



Capanivo[®] 4000

Capacitive level limit switch

Precise and reliable capacitive limit detection, constant even with varying material properties. Certified for hazardous locations (Dust Ex).



Capanivo® 4000



- Simple setup with no further adjustment necessary
- Maintenance-free, corrosion resistant, wide application range
- Versatile extensions and high temperatures (180° C)

Application: Capanivo® 4000 is certified for all solids applications with variables such as high temperature, high pressure and material residues such as flour, grain, cement, granulate, carbon black.

CN 4020

Full, demand, empty detector
Installation vertical, horizontal and oblique, also with limited space



CN 4020 / 180° C

Full, demand, empty detector
Installation vertical, horizontal and oblique



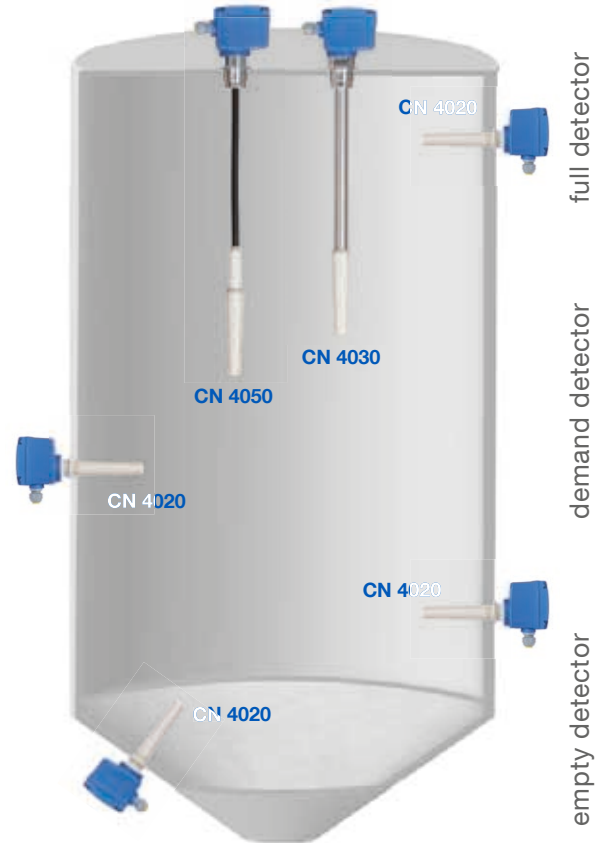
CN 4030

Full, demand, empty detector
Design with pipe extension, vertical installation, sliding sleeve option



CN 4050

Full, demand, empty detector
Design with extension cable up to 6m, vertical installation



Technical Data

Housing	Plastics PA 6 or Aluminum IP 66
Certificates	ATEX II 1/2D, TR-CU, IEC-Ex
Process temperature	- 40°C to + 180°C (- 40°F to + 356°F)
Pressure	- 1 .. +25 bar (- 14.5 .. + 363 psi)
Sensitivity	DK value ≥ 1,6
Supply voltage	21.. 27V DC Relay SPDT 21.. 230V AC/21..45V DC Relay DPDT 20.. 40V DC PNP
Process connection	G 1", G 1½" NPT 1¼", NPT 1½"
Material probe	Plastics PPS, FDA listed, food grade material
Material process conn.	Plastics PPS, 1.4305 (SS 303), aluminium

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Subject to change.

All dimensions in mm (inches).

All prices in Euro (€) or USD (\$),
excluding VAT.

All EURO prices are EXW Betzigau,
all USD prices are EXW Memphis,
excluding packaging costs.

Valid: From 01.04.2019 until 31.03.2020, unless otherwise agreed.

By publishing this selection list all other lists become invalid.

We assume no liability for typing errors.

Different variations to those specified are possible.
Please contact our technical consultants.

Specifications

- Level limit detection in bulk goods/ solids
- Compact unit
- Wide range of applications, no maintenance
- Full-, demand-, empty detector
- Capacitive technology with active shield
- Plastic or aluminium housing
- Sensitivity: dielectric constant ≥ 1.6
- Precalibration allows measurement of most applications without calibration on site
- FSL/ FSH switch
- Output with adjustable delay
- 1935/2004/EC food grade material
- 2011/65/EU RoHS conform

Approvals	CE	
	ATEX/ IEC-Ex	Zone 20/21 (Dust Ignition Proof)
	TR-CU	Ordinary Locations Zone 20/21 (Dust Ignition Proof)

Electro-nics	Relay SPDT	21 .. 27 V DC $\pm 10\%$
	Relay DPDT	21 .. 230 V AC 21 .. 45 V DC $\pm 10\%$
	PNP	20 .. 40 V DC $\pm 10\%$

Housing	Material	Plastics PA6 (glass fibre reinforced) or Aluminium
	Type of protection	IP66

CN 4020 (version 120°C)	Length of extension	155 mm (6.1")
	Ambient temperature	-40 .. +60°C (-40 .. +140°F) -20 .. +60°C (-4 .. +140°F) (Ex)
	Process temperature	-40 .. +120°C (-40 .. +248°F) -30 .. +120°C (-22 .. +248°F) (Ex)
	Process pressure	-1 .. +25 bar (-14.5 .. +363 psi)
	Process connection	G 1" (with flat gasket) G 1½" NPT 1¼" NPT 1½" (adapter)
	Material of process connection/ probe	Plastics PPS (glass fibre reinforced) FDA listed, food grade



CN 4020 (version 180°C)	Length of extension	190 mm (7.5") or 400 mm (15.7")
	Ambient temperature	-40 .. +60°C (-40 .. +140°F)
	Process temperature	-40 .. +180°C (-40 .. +356°F) -30 .. +180°C (-22 .. +356°F) (Ex)
	Process pressure	-1 .. +16 bar (-14.5 .. +232 psi)
	Process connection	G 1½" (with flat gasket)
	Material of process connection/ extension	1.4305 (SS 303), food grade
	Material of probe	Plastics PPS (glass fibre reinforced) FDA listed, food grade



Specifications

CN 4030	Length of extension	210 .. 3,000 mm (8.3 .. 118")
	Ambient temperature	-40 .. +60°C (-40 .. +140°F) -20 .. +60°C (-4 .. +140°F) (Ex)
	Process temperature	-40 .. +110°C (-40 .. +230°F) -30 .. +110°C (-22 .. +230°F) (Ex)
	Process pressure	-1 .. +16 bar (-14.5 .. +232 psi)
	Process connection	G 1½" (with flat gasket)
	Material of process connection/ extension	Aluminium or 1.4305 (SS 303), food grade
	Material of probe	Plastics PPS (glass fibre reinforced) FDA listed, food grade



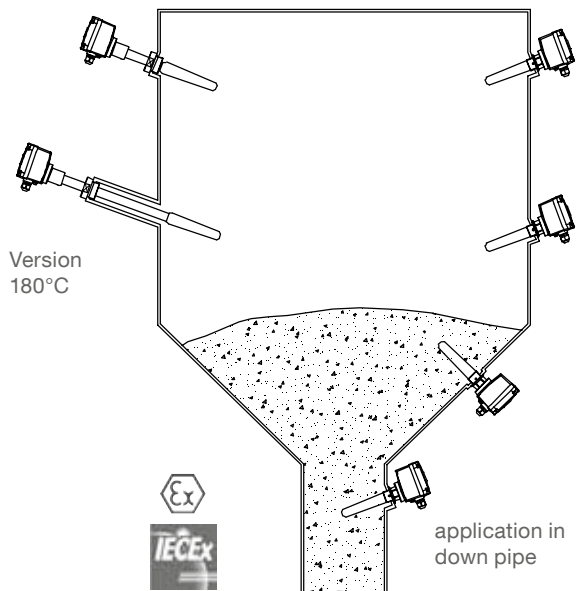
CN 4050	Length of extension	350 .. 6,000 mm (13.8 .. 236")
	Ambient temperature	-20 .. +60°C (-4 .. +140°F)
	Process temperature	-30 .. +80°C (-22 .. +176°F)
	Process pressure	-1 .. +6 bar (-14.5 .. +87 psi)
	Process connection	G 1½" (with flat gasket)
	Material of process connection	Aluminium or 1.4305 (SS 303)
	Material of cable isolation	PE, not food grade
	Material of probe	Plastics PPS (glass fibre reinforced) FDA listed, food grade



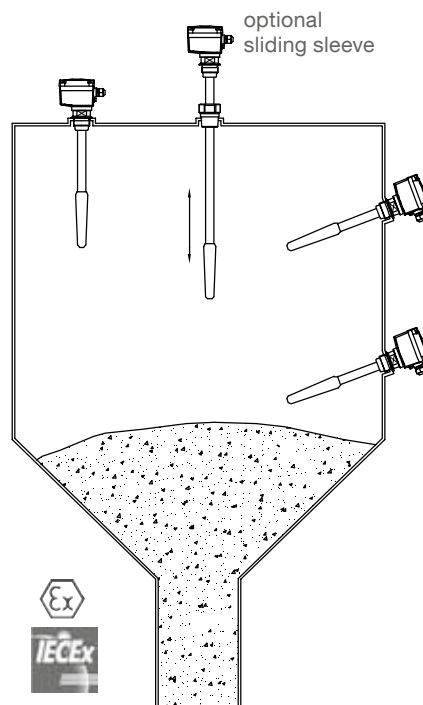
Applications

Detection of solids

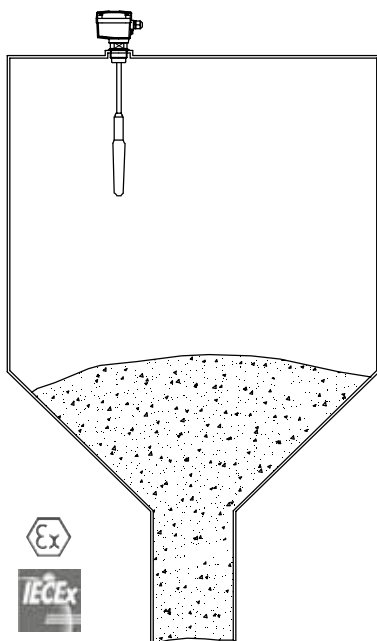
CN 4020



CN 4030



CN 4050



CN 4020 (120°C) Short extension length



Version: 120°C, G 1", L=155 mm, PPS (food grade)
Dimensions: see page 11
Cable entries: M20 x 1.5 (1x cable gland + 1x blind plug)*
Housing material: Plastics PA6*

*Options see page 9

Basic type

CN 4020 (120°C) •

pos.2 **Certificate**

0	CE ⁽¹⁾		•
W	ATEX II 1/2D		•
A	IEC-Ex ta/tb IIIC Da/Db		•
E	TR-CU Ex ta/tb IIIC T! Da/Db X		•

pos.4 **Electronic module**

E	Relay SPDT 21 .. 27 V DC		•
D	PNP 20 .. 40 V DC		•
L	Relay DPDT 21 .. 230 V AC 21 .. 45 V DC		•

Further options: see page 9

CN 4020	A		1		A	A	1	A
position	1	2	3	4	5	6	7	8

← **Order code**

All positions are available in special design (use code "Z").

⁽¹⁾ TR-CU (Ordinary Locations) included

CN 4020 (180°C) Short extension length



Version:
Dimensions:
Cable entries:
Housing material:

180°C, G 1½", 1.4305/ PPS (food grade)
see page 11
M20 x 1.5 (1x cable gland + 1x blind plug)*
Plastics PA6*

*Options see page 9

Basic type

CN 4020 (180°C)		•
pos.2	Certificate	
	0 CE ⁽¹⁾	•
	W ATEX II 1/2D	•
	A IEC-Ex ta/tb IIIC Da/Db	•
	E TR-CU Ex ta/tb IIIC T! Da/Db X	•
pos.4	Electronic module	
	D PNP 20 .. 40 V DC	•
	L Relay DPDT 21 .. 230 V AC 21 .. 45 V DC	•
pos.7	Length of extension "L"	
	2 190 mm (7.5")	•
	3 400 mm (15.7")	•

Further options: see page 9

CN 4020	A		2		B	3		3	← Order code
position	1	2	3	4	5	6	7	8	

All positions are available in special design (use code "Z").

⁽¹⁾ TR-CU (Ordinary Locations) included

CN 4030 Pipe extension



Version: G 1½", Aluminium/ 1.4305/ PPS (food grade)
Dimensions: see page 11
Cable entries: M20 x 1.5 (1x cable gland + 1x blind plug)*
Housing material: Plastics PA6*

*Options see page 9

Basic type

CN 4030 •

pos.2 **Certificate**
 0 CE ⁽¹⁾ •
 W ATEX II 1/2D •
 A IEC-Ex ta/tb IIIC Da/Db •
 E TR-CU Ex ta/tb IIIC T! Da/Db X •

pos.4 **Electronic module**
 D PNP 20 .. 40 V DC •
 L Relay DPDT 21 .. 230 V AC 21 .. 45 V DC •

pos.6 **Material of process connection**
 1 Aluminium •
 3 Stainless steel 1.4305 (303) •

pos.7 **Length of extension "L"**
 A 300 mm (11.8") •
 B 500 mm (19.7") •
 C 1,000 mm (39.4") •
 D 1,500 mm (59.1") •
 Z Price per 100 mm (3.94") or part thereof (starting from 0 mm) •
 min. 210 mm (8.3"), max. 3,000 mm (118")

pos.8 **Material of extension "L"**
 must be the same material as pos.6
 1 Aluminium (probe: plastics PPS)
 3 Stainless steel 1.4305 (303) (probe: plastics PPS)

Further options: see page 9

CN 4030	B	1	B						
position	1	2	3	4	5	6	7	8	

← **Order code**

⁽¹⁾ TR-CU (Ordinary Locations) included

All positions are available in special design (use code "Z").

CN 4050 Cable extension



Version: G 1½", extension PE/ PPS
Dimensions: see page 11
Cable entries: M20 x 1.5 (1x cable gland + 1x blind plug)*
Housing material: Plastics PA6*

Cable length can be shortened at site
*Options see page 9

Basic type

CN 4050			
pos.2	Certificate		
	0 CE ⁽¹⁾		
	W ATEX II 1/2D		
	A IEC-Ex ia/tb IIIC Da/Db		
	E TR-CU Ex ia/tb IIIC T135°C Da/Db X		
pos.4	Electronic module		
	D PNP 20 .. 40 V DC		
	L Relay DPDT 21 .. 230 V AC 21 .. 45 V DC		
pos.6	Material of process connection		
	1 Aluminium		
	3 Stainless steel 1.4305 (303)		
pos.7	Length of extension "L"		
	P 500 mm (19.7")		
	Q 1,000 mm (39.4")		
	R 1,500 mm (59.1")		
	T 2,500 mm (98.4")		
	U 6,000 mm (236")		
	Z Price per 100 mm (3.94") or part thereof (starting from 0 mm)		
	min. 380 mm (15.0"), max. 6,000 mm (236")		

Further options: see page 9

CN 4050	D	1	B	B			
position	1	2	3	4	5	6	7 8

← Order code

All positions are available in special design (use code "Z").

⁽¹⁾ TR-CU (Ordinary Locations) included

Options / Accessories

Options

pos.11 x	Guarantee extension to 5 years	•
pos.21	Weather-protection cover (for Ex only approved for Zone 22)	•
	Housing material	
pos.22 a	Aluminium	•
	Cable entry Selection of the following options only necessary, if a deviation from the default cable gland is required:	
pos.23 x	M20 x 1.5 2x screwed cable gland	•
pos.23 a	¹ NPT ½" tapered ANSI B1.20.1 (1x conduit + 1x Ex-d blind plug)	•
	Hexagon nut	
pos.24 a	aluminium 1 pcs	•
pos.24 b	aluminium 2 pcs	•
pos.24 e	stainless steel 1.4305 (303) 1 pcs	•
pos.24 f	stainless steel 1.4305 (303) 2 pcs	•
	Sliding sleeve ² For applications without overpressure	
pos.25 a	G 1½" DIN 228 material 1.4305 (303)	•
	For applications with overpressure max. 16 bar (232 psi):	
pos.25 e	G 1½" DIN 228 material 1.4305 (303)	•
	³ Signal lamp	
pos.27 a	Bulb, mounted in cable entry M20 x 1.5, 2 W green	•
pos.27 c	Bulb, mounted in cable entry M20 x 1.5, 2 W red	•
	⁴ Plug	
pos.35 x	Valve connector (incl. mating plug) 4-pole (incl. PE) max. 230 V	•
pos.35 a	M12 (without mating plug) 4-pole max. 25 V	•
pos.35 b	M12 (without mating plug) 5-pole (incl. PE) max. 60 V	•
pos.35 c	Harting Han 4A (incl. mating plug) 5-pole (incl. PE) max. 230 V	•
	⁵ Grounding	
pos.36 x	Without metal grounding pin inside the plastics process connection	•
	For applications with corrosive liquids	

¹ Available only for aluminium housing (pos.22 a).

² Available only for CE (pos.2 0)

³ Available only for CE (pos.2 0), not in combination with weather protection cover (pos.21) and cable entries pos.23 x,a,b.

For electronic module Relais DPDT (pos.4 L) three bulbs (24 V, 115 V and 230 V) will be delivered. For PNP (pos.4 D) a 24 V bulb will be delivered.

⁴ Available only for CE (pos.2 0). Without connection of stranded wires for installation and internal terminals (standard) or according to customer specification.

⁵ Available only for CN4020 version 120°C.

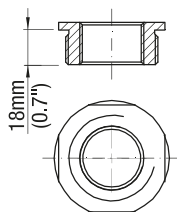
Accessories

Minimum order value for spare parts or accessories is 75 €.

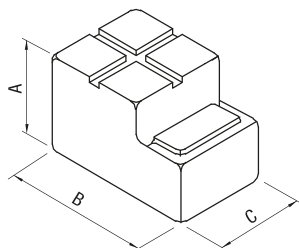
	Adapter G 1" to G 1½"	
bu400606	Aluminium	•
bu400607	1.4305 (303)	•
	Adapter G 1" to NPT 1¼"	
bu400618	Aluminium	•
bu400619	1.4305 (303)	•
	Adapter G 1" to NPT 1½"	
bu400610	Aluminium	•
bu400611	1.4305 (303)	•
zu400200	Shortening kit for CN4050 cable	•

Options / Accessories

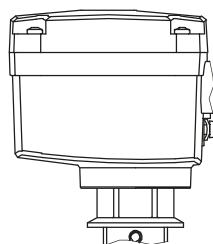
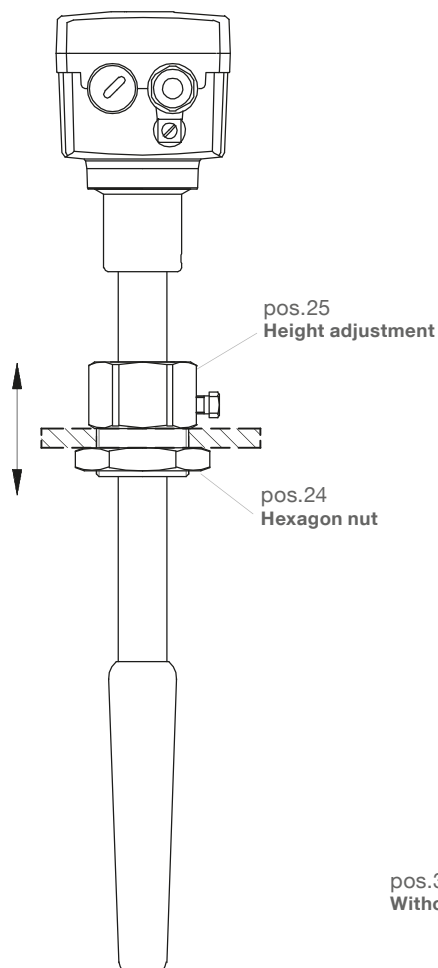
Adapter
G 1" to G 1½"



pos.21
Weather protection cover



A	100 mm (3.94")
B	165 mm (6.30")
C	95 mm (3.54")



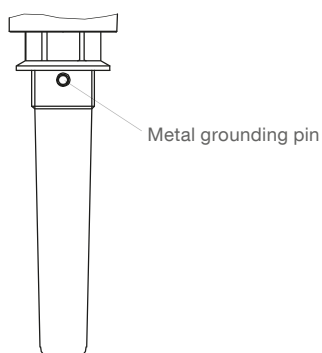
pos.27
Bulb in cable gland

pos.35 x
Valve connector
Enclosure plastic
Protection IP65

pos.35 a,b
Plug M12
Enclosure brass
Protection IP67

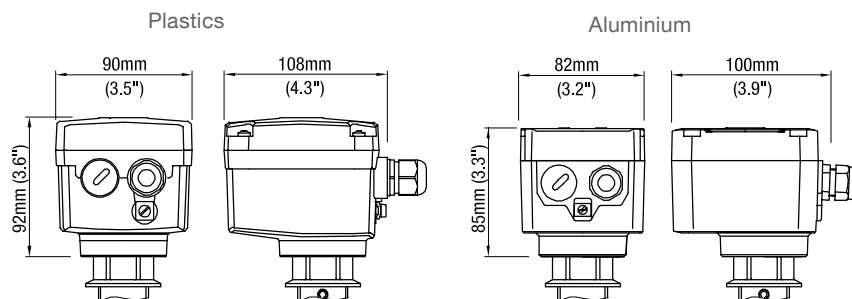
pos.35 c
Plug Han 4A
Enclosure zinc
Protection IP65

pos.36 x
Without metal grounding pin

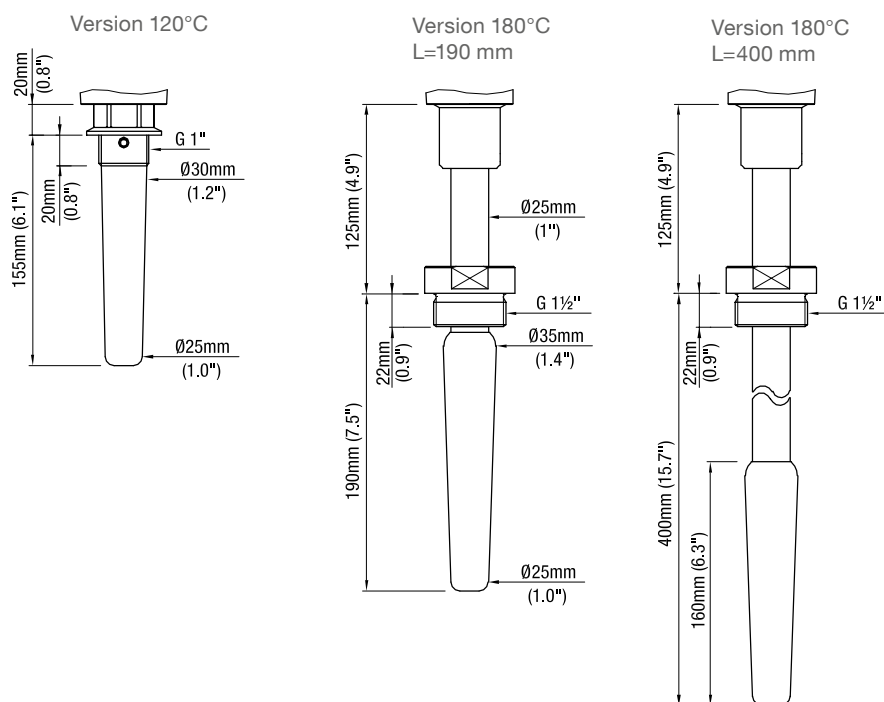


Dimensions

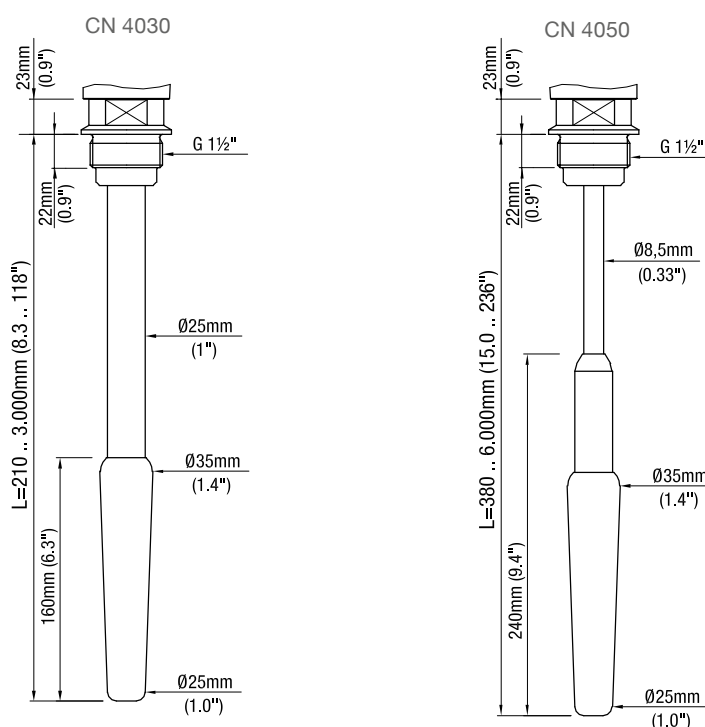
Housing versions



CN 4020



CN 4030 CN 4050



Electrical installation

Relay SPDT

Power supply:

21 .. 27 V DC $\pm 10\%$ * 1.5 W
*incl. 10% of EN 61010

Fuse on power supply:

max. 10 A, fast or slow, HBC, 250 V

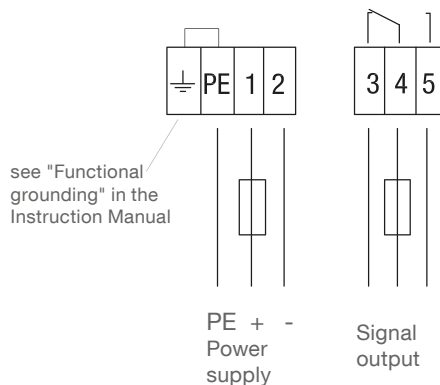
Signal output:

Floating relay SPDT

AC max. 250 V, 3 A, non inductive
DC max. 30 V, 5 A, non inductive

Fuse on signal output:

max. 5 A, fast or slow, HBC, 250 V



Relay DPDT

Universal voltage

Power supply:

21 .. 230 V 50 - 60 Hz $\pm 10\%$ * 18 VA
21 .. 45 V DC $\pm 10\%$ * 2 W
*incl. 10% of EN 61010

Fuse on power supply:

max. 10 A, fast or slow, HBC, 250 V

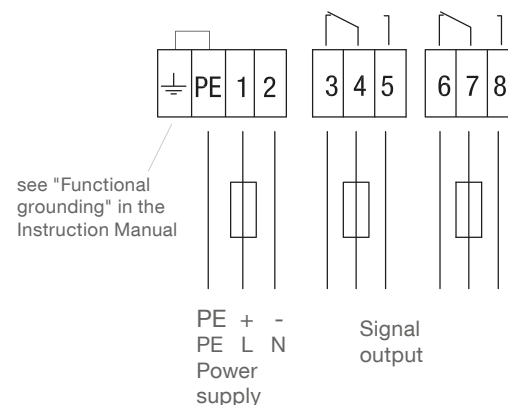
Signal output:

Floating relay DPDT

AC max. 250 V, 8 A, non inductive
DC max. 30 V, 5 A, non inductive

Fuse on signal output:

max. 10 A, fast or slow, HBC, 250 V



PNP

3-wire

Power supply:

20 .. 40 V DC $\pm 10\%$ * 0.5 A
*incl. 10% of EN 61010

Fuse:

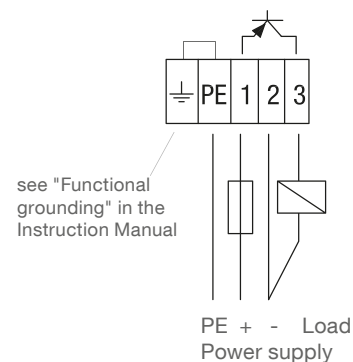
max. 4 A, fast or slow, 250V, HBC

Signal output:

max. 0.4 A

Load for example:

PLC, relay, contactor, bulb



Approved power supply with reinforced insulation to mains is required

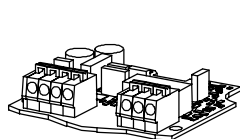
Spare parts

Minimum order value for spare parts or accessories is 75 €.

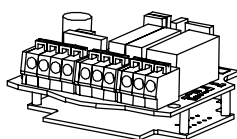
For type	Electronics	Article number
CN 4020 Version 120°C	Relay SPDT 21 .. 27 V DC	pl406100
	Relay DPDT 21 .. 230 V AC 21 .. 45 V DC	pl406110
	PNP 20 .. 40 V DC	pl406120
CN 4020 Version 180°C	Relay DPDT 21 .. 230 V AC 21 .. 45 V DC	pl406111
	PNP 20 .. 40 V DC	pl406121
CN 4030 CN 4050	For these types a non changeable electronic is located inside the probe. No spare parts are stated.	

•
•
•
•
•

Relay SPDT



Relay DPDT



PNP

