

## PRESSURE GAUGES WITH ELECTRICAL CONTACTS DN 100 & 150

Are accessories with movable contacts in air, which open or close electrical circuits depending of the position of the indicating pointer.

They are used with Bourdon tube pressure gauges, bellows, in such way they become pressure switches: the optimal and sure solution to automate any kind of equipment.



### Constructive and functional characteristics:

**Accuracy:** When the indicating pointer is affected by the contact link to add to the gauge accuracy to 50% of their accuracy (with the exclusion of the working area within the 5% if the contact is magnetic type)

**Contact setting:** Over an arc of 270°, trough the knob placed on front lens or through removable key.

**Electrical wiring:** junction box PG9 as per DIN 43650 or cable 0.5 mt.

**Ambient temperature:** -25...+65°C.

**Protection:** IP 44 as per IEC 529, (option IP55).

**Contact material:** Silver-Nickel 80%-20% (options Gold-Silver and Platinum-Iridium).

**Window:** polycarbonate.

### **MINIMUM SCALES For contact types (as per DIN 16085)**

Ds	Model	Simple contact	Double contact
100-150	Stainless steel	1,6 bar	2,5 bar
100-150	Standard	1,6 bar	2,5 bar
100-150	Capsule	40 mbar	60 mbar
150	Absolute pressure	60 mbara	100 mbara
150	Bellow	40 mbar	60 mbar
150	Differential	100 mbar	160 mbar

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**MEI Manometría e Instrumentación, s.l.**

**Pol. Ind. "El Pla" C/ Comerç, 2-22 nave 13 E-08980 Sant Feliu de Llobregat Barcelona Spain**  
**Tf. +34 934 403 939 Fax. +34 934 483 986 www.mei.es e-mail: info@mei.es**



HT CES 100  
**PRESSURE GAUGES  
WITH ELECTRICAL CONTACTS  
DN 100 & 150**

**SLIDING CONTACTS:**

The electrical sliding contacts guarantee an accurate operation within a controlled hysteresis. However they are rather sensitive to vibration, moreover, very slow pressure changes may cause an electrical arc which can

**Constructive and functional characteristics:**

**Set-point accuracy:** 150% of instrument accuracy.  
**Set-point hysteresis:** 0.3% of full scale value.  
**Break rating:** 10W/18VA.  
**Maximum rating:** 250Vac/0.7A (ohmic load).

**LOAD RATINGS (1)**

Volt	DC	AC	Inductive load
220	40 mA	45 mA	25 mA
110	80 mA	90 mA	45 mA
48	120 mA	170 mA	70 mA
24	200 mA	350 mA	100 mA
Vdc minimum values: 24 Vcc / 20 mA			

(1) DIN 16085 recommendation

**MAGNETIC SNAP-ACTION CONTACTS:**

This type of contact is universally used to guarantee the reliable operation of gauges under sever vibration. The magnetic action is guaranteed by a "click operation", which improves contact capacity, life and is less sensitive to vibration. The required power to overcome the magnetic resistance causes an hysteresis at set-point between 2% to 5% of full scale value.

**Constructive and functional characteristics:**

**Set-point accuracy:** 150% of instrument accuracy.  
**Set-point hysteresis:** 2...3% of full scale value.  
**Break rating:** 30W/50VA.  
**Maximum rating:** 250Vac/1A (ohmic load).

**LOAD RATINGS (1)**

Volt	DC	AC	Inductive load
220	100 mA	120 mA	65 mA
110	200 mA	240 mA	130 mA
48	300 mA	450 mA	200 mA
24	400 mA	600 mA	250 mA
Vdc minimum values: 24 Vcc / 20 mA			

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HT CES 100

## PRESSURE GAUGES WITH ELECTRICAL CONTACTS DN 100 & 150

**GOLD-SILVER CONTACTS (80% - 20%)**

This alloy is particularly corrosion and surface oxidation resistant. The resistance of the contact is very low. To be used typically where the tension and the signal current are very low: intrinsically safe barrier, PLC and computer.

**Minimum voltage: 12 Vdc.**

**CONTROL RELAYS**

The use of signal amplifier is required where the instruments are subject to a frequent operations and where the applied load is the maximum permitted. In fact, from the possible production of arc, the result is high wearing of contact parts which reduces the life of the system.

**INDUCTIVE SENSORS (Only DN 150)**

The inductive contacts are intrinsically safe certified as per EN 50014/50020 norm with protection degree EEx ia IICT6.

To guarantee such protection degree the contacts must be supplied via a control relay which must have the same type of certificate. Therefore they are suitable for use in hazardous areas and in where high reliability against vibrations and frequent operations is required.

**PLATINIUM-IRIDIUM CONTACTS (75% - 25%)**

This alloy has good resistance against the electrical arc as well as good chemical resistance. To be used typically in case of frequently operations with high current values.

**Minimum voltage: 24 Vdc.**

**LOAD RATINGS**

(output relay of control unit W01-W02)

<b>Volt</b>	<b>DC</b>	<b>AC</b>
220	0.1 A	4 A
110	0.2 A	4 A
48	0.6 A	4 A
24	4 A	4 A

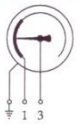







**Constructive and functional characteristics:**

Set-point accuracy: 150% of instrument accuracy.  
Set-point hysteresis: 0.3..1% of full scale value.

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WIRING SCHEME	ELECTRIC SCHEME	CLOCKWISE MOVEMENT OF THE POINTER CAUSES:	JUNCTION TYPE	CONTACT CODE	
				sliding (inductive)	magnetic snap-action
<b>SINGLE CONTACT</b>					
MINI 	3 — o — o — 1	<u>Opening</u>	Junction box PG9 DIN 43650 (1)	<b>01S (B1)</b>	<b>01S.BM1</b>
MAXI 	3 — o — o — 2	<u>Closing</u>	Junction box PG9 DIN 43650 (1)	<b>02S (B2)</b>	<b>02S.BM1</b>
<b>DOUBLE CONTACT (2)</b>					
1° MINI 2° MAXI 	3 — o — o — 1 o — o — 2	<u>Opening 1</u> <u>Closing 2</u>	Junction box PG9 DIN 43650 (1)	<b>01D</b>	<b>01D.BM2</b>
1° MAXI 2° MAXI 	3 — o — o — 1 o — o — 2	<u>Closing 1</u> <u>Closing 2</u>	Junction box PG9 DIN 43650 (1)	<b>02D</b>	<b>02D.BM2</b>
1° MAXI 2° MINI 	3 — o — o — 2 o — o — 1	<u>Closing 2</u> <u>Opening 1</u>	Junction box PG9 DIN 43650 (1)	<b>03D</b>	<b>03D.BM2</b>
1° MINI 2° MINI 	3 — o — o — 1 o — o — 2	<u>Opening 1</u> <u>Opening 2</u>	Junction box PG9 DIN 43650 (1)	<b>04D</b>	<b>04D.BM2</b>
<b>INDEPENDENT DOUBLE CONTACT (2)</b>					
1° MINI 2° MAXI 	3 — o — o — 2 4 — o — o — 1	<u>Opening 1</u> <u>Closing 2</u>	Cable 0,5 mt brown ① (-) black ② (-) blue ③ (+) gray ④ (+)	<b>08D (B12)</b>	<b>08D.BM2</b>
1° MAXI 2° MAXI 	3 — o — o — 2 4 — o — o — 1	<u>Closing 1</u> <u>Closing 2</u>	Cable 0,5 mt brown ① (-) black ② (-) blue ③ (+) gray ④ (+)	<b>09D (B22)</b>	<b>09D.BM2</b>

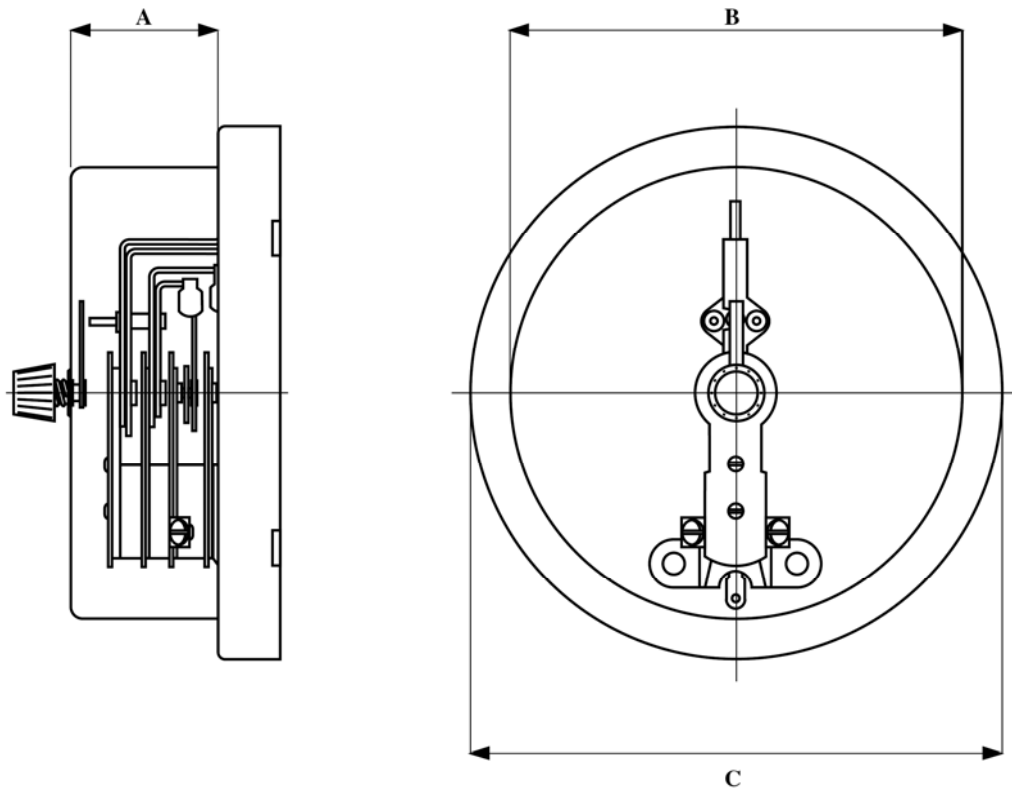
(1) cable 0,5 mt. for back connection and clamp instruments  
(cable colours: ① brown; ② black; ③ blue; ④ gray.  
(2) Each contact must not exceed the next one.

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**TYPES AND DIMENSIONS:**



**Single contact**

DS	A	B	C
100	24	95	112
150	24	142	166

**Double contacts**

DS	A	B	C
100	31	95	112
150	31	142	166

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