

The TMP301 All Stainless Steel Differential Pressure Gauge allows the measurement of pressure differences from 0 ... 60 mbar up to 0 ... 40 bar. Due to the double diaphragm design, it withstands static pressure levels on either side up to 400 bar.



## Applications

- Liquid & gaseous media
- Corrosive environments
- Oil & Gas applications
- Chemical & Petrochemical
- Level measurement in closed tank
- Filter monitoring

## Features

- Single side static sustainable
- Static pressure 400 bar max.
- External Zero adjustment
- Electric contact version
- Dry / liquid filled

## Reference

- EN 837-3
- ATEX 2014/34/UE

Standard parameters	
Accuracy <sup>1</sup>	CL 1.6 (AISI 316L SS / Hastelloy C276) CL 2.5 (Monel 400)
Ambient temperature	-40 ... + 60°C (without dampening liquid) -20 ... + 60°C (with dampening liquid)
Service temperature	100°C max
Static pressure limits (on either side)	100 bar / 250 bar / 400 bar
Over-pressure safety	400 bar for ranges 0 ... 0.4 bar up to 0 ... 40 bar
Zero shift	Max. ± 2% at 20°C and max. static pressure
Measuring range	0 ... 60 mbar to 0 ... 40 bar

<sup>1</sup> At 20°C and Zero static pressure.

## Ordering code

		TMP301	- XX	- XXX	- XX	- XXX	- XX	- XXXX	- XXX	- XX	- XXX	- XX
1. Dial size	100 mm / 4"		04									
	160 mm		07									
2. Range	Refer "Range Table"			XXX								
3. Mounting pattern	Direct, Bottom connection											B0
	Wall/Surface/Projection mounting, Bottom connection											B1
	2" Pipe/Yoke mounting, Bottom connection											B2
	Panel/Front flange mounting, Bottom connection											B3
4. Process connection <sup>1</sup>	¼" NPT (F) x 2 Nos.											12C
	3/8" BSP (M) x 2 Nos.											13C
	½" BSP (M) x 2 Nos.											14C
	M20 X 1.5 mm (M) x 2 Nos.											140
	½" NPT (M) x 2 Nos.											14P
5. Ingress protection	IP 65											ER
6. Execution	Dry											EA
	Dry but fillable											EB
	Dry but fillable, dielectric oil <sup>2</sup>											EF
	Dampening liquid, dielectric oil <sup>2</sup>											EK
7. Static pressure	40 bar											040
	100 bar											100
	250 bar											250
	400 bar											400
8. Switch category	Precision contacts (magnetic)											RS
	Without Contacts											00
9. Switch type	Break contact (1NC)											CD1
	Make contact (1NO)											CD2
	2 x Break contact (2NC)											CD3
	2 x Make contact (2NO)											CD4
	1Break + 1 Make (1NC + 1NO)											CD5
	1 Make + 1 Break (1NO + 1NC)											CD6
	SPDT											CD7
	DPDT											CD8
	Without Contacts											000
10. Other options	Monel diaphragm	DM										TC
	Hastelloy C-276 diaphragm	DO										TM
	Maximum reading pointer	GW										TN
	External zero adjustment (Standard for filled versions)	GZ										TO
	Monel chambers	NM										TX
	Hastelloy C-276 chambers	NO										XF
	Food grade oil filled chamber	OF										XR
	5 - point calibration certificate	TA										XT
	ATEX Version only without contacts <sup>3</sup>	AX										

## Compatible accessories

Diaphragm seal

5 Valve Manifolds

3 Valve manifolds

<sup>1)</sup> For other connections, please contact factory.

<sup>2)</sup> Rubber parts shall be in Viton.

<sup>3)</sup>  II 2 G Ex h IIC T6...T5 Gb X  
II 2 D Ex h IIIC T85°C...T100°C Db X

Specifications		
<b>Material of construction</b>	Sensing element	Double diaphragm, Internal stop without o-ring ≤ 16 bar - AISI 316L SS, > 16 bar Inconel 718
	Case & Ring material	AISI 316 SS (Bayonet type)
	Diaphragm	AISI 316 SS
	Chamber	AISI 316 SS
	Fastener	AISI 304 SS ( PN 100 bar max.) Alloy steel zinc flake coated, RoHS complaint (PN 250 bar and PN 400 bar)
	Movement mechanism	Stainless Steel with ball bearing
	Transmission chamber dampening liquid	Silicon oil
	Chamber sealing gaskets	Viton
	Dial	Aluminum, black graduation on white background
	Pointer	Micro-zero adjustable, aluminum, black powder coated
	Gaskets & filling plug	NBR
	Window	Shatterproof Safety Glass, 4mm thickness
	Purging plug	2 x 1/4" NPT (M), AISI 316L SS
<b>Standard specifications</b>	Dial size	DN100 / DN160
	Range	0 ... 60 mbar 0 ... 100 to 0 ... 250 mbar 0 ... 0.4 to 0 ... 40 bar
	Mounting pattern	Direct, Bottom connection
	Process connection	1/4" NPT (F) x 2 Nos.
	Ingress protection	IP 65 - EN 60529 / IEC 529
	Execution	Dry
<b>Temperature effect</b>	When temperature of the measuring system deviates from reference temperature (+20°C) max error ±0.8% / 10K of true scale value.	
<b>Standard specifications: dampening liquid filled, glycerin or silicon oil</b>	Accuracy	CL 2.5
	Window	Shatterproof safety glass
	Dampening liquid	Glycerin 99,7%/Silicon oil 47V50

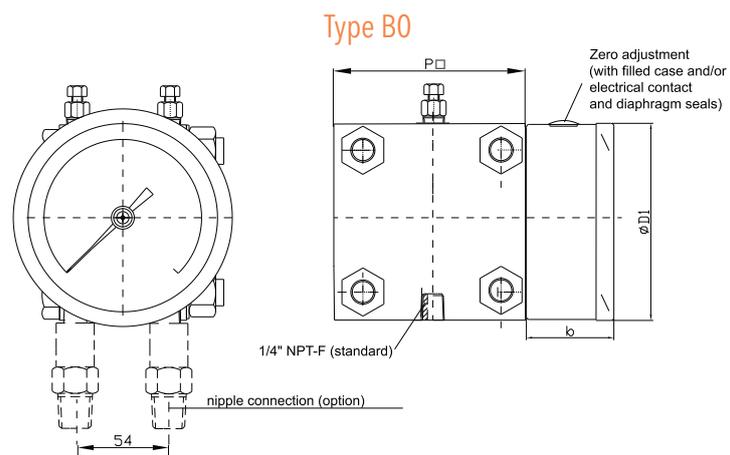
**Pressure Ranges & Dimensions - All dimensions are in mm**

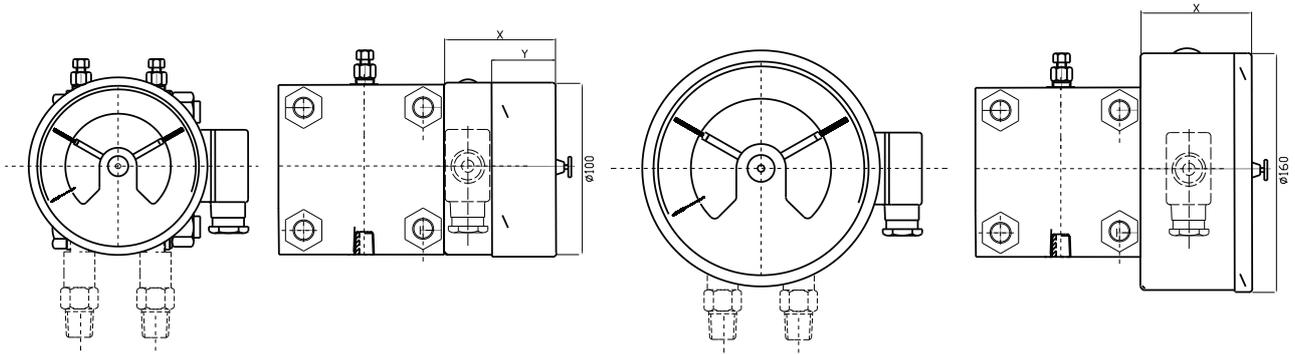
Code	Nominal Range $\Delta P$	Max Static Pressure	DN (Dial Size)	P□	b	D1
A06	0...60 mbar	100 bar	100 mm	140 mm	51	100
A06	0...60 mbar	100 bar	160 mm	140 mm	51	160
A07	0...100 mbar	100 bar	100 mm	140 mm	51	100
A07	0...100 mbar	100 bar	160 mm	140 mm	51	160
A09	0...250 mbar	100 bar	100 mm	100 mm	51	100
A09	0...250 mbar	100 bar	160 mm	100 mm	51	160
A10	0...400 mbar	100 bar or 250 bar	100 mm	88 mm	51	100
A10	0...400 mbar	100 bar or 250 bar	160 mm	88 mm	51	160
A10	0...400 mbar	400 bar	100 mm	100 mm	51	100
A10	0...400 mbar	400 bar	160 mm	100 mm	51	160
A11	0...600 mbar	100 bar or 250 bar	100 mm	88 mm	51	100
A11	0...600 mbar	100 bar or 250 bar	160 mm	88 mm	51	160
A11	0...600 mbar	400 bar	100 mm	100 mm	51	100
A11	0...600 mbar	400 bar	160 mm	100 mm	51	160
B02	0...1 bar	100 bar or 250 bar	100 mm	88 mm	51	100
B02	0...1 bar	100 bar or 250 bar	160 mm	88 mm	51	160
B02	0...1 bar	400 bar	100 mm	100 mm	51	100
B02	0...1 bar	400 bar	160 mm	100 mm	51	160
B05	0...2,5 bar	100 bar or 250 bar	100 mm	88 mm	51	100
B05	0...2,5 bar	100 bar or 250 bar	160 mm	88 mm	51	160
B05	0...2,5 bar	400 bar	100 mm	100 mm	51	100
B05	0...2,5 bar	400 bar	160 mm	100 mm	51	160
B06	0...4 bar	100 bar or 250 bar	100 mm	88 mm	51	100
B06	0...4 bar	100 bar or 250 bar	160 mm	88 mm	51	160
B06	0...4 bar	400 bar	100 mm	100 mm	51	100
B06	0...4 bar	400 bar	160 mm	100 mm	51	160
B07	0...6 bar	100 bar or 250 bar	100 mm	88 mm	51	100
B07	0...6 bar	100 bar or 250 bar	160 mm	88 mm	51	160
B07	0...6 bar	400 bar	100 mm	100 mm	51	100
B07	0...6 bar	400 bar	160 mm	100 mm	51	160
B09	0...10 bar	100 bar or 250 bar	100 mm	88 mm	51	100
B09	0...10 bar	100 bar or 250 bar	160 mm	88 mm	51	160
B09	0...10 bar	400 bar	100 mm	100 mm	51	100
B09	0...10 bar	400 bar	160 mm	100 mm	51	160

Code	Nominal Range $\Delta P$	Max Static Pressure	DN (Dial Size)	P□	b	D1
B11	0...16 bar	100 bar or 250 bar	100 mm	88 mm	51	100
B11	0...16 bar	100 bar or 250 bar	160 mm	88 mm	51	160
B11	0...16 bar	400 bar	100 mm	100 mm	51	100
B11	0...16 bar	400 bar	160 mm	100 mm	51	160
B13	0...25 bar	100 bar or 250 bar	100 mm	88 mm	51	100
B13	0...25 bar	100 bar or 250 bar	160 mm	88 mm	51	160
B13	0...25 bar	400 bar	100 mm	100 mm	51	100
B13	0...25 bar	400 bar	160 mm	100 mm	51	160
B16	0...40 bar	100 bar or 250 bar	100 mm	88 mm	51	100
B16	0...40 bar	100 bar or 250 bar	160 mm	88 mm	51	160
B16	0...40 bar	400 bar	100 mm	100 mm	51	100
B16	0...40 bar	400 bar	160 mm	100 mm	51	160

### General notes

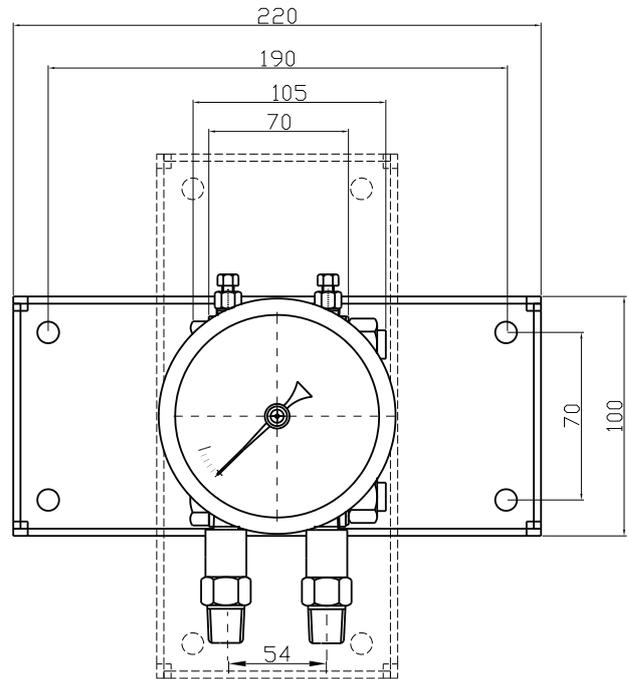
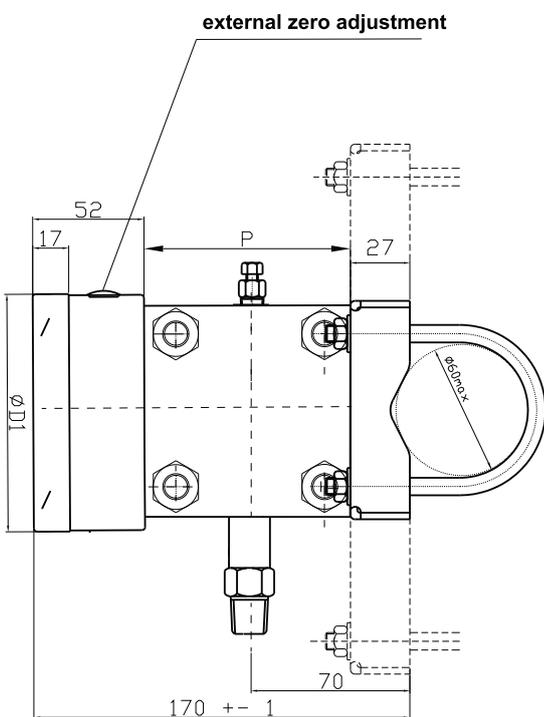
- Other scales & measurement units are available.
- Equivalent scales available in kg/cm<sup>2</sup>, psi, kPa, MPa, bar/psi, kPa/bar, kPa/psi or any other special scales.
- Primary scales shall be in "BLACK" and secondary scales shall be "RED".
- Special scales, custom dial designs, OEM/private logo printing is available, details contact our marketing team.
- Any other range codes which are not available in the list shall be confirmed by factory.



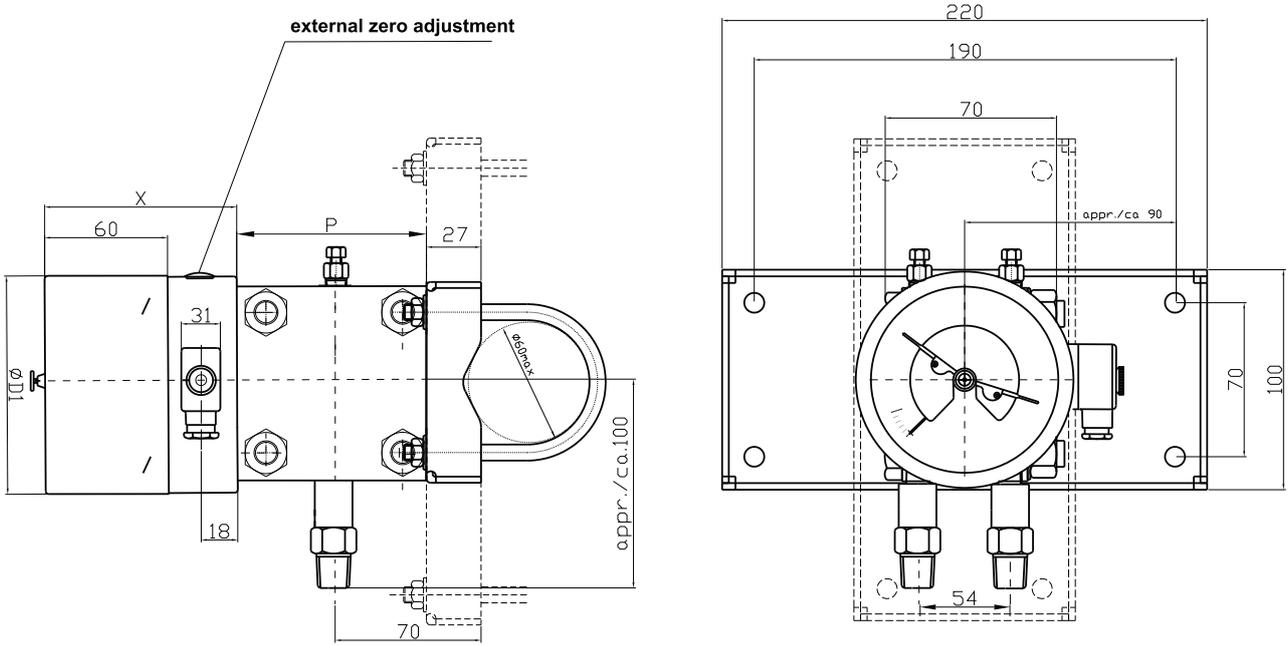


DN	Type of contact	X	Y
100	Single or double contact/SPDT	100	60
160	DPDT	110	-
160	Single or double contact/SPDT	102	-

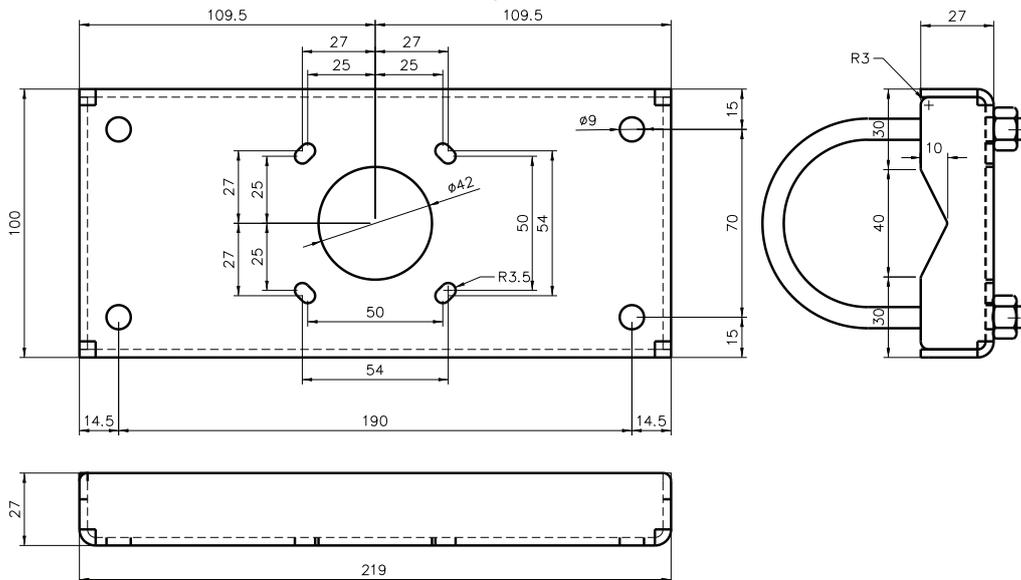
Type B2



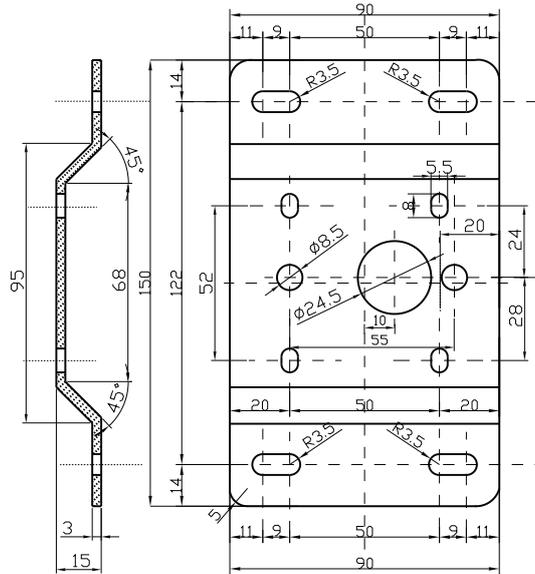
Type B2  
With Electric Contact



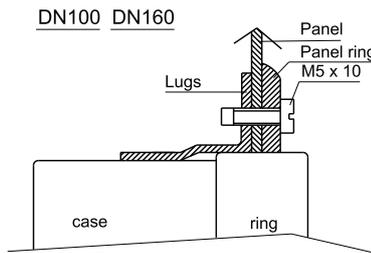
2" Pipe bracket



Back flange surface mounting

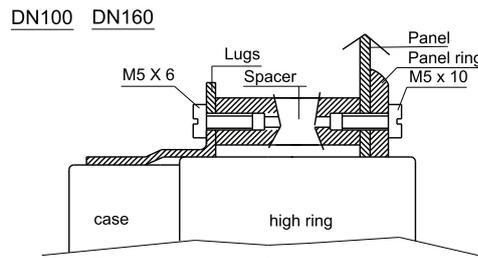


Panel mounting\*



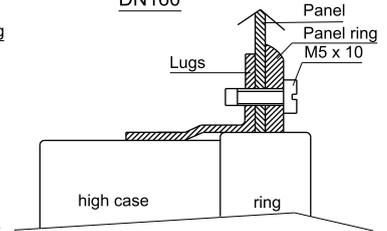
The assembly consist of:  
Panel ring  
4 screws M5

Panel mounting with electrical contact\*



The assembly consist of:  
Panel ring  
4 spacers  
8 screws M5

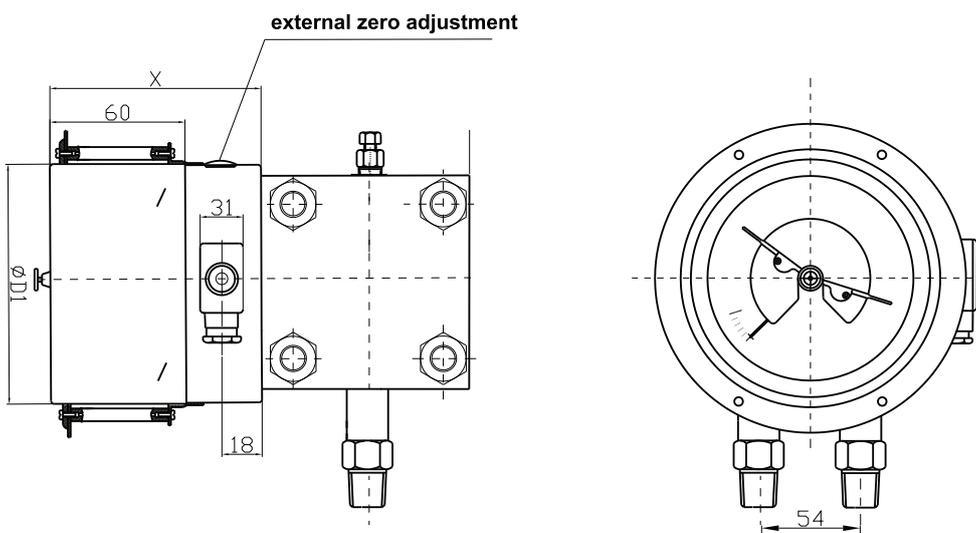
DN160



The assembly consist of:  
Panel ring  
4 screws M5

\* Panel cut-out: 105 mm for DN100  
165 mm for DN160

Type B3



Standard specifications: electric contact version	
Accuracy	CL 2.5
Window	Shatterproof safety glass, 4mm thickness
Switch	1NO; Make contact
Dampening liquid	Dielectric oil (optional)

### Electrical contact details

Switch type	Contacts	Action	Rating	Code
Normally closed (1NC)	Single	Break contact	230VAC/1A; 48VDC/0.5A	CD1
Normally open (1NO)	Single	Make contact	230VAC/1A; 48VDC/0.5A	CD2
Normally closed (2NC)	Double	Break contact	230VAC/1A; 48VDC/0.5A	CD3
Normally open (2NO)	Double	Make contact	230VAC/1A; 48VDC/0.5A	CD4
Normally closed + Normally open (1NC+1NO)	Double	Break contact + Make contact	230VAC/1A; 48VDC/0.5A	CD5
Normally open + Normally closed (1NO+1NC)	Double	Make contact + Break contact	230VAC/1A; 48VDC/0.5A	CD6
SPDT	Single		230VAC/1A; 48VDC/0.5A	CD7
DPDT	Double		230VAC/1A; 48VDC/0.5A	CD8
Normally closed (1NC)	Single	Break contact	220VAC/0.4A	CI1
Normally open (1NO)	Single	Make contact	220VAC/0.4A	CI2
Normally closed (2NC)	Double	Break contact	220VAC/0.4A	CI3
Normally open (2NO)	Double	Make contact	220VAC/0.4A	CI4
Normally closed + Normally open (1NC+1NO)	Double	Break contact + Make contact	220VAC/0.4A	CI5
Normally open + Normally closed (1NO+1NC)	Double	Make contact + Break contact	220VAC/0.4A	CI6

Codes starts with "CD" denomination are magnetic contacts and "CI" are Inductive contacts.

## Modification

Index	Date	Description
a	05/2017	New Datasheet
b	12/2017	Page 2: Process connection Point 4 Code 12B adjusted with code 12C Code 13B adjusted with code 13C Code 14B adjusted with code 14C Code 14M adjusted with code 14O Code 14N adjusted with code 14P Page 2: Dial size Point 1 _ Code 06 adjusted with code 07 Page 2: Ordering code points 8, 9, 10 Change title in: "8" _ Switch category "9" _ Switch type "10" _ Options Page 2: Switch type Point 9 _ Deleted the code with "CI" because with code "RS" is not possible to use the code "CI"