CLS2 capacitive level switch

Contact level control
Suitable for liquids, powders and granules
Protection IP66 / 67
ATEX certified versions
PTFE or PVC insulation



Standard capacitive units with rod or rope extension, for general industrial applications. Suitable for ON-OFF level control of granules, powders and liquids, IP66 / 67 protection.

TECHNICAL FEATURES

Version

compact; with heat sink
Process connection
threaded; flanged
IP rating
IP66 / 67
Electronics
TL31R; TL41R; TL41R ATEX

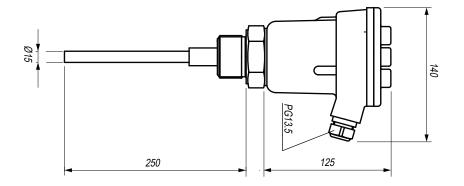
Electrodes

rod partially insulated in PTFE or PVC **Standard electrode length** 250mm

Extensions

with rigid rod Ø10mm AISI 316; rope Ø6mm and counterweight in carbon steel





CLS2 Standard rod level switch

ON/OFF capacitive level control Top and lateral side metallic tank-installation Standard length: 250mm

Version	
Α	Without preamplifier insert (only capacitive electrode)
В	Compact
D	Compact with carbon-steel dissipator between head and connection
E	Compact, dust ATEX II 1/2D Ex tD A21 iaD 20 IP66 T 150°C certificated; only with " G" housing
F	Compact with SS316 dissipator
Z	Special

Electronic preamplifier	
00	None
41	TL41R ON-OFF, supply 24vDC/vAC - 115vAC 50Hz, Relay output SPDT
43	TL41R ON-OFF, supply 85-250vAC 50Hz, Relay output SPDT
99	Special

Housing	
F	PC with transparent cap and anticondensation filter, IP67
G	IP66 aluminum varnished (necessary for ATEX version)
L	PC with blind cap and anticondensation filter, IP67
Z	Special

Process connection	
01	G1" / Carbon-steel
02	G1" / SS316
11	G1"½ / Carbon steel
12	G1"½ / SS316
99	Special

Ele	Electrode type and insulation	
	В	Partially PVC insulated Ø15mm Carbon-steel rod
	С	Ø15mm Carbon-steel rod with extended PVC insulation
	D	Partially PTFE insulated Ø15mm Carbon-steel rod
	Н	Partially PVC insulated Ø15mm SS316 rod
	I	Ø15mm SS316 rod with extended PVC insulation
	L	Partially PTFE insulated Ø15mm SS316 rod
	Z	Special

M10x1,5 female thread for extension 0 None 1 M10x1,5 female thread on top

	Non sensitive part	
ſ	Α	None
	В	100mm, same material of process connection
Ī	Z	Special

Extension	Extension type	
000	None	
400	Ø10mm SS316 rod	
700	Ø6mm carbon-steel rope + carbon-steel counterweight (type 50) Warning! For length over 3m, extra price	
999	Special	

Extensi	Extension length	
Α	Without	
В	Rigid rod Ø10mm, price each 10cm (max 3m)	
С	Carbon-steel rope Ø6mm, price each m (max 10m)	
Z	Special	

Electronics

LTH Electronics Ltd, Chaul End Lane, Luton, Bedfordshire. LU4 8EZ England Telephone: +44 (0)1582 593693 Fax: +44 (0)1582 598036

email: sales@lth.co.uk web: www.lth.co.uk

CLS4 capacitive level switch

Contact level control
Suitable for liquids, powders and granules
Protection IP66 / 67
ATEX certified versions
PTFE or PVC insulation



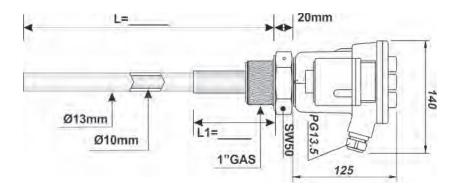
Capacitive units with rod probe for general-purpose, suitable for ON-OFF level control in conductive or non-conductive liquids, IP66 / 67 protection, installation on the top or side of metallic vessels. Available with PTFE or PVC electrode protection.

TECHNICAL FEATURES

Version
compact; with heat sink
Process connection
threaded; flanged; sanitary
IP rating
IP66 / 67
Electronics
TL31R; TL41R; TL41R ATEX; TC7R3

Electrodes
rod partially insulated in PTFE or PVC
Max electrode length
3 m
Certification
ATEX





CLS4 Rod level switch

ON/OFF capacitive level control Suitable for conductive and non-conductive liquids Top and lateral side metallic tank-installation

Version	
Α	Without preamplifier (only capacitive electrode with B, F or L housing)
В	Compact
D	Compact with carbon-steel dissipator between head and connection
E	Compact, dust ATEX II 1/2D Ex tD A21 iaD 20 IP66 T 150°C certificated (TL41R insert); to be used with "G" housing
F	Compact, with SS316 dissipator between head and connection
Н	Separate with M8 female connection, 1,5m coaxcable max. 70°C (cod 525A001H). Electrode with DIN B aluminum housing - IP66 - only with ½" connection
I	Separate with M8 female connection, 1,5m coaxcable with double shielding max 120°C with external sheath in EPDM (cod 525A003E) Electrode with DIN aluminum housing - IP66 - only with ½" connection
L	Separate with M8 female connection, 1,5m coaxcable max 70°C (cod 525A001H) Electrode with DIN A aluminum housing - IP66
M	Separate with M8 female connection,1,5m coaxcable with double shielding max 120°C with external sheath in EPDM (cod 525A003E) Electrode with DIN A aluminum housing - IP66
N	Compact, with carbon-steel dissipator, one 20/21 ATEX cert (TL41R insert only); to be used with "G" housing
Р	Compact, with SS316 dissipator, one 20/21 ATEX cert (TL41R insert only); to be used with "G" housing
	Separate with Al fixing base + 2m coaxcable max 70°C (cod 525A001H) Electrode with DIN aluminum housing - IP66 - only with ½" connection
S	Separate with Al fixing base + 2m coaxcable max 70°C (cod 525A001H) Electrode with DIN A aluminum housing - IP66
Z	Special

Electro	Electronic preamplifier	
00	None	
41	TL41R ON-OFF, supply 24vDC/vAC - 115 vAC 50Hz, Relay output SPDT	
43	TL41R ON-OFF, supply 85-250vAC 50Hz, Relay output SPDT	
73	TC7 3R local calibration, 24vDC, 3 relays out for 3 adjustable set-points	
99	Special	

Housing for electronic preamplifier		
В	IP66 loaded PC , white polycarbonate cap - only with TC7 3R insert	
F	PC with transparent cap and anticondensation filter, IP67 - only with TL41R insert	
G	IP66 aluminum varnished (necessary for ATEX version) - only with TL41R insert	
L	PC with blind cap and anticondensation filter, IP67 - only with TL41R insert	
Z	Special	



Process	Process connection	
01	G1" / Carbon-steel	
02	G1" / SS316	
03	1" NPT-M / Carbon-steel	
04	1" NPT-M / SS316	
11	G1"½ / Carbon-steel	
12	G1"½/SS316	
1	G1"½ / PVC - only for compact versions, housing and TL31/TC73R inserts	
19	G1"½/PTFE	
20	Sanitary DN25 DIN 11851, SS304L	
21	Sanitary DN40 DIN 11851, SS304L	
22	Sanitary DN50 DIN 11851, SS304L	
40	Threaded flange DN40 PN6 NI 10 2-1, PVC	
41	Threaded flange DN40 PN 6 NI6 1/71, PTFE	
42	Threaded flange DN40 PN16, Carbon-steel	
45	Threaded flange DN50 PN6 NI 10 2-1, PVC	
4	Threaded flange DN80 PN6 NI 10 2-1, PVC	
47	Threaded flange DN100 PN6 NI 10 2-1, PVC	
50	Threaded flange DN40 PN16, SS304	
51	Threaded flange DN40 PN16, SS316	
52	Threaded flange DN50 PN16 DIN 2527 form (without gasket), SS316	
53	Threaded flange DN80 PN16 DIN 2527 form (without gasket), SS316	
54	Threaded flange DN100 PN16 DIN 2527 form (without gasket), SS316	
0	Threaded flange ANSI RF 2" 150 psi, SS316	
1	Threaded flange ANSI RF 3" 150 psi, SS316	
2	Threaded flange ANSI RF 4" 150 psi, SS316	
71	CLAMP 1" SS316	
73	CLAMP 1 1/2" SS316	
75	CLAMP 2" SS316	
3	G½" / Carbon-steel - not for DIN A electrode housing	
4	G½" / Stainless-steel SS316 - not for DIN A electrode housing	
92	G "/SS316	
99	Special	

Electrod	lectrode type and insulation	
В	PTFE partially insulated SS316 rod	
С	SSI316 rod with extended PVC insulation	
D	PVC totally insulated SS316 rod	
G	SS316 rod with extended PTFE insulation	
Н	PTFE totally insulated SS316 rod	
L	PTFE 8/12 totally insulated SS316 rod (for li uids)	
M	PTFE partially insulatedSS316 rod + Carbon steel concentric reference electrode	
N	PVC totally insulated SS316 rod + Carbon steel concentric reference electrode	
Р	PTFE totally insulated SS316 rod + Carbon steel concentric reference electrode	
	PTFE partially insulated SS316 rod + SS316 concentric reference electrode	
	PVC totally insulated SS316 rod + SS316 concentric reference electrode	
S	PTFE totally insulated SS316 rod + SS316 concentric reference electrode	
Z	Special	

L Elect	L Electrode length, price each 100mm	
40	PTFE partially insulated SS316 rod	
41	SS316 rod with extended PVC insulation	
42	PVC totally insulated SS316 rod	
45	SS316 rod with extended PTFE insulation	
4	PTFE totally insulated SS316 rod	
4	PTFE 8/12 totally insulated SS316 rod (for li uids)	
50	PTFE partially insulated SS316 rod + Carbon steel concentric reference electrode	
51	PVC totally insulated SS316 rod + Carbon steel concentric reference electrode	
52	PTFE totally insulated SS316 rod+ Carbon steel concentric reference electrode	
53	PTFE partially insulated SS316 rod + SS316 concentric reference electrode	
54	PVC totally insulated SS316 rod + SS316 concentric reference electrode	
55	PTFE totally insulated SS316 rod + SS316 concentric reference electrode	
99	Special	

L1 non	L1 non sensitive part rod , material and price each 10cm	
Α	None	
В	Carbon-steel Carbon-steel	
С	SS316	
Z	Special	



CLS5 capacitive level switch

Contact level control for top mounting

Sensor element in PP

Suitable for control of granules and powders

IP67 protection

Cable in HDPE

Max length 6 m



CLS5 is a capacitive level control instrument that uses an advanced technology. CLS5 is equipped with a sensor in PP heat-sealed. This allows its use in a wide applications range for the level control in granules or powders such as cement, flour, feed for animals, etc. .. The CLS5 is easily configurable via the VL601 module. Maximum tensile load 3000 N.

TECHNICAL FEATURES

Housing material

polycarbonate

Process connection material

AVP

Rope material

PHED

Sensor material

Polycarbonate

Process conntection

1"1/2GAS M

Tensile strength

max 3000N (<40°C); max. 2800N (80°C)

Pressure

-1÷+6bar

Working temperature

-30 to +70°C; +80°C

Power supply

20-36vDC; 20-255vAC 50/60Hz

Electrical connections

Terminal

Output

Relay 3A 230vAC

Mode of intervention

min or max

Delay

0-30s.

Calibraton

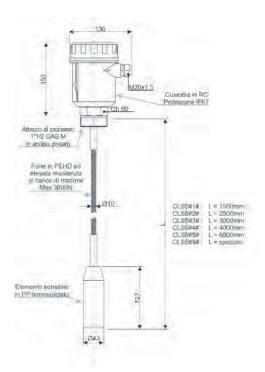
4 buttons

Warm up 1 minute

Display

Plug-in display/keyboard 4 buttons matrix LCD





CLS5 PEHD insulated rope level switch for granulates

Process connection, G1"1/2 / galvanized steel
Product temperature range -30° to +70°C (80° non continuous)
IP67 mechanical protection
Extension with PEHD isolated steel cable
Power supply 20-36vDC / 20-255vAC 50Hz
0,8W or 15VA max power consumption
Relay output rating 250vAC 2A

Version	
Α	Compact with transparent cap, IP67
В	Compact with blind cap, IP67
Z	Special

Extension	Extension length	
1	L 1500mm	
2	L 2500mm	
3	L 3000mm	
4	L 4000mm	
5	L 6000mm	
9	Special	

Access	ories
Α	None
D	VL601 keyboard/display programming module (VL601SGM)
Z	Special



CLS6 compact capacitive level switch

Suitable for liquids, bulk solids and powders

Poor adherence of the product on the sensor surface

Differentiation between foam and liquid

Indication of the sensor status via multicolour LED

Compact case in AISI316L

Active zone covered in PEEK

IP67 protection (on request IP69K)

Two configurable alarms separately



Suitable for the control of solid granules or powders, conductive and non-conductive liquids, even with the presence of foam. CLS6 is designed for universal use in tanks, pipes, silos, hoppers and anything else that requires product presence / absence control. The mass reference integrated in the sensor makes CLS6 also suitable for application in tanks, pipes, etc. made of plastic material. Calibration / configuration can be performed, without the need for optional accessories, using an on-board button that can be activated with any metal object such as, for example, the tip of a screwdriver. The multicolored LED indicates the different switching conditions simplifying the verification of the process conditions

TECHNICAL FEATURES

Applications

Substances based on oil, water-based substances, powders and granulates, pastes of any kind and foaming substances

Case material

AISI316L

Sensitive area material

PEEK

Attack to the process

G 1/2 A hygienic

Protection

IP67 (on request IP69K)

Process pressure range

-1 to + 10bar continuous (max 5bar with + 135 $^{\circ}$ C

for intervals <1h)

Process temperature range

-40 to + 115 $^{\circ}$ C continuous (+ 135 $^{\circ}$ C for intervals <1h with max

pressure 5bar)

Room temperature

-40 ° to 85 ° C

Humidity

<98% RH, condensing

Supply voltage

8-36vDC, max 50mA

Electrical connection

M12-A connector, 4-pin, in polycarbonate or AISI

Alarm outputs

N. 2 PNP or NPN (max 100mA) configurable

Repeatability

± 1mm

Hysteresis

± 1mm

Product dielectric characteristics

CD. > 1.5

Time lag

Adjustable from 0 to 10 seconds

Alarm outputs

N. 2 PNP or NPN (max 100mA) configurable

Certifications (opt.)

ATEX II 3G Ex nA IIC T4 Gc

ATEX II 1G Ex ia IIC T4 Ga, ATEX II 1D Ex ta IIIC T100 ° C



CLS6 Compact level switch

ON/OFF capacitive level control in AISI316L / PEE Suitable for confuctive and non-conductive liquids and granules Installation on tanks, pipes, silos or hoppers 2 PNP configurable output - Working temperature -40 to115°C Alimentazione 12÷30vDC; protezione IP67 Connettore 4 poli M12

Length / Connection / Working pressure	
Α	L 48mm / G 1/2" A hygienic / -1÷10bar
В	L 117mm / G 1/2" A hygienic / -1÷100bar
Z	Special

	Certification	
ſ	0	None
	1	ATEX ia + ta

Accessories	
Α	None
В	Weld-in sleeve - G 1/2" A hygienic female
С	Weld-in sferic sleeve - G 1/2" A hygienic female
D	Clamp sleeve DN25/DN38 - G 1/2" A hygienic female
Z	Special





Contact level control for top mounting
Wire rope carbon steel / PE
Suitable for control of granules and powders
IP66 / 67 protection
Max length 30 m
ATEX certified versions



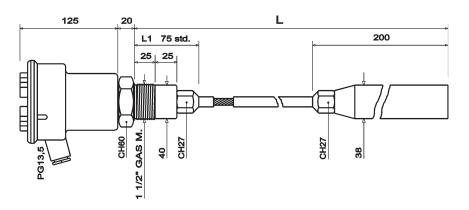
Capacitive instrument with wired rope probe for heavy duty, suitable for level controls in granules and dust, IP66 / 67 protection, installation on the top of metallic vessels.

TECHNICAL FEATURES

Versions
Compact; remote
Process connection material
AVP; SS316
IP rating
IP66 / 67

Electronic models
TL31R; TL41R; TL41R ATEX; TC73R
Electrodes
Rope Ø8mm bare or completely insulated in PE
Certification
ATEX (only TL41R)





CLS7 Rope level switch for granulates

ON/OFF capacitive level control Suitable for bulk solid and granulates Top side metallic tank-installation

Version	
Α	Without electronic preamplifier (only capacitive electrode with B, F or L housing)
В	Compact
E	Compact, dust ATEX II 1/2D Ex tD A21 iaD 20 IP66 T 150°C certificated (TL41R insert); to be used with " G" housing
L	Separate with M8 female connection, 1,5m coaxcable max. 70°C (cod 525A001H). Electrode with DIN A aluminum housing - IP66
Z	Special

Electronic preamplifier	
00	None
41	TL41R ON-OFF, supply 24vDC/vAC - 115vAC 50Hz, Relay output SPDT
43	TL41R ON-OFF, supply 85-250vAC 50Hz, Relay output SPDT
73	ON-OFF TC7.3R local calibration, 24Vdc, 3 relays out for 3 adjustable set-points
99	Special

Housing for electronic preamplifier	
В	IP66 loaded PC , white polycarbonate cap - only with TC7.3R insert
F	PC with transparent cap and anticondensation filter, IP67 - only with TL41R insert
G	IP66 aluminum varnished (necessary for ATEX version) - only with TL41R insert
L	PC with blind cap and anticondensation filter, IP67 - only with TL41R insert
Z	Special

Process	Process connection	
11	G1"½ / Carbon-steel	
42	Threaded flange DN40 PN16, Carbon-steel	
50	Threaded flange DN40 PN16, SS304	
51	Threaded flange DN40 PN16, SS316	
52	Threaded flange DN50 PN16 DIN2527 form B (without gasket), SS316	
53	Threaded flange DN80 PN16 DIN2527 form B (without gasket), SS316	
54	Threaded flange DN100 PN16 DIN2527 form B (without gasket), SS316	
0	Threaded flange ANSI RF 2" 150psi, SS316	
1	Threaded flange ANSI RF 3" 150psi, SS316	
2	Threaded flange ANSI RF 4" 150 psi, SS316	
99	Special	

Electrode type and insulation	
L	8mm carbon steel, counterweight in carbon steel
M	8mm carbon steel, counterweight in SS316
N	8mm carbon steel PE coated, counterweight in carbon steel
Р	8mm carbon steel PE coated, counterweight in SS316
Z	Special

L Electr	L Electrode length, price each meter	
73	8mm carbon steel	
74	8mm carbon steel PE coated	
99	Special	

L1 nor	L1 non sensitive part rod , material and price each 10cm		
Α	Standard (50mm)		
В	Carbon-steel		
С	SS316		
Z	Special		





Contact level control for top mounting
Threaded, flanged and sanitary connection
Suitable for control of liquids
IP66 / 67 protection PTFE or PVC insulation
ATEX certified versions



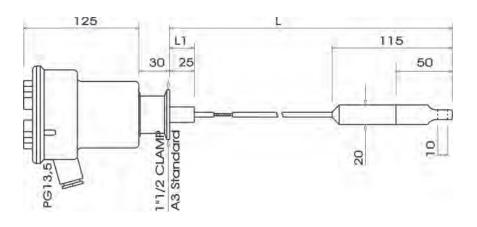
Capacitive instrument with wired rope probe for heavy duty, suitable for level controls in granules and dust, IP66 / 67 protection, installation on the top of metallic vessels.

TECHNICAL FEATURES

Versions
Compact; remote; with heat sink
Process connection material
SS304; SS316
IP rating
IP66 / 67

Electronic models
TL31R; TL41R; TL41R ATEX; TC73R
Electrodes
Rope Ø2,5mm completely insulated in PTFE; PVC
Certification
ATEX (only TL41R)





CLS8 Rope level switch for liquids

ON/OFF capacitive level control Suitable for conductive and not conductive liquids Top side metallic tank-installation

Version	1
Α	Without electronic preamplifier (only capacitive electrode with B, F or L housing)
В	Compact
D	Compact, with carbon steel dissipator between head and connection
Е	Compact, dust ATEX II 1/2D Ex tD A21 iaD 20 IP66 T 150°C certificated (TL41R insert); to be used with " G" housing
F	Compact, with SS316 dissipator between head and connection
L	Separate with M8 female connection, 1,5m coaxcable max 70°C (cod 525A001H)
	Electrode with DIN A aluminum housing - IP66
N	Compact, with carbon-steel dissipator, one 20/21 ATEX cert (TL41R insert only); to be used with "G" housing
Р	Compact, with SS316 dissipator, one 20/21 ATEX cert (TL41R insert only); to be used with "G" housing
Z	Special

Electronic preamplifier	
00	None
41	TL41R ON-OFF, supply 24vDC/vAC- 115vAC 50Hz, Relay output SPDT
43	TL41R ON-OFF, supply 85-250vAC 50Hz, Relay output SPDT
73	ON-OFF TC7 3R local calibration, 24Vdc, 3 relays out for 3 ad ustable set-points
99	Special

Housing for electronic preamplifier	
В	IP66 loaded PC , white polycarbonate cap - only with TC7 3R insert
F	PC with transparent cap and anticondensation filter, IP67 - only with TL41R insert
G	IP66 aluminum varnished (necessary for ATEX versions) - only with TL41R insert
L	PC with blind cap and anticondensation filter, IP67 - only with TL41R insert
Z	Special

Process	Process connection	
02	G1" / SS316	
04	1" NPT / SS316	
11	G1"½ / Carbon-steel	
12	G1"½ / SS316	
1	G1"½ / PVC - only for compact versions, housing and TL31/TC73R inserts	
19	G1"½/PTFE	
20	Sanitary DN25 DIN11851, SS304L	
21	Sanitary DN40 DIN11851, SS304L	
22	Sanitary DN50 DIN11851, SS304L	
42	Theaded flange DN40 PN16, Carbon-steel	
50	Theaded flange DN40 PN16, SS304	
51	Theaded flange DN40 PN16, SS316	
52	Theaded flange DN50 PN16 DIN2527 form (without gasket), SS316	
53	Theaded flange DN80 PN16 DIN2527 form (without gasket), SS316	
54	Theaded flange DN100 PN16 DIN2527 form (without gasket), SS316	
0	Theaded flange ANSI RF 2" 150psi, SS316	
1	Theaded flange ANSI RF 3" 150psi, SSI316	
2	Theaded flange ANSI RF 4" 150psi, SS316	
71	CLAMP 1" SS316	
73	CLAMP 1 1/2" SS316	
75	CLAMP 2" SS316	
99	Special	



LTH Electronics Ltd, Chaul End Lane, Luton, Bedfordshire. LU4 8EZ England Telephone: +44 (0)1582 593693 Fax: +44 (0)1582 598036 email: sales@lth.co.uk web: www.lth.co.uk

Electrod	Electrode type and insulation	
В	Ø2,5mm PVC insulated, counterweight in SS316	
С	Ø2,5mm PTFE insulated, counterweight in SS316	
L	Ø2,5mm PVC insulated, counterweight in PVC	
М	Ø2,5mm PTFE insulated, counterweight in PTFE	
Z	Special	
L Elect	rode length, price each meter	
1	Ø2,5mm PVC insulated	
2	Ø2,5mm PTFE insulated	
99	Special	
L1 non sensitive part rod , material and price each 10cm		

1 00	1 openius	
L1 non	L1 non sensitive part rod , material and price each 10cm	
Α	None	
С	SS316	
Z	Special	





Contact level control for plastic or fiberglass tanks

IP66 / 67 protection

Side mounting, threaded or flanged types

PP / PVC Wetted Parts

Probe length 103 / 150 mm

ATEX certified versions



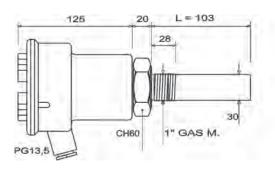
Capacitive units suitable for applications in plastic or fiberglass tanks for the on-off control of acids or other chemically aggressive products. Installation on the side of the tank.

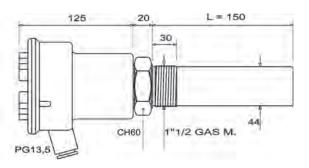
TECHNICAL FEATURES

Versions
Compact
Process connection
Threaded; flanged
IP rating
IP66 / 67

Electronic models
TL31R; TL41R; TL41R ATEX
Electrodes
Insulated in PP;PVC
Certification
ATEX (only TL41R)







CLS9 Rod level switch for plastic tanks

ON/OFF capacitive level control Suitable for chemical products, acids and others Top and lateral side plastic tanks-installation

Version	
Α	Without electronic preamplifier (only capacitive electrode with B, F or L housing)
В	Compact
E	Compact, Zone 20/21 ATEX certificated (TL41R insert only); to be used with "G" housing
Z	Special

Electronic preamplifier	
00	None
41	TL41R ON-OFF, supply 24vDC/vAC - 115vAC 50Hz, Relay output SPDT
43	TL41R ON-OFF, supply 85-250vAC 50Hz, Relay output SPDT
99	Special

Housing		
F	PC with transparent cap and anticondensation filter, IP67;	
G	IP66 aluminum varnished (necessary for ATEX versions)	
L	PC with blind cap and anticondensation filter, IP67	
Z	Special	

Proces	Process connection	
05	G1" / PVC - 30mm (L 103 mm)	
06	G1" / PP - 30mm (L 103 mm)	
18	G1"½ / PVC - 44mm (L 150 mm)	
23	G1"½ / PP - 44mm (L 150 mm)	
40	Flange DN40 PN6 PVC (threaded)	
43	Flange DN40 PN6 PP (Threaded+welding)	
99	Special	

Electrode type and insulation	
В	PVC totally insulated - 44mm (G1"½) 30mm (G1")
С	PP totally insulated - 44mm (G1"½) 30mm (G1")
Z	Special

