DINI ARGEO
Scales - Weighing systems
www.diniargeo.com

ATEX
POWER SUPPLIER

PW200XRD
PW200XR

Manual

12.10 rev.12

INDEX

1 INTRODUCTION

The purpose of this manual is to inform the user of the technical features of the PW200XRD and PW200XR atex power supplier.

This manual has been prepared with the utmost care, but any notifications of imprecise information is much appreciated.

2 SYMBOLS

Please find below the symbols used:
- in the manual to recall the attention of the reader.
- on the instrument to recall the attention of the user.

⚠	**!!CAREFUL!!** This operation must be made by specialised personnel
CE	CE CONFORMITY
Ex	NOTES WHICH SPECIFICALLY CONCERN THE USE OF THE INSTRUMENT IN A HAZARDOUS AREA
	The crossed-out wheeled bin on the product means that at the product end of life, it must be taken to separate collection or to the reseller when a new equivalent type of equipment is purchased. The adequate differentiated refuse collection in having the product recycled, helps to avoid possible negative effects on the environment and health and supports the recycling of the materials of which the equipment is made. The unlawful disposal of the product by the user will entail fines foreseen by the current regulations.

For reasons of simplicity, the “or other device” phrase has been omitted next to the “DFWATEX indicator” or “DFWATEX”, therefore where “DFWATEX” is mentioned, “DFWATEX or other device” is meant.

For reasons of simplicity, the name “PW200” is used for the PW200XRD and PW200XR device; therefore where "PW200" is mentioned, "PW200XRD” and “PW200XR" is meant.

3 WARNING

THIS FILE CONTAINS THESE FOLLOWING MANUALS:

- The use of the PW200 device in hazardous areas requires a special attention and special precautions during the use and maintenance

- Do not use the power supplier in a zone classified as unprotected by the hazardous-proof case:
  - device purchase code: PW200XRxxx, **only board: TO BE USED ONLY IN NON CLASSIFIED ZONE**
  - purchase code of the whole: PW200XR**D**xxx**, board + Exd case**

- Avoid accumulations of dust

- Clean only with damp cloth and/or antistatic products

- Only for PW200XRD:
  - close with tightening grain
  - do not open with live voltage
  - ground the hazardous-proof case
  - close all the holes of the Exd case with plugs and/or cable glands for the entrance of the cables.
  - use only suitable Exd plugs and/or cable glands.
  - do not paint the Exd case

- The PW200 device has been approved for zones of use with precise characteristics: do not install and use the device in other environments besides these.

- The installation, maintenance and repair of the PW200 device must be made only by qualified and authorised personnel and with the approval of expert technicians.

- The maintenance must be made after removing the voltage/power from the equipment.

- Only spare parts approved by Dini Argeo must be used.

- The safety of the hazardous-proof device must be guaranteed **only if** the device is installed, used and cared for, following the instructions given in this manual.

- Do not cover the device with coverings made up of materials which could be electrostatically charged.

- It's forbidden to modify or repair the device with components non conforming to the certification; this action compromises the intrinsic safety of the instrument (**with consequent loss of the Ex approval**) and nullification of the product warranty.

- All the PW200 device connections must be made respecting the norms applied in the zone and in the installation

environment.

- The cable to be used for the power supply must be an armed, with minimum section of 3x0,75 mm². If the device is installed out of the classified zone, it's possible to use any CEI 20-22 cable. To be installed by standard industrial norms.

- For the connection of the Y1, TB3 and TB4 intrinsic safety terminals it's possible to use also a standard cable, for example, CEI 20-22 with 0,25 mm² minimum section of the wire. The cables must be marked "Exi" or light blue.

- The sheathings of the eventual shielded cables must be grounded in the connected external devices, in order to not complicate too much the cabling in the box.

- Ground the Exd box using its appropriate external ground pin, and the electronic board of the PW200 power supplier through the relative built-in ground terminal, on the TB1 power supply connector.

- The cabling of the cables must be made by leaving a long enough section of the various cables for cabling, but not too long, because if a cable detaches itself from its terminal, it would not invade the other zone (intrinsically or not intrinsically safe); in any case there is also a dividing partition, in the version with the Ex d GUB-0 case in order to avoid this possibility, which satisfies the IEC EN 60079-14: 2007 norm, section 12.2.3. The dividing partition between the ATEX and non ATEX zone must be always made as described in the IEC EN 60079-14: 2007 norm, section 12.2.3, whether or not the board is put in a safe zone in a generic box with a minimum IP20 or if it's put in a hazardous area inside an Ex d box.

- The standard RAMCRO LiYY 12x0,34 CEI 20-22 cable, included with the PW200XRDxxx for connection with the DFWATEX2GD, is type B cable and must be adequately protected from the damages.

- It is forbidden to connect the device to modules not foreseen by the certification; this action compromises the intrinsic safety of the instrument (**with consequent loss of the Ex approval**). Contact the manufacturer, Dini Argeo srl for further information.

- Read and apply also all instructions of the attached manuals at the end of this manual: Exd case manual, cable gland manual, and plug manual.

4 DESCRIPTION OF THE SYSTEM

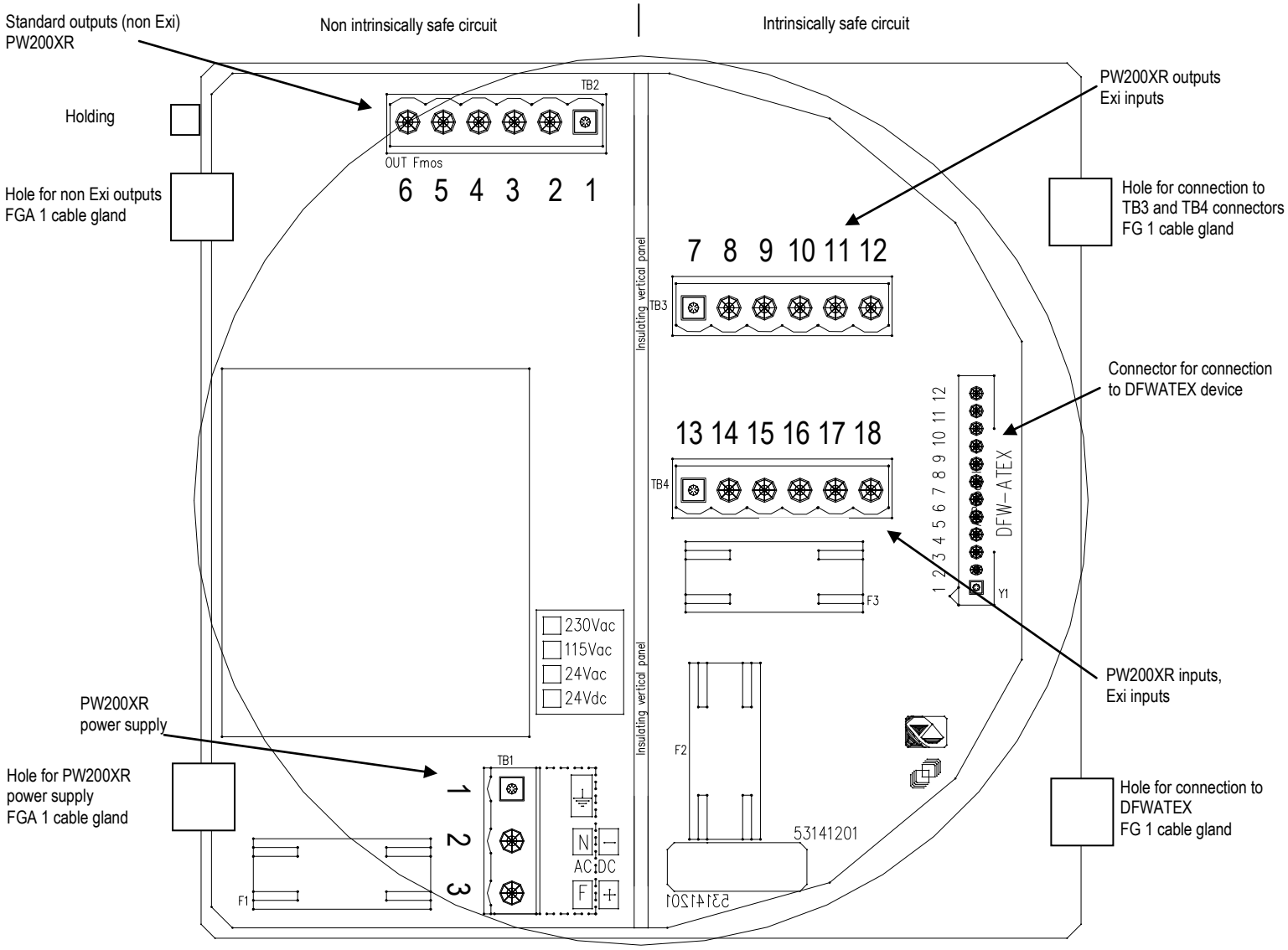
The device under exam is a power supplier specifically foreseen for the already certified "DFWATEX" instrument, or for other devices. The power supplier is made up of an electronic board, (see "INSTRUMENT POWER SUPPLY" section) which generates the necessary continuous barriered voltage (about 10,5V); an additional phase allows for a better use of the digital I/O lines of the DFWATEX or other devices, both for hazardous as well as for non-hazardous zones.
The electronic board, if used in a hazardous zone, must be inserted in a case certified as II 2GD Ex d or greater.
The PW200XRD is the power supplier version certified in its Exd GUB-0 case.
If used in non classified zone, the protection with any case of IP20 or greater is sufficient. The PW200XR version of the power supplier is the version with only the electronic board.

The PW200 is a device designed and made according to the ATEX 94/9/CE directive, for the intrinsic safety protection mode, according to the EN 50014/50020 norms.
The following analysis has been positively compared with the corresponding IEC EN 60079-0 and IEC EN 60079-11 norms.

Protection mode

PW200XRxxx: standard version, installed in non classified zone:
II (2) G [Ex ib] IIC with environment temperature = - 20°C ÷ + 40°C
(PW200XRxxx **device purchase code**, **only board**)

PW200XRDxxx: Ex d version, installed in zone 1 and zone 21:
II (2)/2 G [Ex ib]/Ex d IIC T4 Gb with environment temperature = - 20°C ÷ + 40°C
II (2)/2 D [Ex ib]/Ex tb IIIC T140°C Db with environment temperature = - 20°C ÷ + 40°C
(PW200XR**D**xxx **purchase code of the whole, board + Exd case**)



Ex d GUB-0 case dimensions: 150x150x130mm; weight 2,52kg

5 SAFETY DATA / LABEL PARAMETERS

intrinsic safety circuits:

Y1 connector: DFWATEX power supply

Connector	U_O	I_O	Lo	Co
Y1 (mors.: 1)	12,6V	340mA	700µH	6,8µF

Y1 connector: connection to the DFWATEX output

Connector	U_i	I_i	L_i	C_i	P_i
Y1 (mors.:4,5,6,7)	40V	58mA	0µH	0µF	85mW
Y1 (mors.:9,10,11,12)	40V	30mA	0µH	0µF	110mW

TB3 connector: connection to the inputs (the outputs of signal) of the PW200XR to Exi devices.
TB4 connector: connection to the inputs (the inputs of signal) of the PW200XR to Exi devices.

Connector	U_i	I_i	L_i	C_i	P_i
TB3	40V	30mA	0µH	0µF	110mW
TB4	40V	30mA	0µH	0µF	110mW

If the TB3 outputs of signal (Exi inputs) and the inputs of signal TB4 (Exi inputs) of the PW200 are powered by the intrinsic safety voltage (10V5X) inside the PW200, the sum of the maximum absorbable currents from the 4 Exi outputs and/or from the 4 input is of up to 40mA. For example if only one output is used it is possible to absorb up to 40mA.
The currents absorbed from each TB4 input is maximum 2,5mA; this value has been calculated taking into considering only the input circuit, for example: mechanic button, 10V5X power supply and single input.

6 MARKINGS

Markings:
PW200XRxxx *non classified zone:*

- **CE 1131 Ex II (2) G [Ex ib] IIC**

The power supplier must be installed in a safe zone inside a box that is at least IP20 and must be connected to atex devices, and positioned in zone 1 IIC and/or zone 21 (or less dangerous zones) of category 2G and/or 2D respectively or better (1G and/or 1D). With a category 2G device it must be protected with at least a "Ex ib" protection mode (or greater than "Ex ia"). If the marking of the linked device specifies its suitability to the GAS IIC group, it is implied that it is suitable also for environments containing gases belonging to groups IIB and IIA.
PW200XR**D**xxx *zone 1 and zone 21:*

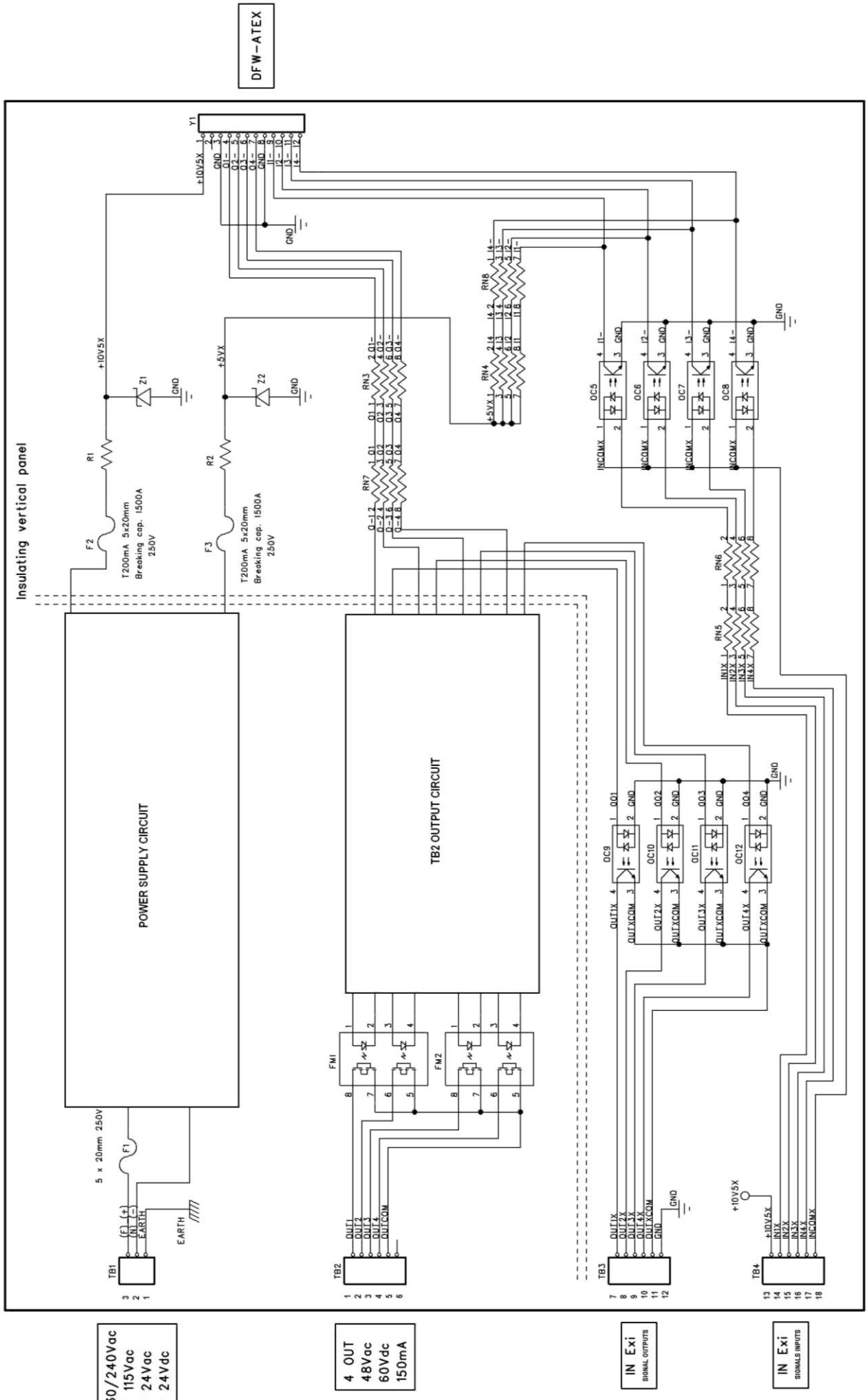
- **CE 1131 Ex II (2)/2 G [Ex ib]/Ex d IIC T4 Gb**
- **CE 1131 Ex II (2)/2 D [Ex ib]/Ex tb IIIC T140°C Db**

The first marking indicates that the PW200XRD is protected for the gases through the Exd hazardous-proof case and can be installed in zone 1 IIC (Ta -20°C ÷ +40°C) or less dangerous zones, and the maximum temperature that can be reached, if there is a foreseeable breakdown, is T4.
The second marking indicates that the PW200XRD is protected for dust in high temperature and can be installed in zone 21 (Ta -20°C ÷ +40°C) or less dangerous zones, and the maximum temperature that can be reached, in case of a foreseeable breakdown, is T140°C.
The power supplier must be installed in zone 1 IIC (Ta -20°C ÷ +40°C) and/or zone 21 (Ta -20°C ÷ +40°C) (or less dangerous zones) and must be connected to atex devices put in zone 1 and/or 21 (or less dangerous zones), of category 2G and/or 2D respectively or better (1G and/or 1D) and with "Ex ib" protection mode (or greater than "Ex ia"). If the marking of the linked device specifies its suitability to the IIC gas group, it is implied that it is suitable also for environments containing gases belonging to groups IIB and IIA.

1131 N° of notified body (CEC) for the ATEX/Q surveillance
II group II (surface)
2 device with category 2
G explosive atmospheres caused by gases, hazes or vapours
D explosive atmospheres with the form of a cloud of inflammable powders and layers, deposits and accumulations of inflammable powders

Hazardous zones		Category according to the 94/9/CE directive
Gases, hazes or vapours	Zone 0	1G
Gases, hazes or vapours	Zone 1	1G or 2G
Gases, hazes or vapours	Zone 2	1G, 2G or 3G
Powders	Zone 20	1D
Powders	Zone 21	1D or 2D
Powders	Zone 22	1D, 2D or 3D

7 ELECTRICAL SCHEME



8 POWER SUPPLY OF THE INSTRUMENT

- Power supply:
  - PW200XRD230 and PW200XR230 power supplier: 230Vac ± 10% (50÷60 Hz)
  - PW200XRD115 and PW200XR115 power supplier: 115Vac ± 10% (50÷60 Hz)
  - PW200XRD24A and PW200XR24A power supplier: 24Vac ± 10% (50÷60 Hz)
  - PW200XRD24D and PW200XR24D power supplier: 24Vdc ± 10%

The cable to be used for the power supply must be an armoured, with minimum section of 3x0,75 mm².
If the device is installed out of the classified zone, it is possible to use any CEI 20-22 cable, to be installed by standard industrial norms.

9 PW200 CONNECTION TO EXTERNAL DEVICES

Y1 connector (connection to the DFWATEX and DFWATEXIO indicators):

R1= R2= 10Ω 5% 2W
RN3= RN7= 1000Ω 5% 1/4W
RN4= RN8= 4,7KΩ 5% 1/4W

1-3 terminal circuit (connection to the power supply of the DFWATEX):
Vnom= 10,5V
Uo = 12,6V
Io = 0,34A
Co= 6,8µF
Lo= 700µH

The verification of the output parameters (Uo, Io, etc.) of the PW200, satisfies the input parameters (Ui, Ii, etc.) of the DFWATEX indicator.

4-5-6-7-8 terminal circuit (connection to the digital outputs of the DFWATEX):
These are information INPUTS for the PW200 as well as INPUTS of electrical power.
RN3=RN3A= 1000Ω 5% 1/4W.
Ui= 40V
Ii= 58mA
Pi= 85mW
Ci= 0pF (insignificant)
Li= 0mH (insignificant)

DFWATEX digital outputs (Y3 connector)
Uo= 5,9V Io= 52mA Po= 76mW Co= 40µF Lo= 10mH

8-9-10-11-12 terminal circuit (connection to the digital inputs of the DFWATEX):
These are information OUTPUTS from the PW200, but INPUTS of electric power.
RN4= RN8= 4,7KΩ 5% 1/4W
Ui= 40V
Ii= 30mA
Pi= 110mW
Ci= 0pF (insignificant)
Li= 0mH (insignificant)

DFWATEX digital inputs (Y4 connector):
Uo= 5,9V Io= 6mA Po= 10mW Co= 40µF Lo= 250mH

The verification of the output parameters (Uo, Io, etc.) of the inputs and of the digital outputs of the DFWATEX, satisfies the input parameters (Ui, Ii, etc.) of this PW200 board.

Taking into consideration the standard RMACRO LiYY 12x0,34 mm² CEI 20-22 II cable, used for connecting the PW200 to the DFWATEX indicator which has the following parameters:
Rmax = 59Ω/Km
Cc = 130pF/m
Lc = 3mH/Km
the electric coordination:
Co >= C tot cable + Ci
Lo >= L tot cable + Li
is satisfied also with a cable long up to 100m; however, since the I/O signals of the DFWATEXIO are TTL, the maximum length of this cable is 1,1m.

Y1 CONNECTOR OF THE PW200 CONNECTION CABLE to DFWATEX and DFWATEXIO:

COLOUR	Y1 CONNECTOR OF PW200	DFWATEX TERMINAL BOARD	DESCRIPTION
Red	1	+ of Y2 mother board (terminal + of DFWATEX power supply)	Excitation +
Green	2	N.C.	-
Black	3	- of Y2 mother board (terminal - of DFWATEX power supply)	Excitation -
Grey	4	1 of Y3 DFWATEX expansion (DIGITAL OUTPUT)	Output1
Red/ Blue	5	2 of Y3 DFWATEX expansion (DIGITAL OUTPUT)	Output2
Yellow	6	3 of Y3 DFWATEX expansion (DIGITAL OUTPUT)	Output3
Brown	7	4 of Y3 DFWATEX expansion (DIGITAL OUTPUT)	Output4
White	8	GND of Y3 DFWATEX expansion (DIGITAL OUTPUT)	GND
Blue	9	1 of Y4 DFWATEX expansion (DIGITAL INPUT)	Input1
Grey/ Pink	10	2 of Y4 DFWATEX expansion (DIGITAL INPUT)	Input2
Pink	11	3 of Y4 DFWATEX expansion (DIGITAL INPUT)	Input3
Purple	12	4 of Y4 DFWATEX expansion (DIGITAL INPUT)	Input4

N.C. not connected

TB3 connector (connection of the PW200 outputs to the Exi devices):

7-8-9-10-11-12 terminal circuit
These are information OUTPUTS from the PW200, but INPUTS of electrical power.

Connection of the outputs using an external intrinsically safe voltage:
Ui= 40V
Ii= 30mA
Ci= 0pF
Li= 0mH
If the maximum current is 40mA, for the calculations take into consideration that the drop out voltage on the output is of about 1Vdc.

Connection of the outputs using the internal intrinsically safe voltage (terminal 13 TB4) of the indicator at 10,5V (for example to connect an electromagnetic valve with Ex ia intrinsic safety, which has defined only the input parameters (Ui. Ii, etc.):
Vnom= 10,5V
I absorbable= 40mA
Uo = 12,6V
Io = 0,34A
Ipicco= 1,326A
Co= 6,8µF
Lo= 700µH

To use the voltage of the indicator the installer must use the voltage (about 10,5V) of terminal 13 of the TB4 connector and the GND of terminal 12 of the TB3 connector and execute the cabling of the outputs of TB3.
In this case the installer must connect a resistance value with Rx layer for each output so that the resulting current of the Uo/(Rx - 5%) gives a Ix current =< 30mA and the Px= $(Ix)^2$ x Rx must be =< the power of the used resistance. The voltage on the BJT will surely be less than the Ui of the output, since there will be at least the Rx series resistance, and in any case, the Uo (12,6V) is less than the Ui itself of the TB3 connector.
The customer should also verify the electrical coordination of the input device being used and with the Uo, Io, Co, Lo and Ui, Ii, Ci and Li values of the PW200.
The layer resistances in Rx series can be placed on the output terminals directly on the board in the Exd box and completely protected with heat-shrinking sheathing.

If the TB3 outputs of PW200 (Exi inputs) are powered by the intrinsic safety voltage (10V5X) inside the PW200, the sum of the maximum absorbable currents of the 4 Exi outputs is up to 40mA, therefore, if just one output is used it is possible to absorb up to 40mA.

Electrical features of the intrinsically safe power supply of the PW200:
Nominal voltage of the 13 TB4 (10V5X) terminal = 10,5V
Maximum absorbable current of the 13 TB4 (10V5X) terminal = 40mA

TB4 connector (connection of the inputs of the PW200 to the Exi devices):

13-14-15-16-17-18 terminal circuit
These are information INPUTS for the PW200 as well as INPUTS of electrical power.

Connection of the inputs using an electrical intrinsically safe voltage:
Ui= 40V
Ii= 30mA
Ci= 0pF (insignificant)
Li= 0mH (insignificant)
RN5=RN6= 2200Ω 5% 1/4W

Connection of the inputs using the internal intrinsically safe voltage (terminal 13 TB4) of the indicator at 10,5V (for example for connecting an intrinsically safe button panel):
Vnom= 10,5V
I absorbable= 40mA
Uo = 12,6V
Io = 0,34A
Ipicco= 1,326A
Co= 6,8µF
Lo= 700µH
To use the indicator voltage the installer must use the voltage of terminal 13 of the TB4 connector and the GND of terminal 12 of the TB3 connector and execute the cabling of the TB4 inputs.

In this case, the installer using an atex panel button, for example “Ex i” with Ci= 0pF and Li= 0mH, must execute only the electrical coordination with his input device and with the Uo, Io, Co, Lo and Ui, Ii, Ci and Li values of the PW200XR.

If the inputs of signal TB4 (Exi inputs) of the PW200 are powered by the intrinsic safety voltage (10V5X) inside the PW200, the sum of the maximum absorbable currents from the 4 input is of up to 40mA. The currents absorbed from each TB4 input is maximum 2,5mA; this value has been calculated taking into considering only the input circuit, for example: mechanic button, 10V5X power supply and single input.

Electrical features of the intrinsically safe power supply of the PW200:
Nominal voltage of the 13 TB4 (10V5X) terminal = 10,5V
Maximum absorbable current of the 13 TB4 (10V5X) terminal = 40mA

TB2 connector (connection of the non protected outputs of the PW200 to external devices):

1-2-3-4-5-6 terminal circuit

Connection of the outputs using an external voltage:
This part of the circuit is used for interfacing the "Ex i" outputs of the DFWATEX with eventual non "Ex i" devices, like mechanical non ATEX relays.
Umax= 48Vac o 60Vdc
Imax= 150mA
The resistance of the outputs, between terminal 5 (the common of the outputs) and one of the outputs is about 10Ω.

The cable to be used for the power supply must be an armoured, with minimum section of 0,25 mm².
If the device is installed out of the classified zone, it's possible to use any CEI 20-22 cable. To be installed by standard industrial norms.

GENERAL NOTES:

For connecting the Y1, TB3 and TB4 intrinsic safety terminals it is possible to use also a standard cable, for example, CEI 20-22 with 0,25 mm² minimum section of the wire. The cables must be marked "Ex i" or light blue.

The sheathings of the eventual shielded cables must be earthed in the connected external devices, in order to not complicate too much the cabling in the box.

The cabling of the cables must be made by leaving a long enough section of the various cables for cabling, but not too long, because if a cable detaches itself from its terminal, it would not invade the other zone (intrinsically or not intrinsically safe); in any case there is also a dividing partition, in the PW200XRD version (with Ex d GUB-0 case) to avoid this possibility, which satisfies the IEC EN 60079-14: 2007 norm, section 12.2.3.
The dividing partition between the ATEX and non ATEX zone must be always made as described in the IEC EN 60079-14: 2007 norm, section 12.2.3, whether or not the board is put in a safe zone in a generic box with a minimum IP20 or if it's put in a hazardous area inside an Ex d box.

For connecting the board of the PW200XRD to the I/O devices, PW200XRD power supply and connection to the DFWATEX, a FGA 1 cable gland (cable gland for armoured cable) and a FG 1 cable gland (cable gland for non armoured cable) are supplied: the first FGA 1 cable gland must be used to power the PW200XRD, while the second FG 1 cable gland is used for connecting the Y1 terminal board of the PW200XRD to the DFWATEX indicator.
With the PW200IO option another two cable glands are supplied: a FGA 1 cable gland (cable gland for armoured cable) for connecting the non Exi outputs (TB2 connector) to the external equipment and a FG 1 cable gland (cable gland for non armoured cable) for connecting the intrinsically safe I/O (TB3 and TB4 connectors) of the PW200XR to the compatible intrinsically safe external equipment.

The cable glands for armoured cables (FGA 1) must be installed in the side of the Exd box next to the non intrinsically safe section of the circuit. The cable glands for non armoured cables (FG 1) must be installed in the side of the Exd box next to the intrinsically safe section of the circuit. For the disposal of the cable glands see the diagram of the PW200XRD in section 4.
Below there are the minimum and maximum diameters of the cables which can be used with the FGA 1 and FG1 cable glands dependently the sealing ring used.

Type of cable gland	Min-max cable diameter (mm)	
	Range Sealing Ring	
FG 1	6 - 9	9 - 12
FGA 1	6 - 9	9 - 12

Carefully read and apply the instructions in the cable gland and plug manuals.

10 SAFETY DATA / LABEL PARAMETERS

The PW200XRD e PW200XR electronic devices must be installed and maintained according to the norms which apply relative to the installations in a hazardous area (different from the mines) classified for the presence of gas like ZONE 1 or for the presence of powders like ZONE 21, for example: EN 60079-14:2008 / IEC 60079-14:2007, EN 60079-17:2007 / IEC 60079-17:2007, EN 1127-1:2007 and with the norms which apply in the zone and in the installation environment.

1. Ground the electronic board of the PW200 and its eventual Ex d GUB-0 case using its appropriate connections.

ALL RESPONSIBILITY IS DECLINED FOR DAMAGES DERIVING FROM THE UNOBSERVANCE OF THESE WARNINGS

CE DECLARATION OF CONFORMITY

We **DINI ARGEO Srl**
Via della Fisica, 20
41042 Spezzano di Fiorano (MO)
ITALY

Declare under our responsibility that the products of the

PW200XRD - PW200XR series' power supplier family

Described in this declaration conform to the following directives:

- **ATEX 94/9/EC directive**
- **EMC 2004/108/CE directive**

The conformance is shown by the observance of the following norms:

IEC 60079-0:2007 / EN 60079-0:2009
IEC 60079-11: 2011 / EN 60079-11:2012
IEC 60079-31:2008 / EN 60079-31:2009

EN55011:1999 + /A1 + /A2
EN61000-6-3:2002 + /A11
EN61000-3-2:2005
EN61000-3-3:1997 + /A1 + /A2/IS1

Marking:
PW200XR *non classified zone:*
- **II (2) G [Ex ib] IIC**

PW200XRD *zone 1 and zone 21:*
- **II (2)/2 G [Ex ib]/Ex d IIC T4 Gb**
- **II (2)/2 D [Ex ib]/Ex tb IIIC T140°C Db**

CE type certificate nr.: **CEC07ATEX094X rev.1** Notified Body for ATEX/Q surveillance : ***1131 (CEC)***

Spezzano di Fiorano, 05/09/2012

Signature
Marco Bertoni
President

WARRANTY

The TWO YEAR warranty period begins on the day the instrument is delivered. It includes spare parts and labour repair at no charge if the INSTRUMENT IS RETURNED prepaid to the DEALER'S PLACE OF BUSINESS. Warranty covers all defects NOT attributable to the Customer (so are not included in the warranty, failures resulting from improper use) and NOT caused during transport.

If on site service is requested (or necessary), for any reason, where the instrument is used, the Customer will pay for all of the service technician's costs: travel time and expenses plus room and board (if any).

the Customer pays for the transport costs (both ways), if the instrument is shipped to DEALER or manufacturer for repair.

The WARRANTY is VOIDED if any of the following occurs: repairs or attempted repairs are made by unauthorised personnel, connected to equipment installed by others, or is incorrectly connected to the power supply, or instrument has defects or damage due to carelessness or failure to follow the guidelines in this instruction manual.

This warranty DOES NOT provide for any compensation for losses or damages incurred by the Customer due to complete or partial failure of instruments, even during the warranty period.

AUTHORISED SERVICE CENTRE STAMP

CORTEM GROUP™

CUSTODIA SERIE CCA... GUB...
ISTRUZIONI DI SICUREZZA, USO E MANUTENZIONE

ENCLOSURES CCA... GUB... SERIES SAFETY, MAINTENANCE AND MOUNTING INSTRUCTIONS

IN ACCORDO ALLA DIRETTIVA 94/9/CE
ED ON ACCORDO ALLO SCHEMA IECEx
According to directive 94/9/EC
and according to IECEx scheme

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ELFIT | cortem | FONDISONZO

1 INFORMAZIONI GENERALI

CONFORMITA' ALLE NORMATIVE STANDARD
CUSTODIE GUB... COSTRUITE IN ACCORDO ALLE NORMATIVE
- EN 60079-0:2009, EN 60079-1:2007, EN 60079-31 ED IN ACCORDO ALLA DIRETTIVA 94/9/EC DEL 23 MARZO 1994
- IEC 60079-0:2007-10 Ed.5.0, IEC 60079-1:2007-04 Ed.6.0, IEC 60079-31:2008-11 Ed.1.0 ED IN ACCORDO ALLO SCHEMA IECEx

1 GENERAL INFORMATION

COMPLIANCE WITH THE STANDARD RULES
TERMINAL BOXES GUB... MANUFACTURED IN COMPLIANCE WITH THE STANDARDS:
- *EN 60079-0:2009-10 Ed.5.0, EN 60079-1:2007-04 Ed.6.0, EN 60079-31:2008-11 Ed.1.0 ACCORDING TO DIRECTIVE 94/9/EC OF 23rd - MARCH 1994*
- *IEC 60079-0:2009-10 Ed.5.0, IEC 60079-1:2007-04 Ed.6.0, IEC 60079-31:2008-11 Ed.1.0 ACCORDING TO IECEx SCHEME*

ISTRUZIONI DI SICUREZZA

RIVOLTE A PERSONALE QUALIFICATO IN ACCORDO CON LE LEGGI NAZIONALI ,INCLUSE LE RELATIVE NORME E, DOVE APPLICABILE, IN ACCORDO CON IEC 79.17 RIGUARDANTE LE APPARECCHIATURE ELETTRICHE PER ATMOSFERE POTENZIALMENTE ESPLOSIVE
- LE CUSTODIE NON DEVONO ESSERE INSTALLATE IN AREA PERICOLOSA ZONA 0
- DEVONO ESSERE RISPETTATI I DATI TECNICI INDICATI SULLE CUSTODIE
- NON SONO AMMESSE MODIFICHE AL PRODOTTO
- LE CUSTODIE POSSONO ESSERE INSTALLATE SOLO SE COMPLETAMENTE INTEGRE
- DEVONO ESSERE UTILIZZATE ESCLUSIVAMENTE PARTI DI RICAMBIO CORTEM
- LE OPERAZIONI DI MANUTENZIONE ORDINARIE E STRAORDINARIE DEVO ESSERE EFFETTUATE SOLO DA ELETTRICISTI QUALIFICATI CON L'APPROVAZIONE DI PERSONALE "ESPERTO"
- LA CHIUSURA DELLE CUSTODIE CON COPERCHI A VITE AVVIENE A MANO, SERRANDO A FONDO IL COPERCHIO, BLOCCANDO IL GRANO IN UNA DELLE APPOSITE SEDI E VERIFICANDO CHE LA GUARNIZIONE SIA CORRETTAMENTE COMPRESSA CON IL CORPO DELLA CUSTODIA.
- DEVONO ESSERE STRETTAMENTE OSSERVATE LE NORME NAZIONALI DI SICUREZZA E PREVENZIONE INFORTUNI, E LE PRESCRIZIONI INDICATE CON "⚠" NEL PRESENTE FASCICOLO TECNICO

SAFETY INSTRUCTIONS
THESE INSTRUCTIONS ARE ADDRESSED TO QUALIFIED PERSONNEL IN COMPLIANCE WITH THE NATIONAL LAWS, INCLUDING THE RELEVANT RULES, AND WITH IEC 79.17 (WHEN APPLICABLE) CONCERNING THE ELECTRICAL EQUIPMENT FOR POTENTIALLY EXPLOSIVE ATMOSPHERES.
- *THE TERMINAL BOXES WILL NOT BE INSTALLED IN ANY DANGEROUS AREA (ZONE 0)*
- *THE TECHNICAL DATA INDICATED ON THE TERMINAL BOXES WILL BE COMPLIED WITH*
- *MODIFICATIONS TO THE PRODUCT ARE NOT ALLOWED*
- *THE TERMINAL BOXES WILL BE INSTALLED ONLY IF THEY ARE COMPLETELY INTACT*
- *USE EXCLUSIVELY CORTEM SPARE PARTS*
- *ROUTINE AND EXTRAORDINARY SERVICING OPERATIONS WILL BE CARRIED OUT EXCLUSIVELY BY QUALIFIED ELECTRICIANS WITH THE SUPERVISION OF "EXPERT" PERSONNEL*
- *THE CLOSING OF THE ENCLOSURES WITH SCREW LIDS MUST BE DONE BY HAND, THE LID MUST BE FULLY SCREWED, USE THE THREADED PIN TO STOP THE LID IN ONE OF THE PROPER POSITION AND VERIFY THAT THE O-RING IS PROPERLY PRESSED ON THE ENCLOSURE BODY.*
- *THE NATIONAL SAFETY RULES AND THE INSTRUCTIONS MARKED BY "⚠" IN THIS TECHNICAL HANDBOOK, WILL STRICTLY BE COMPLIED WITH.*

MATERIALI STANDARD:
CORPO E COPERCHIO IN LEGA DI ALLUMINIO CON CONTENUTO DI MAGNESIO MAX.6% IN PESO, O IN ACCIAIO INOX AISI 303/304/316.
VITI DI COLLEGAMENTO DELLA TERRA INTERNA / ESTERNA IN ACCIAIO INOX.

STANDARD MATERIALS:
COVER IN BODY AND TOP ALUMINIUM ALLOY (MAX. WEIGHT CONTENT OF MAGNESIUM: 6%) OR OF STAINLESS STEEL AISI 303/304/316.
SCREWS IN STAINLESS STEEL FOR THE CONNECTION WITH THE INTERNAL/EXTERNAL EARTHING SYSTEM.

USO E CONFORMITA':
LE CUSTODIE VENGONO USATE IN ZONE PERICOLOSE, DOVE ESISTE PERICOLO DI ESPLOSIONI O COMBUSTIONI DI GAS.
SONO PRINCIPALMENTE USATE PER IMPIANTI IN TUBO CONDUIT O CON PRESSACAVI , E POSSONO AVERE DELLE APPLICAZIONI SULLE PARETI COME QUADRI DI CONTROLLO E SEGNALAZIONE.
SONO COSTRUITE IN ACCORDO ALLE NORMATIVE EUROPEE.

USE AND COMPLIANCE:
THE TERMINAL BOXES ARE USED IN DANGEROUS AREAS WITH RISKS OF EXPLOSIONS OR GAS COMBUSTION. THEY ARE MAINLY USED FOR SYSTEMS IN CONDUITS OR WITH CABLE GLANDS; THEY CAN ALSO BE APPLIED ON THE WALLS AS SIGNALLING AND CONTROL BOARDS. THEY HAVE BEEN MANUFACTURED IN COMPLIANCE WITH THE EUROPEAN STANDARDS.

USO E MANUTENZIONE:
TUTTE LE OPERAZIONI DI INSTALLAZIONE E MANUTENZIONE DEVONO ESSERE FATTE QUANDO IL CIRCUITO NON E' IN TENSIONE. QUANDO VIENE APERTO UN COPERCHIO O UNA QUALSIASI PARTE FILETTATA SI DEVE RIPRISTINARE IL LUBRIFICANTE POSTO SUI FILETTI, SI DEVE FARE MOLTA ATTENZIONE CHE EVENTUALI GUARNIZIONI TIPO O-RING SIANO POSTE NELLA PROPRIA SEDE, SI DEVONO BLOCCARE GLI EVENTUALI GRANI PREVISTI SUI GIUNTI FILETTATI CILINDRICI, MA SOPRATTUTTO SI DEVE FARE MOLTA ATTENZIONE A NON DANNEGGIARE I GIUNTI STESSI, PULENDOLI ACCURATAMENTE PRIMA DI AVVITARLI.

USE AND MAINTENANCE :
ALL INSTALLATION AND MAINTENANCE OPERATIONS MUST BE PERFORMED WHEN CIRCUIT IS OFF. AFTER OPENING THE COVER OR A THREADED PART, CLEAN AND LUBRICATE THE THREADS. CHECK THAT THE O-RINGS ARE MOUNTED IN THE SUITABLE LOCATION. LOCKING SCREWS MUST BE MOUNTED ON ALL THREADED CYLINDRICAL JOINTS.
HANDLE CAREFULLY ALL THREADED PARTS TO AVOID TO DAMAGE THE JOINTS, THOROUGHLY CLEANING THEM BEFORE SCREWING THEM.

COR.TEM è da sempre impegnata nella salvaguardia dell'ambiente ed in tal senso raccomanda di smaltire i contenitori e gli imballaggi usati secondo le prescrizioni e le normative vigenti nel Paese di destinazione, evitando di disperderli nell'ambiente dopo l'utilizzo.

COR.TEM cares for the environmental protection and recommends therefore to dispose properly of the packing and wrapping of its goods, according to the prescriptions and regulations in force in the destination country. The differentiated waste disposal is strongly recommended.

INFORMAZIONE AGLI UTENTI DI APPARECCHIATURE DOMESTICHE O PROFESSIONALI

Ai sensi dell'art. 13 del Decreto Legislativo 25 luglio 2005, n. 151 "Attuazione delle Direttive 2002/95/CE, 2002/96/CE e 2003/108/CE, relative alla riduzione dell'uso di sostanze pericolose nelle apparecchiature elettriche ed elettroniche, nonché allo smaltimento dei rifiuti"

Il simbolo del cassonetto barrato riportato sull'apparecchiatura o sulla sua confezione indica che il prodotto alla fine della propria vita utile deve essere raccolto separatamente dagli altri rifiuti. L'utente dovrà, pertanto, conferire l'apparecchiatura giunta a fine vita agli idonei centri di raccolta differenziata dei rifiuti elettronici ed elettrotecnici, oppure riconsegnarla al rivenditore al momento dell'acquisto di una nuova apparecchiatura di tipo equivalente, in ragione di uno a uno.

Nel caso di utenti professionali (aziende o enti), ai sensi della normativa sopra citata, la raccolta differenziata della presente apparecchiatura giunta a fine vita è organizzata e gestita:

a) direttamente dall'utente, nel caso in cui questo decida di disfarsi dell'apparecchiatura senza sostituirla con una apparecchiatura nuova equivalente ed adibita alle stesse funzioni;
b) dal produttore, inteso come il soggetto che ha per primo introdotto e commercializzato in Italia o rivende in Italia col proprio marchio l'apparecchiatura nuova che ha sostituito la precedente, nel caso in cui, contestualmente alla decisione di disfarsi dell'apparecchiatura a fine vita, l'utente effettui un acquisto di un prodotto di tipo equivalente ed adibito alle stesse funzioni. In tale ultimo caso, l'utente potrà richiedere al produttore il ritiro della presente apparecchiatura entro e non oltre 15 giorni naturali consecutivi dalla consegna della suddetta apparecchiatura nuova.

L'adeguata raccolta differenziata per l'avvio successivo dell'apparecchiatura dismessa al riciclaggio, al trattamento e allo smaltimento ambientalmente compatibile contribuisce ad evitare possibili effetti negativi sull'ambiente e sulla salute e favorisce il reimpiego e/o riciclo dei materiali di cui è composta l'apparecchiatura.

Lo smaltimento abusivo del prodotto da parte dell'utente comporta l'applicazione delle sanzioni di cui alla corrente normativa di legge.

INFORMATION TO USERS OF DOMESTIC AND PROFESSIONAL EQUIPMENT

According to art. 13 of Legislative Decree dated 25 July 2005 No. 151 "Putting into effect Directives 2002/95/CE, 2002/96/CE and 2003/108/CE, aimed to limit the use of dangerous substances in electronic and electrical equipment, and related to waste disposal".

The symbol of the crossed dustbin shown on the equipment or on its package indicates that the product must be collected separately from other waste, at the end of its lifetime. The user shall bring the equipment at the end of its lifetime in places dedicated to collect electrical and electronic waste, or he shall return it to a dealer, buying equivalent equipment (one back, one in).

In the case of professional users (companies or organizations), the subject equipment collection at the end of its lifetime is managed as following indicated:

a) Directly by the user, if he decides to throw the equipment away and not to replace it with a new equivalent one with the same functions;
b) By the manufacturer (i.e. he who first introduced and put on the Italian market, or he who resells in Italy with his brand the new equipment that replaced the previous one), in case the user decides to throw away the old equipment and to replace it with a new equivalent one with the same functions. In this last case, the user can ask the manufacturer to pick up the subject equipment within and not later than 15 days, natural and consecutive, after the new equipment has been delivered.

Separating waste and recycling is aimed to environmentally compatible waste treatment and disposal, in order to limit negative effects on environment and health and to promote recycling the old equipment construction materials and its remake into new products.

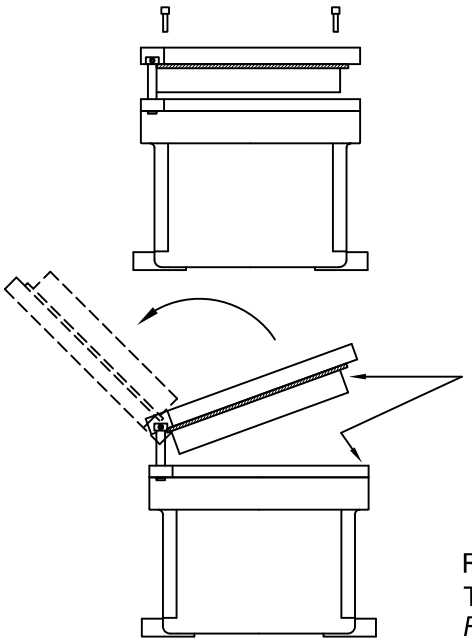
Illegal disposal of the product by the user is subject to fines, as per the current applicable law.

CUSTODIE VUOTE
EMPTY BOXES

TAB.1 TIPI E CARATTERISTICHE
TABLE 1 - TYPES AND CHARACTERISTICS

N.CATALOGO *CATALOG NUMBER*	GUB..; CCA..E; GUB...V; CCA..EH; CCA..C; CCAI..	
ESECUZIONE *EXECUTION*	Ex II 2GD Ex d IIC Gb Ex tb IIIC Db IP66	Ex I M2 Ex d I Mb (only for stainless steel boxes)
TEMPERATURA AMBIENTE *AMBIENT TEMPERATURE*	-20°C.....+60°C	
	-50°C.....+60°C	(enclosures for group II, -40°C with polycarbonate pilot lights)
	-50°C.....+150°C	(enclosures for group II, only for GUB and CCA...E w/o accessories M-0...)
MAX. TEMPERATURA DI ESERCIZIO *MAX. SERVICE TEMPERATURE*	170°C	(100°C CON OPERATORI M-0...) *(100°C WITH ACCESSORIES M-0...)*
GRADO DI PROTEZIONE STD. *STD. PROTECTION DEGREE*	IP-66	
CERTIFICATO: *CERTIFICATE:*	CESI 01 ATEX 034U	

ESEMPIO DI CUSTODIA CON COPERCHIO CON GIUNTO CILINDRICO
EXAMPLE OF TERMINAL BOX WITH CYLINDRICAL JOINT



TOGLIERE LE VITI E SOLLEVARE IL COPERCHIO
REMOVE THE SCREWS AND LIFT THE TOP

PULIRE E LUBRIFICARE IL GIUNTO DI ACCOPPIAMENTO CORPO-COPERCHIO
CLEAN AND LUBRICATE THE BODY-TOP COUPLING JOINT

RUOTARE IL COPERCHIO FINO AD APRIRLO TOTALMENTE
ROTATE THE TOP UNTIL IT IS FULLY OPEN

COPPIA DI SERRAGGIO RACCOMANDATA
RECOMMENDED TIGHTENING TORQUES

Filetto Nominal size thread	**Classe di resistenza 70** Steel Grade Property Class 70	
	Precarico (N) Preload (N)	**Serraggio (Nm)** Tightening (Nm)
M8	12.200	16
M10	16.300	32
M12	24.200	56
M16	45.000	135

CUSTODIE PORTAMORSETTI
BOXES FOR TERMINAL BOXES

TAB.2 TIPI E CARATTERISTICHE
TABLE 2 - TYPES AND CHARACTERISTICS

N.CATALOGO *CATALOG NUMBER*		GUB..; CCA..E; GUB...V; CCA..EH; CCA..C; CCAI..	
ATEX	ESECUZIONE *EXECUTION*	II 2GD Ex d IIC T6/T5 Gb Ex tb IIIC T85°C/T100°C Db IP66	I M2 Ex d I Mb (only for stainless steel boxes)
ATEX	CERTIFICATO: *CERTIFICATE:*	CESI 01 ATEX 035	
IECEx	ESECUZIONE *EXECUTION*	Ex d IIC T6/T5 Gb Ex tb IIIC T85°C/T100°C Db IP66	Ex d I Mb (only for stainless steel boxes)
IECEx	CERTIFICATO: *CERTIFICATE:*	IECEx TSA 06.0012	
TEMPERATURA AMBIENTE *AMBIENT TEMPERATURE*		(-50°C ATEX) -20°C.....+40°C T6 (-50°C ATEX) -20°C.....+55°C T5	
GRADO DI PROTEZIONE STD. *STD. PROTECTION DEGREE*		IP66	
MASSIMO VOLTAGGIO AMMESSO *MAX. VOLTAGE ALLOWED*		660 V PER MORSETTI *660V FOR TERMINALS*	500V PER MORSETTIERE *500V FOR TERMINAL CONNECTIONS*

CARATTERISTICHE ELETTRICHE
ELECTRICAL CHARACTERISTICS
Tensione nominale: 24 ÷ 800 [V]
Rated voltage: 24 to 800 [V]
Frequenza nominale: 50 ÷ 60 [Hz]
Rated frequency: 50 to 60 [Hz]

MORSETTI COMPONIBILI
ASSEMBLABLE TERMINALS
Sezione morsetti: 2,5; 4; 6; 10; 16; 25; 35; 70; 95; 95; 120; 185; 240 [mm²]
Section of terminals:
Corrente nominale: 12,5 ÷ 400 [A]
Rated current: 12.5 to 400 [A]
Max. densità di corrente: 1,65 ÷ 7 [A/mm²]
Max. current density: 1.65 to 7 [A/mm²]

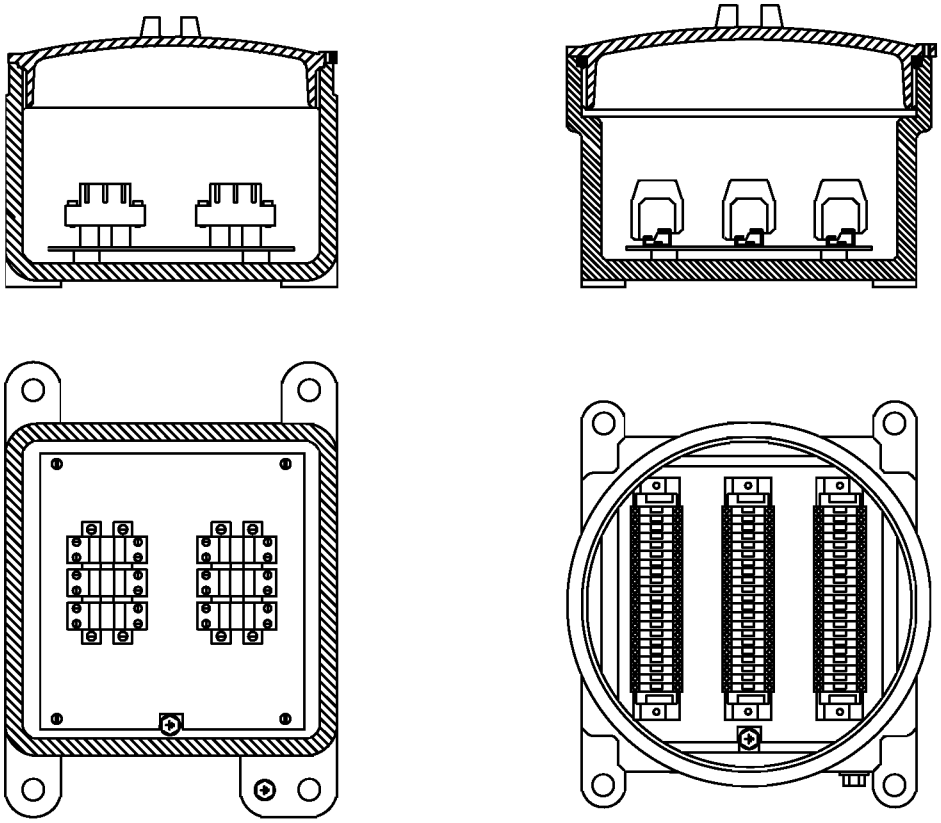
MORSETTIERE
TERMINAL BOARDS
Sezione morsetti: 3x16; 4x16; 3x25; 4x25; 3x40; 4x40; 3x70;
Section of terminals: 4x70; 3x125; 3x200; 4x200; 3x315 [mm²]

Corrente nominale: 48 ÷ 252 [A]
Rated current: 48 to 252 [A]
Max. densità di corrente: 0,8 ÷ 3 [A/mm²]
Max. current density: 0.8 to 3 [A/mm²]

Classi di temperatura per le morsettiere di categoria 2 G:
T6 per temp. ambiente -20 ÷ +40°C
T5 per temp. ambiente -20 ÷ +55°C
Classes of temperature for the terminal boards of 2G category :
T6 for ambient temp. of -20°C to +40°C
T5 for ambient temp. of -20°C to +55°C

Temperatura massima superficiale della custodia per le morsettiere di categoria 2 D:
T85°C per temp. ambiente -20 ÷ +40°C
T100°C per temp. ambiente -20 ÷ +55°C
Maximum surface temperature of the terminal box for the terminal boards of 2D category:
T 85°C for ambient temp. of -20°C to +40°C
T 100°C for ambient temp. of -20°C to +55°C

TIPICA DISPOSIZIONE DI MORSETTI/MORSETTIERE NELLE CUSTODIE
EXAMPLE OF TYPICAL ARRANGEMENT OF TERMINALS/TERMINAL BOARDS IN THE BOXES



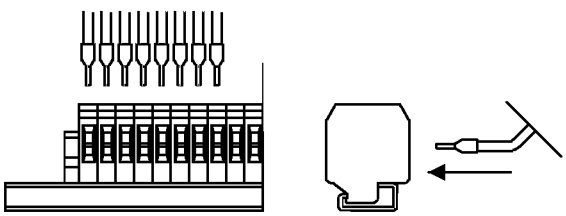
PER LE ENTRATE CON CAVO FLESSIBILE O CON TUBO RIGIDO USARE SOLO ACCESSORI CERTIFICATI IN ACCORDO ALLE NORMATIVE EN 60079-0, EN 60079-1, EN 60079-31, IEC 60079-0, IEC 60079-1, IEC 60079-31. LA SCELTA DEI TIPI DI ACCESSORI DA USARE PER GLI INGRESSI E' FATTA IN ACCORDO ALLE NORME EN 60079-14, IEC 60079-14.

WHEN INSERTING FLEXIBLE CABLES OR RIGID CONDUITS, USE ONLY ACCESSORIES CERTIFIED ACCORDING TO THE STANDARDS EN 60079-0, EN 60079-1, EN 60079-31, IEC 60079-0, IEC 60079-1, IEC 60079-31. THE TYPES OF ACCESSORIES USED FOR THESE OPERATIONS ARE CHOSEN ACCORDING TO THE STANDARDS EN-60079-14, IEC 60079-14.

LE DISTANZA MINIMA TRA GLI INGRESSI E' STABILITA DAL COSTRUTTORE DELLE CUSTODIE IN ACCORDO AL CERTIFICATO CESI 00 ATEX 034U
THE MINIMUM DISTANCE BETWEEN THE INLETS IS SET BY THE MANUFACTURER OF TERMINAL BOXES ACCORDING TO THE CERTIFICATE CESI 00 ATEX 034U.

TUTTI I CABLAGGI ALL'INTERNO DELLE CASSETTE DEVONO ESSERE FATTI RISPETTANDO LE CARATTERISTICHE DEI COMPONENTI, I CAVI DEVONO ESSERE COMPLETI DI PUNTALINO/CAPOCORDA, E BLOCCATI LUNGO IL LORO PERCORSO

ANY WIRING INSIDE THE BOXES WILL BE CARRIED OUT IN COMPLIANCE WITH THE CHARACTERISTICS OF THE COMPONENTS. CABLES WILL BE PROVIDED WITH WIRE TERMINALS AND FASTENED ALONG THEIR PATH.



UNITA' DI COMANDO, CONTROLLO E SEGNALAZIONE
CONTROL, CHECK AND SIGNALLING UNITS

TAB.3 TIPI E CARATTERISTCHE
TABLE 3 - TYPES AND CHARACTERISTICS

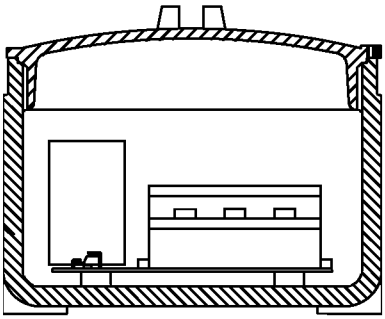
N.CATALOGO *CATALOG NUMBER*		GUB...; CCA...E; GUB...V; CCA...EH; CCA...C; CCAI...	
ATEX	ESECUZIONE *EXECUTION*	Ⓔx II 2GD Ex d IIC T6/T5 Gb Ex tb IIIC T85°C/T100°C Db IP66	Ⓔx I M2 Ex d I Mb (only for stainless steel boxes)
	CERTIFICATO: *CERTIFICATE:*	CESI 01 ATEX 036	
IECEx	ESECUZIONE *EXECUTION*	Ex d IIC T6/T5 Gb Ex tb IIIC T85°C/T100°C Db IP66	Ex d I Mb (only for stainless steel boxes)
	CERTIFICATO: *CERTIFICATE:*	IECEx TSA 06.0012	
TEMPERATURA AMBIENTE *AMBIENT TEMPERATURE*		(-50°C ATEX) -20°C.....+40°C T6 (-50°C ATEX) -20°C.....+55°C T5	
GRADO DI PROTEZIONE STD. *STD. PROTECTION DEGREE*		IP66	
MASSIMO VOLTAGGIO AMMESSO *MAX. VOLTAGE ALLOWED*		1000 V	

TIPO DI COMPONENTE	V MAX (VOLT)	I MAX (AMPER)	MAX POTENZA DISSIPATA *MAX. DISSIPATED POWER* (WATT)
STRUMENTI ANALOGICI E DIGITALI *ANALOG AND DIGITAL INSTRUMENTS*	660	5	10
REATTORI/INVERTER ELETTRONICI *ELECTRONIC REACTORS/INVERTERS*	400	-	10
PLC, MULTIPLEXER E AMPLIFICATORI *PLC, MULTIPLEXERS AND AMPLIFIERS*	240	-	80
DISPOSITIVI DI CONTROLLO E MISURA *MEASURING AND CONTROL DEVICES*	240	-	100
INTERRUTTORI AUTOMATICI *AUTOMATIC SWITCHES*	660	650	-
FUSIBILI *FUSES*	660	400	-
RELE' *RELAYS*	500	10	12
DISPOSITIVI DI CONTROLLO ELETTRONICI *ELECTRONIC CONTROL DEVICES*	660	-	100
CONTATTORI *CONTACTORS*	660	650	30
TEMPORIZZATORI *TIMERS*	240	10	5
RELE' CREPUSCOLARI *TWILIGHT RELAYS*	240	-	2
CONDENSATORI *CAPACITORS*	660	-	-
TRAFORMATORI *TRANSFORMERS*	660	-	200
RESISTORI *RESISTORS*	220	-	300
MORSETTI *TERMINALS*	660	-	-
REATTORI *REACTORS*	220	7.5	40

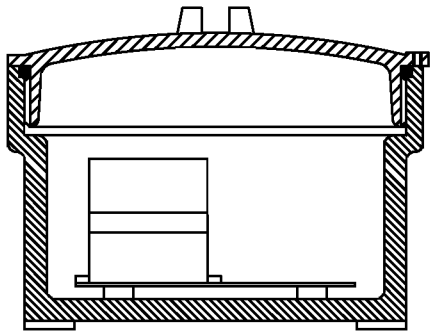
TABELLA DELLE CARATTERISTICHE ELETTRICHE STANDARD DI COMPONENTI INSTALLABILI NELLE CUSTODIE, NELLO SVILUPPO PER UNITA' DI CONTROLLO, COMANDO E SEGNALAZIONE, CORTEM HA TENUTO CONTO DEI SEGUENTI LIMITI. (I valori si riferiscono ai cataloghi dei principali costruttori di componenti elettrici/elettronici in commercio)

TABLE OF STANDARD ELECTRICAL CHARACTERISTICS OF COMPONENTS THAT CAN BE INSTALLED IN THE BOXES. WHEN DESIGNING BOXES FOR CONTROL AND SIGNALLING UNITS, CORTEM HAS CONSIDERED THE FOLLOWING LIMITS. (These values have been extracted from the catalogues of the main manufacturers of electric/electronic components available on the market).

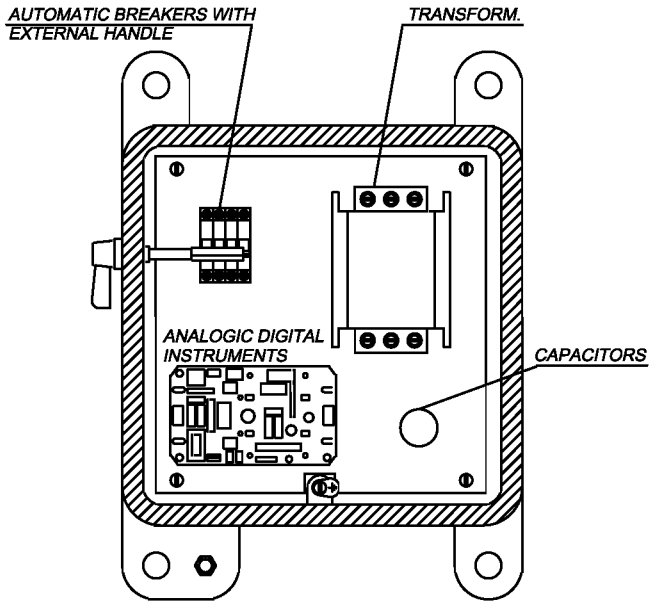
ESEMPIO DI TIPICA DISPOSIZIONE DI ACCESSORI INTERNI/ESTERNI NELLE CUSTODIE
EXAMPLE OF TYPICAL ARRANGEMENT OF INTERNAL/EXTERNAL COMPONENTS IN THE BOXES

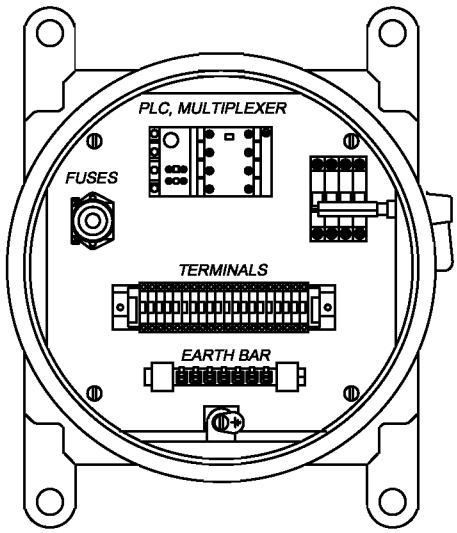


GUB... models



CCA...E models





IN ACCORDO ALLE EN 60079-1 ED IEC 60079-1
L'apparecchiatura contenuta all'interno della custodia può essere posizionata in qualsiasi modo, a condizione che una superficie di almeno il 40% di ogni sezione rimanga libera.

ACCORDING TO EN 60079-1 AND IEC 60079-1
The contents of the enclosure equipment may be placed in any arrangement, provided than an area of at least 40% of each cross-sectional area remains free.

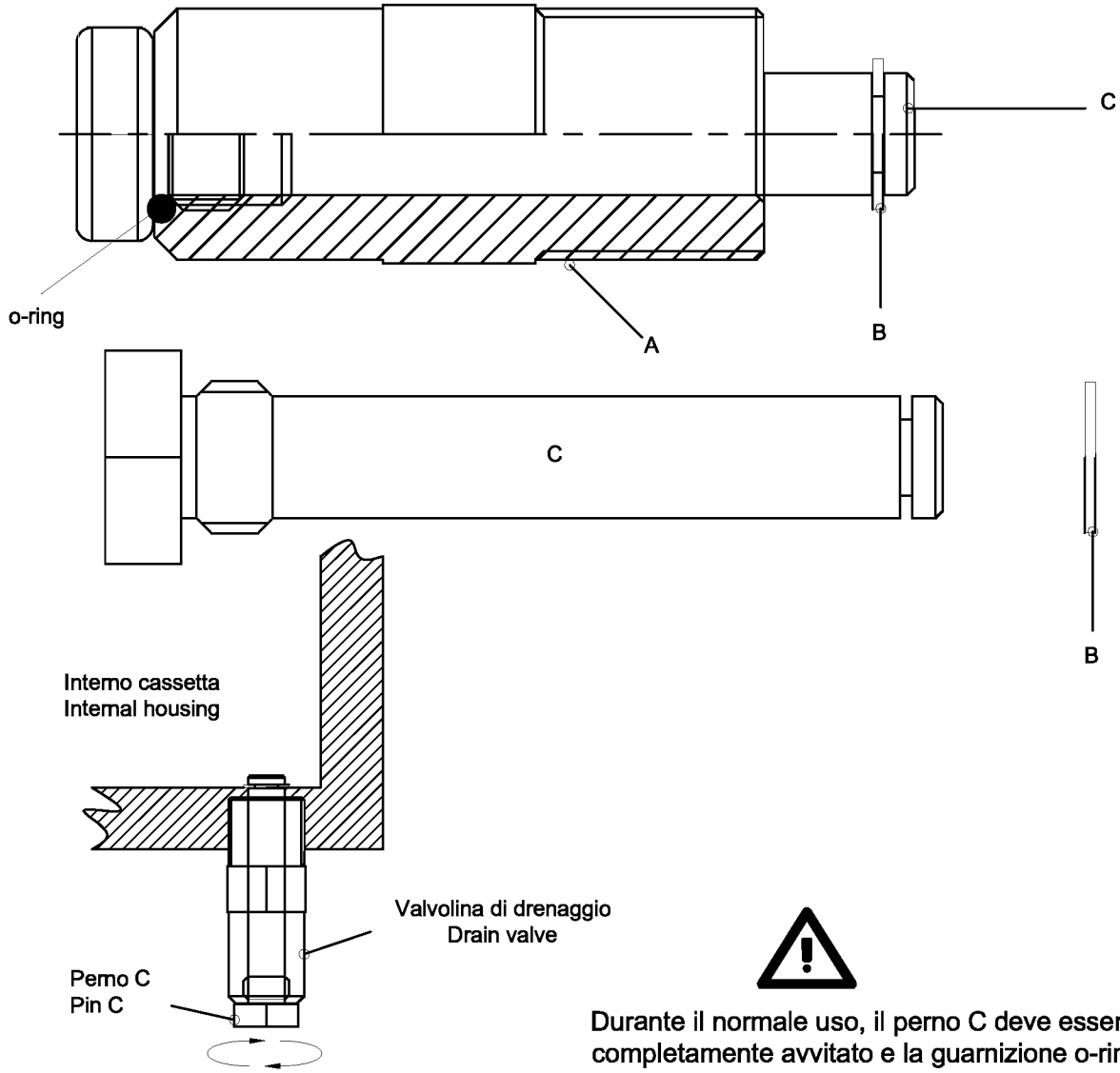
MINIMA DISTANZA IN ARIA TRA I COMPONENTI
MINIMUM DISTANCE IN AIR BETWEEN THE COMPONENTS

VOLTAGGIO COMPONENTI (V a.c.) *VOLTAGE OF COMPONENTS (V a.c.)*	MIN. DISTANZA IN ARIA (mm) *MINIMUM DISTANCE IN AIR (mm)*
60-250	6
250-380	8
380-500	10
500-660	12
660-1000	20
VOLTAGGIO COMPONENTI (V c.c.) *VOLTAGE OF COMPONENTS (V d.c.)*	MIN. DISTANZA IN ARIA (mm) *MINIMUM DISTANCE IN AIR (mm)*
12-250	6

NEL CASO IN CUI IL PRODOTTO VENGA FORNITO SENZA PRESSACAVI SARÀ CURA DEL CLIENTE ADOTTARE TAPPI O PRESSACAVI IN ACCORDO ALLE NORME IMPIANTISTICHE

IN CASE THE PRODUCT IS SUPPLIED WITHOUT CABLE GLANDS, IT IS UP TO THE CUSTOMER TO ADOPT PLUGS OR CABLE GLANDS IN ACCORDANCE WITH THE PLANT ENGINEERING RULES.

VALVOLA TIPO / Valve type:
ECD-2.. II 2GD Ex d IIC/Ex e II Ex tD A21 IP66



Per procedere con il drenaggio, svitare il perno C.
Terminata l'operazione di drenaggio avvitare il perno facendo attenzione che la guarnizione o-ring sia nella propria sede.
To proceed with drain operation, unscrew the pin C.
When drain operation is finished, screw the pin C, be careful to keep the o-ring gasket on its seat.

Durante il normale uso, il perno C deve essere completamente avvitato e la guarnizione o-ring deve essere nella propria sede, al fine di mantenere il grado di protezione IP.
During the normal use, the pin C must be completly screwed and the o-ring gasket must be on its seat, to mantain the IP of protection degree.

Per la pulizia della valvolina, si deve smontare la stessa dalla cassetta procedendo successivamente allo smontaggio di tutti i componenti come da schema
1-Smontare la valvolina A dalla cassetta
2-Togliere la rondella elastica B
3-Svitare e sfilare dalla valvolina A il perno C
4-Effettuare la pulizia del componente ECD
5-Rimontare la valvolina ECD procedendo in senso inverso a quanto indicato nei punti precedenti

For the cleaning of the valve you must strip down it from the junction box proceeding subsequently to dismantle the components as shown in the scheme
1-Strip down the valve A from the junction box
2-Remove the internal spring washer B
3-Unscrew and take out from the valve A the pin C
4-Make the cleaning of the component ECD
5-Reassemble the valve ECD proceeding in the opposite direction as indicated in the above mentioned points.

CODE	MAXIMUM OUTPUT DISSIPATED IN WATT WITH AMBIENT TEMPERATURE OF +40°C			MAXIMUM OUTPUT DISSIPATED IN WATT WITH AMBIENT TEMPERATURE OF +55°C		
	CLASS T6 WITHOUT SIGNALLING LAMPS, ONLY SIGNALLING LED ARE ALLOWED	CLASS T5 WITH SIGNALLING LAMPS AND/OR SIGNALLING LED	CLASS T5 WITHOUT SIGNALLING LAMPS, ONLY SIGNALLING LED ARE ALLOWED	CLASS T6 WITHOUT SIGNALLING LAMPS, ONLY SIGNALLING LED ARE ALLOWED	CLASS T5 WITH SIGNALLING LAMPS AND/OR SIGNALLING LED	CLASS T5 WITHOUT SIGNALLING LAMPS, ONLY SIGNALLING LED ARE ALLOWED
CCA-0C	6	9	13	6	7	9
CCA-01C	11	12	17	9	10	13
CCA-02C	23	25	36	20	22	28
CCA-03C	40	44	58	29	32	43
CCA-04C	93	100	164	70	77	125

CODE	MAXIMUM OUTPUT DISSIPATED IN WATT WITH AMBIENT TEMPERATURE OF +40°C			MAXIMUM OUTPUT DISSIPATED IN WATT WITH AMBIENT TEMPERATURE OF +55°C		
	CLASS T6 WITHOUT SIGNALLING LAMPS, ONLY SIGNALLING LED ARE ALLOWED	CLASS T5 WITH SIGNALLING LAMPS AND/OR SIGNALLING LED	CLASS T5 WITHOUT SIGNALLING LAMPS, ONLY SIGNALLING LED ARE ALLOWED	CLASS T6 WITHOUT SIGNALLING LAMPS, ONLY SIGNALLING LED ARE ALLOWED	CLASS T5 WITH SIGNALLING LAMPS AND/OR SIGNALLING LED	CLASS T5 WITHOUT SIGNALLING LAMPS, ONLY SIGNALLING LED ARE ALLOWED
CCAI2020	30	35	42	25	27	34
CCAI3020	50	54	66	39	42	53
CCAI3030	80	85	120	60	65	100
CCAI4030	105	112	170	90	100	140

COD.		MAXIMUM OUTPUT IN WATT WITH AMBIENT TEMPERATURE			
		+40° C		+55° C	
		CLASS T6	CLASS T5	CLASS T6	CLASS T5
GUB		4	6	3	4
GUB-S		6	9	5	6
GUB-0	GUB-0V	10	16	6	12
GUB-01	GUB-01V	15	24	13	19
GUB-02	GUB-02V	32	51	26	39
GUB-03	GUB-03V	51	74	37	55
GUB-04	GUB-04V	112	197	64	150
GUB-05		165	250	125	190

COD.		MAXIMUM OUTPUT DISSIPATED IN WATT WITH AMBIENT TEMPERATURE OF+40°C			MAXIMUM OUTPUT DISSIPATED IN WATT WITH AMBIENT TEMPERATURE OF +55°C		
		CLASS T6 WITHOUT SIGNALLING LAMPS, ONLY SIGNALLING LED ARE ALLOWED	CLASS T5 WITH SIGNALLING LAMPS AND/OR SIGNALLING LED	CLASS T5 WITHOUT SIGNALLING LAMPS, ONLY SIGNALLING LED ARE ALLOWED	CLASS T6 WITHOUT SIGNALLING LAMPS, ONLY SIGNALLING LED ARE ALLOWED	CLASS T5 WITH SIGNALLING LAMPS AND/OR SIGNALLING LED	CLASS T5 WITHOUT SIGNALLING LAMPS, ONLY SIGNALLING LED ARE ALLOWED
CCA-0E	CCA-0EH	6	9	13	6	7	9
CCA-01E	CCA-01EH	11	12	17	9	10	13
CCA-02E	CCA-02EH	23	25	36	20	22	28
CCA-03E	CCA-03EH	40	44	58	29	32	43
CCA-04E	CCA-04EH	93	100	164	70	77	125

CORTEM s.p.a.
cap. soc.€ 1.578.000,00 i.v.
R.E.A. C.C.I.A.A. GORIZIA U. 32755 - M. GO 000139
Registro Imprese Gorizia 00052120318
Cod.Fisc. e Partita Iva **IT00052120318**
Eco-contributo RAEE assolto ove dovuto n° Registro A.E.E. IT08020000001818

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Web site www.cortemgroup.com

CORTEM™ GROUP
To be sure to be safe.

ATTESTATO DI CONFORMITA' DEI COMPONENTI

ATTESTATION OF CONFORMITY FOR COMPONENTS

N° 0020

Il costruttore:
***We*:**

CORTEM S.p.A.
Via Aquileia, 10
34070 VILLESSE (GO) - ITALY

Dichiara qui di seguito che il prodotto
Hereby declare that the product

Custodie vuote: *Empty boxes:*	**CCA… GUB…**	
Modo di protezione: *Protection mode:*	**(Ex) II 2GD** **Ex d IIC Gb** **Ex tb IIIC Db** **IP66**	**(Ex) I M2** **Ex d I Mb**
Certificato: *Certificate:*	**CESI 01 ATEX 034U**	
Organismo notificato: *Notified body:*	**n. 0722 CESI via Rubattino, 54 (MI) ITALY**	

Risulta in conformità con le seguenti direttive comunitarie:
Is in conformity with the following community directives:

94/9/EC

E che sono state applicate le seguenti norme armonizzate:
And that the following harmonized standards have been applied:

EN 60529: 1991	**EN 60079-0: 2009** **EN 60079-1: 2007** **EN 60079-31:2009**

Le custodie vuote sono state sottoposte alla prova di sovrapressione interna in accordo al par.15.1.3.1 della EN 60079-1 applicando i valori indicati sul certificato CESI 01 ATEX 034U.
The empty housings have been submitted to the overpressure test according to par.15.1.3.1 of EN 60079-1 with the values indicated on CESI 01 ATEX 034U certificate.

Villesse, 08.03.2012

Firma
Signature . . . . . .
Riccardo Gratton
Vice-president

CORTEM s.p.a.
cap. soc.€ 1.578.000,00 i.v.
R.E.A. C.C.I.A.A. GORIZIA U. 32755 - M. GO 000139
Registro Imprese Gorizia 00052120318
Cod.Fisc. e Partita Iva **IT00052120318**
Eco-contributo RAEE assolto ove dovuto n° Registro A.E.E. IT08020000001818

COMPANY WITH QUALITY MANAGEMENT SYSTEM CERTIFIED BY DNV
= ISO 9001:2008 =

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Web site www.cortemgroup.com

CORTEM™ GROUP
To be sure to be safe.

DICHIARAZIONE DI CONFORMITA' *DECLARATION OF CONFORMITY*

CE **N° 0021**

Il costruttore:
***We*:**

CORTEM S.p.A.
Via Aquileia, 10
34070 VILLESSE (GO) - ITALY

Dichiara qui di seguito che il prodotto
Hereby declare that the product

Custodie porta morsetti, unità di comando e controllo: *Terminal boxes, command and control units:*	*Terminal boxes* **GUB…** **CCA…**	*Command and control units* **GUB…** **CCA…**
Modo di protezione: *Protection mode:*	Ⓔx **II 2GD** **Ex d IIC T6/T5 Gb** **Ex tb IIIC T85°C/T100°C Db** **IP66** Ⓔx **I M2** **Ex d I Mb**	Ⓔx **II 2GD** **Ex d IIC T6/T5 Gb** **Ex tb IIIC T85°C/T100°C Db** **IP66** Ⓔx **I M2** **Ex d I Mb**
Certificato: *Certificate:*	**CESI 01 ATEX 035**	**CESI 01 ATEX 036**
Organismo notificato: *Notified body:*	**n. 0722 CESI via Rubattino, 54 (MI) ITALY**	

Risulta in conformità con le seguenti direttive comunitarie:
Is in conformity with the following community directives:

2004/108/EC **94/9/EC**

E che sono state applicate le seguenti norme armonizzate:
And that the following harmonized standards have been applied:

EN 60439-1

EN 60079-0: 2009
EN 60079-1: 2007
EN 60079-31:2009
EN 60529: 1991

Villesse, 30.03.2012

Firma
Signature . . . . . .

Riccardo Gratton
Vice-president

CORTEM GROUP™

PRESSACAVI TIPO FGA-FGAD-FG-FGF-FGN ESECUZIONE II 2GD Ex d IIC Ex tD A21 IP66/67 ISTRUZIONI DI SICUREZZA, USO E MANUTENZIONE

Cableglands type FGA-FGAD-FG-FGF-FGN execution II 2GD Ex d IIC Ex tD A21 IP66/67 safety, maintenance and mounting instructions

IN ACCORDO ALLA DIRETTIVA 94/9/CE
according to directive 94/9/EC

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ELFIT | cortem | FONDISONZO

Istruzioni per il montaggio pressacavi serie
FGA-FGAD-FG-FGF-FGN
Da 1/2" a 3"
in esecuzione Ex d IIC - Ex e II
Costruiti in accordo alle normative europee
EN 60079-0 - 2006
EN 60079-1 - 2004
EN 60079-7 - 2003
EN 60529 - 1991
EN 61241-1 - 2004
Ed in accordo alla nuova direttiva ATEX
94/9/CE del 23-03-1994

Numero di certificato

ELFIT ... Ⓔx CE 0722 II 2GD Ex d IIC/Ex e II
Ex tD A21 IP 66/67 CESI 02 ATEX 081X

Mounting instructions of cables gland type
FGA-FGAD-FG-FGF-FGN
from 1/2" to 3"
execution Ex d IIC - Ex e II
Manufactured in according to european codes
EN 60079-0 - 2006
EN 60079-1 - 2004
EN 60079-7 - 2003
EN 60529 - 1991
EN 61241-1 - 2004
And in according to the new Directive ATEX
94/9/EC of 23-03-1998

Certificate number

ELFIT ... Ⓔx CE 0722 II 2GD Ex d IIC/Ex e II
Ex tD A21 IP 66/67 CESI 02 ATEX 081X

ISTRUZIONI DI SICUREZZA

SAFETY INSTRUCTIONS

Rivolte a personale qualificato in accordo con le leggi nazionali,incluse le relative norme e,dove applicabile in accordo con IEC 79.17, riguardante le apparecchiature elettriche per atmosfere potenzialmente esplosive.

Non sono ammesse modifiche al prodotto

Devono essere utilizzate solo parti di ricambio ELFIT

Le operazioni di manutenzione ordinarie e straordinarie devono essere effettuate solo da personale qualificato con l'approvazione di tecnici "esperti"

Le manutenzioni devono essere effettuate sempre dopo aver toloto tensione al motore o all'apparecchiatura elettrica interessata

Devono essere seguite scrupolosamente le seguenti istruzioni per ottenere una perfetta installazione

Devono essere strettamente osservate le norme nazionali di sicurezza e prevenzione infortuni, e le prescrizioni indicate con ⚠ nel presente fascicolo tecnico.

Per pressacavi armati con armatura a nastro, si deve provvedere ad una tenuta alla trazione mediante dado antistrappo o un ancoraggio all'interno dell'apparecchiatura elettrica.

They are destined to qualified personnel in compliance with the national laws and where applicable, in accordance with IEC 79.17 Standard,concerning electrical appliances to products are not allowed.

Changes to products are not allowed.

Only ELFIT spare parts must be used.

Everyday and extraordinary maintenance operations must be carried out only by qualified personnel after approvalfrom expert thecnicians.

The maintenances operations must be carried out only after the engine has been cut of from mains or from the related electrical appliance.

The following instructions must be strictly followed in order to get a perfect.

The national safety rules and accident prevention regulations, specified as ⚠ in this thecnical booklet, must be strictly respected.

For cable glands for armoured cables with tape armour it is necessary to see to the maintenance to the tractionthrough an anti tearing nut or a clamping inside electrica equipment.

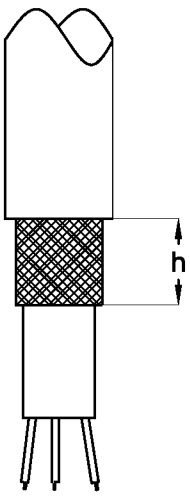
ISTRUZIONI PER IL MONTAGGIO

- I pressacavi vengono impiegati per cavi armati aventi una armatura metallica a filamenti, intrecciata o a nastro metallico e per cavi non armati.
- I pressacavi in esecuzione Ex d IIC ed Ex e II possono essere utilizzati anche per circuiti EEx i. In questo caso i pressacavi devono avere una parte verniciata, di colore blù chiaro.
- Nella tabella A, sono indicati i range di passaggi cavi per grandezza dei singoli pressacavi.
- Nella tabella B sono indicati i passaggi massimi dei pressacvi per tipo di filettatura.
- In basso viene schematizzata la preparazione dei cavi armati per il loro assiemaggio.

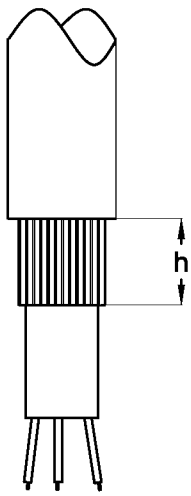
MOUNTING INSTRUCTIONS

- The cable glands are used for armoured cables with a metal braided,filamented armour or steel tape armour ,as well as for non armoured cables.
- The cable glands Ex d IIC and Ex e II, can be used with circuits EEx i. These cable glands should have a part painted light blu.
- In the table A you see the range of the cable passage for size of the single cable gland
- In the table B you see the maximum passage of the cable glands for threading type
- Below you see the scheme of the preparation of the armoured cables for their assemblage

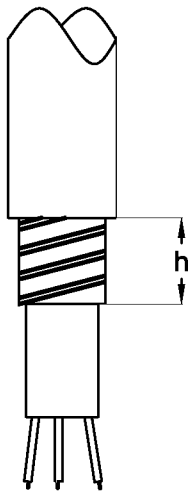
Preparazione cavi armati / Preparation armoured cables



Armatura intrecciata
Braided armour



Armatura a filamenti
Filamented armour



Armatura a nastro
Tape armour

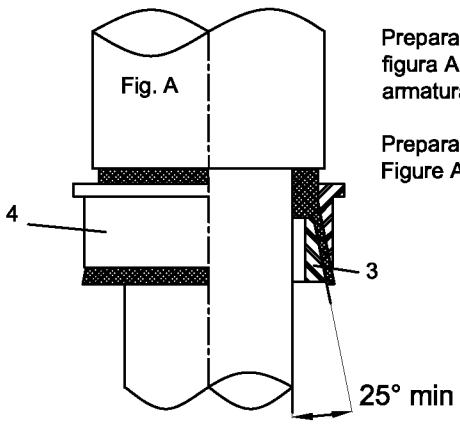


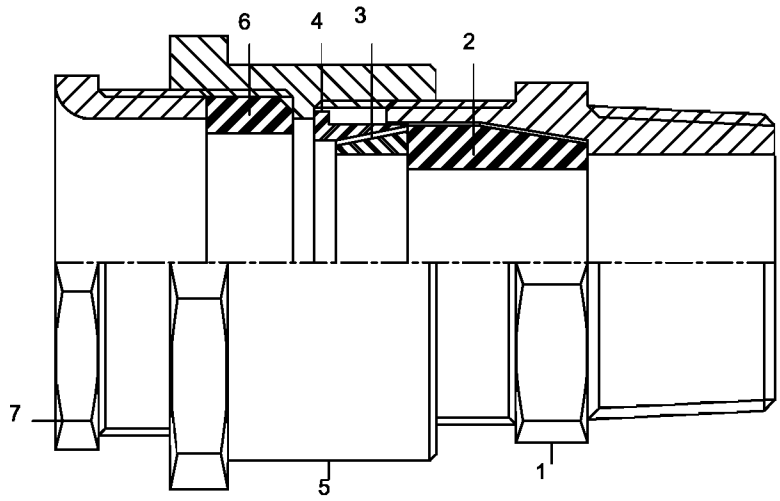
Fig. A

Preparazione armatura - h = altezza della ghiera 4 + 2mm massimo
figura A - Apertura armatura prima della connessione con la ghiera 3 e la ghiera 4 stringi armatura

Preparation of armour - h min = Heigth of ring 4 + 2 mm max.
Figure A - Opening of armour before connection with ring 3 and the armour tightening ring 4.

Pressacavo serie FGA
Esecuzione Ex d IIC ; Ex e II

Cable gland type FGA
Execution to Ex d IIC ; Ex e II



Composizione pressacavo:
1) Corpo maschio
2) Gommino di tenuta interno
3) Ghiera stringiarmatura interna
4) Ghiera stringiarmatura esterna
5)Corpo intermedio
6) Gommino esterno per tenuta IP sulla guaina esterna del cavo.
7) Dado

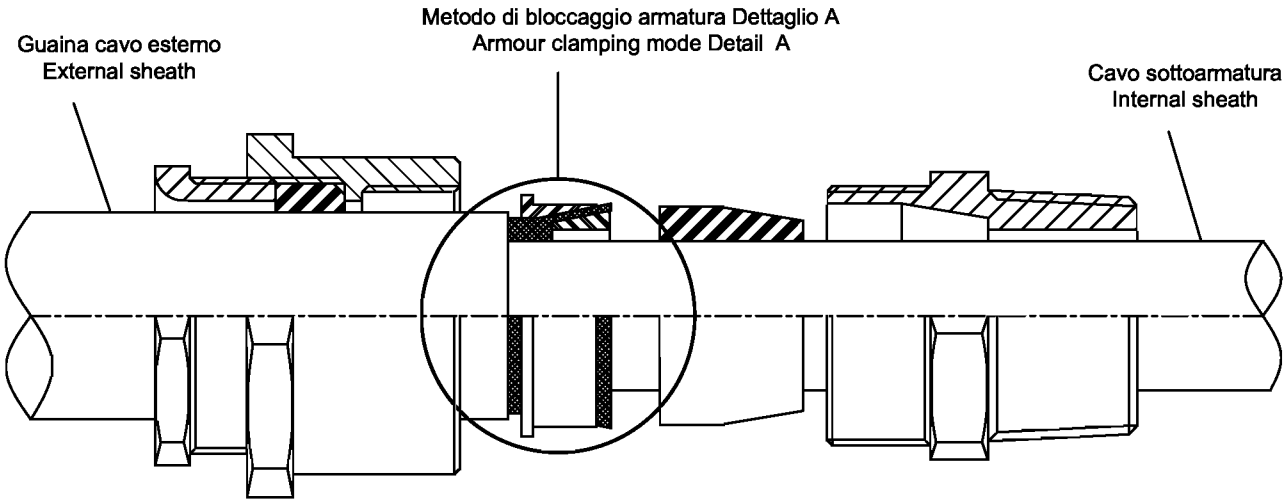
Composition of cable gland:
1) Male body
2) Inner holding rubber
3) Inner armour tightening ring
4) Outer armour tightening ring
5) Middle body
6) External rubber for IP holding on the outer sheath of cable
7) Nut

Istruzioni per il montaggi / Assembling instructions

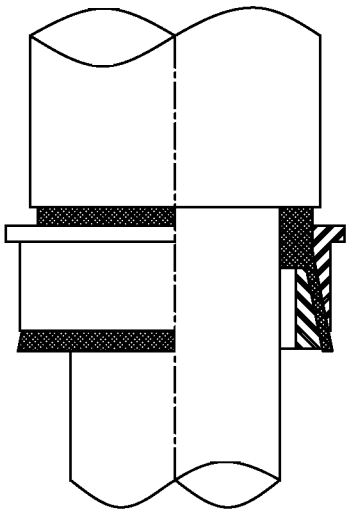
I°- Assemblare il corpo 1 completo di gommino 2 sull'apparecchiatura
II°- Infilare in sequenza sul cavo precedentemente preparato i particolari 7-6-5 e preassemblare il tutto senza stringere
III°-Infilare la ghiera 4 sull'armatura
IV°-Aprire l'armatura in modo tale da poter connettere la ghiera 3 con la ghiera 4
V°-Dopo la connessione, non devono rimanere dei filamenti di armatura sporgenti,che possano interferire con il filetto del corpo 1.Se si dovesse riscontrare tale inconveniente, i filamenti sporgenti devono essere recisi per non compromettere l'assiemaggio finale tra corpo 1 e corpo intermedio 5.
VI°- Infilare la guaina sottoarmatura nel gommino 2 e le due ghiere precedentemente assemblate nel corpo 1,mantenendo sempre in pressione il cavo verso l'interno dell'apparecchiatura, in modo tale da non far fuoriuscire l'armatura dalle due ghiere 3-4
VII°- Completare l'assiemaggio serrando i particolari preassemblati (punto II°) sul corpo 1 e stringere l'intero sistema

I°-Fit the body 1 on the electric equipment with rubber 2
II°-Slip the details 7-6-5 one after another one on the cable previously prepared and preassemble all togetherete without tighting.
III°-Insert the ring 4 on the armour
IV°- Open the armour in order to be able to connect ring 3 to ring 4
V°-After the connection not leave any armour filaments leaning ou of the assembly because they can interferewith the thread of the body 1.If this happens, the leaning filaments must be cut off so as not to effect negatively the final assembly between the body 1 and the middle body 2
VI°-Insert the armour sleeve in the gasket 2 and the two rings previously assembled, in the body 1, always keeping the cable pressed against the inside of the apparatus and not let the armour move away from the locking system (Rings 3-4)
VII°-Complete the installing operation, tightening the preassemble components (point II°) into the body 1 and clamping the system

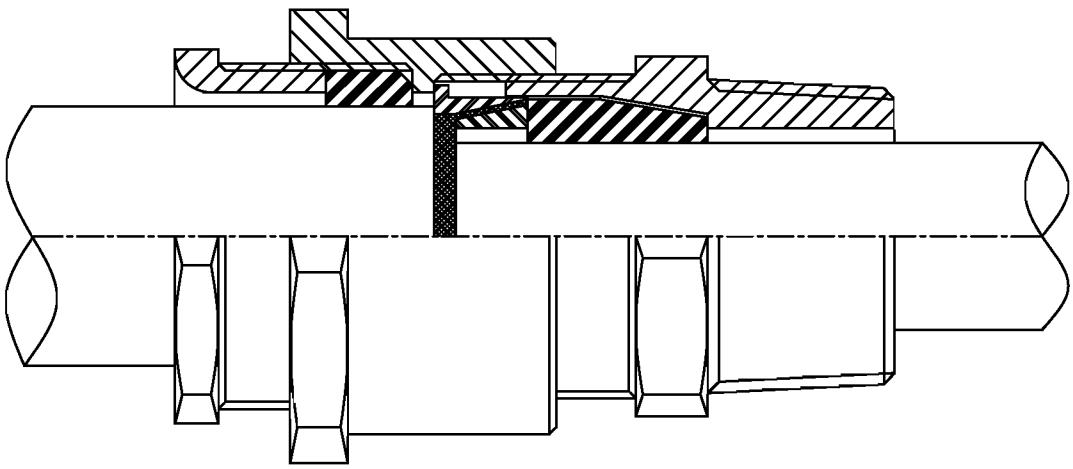
Assemblaggio pressacavo / Assembly cable glands



Dettaglio A
Detail A

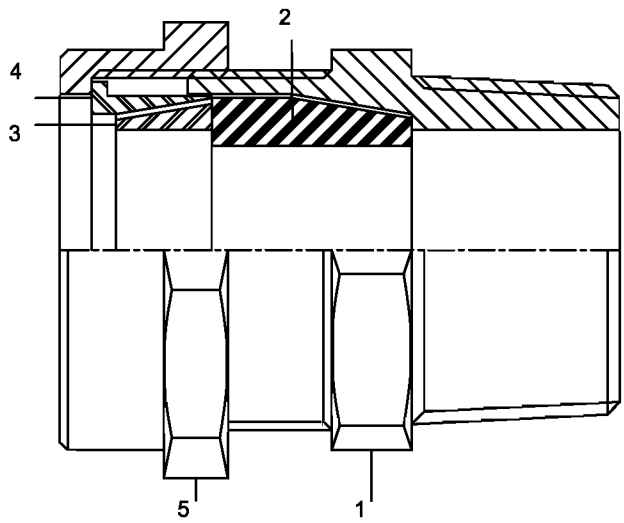


Schema pressacavo correttamente assemblato
Cable gland plan correctly assembled



Pressacavo serie FGAD
Esecuzione Ex d IIC ; Ex e II

Cable gland type FGAD
Execution to Ex d IIC ; Ex e II



Composizione pressacavo:
1) Corpo maschio
2) Gommino di tenuta interno
3) Ghiera stringiarmatura interna
4) Ghiera stringiarmatura esterna
5) Dado

Composition of cable gland:
1) Male body
2) Inner holding rubber
3) Inner armour tightening ring
4) Outer armour tightening ring
5) Nut

Istruzioni per il montaggi / Assembling instructions

I°- Assemblare il corpo 1 completo di gommino 2 sull'apparecchiatura
II°- Infilare in sequenza sul cavo precedentemente preparato il dado 5
III°-Infilare la ghiera 4 sull'armatura
IV°-Aprire l'armatura in modo tale da poter connettere la ghiera 3 con la ghiera 4
V°-Dopo la connessione, non devono rimanere dei filamenti di armatura sporgenti,che possano interferire con il filetto del corpo 1.Se si dovesse riscontrare tale inconveniente, i filamenti sporgenti devono essere recisi per non compromettere l'assiemaggio finale tra corpo 1 e corpo intermedio 5.
VI°- Infilare la guaina sottoarmatura nel gommino 2 e le due ghiere precedentemente assemblate nel corpo 1,mantenendo sempre in pressione il cavo verso l'interno dell'apparecchiatura, in modo tale da non far fuoriuscire l'armatura dalle due ghiere 3-4
VII°- Completare l'assiemaggio serrando il dado 5 sul corpo 1

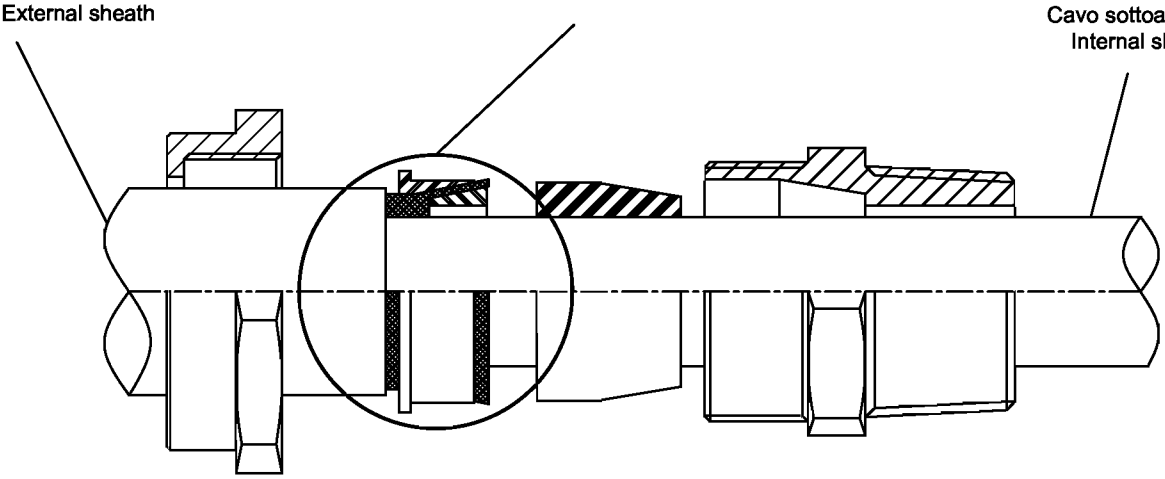
I°-Fit the body 1 on the electric equipment with rubber 2
II°-Insert the nut 5 on the previously prepared cable
III°-Insert the ring 4 on the armour
IV°- Open the armour in order to be able to connect ring 3 to ring 4
V°-After the connection not leave any armour filaments leaning out of the assembly because they can interferewith the thread of the body 1.If this happens, the leaning filaments must be cut off so as not to effect negatively the final assembly between the body 1 and the middle body 5
VI°-Insert the armour sleeve in the gasket 2 and the two rings previously assembled, in the body 1, always keeping the cable pressed against the inside of the apparatus and not let the armour move away from the locking system (Rings 3-4)
VII°-Complete the installing operation, by tightening the nut 5 into the body 1

Assemblaggio pressacavo / Assembly cable glands

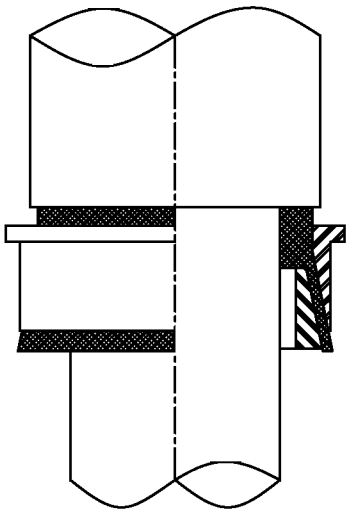
Metodo di bloccaggio armatura Dettaglio A
Armour clamping mode Detail A

Guaina cavo esterno
External sheath

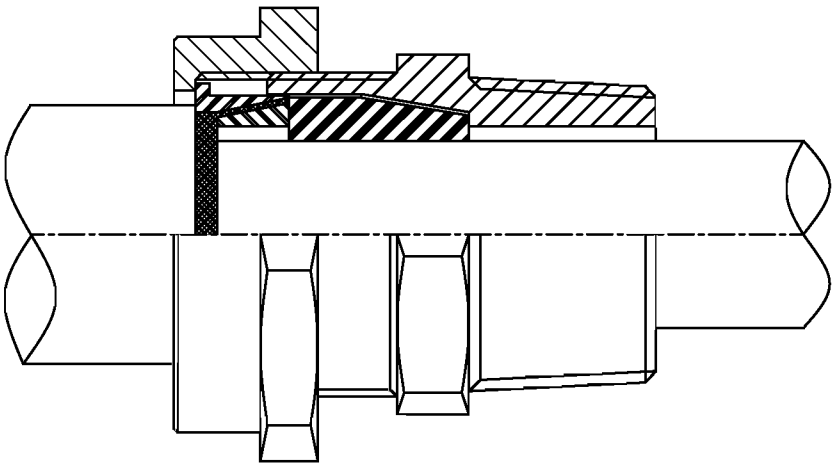
Cavo sottoarmatura
Internal sheath



Dettaglio A
Detail A

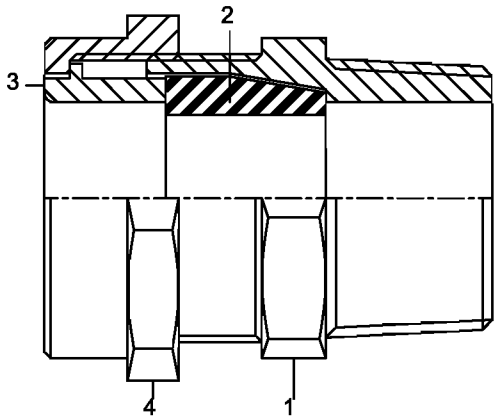


Schema pressacavo correttamente assemblato
Cable gland plan correctly assembled



Pressacavo serie FG
Esecuzione Ex d IIC ; Ex e II

Cable gland type FG
Execution to Ex d IIC ; Ex e II



Composizione pressacavo:
1) Corpo maschio
2) Gommino di tenuta interno
3) Ghiera
4) Dado

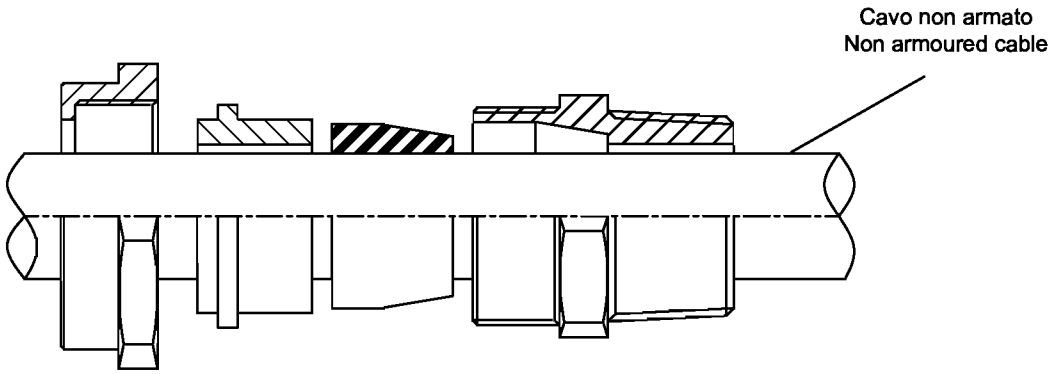
Composition of cable gland:
1) Male body
2) Inner holding rubber
3) Ring
4) Nut

Istruzioni per il montaggi / Assembling instructions

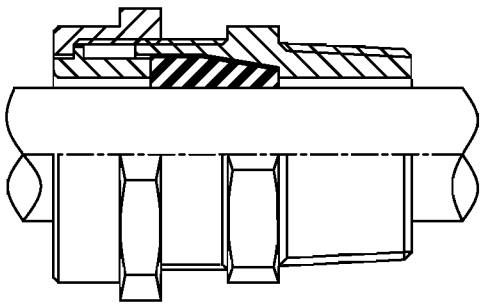
I°- Infilare sul cavo il dado 4 e la ghiera 3
II°- Assemblare il corpo 1 sull'apparecchiatura elettrica comprensivo di gommino 2
III°-Dopo aver infilato il cavo dentro il gommino 2 serrare il tutto con il dado 4.

I°-Slip in the cable the nut 2 and the ring 3
II°-Fit on the body 1 on the elecric equipment with rubber 2
III°-After having slipped the cable into the rubber 2,tighten all said assembly with the nut 4.

Assemblaggio pressacavo / Assembly cable glands

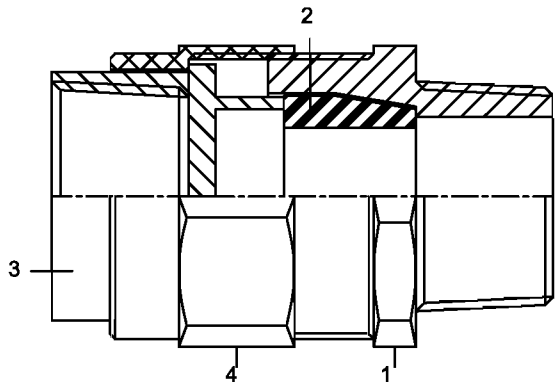


Schema pressacavo correttamente assemblato / Cable gland plan correctly assembled



Pressacavo serie FGF
Esecuzione Ex d IIC ; Ex e II

Cable gland type FG F
Execution to Ex d IIC ; Ex e II



Composizione pressacavo:
1) Corpo maschio
2) Gommino di tenuta interno
3) Bordino femmina
4) Dado

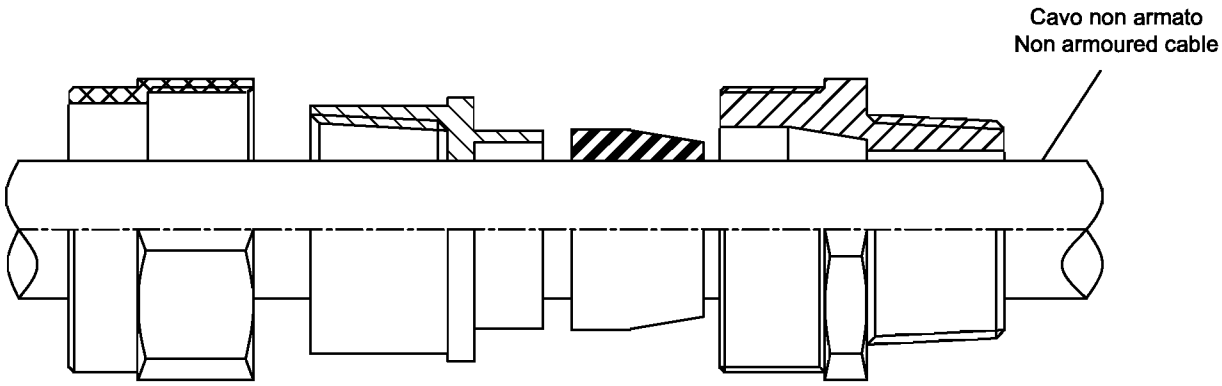
Composition of cable gland:
1) Male body
2) Inner holding rubber
3) Female ring
4) Nut

Istruzioni per il montaggio / Assembling instructions

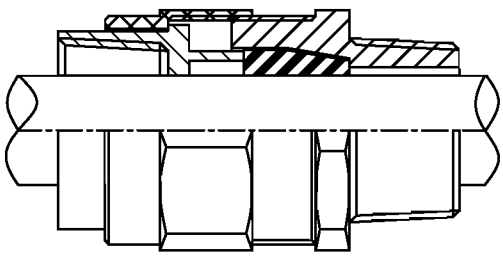
I°- Infilare sul cavo il dado 4 e il bordino femmina 3
II°- Assemblare il corpo 1 sull'apparecchiatura elettrica comprensivo di gommino 2
III°-Dopo aver infilato il cavo dentro il gommino 2 serrare il tutto con il dado 4.

I°-Slip in the cable the nut 2 and the female ring 3
II°-Fit on the body 1 on the elecric equipment with rubber 2
III°-After having slipped the cable into the rubber 2,tighten all said assembly with the nut 4.

Assemblaggio pressacavo / Assembly cable glands

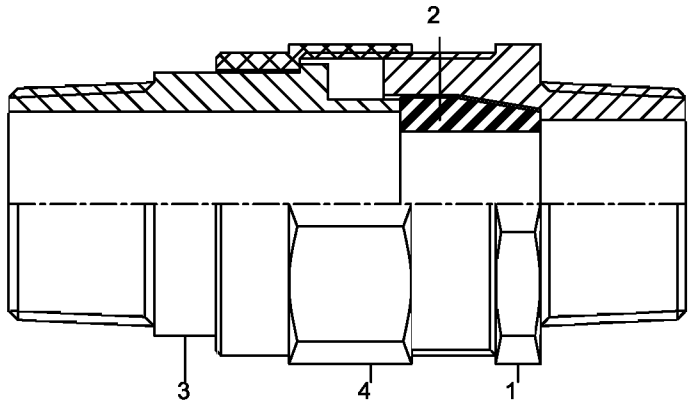


Schema pressacavo correttamente assemblato / Cable gland plan correctly assembled



Pressacavo serie FG
Esecuzione Ex d IIC ; Ex e II

Cable gland type FG
Execution to Ex d IIC ; Ex e II



Composizione pressacavo:
1) Corpo maschio
2) Gommino di tenuta interno
3) Bordino maschio
4) Dado

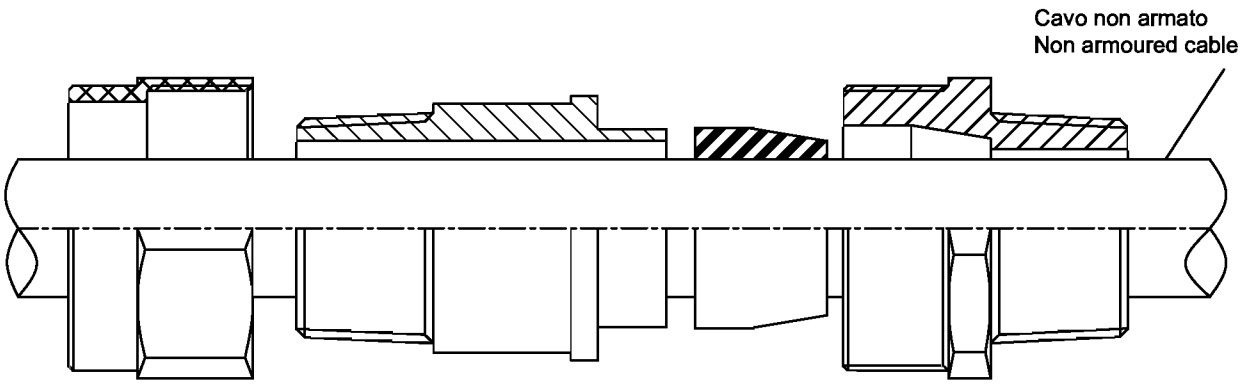
Composition of cable gland:
1) Male body
2) Inner holding rubber
3) Male ring
4) Nut

Istruzioni per il montaggi / Assembling instructions

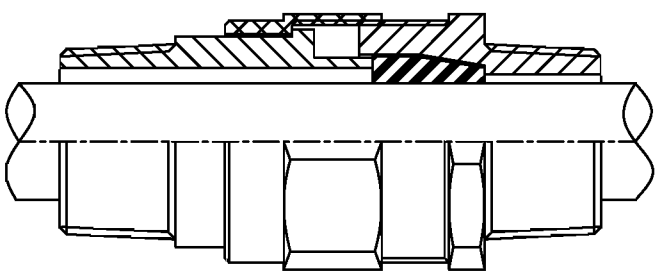
I°- Infilare sul cavo il dado 4 e il bordino maschio 3
II°- Assemblare il corpo 1 sull'apparecchiatura elettrica comprensivo di gommino 2
III°-Dopo aver infilato il cavo dentro il gommino 2 serrare il tutto con il dado 4.

I°-Slip in the cable the nut 2 and the male ring 3
II°-Fit on the body 1 on the elecric equipment with rubber 2
III°-After having slipped the cable into the rubber 2,tighten all said assembly with the nut 4.

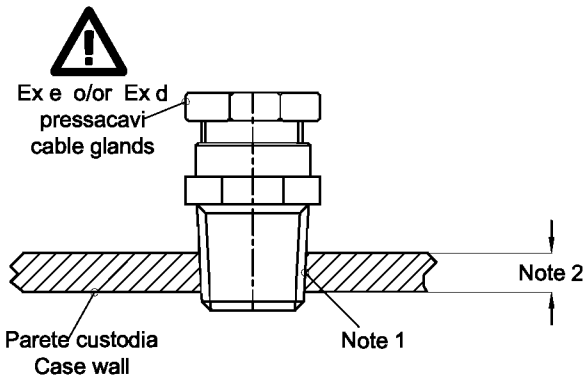
Assemblaggio pressacavo / Assembly cable glands



Schema pressacavo correttamente assemblato / Cable gland plan correctly assembled



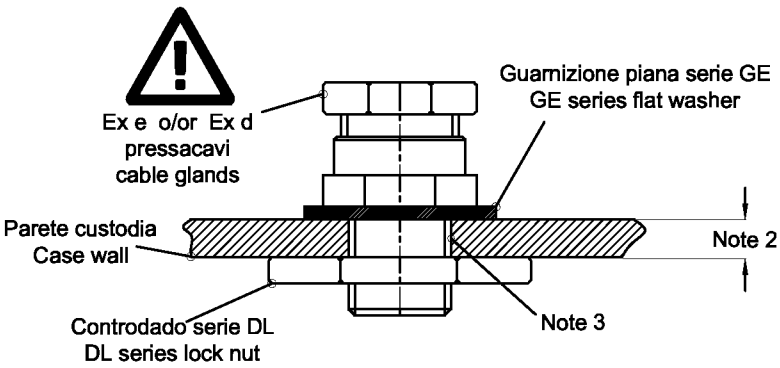
Modo ti protezione IP per pressacavi in esecuzione Ex d - Ex e con filettatura conica
IP protection mode for Ex d-Ex e cable glands with tapered thread



Note :
1) Per ottenere una sicura tenuta IP tra giunto pressacavo e imbocco della custodia, si deve coprire minimo due filetti completi con sigillante " Loctite 577" prima di serrare.
2) Lo spessore minimo della custodia deve essere:
- 5 mm per pressacavi Ex e
- Per pressacavi Ex d si devono avere almeno 6 filetti costruttivi

Note :
1) Ingress Protection: in order to guarantee the specified IP rating, Loctite 577 Thread Sealant shall be applied on the thread (at least two full threads) before fitting to the entry of the enclosure.
2) The minimum thickness of the wall of the enclosure shall be:
- 5 mm for Ex-e cable glands
- For Ex-d cable glands, the enclosure shall be thick enough to engage at least 6 full threads.

Modo ti protezione IP per pressacavi in esecuzione Ex d - Ex e con filettatura cilindrica
IP protection mode for Ex d-Ex e cable glands with cylindrical thread



Note 3
Per la protezione IP 66/67 e per il modo di bloccaggio, coprire almeno due filetti con la "Loctite 577", prima del fissaggio (in alternativa alla GE e DL).
In ogni caso si deve assicurare la continuità metallica
For IP 66/67 degree of protection and clamping mode,you have to put min. two thread the must be covered with "Loctite 577" before tightening up (instead of LOCTITE you can choice the GE and DL)
In any case you must pay attention to garantee the metallic continuity.

Note :

1) Per ottenere una sicura tenuta IP tra giunto pressacavo e imbocco della custodia passante o filettata,ci si deve comportare come di seguito descritto:

Custodie Ex d :
Serraggio con controdado serie DL e guarnizione di tenuta piana esterna serie GE per custodie aventi una parete con spessore minimo 9 mm (imbocchi custodia solo filettati)

Custodie Ex e :
Serraggio con controdado serie DL e guarnizione di tenuta piana esterna serie GE per custodie aventi una parete con spessore minimo 1,5 mm per tutte le misure, 10 mm massimo per misure da 3/8" a 3/4" e 18 mm massimo per misure da 1" a 2" (imbocchi custodia passanti e/o filettati)

Note :

To ensure that the specified IP is achieved after the threaded joint of the cable gland is fitted to the threaded hub ot through hole of the case, please follow the steps detailed hereafter:

Ex-d enclosures:
Use DL series locknut and outer soft washer GE for enclosures with walls having a minimum thickness equal to 9 mm (threaded female hubs only).

Ex-e enclosures:
Tighten with DL series locknut inside, and soft washer GE on the outside of the enclosure, for enclosures with walls having a minimum thickness equal to 1,5 mm for all sizes, 10 mm max. for sizes from 3/8" to 3/4" and 18 mm max. for sizes from 1" to 2" (threaded and through female hubs).

Tabelle / Tables

Tipo pressacavo Cable gland type	Range Ø d min-max Range Ø d min-max	Range Ø D min-max Range Ø D min-max
FGA 1	6÷9 ; 9÷12	8÷11; 11÷14 ; 14÷17
FGA 2	11÷14 ; 14÷17	17÷20 ; 20÷23 ; 23÷25
FGA 3	17÷20 ; 20÷23	23÷26 ; 26÷29 ; 29÷32
FGA 4	23÷26 ; 26÷29	29÷32 ; 32÷36 ; 36÷39
FGA 5	29÷32 ; 32÷36	36÷39 ; 39÷42 ; 42÷44 ; 44÷46
FGA 6	36÷39 ; 39÷42 ; 42÷46	44÷48 ; 48÷52 ; 52÷56 ; 56÷60
FGA 7	44÷48 ; 48÷52 ; 52÷56 ; 56÷60	51÷55 ; 55÷59 ; 59÷63 ; 63÷67
FGA 8	59÷63 ; 63÷67 ; 67÷71	65÷69 ; 69÷73 ; 73÷77 ; 77÷81

Tipo pressacavo Cable gland type	Range Ø d min-max Range Ø d min-max
FG 1	6÷9 ; 9÷12
FG 2	11÷14 ; 14÷17
FG 3	17÷20 ; 20÷23
FG 4	23÷26 ; 26÷29
FG 5	29÷32 ; 32÷36
FG 6	36÷39 ; 39÷42 ; 42÷46
FG 7	44÷48 ; 48÷52 ; 52÷56 ; 56÷60
FG 8	59÷63 ; 63÷67 ; 67÷71

Tipo pressacavo Cable gland type	Range Ø d min-max Range Ø d min-max
FGAD 1	6÷9 ; 9÷12
FGAD 2	11÷14 ; 14÷17
FGAD 3	17÷20 ; 20÷23
FGAD 4	23÷26 ; 26÷29
FGAD 5	29÷32 ; 32÷36
FGAD 6	36÷39 ; 39÷42 ; 42÷46
FGAD 7	44÷48 ; 48÷52 ; 52÷56 ; 56÷60
FGAD 8	59÷63 ; 63÷67 ; 67÷71

Tipo pressacavo Cable gland type	Range Ø d min-max Range Ø d min-max
FGF 1	6÷9 ; 9÷12
FGF 2	11÷14 ; 14÷17
FGF 3	17÷20 ; 20÷23
FGF 4	23÷26 ; 26÷29
FGF 5	29÷32 ; 32÷36
FGF 6	36÷39 ; 39÷42 ; 42÷46
FGF 7	44÷48 ; 48÷52 ; 52÷56 ; 56÷60
FGF 8	59÷63 ; 63÷67 ; 67÷71

Tipo pressacavo Cable gland type	Range Ø d min-max Range Ø d min-max
FGN 1	6÷9 ; 9÷12
FGN 2	11÷14 ; 14÷17
FGN 3	17÷20 ; 20÷23
FGN 4	23÷26 ; 26÷29
FGN 5	29÷32 ; 32÷36
FGN 6	36÷39 ; 39÷42 ; 42÷46
FGN 7	44÷48 ; 48÷52 ; 52÷56 ; 56÷60
FGN 8	59÷63 ; 63÷67 ; 67÷71

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C.C.I.A.A. GORIZIA N° 39435
TRIBUNALE DI GORIZIA
N° 1556 REG. SOC.
COD. FISC. E P. IVA 00124320318

DICHIARAZIONE CE DI CONFORMITA'

Declaration CE of conformity
N° CE/010

Il costruttore :
***We* :**

EL.FIT S.P.A.
VIA AQUILEIA,12
34070 VILLESSE (GO)-ITALIA

Dichiara qui di seguito che il prodotto :
***hereby declare that the product* :**

N° Certificato/Number certificate : CESI 02 ATEX 081X

Pressacavi in esecuzione II 2GD Exd IIC Ex e II tD A21 IP 66/67 serie:
FGA – FG – FGAD – FGF - FGN
Cable glands execution II 2GD Ex d IIC Ex e II tD A21 IP 66/67 type:
FGA – FG – FGAD – FGF - FGN

risulta in conformità con quanto previsto dalle seguenti direttive comunitarie,e con la relativa legislazione nazionale di recepimento:
is in conformity with the following comunitary directives,and with the relevant national laws:

94/9/EC

e che sono state applicate le seguenti norme armonizzate :
and that the following harmonized standards have been applied :

EN 60079-0/2004 - EN 60079-1/2004 - EN 60079-7/2003
EN 60529/1991 – EN 61241-1/2004

Organismo Notificato CESI 0722 Via Rubattino-54 20134 Milano-Italia
Notified Body CESI 0722 Via Rubattino-54 20134 Milano-Italy

VILLESSE, 2007-03-12

FIRMA
Signature

CORTEM GROUP™

RACCORDI TIPO
RE - REB - REM - REN - PLG
ESECUZIONE
II 2GD Ex d IIC Ex e II Ex tD A21 IP66/67
ISTRUZIONI DI SICUREZZA, USO E MANUTENZIONE

Fitting type
RE - REB - REM - REN - PLG
execution
II 2GD Ex d IIC Ex e II Ex tD A21 IP66/67
safety, maintenance and mounting instructions

IN ACCORDO ALLA DIRETTIVA 94/9/CE
according to directive 94/9/EC

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tel. +39 02 76 1103 29
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Tel. 0481-964911 fax. 0481-964999

ELFIT | cortem | FONDISONZO

Istruzioni per il montaggio raccorderia serie
RE-REB-REM-REN-PLG
in esecuzione Ex d IIC e Ex e II IP66/67
Costruite in accordo alle normative europee
EN 60079-0 - 2006
EN 60079-1 - 2004
EN 60079-7 - 2003
EN 60529 - 1991
EN 61241-1 - 2004
EN 61241-0 - 2006
Ed in accordo alla nuova direttiva ATEX
94/9/CE del 23-03-1994

Ta -40°C +150°C

Numero di certificato

ELFIT .. Ⓔx CE 0722 II 2GD Ex d IIC
Ex e II Ex tD A21 IP66/67CESI 02 ATEX 049

Mounting instructions of junction boxes type
RE-REB-REM-REN-PLG
execution Ex d IIC and Ex e II IP66/67
Manufactured in according to european codes
EN 60079-0 - 2006
EN 60079-1 - 2004
EN 60079-7 - 2003
EN 60529 - 1991
EN 61241-1 - 2004
EN 61241-0 - 2006
And in according to the new Directive ATEX
94/9/EC of 23-03-1994

Ta -40°C +150°C

Certificate number

ELFIT .. Ⓔx CE 0722 II 2GD Ex d IIC
Ex e II Ex tD A21 IP66/67 CESI 02 ATEX 049

ISTRUZIONI DI SICUREZZA

SAFETY INSTRUCTIONS

Rivolte a personale qualificato in accordo con le leggi nazionali, incluse le relative norme e, dove applicabilein accordo con IEC 79.17 riguardante le apparecchiature elettriche per atmosfere potenzialmente esplosive.

- Non sono ammesse modifiche al prodotto

- Devono essere seguite scrupolosamente le seguenti istruzioni per ottenere una perfetta installazione

- Devono essere strettamente osservate le norme nazionali di sicurezza e prevenzione infortuni, e le prescrizioni indicate con ⚠ nel presente fascicolo tecnico.

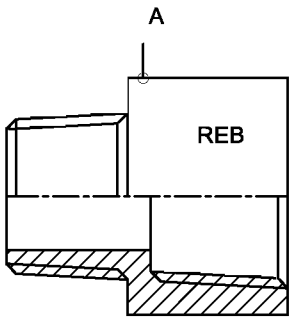
For skilled electricians and instructed personnel in accordance with national legislation, including the relevant standards and, where applicable, in accordance with IEC 79.17 on electrical apparatus for explosive atmospheres.

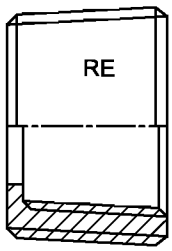
- Changes of the design and modifications to the fittings are not permitted

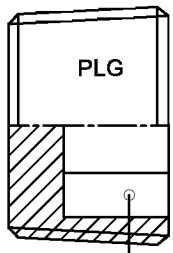
- To obtain a perfect installation it must be followed scrupulously the present instructions

- The national safety rules and regulations for prevention of accidents and the following safety instruction which are marked with an ⚠ in these operating instruction, will have to be observed

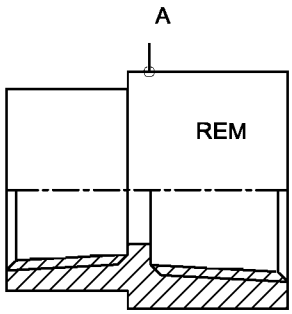
Tipi raccorderia
Fittings type

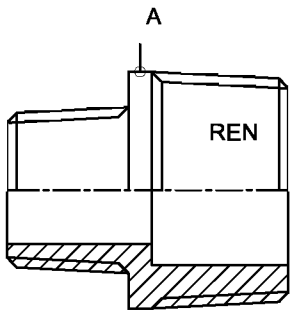






Sede per serraggio con chiave
Seat for tightening with spanner





NOTA A
Posizione da tenere per serraggio con chiave
Position for tightening with spanner

ISTRUZIONI PER IL MONTAGGIO

MOUNTING INSTRUCTIONS

1)Tutti i prodotti qui raffigurati possono essere impiegati negli impianti elettrici in luoghi con pericolo di esplosione o incendio eseguiti in conformit^ a quanto previsto dalle norme di installazione CEI EN 60079-14. In particolare l'esecuzione Ex d è prescritta per le apparecchiature installate nei luoghi pericolosi ,ossia laddove gli impianti elettrici devono essere AD-PE .

1)All the products in this part of drawing may be used in the electrical installations in hazardous areas in accordance with the prescritions of CEI EN 60079-14 codes. In particular the Ex d execution is required for the equipment installed in the hazardous areas , where the electrical installation must be explosion proof.

ISTRUZIONI PER IL MONTAGGIO

2)Gli adattatori serie RE-REB-REM-REN permettono di convertire filettature maschio in filettature femmina o viceversa,diametri maggiori in diametri minori o viceversa.Inoltre consentono di collegare parti con filettature di tipo diverso.Gli adattatori serie REN si possono ottenere anche assemblando un adattatore serie RE con un nipplo serie NP (esempio : REN 43 = RE 43 - NP3).

3)I tappi serie PLG permettono la chiusura di imbocchi femmina o fori inutilizzati, su tubazioni o custodie Ex d.Dopo il montaggio i tappi devono essere bloccati con "Loctite 577" se filettati conici o con un controdado serie DL e "Loctite 577" se filettati cilindrici.(Vedere schema C)

4) Per tappi o adattatori con filettatura cilindrica in esecuzione Ex e, la tenuta IP viene assicurata mediante guarnizione piana o "Loctite 577"(Vedere schema A)

5) E` importante attenersi alle prescrizioni indicate nello schema B per un corretto montaggio

6) La posizione da tenere, per il serraggio con chiave, sui diversi tipi di raccordi, è indicata in " Tipi raccorderie".Il sistema di montaggio è quello indicato nello schema B.

MOUNTING INSTRUCTIONS

2)The adaptors type RE-REB-REM-REN are suitable to change a male thread into a female thread, or vice versa;larger diameter into smaller diameter or vice versa.Besides having these characteristics,are suitable to connect parts with different threads.The adaptors type REN can be obtain also assembling a adaptor type RE with a nipple type NP (example REN 43=RE43 + NP3).

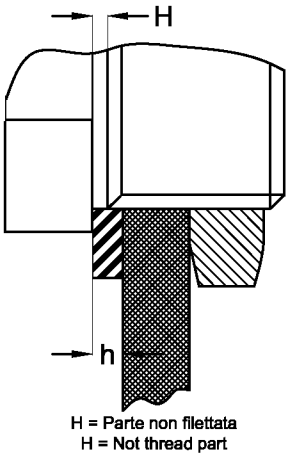
3)The PLG series of screw plugs are for closing of female hubs or unused openings on Ex d piping or casing.Tightening is possible because of the hexagonal hollow within the body of the screw plug.After the mounting the plugs must be locked with "Loctite 577" if the thread is tapered and with nut DL type and "Loctite 577" if the thread is cylindrical.(See scheme C)

4) For male plug in exor adapators with cylindrical thread in execution Ex e, the IP protection degree to be obtain with plain gasket or "Loctite 577" sealing (see scheme A)

5)It is important to follow the prescription indicated in the scheme B.

6) The position gives to hold for clamping with spanner, is indicated in "Fittings Types".The method of assembly is indicated in scheme B.

Dettaglio A
Detail A

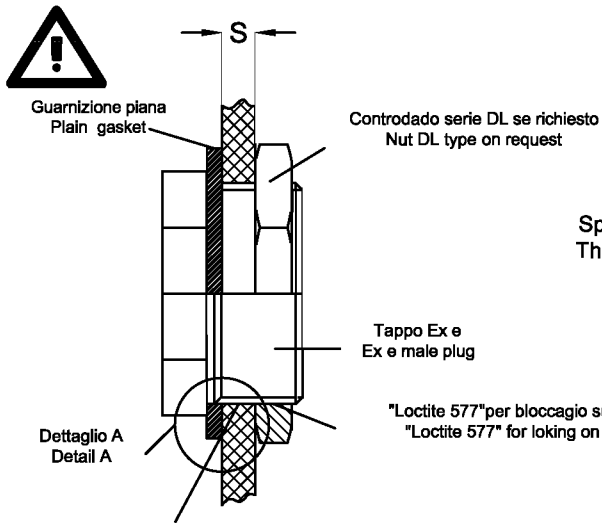


H = Parte non filettata
H = Not thread part

h = Spessore guarnizione piana
h = thickness plain gasket

h sempre > 0,5 mm di H
h always > 0,5 mm of H

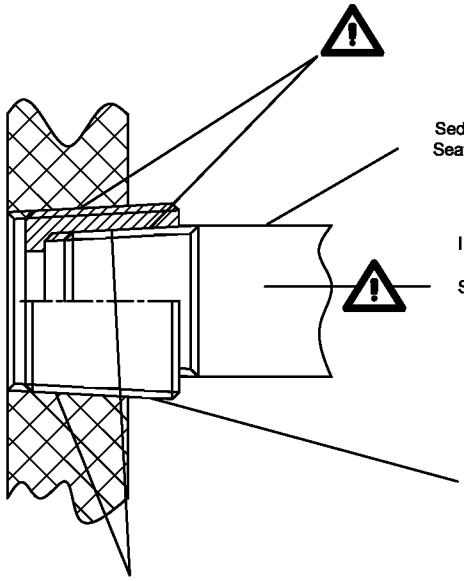
Schema A
Scheme A



Spessore S min. 1,5 mm
Thickness S min. 1,5 mm

Schema B
Scheme B

I° -Assicurasi prima dell'assiemaggio che i due imbocchi filettati siano privi di materiali coprenti (vernici-teflon-ecc)in quanto detti materiali non assicurano una tenuta antideflagrante sul filetto.
Before assembling the fittings you must make sure that the thread hubs are without cover coated materials because these materials don't assure a flameproof tight on the thread.



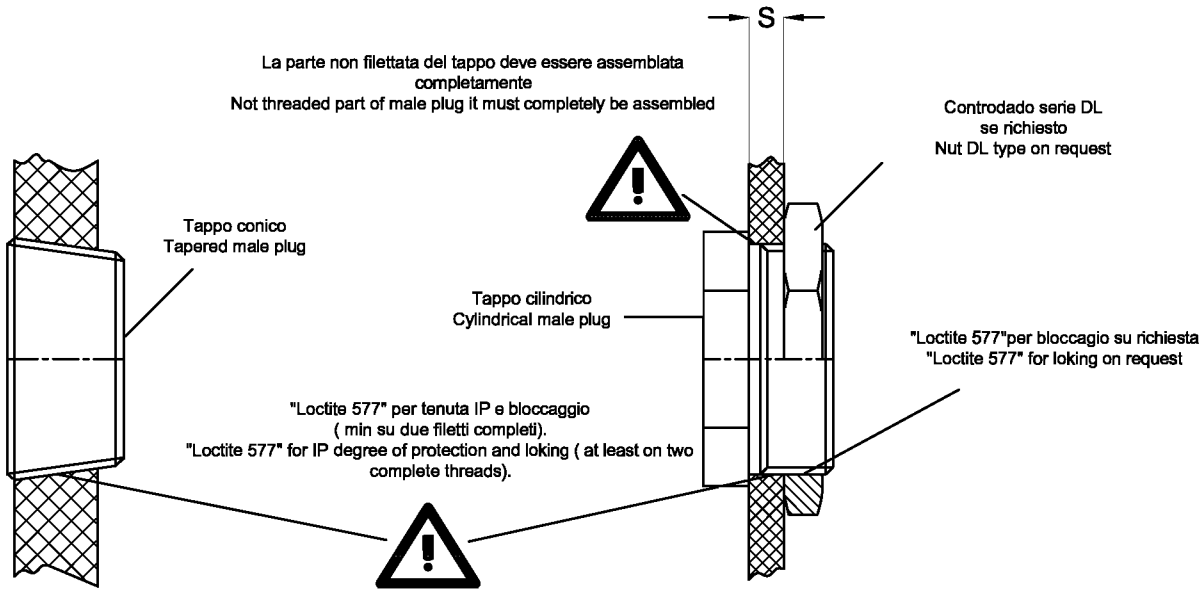
Sede per chiave
Seat for spanner

III°-Avvitare sull'adattatore il raccordo a mano fino al suo completo bloccaggio. Assicurare il serraggio dello stesso con mezzo giro di chiave.
Screw down the fitting on the adaptor by hand until his complete loking. Assure the closing of the fitting with a half turn of spanner.

II°-Avvitare l'adattatore a mano fino al suo completo bloccaggio.
Screw down the adaptor by hand until his complete loking.

Per ottenere il bloccaggio e/o una tenuta IP sulla filettatura stendere sulla stessa un velo di "Loctite 577" (min su due filetti completi).
In ogni caso si deve fare attenzione a garantire la continuità metallica.
To obtain the fixing or/and IP degree of protection on the thread put on it just a bit of "LOCTITE 577" (at least on two complete threads).
In any case you must pay attention to garantee the metallic continuity.

Schema C
Scheme C



Spessore S min. 6 filetti in presa
Thickness S min. 6 threads engaged

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TRIBUNALE DI GORIZIA
N° 1556 REG. SOC.
COD. FISC. E P. IVA 00124320318

DICHIARAZIONE CE DI CONFORMITA'

Declaration CE of conformity

N° CE/007

Il costruttore :
We :

EL.FIT S.P.A.
Via Aquileia – 12
34070 Villesse (GO) – ITALIA

Dichiara qui di seguito che il prodotto :
Hereby declare that the product :

N° Certificato/Number certificate : CESI 02 ATEX 049

Adattatori e tappi maschio Ex d IIC – Ex e II – II 2GD tD A21 IP66/67 :
serie RE – REB – REM – REN - PLG
Adaptors and male plug Ex d IIC – Ex e II – II 2GD tD A21 IP66/67 :
type RE – REB – REM – REN - PLG

risulta in conformità con quanto previsto dalle seguenti direttive comunitarie, e con la relativa legislazione nazionale di recepimento:
is in conformity with the following comunitary directives,and with the relevant national laws:

94/9/EC

e che sono state applicate le seguenti norme armonizzate :
and that the following harmonized standards have been applied :

EN 60079-0/2004 – EN 60079-1/2004 – EN 60079-7/2003
EN 60.529/1991 – EN 61241-1/2004

Organismo Notificato CESI 0722 Via Rubattino-54 20134 Milano-Italia
Notified Body CESI 0722 Via Rubattino-54 20134 Milano-Italy

Villesse 2007-03-12

Firma/*Signature* :