

◦ COSTRUZ. APPARECCHIATURE ED ACCESSORI PER IL GAS

◦ NATURAL GAS EQUIPMENT

◦ LAVORAZIONI MECCANICHE

◦ MACHINING

# MANOMETRO DIFFERENZIALE INDICATORE DI INTASAMENTO

## DIFFERENTIAL PRESSURE GAUGE



### CARATTERISTICHE GENERALI MAIN FEATURES

<b>CONNESSIONI CONNECTIONS</b>	<b>RP 1/4"</b>
<b>PRESSIONE MASSIMA DI ESERCIZIO MAX WORKING PRESSURE</b>	<b>100 BAR</b>
<b>MATERIALE MATERIAL</b>	
<b>CORPO-BODY</b>	<b>ACCIAIO STEEL</b>
<b>COPERCHIO-COVER</b>	<b>ACCIAIO STEEL</b>
<b>MANIFOLD- COD.15001</b>	<b>ACCIAIO STEEL</b>

### MANIFOLD- COD.15001 OPTIONAL

<b>NORMALE STANDARD</b>	<b>SCALA RANGE</b>	<b>CODICE CODE</b>
<b>DP/G 1.5</b>	<b>0 ÷ 0.15 BAR</b>	<b>10242</b>
<b>DP/G 3</b>	<b>0 ÷ 0.3 BAR</b>	<b>10244</b>
<b>DP/G 6</b>	<b>0 ÷ 0.6 BAR</b>	<b>10246</b>
<b>DP/G 10</b>	<b>0 ÷ 1 BAR</b>	<b>10248</b>
<b>DP/G 20</b>	<b>0 ÷ 2 BAR</b>	<b>10250</b>

<b>CONTATTO ELETTRICO REED SWITCH</b>	<b>SCALA RANGE</b>	<b>CODICE CODE</b>
<b>DP/G 1.5 RM</b>	<b>0 ÷ 0.15 BAR</b>	<b>10254</b>
<b>DP/G 3 RM</b>	<b>0 ÷ 0.3 BAR</b>	<b>10256</b>
<b>DP/G 6 RM</b>	<b>0 ÷ 0.6 BAR</b>	<b>10258</b>
<b>DP/G 10 RM</b>	<b>0 ÷ 1 BAR</b>	<b>10260</b>
<b>DP/G 20 RM</b>	<b>0 ÷ 2 BAR</b>	<b>10262</b>



**GUGLIELMI  
DANILO**



ISO 9001 : 2008  
Certificato n° 30700388 QM08

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Reg.imp.Vicenza, Cod.Fisc.e Part. IVA:02951940242

Cap.Soc.Euro 60,000,00 i.v.

-COSTRUZIONI APPAR. E ACCESSORI  
PER IL GAS

-*MANUFACTURING OF EQUIPMENT  
AND DEVICES FOR GAS*

-VALVOLE E FILTRI

-*VALVES AND FILTERS*

-LAVORAZIONI MECCANICHE

- *MACHINING*

**DIFFERENTIAL PRESSURE GAUGE PN 100 ANSI 600 STEEL**

**MAIN SPECIFICATION**

**Connections: Rp 1/4" UNI-ISO 7/1**

**Max working Pressure: 100 bar ANSI 600**

**Pneumatic test: 110 bar**

**Hydrostatic test: 150 bar**

**Temperature: - 20 °C / + 60 °C**

**Range/Step:**

**DP/G 1,5: 0 - 150 mbar**

**DP/G 3: 0 - 300 mbar**

**DP/G 6: 0 - 600 mbar**

**DP/G 10: 0 - 1000 mbar**

**DP/G 20: 0 - 2000 mbar**

**MATERIALS**

**BODY: Steel ASTM A 105**

**COVER: Steel ASTM A 105**



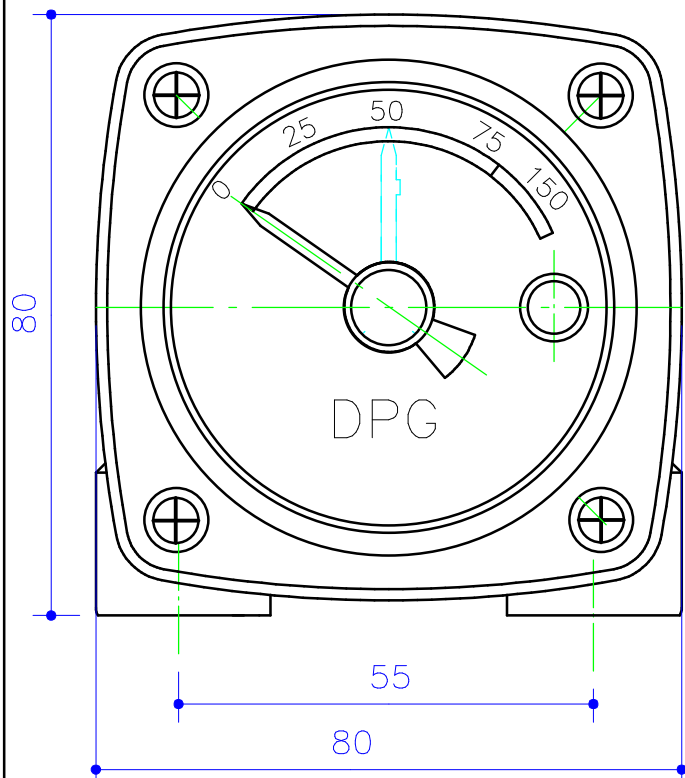
# INSTRUCTIONS

## INDICATORE DI INTASAMENTO

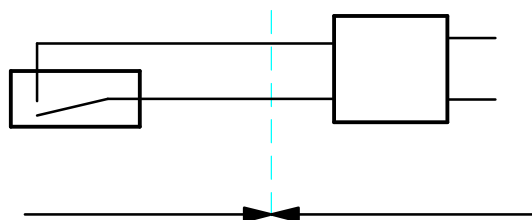
### DIFFERENTIAL PRESSURE INDICATOR

### PRESSURE GAUGE

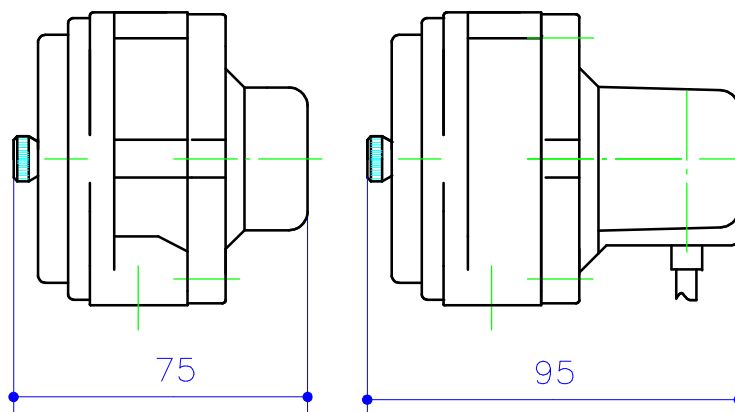
### MANOMETRO DIFERENCIAL



CARATTERISTICHE GENERALI MAIN FEATURES	
CONNESSIONI CONNECTIONS	Rp 1/4"
PRESS. MASS. DI ESERCIZIO MAX WORKING PRESSURE	100 BAR
MATERIALE MATERIAL	
CORPO-BODY	ACCIAIO STEEL
COPERCHIO-COVER	ACCIAIO STEEL
MANIFOLD-COD. 15001	ACCIAIO STEEL
TEMPERATURA TEMPERATURE	-20°C/+60°C



Zona pericolosa	Zona sicura
Dangerous area	Safe area
Zone dangereuse	Zone de sèguretè
Zona perigrosa	Zona segura



#### INSTRUCTION REQUIRED BY PED DIRECTIVE 2014/68/UE

The differential pressure gauge, even if included in the PED 2014/68/UE directive, is not subject to the CE marking, as it is excluded from the article 4/3 of the same directive.

If the customer, by his side sells the manometer to another customer, he is obliged to provide the use instructions.

The Guglielmi Srl company declines any responsibility in the case that our customers sell the manometer without use instructions.

#### INDEX

1. General Information
2. Installation
3. Setting in service
4. Use
5. User's maintenance and controls
6. Safety measures
7. Handling and trasport operations
8. Warranty

follow behind

## 1. GENERAL INFORMATIONS

- Keep the present instruction manual in safe condition and in a place within easy distance for the operators.
- The present manual doesn't exempt from safety and accident-prevention laws in force.
- Guglielmi Danilo Srl Company declines any responsibility in case of:
  - incorrect use of the equipment when in pressure;
  - equipment's modification when in pressure;
  - non-fulfilment of safety and accident-prevention laws in force;
  - non-compliance with the enclosed installation instruction;
- The DP clogging indicator is an instrument which is suitable for surveying the pressure droops in high and/or low pressure environment. Particularly, it may be employed for surveying the clogging degree of the cartridge filters installed on reducing and metering gas stations. The functioning principle is based on the survey of the differential-pressure with a membrane equipped with a contrast spring. It is equipped with an enainment index hand which is able to supply the utmost value of the differential-pressure which took place
- Main features:
  - two colours dial with indication of the pressure droops field beyond the 75% of the full scale
  - dial graduated both in mbar and p.s.d.i.
  - max working pressure up to 100 bar
  - suitable for being installed outside with a -20°C to 60°C room temperature
  - accuracy  $\pm 20\%$  of the full scale
  - maximum index hand that may be zeroed manually from outside
  - calibration is not required
  - the structure is able to bear full inlet pressure by one side of the membrane
  - it may be coupled to a manifold equipped with three incorporated valves that allows:
    - connect the DP to two environments of which it is necessary to survey the differential-pressure without any to pass between them
    - intercept the connections between the two environments under pressure in case of maintenance or substitution of the DP (it is not necessary to depressurize the filter)
    - put the environments under pressure in by-pass in order to inspect the zero setting of the DP
  - it is also available a version(DP/RM) with an incorporated proximity magnetic sensor for telemetering the signal of maximum differential-pressure equal to the 75% of the full scale. This version is made under intrinsic safety according with the rules in force and required the installation of a barrier in a safe area. The maximum distance between the clogging indicator and the barrier must be of 100 m.

## 2. INSTALLATION

- After unpacking, inspect the equipment's integrity when in pressure; if you have any doubt about its integrity, do not use the equipment and ask information to trained personnel.
- Check that the gas pipe is impurity or slag free .
- In case of outdoor installation, protect the equipment when in pressure by accidental impacts.

## 3. SETTING IN SERVICE

- Setting must be done by skilled personnel.

## 4. USE

- Equipment use when in pressure is not allowed to unskilled personnel .
- Do not overcome maximum acceptable limits in terms of pressure shown on the label.
- Avoid foreign bodies entrance into the equipment when in pressure.
- Do not subject the equipment when in pressure to cyclical loads, both steady and unsteady.

## 5. USER'S MAINTENANCE AND CONTROLS

- Do not carry out cleanings with unsuitable mechanical systems, as drills or high pressure jets.
- Do not open the equipment when in pressure.
- Gas is potentially corrosive; before use analyse its composition and verify its compatibility with materials used in the manufacture
- The gas within the equipment is highly inflammable; do not cause any kind of flame trigger.
- Do not clean the equipment with highly corrosive chemical detergent.

## 6. SAFETY MEASURES

- Install always safety attachments in accordance with national law requirements. A fire generated by outside reasons can cause an overcoming of the acceptable equipment's limits when it is in pressure.
- For the design, the production and exercise of gas pressure control and measurement installations, always follow the national law in force of the country where the equipment when in pressure is installed.
- During the functioning, do not subject the equipment when in pressure to any kind of hurt.
- Do not carry out any kind of welding.
- Do not use the equipment for any other purpose than the prescribed one.
- In case of gas leakage, arrest immediately the functioning of the equipment when in pressure.

## 7. HANDLING AND TRASPORT OPERATIONS

- Do not cause any kind of hurt.
- Follow the prescriptions contained in this operative instructions.
- Lifting and transport operations must be done by experienced personnel.
- According with your country's law in force, the material used for the packaging must be recycled or disposed with the waste.
- This equipment contains recyclable material: at the end of its life, check up about recycling set of rules in force in your country.

## 8. WARRANTY

- Guglielmi Danilo Srl Company fully warrants each instrument for a one year long period since gas station installation, but no further 18 months from the shipment date.
- The present warranty is meant with the return of the instrument in our facilities.
- Guglielmi Danilo Srl Company declines any immediate and non-immediate damages to persons or things caused by installation non conformity with the law in force or executed by unskilled personnel.

**Guglielmi Danilo S.r.l.**

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Reg. Imp. Vicenza, Cod.Fiscale e Partita Iva: 02951940242

Cap. Soc. Euro 60.000 I.v.

- **COSTRUZ. APPARECCHIATURE  
ED ACCESSORI PER IL GAS**
- **VALVOLE**
- **LAVORAZIONI MECCANICHE**

## Declaration of conformity

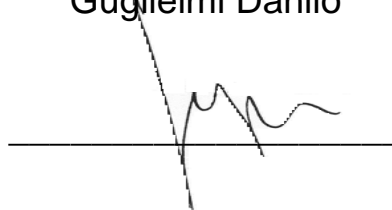
We, **Guglielmi Danilo S.r.l. via dell'Artigianato, 31 - 36050 Bolzano Vicentino (VI) – ITALY** declare, under our sole responsibility, that the equipment

- Description: **magnetic proximity switch**
- Code: **10916-\*\*-\*\*\***
- Marking **Ex ib IIC T4 Gb**

to which this declaration refers, is a **simple apparatus** designed and manufactured in compliance with clauses **5.7** and **6.3.13** requirements of **IEC 60079-11:2011** and **EN 60079-11:2012-01** standards.

Before installation, see **instructions for hazardous area use**.

technical authorized person  
by **Guglielmi Danilo S.r.l.**  
Guglielmi Danilo



Bolzano Vicentino (VI)  
21.11.2016

## 10916-\*\*-\*\*\* magnetic proximity switch instructions for hazardous area use

This document supplements, but not replace, the *magnetic proximity switch* main operating manual.

It applies exclusively to the *magnetic sensor* use in hazardous area.  
See the *magnetic proximity switch* main operating manual for specifications and details.

The *magnetic proximity switch* can be used in hazardous area in compliance with the following manufacturer instructions only.  
Any different use is forbidden as well as any tampering.

### 1. Marking

The *magnetic proximity switch* is a **simple apparatus** according to IEC 60079-11:2011 and EN 60079-11:2012-01 standards clause 5.7 and 6.3.13.  
It is marked as below.

**Ex ib IIC T4 Gb**

### 2. Environmental conditions

- 2.1. ambient temperature range:  $-20^{\circ}\text{C} \leq T_{\text{ambient}} \leq +60^{\circ}\text{C}$
- 2.2. process temperature range:  $-20^{\circ}\text{C} \leq T_{\text{process}} \leq +60^{\circ}\text{C}$
- 2.3. ambient pressure range:  $80 \text{ kPa} \pm 110 \text{ kPa}$
- 2.4. risk of mechanical danger (IEC 60079-0 clause 26.4.2) - cable / enclosure **low / high**

### 3. Permissible operating conditions in an intrinsically safe circuit

- 3.1. hazardous area suitability: **zone 1 and zone 2**
- 3.2. gas group suitability: group **IIC**, group **IIB** and group **IIA**
- 3.3. temperature class suitability: **T4, T3, T2 and T1**

1

### 4. Intrinsic safe input parameters

- 4.1.  $U_i$ : **100V**
- 4.2.  $I_i$ : **0,4A**
- 4.3.  $P_i$ : **1,2W**
- 4.4.  $C_i$ : see the label and item 5
- 4.5.  $L_i$ : see the label and item 5

### 5. Clarification about $C_i$ and $L_i$ parameters

The overall value of  $C_i$  and  $L_i$  parameters of the *magnetic proximity switch* depends on the cable length and they are shown on the label.  
If the cable is shortened the actual overall value of  $C_i$  and  $L_i$  parameters can be recalculated using the following formulas:

$$C_i = 0,7[\text{pF}] + 200[\text{pF/m}] \times \text{cable length}[\text{m}] \text{ and } L_i = 4[\mu\text{H}] + 1[\mu\text{H/m}] \times \text{cable length}[\text{m}]$$

example: cable length = **1,5 m** then

$$C_i = 0,7[\text{pF}] + 200[\text{pF/m}] \times 1,5[\text{m}] = \mathbf{300,7\text{pF}}$$

$$\text{and } L_i = 4[\mu\text{H}] + 1[\mu\text{H/m}] \times 1,5[\text{m}] = \mathbf{5,5 [\mu\text{H}]}$$

### 6. General requirements

- 6.1. The installation, inspection and maintenance of the *magnetic proximity switch* shall be carried out by responsible personnel and operative skilled according to IEC 60079-14, IEC 60079-25 and IEC 60079-17 standards.
- 6.2. The *magnetic proximity switch* can be installed in hazardous area when it is included in an intrinsically safe circuit only. The intrinsically safe circuit must be designed and installed according to IEC 60079-14 and IEC 60079-25 standards.
- 6.3. The *magnetic proximity switch* shall be handled with care during the following operations: loading, transport, unloading, movement and mounting.
- 6.4. Before installation, it shall be verified that any explosive atmosphere is not present. This precaution shall be guaranteed as long as the installation and the initial inspection are completed.

2

6.5. After installation, do not remove or handle the *magnetic proximity switch* if an explosive gas atmosphere may be present (except as provided as an alternative in accordance with IEC 60079-17 and IEC 60079-14 standards).

### 7. Installation

#### 7.1. Mechanical mounting

7.1.1. The *magnetic proximity switch*, when it is installed, shall not be exposed to the following phenomena: vibrations, leakage currents, stray currents, cathodic protections system currents and electrostatic discharge currents.

7.1.2. The *magnetic proximity switch* shall not be physically connected to external source of heating or cooling, except its process interface.

7.1.3. Special protection system (e.g. heat shield, shelter or others) shall be taken to ensure that the *magnetic proximity switch* is not exposed to thermal radiation or solar irradiation.

#### 7.2. Electric connection

7.2.1. The *magnetic proximity switch* shall be electrically connected by its own cable to a suitable device for use in intrinsically safe circuits.

7.2.2. The *magnetic proximity switch* cable must be mechanically protected.  
It must be installed separately from non-intrinsically safe circuits where required by IEC 60079-14 standard.

7.2.3. Earthing or bonding of brass enclosure is not required.  
However, it is allowed earthing or bonding of brass enclosure through mechanical installation.

The insulation between internal circuits and the brass enclosure is guarantee due the dielectric strength test according to IEC 60079-11 standard clauses 6.3.13 and 10.3, that it was successfully passed.

### 8. Maintenance.

The *magnetic proximity switch* calibration and adjustment operations, shall be made in nonhazardous area.  
However, it is possible to follow the alternative procedure according to IEC 60079-17 and IEC 60079-14 standards.

3

For further information about calibration and adjustment of *magnetic proximity switch* see the *magnetic proximity switch* main operating manual  
The *magnetic proximity switch* does not need normally maintenance except for as follows.

#### 8.1. Painting instructions

The *magnetic proximity switch* can be supplied with or without painting.

It is forbidden to coat with additional painting after delivery.

If the original paint is deteriorated it is possible to restore it following the below requirements:

- 8.1.1. Spray-paint is forbidden in hazardous area
- 8.1.2. It is forbidden to paint flameproof joints.
- 8.1.3. The overall thickness after treatment must not exceed **2mm**.

#### 8.2. Cleaning instructions

The *magnetic proximity switch* shall be kept clean and free from accumulation of dust and other that could cause excessive rise in temperature.

Clean the cable with a damp cloth.

#### 8.3. Repair instructions

It is forbidden to use the *magnetic proximity switch* if it is damaged or tampering. In this cases the *magnetic proximity switch* must be isolated electrically but earthing and bonding connections must be guaranteed.

It is forbidden to attempt to open the brass enclosure.

Any repair must be carried out by the manufacturer only.

4