PD meters Production since 1970

SUMMARY

"PETROL" PD meters

PMS presentation

"PETROL" PD meters

Quality manual available on request.

The P.M.S. Petrol Metering Systems S.r.l. Company organization and high lights

P.M.S. PETROL METERING SYSTEMS S.R.L. is the final stage of the story of a chemical engineer who in is first working experience started during the 1963, just several months before the University graduation, was incidentally assigned to the commercial department of a primary engineering company in Rome.
It was the first contact with PD meters and more precisely with A. O. Smith, may be the greatest manufacturer of PD meters at that time.
A long series of different working and living experiences brought to **the present reality of the 100% property of a factory producing PD meters and serving customers all over the world.**

The story passes through:

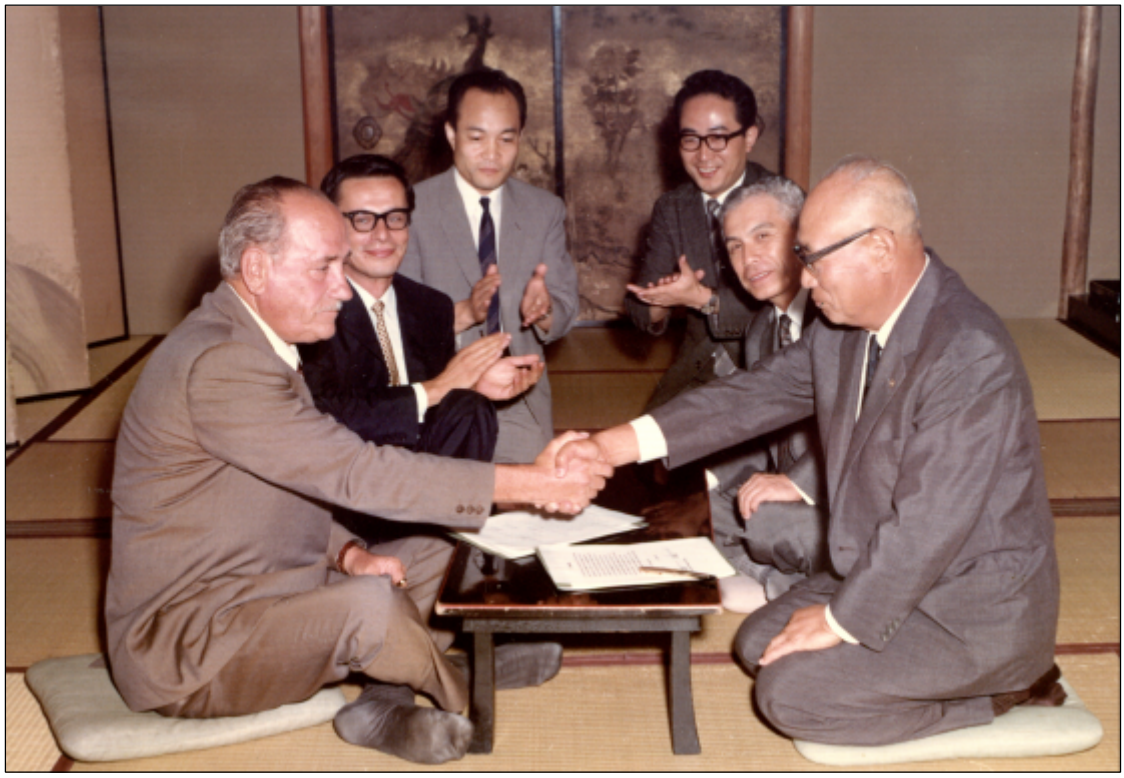
- the qualification as A. O. Smith technician obtained at A.O. Smith factory in Eire, Pennsylvania, during the year 1967;
- the gentleman agreement with a financial party to start-up a commercial company;
- the negotiation with Tokico Ltd in Tokyo during the 1970 to sign a technical agreement for the production of PD meters in Italy;
- the change of the company activity from the commerce to production;
- the building of an own factory in the south of Rome (with the consistent help of the “Cassa del Mezzogiorno”);
- the company auto-financing.
- The training courses for Italian and foreign countries customers carried out at Aprilia (Lt) factory from year 1985 up to now.
  One of the most interesting , even from a folkloristic stand-point, was that hold during the year 1994 to a group of seven (7) technicians plus one (1) chinese-english interpreter of the Tijan-Jin steel plant.
  The length of the course was three (3) days but in spite of the interpreter which was a girl graduated in electronic, the only system we found to communicate was to write questions and replies on a black-board (see picture).

The most significant steps of that story are herebelow documented with several pictures.

Presently P.M.S. PETROL METERING SYSTEMS S.r.l. is a fully indipendent company 100% owned by the promoter family and operating all over the world in the field of metering instrumentation and systems with an own technology and background.

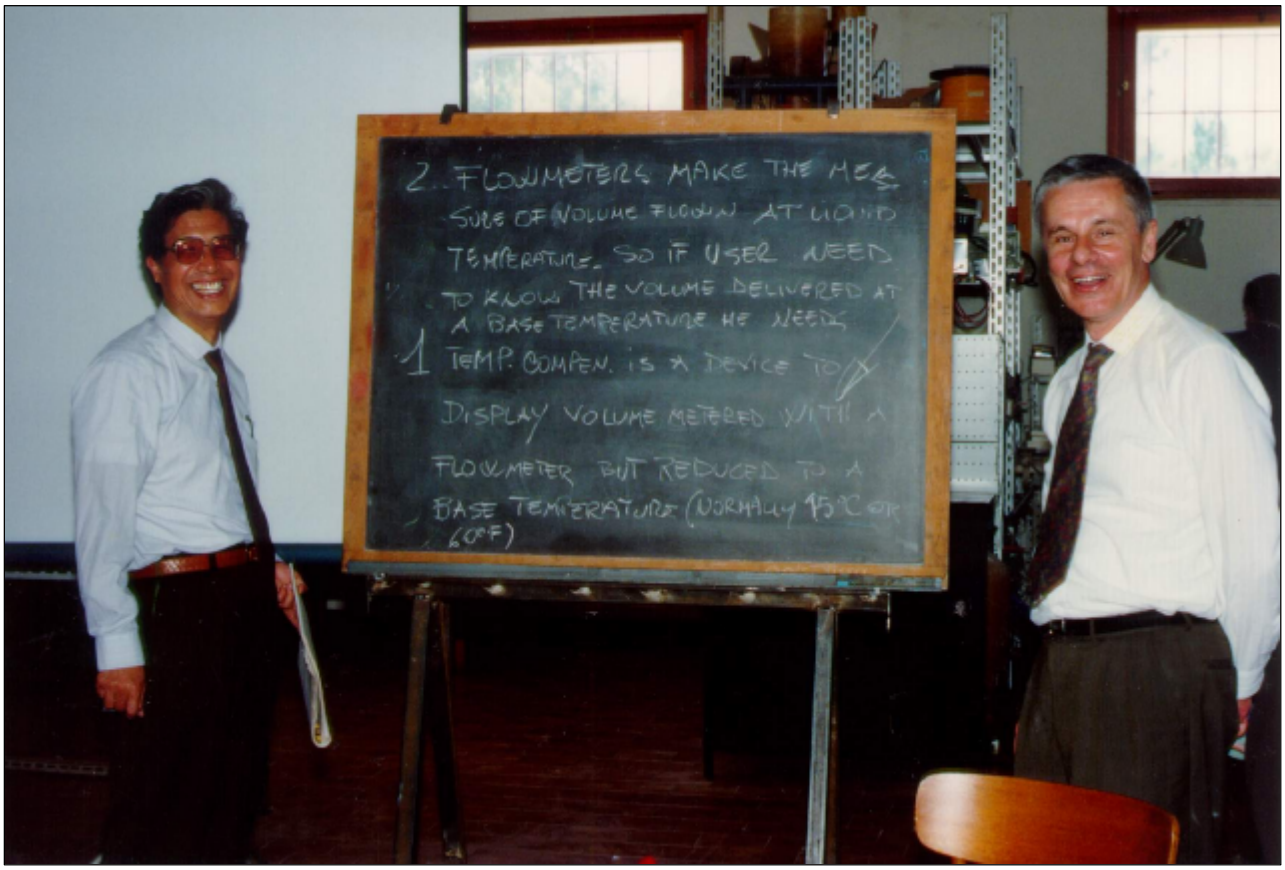
Year 1967

Qualification at A.O.Smith,Eire,Pennsylvania(U.S.A.)



Year 1970

Technical agreement with Tokico in Tokyo (Japan)



Year 1994

Training course at factory with chinese tecnicians and black-board for comunications

Years 1994-2001 Training courses at factory

The production activity is completely carried-out in the own Aprilia (Lt) factory and may be summarized as follows.

Production:

PD meters for liquids, double case type, Roots operating principle, sizes from 1" through 16", max pressure up to 15 MPa, max temperature up to 230 °C. construction materials cast steel, cast iron, stainless steel in the various grades available up to Aisi 316L or in accordance to customer's specific needs either for the outer housing flanged to the piping either for the inner housing, i.e. the measuring unit composed of inner casing plus rotors, shafts and gears.

Factory dimensions:

Total ground 2.500 m2.
Covered area 1.000 m2.

Production capacity:

About 300 instruments per year with possibility of expansion to over 500 instruments per year.

Applications:

Power generation plants, chemical, petrochemical, pharmaceutical and food industry plants, crude oil refineries and oil depots, steel making and concrete making plants, ship makers owners and dealers, crude oil extraction industry.

Markets:

-65% foreign countries directly and through Italian groups

-35% Italy.

For final destination countries see the specific list at page 152 of this general catalogue.

Investments & Financing:

The company even if very young in the present configuration (100% property of the promoter family) and in spite of the conservative initial capital is already working with its own money (auto-financing) and already purchasing other manufacturing structures in view of the next future possible production of metering systems in addition to the well established production of PD meters from 1" through 16" size.

Identification CARD

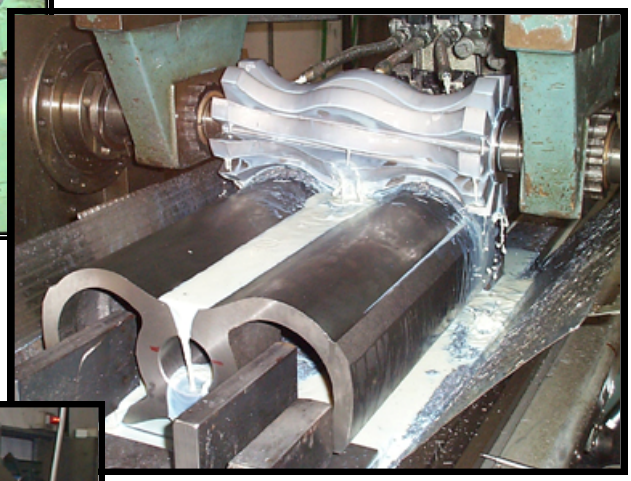
Name	:	P.M.S. Petrol Metering Systems S.r.l.
Address	:	Via delle Valli, 25 04011 Aprilia (LT) ITALY
Phone	:	++39.06.92727658
Fax	:	++39.06.92860025
I. V. A. code	:	IT02068390596
Fiscal code	:	06381091005
Total ground	:	2.500 m²
Covered area	:	1.000 m²
URL web site	:	http://www.petrolms.it
E-mail:		
General Info	:	petrolms@petrolms.it
Dott. Ing. Mario Romiti	:	mario.romiti@petrolms.it
Dott.ssa Silvia Romiti	:	silvia.romiti@petrolms.it
Bank references	:	Monte Dei Paschi Di Siena – Aprilia (LT)
Account n.	:	9650.06
ABI code	:	01030
CAB code	:	73920
SWIFT code	:	PASCITMMAPR

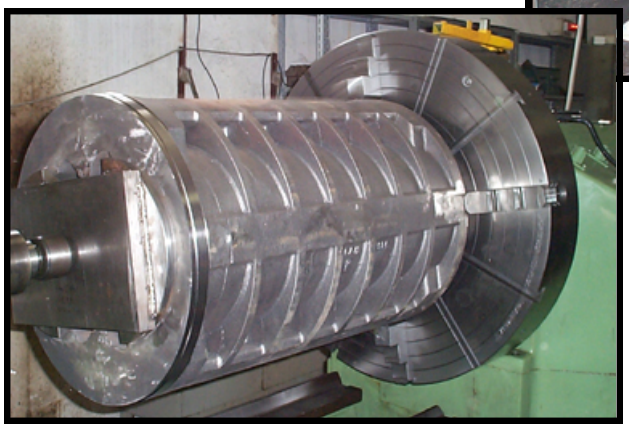
Factory structure

Factory presents a work-shop and two (2) offices blocks, the first one of which reserved to the electronic unit, meeting room and services while the other one reserved to the commercial department.
Offices and work-shop are linked by covered paths with transparent walls.

Work-shop is divided in three main sectors namely:

- Ware-house sector, divided into the following sub-sectors:
  - Raw materials;
  - Packing and despatching;
  - Finished components.
- Hydraulic test and performance test sector;
- Components production and PD meters assembly.

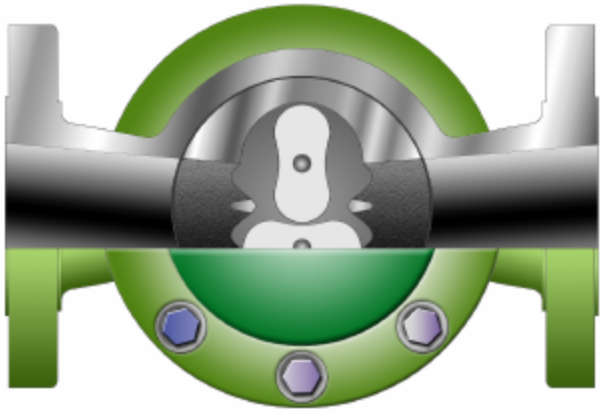




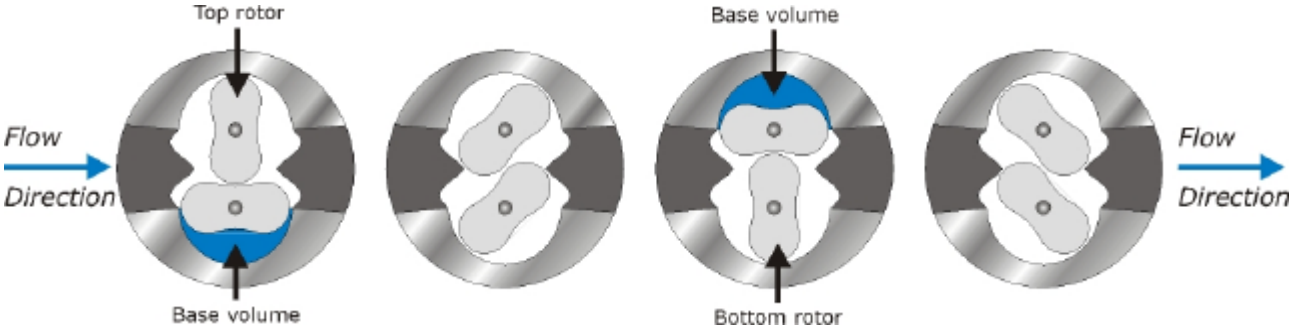
PD meters production generality
Operating principle

The Roots principle is known since the beginning of last century and simply foresees two (2) rotors with a particular shape whose rotation is synchronized by two (2) gears for this reason generally called “timing gears”.
Has been also specialized to produce several different products like pumps, low pressure compressors and other industrial devices.
Our PD meters basically use this operating principle but specialized to meet the performances required to the instruments used in the volumetric measure of liquids flowing through pipes which, are subject to a government approval to be produced being possible their use in fiscal and/or commercial transactions.
As above said the Roots principle foresees two (2) rotors keyed on two (2) shafts and our PD meters conform to this principle (bi-rotor metering mechanism) but only up to a max flow rate of about 300 m3/h (practically 8” size PD meters) because of over this flow rate it is necessary to consistently reduce the rotors rotation speed to prevent piping vibrations as well as a noticeable pressure fluctuation.

Double-case PD meters
Front view

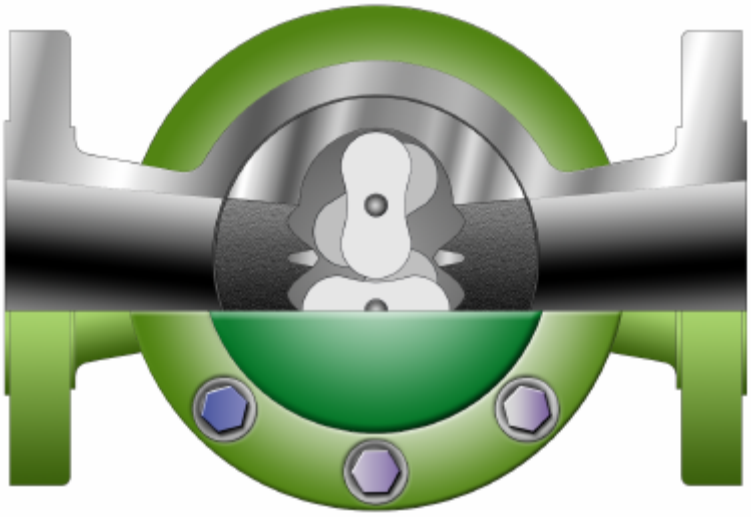


BI-ROTOR mechanism

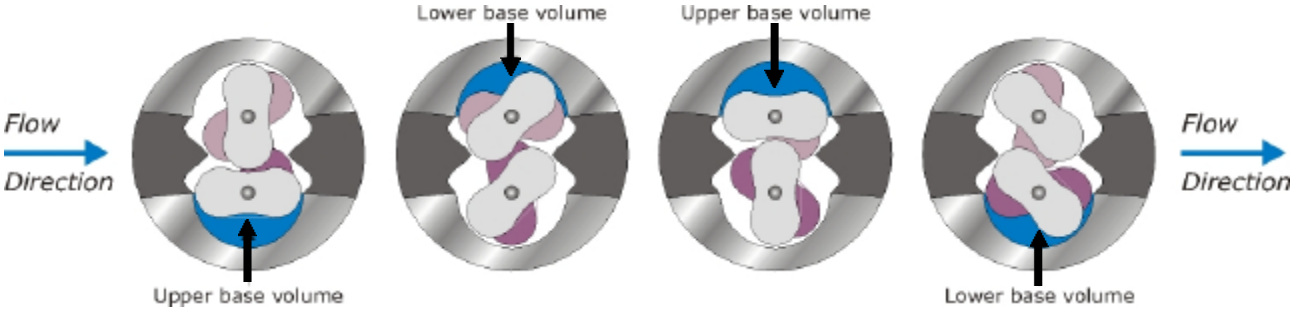


This problem has been solved with the “tetra-rotors” metering mechanism which practically consists in two (2) bi-rotor metering mechanisms keyed on the same shafts but with the rotors shifted of 45°.
In other words it is a system very similar to that used with the electrical current to avoid its fluctuation and to maintain it as much steady as possible.
From a manufacturing stand-point only minor modifications are needed in respect to the manufacturing procedures of the bi-rotor metering mechanism but the results are excellent because of vibrations and pressure fluctuation are almost nullified.
The rotors revolution speed may be therefore increased thus having the possibility to produce more compact PD meters for the same max flow rate.

Double-case PD meters
Top view



TETRA-ROTOR mechanism



PD meters production generality
Production line

In accordance to their operating configuration our PD meters are divided into the following three (3) main groups:

A) PD meters from 1” to 8” nominal sizes
(from model 51 through model 28)

horizontal design, bi-rotor metering mechanism

B) PD meters 8” and 10” nominal sizes
(models 110 and 112)

horizontal design, tetra-rotor metering mechanism

C) PD meters from 12” to 16” nominal sizes
(model 212 through model 114)

vertical design, tetra-rotor metering mechanism

The adoption of horizontal design for PD meters up to model 112 is related to the costant rule that governs our production i.e.

to reduce the maintenance of the PD meters to a real minimum

For this reason all our PD meters feature the following:

1. Double case construction.
2. Magnetic transmission to drive the counter.
3. Carbon bearing instead of ball bearings to support the rotors shafts up to model 112.
4. Carbon and hard metal bearings to support the rotors shaft for model 212 and over.

All above points are deeply illustrated in the following pages.

PD meters production generality
Main features

- Double case contruction
- Floating rotors
- Magnetic transmission
- Carbon bearings
- Change gear calibrator (auto-check)
- Construction materials
- High pressure / temperature
- Capability of metering viscous liquids
- “Tailored” versions
- Excellent accuracy and repeatability
- Reduced maintenance
- Extended Production line
- Wide range of ancillary equipment
- Horizontal and vertical design

Double case contruction

In this type of construction the metering mechanism sometime called also measuring unit and referred hereinafter as inner housing ass'y (inner casing plus rotors, shafts and gears), is a sub-ass'y operating, testable and replaceable in any moment.
During the lines flushing or during the "start-up" the inner housing ass'y can be therefore removed from the outer housing flanged to the piping without removing the entire PD meter from the line and consequently avoiding any damage to the metering mechanism during such operations.
In addition there is a drastic reduction of the time required for the PD meters maintenance being normally enough to maintain only the inner housing ass'y.
Furthermore the construction material of the outer housing may be different from the construction material of the inner housing ass'y (inner casing plus rotors shafts and gears) in accordance to customer's specific needs.
This is the case of the PD meters identified by –C8 as construction materials code which means that are realized with the outer housing in cast steel while the inner housing, i.e. the metering mechanism, is in stainless steel.
From the performance stand-point with the double case construction the inner housing works always in “balanced pressure” conditions which means that the base volume of the PD meter is not subject to change due to changes in the operating pressure of the line. The PD meters calibration is not therefore influenced by the operating pressure of the line.
From a manufacturing stand-point with the double case construction the inner housing is the same for any value of the operating pressure being that pressure withstood by tre outer housing . This means that for the same model of PD meter the inner housing is interchangeable independently by the rating of the line or by the rating of the outer housing flanges and/or body.

Floating rotors

The rotors never touch each other nor they touch the other parts composing the PD meter "base volume" but are synchronized by a couple of “timing gears” mounted outside the rear cover of the inner housing. The rotors are not therefore subject to wear and this means that the PD meters do not need any re-calibration with the time due to the wear of the parts composing the "base volume".

Magnetic transmission

With this type of movement transmission, used in almost all the PD meters produced, the sealing between the wetted parts and the dry parts of the instrument is of static type which fully guarantees against any leakage of the flowing liquid.

Carbon bearings

The adoption of carbon bearings instead of ball bearings to support the rotors shafts agrees with the constant rule that governs our production, i.e. **to reduce the maintenance of PD meters to a real minimum**.
As a matter of facts the life of carbon bearings is at least ten (10) times the life of ball bearings and in our PD meters the bearings are the only component subject to wear being the rotors of floating design.
Of course the friction of the carbon bearings is higher than that of ball bearings but its influence on the PD meter flow rate range for a given accuracy becomes significant only when measuring very dry liquids like liquefied petroleum gas (LPG).
Consequently only for those so dry liquids are used ball bearings instead of carbon bearings to maintain the legal accuracy required to the PD meters.

Change gear calibrator (auto-check)

This type of calibrator assures a continuous mechanic linkage between the inner housing and the counter without any clutch type coupling.
In facts the latter, in case of wear, may produce wrong totalizations without any warning to the operator.
At contrary, with the of replacing gear type calibrator any trouble in the transmission of movement is promptly evidenced from the lack of counter rotation (auto-check).

Construction materials

The Roots operating principle allows the use of any type of construction material such as aluminum, cast iron, carbon steel, stainless steel in the various grades available up to Aisi 316L and plastic materials as "moplen" may be used either for the inner housing either for the outer housing flanged to the piping, in accordance to costumer's specific needs.

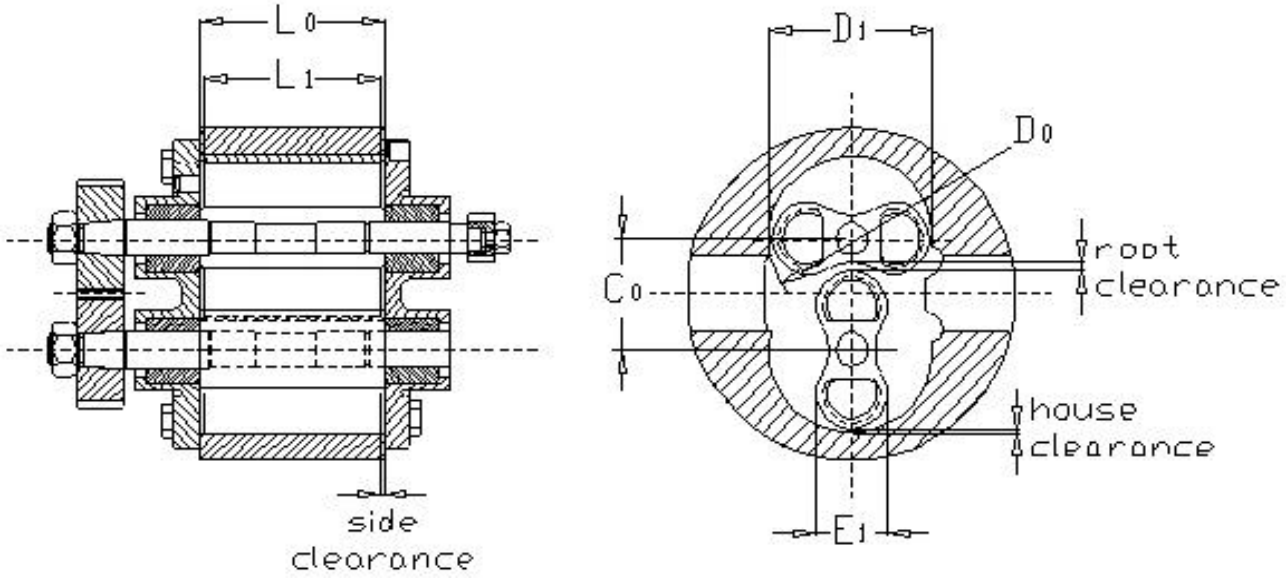
High pressure / temperature

For all the PD meters models the production line includes the versions for max operating pressure up to 15 MPa and for max operating temperatures up to 230 °C.

Capability of metering viscous liquids

Due to both the PD meters operating principle and manufacturing procedures there are no problems for the measure of viscous and very viscous liquids. In facts the profile of the PD meters rotors is worked out with constant profile cutters.
It is therefore very easy to produce PD meters with different "clearances" and consequently also suitable for the measurement of very very viscous liquids (50.000 mPa.s and over).
The “clearances” are the distances between the parts composing the PD meters “base volume”, namely:

- rotor to rotor (root clearance);
- rotor to casing (house clearance);
- rotor to side covers (side clearance).



The metering mechanism operates on the principle of liquid seal and consequently the “clearances” must be kept very tight when measuring very dry and/or not lubricant liquids like LPG or hot water to maintain the legal accuracy required to produce PD meters.
However when the liquid to be metered is enough viscous or very viscous the “clearances” must be enlarged to avoid a too great pressure drop

accross the metering mechanism, with the possible consequent damage of the bearings and of the rotors shafts.
As matter of facts the PD meters design requires that the instrument pressure drop is not over 1,5 Bar.
The “clearances” enlargement is very easily obtained in the rotors type PD meters with rotors worked-out with constant profile cutters because of being the distance between the rotors shafts center-line a fix value is enough to increase the cut-depth of the cutter to automatically reach this result.
The enlargement of the “clearances” does not affect the accuracy of the PD meter because of a thin layer of the viscous liquid under measure remains solidal to the rotors thus practically reducing the actual “clearances” of the mechanism.
In facts for a fixed value of accuracy the flow rate range of the PD meters increases with the viscosity of the liquid to be metered.
For each PD meter there are available at factory eight (8) sets of “clearances” coded with a number from 1 to 8 and the appropriate “clearance” set is selected by the engineering section for each PD meter produced in relation to the viscosity of the liquid to be metered.

“Tailored” versions

For all the models are available specific versions like that to meet Nace requirements.
Are also manufactured PD meters in non standard construction materials like bronze, “moplen” or hastelloy as well as PD meters with flanges in accordance to Jis code, Din code or other codes.

Excellent accuracy and repeatability

Our PD meters tipical accuracy is ±0,2% of reading for custody transfer purposes, ±0,5% of reading for general purposes, anyway in accordance with the specific approvals issued by Italian Ministery of Industry and Commerce for their use in Italy and in the European Community.
Furtermore the reduced quantity of the components generating the “base volume” as well as the permanent “balanced pressure” condition of the inner housing contribute to the high repeatability of the PD meter clearly demonstrated by the results of the witnessed tests certified by the final customer and by a third party carried-out in Port Sudan marine terminal where are installed in parallel service seven (7) 16” size “Petrol” PD meters max flow-rate 1.600 m3/h each for a total max flow-rate of 8.000 m3/h.
A sample copy of the tests made on PD meter n. 1 rispectively at 400 m3/h, 800 m3/h and 1600 m3/h are attached to the specific reports available in this catalogue.
The K-factor is obtained verifying the PD meter with a 24” size bi-directional ball prover. The single values of K-factor are well within the repeatability of 0,05% for five (5) consecutive runs which is the acceptance limits specified in our costumer contract.

Reduced maintenance

The adoption on a standard basis of the magnetic transmission to drive the counter (which means a static seal between the wetted parts and the dry parts of the PD meters) and of carbon bearings or the ass'y carbon hard metal bearings instead of ball bearings to support the rotors shafts, as well as the double case construction and the floating rotors design are all factors that contribute to **reduce the maintenance of the PD meters to a real minimum.**

Extended Production line

The production line includes PD meters from 1" size through 16" size to cover flow rates from few hundred of litres/hour to 1800 m3/hour with construction materials from cast iron to cast steel and stainless steel or others in accordance to specific needs. The operating principle of this type of PD meters permits in facts their realization in any kind of construction material.

Wide range of ancillary equipment

Electronic or pneumatic pulse transmitters and frequency to current converters are available for remote totalization, recording and presetting of metered volumes. Local or remote preset counters, both with one or two stages closure cycles, together with automatic temperature compensators, mechanic or electronic type, complete the range of PD meters ancillary equipment. All the range of protecting devices such as strainers, deaerators, max flow limiting and one or two stages closure valves are also available.

Horizontal / vertical design

The PD meters horizontal design together with their double case construction permit the easily removal of the inner housing (i.e. the inner casing plus rotors, shafts and gears) from the outer housing flanged to the piping from the rear, without the need to remove the entire PD meter from the line and without the need to disconnect the accessories eventually mounted on the counter side.
To fully enjoy the advantage of the horizontally designed PD meters the only precaution to be taken is to leave enough space in the rear side of the PD meters to permit the removal of the inner housing.
However this version is only available up to 10" nominal size PD meters, because of when the weight of the inner housing becomes significant its removal from the rear side becomes difficult and impractical.
For this reason the PD meters from models 212 to 114, i.e. 12" to 16" sizes PD meters, show a vertical design with the inner housing removed from the top.

Certificates - Approvals

Quality System Certificate	Insert
EC – Confirmation of Filing / ATEX	Insert
PED Approval Certificate	Insert
Italian Approval Certificate	Insert
Common Market (CE) Certificate	Insert
Russian Approval Certificate	Insert

Certificate - Approvals
Quality System Certificate

UNI EN ISO 9001:2000 (ISO 9001:2000) Certificate
No. **CERT-09578-2001-AQ-ROM-SINCERT**

Quality manual available on request.

DNV

DET NORSKE VERITAS

QUALITY MANAGEMENT SYSTEM CERTIFICATE

Certificato No. / Certificate No. ***92559-2011-AQ-ITA-ACCREDIA***

Si attesta che / This certifies that

Il sistema di gestione per la qualità di / the quality management system of

P.M.S. PETROL METERING SYSTEM S.r.l.

Via Delle Valli, 25 - 04011 Aprilia (LT) - Italy

È conforme ai requisiti della norma per i sistemi di gestione per la qualità
Conforms to the quality management systems standard

UNI EN ISO 9001:2008 (ISO 9001:2008)

Questa certificazione è valida per il seguente campo applicativo:
This certificate is valid for the following products or services:

(Ulteriori chiarimenti riguardanti lo scopo e l'applicabilità dei requisiti della normativa si possono ottenere consultando l'organizzazione certificata)
(Further clarifications regarding the scope and the applicability of the requirements of the standard(s) may be obtained by consulting the certified organization)

Progettazione, produzione e manutenzione di misuratori volumetrici di tipo meccanico per liquidi

Design, manufacture and maintenance of positive mechanical displacement meters for liquids

Data di scadenza
Expiry Date
2014-01-28

per l'Organismo di Certificazione
for the Accredited Unit
DET NORSKE VERITAS ITALIA S.R.L.

Luogo e data
Place and date
Agrate Brianza, (MB) 2011-01-28

ACCREDIA L'ENTE ITALIANO DI ACCREDITAMENTO

SGQ N°003 A PRD N°003 B
SGA N°003 D SSI N°002 G
SCR N°004 F FSM N°001 I

Membro di MLA EA per gli schemi di accreditamento SGQ, SGA, PRD, PRS, ISP e LAB,di MLA IAF per gli schemi di accreditamento SGQ, SGA, SSI, FSM e PRD e di MRA ILAC per gli schemi di accreditamento LAB

Settore *EA : 18*

Benedetto Ciampa
Lead Auditor

Vittore Marangon
Management Representative

La validità del presente certificato è subordinata a sorveglianza periodica (ogni 6, 9 o 12 mesi) e al riesame completo del sistema con periodicità triennale
The validity of this certificate is subject to periodical audits (every 6, 9 or 12 months) and the complete re-assessment of the system every three years
Le aziende in possesso di un certificato valido sono presenti nella banca dati sul sito **www.dnv.it** *e sul sito Accredia (***www.accredia.it***) - All the companies with a valid certificate are online at the following addresses:* **www.dnv.it** *and* **www.accredia.it**

Certificate - Approvals
EC – Confirmation of filing- ATEX

RWTÜV

[1] **EC – Confirmation of Filing**

[2] **Retention of documents for equipment intended for use in Potentially Explosive Atmospheres Directive 94/9/EC Article 8 (1) b) ii)**

[3]	**File No.:**	**RWTÜV - 8 - 04 - ATEX - 0067 - I - P.M.S.**
[4]	**Identification Details of Documents:**	**P. D. Meters for Liquids**
[5]	**Manufacturer:**	**P.M.S. Petrol Metering Systems s.r.l.**
[6]	**Address:**	**Via delle Valli, 25 I-04011 Aprilia (LT) Italy**

[7] The Certification Body for Explosion Protection of the RWTÜV Systems GmbH, notified body number 0044 in accordance with Article 9 of the Council Directive 94/9/EC of 03.23.1994, confirms the receipt and retention of documents for equipment intended for use in potentially explosive atmospheres given in Annex II to the Directive.

[8] This Confirmation of Filing applies for equipment of groups I and II, categories M2 and 2 which neither has an internal combustion engine nor consists of electrical devices.

[9] This confirmation only relates to the receipt and retention of documents by the Notified Body. Further requirements of the Directive 94/9/EG, e.g. the application of the internal control of production in accordance with Annex VIII of the Directive, and the scope of the documents to be retained in accordance with Annex VIII Number 3 are in the responsibility of the manufacturer and not covered by the confirmation.

[10]	**Date Received:**	**10.02.2004**
[11]	**End of Agreed Period of Retention:**	**10.02.2014**

Certification Body for Explosion Protection — Essen, 04.03.2004

Head of the Certification Body for Explosion Protection
Dipl. - Ing. F. Matz

Zertifizierungsstelle RWTÜV 0044 Explosionsschutz

RWTÜV Systems GmbH, Certification Body for Explosion Protection, Langemarckstr. 20, D – 45141 Essen
Tel.: 0201 / 825 – 2701, Fax 0201 / 825 – 2528, e-Mail: Friedhelm.Matz@rwtuev.de

Certificate - Approvals
PED Approval Certificate

CONSORZIO DNV-MODULO UNO

DNV - MODULO UNO

CERTIFICATO DI APPROVAZIONE
APPROVAL CERTIFICATE

In applicazione della Direttiva 97/23/CE e Decreto Legislativo n. 93 del 25 febbraio 2000
as per Directive 97/23/EC and Decreto Legislativo n.93 of 25 February 2000

Certificato N°/Certificate N°: CE PED.07.0150.04/1866.1

Si attesta che il sistema qualità per il tipo di prodotto:
We hereby declare that the quality system for the type of product:
Misuratori volumetrici per liquidi, Filtri a cestello /
Positive displacement meters for liquids, Strainers

Fabbricato da / *Manufactured by*:
Petrol Metering Systems S.r.l.
Via delle Valli, 25 – 04011 Aprilia (LT) – Italia

è adeguato a garantire la conformità ai requisiti della Direttiva 97/23/CE
is found to comply with the requirements of Directive 97/23/EC

Il sistema qualità per le fasi di fabbricazione, ispezione finale e collaudo per i suddetti prodotti è stato valutato in accordo alle procedure di valutazione della conformità descritte all'**Allegato III modulo D1 della Direttiva 97/23/CE** / *The quality system for manufacture and testing of above mentioned products has been assessed with respect to the procedure of conformity assessment as described in* ***Annex III module D1 of 97/23/EC Directive***

Ulteriori dettagli sul prodotto e le condizioni di validità sono dati in allegato.
More details about the product and validity conditions are given in the annex.

Agrate Brianza, 22 agosto 2007
Per l'Organismo Notificato
On behalf of the Notified Body

Bartolomeo Piccardo
Amministratore Delegato / *Managing Director*

CE
0496

Responsabile della direttiva: / *Directive Responsible:* Giovanni Cortesi

Il presente certificato è composto da una pagina e da un allegato ed è riproducibile solo integralmente.
This certificate includes one page and one annex and only an integral copy can be made.

Certificate - Approvals
PED Approval Certificate

CONSORZIO DNV-MODULO UNO

DNV - MODULO UNO

Allegato al Certificato di Approvazione N°:
Annex to Approval Certificate N°: **CE PED.07.0150.04/1866.1**

SCOPO E CONDIZIONI / *SCOPE AND CONDITIONS*

Prodotti coperti da questo certificato / *Products covered by this certificate*

DNV–MODULO UNO S.c.ar.l. ha effettuato la valutazione del sistema qualità del fabbricante per verificare che i pertinenti requisiti relativi ai seguenti prodotti siano stati implementati / *DNV–MODULO UNO S.c.ar.l. has carried out the QS assessment of the Manufacturer's quality system to verify that the relevant requirements relating to the following products have been implemented.*

Prodotto / *Product*	Rapporto di valutaz. del S.Q. del *QS Assessment Report dated*
Accessori a pressione con massima categoria II come segue: ▪ Misuratori volumetrici di tipo meccanico per liquidi, Pmax.100 bar, T: -10/+230°C. ▪ Filtri a cestello per liquidi, Pmax.20 bar, T: -10/+230°C. *Pressure accessories with max. category II as follow:* ▪ *Positive mechanical displacement meters for liquids, Pmax.100 bar, T: -10/+230°C.* ▪ *Strainers for liquids, Pmax.20 bar, T: -10/+230°C.*	30-07-2007

Condizioni / *Conditions*

1. L'approvazione del sistema è valida esclusivamente per le attrezzature elencate sopra. Per altre attrezzature è necessario inviare una domanda di estensione della certificazione a DNV–MODULO UNO S.c.a r.l. / *The system approval is only valid for the equipment listed above. For other equipment, an application for extension of the certificate must be sent to DNV–MODULO UNO S.c.a r.l.*
2. DNV–MODULO UNO S.c.a r.l. deve essere informata in merito ad ogni fornitore di parti pressurizzate principali / *DNV–MODULO UNO S.c.a r.l. must be informed of any sub suppliers for main pressure retaining part.*
3. Il fabbricante deve informare DNV–MODULO UNO S.c.a r.l. in merito al programma di produzione previsto / *The manufacturer shall inform DNV–MODULO UNO S.c.a r.l. of the intended schedule of production.*
4. E' previsto lo svolgimento di verifiche ispettive periodiche e visite senza preavviso per verificare il mantenimento della validità del presente Certificato / *Periodical audits and unexpected visits will be held in order to verify that the manufacturer's obligations to maintain the validity of this certificate are fulfilled.*
5. Ogni modifica del Sistema Qualità dovrà essere immediatamente comunicata a DNV-MODULO UNO S.c.a r.l per valutare il mantenimento della validità del presente Certificato / *The manufacturer must give information of any intended adjustments of the quality system to DNV–MODULO UNO S.c.a r.l., who will assess the changes and decide if the certificate remain valid.*

Il fabbricante ottempera ai requisiti della direttiva 97/23/CE in materia di attrezzature a pressione ed è autorizzato ad apporre la marcatura CE seguita dal numero di identificazione dell'Organismo Notificato 0496 / *The manufacturer complies with directive 97/23/EC on pressure equipment and is allowed to affix the CE mark followed by the Notified Body identification number 0496.*

Bartolomeo Piccardo
Amministratore Delegato / *Managing Director*

Fine Certificato / *End of certificate*

Certificate - Approvals
Italian Approval Certificate

Approval n. 347828 dated 28/07/70, issued by Italian Weight and Measure Department, for legal and custody transfer applications in Italy.

(N. 97 del Reg.)

Ministero dell'Industria, del Commercio e dell'Artigianato

SERVIZIO CENTRALE METRICO

Decreto Ministeriale 28 luglio 1970, n. 347828, col quale sono ammessi alla verificazione metrica ed alla legalizzazione i misuratori di carburanti e prodotti petroliferi affini, e di liquidi industriali, denominati **"TOKICO PETROL"**.

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IL MINISTRO SEGRETARIO DI STATO
Per l'Industria, il Commercio e l'Artigianato

VISTO il regolamento per la fabbricazione metrica approvato con R.D. 12 giugno 1902, n. 226 e sue successive modifiche, con particolare riferimento al D.P.R. 12 novembre 1958, n. 1215;

VISTA la legge 31 gennaio 1967, n. 33 che ammette alla verificazione metrica misure metalliche della capacità di cinque, dieci, venti, venticinque, cinquanta e cento chilolitri;

VISTO il D.M. 5 aprile 1949, n. 422498, col quale sono ammessi alla verificazione metrica i misuratori volumetrici dei gas, a secco, a rotoidi, denominati « DELTA »;

VISTO il D.M. 5 aprile 1952, n. 322027, col quale è ammesso alla verificazione metrica il misuratore di carburanti liquidi e di olii minerali, denominato « AROV-ZINA »;

VISTI i DD. MM. 19 agosto 1964, n. 197947; 22 ottobre 1964, n. 198483 e 18 giugno 1965, n. 197489, con i quali si approvano, rispettivamente i misuratori di carburanti « BI-ROTOR », « AROV-BOPP & REUTHER » e « AVERY-HARDOLL »;

VISTA la domanda della Ditta Petrol, S.r.l., di Roma, rivolta ad ottenere l'ammissione alla verificazione metrica di misuratori di carburanti e prodotti petroliferi affini, e di liquidi industriali in genere, che presentano modificazioni ed aggiunte rispetto ai tipi ammessi coi decreti precitati;

SENTITO il parere del Comitato Centrale Metrico,

D E C R E T A

Articolo 1

1. **CARATTERISTICHE** — Sono ammessi alla verificazione metrica ed alla legalizzazione i misuratori di carburanti e prodotti petroliferi affini, e di liquidi industriali, denominati « TOKICO PETROL », rappresentati nei disegni con legenda allegati al presente decreto ed aventi le seguenti caratteristiche principali:

1.1. Gli apparecchi sono realizzati per misurare carburanti liquidi, oli combustibili, oli lubrificanti fluidi, prodotti petroliferi in genere, permanentemente stabili allo stato liquido in condizioni ordinarie di temperatura e pressione, e liquidi industriali in genere; essi presentano le seguenti principali caratteristiche:

1.1.1. **organo misuratore a rotoidi**, analogo a quello dei misuratori di gas « DELTA » ammessi alla verificazione con D.M. 5 aprile 1949, n. 422498. I misuratori funzionanti ad elevate pressioni di esercizio hanno l'involucro contenuto in una cassa invasa, durante l'erogazione, dal liquido in afflusso che, ristagnando alla stessa pressione del liquido nella camera misuratrice, annulla gli effetti della pressione sulle pareti.
Ai fini della sicurezza, esulanti dalla competenza del Servizio Metrico, i fabbricanti ed utenti di apparecchi destinati a pressioni elevate, saranno tenuti all'osservanza, sotto la propria diretta responsabilità, degli adempimenti che le Autorità a ciò specificamente preposte abbiano prescritto, od intendano prescrivere, ai fini medesimi.

1.1.2. **testata indicatrice**, realizzata nelle seguenti tre distinte versioni:

1.1.2.1. organo indicatore dei volumi, a quadrante circolare, con lancetta indicatrice azzerabile, provvisto di contatore totalizzatore, a tamburelle, non azzerabile;

1.1.2.2. organo indicatore composito, costituito da un contatore a tamburelle e da un quadrante circolare, con lancetta indicatrice, entrambi azzerabili. Il valore della graduazione del quadrante è pari a quello di una suddivisione dell'ultima tamburella del contatore. L'insieme è completato da un contatore totalizzatore, non azzerabile;

1.1.2.3. testata indicatrice dei soli volumi, tipo « VEEDER-ROOT », costituita da un contatore delle erogazioni parziali, azzerabile, e da un totalizzatore, non azzerabile.
La testata indicatrice « VEEDER-ROOT » può essere dotata di un dispositivo stampante. In questo caso il valore volumetrico dell'unità di impressione deve essere identico od inferiore a quello della minima suddivisione del contatore parziale.

1.1.3. A monte del misuratore deve essere applicato un filtro con separatore d'aria di dimensioni ed efficacia adeguate alla portata del misuratore ed alle caratteristiche specifiche del liquido da misurare; con particolare riferimento alla più o meno marcata proprietà di taluni di essi ad emulsionarsi con aria o vapori.

1.2. Gli apparecchi sono fabbricati in diverse versioni, recanti la denominazione « TOKICO PETROL », seguita da sigle (lettere o numeri) che, fermi restando i caratteri sostanziali, ne identificano talune particolarità costruttive e metrologiche, secondo il seguente codice:

1.2.1. Lettera maiuscola F, per tutte le versioni di misuratore a cassa doppia e lettere F B per quelle a cassa singola.

1.2.2. Lettera maiuscola, indicante la pressione massima di esercizio, come appresso:

Lettera di codice	Pressione massima in kg/cm²
A	**10**
L	**20**
M	**62**
H	**110**

1.2.3. Numero, costituito da due o tre cifre, relativo alla portata massima dello strumento.
Detta portata massima non è prestabilita in maniera tassativa, come è di norma per i misuratori di carburanti degli impianti stradali, ma può variare entro valori massimi e minimi, in funzione della viscosità del liquido misurato, come indicato dalla seguente tabella:

Numero di codice	Campo di portata massima in m³ all'ora	Diametro bocche carico e scarico in mm
51	2 - 4	25
11	4 - 8	25 o 40
12	7,5 - 15	40 o 50
53	20 - 40	50 o 80
13	30 - 60	50 o 80
14	55 - 110	80 o 100
24	65 - 130	80 o 100
16	80 - 160	100 o 150
18	125 - 250	150 o 200
28	160 - 320	150 o 200
110	225 - 450	200 o 250
112	350 - 700	250 o 300
212	450 - 900	250 o 300
114	700 - 1400	350

Il valore della portata massima, indicato dal misuratore, deve essere compreso entro la gamma individuata dai valori di cui alla tabella precedente. Il rapporto tra il valore predetto e quello della corrispondente portata minima deve restare comunque non inferiore a 5.
I valori prescelti per la portata massima e per la portata minima devono essere riportati nei modi indicati dalle prescrizioni in vigore (targa o quadrante).

1.2.4. Un trattino di separazione;

1.2.5. il numero 12, se la testata indicatrice è del tipo indicato al punti 1.1.2.1. precedente, oppure il numero 22, se la testata è del tipo indicato al punto 1.1.2.2. (Nessun segno caratteristico di codice è adottato nel caso che la testata sia del tipo « VEEDER-ROOT »).

1.2.6. Eventuali altre lettere e numeri, riferentisi ai materiali costitutivi della cassa esterna, della cassa interna e dei rotori.
A titolo di esempio, alla sigla FA 24-12-C7 corrisponde un misuratore a doppia cassa, funzionante a pressioni massime di 10 kg/cm², entro una gamma di portate massime da 65 a 130 m³ all'ora, dotato di testata con totalizzatore non azzerabile, con cassa esterna in acciaio al carbonio e le parti interne in acciaio inossidabile AISI 304.

1.3. Gli strumenti possono essere forniti, facoltativamente, dei seguenti dispositivi complementari:

1.3.1. trasmettitore di impulsi elettrici azionato dall'albero dell'organo misuratore, atto a comandare a distanza, dispositivi ripetitori, o registratori, non facenti fede in rapporti con terzi;

1.3.2. campionatore automatico, per il prelievo intermittente di piccoli volumi di liquido in misurazione, allo scopo di determinare, a parte, alcune sue caratteristiche principali (densità, viscosità, ecc.).
Il congegno, a funzionamento elettromeccanico, è azionato dall'albero dell'organo misuratore ed, in relazione al passaggio nell'apparecchio misuratore di preimpostati volumi di liquido, consente la deviazione automatica, in apposito recipiente di raccolta, dei campioni di prova;

1.3.3. testata indicatrice ausiliaria fornita di uno speciale dispositivo atto a compensare automaticamente gli effetti derivanti dalle variazioni di temperatura, per il riporto dei volumi di liquido erogati a quelli corrispondenti ad una prestabilita temperatura di riferimento.
Le indicazioni della testata ausiliaria non sono garantite dai bolli di verificazione metrica e non devono far fede in rapporto con terzi; a tal fine, sul quadrante di essa dovrà essere apposta, in caratteri chiari ed indelebili, la seguente iscrizione:
« I valori indicati da questo contatore, compensati in funzione della temperatura, non sono garantiti dai bolli di verificazione ».

1.4. Sul quadrante della testata indicatrice o su apposita targa applicata ben visibilmente sul fronte del misuratore e vincolata con bolli, devono figurare le seguenti iscrizioni:

I - Marca di fabbrica e ragione sociale del fabbricante;
II - denominazione dell'apparecchio, indicazione del tipo. numero di matricola ed anno di fabbricazione;
III - estremi del presente decreto;
IV - indicazione del liquido misurato e della sua viscosità;
V - gamma delle temperature di esercizio (ove la misurazione avvenga a temperatura non compresa tra —10°C e + 50°C);
VI - portata massima e portata minima;
VII - gamma delle pressioni limite di esercizio.

Articolo 2

2. **VERIFICAZIONE** — La verificazione prima si effettua sul luogo di funzionamento e, facoltativamente, presso l'officina del fabbricante; in quest'ultimo caso lo strumento va soggetto, successivamente, al collaudo di posa in opera sul luogo di funzionamento.
La verificazione periodica si esegue soltanto sul luogo di funzionamento.
La verificazione prima si effettua mediante apposito impianto di prova, messo a disposizione dal fabbricante.

2.1. Le prove devono essere eseguite alla portata massima ed alla portata minima indicate in targa, oltre a qualsiasi portata intermedia scelta dall'Ispettore Metrico.

In ciascuna prova, il liquido erogato dal misuratore viene convogliato in misure campioni che, in relazione alla portata di prova, devono avere capacità tale da consentire il loro riempimento in un tempo di erogazione non inferiore a 2 minuti primi.

Le misure campioni facenti parte dell'impianto di prova devono corrispondere alle prescrizioni in vigore, con particolare riferimento, per le misure di capacità superiore a 2 kl, alla legge 31 gennaio 1967, n. 33 citata nelle premesse.

2.2. L'impianto di prova deve essere dotato di tutte le installazioni necessarie a garantirne la funzionalità, e precisamente:

— serbatoi contenitori dei liquidi di prova, con apparecchiature di esercizio e di sicurezza di prescrizione per gli impianti petroliferi (bocca di carico, bocca di svuotamento, saturatore, valvola di emergenza chiusura aria, presa di aria, ecc.);
— sistemi di pompaggio e tubazioni di adduzione, con appositi attacchi per l'applicazione dei vari tipi di misuratori, di portata tale da consentire il regolare ed agevole flusso dei quantitativi di liquido in erogazione;
— filtri e disareatori, con spie di flusso per individuare l'eventuale presenza di gas nel liquido;
— valvole di non ritorno e sifoni, atti a mantenere costantemente invasate le tubazioni di adduzione;
— banco per il montaggio dei misuratori in prova;
— misura campione di capacità appropriata, opportunamente inserita ed avente la duplice funzione di servire per la verificazione diretta dei misuratori di portata adeguata a quella capacità e per la taratura e la verificazione dei campioni di capacità maggiore, facenti parte dell'impianto.

Uno schema dell'impianto di prova è rappresentato nei disegni con legenda che accompagnano il presente decreto.

2.4. Le stazioni di prova possono essere installate a domanda dei fabbricanti interessati, od anche di singoli utenti, purché questi ne richiedano la preventiva autorizzazione al Ministero dell'Industria e del Commercio - Direzione Generale del Commercio Interno - Servizio Metrico.

Le domande, presentate a questo scopo, dovranno essere corredate da disegni con legenda e descrizione particolareggiata delle apparecchiature predisposte per la funzionalità della stazione e della loro dislocazione negli appositi locali.

L'autorizzazione viene concessa in seguito al favorevole esito degli accertamenti disposti dall'Amministrazione Metrica a mezzo dei propri organi tecnici ed a spese dell'istante.

2.5. La verificazione periodica e, in caso di verificazione prima in officina, il collaudo di posa in opera dei misuratori, si effettuano con apparecchiature del tipo suindicato o con altre di tipo regolarmente ammesso e riconosciute equipollenti in sede degli accertamenti di cui al precedente paragrafo 2-4, poste a disposizione dell'interessato.

Articolo 3

LEGALIZZAZIONE — La legalizzazione che segue la verificazione prima dei misuratori denominati « TOKICO PETROL » si effettua imprimendo i seguenti bolli:

a) bolli a stemma e personale per vincolare all'involucro la targa delle iscrizioni;
b) bolli a tenaglia, indicati nei disegni con legenda allegati al presente decreto, atti a vincolare le varie parti costituenti l'involucro del misuratore e del dispositivo indicatore.

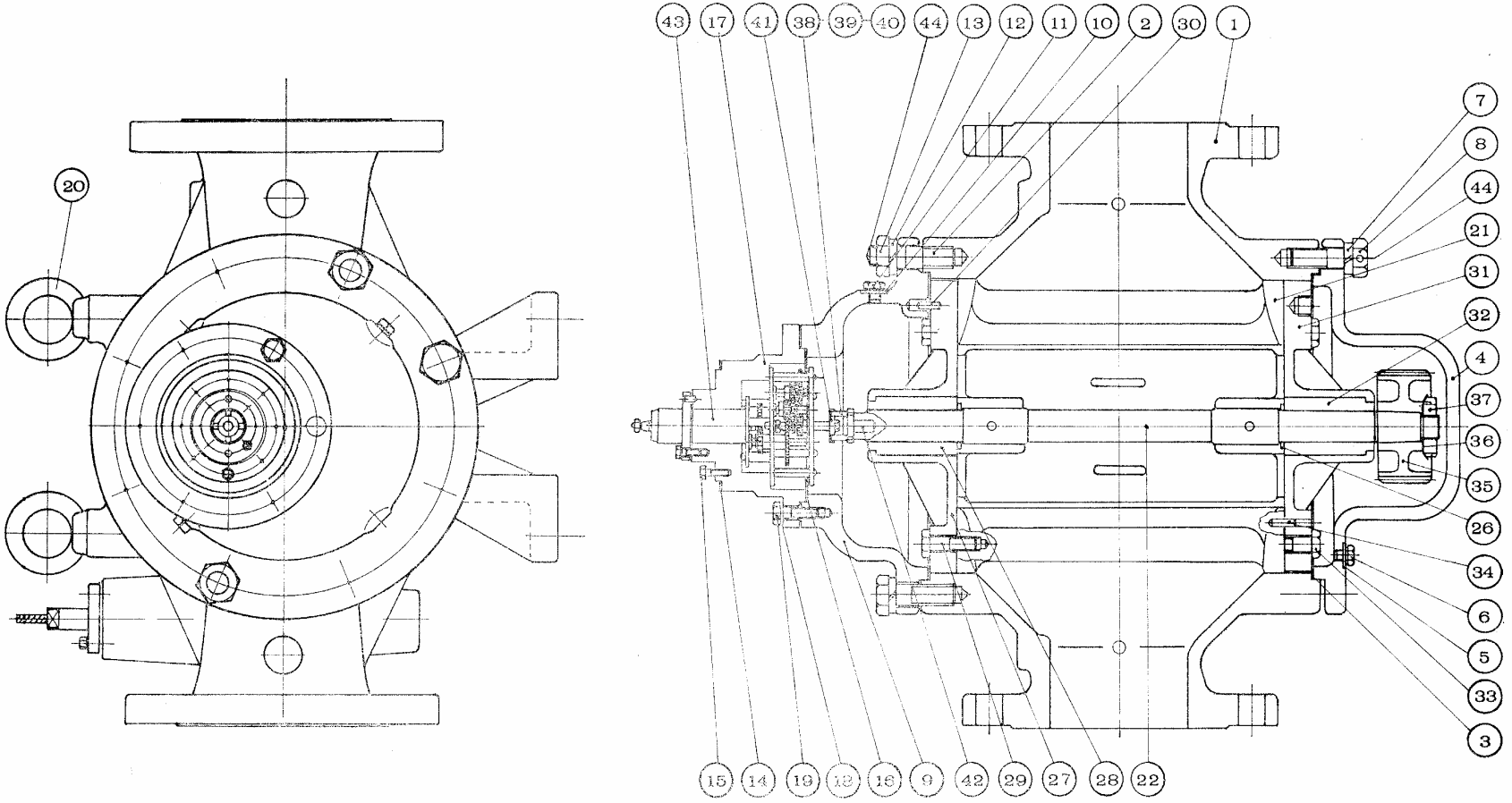
La legalizzazione che segue la verificazione periodica si effettua imprimendo il bollo a doppio millesimo sulla targa delle iscrizioni, ovvero su apposita nicchia imbottita di lega tenera, all'uopo predisposta sulla targa stessa.

Articolo 4

Gli Ispettori Metrici sono incaricati della esecuzione del presente decreto.

p. IL MINISTRO
Mammi

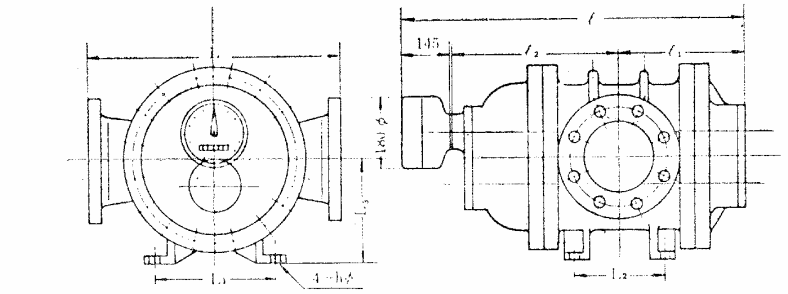
Tavola I Disegni indicativi del Misuratore di carburante **Tokico Petrol** (Misuratore a cassa doppia) Vedi D.M. 28 luglio 1970, n. 347828

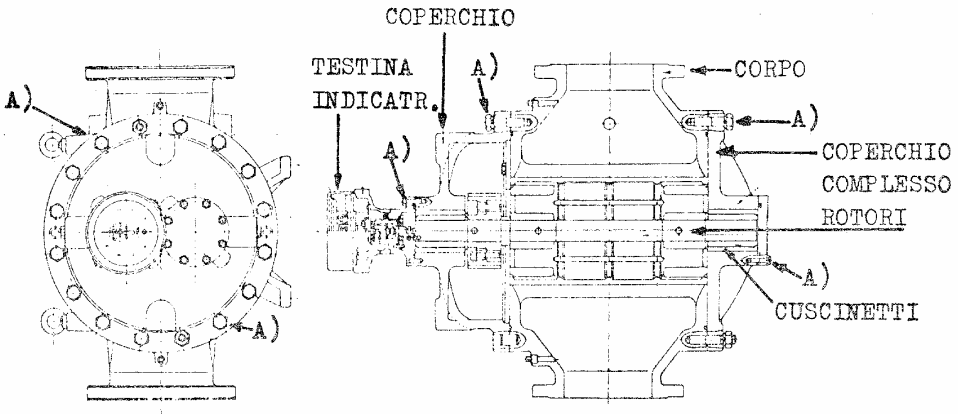


LEGENDA - 1 Cassa esterna del misuratore. 2 Bullone di fissaggio del coperchio superiore. 3 Guarnizione. 4 Coperchio esterno inferiore. 5 Rondella. 6 Dado per drenaggio. 7 Rondella 8 Bulloni di fissaggio del coperchio esterno inferiore al corpo del misuratore. 9 Coperchio superiore. 10 Rondella. 11 Vite. 12 Rondella. 13 Dado. 14 Guarnizione. 15 Bulloni fissaggio accessori. 16 Guarnizione. 17 Scatola di ingranaggi. 18 Rondella. 19 Bullone di fissaggio scatola ingranaggi al coperchio superiore. 20 Bulloni per sollevamento. 21 Cassa interna. 22 Alberi rotoidi. 26 Guarnizione. 27 Coperchio cassa interna. 28 Albero di trasmissione. 29 Bulloni fissaggio cassa interna. 30 Perno di guida per montaggio coperchio superiore. 31 Coperchio interno inferiore. 32 Boccola. 33 Bullone fissaggio coperchio inferiore. 34 Perno di guida per montaggio coperchio interno inferiore. 35 Ingranaggio accoppiamento rotori. 36 Rondella. 37 Dado. 38-39-40 Scatola di trasmissione. 41 Albero di trasmissione. 42 Perno di accoppiamento meccanico. 43 Guaina di protezione. 44 Bolli a tenaglia (l'Ispettore Metrico potrà applicare ogni altro bollo che, a suo giudizio, risulti necessario a garantire l'inaccessibilità degli organi misuratore e indicatore).

Tavola II

Disegni indicativi dei misuratori **Tokico Petrol** (a cassa semplice)

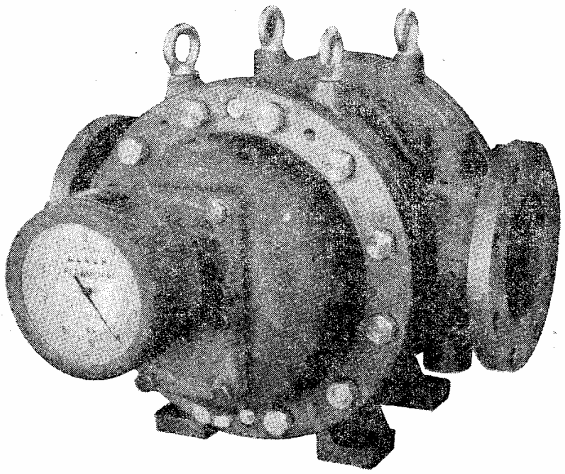




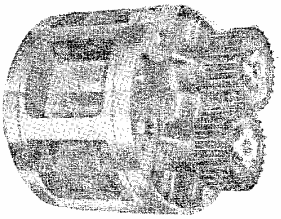
A) Bolli a tenaglia (l'Ispettore Metrico potrà applicare ogni altro bollo che, a suo giudizio, si rende necessario a garantire l'inaccessibilità degli organi misuratore e indicatore).

Tavola III

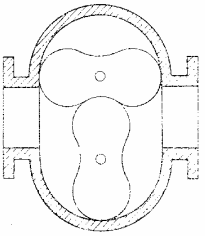
Disegno indicativo dei Misuratori **Tokico Petrol**



Vista d'insieme



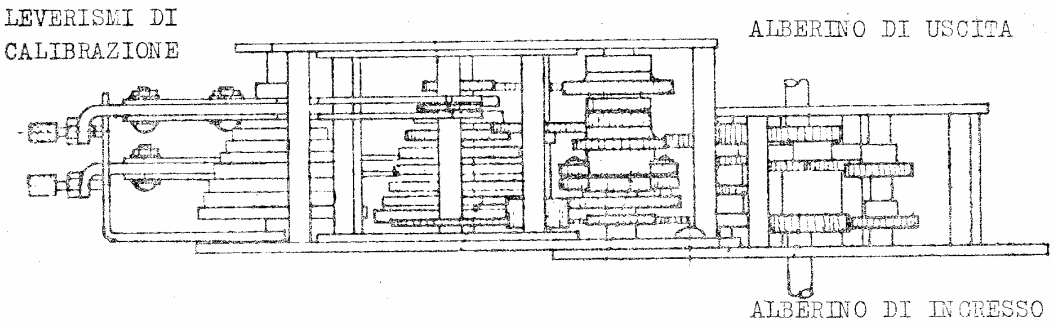
Rotori



Schema
degli organi misuratori

Tavola IV

Disegni indicativi schematici del dispositivo di regolazione preventiva dei misuratori **Tokico Petrol** (dispositivo a ingranaggi).



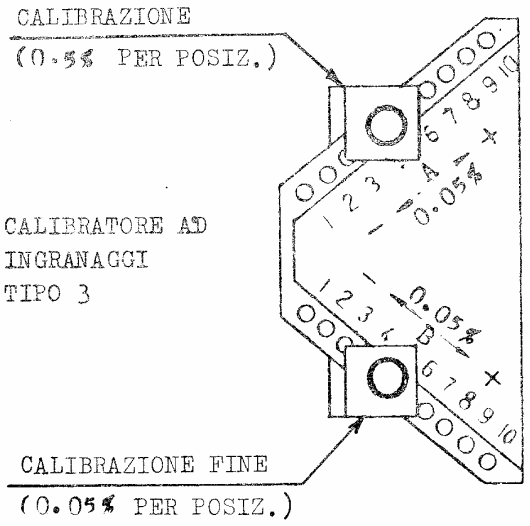


Tavola V

Disegni indicativi schematici del dispositivo di regolazione preventiva dei misuratori **Tokico Petrol** (dispositivo a frizione).

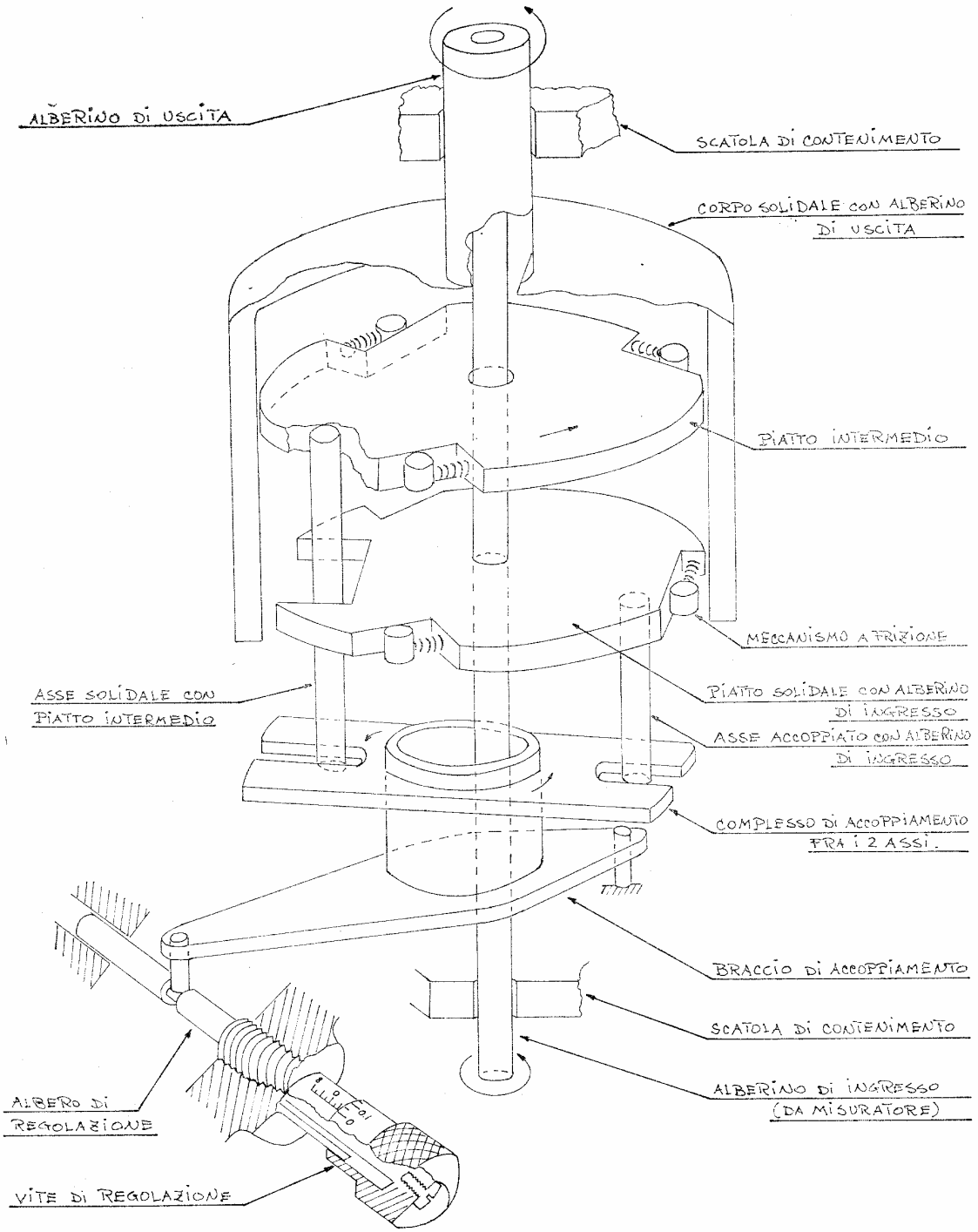


Tavola VI

Disegni indicativi del dispositivo impressore "Veeder Root,, applicato ai misuratori di carburanti **Tokico Petrol.**

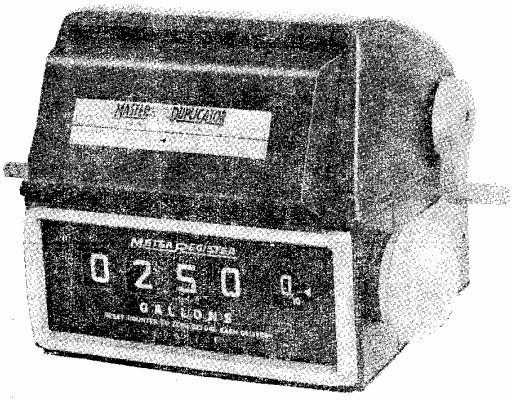


FIG. 1 Testina contatrice - Stampatrice

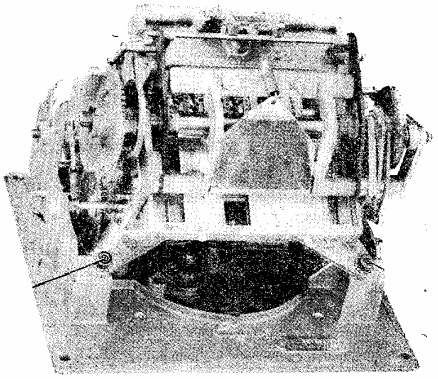


FIG. 2 Testina contatrice - Stampatrice - Interno

LEGENDA

1 Manovella per l'impressione
2 Ingranaggio conico di trasmissione del moto al dispositivo indicatore alle
3 tamburelle tramite gli
4 Ingranaggi
5 Feritoia introduzione scheda o cartellino
6 Martelletto impressione. All'inizio di ogni operazione si deve operare l'impressione, che deve essere ripetuta a fine erogazione, il valore dell'ultima erogazione si ricava per differenza

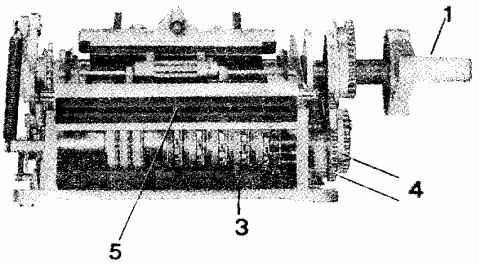


FIG. 3 Vista frontale

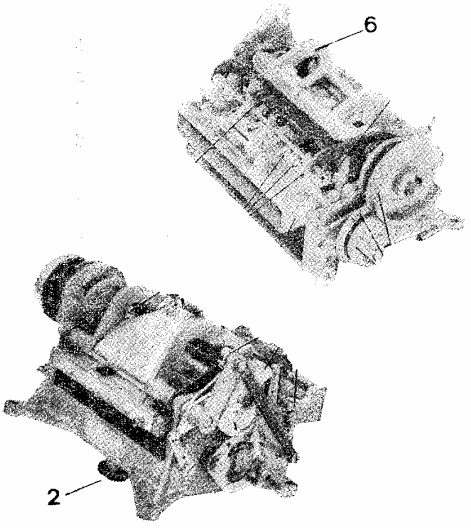


FIG. 4 Assonometrie

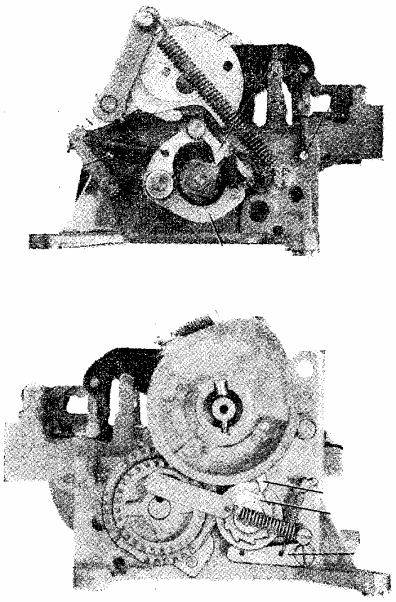


FIG. 5 Viste laterali

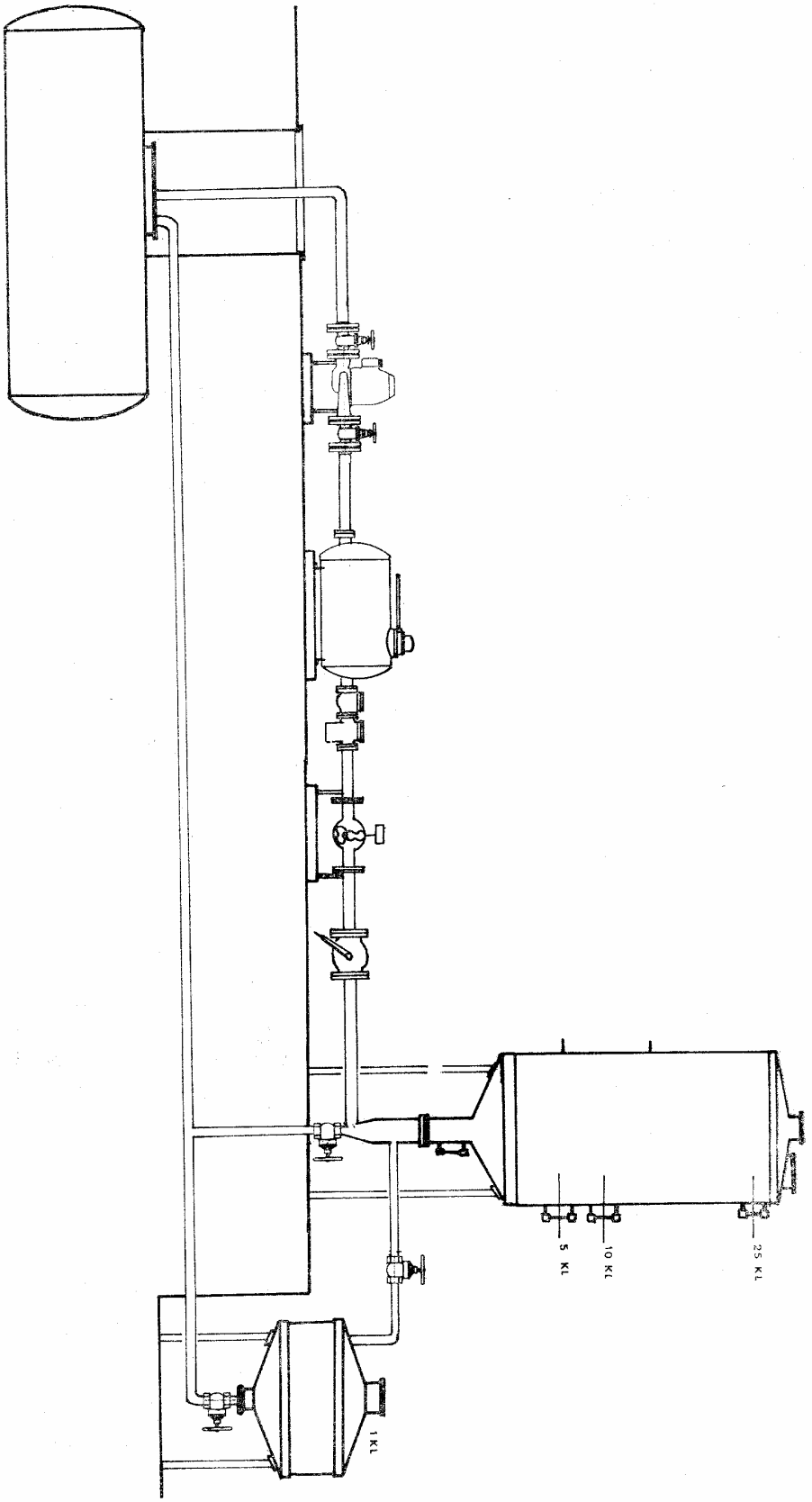


Tavola VII

Disegno indicativo dello schema di un impianto di prova per la verificazione dei misuratori di carburante **Tokico Petrol.**

Tavola VIII

Disegno indicativo schematico del dispositivo compensatore delle variazioni di temperatura, applicato ai misuratori **Tokico Petrol**.

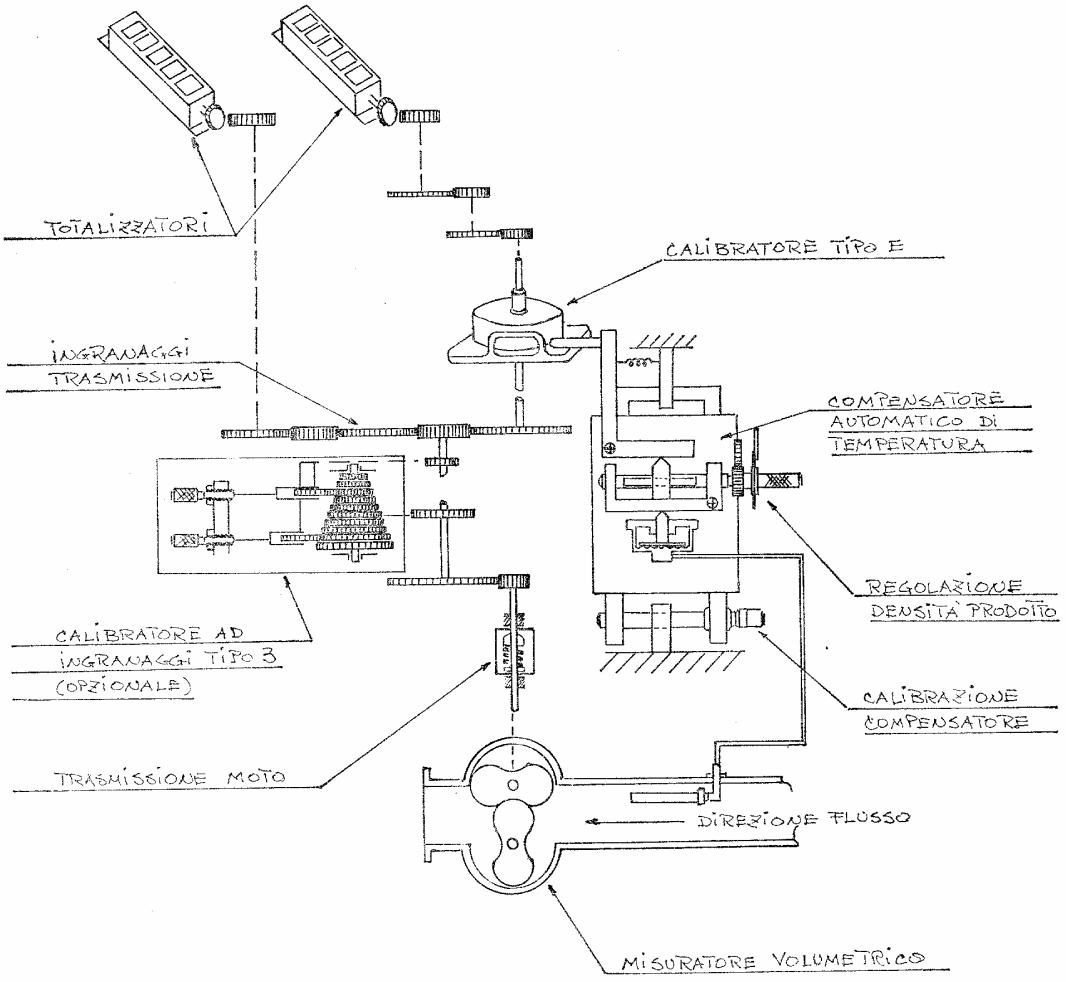
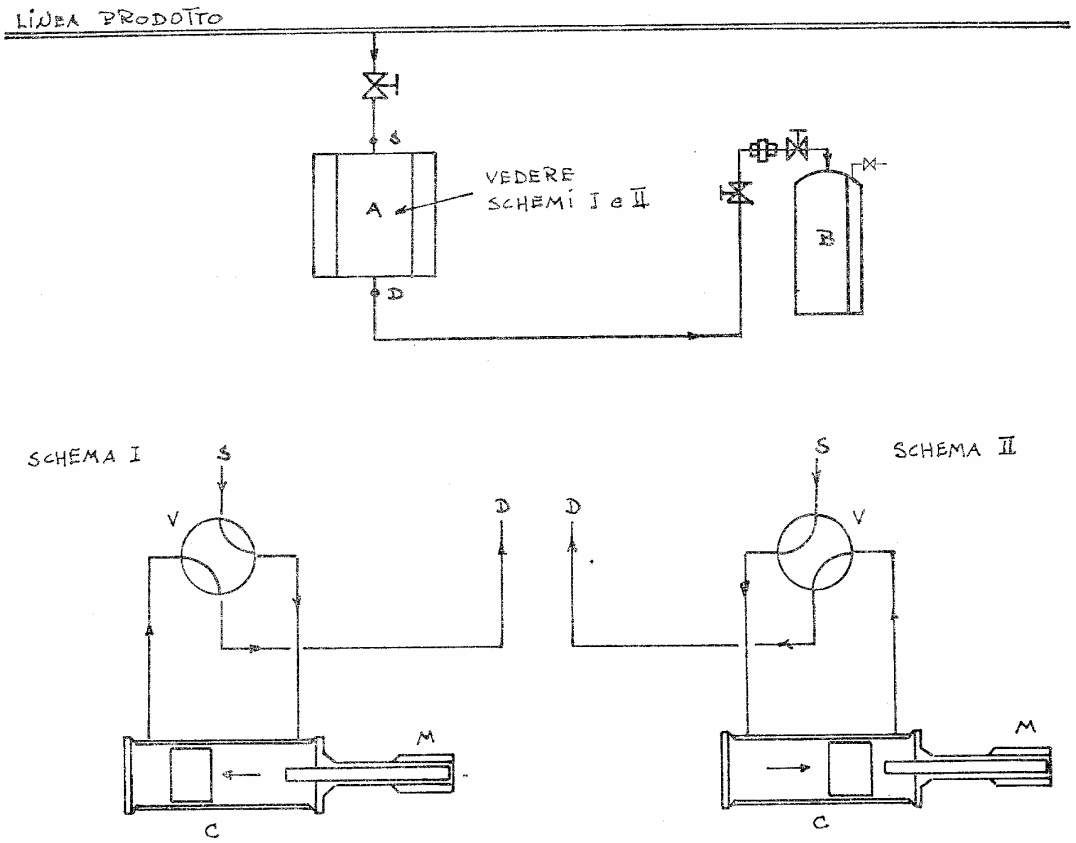


Tavola IX

Disegno indicativo schematico del campionatore applicato ai misuratori **Tokico Petrol**



LEGENDA

- *A Complesso prelievo campione*
- *B Recipiente raccolta campione*
- *C Pistone a corsa variabile*
- *D Uscita prelevatore*
- *M Manopola regolazione corsa*
- *S Ingresso prelevatore*
- *V Valvola a 4 vie*

Tagliare lungo la linea tratteggiata

FOGLIO SPECIFICA PER RICHIESTE DI MISURATORI VOLUMETRICI "TOKICO-PETROL"
Data sheet for inquiring "Tokico-Petrol" flow meters

SOCIETA' Company					RIFERIMENTO Reference		
UTILIZZAZIONE Type of service					QUANTITA' Quantity		
CARATTERISTICHE DEL FLUIDO Fluid specifications	FLUIDO Fluid				VISCOSITA' Viscosity : 1) A At °C ; 2) A At °C		PESO SPECIFICO Specific gravity A At 15°C
	COMPONENTI CORROSIVI Corrosive compounds				SOLIDI IN SOSPENSIONE Suspended solids SI NO		CAMICIA DI VAPORE Need of jacket SI NO
CONDIZIONI DI ESERCIZIO Operating specifications	PORTATA Flow rate	MASSIMA Maximum			NORMALE Normal		MINIMA Minimum
	PRESSIONE Pressure	"			"		"
	TEMPERATURA Temperature	"			"		"
	EROGAZIONE Intake	"			"		"
	TIPO DI ESERCIZIO Operating condition	CONTINUO Continuous			INTERMITTENTE (ORE/GIORNO) Intermittent (Hours/day)		PULSANTE Pulsating SI NO
	TIPO DI POMPA Kind of pump				ACCURATEZZA RICHIESTA Accuracy requested		ENERGIA DISPONIBILE Power source
CARATTERISTICHE DEL MISURATORE Meter caracteristic	MATERIALE Material	CORPO Body			PARTI INTERNE Inner parts		ACCOPPIAMENTO Flange
	DIREZIONE FLUSSO Flow direction	SINISTRA Left → DESTRA right ☐			DESTRA Right → SINISTRA left ☐	ALTO Up → BASSO down ☐	BASSO down → ALTO up ☐
TESTINE INDICATRICI Indicators	STANDARD ☐	VEEDER-ROOTS ☐	NON AZZERABILE Totalizer	AZZERABILE Reset type	STAMPATRICE Printer	PORTATA ISTANT. Flow rate indicator	PREDETERMINATORE Preset device
	LOCALI Direct-reading	NON COMPENSATA No-compensated					ELETTRICO Elettric ☐ PNEUMATICO Pneumatic ☐ MECCANICO Mechanic ☐
		COMPENSATA Compensated					" ☐ " ☐ " ☐
	A DISTANZA Remote-reading	NON COMPENSATA No-compensated					" ☐ " ☐ " ☐
		COMPENSATA Compensated					" ☐ " ☐ " ☐
ACCESSORI Attachments	FILTRO Strainer ☐	VALVOLA DI PREDETERMINAZ. Preset valve	A SOLENOIDE Solenoid ☐	AD UNO STADIO One stage ☐	TRASMETTITORE DI IMPULSI Pulse transmitter	STANDARD ☐	BASSA FREQUENZA Low frequency ☐
	DEGASATORE Air-separator ☐		MECCANICA Mechanic ☐	A DUE STADI Two stage ☐			ALTA FREQUENZA High frequency ☐
	COMPENS. DI TEMPER. Temperature compens. ☐	VALVOLA DI LIMITAZIONE PORTATA Flow control valve ☐		TARATURA Setting		ANTI-DEFLAGRANTE Explosion-proof ☐	AMPLIFICATORE Amplifier SI NO
NOTE Notes							PETROL FOGLIO SPECIFICA _____ DI _____ Data sheet of

MOD. FM1

PMS PETROL Metering Systems
Produzione Misuratori Volumetrici

Certificate - Approvals
Common Market (CE) Certificate

European Community approval certificate for model of measuring instruments n. 99.03.01.002 dated 10/09/99, issued by Italian Weight and Measure Department, for the legal use in the European Community (CE) countries.

MINISTERO DELL'INDUSTRIA, DEL COMMERCIO E DELL'ARTIGIANATO

DIR. GEN. DEL COMMERCIO INTERNO E DEI CONSUMI INDUSTRIALI

Div. XII - **UFFICIO CENTRALE METRICO**

CERTIFICATO DI APPROVAZIONE CEE
DI MODELLO DI STRUMENTI DI MISURA N. 89.03.01.002

(N. 123 del Reg.)

(N. 123 del Reg.)

MINISTERO DELL'INDUSTRIA, DEL COMMERCIO E DELL'ARTIGIANATO

DIR. GEN. DEL COMMERCIO INTERNO E DEI CONSUMI INDUSTRIALI

Div. XII - **UFFICIO CENTRALE METRICO**

CERTIFICATO DI APPROVAZIONE CEE DI MODELLO DI STRUMENTI DI MISURA N. 89.03.01.002

In conformità alle disposizioni del D.P.R. 12 agosto 1982, n. 798, che attua le direttive CEE n. 71/316, relativa alle disposizioni comuni agli strumenti di misura ed ai metodi di controllo metrologico, e del D.P.R. 12 agosto 1982, n. 736, che attua la direttiva CEE n. 71/319 relativa ai contatori di liquidi diversi dall'acqua, del D.P.R. 12 agosto 1982, n. 737, che attua la direttiva CEE n. 71/348, relativa ai dispositivi complementari dei contatori di liquidi diversi dall'acqua, del D.P.R. 23 agosto 1982, n. 856, che attua la direttiva CEE n. 77/313 relativa ai complessi di misurazione per liquidi diversi dall'acqua e del D.M. 9 settembre 1983, che attua la direttiva CEE n.82/625, relativa all'adeguamento al progresso tecnico della direttiva CEE n.77/313, si rilascia alla

DITTA PETROL STRUMENTAZIONI s.r.l.
Via del Commercio, 22
04011 APRILIA (Latina)

il presente certificato di approvazione CEE di modello relativo a:
misuratori volumetrici a rotori per liquidi diversi dall'acqua, denominati "PETROL" tipo F e FB" quali elencati nella tabella 1 allegata e fabbricati dalla stessa Ditta Petrol Strumentazioni s.r.l.

Ai predetti strumenti che pertanto risultano ammessi alla verificazione prima CEE, è attribuito il seguente contrassegno di approvazione:

CE I 89
03 01 002

La presente approvazione CEE ha validità dieci anni a decorrere dalla data del presente certificato.

Le caratteristiche principali e le condizioni di approvazione del modello dei misuratori di liquidi diversi dall'acqua sono indicate negli allegati che sono parte integrante del presente certificato di approvazione.

Roma, 18 Settembre 1989

IL DIRETTORE GENERALE
F.to Visconti

(N. 224, 9450 del Reg.)

Ministero dell'Industria del Commercio e dell'Artigianato

DIREZIONE GENERALE PER L'ARMONIZZAZIONE E LA TUTELA DEL MERCATO

DIVISIONE V - UFFICIO CENTRALE METRICO

CERTIFICATO DI APPROVAZIONE CEE DI MODELLO N. 99.03.01.002

In conformita' alle disposizioni:

- del D.P.R. 12 agosto 1982, n. 798, che attua la direttiva CEE n. 71/316, relativa alle disposizioni comuni agli strumenti di misura ed ai metodi di controllo metrologico, modificato dal D.M. 18 marzo 1988, n. 132, che attua la direttiva CEE n. 83/575, e dalla legge 11 maggio 1999 n. 140;
- del D.P.R. 12 agosto 1982, n. 736, che attua la direttiva CEE n. 71/319, relativa ai contatori di liquidi diversi dall'acqua;
- del D.P.R. 12 agosto 1982, n. 737, che attua la direttiva CEE n. 71/348, relativa ai dispositivi complementari dei contatori di liquidi diversi dall'acqua;
- del D.P.R. 23 agosto 1982, n. 856, che attua la direttiva CEE n. 71/313, relativa ai complessi di misurazione per liquidi diversi dall'acqua;
- del D.M. 9 settembre 1983, che attua la direttiva CEE n. 82/625, relativa all'adeguamento al progresso tecnico della direttiva CEE 77/313;

VISTA la domanda della ditta Petrol Strumentazioni S.r.l., protocollo n. 1326033 del 30 marzo 1999, rivolta ad ottenere la proroga per ulteriori 10 anni del certificato di approvazione CEE di modello n. I 89.03.01.002

VISTO il Decreto Legislativo 31 marzo 1998, n. 80;

si rilascia alla Ditta

Petrol Strumentazioni
Via del Commercio 22
04011 APRILIA (Latina)

il presente certificato di approvazione CEE di modello che rinnova il certificato n. 89.03.01.002 del 18 settembre 1989 relativo a misuratori volumetrici a rotori per liquidi diversi dall'acqua denominati "Petrol" tipo F ed FB.

Le caratteristiche e le condizioni di approvazione rimangono invariate ad eccezione del contrassegno di approvazione CEE sostituito dal seguente:

I99
03.01.002

Il presente certificato di approvazione CEE ha validita' dieci anni a decorrere dal 18 settembre 1999.

Roma, 10 Settembre 1999

IL DIRETTORE DELLA DIVISIONE
ing. F. Bianzino

Allegato al certificato di approvazione CEE di modello n. 89.03.01.002

Descrizione dei misuratori volumetrici a rotori per liquidi diversi dall'acqua denominati "PETROL" tipo F e FB.

I misuratori volumetrici a rotore tipo F. illustrati nel disegno di tabella 4 sono apparecchiature a doppia cassa in quanto l'organo vero e proprio di misura in seguito denominato "camera di misura" è estraibile dalla cassa esterna di contenimento flangiata alla tubazione mentre il tipo FB illustrato nel disegno di tabella 5 è a cassa singola, ossia la camera di misura non è estraibile dalla cassa esterna.

La cassa esterna è composta da tre (3) componenti essenziali, vale a dire il corpo esterno flangiato, il coperchio esterno frontale ed il coperchio esterno posteriore.

La "camera di misura" è essenzialmente costituita dalla cassa interna, dai coperchi interni frontale e posteriore, da due rotori con profili coniugati e da due ingranaggi di sincronismo.

I due rotori, sincronizzati dagli appositi ingranaggi solidali agli assi dei rotori stessi, determinano il volume della camera di misura.

Il liquido che entra nel misuratore fa ruotare il rotore che si trova in condizioni di pressione non bilanciata e, contemportaneamente, gli ingranaggi di sincronismo fanno ruotare l'altro rotore in senso contrario come nella sequenza di tabella 2.

Una rotazione completa dei rotori genera il "volume ciclico" del misuratore.

Durante l'erogazione il numero dei giri compiuto dai rotori viene trasmesso, a mezzo di un giunto di trasmissione, che può essere meccanico o magnetico, alla testata indicatrice per la visualizzazione dei volumi erogati.

La testata indicatrice è realizzata nelle seguenti quattro distinte versioni:

a) Testata indicatrice dei volumi, tipo 12, a quadrante circolare, con lancetta indicatrice non azzerabile, provvista di contatore totalizzatore, a tamburelle, non azzerabile;

b) Testata indicatrice dei volumi, tipo 22, costituita da un contatore a tamburelle e da un quadrante circolare, con lancetta indicatrice, entrambi azzerabili. Il valore della graduazione del quadrante è pari a quello di una suddivisione dell'ultima tamburella del contatore. L'insieme è completato da un contatore totalizzatore non azzerabile;

c) Testata indicatrice dei volumi, tipo "VEEDER-ROOT" costituita da un contatore delle erogazioni parziali, azzerabile, e da un totalizzatore, non azzerabile.

La testata indicatrice "VEEDER-ROOT" può essere dotata di un dispositivo stampante omologato con certificato di approvazione CEE di modello n. D/83/5.521.09

d) Testata indicatrice dei volumi, tipo "KIENZLE" costituita da un contatore delle erogazioni parziali, azzerabile, e da un totalizzatore, non azzerabile.

La testata indicatrici "KIENZLE" può essere dotata di un dispositivo stampante omologato con certificato di approvazione CEE di modello n. D/78/5.521.04

I misuratori vengono normalmente calibrati mediamente una coppia di ingranaggi il cui rapporto di trasmissione è calcolato in modo da compensare le piccole possibili differenze del volume ciclico effettivo rispetto a quello di progetto.

I misuratori volumetrici possono alternativamente essere tarati con appositi calibratori a frizione o ad ingranaggi.

I misuratori volumetrici sono realizzati in diverse versioni che fermi restando i caratteri sostanziali, identificano talune particolarità costruttive e metrologiche secondo il seguente codice:

1. Lettera maiuscola F per tutte le versioni di misuratori a doppia cassa, lettere maiuscola FB per tutte le versioni di misuratori a cassa singola.

2. Lettera maiuscola indicante la pressione massima di esercizio come da seguente codificazione.

codice	pressione max BAR
A	10
L	20
M	62
H	110

3. Numero costituito da due o tre cifre, che rappresenta il modello relativo alla portata dell'apparecchiatura cui corrispondono in codice i dati riportati nella tabella 1.

Detta portata massima non è prestabilita in maniera tassativa, ma può variare entro valori massimi e minimi, in funzione della viscosità del liquido misurato, come indicato nella tabella 1.

Il valore della potata massima, indicato dal misuratore, deve essere compreso entro la gamma individuata dai valori di cui alla tabella 1. Il rapporto tra il valore predetto e quello della corrispondente portata minima deve essere comunque non inferiore a 10.

I valori prescelti per la portata massima e per la portata minima devono essere riportati nella targhetta del singolo strumento.

4. Un trattino di separazione;

5. Il numero 12, se la testata indicatrice è del tipo indicato al punto (a) precedente, oppure il numero 22, se la testata è del tipo indicato al punto (b), la lettera V se la testata è del tipo "VEEDER-ROOT", oppure la lettera K se la testata è del tipo "Kienzle".

6. Un trattino di separazione;

7. Eventuali altre lettere e numeri riferentisi ai materiali costruttivi della cassa esterna, della cassa interna e dei rotori, come da tabella 3.

A titolo di esempio, alla sigla FA24-12-C8 corrisponde un misuratore a doppia cassa, funzionante a pressioni massime di 10 Kg/cm^2, entro una gamma di portate massime da 65 a 130 m^3/h, dotato di testata con totalizzatore con azzerabile, con cassa esterna in acciaio al carbonio e le parti interne in acciaio inossidabile AISI 316.

Gli strumenti possono essere forniti facoltativamente, dai sottoelencati dispositivi complementari.

— Testina predeterminatrice "VEEDER ROOT" azionata dall'albero dell'organo misuratore atto a comandare localmente dispositivi meccanici, pneumatici ed elettrici per la chiusura della linea omologata con certificato di approvazione CEE di modello n. D83/ 5.531.12

— Testina predeterminatrice "KIENZLE" azionata dall'albero dell'organo misuratore atto a comandare localmente dispositivi meccanici, pneumatici ed elettrici per la chiusura della linea omologata con certificato di approvazione CEE di modello n. D78/ 5.531.02

— Trasmettitore di impulsi pneumatici azionato dall'albero dell'organo misuratore

— Trasmettitore di impulsi elettrici azionato dall'albero dell'organo misuratore.

— Raffreddatori ad alette, per temperature di esercizio superiore ad 80°C.

— Sul quadrante della testata indicatrice o su apposita targa applicata ben visibilmente sul fronte del misuratore e vincolata con bolli, devono figurare le seguenti iscrizioni:

I - Marca di fabbrica e ragione sociale del fabbricante;
II - denominazione dell'apparecchio, indicazione del tipo, numero di matricola ed anno di fabbricazione;
III - estremi del presente certificato.
IV - indicazione del liquido misurato e della sua viscosità;
V - gamma delle temperature di esercizio (ove la misurazione avvenga a temperatura non compresa tra -10°C. e + 50°C.);
VI - portata massima e portata minima;
VII - pressione massima di funzionamento

Legalizzazione

La legalizzazione che segue la verificazione si effettua applicando i marchi di verifica ed i sigilli CEE previsti dalle direttive CEE adottate con i provvedimenti citati nel presente certificato e dai disegni collegati.

TABELLA 1

MODELLO	CAMPO DI PORTATA MASSIMA IN M^3 ALL'ORA		VOLUME CICLICO litri	BOCCHE DI ENTRATA/USCITA mm		
51	2	4	0,04887	25		
11	4	8	0,08145	25	o	40
12	7,5	15	0,2027	40	o	50
22	12	24	0,3475	50	o	65
53	20	40	0,5864	50	o	80
13	30	60	0,9773	50	o	80
14	55	110	1,7375	80	o	100
24	75	150	2,7800	80	o	100
16	90	180	4,6924	100	o	150
18	125	250	7,0369	150	o	200
28	160	320	9,4868	150	o	200
110	225	450	9,1740	200	o	250
112	350	700	12,1970	250	o	300
212	450	900	34,1709	250	o	300
612	600	1200	48,6501	300	o	350
114	800	1600	55,8897	350	o	400

TABELLA 2

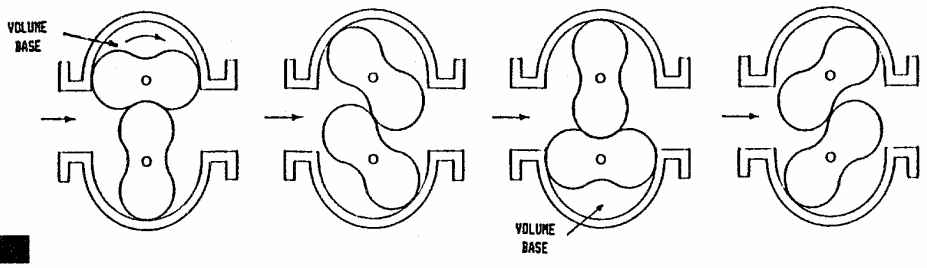


TABELLA 3

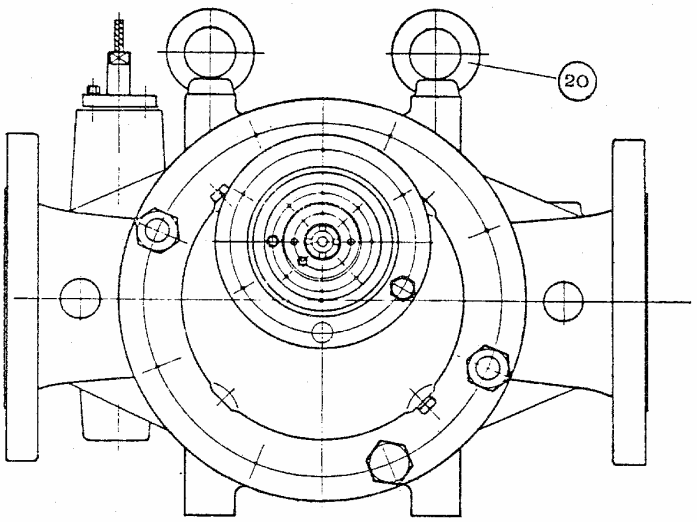
(Materiali parti interne)

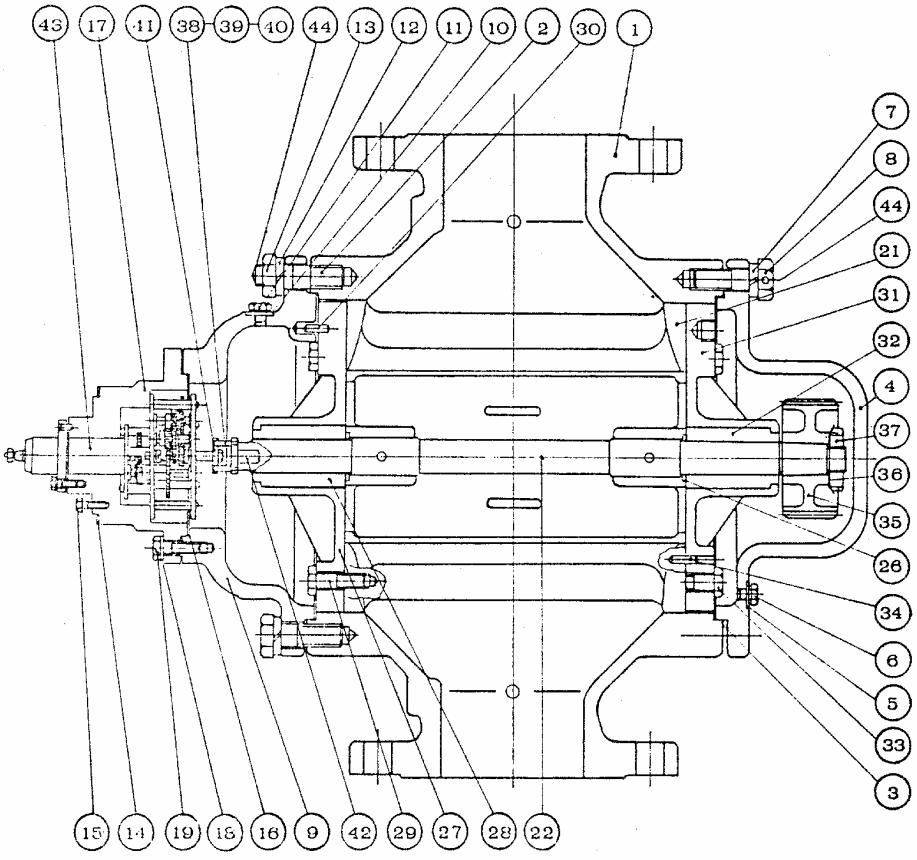
PARTI CODICE	CAMERA DI MISURA	ROTORI	ALBERI	INGRANAGGI P.C.R.	Altre parti al contatto col liquido
1	Bronzo	Bronzo	AISI 420	AISI 420	AISI 304
2	Bronzo	Allum. leg.	AISI 420	AISI 420	AISI 304
3	Ghisa	Allum. leg.	AISI 420	AISI 420	AISI 304
5	Ghisa	Ghisa	AISI 420	AISI 420	AISI 304
7	AISI 304	AISI 304	AISI 304	AISI 304	AISI 304
8	AISI 316	AISI 316	AISI 316	AISI 316	AISI 316
9	AISI 316L	AISI 316L	AISI 316L	AISI 316L	AISI 316L

(Materiali parti esterne)

PARTI CODICE	DESCRIZIONE
A	Ghisa
B	Bronzo
C	Acciaio al carbonio
D	Ghisa sferoidale
E	AISI 304
F	AISI 316
G	AISI 316L

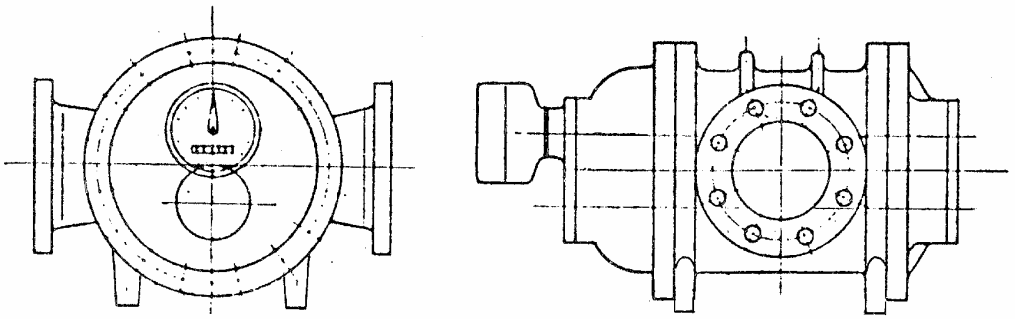
TABELLA 4 **DISEGNI INDICATIVI DEI MISURATORI "PETROL" A DOPPIA CASSA**

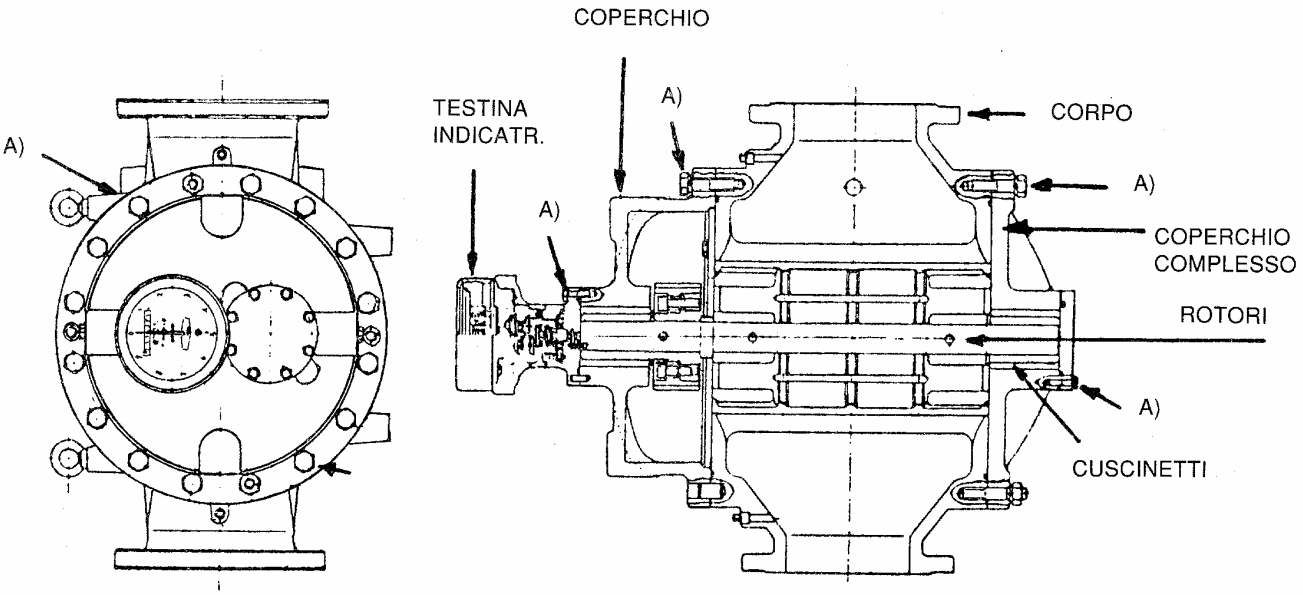




LEGENDA - 1 Cassa esterna del misuratore. 2 Bullone di fissaggio del coperchio superiore. 3 Guarnizione. 4 Coperchio esterno inferiore. 5 Rondella. 6 Dado per drenaggio. 7 Rondella. 8 Bulloni di fissaggio del coperchio esterno inferiore al corpo del misuratore. 9. Coperchio superiore. 10 Rondella. 11 Vite. 12 Rondella. 13 Dado. 14 Guarnizione. 15 Bulloni fissaggio accessori. 16 Guarnizione. 17 Scatola di ingranaggi. 18 Rondella. 19 Bullolne di fissaggio scatola ingranaggi al coperchio superiore. 20 Bulloni per sollevamento. 21 Cassa interna. 22 Alberi rotoidi. 26 Guarnizione. 27 Coperchio cassa interna. 28 Albero di trasmissione. 29 Bulloni fissaggio cassa interna. 30 Perno di guida per montaggio coperchio superiore. 31 coperchio interno inferiore. 32 Boccola. 33 Bullone fissaggio coperchio inferiore. 34 Perno di guida per montaggio coperchio interno inferiore. 35 Ingranaggio accoppiamento rotori. 36 Rondella. 37 Dado. 38-39-40 Scatola di trasmissione. 41 Albero di trasmissione. 42 Perno di accoppiamento meccanico. 43 Guaina di protezione. 44 Bolli a tenaglia (l'Ispettore Metrico potrà applicare ogni altro bollo che, a suo giudizio, risulti necessario a garantire l'inaccessibilità degli organi misuratore e indicatore).

TABELLA 5 **DISEGNI INDICATIVI DEI MISURATORI "PETROL" A CASSA SINGOLA**

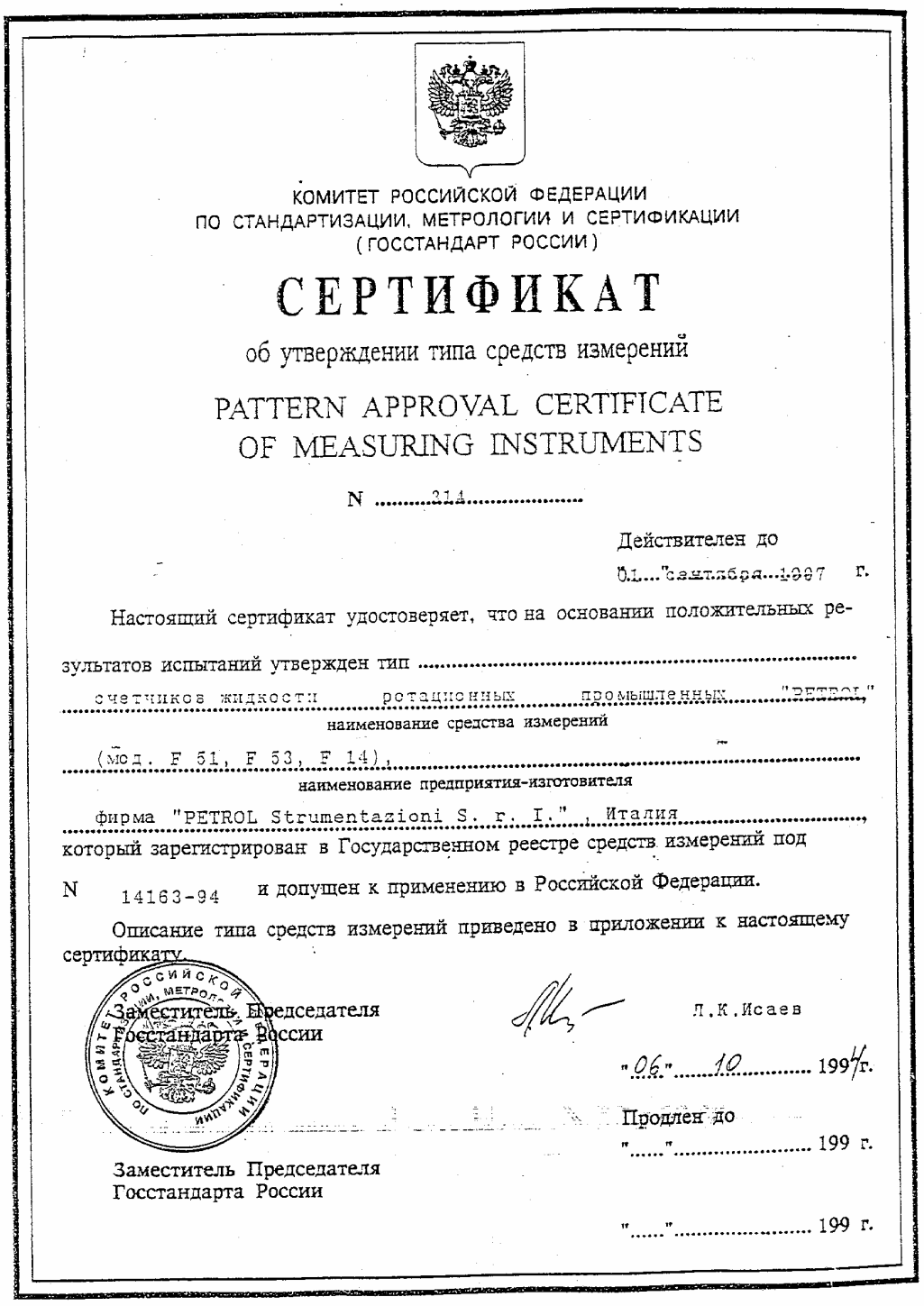




A) Bolli CEE a tenaglia (l'Ispettore Metrico potrà applicare ogni altro bollo che, a suo giudizio, si rende necessario a garantire l'inaccessibilità degli organi misuratore e indicatore).

Certificate - Approvals
Russian Approval Certificate

Approval certificate n. 314 dated 06/10/94 issued by the Russian authority called Gosgortechnadzor, for the legal use in this country.



КОМИТЕТ РОССИЙСКОЙ ФЕДЕРАЦИИ
ПО СТАНДАРТИЗАЦИИ, МЕТРОЛОГИИ И СЕРТИФИКАЦИИ
(ГОССТАНДАРТ РОССИИ)

СЕРТИФИКАТ

об утверждении типа средств измерений

PATTERN APPROVAL CERTIFICATE
OF MEASURING INSTRUMENTS

N 314

Действителен до
01 "сентября 1997 г.

Настоящий сертификат удостоверяет, что на основании положительных результатов испытаний утвержден тип счетчиков жидкости ротационных промышленных "ПЕТРОЛ"
наименование средства измерений
(мод. F 51, F 53, F 14),
наименование предприятия-изготовителя
фирма "PETROL Strumentazioni S. r. l." , Италия,
который зарегистрирован в Государственном реестре средств измерений под N 14163-94 и допущен к применению в Российской Федерации.

Описание типа средств измерений приведено в приложении к настоящему сертификату.

Заместитель Председателя
Госстандарта России Л.К.Исаев

"06" 10 1994 г.

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"....." 199 г.

Заместитель Председателя
Госстандарта России

"....." 199 г.

ОПИСАНИЕ ТИПА СРЕДСТВ ИЗМЕРЕНИЙ
ДЛЯ ГОСУДАРСТВЕННОГО РЕЕСТРА

Подлежит публикации
в открытой печати

СОГЛАСОВАНО
Директор ВНИИМС
А.И.Асташенков
"21" 08 1994 г.

Счетчики жидкости ротационные промышленные "PETROL" моделей F 51, F 53, F 14	:	Внесены в Государственный реестр средств измерений Регистрационный N 14163-94

Выпускается по технической документации фирмы "PETROL Strumentazioni S.r.l.", Италия.

НАЗНАЧЕНИЕ И ОБЛАСТЬ ПРИМЕНЕНИЯ

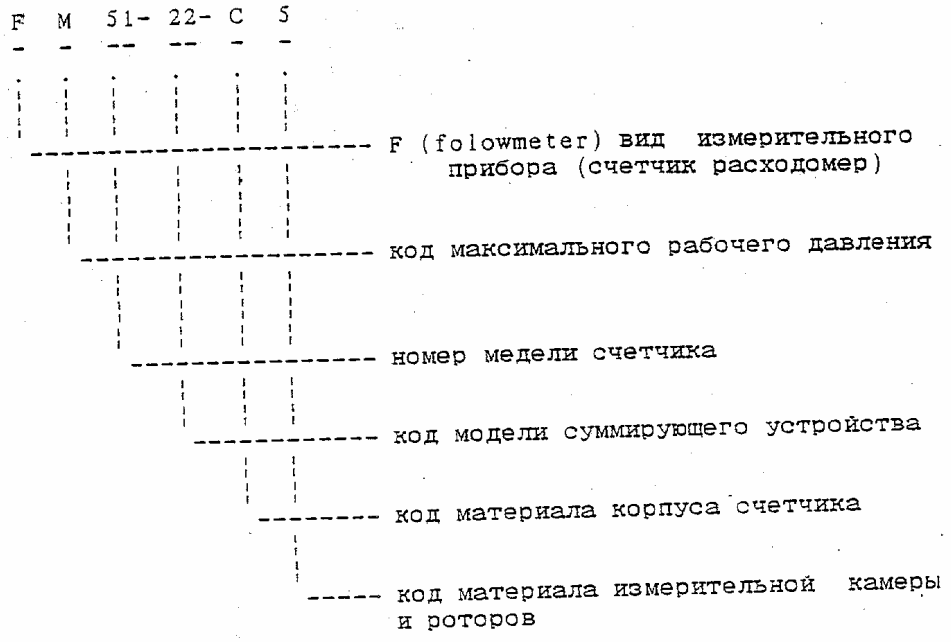
Счетчики жидкости ротационные промышленные "PETROL" предназначены для измерения объема жидкости, прошедшей через счетчик в промышленных установках. Счетчики могут использоваться в различных технологических процессах для учета количества протекающих жидкостей, в том числе и агрессивных сред.

ОПИСАНИЕ

Счетчики жидкости ротационные промышленные "PETROL" состоят из корпуса с измерительной камерой и двух восьмеркообразных роторов, взаимосвязанных синхронизирующей парой шестеренок, двух крышек и отсчетного устройства. Роторы движутся за счет разности давлений на входе и выходе счетчика. В отсчетном устройстве механический сумматор регистрирует объем прошедшей жидкости, как число оборотов роторов с соответствующим коэффициентом. С трубопроводом счетчик соединяется с помощью фланцев. Счетчики имеют встроенный датчик с унифицированными токовым (4-20 мА) или частотным выходами для индикации (без нормируемых метрологических характеристик) величины расхода. Рабочее положение измерительной камеры - горизонтальное, суммирующего устройства - любое. Счетчики опломбируются нависной пломбой, крепящейся в отверстиях болтов, стягивающих корпус.

Для нормальной работы в трубопровод необходимо монтировать фильтры, изготавливаемые фирмой.

Полное обозначение модели счетчика состоит из шести позиций, например:



МАКСИМАЛЬНОЕ РАБОЧЕЕ ДАВЛЕНИЕ	
код	МРа
A	1
L	2
M	6,2
H	11
X	> 11

СУММИРУЮЩЕЕ УСТРОЙСТВО		
код модели	цена единицы разряда, куб.м	
	старшего	младшего
12	10^{7}	10^{-2}
22	10^{5}	10^{-2}
MV	10^{4}	1
VR	10^{6}	10^{-1}

МАТЕРИАЛ КОРПУСА СЧЕТЧИКА		
код	корпуса/крышки	прокладки
A	чугун	петрофлекс
B	бронза	петрофлекс
C	углеродистая сталь	петрофлекс
D	специальный чугун	петрофлекс
E	сталь типа 304	тефлон
F	сталь типа 316	тефлон
G	сталь типа 316 L	тефлон

МАТЕРИАЛ КАМЕРЫ ИЗМЕРЕНИЙ		
код	камера	роторы
1	бронза	бронза
2	бронза	алюминевый сплав
3	чугун	
5	чугун	чугун
7	сталь типа 304	
8	сталь типа 316	
9	сталь типа 316 L	

ХАРАКТЕРИСТИКИ МОДЕЛЕЙ

Обозначение моделей	Диаметр условного прохода отверстия, мм	Расход, куб.м/ч				Максимальные габаритные размеры (длина, высота) мм	Циклический объем, литры	Максимальная масса, кг
		Qmax	Qmin		Порог чувствительности			
			предел доп. погрешности					
			0,2%	0,5%				
F51	25	2...4	0,2Qmax	0,1Qmax	0,01Qmax	275 x 320	0,04887	30
	40	2...4						
F53	50	20...40	0,2Qmax	0,1Qmax	0,01Qmax	380 x 441	0,5864	60
	65							
	80							
F14	80	55-110	0,2Qmax	0,1Qmax	0,01Qmax	560 x575	1,7375	160
	100							

PMS PETROL Metering Systems
Produzione Misuratori Volumetrici

Каждая модель может быть изготовлена для девяти градаций вязкости, мПа.с : до 1; (1...2); (2...10); (10...200); (200...500); (500...1500); (1500...2000); (2000...5000); более 5000.

В зависимости от величины вязкости, на которую изготовлен счетчик, а также от диаметра условного проходного отверстия нормируется допустимая величина потери давления на приборе при Qmax. Эта величина указывается в сопроводительных документах на прибор.

Каждый изготовленный счетчик проверяется на герметичность при 1,5-кратном максимальном рабочем давлении, на которое рассчитан прибор.

ОСНОВНЫЕ ХАРАКТЕРИСТИКИ

Предел допустимой основной относительной погрешности	0,5 %
(по особому заказу)	0,2 %
Максимальная рабочая температура жидкости, град.С	Tmax = 250
Минимальная рабочая температура измеряемой жидкости, град.С	Tmin=минус30
Рабочий диапазон температур среды, в котором сохраняется точность прибора, град.С (за границами рабочего диапазона погрешность не превышает 2-х пределов допустимой основной)	Tmax -60 или Tmin +60
Условия транспортировки: температура, град.С	от минус 10 до 50
вибрация	соответствует группе F3 ГОСТ 12997-84

ЗНАК УТВЕРЖДЕНИЯ ТИПА

Знак утверждения типа не наносится.

КОМПЛЕКТНОСТЬ

Комплектность поставки счетчиков в соответствии с технической документацией фирмы-изготовителя.

ПОВЕРКА

Счетчики жидкости ротационные промышленные "PETROL" поверяют по ГОСТ 8.451-81.

Межповерочный интервал - 2 года.

НОРМАТИВНЫЕ ДОКУМЕНТЫ

Техническая документация фирмы "PETROL Strumentazioni S.r.l.", Италия.

ЗАКЛЮЧЕНИЕ

Счетчики жидкости ротационные промышленные "PETROL" соответствуют требованиям технической документации фирмы-изготовителя.

Изготовитель: фирма "Petrol Strumentazioni S.r.l.", Италия,
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тлф: 0039/6-9281633-9281642
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Начальник сектора ВНИИМС В.В.Новиков

Technical documentation

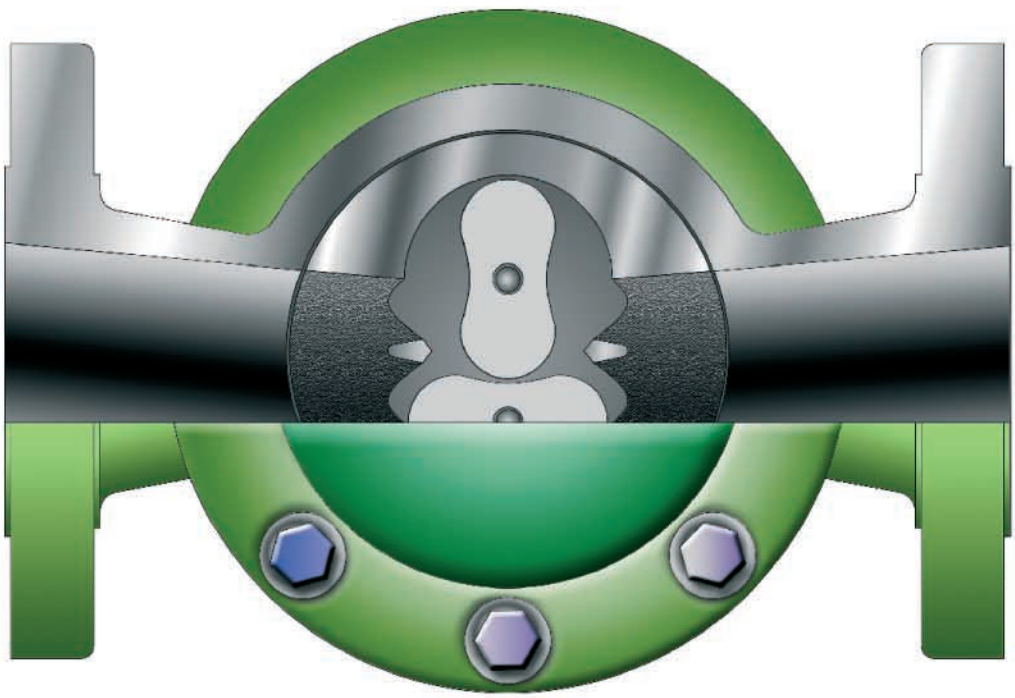
"PETROL" PD meters

PMS
Produzione Misuratori Volumetrici

PETROL
Metering Systems

PD meters

For liquids



Bi-rotor Mechanism

Horizontal Design

CERTIFIED QUALITY SYSTEM
UNI EN ISO 9001/2000
SINCERT DNV

www.petrolms.it

www.petrolms.it

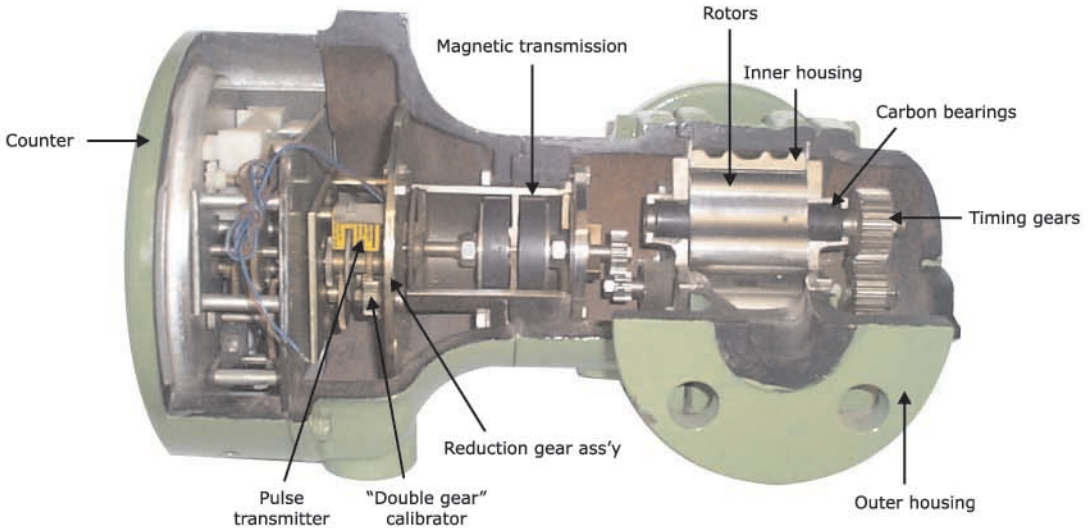
Production line

P.M.S. Petrol Metering Systems S.r.l. is producing PD meters for liquids on the basis of the manufacturing technology and experiences accumulated since the year 1970 from its employees and managers. The production started just after the year 1970 as a result of the technical agreement with a Japanese company who was already producing this type of PD meters since the year 1945.
After the year 1980 the former Petrol S.r.l. now **P.M.S. Petrol Metering Systems S.r.l.** became a completly free PD meters manufacturer operating with an own technology all over the world from the own factory of Aprilia (Lt). The PD meters work on "Roots" principle, known since the beginning of the last century and in this case specialized to obtain an extremely precise and reliable volumetric measure of liquids flowing through pipes. In other cases the same principle has been specialized to produce pumps, low pressure compressors and other industrial devices. Since their commercial debut in the European markets "Petrol" PD meters have contributed to the automation and modernization of the industrial processes for their reliability and exceptional operating characteristics coupled with a very high manufacturing technique. "Petrol" PD meters are to-day available for the measure for almost all the liquid industrially utilized in a range of models so wide to cover flow rate ranges from few hundred of litres/hour to 1.800 m3/h with nominal sizes from 1" to 16". Furthermore they can meet even contemporary either in the standard version either in the jacketed version operating specifications as severe as max. operating pressure till 15 MPa and max.operating temperatures over 230°C. Uo to PD meters model 112 (10" nominal size) their design is horizontal, i.e. the rotors shafts work in horizontal position while from model 212 (12" nominal size and over) their design is vertical, i.e. the rotors shafts work in vertical position. In addition up to PD meters model 28 (8" nominal size) their metering mechanism is composed of two (2) rotors keyed on two (2) shafts while from model 110 (10" nominal size and over) their metering mechanism is composed of four (4) rotors always keyed on two (2) shafts but shifted of 45° (tetra-rotor mechanism).

The PD meters 10" size and over (tetra-rotor mechanism) are duly described in the specific bulletin available on request.

Sectional view *(mod. FA11-22-C8)*

Scale 1:3



Main features

DETAILED DESCRIPTION IN THE GENERAL CATALOGUE AVAILABLE ON REQUEST

Double case construction
Floating rotors
Magnetic transmission
Carbon bearings
Change gear calibrator (auto-check)
Construction materials
High pressure / temperature
Capability of metering viscous liquids
"Tailored" versions
Excellent accuracy and repeatability
Reduced maintenance
Extended production line
Wide range of ancillary equipment
Horizontal and vertical design

"PETROL" PD meters

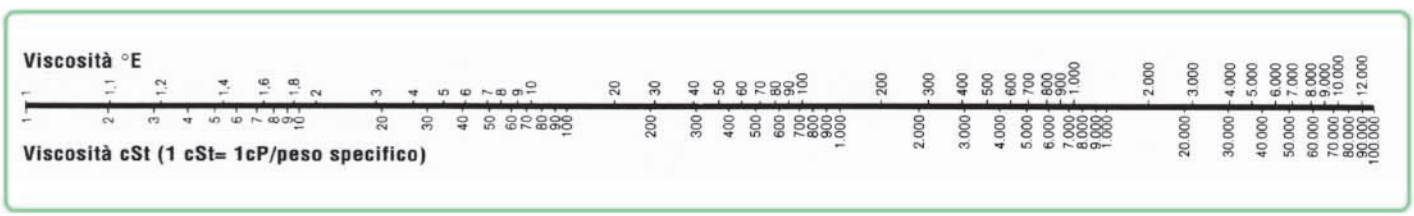
Approved by Industry and Commerce Ministery, Weight and Measure Dept. with D.M. 28/7/1970, n.347828 for Italy and D.M. 10/9/1989 n.99.03.01.002 for European Countries.

"Petrol" PD meters are typical volumetric instruments which directly measure the quantity of liquid flowing through pipes by means of a couple of rotors. These instruments, totally manufactured in our factory since more than 30 years, allow an accurate measure either of the flow rate either of volumes transferred (integrated flow rate) of practically all the liquids industrially utilized. They may be used for custody transfer purposes, operating controls and for the many other needs of the petroleum, chemical, pharmaceutical, crude oil extractions, ships and steel making industries, power plants, etc.

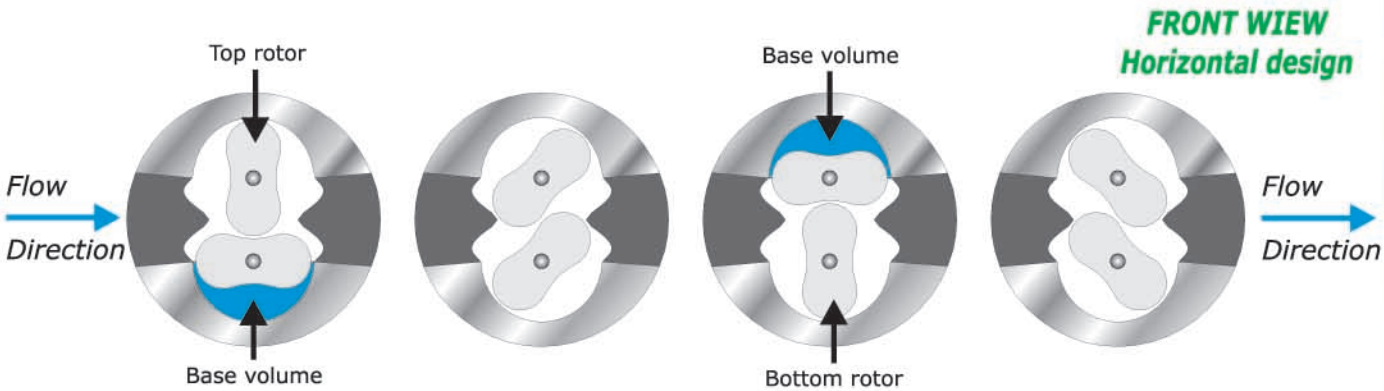
Operating principle

The two rotors, manufactured in such a way that they never touch each other nor they touch the other components of the "base volume", are alternatively driven by the timing gears coupled on rotor's shafts just outside the rear cover of the inner housing.
As shown in the operating scheme, the liquid entering the PD meter pushes the bottom rotor, which is in condition of unbalanced pressure, to rotate counterclockwise. Contemporarly the top rotor, being driven by the timing gears, rotates clockwise.
After a 90 degrees rotation, the rotors are in a reciprocal position in respect to the initial one and therefore it is the top rotor (pushed from the liquid to rotate clockwise) which drives the bottom rotor, through the timing gears, to rotate counterclockwise. During a complete cycle, i.e. a 360° rotors' rotation four (4) "base volumes" are generated. By transmitting the number of rotors' rotations to the counter the volume passed through the PD meter is displayed.

To select a PD meter the viscosity of the liquid to be metered is the most important characteristic to be known. PD meter size an relevant flow-rate range directly depends from its value.
For this reason hereinafter is printed a viscosity conversion diagram.

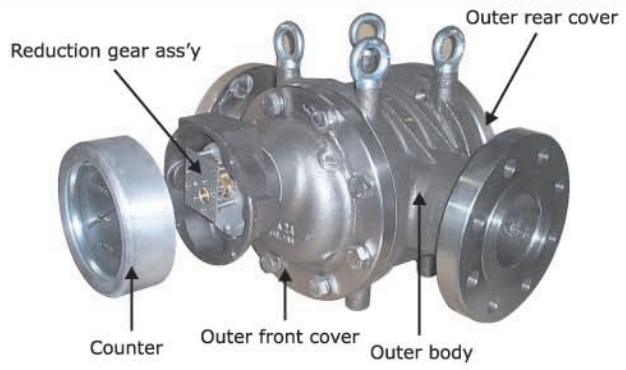


Operating scheme (Bi-rotor mechanism)



Horizontal design means that the rotors' shafts MUST WORK IN HORIZONTAL POSITION (as in above sequence)

Outer housing (Body + front cover + rear cover)

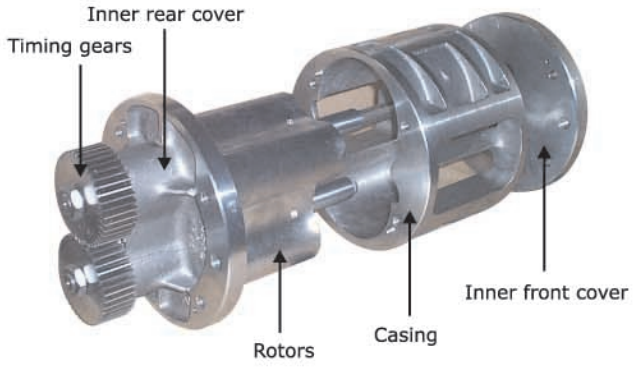


Outer housing materials

CODE	Body/Covers	Gaskets
A	Cast iron	Universal SA
B	Bronze	Universal SA
C	Cast steel	Universal SA
D	Ductile iron	Universal SA
E	AISI 304	Teflon
F	AISI 316	Teflon
G	AISI 316 L	Teflon

Magnetic transmission to drive the counter (standard)

Inner housing (Casing + front cover + rear cover + rotors)

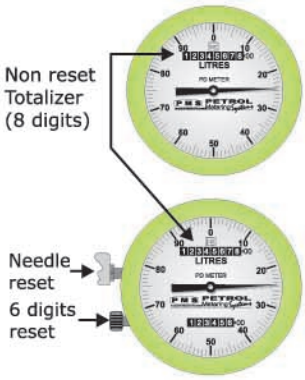


Inner housing materials

CODE	Casing/Covers	Rotors
1	Bronze	Bronze
2	Bronze	Allum. Alloy
3	Cast iron	Allum. Alloy
5	Cast iron	Cast iron
7	AISI 304	AISI 304
8	AISI 316	AISI 316
9	AISI 316 L	AISI 316 L

Impregnated carbon bearings to support rotors' shafts (standard)

Counter models



MOD. 12

10 figures non reset type totalizer (8 on digits + 2 on dial)

For electronic counters, explosion proof or control room version, see general catalogue.

MOD. 22

8 figures reset type counter (6 on digits + 2 on dial) plus 8 digits non reset totalizer.

The needle scope is to increase the counter resolution. One needle revolution = one (1) unit of the totalizer.

Identification code

F A 53 - 12 - F 8

- **F** PD meter type
- **A** Max pressure
- **53** PD meter model
- **12** Counter model
- **F** Outer housing materials
- **8** Inner housing materials

Standard flanges according to ANSI or UNI codes. Special flanges according to other codes on request

How to select

- **PD meter type**
  F standard **FJ** jacketed
- **Max Pressure**
  (See table)
- **PD meter model**
  From the table "flow rate ranges" select the PD meter model more suitable for the specific needs with reference to the type/viscosity of liquid to be metered.

- **Accessories**
  Transmitters code are:
  P for electric pulses
  N for pneumatic pulses
  Insert above codes after the first number of the counter model, ex. -1P2- or/and -2N2-.
  For temperatures above 80°C use mod. AK-5 fin-cooler .
  To read from the top use mod. AM-6 angle adaptor.

- **Construction materials**
  From the relevant "tables" select the construction materials more suitable for the specific needs for what concerns both the outer housing and the inner housing. For diluted HCl and diluted H2SO4 are available PD meters completly realized in "Moplen". For other construction materials consult the factory.

Max pressure

CODE	Mpa
A	1
L	2
M	6,2
H	11
X	>11

Flow-rate ranges (m^3/h)

PD meter model	Flanges size (DN)	Viscosity in mPa.s						
		> 0.5	2	10	50	150	500	2000	Water
51	25	0,6÷3	0,55÷3,5	0,4÷4	0,35÷4	0,25÷4	0,18÷3,5	0,005÷2,8	0,5÷2,8
11	25	1÷5,5	0,9÷6	0,65÷6,5	0,55÷6,5	0,4÷6,5	0,3÷6	0,1÷5	0,9÷5
12	50	2,2÷12	2÷13	1,4÷14	1,2÷14	0,9÷14	0,65÷13	0,2÷10	1,8÷10,5
22	50	3,5÷18	3÷20	2,2÷22	1,8÷22	1,5÷22	1÷20	0,3÷16	2,5÷16,5
53	80	6÷34	5,5÷36	3,8÷38	3,2÷38	2,5÷38	1,8÷36	0,6÷30	4,5÷28
13	80	9,5÷52	8,5÷54	5,6÷56	4,5÷56	3,8÷56	2,8÷54	0,9÷45	7÷42
14	100	15÷85	14÷90	10÷100	8,5÷100	6,5÷100	4,5÷90	1,5÷75	12÷75
24	100	22÷120	20÷130	14÷140	12÷140	9,5÷140	6,5÷130	2÷100	16÷100
16	150	27÷150	25÷160	17÷170	14÷170	11,5÷170	8÷160	2,5÷130	20÷125
18	200	36÷200	34÷220	24÷240	20÷240	17÷240	11÷220	3,5÷170	30÷175
28	200	48÷260	45÷280	30÷300	25÷300	20÷300	14÷280	4,5÷220	35÷225

PD meters may be supplied with the underdetailed alternative flanges size without changing the above flow ranges.

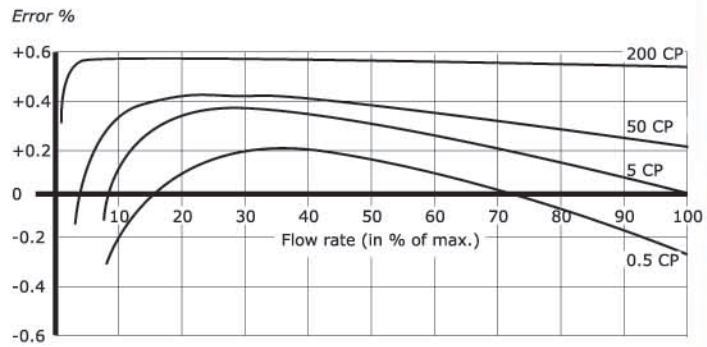
Alternative flanges size

PD meter model	Flanges size (DN)	Flow-rate range m^3/h
51AB	40	See above table
11AB	40	
12AB	40	
22BC	65	
53B	50	
13B	50	
14C	80	
24C	80	
16D	100	**Same model number Same flow-rate range**
18F	150	
28F	150	

Notes on flow-rate ranges

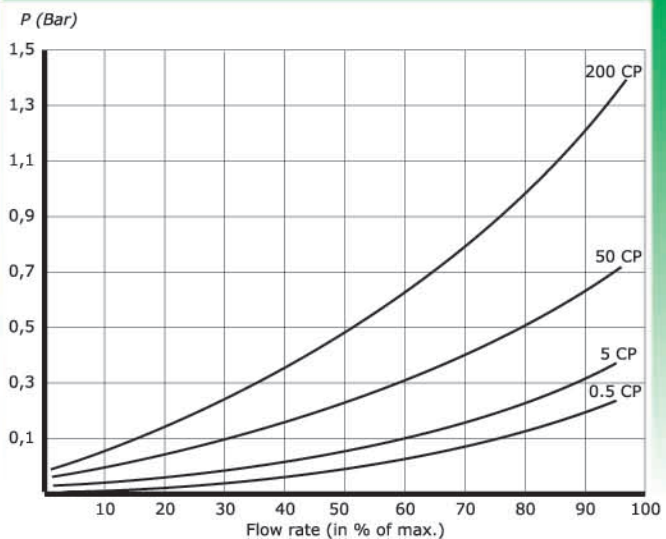
Flow rate ranges shown in the table are referred to intermittent service. For continuous service (8/24 hours of operation per day). as well as for service on lines operated with reciprocating or volumetric pumps its recommended to reduce the max. flow rate of about the 30 % or to consult the factory. The table has been prepared very conservatively to allow anybody to ask for a quotation or to select a "Petrol" PD meter, provided operating temperature is below 80 °C. It is possible to use "Petrol" PD meters for flow rates and viscosities outside mentioned ranges but in such cases it is necessary to consult the factory. The max allowed flow rate is about 20% higher than that shown in the table. PD meters accuracy is in accordance with the official approvals issued by Italian Ministery for installation in Italy and in European Countries.

Accuracy curves

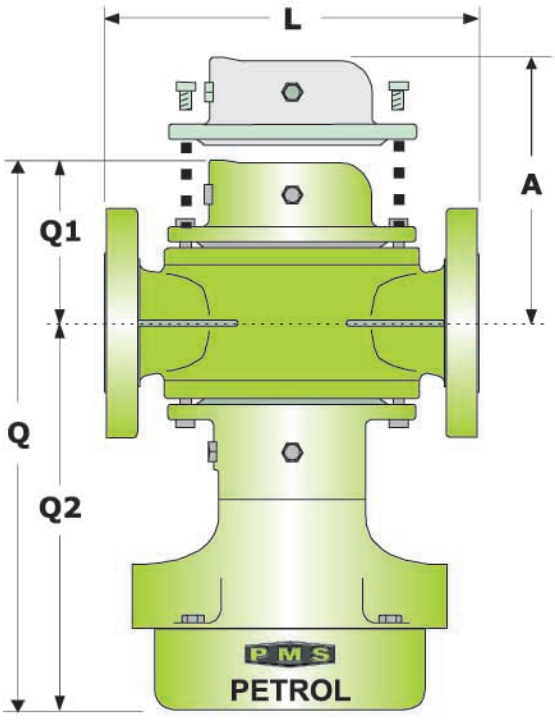


The graph shows only the trend of the accuracy curve for liquids of different viscosity. Curves may then be shifted up and down along the *Error %* axis with the calibrator.

Pressure drop



PD meters outline dimensions



The inner housing is removed from the rear. The dimension A shows the minimum space to be left for its removal.

Dimensions table

MOD	L	Q	Q1	Q2	A
51	200	311	78	233	110
11	200	329	86	243	130
12	250	375	110	265	180
22	250	425	135	290	230
53	320	432	148	284	230
13	320	492	178	314	290
14	385	565	210	355	360
24	450	655	255	400	450
16	610	695	240	455	520
18	610	795	288	507	600
28	625	889	335	554	700

Dimensions valid for PD meters flanged ANSI 150 RF and UNI PN 10/16

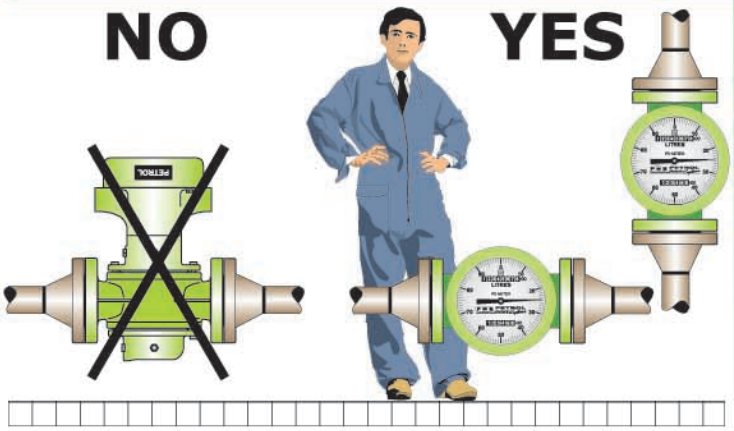
Tests

- All the outer housings are tested at a pressure 1,5 times the max. operating pressure printed in the PD meter name-plate;
- Performance tests are carried out with water as liquid medium and with calibrated tanks (see picture at the right showing a 5 Kl calibrated tank) sealed by Italian Weight and Measure Dept., as reference volume.

Precautions

- The majority of PD meters troubles is caused by solid particles which entering the metering mechanism, block the rotors. Remove the flanges' protections just before PD meter installation and be sure that the PD meter inlet line has been properly cleaned before the start-up
- Use the PD meter within the flow rate range, pressure and temperature values printed in the name-plate and be sure that the flow direction agrees with the arrow stamped on equipment body.
- The use of a protection strainer mounted just up-stream the PD meter or directly coupled on the PD meter inlet flange is strongly recommended. More-over install the PD meter if possible on a by-pass.
- PD meters over 3" size shall be duly anchored on a strong foundation.
- PD meter flow direction may be: left-right, right-left, down-up, up down. Hovewer **the rotors' shafts must compulsory work in horizontal**

Installations



Specialists

During the years "Petrol" has accumulated a very strong experience in the production of PD meters suitable for the heaviest operating conditions in the more different industrial fields such as the measurement of blood, of phtalic and of maleic anhydride, of crude oil on well-heads, of heavy oils at high temperatures, of sea water etc. Such a technical background and the investments yearly destined to the research in the field of the volumetric measurement of liquids have till now satisfied any particular need of the customers. Hereinafter are listed the most significant references for crude oil extraction industry, for power plants and for marine terminals.

Users and application

- **Chemical industry**
  acetic acid, alcohol, caustic soda, demi water, formaldeyde, methanol, napthalene, nitric acid, paintings, saline solutions, solvents, sulphuric acid.
- **Crude oil extraction and marine terminals**
  Crude-oil, fuel-oils, refined products.
- **Food industry**
  alcohol, alcoholic beverages, fats (animal and vegetal), fatty acids, saline solutions, vegetal oils, water.
- **Petrochemical industry**
  Acetaldehyde, acetone, acrilonytrile (AN), benzene, butanol, ethanol, ethylene, LPG, maleic anhydride, phtalic anhydride, propylene, styrene, toluene, xylene.
- **Petroleum industry**
  asphalt, bitumen, crude-oil, gasoline, heavy oils, jp4, light-oil, LPG, lubrificants, kerosene, naphta, paraffines, tar.
- **Pharmaceutical industry**
  Acid solutions, caustic soda, demi water, HCL diluted, H_2SO_4 diluted and concentrated, phosphoric acid.
- **Power plants industry**
  bunker C, crude-oil, demi water, heavy oil, naphta.
- **Ships and steel making industry**
  bunker C, diathermic-oil, heavy-oil, light-oil, turbine-oil, sweet water, sea water.

Marine terminals

ITALY

Costiero Gas Livorno
LPG ships unloading max flow-rate
600/1200 m³/h

ABROAD

Sudan
Marsa Bashayer Marine Terminal
Crude oil loading max flow-rate 8000m3/h

Lebanon
Zaharani marine terminal
Gasoil unloading max flow-rate 1800 m3/h
Beddawi Marine terminal
Gasoil unloading max flow-rate 1800 m3/h

See specific reports in the General Catalog

Power plants

ITALY: Acea Montemartini, ASM Brescia, ASM Ponti sul Mincio, Bastardo, Brindisi Nord, Brindisi Sud, Borgo Trento, Fiume Santo, Isab Priolo, La Spezia, Melilli, Monfalcone, Montalto di Castro, Napoli Levante, Ostiglia, Pietrafitta, Piombino, Porto Tolle, Rosignano Solvay, S. Barbara, San Filippo del Mela, S. Gilla, Sermide, Sulcis, Tavazzano, Termini Imerese, Torrevaldaliga Nord, Torrevaldaliga Sud, Trino Vercellese, Vado Ligure.

ABROAD: *Algeria, Arabia Saudita, Argentina , Cambogia, Chile, China, Egypt, Ethiopia*, Ghana, Jordan, *Greece, Indonesia, Ivory Coast, Irak, Lebanon, Jamaica, Malaysia, Malta, Morocco, Pakistan, Syria, Sud Africa, Tunisia, Turkey, U.A.E., Uruguay, Venezuela, Yemen.*

Crude oil

Platforms: (Off-shore)

ITALY: Agostino, Amelia, Angela/Angelina, Annalisa, Aquila, Barbara, Cervia, Daria, Emilio, Emma, Fratello, Garibaldi, Giovanna, Hera Lacinia, Luna, Nilde, Pennina, Perla, Prezioso, Regina, Squalo, Vega.

ABROAD: *Brasil, China, Croazia, Congo, India, Libya, Nigeria, Vietnam.*

Extraction fields: (On shore)

ITALY: Cavone, Gaggiano, Gela, Monte Alpi, Pisticci, Torrente Baganza, Torrente Tona, Trecate, Val D'Agri, Villa Fortuna.

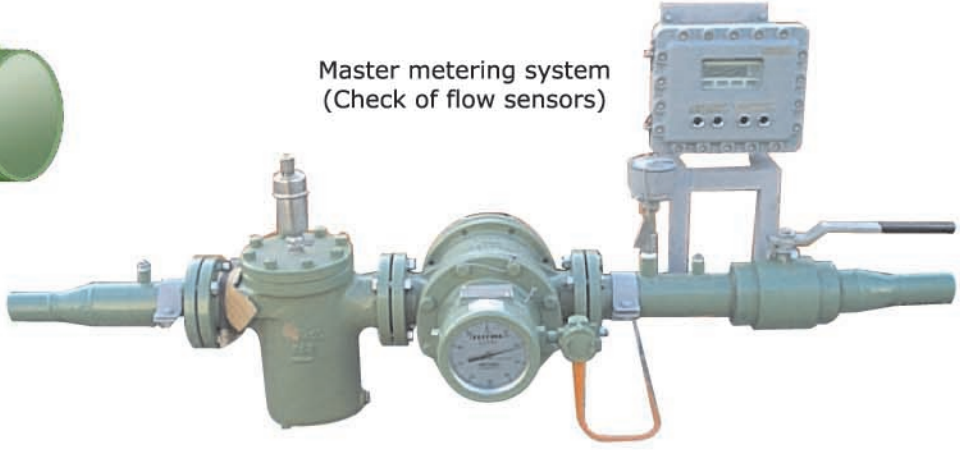
ABROAD: *Austria, Egypt, Libya, Nigeria.*

Metering Systems

"PETROL" PD meters are also used as the main componet of metering systems for custody trasfer purposes and for calibration and/or control of other flow sensor devices.

Skidded 16" size PD meters
(ships loading/unloading)

Master metering system
(Check of flow sensors)



PMS
Produzione Misuratori Volumetrici

PETROL Metering Systems

Name	:	**P.M.S. Petrol Metering Systems S.r.l.**
Address	:	Via delle Valli, 25 04011 Aprilia (LT) ITALY
Phone	:	++39.06.92727658
Fax	:	++39.06.92860025
I. V. A. code	:	IT02068390596
Fiscal code	:	06381091005
Total ground	:	2.500 m²
Covered area	:	1.000 m²
URL web site	:	http://www.petrolms.it
E-mail:		
General Info	:	petrolms@petrolms.it
Dott. Ing. Mario Romiti	:	mario.romiti@petrolms.it
Dott.ssa Silvia Romiti	:	silvia.romiti@petrolms.it
Bank references	:	Monte Dei Paschi Di Siena - Aprilia (LT)
Account n.	:	9650.06
ABI code	:	01030
CAB code	:	73920
SWIFT code	:	PASCITMMAPR

...Thanks for having selected our company.

PMS
Produzione Misuratori Volumetrici

PETROL Metering Systems

Petrol Metering Systems Srl - Via delle Valli, 25 - 04011 Aprilia (LT) Italy
Tel.: ++39.06.92727658 - Fax: ++39.06.92860025
Web: www.petrolms.it - E-mail: petrolms@petrolms.it

"PETROL" TETRA-ROTORS PD METERS

Vertical design

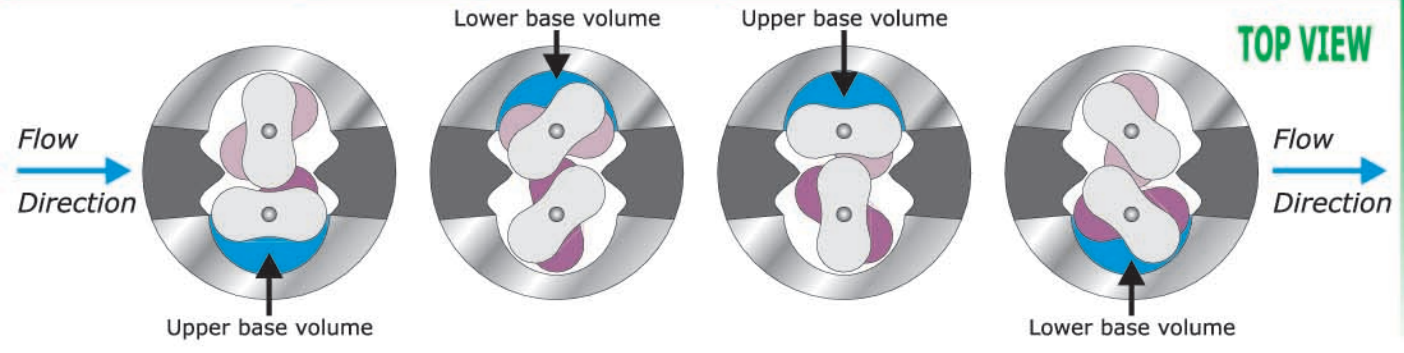
Models 212,612 and 114 are double case PD meters basically using the Roots operating principle but with two (2) rotors shifted at 45° keyed on each shaft to nullify vibrations and pressure pulsation.
Inner housing may be manufactured in cast iron or in the various grades of stainless steel up to Aisi 316L while the outer housing may be manufactured in cast steel or in stainless steel thus permitting their use in almost any liquid industrially used.

These PD meters are specially designed for installations in pipelines, in marine terminals for ships loading and unloading and as main components of skidded metering systems where a very high repeatability is required together with a very easy and reduced maintenance.

Models 212 - 114

For PD meters main features see back page - For references see general catalogue (on request) - For materials/identification code see inner pages

Operating scheme (Tetra-rotors mechanism)



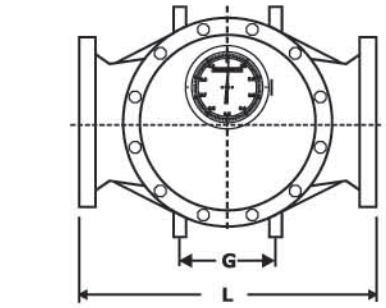
Flow-rate ranges (m³/h)

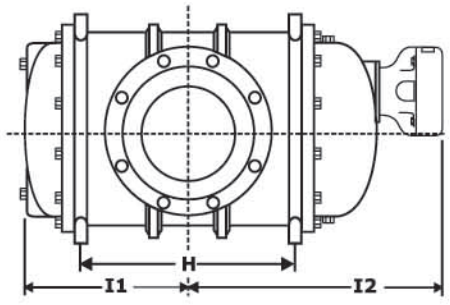
PD meter model	Flanges size (DN)	Viscosity in mPa.s				
		> 0.5	2	10	150	500
212L	250	150÷850	130÷850	90÷900	60÷900	40÷800
212	300	150÷750	130÷750	90÷800	60÷800	40÷700
612	300	200÷1000	180÷1000	130÷1100	85÷1100	55÷900
612P	350	200÷1200	180÷1200	130÷1300	85÷1300	55÷1100
114	350	250÷1350	230÷1350	160÷1500	100÷1500	70÷1250
114R	400	250÷1500	230÷1500	160÷1600	100÷1600	70÷1400

Flow rate ranges shown in the table at the left are referred to continuous service (8/24 hours of operation per day). For intermittent service the max flow rate may be increased by 15%. The table has been prepared very conservatively to allow anybody to ask for a quotation or to select a "Petrol" PD meter, provided operating temperature is below 80 °C. It is possible to use "Petrol" PD meters for flow rates and viscosities outside mentioned ranges but in such cases it is necessary to consult the factory. The max allowed flow rate is about 25% higher than that shown in the table. PD meters accuracy is in accordance with the official approvals issued by Italian Ministery for installation in Italy and in European Countries.

Mod. 110-112

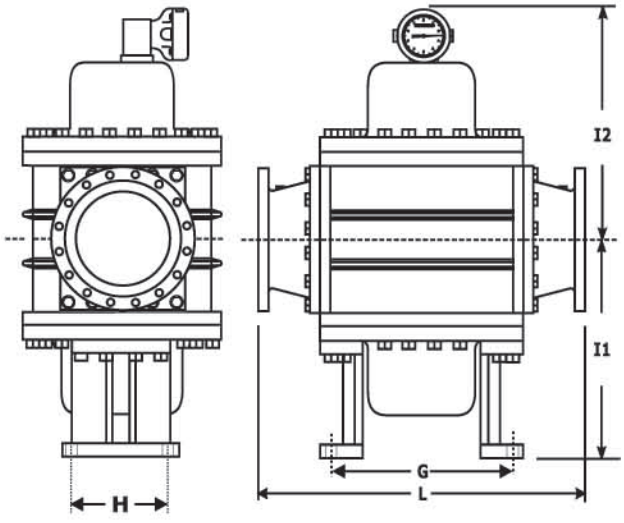
Horizontal design





Mod. 212-612-114

Vertical design



Tests

➢ All the outer housings are tested at a pressure 1,5 times the max. operating pressure printed in the PD meter name-plate;

➢ Performance tests are carried out with water as liquid medium and with a 25 Kl calibrated tank (see picture at the right) sealed by Italian Weight and Measure Dept., as reference volume.

Precautions

➢ The majority of PD meters troubles is caused by solid particles which entering the metering mechanism, block the rotors. Remove the flanges' protections just before PD meter installation and be sure that the PD meter inlet line has been properly cleaned before the start-up

➢ The use of a protection strainer mounted just up-stream the PD meter or directly coupled on the PD meter inlet flange is strongly recommendly.

➢ Use the PD meter within the flow rate range, pressure and temperature values printed in the name-plate and be sure that the flow direction agrees with the arrow stamped on equipment body.

Outline dimensions

Mod.	L	I1	I2	G	H
110	625	335	554	202	405
112	650	395	615	250	524
212	1200	678	750	662	350
612	1300	778	845	662	350
114	1400	825	890	662	350

Dimensions valid for PD meters flanged ANSI 150 RF and UNI PN 10/16

Outer housing materials

CODE	Body/Covers	Gaskets
C	Cast steel	Universal SA
E	AISI 304	Teflon
F	AISI 316	Teflon

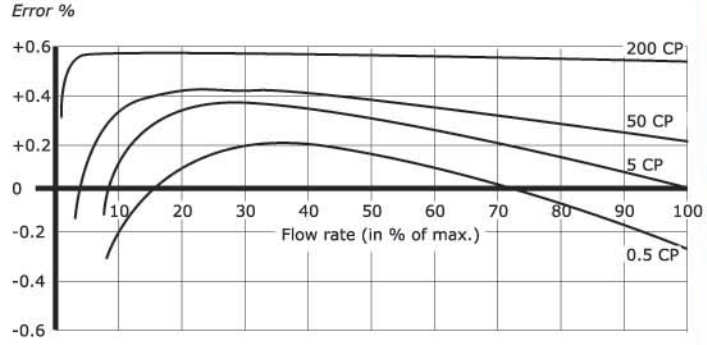
Magnetic transmission to drive the counter (standard)

Inner housing materials

CODE	Casing/Covers	Rotors
5	Cast iron	Cast iron
7	AISI 304	AISI 304
8	AISI 316	AISI 316

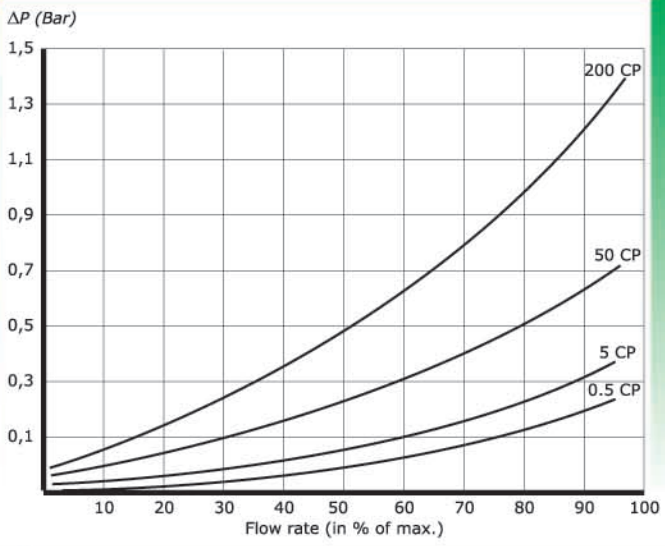
Impregnated carbon bearings to support rotors' shafts (standard)

Accuracy curves

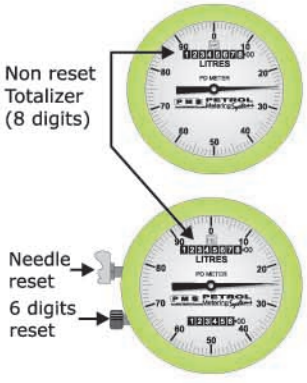


The graph shows only the trend of the accuracy curve for liquids of different viscosity. Curves may then be shifted up and down along the *Error %* axis with the calibrator.

Pressure drop



Counter models



MOD. 12

10 figures non reset type totalizer (8 on digits + 2 on dial)

For electronic counters, explosion proof or control room version, see general catalogue.

MOD. 22

8 figures reset type counter (6 on digits + 2 on dial) plus 8 digits non reset totalizer.

The needle scope is to increase the counter resolution. One needle revolution = one (1) unit of the totalizer.

Identification code

F A 212 - 12 - F 8

- **F** PD meter type
- **A** Max pressure
- **212** PD meter model
- **12** Counter model
- **F** Outer housing materials
- **8** Inner housing materials

Standard flanges according to ANSI or UNI codes. Special flanges according to other codes on request

How to select

- **PD meter type**
  F standard **FJ** jacketed
- **Max Pressure**
  (See table)
- **PD meter model**
  From the table "flow rate ranges" select the PD meter model more suitable for the specific needs with reference to the type/viscosity of liquid to be metered.

- **Accessories**
  P for electric pulses
  Insert above codes after the first number of the counter model, ex. -1P2- or/and -2P2-.
  For temperatures above 80°C use mod. AK-5 fin-cooler .
  To read from the top use mod. AM-6 angle adaptor. for all the horizontally designed PD meters Vertically designed PD meters are always equipped with mod. AM-6 angle adaptor.

- **Construction materials**
  From the relevant "tables" select the construction materials more suitable for the specific needs for what concerns both the outer housing and the inner housing. For other construction materials consult the factory.

Max pressure

CODE	Mpa
A	1
L	2
M	6,2
H	11
X	>11

PMS Produzione Misuratori Volumetrici

PETROL Metering Systems

"PETROL" TETRA-ROTORS PD METERS

Horizontal design

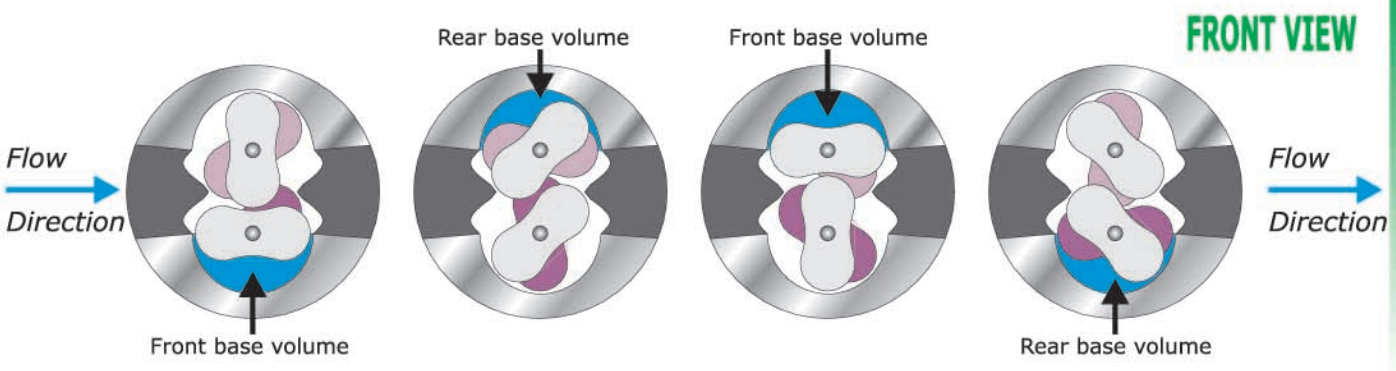
Main features

Detailed description in the general catalogue available on request

- Double case construction
- Floating rotors
- Magnetic transmission
- Carbon bearings
- Change gear calibrator (auto check)
- Construction materials
- Max operating pressure up to 15 MPa
- Max operating temperature up to 230°C
- Capability of metering viscous liquids
- Excellent accuracy and repeatability
- Reduced maintenance

Models 110 - 112

Operating scheme (Tetra-rotors mechanism)



Flow-rate ranges (m³/h)

PD meter model	Flanges size (DN)	Viscosity in mPa.s				
		> 0.5	2	10	150	500
110H	200	70÷400	60÷400	45÷450	30÷450	20÷360
110	250	70÷400	60÷400	45÷450	30÷450	20÷360
112L	250	100÷550	85÷550	55÷550	35÷550	25÷500
112	300	100÷550	85÷550	55÷550	35÷550	25÷500

To select a PD meter the viscosity of the liquid to be metered is the most important characteristic to be known. PD meter size an relevant flow-rate range directly depends from its value.

For notes on flow-rate ranges see front page
For references see general catalogue (on request)
For materials/identification code see inner pages

CALIBRATION PROCEDURE

With the “replacing gear” type calibrator the PD meter calibration is obtained through the replacement of a couple of the “double gear” which is a component of the reduction gear ass’y mounted between the magnetic transmission and the counter of the PD meter itself.

To have the possibility to work on the reduction gear ass’y it is necessary to remove the counter and then is enough a small wrench to replace the “double gear”.

Hereto enclosed please find the drawing 3Y-0511E, relevant to reduction gear ass’y exploded view, on which the “double gear” is shown under part number 12 while its mounting system is under the part numbers 10, 11, 13 and 16.

To select the “double gear” needed for a new calibration consult the table 78-V-42 hereto enclosed where such gears are listed with a progressive number from -1,8 to 8. The increaser of the identification number corresponds to an increase of the reduction ratio.

The table shows the “double gear” reduction factor and its percentage (%) change (%) in respect to to the “double gear” immediately downstream.

May be useful to recall that if for a know volume of liquid metered it is necessary to reduce the reading of the counter, the reduction factor must be increased and therefore it is necessary to install a “double gear” with an higher identification number.

TABLE N° 78-V-042

-1.8	-1	-0.2	0	0.2	0.5	1	1.3	1.6	2	2.5	2.9
49	42	53	41	35	52	40	34	45	39	33	49
41	35	44	34	29	43	33	28	37	32	27	40
1.5297	1.5360	1.5417	1.5435	1.5448	1.5479	1.5515	1.5543	1.5568	1.5600	1.5644	1.5680
-0.411	-0.371	-0.116	0	0.084	0.200	0.232	0.180	0.161	0.206	0.282	0.230

← - E + →

3	3.4	3.7	4	4.3	4.5	5	5.1	5.2	5.3	5.4	6
38	43	32	37	42	47	36	41	46	51	56	35
31	35	26	30	34	38	29	33	37	41	45	28
1.5690	1.5726	1.5754	1.5787	1.5811	1.5832	1.5890	1.5903	1.5913	1.5922	1.5929	1.600
0.064	0.229	0.178	0.209	0.152	0.133	0.366	0.082	0.063	0.056	0.044	0.450

← - E + →

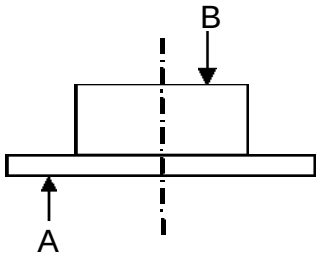
6.6	6.7	6.9	7	7.3	7.5	7.7	8	Identification number
54	49	39	34	53	43	38	33	Number of teeth gear A
43	39	31	27	42	34	30	26	Number of teeth gear B
1.6074	1.6082	1.6103	1.6118	1.6152	1.6188	1.6213	1.6246	τ Reduction ratio (1.28xA/B)
0.461	0.049	0.131	0.093	0.211	0.223	0.155	0.204	% change in %

← - E + →

The % change (%)for a definite calibration number shows the percentage (%) change in respect to the calibration number immediately downstream.
To obtain the desired % change the factors listed under % have to be progressively summed-up.
For volumes registered by the PD meter lower that those registered by the calibrated tank it is necessary to proceed toward the – å
For volumes registered by the PD meter higher than those registered by the calibrated tank it is necessary to proceed toward the å+

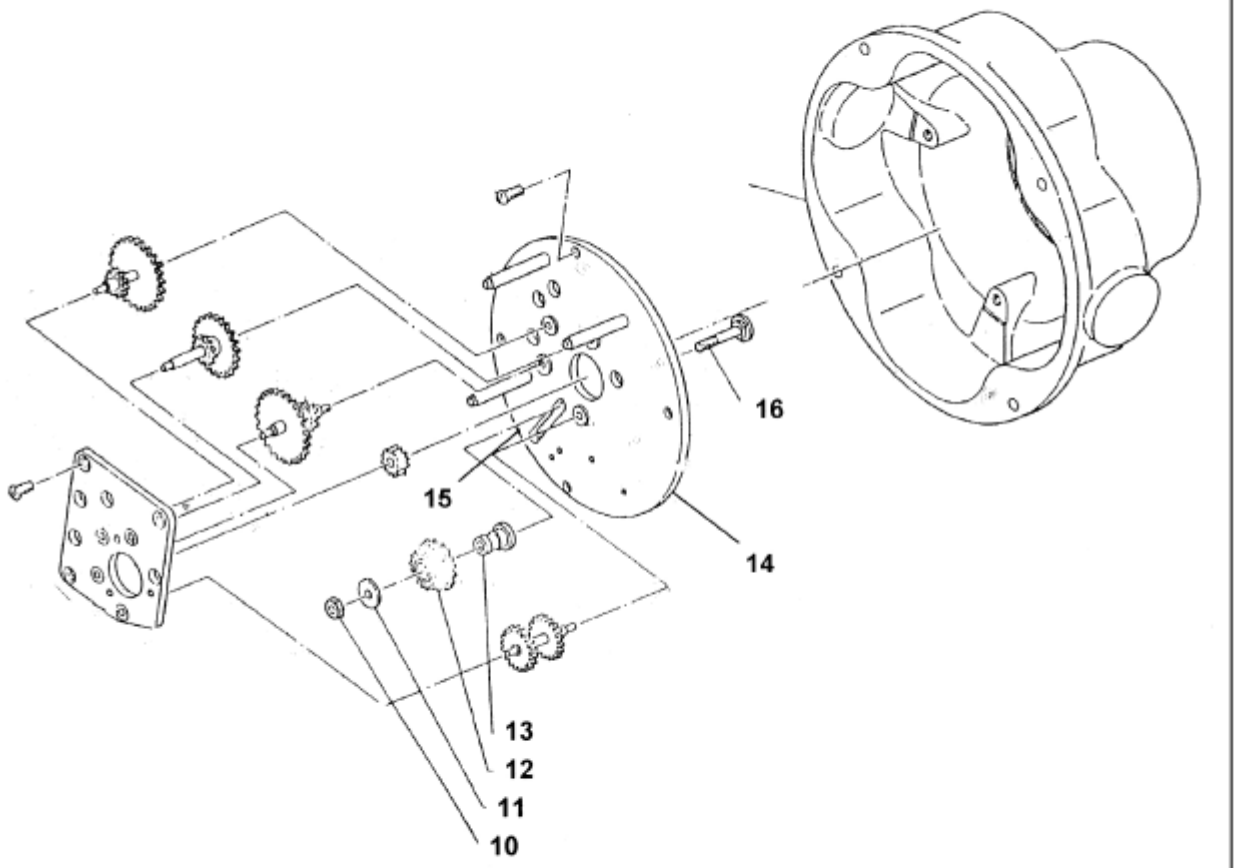
Examples:

- PD meter with calibration number : 6
- volume registered by the PD meter : litres 994
- volume registered by the PD meter : litres 1000



å% = (994 – 1000) : 1000 x 100 = -0,60 %
The calibration number more adequate is the 5.1 because of it generates a percentage (%) change (%) of : 0,450 + 0,044 + 0,056 + 0,063 = 0,613 %

which is the closest correction available in respect to the correction to be made.



ITEM	DESCRIPTION	Q.TY	
10	NUT	1	
11	WASHOR	1	
12	"DOUBLE GEAR" CALIBRATOR	1	
13	GUIDE	1	
14	BOTTOM PLATE	1	
15	BUTTON HOLE	1	
16	COUNTER SUPPORT	1	

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Web:www.petrolms.it e-mail:petrolms@petrolms.it

REDUCTION GEAR ASS'Y

EXPLODED VIEW

Cliente Customer							Ordine P.Order			Commessa Job
							Compilato DRN	Controllato CHKD	Approvato APP	Disegno n° Drawing n°
Revisioni Revisions	0	1	2	3	4	Data Date				3Y-05IIE
Data Date						Sigla Tag				Foglio Sheet 1/1

Generality

1. "Petrol" PD meters have been legally approved with D.M. 28/07/70 n. 347828, whose copy is available in this catalogue. This approval foresees that the first verification is made directly in the plant or, alternatively, at the manufacturer factory, in which case, however, an additional verification in the plant is needed.

2. The liquid medium used at factory for performance test is water added with some percentage of oil, for the further protection of cast iron/steel parts of PD meters - C5 and - C8 versions.

Test station

1. In order to provide the performance test of mod. 51 and 11 PD meters it is used a closed-type hydraulic circuit, which includes the underdetailed equipment.

   1.1. 200 litres capacity calibrated tank;
   1.2. centrifugal pump, complete with by-pass and valves to adjust the flow-rate;
   1.3. stainless steel reservoir, about 500 litres capacity.

2. Main characteristics of involved system are the following:

   2.1. calibrated tank

2.1.1.	capacity	: 200 litres
2.1.2.	loading	: from top
2.1.3.	unloading	: from bottom
2.1.4.	graduation	: only on top neck
2.1.5.	official seals	: Latina Chamber of Commerce

   2.2. centrifugal pump

2.2.1.	manufacturer	: Audoli & Bertola - Torino
2.2.2.	model	: Q 2509
2.2.3.	serial number	: 123753
2.2.4.	head	: 28,5 - 20 m. H2O
2.2.5.	flow rate	: 20 - 100 litres/1'
2.2.6.	power	: 0,95 HP

Test's procedure

1. Batches of about 200 litres are delivered into the calibrated tank, in such a way that at the end of each batch, the level of liquid falls within the graduated portion of calibrated tank neck.

2. Volume (Vm) passed through the PD meter, as registered by the counter, is compared with the volume (Vc) as registered by the calibrated tank.

3. Through the formula:

$$\frac{Vm - Vc}{Vc} \times 100 = E\%$$

the error of PD meter, as percentage, is calculated.

4. Should calculated value of E% be greater than that required, PD meter calibration is changed by replacing the “double gear” calibrator, which is an integrant part of reduction gear ass’y (calibration by gear replacing). See document RGC.01 available in this catalogue.

Specific considerations

1. Should PD meter be required for service on liquids with viscosity about 5 - 10 cP, the calculated value of E% is adjusted about 0,5% less of the value required at actual normal flow-rate, in order to compensate the slippage reduction, between rotors and between those latters and the other componets of the base volume, under the actual operating conditions.

2. Should PD meter be required for service on liquids with viscosity over 10 cP, the calculated value of E% will remain steady down to 10% about of maximum rated flow rate printed on PD meter nameplate.

Performance test procedures Mod. 12 – 22 – 53 – 13

Generality

1. "Petrol" PD meters have been legally approved with D.M. 28/07/70 n. 347828, whose copy is available in this catalogue. This approval foresees that the first verification is made directly in the plant and, alternatively, at the manufacturer factory, in which case, however, an additional verification in the plant is needed.

2. The liquid medium used at factory for performance test is water added with some percentage of oil, for the further protection of cast iron/steel parts of PD meters - C5 and - C8 versions.

Test station

1. In order to provide the performance test of mod. 12 - 22 -53 and 13, PD meter, it is used a closed-type hydraulic circuit, which includes the underdetailed equipment.

   1.1. 1000 litres capacity calibrated tank;
   1.2. centrifugal pump, complete with by-pass and valves to adjust the flow-rate;
   1.3. stainless steel reservoir, about 1800 litres capacity about.

2. Main characteristics of involved system are the following:

   2.1. calibrated tank

2.1.1.	capacity	: 1000 litres
2.1.2.	loading	: from top
2.1.3.	unloading	: from bottom
2.1.4.	graduation	: only on top neck
2.1.5.	official seals	: Latina Chamber of Commerce

   2.2. centrifugal pump

2.2.1.	manufacturer	: Audoli & Bertola - Torino
2.2.2.	model	: S 5155
2.2.3.	serial number	: 12362
2.2.4.	head	: 32 - 18 m. H2O
2.2.5.	flow rate	: 300 - 850 litres/1'
2.2.6.	power	: 5,5 HP

Test's procedure

1. Batches of about 1000 litres are delivered into the calibrated tank, in such a way that, at the end of each batch, the level of liquid falls within the graduated portion of calibrated tank neck.

2. Volume (Vm) passed through the PD meter, as registered by PD meter counter, is compared with the volume (Vc) as registered by calibrated tank.

3. Through the formula:

$$\frac{Vm - Vc}{Vc} \times 100 = E\%$$

the error of PD meter, as percentage, is calculated.

4. Should calculated value of E% be greater than that required, PD meter calibration is changed by replacing the “double gear” calibrator, which is an integrant part of reduction gear ass’y (calibration by gear replacing). See document RGC.01 available in this catalogue.

Specific considerations

1. Should PD meter be required for service on liquids with viscosity about 5 - 10 cP, the calculated value of E% is adjusted about 0,5% less of the value required at actual normal flow-rate, in order to compensate the slippage reduction, between rotors and between those latters and other componets of the base volume, under the actual operating conditions.

2. Should PD meter be required for service on liquids with viscosity over 10 cP, the calculated value of E% will remain steady down to 10% about of maximum rated flow rate printed on PD meter nameplate.

Performance test procedures
Mod. 14 – 24 – 16 – 18 – 28

Generality

1. "Petrol" PD meters have been legally approved with D.M. 28/07/70 n. 347828, whose copy is available in this catalogue. This approval foresees that the first verification is made directly in the plant and, alternatively, at the manufacturer factory, in which case, however, an additional verification in the plant is needed.

2. The liquid medium used at factory for performance test is water added with some percentage of oil, for the further protection of cast iron/steel parts of PD meters - C5 and - C8 versions.

Test station

1. In order to provide the performance test of mod. 14 - 24 -16 and 18 PD meters, it is used a closed-type hydraulic circuit, which includes the underdetailed equipment.

   1.1. 5000 litres capacity calibrated tank;
   1.2. centrifugal pump, complete with by-pass and valves to adjust the flow-rate;
   1.3. stainless steel reservoir, about 7000 litres capacity.

2. Main characteristics of involved system are the following:

   2.1. calibrated tank

2.1.1.	capacity	: 5000 litres
2.1.2.	loading	: from bottom
2.1.3.	unloading	: from bottom
2.1.4.	graduation	: on top neck and on bottom neck
2.1.5.	official seals	: Latina Chamber of Commerce

   2.2. centrifugal pump

2.2.1.	manufacturer	: Audoli & Bertola - Torino
2.2.2.	model	: A 801620
2.2.3.	serial number	: 94905
2.2.4.	head	: 25 - 16 m. H2O
2.2.5.	flow rate	: 150 M3/h - 25 m. H2O
2.2.6.	power	: 20 HP

Test's procedure

1. At the beginning of test the level of liquid is positioned close or on "zero" graduation of calibrated tank bottom neck.

2. Batches of about 5000 litres are delivered into the calibrated tank, in such a way that, at the end of each batch, the level of liquid falls within the graduated portion of calibrated tank neck.

3. Volume (Vm) passed through PD meter, as registered by PD flowmeter counter, is compared with the volume (Vc) as registered by the calibrated tank.

4. Through the formula:

$$\frac{Vm - Vc}{Vc} \times 100 = E\%$$

the error of PD meter, as percentage, is calculated.

5. Should calculated value of E% be greater than that required, PD meter calibration is changed by replacing the “double gear” calibrator, which is an integrant part of reduction gear ass’y (calibration by gear replacing). See document RGC.01 available in this catalogue.

Specific considerations

1. Should PD meter be required for service on liquids with viscosity about 5 - 10 cP, the calculated value of E% is adjusted about 0,5% less of the value required at actual normal flow-rate, in order to compensate the slippage reduction, between rotors and between those latters and the other components the base volume, under the actual operating conditions.

2. Should PD meter be required for service on liquids with viscosity over 10 cP, the calculated value of E% will remain steady down to 10% about of maximum rated flow rate printed on PD meter nameplate.

Generality

1. "Petrol" PD meters have been legally approved with D.M. 28/07/70 n. 347828, whose copy is available in this catalogue. This approval foresees that the first verification is made directly in the plant and, alternatively, at the manufacturer factory, in which case, however, an additional verification in the plant is needed.

2. The liquid medium used at factory for performance test is water added with some percentage of oil, for the further protection of cast iron/steel parts of PD meters - C5 and - C8 versions.

Test station

1. In order to provide the performance test of mod. 110 - 112 – 212 - 612 and 114 PD meters, it is used a closed-type hydraulic circuit, which includes the underdetailed equipment.

   1.1. 25.000 litres capacity calibrated tank;
   1.2. centrifugal pump, complete with by-pass and valves to adjust the flow-rate;
   1.3. steel reservoir, about 40.000 litres capacity.

2. Main characteristics of involved system are the following:

   2.1. calibrated tank

2.1.1.	capacity	: 25.000 litres
2.1.2.	loading	: from bottom
2.1.3.	unloading	: from bottom
2.1.4.	graduation	: on top neck and on bottom neck
2.1.5.	official seals	: Latina Chamber of Commerce

   2.2. centrifugal pump

2.2.1.	manufacturer	: Sihi idromeccanica - Milano
2.2.2.	model	: WTS 250.28
2.2.3.	serial number	: P.B. 0065
2.2.4.	head	: 30 – 18 m. H20
2.2.5.	flow rate	: 1250 M3/h
2.2.6.	power	: diesel engine VM mod. T1156 DAN. 148 HP

Test's procedure

1. At the beginning of test the level of liquid is positioned close or on "zero" graduation of calibrated tank bottom neck.

2. Batches of about 25.000 litres are delivered into the calibrated tank, in such a way that, at the end of each batch, the level of liquid falls within the graduated portion of calibrated tank neck.

3. Volume (Vm) passed through PD meter, as registered by PD flowmeter counter, is compared with the volume (Vc) as registered by the calibrated tank.

4. Through the formula:

$$\frac{Vm - Vc}{Vc} \times 100 = E\%$$

the error of PD meter, as percentage, is calculated.

5. Should calculated value of E% be greater than that required, PD meter calibration is changed by replacing the “double gear” calibrator, which is an integrant part of reduction gear ass’y (calibration by gear replacing). See document RGC.01 available in this catalogue.

Specific considerations

1. Should PD meter be required for service on liquids with viscosity about 5 - 10 cP, the calculated value of E% is adjusted about 0,5% less of the value required at actual normal flow-rate, in order to compensate the slippage reduction, between rotors and between those latters and the other components the base volume, under the actual operating conditions.

2. Should PD meter be required for service on liquids with viscosity over 10 cP, the calculated value of E% will remain steady down to 10% about of maximum rated flow rate printed on PD meter nameplate.

Factory certificates PD meters

Generality

"Petrol" PD meters are instruments completly manufactured in our factory of Aprilia (LT) – Italy, under a strict quality control procedures certified by the Det Norske Veritas Italia (DNV).
The Quality Control Manual is available on request.

Furthermore, being our PD meters instruments with an high degree of standardization, they safely fall within quality level 3 from the stand-point of a "quality control plan".
At the light of what above the factory certificates released on a standard basis are the following:

a) hydraulic test, whose procedures are detailed hereinafter.
b) performance test, whose procedure are detailed hereinafter.
c) material certificates for the castings of the outer housing.

a) Hydraulic Test

One of the main characteristics of our PD meters is their "double case" type of contruction.
This means that the inner housing (inner casing plus rotors, shafts and gears), is removable from the outer housing flanged to the piping. The outer housing is therefore the sole sub-assembly subject to line operating pressure and consequently to the hydraulic test.
Hydraulic test is carried-out for all the outer housings produced, using water as liquid medium and a "factory test" certificate is drawn-up for each housing.
The test is carried-out applying a pressure of not less than 1,5 times the max. operating pressure for at least five (5) minutes by means of an hydraulic hand pump.

b) Performance Test

Four (4) test stations are available in our factory to carry- out the performance tests of PD meters.
All the four (4) stations use the "calibrated tank" method which mainly consists of a closed type hydraulic circuit.
The size of stations differ for the nominal volume of the calibrated tank and consequently for the size of the PD meters to be tested. In this respect and from a general stand-point the nominal volume of the calibrated tank should not be less than the volume passed through the PD meter for one (1) minute at its max. flowrate.

Performance tests are carried out for all the PD meters produced, in accordance to the procedures available in this catalogue and a "factory test" certificate is drawn-up for each of them.

c) Materials certificates

In accordance to what stated in the paragraph of hydraulic test the material certificates released on a standard basis are those relevant to the castings of the outer housing, for which is also always guaranteed the traceability.
May be also supplied the certificates of the castings and/or of the semi-finished products used to produce the inner housing but such request has to be commercially negotiated when placing the P.O. being subject to an extra-charge on the selling price of the PD meter.

Factory certificates Strainers

Generality

Factory certificate released on a standard basis for the strainers are the following:

a) hydraulic test, whose procedures are detailed hereinafter.
b) material certificates for the strainer body and cover.

a) Hydraulic Test

Hydraulic test is carried-out for all the strainers produced, using water as liquid medium and a "factory test" certificate is drawn-up for each body.
The test is carried-out applying a pressure of not less than 1,5 times the max. operating pressure for at least five (5) minutes by means of an hydraulic hand pump.

b) Materials certificates

The material certificates released on a standard basis are those relevant to the casting of the strainer body and to its cover, for which is also always guaranteed the traceability.
May be also supplied the certificates of the semi-finished products used to produce the screener but such request has to be commercially negotiated when placing the P.O. being subject to an extra-charge on the selling price of the strainer.

Painting specifications PD meters

Generality

"Petrol" PD meters are instruments composed by several sub assembly.

1. The sub assembly exposed to atmosphere and/or enviromental conditions are:

   1.1. the outer housing, raw material stainless steel or cast steel castings;
   1.2. the counter, raw material aluminum casting;
   1.3. the counter base, raw material cast iron casting.

The castings composing the above mentioned sub ass'y are subject to sandblasting before their shipment to our factory.

Once completed the PD meter ass'y and carried-out the performance test the PD meters are painted in accordance to the following procedure.

Painting materials

The underdetailed materials are normally used:

1. Two-components epoxy primer, with the main function of anchoring and antirust medium.
   Such material is supplied in two (2) components, namely:

   1.1. primer;
   1.2. catalyst;

The two (2) components have to be blended up to the application viscosity and then applied by means of a spray gun.

Product hardens in air.

2. Two-components acrylic urethanic warnish, with the main function of parts protection, standard color green RAL 6011.

The two (2) components have to be blended up to the application viscosity and then applied by means of a spry gun. Such material shows an excellent resistance to acids, bases and organic solvents. As most of acrylic urethanic varnishes, it is strongly recommended for protection of parts exposed to marine enviroments. It is applied using a proper diluent, by means of a spray gun.

Product hardens in air.

Painting procedure

Painting procedure may be summarized as follows.

1. cleaning of the PD meter;
2. protection of the parts not to be painted;
3. primer application (see item 1), average thickness 100 micron;
4. hardening of primer in air, average time required about 60 min.;
5. application of acrylic urethanic varnish (see item 2), average thickness 60 micron;
6. hardening of acrylic urethanic varnish in air, average time required 12 hours.

Particular considerations

1. In most installations painting of aluminum castings and of stainless steel castings is not required.
   However being our PD meters used in different industrial areas as well as in different countries, painting in accordance to present specification, is provided for all the PD meters produced.

2. Hardening of primer and of acrylic urethanic varnish in air has been preferred to hardening in furnace to avoid eventual damages to those components of the PD meter which, when in service, are normally subject only to ambient temperature as, for example, the counter and the pulse transmitter.
   In this respect may be usefull to recall that for max. operating temperatures over 80 °C, PD meters are equipped with a fin-type cooler.

Doc.: PS-ST.01

Painting specifications Strainers

Generality

"Petrol" strainers are instruments composed by several sub assembly.

1. The sub assembly exposed to atmosphere and/or enviromental conditions are:
   - 1.1. the body, raw material stainless steel or cast steel casting;
   - 1.2. the cover, raw material stainless steel or carbon steel casting or plate;

The castings composing the above mentioned sub ass'y are subject to sandblasting before their shipment to our factory.

Once completed the strainer ass'y and carried-out the idraulic tests the strainers are painted in accordance to the following procedure.

Painting materials

The underdetailed materials are normally used:

1. Two-components epoxy primer, with the main function of anchoring and antirust medium.
   Such material is supplied in two (2) components, namely:
   - 1.1. primer;
   - 1.2. catalyst;

The two (2) components have to be blended up to the application viscosity and then applied by means of a spray gun.

Product hardens in air.

2. Two-components acrylic urethanic varnish, with the main function of parts protection, standard color green RAL 6011.

The two (2) components have to be blended up to the application viscosity and then applied by means of a spry gun.
Such material shows an excellent resistance to acids, bases and organic solvents. As most of acrylic urethanic varnishes it is strongly recommended for protection of parts exposed to marine enviroments. It is applied using a proper diluent, by means of a spray gun.

Product hardens in air.

Painting procedure

Painting procedure may be summarized as follows.

1. cleaning of the strainer;
2. primer application (see item 1), average thickness 100 micron;
3. hardening of primer in air, average time required about 60 min.;
4. application of acrylic urethanic varnish (see item 2), average thickness 60 micron;
5. hardening of acrylic urethanic varnish in air, average time required 12 hours.

Particular considerations

1. In most installations painting of stainless steel castings is not required.
   However being our strainers used in different industrial areas as well as in different countries, painting in accordance with present specification is provided for all the strainers produced.

2. Hardening of primer and of acrylic urethanic varnish is made in air has done for the PD meters for uniformity.

Storage specifications

Generality

"Petrol" PD meters are normally supplied packed inside wooden cases produced by specialized firms in such a way to permit thair easy handling without damaging the instruments. For cases handling all types of motor-machinery and/or hand-machinery generally available at storage houses may be used. It is however recommended to avoid cases superimposing except in case of equal dimensions and similar gross weight.

Short period storage

No special precautions have to be taken for short periods of storage.
It is however recommended that cases are possibly stored in a closed warehouse and anyway not left in open areas exposed to rain, sand and wind.

Long periods storage

In case of long periods of storage, cases must be stored in a closed warehouse. In addition the PD meters maintenance procedures detailed in the specific manual which always accompanies the instruments must be strictly followed immediately after their un-packing and/or immediately before their installation and/or start-up. It is in any case imperative that at least the innner housing is removed from the outer housing and duly checked according to its specific maintenance procedures, before the PD meters start-up.

Electric pulse transmitters

Generality

"Petrol" PD meters may be equipped with pulse transmitters to perform the following functions:

- remote totalization of the volumes metered;
- flow rate conversion in an analog signal, normally 4 – 20 mA or alternatively 0 – 20 mA, for flow rate regulation and/or recording
- PD meter calibration and/or verification in a metering systems.

Pulse transmitters are available in the intrinsecally safe and in the explosion proof version.
The intrinsecally safe version which is the most commonly supplied an inductive type pick-up coil.
The explosion plus version normally is of electronic type but also reed switch type is available.
Both versions are described hereinafter.

Intrisecally safe inductive type pulse transmitter

This type of transmitter is used either for remote totalization (transmission of pulses scaled at 1 pulse/volumetric unit metered) either for frequency transmission (pulses to be converted into an analog signal 4 - 20 mA or alternatively 0 - 20 mA) or to feed a prover counter. Transmitter is mainly composed by a "fork" type inductive pick-up, mounted in the "reduction gear assembly" housed inside the counter base of the PD meter. The pick-up normally used is mod. AF 3,5 whose technical and dimensional characteristics are detailed in the doc. PU.01 hereto attached. The pick-up operates by means of a "vetronite" disk on which several copper sectors are present. A current change is generated when such sectors pass between the pick-up polarities.
The number of sectors may be different, in accordance to specific costumer needs.
The "vetronite" disk is normally keyed on:

1. "reduction gear asse'y" input shaft, for frequency transmission (pulse to be converted into an analog signal 4 - 20 mA or alternatively 0 - 20 mA) or to feed a prover counter;

2. "reduction gear ass'y" output shaft, i.e. downstream the "double gear" calibrator, for remote totalization (transmission of pulses scaled at 1 pulse/volumetric unit metered).

On the same "reduction gear assembly", i.e. on the same PD meter, both transmitters may be contemporarly mounted. The inductive type pick-up, as supplied, is complete with two (2) conductors, the positive one of which is shielded with a brown sheath while the negative one is shielded with a blue sheath. The two (2) conductors are wired on a terminal board housed inside an explosion-proof housing linked to the counter base.
Either the pick-up/"vetronite" disk mounting system either the conductors terminal board are shown in the underdetailed sectional drawings hereto attached, which include the "legenda" for the parts identification.

Drwg. GAC/01/E	pulse transmitter for remote totalization
Drwg. GAF/02/E	pulse transmitter for frequency transmission / prover counter
Drwg. GACF/03/E	pulse transmitter for remote totalization and for frequency transmission

Explosion proof pulse transmitters

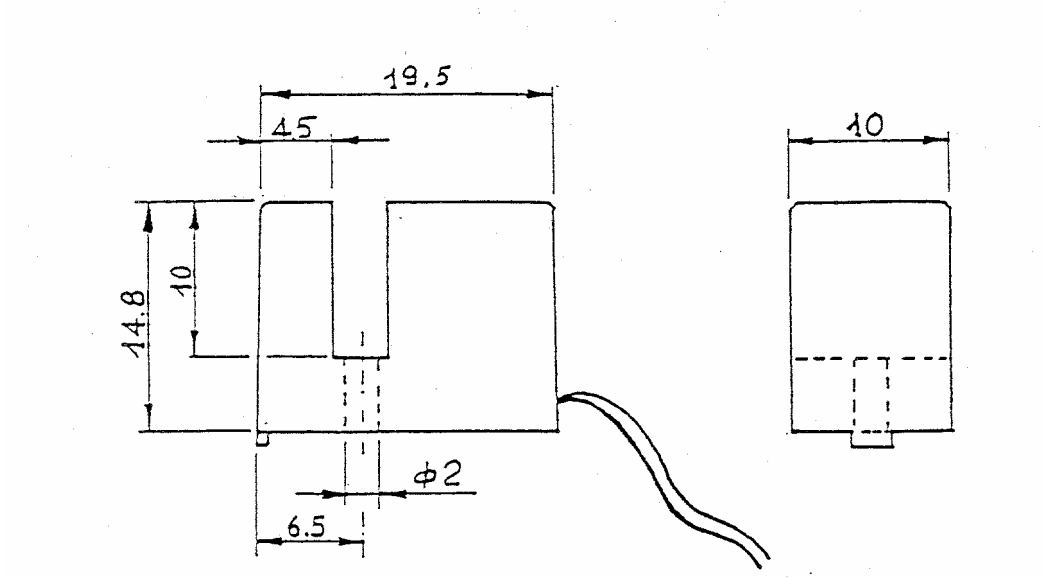
Also this type of transmitters are used either for remote totalization either for frequency transmission.
Are equipment manufactured by specialized firms and purchased as an operating component
All the types available are equipped with an input shaft which in our case is driven by the “reduction gear ass’y“ of the PD meter itself through a mechanical coupling.
Except for the model 1871 all the other models are electronic and need a specific electrical supply.
The models more commonly used and selected in accordance to the specific needs of the customer are listed herebelow and their characteristics are detailed from page 77.

Model 1871,	reed contact output, 1 or 10 ppr (pulses per revolution of input shaft)
Model 7671,	electronic, up to 100 ppr
Model 2REXI,	electronic, up tp 5000 ppr
Model 01-09,	electronic, up to 2 x 100 ppr

Doc.: PU.01

"FORK" Type inductive PICK-UP, Mod. AF 3,5

Outline dimensions

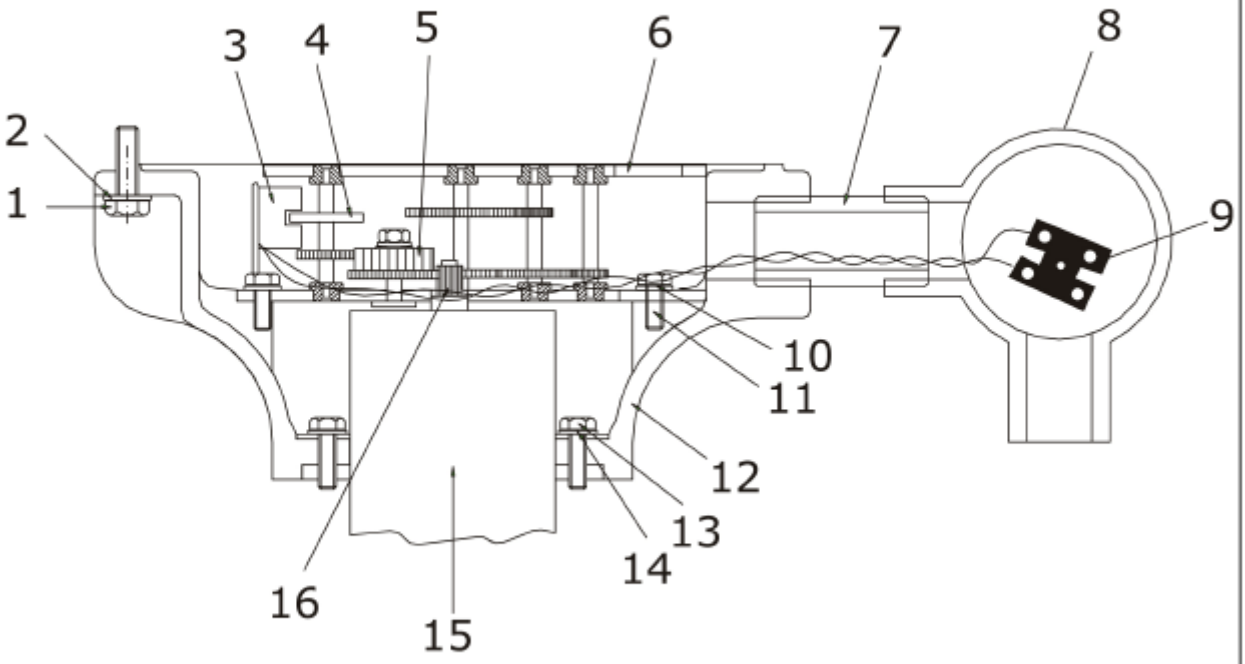


Technical characteristics

Air gap 3,5 mm
Max. frequency 5 KHz.
Accuracy 0,01 mm
Repeatability 0,01 mm

Supply voltage 8 V DC ± 20%
Harmonic content < 5%
Switching range change in current
Metal absent < 3 mA
Metal present < 1 mA

Type of protection IP 66
Conductors lenght 0,5 m



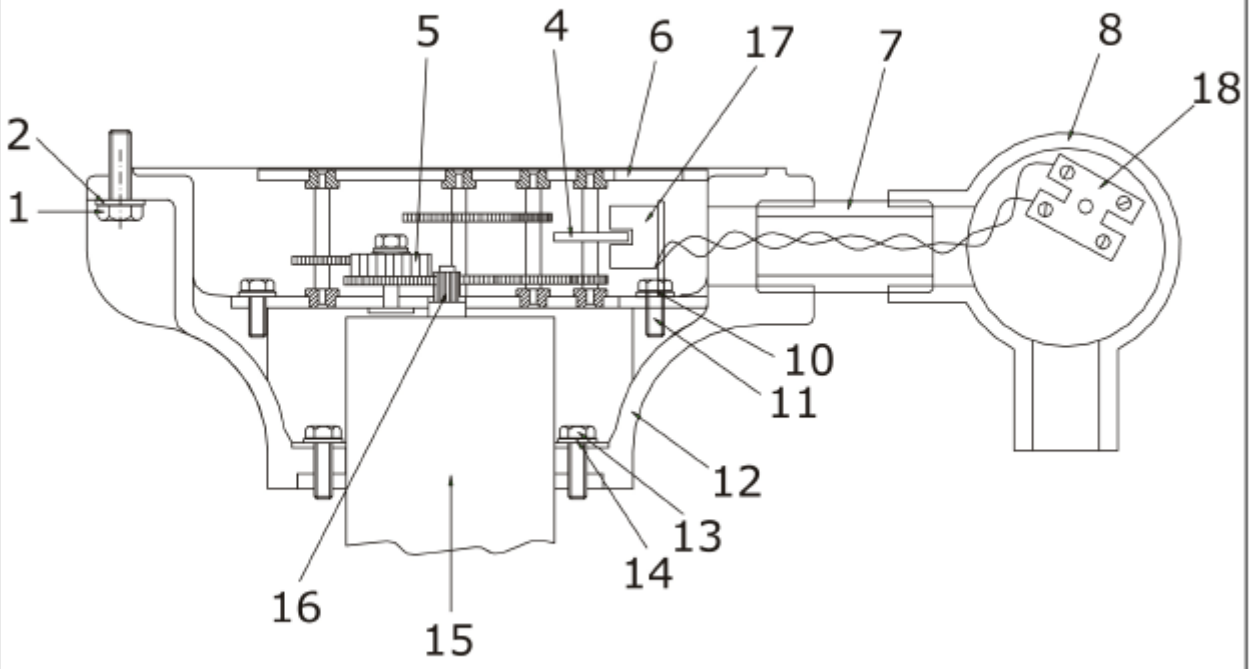
ITEM	DESCRIPTION	QTY	
18			
17			
16	Z2:1 GEAR (CONIC)	1	
15	MAGNETIC TRANSMISSION	1	
14	SPRING WASHER	4	
13	SCREW, COUNTER BASE	4	
12	COUNTER BASE	1	
11	SCREW, REDUCT GEAR ASS'Y	3	
10	SPRING WASHER	3	
9	TERMINAL STRIP, BLACK	1	
8	EXD HOUSING	1	
7	NIPPLE	1	
6	REDUC. GEAR ASS'Y	1	
5	"DOUBLE GEAR" CALIBRATOR	1	
4	VETRONITE DISK	1	
3	PICK-UP, INDUCTIVE (1 PULSE/VOLUMETRIC UNIT)	1	
2	SPRING WASHER	4	
1	SCREW, COUNTER	4	

PMS Produzione Misuratori Volumetrici
PETROL Metering Systems
Uffici e stabilimento: Via delle Valli, 25 04011 Aprilia (LT) ITALIA
Tel. ++39.06.92727658 Fax. ++39.06.92860025
Web:www.petrolms.it e-mail:petrolms@petrolms.it

REDUCTION GEAR ASS'Y EQUIPPED WITH ONE (1) PULSE TRANSMITTER FOR REMOTE TOTALIZATION

SECTIONAL DRAWING

Cliente Customer						Ordine P.Order		Commessa Job
						Compilato DRN	Controllato CHKD	Approvato APP	Disegno n° Drawing n° GAC/01/E
Revisioni Revisions	0	1	2	3	4	Data Date			
Data Date						Sigla Tag			Foglio Sheet 1/1



ITEM	DESCRIPTION	QTY	
18	TERMINAL STRIP, WHITE	1	
17	PICK-UP, INDUCTIVE (FREQUENCY)	1	
16	Z20 GEAR (CONIC)	1	
15	MAGNETIC TRANSMISSION	1	
14	SPRING WASHER	4	
13	SCREW, COUNTER BASE	4	
12	COUNTER BASE	1	
11	SCREW, REDUCT GEAR ASS'Y	3	
10	SPRING WASHER	3	
9			
8	EXO HOUSING	1	
7	NIPPLE	1	
6	REDUC. GEAR ASS'Y	1	
5	"DOUBLE GEAR" CALIBRATOR	1	
4	VETRONITE DISK	1	
3			
2	SPRING WASHER	4	
1	SCREW, COUNTER	4	

PMS Produzione Misuratori Volumetrici
PETROL Metering Systems
Uffici e stabilimento: Via delle Valli, 25 04011 Aprilia (LT) ITALIA
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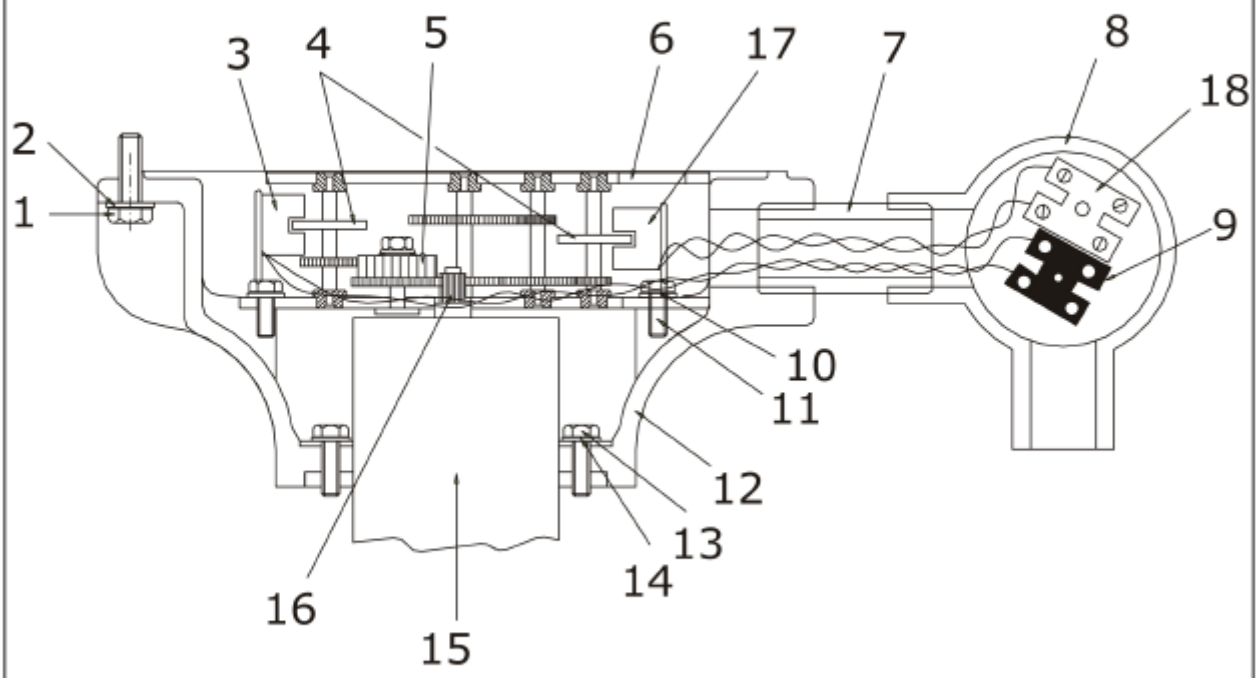
Web:www.petrolms.it e-mail:petrolms@petrolms.it

REDUCTION GEAR ASS'Y
EQUIPPED WITH ONE (1) PULSE TRANSMITTER FOR FREQUENCY TRANSMISSION

SECTIONAL DRAWING

Cliente Customer						**Ordine** P.Order		**Commessa** Job	
						Compilato DRN	**Controllato** CHKD	**Approvato** APP	**Disegno n°** Drawing n°
Revisioni Revisions	0	1	2	3	4	**Data** Date				GAF/02/E
Data Date						**Sigla** Tag				**Foglio** Sheet 1/1



ITEM	DESCRIPTION	QTY	
18	TERMINAL STRIP, WHITE	1	
17	PICK-UP, INDUCTIVE (FREQUENCY)	1	
16	Z20 GEAR (CONIC)	1	
15	MAGNETIC TRANSMISSION	1	
14	SPRING WASHER.	4	
13	SCREW, COUNTER BASE	4	
12	COUNTER BASE	1	
11	SCREW, REDUCT GEAR ASS'Y	3	
10	SPRING WASHER	3	
9	TERMINAL STRIP, BLACK	1	
8	EXD HOUSING	1	
7	NIPPLE	1	
6	REDUC. GEAR ASS'Y	1	
5	"DOUBLE GEAR" CALIBRATOR	1	
4	VETRONITE DISK	2	
3	PICK-UP, INDUCTIVE (1 PUSLE/VOLUMETRIC UNIT)	1	
2	SPRING WASHER	4	
1	SCREW, COUNTER	4	

PMS Produzione Misuratori Volumetrici
PETROL Metering Systems
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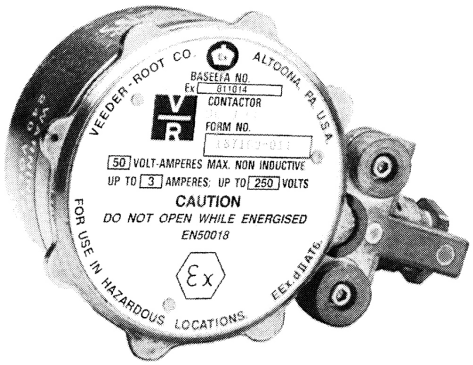
Web:www.petrolms.it e-mail:petrolms@petrolms.it

REDUCTION GEAR ASS'Y
EQUIPPED WITH TWO (2) PULSE TRANSMITTERS

SECTIONAL DRAWING

Cliente Customer							Ordine P.Order		Commessa Job	
							Compilato DRN	Controllato CHKD	Approvato APP	Disegno n° Drawing n° GACF/03/E
Revisioni Revisions	0	1	2	3	4	Data Date				
Data Date						Sigla Tag				Foglio Sheet 1/1

1871 BASEEFA PULSE TRANSMITTER



RELIABLE . . . LONG LIFE

- BASEEFA certified & CE compliance per Emc directive 89/336.
- Square wave pulse. Minimum contact bounce.
- Choice of 1, 2, 5 & 10 pulses per revolution.
- Bidirectional operation.
- Mount in any position.
- Explosion-proof construction.

APPLICATIONS

The Series 1871 pulse transmitter has been designed for use with gasoline pump computers and miscellaneous electrical counters in remote indicating and data systems. It provides fast, accurate pulsing for counters, printers, and stepping motors used with remote indicating, totalizing, and data systems.

DESCRIPTION

The pulse transmitter chops a fixed level input voltage to form a square wave pulse with minimum contact bounce for use with transistorized circuits.

The Series 1871 pulser consists of a rugged die cast explosion-proof housing with a screw type cover for easy access to the pulsing mechanism. The transmitter utilizes a dry-reed switch, magnet, and gear train, synchronized to provide 1 pulse per revolution. Long life is a feature of this unit.

MODELS

Series 1871 — Bidirectional. Specify input shaft length from table on reverse side of this page.

SPECIFICATIONS

Specifications listed are standard unless otherwise noted. Optional features listed are available at additional cost.

Pulse Frequency: 1 cycle per revolution of input shaft.

Contact Rating: Maximum 50 VA resistive, not to exceed 250 V or 3 amperes.

Type Switch: Single pole, single throw.

Contact Resistance: 500 milliohms.

Contact Bounce: 1 millisecond average.

Speed: 0 to 3000 pulses per minute. 300 rpm maximum input shaft speed.

Pulse Timing: 50% ± 10% on, the balance off.

Mounting Position: Operable in any position, clockwise or counterclockwise rotation.

Temperature: Compensated -40° to +160° F (-40° +71° C).

Torque: 3.0 oz-in. (216.2 g-cm) maximum.

Life Expectancy: Up to 200 million pulses, depending on electrical loads and input shaft speed.

Contact Protection: Arc suppression is required when used in inductive circuits. Type and value of suppression will vary with coil and coil voltages under consideration.

Housing: Explosion-Proof.

Mounting: Three 1/4 - 20 NC-2 blind tapped holes spaced 120° apart on a 2 1/2 - inch (63.5mm) diameter bolt circle are provided on the shaft end of the housing for mounting.

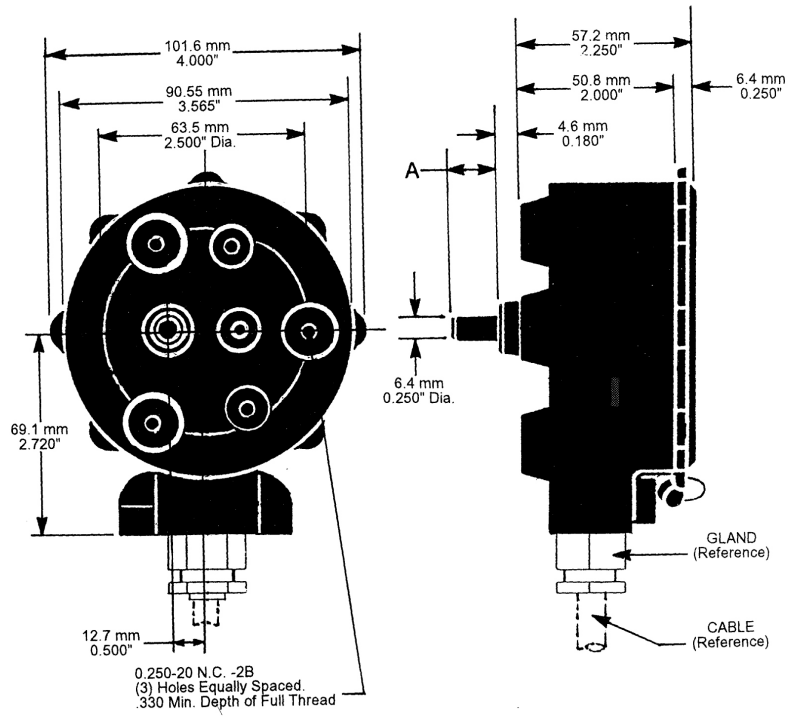
***Wiring Note:** The internal earth point screw must not exceed 4mm in length.

OPTIONS

Standard models of the 1871 have an output of 1 pulse per revolution of the input shaft and should be so specified when ordering. Other ratios may be most economically obtained via customer supplied external gearing. The simplest method to use two spur gears — one mounted on the pulse transmitter input shaft, the mating gear mounted on the customer drive. Ratio pulses of 2, 5 & 10 per revolution can be obtained by special order from the factory. Also available are non-standard input shafts, lead length variations.

(See reverse side for Dimensions)

DIMENSIONS



Dimensions

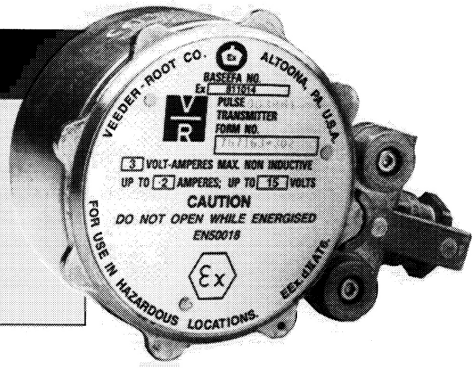
A. Shaft length standard .410 + 0.50 in. - 0.035 in. (10.4 +1.27 mm - 0.88 mm)	Any cable gland approved by BASEEFA for use with Group IIA, IIB or IIC enclosures may be used. 2 or 3 core tinned copper conductors required with metallic screen. All enclosed in an outer insulating sheath.

Other lengths available on request

7671 BASEEFA SOLID STATE PULSE TRANSMITTER

RELIABLE, LONG LIFE PULSE TRANSMITTER FOR HAZARDOUS LOCATIONS

- BASEEFA certified & CE compliance per Emc directive 89/336.
- Solid State Switching Mechanism.
- Directional Sensing.
- Single or Dual Channel.
- Optional One-way Clutch.
- Explosion-proof Housing.



DESCRIPTION

These solid state pulse transmitters provide fast and accurate signaling for remote indication, totalizing and data monitoring systems. They are BASEEFA certified for gasoline pump computers and applications that require pulsing of output shaft rotation in hazardous locations.

The output can be either dual channel with 50 pulses per revolution per channel or single channel with 100 pulses per revolution. The dual channel pulse trains can be staggered or overlapping. A staggered output allows errors to be detected on either channel or on both concurrently (power loss to pulser). An overlapping output permits the detection of direction of rotation and errors on either channel but not on both concurrently. The single channel devices are used when greater pulse density is desired and error detection is not required.

SPECIFICATIONS

Specifications listed are standard unless otherwise noted. Optional features are available at no additional cost.

Recommended Operating Conditions: Each channel:

Supply Voltage (VCC): 10 to 15 VDC, 75 mA max at 15 VDC.

Output: Dependent on load.

Switching Times: Rise Time: 2 microseconds maximum with 10 mA resistive load to ground. Fall time: 4 microseconds maximum.

Recommended Termination: See reverse side.

Rotation: Standard is bidirectional, customer specified. Optional models available with no-back feature.

Input Shaft Speed: 600 rpm maximum.

Torque: 2 oz-in. maximum (144 gm-cm).

Output Pulse: Dual channel at 50 ppr, staggered or overlapping. Single channel at 100 ppr.

Duty Cycle:

Overlapping/Quadrature: 50% ±10% high/low ratio. Second channel phase displaced by 90° ±18°.

Staggered: 75% ±5% high/low ration. Second channel displaced by 180° ±18°.

Single Channel: 50% ±10% high/low ratio.

Operating Environment: −40° to 180° F (−40° to 82° C).

Storage Environment: −67° to 257° F (−55° to 125° C).

Shaft: Specify length of either 0.410 or 0.650 inch (10.4 or 16.5 mm).

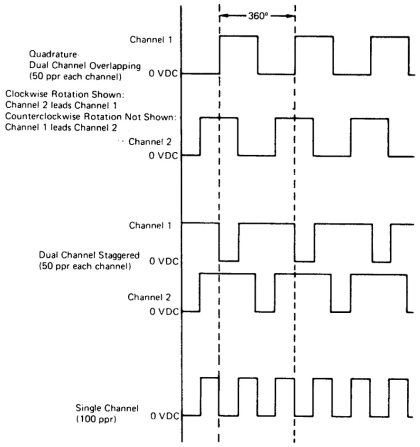
Shock: Normal Shipping.

Housing: Explosion-proof.

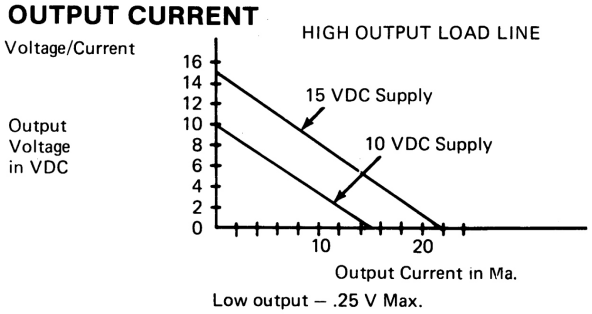
Mounting: Three 1/4-20 UNC-2B blind tapped holes, spaced 120° apart on a 2.5 in. (63.5 mm) diameter bolt circle.

Wiring Note: 1.) Should product be exposed within systems in areas where radiated fields are greater than 3 v/m", possible error in pulse count my occur.
2.) The Internal Earth Point Screw must not exceed 4mm in length.

LOGIC OUTPUT SIGNALS



OUTPUT CURRENT



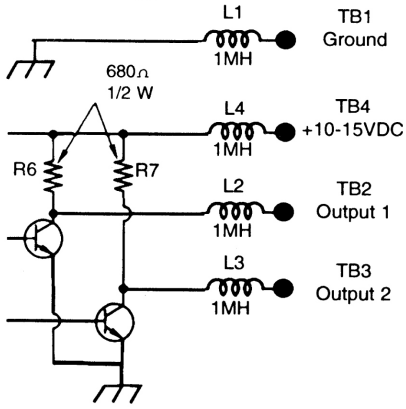
Low output – .25 V Max.

MODELS

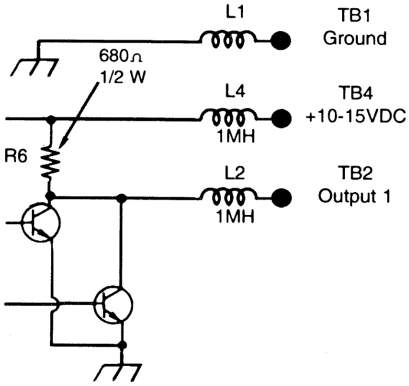
767163-xxx*	Bidirectional	Clockwise	Counter-clockwise
Dual Channel (overlap)	–30x	–40x	–50x
Dual Channel (staggered)	–31x	–41x	–51x
Single Channel	–32x	–42x	–52x

*Third digit of the suffix number indicates length of shaft. Contact factory for details.

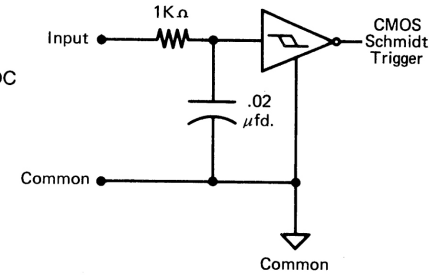
SCHEMATIC



Wiring Connections for Dual Output Models.

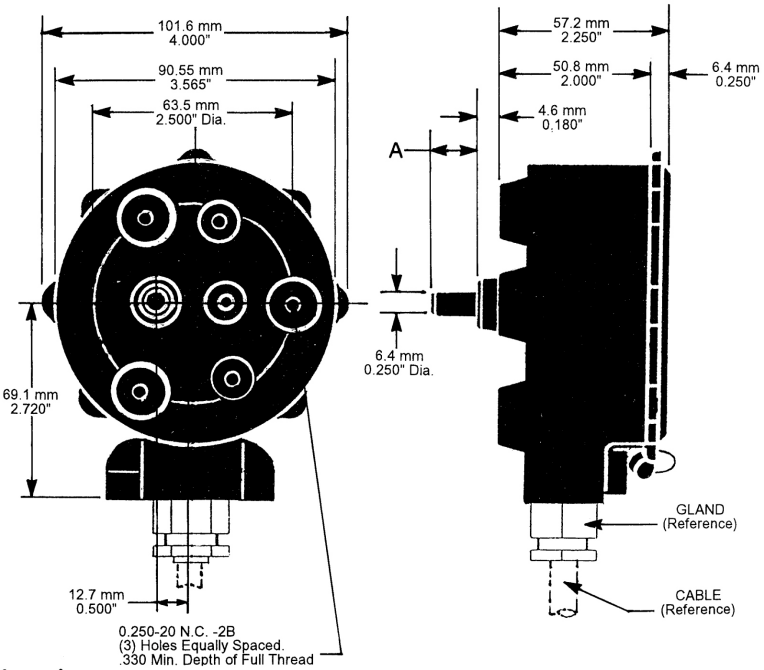


Wiring Connections for Single Output Models.



Typical Termination Schematic. Network may vary depending on application.

DIMENSIONS



Dimensions

A. Shaft length standard .410 $^{+0.50\ in.}_{-0.035\ in.}$ (10.4 $^{+1.27\ mm}_{-0.88\ mm}$)	Any cable gland approved by BASEEFA for use with Group IIA, IIB or IIC enclosures may be used. 2, 3, 4, 5 or 6 core tinned copper conductors required with metallic screen. All enclosed in an outer insulating sheath.

Other lengths available on request

ATEX CE 2REXI

Stainless Steel or Aluminum

CHARACTERISTICS

ENCODER TYPE	Hollow shaft or shaft encoder
APPROVAL	Ex II 2 G/D EEx d IIB T6
SMD - TECHNOLOGY	Strong compact electronics
HIGH IP-RATING	Std. IP 65
LOW CURRENT CONSUMPTION	To be connected directly to PLC'S and counters
SHORT CIRCUIT PROTECTION	Thermal shut down at 155°CJ
WIDE SUPPLY RANGE	Min. 4,5V to max. 30V
STRONG MEC. CONSTRUCTION	Based on 2 precision ball bearings, for harsh industrial environments

ELECTRICAL SPECIFICATIONS

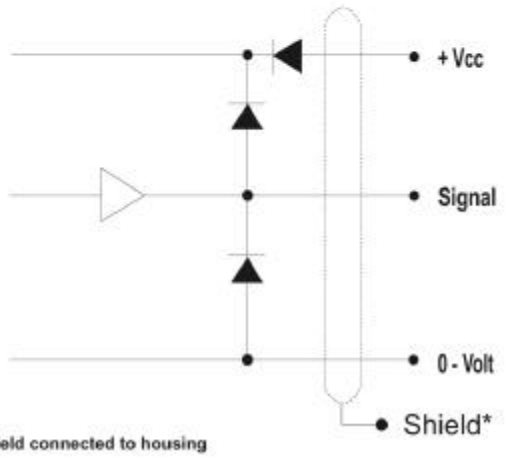
	At +25°C
Output waveform	Incremental (A, B)
Zero or index pulse	Rotation detector
Output	Totempole
Supply-voltage (Vin)	Min. 4,5V to max. 30V * Reverse polarity protection
Current (no load)	Max. 45 mA
Max. load pr. output	30 mA - (Short circuit protected) *
V Out low	Max. 500 mV @ I =10mA
Operating temp.	- 40°C to + 75°C
Storage temp.	- 40°C to + 75°C
Max. pulse frequency	300 kHz *
V out high	Min. (Vin -0,6) @ I = -10mA Min. (Vin -1,3) @ I = -25mA
Cable data	Connector
Output signals	Standard + rotation detector
EMC certified acc. to EEx certified acc. to	EN 50081-1 and EN 50082-2 EN 50014 and EN 50018 and 94 / 9 / EC (ATEX)

* = It is not recommended to combine max. value for all 3 parameters

MECHANICAL SPECIFICATIONS

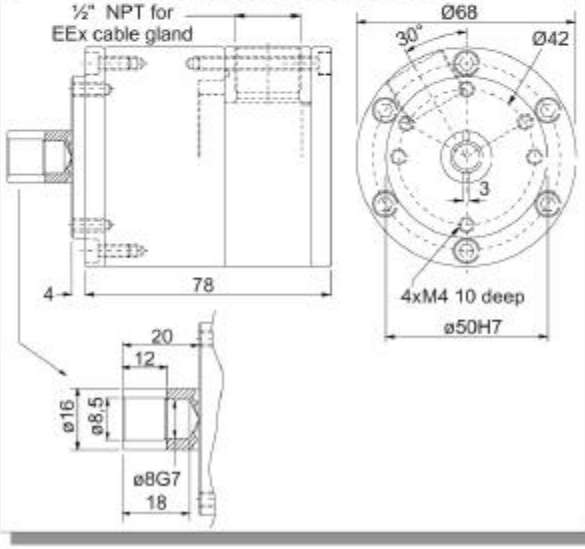
Weight	About 730 g
Materials : Housing	Aluminum
Shaft	Stainless steel
Bearings	Lifetime lubricated ball bearings
Shaft dimensions	Optional
Shaft loads	Axial max. 50 N Radial max. 50 N
Max. rev.	3.000 Rev./min.
IP-rating	Standard IP 65
Start torque	IP 66 < 0,05 Nm at 25°C IP 67 < 0,2 Nm at 25°C IP 68 < 0,2 Nm at 25°C
Mass moment of inertia	45 gcm²
Max. shock	100 G/11 ms
Bump	10 G - 16 ms (1000 x 3 Axis)
Vibration	(10 - 2000 Hz)/10 G

OUTPUT CIRCUIT



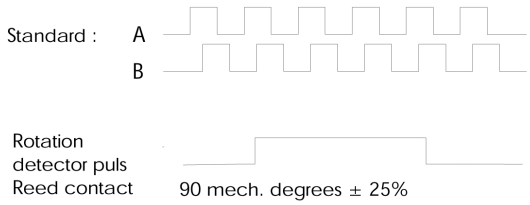
* Shield connected to housing

MECHANICAL DIMENSIONS



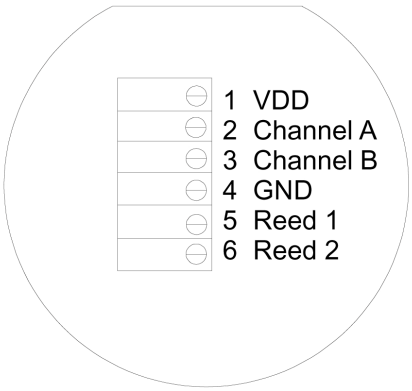
OUTPUT WAVEFORMS

Rotation: Clockwise (cw) from shaftside



CONNECTIONS

Connection clamps on PCB



ORDERING CODES

	Options	Ordering codes
Pulses pr. rev.:	No. of pulses	XXXX
Output signal:	Standard	N
Shaft dimensions*:	Optional	XX
IP-rating:	IP 65	65
Length of cable:	No. of Metre	XX
Cable take out:	Side	S

Special type: Supply 10-30V (HTL), has to be ordered specially.

*Special shafts or hollowshaft on request (inches)

PULSES/REV.

10 *	100 *	360 *	1024 *
16 *	128	400	1131 *
20 *	138	455 *	1250
30 *	144	500 *	1270
32 *	150 *	504	1500 *
36 *	180 *	560	2000 * *
50 *	200 *	600	2048 * *
60 *	250	635	2500 * *
64 *	254 *	720	3000 * *
75 *	256	800	3600 * *
90 *	300 *	1000 *	4000 * *
			4096 * *
			5000 * *

* Supplied with zero - puls.

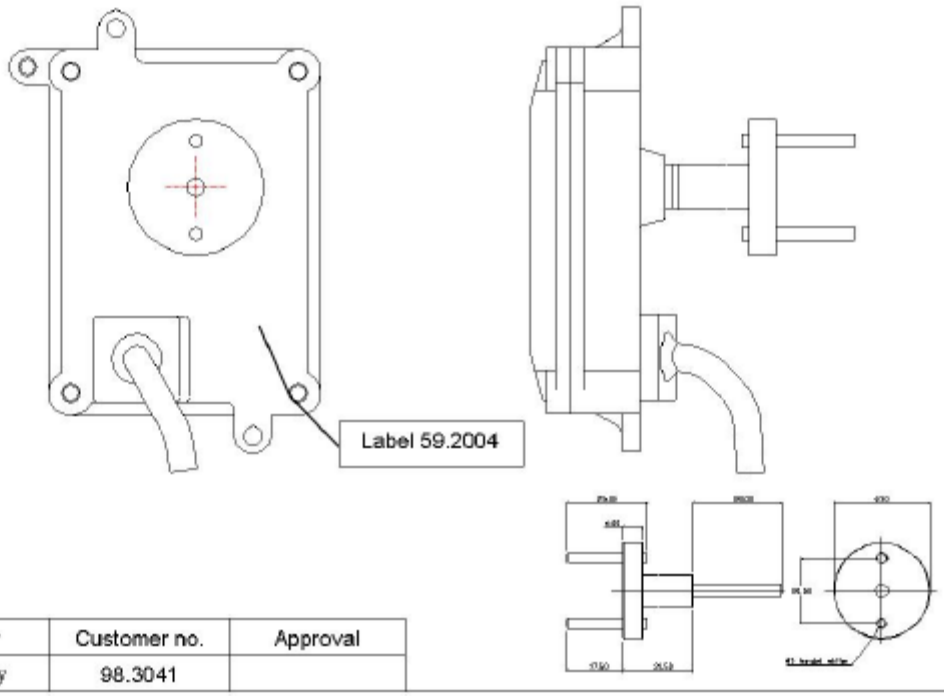
** By ordering please specify power-supply.
5V or 10-30V

Zero-puls for other counts available on request.

2REXI [ ][ ][ ][ ] [N] [ ][ ] [6][5] [ ][ ] [S]

Pulses | Output signal | Shaft | IP-rating | Length of Cable | Cable take out

Encoder type:	01-09-U, 2 x 100, 5 - 24 VDC, NPN OC		Rev. 01	of	01
Bracket Assembly Parts	Supply with Cover Kit 99.5007		Coupling Assembly Parts		62.0145
Totalizer		No.		Gearbox Type		No.		Flexcable		No.	



Customer	Customer no.	Approval
Petrol - Italy	98.3041	

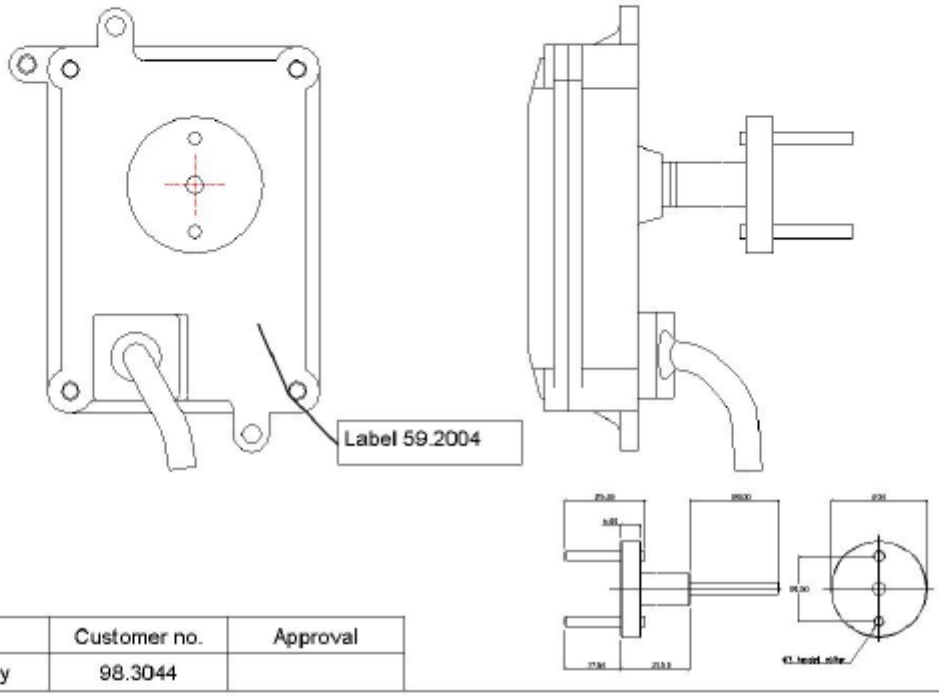
W & M Approval	PTB no. 5.552-92.14	EMC Approval	CE - EN50081-1 & EN50082-2
Safety Approval	DEMKO no. 92C. 105922X	Approval type	EEx d IIb T6
Working temp.	-40°C to +70°C	Approved Temp.	-20°C to +70°C
Sealing	1 Cover screw is sealed with lead	Labels	59.2431 and 59.2004

Pulse form	Squarewave - 50% duty cycle	Power supply	5 - 24 VDC
Phase shift	Ch1 - Ch2: 25%	Current / no load	20 mA, typically 17mA
El. Cable no.	09.4800	Output stage	NPN - OC 1k pull-up to +VDC before diode
El. Cable type	2 meters with 4 core + shield	output load max.	30 mA per channel
Shield	shield connected to housing	Output signal	2 x 100 Pulse / CCW adj.

+VDC	0VDC	Ch 1	Ch 2	Ch 3	FunctionSelect
Green	Brown	White	Yellow		

Rev. 02		
Rev. 03		
Rev.04		

Encoder type:	01-09-U, 2 x 50, 5 - 24 VDC, NPN OC		Rev. 01	of	01
Bracket Assembly Parts	Supply with Cover Kit 99.5007		Coupling Assembly Parts		62.0145
Totalizer		No.	Gearbox Type	No.	Flexcable / No.



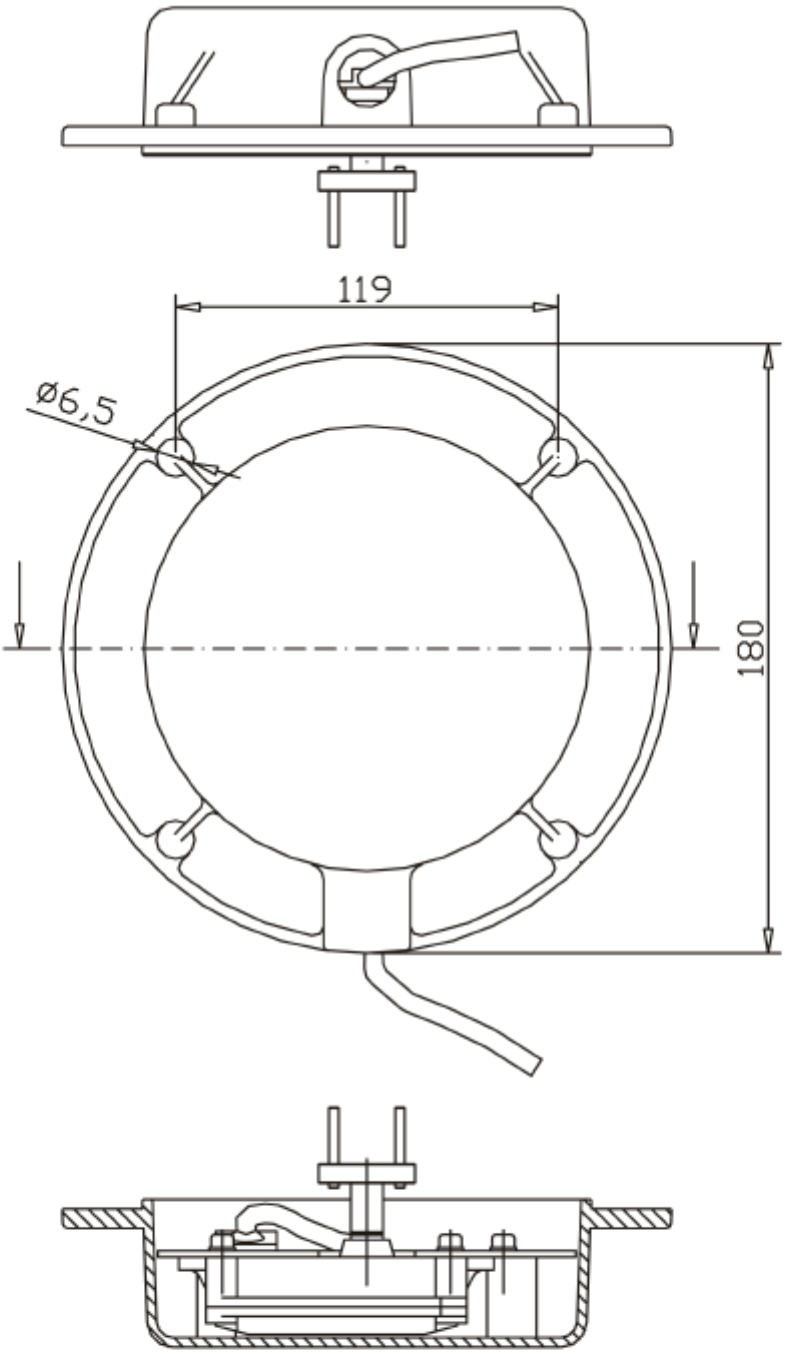
Customer	Customer no.	Approval
Petrol - Italy	98.3044	

W & M Approval	PTB no. 5.552-92.14	EMC Approval	CE - EN50081-1 & EN50082-2
Safety Approval	DEMKO no. 92C. 105922X	Approval type	EEx d IIb T6
Working temp.	-40°C to +70°C	Approved Temp.	-20°C to +70°C
Sealing	1 Cover screw sealed with lead	Labels	59.2431 and 59.2004

Pulse form	Squarewave - 50% duty cycle	Power supply	5 - 24 VDC
Phase shift	Ch1 - Ch2: 25%	Current / no load	20 mA, typically 17mA
El. Cable no.	09.4800	Output stage	NPN - OC 1k pull-up to +VDC before diode
El. Cable type	2 meters with 4 core + shield	output load max.	30 mA per channel
Shield	shield connected to housing	Output signal	2 x 50 Pulse / CCW adj.

+VDC	0VDC	Ch 1	Ch 2	Ch 3	FunctionSelect
Green	Brown	White	Yellow		

Rev. 02		
Rev. 03		
Rev.04		



PMS Produzione Misuratori Volumetrici
PETROL Metering Systems
Uffici e stabilimento: Via delle Valli, 25 04011 Aprilia (LT) ITALIA
Tel. ++39.06.92727658 Fax. ++39.06.92860025
Web:www.petrolms.it e-mail:petrolms@petrolms.it

ENCODER TYPE 01-09
OUT-LINE DIMENSIONS

Cliente Customer							Ordine P.Order		Commessa Job	
							Compilato DRN	Controllato CHKD	Approvato APP	Disegno n° Drawing n° ELT 01-09
Revisioni Revisions	0	1	2	3	4	Data Date				
Data Date						Sigla Tag				Foglio Sheet

Remote processing of electric pulses from PD meters

1. Generality

Electric pulses transmitted from the PD meters may be used for:

- totalization of metered volumes on electro-mechanic or electronic type counters;
- conversion into an analog signal 4 - 20 mA or alternatively 0 - 20 mA proportional to actual flow-rate.
- PD meters calibration/verification.

2. Signal from inductive type pulse transmitter

2.1. Totalization

For remote totalization an intrinsecally safe amplifier, Cenelec EN50.014/EN50.020 certified, which is normally installed in control room and/or in a "safe area", is used.

The amplifier provides for the inductive type pick-up supply and has available a relais output (mod. EXI-NR) or, alternatively, a transistor output (mod. EXI-NS) mainly for connection to computerized processors.

The amplifier must be powered by the electrical supply available (110 V. AC, 220 V. AC, 24 V. DC or others), whose value must be in any case specified in the P.O.

The specific/general characteristics of the amplifiers are listed in the table 1, while their out-line dimensions are shown in the attached drawing M-R/D 003/E.

For the totalization of volumes metered in volumetric units such as liters, dekalitres etc, it is necessary that:

- the amplifier is connected to pick-up/"vetronite" disk driven by the output shaft of the "reduction gear ass'y" which also drives the PD meter counter, whose volumetric reading unit must be specified in the P.O.
- the amplifier output is connected with an electro-mechanic or electronic type counter, normally supplied by others, for the visualization of the volumes metered.

The volumetric unit of the pulses as for example 1 pulse/liter or 1 pulse/dekalitre i.e. the reading unit of the electromechanic or electronic totalizer is specified in the documents accompanying the equipment.

The inductive pick-up/amplifier/electro-mechanic totalizer wiring scheme is shown in the attached drawing n. M-R/C 208/E.

2.2. Conversion into an analog signal

For pulses remote conversion into an analog signal, mod. CFC-1 frequency to current converter, normally installed in control-room, is used.
The converter provides for the inductive type pick-up supply and gives out an analog signal 4 - 20 mA or alternatively 0 - 20 mA proportional to actual flow rate.
The converter must be powered by the electrical supply available(110 V. AC, 220 V. AC, 24 V. DC or others), whose value must be in any case specified in the P.O.
The electrical characteristics of mod. CFC-1 converter are listed in the attached table 3, while its out-line dimensions are shown in the attached drawing n. M-R/D 003/E.
In order to obtain better performances from the frequency to current converter, it is recommended that its input frequency is as high as possible.
It is therefore a need that the converter is connected to pick-up/"vetronite" disk system keyed on "reduction gear assembly" input shaft.
As a matter of facts this shaft is the first available down stream the PD meter movement transmission system and therefore it has the highest available angular velocity.
The inductive pick-up/mod. CFC-1 converter wiring scheme is shown on the attached drawing n. M-R/C 004/I.

IMPORTANT. In the case that for remote conversion into an analog signal, an intrinsecally safe pulse transmission system is required, it is enough to install, just upstream the mod. CFC-1 frequency to current converter, a mod. EXI-NS amplifier, whose characteristics have been detailed in the previous pages.

In such case the pick-up/amplifier/converter wiring scheme is shown on attached drawing n. M-R/C 003/E.

2.3. Totalization and conversion into an analog signal

To have available both the remote totalization and the remote conversion into an analog signal two (2) inductive pick- up/"vetronite" disk systems are used, the first one of which keyed on the "reduction gear ass'y" output shaft and the second one keyed on the "reduction gear ass'y" input shaft of the same PD meter.

As for as amplifiers and converters are concerned please refer to previous paragraphs respectively dealing with totalization and conversion.

The inductive pick-up/amplifier and inductive pick-up/amplifier/converter wiring scheme is shown on attached drawing n. M-R/C 308/E.

2.4. Prover counter

Prover counters may be connected to intrinsecally safe or explosion proof type pulse transmitters.
The prover counter available of the input pulses which frequency must be as high possible in order to inprove the repeatability of the calibration/verification test.

3. Signal from explosion proof

3.1. Totalization

For this type of service generally requiring a low input frequency mod. 1871 pulse transmitter operated by a dry-reed contact may be used.
Otherwise should be required an high resolution of the pulses to be totalized the explosion proof pulse transmitter to be used is an electronic one which however needs a specific power supply to operate.

3.2. Conversion into an analog signal

The pulse transmitter used is related to the input frequency required by the specific application.
In any case the frequency to current converter to be used is the mod. CFC-2, whose characteristics are shown in the table 4 hereto attached.
Mod. CFC-2 provides the proper electric supply to the transmitter which is of course of electronic type and gives out the analog signal 4 – 20 mA or 0 – 20 mA required by the specific application.

3.3. Totalization and conversion into an analog signal

Mod. CFC- 2 frequency to current converter has available a signal output which reproducing the input frequency may be duly scaled and/or directly totalized.

3.4. Prover counter

It is valid what said in above paragraph 2.1 for the totalization of pulses having an high resolution, i.e. an high input frequency.

TABLE 1

INTRINSECALLY SAFE AMPLIFIER MOD. EXI-NR

Specific technical characteristics

1.1.	PROTECTION	(EEX-ia) II C T6
1.2.	CERTIFICATION	CENELEC EN 50.014 / EN50.020
1.3.	ELECTRICAL SUPPLY alternatively:	220V.a.c., standard; 110V.a.c.24V.d.c.
1.4.	INPUT CIRCUIT	intrinsecally safe

1.4.1.	voltage (V) max	15,75 V d.c.
1.4.2.	corrent (I) max	2.2 mA
1.4.3.	external capacitance (C)	< 600 nF
1.4.4.	external inductance (L)	< 1000 mH

NOTE: Recommended section for each interconnecting conductor is 1 mm²

1.5. OUTPUT CIRCUIT (RELAIS)

1.5.1.	contact type	n. 2 NO, standard;
1.5.2.	alternatively:	n. 1 SPDT n. 2 NC, n. 1 NO + n. 1 NC

1.5.3.	contacts voltage	220V.a.c.; 24V. d.c.	
1.5.4.	contacts max. current	0,4 A	4 A
1.5.5.	response time actraction	10 m sec., release 20 m sec.	
1.5.6.	contact material	AgCdO	
1.5.7.	mechanic life	10^7 operations	

FOLLOWS TABLE 1

General characteristics

1.1.	ELECTRICAL		
	1.1.1.	supply variation	+/- 10%
	1.1.2.	frequency	50 Hz.
	1.1.3.	consumption	1,5 VA
1.2.	AMBIENT		
	1.2.1.	ambient temperature	- 20 °C. / + 55 °C.
	1.2.2.	storage temperature	- 40 °C. / + 85 °C.
	1.2.3.	max relative humidity	95%
	1.2.4.	vibrations	4g on all the directions
1.3.	OPERATING		
	1.3.1.	working position	any position
	1.3.2.	maintenance	not necessary
1.4.	HOUSING		termoplastic autoextinguishing, not dripping;
	1.4.1.	quick mounting	DIN 46277 section; waall, with bracket
	1.4.2.	bracket hole	DIN 43604
	1.4.3.	center line	----------
	1.4.4.	protection	housing IP 50, terminal IP 10
	1.4.5.	weight approximate	250 g.

TABLE 2

INTRINSECALLY SAFE AMPLIFIER MOD. EXI-NS

Specific technical characteristic

1.1.	PROTECTION	(EEX-ia) II C T6
1.2.	CERTIFICATION	CENELEC EN 50.014 / EN50.020
1.3.	ELECTRICAL SUPPLY alternatively:	220V.a.c., standard; 110V.a.c.24V.d.c.
1.4.	INPUT CIRCUIT	intrinsecally safe

1.4.1.	voltage (V) max	8,6 V d.c.
1.4.2.	corrent (I) max	11 mA
1.4.3.	external capacitance (C)	< 5 µF
1.4.4.	external inductance (L)	< 250 mH

NOTE: Recommended section for each interconnecting conductor is 1 mm²

1.5. OUTPUT CIRCUIT (TRANSISTOR)

1.5.1.	max. supply	30 V. d.c.
1.5.2.	max. current	100 mA

FOLLOWS TABLE 2

General characteristics

1.5.	ELECTRICAL		
	1.5.1.	supply variation	+/- 10%
	1.5.2.	frequency	50 Hz.
	1.5.3.	consumption	1,5 VA
1.6.	AMBIENT		
	1.6.1.	ambient temperature	- 20 °C. / + 55 °C.
	1.6.2.	storage temperature	- 40 °C. / + 85 °C.
	1.6.3.	max relative humidity	95%
	1.6.4.	vibrations	4g on all the directions
1.7.	OPERATING		
	1.7.1.	working position	any position
	1.7.2.	maintenance	not necessary
1.8.	HOUSING		termoplastic autoextinguishing, not dripping;
	1.8.1.	quick mounting	DIN 46277 section; waall, with bracket
	1.8.2.	bracket hole	DIN 43604
	1.8.3.	center line	----------
	1.8.4.	protection	housing IP 50, terminal IP 10
	1.8.5.	weight approximate	250 g.

TABLE 3

FREQUENCY TO CORRENT CONVERTER MOD. CFC-1

Specific technical characteristic

1.1.	SUPPLY		220V.a.c., standard; alternatively: 110V.a.c. 24V.c.c.
1.2.	INPUT CIRCUIT		intrinsecally safe
	1.2.1.	voltage max.	8 V.
	1.2.2.	current max.	8 mA
	1.2.3.	resistance max.	< 100 Ohm
	1.2.4.	full scale minimum	1 Hz

NOTE: Recommended section for each interconnecting conductors is 1 mm²

1.3.	OUTPUT CIRCUIT		
	1.3.1.	current	4 - 20 mA standard, alternatively: 0 - 20 mA
	1.3.2.	load max.	500 Ohm
1.4.	ACCURACY		+/- 1% within 1:10 range
1.5.	LINEARITY		+/- 1% within 1:10 range

FOLLOWS TABLE 3

General characteristics

1.6.	ELECTRICAL		
	1.6.1.	supply variation	+/- 10%
	1.6.2.	frequency	50 Hz.
	1.6.3.	consumption	1,5 VA
1.7.	AMBIENT		
	1.7.1.	ambient temperature	- 20 °C / + 55 °C
	1.7.2.	storage temperature	- 40 °C / + 85 °C
	1.7.3.	max.relative humidity	95%
	1.7.4.	vibrations	4g on all the directions
1.8.	OPERATING		
	1.8.1.	working position	any position
	1.8.2.	maintenance	not necessary
1.9.	HOUSING		termoplastic autoextinguishing, not dripping;
	1.9.1.	quick mounting	DIN 46277 section; wall, with bracket
	1.9.2.	bracket hole	DIN 43604
	1.9.3.	center line	----------
	1.9.4.	protection	housing IP 50, terminal IP 10
	1.9.5.	weight approximate	250 g.

TABLE 4

FREQUENCY TO CORRENT CONVERTER MOD. CFC-2

Specific technical characteristic

1.10.	SUPPLY		220V.a.c., standard; alternatively: 110V.a.c. 24V.c.c.
1.11.	INPUT CIRCUIT		intrinsecally safe
	1.11.1.	voltage max.	24 V.
	1.11.2.	current max.	...mA
	1.11.3.	resistance max.	< 100 Ohm
	1.11.4.	full scale minimum	1 Hz

NOTE: Recommended section for each interconnecting conductors is 1 mm²

1.12.	OUTPUT CIRCUIT		
	1.12.1.	current	4 - 20 mA standard, alternatively: 0 - 20 mA
	1.12.2.	load max.	500 Ohm
1.13.	ACCURACY		+/- 1% within 1:10 range
1.14.	LINEARITY		+/- 1% within 1:10 range

FOLLOWS TABLE 4

General characteristics

1.15. ELECTRICAL

1.15.1.	supply variation	+/- 10%
1.15.2.	frequency	50 Hz.
1.15.3.	consumption	1,5 VA

1.16. AMBIENT

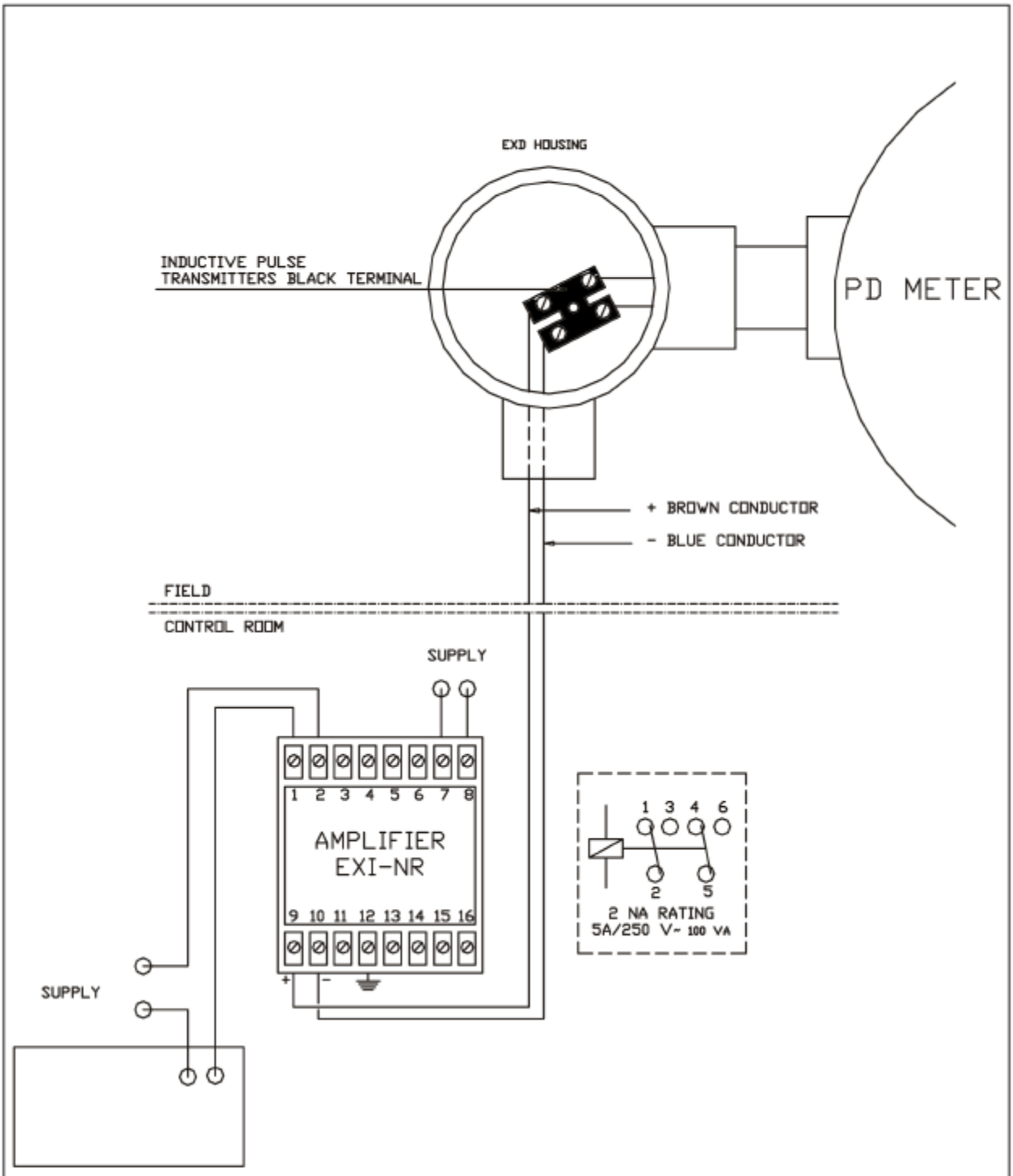
1.16.1.	ambient temperature	- 20 °C / + 55 °C
1.16.2.	storage temperature	- 40 °C / + 85 °C
1.16.3.	max.relative humidity	95%
1.16.4.	vibrations	4g on all the directions

1.17. OPERATING

1.17.1.	working position	any position
1.17.2.	maintenance	not necessary

1.18. HOUSING termoplastic autoextinguishing, not dripping;

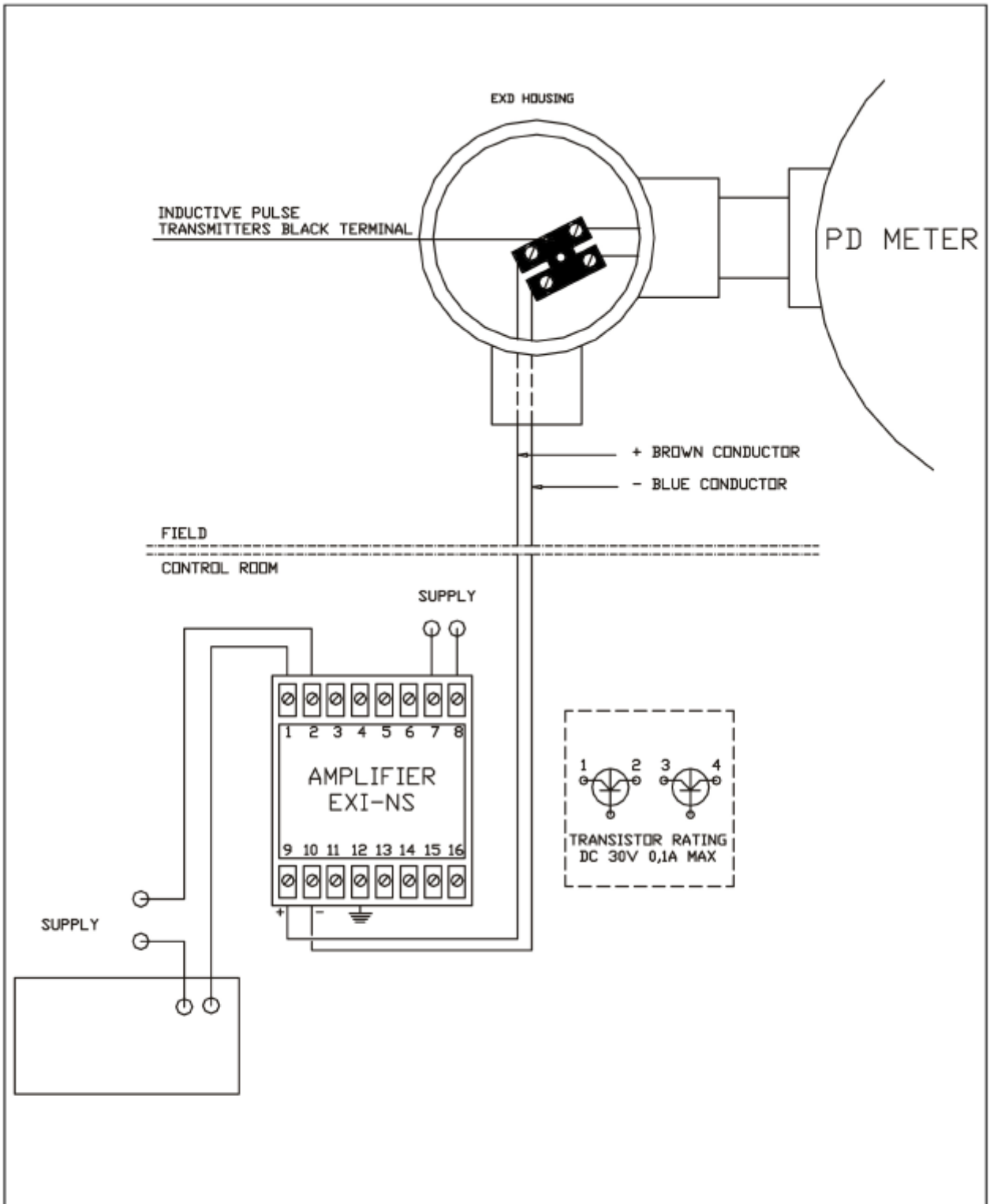
1.18.1.	quick mounting	DIN 46277 section; wall, with bracket
1.18.2.	bracket hole	DIN 43604
1.18.3.	center line	----------
1.18.4.	protection	housing IP 50, terminal IP 10
1.18.5.	weight approximate	250 g.



PMS Produzione Misuratori Volumetrici
PETROL Metering Systems
Uffici e stabilimento: Via delle Valli, 25 04011 Aprilia (LT) ITALIA
Tel. ++39.06.92727658 Fax. ++39.06.92860025
Web:www.petrolms.it e-mail:petrolms@petrolms.it

MOD. EXI-NR AMPLIFIER FOR CALIBRATED PULSES (PULSES/VOLUMETRIC UNITS) WIRING SCHEME

Cliente Customer							Ordine P.Order			Commessa Job
							Compilato DRN	Controllato CHKD	Approvato APP	Disegno n° Drawing n° M-R/C 208/E
Revisioni Revisions	0	1	2	3	4	Data Date				
Data Date						Sigla Tag				Foglio Sheet



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Tel. ++39.06.92727658 Fax. ++39.06.92860025
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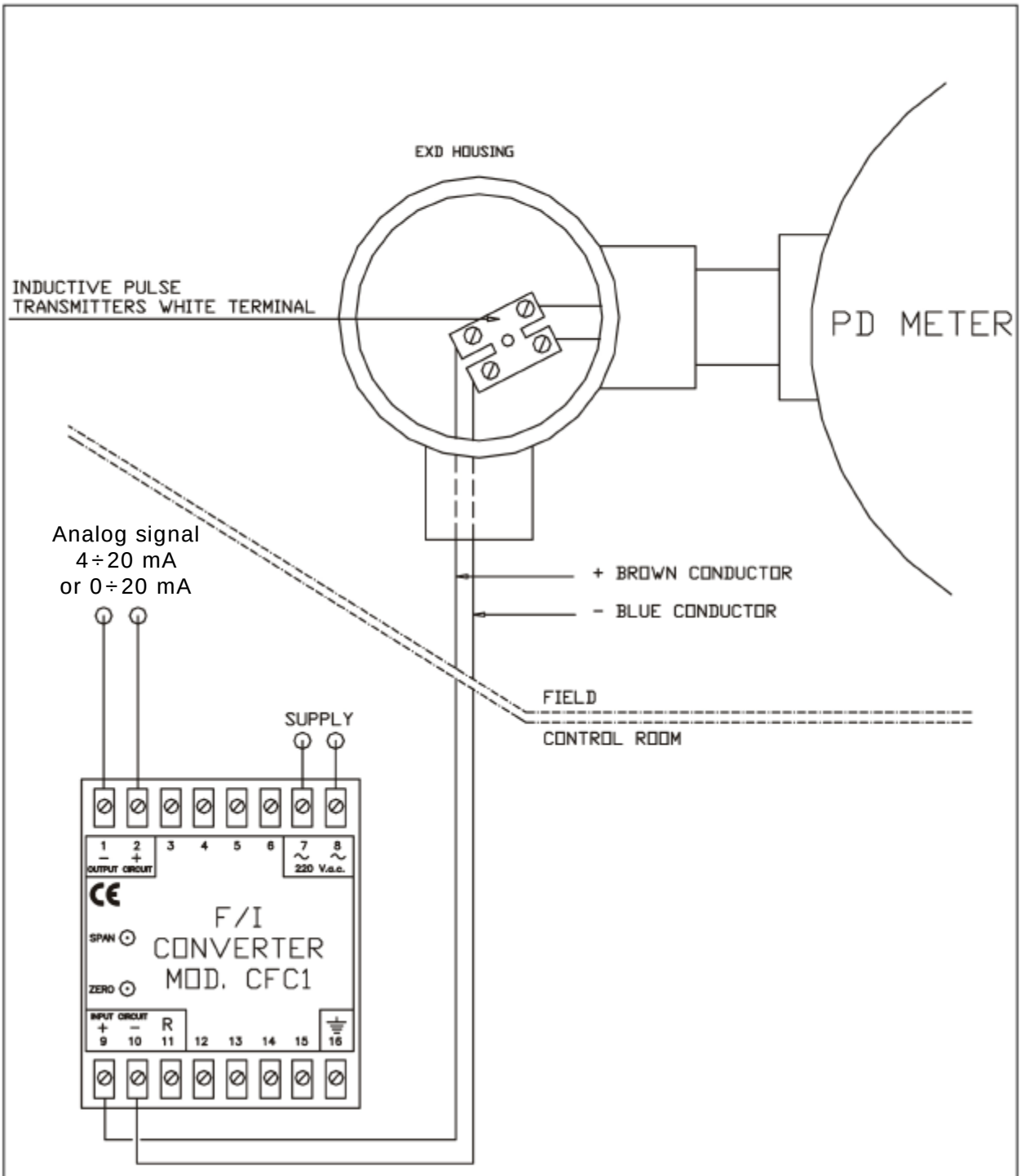
MOD. EXI-NS AMPLIFIER FOR CALIBRATED PULSES (PULSES/VOLUMETRIC UNITS) WIRING SCHEME

Cliente Customer							Ordine P.Order		Commessa Job	
							Compilato DRN	Controllato CHKD	Approvato APP	Disegno n° Drawing n° M-R/C 408/E
Revisioni Revisions	0	1	2	3	4	Data Date				
Data Date						Sigla Tag				Foglio Sheet 1/1



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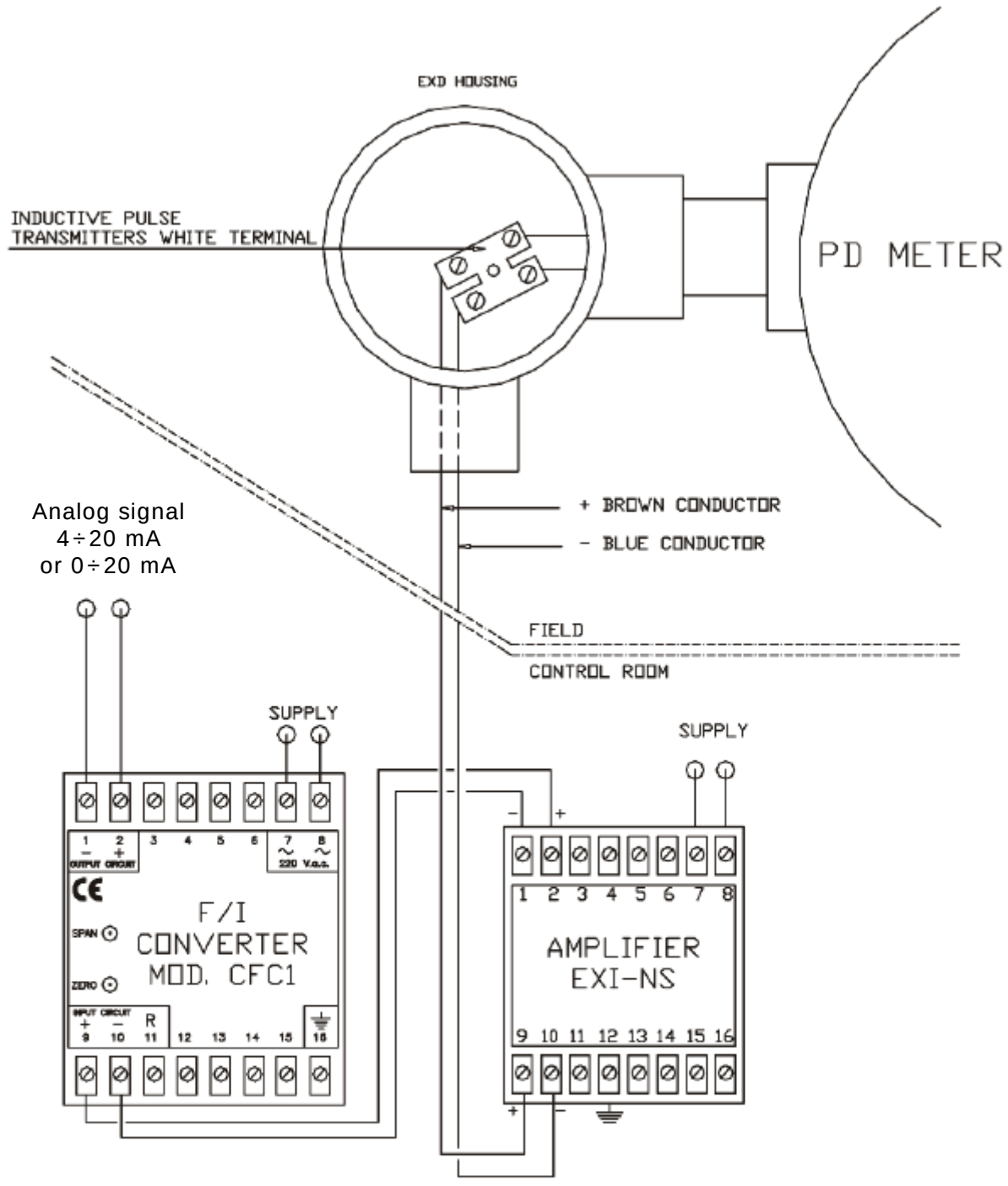
Web:www.petrolms.it e-mail:petrolms@petrolms.it

MOD. CFC-1 F/I CONVERTER WIRING SCHEME

Cliente Customer							Ordine P.Order			Commessa Job
							Compilato DRN	Controllato CHKD	Approvato APP	Disegno n° Drawing n° M-R/C 004/E
Revisioni Revisions	0	1	2	3	4	Data Date				
Data Date						Sigla Tag				Foglio Sheet



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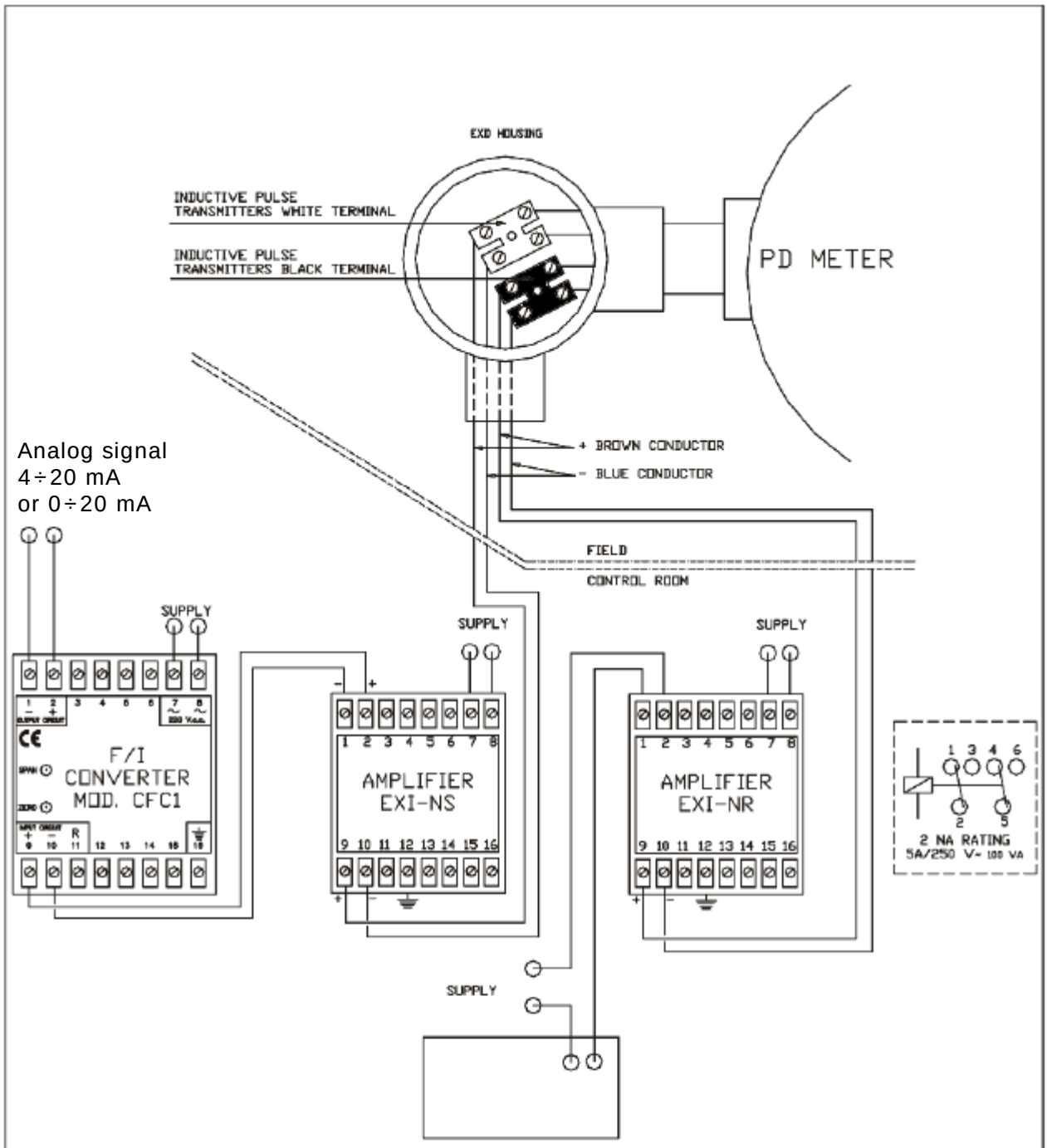
Web:www.petrolms.it e-mail:petrolms@petrolms.it

MOD. CFC-1 F/I CONVERTER (INTRINSECALLY SAFE VERSION) WIRING SCHEME

Cliente Customer							Ordine P.Order		Commessa Job	
							Compilato DRN	Controllato CHKD	Approvato APP	Disegno n° Drawing n° M-R/C 003/E
Revisioni Revisions	0	1	2	3	4	Data Date				
Data Date						Sigla Tag				Foglio Sheet



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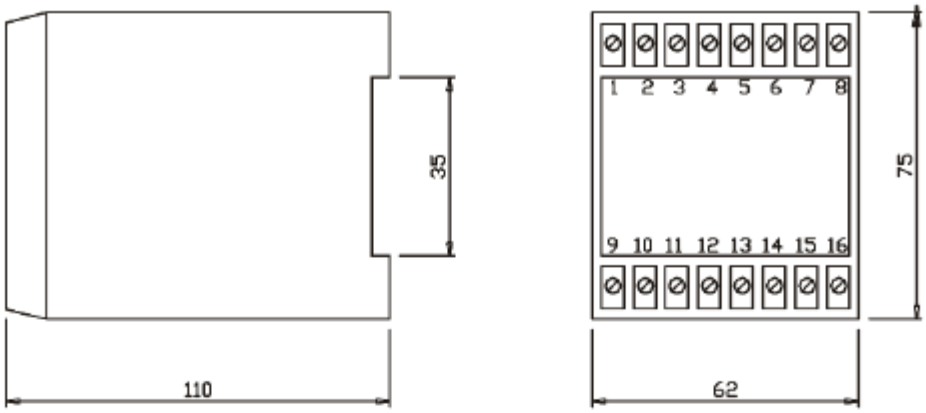
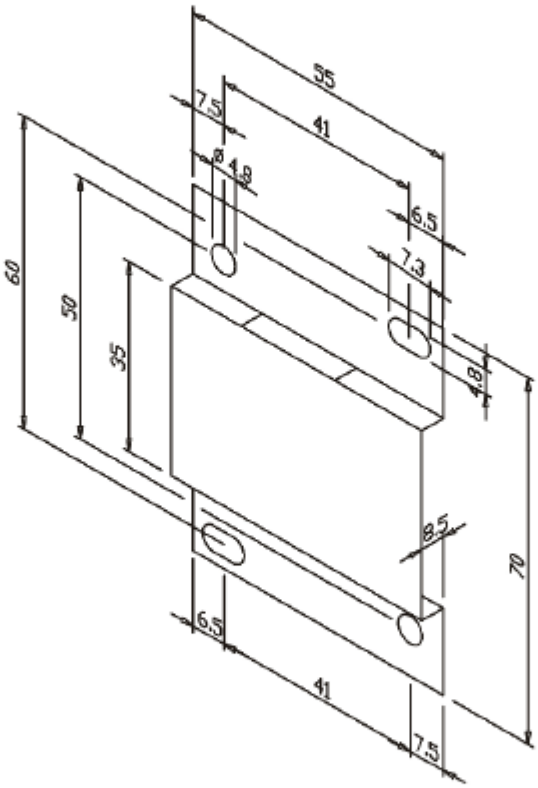
Web:www.petrolms.it e-mail:petrolms@petrolms.it

MOD. CFC-I F/I CONVERTER PLUS MOD. EXI-NR AMPLIFIER FOR CALIBRATION PULSES

Cliente Customer							Ordine P.Order		Commessa Job	
							Compilato DRN	Controllato CHKD	Approvato APP	Disegno n° Drawing n°
Revisioni Revisions	0	1	2	3	4	Data Date				M-R/C 308/E
Data Date						Sigle Tag				Foglio Sheet





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MOD. EXI-NR AMPLIFIER AND MOD. CFC-1 F/I CONVERTER

OUT-LINE DIMENSIONS

Cliente Customer							Ordine P.Order		Commessa Job	
							Compilato DRN	Controllato CHKD	Approvato APP	Disegno n° Drawing n°
Revisioni Revisions	0	1	2	3	4	Data Date				M-R/D 003/E
Data Date						Sigla Tag				Foglio Sheet

Local pneumatic presetting (mod. PNC)

The PNC (pneumatic preset counter) is an instrument engineered to permit a cheap and simple local presetting of PD meters to be installed in areas with explosive enviromental atmosphere and where is available compressed air for instrumentation.
It foresees a pneumatic pulse transmitter installed inside the PD meter counter which feed the PNC, i.e. a pneumatic system housed inside an IP-65 casing integrally mounted on the PD meter head.
In the drawings n. SCP101PNC-EN and n. SCP101PNC2-EN hereto enclosed are illustrated respectively the PNC operating scheme and its mounting configuration.

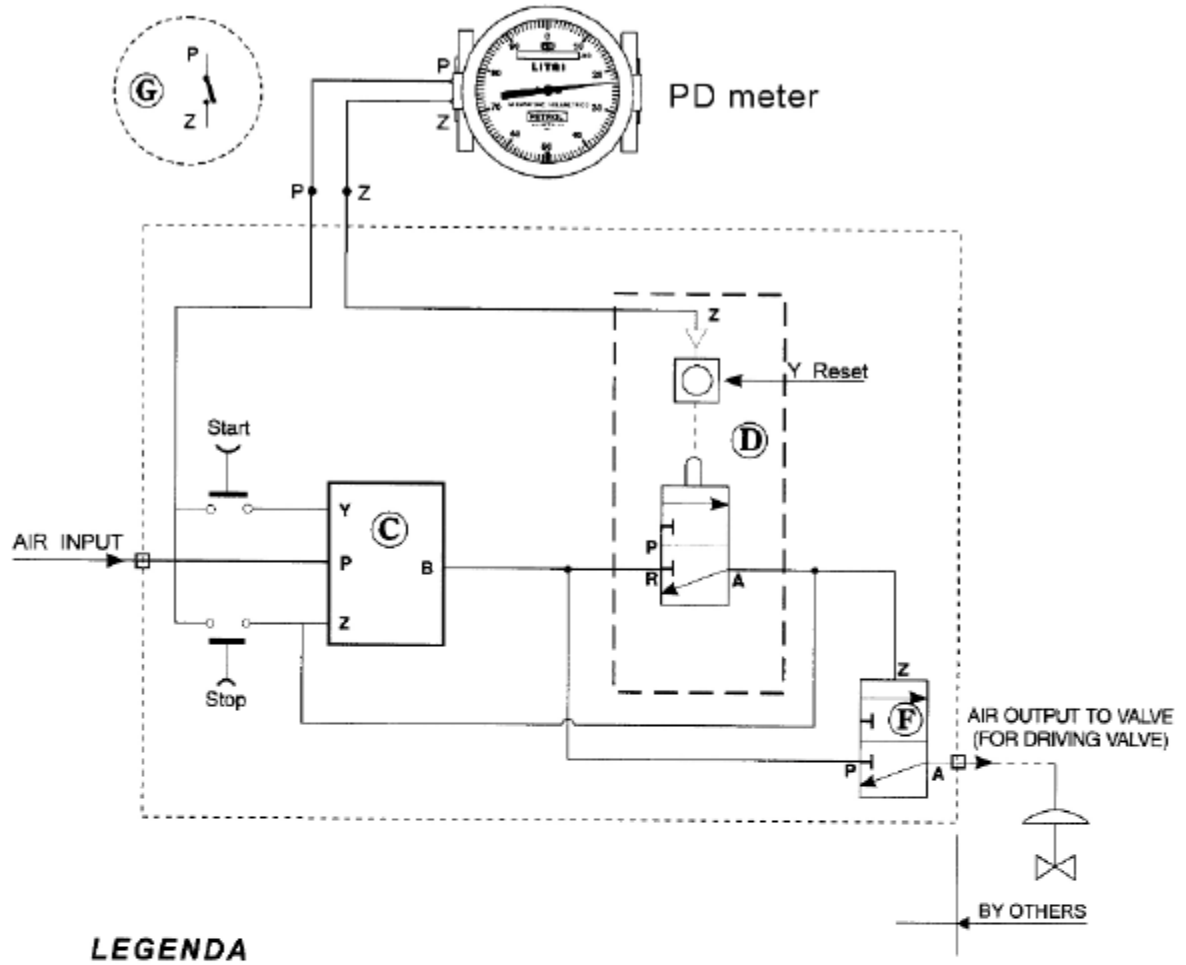
The PNC is equipped with the following main components:

1. pneumatic set-stop counter mod. 497.486 five (5) figures manually settable through single push buttons;
2. pneumatic logic for "air-open" service;
3. start and stop buttons;
4. connection to the utilization

The general characteristics of the pneumatic set-stop counter mod. 497.486 are listed in the following pages.

When using this type of pre-setting system it is recommended to take the following precautions:

- avoid a too high pneumatic pulses frequency, i.e. not over one (1) pulse per second to avoid their over-lapping with possible pulses loss,
- be sure that the PD meter counter breathing hole permits a regular air drainage,
- check that the air pressure to the transmitter and to the set-stop counter is within their specified limits.



LEGENDA

Ⓒ **Valve mod. J3-PK3**

Ⓓ **Preset mod. 0.497.486**

Ⓕ **Valve mod. VL/O 3PH3**

Ⓖ **Pneumatic switch mod. S-3-PK-3-B (installed on the PD flowmeter)**

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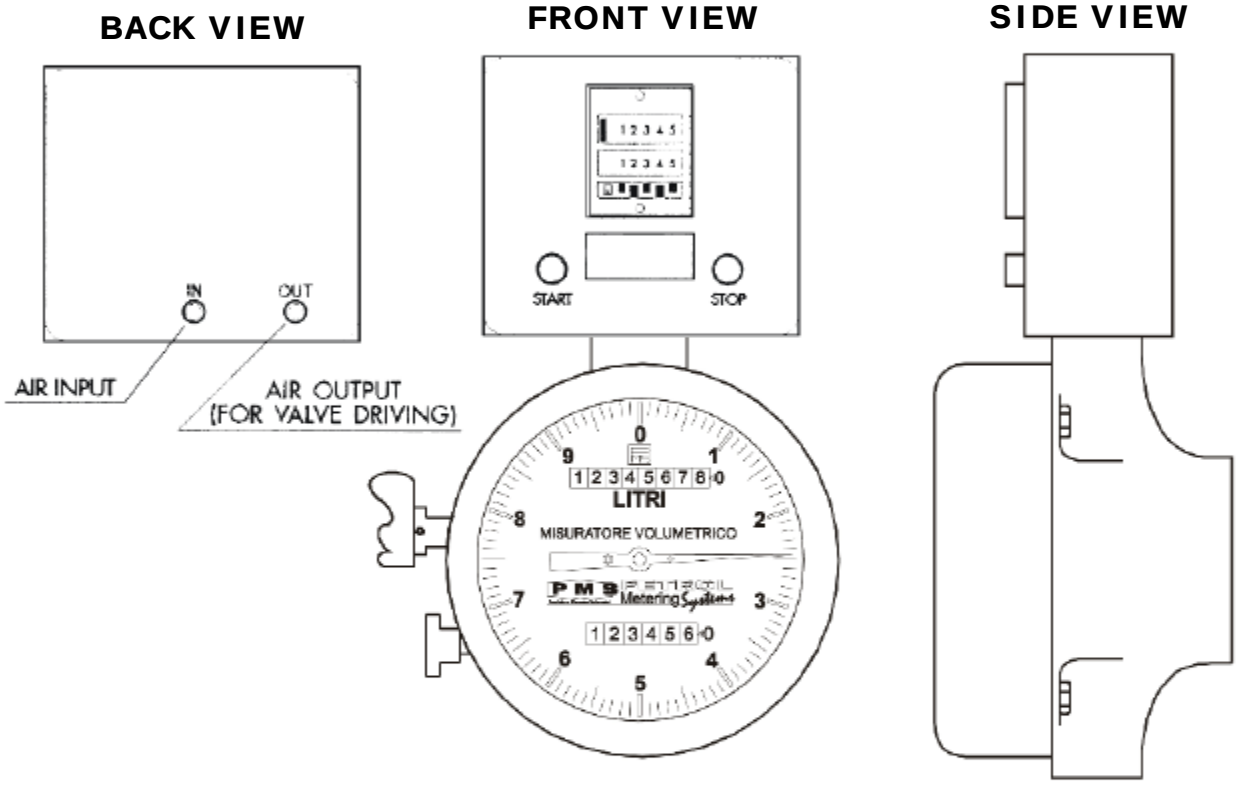
MISURATORI VOLUMETRICI "PETROL"
"PETROL PD METERS"

"PETROL" PNEUMATIC PRESET COUNTER MOD. "PNC"

OPERATING SCHEME

Cliente Customer							Ordine P.Order		Commessa Job	
							Compilato DRN	Controllato CHKD	Approvato APP	Disegno n° Drawing n° SCPIDIPNC-EN.doc
Revisioni Revisions	0	1	2	3	4	Data Date				
Data Date						Sigle Tag				Foglio Sheet 1 / Di Of 1

PNC PRESET



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MISURATORI VOLUMETRICI "PETROL"
"PETROL PD METERS"

"PETROL" PNEUMATIC PRESET COUNTER MOD. "PNC"

MOUNTING CONFIGURATION

Cliente Customer							Ordine P.Order			Commessa Job	
							Compilato DRN	Controllato CHKD	Approvato APP	Disegno n° Drawing n°	
Revisioni Revisions	0	1	2	3	4	Data Date				SCPI01PNC2-EN.DOC	
Data Date						Sigle Tag				Foglio Sheet 1	Di Of 1

SET STOP COUNTER MOD. 497.486

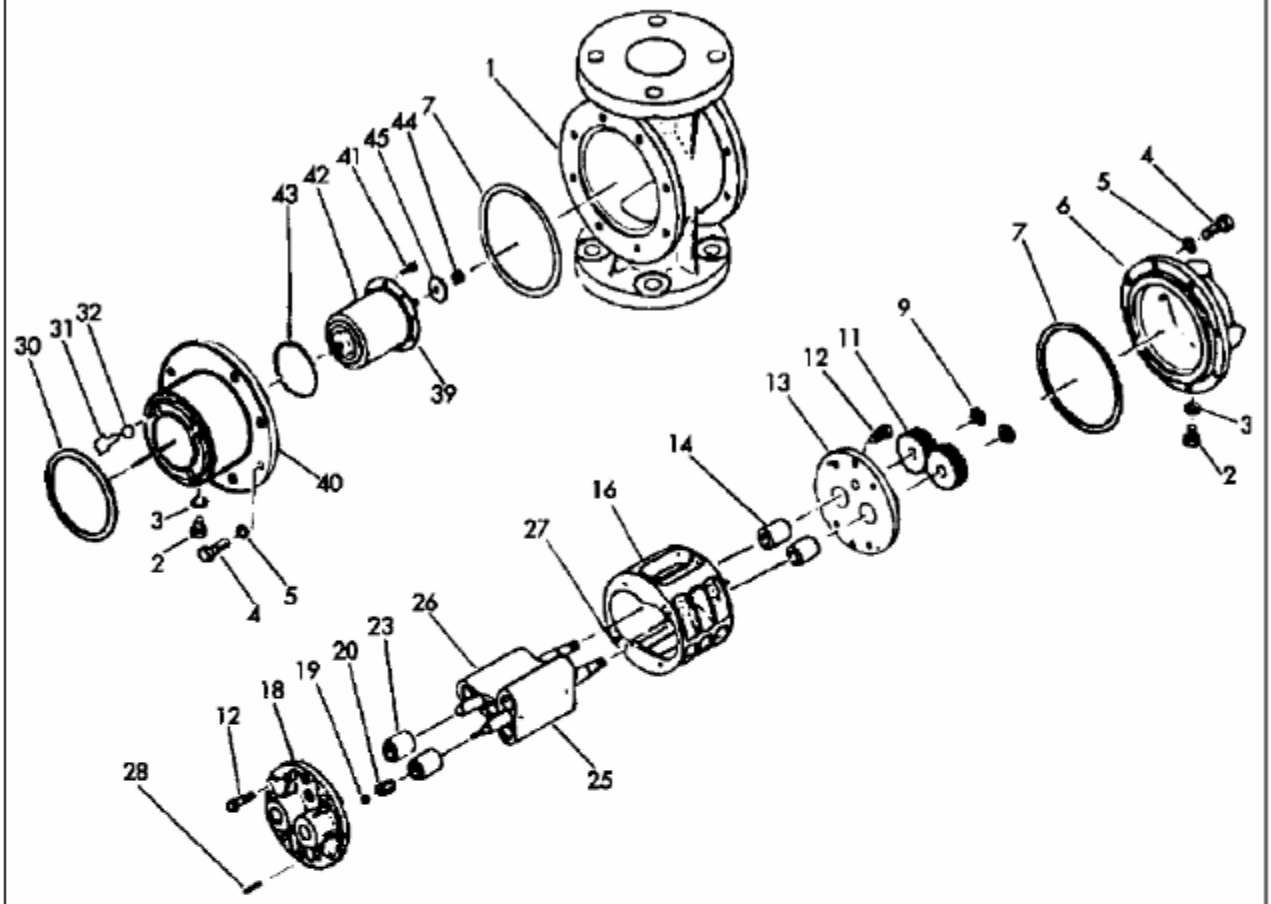
GENERAL CHARACTERISTICS

Display	5-digit indication of count and preset value, depending on version
Digit height	4 mm
Service pressure	2...8 bar
Air quality	Oilfree
Filter pore width	< 40 µm
Operating temperature	0... + 60 °C
Connection	Hose couple M5 or rapid-fit connection (depending on version)
Mounting	Front panel
Mounting position	Horizontal roller axis
Protection class (IEC 144)	IP 40 with hoses connected; for higher degree or protection we recommend clear covers
Count input	Adding
Min. pulse length	8 ms
Max. counting frequency	20 Hz
Pulse duty factor	1:1
Reset	▪ Manual with button ▪ By external pneumatic signal, Min. pulse length 180 ms ▪ Automatic reset after preset has been reached (only in version with automatic reset)
Reset fraquency	Max. 1 per 2 s
Signal duration	From when preset has been reached until reset; at 3 bar, counter with automatic reset 300...340 ms

Attention! Minimum time period between last count pulse and pneumatic reset is 50 ms.

Exploded views with legenda PD meters

Includes:



PD meter, mod. 51-11

Mod. 51/11							Sigla Tag				
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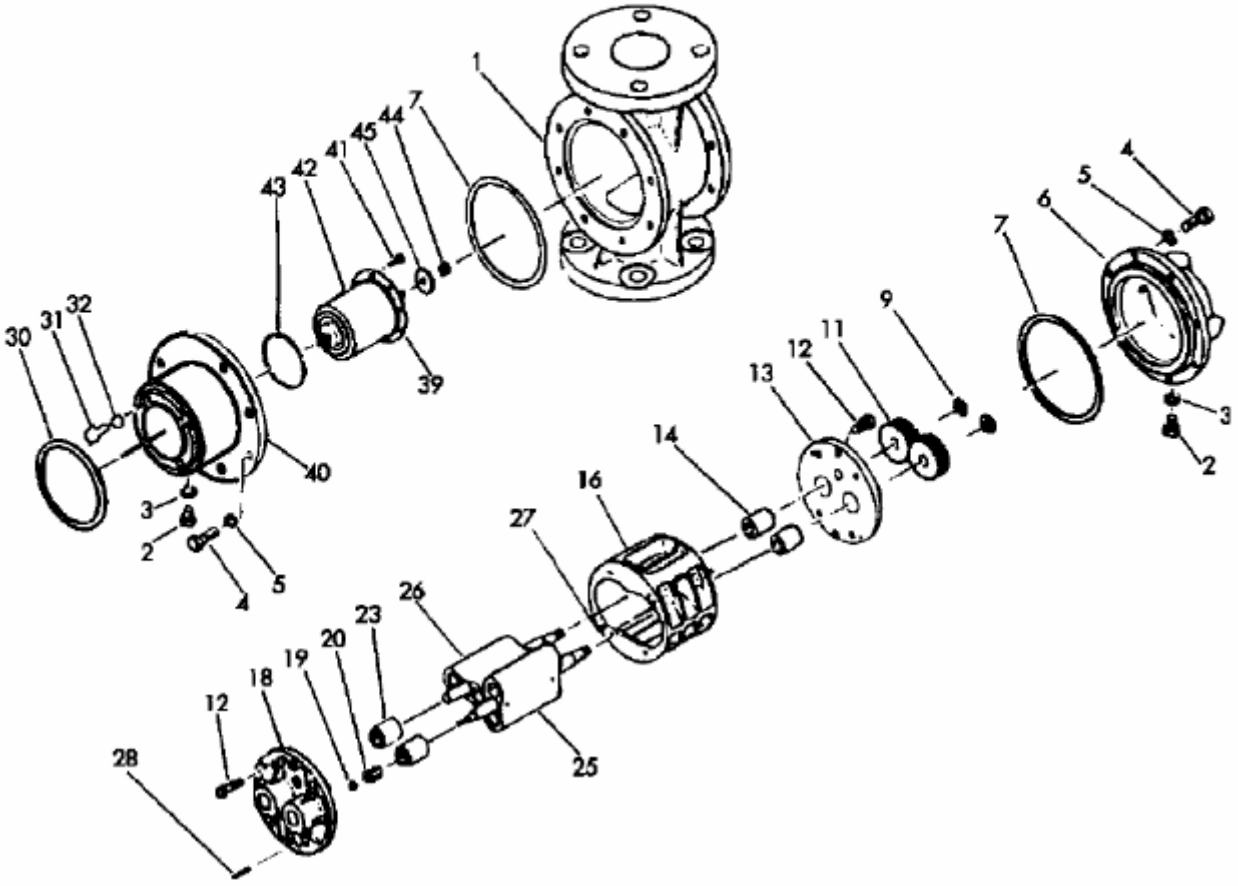
Cliente Customer							Ordine P.Order			Commessa Job	
							Compilato DRN	Controllato CHKD	Approvato APP	Disegno n° Drawing n°	
Revisioni Revisions	0	1	2	3	4	Data Date				IG-EXP_IE_TD.doc	
Data Date						Sigla Tag				Foglio Sheet	Di Of

45	INGRANAGGIO TRASMISSIONE	MAGNETIC COUPLING GEAR	1	90			
44	DADO BLOCCO INGR. DI TRASMIS.	LOCK NUT, TRANSMISSION	1	89			
43	GUARNIZIONE TRASMISSIONE	GASKET, TRANSMISSION	1	88			
42	TRASMISSIONE MAGNETICA	MAGNETIC COUPLING ASS'Y	1	87			
41	BULLONE TRASMISSIONE	BOLT TRANSMISSION	8	86			
40	COP. ANT. CORPO ESTERNO	FRONT COVER	1	85			
39	FLANGIA BLOCCAGGIO TRASMISS.	FLANGE, MAGNETIC TRANSMISS.	1	84			
38				83			
37				82			
36				81			
35				80			
34				79			
33				78			
32	RONDELLA ELASTICA SUPPORTO	SPRING WASHER, COUNTER	4	77			
31	BULLONI SUPPORTO TESTATA	BOLT, COUNTER	4	76			
30	GUARNIZIONE SUPP. TESTATA	GASKET, COUNTER	1	75			
29				74			
28	SPINA COP.ANT. CAMERA DI MIS.	PIN, FRONT END PLATE	1	73			
27	SPINA GUIDA CAMERA DI MISURA	PIN, INNER BODY	4	72			
26	ASSIEME ROTORE "B"	ROOTS ASS'Y	1	71			
25	ASSIEME ROTORE "A"	ROOTS ASS'Y	1	70			
24				69			
23	BOCCOLE ANTERIORI IN GRAFITE	BEARING, FRONT	2	68			
22				67			
21				66			
20	INGRANAGGIO ROTORE	ROTOR GEAR	1	65			
19	DADO DI BLOCCO ROTORE	LOCK NUT TRANSMISSION	1	64			
18	COP.ANT. CAMERA DI MISURA	FRONT END PLATE	1	63			
17				62			
16	CORPO CAMERA DI MISURA	INNER BODY	1	61			
15				60			
14	BOCCOLE POSTERIORI IN GRAFITE	BEARING, REAR	2	59			
13	COP.POS. CAMERA DI MISURA	REAR END PLATE	1	58			
12	BULLONE CAMERA DI MISURA	BOLT, INNER HOUSING	8	57			
11	INGRANAGGI DI SINCRONISMO	TIMING GEAR	2	56			
10				55			
9	DADO DI BLOCCO INGRANAGGI	LOCK NUT, SHAFTS	2	54			
8				53			
7	GUARNIZIONE CORPO	GASKET BODY	2	52			
6	COP. POS. CORPO ESTERNO	REAR COVER	1	51			
5	GROVER COPERCHI ESTERNI	SPRING WASHER, COVER	8	50			
4	BULLONE COPERCHI ESTERNI	BOLT COVER	8	49			
3	GUARNIZIONE DRENAGGIO	GASKET, DRAIN	4	48			
2	TAPPO DRENAGGIO SFIATO	PLUG, DRAIN	4	47			
1	CORPO ESTERNO	OUTER BODY	1	46			
P.N.	**DESCRIZIONE**	**DESCRIPTION**	**Q**	**P.N.**	**DESCRIZIONE**	**DESCRIPTION**	**Q**
Mod.		51/11					

PD meter, models 51-11

LEGENDA



PD meter, mod. 12-22

Mod. 12/22							Sigla Tag				
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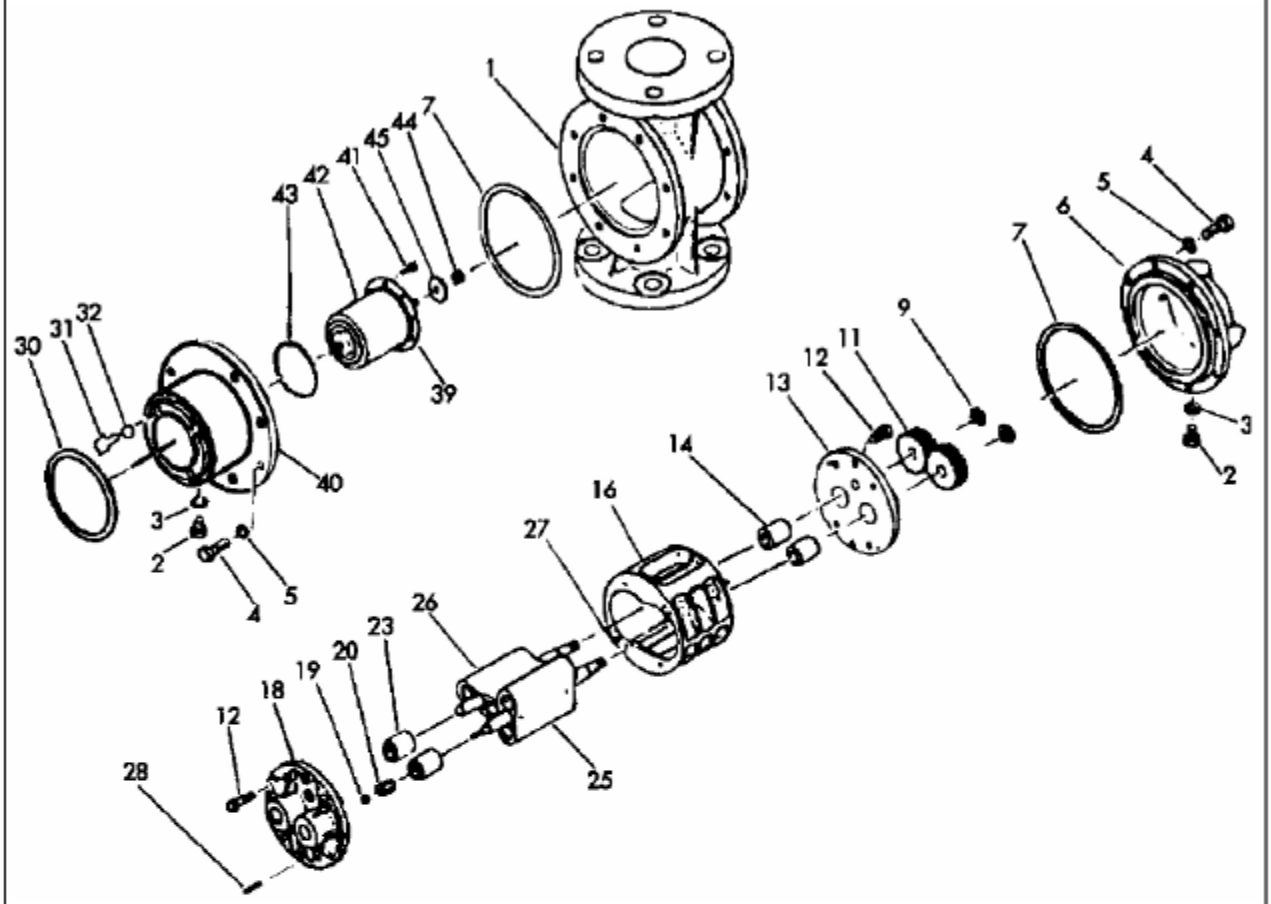
Cliente Customer							Ordine P.Order			Commessa Job	
							Compilato DRN	Controllato CHKD	Approvato APP	Disegno n° Drawing n° 16-EXP_IE_T02.doc	
Revisioni Revisions	0	1	2	3	4	Data Date					
Data Date						Sigla Tag				Foglio Sheet	Di Of

45	INGRANAGGIO TRASMISSIONE	MAGNETIC COUPLING GEAR	1	90			
44	DADO BLOCCO INGR. DI TRASMIS.	LOCK NUT, TRANSMISSION	1	89			
43	GUARNIZIONE TRASMISSIONE	GASKET, TRANSMISSION	1	88			
42	TRASMISSIONE MAGNETICA	MAGNETIC COUPLING ASS'Y	1	87			
41	BULLONE TRASMISSIONE	BOLT TRANSMISSION	8	86			
40	COP. ANT. CORPO ESTERNO	FRONT COVER	1	85			
39	FLANGIA BLOCCAGGIO TRASMISS.	FLANGE, MAGNETIC TRANSMISS.	1	84			
38				83			
37				82			
36				81			
35				80			
34				79			
33				78			
32	RONDELLA ELASTICA SUPPORTO	SPRING WASHER, COUNTER	4	77			
31	BULLONI SUPPORTO TESTATA	BOLT, COUNTER	4	76			
30	GUARNIZIONE SUPP. TESTATA	GASKET, COUNTER	1	75			
29				74			
28	SPINA COP.ANT. CAMERA DI MIS.	PIN, FRONT END PLATE	1	73			
27	SPINA GUIDA CAMERA DI MISURA	PIN, INNER BODY	4	72			
26	ASSIEME ROTORE "B"	ROOTS ASS'Y	1	71			
25	ASSIEME ROTORE "A"	ROOTS ASS'Y	1	70			
24				69			
23	BOCCOLE ANTERIORI IN GRAFITE	BEARING, FRONT	2	68			
22				67			
21				66			
20	INGRANAGGIO ROTORE	ROTOR GEAR	1	65			
19	DADO DI BLOCCO ROTORE	LOCK NUT TRANSMISSION	1	64			
18	COP.ANT. CAMERA DI MISURA	FRONT END PLATE	1	63			
17				62			
16	CORPO CAMERA DI MISURA	INNER BODY	1	61			
15				60			
14	BOCCOLE POSTERIORI IN GRAFITE	BEARING, REAR	2	59			
13	COP.POS. CAMERA DI MISURA	REAR END PLATE	1	58			
12	BULLONE CAMERA DI MISURA	BOLT, INNER HOUSING	8	57			
11	INGRANAGGI DI SINCRONISMO	TIMING GEAR	2	56			
10				55			
9	DADO DI BLOCCO INGRANAGGI	LOCK NUT, SHAFTS	2	54			
8				53			
7	GUARNIZIONE CORPO	GASKET BODY	2	52			
6	COP. POS. CORPO ESTERNO	REAR COVER	1	51			
5	GROVER COPERCHI ESTERNI	SPRING WASHER, COVER	16	50			
4	BULLONE COPERCHI ESTERNI	BOLT COVER	16	49			
3	GUARNIZIONE DRENAGGIO	GASKET, DRAIN	4	48			
2	TAPPO DRENAGGIO SFIATO	PLUG, DRAIN	4	47			
1	CORPO ESTERNO	OUTER BODY	1	46			
P.N.	**DESCRIZIONE**	**DESCRIPTION**	**Q**	**P.N.**	**DESCRIZIONE**	**DESCRIPTION**	**Q**
Mod.		12/22					

PD meter, models 12-22

LEGENDA



PD meter, mod. 53-13

Mod. 53/13							Sigla Tag				
PMS Produzione Misuratori Volumetrici — PETROL Metering Systems Uffici e stabilimento: Via delle Valli, 25 04011 Aprilia (LT) ITALIA Tel. ++39.06.92727658 Fax. ++39.06.92860025 Web:www.petrolms.it e-mail:petrolms@petrolms.it							MISURATORI VOLUMETRICI "PETROL" A DOPPIA CASSA "PETROL" PD METER DOUBLE CASE TYPE VISTA ESPLOSA EXPLODED VIEW DRAWING				
Cliente Customer							Ordine P.Order		Commessa Job		
							Compilato DRW	Controllato CHKD	Approvato APP	Disegno n° Drawing n°	
Revisioni Revisions	0	1	2	3	4	Data Date				IG-EXP_IE_T03.doc	
Data Date						Sigla Tag				Foglio Sheet	Di Of

45	INGRANAGGIO TRASMISSIONE	MAGNETIC COUPLING GEAR	1	90			
44	DADO BLOCCO INGR. DI TRASMIS.	LOCK NUT, TRANSMISSION	1	89			
43	GUARNIZIONE TRASMISSIONE	GASKET, TRANSMISSION	1	88			
42	TRASMISSIONE MAGNETICA	MAGNETIC COUPLING ASS'Y	1	87			
41	BULLONE TRASMISSIONE	BOLT TRANSMISSION	8	86			
40	COP. ANT. CORPO ESTERNO	FRONT COVER	1	85			
39	FLANGIA BLOCCAGGIO TRASMISS.	FLANGE, MAGNETIC TRANSMISS.	1	84			
38				83			
37				82			
36				81			
35				80			
34				79			
33				78			
32	RONDELLA ELASTICA SUPPORTO	SPRING WASHER, COUNTER	4	77			
31	BULLONI SUPPORTO TESTATA	BOLT, COUNTER	4	76			
30	GUARNIZIONE SUPP. TESTATA	GASKET, COUNTER	1	75			
29				74			
28	SPINA COP.ANT. CAMERA DI MIS.	PIN, FRONT END PLATE	1	73			
27	SPINA GUIDA CAMERA DI MISURA	PIN, INNER BODY	4	72			
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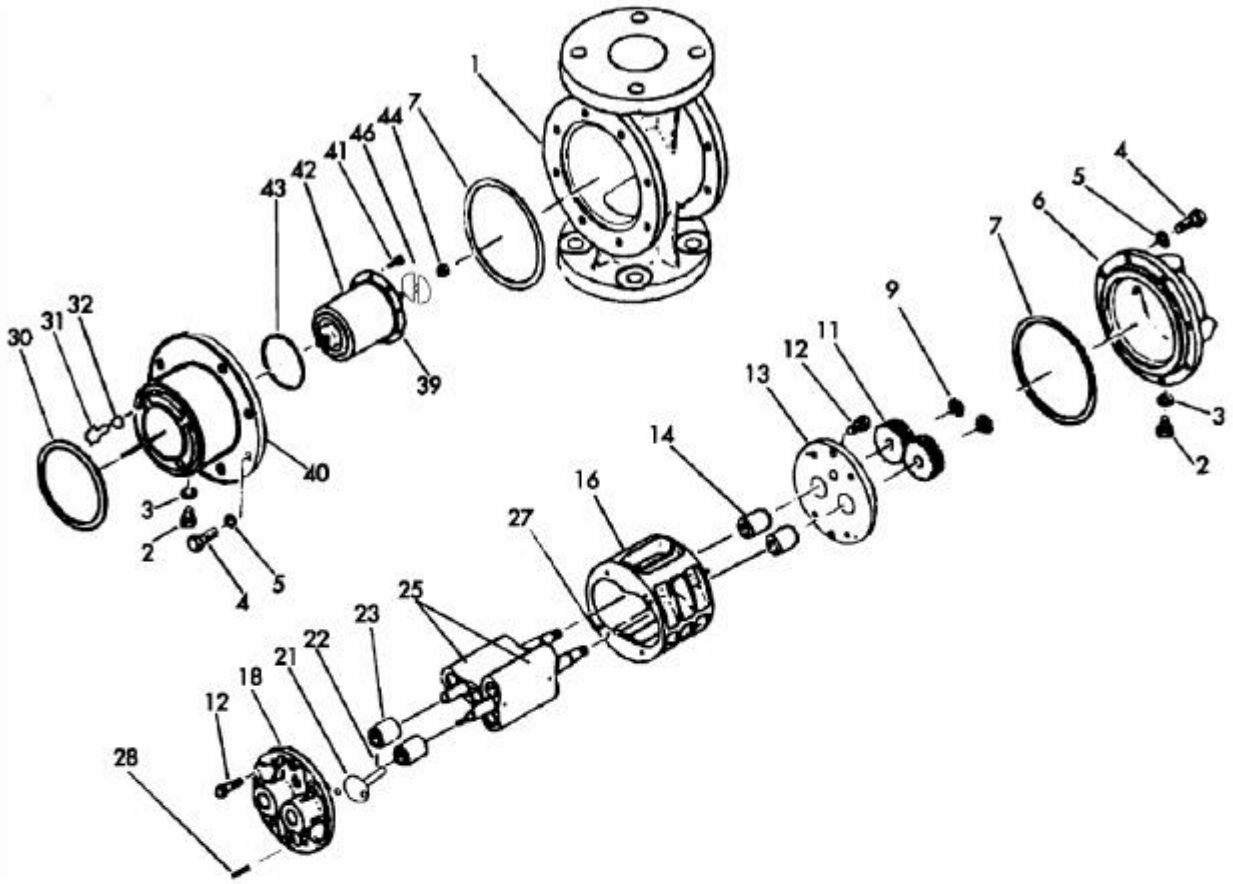
25	ASSIEME ROTORE "A"	ROOTS ASS'Y	1	70			
24				69			
23	BOCCOLE ANTERIORI IN GRAFITE	BEARING, FRONT	2	68			
22				67			
21				66			
20	INGRANAGGIO ROTORE	ROTOR GEAR	1	65			
19	DADO DI BLOCCO ROTORE	LOCK NUT TRANSMISSION	1	64			
18	COP.ANT. CAMERA DI MISURA	FRONT END PLATE	1	63			
17				62			
16	CORPO CAMERA DI MISURA	INNER BODY	1	61			
15				60			
14	BOCCOLE POSTERIORI IN GRAFITE	BEARING, REAR	2	59			
13	COP.POS. CAMERA DI MISURA	REAR END PLATE	1	58			
12	BULLONE CAMERA DI MISURA	BOLT, INNER HOUSING	8	57			
11	INGRANAGGI DI SINCRONISMO	TIMING GEAR	2	56			
10				55			
9	DADO DI BLOCCO INGRANAGGI	LOCK NUT, SHAFTS	2	54			
8				53			
7	GUARNIZIONE CORPO	GASKET BODY	2	52			
6	COP. POS. CORPO ESTERNO	REAR COVER	1	51			
5	GROVER COPERCHI ESTERNI	SPRING WASHER, COVER	16	50			
4	BULLONE COPERCHI ESTERNI	BOLT COVER	16	49			
3	GUARNIZIONE DRENAGGIO	GASKET, DRAIN	4	48			
2	TAPPO DRENAGGIO SFIATO	PLUG, DRAIN	4	47			
1	CORPO ESTERNO	OUTER BODY	1	46			
P.N.	**DESCRIZIONE**	**DESCRIPTION**	**Q**	**P.N.**	**DESCRIZIONE**	**DESCRIPTION**	**Q**
Mod.		53/13					

PD meter, models 53-13

LEGENDA



PD meter, mod. 14-24

Mod. 14/24		Sigla Tag	

PMS Produzione Misuratori Volumetrici — PETROL Metering Systems

Uffici e stabilimento: Via delle Valli, 25 04011 Aprilia (LT) ITALIA
Tel. ++39.06.92727658 Fax. ++39.06.92860025
Web:www.petrolms.it e-mail:petrolms@petrolms.it

MISURATORI VOLUMETRICI "PETROL" A DOPPIA CASSA
"PETROL" PD METER DOUBLE CASE TYPE

VISTA ESPLOSA

EXPLODED VIEW DRAWING

Cliente Customer		Ordine P.Order	Commessa Job

	Compilato DRN	Controllato CHKD	Approvato APP	Disegno n° Drawing n°
				16-EXP_IE_T04.doc

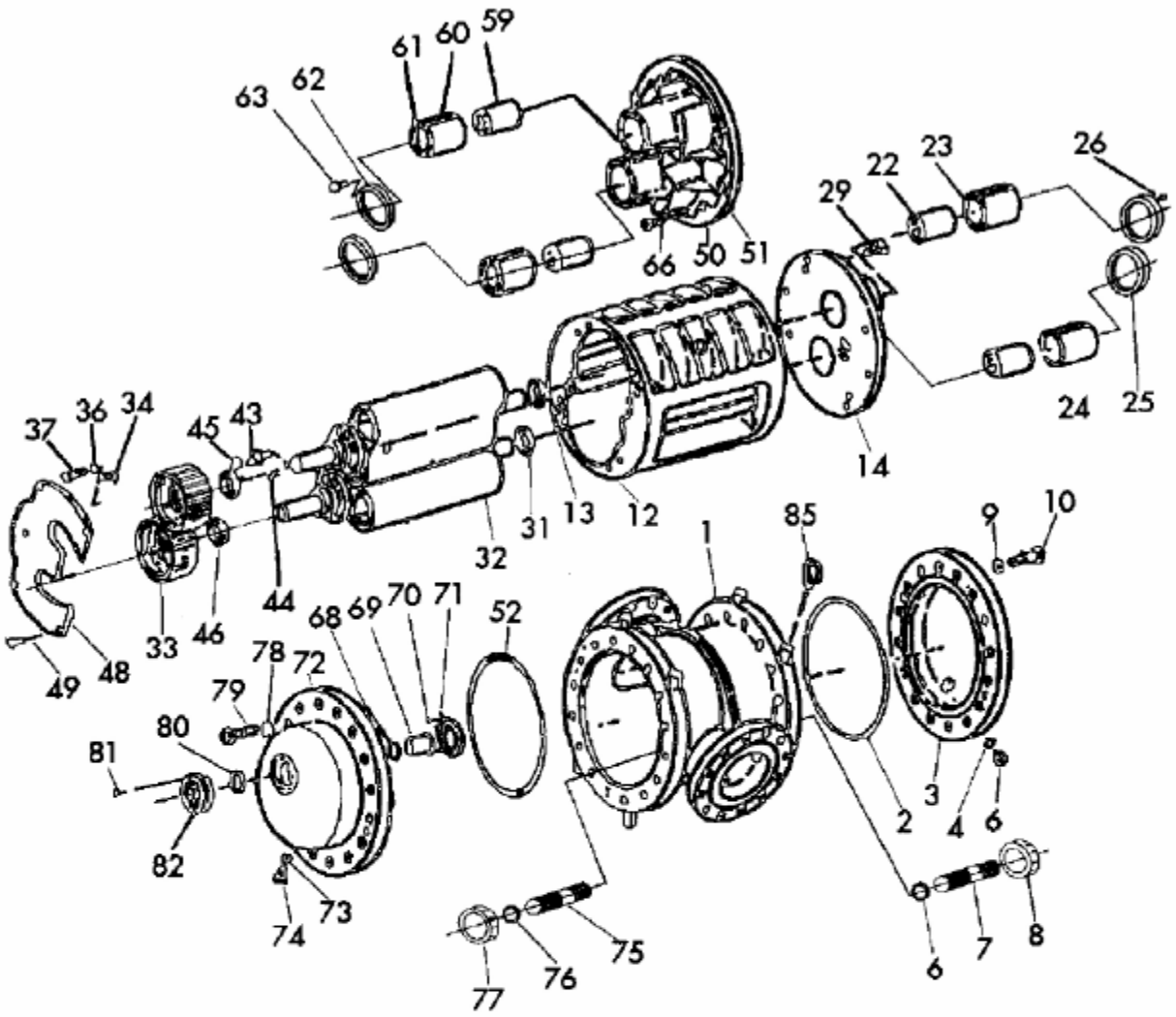
Revisioni Revisions	0	1	2	3	4	Data Date
Data Date						Sigla Tag

Foglio Sheet

45				90			
44	DADO BLOCCO INGR. DI TRASMIS.	LOCK NUT, TRANSMISSION	1	89			
43	GUARNIZIONE TRASMISSIONE	GASKET, TRANSMISSION	1	88			
42	TRASMISSIONE MAGNETICA	MAGNETIC COUPLING ASS'Y	1	87			
41	BULLONE TRASMISSIONE	BOLT TRANSMISSION	8	86			
40	COP. ANT. CORPO ESTERNO	FRONT COVER	1	85			
39	FLANGIA BLOCCAGGIO TRASMISS.	FLANGE, MAGNETIC TRANSMISS.	1	84			
38				83			
37				82			
36				81			
35				80			
34				79			
33				78			
32	RONDELLA ELASTICA SUPPORTO	SPRING WASHER, COUNTER	4	77			
31	BULLONI SUPPORTO TESTATA	BOLT, COUNTER	4	76			
30	GUARNIZIONE SUPP. TESTATA	GASKET, COUNTER	1	75			
29				74			
28	SPINA COP.ANT. CAMERA DI MIS.	PIN, FRONT END PLATE	1	73			
27	SPINA GUIDA CAMERA DI MISURA	PIN, INNER BODY	4	72			
26				71			
25	ASSIEME ROTORE	ROOTS ASS'Y	2	70			
24				69			
23	BOCCOLE ANTERIORI IN GRAFITE	BEARING, FRONT	2	68			
22	SPINA DI TRASMISSIONE	PIN	1	67			
21	FORCHETTA DI ACCOPPIAMENTO	COUPLING ASS'Y	1	66			
20				65			
19				64			
18	COP.ANT. CAMERA DI MISURA	FRONT END PLATE	1	63			
17				62			
16	CORPO CAMERA DI MISURA	INNER BODY	1	61			
15				60			
14	BOCCOLE POSTERIORI IN GRAFITE	BEARING, REAR	2	59			
13	COP.POS. CAMERA DI MISURA	REAR END PLATE	1	58			
12	BULLONE CAMERA DI MISURA	BOLT, INNER HOUSING	8	57			
11	INGRANAGGI DI SINCRONISMO	TIMING GEAR	2	56			
10				55			
9	DADO DI BLOCCO INGRANAGGI	LOCK NUT, SHAFTS	2	54			
8				53			
7	GUARNIZIONE CORPO	GASKET BODY	2	52			
6	COP. POS. CORPO ESTERNO	REAR COVER	1	51			
5	GROVER COPERCHI ESTERNI	SPRING WASHER, COVER	16	50			
4	BULLONE COPERCHI ESTERNI	BOLT COVER	16	49			
3	GUARNIZIONE DRENAGGIO	GASKET, DRAIN	4	48			
2	TAPPO DRENAGGIO SFIATO	PLUG, DRAIN	4	47			
1	CORPO ESTERNO	OUTER BODY	1	46	DISCO DI ACCOPPIAMENTO	COUPLING, DRIVEN	1
P.N.	**DESCRIZIONE**	**DESCRIPTION**	**Q**	**P.N.**	**DESCRIZIONE**	**DESCRIPTION**	**Q**
Mod.		14/24					

PD meter, models 14-24

LEGENDA



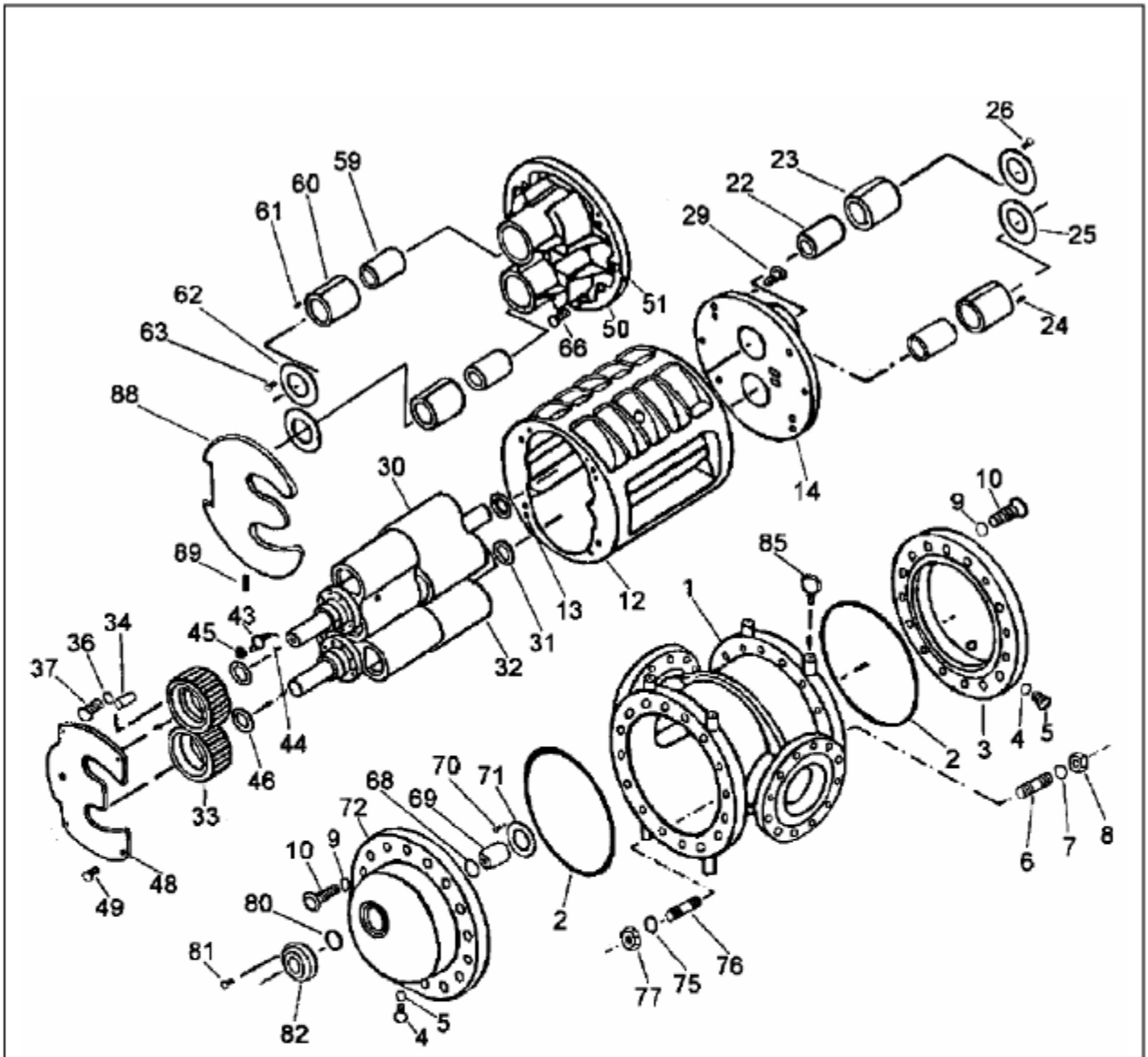
PD meter, mod. 16-18-28

Mod.	16/18/28							Sigla Tag				
PMS Produzione Misuratori Volumetrici — PETROL Metering Systems Uffici e stabilimento: Via delle Valli, 25 04011 Aprilia (LT) ITALIA Tel. ++39.06.92727658 Fax. ++39.06.92860025 Web:www.petrolms.it e-mail:petrolms@petrolms.it								MISURATORI VOLUMETRICI "PETROL" A DOPPIA CASSA "PETROL" PD METER DOUBLE CASE TYPE VISTA ESPLOSA EXPLODED VIEW DRAWING				
Cliente Customer								Ordine P.Order			Commessa Job	
								Compilato DRW	Controllato CHKD	Approvato APP	Disegno n° Drawing n°	
Revisioni Revisions	0	1	2	3	4	Data Date					16-EXP_IE_TDS.doc	
Data Date						Sigla Tag					Foglio Sheet	Di Of

45	DISCO TRASMISSIONE	COUPOLING, DRIVER	1	90			
44	GRANO TRASMISSIONE	DOWEL COUPOLING, DRIVING	1	89			
43	FORCHE DI TRASMISSIONE	COUPOLING, DRIVING	1	88			
42				87			
41				86			
40				85	GOLFARE	EYE BOLT	4
39				84			
38				83			
37	BULLONE INGRANAGGI	BOLT, TIMING GEAR	16	82	ADATTATORE SUPP. TESTINA	ADAPTOR, COUNTER	1
36	RONDELLA ELASTICA INGRANAGGI	SPRING WASHER, TIMING GEAR	16	81	BULLONE SUPP. TESTINA	BOLT, COUNTER BASE	6
35				80	GUARNIZIONE SUPP. TESTINA	GASKET, COUNTER BASE	1
34	SPINA INGRANAGGI	KNOCK PIN, TIMING GEAR	2	79	BULLONE COPERCHIO	BOLT, COVER	16
33	INGRANAGGI DI SINCRONISMO	TIMING GEAR	2	78	RONDELLA ELASTICA COP.	SPRING WASHER, COVER	16
32	ASSIEME ROTORE	ROOTS ASS'Y	2	77	DADO PRIGIONIERI	NUT, STUD	2
31	ANELLO DI RASAMENTO POST.	SIDE RING, REAR	2	76	RONDELLA ELASTICA PRIGION.	SPRING WASHER, COVER	2
30				75	PRIGIONIERO COP. ANT. C.E.	STUD, FRONT COVER	2
29	BULLONE CAMERA DI MISURA	BOLT, INNER HOUSING	4	74	TAPPO DRENAGGIO	PLUG DRAIN	2
28				73	GUARNIZIONE DRENAGGIO	GASKET DRAIN	2
27				72	COP. ANT. CORPO ESTERNO	FRONT COVER	1
26	BULLONE SUPPORTO	BOLT, RETAINER	8	71	SUPPORTO TRASMISSIONE	RETAINER, MAGN. COUPLING	1
25	SUPPORTO BOCCOLA	RETAINER BEARING	2	70	BULLONE DI TRASMISSIONE	BOLT, MAGNETIC COUPLING	8
24	SPINA BOCCOLA	PIN, REAR BEARING	4	69	TRASMISSIONE MAGNETICA	MAGNETIC COUPLING ASS'Y	1
23	MANICOTTO BOCCOLA	BUSH, REAR BEARING	2	68	GUARNIZIONE TRASMISSIONE	GASKET, MAGNETIC COUPLING	1
22	BOCCOLA POSTERIORE	BEARING, REAR	2	67			
21				66	BULLONE CAMERA DI MISURA	BOLT, INNER HOUSING	4
20				65			
19				64			
18				63	BULLONE SUPPORTO	BOLT, RETAINER	8
17				62	SUPPORTO BOCCOLA	RETAINER, BEARING	2
16				61	SPINA BOCCOLA	PIN, FRONT BEARING	4
15				60	MANICOTTO BOCCOLA	BUSH, FRONT BEARING	2
14	COP. POS. CAMERA DI MISURA	REAR END PLATE	1	59	BOCCOLA FRONTALE	BEARING, FRONT	2
13	SPINA GUIDA CAMERA	PIN, INNER HOUSING	4	58			
12	CORPO CAMERA DI MISURA	INNER BODY	1	57			
11				56			
10	BULLONE COPERCHIO	BOLT, COVER	16	55			
9	RONDELLA ELASTICA COPERCHIO	SPRING WASHER, COVER	16	54			
8	DADO PRIGIONIERI	NUT, STUD	2	53			
7	RONDELLA ELASTICA PRIGIONIERI	SPRING WASHER, STUD	2	52	GUARNIZIONE CORPO	GASKET BODY	1
6	PRIGIONIERI COP.POS. ESTERNO	STUD REAR COVER	2	51	SPINA GUIDA CAMERA DI MIS.	PIN, INNER HOUSING	1
5	TAPPO DRENAGGIO	PLUG DRAIN	2	50	COP. ANT. CAMERA DI MISURA	FRONT END PLATE	1
4	GUARNIZIONE DRENAGGIO	GASKET, DRAIN	2	49	BULLONE PIATTO SAGOMATO	BOLT, SIDE PLATE	5
3	COP. POS. CORPO ESTERNO	REAR COVER	1	48	PIATTO SAGOMATO CHIUSO	SIDE PLATE	1
2	GUARNIZIONE CORPO	GASKET, BODY	1	47			
1	CORPO ESTERNO	OUTER BODY	1	46	ANELLO RASAMETO FRONTALE	SIDE RING, FRONT	2
P.N.	**DESCRIZIONE**	**DESCRIPTION**	**Q**	**P.N.**	**DESCRIZIONE**	**DESCRIPTION**	**Q**
Mod.		16/18/28					

PD meter, models 16-18-28

LEGENDA



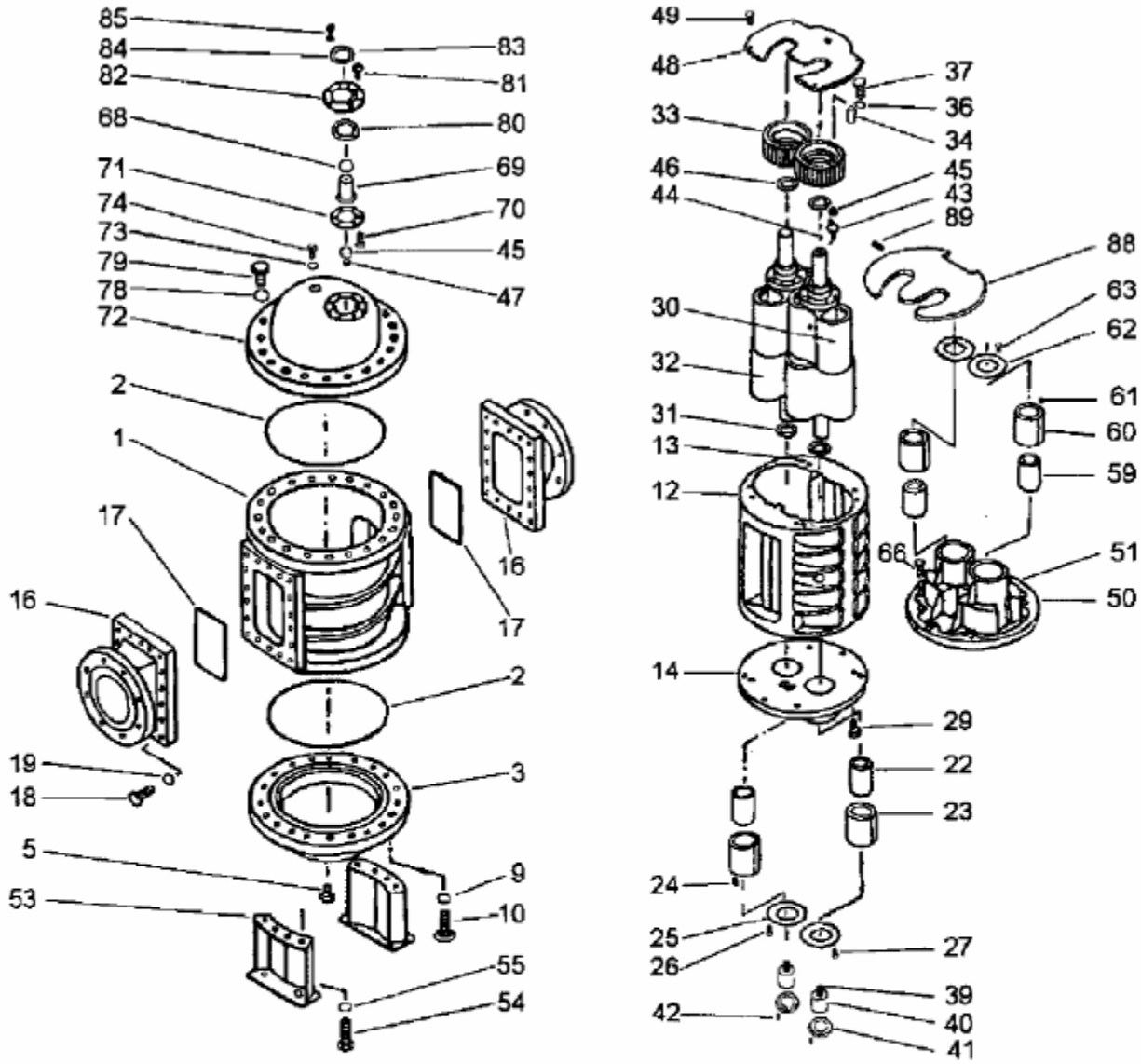
PD meter, mod. 110-112

Mod.	110/112						Sigla Tag				
PMS Produzione Misuratori Volumetrici — PETROL Metering Systems Uffici e stabilimento: Via delle Valli, 25 04011 Aprilia (LT) ITALIA Tel. ++39.06.92727658 Fax. ++39.06.92860025 Web:www.petrolms.it e-mail:petrolms@petrolms.it							MISURATORI VOLUMETRICI "PETROL" A DOPPIA CASSA "PETROL" PD METER DOUBLE CASE TYPE VISTA ESPLOSA EXPLODED VIEW DRAWING				
Cliente Customer							Ordine P.Order		Commessa Job		
							Compilato DRW	Controllato CHKD	Approvato APP	Disegno n° Drawing n°	
Revisioni Revisions	0	1	2	3	4	Data Date				IG-EXP_IE_TDG.doc	
Data Date						Sigla Tag				Foglio Sheet	Di Of

45	DISCO TRASMISSIONE	COUPOLING, DRIVER	1	90			
44	GRANO TRASMISSIONE	DOWEL COUPOLING, DRIVING	1	89	SPINA CONICA	CONIC PIN ROTOR PLATE	6
43	FORCHE DI TRASMISSIONE	COUPOLING, DRIVING	1	88	PIATTO SAGOMATO ROTORI	SHAPED ROTOR PLATE	1
42				87			
41				86			
40				85	GOLFARE	EYE BOLT	4
39				84			
38				83			
37	BULLONE INGRANAGGI	BOLT, TIMING GEAR	16	82	ADATTATORE SUPP. TESTINA	ADAPTOR, COUNTER	1
36	RONDELLA ELASTICA INGRAN.	SPRING WASHER, TIMING GEAR	16	81	BULLONE SUPP. TESTINA	BOLT, COUNTER BASE	6
35				80	GUARNIZIONE SUPP. TESTINA	GASKET, COUNTER BASE	1
34	SPINA INGRANAGGI	KNOCK PIN, TIMING GEAR	2	79			
33	INGRANAGGI DI SINCRONISMO	TIMING GEAR	2	78			
32	ASSIEME ROTORE "B"	ROOTS ASS'Y	1	77	DADO PRIGIONIERI	NUT, STUD	2
31	ANELLO DI RASAMENTO POST.	SIDE RING, REAR	2	76	RONDELLA ELASTICA PRIGION.	SPRING WASHER, COVER	2
30	ASSIEME ROTORE "A"	ROOTS ASS'Y	1	75	PRIGIONIERO COP. ANT. C.E.	STUD, FRONT COVER	2
29	BULLONE CAMERA DI MISURA	BOLT, INNER HOUSING	4	74			
28				73			
27				72	COP. ANT. CORPO ESTERNO	FRONT COVER	1
26	BULLONE SUPPORTO	BOLT, RETAINER	8	71	SUPPORTO TRASMISSIONE	RETAINER, MAGN. COUPLING	1
25	SUPPORTO BOCCOLA	RETAINER BEARING	2	70	BULLONE DI TRASMISSIONE	BOLT, MAGNETIC COUPLING	8
24	SPINA BOCCOLA	PIN, REAR BEARING	4	69	TRASMISSIONE MAGNETICA	MAGNETIC COUPLING ASS'Y	1
23	MANICOTTO BOCCOLA	BUSH, REAR BEARING	2	68	GUARNIZIONE TRASMISSIONE	GASKET, MAGNETIC COUPLING	1
22	BOCCOLA POSTERIORE	BEARING, REAR	2	67			
21				66	BULLONE CAMERA DI MISURA	BOLT, INNER HOUSING	4
20				65			
19				64			
18				63	BULLONE SUPPORTO	BOLT, RETAINER	8
17				62	SUPPORTO BOCCOLA	RETAINER, BEARING	2
16				61	SPINA BOCCOLA	PIN, FRONT BEARING	4
15				60	MANICOTTO BOCCOLA	BUSH, FRONT BEARING	2
14	COP. POS. CAMERA DI MISURA	REAR END PLATE	1	59	BOCCOLA FRONTALE	BEARING, FRONT	2
13	SPINA GUIDA CAMERA	PIN, INNER HOUSING	4	58			
12	CORPO CAMERA DI MISURA	INNER BODY	1	57			
11				56			
10	BULLONE COPERCHIO	BOLT, COVER	32	55			
9	RONDELLA ELASTICA COPERCHIO	SPRING WASHER, COVER	32	54			
8	DADO PRIGIONIERI	NUT, STUD	2	53			
7	RONDELLA ELASTICA PRIGIONIERI	SPRING WASHER, STUD	2	52			
6	PRIGIONIERI COP.POS. ESTERNO	STUD REAR COVER	2	51	SPINA GUIDA CAMERA DI MIS.	PIN, INNER HOUSING	1
5	TAPPO DRENAGGIO	PLUG DRAIN	2	50	COP. ANT. CAMERA DI MISURA	FRONT END PLATE	1
4	GUARNIZIONE DRENAGGIO	GASKET, DRAIN	4	49	BULLONE PIATTO SAGOMATO	BOLT, SIDE PLATE	5
3	COP. POS. CORPO ESTERNO	REAR COVER	1	48	PIATTO SAGOMATO CHIUSO	SIDE PLATE	1
2	GUARNIZIONE CORPO	GASKET, BODY	2	47			
1	CORPO ESTERNO	OUTER BODY	1	46	ANELLO RASAMETO FRONTALE	SIDE RING, FRONT	2
P.N.	**DESCRIZIONE**	**DESCRIPTION**	**Q**	**P.N.**	**DESCRIZIONE**	**DESCRIPTION**	**Q**
Mod.		110/112					

PD meter, models 110-112

LEGENDA



PD meter, mod. 212-114

Mod. 212/114							Sigla Tag				
PMS Produzione Misuratori Volumetrici — PETROL Metering Systems Uffici e stabilimento: Via delle Valli, 25 04011 Aprilia (LT) ITALIA Tel. ++39.06.92727658 Fax. ++39.06.92860025 Web:www.petrolms.it e-mail:petrolms@petrolms.it							MISURATORI VOLUMETRICI "PETROL" A DOPPIA CASSA "PETROL" PD METER DOUBLE CASE TYPE VISTA ESPLOSA EXPLODED VIEW DRAWING				
Cliente Customer							Ordine P.Order			Commessa Job	
							Compilato DRW	Controllato CHKD	Approvato APP	Disegno n° Drawing n°	
Revisioni Revisions	0	1	2	3	4	Data Date				16-EXP_IE_TD7.doc	
Data Date						Sigla Tag				Foglio Sheet	Di Of

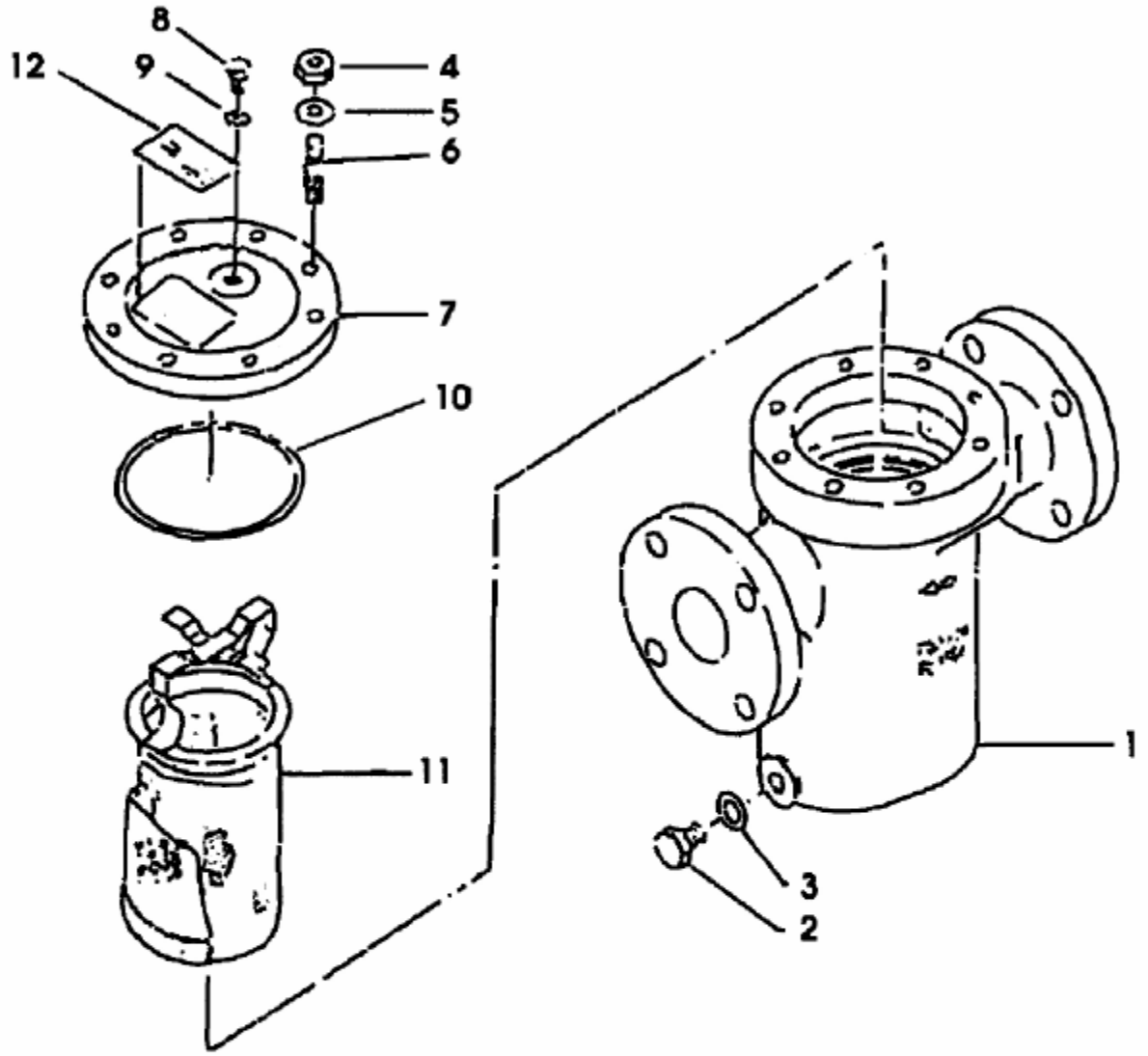
45	DISCO TRASMISSIONE	COUPOLING, DRIVER	1	90			
44	GRANO TRASMISSIONE	DOWEL COUPOLING, DRIVING	1	89	SPINA CONICA	PIN, CONIC	6
43	FORCHE DI TRASMISSIONE	COUPOLING, DRIVING	1	88	PIATTO SAGOMATO ROTORI	SHAPED ROTOR PLATE	1
42	GRANO, GHIERA BULLONE	DOWEL, NUT ADJUSTER	2	87			
41	GHIERA BULLONE DI REGISTRO	NUT ADJUSTER	2	86			
40	BULLONE DI REGISTRO	BOLT ADJUSTER	2	85	BULLONE SUPPORTO TESTINA	BOLT, COUNTER	4
39	CILINDRO, SOSTEGNO ROTORE	SUPPORT ROTORS	2	84	RONDELLA ELASTICA	SPRING WASHER, COUNTER	4
38	CILINDRO, APPOGGIO ROTORE	PLATE BEARING, ROTORS	2	83	GUARNIZIONE SUPP. TESTINA	GASKET, COUNTER	1
37	BULLONE INGRANAGGI	BOLT, TIMING GEAR	16	82	FLANGIA SUPP. TESTINA	ADAPTOR, COUNTER	1
36	RONDELLA ELASTICA INGRAN.	SPRING WASHER, TIMING GEAR	16	81	BULLONE FLANGIA	BOLT, COUNTER BASE	10
35				80	GUARNIZIONE SUPP. TESTINA	GASKET, COUNTER BASE	1
34	SPINA INGRANAGGI	KNOCK PIN, TIMING GEAR	4	79	BULLONE COPERCHIO	BOLT, COVER	20
33	INGRANAGGI DI SINCRONISMO	TIMING GEAR	2	78	RONDELLA ELASTICA COP.	SPRING WASHER, COVER	20
32	ASSIEME ROTORE "B"	ROOTS ASS'Y	1	77			
31	ANELLO DI RASAMENTO INF.	THRUST RING, BOTTOM	2	76			
30	ASSIEME ROTORE "A"	ROOTS ASS'Y	1	75			
29	BULLONE CAMERA DI MISURA	BOLT, INNER HOUSING	4	74	TAPPO DI SFIATO	PLUG, BLEED	1
28				73	GUARNIZIONE SFIATO	GASKET, BLEED	1
27	BULLONE MANICOTTO	BOLT, BUSH	4	72	COP. SUP. CORPO ESTERNO	OUTER COVER UP-SIDE	1
26	BULLONE SUPPORTO	BOLT, RETAINER	8	71	SUPPORTO TRASMISSIONE	RETAINER, MAGN. COUPLING	1
25	SUPPORTO BOCCOLA INFERIORE	SUPPORT, BOTTOM BEARING	2	70	BULLONE DI TRASMISSIONE	BOLT, MAGNETIC COUPLING	8
24	SPINA MANICOTTO	PIN, BUSH	2	69	TRASMISSIONE MAGNETICA	MAGNETIC COUPLING ASS'Y	1
23	MANICOTTO BOCCOLA	BUSH, REAR BEARING	2	68	GUARNIZIONE TRASMISSIONE	GASKET, MAGNETIC COUPLING	1
22	BOCCOLA POSTERIORE	BEARING, REAR	2	67			
21				66	BULLONE CAMERA DI MISURA	BOLT, INNER HOUSING	4
20				65			
19	ROSETTA ELASTICA	SPRING WASHER, SPOOL PIPE	36	64	BULLONE, MANICOTTO	BOLT, BUSH	4
18	BULLONE TRONCHETTO	BOLT, SPOOL PIPE	36	63	BULLONE SUPPORTO	BOLT, RETAINER	8
17	GUARNIZIONE O-RING TRONC.	GASKET, SPOOL PIPE	2	62	SUPPORTO BOCCOLA	RETAINER, BEARING	2
16	TRONCHETTO FLANGIATO	SPOOL PIPE	2	61	SPINA, MANICOTTO	PIN, BUSH	4
15				60	MANICOTTO BOCCOLA	BUSH, FRONT BEARING	2
14	COP. INF. CAMERA DI MISURA	REAR END PLATE	1	59	BOCCOLA SUPERIORE	BEARING, UP-SIDE	2
13	SPINA GUIDA CAMERA	PIN, INNER HOUSING	4	58			
12	CORPO CAMERA DI MISURA	INNER BODY	1	57			
11				56			
10	BULLONE COPERCHIO	BOLT, BOTTOM COVER	12	55	RONDELLA ELASTICA	SPRIN WASHER, BRACKET	8
9	RONDELLA ELASTICA COPERCHIO	SPRING WASHER, COVER	12	54	BULLONE, STAFFA	BOLT, BRACKET	8
8				53	STAFFA DI APPOGGIO	BRACKET	2
7				52			
6				51	SPINA GUIDA CAMERA DI MIS.	PIN, INNER HOUSING	1
5	TAPPO DRENAGGIO	PLUG DRAIN	2	50	COP. SUP. CAMERA DI MISURA	INNER END PLATE, UP SIDE	1
4				49	BULLONE PIATTO SAGOMATO	BOLT, SIDE PLATE	5
3	COP. INF. CORPO ESTERNO	REAR COVER	1	48	PIATTO SAGOMATO CHIUSO	SIDE PLATE	1
2	GUARNIZIONE CORPO	GASKET, BODY	2	47	DADO DI BLOCCO DISCO TRAS.	LOCK-NUT TRANSMISSION	1
1	CORPO ESTERNO	OUTER BODY	1	46	ANELLO RASAMETO SUPERIORE	THRUST RING, UP SIDE	2
P.N.	**DESCRIZIONE**	**DESCRIPTION**	**Q**	**P.N.**	**DESCRIZIONE**	**DESCRIPTION**	**Q**
Mod.		212/114					

PD meter, models 212-114

LEGENDA

Exploded views with legenda
Strainers

Includes:



Strainer, mod. 1-2-3-4

Mod.	1/2/3/4						Sigla Tag				
PMS Produzione Misuratori Volumetrici PETROL Metering Systems Uffici e stabilimento: Via delle Valli, 25 04011 Aprilia (LT) ITALIA Tel. ++39.06.92727658 Fax. ++39.06.92860025 Web:www.petrolms.it e-mail:petrolms@petrolms.it							FILTRO "PETROL" "PETROL" STRAINERS VISTA ESPLOSA EXPLODED VIEW DRAWING				
Cliente Customer							Ordine P.Order		Commessa Job		
							Compilato DRN	Controllato CHKD	Approvato APP	Disegno n° Drawing n°	
Revisioni Revisions	0	1	2	3	4	Data Date				16-EXP_IE_T08.doc	
Data Date						Sigla Tag				Foglio Sheet	Di Of

45				90			
44				89			
43				88			
42				87			
41				86			
40				85			
39				84			
38				83			
37				82			
36				81			
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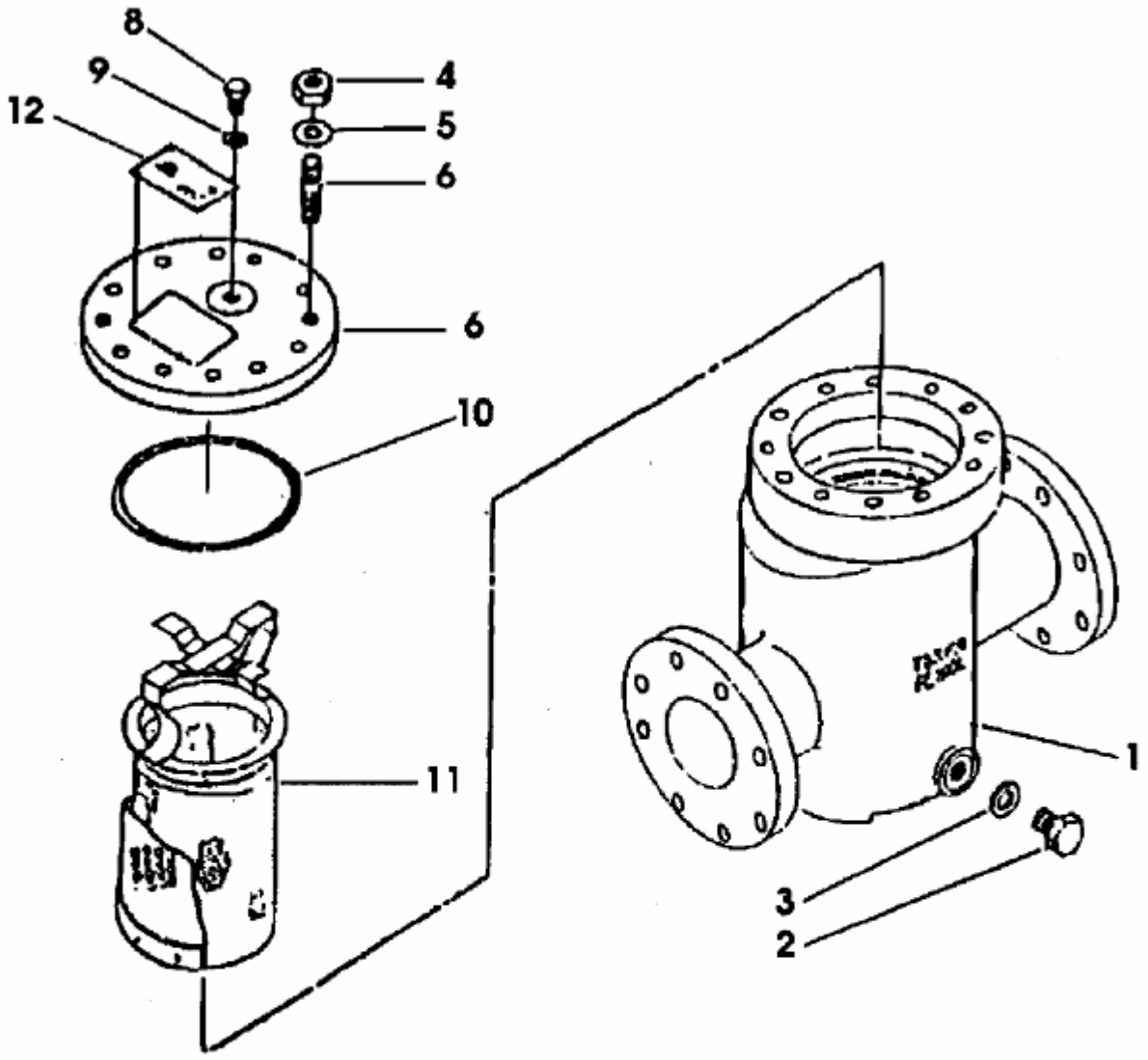
23				68			
22				67			
21				66			
20				65			
19				64			
18				63			
17				62			
16				61			
15				60			
14				59			
13				58			
12	TARGHETTA	NAMEPLATE	1	57			
11	CESTELLO FILTRANTE	SCREENER	1	56			
10	GUARNIZIONE CORPO	GASKET BODY	1	55			
9	GUARNIZIONE TAPPO DI SFIATO	GASKET BLEED	1	54			
8	TAPPO SFIATO	BOLT BLEED	1	53			
7	COPERCHIO	COVER	1	52			
6	PRIGIONIERO	STUD	6	51			
5	RONDELLA ELASTICA	WASHER	6	50			
4	DADO	NUT	6	49			
3	GUARNIZIONE DRENAGGIO	GASKET DRAIN	1	48			
2	TAPPO DRENAGGIO	PLUG DRAIN	1	47			
1	CORPO FILTRO	BODY	1	46			
P.N.	**DESCRIZIONE**	**DESCRIPTION**	**Q**	**P.N.**	**DESCRIZIONE**	**DESCRIPTION**	**Q**
Mod.		1/2/3/4					

Strainer, models 1-2-3-4

LEGENDA



Strainer, mod. 6

Mod.	6						Sigla Tag				
PMS Produzione Misuratori Volumetrici — PETROL Metering Systems Uffici e stabilimento: Via delle Valli, 25 04011 Aprilia (LT) ITALIA Tel. ++39.06.92727658 Fax. ++39.06.92860025 Web:www.petrolms.it e-mail:petrolms@petrolms.it							FILTRO "PETROL" "PETROL" STRAINERS VISTA ESPLOSA EXPLODED VIEW DRAWING				
Cliente Customer							Ordine P.Order			Commessa Job	
							Compilato DRN	Controllato CHKD	Approvato APP	Disegno n° Drawing n°	
Revisioni Revisions	0	1	2	3	4	Data Date				16-EXP_IE_T09.doc	
Data Date						Sigla Tag				Foglio Sheet	Di Of

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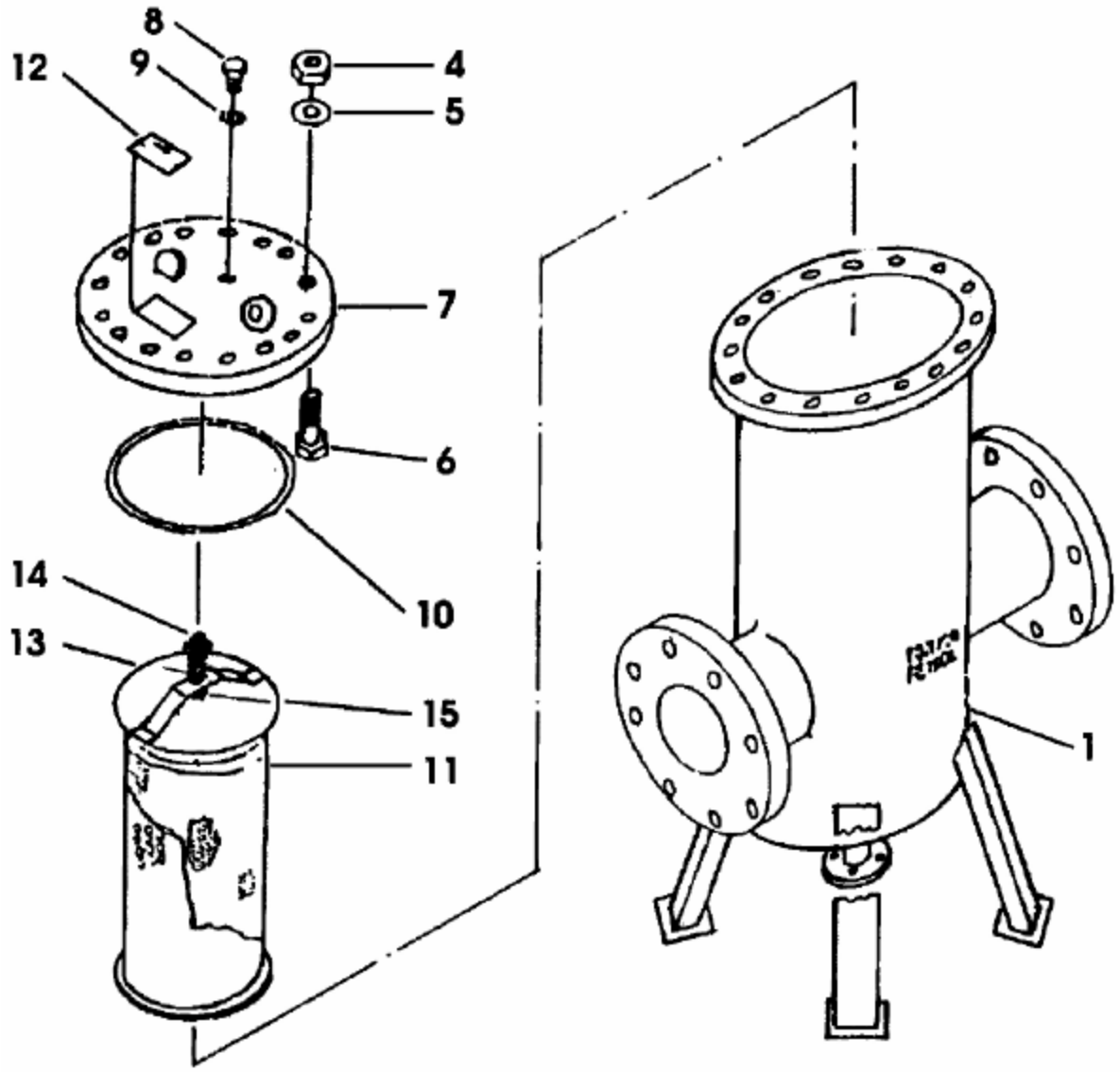
19				64			
18				63			
17				62			
16				61			
15				60			
14				59			
13				58			
12	TARGHETTA	NAMEPLATE	1	57			
11	CESTELLO FILTRANTE	SCREENER	1	56			
10	GUARNIZIONE CORPO	GASKET BODY	1	55			
9	GUARNIZIONE TAPPO DI SFIATO	GASKET BLEED	1	54			
8	TAPPO SFIATO	BOLT BLEED	1	53			
7	COPERCHIO	COVER	1	52			
6	PRIGIONIERO	STUD	6	51			
5	RONDELLA ELASTICA	WASHER	6	50			
4	DADO	NUT	6	49			
3	GUARNIZIONE DRENAGGIO	GASKET DRAIN	1	48			
2	TAPPO DRENAGGIO	PLUG DRAIN	1	47			
1	CORPO FILTRO	BODY	1	46			
P.N.	**DESCRIZIONE**	**DESCRIPTION**	**Q**	**P.N.**	**DESCRIZIONE**	**DESCRIPTION**	**Q**
Mod.		6					

Strainer, model 6

LEGENDA



Strainer, mod. 8

8							Sigla Tag				
PMS Produzione Misuratori Volumetrici — PETROL Metering Systems Uffici e stabilimento: Via delle Valli, 25 04011 Aprilia (LT) ITALIA Tel. ++39.06.92727658 Fax. ++39.06.92860025 Web:www.petrolms.it e-mail:petrolms@petrolms.it							FILTRO "PETROL" "PETROL" STRAINERS VISTA ESPLOSA EXPLODED VIEW DRAWING				
Cliente Customer							Ordine P.Order			Commessa Job	
							Compilato DRW	Controllato CHKD	Approvato APP	Disegno n° Drawing n°	
Revisioni Revisions	0	1	2	3	4	Data Date				IG-EXP_IE_110.doc	
Data Date						Sigla Tag				Foglio Sheet	Di Of

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18				63			
17				62			
16				61			
15	DADO	NUT	1	60			
14	PERNO	PIN	1	59			
13	MOLLA	SPRING	1	58			
12	TARGHETTA	NAMEPLATE	1	57			
11	CESTELLO FILTRANTE	SCREENER	1	56			
10	GUARNIZIONE CORPO	GASKET BODY	1	55			
9	GUARNIZIONE SFIATO	GASKET BLEED	1	54			
8	TAPPO SFIATO	BOLT BLEED	1	53			
7	COPERCHIO	COVER	1	52			
6	BULLONE COPERCHIO	BOLT	16	51			
5	RONDELLA ELASTICA	WASHER	16	50			
4	DADO	NUT	16	49			
3				48			
2				47			
1	CORPO FILTRO	BODY	1	46			
P.N.	**DESCRIZIONE**	**DESCRIPTION**	**Q**	**P.N.**	**DESCRIZIONE**	**DESCRIPTION**	**Q**
Mod.		8					

Strainer, model 8

LEGENDA

References

"PETROL" PD meters

Main industrial sector served and relevant customers.

Automation:

ABB Energy Autiomation S.p.A.
A.P.S. S.p.A.

Chemical and petrochemical industries:

Bracco Imaging S.p.A.
Chemi S.p.A.
*Condea Augusta S.p.A.
Enichem S.p.A.
Eurallumina S.p.A.
Infineum S.p.A.
Lonza S.p.A.
Montell Italia S.p.A.
Repsol Polivar S.p.A.
Solvai & C. S.p.A.
Uniroyal Chimica S.p.A.

Crude oil extraction and treatment:
(including measuring skid manufacturer)

Agip S.p.A.
Cosmi S.p.A.
Daniel Europe Ltd Scotland
Edison Gas S.p.A.
Intermare Sarda S.p.A.
Italfluid Geoenergy S.p.A.
Naval Mare S.p.A.
Nuova Oma S.p.A.
Nuovo Pignone S.p.A. *
Premabergo Italiana S.p.A.
Rosetti Marino S.p.A.
Peroni Pompe S.p.A.
Saipem S.p.A.
Tozzi Sud S.p.A.

Engineering:

Enel Power S.p.A.
Engineering India Ltd India
Euro Tecnica S.p.A.
Foster Wheleer S.p.A.
Snamprogetti S.p.A.
Tecnimont S.p.A.
Technip S.p.A.
Techint S.p.A.
Techint Cimontubi S.p.A.

LPG distributions:

Costiero Gas S.p.A. *
Liquigas S.p.A.

Pharmaceutical:

Abbott S.p.A.
Bristol Myers Squibb S.p.A.
Recordati S.p.A.
Zambon Group S.p.A.

Power generation:

A.S.M. Brescia S.p.A.
Alstom Power Inc. USA
Altom Power S.p.A.
Ansaldo Caldaie S.p.A.
Ansaldo Energia S.p.A.
Enel S.p.A.
Isab Energy Services S.p.A.
Macchi Caldaie S.p.A.

Refining:

Agip Petroli S.p.A.
Isab Energy S.p.A.
Raffineria di Roma S.p.A.
Saras S.p.A.

Ships making, owners and dealers:

F.lli Cosulich S.r.l.
Fincantieri S.p.A.
General Naval Control S.p.A.
Princess Cruises USA

Steel making:

Danieli Spa ex Italsider.

*** see specific report in this catalogue**

Plants, applications and sizes

PMS Produzione Misuratori Volumetrici — PETROL Metering Systems

REFERENCE FOR

Power plant in Italy

Customer	Liquid	Qty	PD meter	City / plant
A.C.I.	HYDRAULIC OIL	1	FM12AB-12-C5	CASSANA (FE) / CENTRALINA OLEODINAMICA
A.C.R.A.F. S.P.A.	GASOIL	1	FM51-1P2-C5	TRINO VERCELLESE (VC) / CTE ENEL TRINO VER
A.S.M.	BUNKER "C"	1	FM53-12-C5	MANTOVA (MN) / CTE ENEL PONTI S. MINCIO
A.S.M.	BUNKER C	1	FM53-1P2-C5	PONTI SUL MINCIO (MN) / CTE A.S.M.
AERIMPIANTI S.R.L.	DEMI WATER	1	FA22-1P2-E7	BORGO TRENTO (VE) / CTE COGENERAZIONE
AERIMPIANTI S.R.L.	GASOIL	1	FA14-12-C5	BORGO TRENTO (VE) / CTE COGENERAZIONE
AGIP S.P.A.	GLYCOL DIETILENI	1	FA51-2I2-C5	C.LE DI PINETO (CH) / CTE ENEL
AGIP S.P.A.	GLYCOL DIETILENI	1	FL12AB-22-C8	CROTONE (CZ) / STAB. AGIP
AGIP S.P.A.	GLYCOL	1	FM12-1P2-C8	GROTTAMMARE (AP) / CENTRALE GAS AGIP
AGIP S.P.A.	GASOLINA	2	FL51-22-C8	GROTTAMMARE (CH) / STAB. AGIP
AGIP S.P.A.	OIL WATER	1	FL11-12-C8	ORTONA (CH) / GENERAZIONE E.E. TORRENTE T
AGIP S.P.A.	ETHYLENE GLYCOL	4	FM12-1P2-C8	RAMANE(S.SALVO) (RA) / CENTRALE GAS AGIP
ALCOA ITALIA S.P.A.	FUEL OIL	1	FL12AB-1P2-C5	PORTOSCUSO (CA) / STABILIMENTO DI PORTOS
ALCOA ITALIA S.P.A.	PITCH DISTILLED	2	FA51-12-C5	PORTOSCUSO (CA) / STABILIMENTO DI PORTOS
ALTECO S.R.L.	DEMI WATER	1	FA53B-1P2-F8	ROSIGNANO SOLVAY (LI) / ROSIGNANO SOLVAY
ALTECO S.R.L.	GASOIL	2	FA13-1P2-C8	ROSIGNANO SOLVAY (LI) / ROSIGNANO SOLVAY
ALTECO S.R.L.	GASOIL	2	FA14-1P2-C8	ROSIGNANO SOLVAY (LI) / ROSIGNANO SOLVAY
ANSALDO ANM - GENOVA (GE)	WATER	1	FA12-1P2-F8	PONTI SUL MINCI (MN) / CTE
ANSALDO COMPONENTI S.P.A.	HEAVY OIL	1	FM12-1P2-C5	FUSINA (VE) / CTE ENEL
ANSALDO COMPONENTI S.P.A.	HEAVY OIL	1	FM13-1P2-C5	FUSINA (VE) / CTE ENEL
ANSALDO COMPONENTI S.P.A.	HEAVY OIL	1	FM53-12-C5	FUSINA (VE) / CTE ENEL
ANSALDO COMPONENTI S.P.A.	LIGHT OIL	1	FM12-1P2-C5	FUSINA (VE) / CTE ENEL
ANSALDO ENERGIA S.P.A.	GASOIL	1	FA22-12-C8	
ANSALDO ENERGIA S.P.A.	FUEL OIL	4	FM11AB-2P2-C8	BRESCIA (BS) / A.S.M. BRESCIA
ANSALDO ENERGIA S.P.A.	FUEL OIL	1	FM22-1P2-C5	MONFALCONE (GO) / CTE ENEL MONFALCONE (G
ANSALDO ENERGIA S.P.A.	NAPHTA	1	FM22-1P2-C5	PONTI SUL MINCIO (MN) / CTE A.E.M.
ANSALDO ENERGIA S.P.A.	FUEL OIL	1	FM11AB-1P2-C5	PONTI SUL MINCIO (MN) / REBURNING GR. 2
ANSALDO ENERGIA S.P.A.	NAPHTA	1	FL12-1P2-C5	VADO LIGURE (SV) / CTE ENEL
ANSALDO GIE S.P.A.	HEAVY FUEL OIL	1	FH22-1P2-C5	CIVITAVECCHIA (RM) / CTE ENEL TORRE VALDAL
ANSALDO GIE S.P.A.	GASOIL	1	FM51-12-C5	TURBIGO (MI) / CTE ENEL
ANSALDO IMPIANTI	NAPHTA	1	FL24-12-C5	CASSANO D'ADDA (MI) / CTE ENEL
ANSALDO INDUSTRIA S.P.A.	GASOIL	2	FA11AB-12-C5	BORGO TRENTO (VE) / COGENERATION PLANT
ANSALDO INDUSTRIA S.P.A.	GASOIL	1	FA12-12-C5	BORGO TRENTO (VE) / COGENERAZIONE
ANSALDO INDUSTRIA S.P.A.	DISTILLATE OIL	2	FL24C-2P2-F8	BRINDISI (BR) / CTE ENEL
ANSALDO INDUSTRIA S.P.A.	SEA WATER	2	FL16-2P2-F8	BRINDISI (BR) / CTE ENEL
ASTER S.P.A.	FUEL OIL	1	FL53-12T1-C5	MONCALIERI (TO) / C.LE TERM.INTEGR.RISERVA
ASTER S.P.A.	GASOIL	1	FA12AB-12T2-C5	MONCALIERI (TO) / C.LE TERM.INTEGR.RISERVA
BELLELI S.P.A.	GASOLINA	2	FA51-12-C8	CATANIA (CT) / NUOVA CENTRAL.GAS BRONTE

PMS Produzione Misuratori Volumetrici

PETROL Metering Systems

REFERENCE FOR

Power plant in Italy

Customer	Liquid	Qty	PD meter	City / plant
BENELLI S.P.A.	PARAXILOLO	1	FL51-12-F8	GRAN SASSO (AQ) / SCINTILLATOR HANDLING
BENELLI S.P.A.	GASOIL	1	FA53-12-C5	PRATOLA SERRA / PRODUZ. GENERAZIONE
BLOOM ENGINEERING S.R.L.	FUEL OIL	1	FA51-1P2-C5	
BONATTI S.P.A. - PARMA	OLIO LUBRIFICANT	2	FA11-12-C8	MESSINA / CENTRALE COMPRESSIONE GAS
BONATTI S.P.A. - PARMA	ACQUA	1	FA22-22-F8	PARMA
C.C.T. S.P.A.	FUEL OIL	1	FL51AB-1P2-C5	ATESSA (CH) / FIAT-SEVEL
C.C.T. S.P.A.	GASOIL	1	FA11AB-1P2-C5	FIGINO (MI) / INCENERITORE SILLA 2 - AMSA
C.C.T. S.P.A.	FUEL OIL	2	FM51AB-1P2-C8	MANTOVA
C.C.T. S.P.A.	GASOIL	1	FL51AB-12-C5	RAVENNA / CTE ENEL RAVENNA
C.C.T. S.P.A.	GASOIL	1	FL11AB-1P2-C5	SETTIMO TORINESE (TO) / CTE SONDEL
C.C.T. S.P.A.	FUEL OIL	3	FL51AB-1P2-C5	TERMINI IMERESE (PA) / FIAT AUTO
CO.GE.MA.	FUEL OIL	1	FH51-1P2-C5	MELILLI (SR) / STAB. DI MELILLI
EDISON S.P.A. - CHIETI	ACQUA DI POZZO	1	FL16-12-C8	SAN GIOVANNI TEATINO (CH)
EDISON S.P.A. - CHIETI	ACQUA DI POZZO	1	FM14-12-C8	SAN GIOVANNI TEATINO (CH)
EDISON S.P.A. - CHIETI	GREZZO	1	FM16-1P2-C5	SAN GIOVANNI TEATINO / EDISON
EDISON S.P.A. - CHIETI	GREZZO	1	FM53-1P2-C5	SAN GIOVANNI TEATINO / EDISON
EDISON S.P.A. - SIRACUSA	OLIO GREZZO	1	FA13-1P2-C8	SIRACUSA
ELSAG BAILEY HARTMAN & BROWN	FUEL OIL	1	FA53-12-C5	CASSANO D'ADDA (MI) / CTE AEM
ELSAG BAILEY HARTMAN & BROWN	FUEL OIL	2	FM53-12-C5	CASSANO D'ADDA (MI) / CTE AEM
ELSAG BAILEY HARTMAN & BROWN	GASOIL	2	FM12-12-C5	CASSANO D'ADDA (MI) / CTE AEM
ELSAG BAILEY HARTMAN & BROWN	GASOIL	2	FM13-1P2-C5	MONTALTO DI CASTRO (VT) / CTE ENEL
ELSAG BAILEY HARTMAN & BROWN	GASOIL	2	FM53-1P2-C5	MONTALTO DI CASTRO (VT) / CTE ENEL
ELSAG BAILEY HARTMAN & BROWN	NAPHTA	2	FM14-1P2-C5	MONTALTO DI CASTRO (VT) / CTE ENEL
ELSAG BAILEY HARTMAN & BROWN	NAPHTA	2	FM18-1P2-C5	MONTALTO DI CASTRO (VT) / CTE ENEL
ELSAG BAILEY HARTMAN & BROWN	GASOIL	2	FM12-1P2-C5	MONTALTO DI CASTRO (VT) / CTE ENEL MONTAL
ELSAG BAILEY HARTMAN & BROWN	GASOIL	2	FM53-1P2-C5	MONTALTO DI CASTRO (VT) / CTE ENEL MONTAL
ELSAG BAILEY HARTMAN & BROWN	NAPHTA ATZ/BTZ	2	FM14-1P2-C5	MONTALTO DI CASTRO (VT) / CTE ENEL MONTAL
ELSAG BAILEY HARTMAN & BROWN	NAPHTA ATZ/BTZ	2	FM18-1P2-C5	MONTALTO DI CASTRO (VT) / CTE ENEL MONTAL
ENDESA ITALIA S.R.L. (C.LE DI MO	OLIO COMBUSTIBI	1	FH24-12-C5	MONFALCONE (GO)
ENDESA ITALIA S.R.L. (VEDERE E-	IDROCARBURI LIQ	2	FM13-12-C5	MONFALCONE / C.LE DI MONFALCONE
ENEL GIT S.P.A.	GASOIL	1	FM12-1P2-C5	SULCIS (CA) / CTE ENEL
ENEL GIT S.P.A.	GASOIL	1	FM53-1P2-C5	TORREVALDALIGA NORD (RM) / CTE ENEL
ENEL POWER S.P.A. (ROMA)	GASOLIO	1	FL53B-1P2-C8	PORTOSCUSO (CA)
ENEL PRODUZIONE S.P.A. (BARI)	OLIO COMBUSTIBI	4	FH53B-2P2-C8	BARI / BA00
ENEL PRODUZIONE S.P.A. (PISA)	ACQUA DEMI	1	FX11-12-F8	SESTA / GEM/AREA TECNICA RICERCA
ENEL PRODUZIONE S.P.A. (PISA)	ACQUA DEMI	3	FX51-12-F8	SESTA / GEM/AREA TECNICA RICERCA
ENEL PRODUZIONE S.P.A. (PISA)	GASOLIO	1	FX11-12-C5	SESTA / GEM/AREA TECNICA RICERCA
ENEL S.P.A	DEMI WATER	1	FA12-12-F8	CIVITAVECCHIA (RM) / CTE ENEL TORREVALDALI

PMS Produzione Misuratori Volumetrici

PETROL Metering Systems

REFERENCE FOR

Power plant in Italy

Customer	Liquid	Qty	PD meter	City / plant
ENEL S.P.A.	GASOIL	4	FM11AB-2P2-C5	BRINDISI (BR) / CTE BRINDISI NORD
ENEL S.P.A.	GASOIL	4	FM53BC-2P2-C5	BRINDISI (BR) / CTE BRINDISI NORD
ENEL S.P.A.	NAPHTA	8	FH14C-2P2-C5	BRINDISI (BR) / CTE ENEL
ENEL S.P.A.	FUEL OIL	1	FH24C-2P2-C5	BRINDISI (BR) / CTE ENEL BRINDISI NORD
ENEL S.P.A.	O.C.D.	1	FA53B-2P2-C5	BRINDISI (BR) / CTE ENICHEM
ENEL S.P.A.	FUEL OIL	1	FM18-2P2-C8	BRINDISI / CTE BRINDISI
ENEL S.P.A.	NAPHTA	1	FH24C-2P2-C5	BRINDISI BR) / CTE ENEL BRINDISI NORD
ENEL S.P.A.	HEAVY FUEL OIL	1	FA24-12-C5	CAGLIARI (CA) / CTE ENEL S. GILLA
ENEL S.P.A.	O.C.D.	3	FM12-12-C5	CAGLIARI (CA) / CTE ENEL S. GILLA GR. 1
ENEL S.P.A.	O.C.D.	3	FM53B-12-C5	CAGLIARI (CA) / CTE ENEL S. GILLA GR. 2
ENEL S.P.A.	GASOIL	1	FA28-12-C5	CAGLIARI (CA) / CTE ENEL SULCIS
ENEL S.P.A.	GASOIL	1	FM11-1P2-C5	CIVITAVECCHIA (RM) / CTE ENEL
ENEL S.P.A.	GASOIL	1	FM53-1P2-C5	CIVITAVECCHIA (RM) / CTE ENEL T.V. NORD
ENEL S.P.A.	NAPHTA	1	FL14-12-C5	CIVITAVECCHIA (RM) / CTE ENEL T.V. SUD
ENEL S.P.A.	NAPHTA	1	FM14-12-C5	CIVITAVECCHIA (RM) / CTE ENEL T.V. SUD
ENEL S.P.A.	NAPHTA	2	FM24-12-C5	CIVITAVECCHIA (RM) / CTE ENEL T.V. SUD
ENEL S.P.A.	GASOIL	1	FM13-12-C5	CIVITAVECCHIA (RM) / CTE ENEL TORREVALDALI
ENEL S.P.A.	DEMI WATER	4	FA24-12-F8	FIUME SANTO (SS) / CTE ENEL
ENEL S.P.A.	DEMI WATER	1	FA28L-12-F8	FIUME SANTO (SS) / CTE ENEL
ENEL S.P.A.	FUEL OIL	1	FM14-1P2-C5	FIUME SANTO (SS) / CTE ENEL
ENEL S.P.A.	FUEL OIL	1	FM53B-1P2-C5	FIUME SANTO (SS) / CTE ENEL
ENEL S.P.A.	GASOIL	2	FA13-1P2-C5	FIUME SANTO (SS) / CTE ENEL
ENEL S.P.A.	GASOIL	1	FA51-1P2-C5	FIUME SANTO (SS) / CTE ENEL
ENEL S.P.A.	GASOIL	1	FM53B-1P2-C5	FIUME SANTO (SS) / CTE ENEL
ENEL S.P.A.	NAPHTA	2	FH13-1P2-C5	FIUME SANTO (SS) / CTE ENEL
ENEL S.P.A.	GASOIL	1	FA14-1P2-C5	FUSINA (VE) / CTE ENEL
ENEL S.P.A.	GASOIL	1	FA51-12-C5	GUALDO CATTANEO (PG) / CTE ENEL BASTARDO
ENEL S.P.A.	GASOIL	2	FM13-12-C5	LA SPEZIA (SP) / CTE ENEL
ENEL S.P.A.	GASOIL	2	FA51-12-C5	LA SPEZIA (SP) / CTE ENEL LA SPEZIA
ENEL S.P.A.	GASOIL	1	FL12AB-12-C5	LA SPEZIA (SP) / CTE ENEL LA SPEZIA
ENEL S.P.A.	GASOIL	1	FL51-12-C5	LA SPEZIA (SP) / CTE ENEL LA SPEZIA
ENEL S.P.A.	GASOIL	1	FM13-12-C5	LA SPEZIA (SP) / CTE ENEL LA SPEZIA
ENEL S.P.A.	BUNKER "C"	1	FL16D-1TP2-C5	MOGLIA DI SERMIDE (MN) / CTE ENEL
ENEL S.P.A.	GASOIL	1	FM51-12-C5	NAPOLI (NA) / CTE ENEL
ENEL S.P.A.	GASOIL	1	FM53-12-C5	NAPOLI (NA) / CTE ENEL
ENEL S.P.A.	NAPHTA	1	FM14-1P2-C5	P.TO VESME (CA) / CTE ENEL
ENEL S.P.A.	NAPHTA	1	FM14-1P2-C5	P.TO VESME (CA) / CTE ENEL SULCIS (CA)
ENEL S.P.A.	GASOIL	1	FM53-1P2-C5	P.TO VESME (CA) / CTE SULCIS

PMS Produzione Misuratori Volumetrici

PETROL Metering Systems

REFERENCE FOR

Power plant in Italy

Customer	Liquid	Qty	PD meter	City / plant
ENEL S.P.A.	GASOIL	1	FA11-22-F8	PALERMO (PA)
ENEL S.P.A.	WATER	1	FA11AB-22-C8	PIOMBINO (LI) / CTE ENEL
ENEL S.P.A.	FUEL OIL	4	FM18F-2P2-C5	PORTO TOLLE (RO) / CTE ENEL
ENEL S.P.A.	GASOIL	1	FM11-12-C5	PORTO TOLLE (RO) / CTE ENEL
ENEL S.P.A.	GASOIL	1	FM51-12-C5	PORTO TOLLE (RO) / CTE ENEL
ENEL S.P.A.	GASOIL	1	FM53B-1P2-C5	PORTO TOLLE (RO) / CTE ENEL
ENEL S.P.A.	WATER	1	FA13-12-F8	PORTO TOLLE (RO) / CTE ENEL
ENEL S.P.A.	NAPHTA	1	FM14C-12-C5	PORTO TOLLE (RO) / CTE ENEL DI PORTO TOLLE
ENEL S.P.A.	WATER	1	FA13-12-F8	PORTO TOLLE (VE) / CTE ENEL
ENEL S.P.A.	NAPHTA	2	FH51-1P2-C5	S. GILLA (CA) / CTE ENEL
ENEL S.P.A.	GASOIL	2	FL13-12-C5	S. GILLA (CA) / CTE ENEL S. GILLA
ENEL S.P.A.	FUEL OIL	1	FM11AB-1P2-C5	S. GILLA (CA) / CTE ENEL SPERIMENTALE S.GILL
ENEL S.P.A.	GPL	1	FL11AB-1P2-C3	S. GILLA (CA) / CTE ENEL SPERIMENTALE S.GILL
ENEL S.P.A.	BUNKER "C"	1	FM12-1P2-C5	S.GILLA (CA) / CTE ENEL
ENEL S.P.A.	FUEL OIL	1	FM22-1P2-C8	S.GILLA (CA) / CTE S. GILLA (CA)
ENEL S.P.A.	WATER	1	FA24-12-F8	SASSARI (SS) / CTE ENEL
ENEL S.P.A.	FUEL OIL	2	FL14-1P2-C5	SERMIDE (MN) / CTE ENEL
ENEL S.P.A.	GASOIL	1	FL51-12-C5	SERMIDE (MN) / CTE ENEL
ENEL S.P.A.	GASOIL	1	FL53B-1P2-C5	SERMIDE (MN) / CTE ENEL
ENEL S.P.A.	GASOIL	2	FX51-1P2-C5	SESTA (PI) / IMPIANTO SPERIMENTALE DI SESTA
ENEL S.P.A.	GASOIL	1	FH11-1P2-C5	SESTA / IMPAINTO SPERIMENTALE SESTA
ENEL S.P.A.	GASOIL	2	FX51-1P2-C5	SESTA / IMPIANTO SPERIMENTALE DI SESTA
ENEL S.P.A.	GASOIL	2	FH51-1P2-C5	SESTA / IMPIANTO SPERIMENTALE SESTA
ENEL S.P.A.	GASOIL	2	FH51-1P2-C5	SESTA / IMPIANTO SPERIMENTALE SESTA - POL
ENEL S.P.A.	NAPHTA	1	FM14-1I2-C5	SULCIS - P.TO VESME (CA) / CTE SULCIS
ENEL S.P.A.	GASOIL	1	FM12-1P2-C5	SULCIS (CA) / CTE ENEL
ENEL S.P.A.	O. C. PESANTE	1	FM14-1P2-C5	TAVAZZANO (MI) / CTE ENEL
ENEL S.P.A.	GASOIL	4	FAL11-12-C5	TERMINI IMERESE (PA) / CTE ENEL
ENEL S.P.A.	GASOIL	1	FL51-12-C5	TERMINI IMERESE (PA) / CTE ENEL
ENEL S.P.A.	GASOIL	1	FM11-1P2-C5	TERMINI IMERESE (PA) / CTE ENEL
ENEL S.P.A.	GASOIL	1	FM53B-1P2-C5	TERMINI IMERESE (PA) / CTE ENEL
ENEL S.P.A.	NAPHTA	2	FM24-1P2-C5	TERMINI IMERESE (PA) / CTE ENEL
ENEL S.P.A.	NAPHTA	1	FM53B-1P2-C5	TERMINI IMERESE (PA) / CTE ENEL
ENEL S.P.A.	FUEL OIL	2	FM18F-2P2-C5	TOLLE (RO) / CTE ENEL
ENEL S.P.A.	GASOIL	1	FL51-12-C5	TORRE VALDALIGA SUD (RM) / CTE ENEL
ENEL S.P.A.	NAPHTA	4	FM24-12-C5	TORRE VALDALIGA SUD (RM) / CTE ENEL
ENEL S.P.A.	GASOIL	3	FL51-12-C5	TORREVALDALIGA SUD (RM) / CTE ENEL
ENEL S.P.A.	GASOIL	4	FL53-12-C5	TORREVALDALIGA SUD (RM) / CTE ENEL

PMS Produzione Misuratori Volumetrici

PETROL Metering Systems

REFERENCE FOR

Power plant in Italy

Customer	Liquid	Qty	PD meter	City / plant
ENEL S.P.A.	GASOIL	2	FM13-12-C5	TORREVALDALIGA SUD (RM) / CTE ENEL
ENEL S.P.A.	GASOIL	3	FL51-12-C5	TURBIGO (MI)
ENEL S.P.A.	GASOIL	1	FM51-12-C5	TURBIGO / CTE ENEL TURBIGO
ENEL S.P.A.	HEAVY FUEL OIL	1	FH16D-1P2-C5	TURBIGO / CTE ENEL TURBIGO
ENEL S.P.A.	NAPHTA	2	FM11-12-C5	UMBRIA (PG) / CTE ENEL PIETR E BASTAR
ENEL S.P.A.	NAPHTA	4	FM12-1P2-C5	UMBRIA (PG) / CTE ENEL PIETR E BASTAR
ENEL S.P.A.	NAPHTA	4	FM53-1P2-C5	UMBRIA (PG) / CTE ENEL PIETR E BASTAR
ENEL SPT-GIT	GASOIL	2	FL53-12-C5	FIUMICINO (RM) / CTE ENEL TURBOGAS
ENELPOWER S.P.A.	FUEL OIL / ORIMUL	2	FM18-2P2-C8	BRINDISI / CTE ENEL BRINDISI SUD
ENICHEM SINTESI S.P.A.	METAC 80	1	FA51-2P2-F8	RAVENNA (RA) / STAB. ENICHEM
E-ON PRODUZIONE S.P.A.	OLIO COMBUSTIBI	2	FM13-12-C5	MONFALCONE / C.LE TERMOELETTRICA
ESACONTROL S.P.A.	DEMI WATER	1	FA53B-1P2-F8	SULCIS (CA) / CTE ENEL
ESACONTROL S.P.A.	GASOIL	1	FM12-1P2-C5	SULCIS (CA) / CTE ENEL
ESACONTROL S.P.A.	GASOIL	1	FM53-1P2-C5	SULCIS (CA) / CTE ENEL
ESACONTROL S.P.A.	NAPHTA	2	FM14-1P2-C5	SULCIS (CA) / CTE ENEL
EUROMISURE S.R.L.	ORIMULSION	2	FM13-1P2-C5	MESSINA / C.T.E. SAN FILIPPO DEL MELA
EUROMISURE S.R.L.	ORIMULSION	2	FM16-1P2-C5	MESSINA / C.T.E. SAN FILIPPO DEL MELA
F. FOCHI ENERGIA S.R.L.	WATER	1	FA13-12-C8	MONTALTO DI CASTRO (VT) / CTE ENEL
FILIPPO FOCHI ENERGIA S.R.L.	WATER	3	FA14-12-C8	MONTALTO DI CASTRO (VT) / CTE ENEL
FILIPPO FOCHI ENERGIA S.R.L.	WATER	1	FA16-2P2-C8	SETTIMO TORINESE (TO) / C.LE TERMICA SONDE
FILIPPO FOCHI ENERGIA S.R.L.	GASOIL	1	FA22-2TP2-C5	SETTIMO TORINESE (TO) / COGENERAZIONE SO
FILIPPO FOCHI ENERGIA S.R.L.	GASOIL	1	FA24-2TP2-C5	SETTIMO TORINESE (TO) / COGENERAZIONE SO
FIREM SOC. CONSORTILE	GASOIL	2	FA51-12-C5	/ CONSUMO GRUPPI ELETTROGENI
FISCHER & PORTER S.P.A.	BUNKER "C"	2	FA51-1P2-C5	/ REGOLAZIONE
FRANCO TOSI S.P.A.		1	FA51-12-C5	S. GILLA (CA) / CTE ENEL
FRANCO TOSI S.P.A.	GASOIL	1	FA51-12-C5	S. GILLA (CA) / CTE ENEL
FRANCO TOSI S.P.A.	NAPHTA	1	FA51-1P2-C5	S. GILLA 1° (CA) / CTE ENEL
HARTMANN & BROWN ITALIA S.P.A.	BUNKER "C"	1	FM14-12-C5	BRINDISI NORD (BR) / CTE ENEL SEZ.3
HARTMANN & BROWN ITALIA S.P.A.	BUNKER "C"	1	FM18-1P2-C5	BRINDISI NORD (BR) / CTE ENEL SEZ.3
HARTMANN & BROWN ITALIA S.P.A.	GAS	1	FM53-1P2-C5	BRINDISI NORD (BR) / CTE ENEL SEZ.3
HARTMANN & BROWN ITALIA S.P.A.	GASOIL	1	FM14-1P2-C5	BRINDISI NORD (BR) / CTE ENEL SEZ.3
HARTMANN & BROWN ITALIA S.P.A.	BUNKER "C"	1	FM14-12-C5	BRINDISI NORD (BR) / CTE ENEL SEZ.4
HARTMANN & BROWN ITALIA S.P.A.	BUNKER "C"	1	FM18-1P2-C5	BRINDISI NORD (BR) / CTE ENEL SEZ.4
HARTMANN & BROWN ITALIA S.P.A.	GASOIL	1	FM14-12-C5	BRINDISI NORD (BR) / CTE ENEL SEZ.4
HARTMANN & BROWN ITALIA S.P.A.	GASOIL	1	FM53-1P2-C5	BRINDISI NORD (BR) / CTE ENEL SEZ.4
HARTMANN & BROWN ITALIA S.P.A.	GASOIL	2	FM11AB-12-C5	BRINDISI SUD (BR) / CTE ENEL
HARTMANN & BROWN ITALIA S.P.A.	GASOIL	1	FM53-1P2-C5	BRINDISI SUD (BR) / CTE ENEL
HARTMANN & BROWN ITALIA S.P.A.	N.P. BUNKER "C"	2	FM14-12-C5	BRINDISI SUD (BR) / CTE ENEL

PMS Produzione Misuratori Volumetrici

PETROL Metering Systems

REFERENCE FOR

Power plant in Italy

Customer	Liquid	Qty	PD meter	City / plant
HARTMANN & BROWN ITALIA S.P.A.	N.P. BUNKER "C"	2	FM14-1P2-C5	BRINDISI SUD (BR) / CTE ENEL
HARTMANN & BROWN ITALIA S.P.A.	N.P. BUNKER "C"	2	FM18-1P2-C5	BRINDISI SUD (BR) / CTE ENEL
HARTMANN & BROWN ITALIA S.P.A.	GASOIL	1	FM53-1P2-C5	BRINDISI SUD / CTE ENEL
HARTMANN & BROWN ITALIA S.P.A.	GASOIL	1	FA12AB-1P2-C5	CAGLIARI (CA) / CTE ENEL S. GILLA
HARTMANN & BROWN ITALIA S.P.A.	GASOIL	1	FM12-1P2-C5	TAVAZZANO (MI) / CTE ENEL GRUPPO 3
HARTMANN & BROWN ITALIA S.P.A.	GASOIL	1	FM53-1P2-C5	TAVAZZANO (MI) / CTE ENEL GRUPPO 3
HARTMANN & BROWN ITALIA S.P.A.	N.P. BUNKER "C"	1	FM14-1P2-C5	TAVAZZANO (MI) / CTE ENEL GRUPPO 3
HARTMANN & BROWN ITALIA S.P.A.	N.P. BUNKER "C"	1	FM53-1P2-C5	TAVAZZANO (MI) / CTE ENEL GRUPPO 3
HARTMANN & BROWN ITALIA S.P.A.	GASOIL	1	FM12-1P2-C5	TAVAZZANO (MI) / CTE ENEL GRUPPO 4
HARTMANN & BROWN ITALIA S.P.A.	N.P. BUNKER "C"	1	FM14-1P2-C5	TAVAZZANO (MI) / CTE ENEL GRUPPO 4
HARTMANN & BROWN ITALIA S.P.A.	N.P. BUNKER "C"	1	FM53-1P2-C5	TAVAZZANO (MI) / CTE ENEL GRUPPO 4
IEMSA IMPIANTI S.R.L.	FUEL OIL	4	FL212-2P2-C5	MONTALTO DI CASTRO (VT) / CTE ENEL MONTAL
IEMSA IMPIANTI S.R.L.	GASOIL	2	FM28-2P2-C5	MONTALTO DI CASTRO (VT) / CTE ENEL MONTAL
MACCHI CALDAIE S.R.L.	GASOIL	1	FM51-1P2-C5	TORINO (TO) / CTE AEM
MACCHI CALDAIE S.R.L.	NAPHTA	3	FM11AB-1P2-C5	TORINO (TO) / CTE AEM
MACCHI S.P.A.	NAPHTA	2	FL11AB-1P2-C5	ATESSA V. DI SANGRO (CH) / C.LE TERMICA FIA
MACCHI S.P.A.	FUEL OIL	1	FM206-12-C5	BRESCIA (BS) / CTE ASM
MACCHI S.P.A.	GASOIL	1	FM12-1P2-C5	BRESCIA (BS) / CTE ASM
MACCHI S.P.A.	NAPHTA	2	FM12-1P2-C5	BRESCIA (BS) / CTE ASM
MACCHI S.P.A.	NAPHTA	4	FM51-12-C5	BRESCIA (BS) / CTE ASM
MACCHI S.P.A.	FUEL OIL	1	FL11AB-1P2-C5	CUNEO (CN) / 606 FIAT RIVALTA
MACCHI S.P.A.	FUEL OIL	1	FL12-1P2-C5	POMIGLIANO (NA) / CENTRALE TERM.STAB.FIAT
MACCHI S.P.A.	FUEL OIL	1	FM11-1P2-C5	SAN GIUSTINA (BL) / IMPIANTO RENO DE MEDIC
MALPENSA ENERGIA S.R.L.	GASOIL	2	FA11-12-C5	ITALY - MALPENSA (MI)
MG SISTEMI SRL	ACQUA DEMI	1	FA53-12-F8	CHIVASSO / ENEL POWER
NUOVA CIMIMONTUBI S.P.A.	GASOIL	1	FM51-1P2-C5	TRINO VERCELLESE (VC) / CTE ENEL TRINO VER
PETROLITE FRANCESE	WATER	1	FL53B-12-C8	AGIP TORR.TONA (??) / DISSALAZ. ELETTROSTA
PIANIMPIANTI S.P.A.	GASOLIO	2	FA22-2P2-C5	MILANO / BIOMASSE
PROGECO SISTEMI S.R.L.	GASOIL	2	FA22-1P2-C5	ROSIGNANO SOLVAY (LI)
R.A. SYSTEM S.R.L	BUNKER "C"	4	FA51-1P2-C5	
R.A. SYSTEM S.R.L	NAPHTA	21	FA51-1P2-C5	
R.A. SYSTEM S.R.L.	NAPHTA	7	FA51-1P2-C5	
REPCO S.R.L.	GASOLINE	1	FX51-1P2-C8	BERNATE TICINO (MI) / S.I.M.V. S.R.L.
SACEM S.P.A.	FUEL OIL	2	FM14-1P2-C5	FIUME SANTO (SS) / CTE ENEL
SACEM S.P.A.	FUEL OIL	2	FM53B-1P2-C5	FIUME SANTO (SS) / CTE ENEL
SACEM S.P.A.	GASOIL	2	FM11-1P2-C5	FIUME SANTO (SS) / CTE ENEL
SACEM S.P.A.	GASOIL	2	FM53B-1P2-C5	FIUME SANTO (SS) / CTE ENEL
SAIPEM S.P.A.	NAPHTA	1	FA112-22-C8	OSTIGLIA (MN) / CTE ENEL

PMS Produzione Misuratori Volumetrici — PETROL Metering Systems

REFERENCE FOR

Power plant in Italy

Customer	Liquid	Qty	PD meter	City / plant
SARDAMAG S.P.A.	BUNKER "C"	1	FA51-22-C5	S. ANTIOCO (CA) / STAB. SARDAMAG
SIFEM INTERNATIONAL S.R.L.	CRUDE OIL	1	FM13-22-C8	SESTO SAN GIOVANNI (MI)
SIMPRO S.R.L.	KEROSENE	1	FA51AB-1P2-C5	GENOVA
SNAM S.P.A.	GASOIL	1	FA51-MVP-F8	/ CENTRALE DI MELIZZANO
SNAM S.P.A.	GASOIL	1	FA51-12-C5	/ CENTRALE DI MONTESANO
SNAM S.P.A.	OIL	4	FA11-12-C8	TARSIA (CS) / IMAPINTO DI SPINTA DI TARSIA
SNAMPROGETTI S.P.A.	GLYCOL	1	FA51-12-C8	INCA PISTICCI (MT) / RIGRADAZIONE PET
SNAMPROGETTI S.P.A.	LUBRICATING OIL	2	FA11-12-C8	MASERA / C.LE COMPRESSIONE DI MASERA
SNAMPROGETTI S.P.A.	LUBRICATING OIL	2	FA11-12-C8	MASERA / CTE MASERA PLANT
SNAMPROGETTI S.P.A.	LUBRICATING OIL	3	FA51-12-C8	RIPALTA CREMASCA (CR) / CENTRALE COMPRESS
SNAMPROGETTI S.P.A.	WELL WATER	1	FA51-12-C8	RIPALTA CREMASCA (CR) / CENTRALE COMPRESS
SNAMPROGETTI S.P.A.	LUBRICATING OIL	3	FA11-12-C5	SETTALA (MI) / STAZ. COMPR. GAS
SOIMI S.P.A.	LUBRICATING OIL	1	FA51-12-C5	SNAM-RIPALTA GU (CR) / STAZIONE COMPRESS.
SOLVAY & CIE S.A.	FUEL OIL	1	FM12-1P2-C5	ROSIGNANO SOLVAY (LI)
SOMEFI S.P.A.	OCD	4	FM14C-1P2-C5	ENEL PRODUZIONE SPA / C.LE DI PIOMBINO
SOMEFI S.P.A.	GASOLIO	4	FM13BC-1P2-C5	PIOMBINO / C.LE ENEL
SOMEFI S.P.A.	GASOLIO TORCE	6	FM11AB-1P2-C5	PIOMBINO / C.LE ENEL
SOMEFI S.P.A.	OLIO COMBUSTIBI	8	FH24-1P2-C5	PIOMBINO / C.LE ENEL
TECHINT S.P.A	FUEL OIL	2	FM212-VRT1-C5	BRINDISI (BR) / OLEODOTTO BRINDISI NORD
TECHINT S.P.A	FUEL OIL	2	FA212-VRT1-C5	BRINDISI (BR) / OLEODOTTO BRINDISI SUD
TECHINT S.P.A.	FUEL OIL	1	FM18-2P2-C8	BRINDISI / CTE ENEL BRINDISI
TECHINT S.P.A.	HEAVY FUEL OIL	1	FM18-2P2-C8	BRINDISI / CTE ENEL BRINDISI
TERMOSUD S.P.A.	FUEL OIL	1	FM51-1P2-C5	
TOZZI SUD S.P.A.	GASOLINA	1	FL13-1P2-C8	/ CENTRALE GAS MANARA
TOZZI SUD S.P.A.	LUBRICATING OIL	2	FA12-1P2-C8	FANO (PS) / CENTRALE GAS DI FANO
TURBOTECNICA S.P.A.	GASOIL	1	FA53-2P2-C5	CREMONA (CR) / CTE CREMONA
TURBOTECNICA S.P.A.	GASOIL	1	FL11-2P2-C5	CREMONA (CR) / CTE CREMONA
TURBOTECNICA S.P.A.	WATER	2	FA51-1I2-F8	FARO S. (ME) / CENTRALE SNAM
TURBOTECNICA S.P.A.	WATER	2	FA51-2I2-F8	FARO SUP. (ME) / CENTRALE SNAM
TURBOTECNICA S.P.A.	GASOIL	1	FL13-12-C5	MONTALTO DI CASTRO (VT) / CTE ENEL
TURBOTECNICA S.P.A.	GASOIL	4	FL13-2TP2-C5	MONTALTO DI CASTRO (VT) / CTE ENEL
TURBOTECNICA S.P.A.	GASOIL	2	FL13-2TP2-C5	NAPOLI LEVANTE (NA) / CTE ENEL
TURBOTECNICA S.P.A.	GASOIL	4	FL13-2TP2-C5	ROSSANO CALABRO (CS) / CTE ENEL
TURBOTECNICA S.P.A.	DEMI WATER	2	FM28-1P2-F8	TARANTO / CENTRALE DI COGENERAZIONE ILVA

PMS Produzione Misuratori Volumetrici — PETROL Metering Systems

REFERENCE FOR

Supplies to abroad country

ALBANIA

Customer	Liquid	Qty	PD meter	City / plant
MAIRE ENGINEERING S.P.A. (SOST	FUEL OIL	2	FA13-1P2-C8	VLORE / KESH CENTRALE A CICLO COMBINATO
MAIRE ENGINEERING S.P.A. (SOST	FUEL OIL	1	FA51-1P2-C8	VLORE / KESH CENTRALE A CICLO COMBINATO
TECNIMONT S.P.A. (TORINO)	FUEL OIL	1	FA13-1P2-C8	VLORE / KESH CENTRALE A CICLO COMBINATO

ALGERIA

Customer	Liquid	Qty	PD meter	City / plant
A.I.F.G.	OLIO	1	FA14C-12-C5	HASSI MESSAOUD
A.I.F.G.	CRUDE OIL	2	FM18F-1P2-C5	HASSI MESSAUD
A.I.F.G.	CRUDE OIL	2	FH14C-1P2-C5	OUERGLA
ABB S.P.A. ENERGY AUTOMATION	FUEL OIL	10	FM13-1P2-C5	/ CTE MERS EL HADJAD II°
ALTECO S.R.L.	EAU	1	FA53B-1P2-C8	/ ANSALDO - CENTRALE THERMIQUE D'ORAN
ANSALDO ENERGIA S.P.A.	LIGHT FUEL OIL	1	FM53-1P2-C5	/ C.T.E. ORANO GR. 4 - SONELGAZ
ANSALDO S.P.A.	FUEL OIL	2	FA13-1P2-C5	/ CTE MERS EL HADJADJ II°
ANSALDO S.P.A.	FUEL OIL	2	FM13-1P2-C5	/ CTE MERS EL HADJADJ II°
BONATTI S.P.A. - PARMA	EAU	1	FA11-22-F8	HASSI MESSAUD / CENTRE HUILE BRN
BONATTI SPA - ALGERIA	WATER	1	FA11-22-F8	
ENI S.P.A.	CRUDE OIL	1	FM13-12-C5	
FIORENTINI S.P.A.	GPL	1	FL13-22-C5	/ SONELGAZ TRANSPORT DU GAZ-GRTG
ROLLE S.P.A.	CRUDE OIL	1	FM13-1P2-C5	
ROLLE S.P.A.	CRUDE OIL	1	FM53B-1P2-C8	/ PLANT HASSI MESAUD
ROLLE S.P.A.	WATER	1	FM51-1P2-C8	/ PLANT HASSI MESAUD
TURBOTECNICA S.P.A.	GASOIL	1	FA14-22-C5	/ ADRAR PLANT

ARGENTINA

Customer	Liquid	Qty	PD meter	City / plant
ELSAG BAILEY HARTMAN & BROWN	FUEL OIL	4	FM13-1P2-C5	/ COSTA NERA

AUSTRIA

Customer	Liquid	Qty	PD meter	City / plant
MANNESMAN ANLAGENBAU	LIGHT OIL	3	FL22-1P2-C5	
MANNESMAN ANLAGENBAU	LIGHT OIL	1	FL24-1P2-C5	
MANNESMAN ANLAGENBAU	LIGHT OIL	1	FL51-1P2-C5	
O.M.V.	CRUDE OIL	2	FAL12-1P2-C8	/ WELL

PMS Produzione Misuratori Volumetrici PETROL Metering Systems

REFERENCE FOR

Supplies to abroad country

BAHARAIN

Customer	Liquid	Qty	PD meter	City / plant
SAE SADELMI S.P.A.	DISTILLATE OIL	1	FA18F-2PI2-C5	/ CTE ALBA POWER STATION 3

BANGLADESH

Customer	Liquid	Qty	PD meter	City / plant
3P PROGETTI S.P.A.	HYDROCARBON	2	FA11-12-C8	/ CONDEN. DISCHARGE SYSTEM
T & T S.P.A.	GASOLINE	1	FL12-1P2-C5	

BRASIL

Customer	Liquid	Qty	PD meter	City / plant
METROVAL LTDA	OIL & WATER EMU	1	FM110H-22-C8	
PETROBRAS AMERICA INC.	CRUDE OIL	1	FM112L-1P2-C8	

BULGARIA

Customer	Liquid	Qty	PD meter	City / plant
PRESSINDUSTRIA S.P.A.	DEMI WATER	1	FA11-1P2-F8	/ POLIOLI PLANT BULGARIA
PRESSINDUSTRIA S.P.A.	DEMI WATER	2	FA51-22-F8	/ POLIOLI PLANT BULGARIA
PRESSINDUSTRIA S.P.A.	WELL WATER	1	FA53-22-F8	/ POLIOLI PLANT BULGARIA
REPCO S.R.L.	GASOLINE	2	FH51-1P2-C5	/ BULGAS GAZ - SOFIA

CAMBOGIA

Customer	Liquid	Qty	PD meter	City / plant
PEYRANI S.P.A.	HEAVY FUEL OIL	1	FA12-12-C5	/ PHNOM PENH POWER PLANT
PEYRANI S.P.A.	HEAVY FUEL OIL	1	FA22-12-C5	/ PHNOM PENH POWER PLANT

PMS Produzione Misuratori Volumetrici

PETROL Metering Systems

REFERENCE FOR

Supplies to abroad country

CHILE

Customer	Liquid	Qty	PD meter	City / plant
ANSALDO ENERGIA S.P.A.	DEMI WATER	1	FL14-12-F8	/ MEJILLONES THERMAL POWER PLANT
ANSALDO ENERGIA S.P.A.	DIESEL OIL	1	FM11AB-1P2-C5	/ MEJILLONES THERMAL POWER PLANT
ANSALDO ENERGIA S.P.A.	WATER	1	FA22-12-C8	/ MEJILLONES THERMAL POWER PLANT
ANSALDO ENERGIA S.P.A.	GASOIL	1	FA18-1I2-C5	QUILLOTA / NEHUENCO THERMAL POWER PLANT
TECNIMONT S.P.A.	ANTISTATIC	1	FM51-2N2-F8	/ P.P.TALCAHUANO
TECNIMONT S.P.A.	CONDENSATE	1	FM11AB-2N2-C8	/ P.P.TALCAHUANO
TECNIMONT S.P.A.	GREASE	1	FM51-2N2-F8	/ P.P.TALCAHUANO
TECNIMONT S.P.A.	OIL	2	FM51-2N2-F8	/ P.P.TALCAHUANO

PMS Produzione Misuratori Volumetrici

PETROL Metering Systems

REFERENCE FOR

Supplies to abroad country

CHINA

Customer	Liquid	Qty	PD meter	City / plant
ANSALDO S.P.A.	H.F.O.	1	FM11AB-12-C8	/ CTE
ANSALDO S.P.A.	LIGHT FUEL OIL	1	FM11AB-12-C8	/ CTE
ASFALTI BREITNER S.R.L.	BITUMEN	1	FJA13-1P2-C5	
BKAET CO. LTD	CAUSTIC	1	FM51-1P2-C8	BEIJIN
C.M.B. S.P.A.	VEGETAL OIL	1	FJA11-MVE-F8	/ PROG. JIUJIANG
C.M.B. S.P.A.	FATTY ACIDS	1	FA53-1P2-F8	GUANGHAN
C.M.B. S.P.A.	FATTY ACIDS	1	FA11AB-12-E7	JINAN / FATTY ACIDS
C.M.B. S.P.A.	FATTY ACIDS	3	FA11AB-1P2-E7	JINAN / FATTY ACIDS
C.M.B. S.P.A.	FATTY ACIDS	1	FA51-12-E7	JINAN / FATTY ACIDS
C.M.B. S.P.A.	FATTY ACIDS	1	FH11AB-1P2-F8	JINAN / FATTY ACIDS
C.M.B. S.P.A.	GLYCERINE	1	FA11AB-1P2-E7	JINAN / FATTY ACIDS
C.M.B. S.P.A.	GLYCERINE	1	FA51-1P2-E7	JINAN / FATTY ACIDS
C.M.B. S.P.A.	GLYCERINE	2	FA51AB-1P2-C8	JINAN / FATTY ACIDS
C.M.B. S.P.A.	C 16 / C 18	1	FA51-1P2-F8	LUZHOV / FATTY ACIDS
C.M.B. S.P.A.	C 20	1	FA51-1P2-E8	LUZHOV / FATTY ACIDS
C.M.B. S.P.A.	C 22	1	FA51-1P2-E8	LUZHOV / FATTY ACIDS
C.M.B. S.P.A.	FATTY ACIDS	4	FA11AB-1P2-E8	LUZHOV / FATTY ACIDS
C.M.B. S.P.A.	FATTY ACIDS	2	FA12AB-1P2-E8	LUZHOV / FATTY ACIDS
C.M.B. S.P.A.	FATTY ACIDS	2	FA51-1P2-E8	LUZHOV / FATTY ACIDS
C.M.B. S.P.A.	FATTY ACIDS	2	FA53B-1P2-E8	LUZHOV / FATTY ACIDS
C.M.B. S.P.A.	FATTY ACIDS	1	FH11AB-1P2-E8	LUZHOV / FATTY ACIDS
C.M.B. S.P.A.	GLYCERINE	1	FA51-1P2-C8	LUZHOV / FATTY ACIDS
C.M.B. S.P.A.	GLYCERINE	2	FA51-1P2-E8	LUZHOV / FATTY ACIDS
C.M.B. S.P.A.	LARD	1	FA53B-1P2-C8	LUZHOV / FATTY ACIDS
C.M.B. S.P.A.	OIL	4	FA11AB-1P2-C8	LUZHOV / FATTY ACIDS
C.M.B. S.P.A.	OIL/TALLON	1	FA12AB-1P2-C8	LUZHOV / FATTY ACIDS
C.M.B. S.P.A.	TALLOW	1	FA53B-1P2-C8	LUZHOV / FATTY ACIDS
C.M.B. S.P.A.	FATTY ACIDS	1	FA12-1P2-F8	SHENYANG / FATTY ACIDS
C.M.B. S.P.A.	ALIMENTARY OIL	1	FA12-1P2-C5	SHENYANG / HYDROGENATION PLANT
C.M.B. S.P.A.	FATTY ACIDS	1	FA206-P-C8	SHENYANG / TOTAL DISTILLATION
C.M.B. S.P.A.	FATTY ACIDS	1	FA51-1P2-C8	SHENYANG / TOTAL DISTILLATION
CENTRO COMBUSTION S.P.A.	NAPHTA	6	FA51-1P2-C8	/ WELFING BEAM FURNACE
CHINESE DELEGATION IN GENOVA	HEAVY OIL	1	FA11AB-1P2-C5	TIANJIN / TIANJIN PIPE CORPORATION
CHINESE DELEGATION IN GENOVA	HEAVY OIL	1	FA12-1P2-C5	TIANJIN / TIANJIN PIPE CORPORATION
CHINESE DELEGATION IN GENOVA	HEAVY OIL	4	FA51-1P2-C5	TIANJIN / TIANJIN PIPE CORPORATION
CHINESE DELEGATION IN GENOVA	LIGHT OIL	1	FA11AB-1P2-C5	TIANJIN / TIANJIN PIPE CORPORATION

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REFERENCE FOR

Supplies to abroad country

CHINESE DELEGATION IN GENOVA	LIQUIDS	1	FL53-1P2-C5	TIANJIN / TIANJIN PIPE CORPORATION
DANCO INTERNATIONAL	HEAVY FUEL OIL	10	FA51-1P2-C5	TIANJIN / TIANJIN PIPE CORPORATION
DANIELI CENTRO COMBUSTION S.P	NAPHTA	4	FA51-1P2-C8	TIANJIN / TIANJIN PIPE CORPORATION
DYNAMIC EXIM PTE. LTD.	FUEL OIL	2	FA51-1P2-C5	TIANJIN / TIANJIN PIPE CORPORATION
ESACONTROL S.P.A.	FUEL OIL	1	FA13-12-C8	NANTONG / CTE
ESACONTROL S.P.A.	LIGHT OIL	1	FA53-12-C8	NANTONG / CTE
ESACONTROL S.P.A.	FUEL OIL	4	FA53B-1P2-C8	NANTONG / CTE 2X350MW PLANT
ESACONTROL S.P.A.	FUEL OIL	1	FM12-1P2-C8	NANTONG / CTE 2X350MW PLANT
ESACONTROL S.P.A.	FUEL OIL	1	FA24-12-C8	SHANG-AN / CTE
ESACONTROL S.P.A.	LIGHT OIL	1	FA53-12-C8	SHANG-AN / CTE
ESACONTROL S.P.A.	FUEL OIL	2	FA12-1P2-C8	SHANG-AN / CTE 2X350MW PLANT
ESACONTROL S.P.A.	FUEL OIL	4	FM12-1P2-C8	SHANG-AN / CTE 2X350MW PLANT
F.TOSI IND. S.P.A.	R.F.O.	4	FM53B-12-C5	DAKANG / CTE DAKANG
FILIPPO FOCHI PETROLCHIMICA S.	NAOH 42%	1	FA12-1P2-F8	/ PROJ. 1940A C.FP5004
FILIPPO FOCHI PETROLCHIMICA S.	CAUSTIC	1	FM51-1P2-C8	/ PROJ. P1940A C.FP5004
FILIPPO FOCHI PETROLCHIMICA S.	FUEL OIL	1	FA51AB-12-C8	/ PROJ. P1940A C.FP5004
FILIPPO FOCHI PETROLCHIMICA S.	FUEL OIL	1	FA51AB-1P2-C8	/ PROJ. P1940A C.FP5004
FILIPPO FOCHI PETROLCHIMICA S.	HCL 31%	1	FA51-12-MP	/ PROJ. P1940A C.FP5004
FILIPPO FOCHI PETROLCHIMICA S.	NAOH 42%	1	FA51-12-F8	/ PROJ. P1940A C.FP5004
FILIPPO FOCHI PETROLCHIMICA S.	WASTE WATER	1	FA12AB-12-C8	/ PROJ. P1940A C.FP5004
FILIPPO FOCHI PETROLCHIMICA S.	WATER+CAUSTIC	1	FA51-1P2-C8	/ PROJ. P1940A C.FP5004
FISHER ROSEMOUNT ITALIA S.R.L.	SOLVENT	1	FA51AB-2N2-F8	/ CHINA PETROCHEM
IRITECNA S.P.A.	HEAVY OIL	1	FA12-1P2-C5	TIANJIN / PIPE TUBE 500.000 T/A
IRITECNA S.P.A.	LIGHT OIL	1	FA11AB-1P2-C5	TIANJIN / PIPE TUBE 500.000 T/A
IRITECNA S.P.A.	LIGHT OIL	2	FA51-1P2-C5	TIANJIN / PIPE TUBE 500.000 T/A
ITALIMPIANTI S.P.A.	GASOIL	1	FL11AB-1P2-C5	TIANJIN / PIPE TUBE 500.000 T/A
ITALIMPIANTI S.P.A.	HEAVY OIL	1	FA11AB-1P2-C5	TIANJIN / PIPE TUBE 500.000 T/A
ITALIMPIANTI S.P.A.	HEAVY OIL	1	FA12-1P2-C5	TIANJIN / PIPE TUBE 500.000 T/A
ITALIMPIANTI S.P.A.	HEAVY OIL	9	FA51-1P2-C5	TIANJIN / PIPE TUBE 500.000 T/A
ITALIMPIANTI S.P.A.	LIGHT OIL	1	FA11AB-1P2-C5	TIANJIN / PIPE TUBE 500.000 T/A
ITALIMPIANTI S.P.A.	LIGHT OIL	2	FA51-1P2-C5	TIANJIN / PIPE TUBE 500.000 T/A
ITALIMPIANTI S.P.A.	NAPHTA	1	FL53-1P2-C5	TIANJIN / PIPE TUBE 500.000 T/A
ITALIMPIANTI S.P.A.	NAPHTA	1	FL53BC-1P2-C5	TIANJIN / PIPE TUBE 500.000 T/A
LINDE IMPIANTI ITALIA S.P.A.	CAUSTIC SODA	1	FA12-22-F8	JILIN / JILIN AMMONIA PLANT
LINDE IMPIANTI ITALIA S.P.A.	HCL SOLUTION	1	FA12-22-MP	JILIN / JILIN AMMONIA PLANT
LINDE IMPIANTI ITALIA S.P.A.	METHANOL	1	FA14-22-F8	JILIN / JILIN AMMONIA PLANT
MASIC U.S. INC.	HEAVY FUEL OIL	2	FA51-1P2-C5	TIANJIN / TIANJIN PIPE CORPORATION
NITCO S.P.A.	HEAVY FUEL OIL	1	FA11AB-1P2-C5	TIANJIN / TIANJIN PIPE CORPORATION
NITCO S.P.A.	HEAVY FUEL OIL	1	FA12-1P2-C5	TIANJIN / TIANJIN PIPE CORPORATION

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NITCO S.P.A.	HEAVY FUEL OIL	1	FL53-1P2-C5	TIANJIN / TIANJIN PIPE CORPORATION
NITCO S.P.A.	LIGHT FUEL OIL	1	FA11AB-1P2-C5	TIANJIN / TIANJIN PIPE CORPORATION
NITCO S.P.A.	LIGHT FUEL OIL	1	FL11AB-1P2-C5	TIANJIN / TIANJIN PIPE CORPORATION
PRESSINDUSTRIA S.P.A.	WATER	1	FA53-22-F8	SHEN YANG / IMP. POLIOLI
PRESSINDUSTRIA S.P.A.	DEMI WATER	1	FA11-1P2-F8	SHEN YANG. / IMP. POLIOLI
PRESSINDUSTRIA S.P.A.	DEMI WATER	2	FA51-22-F8	SHEN YANG. / IMP. POLIOLI
SHENZEN CTS INDUSTRIAL CO. LT	CHEMICAL LIQUID	4	FA51AB-2N2-C8	
SHENZEN CTS INDUSTRIAL CO. LT	CHEMICAL LIQUID	1	FM51AB-2N2-F8	
SIIRTEC S.P.A.	MEG	2	FA13-12-C8	LIAO DONG BAY / JZ-20-2 SOUTH HIGH MEG
SIIRTEC S.P.A.	MEG	1	FA51-12-C8	LIAO DONG BAY / JZ-20-2 SOUTH HIGH MEG
SIIRTEC S.P.A.	HYDROCARBON	1	FL13-22-C8	SOUTH CHINA SEA / HZ 26.1 DEVELOP.
SIIRTEC S.P.A.	WATER	1	FL53-22-C8	SOUTH CHINA SEA / HZ 26.1 DEVELOP.
SIIRTEC S.P.A.	CRUDE	1	FA18-2T2-C5	SOUTH CHINA SEA / HZ-21-1 FIELD DEVELOP
SIIRTEC S.P.A.	WATER	1	FA28-2T2-C8	SOUTH CHINA SEA / HZ-21-1 FIELD DEVELOP
SIIRTEC S.P.A.	CRUDE LIQ.	1	FA110H-2T2-C5	SOUTH CHINA SEA / HZ-26 FIELD DEVELOP.
SIIRTEC S.P.A.	WATER	1	FA210-2T2-C8	SOUTH CHINA SEA / HZ-26 FIELD DEVELOP.
SNAMPROGETTI S.P.A.	L/SOL	2	FA11-MVP-E8	BEIJING / 40000 MTPY EVA RESIN PLANT
SNAMPROGETTI S.P.A.	L/VAM	1	FA11-MVP-E8	BEIJING / 40000 MTPY EVA RESIN PLANT
SNAMPROGETTI S.P.A.	ETHANOL	11	FA14-2P2-F8	JILIN / 100.000 M.T.P.Y. ALPHA ALCHOL
SNAMPROGETTI S.P.A.	ETHANOL	2	FA53-2P2-F8	JILIN / 100.000 M.T.P.Y. ALPHA ALCHOL
SNAMPROGETTI S.P.A.	SM	1	FA11AB-2N2-C8	MAOMING GUANG / MTPY STYRENE PLANT
SNAMPROGETTI S.P.A.	SM	1	FA51AB-2N2-C8	MAOMING GUANG / MTPY STYRENE PLANT
SNIA ENGINEERING S.P.A.	DEMI WATER	1	FA14-1P2-C8	/ CAPROLACTAM PROJECT
SNIA ENGINEERING S.P.A.	DEMI WATER	1	FM11AB-1P2-C8	/ CAPROLACTAM PROJECT
SNIA ENGINEERING S.P.A.	WATER	2	FA14-1P2-C8	/ CAPROLACTAM PROJECT
SNIA ENGINEERING S.P.A.	WATER	1	FA51AB-1P2-F8	/ CAPROLACTAM PROJECT
SNIA ENGINEERING S.P.A.	CS2	1	FA14-MVP-E8	LIAOYANG / CS2-CNCCC.
TECHNIPETROL S.R.L.	BFW	1	FM12-22-C8	/ 1834-CAPROLACTAM PLANT SHJIAZH
TECHNIPETROL S.R.L.	CAUSTIC SODA 42	1	FA11AB-22-C8	/ 1834-CAPROLACTAM PLANT SHJIAZH
TECHNIPETROL S.R.L.	CAUSTIC SODA 42	1	FA12-22-C8	/ 1834-CAPROLACTAM PLANT SHJIAZH
TECHNIPETROL S.R.L.	CAUSTIC SODA 42	1	FA12-2P2-C8	/ 1834-CAPROLACTAM PLANT SHJIAZH
TECHNIPETROL S.R.L.	CLEAN CONDENSA	1	FA11-22-C8	/ 1834-CAPROLACTAM PLANT SHJIAZH
TECHNIPETROL S.R.L.	CONDENSATE	1	FM12-22-C8	/ 1834-CAPROLACTAM PLANT SHJIAZH
TECHNIPETROL S.R.L.	FUEL OIL	1	FA22-2P2-C8	/ 1834-CAPROLACTAM PLANT SHJIAZH
TECHNIPETROL S.R.L.	FUEL OIL	2	FA51AB-2P2-C8	/ 1834-CAPROLACTAM PLANT SHJIAZH
TECHNIPETROL S.R.L.	LPG	1	FM13-P-C3	/ 1834-CAPROLACTAM PLANT SHJIAZH
TECHNIPETROL S.R.L.	MOTHER LIQUOR	1	FA12-22-F8	/ 1834-CAPROLACTAM PLANT SHJIAZH
TECHNIPETROL S.R.L.	PROCESS WATER	1	FL51AB-22-F8	/ 1834-CAPROLACTAM PLANT SHJIAZH
TECHNIPETROL S.R.L.	SODA	1	FA51-22-C8	/ 1834-CAPROLACTAM PLANT SHJIAZH

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Supplies to abroad country

TECHNIPETROL S.R.L.	WATER	1	FA11-22-F8	/ 1834-CAPROLACTAM PLANT SHJIAZH
TECHNIPETROL S.R.L.	WATER	1	FM22-22-C8	/ 1834-CAPROLACTAM PLANT SHJIAZH
TECNIMONT S.P.A.	A.CYANHYD.	1	FA51AB-12-G9	/ MMA - ANDA PLANT
TECNIMONT S.P.A.	AMMONIACA ANID	1	FM51-12-F8	/ MMA - ANDA PLANT
TECNIMONT S.P.A.	METHANOL	1	FA51-12-F8	/ MMA - ANDA PLANT
TECNIMONT S.P.A.	PURE MMA	1	FA11AB-12-F8	/ MMA - ANDA PLANT
TECNIMONT S.P.A.	ADDITIVE	1	FM51-2N2-F8	/ PP PUYANG/ENG
TECNIMONT S.P.A.	MINERAL OIL	1	FM51-22-F8	/ PP PUYANG/ENG
TECNIMONT S.P.A.	OIL	1	FM51-2N2-C8	/ PP PUYANG/ENG
TECNIMONT S.P.A.	OIL+MELTED GREA	1	FM51AB-2N2-F8	/ PP PUYANG/ENG
TECNIMONT S.P.A.	BUTADIENE	1	FL11AB-P-C8	GUANGZHOUP P.R.C. / ETHYLENE COMPLEX
TECNIMONT S.P.A.	C4 HC	1	FL11AB-P-C8	GUANGZHOUP P.R.C. / ETHYLENE COMPLEX
TECNIMONT S.P.A.	C4 HC	1	FL12-P-C8	GUANGZHOUP P.R.C. / ETHYLENE COMPLEX
TECNIMONT S.P.A.	ETHYLENE	1	FM13-P-F8	GUANGZHOUP P.R.C. / ETHYLENE COMPLEX
TECNIMONT S.P.A.	GASOIL	1	FL14-P-C8	GUANGZHOUP P.R.C. / ETHYLENE COMPLEX
TECNIMONT S.P.A.	H.C.	1	FA53-P-C8	GUANGZHOUP P.R.C. / ETHYLENE COMPLEX
TECNIMONT S.P.A.	H.C.	1	FL53-P-C8	GUANGZHOUP P.R.C. / ETHYLENE COMPLEX
TECNIMONT S.P.A.	PROPYLENE	1	FM53-P-C8	GUANGZHOUP P.R.C. / ETHYLENE COMPLEX
TECNIMONT S.P.A.	ADDITIVE	1	FM51-2N2-F8	PP MAOMING / 140000 T/Y PP
TECNIMONT S.P.A.	MINERAL OIL	1	FM51-22-F8	PP MAOMING / 140000 T/Y PP
TECNIMONT S.P.A.	OIL	1	FM51-2N2-C8	PP MAOMING / 140000 T/Y PP
TECNIMONT S.P.A.	OIL+MELTED GREA	1	FM51AB-2N2-F8	PP MAOMING / 140000 T/Y PP
WUHAN WEIKE AUTOMATIC CONTR	FUEL OIL	1	FA51AB-1P2-C8	CHINA

COLOMBIA

Customer	Liquid	Qty	PD meter	City / plant
AERIMPIANTI S.R.L.	NAPHTA / GASOIL	8	FA51-1P2-C5	/ ICEL CENTR.DIESEL LETICI
AERIMPIANTI S.R.L.	NAPHTA	1	FA14C-12-C5	LETIC
AERIMPIANTI S.R.L.	NAPHTA	1	FA24-12-C5	LETIC
BENELLI S.P.A.	SODA 47%	1	FAL12-1P2-E7	CAUCA / PASTA DI CELLULOSA
T.P.L. S.P.A.	ALCOHOL	4	FA11AB-22-E7	/ IND.DE LICORES DEL VALLE
T.P.L. S.P.A.	ALCOHOL	3	FA13B-2N2-E7	/ IND.DE LICORES DEL VALLE
T.P.L. S.P.A.	ALCOHOL	2	FA53B-22-E7	/ IND.DE LICORES DEL VALLE
T.P.L. S.P.A.	ALCOHOL	3	FA53B-2N2-E7	/ IND.DE LICORES DEL VALLE

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REFERENCE FOR

Supplies to abroad country

CONGO

Customer	Liquid	Qty	PD meter	City / plant
AGIP RECHERCHES	CRUDE OIL	1	FM24-22-C8	POINTE NOIRE / ZAF 1 PLATFORM
AGIP RECHERCHES	CRUDE OIL	3	FM24-VRT-C8	POINTE NOIRE / ZAF 1 PLATFORM
AGIP RECHERCHES	CRUDE OIL	1	FM24-VRT-C8	POINTE NOIRE / ZAF 1 PLATFORM
AGIP RECHERCHES	CRUDE OIL	1	FM51-22-C8	POINTE NOIRE / ZAF 1 PLATFORM
AGIP S.P.A.	CRUDE OIL	1	FH212-2P2-C5	POINTE NOIRE / ZAF 1 PLATFORM
I.M.S. S.P.A.	SOUR WATER	1	FM51-2P2-C8	LOANGO EX / DP-6 PLATFORM

CROATIA

Customer	Liquid	Qty	PD meter	City / plant
PLIVA CONSULTING	WATER	1	FA11-22-F8	

CUBA

Customer	Liquid	Qty	PD meter	City / plant
C.R. TECHNOLOGIC SYSTEM S.R.L.	ALCHOOL	1	FA53B-2P2-C8	
C.R. TECHNOLOGIC SYSTEM S.R.L.	ALCOOL / RON	2	FA53B-2P2-C8	AZUIMPORT - LA HABANA
C.R. TECHNOLOGIC SYSTEM S.R.L.	GASOLIO	2	FA53-1P2-C5	LA HABANA
C.R. TECHNOLOGIC SYSTEM S.R.L.	ACQUA	2	FA13B-22-C8	MAQUIMPORT - LA HABANA
C.R. TECNOLOGIC SYSTEM S.R.L.	GASOIL	2	FA14C---C5	
C.R. TECNOLOGIC SYSTEM S.R.L.	WATER	1	FA13-2P2-C8	
C.R. TECNOLOGIC SYSTEM S.R.L.	WATER	5	FA14C-2P2-C5	
C.R. TECNOLOGY SYSTEM S.R.L.	GASOLINE	1	FA212-12-C5	/ CUPET FORTUNE
C.R. TECNOLOGY SYSTEM S.R.L.	GASOLINE	2	FA28F-12-C5	/ CUPET FORTUNE
C.R. TECNOLOGY SYSTEM S.R.L.	KEROSENE	1	FA112L-12-C5	/ CUPET FORTUNE
C.R. TECNOLOGY SYSTEM S.R.L.	LPG	1	FL14C-12-C3	/ CUPET FORTUNE
C.R. TECNOLOGY SYSTEM S.R.L.	PETROLEUM	1	FA18F-1P2-C5	/ CUPET FORTUNE

CYPRUS

Customer	Liquid	Qty	PD meter	City / plant
ANSALDO CALDAIE S.P.A.	FUEL OIL	1	FL12-2P2-C8	VASILIKOS / POWER STATION
ANSALDO CALDAIE S.P.A.	FUEL OIL	6	FL12AB-2P2-C8	VASILIKOS / POWER STATION
ANSALDO CALDAIE S.P.A.	FUEL OIL	1	FL51AB-2P2-C8	VASILIKOS / POWER STATION
ANSALDO CALDAIE S.P.A.	FUEL OIL	1	FL53-2P2-C8	VASILIKOS / POWER STATION
ANSALDO CALDAIE S.P.A.	FUEL OIL	1	FL53S-1P2-C5	VASILIKOS / POWER STATION

PMS Produzione Misuratori Volumetrici

PETROL Metering Systems

REFERENCE FOR

Supplies to abroad country

CZECH REPUBLIC

Customer	Liquid	Qty	PD meter	City / plant
SNAMPROGETTI S.P.A.	CHARGE	1	FM28-1P2-C8	/ LITVINOV
SNAMPROGETTI S.P.A.	GASOIL	1	FM24-1P2-C8	/ LITVINOV
SNAMPROGETTI S.P.A.	GASOIL	1	FM51AB-1P2-C8	/ LITVINOV
SNAMPROGETTI S.P.A.	GASOIL	2	FM53-1P2-C8	/ LITVINOV
SNAMPROGETTI S.P.A.	SLOP WAX	1	FM12-1P2-C8	/ LITVINOV
SNAMPROGETTI S.P.A.	VACUM RESIDUE	1	FM24-1P2-C8	/ LITVINOV

DENMARK

Customer	Liquid	Qty	PD meter	City / plant
ANSALDO ENERGIA S.P.A.	DEMI WATER	1	FL14C-2P2-F8	/ AVEDORE PLANT

PMS Produzione Misuratori Volumetrici — PETROL Metering Systems

REFERENCE FOR

Supplies to abroad country

EGYPT

Customer	Liquid	Qty	PD meter	City / plant
ABB SAE SADELMI S.P.A.	SOLAR OIL	2	FM22-1IP2-C5	/ CTE CAIRO WEST
ABB SAE SADELMI S.P.A.	FUEL OIL	1	FL112-2P2-F8	/ EL KUREIMAT THERMAL POWER PLANT
ABB SAE SADELMI S.P.A.	FUEL OIL	12	FM53-2P2-F8	/ EL KUREIMAT THERMAL POWER PLANT
ANSALDO CALDAIE S.P.A.	MAZOUT OIL	2	FL14-1P2-C8	EL TEBBIN / EL TEBBIN THERMAL POWER PLANT
ANSALDO CALDAIE S.P.A.	MAZOUT OIL	2	FL22-1P2-C8	EL TEBBIN / EL TEBBIN THERMAL POWER PLANT
ANSALDO CALDAIE S.P.A.	SOLAR OIL	2	FL22-1P2-C8	EL TEBBIN / EL TEBBIN THERMAL POWER PLANT
ANSALDO ENERGIA S.P.A.	HEAVY FUEL OIL	1	FM53-1P2-C8	/ CTE DAMANHOOR
ANSALDO ENERGIA S.P.A.	LIGHT FUEL OIL	1	FL11AB-1P2-C8	/ CTE DAMANHOOR
ANSALDO S.P.A	H. FUEL OIL	1	FM53-1P2-C8	/ CTE DAMANHOOR
ANSALDO S.P.A.	H. FUEL OIL	3	FM53-1P2-C8	/ CTE DAMANHOOR
ANSALDO S.P.A.	LIGHT FUEL OIL	1	FL11AB-1P2-C8	/ CTE DAMANHOOR
AR TECNOLOGY S.R.L.	CONDESATE	1	FL53-2P2-F8	/ GUPCO - CAIRO
CO.GE.MA.	HEAVY FUEL OIL	1	FM24-12-C5	/ CTE DAMANHOOR
ECIS S.R.L.	HYDROCARBON	2	FL53-2P2-F8	
ELSAG BAILEY HARTMAN & BROWN	GLYCOL	1	FA51-P-C8	/ ELQARA ONSHORE PLANT -PETROBEL -BALTIM
ELSAG BAILEY HARTMAN & BROWN	H.C. CONDENSATE	1	FH14-P-C8	/ ELQARA ONSHORE PLANT -PETROBEL -BALTIM
EPSCO S.R.L.	CRUDE OIL	1	FA22-1P2-C8	/ QAPCO - WEST GEBER EL ZEIT
EPSCO S.R.L.	CRUDE OIL + WAT	1	FM22-1P2-C8	/ QAPCO - WEST GEBER EL ZEIT
EPSCO S.R.L.	WATER	2	FA11-1P2-C8	/ QAPCO - WEST GEBER EL ZEIT
IBN-INGENIEURBURO MOHAMED N	FUEL OIL	2	FM53-2P2-F8	/ EL KUREIMAT THERMAL POWER PLANT
INGLEN S.P.A.	GASOIL	1	FA12-12-C5	
INGLEN S.P.A.	GASOIL	1	FA14-12-C5	
INGLEN S.P.A.	HEAVY FUEL OIL	1	FA12-12-C5	
INGLEN S.P.A.	HEAVY FUEL OIL	1	FA14-12-C5	
NUOVA CIMIMONTUBI S.P.A.	MAZOUT	2	FM14-2P2-C8	/ EL KUREIMAT POWER STATION
NUOVA CIMIMONTUBI S.P.A.	MAZOUT	2	FM18F-2P2-C8	/ EL KUREIMAT POWER STATION
NUOVA CIMIMONTUBI S.P.A.	SOLAR OIL	2	FL53-2P2-C8	/ EL KUREIMAT POWER STATION
PERONI POMPE S.P.A.	GLYCOL	1	FA51-2P2-C8	/ EL GAMIL PLANT
PERONI POMPE S.P.A.	GLYCOL	1	FA51-2P2-C8	EGITTO / GUPCO - RAS EL BARR CONCESSION
PERONI POMPE S.P.A.	GLYCOL	1	FX51-2P2-C8	EGITTO / GUPCO - RAS EL BARR CONCESSION
POLYPLASTIC	MMA	1	FA12-MVE-F8	/ PLANT EGYPT
PREMABERGO ITALIANA S.P.A.	FUEL OIL	2	FJA13-1P2-C5	/ CTE WEST CAIRO
PREMABERGO ITALIANA S.P.A.	FUEL OIL	2	FJM16D-1P2-C5	/ CTE WEST CAIRO
PREMABERGO ITALIANA S.P.A.	FUEL OIL	2	FM22-1P2-C5	/ CTE WEST CAIRO
PREMABERGO ITALIANA S.P.A.	CRUDE OIL	1	FH24-2P2-C8	RAS GARRA / CRUDE OIL FLOW STATION
RA.CO. S.R.L.	DIESEL OIL	1	FA53B-12-C5	RAS GARRA / CRUDE OIL FLOW STATION

PMS Produzione Misuratori Volumetrici — PETROL Metering Systems

REFERENCE FOR

Supplies to abroad country

ROSETTI MARINO S.P.A.	GLYCOL	1	FH51-1P2-F8	EGYPT / EL QARA ON-SHORE
SADELMI COGEPI	LIGHT OIL	1	FA110H-2I2-C5	/ CTE CAIRO SOUTH
SAE SADELMI S.P.A.	SOLAR OIL	1	FL18F-2I2-C5	/ CTE DAMIETTA
SICES S.P.A.	GASOLINE	1	FX22-22-F8	/ PETROBEL
SICES S.P.A.	WATER	1	FAL13-12-C8	CAIRO / EXPANS.-UNIT500-PETROBEL
SICES S.P.A.	WATER	1	FAL24-12-C8	CAIRO / EXPANS.-UNIT500-PETROBEL
SIIRTEC S.P.A.	CRUDE OIL	2	FH53B-22-C8	/ AGBARA FIELD DEVELOPMENT
SIIRTEC S.P.A.	WATER	1	FH12-22-C8	/ AGBARA FIELD DEVELOPMENT
ZAMA S.R.L.	GASOIL	2	FA24-2P2-C8	/ PETROBEL

ETHIOPIA

Customer	Liquid	Qty	PD meter	City / plant
C.M.B. S.P.A.	OIL	8	FA11-22-C8	ADIS ABEBA / DECOLORAZIONE
C.M.B. S.P.A.	OIL	1	FA11-2P2-F8	ADIS ABEBA / DECOLORAZIONE
C.M.B. S.P.A.	OIL	2	FA51-22-C8	ADIS ABEBA / DECOLORAZIONE
F.TOSI IND. S.P.A.	GASOIL	1	FL11-12-C5	/ BELESA
TOSI	GASOIL	3	FL11-12-C5	ETIOPIA / CTE OF ASMARA ETIOPIA

FRANCE

Customer	Liquid	Qty	PD meter	City / plant
MATREC	OIL	2	FA51-2P2-C5	MARSEILLE
MATREC	OIL	1	FA51-2P2-C5	MARSEILLE

GERMANY

Customer	Liquid	Qty	PD meter	City / plant
ABB UTILITY AUTOMATION GMBH	DIESEL FUEL	1	FL11AB-2P2-C8	
TECNIMONT S.P.A.	AL-ALKYL + HEXAN	1	FL51-2N2-F8	MÜNCHSMÜNSTER / 320KT/Y HDPE
TECNIMONT S.P.A.	DEMI / HEATING W	1	TCX 50-70-050	MÜNCHSMÜNSTER / 320KT/Y HDPE
TECNIMONT S.P.A.	INDUSTRIAL / DRI	2	TCX 40-40-050	MÜNCHSMÜNSTER / 320KT/Y HDPE

GHANA

Customer	Liquid	Qty	PD meter	City / plant
ANSALDO ENERGIA S.P.A.	GASOIL	1	FL24-1I2-C5	/ BARGE
ANSALDO ENERGIA S.P.A.	GASOIL	1	FA24-1I2-C5	/ BARGE POWER PLANT
SAIPEM S.P.A.	GASOIL	1	FA14C-12-C5	/ CRAWLER" - DERRICK / LAY BARGE

PMS Produzione Misuratori Volumetrici

PETROL Metering Systems

REFERENCE FOR

Supplies to abroad country

GREAT BRETAIN

Customer	Liquid	Qty	PD meter	City / plant
ADVANCED ENERGY PRODUCT LTD	CUTTER STOCK	1	FA110-2TP2-C5	
ADVANCED ENERGY PRODUCT LTD	DIESEL OIL	1	FA24-12-C5	
ADVANCED ENERGY PRODUCT LTD	GASOIL	1	FA24-22-C5	
ADVANCED ENERGY PRODUCT LTD	HEAVY FUEL OIL	3	FA112-2TP2-C5	
ADVANCED ENERGY PRODUCT LTD	HEAVY FUEL OIL	1	FA24-22-C5	
ADVANCED ENERGY PRODUCT LTD	HEAVY FUEL OIL	1	FA28-12-C5	
ADVANCED ENERGY PRODUCT LTD	LIGHT FUEL OIL	1	FA112-2TP2-C5	
ADVANCED ENERGY PRODUCT LTD	POTABLE WATER	1	FA16D-12-F8	
EUROPROCESS S.R.L.	POTABLE WATER	1	FA12-1P2-F8	/ CHP PLANT CASTLEFORD
EUROPROCESS S.R.L.	DISTILLED WATER	1	FM51-1P2-C5	/ HICKSON&WELCH LTD - COMBINED HEAT AND
EUROPROCESS S.R.L.	GASOIL	1	FA11AB-1P2-F8	/ HICKSON&WELCH LTD - COMBINED HEAT AND
EUROPROCESS S.R.L.	TOWNS WATER	1	FA14-1P2-C8	/ HICKSON&WELCH LTD - COMBINED HEAT AND
HYDRILL AOT SYSTEM	LIQUIDS	1	FL12-12-F8	LONDON / HYDRIL AOT SYSTEM
I.C.E.	CRUDE OIL	1	FM24-12-C8	
I.C.E.	DIESEL	1	FA16-22-C8	
I.C.E.	FUEL OIL	1	FA51-1P2-C5	
I.C.E.	HEAVY FUEL OIL	1	FL11AB-1P2-C5	
I.C.E.	HEAVY FUEL OIL	1	FL14-1P2-C5	
I.C.E.	MALATHION	1	FA22-22-F8	
I.C.E.	PIBSI	1	FL53-22-C5	
I.C.E.	SODIUM SOLPHYD	1	FA12-MD-F8	
I.C.E.	CORROSION INHIB	1	FL24-VR-F8	/ BP ETAP PROJECT
I.C.E.	CORROSION INHIB	1	FL53-VR-F8	/ BP ETAP PROJECT
I.C.E.	DEMULSIFIER 1	1	FL53-VR-F8	/ BP ETAP PROJECT
I.C.E.	DIESEL	1	FL16-VR-C5	/ BP ETAP PROJECT
I.C.E.	METHANOL	1	FL24-VR-C8	/ BP ETAP PROJECT
I.C.E.	POTABLE WATER	1	FL16-VR-F8	/ BP ETAP PROJECT
I.C.E.	THI SOLUTION	2	FL24-VR-F8	/ BP ETAP PROJECT
I.C.E.	WAX INHIBITOR	1	FL53-VR-F8	/ BP ETAP PROJECT
I.C.E.	AMINE	1	FA11-1P2-F8	/ ELF - ELGINE FRANKLIN ALLIANCE
I.C.E.	DIESEL	2	FL24-1P2-C5	/ ELF - ELGINE FRANKLIN ALLIANCE
I.C.E.	POTABLE WATER	2	FL16D-1P2-F8	/ ELF - ELGINE FRANKLIN ALLIANCE
I.C.E.	DEIONIZED WATE	1	FA11-1P2-F8	/ ELF - ELGINE FRANKLIN ALLLIANCE
I.C.E.	TED LIQUID	1	FA12-2I2-C8	/ F & P WORKINGTON - AMERADA HESS - TRITO
I.C.E.	TEG AND FRESH W	1	FA12-2I2-C8	/ F & P WORKINGTON - AMERADA HESS - TRITO
I.C.E.	WATER	1	FA12-2I2-C8	/ F & P WORKINGTON - AMERADA HESS - TRITO

PMS Produzione Misuratori Volumetrici PETROL Metering Systems

REFERENCE FOR

Supplies to abroad country

I.C.E.	DC200	1	FM53-1P2-C5	ENGLAND / PIRELLI FACTORY
I.C.E.	FUEL OIL	1	FA51-1P2-C5	GRAN BRETAGNA
I.C.E.	DIESEL	1	FA12AB-12-C5	NORTH SEA / ERSKINE FIELD DEVELOPMENT TEX
SURELAND LTD	DEMI WATER	1	FA18-22-F8	
SURELAND LTD	SODIUM HYPOCLO	1	FA22-22-MP	
SURELAND LTD	SOLPHURIC ACID	1	FA51-22-C5	
SURELAND LTD	SOLPHURIC ACID	1	FA51-22-MP	

GREECE

Customer	Liquid	Qty	PD meter	City / plant
ANSALDO ENERGIA S.P.A.	GASOIL	1	FM12-1P2-C5	ST. GEORGE BAY / CTE KERATSINI
ANSALDO ENERGIA S.P.A.	NAPHTA	1	FM12-1P2-C5	ST. GEORGE BAY / CTE KERATSINI
ANSALDO ENERGIA S.P.A.	NAPHTA	2	FM13-1P2-C5	ST. GEORGE BAY / CTE KERATSINI
CENTRO COMBUSTION S.P.A.	NAPHTA	2	FA51AA-1P2-C8	/ SOVEL - GRECIA
CENTRO COMBUSTION S.P.A.	NAPHTA	3	FA51CD-1P2-C8	/ SOVEL - GRECIA
DANIELI CENTRO COMBUSTION S.P	NAFTA	1	FA51CD-1P2-C8	/ SOVEL
E.VAKALOPOULOS BROS CO.	ALIMENTARY OIL	1	FA11AB-12-C8	
E.VAKALOPOULOS BROS CO.	ALIMENTARY OIL	3	FA51-12-C8	
E.VAKALOPOULOS BROS CO.	OIL	1	FA53-12-F8	THESSALONIK
E.VAKALOPOULOS BROS CO.	WATER	1	FA11-12-F8	THESSALONIK
E.VAKALOPOULOS BROS CO.	OIL	1	FA22-12-F8	THESSALONIKI
E.VAKALOPOULOS BROS CO.	WATER	2	FA22-12-F8	THESSALONIKI
E.VAKALOPOULOS BROS CO.	WATER SOLUTION	1	FA22-12-F8	THESSALONIKI
ELSAG BAILEY HARTMAN & BROWN	DIESEL	10	FH11AB-1P2-C5	/ CTE AGHIOS DIMITRIOS

HAITI

Customer	Liquid	Qty	PD meter	City / plant
STEINFELS PLANT	NONILFENOLO	1	FA51-22-F8	/ STAB. X PROD. SAPONI

PMS Produzione Misuratori Volumetrici PETROL Metering Systems

REFERENCE FOR

Supplies to abroad country

INDIA

Customer	Liquid	Qty	PD meter	City / plant
BHARAT PETROLEUM C. LTD.	FUEL OIL	2	FM11AB-1P2-C5	/ BENZENE CAP RESTORATION
BHARAT PETROLEUM C. LTD.	FUEL OIL	6	FM51AB-1P2-C5	/ BENZENE CAP RESTORATION
HINDUSTAN SHIPYARD LTD.	DIESEL OIL	1	FA28-12-E7	
INDIAN OIL CORPORATION LTD	CRUDE OIL	1	FH13-1P2-F8	
INDIAN OIL CORPORATION LTD	VACUUM RESIDUE	3	FM13-1P2-C5	/ PANIPAT REFINERY
INDIAN OIL CORPORATION LTD	VACUUM RESIDUE	1	FM24-1P2-C5	/ PANIPAT REFINERY
INDIAN OIL CORPORATION LTD	VB FEED	1	FL14-1P2-C5	/ PANIPAT REFINERY
INDIAN OIL CORPORATION LTD	CRUDE OIL	1	FH13-1P2-F8	JAMNAGAR / VKC-PL PROJECT
INDIAN OIL CORPORATION LTD	CRUDE OIL	1	FH13-1P2-F8	RAJOLA / VKC-PL PROJECT
INDIAN OIL CORPORATION LTD	CRUDE OIL	1	FH13-1P2-F8	RAMSAR / VKC-PL PROJECT
INDIAN OIL CORPORATION LTD	CRUDE OIL	1	FH13-1P2-F8	REWARI / VKC-PL PROJECT
INDIAN OIL CORPORATION LTD	CRUDE OIL	1	FH13-1P2-F8	SURENDER NAGAR / VKC-PL PROJECT
KAVERI ENGINEE. INDUSTR. LDT	H. C. LIQUID	2	FL24-22-F8	/ BHMP SEPARATOR REVAMPING
KAVERI ENGINEE. INDUSTR. LDT	H. C. LIQUID	1	FL53-22-F8	/ BHMP SEPARATOR REVAMPING
KAVERI ENGINEE. INDUSTR. LDT	H. C. LIQUID	2	FM18-2P2-F8	/ BHMP SEPARATOR REVAMPING
KAVERI ENGINEE. INDUSTR. LDT	WATER	3	FL28-2P2-F8	/ BHMP SEPARATOR REVAMPING
MEMBRANE S.R.L.	WATER	1	FA11-12-F8	SOUTH-BA / PIATTAFORMA OFF-SHORE
RA.CO. S.R.L.	NAPHTA	1	FA11AB-1P2-C5	KAKINADA / LIQUID FUEL SYSTEM
ROCKWIN FLOWMETER LTD	LIGHT DIESEL OIL	2	FA11-1I2-C8	/ E.I.L. INDIA
SICES S.P.A.	GLYCOL DIETILENI	1	FL22-1P2-C8	/ BARBARA "G" PLATFORM
TENOVA SPA	HFO	4	FL206-1P2-C8	RAIGARH - JINDAL STEEL & POWER LTD / WALKI
TENOVA SPA	HFO	3	FL51-1P2-C8	RAIGARH - JINDAL STEEL & POWER LTD / WALKI
TURBOTECNICA S.P.A.	GASOIL	1	FA53-12-C5	/ JIGDISHPUR INDIA
TURBOTECNICA S.P.A.	NAPHTA	1	FA13-1P2-C5	/ JIGDISHPUR INDIA

PMS Produzione Misuratori Volumetrici PETROL Metering Systems

REFERENCE FOR

Supplies to abroad country

INDONESIA

Customer	Liquid	Qty	PD meter	City / plant
AGIP LUBRINDO PATRAMA	LUBE OIL	1	FA14-22-C8	/ BLENDING BASE OIL STORAGE-SURA
AGIP LUBRINDO PATRAMA	LUBE OIL	2	FA14-2P2-C8	/ RE-FINERY & BLENDING PLANT SUR.
COMMISSIONING ITALIA S.P.A.	BENZENE	1	FL51-1P2-F8	JAKARTA / MFA UNIT DISTILLATION 200 PT
COMMISSIONING ITALIA S.P.A.	MALEIC ANHYDRID	1	FJA53-1P2-F8	JAKARTA / MFA UNIT DISTILLATION 200 PT
COMMISSIONING ITALIA S.P.A.	MALEIC ANHYDRID	1	FJA53-VRVE-P-F8	JAKARTA / MFA UNIT DISTILLATION 200 PT
COMMISSIONING ITALIA S.P.A.	PHTALIC ANHYDRI	1	FJA13-VRVE-P-F8	JAKARTA / MFA UNIT DISTILLATION 200 PT
PREMABERGO ITALIANA S.P.A.	DIESEL	1	FA114R-VR-P-C5	/ MAURA TAWAR COMBINED CYCLE POWER PLA
ZAMA S.R.L.	BASE OIL	4	FA16D-2P2-C8	/ BLENDING PLANT-PT AGIP LUBRINDO PRATAM
ZAMA S.R.L.	GASOIL	2	FA206-1P2-C8	GEMPOL / LUBE OIL-SURABAYA

IRAN

Customer	Liquid	Qty	PD meter	City / plant
ALTECO S.R.L.	HEAVY FUEL OIL	1	FL53-12-C8	KONARAK / KONARAK DESALTING PLANT
ALTECO S.R.L.	LIGHT FUEL OIL	1	FL53-12-C8	KONARAK / KONARAK DESALTING PLANT
ANSALDO CALDAIE S.P.A.	DIESEL OIL	2	FM12-1P2-C5	BANIAS / BANIAS POWER PLANT
ANSALDO CALDAIE S.P.A.	RESIDUAL FUEL OI	4	FM13-1P2-C5	BANIAS / BANIAS POWER PLANT
HARTMANN & BROWN ITALIA S.P.A.	DEMI WATER	1	FA13-22-F8	ESFAHAN / PICKLING LINE
ITALIMPIANTI S.P.A.	FUEL OIL	2	FA24-22-C5	ESFAHAN / ESFAHAN STEEL WORK
K.T.I. S.P.A.	FUEL OIL	1	FL11AB-1P2-C8	/ CRUDE HEATER FH-101B
MACCHI STEAM POWER GENERATI	FUEL OIL	2	FM12AB-1P2-C5	BINA / ILAM PETROLCHEMICAL COMPLEX
TECNIMONT S.P.A.	ANTISTATIC	1	FA51-2N2-F8	/ PP MARUN
TECNIMONT S.P.A.	CONDENSATE	1	FA11AB-2N2-F8	/ PP MARUN
TECNIMONT S.P.A.	MELT GREASE	2	FA51-2N2-F8	/ PP MARUN
TECNIMONT S.P.A.	OIL	2	FA51-2N2-F8	/ PP MARUN
TECNIMONT S.P.A.	WATER	1	FM12AB-1N2-F8	/ SORBITOL PRODUCTION
TECNIMONT S.P.A.	ANTISTATIC	1	FA51-2N2-F8	BANDAR ASALUYE / JAM PETROLCHEMICAL COMP
TECNIMONT S.P.A.	CONDENSATE	1	FA11AB-2N2-F8	BANDAR ASALUYE / JAM PETROLCHEMICAL COMP
TECNIMONT S.P.A.	OIL	4	FA51-2N2-F8	BANDAR ASALUYE / JAM PETROLCHEMICAL COMP
TECNIMONT S.P.A.	OIL	5	FA51-2N2-F8	BANDAR ASALUYE / PE JAM PETROLCHEMICAL C
TECNIMONT S.P.A.	ANTISTATIC	1	FA51-2N2-F8	BANDAR IMAM
TECNIMONT S.P.A.	CONDENSATE	1	FA11AB-2N2-F8	BANDAR IMAM
TECNIMONT S.P.A.	MELT GREASE	2	FA51-2N2-F8	BANDAR IMAM
TECNIMONT S.P.A.	OIL	2	FA51-2N2-F8	BANDAR IMAM

PMS Produzione Misuratori Volumetrici — PETROL Metering Systems

REFERENCE FOR

Supplies to abroad country

IRAQ

Customer	Liquid	Qty	PD meter	City / plant
ANSALDO ENERGIA S.P.A.	CRUDE OIL	2	FM13-12-C5	BAIJI / BAIJI POWER PLANT - UNIT 5/6
ANSALDO ENERGIA S.P.A.	DIESEL OIL	2	FM11-1P2-C5	BAIJI / BAIJI POWER PLANT - UNIT 5/6
ANSALDO ENERGIA S.P.A.	RESIDUAL FUEL OI	2	FM13-12-C5	BAIJI / BAIJI POWER PLANT - UNIT 5/6
ANSALDO ENERGIA S.P.A.	RESIDUAL FUEL OI	4	FM13-1P2-C5	BAIJI / BAIJI POWER PLANT - UNIT 5/6
ANSALDO S.P.A.	BLACK DIES	1	FM12-1P2-C8	DAURA / CTE DAURA
ANSALDO S.P.A.	BLACK DIESEL	6	FM13-1P2-C8	DAURA / CTE DAURA
ANSALDO S.P.A.	BLACK DIESEL	1	FM51-1P2-C8	DAURA / CTE DAURA
ANSALDO S.P.A.	BLACK DIESEL OIL	1	FM12-1P2-C8	DAURA / CTE DAURA
ANSALDO S.P.A.	BLACK DIESEL OIL	1	FM51-1P2-C8	DAURA / CTE DAURA
ANSALDO S.P.A.	BUNKER "C" / F.O.	6	FM13-1P2-C8	DAURA / CTE DAURA
COMET CO. LTD.	H.C.	10	FM13-22-C5	SOUTH OIL COMPANY / DEGASSING STATION
COMET CO. LTD.	H.C.	10	FM14-22-C5	SOUTH OIL COMPANY / DEGASSING STATION
COMET CO. LTD.	H.C.	5	FM16-22-C5	SOUTH OIL COMPANY / DEGASSING STATION
COMET CO. LTD.	H.C.	5	FM18-22-C5	SOUTH OIL COMPANY / DEGASSING STATION
COMET CO. LTD.	H.C.	15	FM28-22-C5	SOUTH OIL COMPANY / DEGASSING STATION
G.I.E. S.P.A.	FUEL OIL	1	FM13-12-C5	BAIJI / CTE BAIJI
G.I.E. S.P.A.	FUEL OIL	1	FM13-1P2-C5	BAIJI / CTE BAIJI
GEEP	FUEL OIL	12	FM13-1P2-C5	BAIJI / BAIJI POWER STATION
GEEP	DIESEL OIL / CRU	2	FM12-1P2-C8	DAURA / DAURA POWER STATION
GEEP	DIESEL OIL / CRU	2	FM51-1P2-C8	DAURA / DAURA POWER STATION
GEEP	FUEL OIL / CRUDE	12	FM13-1P2-C8	DAURA / DAURA POWER STATION
GEST. COMM. SRL	GASOIL / GASOLIN	2	FA28-2P2-C8	KARBALA / KARBALA DEPOT
GEST. COMM. SRL	GASOIL / GASOLIN	2	FA28L-2P2-C8	KARBALA / KARBALA DEPOT
INTERPROJECT ITALY S.R.L.	CRUDE OIL	30	FA13-12-C5	
NORTH OIL COMPANY	PETROLEUM PROD	10	FA13-22-C5	
PROGETTI EUROPA & GLOBAL S.P.A	OIL	1	FL14-1P2-C8	/ WEST QURNA OIL FIELD
PROGETTI EUROPA & GLOBAL S.P.A	WATER	1	FL53-1P2-C8	/ WEST QURNA OIL FIELD
RIGEL SISTEMI SRL	PETROLEUM PROD	3	FA14-C5	
RIGEL SISTEMI SRL	PETROLEUM PROD	4	FA24-C5	
RIGEL SISTEMI SRL	BENZENE LUBE OI	1	FL14-C5	NORTH OIL COMPANY / AL NAJAF OIL STORAGE
RIGEL SISTEMI SRL	BENZENE LUBE OI	1	FL24-C5	NORTH OIL COMPANY / AL NAJAF OIL STORAGE
RIGEL SISTEMI SRL	DIESEL LUBE OIL	1	FL14-C5	NORTH OIL COMPANY / AL NAJAF OIL STORAGE
RIGEL SISTEMI SRL	DIESEL LUBE OIL	1	FL24-C5	NORTH OIL COMPANY / AL NAJAF OIL STORAGE
RIGEL SISTEMI SRL	DIESEL LUBE OIL/	1	FL14-C5	NORTH OIL COMPANY / AL NAJAF OIL STORAGE
RIGEL SISTEMI SRL	GASOIL	2	FL14-C5	NORTH OIL COMPANY / AL NAJAF OIL STORAGE
RIGEL SISTEMI SRL	GASOIL	4	FL24-C5	NORTH OIL COMPANY / AL NAJAF OIL STORAGE

PMS Produzione Misuratori Volumetrici PETROL Metering Systems

REFERENCE FOR

Supplies to abroad country

RIGEL SISTEMI SRL	GASOLINE	2	FL14-C5	NORTH OIL COMPANY / AL NAJAF OIL STORAGE
RIGEL SISTEMI SRL	GASOLINE	4	FL24-C5	NORTH OIL COMPANY / AL NAJAF OIL STORAGE
RIGEL SISTEMI SRL	KEROSENE	2	FL14-C5	NORTH OIL COMPANY / AL NAJAF OIL STORAGE
RIGEL SISTEMI SRL	KEROSENE	3	FL24-C5	NORTH OIL COMPANY / AL NAJAF OIL STORAGE
RIGEL SISTEMI SRL	RCR	6	FL24-C5	NORTH OIL COMPANY / AL NAJAF OIL STORAGE

IVORY COAST

Customer	Liquid	Qty	PD meter	City / plant
ABB SADELMI S.P.A.	DIESEL OIL	1	FA24-2P2-C5	AZITO / CENTRALE TERMIQUE D'AZITO
ABB SADELMI S.P.A.	GASOIL	1	FA51-22-C8	AZITO / CENTRALE TERMIQUE D'AZITO

JAMAICA

Customer	Liquid	Qty	PD meter	City / plant
ANSALDO SERV.DIV.AERIM	FUEL OIL	1	FA28-12-C5	KINGSTON JAMAIC / POWER STATION

JORDAN

Customer	Liquid	Qty	PD meter	City / plant
ABB COMBUSTION ENGINEERING S	HEAVY FUEL OIL	6	FM53B-1P2-C5	AQABA / AQABA THERMAL POWER STATION
ABB COMBUSTION ENGINEERING S	LIGHT FUEL OIL	3	FM12-1P2-C5	AQABA / AQABA THERMAL POWER STATION
ABB COMBUSTION ENGINEERING S	LIGHT FUEL OIL	2	FM206-12-C5	AQABA / AQABA THERMAL POWER STATION
ABB COMBUSTION ENGINEERING S	LIGHT FUEL OIL	3	FM206-1P2-C5	AQABA / AQABA THERMAL POWER STATION
ABB SADELMI S.P.A.	FUEL OIL	1	FA22-2P2-C8	AQABA / AQABA THERMAL POWER STATION
ABB SADELMI S.P.A.	HEAVY FUEL OIL	1	FA14-2P2-C8	AQABA / AQABA THERMAL POWER STATION
BLOOM ENGINEERING S.R.L.	FUEL OIL	1	FA51-P-C5	
C.M.B. S.P.A.	GLYCERINE	1	FA51-1P2-C8	AMMAN / FATTY ACIDS
C.M.B. S.P.A.	GLYCERINE	1	FA51-1P2-E8	AMMAN / FATTY ACIDS
REPCO S.R.L.	DIESEL FUEL	1	FL11-1P2-C5	AMMAN / AMMAN REFINERY EXTENTION

JUGOSLAVIA

Customer	Liquid	Qty	PD meter	City / plant
BORUS KIDRIC	NAPHTALENE	1	FJA51-2P2-C5	/ STAB. TESLIC

KENIA

Customer	Liquid	Qty	PD meter	City / plant
FIRESTONE S.P.A.	SILANE	1	FA12AB-P-F8	

PMS Produzione Misuratori Volumetrici PETROL Metering Systems

REFERENCE FOR

Supplies to abroad country

KOREA

Customer	Liquid	Qty	PD meter	City / plant
R.A. SYSTEM S.R.L	NAPHTA	2	FA51-1P2-C5	/ KYUNGDOR
R.A. SYSTEM S.R.L	NAPHTA	6	FA51-1P2-C5	KYNGDOR
RA.CO. S.R.L.	NAPHTA	1	FA12-1P2-C5	YUKONG
SIIRTEC NIGI S.P.A.	WAXI CRUDE OIL	2	FL212-1P2-C5	KOLON / CPP-2 PLATFORM

KUWAIT

Customer	Liquid	Qty	PD meter	City / plant
ANGELONI S.R.L.	CLORURO DI ESAN	4	FA12AB-22-F8	KUWAIT / STAB. FARMACEUTICO
KPICO	HAEMODIALY	2	FA51-1P2-F8	
MACCHI S.P.A.	FUEL OIL	1	FM11-1P2-C8	/ KNPC - MULTI PROJECT DEV.
MACCHI S.P.A.	FUEL OIL	1	FM22-1P2-C8	/ KNPC - MULTI PROJECT DEV.
REZAYAT TRADING COMPANY LTD	AVIATION FUEL JP	2	FA24-22-F8	
SIIRTEC S.P.A.	OIL	1	FA13-22-C5	KUWAIT / STAB. K.O.C. UN.TEST.SEP
SIIRTEC S.P.A.	CRUDE OIL	1	FH12-22-C8	KUWAIT / WELL TEST UNIT C.S.S.R.
SIIRTEC S.P.A.	WATER	1	FH12-22-C8	KUWAIT / WELL TEST UNIT C.S.S.R.

LE GOL

Customer	Liquid	Qty	PD meter	City / plant
ANSALDO CALDAIE S.P.A.	GASOIL	1	FM51-1P2-C8	LE GOL / C.T.E.
ANSALDO CALDAIE S.P.A.	GASOL	1	FM12-1P2-C8	LE GOL / C.T.E.

LEBANON

Customer	Liquid	Qty	PD meter	City / plant
ANSALDO ENERGIA S.P.A.	LIGHT FUEL OIL	1	FA114R-1I2-C5	/ BEDDAWI COMBINED CYCLE
ANSALDO ENERGIA S.P.A.	LIGHT FUEL OIL	4	FA14-1I2-C5	/ BEDDAWI COMBINED CYCLE
ANSALDO ENERGIA S.P.A.	LIGHT FUEL OIL	2	FA24-1I2-C5	/ BEDDAWI COMBINED CYCLE
ANSALDO ENERGIA S.P.A.	WATER	1	FA14-1P2-E7	/ BEDDAWI COMBINED CYCLE
ANSALDO ENERGIA S.P.A.	CONDENSATE WAT	3	FA13B-22-F8	/ CTE ZOUCH
ANSALDO ENERGIA S.P.A.	LIGHT FUEL OIL	1	FA114R-1I2-C5	/ ZAHRANI COMBINED CYCLE
ANSALDO ENERGIA S.P.A.	LIGHT FUEL OIL	4	FA14-1I2-C5	/ ZAHRANI COMBINED CYCLE
ANSALDO ENERGIA S.P.A.	LIGHT FUEL OIL	2	FA24-1I2-C5	/ ZAHRANI COMBINED CYCLE
ANSALDO ENERGIA S.P.A.	WATER	1	FA14-1P2-E7	/ ZAHRANI COMBINED CYCLE
ANSALDO ENERGIA S.P.A.	DEMI WATER	1	FL13-1P2-C8	ZOUCH / CTE JIEH-HYRACHE
ANSALDO ENERGIA S.P.A.	FUEL OIL	1	FM14C-1P2-C8	ZOUCH / CTE JIEH-HYRACHE

PMS Produzione Misuratori Volumetrici — PETROL Metering Systems

REFERENCE FOR

Supplies to abroad country

LUXEMBURG

Customer	Liquid	Qty	PD meter	City / plant
ITALIMPIANTI S.P.A.	GASOIL	1	FA11AB-1P2-C5	/ FORNO A LONGHERONI - BELVAL
ITALIMPIANTI S.P.A.	GASOIL	1	FA51-1P2-C5	/ FORNO A LONGHERONI - BELVAL
ITALIMPIANTI S.P.A.	GASOIL	1	FA51AB-1P2-C5	/ FORNO A LONGHERONI - BELVAL

LYBIA

Customer	Liquid	Qty	PD meter	City / plant
A.B. ALIBRANDI IMPIANTI S.R.L.	CAUSTIC SODA 42	3	FA13B-22-F8	
A.B. ALIBRANDI IMPIANTI S.R.L.	LIQUID FAT	3	FA13-22-F8	
AGIP OIL CO. LTD	GASOLINE	2	FM22-VRD-F8	/ RAS LANOUF PORT
AGIP OIL CO. LTD	GASOLINE	2	FM53-VRD-F8	/ RAS LANOUF PORT
AL JAWABY OIL SERVICE CO. LTD	CRUDE OIL	1	FM13-2P2-C8	/ LIBIAN AGIP NAME
AL JAWABY OIL SERVICE CO. LTD	CRUDE OIL	1	FM24-1P2-C8	/ LIBIAN AGIP NAME
AL JAWABY OIL SERVICE CO. LTD	CRUDE OIL	1	FM13-22-C8	LYBIA / LIBIAN AGIP NAME
AL JAWABY OIL SERVICE CO. LTD	CRUDE OIL	1	FM24-1P2-C8	LYBIA / LIBIAN AGIP NAME
AL JAWABY OIL SERVICE CO. LTD	WATER	1	FM11-22-C8	LYBIA / LIBIAN AGIP NAME
DANIEL EUROPE LTD	CRUDE OIL	1	FL112L-1P2-C8	PIRECO LIBYA / PIRECO PLANT
DANIEL EUROPE LTD	CRUDE OIL	1	FL112L-1P2-C8	PIRECO LIBYA / VEBA OIL OPERATIONS
EMERSON FISHER ROSEMOUNT - M	CRUDE OIL	2	FA53-1P2-C8	/ EL FEEL - FIELD POWER GENERATOR PLANT
ISIS	WASH WATER	1	FAL28F-12-F8	NAFOORA / CPS DESALTER
ITALSERVICE S.N.C.	FUEL OIL	1	FA11-12-C8	LYBIA / COMPLEX RAS LANUF
JAWABY OIL SERV	FUEL OIL	2	FA11-12-C81	RAS LANUF
JAWABY OIL SERV	FUEL OIL	2	FA53B-12-C81	RAS LANUF
MEDILOG LTD	CRUDE OIL	1	FL112L-1P2-C8	LYBIA / VEBA OIL - AGIP CO.
MEDITERRANEAN OIL SERVICE GM	CRUDE OIL	1	FL112L-1P2-C8	LYBIA / VEBA OIL OPERATIONS
MIDDLE EAST S.R.L.	WATER	1	FA13-12-C8	LYBIA
PREMABERGO ITALIANA S.P.A.	CRUDE OIL	2	FM13-22-C8	/ AGIP NAME/NOTH RIMAL FIEL FLOW STATION
PREMABERGO ITALIANA S.P.A.	CRUDE OIL	2	FM24-1P2-C8	/ AGIP NAME/NOTH RIMAL FIEL FLOW STATION
PREMABERGO ITALIANA S.P.A.	WATER	2	FM11-22-C8	/ AGIP NAME/NOTH RIMAL FIEL FLOW STATION
PREMABERGO ITALIANA S.P.A.	WATER	2	FM53-12-C8	/ AGIP NAME/NOTH RIMAL FIEL FLOW STATION
SICON OIL & GAS S.R.L.	RAW WATER	2	FA14-2P2-H6	EL BOURI
UMM AL-JAWABY OIL SERVICE CO.	CRUDE OIL	1	FL112L-1P2-C8	/ VEBA OIL OPERATIONS
UMM AL-JAWABY OIL SERVICE CO.	CRUDE OIL	1	FL112L-1P2-C8	LYBIA / VEBA OIL OPERATIONS

PMS Produzione Misuratori Volumetrici — PETROL Metering Systems

REFERENCE FOR

Supplies to abroad country

MALESYA

Customer	Liquid	Qty	PD meter	City / plant
C.M.B. S.P.A.	CRUDE GLICERINE	1	FA51AB-1P2-F8	NALIN / FATTY ACIDS
C.M.B. S.P.A.	FAT	1	FM12-1P2-F8	NALIN / FATTY ACIDS
C.M.B. S.P.A.	FATTY ACIDS	1	FA12-1P2-E8	NALIN / FATTY ACIDS
C.M.B. S.P.A.	FATTY ACIDS	1	FA12-1P2-F8	NALIN / FATTY ACIDS
TURBOTECNICA S.P.A.	DIESEL	5	FL13-2TP2-C5	/ FORT KLANG POWER PLANT
TURBOTECNICA S.P.A.	DIESEL	6	FL14-MDTP-C5	/ FORT KLANG POWER PLANT

MALTA

Customer	Liquid	Qty	PD meter	City / plant
TURBOTECNICA S.P.A.	DIESEL OIL	2	FL22-1P2-C8	/ DELIMARA POWER STATION - ENEMALTA CORP

MEXICO

Customer	Liquid	Qty	PD meter	City / plant
FISHER ROSEMOUNT ITALIA S.R.L.	POTABLE WATER	2	FA11AB-12-C8	/ IRUP - CURACAO
FISHER ROSEMOUNT ITALIA S.R.L.	POTABLE WATER	2	FA12AB-12-C8	/ IRUP - CURACAO
HARTMANN & BROWN ITALIA S.P.A.	GASOIL	1	FL11AB-2P2-C8	/ CTE ACAJUTLA
REPCO S.R.L.	LIQUID SULPHUR	3	FJA53-1P2-C8	

MOROCCO

Customer	Liquid	Qty	PD meter	City / plant
ANSALDO GIE S.P.A.	FUEL OIL	1	FA14-12-C5	/ CTE TETOUAN
ANSALDO GIE S.P.A.	FUEL OIL	1	FA16-12-C5	/ CTE TETOUAN
ANSALDO GIE S.P.A.	FUEL OIL	1	FA16-12-C5	/ TURBOGAS MOHAMMEDIA
ANSALDO GIE S.P.A.	FUEL OIL	2	FA14-1P2-C5	TETOUAN / GT TETOUAN 3 X 33 MW
ANSALDO GIE S.P.A.	FUEL OIL	1	FA18-1P2-C5	TETOUAN / GT TETOUAN 3 X 33 MW
ANSALDO GIE S.P.A.	GASOIL	2	FA12-1P2-C5	TETOUAN / GT TETOUAN 3 X 33 MW
ANSALDO GIE S.P.A.	GASOIL	1	FA14-1P2-C5	TETOUAN / GT TETOUAN 3 X 33 MW
ANSALDO GIE S.P.A.	GASOIL	1	FA24-1P2-C5	TETOUAN / GT TETOUAN 3 X 33 MW
ANSALDO GIE S.P.A.	WATER	2	FA22-1P2-C8	TETOUAN / GT TETOUAN 3 X 33 MW

NEPAL

Customer	Liquid	Qty	PD meter	City / plant
C.M.B. S.P.A.	OIL	1	FA12AB-22-C5	/ NEPAL 3326

PMS Produzione Misuratori Volumetrici — PETROL Metering Systems

REFERENCE FOR

Supplies to abroad country

NIGERIA

Customer	Liquid	Qty	PD meter	City / plant
AGIP RECHERCHES	CRUDE + WATER	1	FX24-2P2-C8	/ AGBARA FIELD DEVEL.NIGER
AGIP RECHERCHES	WATER	1	FAL12AB-2P2-C8	/ AGBARA FIELD DEVEL.NIGER
AGIP RECHERCHES	WATER	1	FAL14C-2P2-C8	/ AGBARA FIELD DEVEL.NIGER
AGIP RECHERCHES	WATER	1	FAL53-2P2-C8	/ AGBARA FIELD DEVEL.NIGER
AGIP S.P.A.	OIL	1	FH53B-22-C8	AGBARA / PLATFORM
C.E.I. S.P.A.	NGL	1	FM18-1P2-C8	OBIAFU-OBICKOM / NGL GAS
I.C.E.	DIESEL	1	FA14-12-C5	/ ICS BONNY ISLAND
I.C.E.	DIESEL	1	FA14C-12-C5	/ ICS BONNY ISLAND
I.C.E.	SLOP OIL	1	FA14-12-C4	/ ICS BONNY ISLAND
I.C.E.	WATER	1	FA12-12-C8	/ ICS BONNY ISLAND
IIT S.R.L.	DDBS	1	FA51-1P2-F8	
IIT S.R.L.	DDBS	1	FA51-22-F8	
SAIPEM S.P.A.	WATER	1	FL11AB-12-C8	/ GAS SUPPLY TO ALLUMINIUM
SAIPEM S.P.A.	WATER	1	FL11AB-12-C8	/ GAS SUPPLY TO ALLUMINIUM SMELTING
SIIRTEC NIGI S.P.A.	OIL	1	FM53-2P2-C8	/ GAS PLANT OBIAFU-OBIKOM
SIIRTEC NIGI S.P.A.	WATER	1	FM22-2P2-C8	/ GAS PLANT OBIAFU-OBIKOM
SIIRTEC NIGI S.P.A.	CRUDE OIL + WAT	1	FH13B-1P2-C8	AGBARA / AGBARA PLATFORM
SIPEX S.R.L.	CRUDE OIL	1	FH12-22-C8	/ SKID AGIP NIGERIA
SIPEX S.R.L.	CRUDE OIL	2	FH14C-12-C8	/ SKID AGIP NIGERIA
SIPEX S.R.L.	WATER	1	FH22-22-C8	/ SKID AGIP NIGERIA
SPIE BATIGNOLLES - D.E.N.	CRUDE OIL	1	FM16-22-C8	/ 1° PHASE DEV. OGBAINBIRI
TECNIMONT S.P.A.	ADDITIVE	1	FA51-2N2-F8	PORT HARCOURT / P.P. - PLANT
TECNIMONT S.P.A.	OIL	1	FA51-2N2-C8	PORT HARCOURT / P.P. - PLANT
TECNIMONT S.P.A.	OIL	1	FA51AB-2N2-C8	PORT HARCOURT / P.P. - PLANT
TECNIMONT S.P.A.	OIL GREASE	1	FA51AB-2N2-F8	PORT HARCOURT / P.P. - PLANT
TECNIMONT S.P.A.	OIL	1	FA51-22-F8	PORT HARCOURT / P.P.- PLANT

NORWEY

Customer	Liquid	Qty	PD meter	City / plant
ABB OFFSHORE AS	LIGHT PETROLEUM	2	FL24-22-C8	/ SENDJE CEIBA
FLOW TEKNIKK AS	FUEL OIL	1	FA24C-VR-P-C5	
GENTEC INSTRUMENT AB	BITUMEN	1	FM14C-2P2-C5	
I.C.E.	WATER	1	FA16-VR-C5	

PMS Produzione Misuratori Volumetrici — PETROL Metering Systems

REFERENCE FOR

Supplies to abroad country

PAKISTAN

Customer	Liquid	Qty	PD meter	City / plant
AAMIR ATA BARRY	LPG	4	FM13-12-C3	
AAMIR ATA BARRY	LPG	1	FM18F-VRD-C3	
ALTECO S.R.L.	GASOIL	3	FA24-1P2-C5	/ LIBERTY
ANGELONI S.R.L.	CONDENSATE	2	FVA14C-VRDVM-	ISLAMABAD / BOBI EARL PROD. FACILITY-OGCD
BUSINESS MANAGEMENT CO. LTD	HEAVY FUEL OIL	1	FM13-1P2-C5	
BUSINESS MANAGEMENT CO. LTD.	HEAVY FUEL OIL	1	FM13-1P2-C5	
CTIP S.P.A.	HYDROCARBON	1	FH51-22-C8	/ P2037A QUADIRPUR GAS
CTIP S.P.A.	CORROSION INHIB	1	FA51-22-C8	/ QUADIRPUR GAS - P2037A
CTIP S.P.A.	CORROSION INHIB	1	FA51AB-22-C8	/ QUADIRPUR GAS - P2037A
CTIP S.P.A.	HYDROCARBON	2	FA14C-VRDVE-C8	/ QUADIRPUR GAS - P2037A
CTIP S.P.A.	HYDROCARBON	1	FA53-22-C8	/ QUADIRPUR GAS - P2037A
CTIP S.P.A.	WATER	1	FA13-22-C8	/ QUADIRPUR GAS - P2037A
CTIP S.P.A.	WATER	1	FH11-22-C8	/ QUADIRPUR GAS - P2037A
CTIP S.P.A.	WATER	1	FH13-22-C8	/ QUADIRPUR GAS - P2037A
DE NORA PERMELEC S.P.A.	CAUSTIC SODA 50	1	FA11-22-F8	PAKISTAN / STAB. IN PAKISTAN
HARTMANN & BROWN ITALIA S.P.A.	GASOIL	2	FM53B-1P2-C5	/ CTE BIN QASIM
HARTMANN & BROWN ITALIA S.P.A.	NAPHTA	1	FM13-1P2-C5	/ CTE BIN QASIM
HARTMANN & BROWN ITALIA S.P.A.	NAPHTA	1	FM13-1P2-C5	/ CTE BIN QASIM
HARTMANN & BROWN ITALIA S.P.A.	NAPHTA	2	FM53B-1P2-C5	/ CTE BIN QASIM
MACCHI S.P.A.	FUEL OIL	3	FM11AB-1P2-C8	/ JCG - PARKO - PAKISTAN
OGDCL LTD.	CORROSIVE INHIB	1	FA51AB-22-C8	ISLAMABAD / QUADIPUR GAS
OGDCL LTD.	WATER	1	FA13-22-C8	ISLAMABAD / QUADIPUR GAS
OGDCL LTD.	WATER	1	FH13-22-C8	ISLAMABAD / QUADIPUR GAS
OGDCL LTD.	HYDROCARBON	2	FA14C-VRDVE-C8	ISLAMABAD / QUADIRPUR GAS
OGDCL LTD.	HYDROCARBON KE	1	FA53-22-C8	ISLAMABAD / QUADIRPUR GAS
PROGRESSIVE ENTERPRISE	NAPHTA	2	FM13-1P2-C5	/ CTE BIN QUASIM
QUALITY SERVICES	HFO	2	FM13-1P2-C5	

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REFERENCE FOR

Supplies to abroad country

POLAND

Customer	Liquid	Qty	PD meter	City / plant
SNAMPROGETTI S.P.A.	EB	1	FL11AB-1N2-C8	/ ZAKLADY CHEMICZE OSSWIECIN
SNAMPROGETTI S.P.A.	EB	1	FL51AB-1N2-C8	/ ZAKLADY CHEMICZE OSSWIECIN
TECNIMONT S.P.A.	AL-ALKYL + HEXAN	1	FA51-2N2-F8	/ PP-HDPE PLOCK
TECNIMONT S.P.A.	ANTISTATIC AGEN	1	FA51-2N2-F8	/ PP-HDPE PLOCK
TECNIMONT S.P.A.	CONDENSATE	1	FA51-2N2-F8	/ PP-HDPE PLOCK
TECNIMONT S.P.A.	DEMI / HEATING W	1	TCX 50-70-050	/ PP-HDPE PLOCK
TECNIMONT S.P.A.	DEMI / HEATING W	1	TCX 70-50-050	/ PP-HDPE PLOCK
TECNIMONT S.P.A.	INDUSTRIAL / DRI	2	TCX 40-40-050	/ PP-HDPE PLOCK
TECNIMONT S.P.A.	OIL	3	FA51-2N2-F8	/ PP-HDPE PLOCK
TECNIMONT S.P.A.	OIL	1	FJA51-2N2-F8	/ PP-HDPE PLOCK

PORTUGAL

Customer	Liquid	Qty	PD meter	City / plant
SOLVAY PORTUGAL S.A.S.	THICK FUEL OIL	2	FM11-1P2-C5	POVOA / STAB. SOLVAY
SOLVAY PORTUGAL S.A.S.	FUEL OIL	1	FM11-1P2-C5	POVOA DE SANTA IRIA / STAB. SOLVAY PORTUG

QATAR

Customer	Liquid	Qty	PD meter	City / plant
MACCHI S.P.A.	FUEL OIL	1	FL11AB-1P2-C5	/ NODCO
MACCHI S.P.A.	FUEL OIL	1	FL51-1P2-C5	/ NODCO
QAPCO - QATAR PETROLCHEMICAL	LUBE OIL	3	FA11AB-12-F8	
SIMIMPIANTI S.P.A.	CRUDE OIL	1	FL53-1P2-C8	ARABIAN GULF / DESALINATION PLANT
SNAMPROGETTI S.P.A.	FUEL OIL	3	FM51AB-12-F8	
SNAMPROGETTI S.P.A.	HEPTANE	2	FM12-VRVE-F8	
SNAMPROGETTI S.P.A.	LUBE OIL	1	FM11AB-12-F8	
SNAMPROGETTI S.P.A.	PROPYLENE	1	FM11AB-1P2-H8	
SNAMPROGETTI S.P.A.	DEMI WATER	1	FA51-12-F8	/ QAPCO EXPANSION PROJECT LDPE

RUMENIA

Customer	Liquid	Qty	PD meter	City / plant
ABB SACE S.P.A. AUTOMATION PRO	H2O DEMI	3	FA51-12-F8	/ ANSALDO CERNAVODA
ANSALDO ENERGIA S.P.A.	DEMI WATER	2	FA51-12-F8	/ CTN CERNAVODA POWER PLAN
ANSALDO S.P.A	DEMI WATER	2	FA51-12-F8	/ CTN CERNAVODA NPP
CIEM SRL	H.C.	1	FA12AB-1P2-C5	

PMS Produzione Misuratori Volumetrici

PETROL Metering Systems

REFERENCE FOR

Supplies to abroad country

RUSSIA

Customer	Liquid	Qty	PD meter	City / plant
ANSALDO COMPONENTI S.P.A.	HYDRAULIC OIL	1	FL53-12-C5	SARATOV / ACRILONITRILE
BOATO INTERNATIONAL S.R.L.	BITUMEN	1	FA53-1P2-C5	
GESTRA S.R.L.	H.C. CONDENSATE	1	FA12-1I2-F8	
HELLING GMBH	OIL	1	FM51-22-F8	
I.C.E.	POTABLE WATER	1	FM14C-22-F8	
I.C.E.	POTABLE WATER	1	FM24-22-F8	
I.C.E.	POTABLE WATER	1	FM51-22-F8	
I.C.E.	DEG	1	FA11AB-22-F8	KARACHAGANAK
I.C.E.	DEG SOLUTION	1	FA51-22-F8	KARACHAGANAK
I.C.E.	DEMI WATER	1	FA16-22-F8	KARACHAGANAK
I.C.E.	DISTILLED WATER	1	FA11-22-F8	KARACHAGANAK
I.C.E.	DISTILLED WATER	1	FA16-22-F8	KARACHAGANAK
I.C.E.	LAGOON WATER	1	FA14-22-F8	KARACHAGANAK
I.C.E.	WASTE WATER	1	FA14-22-F8	KARACHAGANAK
I.C.E.	WATER	1	FA12-22-F8	KARACHAGANAK
I.C.E.	WATER	1	FA22-22-F8	KARACHAGANAK
K.T.I. S.P.A.	FUEL OIL	2	FA12-1P2-C5	KIRISHI / UNIT AT6 - FORNI TOPPING
NOVOTEX HANDELSGES M.B.H.	OIL	1	FM51-22-F8	
PRESSINDUSTRIA S.P.A.	ACETONE	1	FA11-1N2-F8	
PRESSINDUSTRIA S.P.A.	DEMI WATER	1	FA11-1N2-F8	
PRESSINDUSTRIA S.P.A.	ACETIC ACID	1	FA51-1N2-F8	/ ANTIBIOTIC
PRESSINDUSTRIA S.P.A.	ACETONE	1	FA11-1N2-F8	/ ANTIBIOTIC
PRESSINDUSTRIA S.P.A.	SODA 2%	2	FA51-1N2-F8	/ ANTIBIOTIC
PRESSINDUSTRIA S.P.A.	SODA 30%	2	FA51-1N2-F8	/ ANTIBIOTIC
TECNIMONT S.P.A.	CONDENSATE	1	FA53-12-C8	MOSCOW / C3/PP-100 KTY-ENG
TECNIMONT S.P.A.	CONDENSATE	1	FM51AB-12-C8	MOSCOW / C3/PP-100 KTY-ENG
TECNIMONT S.P.A.	WATER	1	FA14-12-C8	MOSCOW / C3/PP-100 KTY-ENG
TECNIMONT S.P.A.	WATER	2	FM51-12-C8	MOSCOW / C3/PP-100 KTY-ENG
TECNIMONT S.P.A.	SALT WATER	1	FA53-12-C8	MOSCOW / C3PP-100 KTI ENG
TECNIMONT S.P.A.	ADDITIVE	1	FM51-2N2-F8	MOSCOW / REF. C3/PP-100 KTY-ENG
TECNIMONT S.P.A.	OIL	1	FM51-22-F8	MOSCOW / REF. C3/PP-100 KTY-ENG
TECNIMONT S.P.A.	OIL	1	FM51-2N2-C8	MOSCOW / REF. C3/PP-100 KTY-ENG
TECNIMONT S.P.A.	OIL/GREASE	1	FM51AB-2N2-F8	MOSCOW / REF. C3/PP-100 KTY-ENG

PMS Produzione Misuratori Volumetrici — PETROL Metering Systems

REFERENCE FOR

Supplies to abroad country

S. DOMINGO

Customer	Liquid	Qty	PD meter	City / plant
C.S.I. S.R.L.	FUEL OIL	1	FA12-1P2-C5	/ CTE

SAUDI ARABIA

Customer	Liquid	Qty	PD meter	City / plant
ABB COMBUSTION ENGINEERING S	CRUDE OIL	6	FM24-1P2-C8	SHOAIBA / KSA PROJECT
ABB ENERGY AUTOMATION S.P.A.	FUEL OIL	6	FM13-2P2-C5	/ MEDINAT YANBU AL SINAYAD
ABB SADELMI S.P.A.	CRUDE OIL	1	FA14-1P2-C8	JEDDAH / SAUDI CONSOLIDATED ELECTRICITY
ABB SADELMI S.P.A.	LIGHT FUEL OIL	1	FA14-1P2-C8	JEDDAH / SAUDI CONSOLIDATED ELECTRICITY
ABB SADELMI S.P.A.	SLOP OIL	2	FA53-1P2-C8	JEDDAH / SAUDI CONSOLIDATED ELECTRICITY
ALSTOM POWER INC.	CRUDE OIL	1	FM24-1P2-C8	/ SHOAIBA PHASE I, UNITS 1-3
ALSTOM POWER INC.	CRUDE OIL	4	FM24-1P2-C8	/ SHOAIBA PHASE II, UNITS 4
ALSTOM POWER INC.	CRUDE OIL	1	FM24-1P2-C8	SHOAIBA / STG II - UNIT 9 -11
ALSTOM POWER INC.	CRUDE OIL	1	FM24-1P2-C8	SHOAIBA / STG II, UNITS 6-8
ALSTOM POWER INC.	CRUDE OIL	1	FM24-1P2-C8	SHOAIBA PHASE II, UNITS 4&5
ALSTOM POWER INC.	HFO / CRUDE OIL	1	FM24-1P2-C8	SHOAIBA SITE / SHOAIBA STG. II, UNITS 9-11
ALSTOM POWER INC.	CRUDE OIL	6	FM24-1P2-C8	SHOAIBA
ALSTOM POWER INC.	CRUDE OIL	6	FM24-1P2-C8	SHOAIBA
ANSALDO CALDAIE S.P.A.	CRUDE OIL	3	FM18-1P2-C8	SHOAIBA / UNIT 1-2-3
ANSALDO CALDAIE S.P.A.	DIESEL OIL	3	FM13-1P2-C8	SHOAIBA / UNIT 1-2-3
MACCHI S.P.A.	FUEL OIL	4	FM12-1P2-C8	/ AIFC(IBN-RUSCH) DPTA & AROMATICS
MACCHI S.P.A.	FUEL OIL	4	FM22-1P2-C8	/ AIFC(IBN-RUSCH) DPTA & AROMATICS
MACCHI S.P.A.	VTB	6	FM12AB-1P2-C8	CHIYODA / LUBEREF
SAE SADELMI S.P.A.	FUEL OIL	3	FA18F-22-C5	JIZAN / JIZAN POWER PLANT
SALACO	D.I. PRODUCT	1	FA24C-12-C8	/ LUBE OIL ADDITIVES PLANT
SALACO	V.I. PRODUCT	1	FA14C-12-C8	/ LUBE OIL ADDITIVES PLANT
SNAMPROGETTI S.P.A.	POTABLE WATER	1	FL13-22-C8	SAUDI ARAMCO RIYAD PRODUCTS SUPPLY SYST
SPIE ENERTRANS	FUEL OIL	1	FA12-2P2-C5	/ BAJI PUMP STATION
TECNIMONT S.P.A.	POTABLE WATER	1	FA22-12-C8	/ PTE YANBU

SINGAPORE

Customer	Liquid	Qty	PD meter	City / plant
DONATI TULLIO	NAPHTA	3	FA51-1P2-C5	/ RIC. X C. 746 P.O. H.& B
DYNAMIC EXIM PTE. LTD.	FUEL OIL	1	FA51-1P2-C5	

PMS Produzione Misuratori Volumetrici — PETROL Metering Systems

REFERENCE FOR

Supplies to abroad country

SOMALIA

Customer	Liquid	Qty	PD meter	City / plant
C.M.B S.P.A.	OIL	1	FA53B-22-C5	ADIS ABEBA / POST REFINING
PREMABERGO ITALIANA S.P.A.	HEAVY OIL	1	FA53B-2P2-C5	MOGADISCIO
PREMABERGO ITALIANA S.P.A.	LIGHT OIL	1	FA53B-2P2-C5	MOGADISCIO

SOUTH AFRICA

Customer	Liquid	Qty	PD meter	City / plant
ANSALDO COMPONENTI S.P.A.	DEMI WATER	2	FA12-12-C8	SUD AFRICA / CTE WANKIE
G.I.E. S.P.A.	LIGHT OIL	1	FA53-2P2-C8	SUD AFRICA / POWER STATION MAMATSUWE

SPAIN

Customer	Liquid	Qty	PD meter	City / plant
BOPP & REUTHER S.R.L.	HCL 33%	2	FA12-MVPE-MP	
HIS.P.A.NO LJUNGMANS	HYDROCARBON	2	FA24-12-C5	
HIS.P.A.NO LJUNGMANS	WATER	3	FH206-12-G9	BARCELONA

SUDAN

Customer	Liquid	Qty	PD meter	City / plant
CRAMM & CO. GMBH	DIESEL / NAPHTA	2	FA14C-12-C5	
NUOVO PIGNONE S.P.A.	CRUDE OIL	7	FL114R-1P2-C5	/ MUGLAD PORT SUDAN

SWISS

Customer	Liquid	Qty	PD meter	City / plant
SNAMPROGETTI S.P.A.	OIL	3	FL51-12-C8	/ RUSWILL COMPRESSOR STATION
SNAMPROGETTI S.P.A.	OIL	3	FL51-12-C8	/ TRANSITGAS EXTENSION RUSWIL

SYRIA

Customer	Liquid	Qty	PD meter	City / plant
C.M.B. S.P.A.	VEGETABLE OIL	1	FJA12-2P2-C5	
FIAT AVIO S.P.A.	DISTILLED OIL	1	FA14C-12-C5	/ AL NASSRIEH POWER PLANT
SITECO S.P.A.	DISTILLATE OIL	1	FA11-12-C5	/ AL NASSRIEH POWER PLANT
SITECO S.P.A.	DISTILLATE OIL	1	FA13-12-C5	/ AL NASSRIEH POWER PLANT
SITECO S.P.A.	RESIDUAL OIL	1	FA16-12-C5	/ AL NASSRIEH POWER PLANT

PMS Produzione Misuratori Volumetrici — PETROL Metering Systems

REFERENCE FOR

Supplies to abroad country

TAIWAN

Customer	Liquid	Qty	PD meter	City / plant
BONO ENERGIA S.P.A.	HEAVY FUEL OIL	3	FA51-12-C5	/ CHEMTEX - FAR EASTERN TEXTILE
FELCA INTERNATIONAL TRADING C	DIESEL	1	FA14-2P2-F8	
FELCA INTERNATIONAL TRADING C	FUEL OIL	1	FA11AB-1P2-C8	
FELCA INTERNATIONAL TRADING C	FUEL OIL	1	FA16D-2P2-C5	
FELCA INTERNATIONAL TRADING C	HYDROCARBON	1	FA110H-1P2-C8	
FELCA INTERNATIONAL TRADING C	HYDROCARBON	1	FL110-1P2-C8	
FELCA INTERNATIONAL TRADING C	MEK	1	FA51-P-C8	
FELCA INTERNATIONAL TRADING C	STARCH	1	FA12AB-P-F8	
K.T.I. S.P.A.	ORGANIC WATER	1	FA51-P-C5	
PERONI & C. S.P.A.	GASOIL	1	FA53-12-C8	/ GIOVANNA PLATFORM
SARAS S.P.A.	FUEL OIL	1	FL11-2P2-C8	SARROCH (CA) / RAFF. SARAS IMP. CTE

TANZANIA

Customer	Liquid	Qty	PD meter	City / plant
ALTECO S.R.L.	DEMI WATER	1	FA13-1P2-C8	/ QUINTO TRENO DI LISCIV.
INDUSTRY SUPPLI	ASPHAT	1	FA53-1P2-C5	DAR ES SAALAM T / BLENDING BITUME
INDUSTRY SUPPLI	KEROSENE	1	FA53B-1P2-C5	DAR ES SAALAM T / BLENDING BITUME
INDUSTRY SUPPLI	NAPHTA	1	FA53B-1P2-C5	DAR ES SAALAM T / BLENDING BITUME
MANZINI COMACO S.P.A.	BITUMEN	2	FJA12-2P2-C5	/ CARICO BITUME
SNAMPROGETTI S.P.A.	WATER	1	FA53B-12-C8	DAR-ES-SALAAM/T / T.P.D.C. BITUMEN PLANT
TECNIMONT S.P.A.	DEMI WATER	1	FA51-1N2-F8	/ PESTICIDES-MOSHI
TECNIMONT S.P.A.	HCL 31/33%	1	FA12AB-1N2-MP	/ PESTICIDES-MOSHI
TECNIMONT S.P.A.	NAOH 33%	1	FA51-1N2-F8	/ PESTICIDES-MOSHI
TIPER CO. LTD.	FUEL OIL	6	FL51-12-C5	

PMS Produzione Misuratori Volumetrici — PETROL Metering Systems

REFERENCE FOR

Supplies to abroad country

TUNISIA

Customer	Liquid	Qty	PD meter	City / plant
ANSALDO ENERGIA S.P.A.	CONDENSATE	4	FL53-1P2-C8	/ CTE RADES
ANSALDO ENERGIA S.P.A.	DEMI WATER	6	FL24-1P2-C8	/ CTE RADES
ANSALDO ENERGIA S.P.A.	DEMI WATER	1	FL24-1P2-F8	/ CTE RADES
ANSALDO ENERGIA S.P.A.	DEMI WATER	2	FM12AB-1P2-F8	/ CTE RADES
ANSALDO ENERGIA S.P.A.	DIESEL OIL	2	FM22-1P2-C5	/ CTE RADES
ANSALDO ENERGIA S.P.A.	GASOIL	1	FA53-1I2-C5	/ CTE RADES
ANSALDO ENERGIA S.P.A.	HEAVY FUEL OIL	2	FM14-1P2-C5	/ CTE RADES
ANSALDO ENERGIA S.P.A.	HEAVY FUEL OIL	2	FM53-1P2-C5	/ CTE RADES
ANSALDO ENERGIA S.P.A.	CONDENSATE	1	FL53-1P2-C8	CENTRALE THERMIQUE DE RADES - TUNISIE / CT
ANSALDO ENERGIA S.P.A.	DEMI WATER	1	FL24-1PI2-F8	CENTRALE THERMIQUE DE RADES - TUNISIE / CT
ANSALDO ENERGIA S.P.A.	DEMI WATER	1	FM12AB-1P2-F8	CENTRALE THERMIQUE DE RADES - TUNISIE / CT
ANSALDO ENERGIA S.P.A.	DIESEL OIL	1	FM22-1P2-C5	CENTRALE THERMIQUE DE RADES - TUNISIE / CT
ANSALDO ENERGIA S.P.A.	GASOIL	1	FA53-1I2-C5	CENTRALE THERMIQUE DE RADES - TUNISIE / CT
ANSALDO ENERGIA S.P.A.	HEAVY FUEL OIL	1	FM14-1P2-C5	CENTRALE THERMIQUE DE RADES - TUNISIE / CT
ANSALDO ENERGIA S.P.A.	HEAVY FUEL OIL	1	FM53-1P2-C5	CENTRALE THERMIQUE DE RADES - TUNISIE / CT
ITALFLUID - MAGHREB S.A.R.L. (VE	H.C.	2	FA24-1P2-C5	
ITALFLUID - MAGHREB S.A.R.L. (VE	OIL	2	FA24-1P2-C5	MANAR III
SNAMPROGETTI S.P.A.	OIL	2	FA51-12-C8	
SNAMPROGETTI S.P.A.	OIL	4	FA51-22-C8	/ GASDOTTO TRANSTUNISINO
SNAMPROGETTI S.P.A.	OIL	1	FA51-22-C5	CAP BON / EXPANSION STATION GAS COMPRESS

TURCKEY

Customer	Liquid	Qty	PD meter	City / plant
ANSALDO GIE S.P.A.	FUEL OIL BUNKER	3	FM13BC-1P2-C5	/ TUNCBILEK THERMAL POWER PLANT
ANSALDO GIE S.P.A.	FUEL OIL BUNKER	1	FM13BC-1P2-C5	/ TUNCBILEK THERMAL POWER PLANT
ANSALDO GIE S.P.A.	LIGHT OIL	4	FM13BC-1P2-C5	/ TUNCBILEK THERMAL POWER PLANT
CTIP S.P.A.	DEMI WATER	1	FA12AB-22-F8	/ VCM PLANT PETKIM ALIAGA
CTIP S.P.A.	ORTOXYLEME/BEN	1	FA14C-2P2-C8	IZMIR / PVC PLANT
MOTEX	ACRILONITR	1	FA18F-2P2-F8	
MOTEX	VINILACTT	1	FA53B-2P2-F8	
SNAMPROGETTI S.P.A.	WATER	1	FA11-22-C8	/ TUPRAS IZMIT REFINERY - UCAP
SNAMPROGETTI S.P.A.	WATER	1	FA13-12-C8	/ TUPRAS IZMIT REFINERY - UCAP
SNAMPROGETTI S.P.A.	WATER	1	FA12-12-C8	ALIAGA IZMIR / REFINERY - TUPRAS
SNAMPROGETTISUD S.P.A	WATER	1	FA53B-22-C8	TUPRAS IZMIR / REFINERY - HAUP

PMS Produzione Misuratori Volumetrici PETROL Metering Systems

REFERENCE FOR

Supplies to abroad country

U.A.E.

Customer	Liquid	Qty	PD meter	City / plant
ABB S.P.A. ENERGY AUTOMATION	FUEL OIL	1	FM13-2P2-C5	YANBU
ANSALDO CALDAIE S.P.A.	HEAVY FUEL OIL	1	FM12-2P2-C5	MADINAT YANBU AL SINAYAH / STEAM POWER P
ANSALDO CALDAIE S.P.A.	HEAVY FUEL OIL	1	FM13-2P2-C5	MADINAT YANBU AL SINAYAH / STEAM POWER P
ANSALDO CALDAIE S.P.A.	LIGHT FUEL OIL	1	FL12-2P2-C5	MADINAT YANBU AL SINAYAH / STEAM POWER P
ANSALDO ENERGIA S.P.A.	DIESEL OIL	1	FA14C-1P2-C8	MIRFA / MIRFA POWER AND DESALINATION
ANSALDO ENERGIA S.P.A.	DIESEL FUEL	6	FL11AB-2P2-C8	MIRFA / MIRFA POWER AND DESALINATION PLA
C.C.T. S.P.A.	FUEL OIL	2	FL51-1P2-C5	/ E.T.A.
C.M.B S.P.A.	GLYCOL	1	FA12-22-F8	ABU DHABI / ALKIN RESIN - NATIONAL RESIN FA
C.M.B S.P.A.	XILENE OIL AND W	1	FA12-22-F8	ABU DHABI / ALKIN RESIN - NATIONAL RESIN FA
EIGHT INDUSTRIES	FUEL OIL	1	FA22-12-C5	U.A.E.
FILIPPO FOCHI ENERGIA S.R.L.	DIESEL	1	FA14-1P2-C5	MIRFA / MIRFA POWER AND DESALINATION PLA
FISHER ROSEMOUNT ITALIA S.R.L.	DESALINATED WA	1	FA13-2P2-F8	DUBAI / EPCL - CONDENSATE PROCESSING PLAN
FISHER ROSEMOUNT ITALIA S.R.L.	POTABLE WATER	1	FL24-2P2-C8	DUBAI / EPCL - CONDENSATE PROCESSING PLAN
FISHER ROSEMOUNT ITALIA S.R.L.	POTABLE WATER	1	FL24-2P2-F8	DUBAI / EPCL - CONDENSATE PROCESSING PLAN
FISHER ROSEMOUNT ITALIA S.R.L.	LIQUID SULPHUR	1	FJA22-1P2-C8	DUBAI / SULPHUR RECOVERY UNIT
I.C.E.	WATER	2	FA18-12-F8	/ BOROUGE PETROCHEMICAL
S.T.F. S.P.A.	DIESEL OIL	2	FM53-1P2-C5	JEBEL ALI PWER AND DESALINATION - STATION
S.T.F. S.P.A.	DIESEL OIL	2	FM53B-1P2-C5	JEBEL ALI PWER AND DESALINATION - STATION
SITECO S.P.A	GASOIL	3	FA14-1P2-C5	/ MIRFA POWER AND DESALINATION PLANT
SITECO S.P.A.	GASOIL	1	FA14-1P2-C5	/ MIRFA POWER AND DESALINATION PLANT
THERMAX BABCOCK & WILCOX LTD	FUEL OIL	1	FL51AB-2P2-C5	DUBAI / ETA - BOILER PF0671

PMS Produzione Misuratori Volumetrici — PETROL Metering Systems

REFERENCE FOR

Supplies to abroad country

U.S.A.

Customer	Liquid	Qty	PD meter	City / plant
ANSALDO CALDAIE S.P.A.	LIGHT OIL	1	FM12-1P2-C8	BAHIA LAS MINAS - PANAMA
DANIEL FLOW PRODUCTION INC.	OIL	1	FA24-1P2-C5	HOUSTON
FINCANTIERI S.P.A. (TRIESTE)	HEAVY FUEL OIL	1	FA112-1P2-C5	HULL 6100 - CROWN PRINCESS
FINCANTIERI S.P.A. (TRIESTE)	HEAVY FUEL OIL	12	FL22-1P2-C5	HULL 6100 - CROWN PRINCESS
FINCANTIERI S.P.A. (TRIESTE)	LUBE OIL	2	FA22-12-C5	HULL 6100 - CROWN PRINCESS
FINCANTIERI S.P.A. (TRIESTE)	POTABLE WATER	2	FA14C-1P2-F8	HULL 6100 - CROWN PRINCESS
FINCANTIERI S.P.A. (TRIESTE)	SEA WATER	4	FA12AA-1P2-B1	HULL 6100 - CROWN PRINCESS
PRINCESS CRUISES	HEAVY FUEL OIL	1	FL22-2P2-C5	GRAND PRINCESS / EX 5956
PRINCESS CRUISES	LUBE OIL	1	FA22-12-C5	OCEAN PRINCESS / EX 6044
PRINCESS CRUISES	SEA WATER	2	FA12AA-1P2-B1	STAR PRINCESS / EX 6051
PRINCESS CRUISES	HEAVY FUEL OIL	1	FL22-2P2-C5	SUN PRINCESS / EX 5909
TIMAVO SHIP SUPPLY SRL	SEA WATER	1	FA12AA-1P2-B1	C. 6051 - STAR PRINCESS
TIMAVO SHIP SUPPLY SRL	HEAVY FUEL OIL	1	FA112-1P2-C5	GOLDEN PRINCESS / EX 6050
TIMAVO SHIP SUPPLY SRL	ACQUA DI MARE	1	FA12AA-1P2-B1	NAVE STAR PRINCESS

UCRAINA

Customer	Liquid	Qty	PD meter	City / plant
TECNIMONT S.P.A.	ADDITIVE	1	FM51-2N2-F8	/ POLIPROPYLENE
TECNIMONT S.P.A.	OIL	1	FM51-2N2-C8	/ POLIPROPYLENE
TECNIMONT S.P.A.	OIL GREASE	1	FM51AB-2N2-F8	/ POLIPROPYLENE

UNGHERIA

Customer	Liquid	Qty	PD meter	City / plant
TECNIMONT S.P.A.	MELT GREASE	1	FM51-2N2-F8	/ PP UNGHERIA
TECNIMONT S.P.A.	OIL	3	FM51-2N2-F8	/ PP UNGHERIA

URUGUAY

Customer	Liquid	Qty	PD meter	City / plant
ALTECO S.R.L.	FUEL OIL	1	FH53-1IP2-C5	/ CTE MONTEVIDEO
ALTECO S.R.L.	FUEL OIL	1	FL22-1IP2-C5	/ CTE MONTEVIDEO

PMS Produzione Misuratori Volumetrici — PETROL Metering Systems

REFERENCE FOR

Supplies to abroad country

VENEZUELA

Customer	Liquid	Qty	PD meter	City / plant
G.I.E. S.P.A.		1	FA11-1I2-C5	PENA LARGA / PLANTA HIDROELECTRICA
G.I.E. S.P.A.	LUBRICATING OIL	1	FA11-1I2-C5	PENA LARGA / PLANTA HIDROELECTRICA
PRESSINDUSTRIA S.P.A.	ACIDO ADIP	1	FA13C-1N2-E7	/ UNITA' RESINE
PRESSINDUSTRIA S.P.A.	DMF	1	FA53AB-2N2-E7	/ UNITA' RESINE
PRESSINDUSTRIA S.P.A.	DMF TOLUEN	1	FA53B-1N2-E7	/ UNITA' RESINE
T.P.L. S.P.A.	HEXANE	1	FA53B-1P2-C8	EL TABLAZO / POLIPROPYLENE
T.P.L. S.P.A.		1	FA53B-1P2-F8	EL TABLAZO / POLYPROPYLENE
T.P.L. S.P.A.	HEXANE	1	FA53B-1P2-F8	EL TABLAZO VEN. / POLIPROPYLENE
T.P.L. S.P.A.	ABSTB	1	FM206-P-F8	EL TABLAZO VENT / POLIPROPILENE
T.P.L. S.P.A.	AHSTB	1	FM51-P-F8	EL TABLAZO VENT / POLIPROPILENE

VIETNAM

Customer	Liquid	Qty	PD meter	City / plant
SIIRTEC INTERNATIONAL S.P.A.	CRUDE OIL	1	FM22-12-C8	/ WITHE TIGER
SIIRTEC INTERNATIONAL S.P.A.	WAXI CRUDE OIL	1	FM24-2P2-C8	/ WITHE TIGER
SIIRTEC INTERNATIONAL S.P.A.	WAXI CRUDE OIL	4	FM28-1P2-C8	/ WITHE TIGER

YEMEN

Customer	Liquid	Qty	PD meter	City / plant
ANSALDO DIV. IMPIANTI	NAPHTA	2	FA24-22-C5	RAS KATEN / STAZIONE DI POMPAGGIO
ESACONTROL S.P.A.	LIGHT FUEL OIL	1	FAL13-12-C8	/ CTE AL MOUKHA 4X40 MW
ESACONTROL S.P.A.	LIGHT FUEL OIL	1	FM11-12-C8	/ CTE AL MOUKHA 4X40 MW
ESACONTROL S.P.A.	LIGHT FUEL OIL	2	FM51-12-C8	/ CTE AL MOUKHA 4X40 MW
ESACONTROL S.P.A.	R.F.O./L.F.O.	1	FAL112-12-C8	/ CTE AL MOUKHA 4X40 MW

ZAMBIA

Customer	Liquid	Qty	PD meter	City / plant
INDENI PETROLEUM REFINERY	FUEL OIL	1	FL11AB-12-C5	NDOLA / CRUDE DISTILLATION
INDENI PETROLEUM REFINERY	FUEL OIL	6	FL51-12-C5	NDOLA / CRUDE DISTILLATION
INDENI PETROLEUM REFINERY	FUEL OIL	9	FL51AB-12-C5	NDOLA / CRUDE DISTILLATION
INDENI PETROLEUM REFINERY	FUEL OIL	2	FL53-12-C5	NDOLA / CRUDE DISTILLATION

PMS Produzione Misuratori Volumetrici — PETROL Metering Systems

REFERENCE FOR

Crude-oil extraction industry

Customer	Liquid	Qty	PD meter	Destination / plant
ENI S.P.A.	CRUDE OIL	1	FM13-12-C5	ALGERIA
ROLLE S.P.A.	CRUDE OIL	1	FM53B-1P2-C8	ALGERIA / PLANT HASSI MESAUD
ROLLE S.P.A.	WATER	1	FM51-1P2-C8	ALGERIA / PLANT HASSI MESAUD
A.I.F.G.	OLIO	1	FA14C-12-C5	ALGERIA HASSI MESSAOUD
PETROBRAS AMERICA INC.	CRUDE OIL	1	FM112L-1P2-C8	BRASIL
BENELLI S.P.A.	SODA 47%	1	FAL12-1P2-E7	COLOMBIA CAUCA / PASTA DI CELLULOSA
AGIP RECHERCHES	CRUDE OIL	1	FM24-22-C8	CONGO POINTE NOIRE / ZAF 1 PLATFORM
AR TECNOLOGY S.R.L.	CONDESATE	1	FL53-2P2-F8	EGYPT / GUPCO - CAIRO
SICES S.P.A.	GASOLINE	1	FX22-22-F8	EGYPT / PETROBEL
ROSETTI MARINO S.P.A.	GLYCOL	1	FH51-1P2-F8	EGYPT EGYPT / EL QARA ON-SHORE
RA.CO. S.R.L.	DIESEL OIL	1	FA53B-12-C5	EGYPT RAS GARRA / CRUDE OIL FLOW STATION
I.C.E.	DIESEL	1	FA12AB-12-C5	GREAT BRETAIN NORTH SEA / ERSKINE FIELD DE
K.T.I. S.P.A.	FUEL OIL	1	FL11AB-1P2-C8	IRAN / CRUDE HEATER FH-101B
PROGETTI EUROPA & GLOBAL S.P.A	OIL	1	FL14-1P2-C8	IRAQ / WEST QURNA OIL FIELD
PROGETTI EUROPA & GLOBAL S.P.A	WATER	1	FL53-1P2-C8	IRAQ / WEST QURNA OIL FIELD
BG RIMI S.P.A.	GASOLINE	1	FX51-12-C8	ITALY
BOSCO INDUSTRIE MECCANICHE S	GASOLINE	1	FX12-22-F8	ITALY
EDISON GAS S.P.A.	GASOIL	4	FX11-12-C8	ITALY
ITALFLUID GEOENERGY S.R.L.	CRUDE OIL	7	FA13-12-C8	ITALY
ITALFLUID GEOENERGY S.R.L.	CRUDE OIL	2	FM13-12-C8	ITALY
ITALFLUID GEOENERGY S.R.L.	LIGHT OIL	1	FH14C-2P2-C8	ITALY
CONSORZIO PISA RICERCHE	CRUDE OIL	1	FM53-2P2-C8	ITALY / CAMPI OLIO DI PREZIOSO
CONSORZIO PISA RICERCHE	CRUDE OIL	1	FM53-2P2-C8	ITALY / CAMPI OLIO PONTE DIRILLO
COSMI S.P.A.	GLICOLE DIETILEN	1	FL12-12-C8	ITALY / CAMPO REGINA
AGIP S.P.A.	GLYCOL + WATER	2	FL12-1P2-F8	ITALY / SABBIONCELLO - SNOR
REPCO S.R.L.	COAT WATER	2	FM51-12-C8	ITALY / SPI - IMPIANTO AREA POZZO CUPOLONI
ITALFLUID GEOENERGY S.R.L.	CRUDE OIL	1	FM13-1P2-C8	ITALY / SU CAMION
ITALFLUID GEOENERGY S.R.L.	CRUDE OIL	2	FM12-12-C8	ITALY / TESTA POZZI
ITALFLUID GEOENERGY S.R.L.	CRUDE OIL	1	FM14C-12-C8	ITALY / TESTA POZZI
ROSETTI MARINO S.P.A.	GASOIL	1	FL53-22-C8	ITALY ADRIATIC SEA / PIATTAFORMA COMPLEX -
BENELLI RAVENNA S.P.A.	GASOLINA	2	FA14C-2P2-C8	ITALY ADRIATIC SEA / PROGETTO EMILIO
AGIP S.P.A.	GASOIL	9	FH51-12-C8	ITALY AGIP GELA (CL) / IMP. POZZO
AGIP S.P.A.	GASOLIO FLUSTAG	1	FH51-12-C8	ITALY AGIP GELA (CL) / IMP. POZZO
AGIP S.P.A.	GASOLINA	2	FM206-12-C8	ITALY CANDELA (FG) / CENTRALE GAS CANDELA
AGIP S.P.A.	CONDENSATE	1	FH11-22-C8	ITALY CANDELA (FG) / POZZO SORIANO
AGIP S.P.A.	GASOLINA	1	FA53B-MVP-C8	ITALY CASALBORSETTI (RA) / CENTRALE GAS
S.E.I.C. S.R.L.	OIL	1	FM22-2P2-C8	ITALY CAVENAGO D'ADDA (LO) / ENI DIV. AGIP
ZAMA S.R.L.	LUBRICATING OIL	2	FA11-1P2-C5	ITALY CECCANO / AGIP S.P.A -CECCANO PLANT

PMS Produzione Misuratori Volumetrici

PETROL Metering Systems

REFERENCE FOR

Crude-oil extraction industry

Customer	Liquid	Qty	PD meter	Destination / plant
ENI S.P.A.	SALT WATER	3	FH22-1P2-C8	ITALY CREMA
AGIP S.P.A.	SALTY WATER	1	FH11-22-F8	ITALY CREMA / STABILIMENTO DI CREMA
AGIP S.P.A	GASOIL AND CRUD	7	FH206-1P2-C8	ITALY GELA (CL)
AGIP S.P.A.	GASOIL	1	FH206-12-C8	ITALY GELA (CL)
AGIP S.P.A.	GASOIL	1	FH51-12-C8	ITALY GELA (CL)
AGIP S.P.A.	GASOIL AND CRUD	22	FH206-1P2-C8	ITALY GELA (CL)
PETROSERVICE MEDITERRANEA S.	CRUDE OIL	1	FH13-12-C5	ITALY GELA (CL)
AGIP S.P.A.	GASOIL	1	FH12-22-C8	ITALY GELA (CL) / AGIP CONCESSIO. GIAURONE
AGIP S.P.A.	GASOIL	5	FH51-22-C8	ITALY GELA (CL) / AGIP CONCESSIO. GIAURONE
BG. ENGINEERING	GASOIL	12	FH51-2P2-C8	ITALY GELA (CL) / AGIP GELA
BG. ENGINEERING	OIL	1	FM11AB-22-C8	ITALY GELA (CL) / AGIP GELA
ECIS S.R.L.	GASOLINE	2	FM51-22-C8	ITALY GELA (CL) / AGIP GELA
ECIS S.R.L.	WATER	2	FM51-22-C8	ITALY GELA (CL) / AGIP GELA
NUOVA OMA S.R.L.	GASOLINE	1	FH51-12-C8	ITALY GELA (CL) / AREA POZZO FEUDO GRANDE
NUOVA OMA S.R.L.	GASOLINE	1	FH53-12-C8	ITALY GELA (CL) / AREA POZZO FEUDO GRANDE
NUOVA OMA S.R.L.	GASOLINE	1	FM51-22-C8	ITALY GELA (CL) / AREA POZZO SERRA DI VITO -
AGIP S.P.A.	GASOIL	2	FH51-12-F8	ITALY GELA (CL) / CAMPO ESTRAZIONE SESI
AGIP S.P.A.	GASOIL	4	FH51-1P2-C8	ITALY GELA (CL) / CAMPO PERLA
AGIP S.P.A.	GASOIL	1	FH12-22-C8	ITALY GELA (CL) / GIAURONE SARCIS
AGIP S.P.A.	GASOIL	5	FX51-2P2-C8	ITALY GELA (CL) / INIEZIONE GAS CLUSTER F
SNAMPROGETTI S.P.A	SLOP-OIL	1	FA11AB-22-C8	ITALY GELA (CL) / NUOVO COKING
AGIP S.P.A.	HEAVY GASOIL	9	FH51-12-C8	ITALY GELA (CL) / PIATTAFORMA PREZIOSO
AGIP S.P.A.	HEAVY GASOIL	5	FH51-12-C8	ITALY GELA (CL) / POZZI 104~108 GELA
AGIP S.P.A	HEAVY GASOIL	1	FH51-12-C8	ITALY GELA (CL) / POZZI 91-95 GELA
AGIP S.P.A.	HEAVY GASOIL	4	FH51-12-C8	ITALY GELA (CL) / POZZI 91-95 GELA
AGIP S.P.A.	GLYCOL	1	FM12-1P2-C8	ITALY GROTTAMMARE (AP) / CENTRALE GAS GRO
ENI S.P.A.	WATER	2	FA13-22-C8	ITALY ITALY - RAGUSA (RG) / AGIP S.P.A.
SICES S.P.A.	OIL	1	FL14C-1P2-F8	ITALY MONTE ALPI / AGIP PLANT
SICES S.P.A.	WATER	1	FL12-1P2-F8	ITALY MONTE ALPI / AGIP PLANT
SICES S.P.A.	WATER	1	FM53-1P2-F8	ITALY MONTE ALPI / AGIP PLANT
SIIRTEC S.P.A.	CRUDE OIL	2	FH22-22-C8	ITALY MONTE ALPI / AGIP PLANT
SIIRTEC S.P.A.	WATER	2	FH12-22-C8	ITALY MONTE ALPI / AGIP PLANT
AGIP S.P.A.	MINERAL OIL	1	FM13-22-C8	ITALY MONTE ALPI / MONTE ALPI
ENI S.P.A.	CRUDE OIL	1	FH22-22-C8	ITALY MONTE ALPI / MONTE ALPI PLANT
ITALFLUID GEOENERGY S.R.L.	CRUDE OIL	1	FH13-2P2-C8	ITALY NOTARESCO (TE)
ITALFLUID GEOENERGY S.R.L.	CRUDE OIL	4	FL13-22-C8	ITALY NOTARESCO (TE)
ITALFLUID GEOENERGY S.R.L.	CRUDE OIL	2	FL13-2P2-C8	ITALY NOTARESCO (TE)
ITALFLUID GEOENERGY S.R.L.	WATER	1	FL12-12-C8	ITALY NOTARESCO (TE)

PMS Produzione Misuratori Volumetrici

PETROL Metering Systems

REFERENCE FOR

Crude-oil extraction industry

Customer	Liquid	Qty	PD meter	Destination / plant
PETROSERVICE MEDITERRANEA S.	BRACKISCH WATE	1	FH51-12-C8	ITALY NOTARESCO (TE)
ITALFLUID GEOENERGY S.R.L.	CRUDE OIL	6	FM12-12-C8	ITALY NOTARESCO (TE) / TESTA POZZI
AGIP S.P.A.	GLYCOL + GASOLI	3	FH51-12-F8	ITALY ORTONA (CH)
ENI S.P.A.	GASOLINE	2	FL24-12-C5	ITALY ORTONA (CH) / STABILIMENTO DI ORTON
AGIP RAFFINAZIONE S.P.A.	FUEL OIL	1	FL11AB-1P2-C5	ITALY P.TO MARGHERA (VE)
AGIP S.P.A.	GLYCOL DIETILENI	1	FA51-2P2-C8	ITALY PASSOVECCHIO (CZ)
AGIP S.P.A.	CRUDE OIL	4	FB14-MVPD-A5	ITALY PISTICCI (MT) / CENTRO OLI
BENELLI S.P.A.	GASOIL	3	FM51-1P2-C5	ITALY PRATOLA SERRA (AV) / CTE F.M.A P. SER
AGIP S.P.A.	GASOIL	4	FH51-1P2-F8	ITALY SET.SICIL. GELA (CL) / SIST. PRODUZ. MO
AGIP S.P.A.	WATER + GASOLIN	1	FH206-1P2-C8	ITALY SETTALA (MI) / CENTRALE GAS SETTALA
EDISON GAS S.P.A.	COAT WATER	1	FH11-12-C8	ITALY SIRACUSA
EDISON GAS S.P.A.	GASOIL	2	FH11-12-C8	ITALY SIRACUSA
EDISON GAS S.P.A.	NAPHTA	1	FA51-12-C5	ITALY SIRACUSA
EDISON OIL S.P.A.	COAT WATER	1	FH11-12-C8	ITALY SIRACUSA
EDISON GAS S.P.A.	GASOIL	1	FH11-12-C8	ITALY SIRACUSA (SR)
EDISON GAS S.P.A.	GASOIL	1	FL12-12-C8	ITALY SIRACUSA (SR)
EDISON OIL S.P.A.	COAT WATER	1	FH11-12-C8	ITALY SIRACUSA (SR)
EDISON OIL S.P.A.	SALT WATER	2	FH11-12-C8	ITALY SIRACUSA (SR)
ITALFLUID GEOENERGY S.R.L	PETROLIO GREZZO	1	FM13-1P2-C8	ITALY SU CAMION / PROVE SU TESTE POZZI
BRITISH GAS RIMI S.P.A.	GASOLINA	1	FH51-1P2-C8	ITALY TORRENTE BAGANZA / AREA POZZO TORR
AGIP S.P.A	CRUDE OIL	1	FA13-MVP-C8	ITALY TORRENTE TONA (CH) / IMP. CARICO
C.I.P.I. S.R.L.	OIL	1	FM12-1P2-C8	ITALY TRECATE / AGIP CENTRO OLIO TRECATE
C.I.P.I. S.R.L.	OIL	1	FM51-1P2-C8	ITALY TRECATE / AGIP CENTRO OLIO TRECATE
CEMENSUD S.P.A.	BUNKER "C"	2	FH11-12-C5	ITALY VIBO VALENTIA (CZ) / CEMENSUD SPA
ENI S.P.A.	WATER	1	FL12-1P2-C8	ITALY VIGGIANO (PZ) / CENTRO OILO VALDAGRI
AGIP S.P.A.	CRUDE OIL	1	FL16----C8	ITALY VIGGIANO (PZ) / CENTRO OLIO VALDAGRI
AGIP S.P.A.	CRUDE OIL	2	FM16-1P2-C8	ITALY VIGGIANO (PZ) / CENTRO OLIO VALDAGRI
AGIP S.P.A.	DEMI WATER	1	FL12-2P2-F8	ITALY VIGGIANO (PZ) / CENTRO OLIO VALDAGRI
AGIP S.P.A.	OIL	4	FM16-1P2-C8	ITALY VIGGIANO (PZ) / CENTRO OLIO VALDAGRI
AGIP S.P.A.	WATER	2	FL12-2P2-C8	ITALY VIGGIANO (PZ) / CENTRO OLIO VALDAGRI
AGIP S.P.A.	WATER	1	FL14C-2P2-C8	ITALY VIGGIANO (PZ) / CENTRO OLIO VALDAGRI
AGIP S.P.A.	WATER	2	FM13-1P2-C8	ITALY VIGGIANO (PZ) / CENTRO OLIO VALDAGRI
ENI S.P.A.	CRUDE OIL	2	FL16-C8	ITALY VIGGIANO (PZ) / CENTRO OLIO VALDAGRI
ENI S.P.A.	OIL	1	FM16-1P2-C8	ITALY VIGGIANO (PZ) / CENTRO OLIO VALDAGRI
ENI S.P.A.	WATER	1	FM13-1P2-C8	ITALY VIGGIANO (PZ) / CENTRO OLIO VALDAGRI
IND. MECC. SCARDELLATO S.P.A.	OIL	1	FL112-2P2-C8	ITALY VILLA FORTUNA (NO) / CENTRO OLIO UNIT
IND. MECC. SCARDELLATO S.P.A.	WATER	1	FL13-2P2-C8	ITALY VILLA FORTUNA (NO) / CENTRO OLIO UNIT
IND. MECC. SCARDELLATO S.P.A.	WATER	1	FM24-2P2-C8	ITALY VILLA FORTUNA (NO) / CENTRO OLIO UNIT

PMS Produzione Misuratori Volumetrici

PETROL Metering Systems

REFERENCE FOR

Crude-oil extraction industry

Customer	Liquid	Qty	PD meter	Destination / plant
AGIP S.P.A.	OIL	2	FH53-1P2-C8	ITALY VILLAFORTUNA / AREA POZZO TRECATE 4
SIIRTEC S.P.A.	OIL	1	FA13-22-C5	KUWAIT KUWAIT / STAB. K.O.C. UN.TEST.SEP
SIIRTEC S.P.A.	CRUDE OIL	1	FH12-22-C8	KUWAIT KUWAIT / WELL TEST UNIT C.S.S.R.
SIIRTEC S.P.A.	WATER	1	FH12-22-C8	KUWAIT KUWAIT / WELL TEST UNIT C.S.S.R.
AL JAWABY OIL SERVICE CO. LTD	CRUDE OIL	1	FM13-2P2-C8	LYBIA / LIBIAN AGIP NAME
AL JAWABY OIL SERVICE CO. LTD	CRUDE OIL	1	FM24-1P2-C8	LYBIA / LIBIAN AGIP NAME
AGIP OIL CO. LTD	GASOLINE	2	FM22-VRD-F8	LYBIA / RAS LANOUF PORT
AGIP OIL CO. LTD	GASOLINE	2	FM53-VRD-F8	LYBIA / RAS LANOUF PORT
ITALSERVICE S.N.C.	FUEL OIL	1	FA11-12-C8	LYBIA LYBIA / COMPLEX RAS LANUF
AL JAWABY OIL SERVICE CO. LTD	CRUDE OIL	1	FM13-22-C8	LYBIA LYBIA / LIBIAN AGIP NAME
AL JAWABY OIL SERVICE CO. LTD	CRUDE OIL	1	FM24-1P2-C8	LYBIA LYBIA / LIBIAN AGIP NAME
AL JAWABY OIL SERVICE CO. LTD	WATER	1	FM11-22-C8	LYBIA LYBIA / LIBIAN AGIP NAME
SPIE BATIGNOLLES - D.E.N.	CRUDE OIL	1	FM16-22-C8	NIGERIA / 1° PHASE DEV. OGBAINBIRI
SIPEX S.R.L.	CRUDE OIL	1	FH12-22-C8	NIGERIA / SKID AGIP NIGERIA
SIPEX S.R.L.	CRUDE OIL	2	FH14C-12-C8	NIGERIA / SKID AGIP NIGERIA
SIPEX S.R.L.	WATER	1	FH22-22-C8	NIGERIA / SKID AGIP NIGERIA
AGIP S.P.A.	OIL	1	FH53B-22-C8	NIGERIA AGBARA / PLATFORM
ABB OFFSHORE AS	LIGHT PETROLEUM	2	FL24-22-C8	NORWEY / SENDJE CEIBA
I.C.E.	DEG	1	FA11AB-22-F8	RUSSIA KARACHAGANAK
I.C.E.	DEG SOLUTION	1	FA51-22-F8	RUSSIA KARACHAGANAK
I.C.E.	DEMI WATER	1	FA16-22-F8	RUSSIA KARACHAGANAK
I.C.E.	DISTILLED WATER	1	FA11-22-F8	RUSSIA KARACHAGANAK
I.C.E.	DISTILLED WATER	1	FA16-22-F8	RUSSIA KARACHAGANAK
I.C.E.	LAGOON WATER	1	FA14-22-F8	RUSSIA KARACHAGANAK
I.C.E.	WASTE WATER	1	FA14-22-F8	RUSSIA KARACHAGANAK
I.C.E.	WATER	1	FA12-22-F8	RUSSIA KARACHAGANAK
I.C.E.	WATER	1	FA22-22-F8	RUSSIA KARACHAGANAK
SPIE ENERTRANS	FUEL OIL	1	FA12-2P2-C5	SAUDI ARABIA / BAJI PUMP STATION
ABB S.P.A. ENERGY AUTOMATION	FUEL OIL	1	FM13-2P2-C5	U.A.E. YANBU
ANSALDO DIV. IMPIANTI	NAPHTA	2	FA24-22-C5	YEMEN RAS KATEN / STAZIONE DI POMPAGGIO

PMS Produzione Misuratori Volumetrici

PETROL Metering Systems

REFERENCE FOR

Chemical industry

Customer	Liquid	Qty	PD meter	Destination / plant
PRESSINDUSTRIA S.P.A.	DEMI WATER	1	FA11-1P2-F8	BULGARIA / POLIOLI PLANT BULGARIA
PRESSINDUSTRIA S.P.A.	DEMI WATER	2	FA51-22-F8	BULGARIA / POLIOLI PLANT BULGARIA
PRESSINDUSTRIA S.P.A.	WELL WATER	1	FA53-22-F8	BULGARIA / POLIOLI PLANT BULGARIA
TECNIMONT S.P.A.	ANTISTATIC	1	FM51-2N2-F8	CHILE / P.P.TALCAHUANO
TECNIMONT S.P.A.	CONDENSATE	1	FM11AB-2N2-C8	CHILE / P.P.TALCAHUANO
TECNIMONT S.P.A.	GREASE	1	FM51-2N2-F8	CHILE / P.P.TALCAHUANO
TECNIMONT S.P.A.	OIL	2	FM51-2N2-F8	CHILE / P.P.TALCAHUANO
SHENZEN CTS INDUSTRIAL CO. LT	CHEMICAL LIQUID	4	FA51AB-2N2-C8	CHINA
SHENZEN CTS INDUSTRIAL CO. LT	CHEMICAL LIQUID	1	FM51AB-2N2-F8	CHINA
TECHNIPETROL S.R.L.	BFW	1	FM12-22-C8	CHINA / 1834-CAPROLACTAM PLANT SHJIAZH
TECHNIPETROL S.R.L.	CAUSTIC SODA 42	1	FA11AB-22-C8	CHINA / 1834-CAPROLACTAM PLANT SHJIAZH
TECHNIPETROL S.R.L.	CAUSTIC SODA 42	1	FA12-22-C8	CHINA / 1834-CAPROLACTAM PLANT SHJIAZH
TECHNIPETROL S.R.L.	CAUSTIC SODA 42	1	FA12-2P2-C8	CHINA / 1834-CAPROLACTAM PLANT SHJIAZH
TECHNIPETROL S.R.L.	CLEAN CONDENSA	1	FA11-22-C8	CHINA / 1834-CAPROLACTAM PLANT SHJIAZH
TECHNIPETROL S.R.L.	CONDENSATE	1	FM12-22-C8	CHINA / 1834-CAPROLACTAM PLANT SHJIAZH
TECHNIPETROL S.R.L.	FUEL OIL	1	FA22-2P2-C8	CHINA / 1834-CAPROLACTAM PLANT SHJIAZH
TECHNIPETROL S.R.L.	FUEL OIL	2	FA51AB-2P2-C8	CHINA / 1834-CAPROLACTAM PLANT SHJIAZH
TECHNIPETROL S.R.L.	LPG	1	FM13-P-C3	CHINA / 1834-CAPROLACTAM PLANT SHJIAZH
TECHNIPETROL S.R.L.	MOTHER LIQUOR	1	FA12-22-F8	CHINA / 1834-CAPROLACTAM PLANT SHJIAZH
TECHNIPETROL S.R.L.	PROCESS WATER	1	FL51AB-22-F8	CHINA / 1834-CAPROLACTAM PLANT SHJIAZH
TECHNIPETROL S.R.L.	SODA	1	FA51-22-C8	CHINA / 1834-CAPROLACTAM PLANT SHJIAZH
TECHNIPETROL S.R.L.	WATER	1	FA11-22-F8	CHINA / 1834-CAPROLACTAM PLANT SHJIAZH
TECHNIPETROL S.R.L.	WATER	1	FM22-22-C8	CHINA / 1834-CAPROLACTAM PLANT SHJIAZH
SNIA ENGINEERING S.P.A.	DEMI WATER	1	FA14-1P2-C8	CHINA / CAPROLACTAM PROJECT
SNIA ENGINEERING S.P.A.	DEMI WATER	1	FM11AB-1P2-C8	CHINA / CAPROLACTAM PROJECT
SNIA ENGINEERING S.P.A.	WATER	2	FA14-1P2-C8	CHINA / CAPROLACTAM PROJECT
SNIA ENGINEERING S.P.A.	WATER	1	FA51AB-1P2-F8	CHINA / CAPROLACTAM PROJECT
FISHER ROSEMOUNT ITALIA S.R.L.	SOLVENT	1	FA51AB-2N2-F8	CHINA / CHINA PETROCHEM
TECNIMONT S.P.A.	PURE MMA	1	FA11AB-12-F8	CHINA / MMA - ANDA PLANT
TECNIMONT S.P.A.	ADDITIVE	1	FM51-2N2-F8	CHINA / PP PUYANG/ENG
TECNIMONT S.P.A.	MINERAL OIL	1	FM51-22-F8	CHINA / PP PUYANG/ENG
TECNIMONT S.P.A.	OIL	1	FM51-2N2-C8	CHINA / PP PUYANG/ENG
TECNIMONT S.P.A.	OIL+MELTED GREA	1	FM51AB-2N2-F8	CHINA / PP PUYANG/ENG
FILIPPO FOCHI PETROLCHIMICA S.	NAOH 42%	1	FA12-1P2-F8	CHINA / PROJ. 1940A C.FP5004
FILIPPO FOCHI PETROLCHIMICA S.	CAUSTIC	1	FM51-1P2-C8	CHINA / PROJ. P1940A C.FP5004
FILIPPO FOCHI PETROLCHIMICA S.	FUEL OIL	1	FA51AB-12-C8	CHINA / PROJ. P1940A C.FP5004
FILIPPO FOCHI PETROLCHIMICA S.	FUEL OIL	1	FA51AB-1P2-C8	CHINA / PROJ. P1940A C.FP5004
FILIPPO FOCHI PETROLCHIMICA S.	HCL 31%	1	FA51-12-MP	CHINA / PROJ. P1940A C.FP5004

PMS Produzione Misuratori Volumetrici

PETROL Metering Systems

REFERENCE FOR

Chemical industry

Customer	Liquid	Qty	PD meter	Destination / plant
FILIPPO FOCHI PETROLCHIMICA S.	NAOH 42%	1	FA51-12-F8	CHINA / PROJ. P1940A C.FP5004
FILIPPO FOCHI PETROLCHIMICA S.	WASTE WATER	1	FA12AB-12-C8	CHINA / PROJ. P1940A C.FP5004
FILIPPO FOCHI PETROLCHIMICA S.	WATER+CAUSTIC	1	FA51-1P2-C8	CHINA / PROJ. P1940A C.FP5004
SNAMPROGETTI S.P.A.	L/SOL	2	FA11-MVP-E8	CHINA BEIJING / 40000 MTPY EVA RESIN PLANT
SNAMPROGETTI S.P.A.	L/VAM	1	FA11-MVP-E8	CHINA BEIJING / 40000 MTPY EVA RESIN PLANT
TECNIMONT S.P.A.	BUTADIENE	1	FL11AB-P-C8	CHINA GUANGZHOUP P.R.C. / ETHYLENE COMPLE
TECNIMONT S.P.A.	C4 HC	1	FL11AB-P-C8	CHINA GUANGZHOUP P.R.C. / ETHYLENE COMPLE
TECNIMONT S.P.A.	C4 HC	1	FL12-P-C8	CHINA GUANGZHOUP P.R.C. / ETHYLENE COMPLE
TECNIMONT S.P.A.	ETHYLENE	1	FM13-P-F8	CHINA GUANGZHOUP P.R.C. / ETHYLENE COMPLE
TECNIMONT S.P.A.	GASOIL	1	FL14-P-C8	CHINA GUANGZHOUP P.R.C. / ETHYLENE COMPLE
TECNIMONT S.P.A.	H.C.	1	FA53-P-C8	CHINA GUANGZHOUP P.R.C. / ETHYLENE COMPLE
TECNIMONT S.P.A.	H.C.	1	FL53-P-C8	CHINA GUANGZHOUP P.R.C. / ETHYLENE COMPLE
TECNIMONT S.P.A.	PROPYLENE	1	FM53-P-C8	CHINA GUANGZHOUP P.R.C. / ETHYLENE COMPLE
SNAMPROGETTI S.P.A.	ETHANOL	11	FA14-2P2-F8	CHINA JILIN / 100.000 M.T.P.Y. ALPHA ALCHOL
SNAMPROGETTI S.P.A.	ETHANOL	2	FA53-2P2-F8	CHINA JILIN / 100.000 M.T.P.Y. ALPHA ALCHOL
LINDE IMPIANTI ITALIA S.P.A.	CAUSTIC SODA	1	FA12-22-F8	CHINA JILIN / JILIN AMMONIA PLANT
LINDE IMPIANTI ITALIA S.P.A.	HCL SOLUTION	1	FA12-22-MP	CHINA JILIN / JILIN AMMONIA PLANT
LINDE IMPIANTI ITALIA S.P.A.	METHANOL	1	FA14-22-F8	CHINA JILIN / JILIN AMMONIA PLANT
SIIRTEC S.P.A.	MEG	2	FA13-12-C8	CHINA LIAO DONG BAY / JZ-20-2 SOUTH HIGH M
SIIRTEC S.P.A.	MEG	1	FA51-12-C8	CHINA LIAO DONG BAY / JZ-20-2 SOUTH HIGH M
SNIA ENGINEERING S.P.A.	CS2	1	FA14-MVP-E8	CHINA LIAOYANG / CS2-CNCCC.
SNAMPROGETTI S.P.A.	SM	1	FA11AB-2N2-C8	CHINA MAOMING GUANG / MTPY STYRENE PLANT
SNAMPROGETTI S.P.A.	SM	1	FA51AB-2N2-C8	CHINA MAOMING GUANG / MTPY STYRENE PLANT
TECNIMONT S.P.A.	ADDITIVE	1	FM51-2N2-F8	CHINA PP MAOMING / 140000 T/Y PP
TECNIMONT S.P.A.	MINERAL OIL	1	FM51-22-F8	CHINA PP MAOMING / 140000 T/Y PP
TECNIMONT S.P.A.	OIL	1	FM51-2N2-C8	CHINA PP MAOMING / 140000 T/Y PP
TECNIMONT S.P.A.	OIL+MELTED GREA	1	FM51AB-2N2-F8	CHINA PP MAOMING / 140000 T/Y PP
PRESSINDUSTRIA S.P.A.	WATER	1	FA53-22-F8	CHINA SHEN YANG / IMP. POLIOLI
PRESSINDUSTRIA S.P.A.	DEMI WATER	1	FA11-1P2-F8	CHINA SHEN YANG. / IMP. POLIOLI
PRESSINDUSTRIA S.P.A.	DEMI WATER	2	FA51-22-F8	CHINA SHEN YANG. / IMP. POLIOLI
TECNIMONT S.P.A.	AL-ALKYL + HEXAN	1	FL51-2N2-F8	GERMANY MÜNCHSMÜNSTER / 320KT/Y HDPE
TECNIMONT S.P.A.	DEMI / HEATING W	1	TCX 50-70-050	GERMANY MÜNCHSMÜNSTER / 320KT/Y HDPE
TECNIMONT S.P.A.	INDUSTRIAL / DRI	2	TCX 40-40-050	GERMANY MÜNCHSMÜNSTER / 320KT/Y HDPE
STEINFELS PLANT	NONILFENOLO	1	FA51-22-F8	HAITI / STAB. X PROD. SAPONI
COMMISSIONING ITALIA S.P.A.	BENZENE	1	FL51-1P2-F8	INDONESIA JAKARTA / MFA UNIT DISTILLATION
COMMISSIONING ITALIA S.P.A.	MALEIC ANHYDRID	1	FJA53-1P2-F8	INDONESIA JAKARTA / MFA UNIT DISTILLATION
COMMISSIONING ITALIA S.P.A.	MALEIC ANHYDRID	1	FJA53-VRVE-P-F8	INDONESIA JAKARTA / MFA UNIT DISTILLATION
COMMISSIONING ITALIA S.P.A.	PHTALIC ANHYDRI	1	FJA13-VRVE-P-F8	INDONESIA JAKARTA / MFA UNIT DISTILLATION

PMS Produzione Misuratori Volumetrici — PETROL Metering Systems

REFERENCE FOR

Chemical industry

Customer	Liquid	Qty	PD meter	Destination / plant
TECNIMONT S.P.A.	ANTISTATIC	1	FA51-2N2-F8	IRAN / PP MARUN
TECNIMONT S.P.A.	CONDENSATE	1	FA11AB-2N2-F8	IRAN / PP MARUN
TECNIMONT S.P.A.	MELT GREASE	2	FA51-2N2-F8	IRAN / PP MARUN
TECNIMONT S.P.A.	OIL	2	FA51-2N2-F8	IRAN / PP MARUN
TECNIMONT S.P.A.	WATER	1	FM12AB-1N2-F8	IRAN / SORBITOL PRODUCTION
TECNIMONT S.P.A.	ANTISTATIC	1	FA51-2N2-F8	IRAN BANDAR ASALUYE / JAM PETROLCHEMICAL
TECNIMONT S.P.A.	CONDENSATE	1	FA11AB-2N2-F8	IRAN BANDAR ASALUYE / JAM PETROLCHEMICAL
TECNIMONT S.P.A.	OIL	4	FA51-2N2-F8	IRAN BANDAR ASALUYE / JAM PETROLCHEMICAL
TECNIMONT S.P.A.	OIL	5	FA51-2N2-F8	IRAN BANDAR ASALUYE / PE JAM PETROLCHEMIC
ACETATI S.P.A.	NAPHTA	1	FM12AB-1P2-C5	ITALY
CARBOCHIMICA ITALIANA S.P.A.	FUEL OIL	1	FM11-12-C5	ITALY
DISTILLERIE ITALIANE S.P.A.	ORTOXILOLO	1	FA11-1P2-F8	ITALY
BRIZIO BASI S.N.C.	ISOLATING OIL	1	FA11-2I2-C5	ITALY / CENTRALINE PER ENEL/FFSS
DE NORA PERMELEC S.P.A.	NAOH 50%	1	FA11AB-12-C8	ITALY / CLORO SODA CELLE MERCUR.
BALLESTRA S.P.A.	IPOCLORITO	1	FA51-1P2-MP	ITALY / DAC ITALIA
NUOVO PIGNONE S.P.A.	GASOIL	1	FA11AB-1P2-C8	ITALY ALZANO LOMBARDO (BG) / CARTIERA PIG
ROVER COLORI E VERNICI S.R.L.	WATER	1	FA51-12-C8	ITALY APRILIA (LT)
POLIFILM S.R.L.	ETHIL ACETATE	1	FA12AB-12-C8	ITALY ARZANO (NA)
ENICHEM ANIC S.P.A.	CAUSTIC SODA 25	1	FA53B-12-F8	ITALY ASSEMINI (CA)
C.C.T. S.P.A.	FUEL OIL	2	FL51AB-1P2-C5	ITALY ASSEMINI (CA) / CTE ENICHEM
ENICHEM POLIMERI S.P.A.	O.C.D.	1	FL53B-2P2-C5	ITALY ASSEMINI (CA) / STAB. ENICHEM
ENICHEM POLIMERI S.P.A.	PROPILENE	1	FM13-1P2-C8	ITALY ASSEMINI (CA) / STAB. ENICHEM MACCHI
MIRA LANZA S.P.A.	WATER	1	FA12-1P2-C8	ITALY AVIGLIANO (PZ) / STAB. NIAV S.P.A.
ALTA S.P.A.	TOLUENE	1	FA11AB-1P2-C8	ITALY BAGNO REGIO (VT)
ENICHEM S.P.A.	FUEL OIL	1	FM24-12-C5	ITALY BRINDISI
MONTELL ITALIA S.P.A.	OIL	1	FA51-MVP-F8	ITALY BRINDISI
HIMONT ITALIA S.P.A.	DEMI WATER	1	FA11-MVP-E8	ITALY BRINDISI (BR)
MONTEPOLIMERI SUD S.P.A.	MINERAL OIL	1	FM11-1N2-F8	ITALY BRINDISI (BR)
MONTEPOLIMERI SUD S.P.A.	MINERAL OIL	1	FM11AB-1N2-F8	ITALY BRINDISI (BR)
MONTEPOLIMERI SUD S.P.A.	MINERAL OIL	2	FM51-1N2-F8	ITALY BRINDISI (BR)
K.T.I. S.P.A.	SODA SOLUTION	1	FM51-12-C8	ITALY BRINDISI (BR) / ENICHEM PLANT
MARCHON ITALIANA S.P.A.	MINERAL OIL	2	FA12AB-1N2-F8	ITALY C. STIVIERE (MN) / STAB. DI C. STIVIERE
SARDAMAG S.P.A.	FUEL OIL	1	FH51-1P2-C5	ITALY CAGLIARI
NUOVA STI S.R.L.	CAUSTIC SODA 30	1	FA14-22-C8	ITALY CAGLIARI / ENICHEM PLANT
RECORDATI S.P.A.	EPICLORIDRINA	1	FA11-MVE-C8	ITALY CAMPOVERDE (LT)
NOVATEC S.R.L.	ALCOHOL	1	FA51-1P2-F8	ITALY CAPANNORI (LU)
MARCHON ITALIANA S.P.A.	DODECILBENZENE	2	FA11-12-C5	ITALY CAST.D.STIVIERE (MN) / STABILIMENTO M
CHEMIE LINZ CASTELLANZA S.R.L.	FUEL OIL	1	FM12-1P2-C5	ITALY CASTELLANZA (VA)

PMS Produzione Misuratori Volumetrici

PETROL Metering Systems

REFERENCE FOR

Chemical industry

Customer	Liquid	Qty	PD meter	Destination / plant
CHEMIE LINZ CASTELLANZA S.R.L.	NAPHTA	1	FL11AB-1P2-C5	ITALY CASTELLANZA (VA)
RESCOL CASTELLANZA S.R.L.	METHANOL	1	FA12AB-12-F8	ITALY CASTELLANZA (VA)
RESCOL CASTELLANZA S.R.L.	UREA SOLUTION	1	FA11-1P2-F8	ITALY CASTELLANZA (VA)
CHEMIE LINZ CASTELLANZA S.R.L.	FORMUREA	1	FL14C-1P2-F8	ITALY CASTELLANZA (VA) / RESCOL CASTELLANZ
RESCOL S.P.A.	METHANOL	1	FA12-12-F81	ITALY CASTELLANZA (VA) / STAB. DI CASTELLAN
RESEM S.P.A.	ACETONE	1	FA51-MVM-C7	ITALY CASTELLANZA (VA) / STAB. RESEM
RESEM S.P.A.	DIFENILMETANO D	1	FJA11-MVP-C8	ITALY CASTELLANZA (VA) / STAB. RESEM
RESEM S.P.A.	ETHIL ACETATE	1	FA51-MVM-C7	ITALY CASTELLANZA (VA) / STAB. RESEM
RESEM S.P.A.	METHANOL	1	FA11-22-F8	ITALY CASTELLANZA (VA) / STAB. RESEM
MARCHON ITALIANA S.P.A.	ACIDO ALFAOLEF.S	1	FA11-12-F8	ITALY CASTIGLIONE D.S (MN) / STAB. MARCHON
MARCHON ITALIANA S.P.A.	ALFAOLEFINE	1	FA51-12-C5	ITALY CASTIGLIONE D.S (MN) / STAB. MARCHON
MARCHON ITALIANA S.P.A.	DODECILBENZENE	1	FA51-12-C5	ITALY CASTIGLIONE DELLE STIVIERE (MN)
MARCHON ITALIANA S.P.A.	FATTY ALCOLI	2	FA51-12-C5	ITALY CASTIGLIONE DELLE STIVIERE (MN)
ACNA CHIMICA ORGANICA S.P.A.	WATER AMMONIAC	1	FA14C-MVPEF8	ITALY CENGIO (SV)
SITECO S.P.A	DISTILLED OIL	2	FA13-12-C5	ITALY CREMA (CR)
SITECO S.P.A	RESIDUAL OIL	1	FA16-12-C5	ITALY CREMA (CR)
ENICHEM AUGUSTA INDUSTRIALE	WATER	1	FA12-1N2-F8	ITALY CROTONE (CZ)
CHEMIA S.P.A.	XILOLO	1	FA11-1P2-C8	ITALY DOSSO DI S.AGOSTINO (FE)
3M ITALIA S.P.A.	ALCOHOL	1	FA53B-22-F8	ITALY FERRANIA (SV)
MONTELL ITALIA S.P.A.	WATER	2	FA22-12-F8	ITALY FERRARA
ENICHEM ANIC S.P.A.	N.DECANO	1	FAL12AB-22-F8	ITALY FERRARA (FE)
ENICHEM POLIMERI S.P.A.	STYRENE	1	FA13B-1P2-C8	ITALY FERRARA (FE)
ENICHEM S.P.A.	FUEL OIL	2	FL12-1P2-C5	ITALY FERRARA (FE)
ENICHEM S.P.A.	FUEL OIL	1	FL13-1P2-C5	ITALY FERRARA (FE)
ENICHEM S.P.A.	NAOH 50%	1	FA11AB-MVP-C8	ITALY FERRARA (FE)
ENICHEM S.P.A.	NAOH 50%	1	FA22-MVP-C8	ITALY FERRARA (FE)
HIMONT ITALIA S.P.A.	WATER	1	FA11-2N2-F8	ITALY FERRARA (FE)
MONTEDIPE S.P.A.	NAPHTA	1	FM24-2P2-C5	ITALY FERRARA (FE)
FERRARA SERV. IND. S.P.A.	CAPROLATTAME	1	FA53B-1P2-F8	ITALY FERRARA (FE) / F21 MONTEDIPE
MONTEDIPE S.P.A.	BUTENE	1	FL11AB-22-C8	ITALY FERRARA (FE) / HDPE-GAS ENIMONT (FE)
MONTEDIPE S.P.A.	ESANO SOLVENTE	1	FL51-12-F8	ITALY FERRARA (FE) / HDPE-SLURRY
HIMONT ITALIA S.P.A.	FAT	1	FA51-1N2-F8	ITALY FERRARA (FE) / MPX
HIMONT ITALIA S.P.A.	OIL	1	FA51-1N2-C8	ITALY FERRARA (FE) / MPX
HIMONT ITALIA S.P.A.	OIL	2	FA51-1N2-F8	ITALY FERRARA (FE) / MPX
HIMONT ITALIA S.P.A.	OIL	1	FA51-VR-F8	ITALY FERRARA (FE) / MPX
ENIMONT ELASTOMERI S.R.L.	ATTIVATORE	1	FM11-MVP-F8	ITALY FERRARA (FE) / N.C.L. - DUTRAL
MONTEDIPE S.P.A.	PETROLATE OIL	1	FL12-12-F8	ITALY FERRARA (FE) / N.C.L. DUTRAL
ENICHEM POLIMERI S.P.A.	METALL.ORG.+VAS	1	FL11-1N2-F8	ITALY FERRARA (FE) / STAB. ECP FERRARA

PMS Produzione Misuratori Volumetrici — PETROL Metering Systems

REFERENCE FOR

Chemical industry

Customer	Liquid	Qty	PD meter	Destination / plant
ENICHEM POLIMERI S.P.A.	PETROLATE OIL	1	FL12AB-1N2-F8	ITALY FERRARA (FE) / STAB. ECP FERRARA
MONTELL ITALIA S.P.A.	WATER	1	FA53-12-C8	ITALY FERRARA / TORRI DI RAFFREDDAMENTO
CARBOCHIMICA ITALIANA S.P.A.	FENATO SODICO	1	FA14C-VRVE-C8	ITALY FIDENZA (PR)
CARBOCHIMICA ITALIANA S.P.A.	NAPHTALENE	2	FA14C-VRVE-C8	ITALY FIDENZA (PR)
CARBOCHEMICALS S.P.A.	GLICOLE DIETILEN	1	FA14C-VRVE-C8	ITALY FIDENZA (PR) / FIDENZA PLANT
DSM ITALIA S.R.L.	DEMI WATER	1	FA12AB-1P2-F8	ITALY FILAGO (BG)
DSM ITALIA S.R.L.	DEMI WATER	1	FA51-1P2-F8	ITALY FILAGO (BG)
DSM ITALIA S.R.L.	RESINA POLIESTER	1	FA13-VR-F8	ITALY FILAGO (BG)
S.I.M.S. S.P.A.	SOLVENT	1	FA11-12-F8	ITALY FIRENZE
TECHINT S.P.A	LIALET	2	FA13-VR-F8	ITALY GELA (CL) / ENICHEM PLANT
BOZZOTTI & C. S.R.L.	DIESEL	1	FM51-12-C5	ITALY GENOVA
BOZZOTTI & C. S.R.L.	FUEL OIL	2	FA11AB-12-C5	ITALY GENOVA
EXXON CHEMICAL S.P.A.	OIL	1	FA22-2P2-C5	ITALY GENOVA
TASSANI S.P.A.	VINAVIL (H.C.VISC	1	FA11-1P2-F8	ITALY GENOVA BOLZAN. (GE) / COLORIFICIO
OXYDO S.R.L.	WATER	1	FA12AB-1N2-F8	ITALY ITALY - ANAGNI (FR)
ANIC S.P.A.	ACRYLONITRILE	1	FA14C-MVP-F8	ITALY ITALY - MACCHIAREDDU (CA) / ANIC PLAN
ANIC S.P.A.	ACRYLONITRILE	2	FA14C-MVP-F8	ITALY ITALY - MACCHIAREDDU AS (CA) / ANIC PL
MONTEPOLIMERI S.P.A.	METILSTIROLO	1	FA53B-1P2-F8	ITALY ITALY - MANTOVA (MN) / MONTEPOLIMERI
ENICHEM S.P.A.	ALFA METIL STYRE	1	FL12-22-C8	ITALY ITALY - MANTOVA / IMPIANTO DI MANTOV
ENICHEM S.P.A.	STYRENE	1	FL51-22-F8	ITALY ITALY - MANTOVA / IMPIANTO DI MANTOV
BALLESTRA S.P.A.	IPOCLORITO	1	FA51-1P2-MP	ITALY ITALY - MILANO / DAC ITALIA
ENICHEM S.P.A.	DEMI WATER	1	FA13-1P2-C8	ITALY ITALY - PORTO TORRES (CA) / IMPIANTO F
ENICHEM S.P.A.	RAW WATER	1	FA22-1P2-C8	ITALY ITALY - PORTO TORRES (CA) / IMPIANTO F
DISTILLERIE ITALIANE S.P.A.	ALCOLI	1	FA53B-1P2-C5	ITALY ITALY - SAN GIOVANNI VALDARNO (AR)
DISTILLERIE ITALIANE S.P.A.	ALCOLI	2	FA53B-1P2-F8	ITALY ITALY - SAN GIOVANNI VALDARNO (AR)
MASTER BUILDING SRL	POLIOLI	1	FA12-1P2-F8	ITALY LAINATE (MI)
MASTER BUILDING SRL	POLYESTER - BEST	1	FA12-1P2-F8	ITALY LAINATE (MI)
MASTER BUILDING SRL	POLYESTER - BEST	1	FA12-1P2-F8	ITALY LAINATE (MI)
MASTER BUILDING SRL	POLYESTER - BEST	1	FA12-1P2-F8	ITALY LAINATE (MI)
UNIROYAL CHIMICA S.R.L.	DIMETILANILINA	1	FA22-MVE-C5	ITALY LATINA SCALO (LT)
UNIROYAL CHIMICA S.R.L.	H.C.	2	FA12-VR-F8	ITALY LATINA SCALO (LT)
UNIROYAL CHIMICA S.R.L.	H.C.	1	FA22-1P2-C8	ITALY LATINA SCALO (LT)
UNIROYAL CHIMICA S.R.L.	H.C.	1	FA53B-VRDVE-C8	ITALY LATINA SCALO (LT)
UNIROYAL CHIMICA S.R.L.	HOT WATER	1	FA11-1P2-C8	ITALY LATINA SCALO (LT)
UNIROYAL CHIMICA S.R.L.	HOT WATER	1	FA12-1P2-C8	ITALY LATINA SCALO (LT)
UNIROYAL CHIMICA S.R.L.	SOLVENT	1	FA22-22-F8	ITALY LATINA SCALO (LT)
UNIROYAL CHIMICA S.R.L.	SOLVENT	1	FA51-12-F8	ITALY LATINA SCALO (LT)
UNIROYAL CHIMICA S.R.L.	UBOB/DPA/TERBUT	1	FJA22-22-C8	ITALY LATINA SCALO (LT)

PMS Produzione Misuratori Volumetrici

PETROL Metering Systems

REFERENCE FOR

Chemical industry

Customer	Liquid	Qty	PD meter	Destination / plant
ARSOL S.P.A.	FUEL OIL	1	FA11AB-12-C5	ITALY LATINA SCALO (LT) / STABILIMENTO ARSO
RENEE BLANCHE S.R.L.	WATER	1	FA51-1P2-C8	ITALY LUSTRA (SA)
ENICHEM ANIC S.P.A.	PECI CLOR.	1	FL13-MVP-C5	ITALY MACCHIAREDDU (CA) / TRI/PER
ENICHEM S.P.A.	PEB	1	FA51AB-12-C8	ITALY MANTOVA
ENICHEM S.P.A.	TOLUENE	1	FA12-2P2-F8	ITALY MANTOVA
ENICHEM S.P.A.	WATER	1	FL53B-MVP-C8	ITALY MANTOVA
ENICHEM POLIMERI S.P.A.	STYRENE	1	FA51AB-1P2-C8	ITALY MANTOVA (MN)
ENICHEM POLIMERI S.P.A.	WATER	1	FA14C-MVP-F8	ITALY MANTOVA (MN)
ENICHEM POLIMERI S.P.A.	WATER	1	FA24-12-C8	ITALY MANTOVA (MN)
ENICHEM POLIMERI S.P.A.	WATER SOLUTION	1	FA51-22-F8	ITALY MANTOVA (MN)
ENICHEM POLIMERI S.P.A.	WATER SOLUTION	1	FA53B-22-F8	ITALY MANTOVA (MN)
ENICHEM S.P.A.	BUTILBENZENE	1	FL11AB-12-F8	ITALY MANTOVA (MN)
ENICHEM S.P.A.	BUTILBENZENE	1	FL51AB-12-F8	ITALY MANTOVA (MN)
ENICHEM S.P.A.	PHENOLIC RESTS A	1	FA51AB-12-C8	ITALY MANTOVA (MN)
MONTEDIPE S.P.A.	DEMI WATER	1	FA12AB-1P2-E7	ITALY MANTOVA (MN)
MONTEDIPE S.P.A.	LIQUID PETROLEU	1	FA206-2P2-F8	ITALY MANTOVA (MN)
MONTEDIPE S.P.A.	STIROLO	1	FA13-12-C8	ITALY MANTOVA (MN)
AGRAL ENGINEERING S.R.L.	BITUMEN	2	FJA28F-MVP-C5	ITALY MANTOVA (MN) / CARICAMEMTO RAFF. ICI
C.C.T. S.P.A.	FUEL OIL	1	FL51-1P2-C5	ITALY MANTOVA (MN) / ENICHEM
ENICHEM POLIMERI S.P.A.	SODA 25%	1	FA22-22-F8	ITALY MANTOVA (MN) / FOGNA ACIDA A BIOLOG
MONTEPOLIMERI S.P.A.	ACRYLONITRILE	1	FA53B-2P2-F8	ITALY MANTOVA (MN) / MONTEPOLIMERI PLANT
MONTEPOLIMERI S.P.A.	WELL WATER	1	FA51-MVP-C8	ITALY MANTOVA (MN) / MONTEPOLIMERI PLANT
IRAF	BITUMEN	1	FA16D-1P2-C5	ITALY MANTOVA (MN) / RAFFINERIA ICIP MANT
ENICHEM POLIMERI S.P.A.	STYRENE + RUBBE	1	FL24-1P2-C8	ITALY MANTOVA (MN) / ST 15
MONTEDIPE S.P.A.	SOLUZIONE GOMM	1	FA53B-1P2-F8	ITALY MANTOVA (MN) / ST16
MONTEDIPE S.P.A.	SM+EB	1	FA11AB-1P2-C8	ITALY MANTOVA (MN) / ST18
MONTEDIPE S.P.A.	RES.STIROLO+ ZO	1	FA51AB-1P2-C8	ITALY MANTOVA (MN) / ST40 SEZ. DISTILLAZION
MONTEDIPE S.P.A.	STIROLO	1	FA53B-1P2-C8	ITALY MANTOVA (MN) / ST40 SEZ. DISTILLAZION
MONTEDIPE S.P.A.	ACRYLONITRILE	1	FA206-2P2-F8	ITALY MANTOVA (MN) / STAB. DI MANTOVA
MONTEDIPE S.P.A.	LIQUID FENOLO	1	FA24-MVP-F8	ITALY MANTOVA (MN) / STAB. DI MANTOVA
ENICHEM FIBRE	ETHYLENE GLYCOL	1	FA13-12-E7	ITALY MANTOVA (MN) / STAB. DI OTTANA
IRAF	BITUMEN	2	FA16D-1P2-C5	ITALY MANTOVA (MN) / STAB. ICIP MANTOVA
IRAF	BITUMEN	1	FA18F-1P2-C5	ITALY MANTOVA (MN) / STAB. ICIP MANTOVA
MONTEDIPE S.P.A.	ORGANIC LIQUIDS	1	FL12-12-F8	ITALY MANTOVA (MN) / STAB. MONTEDIPE
MONTEDIPE S.P.A.	STIROLO	1	FA13-2P2-F8	ITALY MANTOVA (MN) / STAB. MONTEDIPE
MONTEDIPE S.P.A.	STIROLO	1	FA53B-2P2-F8	ITALY MANTOVA (MN) / STAB. MONTEDIPE
ENICHEM S.P.A.	ACRINOLITRYLE	1	FA51S-12-F8	ITALY MANTOVA / IMPIANTO DI MANTOVA
ENICHEM S.P.A.	BENZENE	1	FL14C-2P2-C8	ITALY MANTOVA / STABILIMENTO DI MANTOVA

PMS Produzione Misuratori Volumetrici

PETROL Metering Systems

REFERENCE FOR

Chemical industry

Customer	Liquid	Qty	PD meter	Destination / plant
ENICHEM S.P.A.	DEMI WATER	1	FL51-1P2-C8	ITALY MANTOVA / STABILIMENTO DI MANTOVA
ENICHEM S.P.A.	ETILBENZENE	1	FL51-1P2-C8	ITALY MANTOVA / STABILIMENTO DI MANTOVA
ENICHEM S.P.A.	STYRENE	1	FL51-1P2-C8	ITALY MANTOVA / STABILIMENTO DI MANTOVA
ENICHEM S.P.A.	TOLUENE	1	FL12-2P2-C8	ITALY MANTOVA / STABILIMENTO DI MANTOVA
MIRA LANZA S.P.A.	DEMI WATER	1	FA51-22-F8	ITALY MESA PONTINIA (LT) / STAB. MIRA LANZA
BRIZIO BASI S.N.C.	DIATERMICO OIL	3	FA11-1I2-F8	ITALY MILANO (MI) / B. BASI MILANO
DUCO MAX MEYER		1	FA11-1N2-F8	ITALY MILANO (MI) / INFUSTAGGIO SOLVENTI
DUCO MAX MEYER	SOLVENT	1	FA11-1N2-F8	ITALY MILANO (MI) / INFUSTAGGIO SOLVENTI
MIRA LANZA S.P.A.	ACETIC ANHYDRID	1	FA53B-1P2-F8	ITALY MIRA (VE) / MIRA LANZA PLANT
MIRA LANZA S.P.A.	DEMI WATER	1	FA11-1P2-F8	ITALY MIRA (VE) / MIRA LANZA PLANT
MIRA LANZA S.P.A.	DEMI WATER	1	FA12-1P2-F8	ITALY MIRA (VE) / MIRA LANZA PLANT
MIRA LANZA S.P.A.	ACETIC ACID	1	FA53B-MVP-F8	ITALY MIRA (VE) / STAB. MIRA LANZA
MIRA LANZA S.P.A.	ACRYLIC ACID	1	FA12AB-1P2-F8	ITALY MIRA (VE) / STAB. MIRA LANZA
MIRA LANZA S.P.A.	WATER	1	FA51-1P2-F8	ITALY MIRA (VE) / STAB. MIRA LANZA
ITALCHIMICA LAZIO S.R.L.	SOLVENT	1	FA22-22-C8	ITALY MONTEROTONDO (RM)
ACHIMAR S.P.A.	GASOIL	1	FA11AB-1N2-C5	ITALY MOROLO SCALO (FR) / STAB. ACHIMAR
ROHM & HAAS S.P.A.	SODA 20%	1	FA51-1N2-F8	ITALY MOZZANICA (BG) / STABILIMENTO R & HA
ROHM & HAAS S.P.A.	HCL 33%	1	FA51-1N2-MP	ITALY MOZZANICA (BG) / STABILIMENTO R. & H
ROHM & HAAS S.P.A.	ISOFORONE	1	FA12AB-1N2-F8	ITALY MOZZANICA (BG) / STABILIMENTO R.& HA
ROHM & HAAS S.P.A.	XILOLO	1	FA12AB-1N2-F8	ITALY MOZZANICA (BG) / STABILIMENTO R.& HA
ALCANTARA S.P.A.	H.C.	1	FAL24-1P2-E7	ITALY NERA MONTORO (TR)
ALCANTARA S.P.A.	SW	1	FA51-1P2-F8	ITALY NERA MONTORO (TR) / ALEX 1
ALCANTARA S.P.A.	TR	1	FA11AB-1P2-P8	ITALY NERA MONTORO (TR) / ALEX 1
ALCANTARA S.P.A.	WASTE TR	1	FA12-1P2-P8	ITALY NERA MONTORO (TR) / ALEX 1
TERNI IND. CHIMICHE	SODA 48% SOLUZ.	1	FA51-2P2-C8	ITALY NERA MONTORO (TR) / IMP. POLICARBONA
ALCANTARA S.P.A.	DMF	1	FA51-1P2-F8	ITALY NERA MONTORO (TR) / STAB ALCANTARA
ALCANTARA S.P.A.	ADME	1	FA11-1N2-F8	ITALY NERA MONTORO (TR) / STAB. ALCANTARA
ALCANTARA S.P.A.	DMF SOLUZ.	1	FA51-1P2-F8	ITALY NERA MONTORO (TR) / STAB. ALCANTARA
ALCANTARA S.P.A.	SOFTENING AGENT	1	FGPB-631	ITALY NERA MONTORO (TR) / STAB. ALCANTARA
ALCANTARA S.P.A.	SOFTENING AGENT	1	FA51-1P2-F8	ITALY NERA MONTORO (TR) / STAB. DI NERA MO
ROTOSUD S.R.L.	ETHYL ACETATE	1	FA11-12-F8	ITALY ORICOLA (AQ)
ROTOSUD S.R.L.	TOLUENE	1	FA12AB-12-C8	ITALY ORICOLA (AQ)
ENI S.P.A.	GLYCOL	1	FL11-1P2-C8	ITALY ORTONA (CH)
SOMESA	DEMI WATER	1	FA13B-1P2-F8	ITALY OTTANA (NU) / ANIC
I.N.C.A. INTERNATIONAL S.R.L.	BUNKER "C"	1	FA53B-12-C5	ITALY OTTANA (NU) / ENICHEM FIBRE PLANT
MONTEFIBRE S.P.A.	H2O+MN BR	1	FA51-1N2-F8	ITALY OTTANA (NU) / TPA PREPAR. CATALIZ.
MONTEFIBRE S.P.A.	FUEL OIL	1	FM51-1P2-C5	ITALY OTTANA (SS) / TPA INCENERIMENTO
ENICHEM S.P.A.	OIL	2	FA18-C5	ITALY P.TO TORRES (CA)

PMS Produzione Misuratori Volumetrici

PETROL Metering Systems

REFERENCE FOR

Chemical industry

Customer	Liquid	Qty	PD meter	Destination / plant
ENICHEM BASE	CAUSTIC SODA 50	1	FA18F-12-E7	ITALY P.TO. TORRES (SS) / STAB ENICHEM P. TO
CHEMI S.P.A.	ACQUA DEMI	1	FL51S-22-C8	ITALY PATRICA
CHEMI S.P.A.	ACETIC ANHYDRID	1	FA11-1N2-F8	ITALY PATRICA (FR)
CHEMI S.P.A.	ACETONE	3	FA12AB-22-F8	ITALY PATRICA (FR)
CHEMI S.P.A.	ACID ORGANIC SO	1	FA12-22-MP	ITALY PATRICA (FR)
CHEMI S.P.A.	ACQUA + SOLVENT	1	FL12-22-C8	ITALY PATRICA (FR)
CHEMI S.P.A.	ACQUA + SOLVENT	7	FL51-22-C8	ITALY PATRICA (FR)
CHEMI S.P.A.	BENZENE	2	FA12-VRVME-C8	ITALY PATRICA (FR)
CHEMI S.P.A.	DEMI WATER	1	FA12AB-12-F8	ITALY PATRICA (FR)
CHEMI S.P.A.	DEMI WATER	1	FA12AB-22-F8	ITALY PATRICA (FR)
CHEMI S.P.A.	DEMI WATER	1	FA51-22-F8	ITALY PATRICA (FR)
CHEMI S.P.A.	HYDROCHLORATE	1	FA51-1N2-MP	ITALY PATRICA (FR)
CHEMI S.P.A.	HYDROCLORATE A	1	FA51-22-MP	ITALY PATRICA (FR)
CHEMI S.P.A.	METHANOL	1	FA12AB-22-F8	ITALY PATRICA (FR)
CHEMI S.P.A.	METHANOL	4	FA22-22-C8	ITALY PATRICA (FR)
CHEMI S.P.A.	METHYL CHLORIDE	1	FA12AB-22-F8	ITALY PATRICA (FR)
CHEMI S.P.A.	SOLVENT	1	FA12AB-22-F8	ITALY PATRICA (FR)
CHEMI S.P.A.	TERBUTILAMMINA	1	FA11AB-12-C8	ITALY PATRICA (FR)
CHEMI S.P.A.	WATER	1	FA51-12-F8	ITALY PATRICA (FR)
MARCHON SUD S.R.L.	ALCOLI	1	FA51-12-C8	ITALY PATRICA (FR)
MARCHON SUD S.R.L.	DODECILBENZENE	1	FA11-12-C5	ITALY PATRICA (FR)
MARCHON SUD S.R.L.	DODECILBENZENE	2	FA51-12-C5	ITALY PATRICA (FR)
MARCHON SUD S.R.L.	SF ACIDO	1	FA12-12-F8	ITALY PATRICA (FR)
WACKER CHEMIE ITALIA S.P.A.	PERCHLOROETHYL	1	FA51AB-1P2-F8	ITALY PESCHIERA BORROMEO (MI) / ITALCOMPO
WACKER CHEMIE ITALIA S.P.A.	SHELL SOL	1	FA51AB-1P2-F8	ITALY PESCHIERA BORROMEO (MI) / ITALCOMPO
WACKER CHEMIE ITALIA S.P.A.	SPECIAL NAPHTA	1	FA51AB 1P2-F8	ITALY PESCHIERA BORROMEO (MI) / ITALCOMPO
WACKER CHEMIE ITALIA S.P.A.	TOLUENE	1	FA51AB-1P2-F8	ITALY PESCHIERA BORROMEO (MI) / ITALCOMPO
WACKER CHEMIE ITALIA S.P.A.	TRICHLOROETHYLE	1	FA51AB-1P2-F8	ITALY PESCHIERA BORROMEO (MI) / ITALCOMPO
WACKER CHEMIE ITALIA S.P.A.	XILENE	1	FA51AB-1P2-F8	ITALY PESCHIERA BORROMEO (MI) / ITALCOMPO
ISE S.R.L. (PIOMBINO)	ACQUA INDUSTRIA	1	FA12-2P2-C8	ITALY PIOMBINO / ISE SEDE IMPIANTI
REPSOL POLIVAR S.P.A.	METILMETACRILAT	1	FA12-2P2-F8	ITALY POMEZIA
REPSOL POLIVAR S.P.A.	METILMETACRILAT	3	FA12AB-2P2-F8	ITALY POMEZIA
REPSOL POLIVAR S.P.A.	METILMETACRILAT	3	FA11-MVPE-F8	ITALY POMEZIA (RM)
REPSOL POLIVAR S.P.A.	METILMETACRILAT	1	FA12-1P2-F8	ITALY POMEZIA (RM)
REPSOL POLIVAR S.P.A.	METILMETACRILAT	1	FA12AB-2P2-F8	ITALY POMEZIA (RM)
REPSOL POLIVAR S.P.A.	MMA MONOMERO	2	FA53B-MVE-F8	ITALY POMEZIA (RM)
REPSOL POLIVAR S.P.A.	MMA MONOMERO	1	FA53B-MVPE-F8	ITALY POMEZIA (RM)
CIBA GEIGY S.P.A.	ORTOCRESOLO	1	FJA22-MVP-F8	ITALY PONTECCHIO MARCONI (BO)

PMS Produzione Misuratori Volumetrici

PETROL Metering Systems

REFERENCE FOR

Chemical industry

Customer	Liquid	Qty	PD meter	Destination / plant
CIBA GEIGY S.P.A.	WATER	1	FA11-MVE-C8	ITALY PONTECCHIO MARCONI (BO)
SIPA	WATER	1	FA13B-1P2-F8	ITALY PORTAMARGHERA (VE) / SIPA PLANT
3V CMP S.P.A.	ORTOTOLUIDINA	1	FA53-2P2-C5	ITALY PORTO MARGHERA (VE)
3V CMP S.P.A.	PARANITROTULUID	1	FA22-2P2-C5	ITALY PORTO MARGHERA (VE)
C.P.M. S.P.A	ORTONITROTOLUO	1	FA53-22-C5	ITALY PORTO MARGHERA (VE)
ENICHEM ANIC S.P.A.	SODA	2	FL24C-MVP-F8	ITALY PORTO MARGHERA (VE)
ENICHEM ANIC S.P.A.	SODA 50%	1	FA24C-MVP-F8	ITALY PORTO MARGHERA (VE)
MONTEFIBRE S.P.A.	DEIONIZED WATER	1	FA51-1P2-F8	ITALY PORTO MARGHERA (VE)
MONTEFIBRE S.P.A. (MARGHERA)	ACQUA DEIONIZZA	1	FA51-1P2-F8	ITALY PORTO MARGHERA (VE) / MONTEFIBRE S.P
ENICHEM S.P.A.	FUEL OIL	1	FA51-2P2-C5	ITALY PORTO TORRES (CA)
3P PROGETTI S.P.A.	FUEL OIL	1	FA206-22-C8	ITALY PORTO TORRES (CA) / ENICHEM AUGUS. U
3P PROGETTI S.P.A.	FUEL OIL	1	FA51-22-C8	ITALY PORTO TORRES (CA) / ENICHEM AUGUS. U
ENICHEM S.P.A.	WATER	1	FL11-1P2-F8	ITALY PORTO TORRES (SS)
ENICHEM S.P.A.	CYCLOPENTANE	1	FA14C---C5	ITALY PORTO TORRES (SS) / PORTO TORRES PLA
S.I.P.A.	DEIONIZED WATER	1	FA51-1P2-F8	ITALY PORTOMARGHERA (VE) / STAB. SIPA
S.I.P.A.	SOLVENT	1	FA51-1P2-F8	ITALY PORTOMARGHERA (VE) / STAB. SIPA
S.I.P.A.	WATER	1	FA11-1P2-F8	ITALY PORTOMARGHERA (VE) / STAB. SIPA
S.I.P.A.	WATER	1	FA53B-1P2-F8	ITALY PORTOMARGHERA (VE) / STAB. SIPA
NUOVA SAMIM S.P.A.	FUEL OIL	2	FA51AB 12 C5	ITALY PORTOSCUSO (CA)
MONTEDIPE S.P.A.	GLYCOL ETILENICO	1	FA53-MVP-C5	ITALY PRIOLO (SR) / STAB. MONTEDIPE
SARDAMAG S.P.A.	FUEL OIL	1	FH51-1P2-C5	ITALY PRIOLO (SR) / STAB. SARDAMAG
ENICHEM ANIC S.P.A.	OILY MUDS	2	FM51-1P2-F8	ITALY RAGUSA (RG) / STAB. ENICHEM
ENICHEM SINTESI S.P.A.	AVM	1	FA51AB-2P2-F8	ITALY RAVENNA (RA)
ENICHEM SISTESI S.P.A.	AVM	5	FA51AB-2P2-F8	ITALY RAVENNA (RA)
ENICHEM SISTESI S.P.A.	HCL 35%	1	FA51-2P2-MP	ITALY RAVENNA (RA)
ENIMONT ANIC S.R.L.	DEMI WATER	2	FL22-1P2-F8	ITALY RAVENNA (RA)
ENIMONT ELASTOMERI S.R.L.	WATER	1	FL206-12-F8	ITALY RAVENNA (RA)
ENICHEM ANIC S.P.A.	WATER	1	FL13B-2P2-F81	ITALY RAVENNA (RA) / 711 PVC/M
BPD DIFESA E S.P.A.ZIO	DIMERO	1	FA22-12-F8	ITALY RAVENNA (RA) / CTE ENICHEM
BPD DIFESA E S.P.A.ZIO	WATER	1	FA12AB-12-F8	ITALY RAVENNA (RA) / CTE ENICHEM
ENICHEM SISTESI S.P.A.	AEROSOL	1	FA206AB-2P2-F8	ITALY RAVENNA (RA) / ECS/AVP
ENICHEM SISTESI S.P.A.	ALCOHOL	1	FA13-2P2-F8	ITALY RAVENNA (RA) / ECS/AVP
ENICHEM SISTESI S.P.A.	DEMI WATER	1	FA51AB-2P2-F8	ITALY RAVENNA (RA) / ECS/AVP
ENICHEM SISTESI S.P.A.	MEGAL 30%	1	FA12-2P2-F8	ITALY RAVENNA (RA) / ECS/AVP
ENICHEM SISTESI S.P.A.	NATRASOL	1	FA13-2P2-F8	ITALY RAVENNA (RA) / ECS/AVP
ENICHEM SISTESI S.P.A.	PALATINOL	1	FA51-2P2-F8	ITALY RAVENNA (RA) / ECS/AVP
ENICHEM SISTESI S.P.A.	RONGAL.20%	1	FA51-2P2-F8	ITALY RAVENNA (RA) / ECS/AVP
ENICHEM ANIC S.P.A.	DEMI WATER	1	FL13B-1P2-F8	ITALY RAVENNA (RA) / STAB ENICHEM ANIC

PMS Produzione Misuratori Volumetrici

PETROL Metering Systems

REFERENCE FOR

Chemical industry

Customer	Liquid	Qty	PD meter	Destination / plant
ENICHEM POLIMERI S.P.A.	WATER DEMI	1	FA12-2P2-F81	ITALY RAVENNA (RA) / STAB. ENICHEM
ENICHEM SINTESI S.P.A.	AVM / ALCOHOL	1	FA12-2P2-F8	ITALY RAVENNA (RA) / STAB. ENICHEM
ENICHEM SINTESI S.P.A.	HCL	1	FA51-2P2-MP	ITALY RAVENNA (RA) / STAB. ENICHEM
ENICHEM SINTESI S.P.A.	METANOLO / WATE	1	FA11AB-2N2-F8	ITALY RAVENNA (RA) / STAB. ENICHEM
ENICHEM SINTESI S.P.A.	METHANOL	1	FA12-2P2-F8	ITALY RAVENNA (RA) / STAB. ENICHEM
ENICHEM SINTESI S.P.A.	SODA 8%	1	FA51AB-2P2-F8	ITALY RAVENNA (RA) / STAB. ENICHEM
ENICHEM SINTESI S.P.A.	SODA 98%	1	FA51-2P2-F8	ITALY RAVENNA (RA) / STAB. ENICHEM
ENICHEM SINTESI S.P.A.	TPAOH	1	FA51-MVP-E7	ITALY RAVENNA (RA) / STAB. ENICHEM
ENICHEM SINTESI S.P.A.	H.C.	2	FA11AB-1N2-F8	ITALY RAVENNA (RA) / STAB. ENICHEM SINTESI
ENICHEM SINTESI S.P.A.	H.C.	2	FA51-1N2-F8	ITALY RAVENNA (RA) / STAB. ENICHEM SINTESI
ENICHIMICA SEC.	WATER	1	FA51-MVP-E7	ITALY RAVENNA (RA) / STAB. ENICHIMICA
ERBA BIOCHIMICA	H.C.	1	FA11-22-F8	ITALY RODANO (MI)
ERBA BIOCHIMICA	SOLVENT	1	FA11-22-F8	ITALY RODANO (MI)
ERBA BIOCHIMICA	H.C.	1	FA51-22-F8	ITALY RODANO (MI) / STAB. DI RODANO
ERBA BIOCHIMICA	SOLVENT	2	FA11-22-F8	ITALY RODANO (MI) / STAB. DI RODANO
SOLVAY S.P.A.	CATALYST	1	FA51-1P2-C5	ITALY ROSIGNANO (LI) / STAB. SOLVAY
INTEROX CHIMICA	WATER	1	FA13B-12-F8	ITALY ROSIGNANO S. (LI)
PIANIMPIANTI S.P.A.	ETHIL ACETATE	1	FA11-12-F8	ITALY ROVERETO / RECUPERO SOLVENTI
ALUSUISSE ITALIA S.P.A.	ALCOOL DUEETILE	1	FA53B-1P2-C5	ITALY S. G. VALDARNO (AR)
DISTILLERIE ITALIANE S.P.A.	MALEIC ANHYDRID	1	FJA13-1P2-F8	ITALY S. G. VALDARNO (AR)
DISTILLERIE ITALIANE S.P.A.	DICICLOPENTADIE	1	FA13-1P2-F8	ITALY S. G. VALDARNO (AR) / STAB. DIST. ITALI
DISTILLERIE ITALIANE S.P.A.	DIETILEN GLYCOL	1	FA13-1P2-F8	ITALY S. G. VALDARNO (AR) / STAB. DIST. ITALI
DISTILLERIE ITALIANE S.P.A.	DIPROPILEN GLYC	1	FA13-1P2-F8	ITALY S. G. VALDARNO (AR) / STAB. DIST. ITALI
DISTILLERIE ITALIANE S.P.A.	MALEIC ANHYDRID	2	FJL13-1P2-F8	ITALY S. G. VALDARNO (AR) / STAB. DIST. ITALI
DISTILLERIE ITALIANE S.P.A.	MONOETILENGLYC	1	FA13-1P2-F8	ITALY S. G. VALDARNO (AR) / STAB. DIST. ITALI
DISTILLERIE ITALIANE S.P.A.	PHTALIC ANHYDRI	2	FJA13-1P2-F8	ITALY S. G. VALDARNO (AR) / STAB. DIST. ITALI
DISTILLERIE ITALIANE S.P.A.	STIROLO	1	FA12-1P2-F8	ITALY S. G. VALDARNO (AR) / STAB. DIST. ITALI
DISTILLERIE ITALIANE S.P.A.	STIRONE	1	FA13-1P2-F8	ITALY S. G. VALDARNO (AR) / STAB. DIST. ITALI
DISTILLERIE ITALIANE S.P.A.	STYRENE	1	FA12-1P2-F8	ITALY S. G. VALDARNO (AR) / STAB. DIST. ITALI
DISTILLERIE ITALIANE S.P.A.	PLASTIFICANTE	1	FA13-12-C5	ITALY S. G. VALDARNO (AR) / STAB. DISTILLERI
DISTILLERIE ITALIANE S.P.A.	MONOPROPILEN GL	2	FA13-1P2-F8	ITALY S. G. VALDARNO (AR) / STAB. DISTILLERI
ALUSUISSE ITALIA S.P.A.	ALCOHOL	4	FL13-1P2-F8	ITALY S. GIOVANNI V.NO (AR)
ALUSUISSE ITALIA S.P.A.	ORTOXILOLO	1	FA11-1P2-F8	ITALY S. GIOVANNI V.NO (AR)
LONZA GROUP SPA - S. GIOVANNI	ALCOLI	1	FA53B-1P2-C5	ITALY SAN GIOVANNI V.NO (AR)
LONZA GROUP S.P.A.	MALEIC ANHYDRID	1	FJL13-1P2-F8	ITALY SAN GIOVANNI VALDARNO (AR)
LONZA GROUP S.P.A.	PHTALIC ANHYDRI	1	FJL13-1P2-F8	ITALY SAN GIOVANNI VALDARNO (AR)
LONZA GROUP S.P.A.	PLASTICIZER	1	FA13-12-C5	ITALY SAN GIOVANNI VALDARNO (AR)
PARAFFINE SARDE S.P.A.	FUEL OIL	4	FL206-1P2-C5	ITALY SARROCH (CA)

PMS Produzione Misuratori Volumetrici

PETROL Metering Systems

REFERENCE FOR

Chemical industry

Customer	Liquid	Qty	PD meter	Destination / plant
PARAFFINE SARDE S.P.A.	FUEL OIL	8	FL206AB-1P2-C5	ITALY SARROCH (CA)
TECNIMONT S.P.A.	GASOIL	1	FM206-1P2-C8	ITALY SARROCH (CA) / POLIOLEFINE PIO NURAC
TECNIMONT S.P.A.	P.I.O.	1	FM51-1P2-C8	ITALY SARROCH (CA) / POLIOLEFINE PIO NURAC
TECNIMONT S.P.A.	SOL.POTASSIO ID	1	FM51-12-G9	ITALY SARROCH (CA) / POLIOLEFINE PIO NURAC
ALUSUISSE ITALIA S.P.A.	DEMI WATER	1	FA51-1P2-F8	ITALY SCANZOROSCIATE (BG)
FTALITAL S.P.A	PSEUDO CUMENE	1	FA51AB-1P2-F8	ITALY SCANZOROSCIATE (BG)
FTALITAL S.P.A	WATER	1	FA11-MVP-F8	ITALY SCANZOROSCIATE (BG)
FTALITAL S.P.A.	ORTOXILOLO	1	FA11-2P2-F8	ITALY SCANZOROSCIATE (BG)
ALUSUISSE ITALIA S.P.A.	BUTANO	1	FA51-22-C3	ITALY SCANZOROSCIATE (BG) / FTALITAL PLANT
ALUSUISSE ITALIA S.P.A.	DEMI WATER	1	FA51-1P2-F8	ITALY SCANZOROSCIATE (BG) / FTALITAL PLANT
ALUSUISSE ITALIA S.P.A.	METHANOL	1	FA51-2P2-F8	ITALY SCANZOROSCIATE (BG) / FTALITAL PLANT
ALUSUISSE ITALIA S.P.A.	NAPHTALENE	1	FJA51-2P2-F8	ITALY SCANZOROSCIATE (BG) / STAB. FTALITAL
LONZA GROUP S.P.A.	HYDROCLORATE A	1	FA11-MVP-MP	ITALY SCANZOROSCIATE (BG) / STABILIMENTO F
LONZA GROUP S.P.A.	PSEUDO CUMENE	1	FA51AB-1P2-F8	ITALY SCANZOROSCIATE (BG) / STABILIMENTO F
LONZA GROUP S.P.A.	SOLVENT	1	FA22-22-F8	ITALY SCANZOROSCIATE (BG) / STABILIMENTO F
TECNIMONT S.P.A.	WATER	1	FA14C-1P2-F8	ITALY SEGRATE (MI) / ROCHE PLANT
BIOSINT S.P.A.	DEMI WATER	1	FA12AB-1P2-F8	ITALY SERMONETA (LT)
TECNIMONT S.P.A.	DEMI WATER	1	FA51-1N2-F8	ITALY SPINETTA MARENGO (AL) / STAB. MONTEF
TECNIMONT S.P.A.	DEMI WATER	2	FAL206-22-F8	ITALY SPINETTA MARENGO (AL) / STAB. MONTEF
CARBOCHIMICA ITALIANA S.P.A.	OIL	1	FA13-2P2-F8	ITALY STAB. LIVORNO (LI) / IMP. CARICO AUTOB
MONTEDIPE S.P.A.	ETILBENZOLO	1	FA13-1P2-C8	ITALY STAB. MANTOVA (MN)
MARCHON ITALIANA S.P.A.	ACIDO DODECIL-B	1	FA11-12-F8	ITALY STAB. MARCHON (MN)
ENICHEM SINTESI S.P.A.	DEMI WATER	1	FA53B-2N2-F8	ITALY STAB. RAVENNA (RA)
PIANIMPIANTI S.P.A.	TOLUENE	2	FA11-12-B7	ITALY STAB. RIZZOLI (MI) / RECUPERO SOLVENT
HIMONT ITALIA S.P.A.	ALCOHOL	2	FL51-12-C8	ITALY TERNI (TR)
UNIBIOS S.P.A.	ALCOHOL	1	FA51-22-F8	ITALY TRECATE (NO)
PIANIMPIANTI S.P.A.	ESANO	1	FA51-12-E7	ITALY UBOLDO (VA) / IMP. REC. SOLVENTI
EXXON CHEMICAL S.P.A.	MINERAL OIL	1	FA16D-22-C5	ITALY VADO LIGURE (SV)
MIRA LANZA S.P.A.	OLEINA	1	FA51-12-C8	ITALY VENEZIA (VE) / STAB. MIRA LANZA
MIRA LANZA S.P.A.	STEARINA	1	FA13-1N2-F8	ITALY VENEZIA (VE) / STAB. MIRA LANZA
I.D.A. S.R.L.	SOLVENT	1	FA51-12-F8	ITALY VIGNATE (MI)
PIANIMPIANTI S.P.A.	ESANO	1	FA51-12-F8	ITALY VINCI (FI) / STAB. 3M ITALIANA
PIANIMPIANTI S.P.A.	ESANO/TULUOLO	1	FA51-12-F8	ITALY VINCI (FI) / STAB. 3M ITALIANA
PIANIMPIANTI S.P.A.	TOLUENE	1	FA51-12-F8	ITALY VINCI (FI) / STAB. 3M ITALIANA
SIIRTEC NIGI S.P.A.	WAXI CRUDE OIL	2	FL212-1P2-C5	KOREA KOLON / CPP-2 PLATFORM
TECNIMONT S.P.A.	ADDITIVE	1	FA51-2N2-F8	NIGERIA PORT HARCOURT / P.P. - PLANT
TECNIMONT S.P.A.	OIL	1	FA51-2N2-C8	NIGERIA PORT HARCOURT / P.P. - PLANT
TECNIMONT S.P.A.	OIL	1	FA51AB-2N2-C8	NIGERIA PORT HARCOURT / P.P. - PLANT

PMS Produzione Misuratori Volumetrici

PETROL Metering Systems

REFERENCE FOR

Chemical industry

Customer	Liquid	Qty	PD meter	Destination / plant
TECNIMONT S.P.A.	OIL GREASE	1	FA51AB-2N2-F8	NIGERIA PORT HARCOURT / P.P. - PLANT
TECNIMONT S.P.A.	OIL	1	FA51-22-F8	NIGERIA PORT HARCOURT / P.P.- PLANT
TECNIMONT S.P.A.	AL-ALKYL + HEXAN	1	FA51-2N2-F8	POLAND / PP-HDPE PLOCK
TECNIMONT S.P.A.	ANTISTATIC AGEN	1	FA51-2N2-F8	POLAND / PP-HDPE PLOCK
TECNIMONT S.P.A.	CONDENSATE	1	FA51-2N2-F8	POLAND / PP-HDPE PLOCK
TECNIMONT S.P.A.	DEMI / HEATING W	1	TCX 50-70-050	POLAND / PP-HDPE PLOCK
TECNIMONT S.P.A.	DEMI / HEATING W	1	TCX 70-50-050	POLAND / PP-HDPE PLOCK
TECNIMONT S.P.A.	INDUSTRIAL / DRI	2	TCX 40-40-050	POLAND / PP-HDPE PLOCK
TECNIMONT S.P.A.	OIL	3	FA51-2N2-F8	POLAND / PP-HDPE PLOCK
TECNIMONT S.P.A.	OIL	1	FJA51-2N2-F8	POLAND / PP-HDPE PLOCK
SNAMPROGETTI S.P.A.	EB	1	FL11AB-1N2-C8	POLAND / ZAKLADY CHEMICZE OSSWIECIN
SNAMPROGETTI S.P.A.	EB	1	FL51AB-1N2-C8	POLAND / ZAKLADY CHEMICZE OSSWIECIN
QAPCO - QATAR PETROLCHEMICAL	LUBE OIL	3	FA11AB-12-F8	QATAR
ANSALDO S.P.A	DEMI WATER	2	FA51-12-F8	RUMENIA / CTN CERNAVODA NPP
HELLING GMBH	OIL	1	FM51-22-F8	RUSSIA
NOVOTEX HANDELSGES M.B.H.	OIL	1	FM51-22-F8	RUSSIA
TECNIMONT S.P.A.	CONDENSATE	1	FA53-12-C8	RUSSIA MOSCOW / C3/PP-100 KTY-ENG
TECNIMONT S.P.A.	CONDENSATE	1	FM51AB-12-C8	RUSSIA MOSCOW / C3/PP-100 KTY-ENG
TECNIMONT S.P.A.	WATER	1	FA14-12-C8	RUSSIA MOSCOW / C3/PP-100 KTY-ENG
TECNIMONT S.P.A.	WATER	2	FM51-12-C8	RUSSIA MOSCOW / C3/PP-100 KTY-ENG
TECNIMONT S.P.A.	SALT WATER	1	FA53-12-C8	RUSSIA MOSCOW / C3PP-100 KTI ENG
TECNIMONT S.P.A.	ADDITIVE	1	FM51-2N2-F8	RUSSIA MOSCOW / REF. C3/PP-100 KTY-ENG
TECNIMONT S.P.A.	OIL	1	FM51-22-F8	RUSSIA MOSCOW / REF. C3/PP-100 KTY-ENG
TECNIMONT S.P.A.	OIL	1	FM51-2N2-C8	RUSSIA MOSCOW / REF. C3/PP-100 KTY-ENG
TECNIMONT S.P.A.	OIL/GREASE	1	FM51AB-2N2-F8	RUSSIA MOSCOW / REF. C3/PP-100 KTY-ENG
ANSALDO COMPONENTI S.P.A.	HYDRAULIC OIL	1	FL53-12-C5	RUSSIA SARATOV / ACRILONITRILE
MACCHI S.P.A.	FUEL OIL	4	FM12-1P2-C8	SAUDI ARABIA / AIFC(IBN-RUSCH) DPTA & ARO
MACCHI S.P.A.	FUEL OIL	4	FM22-1P2-C8	SAUDI ARABIA / AIFC(IBN-RUSCH) DPTA & ARO
TECNIMONT S.P.A.	POTABLE WATER	1	FA22-12-C8	SAUDI ARABIA / PTE YANBU
CTIP S.P.A.	ORTOXYLEME/BEN	1	FA14C-2P2-C8	TURCKEY IZMIR / PVC PLANT
I.C.E.	WATER	2	FA18-12-F8	U.A.E. / BOROUGE PETROCHEMICAL
FISHER ROSEMOUNT ITALIA S.R.L.	LIQUID SULPHUR	1	FJA22-1P2-C8	U.A.E. DUBAI / SULPHUR RECOVERY UNIT
TECNIMONT S.P.A.	ADDITIVE	1	FM51-2N2-F8	UCRAINA / POLIPROPYLENE
TECNIMONT S.P.A.	OIL	1	FM51-2N2-C8	UCRAINA / POLIPROPYLENE
TECNIMONT S.P.A.	OIL GREASE	1	FM51AB-2N2-F8	UCRAINA / POLIPROPYLENE
PRESSINDUSTRIA S.P.A.	ACIDO ADIP	1	FA13C-1N2-E7	VENEZUELA / UNITA' RESINE
PRESSINDUSTRIA S.P.A.	DMF	1	FA53AB-2N2-E7	VENEZUELA / UNITA' RESINE
PRESSINDUSTRIA S.P.A.	DMF TOLUEN	1	FA53B-1N2-E7	VENEZUELA / UNITA' RESINE

PMS Produzione Misuratori Volumetrici

PETROL Metering Systems

REFERENCE FOR

Supplies to E.N.I. Group Companies

Customer	Liquid	Qty	PD meter	Destination / plant
AGIP LIQUIGAS S.P.A.	LPG	2	FL53B-22-C5	ITALY LIVORNO (LI) / DEPOSITO COSTIERO
AGIP LUBRINDO PATRAMA	LUBE OIL	1	FA14-22-C8	INDONESIA / BLENDING BASE OIL STORAGE-SU
AGIP LUBRINDO PATRAMA	LUBE OIL	2	FA14-2P2-C8	INDONESIA / RE-FINERY & BLENDING PLANT SU
AGIP OIL CO. LTD	GASOLINE	2	FM22-VRD-F8	LYBIA / RAS LANOUF PORT
AGIP OIL CO. LTD	GASOLINE	2	FM53-VRD-F8	LYBIA / RAS LANOUF PORT
AGIP PETROLI S.P.A.	GASOLINE	2	FA24C--C5	ITALY FIORENZUOLA D'ARDA (PC) / DE. FI FIORE
AGIP PETROLI S.P.A.	GASOIL	6	FA24-C5	ITALY FIORENZUOLA D'ARDA (PC) / DE. FI FIORE
AGIP PETROLI S.P.A.	GASOLINE	1	FA24-C5	ITALY FIORENZUOLA D'ARDA (PC) / DE. FI FIORE
AGIP PETROLI S.P.A.	GASOIL	1	FA24--C5	ITALY FIORENZUOLA D'ARDA (PC) / DE.FI DI FIO
AGIP PETROLI S.P.A.	GASOLINE	1	FA24--C5	ITALY FIORENZUOLA D'ARDA (PC) / DE.FI FIORE
AGIP PETROLI S.P.A.	GASOIL	9	FA24--C5	ITALY FIORENZUOLA D'ARDA (PC) / DE.FI. DI FI
AGIP PETROLI S.P.A.	GASOLINE	5	FA24--C5	ITALY FIORENZUOLA D'ARDA (PC) / DE.FI. DI FI
AGIP PETROLI S.P.A.	PETROLEUM	1	FA24--C5	ITALY FIORENZUOLA D'ARDA (PC) / DE.FI. DI FI
AGIP PETROLI S.P.A.	GASOIL	4	FA24--C5	ITALY FIORENZUOLA D'ARDA (PC) / DE.FI. FIORE
AGIP PETROLI S.P.A.	GASOIL	2	FA24-C5	ITALY FIORENZUOLA D'ARDA (PC) / RECUPERO P
AGIP PETROLI S.P.A.	GASOLINE	2	FA24-C5	ITALY FIORENZUOLA D'ARDA (PC) / RECUPERO P
AGIP PETROLI S.P.A.	PETROLEUM	1	FA24-C5	ITALY FIORENZUOLA D'ARDA (PC) / RECUPERO P
AGIP PETROLI S.P.A.	GASOIL	1	FA24--C5	ITALY ITALY - FIORENZUOLA D'ARDA (PC) / DE.F
AGIP PETROLI S.P.A.	GASOLINE	1	FA24--C5	ITALY ITALY - FIORENZUOLA D'ARDA (PC) / DE.F
AGIP PETROLI S.P.A.	GASOLINE	11	FA24--C5	ITALY ITALY - FIORENZUOLA D'ARDA (PC) / DE.F
AGIP PETROLI S.P.A.	GASOLINE	1	FVA16D-VRDT1-C	ITALY LIVORNO (LI) / LIVORNO PLANT
AGIP PETROLI S.P.A.	GASOIL	4	FA24--C5	ITALY NAPOLI / NAPOLI PLANT
AGIP PETROLI S.P.A.	GASOLINE	1	FA24--C5	ITALY NAPOLI / NAPOLI PLANT
AGIP PETROLI S.P.A.	FUEL OIL	1	FL12-2P2-C5	ITALY PORTO MARGHERA (VE) / RAFFINERIA DI P
AGIP PETROLI S.P.A.	GASOLINE	2	FA18F--C5	ITALY PREGNANA MILANESE / VRU DE.FI PREGNA
AGIP PETROLI S.P.A.	GASOIL	1	FVL110H---C5	ITALY RHO / DE.FI. RHO
AGIP PETROLI S.P.A.	GASOLINE	1	FVL110H---C5	ITALY RHO / DE.FI. RHO
AGIP PETROLI S.P.A.	FUEL OIL	1	FL12-2P2-C5	ITALY VENEZIA / RAFFINERIA DI VENEZIA
AGIP RAFFINAZIONE S.P.A.	FUEL OIL	1	FL11AB-1P2-C5	ITALY P.TO MARGHERA (VE)
AGIP RAFFINAZIONE S.P.A.	FUEL OIL	1	FL12-1P2-C8	ITALY PORTAO MARGHERA (VE) / VENICE REFINE
AGIP RAFFINAZIONE S.P.A.	HEAVY FUEL OIL	7	FVA110H-1P2-C8	ITALY PORTO MARGHERA (VE)
AGIP RAFFINAZIONE S.P.A.	CONDENSATE	1	FA22-1P2-F8	ITALY PORTO MARGHERA (VE) / VENICE REFINER
AGIP RAFFINAZIONE S.P.A.	FUEL OIL	5	FA28-1P2-C5	ITALY PORTO MARGHERA (VE) / VENICE REFINER
AGIP RAFFINAZIONE S.P.A.	FUEL OIL	1	FM51-1P2-C8	ITALY PORTO MARGHERA (VE) / VENICE REFINER
AGIP RECHERCHES	CRUDE OIL	1	FM24-22-C8	CONGO POINTE NOIRE / ZAF 1 PLATFORM
AGIP RECHERCHES	CRUDE OIL	4	FM24-VRT-C8	CONGO POINTE NOIRE / ZAF 1 PLATFORM
AGIP RECHERCHES	CRUDE OIL	1	FM51-22-C8	CONGO POINTE NOIRE / ZAF 1 PLATFORM
AGIP RECHERCHES	CRUDE OIL	1	FM12-22-C8	ITALY POINTE NOIRE / ZAF 1 PLATFORM

PMS Produzione Misuratori Volumetrici — PETROL Metering Systems

REFERENCE FOR

Supplies to E.N.I. Group Companies

Customer	Liquid	Qty	PD meter	Destination / plant
AGIP RECHERCHES	CRUDE + WATER	1	FX24-2P2-C8	NIGERIA / AGBARA FIELD DEVEL.NIGER
AGIP RECHERCHES	WATER	1	FAL12AB-2P2-C8	NIGERIA / AGBARA FIELD DEVEL.NIGER
AGIP RECHERCHES	WATER	1	FAL14C-2P2-C8	NIGERIA / AGBARA FIELD DEVEL.NIGER
AGIP RECHERCHES	WATER	1	FAL53-2P2-C8	NIGERIA / AGBARA FIELD DEVEL.NIGER
AGIP S.P.A	GASOIL AND CRUD	7	FH206-1P2-C8	ITALY GELA (CL)
AGIP S.P.A	HEAVY GASOIL	1	FH51-12-C8	ITALY GELA (CL) / POZZI 91-95 GELA
AGIP S.P.A	CRUDE OIL	1	FA13-MVP-C8	ITALY TORRENTE TONA (CH) / IMP. CARICO
AGIP S.P.A.	CRUDE OIL	1	FH212-2P2-C5	CONGO POINTE NOIRE / ZAF 1 PLATFORM
AGIP S.P.A.	GLYCOL ETILENICO	1	FL11-1P2-C8	ITALY / PIATTAFORMA EMMA
AGIP S.P.A.	GLYCOL ETILENICO	3	FL11-1P2-C8	ITALY / PIATTAFORMA FRATELLO
AGIP S.P.A.	GLYCOL ETILENICO	1	FL11-1P2-C8	ITALY / PIATTAFORMA SQUALO
AGIP S.P.A.	GLYCOL + WATER	2	FL12-1P2-F8	ITALY / SABBIONCELLO - SNOR
AGIP S.P.A.	GASOIL	9	FH51-12-C8	ITALY AGIP GELA (CL) / IMP. POZZO
AGIP S.P.A.	GASOLIO FLUSTAG	1	FH51-12-C8	ITALY AGIP GELA (CL) / IMP. POZZO
AGIP S.P.A.	CRUDE OIL	2	FA51-12-C8	ITALY BENEVENTO (BN) / CENTRO OLIO BENEVE
AGIP S.P.A.	GASOLINA	1	FA53B-12-C8	ITALY BORDOLANO
AGIP S.P.A.	GLYCOL DIETILENI	1	FA51-2I2-C5	ITALY C.LE DI PINETO (CH) / CTE ENEL
AGIP S.P.A.	OIL	1	FA14C-2P2-C5	ITALY C.O.VILLAFORTU. (MI)
AGIP S.P.A.	GASOLINA	2	FM206-12-C8	ITALY CANDELA (FG) / CENTRALE GAS CANDELA
AGIP S.P.A.	CONDENSATE	1	FH11-22-C8	ITALY CANDELA (FG) / POZZO SORIANO
AGIP S.P.A.	GASOLINA	1	FA53B-MVP-C8	ITALY CASALBORSETTI (RA) / CENTRALE GAS
AGIP S.P.A.	CRUDE OIL	1	FL12-12-C8	ITALY CAVONE (NO) / STAB. AGIP SPA
AGIP S.P.A.	CRUDE OIL	1	FA53-2P2-C5	ITALY CHIETI (CH) / AGIP CHIETI
AGIP S.P.A.	CRUDE OIL	1	FAL14-22-C8	ITALY CHIETI (CH) / NAVE CISTERNA X RACCOLT
AGIP S.P.A.	OIL	1	FX11-1P2-C8	ITALY CREMA (CR) / CENTRALE MALOSSA
AGIP S.P.A.	GASOLINA	1	FA14C-MVP-C8	ITALY CREMA (CR) / SETT. CREMA PER CAVIAGA
AGIP S.P.A.	SALTY WATER	1	FH11-22-F8	ITALY CREMA / STABILIMENTO DI CREMA
AGIP S.P.A.	GLYCOL DIETILENI	1	FL12AB-22-C8	ITALY CROTONE (CZ) / STAB. AGIP
AGIP S.P.A.	WATER	2	FA24C-MVDT-C8	ITALY GAGGIANO (MI) / CAMPO OLIO
AGIP S.P.A.	WATER	1	FA51-MD-C8	ITALY GAGGIANO (MI) / CAMPO OLIO
AGIP S.P.A.	CRUDE OIL	6	FA14C-MVDT-C8	ITALY GAGGIANO (MI) / CAMPO OLIO-BRACCI CA
AGIP S.P.A.	CRUDE OIL	1	FA53B-MDT-C8	ITALY GAGGIANO (MI) / CAMPO OLIO-BRACCI CA
AGIP S.P.A.	GASOIL	1	FH206-12-C8	ITALY GELA (CL)
AGIP S.P.A.	GASOIL	1	FH51-12-C8	ITALY GELA (CL)
AGIP S.P.A.	GASOIL AND CRUD	22	FH206-1P2-C8	ITALY GELA (CL)
AGIP S.P.A.	GASOIL	1	FH12-22-C8	ITALY GELA (CL) / AGIP CONCESSIO. GIAURONE
AGIP S.P.A.	GASOIL	5	FH51-22-C8	ITALY GELA (CL) / AGIP CONCESSIO. GIAURONE
AGIP S.P.A.	GASOIL	2	FH51-12-F8	ITALY GELA (CL) / CAMPO ESTRAZIONE SESI

PMS Produzione Misuratori Volumetrici — PETROL Metering Systems

REFERENCE FOR

Supplies to E.N.I. Group Companies

Customer	Liquid	Qty	PD meter	Destination / plant
AGIP S.P.A.	GASOIL	4	FH51-1P2-C8	ITALY GELA (CL) / CAMPO PERLA
AGIP S.P.A.	GASOIL	1	FH12-22-C8	ITALY GELA (CL) / GIAURONE SARCIS
AGIP S.P.A.	GASOIL	5	FX51-2P2-C8	ITALY GELA (CL) / INIEZIONE GAS CLUSTER F
AGIP S.P.A.	HEAVY GASOIL	9	FH51-12-C8	ITALY GELA (CL) / PIATTAFORMA PREZIOSO
AGIP S.P.A.	HEAVY GASOIL	5	FH51-12-C8	ITALY GELA (CL) / POZZI 104~108 GELA
AGIP S.P.A.	HEAVY GASOIL	4	FH51-12-C8	ITALY GELA (CL) / POZZI 91-95 GELA
AGIP S.P.A.	CRUDE OIL	1	FA18-2P2-C8	ITALY GELA CENTRO OLI (CL) / CENTRO OLIO 3°
AGIP S.P.A.	GLYCOL	1	FM12-1P2-C8	ITALY GROTTAMMARE (AP) / CENTRALE GAS AGI
AGIP S.P.A.	GLYCOL	1	FM12-1P2-C8	ITALY GROTTAMMARE (AP) / CENTRALE GAS GRO
AGIP S.P.A.	GASOLINA	2	FL51-22-C8	ITALY GROTTAMMARE (CH) / STAB. AGIP
AGIP S.P.A.	CRUDE OIL	2	FA24C-MVDT-C8	ITALY MILANO (MI) / CENTRO OLIO GAGGIANO
AGIP S.P.A.	MINERAL OIL	1	FM13-22-C8	ITALY MONTE ALPI / MONTE ALPI
AGIP S.P.A.	GLYCOL + GASOLI	3	FH51-12-F8	ITALY ORTONA (CH)
AGIP S.P.A.	OIL WATER	1	FL11-12-C8	ITALY ORTONA (CH) / GENERAZIONE E.E. TORRE
AGIP S.P.A.	GLYCOL DIETILENI	1	FA51-2P2-C8	ITALY PASSOVECCHIO (CZ)
AGIP S.P.A.	CRUDE OIL	4	FB14-MVPD-A5	ITALY PISTICCI (MT) / CENTRO OLI
AGIP S.P.A.	CRUDE OIL	1	FA24-22-C8	ITALY PISTICCI (MT) / CENTRO OLIO
AGIP S.P.A.	CRUDE OIL	1	FA28F-22-C8	ITALY PISTICCI (MT) / CENTRO OLIO
AGIP S.P.A.	CRUDE OIL	1	FA53-22-C8	ITALY PISTICCI (MT) / CENTRO OLIO
AGIP S.P.A.	ETHYLENE GLYCOL	4	FM12-1P2-C8	ITALY RAMANE(S.SALVO) (RA) / CENTRALE GAS
AGIP S.P.A.	GASOIL	4	FH51-1P2-F8	ITALY SET.SICIL. GELA (CL) / SIST. PRODUZ. MO
AGIP S.P.A.	LIQUID OIL	1	FL13-1P2-C8	ITALY SETTALA (MI) / CENTRALE GAS SETTALA
AGIP S.P.A.	WATER + GASOLIN	1	FH206-1P2-C8	ITALY SETTALA (MI) / CENTRALE GAS SETTALA
AGIP S.P.A.	CRUDE OIL + H2S	8	FA13-MVP-C8	ITALY TORRENTE TONA / CENTRO OLIO
AGIP S.P.A.	CRUDE OIL	1	FL16----C8	ITALY VIGGIANO (PZ) / CENTRO OLIO VALDAGRI
AGIP S.P.A.	CRUDE OIL	2	FM16-1P2-C8	ITALY VIGGIANO (PZ) / CENTRO OLIO VALDAGRI
AGIP S.P.A.	DEMI WATER	1	FL12-2P2-F8	ITALY VIGGIANO (PZ) / CENTRO OLIO VALDAGRI
AGIP S.P.A.	OIL	4	FM16-1P2-C8	ITALY VIGGIANO (PZ) / CENTRO OLIO VALDAGRI
AGIP S.P.A.	WATER	2	FL12-2P2-C8	ITALY VIGGIANO (PZ) / CENTRO OLIO VALDAGRI
AGIP S.P.A.	WATER	1	FL14C-2P2-C8	ITALY VIGGIANO (PZ) / CENTRO OLIO VALDAGRI
AGIP S.P.A.	WATER	2	FM13-1P2-C8	ITALY VIGGIANO (PZ) / CENTRO OLIO VALDAGRI
AGIP S.P.A.	OIL	2	FH53-1P2-C8	ITALY VILLAFORTUNA / AREA POZZO TRECATE 4
AGIP S.P.A.	OIL	1	FH53B-22-C8	NIGERIA AGBARA / PLATFORM
ENICHEM ANIC S.P.A.	CAUSTIC SODA 25	1	FA53B-12-F8	ITALY ASSEMINI (CA)
ENICHEM ANIC S.P.A.	N.DECANO	1	FAL12AB-22-F8	ITALY FERRARA (FE)
ENICHEM ANIC S.P.A.	PECI CLOR.	1	FL13-MVP-C5	ITALY MACCHIAREDDU (CA) / TRI/PER
ENICHEM ANIC S.P.A.	SODA	2	FL24C-MVP-F8	ITALY PORTO MARGHERA (VE)
ENICHEM ANIC S.P.A.	SODA 50%	1	FA24C-MVP-F8	ITALY PORTO MARGHERA (VE)

PMS Produzione Misuratori Volumetrici

PETROL Metering Systems

REFERENCE FOR

Supplies to E.N.I. Group Companies

Customer	Liquid	Qty	PD meter	Destination / plant
ENICHEM ANIC S.P.A.	OILY MUDS	2	FM51-1P2-F8	ITALY RAGUSA (RG) / STAB. ENICHEM
ENICHEM ANIC S.P.A.	WATER	1	FL13B-2P2-F81	ITALY RAVENNA (RA) / 711 PVC/M
ENICHEM ANIC S.P.A.	DEMI WATER	1	FL13B-1P2-F8	ITALY RAVENNA (RA) / STAB ENICHEM ANIC
ENICHEM AUGUSTA INDUSTRIALE	WATER	1	FA12-1N2-F8	ITALY CROTONE (CZ)
ENICHEM BASE	CAUSTIC SODA 50	1	FA18F-12-E7	ITALY P.TO. TORRES (SS) / STAB ENICHEM P. TO
ENICHEM FIBRE	ETHYLENE GLYCOL	1	FA13-12-E7	ITALY MANTOVA (MN) / STAB. DI OTTANA
ENICHEM POLIMERI S.P.A.	O.C.D.	1	FL53B-2P2-C5	ITALY ASSEMINI (CA) / STAB. ENICHEM
ENICHEM POLIMERI S.P.A.	PROPILENE	1	FM13-1P2-C8	ITALY ASSEMINI (CA) / STAB. ENICHEM MACCHI
ENICHEM POLIMERI S.P.A.	STYRENE	1	FA13B-1P2-C8	ITALY FERRARA (FE)
ENICHEM POLIMERI S.P.A.	METALL.ORG.+VAS	1	FL11-1N2-F8	ITALY FERRARA (FE) / STAB. ECP FERRARA
ENICHEM POLIMERI S.P.A.	PETROLATE OIL	1	FL12AB-1N2-F8	ITALY FERRARA (FE) / STAB. ECP FERRARA
ENICHEM POLIMERI S.P.A.	STYRENE	1	FA51AB-1P2-C8	ITALY MANTOVA (MN)
ENICHEM POLIMERI S.P.A.	WATER	1	FA14C-MVP-F8	ITALY MANTOVA (MN)
ENICHEM POLIMERI S.P.A.	WATER	1	FA24-12-C8	ITALY MANTOVA (MN)
ENICHEM POLIMERI S.P.A.	WATER SOLUTION	1	FA51-22-F8	ITALY MANTOVA (MN)
ENICHEM POLIMERI S.P.A.	WATER SOLUTION	1	FA53B-22-F8	ITALY MANTOVA (MN)
ENICHEM POLIMERI S.P.A.	SODA 25%	1	FA22-22-F8	ITALY MANTOVA (MN) / FOGNA ACIDA A BIOLOG
ENICHEM POLIMERI S.P.A.	STYRENE + RUBBE	1	FL24-1P2-C8	ITALY MANTOVA (MN) / ST 15
ENICHEM POLIMERI S.P.A.	WATER DEMI	1	FA12-2P2-F81	ITALY RAVENNA (RA) / STAB. ENICHEM
ENICHEM S.P.A.	FUEL OIL	1	FM24-12-C5	ITALY BRINDISI
ENICHEM S.P.A.	FUEL OIL	2	FL12-1P2-C5	ITALY FERRARA (FE)
ENICHEM S.P.A.	FUEL OIL	1	FL13-1P2-C5	ITALY FERRARA (FE)
ENICHEM S.P.A.	NAOH 50%	1	FA11AB-MVP-C8	ITALY FERRARA (FE)
ENICHEM S.P.A.	NAOH 50%	1	FA22-MVP-C8	ITALY FERRARA (FE)
ENICHEM S.P.A.	ALFA METIL STYRE	1	FL12-22-C8	ITALY ITALY - MANTOVA / IMPIANTO DI MANTOV
ENICHEM S.P.A.	STYRENE	1	FL51-22-F8	ITALY ITALY - MANTOVA / IMPIANTO DI MANTOV
ENICHEM S.P.A.	DEMI WATER	1	FA13-1P2-C8	ITALY ITALY - PORTO TORRES (CA) / IMPIANTO F
ENICHEM S.P.A.	RAW WATER	1	FA22-1P2-C8	ITALY ITALY - PORTO TORRES (CA) / IMPIANTO F
ENICHEM S.P.A.	PEB	1	FA51AB-12-C8	ITALY MANTOVA
ENICHEM S.P.A.	TOLUENE	1	FA12-2P2-F8	ITALY MANTOVA
ENICHEM S.P.A.	WATER	1	FL53B-MVP-C8	ITALY MANTOVA
ENICHEM S.P.A.	BUTILBENZENE	1	FL11AB-12-F8	ITALY MANTOVA (MN)
ENICHEM S.P.A.	BUTILBENZENE	1	FL51AB-12-F8	ITALY MANTOVA (MN)
ENICHEM S.P.A.	PHENOLIC RESTS A	1	FA51AB-12-C8	ITALY MANTOVA (MN)
ENICHEM S.P.A.	ACRINOLITRYLE	1	FA51S-12-F8	ITALY MANTOVA / IMPIANTO DI MANTOVA
ENICHEM S.P.A.	BENZENE	1	FL14C-2P2-C8	ITALY MANTOVA / STABILIMENTO DI MANTOVA
ENICHEM S.P.A.	DEMI WATER	1	FL51-1P2-C8	ITALY MANTOVA / STABILIMENTO DI MANTOVA
ENICHEM S.P.A.	ETILBENZENE	1	FL51-1P2-C8	ITALY MANTOVA / STABILIMENTO DI MANTOVA

PMS Produzione Misuratori Volumetrici

PETROL Metering Systems

REFERENCE FOR

Supplies to E.N.I. Group Companies

Customer	Liquid	Qty	PD meter	Destination / plant
ENICHEM S.P.A.	STYRENE	1	FL51-1P2-C8	ITALY MANTOVA / STABILIMENTO DI MANTOVA
ENICHEM S.P.A.	TOLUENE	1	FL12-2P2-C8	ITALY MANTOVA / STABILIMENTO DI MANTOVA
ENICHEM S.P.A.	OIL	2	FA18-C5	ITALY P.TO TORRES (CA)
ENICHEM S.P.A.	FUEL OIL	1	FA51-2P2-C5	ITALY PORTO TORRES (CA)
ENICHEM S.P.A.	WATER	1	FL11-1P2-F8	ITALY PORTO TORRES (SS)
ENICHEM S.P.A.	CYCLOPENTANE	1	FA14C---C5	ITALY PORTO TORRES (SS) / PORTO TORRES PLA
ENICHEM SINTESI S.P.A.	AVM	1	FA51AB-2P2-F8	ITALY RAVENNA (RA)
ENICHEM SINTESI S.P.A.	AVM / ALCOHOL	1	FA12-2P2-F8	ITALY RAVENNA (RA) / STAB. ENICHEM
ENICHEM SINTESI S.P.A.	HCL	1	FA51-2P2-MP	ITALY RAVENNA (RA) / STAB. ENICHEM
ENICHEM SINTESI S.P.A.	METAC 80	1	FA51-2P2-F8	ITALY RAVENNA (RA) / STAB. ENICHEM
ENICHEM SINTESI S.P.A.	METANOLO / WATE	1	FA11AB-2N2-F8	ITALY RAVENNA (RA) / STAB. ENICHEM
ENICHEM SINTESI S.P.A.	METHANOL	1	FA12-2P2-F8	ITALY RAVENNA (RA) / STAB. ENICHEM
ENICHEM SINTESI S.P.A.	SODA 8%	1	FA51AB-2P2-F8	ITALY RAVENNA (RA) / STAB. ENICHEM
ENICHEM SINTESI S.P.A.	SODA 98%	1	FA51-2P2-F8	ITALY RAVENNA (RA) / STAB. ENICHEM
ENICHEM SINTESI S.P.A.	TPAOH	1	FA51-MVP-E7	ITALY RAVENNA (RA) / STAB. ENICHEM
ENICHEM SINTESI S.P.A.	H.C.	2	FA11AB-1N2-F8	ITALY RAVENNA (RA) / STAB. ENICHEM SINTESI
ENICHEM SINTESI S.P.A.	H.C.	2	FA51-1N2-F8	ITALY RAVENNA (RA) / STAB. ENICHEM SINTESI
ENICHEM SINTESI S.P.A.	DEMI WATER	1	FA53B-2N2-F8	ITALY STAB. RAVENNA (RA)
ENICHEM SISTESI S.P.A.	AVM	5	FA51AB-2P2-F8	ITALY RAVENNA (RA)
ENICHEM SISTESI S.P.A.	HCL 35%	1	FA51-2P2-MP	ITALY RAVENNA (RA)
ENICHEM SISTESI S.P.A.	AEROSOL	1	FA206AB-2P2-F8	ITALY RAVENNA (RA) / ECS/AVP
ENICHEM SISTESI S.P.A.	ALCOHOL	1	FA13-2P2-F8	ITALY RAVENNA (RA) / ECS/AVP
ENICHEM SISTESI S.P.A.	DEMI WATER	1	FA51AB-2P2-F8	ITALY RAVENNA (RA) / ECS/AVP
ENICHEM SISTESI S.P.A.	MEGAL 30%	1	FA12-2P2-F8	ITALY RAVENNA (RA) / ECS/AVP
ENICHEM SISTESI S.P.A.	NATRASOL	1	FA13-2P2-F8	ITALY RAVENNA (RA) / ECS/AVP
ENICHEM SISTESI S.P.A.	PALATINOL	1	FA51-2P2-F8	ITALY RAVENNA (RA) / ECS/AVP
ENICHEM SISTESI S.P.A.	RONGAL.20%	1	FA51-2P2-F8	ITALY RAVENNA (RA) / ECS/AVP
SAIPEM S.P.A.	GASOIL	1	FA14C-12-C5	GHANA / CRAWLER" - DERRICK / LAY BARGE
SAIPEM S.P.A.	NAPHTA	1	FA112-22-C8	ITALY OSTIGLIA (MN) / CTE ENEL
SAIPEM S.P.A.	WATER	1	FL11AB-12-C8	NIGERIA / GAS SUPPLY TO ALLUMINIUM
SAIPEM S.P.A.	WATER	1	FL11AB-12-C8	NIGERIA / GAS SUPPLY TO ALLUMINIUM SMELTI
SNAM S.P.A.	GASOIL	1	FA51-MVP-F8	ITALY / CENTRALE DI MELIZZANO
SNAM S.P.A.	GASOIL	1	FA51-12-C5	ITALY / CENTRALE DI MONTESANO
SNAM S.P.A.	FUEL OIL	1	FM51AB-1P2-C8	ITALY GENOVA / COMANDO LNG LERICI - AGENZ
SNAM S.P.A.	FUEL OIL	1	FM51AB-1P2-C8	ITALY GENOVA / COMANDO LNG PORTOVENERE -
SNAM S.P.A.	OIL	1	FA51-12-C5	ITALY STAZ.COMP.GAS (ME)
SNAM S.P.A.	OIL	4	FA11-12-C8	ITALY TARSIA (CS) / IMAPINTO DI SPINTA DI TA
SNAMPROGETTI S.P.A	SLOP-OIL	1	FA11AB-22-C8	ITALY GELA (CL) / NUOVO COKING

PMS Produzione Misuratori Volumetrici

PETROL Metering Systems

REFERENCE FOR

Supplies to E.N.I. Group Companies

Customer	Liquid	Qty	PD meter	Destination / plant
SNAMPROGETTI S.P.A.	L/SOL	2	FA11-MVP-E8	CHINA BEIJING / 40000 MTPY EVA RESIN PLANT
SNAMPROGETTI S.P.A.	L/VAM	1	FA11-MVP-E8	CHINA BEIJING / 40000 MTPY EVA RESIN PLANT
SNAMPROGETTI S.P.A.	ETHANOL	11	FA14-2P2-F8	CHINA JILIN / 100.000 M.T.P.Y. ALPHA ALCHOL
SNAMPROGETTI S.P.A.	ETHANOL	2	FA53-2P2-F8	CHINA JILIN / 100.000 M.T.P.Y. ALPHA ALCHOL
SNAMPROGETTI S.P.A.	SM	1	FA11AB-2N2-C8	CHINA MAOMING GUANG / MTPY STYRENE PLANT
SNAMPROGETTI S.P.A.	SM	1	FA51AB-2N2-C8	CHINA MAOMING GUANG / MTPY STYRENE PLANT
SNAMPROGETTI S.P.A.	CHARGE	1	FM28-1P2-C8	CZECH REPUBLIC / LITVINOV
SNAMPROGETTI S.P.A.	GASOIL	1	FM24-1P2-C8	CZECH REPUBLIC / LITVINOV
SNAMPROGETTI S.P.A.	GASOIL	1	FM51AB-1P2-C8	CZECH REPUBLIC / LITVINOV
SNAMPROGETTI S.P.A.	GASOIL	2	FM53-1P2-C8	CZECH REPUBLIC / LITVINOV
SNAMPROGETTI S.P.A.	SLOP WAX	1	FM12-1P2-C8	CZECH REPUBLIC / LITVINOV
SNAMPROGETTI S.P.A.	VACUM RESIDUE	1	FM24-1P2-C8	CZECH REPUBLIC / LITVINOV
SNAMPROGETTI S.P.A.	CONDENSATE	1	FAL51-2N2-C8	ITALY / RETR.BUTADIEN
SNAMPROGETTI S.P.A.	GLYCOL	1	FAL51-22-C8	ITALY / RIGRAD.PET
SNAMPROGETTI S.P.A.	LUBRICATING OIL	4	FA11-12-C8	ITALY CINISELLO BALSAMO (MI) / CTE GAS COM
SNAMPROGETTI S.P.A.	LUBRICATING OIL	4	FA11-12-C8	ITALY CORTEMAGGIORE (PC) / GAS COMPRESSI
SNAMPROGETTI S.P.A.	LUBRICATING OIL	3	FAH11-12-C8	ITALY CORTEMAGGIORE (PC) / STAZ.COMP.GAS
SNAMPROGETTI S.P.A.	WATER	1	FA53-12-C8	ITALY CORTEMAGGIORE (PC) / STAZ.COMP.GAS
SNAMPROGETTI S.P.A.	LUBRICATING OIL	2	FA11-12-C8	ITALY CUPELLO (CH) / GAS COMPRESSION
SNAMPROGETTI S.P.A.	LUBRICATING OIL	1	FA11-12-C8	ITALY ENNA (EN) / CTE COMPRESSION GAS
SNAMPROGETTI S.P.A.	LUBRICATING OIL	1	FA11-12-C8	ITALY GALLESE (VT) / CENTRALE DI COMPRESSI
SNAMPROGETTI S.P.A.	LUBRICATING OIL	1	FA11-12-C8	ITALY GALLESE (VT) / GAS COMPRESSION
SNAMPROGETTI S.P.A.	DIMETHILDISULFI	1	FX51-2P2-C8	ITALY GELA (CL) / NUOVO COKING
SNAMPROGETTI S.P.A.	RAW WATER	1	FA206-22-C8	ITALY GELA (CL) / NUOVO COKING
SNAMPROGETTI S.P.A.	SODA	1	FA206-22-C8	ITALY GELA (CL) / NUOVO COKING
SNAMPROGETTI S.P.A.	SOLUZIONE CAUST	1	FA51-2P2-C8	ITALY GELA (CL) / NUOVO COKING
SNAMPROGETTI S.P.A.	GLYCOL	1	FA51-12-C8	ITALY INCA PISTICCI (MT) / RIGRADAZIONE PET
SNAMPROGETTI S.P.A.	LUBRICATING OIL	2	FA51-12-C8	ITALY MALBORGHETTO / CENTRALE DI COMPRES
SNAMPROGETTI S.P.A.	SLURRY	1	FL51-1I2-C5	ITALY MANFREDONIA (FE) / STAB. ANIC (IN PRO
SNAMPROGETTI S.P.A.	LUBRICATING OIL	2	FA11-12-C8	ITALY MASERA / C.LE COMPRESSIONE DI MASER
SNAMPROGETTI S.P.A.	LUBRICATING OIL	2	FA11-12-C8	ITALY MASERA / CTE MASERA PLANT
SNAMPROGETTI S.P.A.	LUBRICATING OIL	1	FA11-12-C8	ITALY MELIZZANO (BN) / GAS COMPRESSION
SNAMPROGETTI S.P.A.	LUBRICATING OIL	1	FA11-12-C8	ITALY MESSINA (ME) / CTE GAS COMPRESSION
SNAMPROGETTI S.P.A.	LUBRICATING OIL	3	FA11-12-C8	ITALY MINERBIO (BO) / STAZ. DI SPINTA MINER
SNAMPROGETTI S.P.A.	LUBRICATING OIL	3	FA11-12-C8	ITALY MONTESANO (SA) / GAS COMPRESSION
SNAMPROGETTI S.P.A.	LUBRICATING OIL	1	FA11-12-C8	ITALY MONTESANO (SA) / GAS COMPRESSIONE
SNAMPROGETTI S.P.A.	WATER	1	FL22-12-C8	ITALY MORTARA (PV) / CTE GAS COMPRESSION
SNAMPROGETTI S.P.A.	LUBRICATING OIL	3	FA51-12-C8	ITALY RIPALTA CREMASCA (CR) / CENTRALE COM

PMS Produzione Misuratori Volumetrici — PETROL Metering Systems

REFERENCE FOR

Supplies to E.N.I. Group Companies

Customer	Liquid	Qty	PD meter	Destination / plant
SNAMPROGETTI S.P.A.	WELL WATER	1	FA51-12-C8	ITALY RIPALTA CREMASCA (CR) / CENTRALE COM
SNAMPROGETTI S.P.A.	LUBRICATING OIL	1	FA51-12-C8	ITALY SERGNANO (CR) / POTENZIAMENTO CENT
SNAMPROGETTI S.P.A.	LUBRICATING OIL	3	FA11-12-C5	ITALY SETTALA (MI) / STAZ. COMPR. GAS
SNAMPROGETTI S.P.A.	TOLUENE	1	FA12-22-C8	ITALY SPINETTA MARENG (MN) / STAB. MONTEFL
SNAMPROGETTI S.P.A.	ANTIMP.	1	FA11-1N2-E7	ITALY T.I.C. NERA MONTORO (TR) / GRAN CALCU
SNAMPROGETTI S.P.A.	DEMI WATER	1	FA11-1N2-E7	ITALY T.I.C. NERA MONTORO (TR) / GRAN CALCU
SNAMPROGETTI S.P.A.	LUBRICATING OIL	1	FA11-12-C8	ITALY TARSIA (CS) / C.LE SPINTA GAS
SNAMPROGETTI S.P.A.	LUBRICATING OIL	1	FA11-12-C8	ITALY TERRANUOVA BRACCIOL (AR) / GAS COMP
SNAMPROGETTI S.P.A.	OIL	3	FA11-12-C8	ITALY TERRANUOVA BRACCIOL (AR) / GAS COMP
SNAMPROGETTI S.P.A.	EB	1	FL11AB-1N2-C8	POLAND / ZAKLADY CHEMICZE OSSWIECIN
SNAMPROGETTI S.P.A.	EB	1	FL51AB-1N2-C8	POLAND / ZAKLADY CHEMICZE OSSWIECIN
SNAMPROGETTI S.P.A.	FUEL OIL	3	FM51AB-12-F8	QATAR
SNAMPROGETTI S.P.A.	HEPTANE	2	FM12-VRVE-F8	QATAR
SNAMPROGETTI S.P.A.	LUBE OIL	1	FM11AB-12-F8	QATAR
SNAMPROGETTI S.P.A.	PROPYLENE	1	FM11AB-1P2-H8	QATAR
SNAMPROGETTI S.P.A.	DEMI WATER	1	FA51-12-F8	QATAR / QAPCO EXPANSION PROJECT LDPE
SNAMPROGETTI S.P.A.	POTABLE WATER	1	FL13-22-C8	SAUDI ARABIA SAUDI ARAMCO RIYAD PRODUCT
SNAMPROGETTI S.P.A.	OIL	3	FL51-12-C8	SWISS / RUSWILL COMPRESSOR STATION
SNAMPROGETTI S.P.A.	OIL	3	FL51-12-C8	SWISS / TRANSITGAS EXTENSION RUSWIL
SNAMPROGETTI S.P.A.	WATER	1	FA53B-12-C8	TANZANIA DAR-ES-SALAAM/T / T.P.D.C. BITUME
SNAMPROGETTI S.P.A.	OIL	2	FA51-12-C8	TUNISIA
SNAMPROGETTI S.P.A.	OIL	4	FA51-22-C8	TUNISIA / GASDOTTO TRANSTUNISINO
SNAMPROGETTI S.P.A.	OIL	1	FA51-22-C5	TUNISIA CAP BON / EXPANSION STATION GAS C
SNAMPROGETTI S.P.A.	WATER	1	FA11-22-C8	TURCKEY / TUPRAS IZMIT REFINERY - UCAP
SNAMPROGETTI S.P.A.	WATER	1	FA13-12-C8	TURCKEY / TUPRAS IZMIT REFINERY - UCAP
SNAMPROGETTI S.P.A.	WATER	1	FA12-12-C8	TURCKEY ALIAGA IZMIR / REFINERY - TUPRAS
SNAMPROGETTISUD S.P.A	WATER	1	FA53B-22-C8	TURCKEY TUPRAS IZMIR / REFINERY - HAUP
SNAMPROGETTISUD S.P.A.	ACRYNOLITRILE	1	FA51-12-E8	ITALY MANTOVA (MN) / ST 17 ECP (MN)
SNAMPROGETTISUD S.P.A.	CERE+ORG.	1	FA22-12-C8	ITALY MANTOVA (MN) / ST 17 ECP (MN)
SNAMPROGETTISUD S.P.A.	STYRENE	1	FA12AB-12-E8	ITALY MANTOVA (MN) / ST 17 ECP (MN)

PMS Produzione Misuratori Volumetrici PETROL Metering Systems

REFERENCE FOR

Ships making / owners / dealers

Customer	Liquid	Qty	PD meter	Destination / plant
GENERAL NAVAL CONTROL S.R.L.	SEA WATER	1	FA51-12-F8	ITALY
LA FORNITRICE S.R.L.	GASOIL	1	FA22-12-C5	ITALY
TEFIN	HEAVY OIL / BLEN	1	FA12-1P2-C1	ITALY
FRATELLI COSULICH S.P.A.	NAPHTA	1	FA51AB-12-C5	ITALY / ALBA MARINA
FINCANTIERI S.P.A.	SEA WATER	4	FA12AA-1P2-B1	ITALY / DISNEY MAGIC
FINCANTIERI S.P.A.	SEA WATER	4	FA12AA-1P2-B1	ITALY / DISNEY WONDER
MACCHI S.P.A.	FUEL OIL	2	FM51AB-1P2-C8	ITALY / LNG CARRIERS - FINCANTIERI
TOP PERFORMANCE	DIESEL	4	FA51S-12-C5	ITALY ALISCAFO "SALERNO"
METAL-LEGNO S.N.C.	GASOIL	1	FVM24-VRVE-C8	ITALY BRINDISI (BR) / BETTOLINE/ARSENALE (B
TIMAVO SHIP SUPPLY SRL	HEAVY FUEL OIL	2	FL22-1P2-C5	ITALY CARIBBEAN PRINCESS
AGIP S.P.A.	CRUDE OIL	1	FAL14-22-C8	ITALY CHIETI (CH) / NAVE CISTERNA X RACCOLT
ABB [CHIUSA/SOSTITUITA] (SOLUT	OLIO COMBUSTIBI	1	FL22-2P2-C5	ITALY GENOVA GE / NAVE SUN PRINCESS - EX 5
FINCANTIERI S.P.A. (TRIESTE)	BILGE WATER	1	FA13-2P2-C8	ITALY HAVE 6149 / EURODAM / ACQUA DI SENTI
FINCANTIERI S.P.A. (TRIESTE)	BILGE WATER	1	FA22-2P2-C8	ITALY HAVE 6149 / EURODAM / ACQUA DI SENTI
FINCANTIERI S.P.A. (TRIESTE)	BILGE WATER	1	FA53-2P2-C8	ITALY HAVE 6149 / EURODAM / ACQUA DI SENTI
FINCANTIERI S.P.A.	HEAVY FUEL OIL	2	FA112L-22-C5	ITALY HULL 5909 - SUN PRINCESS
FINCANTIERI S.P.A.	HEAVY FUEL OIL	8	FL22-2P2-C5	ITALY HULL 5909 - SUN PRINCESS
FINCANTIERI S.P.A.	OIL	4	FA11AB-22-C5	ITALY HULL 5909 - SUN PRINCESS
FINCANTIERI S.P.A.	WATER	1	FA13-22-F8	ITALY HULL 5909 - SUN PRINCESS
FINCANTIERI S.P.A.	HEAVY FUEL OIL	8	FL22-2P2-C5	ITALY HULL 5955 - DAWN PRINCESS
FINCANTIERI S.P.A.	OIL	4	FA11AB-22-C5	ITALY HULL 5955 - DAWN PRINCESS
FINCANTIERI S.P.A.	WATER	1	FA13-22-F8	ITALY HULL 5955 - DAWN PRINCESS
FINCANTIERI S.P.A.	HEAVY FUEL OIL	1	FA112-22-C5	ITALY HULL 5956 - GRAND PRINCESS
FINCANTIERI S.P.A.	HEAVY FUEL OIL	1	FA14C-2P2-F8	ITALY HULL 5956 - GRAND PRINCESS
FINCANTIERI S.P.A.	HEAVY FUEL OIL	2	FA22-22-C5	ITALY HULL 5956 - GRAND PRINCESS
FINCANTIERI S.P.A.	HEAVY FUEL OIL	12	FL22-2P2-C5	ITALY HULL 5956 - GRAND PRINCESS
FINCANTIERI S.P.A.	SEA WATER	8	FA12AA-1P2-B1	ITALY HULL 5956 - GRAND PRINCESS
FINCANTIERI S.P.A.	WATER	1	FA14C-1P2-F8	ITALY HULL 5956 - GRAND PRINCESS
FINCANTIERI S.P.A.	HEAVY FUEL OIL	1	FA112L-22-C5	ITALY HULL 5998 - SEA PRINCESS
FINCANTIERI S.P.A.	HEAVY FUEL OIL	8	FA22-2P2-C5	ITALY HULL 5998 - SEA PRINCESS
FINCANTIERI S.P.A.	WATER	1	FA13-22-F8	ITALY HULL 5998 - SEA PRINCESS
FINCANTIERI S.P.A.	HEAVY FUEL OIL	1	FA112L-22-C5	ITALY HULL 6044 - OCEAN PRINCESS
FINCANTIERI S.P.A.	HEAVY FUEL OIL	1	FA13-22-F8	ITALY HULL 6044 - OCEAN PRINCESS
FINCANTIERI S.P.A.	HEAVY FUEL OIL	8	FA22-2P2-C5	ITALY HULL 6044 - OCEAN PRINCESS
FINCANTIERI S.P.A.	NAPHTA	2	FL51-C5	ITALY HULL 6044 - OCEAN PRINCESS
FINCANTIERI S.P.A.	HEAVY FUEL OIL	1	FA112-1P2-F8	ITALY HULL 6050 - GOLDEN PRINCESS
FINCANTIERI S.P.A.	HEAVY FUEL OIL	12	FL22-1P2-C5	ITALY HULL 6050 - GOLDEN PRINCESS
FINCANTIERI S.P.A.	LUBE OIL	2	FA22-12-C5	ITALY HULL 6050 - GOLDEN PRINCESS

PMS Produzione Misuratori Volumetrici

PETROL Metering Systems

REFERENCE FOR

Ships making / owners / dealers

Customer	Liquid	Qty	PD meter	Destination / plant
FINCANTIERI S.P.A.	POTABLE WATER	2	FA14C-1P2-F8	ITALY HULL 6050 - GOLDEN PRINCESS
FINCANTIERI S.P.A.	SEA WATER	4	FA12AA-1P2-B1	ITALY HULL 6050 - GOLDEN PRINCESS
FINCANTIERI S.P.A.	HEAVY FUEL OIL	1	FA112-1P2-C5	ITALY HULL 6051 - STAR PRINCESS
FINCANTIERI S.P.A.	HEAVY FUEL OIL	12	FL22-1P2-C5	ITALY HULL 6051 - STAR PRINCESS
FINCANTIERI S.P.A.	LUBE OIL	2	FL22-1P2-C5	ITALY HULL 6051 - STAR PRINCESS
FINCANTIERI S.P.A.	POTABLE WATER	2	FA14C-1P2-F8	ITALY HULL 6051 - STAR PRINCESS
FINCANTIERI S.P.A.	SEA WATER	4	FA12AA-1P2-B1	ITALY HULL 6051 - STAR PRINCESS
FINCANTIERI S.P.A. (TRIESTE)	SEA WATER	1	FA12AA-1P2-B1	ITALY HULL 6051 - STAR PRINCESS
FINCANTIERI S.P.A. (TRIESTE)	DRINKABLE WATER	2	FA14C-1P2-F8	ITALY HULL 6067 - CARIBBEAN PRINCESS
FINCANTIERI S.P.A. (TRIESTE)	HEAVY FUEL OIL	1	FA112-1P2-C5	ITALY HULL 6067 - CARIBBEAN PRINCESS
FINCANTIERI S.P.A. (TRIESTE)	HEAVY FUEL OIL	12	FL22-1P2-C5	ITALY HULL 6067 - CARIBBEAN PRINCESS
FINCANTIERI S.P.A. (TRIESTE)	LUBE OIL	2	FA22-12-C5	ITALY HULL 6067 - CARIBBEAN PRINCESS
FINCANTIERI S.P.A. (TRIESTE)	SEA WATER	4	FA12AA-1P2-B1	ITALY HULL 6067 - CARIBBEAN PRINCESS
FINCANTIERI S.P.A.	DISTILLED WATER	1	FA12-2P2-C8	ITALY HULL 6075 - ZUIDERDAM
FINCANTIERI S.P.A.	DISTILLED WATER	1	FA12AB-2P2-C8	ITALY HULL 6075 - ZUIDERDAM
FINCANTIERI S.P.A.	HEAVY FUEL OIL	1	FA112-2P2-C5	ITALY HULL 6075 - ZUIDERDAM
FINCANTIERI S.P.A.	HEAVY FUEL OIL	2	FL22-2P2-C5	ITALY HULL 6075 - ZUIDERDAM
FINCANTIERI S.P.A.	HEAVY FUEL OIL	2	FL53-2P2-C5	ITALY HULL 6075 - ZUIDERDAM
FINCANTIERI S.P.A.	LUBRICATING OIL	1	FA12-22-C5	ITALY HULL 6075 - ZUIDERDAM
FINCANTIERI S.P.A.	MARINE FUEL OIL	1	FA16-2P2-C5	ITALY HULL 6075 - ZUIDERDAM
FINCANTIERI S.P.A. (TRIESTE)	DISTILLED WATER	1	FA12-2P2-C8	ITALY HULL 6076 / OOSTERDAM
FINCANTIERI S.P.A. (TRIESTE)	DISTILLED WATER	1	FA12AB-2P2-C8	ITALY HULL 6076 / OOSTERDAM
FINCANTIERI S.P.A. (TRIESTE)	HEAVY FUEL OIL	1	FA112-2P2-C5	ITALY HULL 6076 / OOSTERDAM
FINCANTIERI S.P.A. (TRIESTE)	HEAVY FUEL OIL	2	FL22-2P2-C5	ITALY HULL 6076 / OOSTERDAM
FINCANTIERI S.P.A. (TRIESTE)	HEAVY FUEL OIL	2	FL53-2P2-C5	ITALY HULL 6076 / OOSTERDAM
FINCANTIERI S.P.A. (TRIESTE)	LUBRICATING OIL	1	FA12-22-C5	ITALY HULL 6076 / OOSTERDAM
FINCANTIERI S.P.A. (TRIESTE)	MFO MARINE FUEL	1	FA16-2P2-C5	ITALY HULL 6076 / OOSTERDAM
FINCANTIERI S.P.A. (TRIESTE)	DISTILLED WATER	2	FA12-2P2-C8	ITALY HULL 6077 - WESTARDAM
FINCANTIERI S.P.A. (TRIESTE)	DISTILLED WATER	1	FA12AB-2P2-C8	ITALY HULL 6077 - WESTARDAM
FINCANTIERI S.P.A. (TRIESTE)	HEAVY FUEL OIL	1	FA112-2P2-C5	ITALY HULL 6077 - WESTARDAM
FINCANTIERI S.P.A. (TRIESTE)	HEAVY FUEL OIL	2	FL22-2P2-C5	ITALY HULL 6077 - WESTARDAM
FINCANTIERI S.P.A. (TRIESTE)	HEAVY FUEL OIL	2	FL53-2P2-C5	ITALY HULL 6077 - WESTARDAM
FINCANTIERI S.P.A. (TRIESTE)	LUBRICATING OIL	1	FA12-22-C5	ITALY HULL 6077 - WESTARDAM
FINCANTIERI S.P.A. (TRIESTE)	MFO MARINE FUEL	1	FA16-2P2-C5	ITALY HULL 6077 - WESTARDAM
FINCANTIERI S.P.A. (TRIESTE)	DISTILLED WATER	1	FA12-2P2-C8	ITALY HULL 6078 - ARCADIA
FINCANTIERI S.P.A. (TRIESTE)	DISTILLED WATER	1	FA12AB-2P2-C8	ITALY HULL 6078 - ARCADIA
FINCANTIERI S.P.A. (TRIESTE)	HEAVY FUEL OIL	1	FA112-2P2-C5	ITALY HULL 6078 - ARCADIA
FINCANTIERI S.P.A. (TRIESTE)	HEAVY FUEL OIL	4	FL53-2P2-C5	ITALY HULL 6078 - ARCADIA

PMS Produzione Misuratori Volumetrici

PETROL Metering Systems

REFERENCE FOR

Ships making / owners / dealers

Customer	Liquid	Qty	PD meter	Destination / plant
FINCANTIERI S.P.A. (TRIESTE)	LUBRICATING OIL	1	FA12-22-C5	ITALY HULL 6078 - ARCADIA
FINCANTIERI S.P.A. (TRIESTE)	MFO MARINE FUEL	1	FA16-2P2-C5	ITALY HULL 6078 - ARCADIA
FINCANTIERI S.P.A. (TRIESTE)	DISTILLED WATER	1	FA12AB-2P2-C8	ITALY HULL 6079 - QUEEN VICTORIA
FINCANTIERI S.P.A. (TRIESTE)	HEAVY FUEL OIL	1	FA112-2P2-C5	ITALY HULL 6079 - QUEEN VICTORIA
FINCANTIERI S.P.A. (TRIESTE)	HEAVY FUEL OIL	2	FL22-2P2-C5	ITALY HULL 6079 - QUEEN VICTORIA
FINCANTIERI S.P.A. (TRIESTE)	HEAVY FUEL OIL	2	FL53-2P2-C5	ITALY HULL 6079 - QUEEN VICTORIA
FINCANTIERI S.P.A. (TRIESTE)	LUBRICATING OIL	1	FA12-22-C5	ITALY HULL 6079 - QUEEN VICTORIA
FINCANTIERI S.P.A. (TRIESTE)	MFO MARINE FUEL	1	FA16-2P2-C5	ITALY HULL 6079 - QUEEN VICTORIA
FINCANTIERI S.P.A. (TRIESTE)	HUILES	9	FA51-2P2-C5	ITALY HULL 6081 - DANIELLE CASANOVA
FINCANTIERI S.P.A. (TRIESTE)	DISTILLED WATER	1	FA12-2P2-C8	ITALY HULL 6127 / QUEEN VICTORIA
FINCANTIERI S.P.A. (TRIESTE)	DISTILLED WATER	1	FA12AB-2P2-C8	ITALY HULL 6127 / QUEEN VICTORIA
FINCANTIERI S.P.A. (TRIESTE)	HEAVY FUEL OIL	1	FA112-2P2-C5	ITALY HULL 6127 / QUEEN VICTORIA
FINCANTIERI S.P.A. (TRIESTE)	HEAVY FUEL OIL	4	FL53-2P2-C5	ITALY HULL 6127 / QUEEN VICTORIA
FINCANTIERI S.P.A. (TRIESTE)	LUBRICATING OIL	1	FA12-22-C5	ITALY HULL 6127 / QUEEN VICTORIA
FINCANTIERI S.P.A. (TRIESTE)	MFO MARINE FUEL	1	FA16-2P2-C5	ITALY HULL 6127 / QUEEN VICTORIA
FINCANTIERI S.P.A. (TRIESTE)	DRINKABLE WATER	2	FA14C-1P2-F8	ITALY HULL 6131 - EMERALD PRINCESS
FINCANTIERI S.P.A. (TRIESTE)	HEAVY FUEL OIL	1	FA112-1P2-C5	ITALY HULL 6131 - EMERALD PRINCESS
FINCANTIERI S.P.A. (TRIESTE)	HEAVY FUEL OIL	12	FL22-1P2-C5	ITALY HULL 6131 - EMERALD PRINCESS
FINCANTIERI S.P.A. (TRIESTE)	LUBE OIL	2	FA22-12-C5	ITALY HULL 6131 - EMERALD PRINCESS
FINCANTIERI S.P.A. (TRIESTE)	SEA WATER	4	FA12AA-1P2-B1	ITALY HULL 6131 - EMERALD PRINCESS
FINCANTIERI S.P.A. (TRIESTE)	DRINKABLE WATER	1	FA14C-1P2-F8	ITALY HULL 6132
FINCANTIERI S.P.A. (TRIESTE)	DRINKABLE WATER	2	FA14C-1P2-F8	ITALY HULL 6132 / VENTURA
FINCANTIERI S.P.A. (TRIESTE)	HEAVY FUEL OIL	1	FA112-1P2-C5	ITALY HULL 6132 / VENTURA
FINCANTIERI S.P.A. (TRIESTE)	HEAVY FUEL OIL	12	FL22-1P2-C5	ITALY HULL 6132 / VENTURA
FINCANTIERI S.P.A. (TRIESTE)	LUBE OIL	2	FA22-12-C5	ITALY HULL 6132 / VENTURA
FINCANTIERI S.P.A. (TRIESTE)	SEA WATER	4	FA12AA-1P2-B1	ITALY HULL 6132 / VENTURA
FINCANTIERI S.P.A. (TRIESTE)	DISTILLED WATER	1	FA12-2P2-C8	ITALY HULL 6149 / EURODAM
FINCANTIERI S.P.A. (TRIESTE)	DISTILLED WATER	1	FA12AB-2P2-C8	ITALY HULL 6149 / EURODAM
FINCANTIERI S.P.A. (TRIESTE)	HEAVY FUEL OIL	1	FA112-2P2-C5	ITALY HULL 6149 / EURODAM
FINCANTIERI S.P.A. (TRIESTE)	LUBRICATING OIL	1	FA12-22-C5	ITALY HULL 6149 / EURODAM
FINCANTIERI S.P.A. (TRIESTE)	MFO MARINE FUEL	1	FA16-2P2-C5	ITALY HULL 6149 / EURODAM
FINCANTIERI S.P.A. (TRIESTE)	DRINKABLE WATER	2	FA14C-1P2-F8	ITALY HULL 6150 / RUBY PRINCESS
FINCANTIERI S.P.A. (TRIESTE)	HEAVY FUEL OIL	1	FA112-1P2-C5	ITALY HULL 6150 / RUBY PRINCESS
FINCANTIERI S.P.A. (TRIESTE)	HEAVY FUEL OIL	12	FL22-1P2-C5	ITALY HULL 6150 / RUBY PRINCESS
FINCANTIERI S.P.A. (TRIESTE)	LUBE OIL	2	FA22-12-C5	ITALY HULL 6150 / RUBY PRINCESS
FINCANTIERI S.P.A. (TRIESTE)	BILGE WATER	1	FA53-2P2-C8	ITALY HULL 6155 / COSTA LUMINOSA
FINCANTIERI S.P.A. (TRIESTE)	DISTILLED WATER	1	FA12-2P2-C8	ITALY HULL 6155 / COSTA LUMINOSA
FINCANTIERI S.P.A. (TRIESTE)	DISTILLED WATER	1	FA12AB-2P2-C8	ITALY HULL 6155 / COSTA LUMINOSA

PMS Produzione Misuratori Volumetrici

PETROL Metering Systems

REFERENCE FOR

Ships making / owners / dealers

Customer	Liquid	Qty	PD meter	Destination / plant
FINCANTIERI S.P.A. (TRIESTE)	HEAVY FUEL OIL	1	FA112-2P2-C5	ITALY HULL 6155 / COSTA LUMINOSA
FINCANTIERI S.P.A. (TRIESTE)	LUBRICATING OIL	1	FA12-22-C5	ITALY HULL 6155 / COSTA LUMINOSA
FINCANTIERI S.P.A. (TRIESTE)	MFO MARINE FUEL	1	FA16-2P2-C5	ITALY HULL 6155 / COSTA LUMINOSA
FINCANTIERI S.P.A. (TRIESTE)	BILGE WATER	1	FA53-2P2-C8	ITALY HULL 6164 / COSTA CROCIERE
FINCANTIERI S.P.A. (TRIESTE)	DISTILLED WATER	1	FA12-2P2-C8	ITALY HULL 6164 / COSTA CROCIERE
FINCANTIERI S.P.A. (TRIESTE)	DISTILLED WATER	1	FA12AB-2P2-C8	ITALY HULL 6164 / COSTA CROCIERE
FINCANTIERI S.P.A. (TRIESTE)	HEAVY FUEL OIL	1	FA112-2P2-C5	ITALY HULL 6164 / COSTA CROCIERE
FINCANTIERI S.P.A. (TRIESTE)	LUBRICATING OIL	1	FA12-22-C5	ITALY HULL 6164 / COSTA CROCIERE
FINCANTIERI S.P.A. (TRIESTE)	MFO MARINE FUEL	1	FA16-2P2-C5	ITALY HULL 6164 / COSTA CROCIERE
FINCANTIERI S.P.A. (TRIESTE)	DRINKABLE WATER	2	FA14C-1P2-F8	ITALY HULL 6166 / P&O CRUISESS
FINCANTIERI S.P.A. (TRIESTE)	HEAVY FUEL OIL	1	FA112-1P2-C5	ITALY HULL 6166 / P&O CRUISESS
FINCANTIERI S.P.A. (TRIESTE)	HEAVY FUEL OIL	4	FL22-1P2-C5	ITALY HULL 6166 / P&O CRUISESS
FINCANTIERI S.P.A. (TRIESTE)	HEAVY FUEL OIL	8	FL22BC-1P2-C5	ITALY HULL 6166 / P&O CRUISESS
FINCANTIERI S.P.A. (TRIESTE)	LUBE OIL	2	FA22-12-C5	ITALY HULL 6166 / P&O CRUISESS
FINCANTIERI S.P.A. (TRIESTE)	BILGE WATER	1	FA13-2P2-C8	ITALY HULL 6181 / HOLLAND AMERICA LINE
FINCANTIERI S.P.A. (TRIESTE)	BILGE WATER	1	FA22-2P2-C8	ITALY HULL 6181 / HOLLAND AMERICA LINE
FINCANTIERI S.P.A. (TRIESTE)	BILGE WATER	1	FA53-2P2-C8	ITALY HULL 6181 / HOLLAND AMERICA LINE
FINCANTIERI S.P.A. (TRIESTE)	DISTILLED WATER	1	FA12-2P2-C8	ITALY HULL 6181 / HOLLAND AMERICA LINE
FINCANTIERI S.P.A. (TRIESTE)	DISTILLED WATER	1	FA12AB-2P2-C8	ITALY HULL 6181 / HOLLAND AMERICA LINE
FINCANTIERI S.P.A. (TRIESTE)	HEAVY FUEL OIL	1	FA112-2P2-C5	ITALY HULL 6181 / HOLLAND AMERICA LINE
FINCANTIERI S.P.A. (TRIESTE)	LUBRICATING OIL	1	FA12-22-C5	ITALY HULL 6181 / HOLLAND AMERICA LINE
FINCANTIERI S.P.A. (TRIESTE)	MFO MARINE FUEL	1	FA16-2P2-C5	ITALY HULL 6181 / HOLLAND AMERICA LINE
FINCANTIERI S.P.A. (TRIESTE)	DISTILLED WATER	1	FA12-2P2-C8	ITALY HULL 6187 / QUEEN ELIZABETH
FINCANTIERI S.P.A. (TRIESTE)	DISTILLED WATER	1	FA12AB-2P2-C8	ITALY HULL 6187 / QUEEN ELIZABETH
FINCANTIERI S.P.A. (TRIESTE)	HEAVY FUEL OIL	1	FA112-2P2-C5	ITALY HULL 6187 / QUEEN ELIZABETH
FINCANTIERI S.P.A. (TRIESTE)	LUBRICATING OIL	1	FA12-22-C5	ITALY HULL 6187 / QUEEN ELIZABETH
FINCANTIERI S.P.A. (TRIESTE)	MFO MARINE FUEL	1	FA16-2P2-C5	ITALY HULL 6187 / QUEEN ELIZABETH
SANT	SEA WATER	1	FA51-22-F8	ITALY M/N TIRRENIA () / ACQUA SCARICO NAVI
SANT	SEA WATER	2	FA51-22-F7	ITALY M/N TIRRENIA (NA) / ACQUA SCARICO NA
SANT	SEA WATER	11	FA51-22-F8	ITALY M/N TIRRENIA (NA) / ACQUA SCARICO NA
FRATELLI D'AMICO S.P.A.	NAFTA PESANTE	1	FL51-1P2-C5	ITALY M/T SCORPIUS
MOBY S.P.A.	OLIO COMBUSTIBI	1	FA28-1P2-C5	ITALY M/V MOBY AKI
MOBY S.P.A.	OLIO COMBUSTIBI	1	FA28F-1P2-C5	ITALY M/V MOBY FREEDOM
MOBY S.P.A.	OLIO COMBUSTIBI	1	FA28F-1P2-C5	ITALY M/V MOBY WONDER
FINCANTIERI S.P.A. (TRIESTE)	HEAVY FUEL OIL	1	FA112-1P2-C5	ITALY MN VENTURA
MOBY S.P.A.	OLIO COMBUSTIBI	1	FA28-1P2-C5	ITALY N/M MOBY TOMMY
GENOVESE COMMERCIALE S.R.L.	HEAVY FUEL OIL	1	FA22-2P2-C5	ITALY NAVE DA CROCIERA / NAVE ...
FINCANTIERI S.P.A. (MONFALCONE	HEAVY FUEL OIL	1	FL22-1P2-C5	ITALY NAVE EMERAL PRINCESS / EX 6132

PMS Produzione Misuratori Volumetrici

PETROL Metering Systems

REFERENCE FOR

Ships making / owners / dealers

Customer	Liquid	Qty	PD meter	Destination / plant
RIMORCHIATORI LAZIALI S.P.A.	GASOIL	1	FA24-12-C5	ITALY ORTONA PORTO (PE) / S/V CAPO FRASCA
FRATELLI COSULICH S.P.A.	GASOLIO	1	FA24-12-C5	ITALY S.GIOVANNI TEADINO (CH) / EDISON GAS
BONO ENERGIA S.P.A.	FUEL OIL	1	FM51AB-1P2-C8	ITALY SHIP / JOB FINCANTIERI
BONO ENERGIA S.P.A.	FUEL OIL	1	FM51AB-1P2-C8	ITALY SHIP / LNG CARRIER - FINCANTIERI
TIMAVO SHIP SUPPLY SRL	SEA WATER	1	FA12AA-1P2-B1	U.S.A. C. 6051 - STAR PRINCESS
TIMAVO SHIP SUPPLY SRL	HEAVY FUEL OIL	1	FA112-1P2-C5	U.S.A. GOLDEN PRINCESS / EX 6050
PRINCESS CRUISES	HEAVY FUEL OIL	1	FL22-2P2-C5	U.S.A. GRAND PRINCESS / EX 5956
FINCANTIERI S.P.A. (TRIESTE)	HEAVY FUEL OIL	1	FA112-1P2-C5	U.S.A. HULL 6100 - CROWN PRINCESS
FINCANTIERI S.P.A. (TRIESTE)	HEAVY FUEL OIL	12	FL22-1P2-C5	U.S.A. HULL 6100 - CROWN PRINCESS
FINCANTIERI S.P.A. (TRIESTE)	LUBE OIL	2	FA22-12-C5	U.S.A. HULL 6100 - CROWN PRINCESS
FINCANTIERI S.P.A. (TRIESTE)	POTABLE WATER	2	FA14C-1P2-F8	U.S.A. HULL 6100 - CROWN PRINCESS
FINCANTIERI S.P.A. (TRIESTE)	SEA WATER	4	FA12AA-1P2-B1	U.S.A. HULL 6100 - CROWN PRINCESS
TIMAVO SHIP SUPPLY SRL	ACQUA DI MARE	1	FA12AA-1P2-B1	U.S.A. NAVE STAR PRINCESS
PRINCESS CRUISES	LUBE OIL	1	FA22-12-C5	U.S.A. OCEAN PRINCESS / EX 6044
PRINCESS CRUISES	SEA WATER	2	FA12AA-1P2-B1	U.S.A. STAR PRINCESS / EX 6051
PRINCESS CRUISES	HEAVY FUEL OIL	1	FL22-2P2-C5	U.S.A. SUN PRINCESS / EX 5909

PMS Produzione Misuratori Volumetrici

PETROL Metering Systems

REFERENCE FOR

Marine terminals

Customer	Liquid	Qty	PD meter	Destination / plant
AGIP LIQUIGAS S.P.A.	LPG	2	FL53B-22-C5	ITALY LIVORNO (LI) / DEPOSITO COSTIERO
COSTIERO GAS LIVORNO S.P.A.	LPG	3	FL28-2P2-C3	ITALY STAB. LIVORNO (LI) / SCARICO FISCALE D
ANSALDO ENERGIA S.P.A.	LIGHT FUEL OIL	1	FA114R-1I2-C5	LEBANON / BEDDAWI COMBINED CYCLE
ANSALDO ENERGIA S.P.A.	LIGHT FUEL OIL	4	FA14-1I2-C5	LEBANON / BEDDAWI COMBINED CYCLE
ANSALDO ENERGIA S.P.A.	LIGHT FUEL OIL	2	FA24-1I2-C5	LEBANON / BEDDAWI COMBINED CYCLE
ANSALDO ENERGIA S.P.A.	WATER	1	FA14-1P2-E7	LEBANON / BEDDAWI COMBINED CYCLE
ANSALDO ENERGIA S.P.A.	LIGHT FUEL OIL	1	FA114R-1I2-C5	LEBANON / ZAHRANI COMBINED CYCLE
ANSALDO ENERGIA S.P.A.	LIGHT FUEL OIL	4	FA14-1I2-C5	LEBANON / ZAHRANI COMBINED CYCLE
ANSALDO ENERGIA S.P.A.	LIGHT FUEL OIL	2	FA24-1I2-C5	LEBANON / ZAHRANI COMBINED CYCLE
ANSALDO ENERGIA S.P.A.	WATER	1	FA14-1P2-E7	LEBANON / ZAHRANI COMBINED CYCLE
NUOVO PIGNONE S.P.A.	CRUDE OIL	7	FL114R-1P2-C5	SUDAN / MUGLAD PORT SUDAN

PMS Produzione Misuratori Volumetrici

PETROL Metering Systems

REFERENCE FOR

PD meters 10" size and over

with tetra-rotor mechanism

Customer	Liquid	Qty	PD meter	Destination / plant
METROVAL LTDA	OIL & WATER EMU	1	FM110H-22-C8	BRASIL
PETROBRAS AMERICA INC.	CRUDE OIL	1	FM112L-1P2-C8	BRASIL
SIIRTEC S.P.A.	CRUDE LIQ.	1	FA110H-2T2-C5	CHINA SOUTH CHINA SEA / HZ-26 FIELD DEVEL
AGIP S.P.A.	CRUDE OIL	1	FH212-2P2-C5	CONGO POINTE NOIRE / ZAF 1 PLATFORM
C.R. TECNOLOGY SYSTEM S.R.L.	GASOLINE	1	FA212-12-C5	CUBA / CUPET FORTUNE
C.R. TECNOLOGY SYSTEM S.R.L.	KEROSENE	1	FA112L-12-C5	CUBA / CUPET FORTUNE
SADELMI COGEPI	LIGHT OIL	1	FA110H-2I2-C5	EGYPT / CTE CAIRO SOUTH
ABB SAE SADELMI S.P.A.	FUEL OIL	1	FL112-2P2-F8	EGYPT / EL KUREIMAT THERMAL POWER PLANT
ADVANCED ENERGY PRODUCT LTD	CUTTER STOCK	1	FA110-2TP2-C5	GREAT BRETAIN
ADVANCED ENERGY PRODUCT LTD	HEAVY FUEL OIL	3	FA112-2TP2-C5	GREAT BRETAIN
ADVANCED ENERGY PRODUCT LTD	LIGHT FUEL OIL	1	FA112-2TP2-C5	GREAT BRETAIN
PREMABERGO ITALIANA S.P.A.	DIESEL	1	FA114R-VR-P-C5	INDONESIA / MAURA TAWAR COMBINED CYCLE
SULZER BRASIL S.A.S.	CRUDE OIL	1	FLJ112-VR-P-C8	ITALY / PIATTAFORMA
TECHINT S.P.A	FUEL OIL	2	FM212-VRT1-C5	ITALY BRINDISI (BR) / OLEODOTTO BRINDISI N
TECHINT S.P.A	FUEL OIL	2	FA212-VRT1-C5	ITALY BRINDISI (BR) / OLEODOTTO BRINDISI SU
FINCANTIERI S.P.A.	HEAVY FUEL OIL	2	FA112L-22-C5	ITALY HULL 5909 - SUN PRINCESS
FINCANTIERI S.P.A.	HEAVY FUEL OIL	1	FA112-22-C5	ITALY HULL 5956 - GRAND PRINCESS
FINCANTIERI S.P.A.	HEAVY FUEL OIL	1	FA112L-22-C5	ITALY HULL 5998 - SEA PRINCESS
FINCANTIERI S.P.A.	HEAVY FUEL OIL	1	FA112L-22-C5	ITALY HULL 6044 - OCEAN PRINCESS
FINCANTIERI S.P.A.	HEAVY FUEL OIL	1	FA112-1P2-F8	ITALY HULL 6050 - GOLDEN PRINCESS
FINCANTIERI S.P.A.	HEAVY FUEL OIL	1	FA112-1P2-C5	ITALY HULL 6051 - STAR PRINCESS
FINCANTIERI S.P.A. (TRIESTE)	HEAVY FUEL OIL	1	FA112-1P2-C5	ITALY HULL 6067 - CARIBBEAN PRINCESS
FINCANTIERI S.P.A.	HEAVY FUEL OIL	1	FA112-2P2-C5	ITALY HULL 6075 - ZUIDERDAM
FINCANTIERI S.P.A. (TRIESTE)	HEAVY FUEL OIL	1	FA112-2P2-C5	ITALY HULL 6076 / OOSTERDAM
FINCANTIERI S.P.A. (TRIESTE)	HEAVY FUEL OIL	1	FA112-2P2-C5	ITALY HULL 6077 - WESTARDAM
FINCANTIERI S.P.A. (TRIESTE)	HEAVY FUEL OIL	1	FA112-2P2-C5	ITALY HULL 6078 - ARCADIA
FINCANTIERI S.P.A. (TRIESTE)	HEAVY FUEL OIL	1	FA112-2P2-C5	ITALY HULL 6079 - QUEEN VICTORIA
FINCANTIERI S.P.A. (TRIESTE)	HEAVY FUEL OIL	1	FA112-2P2-C5	ITALY HULL 6127 / QUEEN VICTORIA
FINCANTIERI S.P.A. (TRIESTE)	HEAVY FUEL OIL	1	FA112-1P2-C5	ITALY HULL 6131 - EMERALD PRINCESS
FINCANTIERI S.P.A. (TRIESTE)	HEAVY FUEL OIL	1	FA112-1P2-C5	ITALY HULL 6132 / VENTURA
FINCANTIERI S.P.A. (TRIESTE)	HEAVY FUEL OIL	1	FA112-2P2-C5	ITALY HULL 6149 / EURODAM
FINCANTIERI S.P.A. (TRIESTE)	HEAVY FUEL OIL	1	FA112-1P2-C5	ITALY HULL 6150 / RUBY PRINCESS
FINCANTIERI S.P.A. (TRIESTE)	HEAVY FUEL OIL	1	FA112-2P2-C5	ITALY HULL 6155 / COSTA LUMINOSA
FINCANTIERI S.P.A. (TRIESTE)	HEAVY FUEL OIL	1	FA112-2P2-C5	ITALY HULL 6164 / COSTA CROCIERE
FINCANTIERI S.P.A. (TRIESTE)	HEAVY FUEL OIL	1	FA112-1P2-C5	ITALY HULL 6166 / P&O CRUISESS
FINCANTIERI S.P.A. (TRIESTE)	HEAVY FUEL OIL	1	FA112-2P2-C5	ITALY HULL 6181 / HOLLAND AMERICA LINE
FINCANTIERI S.P.A. (TRIESTE)	HEAVY FUEL OIL	1	FA112-2P2-C5	ITALY HULL 6187 / QUEEN ELIZABETH

PMS Produzione Misuratori Volumetrici

PETROL Metering Systems

REFERENCE FOR

PD meters 10" size and over

with tetra-rotor mechanism

Customer	Liquid	Qty	PD meter	Destination / plant
3P PROGETTI S.P.A.	CRUDE OIL	6	FAL114-VRT-C5	ITALY LIBIA / PIATTAFORMA EL BOURI
3P PROGETTI S.P.A.	CRUDE OIL	3	FM112-VRT-C5	ITALY LIBIA / PIATTAFORMA EL BOURI
PRO.RA.CO S.R.L.	BUNKER "C"	1	FL110H-2TP2-C5	ITALY MANFREDONIA (FG) / BUNKERAGGIO (SMI
FINCANTIERI S.P.A. (TRIESTE)	HEAVY FUEL OIL	1	FA112-1P2-C5	ITALY MN VENTURA
IEMSA IMPIANTI S.R.L.	FUEL OIL	4	FL212-2P2-C5	ITALY MONTALTO DI CASTRO (VT) / CTE ENEL M
SAIPEM S.P.A.	NAPHTA	1	FA112-22-C8	ITALY OSTIGLIA (MN) / CTE ENEL
RAFFINERIA DI ROMA S.P.A.	GASOIL	1	FVA110H-VRD-P-	ITALY PANTANO DI GRANO
RAFFINERIA DI ROMA S.P.A.	GASOIL	1	FM212L-VRD.P.C	ITALY PANTANO DI GRANO RM
PRAOIL OLEODOTTI ITALIANI S.P.A	GASOIL	1	FVM110H-C5	ITALY PANTANO DI GRANO RM / PANTANO DI GR
AGIP RAFFINAZIONE S.P.A.	HEAVY FUEL OIL	7	FVA110H-1P2-C8	ITALY PORTO MARGHERA (VE)
AGIP PETROLI S.P.A.	GASOIL	1	FVL110H---C5	ITALY RHO / DE.FI. RHO
AGIP PETROLI S.P.A.	GASOLINE	1	FVL110H---C5	ITALY RHO / DE.FI. RHO
IND. MECC. SCARDELLATO S.P.A.	OIL	1	FL112-2P2-C8	ITALY VILLA FORTUNA (NO) / CENTRO OLIO UNIT
SIIRTEC NIGI S.P.A.	WAXI CRUDE OIL	2	FL212-1P2-C5	KOREA KOLON / CPP-2 PLATFORM
ANSALDO ENERGIA S.P.A.	LIGHT FUEL OIL	1	FA114R-1I2-C5	LEBANON / BEDDAWI COMBINED CYCLE
ANSALDO ENERGIA S.P.A.	LIGHT FUEL OIL	1	FA114R-1I2-C5	LEBANON / ZAHRANI COMBINED CYCLE
UMM AL-JAWABY OIL SERVICE CO.	CRUDE OIL	1	FL112L-1P2-C8	LYBIA / VEBA OIL OPERATIONS
MEDILOG LTD	CRUDE OIL	1	FL112L-1P2-C8	LYBIA LYBIA / VEBA OIL - AGIP CO.
MEDITERRANEAN OIL SERVICE GM	CRUDE OIL	1	FL112L-1P2-C8	LYBIA LYBIA / VEBA OIL OPERATIONS
UMM AL-JAWABY OIL SERVICE CO.	CRUDE OIL	1	FL112L-1P2-C8	LYBIA LYBIA / VEBA OIL OPERATIONS
DANIEL EUROPE LTD	CRUDE OIL	1	FL112L-1P2-C8	LYBIA PIRECO LIBYA / PIRECO PLANT
DANIEL EUROPE LTD	CRUDE OIL	1	FL112L-1P2-C8	LYBIA PIRECO LIBYA / VEBA OIL OPERATIONS
NUOVO PIGNONE S.P.A.	CRUDE OIL	7	FL114R-1P2-C5	SUDAN / MUGLAD PORT SUDAN
FELCA INTERNATIONAL TRADING C	HYDROCARBON	1	FA110H-1P2-C8	TAIWAN
FELCA INTERNATIONAL TRADING C	HYDROCARBON	1	FL110-1P2-C8	TAIWAN
TIMAVO SHIP SUPPLY SRL	HEAVY FUEL OIL	1	FA112-1P2-C5	U.S.A. GOLDEN PRINCESS / EX 6050
FINCANTIERI S.P.A. (TRIESTE)	HEAVY FUEL OIL	1	FA112-1P2-C5	U.S.A. HULL 6100 - CROWN PRINCESS
ESACONTROL S.P.A.	R.F.O./L.F.O.	1	FAL112-12-C8	YEMEN / CTE AL MOUKHA 4X40 MW

Aprilia, 21/01/11

Liquids metered

ACETIC ACID
ACETIC ANHYDRIDE
ACETONE
ACRILONITRYLE
ADDITIVE
ALCHEM
ALCOHOL
ALCOHOLIC FLEMMA
ALFA METIL STYRENE
ALIMENTARY OIL
AMINE
AMMONIA
ANTISTATIC

BASE OIL
BENZENE
BITUMEN
BUNKER “C”
BUTANOL
BUTILBENZENE

CAUSTIC SODA
COAT WATER
CONDENSATE
CRUDE OIL
CYCLOPENTANE

DECILBENZENE
DEIONIZED WATER
DEMI WATER
DIESEL
DIESEL FUEL
DIESEL OIL
DISTILLED OIL
DISTILLED WATER

ETHANOL
ETHYL ACETATE
ETILBENZENE

FENATO SODICO
FUEL OIL

GASOIL
GASOLINA
GASOLINE
GLICOLE DIETILENICO
GLYCOL
GREASE

HCL SOLUTION
HEAVY FUEL OIL
HEPTANE
HOT WATER
HYDROCARBON
HYDROCLORATE ACID

ISOBUTANOLO
ISOPROPANOLO

JET FUEL
JP-5

KEROSENE

LIGHT DIESEL OIL
LIGHT FUEL OIL
LIGHT OIL
LIQUID FAT
LIQUID SULPHUR
LPG
LUBE OIL
LUBRICATING OIL
LUBRICITY

MALATHION
MALEIC ANHYDRIDE
MARINE FUEL OIL
MAZOUT
MELT GREASE
METHANOL
METHYL CHLORIDE
METIMETACRILATO
MINERAL OIL

NAPHTA

OIL
ORIMULSION

PETROLEUM
PETROLEUM PRODUCTS
PHTALIC ANHYDRIDE
PLASTICIZER
POTABLE WATER
PROCESS WATER
PROPYLENE

RAW WATER
RESIDUAL FUEL OIL

SALT WATER
SEA WATER
SILANE
SLOP OIL
SODA
SODIUM HYPOCLORIDE
SODIUM SOLPHIDE
SOLAR OIL
SOLPHURIC ACID
SOLVENT
SOY OIL
STANCO BASE
STARCH
STYRENE
SUGAR SYRUP
SULPHURIC ACID

TOLUENE
TOWNS WATER

VACUUM RESIDUE
VEGETABLE OIL

WASTE WATER
WATER
WAX INHIBITOR
WELL WATER

XILENE
XILOLO

Specific reports

"PETROL" PD meters

El Bouri field (Sirte Gulf) report

Following the Agip Name and Libyan final customer technicians qualification visit of Febraury 1985 and after several months of hard technical/commercial negotiations, at the beginning of October it was decided to use “Petrol” PD meters for El Bouri platform.

The technical and commercial aspects of this choice can be summarized as follows.

Technical aspects

1. Supply composition.

   1.1. n. 3 "Petrol" PD meters, max flow rate 500 M3/h, flanges 10" ANSI 300 RF.

   1.2. n. 6 "Petrol" make PD meters, max flow rate1500 M3/h, flanges 16" ANSI 150 RF.

   All PD meters equipped with:

   1.2.1. automatic temperature compensator, mechanic type;
   1.2.2. high frequency pulse transmitter;
   1.2.3. register and ticket printer for both gross and net volumes metered.

   1.3. Installation and liquids delivered.

   PD meters will be used to measure "crude oil" drawn-off from 4.000 metres deep wells, off-shore African coast.

   "Crude-oil" main characteristics are the following:

   1.3.1. sp. gravity : 0,874 - 0,857
   1.3.2. viscosity : 15 cP a 54°C.
   1.3.3. vapor pressure : 13 PSI a 60°C.

   The platform is anchored on a base 150 mt depth.
   The 10" size PD meters shall measure the crude-oil pumped from wells into the tanker used as floating reservoir.
   The 16" size PD meters shall fiscally measure the "crude-oil" sold and filled-into the shipping tankers.

1.4. Main technical characteristics.

1.4.1. "Double case" type PD meters.

The measuring unit is removable from the outer housing flanged to the piping.
Such a manufacturing configuration allows to drastically reduce the eventually "out-of-service" periods of the PD meter.
In facts the measuring unit may be replaced in a very short period of time. Furthermore it strongly simplifies the maintenance eventually needed by the rotating parts, being the measuring unit more light and more easy to handle than the entire PD meter.

1.4.2. "Tetra rotor" type PD meters.

Such configuration practically nullifies the pressure "pulsations" tipical of this operating principle and drastically reduces the PD meters vibrations.

1.4.3. Replacing gear type calibrator.

This type of calibrator assures a continuous mechanic linkage between the measuring unit and the counter/totalizer without any clutch type coupling.
In facts the latter, in case of wear, may give-out wrong totalizations without any warning to the operator.
At contrary, with the of replacing gear type calibrator any trouble in the movement transmission is promptly evidenced from the lack of counter/totalizer rotation.

1.4.4. Carbon bearings.

This type of bearings used as rotor's shafts guide, instead of ball bearings normally used by other manufacturers, drastically improves the life of the PD meters.

Commercial aspects

1. International competition

Supply has been entered in competition with the major worldwide known PD meters manufacturers, i.e.:

1.1. A.O. Smith, american manufacturer;
1.2. Tokico LTD, japanese manufacturer;
1.3. Bopp & Reuther, german manufacturer;
1.4. Oval LTD, japanese manufacturer.

While for A.O. Smith politic factors connected to the recent libyan-american misunderstandings might have been of some influence, the exclusion of the other manufacturers is strictly connected, beyond the bare price level, to technical factors such as:

1.4.1. max flow-rate, limited to 1.200 m3/h for the german Bopp & Reuther;
1.4.2. PD meter configuration, i.e., availablity over 6" size of only single case PD meters for the japanese Tokico LTD and Oval LTD.

1.5. Price level

The lump-sum price at which order has been entered permits to consider as advantageous and fruitful the market of big size PD meters.

In facts:

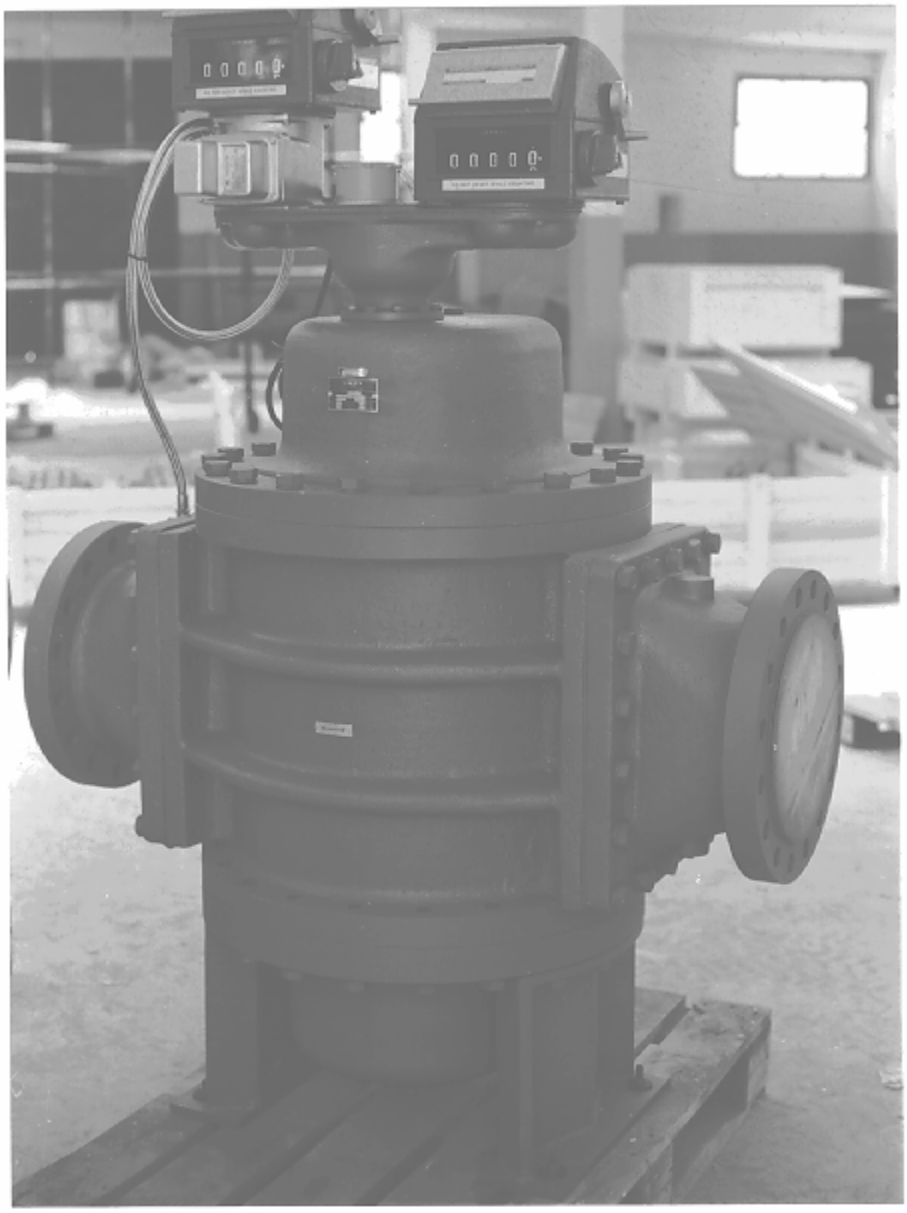
1.5.1. A.O. Smith prices look to be about 40% higher;
1.5.2. Bopp & Reuther prices look to be 30% higher;
1.5.3. Tokico LTD and Oval LTD prices look to be aligned but with PD meters not technically comparable due to their single case configuration, as previously said.

1.6. Reference

El Bouri platform is the greatest of Mediterranean sea and the second-one in Europe.
Either the plant configuration either its dimensions are a basic reference point for similar installations wherever they have to be realized.

Employees involved in the construction of the 16” and 10” size PD meters for El Bouri (LIBYA) platform

10” size PD meter for El Bouri (LIBYA) platform



16” size PD meters for El Bouri (LIBYA) platform

BOURI

The Mediterranean's biggest oil field nears completion. At a cost of $2-3 billion, Libya's first offshore oil field is scheduled for production in 1988.

Once final hookup is accomplished at Bouri's giant steel platform in 570 ft of water off Libya, drilling on the first of 30 wells is to begin and soon oil will flow through the world's deepest offshore floating tanker facility.

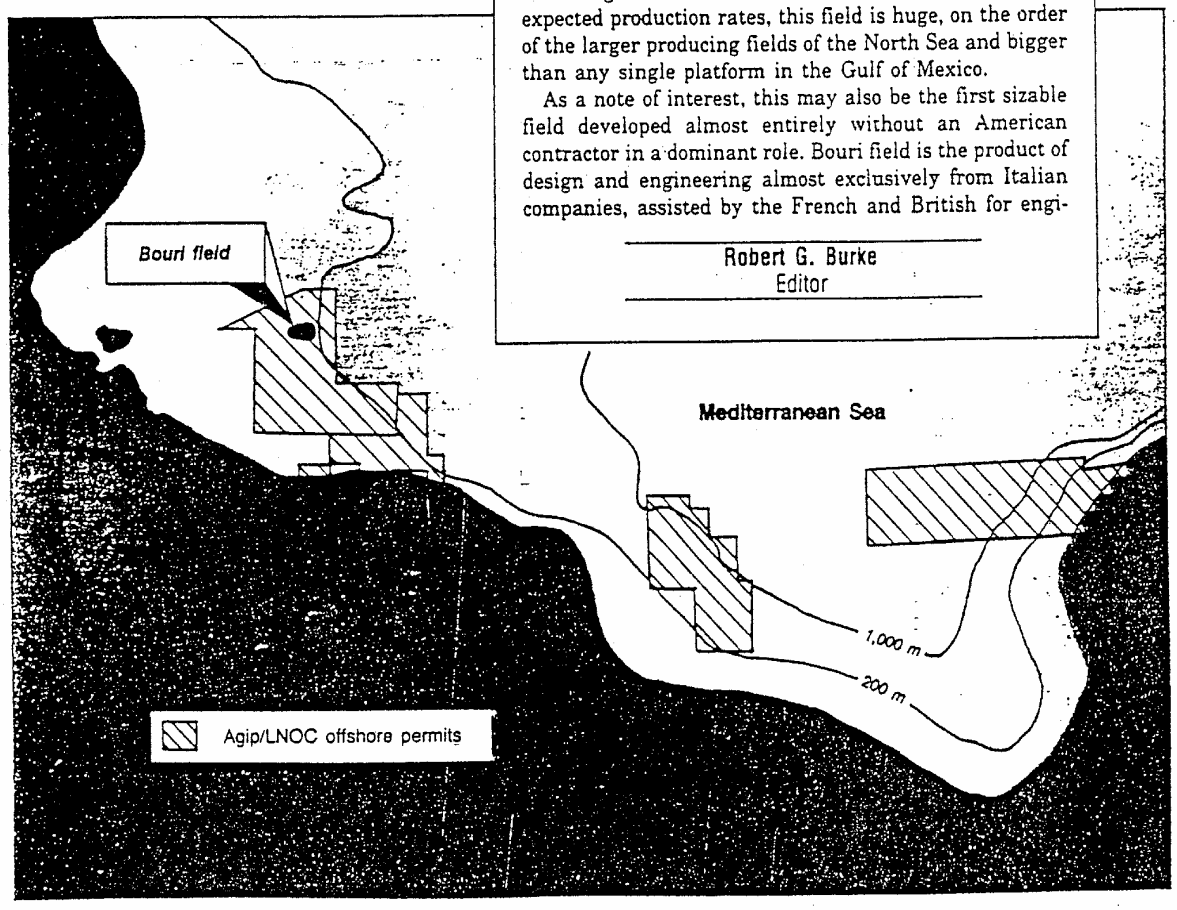
This entire operation, going back to first contracts in 1983, has been a monstrous design and engineering task. Even though the technology is not of a conventional type, the very latest in drilling and production methods were used in getting this field on stream.

So far, the project is right on schedule. Topside installation and hookup is set for this summer and drilling should begin by fall. After that, the floating tanker should be in place and capable of taking oil. Early production schedules call for 30,000-50,000 b/d at first, rising in the 1990s to 150,000 b/d.

The significance of Bouri is one of size and scale. At expected production rates, this field is huge, on the order of the larger producing fields of the North Sea and bigger than any single platform in the Gulf of Mexico.

As a note of interest, this may also be the first sizable field developed almost entirely without an American contractor in a dominant role. Bouri field is the product of design and engineering almost exclusively from Italian companies, assisted by the French and British for engi-

Robert G. Burke
Editor



Offshore production will triple in the Mediterranean with inauguration of Libya's Bouri and Italy's Vega

The Mediterranean is not a large producing area, accounting for 123,000 b/d of oil and 26.5 million cu meters of natural gas, compared to output from the North Sea of 3.5 million b/d and 215 million cu meters of gas.

This region, with the addition of Vega field in Italy now being developed and Bouri off Libya, will undergo a dramatic jump when offshore oil production nearly triples. Of that gain, Bouri alone will account for 150,000 b/d.

Today, as before, the importance of the Mediterranean is not the amount of oil produced but rather its location, lying close to western Europe, a large consumer in need of enormous quantities of oil and gas. In western Europe are 350 million people consuming giant amounts of energy, 65% of which comes from hydrocarbons.

Besides western Europe on the northern coast, the Mediterranean has access to a smaller market of less developed countries, mainly along the north coast of Africa. Here, the population is 160 million, considered a prime target for continued growth.

Offshore oil from Libya won't arrive until 1988.

More offshore oil is coming. Production already flows from 45 oil and gas fields in Italy, Spain, Tunisia, and Greece. These are mostly small producers. At least 16 more fields are under study and besides Libya, Yugoslavia may soon begin offshore production.

Exploration is underway in three more countries, Turkey, Malta and Egypt. This is believed to have resulted in the discovery of 76 additional fields, according to a report by Agip issued last March at a Houston technical meeting.

Out of these new fields, Agip estimates 12 under immediate appraisal. Apparently, the remainder are small deposits not large enough to warrant appraisal drilling.

neering support and design, and the Koreans for topside construction. American equipment and supplies occupied only a minor role.

Even though most of the engineering scheme at Bouri is not entirely advanced by North Sea or Gulf of Mexico standards, certain achievements are worthy of mention.

Approximately 67,000 tons of steel used on PD 4. This compares to the largest structures in the North Sea. But those are mainly concrete, and the Bouri structure dwarfs almost every structure in position in the Gulf of Mexico. As a comparison, the jacket at Santa Ynez in 1,300 ft of water off California weighs in at a svelte 20,000 tons. Shell's Cognac platform, the biggest in the gulf, weighs 57,000 tons.

At the time of Cognac, that was the heaviest offshore steel platform. Water depth at this offshore Louisiana site is 1,025 ft. Cognac was fashioned from three sections. Shell, operator of Cognac, has even bigger plans. Bullwinkle, due out in 1988 from a construction yard at Corpus Christi, Texas, has a gross operating weight of 78,000 tons. That's all in one piece, too.

Electronic gadgetry and controls at Bouri are among the most sophisticated and advanced, incorporating a duplicate control room onshore at Tripoli and the potential for unmanned operations at every step of the processing chain. This is fairly common today, and most platforms utilize supervisory control and remote monitoring from onshore. Telemetry and satellite communications are adapted for use at DP 4. Complicated systems for process control and alarms in case of accident are built in the system.

A cantilevered flare stack on DP 4 extends out from the platform sides and a distance above the water. Compared to North Sea operations, this is unusual. North Sea platforms generally have a separate tower for flares. In the Gulf of Mexico almost no flaring is allowed and when venting is done, the stack is cantilevered, but there's no fire or burning. At Bouri, the flare extends a safe distance away. Due to exacting design standards, the cantilever is economical to construct.

Expense. At a cost of $2-3 billion, Bouri has to rank among the most costly of offshore projects. Only 10 years ago a concrete platform at Statfjord came in at $1 billion, then a world record. Nothing this costly exists in the Gulf of Mexico and may not ever be built there. Of course, deep water and arctic operations may soon push Bouri's cost into a secondary position.

A single point mooring (SPM) system at Bouri is likely to make history. This unit, under construction by EMH of France, has a biarticulated buoyant tower in 540 ft of water, deepest ever for a tanker loading facility. A supercruiser has been adapted for mooring alongside as storage. At 250,000 dwt, this ship can hold approximately 1.4 million bbl of oil, or roughly two weeks' production when Bouri gets cranked up to capacity. Smaller tankers can and take crude for delivery elsewhere.

The use of insulated pipelines between platforms at Bouri and to the SPM terminal is unusual but not

entirely unique. The design, that of Snamprogetti, features a double-walled pipe or simply one pipe inside another and sealed at both ends. The importance of this is that use here could lead to further applications in the arctic and for deepwater. Insulated lines at Bouri are specified because of low temperatures in the 570-ft water depths and, to some extent, because of the chemical composition of the crude.

Early development

Bouri's discovery was drilled by Agip (NAME) in 1977 on one of three concessions granted that company in 1974. Numerous tests were drilled prior to this first oil. Six additional wells proved up the Bouri reserve before plans to develop were laid out. The name Bouri is an Arabic term, meaning sea bass, a fish common along that portion of North Africa's coast.

The estimated reserves at Bouri are about five billion bbl, but only a fraction of that is recoverable. According to some calculations, the recovery will be only 10% of the oil in place, but this could grow to a billion bbl by use of enhanced recovery methods.

After the Libyan National Oil Co. joined with Agip on operation of the field, the Italian state oil company decided on production plans. A two-phase program was drawn up by the Italians. At first, a central section of the field will have a platform set in place. This is DP 4, the field's mother platform. A satellite platform, DP 3, will be constructed a short distance away. The initial phase also calls for the SPM facility connecting the two platforms with a storage tanker.

In the second stage, three more satellite platforms are to be built and emplaced. These would connect all producing areas of the field and should provide for the production of 150,000 b/d oil back to the tanker loading facility.

The cost of this is an enormous $2-3 billion covering at least five years. First oil won't flow through the SPM system until early 1988, although drilling and completion of the first wells could well be accomplished this summer. The jacket for DP 4 was set in place last September and topsides are to go in soon. The SPM is scheduled for early 1988, and delivery of the jacket for DP 3 is about that same time.

Actually, the completion of much of the second stage could easily depend on the performance of the field reservoir and production results achieved by these first two platforms. Bouri certainly wouldn't be the first field to suffer a setback, if these first two platforms didn't produce in exactly the way predicted.

The structure at Bouri is anticlinal and covers an area of roughly 33 km by 10 km, or about 15 miles long and two miles wide. The reservoir is carbonate in nature.

Giant Bouri platform development design and construction program surrounded by confidentiality

Secrecy surrounds Bouri field. At first, only the sketchiest of details escaped the consortium comprised of Libya National Oil Co. and Agip, North Africa Mediterranean and Egypt (NAME). Last fall, when the first steel platform, was set in place, only a few local newspapers and trade journals reported the fact. But Bouri is an important field, if only because of platform size and expected oil production.

Only 75 miles north of Tripoli, the field is largely unknown to the outside world since the Libyan government is reluctant to release details on construction or engineering in the field. Design and engineering began in 1984, and first oil won't flow until 1988.

Nearly every contract on the project has a clause of confidentiality protecting the design and construction. No supplier discusses the Bouri project without first seeking clearance from Libya, and that permission was rarely given.

For this article, numerous sources were contacted. Information obtained was mostly from engineers not directly involved with the project. Inside the industry, Bouri has attracted much attention, chiefly because of the size and nature of the construction project. All data was checked and confirmed by independent sources. Only limited data has been published.

Bouri's importance comes from project size, cost, and amount of oil. The design and engineering is bright and up-to-date but not especially advanced. If anything, the electronic control and telemetry may prove to be the most exciting bits of technology to come out of Bouri.

There's been talk of using sophisticated electronic gear to retrofit existing platforms for unmanned operations. Bouri has a semblance of this electronic gear going in place. But many newer platforms have this equipment. Bouri happens to be the largest.

If such a market for electronic controls does come-about, the logical place to begin would be in the North Sea and the Gulf of Mexico. These two regions alone have hundreds of platforms, each of which would be a potential target for unmanned electronic controls. □

Basically, this is a elongated structural trap, trending east and west.

According to analysis, the hydrocarbons at Bouri are contained in the Metlaoui formation, believed to be a part of the upper Paleocene and lower Eocene zones. The structure is located in a carbonate platform developed in the Pelagian platform environment of the Cretaceous age.

The belief now is that the Metlaoui formation is a carbonate sequence of sediments and has a thickness of 900 ft. At Bouri the net pay seems to be approximately 350 ft, sizable by any standard except the best of Middle East fields. The oil gravity ranges from 22° to 27°.

In early development, DP 4 will have two drilling rigs operated at the same time on the platform to take down 30 directional holes. This main platform will have a 23,500 metric ton steel jacket and a complete operating weight of 67,000 metric tons. Besides complete drilling functions, DP 4 is to be outfitted for processing and treatement of the crude before shipment.

The first satellite platform, DP 3, is to have 20 wells. This platform will be 7.8 km from DP 4. Only minimum processing is called for at DP 3. The connection to DP 4 is by a 12-in. insulated pipeline laid on the seafloor.

In comparison, the jacket of DP 3 is to contain 14,000 metric tons of steel and have a total operating weight of 35,000 metric tons.

Offshore loading

As a permanent offshore loading facility, the operating partners ordered a system consisting of a biarticulated column attached to a 250,000 dwt ton tanker. This tanker will be permanently moored alongside the tower.

Crude oil from DP 4 will be pumped through two 16 in. pipelines to the storage tanker. Other tankers will take crude from there to various markets. Agip NAME, in the operating agreement, receives 19% of the crude, and Libya National Oil Co. has the option to sell the remaining share. Agip may negotiate to purchase this additional oil supply.

Crude from DP 4 and the satellite will be processed by means of two parallel production trains, each designed to handle 75,000 standard barrels of oil a day. Each train consists of three stages for separating oil from gas, and an electrostatic desalter.

Gas from the first stage and test separators is primarily used as fuel by the turbogenerators and fired heaters. A fuel-gas sweetening plant has been provided so that the emission of sulfur compounds produced as a product of combustion is reduced to acceptable and safe levels.

Jacket construction

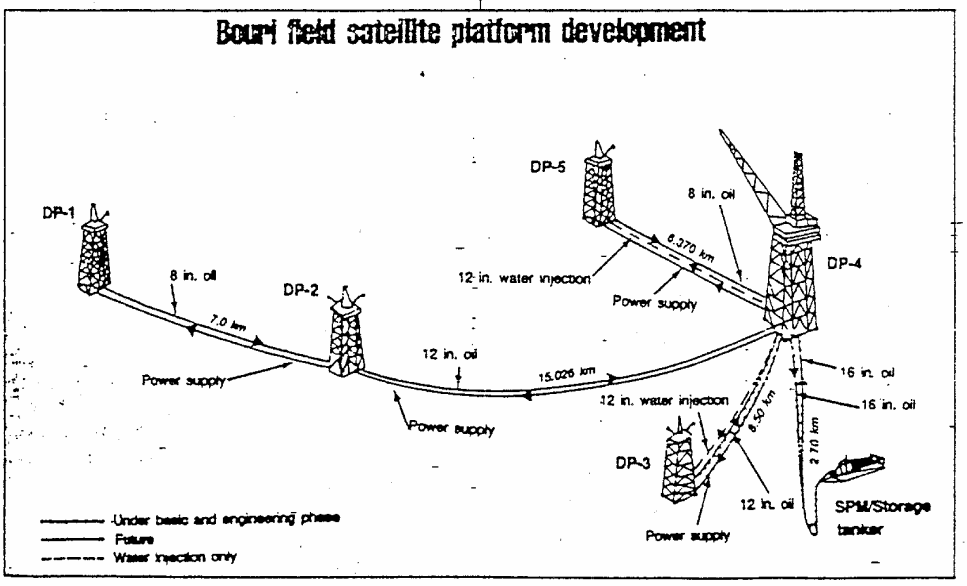
The two jackets are similar to a conventional battered jacket except that the bottom bay of the platform has vertical legs. Pile sleeves are connected directly to these legs.

A solid and firm foundation for the platforms is provided. Piles measuring 96 in. in diameter were driven vertically by means of an underwater hammer without need of pile guides.

According to basic designs, there will be 24 piles for DP 4 and 20 piles for DP 3. These are about standard for that size of platform. The number of piles has been restricted where possible by increasing the pile diameter from customary sizes. This reduced to some extent the cost of the platform.

The DP 4 jacket is the first self-elevating jacket launched in the Mediterranean, but this is not unique nor especially unusual. Although this procedure is considered by some to be more risky than other launching methods, the system is done almost routinely. The choice was made at Bouri to save time in upending the jacket and getting the piles driven in place.

As a procedure, the self elevating method calls for welding buoyant chambers on the jacket. The placement of the jacket is controlled by regulating the amount and flow of air in the chambers. Generally, this is done in three stages, as was the case at Bouri. The platform jacket is towed by launch barge into position, and the jacket launched. The barge is moved clear, while the jacket rotates into an upright position. The plaform sinks to approximately 10 meters or roughly 30 ft above the seabed. The floating jacket is manuevered into position



Varco top drive units slated for three drilling packages on DP4 and DP3 Bouri platforms

Three Varco top drive units for drilling were sold for Bouri field. Two of these are for DP 4 platform, and a third for DP 3. The top-drive units are among the most advanced of drilling tools.

Top drive units result in faster drilling, mainly because this system allows three stands of pipe to be connected at once. Working in 90 ft lengths allows faster drilling, better control, and more efficiency.

Varco's system operates like a power swivel but is a complete drilling package. The traditional kelly and drive bushing are gone. The drill string is rotated by a standard dc drive motor. Virtually everything about the system is standard. □

and the airtanks filled so the structure settles to the seafloor. Piles are then driven.

The shape and size of DP 4 was determined by basic design and method of launch chosen. The characteristics of DP 4 are these: jacket height 176 meters, weight at launch 24,900 tons, module support frame weight 2,900 tons, flare system weight 1,100 tons, and a total operating weight of 26,000 tons.

Weather in the Mediterranean is calm. For that reason, a moderate design criteria was picked. The 100-year storm conditions was considered for an extreme wave height of 16.5 meters at a 16 second interval, with a wind speed of 44 meters per second and for one minute sustained.

Drilling program

DP 4 at Bouri is to have dual rigs operating at the same time, a situation in the offshore that may be unusual but certainly is not unique. Platforms in both the North Sea and Gulf of Mexico, as well as many other places, have dual rigs. DP 3 is to have only one rig.

The rigs on DP 4 will operate over two separate clusters having 21 slots each. Plans now call for 30 directional wells, 15 for each cluster. DP 3 will have 24 slots and 20 directional wells.

In drilling, the casing profile calls for 20 in. pipe, then 9 5/8 in., and 7 in. up to the surface, inside a 30 in. conductor pipe in the seabed. The drift angle of directional wells will reach 60° with a horizontal displacement up to 10,500 ft.

Drilling operations might be critical. Conditions seem to indicate a high content of hydrogen sulfide, high temperatures in the bottom hole, and constant problems and difficulties routinely associated with conducting simultaneous activity for drilling and production.

Completing the wells

Every development well taken down on Bouri will be completed as single flowing well.

According to current estimates, and because of pressure depletion and an expected growth in water cut from the wells, artificial lift may be needed at a later stage. This would not be unusual and in fact is probably normal for most wells. Tubing size has been selected at 3 1/2 in. for DP 4 platform wells.

Well conditions at Bouri DP 4 are expected to be these: produced fluids are likely to be very corrosive, therefore a high-alloy stainless steel tubing has been ordered and will be installed. Components for the Christmas tree are stipulated for materials of a high-corrosion resistance. But these downhole conditions are not expected to impede production nor delay the field. While corrosive, the produced fluids are expected to remain within customary ranges. □

Host of European contractors make Libya's first offshore field development a reality

Like all good fields today, Bouri is not the product of one or even a few company efforts, but rather a merger of many. In today's electronic sophistry, the need for varied talents is strong. Among Bouri's contractors and suppliers are:

In Italy, Agip, operator and primary contractor; Tecnomare, structural engineering; Snamprogetti, topside engineering; Saipem, drilling modules; Belleli/Micoperi, supply and installation of two steel platforms; Saipem, installation and hookup; and Fincantieri, storage tanker conversion. Major equipment is to come from Turbotecnica, gas turbines; Snammare, a storage tanker, the Agip Sardegna; Breda Fucine, wellheads; 3P, metering systems; and Aerotecnica Marelli, HVAC.

Outside Italy, John Brown, project management; Heerema E. Von Der Lippe, site survey and soil investigation; Lloyds, certification; Noble Denton, marine surveyer; O.T.C., model making test; BKW, survey; Daewoo, drilling and accommodations modules. EMH, construction and installation of SPM; Hyundai, construction of module and processing utilities; L.I.C., insurance; I.C.S., fire and gas detection; Elektrisk Bureau, telecommunications system; Varco, topdrive; NEDECO, engineering log base, and Prakla, seismic. □

BOURI

EMH installs world's deepest single-point tanker loading facility near Libya's Bouri platforms

The single-point mooring system for Bouri was constructed by EMH of France, who pioneered the concept of articulated columns almost two decades ago. The concept of a biarticulated column was selected to permanently moor a 250,000 dwt storage tanker in 570 ft waters. This is the deepest offshore tanker mooring for the transfer of oil.

According to basic design, this system features two structural elements linked together by a universal joint. A second universal joint connects these elements to the base, piled to the seafloor. A triaxial joint at the top ensures a connection to the mooring yoke.

The Agip Sardegna, a supertanker of giant size, is being modified for a new role as storage unit. The system is being designed to withstand a velocity of 100 knots and a maximum current speed of 2.1 m/sec at sea surface.

This SPM system will go in at Bouri field in two stages. the first calls for the buoyant tower and base to be installed in the fall of 1987. EMH has this unit in fabrication at a yard in Spain. The storage tanker with yoke attached will be towed to Libya and connected to the SPM in the summer of 1988.

Bluewater Terminal Systems NV acts as subcontractor to provide design of the rigid yoke connection. Alsthom Ateliers et Chantiers de Bretagne carries out the basic tanker conversion engineering under EMH's supervision with detail design done by Fincantieri.

At Bouri, the SPM system will consist of a biarticulated column, the base, and a connecting yoke.

The upper buoyant column is connected to the lower element by a universal joint. Another universal joint connects the column to the piled base which anchors the SPM to the seabed. At the top of the buoyant element is the mooring head where a triaxial joint ensures the yoke-column connection, allowing the vessel to rotate and move.

Two oil lines, capable of being maintained by cleaning pigs, include a two-path swivel joint.

The basic SPM tower consists of three structural steel beams anchored to the seabed by piling. These piles are grouted in place. Buoyancy tanks are a part of the structure for transportation and installation.

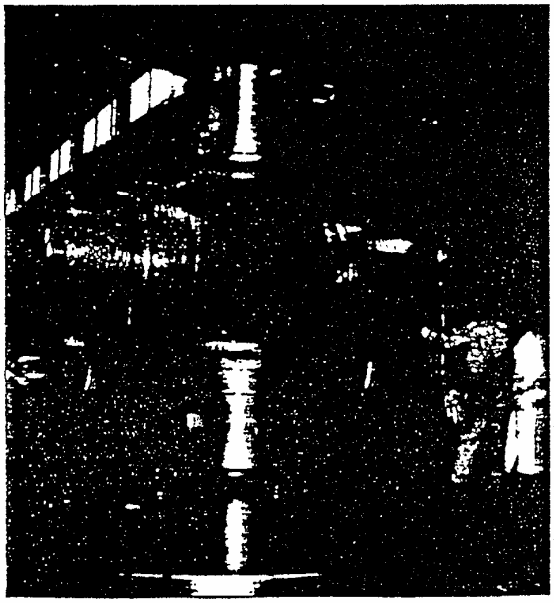
The upper column provides buoyancy and is a long cylinder. This structure is 84 meters in length and 20 meters in diameter. The insides are stiffened. This piece is made of seven watertight compartments. In operations, the lower compartment is partially flooded with seawater.

The lower columm is 91 meters long and provides a connection between the foundation base and the upper column. External diameter of this seciton measures 2.5 meters. During operation, this chamber is completely filled by seawater.

Two universal joints, one in the base and the other at intermediate level, are of EMH design as used in articulated columns already installed in the North Sea. The main element of the articulation is the cast steel, cross-shaped cardan spider whose two shafts rotate along a self-lubricated bank fitted to bearing housings. These bearing housings are bolted to the structure, one at the top, another at bottom.

One feature of these universal joints is a hollow spider connection which enables the transfer of fluids and elimiates jumper hoses. Pipeline flexibility remains because of torsion seals made from an elastomer compounds and reinforced by steel hoops.

At the column's top, about 12 to 14 meters above sea level, a triaxial joint allows free movement. The triaxial joint consists of three elements: a trunnion, rotating ring



This universal joint, one of two for the SPM facility off Libya, is an integral part of the structure. It allows crude to move from DP 4 platform to an offshore loading and storage site.

and annular card. As a part of the column, the trunnion is a vertical shaft around which the tanker can rotate.

Atop this point is a rotating ring featuring two horizontal shafts for the roll axis. This is placed inside the annular spider where two more horizontal shafts allow for a pitch axis.

Bearings housings are mounted on these shafts and connected to the yoke arms by bolts. Covering about 50 meters in length, the mooring yoke has a tubular steel frame shaped as a pyramid.

Alongside the column is a bearing to accommodate any roll from the tanker. At the tanker's sides are two hingers to allow pitch from the vessel.

Two separate circuits composed of 16 in. pipeline allow oil to flow from Bouri platform DP 4 to the SPM. Rigid piping runs outside the column and then inside the buoyant chamber. The articulated units of the column at the base and intermediate level enable the fluid to pass through.

At the column's upper point, a two-path fluid swivel allows the yoke to rotate around the column axis. This unit is composed of a 16-in. in-line swivel for the main passage of a second swivel for the backup line. Each swivel is fitted with a bearing.

Between the column and the tanker, fluids move through rigid piping supported by the yoke and swivel joints having jumper hoses at both ends.

The storage tanker is the 250,000 dwt Agip Sardegna built in Trieste in 1972. Besides acting as storage for field output, the tanker has to provide offloading facilities for outgoing tankers.

First modification to be made to the tanker was to alter the bow to receive the SPM yoke and allow a connection. Suitable openings had to be made in the bow and the structure reinforced. Ballasting was modified and the tanker sealed to prevent seawater from invading the crude storage.

A computerized control system had to set up to allow monitoring of storage and crude transfer lines. Meter banks record the amount of oil taken on board and withdrawn.

And a system of floating fenders were put in place to allow side-by-side moorings of tankers, along with flexible hoses to load the tankers as they waited. □

Snamprogetti uses complex control system for processing at Libyan offshore oil field

For the design of two Bouri platforms, the philosophy of controls was to provide the most up-to-date and sophisticated electronic supervisory control system possible.

The central oil producing facility, called DP 4, has a control room and a duplicate control room onshore at Tripoli. The platform can be monitored onshore or the control system can be shut off at the platform and most operations conducted from the shore location.

This sophisticated system called for the latest in electronic gear. Design of process controls and emergency shutdown procedures was by Snamprogetti of Milan, Italy. Communications and telemetry systems had to be adapted for these uses and worked into the system. Minicomputer facilities had to be designed and arranged. Processing was adapted for these uses.

The electronic process control systems are based on a multiprocessor and peripheral equipment. These include visual display units, mass storage, printers, copiers, and keyboards. All these various components had to be coordinated and integrated into a single system. Once connected, they had to fit into a complex process procedure.

Status of alarms and shutdown data is obtained by approximately 2800 digital signals for process control and 3700 signals for the fire and gas emergency shutdown systems.

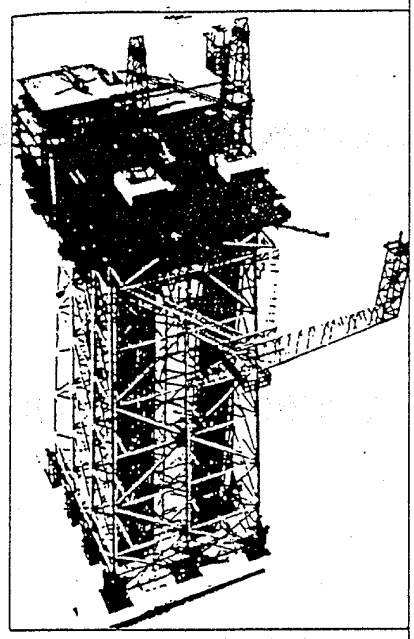
To increase system reliability, abundant backup systems were provided. Essential services associated with production and safety were supported by pneumatic systems.

From the control room, the operator has the ability to carry out all control functions and to visualize all the information related to the process operation by means of displays of general plant situation and of particular emphasis on the process, through graphic displays, alarm lists and production reports.

Agip (NAME) awarded an 38.5 million order to EB Communications, Nesbru, Norway, for delivery of all telecommunciations systems to Bouri field. EB supplied equipment for two platforms, a troposcatter radio link to an onshore logistics base and an optional microwave link along the coast.

Much of the control system and electronic gear was provided by Philips of Holland. This gear incorporates the latest developments and most used items in the electronics fields. No new items or completely rearranged circuity is included. □

Technomare designs a cantilevered flare stack to reduce platform costs at Bouri



Cantilevered flare stack is a dominant feature of the Bouri jacket, as illustrated in this model.

Technomare designed both Bouri platforms. The jackets are similar, 22,000 tons for DP 4 and 14,000 tons for DP 3 with topside operating payloads of 34,000 tons and 18,000 tons. This places the steel structures among the largest ever built for the offshore.

With the addition of piling weight, DP 4 comes in at 67,000 tons of operating weight, making this the heaviest steel platform ever installed. Bullwinkle, soon to be placed in the Gulf of Mexico, will outweigh DP 4, hitting a total of 78,000 tons. DP 4 sits in only 550 ft of water; Bullwinkle will be at 1,350 ft.

The main technical innovation is the use of perimeter piling to cope with local soil conditions, rather than a more traditional approach of having corner piles.

One unusual approach taken on DP 4 is a cantilevered flare stack.

The more conventional approaches of having a flare on deck or building a separate flare tower were ruled out for various reasons. Because of the water depth at 570 ft, the use of a cantilevered stack extending 100 meters out into the sea and 100 meters above the water surface was deemed an efficient use of space and less costly to construct than a separate flare tower.

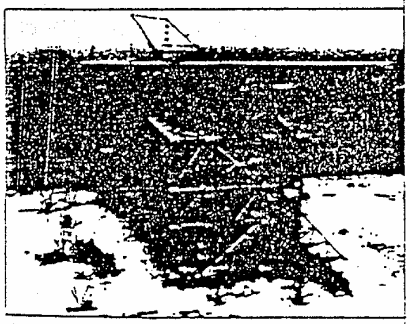
Overall length of the boom, measured from the jacket hinge to the flare burner, is 200 meters. The flare tip is connected by a horizontal A-frame linking the boom to an upper deck of the module support frame. This creates a triangle approximately 55 meters on each side.

All connections on the boom and the frame, the boom and jacket, and the frame and the module support frame are by mechanical hinges.

Fendering along the splash zone of the platform protects the flare boom from damage by a boat. The fendering system can absorb the energy of a 2500 ton displacement supply vessel at a speed of one meter per second.

On costs, engineers calculate the cantilevered approach reduced the flare cost by 20%, when compared to building a separate tower and bridge.□

Belleli assembles giant steel jackets for Bouri at Taranto construction yard



Giant jacket for Bouri field was constructed at Taranto, Italy, for installation last fall in the Mediterranean Sea.

Belleli of Italy was main contractor for constructing both of Bouri's production platforms.

The first was placed on the seabed last fall. The unit was piled and grouted. Topside construction was done in Korea and the housing and accommodation units shipped across the sea for installation and hookup.

Belleli's yard at Taranto was the construction site. Other than size and weight, DP 4 does not appear to have caused any peculiar or unusual construction problems. The shape is conventional and ordinary construction methods were used throughout.

During construction, the Libyans and Italians managed the project with technical assistance from the UK's John Brown Offshore. Saipem has a diversified contract for the engineering of the drilling modules and the drilling and hookup of 36 wells. They teamed with South Korea's Hyundai for fabrication of process and utility modules, installation, hookup and commissioning with drilling, accommodation and flare system, plus hookup of the module support frames. This contract is worth $155 million.

The construction and assembly of both platforms was at the Taranto yard. DP 4 was shipped last fall and DP 3 is nearing completion now at the same location.

Ordered in 1984 at a cost of $250 million, the Bouri project was the biggest construction contract ever placed.□

LPG metering
c/o Costiero Gas Livorno plant

Includes:

Generality

Costiero Gas Livorno S.p.A. factory is surely the greatest plant in Italy for LPG storage and distribution.

Builted-up about 45 years ago, with very new techniques for the time, the plant had to serve as the storage point for LPG coming from the Middle-East and destined to the United States.

The storage of LPG is made in caverns worked-out at a depth of about 100 metres in the north area of Leghorn harbour.

The construction of caverns has been an high engineering and difficult job for which also an human lives' tribute has been paid.

Also to-day it is the only storage of this type existing in Italy, even if other similar project have been discussed and engineered.

The storage total capacity is about 50.000 m3, divided into three (3) caverns, each one consisting of several tunnels connected by an header.

With such a configuration it is possible to simultaneously provide for the storage of three (3) different products as, for a limit example, pure propane, pure buthane and a blend of the two (2) products.

Caverns are filled by discharging LPG-ships (in Italy called "gasiere") of various sizes and coming from all over the world.

The LPG-ship discharge plant includes a battery of sea-water type heat exchangers, to allow the discharge of LPG transported in refrigerated conditions at temperatures ranging from - 30°C. to - 40°C.

The discharge of LPG-ships is controlled and reckoned through a fiscal metering station, whose primary elements are PD meters rotors type.

The LPG so stored is then distribuited all over the Italian territory through tank trucks and rail tankers.

Therefore the plant is equipped with:

1. a loading station for tank trucks, with a capacity of about 250-300 tank trucks/day, whose load is controlled and reckoned through scales.

2. a loading station for rail tankers, whose load is controlled and reckoned through PD meters, rotors type.

Fiscal metering station

The fiscal metering station of LPG discharged from LPG-ships is mainly composed of two (2) 8" lines, each equipped with two (2) PD flowmeters in parallel, max capacity 300 m3/h each flowmeter.
The total capacity of the metering station is therefore in the order of 1.200 m3/h.
On each 8" line the underdetailed main equipment are installed for PD meters protection:

1. deaerator, with a capacity of 3,5 m3 about, equipped with alarms for line shut-down in case LPG is approaching or it is in "flash" conditions;
2. basket type strainer;
3. max flow rate limiting valve.

Each line is additionally equipped with an electronic type densitometer to convert the LPG volumes, as metered, into weight.
Each PD flowmeter is equipped with the underdetailed accessories:

- reset type counter;
- inductive type, intrinsecally safe pulse transmitter, for control room processing of metered volumes.

For the calibration of PD meters the metering station is equipped with a 10 m3 nominal capacity calibrated tank, sealed by involved Authorities either for what concerns the capacity either for what concerns the max operating pressure (about 30 Bar).

The calibration is accomplished using the system known as "vapor displacement method", which foresees the connection of the head of the calibrated tank, with the head of the cavern from which the test liquid is coming.

Data recorded during the calibration run are corrected for temperature and pressure in accordance with a procedure prepared by the PD meters manufacturer and accepted by Metric Authorities.

In this respect may be useful to point-out that such a calibration system is actually used because of, in Italy, the "pipe -prover" system, which could be favourably considered for similar LPG metering stations, is not yet approved by Metric Authorities.

The metering station allows the fiscal measurement of LPG with operating conditions within the underdetailed ranges:

- density : 0,5 ~ 0,6 Kg/litro
- pressure : 5 - 25 BAR
- temperature : 0 - 40° C.

All the equipment are flanged according to ANSI 300.

PD meters charasteristics

The main characteristics of PD meters installed in the fiscal metering station are the following:

- manufacturer : “Petrol” PD meter
- model : FM28-2P2-C3
- type : rotors
- construction : double case
- materials : outer housing c. steel, inner housing c. iron, rotors aluminum alloy shafts and gears AISI 420 stainles steel.

The rotors work in horizontal position and are supported by sealed type ball bearings.

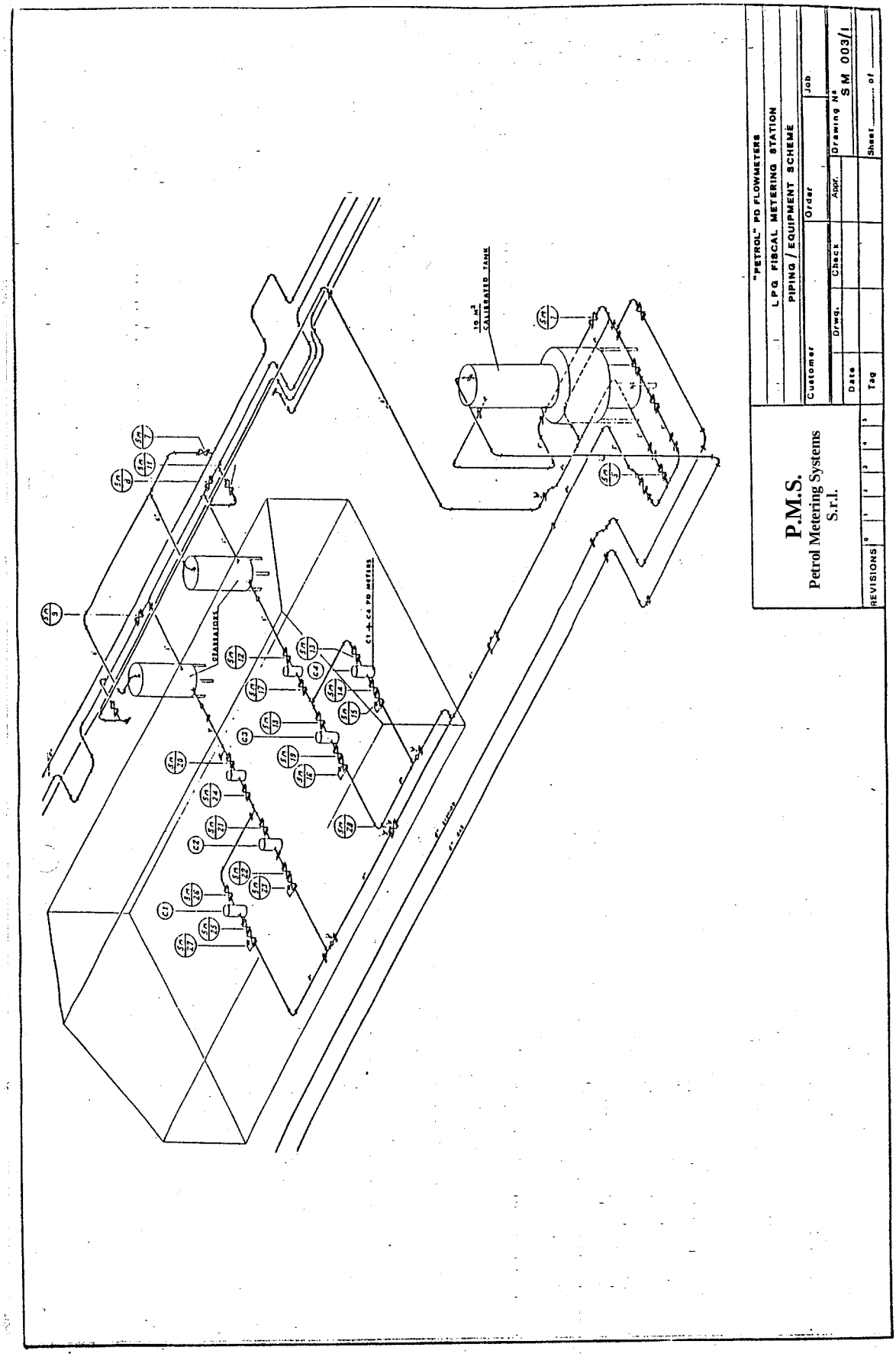
The movement is transmitted to the counter by means of a magnetic type transmission system.

The flow-rate range, within which the legal accuracy of ±0,5% of reading is maintained, is 50 - 300 m3/h.

The two (2) PD meters of the second 8" line have been installed during the 1983, while those of first 8" metering line have been installed during the 1980.

Hereto enclosed please find the copy of a report issued by Local Metric Office involving a general control of PD meters together with its translation in english language.

Piping / Equipment scheme



MINISTERY OF INDUSTRYAND COMMERCE
METRIC OFFICE OF LEGHORN

"PETROL" PD FLOWMETER FOR GPL INSTALLED c/o LIQUIPIBIGAS COASTAL DEPOT OF LEGHORN - MECHANICAL PARTS CONTROL.

Within the job of sperimental checks and periodical controls made by this office on "PETROL" PD flowmeter, installed c/o Liquipibigas coastal depot of Leghorn, has been retained useful, after fourteen (14) months of service and also in accordance to a request of Liquipibigas in this sense, to proceed to an overall control of the mechanical components of PD flowmeter itself, to ascertain the actual conditions of the equipment as well as the eventual wear of the parts.

Therefore, after having called for the technical people of "Petrol S.r.l." maker of the PD flowmeter, the last February 19th the writer proceeded to the control of the equipment, which is mainly based on the removal of the measuring unit from the outer housing flanged to the piping, and on the control of the rotating parts.

Such a control has been made just after a series of metrological tests which have confirmed that the accuracy of the PD flowmeter is well within the legal tolerances (max deviation -1%.).

From the examination of measuring unit parts it came out that:

- the rotors and the timing gears are in very good conditions and without any sign of wear;
- the tolerances between the rotors and between those latters and the measuring unit housing are identical to the initial ones;
- the measuring mechanism is completly free and with no fricition, so that can easily rotate just moving with two (2) fingers the timing gears;
- the measuring unit is in a very good conditions and without any sign of wear;
- the only note concerns a slightly noise of the sealed bearings supporting the rotor shafts, the replacement of which has been recommended even in consideration of the long period of service.

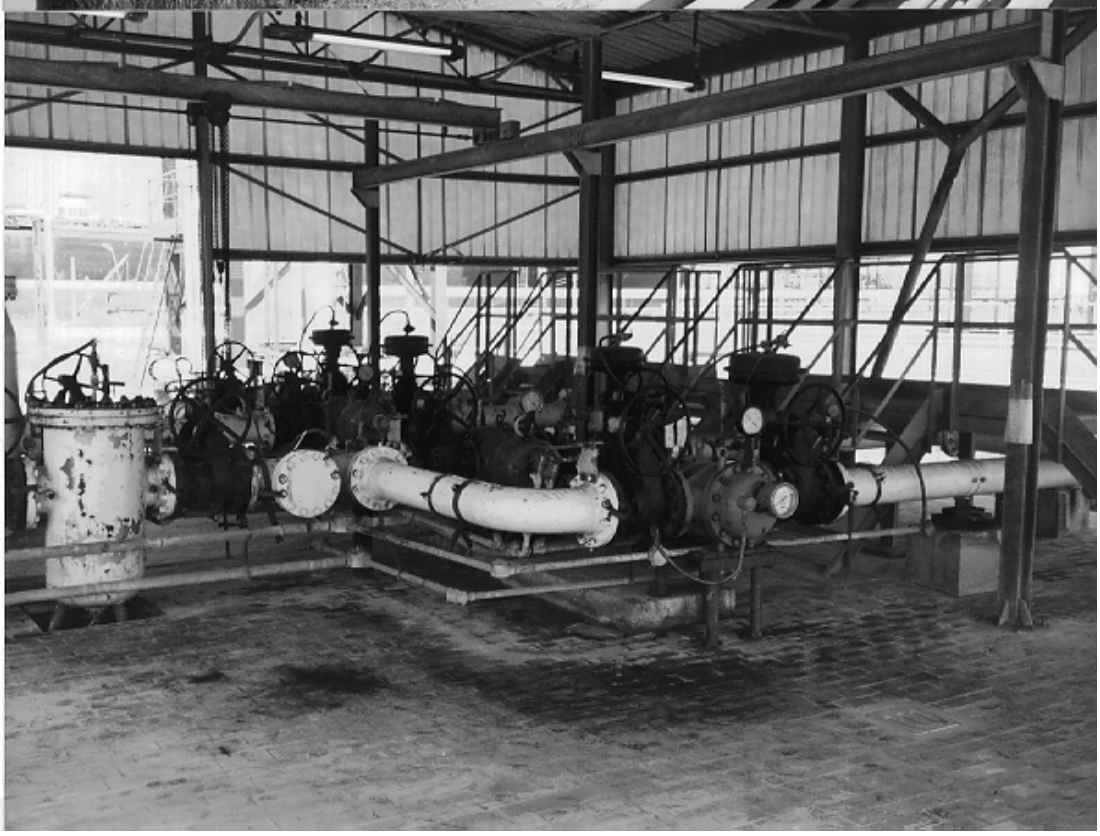
Above results have to be considered very satisfactory, also in consideration of the fact that, as the writer could check, in the fourteen (14) months of service the flowmeter measured a total volume of 725.000.= m3, equal to an avarage flow of over 1700 m3/h per day. This means a continuous ininterrupted service at 70 m3/h or, even better, being the installation on a ship discharge line, an actual service of about six (6) hours per day at the max flow rate of 300 m3/h for all the days, festivities included, from the date of the installation check (made on Jan 4th 1986) to the date of the present control.

It has also to be said that during such period the manufacturer has never been called to provide maintenance, nor the equipment has been subject to any "out of service" problem, and that, at last, the checks periodically made by this office have always given good results within the limit of legal tolerances.

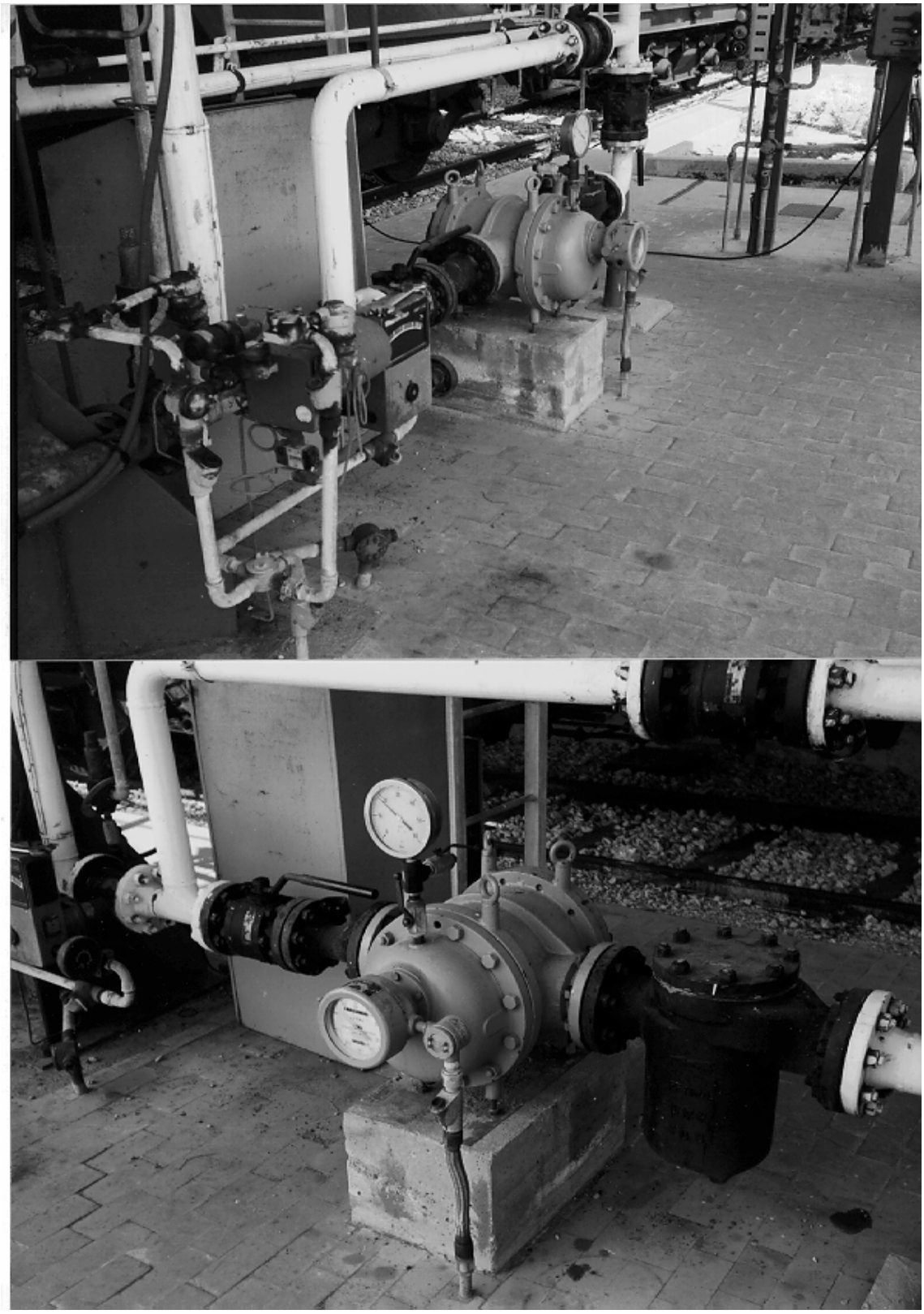
On the basis of the above considerations it may be said that "Petrol" PD flowmeter, when used for the measurement of G.P.L., shows all the characteristics of reliability, not only metrological but also mechanical, for a very long and very heavy service.

F iscal metering stations

P D meters and calibrated tank



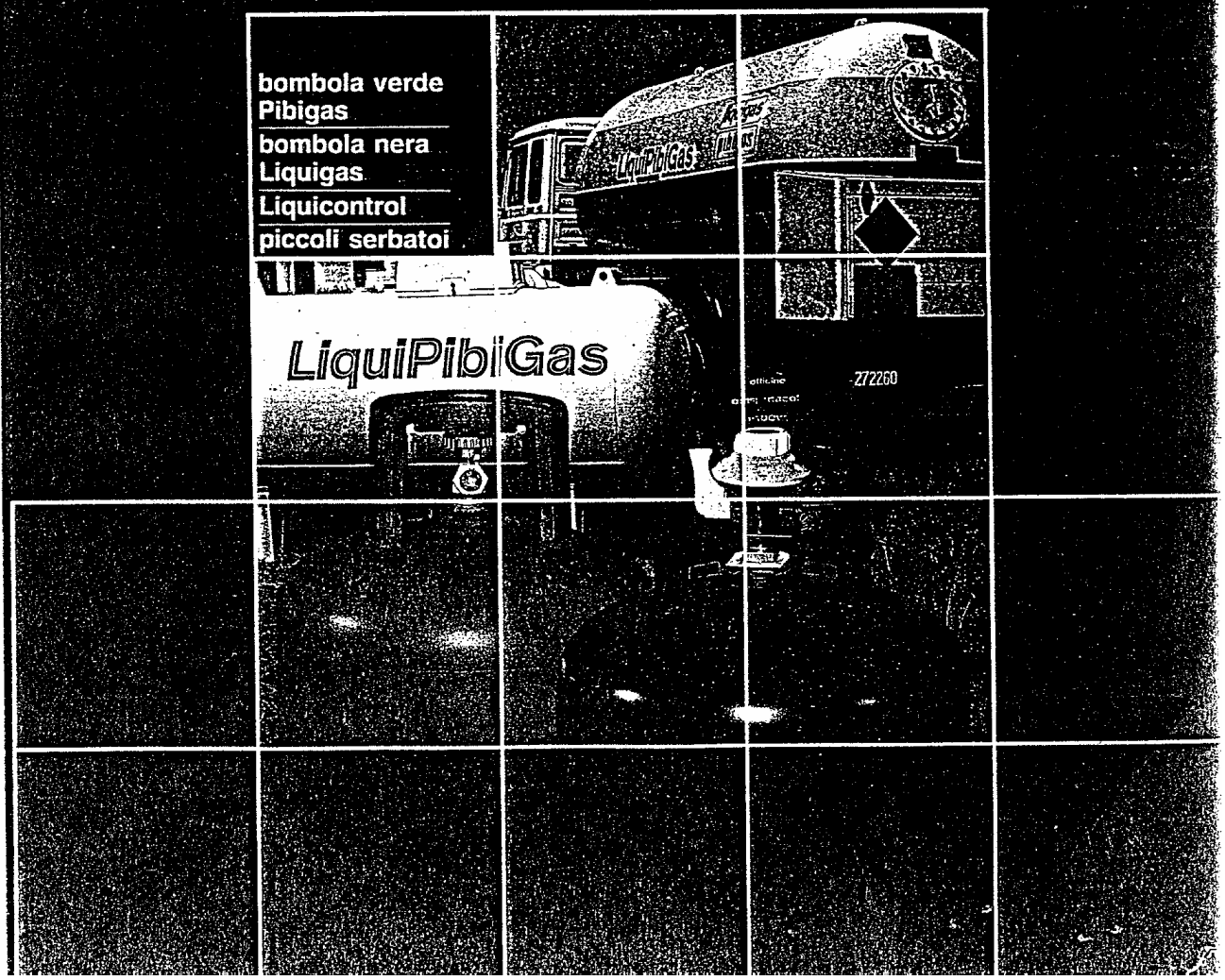
P D meters at rail tankers loading system



LiquiPibiGas

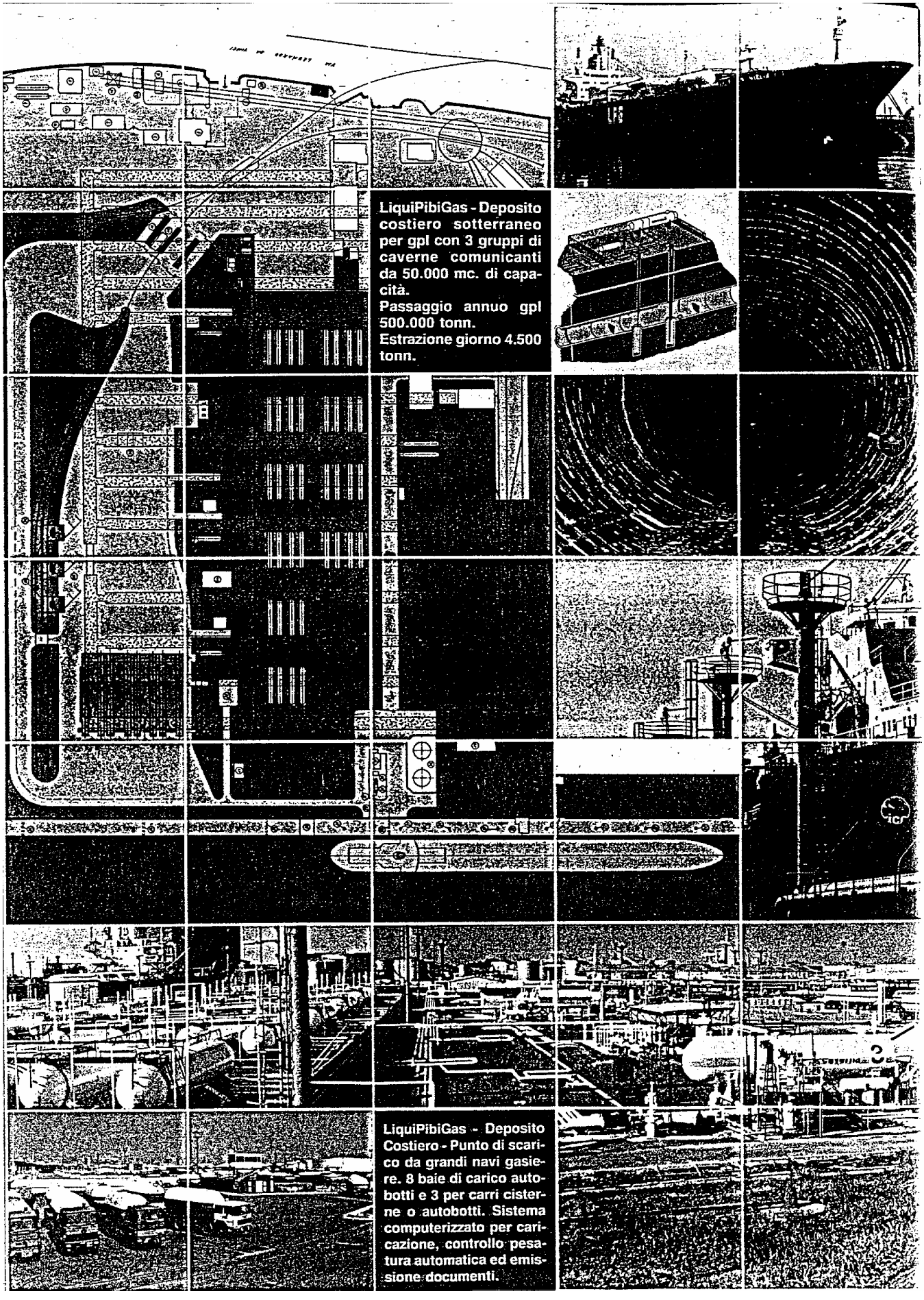
La Società con le due prime reti di distribuzione di gas liquido in Italia.

La Società con il più grande e moderno deposito per l'importazione di GPL in Italia.



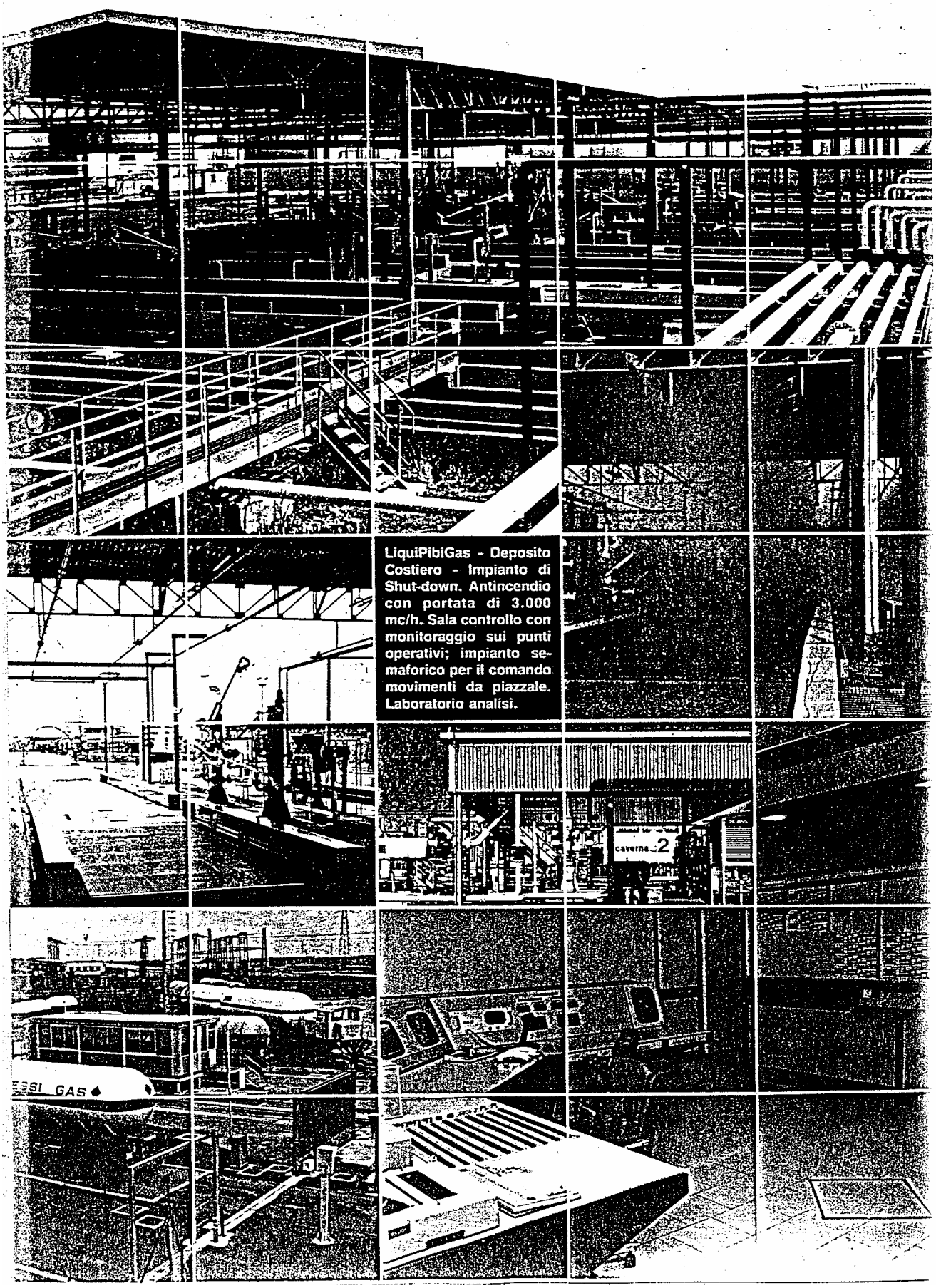
PMS Produzione Misuratori Volumetrici

PETROL Metering Systems



LiquiPibiGas - Deposito costiero sotterraneo per gpl con 3 gruppi di caverne comunicanti da 50.000 mc. di capacità.
Passaggio annuo gpl 500.000 tonn.
Estrazione giorno 4.500 tonn.

LiquiPibiGas - Deposito Costiero - Punto di scarico da grandi navi gasiere. 8 baie di carico autobotti e 3 per carri cisterne o autobotti. Sistema computerizzato per caricazione, controllo pesatura automatica ed emissione documenti.



LiquiPibiGas - Deposito Costiero - Impianto di Shut-down. Antincendio con portata di 3.000 mc/h. Sala controllo con monitoraggio sui punti operativi; impianto semaforico per il comando movimenti da piazzale. Laboratorio analisi.

LiquiPibiGas

Sede Centrale
20138 Milano - Via Medici del Vascello, 26 - Tel. 02/5201
Telex 310246 ENI per QI124 - Telefax 02/52025281

Deposito Costiero
57100 Livorno - Via L. Da Vinci, 23/A - Tel. 0586/424681-744
Telex 500470 LIPILI - Telefax 0586/424683

Unità commerciali

PIEMONTE
10071 - Borgaro Torinese (To)
Fr. Mappano Via Rivarolo 70 - tel. 011/2621772-3
28069 - Trecate (No)
Via S. Cassiano Loc. S/Martino - tel. 0321/79380-1
11020 - Issogne (Ao)
Frazione Mure - tel. 0125/960501

LIGURIA
16162 - Genova Bolzaneto (Ge)
Via N.S. della Guardia, 29 - tel. 010/710141-2
1245 - Fossano (Cn)
Fr. Cussanio, 2 - tel. 0172/691195
18100 - Imperia
Via Nazionale, 255 - tel. 0183/273960-24831

LOMBARDIA
22070 - Casnate C/Bernate (Co)
Via Platone, 24 - tel. 031/590804-520080
20017 - Rho (Mi)
Via Risorgimento, 18 - tel. 02/9313036-9302992
23100 - Sondrio (Concessionario)
Via Lavizzari, 25 - tel. 0342/215330

TRENTINO
37100 - Verona
Viale Del Commercio, 57/A - tel. 045/500938-504194-107
38100 - Trento
Via Brennero, 163 - tel. 0461/821393-660
46028 Sermide (Mn) (Concessionario)
Via F.lli Bandiera, 28 - tel. 0386/761038

VENETO-FRIULI
35020 - Albignasego (Pd)
Via Marco Polo, 33 - tel. 049/680211-680350
30027 - San Donà di Piave (Ve)
Musetta di Sopra, 1 - tel. 0421/53290-53222
33030 - Campoformido (Ud)
Via Zorutti, 88 - tel. 0432/663204
32100 - Belluno (Concessionario)
Via A. di Foro, 104 - tel. 0437/30600

EMILIA ROMAGNA
40056 - Crespellano (Bo)
Via Lunga, 2 - tel. 051/969051-046-960201-203
47023 - Cesena (Fo)
Via Rosoleto, 755 - tel. 0547/331301-2

TOSCANA-UMBRIA
57100 - Livorno
Via L. Da Vinci, 23/A - tel. 0586/424681-744
54031 - Avenza (Ms)
Via Igino Cocchi, 7 - tel. 0585/53942-55340-56977
50019 - Sesto Fiorentino (Fi)
Via Provinciale Lucchese, 133 - tel. 055/370995-311840
53018 - Sovicille (Si)
Loc. Pian dei Mori S.S. 73 - tel. 0577/349259
06100 - Perugia
Fr. Ponte Valleceppi - tel. 075/6920148-6920011-6920601
58100 - Grosseto (Concessionario)
Via Senese, 190/192 - tel. 0564/451167

LAZIO
00040 - Pomezia (Roma)
Località S. Palomba
tel. 06/9194345-6-9194120-9194037
01100 - Viterbo
S.S. Cassia Km. 86,500 - tel. 0761/250179
00131 - Roma
Loc. Salone Via Cipolletti, 25 - tel. 06/4090054

MARCHE-ABRUZZI
60015 - Falconara Marittima (An)
Via Castellaraccia - tel. 071/912885-446
66013 - Chieti Scalo
Via Erasmo Piaggio, 65 - tel. 0871/560850-560812
67100 - L'Aquila
S.S. 5 Bis Km. 1,500 - tel. 0862/25190

PUGLIA-CAMPANIA
70100 - Bari
Via Ascianghi, 23 - tel. 080/441585-17-441676
71100 - Foggia
Via Sprecacenere, 1 - tel. 0881/70873
86039 - Termoli (Cb)
Via Alto Pantano, 9 - tel. 0875/81128-85677
80013 - Casalnuovo di Napoli
Cancello Comunale, 1
tel. 081/8421262-8422759-8423585-033

BASILICATA PUGLIA SUD
74100 - Taranto
Via Galese, 151 - tel. 099/412609-033
74100 - Taranto
S.S. 7 Km. 3 Bivio 2° tato Sud - tel. 099/411892
85100 - Potenza
Contrada Bellemme Zona Ind. - tel. 0971/24463
73016 - Lecce
Via S. Cesario Km. 3 - tel. 0832/24150
84039 - Teggiano (Sa) Concessionario
Via Sottocorte - tel. 0975/84039

CALABRIA
87040 - Montalto Uffugo (Cs)
Scalo F.S. Via S. Rita, 4 - tel. 0984/934042-3
88019 - Vibo Valentia (Cz)
Via delle Industrie, 123 - tel. 0963/571717
89100 - Reggio Calabria
Contrada Calamizzi - tel. 0965/590318
88050 - Sellia Marina (Cz)
Loc. Petrizia - tel. 0961/964913

SICILIA
90146 - Palermo
Via Nuova, 116 Loc. S. Lorenzo Colli
tel. 091/6883110-155-6883103
90040 - Isola delle Femmine (Pa)
Via Palermo, 16 - tel. 091/677262
95030 - Catania
Loc. Piano D'Arci Zona Ind. 15° Strada
tel. 095/591503-591010
97100 - Ragusa
Località Fortugno - tel. 0932/24995
91026 - Mazara del Vallo (Tp)
Via Marsala, 219 - tel. 0923/933033
98057 - Milazzo (Me)
Contrada Mangiavacca - tel. 090/9287315-2100
93100 - Caltanissetta (Cl)
Contrada Calderano Zona Industriale
tel. 0934/29618-21784

SARDEGNA
09018 - Sarroch (Ca)
S.S. 195 al Km. 18,875 - tel. 070/900062-450
07020 - Golfo Aranci (Ss)
Via Lodi, 2 - tel. 0789/46902
07046 - Porto Torres (Ss)
Zona Industriale - tel. 079/516247-142
08100 - Nuoro (Concessionario)
Via Mannironi, 98 - tel. 0784/32218

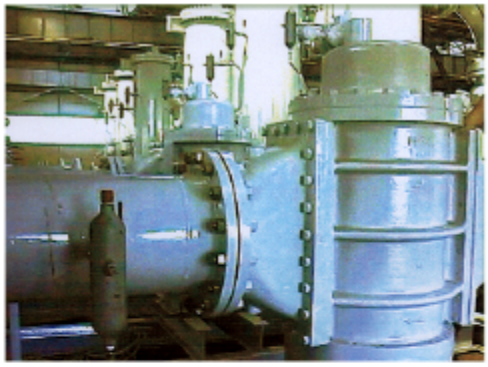
Muglad Marine Terminal - Port Sudan

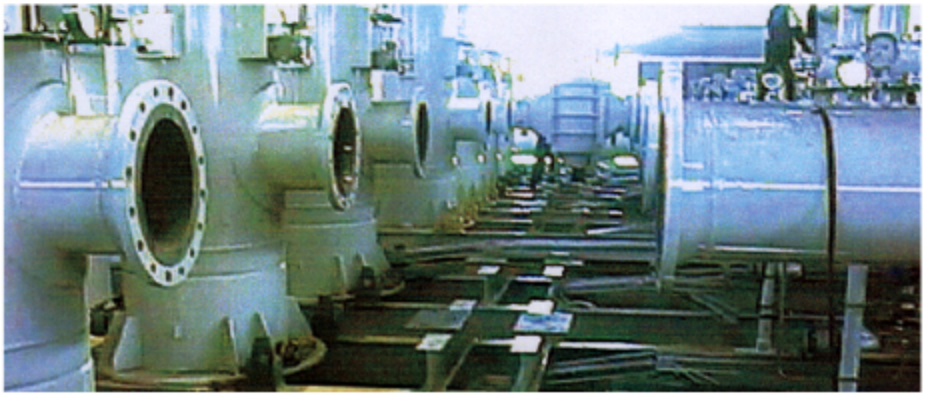
After several months of technical and commercial negotiations with Nuovo Pignone S.p.A. Bari and with the approval of their customer Techint S.A. Buenos Aires in March 1999 has been hissued the P.O. covering seven (7) 16" size "PETROL" PD meters for Muglad Marine Terminal in Port Sudan.
Apart the magnitude of the order, even from the bare stand point of the total amount, the other very interesting aspect of the supply is the worldwide circulation of "PETROL" as PD meters trade name for the many companies and countries involved in this project, namely:

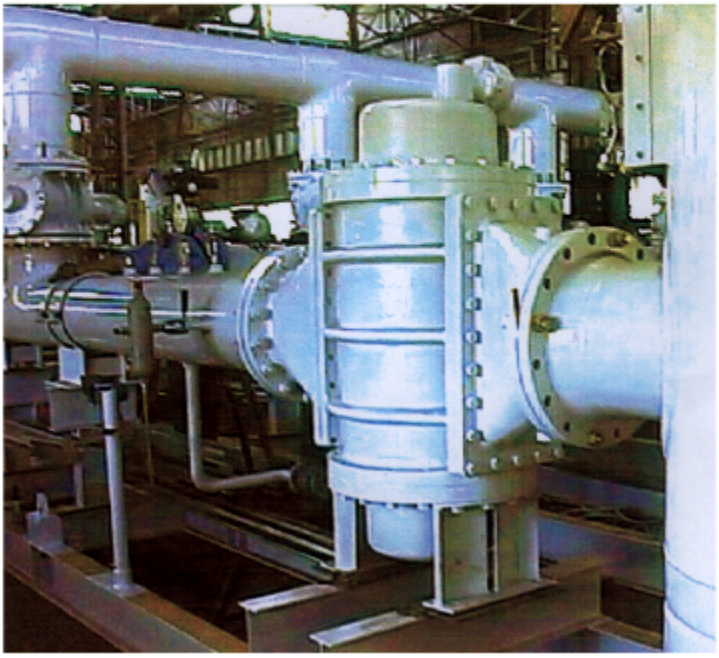
1. **Marine terminal property** (final client)
   China, Malesya, Canada and Sudan, the latter two (2) with minor share percentage.
2. **Main contractor**
   Techint S.A. Buenos Aires, Argentina.
3. **Measuring system supply**
   Nuovo Pignone S.p.A. Bari.
4. **Final client consultant**
   Malesian company.
5. **Plant maintenance**
   three (3) Malesian companies.

Furthermore PD meters would have been checked for performances with a ball type bi-directional prover manufactured by Nuovo Pignone Bari on the basis of an its own design.
Of course the tests would have been witnessed and certified by an external company qualified for this service.
Nuovo Pignone PD meters specifications sheet is hereto attached.

The PD meters were supplied and pre-commissioned within the end of the 1999 but due to a long sequence of miss-operations in the plant the commissioning of metering skids started only on May 2001.
Due to the spread of repeatability accepted by Nuovo Pignone S.p.A. and some problems with the swithcing time of the prover four (4) way valve the PD meters output frequency had to be increased from one (1) pulse / liter to about two (2) pulses per liter but anyway the repeatability of the PD meters was found to be very well within the total spread of 0,05% required by the contract.
Same pictures of the metering skids when still under realization in Bari are hereto enclosed. While a copy of the witnessed performance tests is available in the previous pages of this catalogue.







PD METERS – PROVING & K-FACTOR REPEATABILTY RECORD

METERING SYSTEM U-1018

SEVEN POINTS PROVING

DATE PERFORMED: (I) 30 APRIL 2002 (PD# 6, 7)
(II) 4 & 5 MAY 2002 (PD# 1, 2, 3, 4, 5)

Meter #1 (4/5/02)	K Factor @ Flowrate (m3/hr)						
	400	600	800	1000	1200	1400	1600
Run 1	1819.698	1820.481	1822.953	1826.455	1828.614	1829.907	1830.582
Run 2	1819.665	1820.774	1823.257	1826.131	1828.633	1830.036	1830.527
Run 3	1819.252	1820.505	1823.094	1826.052	1828.583	1830.081	1830.575
Run 4	1819.487	1820.573	1823.208	1826.389	1828.432	1829.817	1830.745
Run 5	1819.797	1820.314	1823.258	1825.914	1828.536	1830.030	1830.457
Max-Min	0.545	0.460	0.305	0.541	0.201	0.264	0.288
Average	1819.580	1820.529	1823.154	1826.188	1828.560	1829.974	1830.577
Repeatability	**0.030**	**0.025**	**0.017**	**0.030**	**0.011**	**0.014**	**0.016**

Meter #2 (4/5/02)	K Factor @ Flowrate (m3/hr)						
	400	600	800	1000	1200	1400	1600
Run 1	1822.449	1822.247	1822.567	1824.690	1827.734	1829.281	1831.315
Run 2	1822.393	1821.910	1822.643	1824.804	1828.033	1829.331	1830.838
Run 3	1822.147	1822.141	1822.479	1825.417	1827.931	1829.434	1831.237
Run 4	1822.623	1822.255	1822.641	1825.062	1827.519	1829.677	1830.546
Run 5	1822.577	1821.832	1822.591	1824.804	1827.784	1829.165	1831.236
Max-Min	0.476	0.617	0.164	0.727	0.514	0.512	0.769
Average	1822.438	1822.077	1822.584	1824.955	1827.800	1829.378	1831.034
Repeatability	**0.026**	**0.023**	**0.009**	**0.040**	**0.028**	**0.028**	**0.042**

Meter #3 (4/5/02)	K Factor @ Flowrate (m3/hr)						
	400	600	800	1000	1200	1400	1600
Run 1	1812.612	1816.482	1820.473	1823.868	1826.293	1827.341	1827.524
Run 2	1812.154	1816.714	1820.507	1823.863	1826.214	1827.578	1827.301
Run 3	1812.162	1816.582	1820.660	1824.142	1826.197	1827.275	1827.520
Run 4	1812.092	1816.328	1820.244	1823.734	1826.074	1827.417	1827.351
Run 5	1812.460	1816.293	1820.470	1824.034	1826.151	1827.431	1827.309
Max-Min	0.520	0.421	0.416	0.408	0.219	0.303	0.223
Average	1812.296	1816.480	1820.471	1823.928	1826.186	1827.408	1827.401
Repeatability	**0.029**	**0.023**	**0.023**	**0.022**	**0.012**	**0.017**	**0.012**

	Completed by (Subcontractor/Contractor)	Approved by (Contractor)	Reviewed by (Owner)
COMPANY	N. PIGNONE	TECHINT-SAIPEM JV	OGP
SIGNATURE			
NAME	FORTUNATO	DANIEL RIOS	A.B. RAHMAN
DATE	8-05-2002	08-MAY-02	08-May-02

PD METERS – PROVING & K-FACTOR REPEATABILTY RECORD

METERING SYSTEM U-1018

Meter #4 (4/5/02)	K Factor @ Flowrate (m3/hr)						
	400	600	800	1000	1200	1400	1600
Run 1	1813.377	1816.232	1818.883	1821.099	1822.499	1823.924	1824.796
Run 2	1812.877	1816.350	1819.097	1820.986	1823.038	1824.207	1824.896
Run 3	1813.202	1816.266	1819.292	1821.150	1822.693	1824.561	1824.620
Run 4	1813.044	1815.870	1819.457	1821.012	1822.759	1824.020	1824.467
Run 5	1813.187	1816.550	1818.946	1821.155	1823.392	1823.858	1825.041
Max-Min	0.500	0.680	0.574	0.169	0.893	0.703	0.574
Average	1813.137	1816.254	1819.135	1821.080	1822.876	1824.114	1824.764
Repeatability	**0.028**	**0.037**	**0.032**	**0.009**	**0.049**	**0.039**	**0.031**

Meter #5 (4/5/02)	K Factor @ Flowrate (m3/hr)						
	400	600	800	1000	1200	1400	1600
Run 1	1814.803	1817.512	1820.974	1822.944	1825.344	1826.459	1827.703
Run 2	1814.998	1817.362	1820.574	1823.022	1825.284	1826.864	1828.173
Run 3	1814.690	1817.298	1820.614	1822.958	1825.218	1826.554	1828.156
Run 4	1814.930	1817.152	1820.355	1822.997	1825.349	1826.580	1828.241
Run 5	1814.803	1817.210	1820.776	1823.216	1825.477	1826.500	1827.847
Max-Min	0.308	0.360	0.619	0.272	0.259	0.405	0.538
Average	1814.845	1817.307	1820.659	1823.027	1825.334	1826.591	1828.024
Repeatability	**0.017**	**0.020**	**0.034**	**0.015**	**0.014**	**0.022**	**0.029**

Meter #6 30/4/02)	K Factor @ Flowrate (m3/hr)						
	400	600	800	1000	1200	1400	1600
Run 1	1819.365	1820.474	1822.933	1824.935	1827.536	1829.480	1830.877
Run 2	1819.415	1820.191	1823.002	1825.654	1827.662	1829.597	1830.956
Run 3	1819.487	1820.281	1823.232	1825.541	1828.252	1829.782	1830.630
Run 4	1819.633	1820.728	1822.761	1825.464	1827.610	1829.819	1831.091
Run 5	1819.917	1819.884	1822.717	1825.686	1828.055	1829.861	1830.953
Max-Min	0.552	0.844	0.515	0.751	0.716	0.381	0.461
Average	1819.563	1820.312	1822.929	1825.456	1827.823	1829.708	1830.901
Repeatability	**0.030**	**0.046**	**0.028**	**0.041**	**0.039**	**0.021**	**0.025**

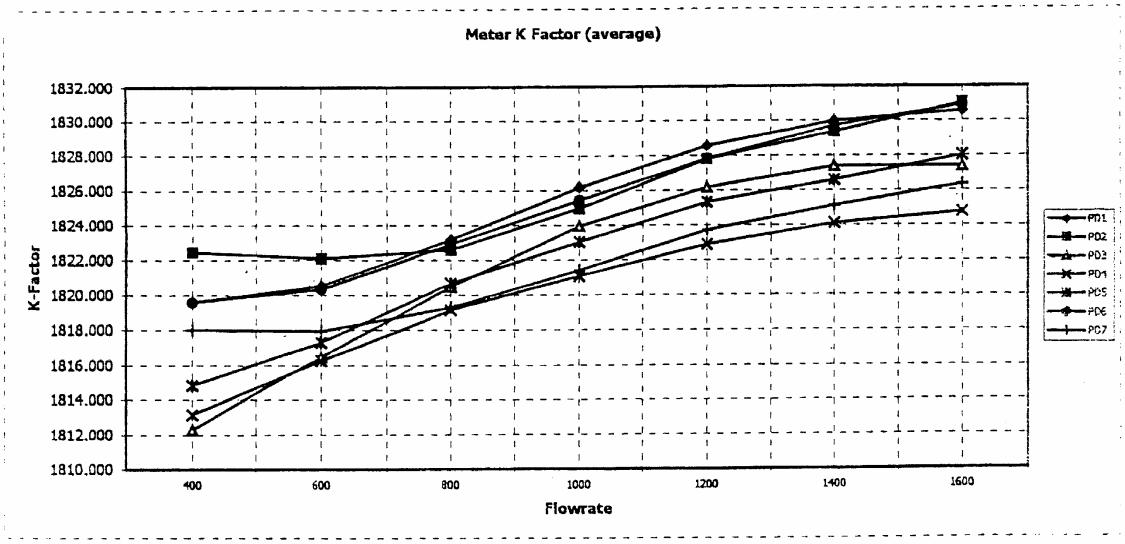
	Completed by (Subcontractor/Contractor)	Approved by (Contractor)	Reviewed by (Owner)
COMPANY	N. PIGNONE	TECHINT-SAIPEM JV	OGP
SIGNATURE			
NAME	FORTUNATO	DANIEL RIOS	A.B. RAHMAN
DATE	8-05-2002	08-MAY-02	08-May-02

PD METERS – PROVING & K-FACTOR REPEATABILTY RECORD

METERING SYSTEM U-1018

Meter #7 30/4/02)	K Factor @ Flowrate (m3/hr)						
	400	600	800	1000	1200	1400	1600
Run 1	1817.928	1817.970	1819.211	1821.319	1823.776	1825.250	1826.007
Run 2	1818.042	1817.998	1819.322	1821.204	1823.946	1825.033	1826.614
Run 3	1818.070	1817.974	1819.253	1821.280	1823.860	1825.274	1826.704
Run 4	1818.010	1818.063	1819.301	1821.479	1823.416	1825.120	1826.323
Run 5	1817.931	1817.803	1819.382	1821.834	1823.450	1824.900	1826.206
Max-Min	0.142	0.260	0.171	0.630	0.530	0.374	0.697
Average	1817.996	1817.962	1819.294	1821.423	1823.690	1825.115	1826.371
Repeatability	0.008	0.014	0.009	0.035	0.029	0.020	0.038

K-FACTOR CURVES



NOTES:

1. REPEATABILITY OF FIVE CONSECUTIVE RUNS SHALL BE LESS THAN 0.5%
2. EQUATTION OF REPEATABILITY

$$\text{REPEATABILITY (\%)} = \text{K-FACTOR}_{max} - \text{K-FACTOR}_{min} / \text{K-FACTOR}_{ave} \times 100$$

	Completed by (Subcontractor/Contractor)	Approved by (Contractor)	Reviewed by (Owner)
COMPANY	N. PIGNONE	TECHINT-SAIPEM JV	OGP
SIGNATURE			
NAME	FORTUNATO	DANIEL RIOS	AB RAHMAN
DATE	8-05-2002	08-MAY-02	08 MAY-02

PD meters Production since 1970

Qualifications and final destinations

"PETROL" PD meters

Qualification / Main customers

a

ABB LUMUS S.P.A.
ABB SOLUTION P.I. S.P.A.
ABB INDUSTRI S.A. (NORWAY)
ABB INDUSTRIA S.P.A.
ABB ENERGY AUTOMATION S.P.A.

ABBOTT S.P.A.

AGIP S.P.A.
AGIP GAS B.V. LYBIA
AGIP PETROLI S.P.A.

A.P.S. S.P.A.

ANSALDO ENERGIA S.P.A.
ANSALDO CALDAIE S.P.A.

ALSTOM POWER S.P.A.
ALSTOM POWER INC. (USA)

API S.P.A.

ARAMCO OVERSEAS SA (HOLAND)

A.C.R.A.F. S.P.A (GRUPPO ANGELINI)

b

BRISTOL MYERS SQUIBB S.P.A.
BONATTI S.P.A.
B.R.A.I. S.P.A. (EX ASFALTI BRAITNER)
BROWN & ROOT LDT (UK)
BOATO INTERNATIONAL S.P.A.
BRACCO IMAGING S.P.A.

c

CHEMI S.P.A.
COSTIERO GAS LIVORNO S.P.A.
CONDEA AUGUSTA (DA CAMBIARE)

d

DANIEL EUROPE LTD SCOTLAND
DANIELI S.P.A. (DA SISTEMARE)

e

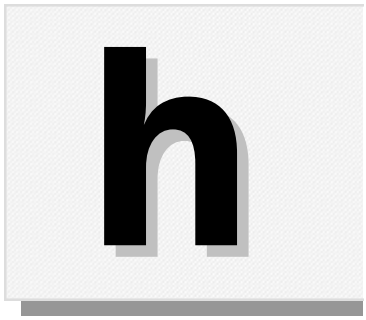
ENEL S.P.A.
ENEL POWER S.P.A.
EURALLUMINA S.P.A.
ENGINEERING INDIA LDT (E.I.L. INDIA)
ENICHEM S.P.A.
ESSAR OFFSHORE LTD INDIA
EDISON GAS S.P.A.
EDISON OIL S.P.A.
EMERSON GROUP (USA)
ERG PETROLI S.P.A.

f

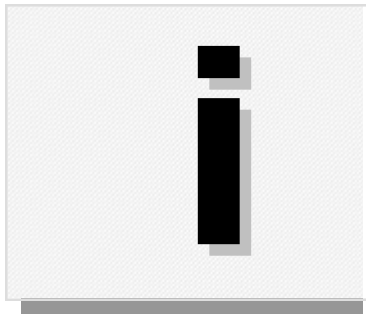
FISHR & PORTER LTD (UK)
FINCANTIERI S.P.A.
F.LLI COSULICH S.P.A.
FELCA INTERNATIONAL LTD (TAIWAN)
FIRESTONE/BRIDGSTONE S.P.A.

g

GENERAL NAVAL CONTROL S.R.L.
GEEP (IRAQ)



HINDUSTAN SHIPYARD LTD (INDIA)



ITALFLUID GEOENERGY S.P.A.
INDENY PETROLEUM REFINRY CO (ZAMBIA)
I.I.P. S.P.A.
INFINEUM S.P.A: (EX EXXON CHEMICAL)
INDIAN OIL COMPANY CO (INDIA)
ISE S.P.A.
IANUA S.R.L.

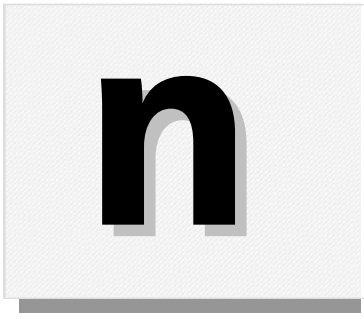
k

KAVERY ENGINEERING LTD (INDIA)

l

LONZA S.P.A. (EX ALUSUISSE GROUP)
LIQUIGAS S.P.A.
LINDE IMPIANTI S.P.A.
LABORATORI MAG S.R.L.

MANFREDONIA VETRO S.P.A.
MONTELL ITALIA S.P.A.
MONTEFIBRE S.P.A.



NUOVO PIGNONE S.P.A.
NOOC (IRAQ)

O

OIL & NATURAL GAS CO (O.N.G.C. INDIA)

P

PRINCESS CRUISES LTD (USA)

PREMABERGO ITALLIANA S.P.A.

PETROBRAS SA (BRASIL)

r

RECORDATI S.P.A.
RAFFINERIA DI ROMA S.P.A.
REPCO S.R.L.
ROVER VERNICI E COLORI S.P.A.

S

SARAS S.P.A.
SNIA ENGINEERING S.P.A.
SILOMAR S.P.A.
SNAMPROGETTI S.P.A.
SAIPEM S.P.A.
SOLVEY & C.IE. S.P.A.

SOLVAY PORTUGAL SA (PORTUGAL)

SNAM S.P.A.

t

TECNIP S.P.A.

TECHINT CIMIMONTUBI S.P.A.

TECNIMONT S.P.A.

THERMOMEASURENT LTD (UK)

Z

ZAMBON GROUP

List of final destination countries

ALGERIA
ARABIA SAUDITA
ARGENTINA
AUSTRALIA
AUSTRIA

BAHRAIN
BANGLADESH
BRASILE
BULGARIA

CAMBOGIA
CILE
CINA
COLOMBIA
CONGO
CROAZIA
CUBA

DUBAI

EGITTO
EMIRATI ARABI
ESTONIA
ETIOPIA

FILIPPINE
FINLANDIA
FRANCIA

GERMANIA
GIAPPONE
GIORDANIA
GRECIA
GUAM

HAITI

INDIA
INDONESIA
INGHILTERRA
IRAN
IRAQ

JAMAICA
JUGOSLAVIA

KENIA
KOREA
KUWAIT

LIBANO
LIBIA
LUSSEMBURGO

MALESIA
MAROCCO
MESSICO

NEPAL
NIGERIA
NORVEGIA
NUOVA ZELANDA

OLANDA
OMAN

PAKISTAN
POLONIA
PORTOGALLO

QATAR

REPUBBLICA CECA
ROMANIA
RUSSIA

SCOZIA
S.DOMINGO
SINGAPORE
SIRIA
SLOVACCHIA
SOMALIA
SPAGNA
STATI UNITI

SUD AFRICA
SUDAN
SVEZIA
SVIZZERA

TANZANIA
TUNISIA
TURCHIA

U.A.E.
UCRAINA
UNGHERIA
URUGUAY

VENEZUELA
VIETNAM

YEMEN

ZAMBIA