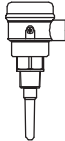
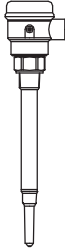
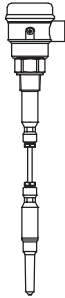


Table of contents

	Page
Overview	2
Applications	4

CN 7120 / CN 7121 Short extension length	6
	

CN 7130 Pipe extension	10
	

CN 7150 Cable extension	12
	

Options/ Accessories / Spare parts	14
Detailed Ex-Markings	16
Dimensions	17
Electrical installation	21

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 01.09.2021 until 31.03.2022, 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.

Overview

- Level limit detection in liquids and solids
- Leakage detection
- Interface detection (water/oil or liquid/foam)
- Compact unit
- Wide range of applications
- Full-, demand-, empty detector
- Capacitive technology with active shield
- Sensitivity: dielectric constant ≥ 1.5
- Precalibration allows measurement of most applications without sensitivity setting on site
- No maintenance
- Plastic or stainless steel housing
- Corrosion resistant construction
- Various process connections: threaded (including G 1/2" hygienic), flanged (screwed) or Tri-clamp
- 4-wire DC with relay signal output
- 2-wire 8/16 mA or 4-20mA, including remote test
- IO-Link with PNP, NPN, Push Pull signal output
- Hazardous Locations approvals
- Hygiene approvals, food grade material
- 2011/65/EU RoHS conform

Approvals	CE, FM, CSA, TR-CU, UKCA	General purpose
	ATEX, IEC-Ex, TR-CU, INMETRO, KC, CCC, UKCA	Zone 0, 0/1, 20/21 Intrinsically safe
	FM, CSA	Class I, II, III, Div. 1, Gr. A-G Intrinsically safe
	EHEDG	Hygiene
	WHG, VLAREM	Overflow and leakage protection
Electronics	4-wire	DC with relay / solid state relay signal output 8/16 mA or 4-20mA, including remote test
	2-wire	
	3/4-wire	IO-Link with PNP, NPN, Push Pull signal output
Enclosure	Ø65mm	Thermoplastic polyester
	Ø35mm	CN 7120: 1.4404 (316L) CN 7121: Thermoplastic polyester
	Ingress protection	Type 4X / IP68

CN 7120 Stainless steel process connection	Length of extension	92 mm (3.6")
	Ambient temperature	-40 .. +85°C (-40 .. +185°F)
	Process temperature	-40 .. +125°C (-40 .. +257°F)
	Process pressure	-1 .. +25 bar (-14.5 .. +363 psi)
	Process connection	Thread: G 1/2" Hygienic, G 1/2", G 3/4", G 1" NPT 3/4" Adapters for further threads available Tri-clamp: DN25 (1") - DN50 (2") Flanges (threaded): DN 25-50, ASME 1"- 2"
	Material of process connection	1.4404 (316L)
	Material of probe	PEEK, PPS or PVDF (FDA listed, food grade)



Enclosure Ø35mm with M12 plug and G 1/2" Hygienic



Enclosure Ø65mm with cable gland and G 3/4"

CN 7121 Plastic process connection	Length of extension	92 mm (3.6")
	Ambient temperature	-40 .. +85°C (-40 .. +185°F)
	Process temperature	-40 .. +125°C (-40 .. +257°F)
	Process pressure	-1 .. +10 bar (-14.5 .. +146 psi)
	Process connection	Thread: G 1", NPT 3/4" Adapters for further threads available
	Material of process connection and probe	PPS or PVDF (FDA listed, food grade)



Enclosure Ø35mm with M12 plug and G 1"



Enclosure Ø65mm with cable gland and G 3/4"

Overview

CN 7130 Pipe extension	Length of extension	300 .. 4000mm (11.8 .. 157")
	Ambient temperature	-40 .. +85°C (-40 .. +185°F)
	Process temperature	-40 .. +125°C (-40 .. +257°F)
	Process pressure	-1 .. +25 bar (-14.5 .. +363 psi) -1 .. +10 bar (-14.5 .. +146 psi) with sliding sleeve
	Process connection	Thread: G 3/4", G 1", NPT 3/4" Adapters for further threads available Flanges (threaded): DN 25-50, ASME 1"- 2"
	Material of process connection/ extension	1.4404 (316L)
	Material of probe	PPS or PVDF (FDA listed, food grade)



Enclosure Ø65mm
with cable gland
and G 3/4"

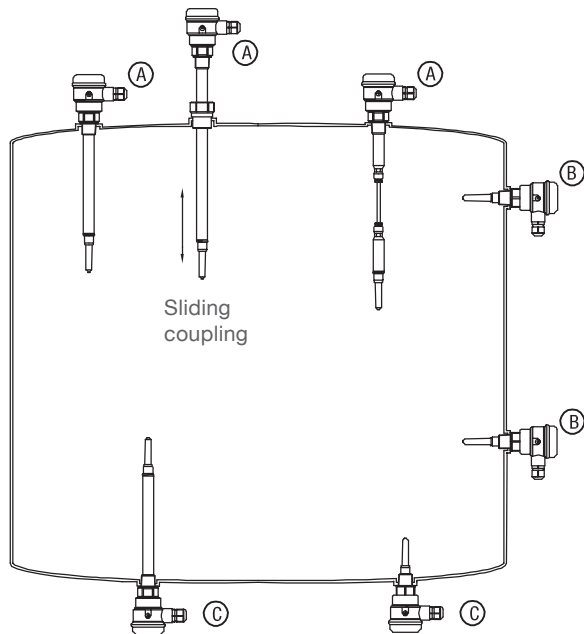
CN 7150 Cable extension	Length of extension	500 .. 20.000mm (19.7 .. 787")
	Ambient temperature	-40 .. +85°C (-40 .. +185°F)
	Process temperature	-40 .. +125°C (-40 .. +257°F)
	Process pressure	-1 .. +10 bar (-14.5 .. +146 psi)
	Process connection	Thread: G 3/4", G 1", NPT 3/4" Adapters for further threads available Flanges (threaded): DN 25-50, ASME 1"- 2"
	Material of process connection	1.4404 (316L) or PPS (FDA listed, food grade)
	Material of cable extension	FEP jacketed
Material of probe	PPS (FDA listed, food grade)	



Enclosure Ø65mm
with cable gland
and G 3/4"

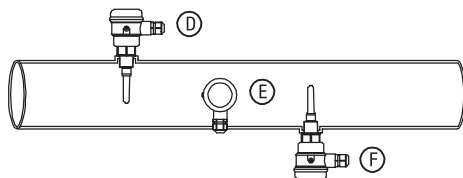
Liquid applications

CN 7120
 CN 7121
 CN 7130
 CN 7150



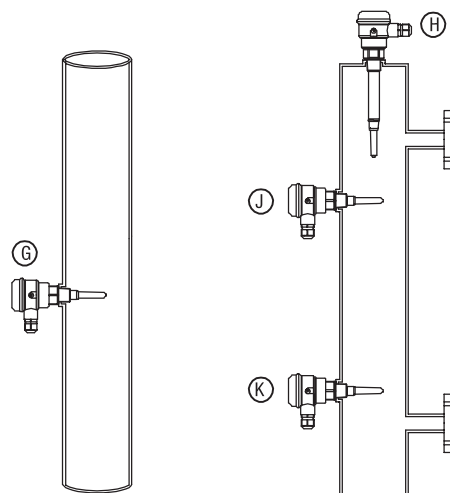
Vessel

- A Full, demand or empty detector vertical
- B Full, demand or empty detector horizontal
- C Empty detector vertical from the bottom



Horizontal pipe

- D Full detector vertical
- E Demand or empty detector horizontal
- F Empty detector vertical from the bottom



Vertical pipe

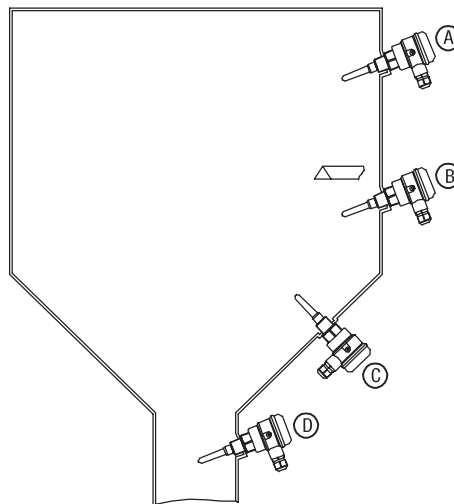
- G Full, demand or empty detector horizontal

Bypass

- H Full, demand or empty detector vertical
- J Full detector horizontal
- K Demand or empty detector horizontal

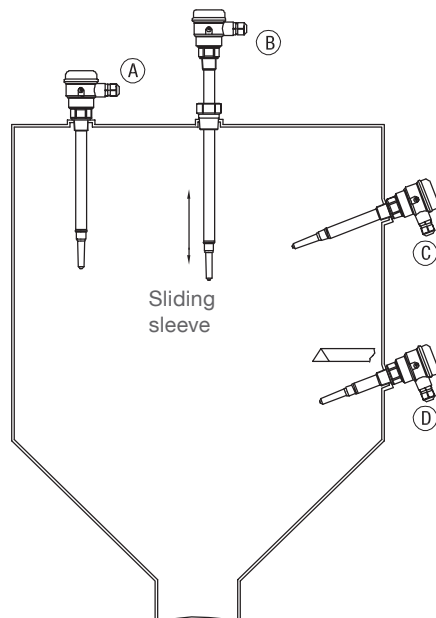
Solid applications

CN 7120 /
 CN 7121



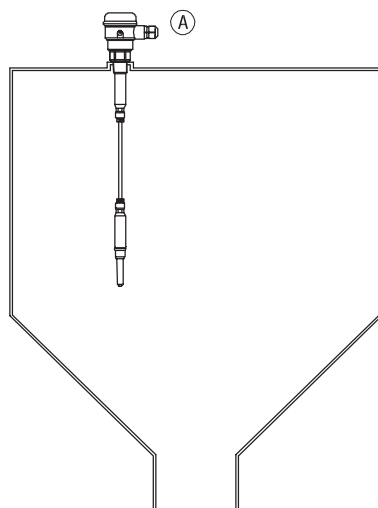
- A Full detector horizontal or oblique
- B Demand or empty detector horizontal or oblique
- C Empty detector oblique from the bottom
- D Empty detector in the silo outlet

CN 7130



- A Full detector vertical
- B Full detector with sliding sleeve
- C Full detector horizontal or oblique
- D Demand or empty detector horizontal or oblique

CN 7150



- A Full, demand or empty detector vertical

CN 7120 Short extension length - Stainless steel process connection



Enclosure
 Ø35mm with M12 plug
 and G 1/2" Hygienic



Enclosure
 Ø65mm with cable
 gland and G 3/4"

CN 7120

pos.2

Certificate ⁽⁵⁾ (detailed Ex-markings: see page 16)

	Gas	Dust	Protection method
0	CE / UKCA / TR-CU	-	General purpose
Q	CE / UKCA / FM / CSA	-	General purpose
Y	ATEX / IEC-Ex	Zone 0, 0/1	Intrinsically Safe
P	FM / CSA	Cl. I Div.1	Intrinsically Safe
V	TR-CU	Zone 0, 0/1	Intrinsically Safe
B	INMETRO	Zone 0, 0/1	Intrinsically Safe
T	KC	Zone 0, 0/1	Intrinsically Safe
G	CCC	Zone 0, 0/1	Intrinsically Safe
J	UKCA	Zone 0, 0/1	Intrinsically Safe

pos.3

Enclosure

- 1 Enclosure Ø65mm, internal terminal block, cable gland M20x1,5 (attached)
- 2 Enclosure Ø65mm, internal terminal block, conduit NPT 1/2"
- 3 Enclosure Ø65mm, M12-plug (mounted in M20x1.5) ⁽¹⁾
- 4 Enclosure Ø35mm, M12-plug ⁽²⁾

pos.4

Electronic

- A 4-wire Relay DC and 2-wire (8/16mA or 4-20mA) ⁽²⁾
- B 3/4-wire IO-Link, PNP, NPN, Push/Pull ⁽¹⁾

pos.5

Process connection

- A Thread G 1/2" DIN ISO 228-1, Hygienic
- B Thread G 1/2" DIN ISO 228-1
- C Thread G 3/4" DIN ISO 228-1
- D Thread G 1" DIN ISO 228-1
- F Thread NPT 3/4" ASME B 1.20.1
- K Tri-clamp DN25 (1") /DN40 (1 1/2") DIN 32676 Type A (DIN 11851), DIN 32676 Type C (ASME BPE 2009)
- L Tri-clamp DN50 (2") DIN 32676 Type A (DIN 11851), DIN 32676 Type C (ASME BPE 2009)
- N Flange DN 25, PN 16/40 EN 1092-1 type A flat faced
- P Flange DN 40, PN 16/40 EN 1092-1 type A flat faced
- Q Flange DN 50, PN 16/25/40 EN 1092-1 type A flat faced
- R Flange 1" 150 lbs ASME B16.5, raised face
- S Flange 1" 300 lbs ASME B16.5, raised face
- T Flange 1 1/2" 150 lbs ASME B16.5, raised face
- U Flange 1 1/2" 300 lbs ASME B16.5, raised face
- V Flange 2" 150 lbs ASME B16.5, raised face
- W Flange 2" 300 lbs ASME B16.5, raised face

CN 7120 Short extension length - Stainless steel process connection

pos.6	Material of sensor	
	A PPS ⁽³⁾	•
	B PVDF ⁽³⁾	•
	C PEEK ⁽⁴⁾	•
pos.7	Material of process connection and extension "L"	
	2 1.4404 (316L)	•

Further options: see page 14

⁽¹⁾ Available with General Purpose (pos.2 0,Q). With pos.4 B: IO-Link certificate pending.

⁽²⁾ With certificate General purpose (pos.2. 0,Q):

4-wire Relay 9-33 V DC and

2-wire (8/16mA or 4-20mA*)

With certificate Intrinsically safe:

2-wire (8/16mA or 4-20mA*) and

4-wire Solid state relay 10.8-30 V DC (not implemented with Enclosure Ø35mm, M12-plug (pos.3 4))

*If required, the unit can be set to 4-20mA continuous current output (direct output of the measured capacitance).

⁽³⁾ Not with process connection G 1/2" Hygienic (pos.5 A)

⁽⁴⁾ Available with process connection G 1/2" Hygienic (pos.5 A)

⁽⁵⁾ CE, ATEX, IEC-Ex available. Other approvals pending

CN 7120	A						2	1	← Order code
position	1	2	3	4	5	6	7	8	

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

CN 7121 Short extension length - Plastic process connection



Enclosure
 Ø35mm with M12 plug
 and G 1"



Enclosure
 Ø65mm with cable
 gland and G 3/4"

CN 7121

pos.2

Certificate ⁽⁵⁾ (detailed Ex-markings: see page 16)

	Gas	Dust	Protection method
0	CE / UKCA / TR-CU	-	General purpose
Q	CE / UKCA / FM / CSA	-	General purpose
Y	ATEX / IEC-Ex	Zone 0, 0/1	Intrinsically Safe
P	FM / CSA	Cl. I Div.1	Intrinsically Safe
V	TR-CU	Zone 0, 0/1	Intrinsically Safe
B	INMETRO	Zone 0, 0/1	Intrinsically Safe
T	KC	Zone 0, 0/1	Intrinsically Safe
G	CCC	Zone 0, 0/1	Intrinsically Safe
J	UKCA	Zone 0, 0/1	Intrinsically Safe

pos.3

Enclosure

- 1 Enclosure Ø65mm, internal terminal block, cable gland M20x1,5 (attached)
- 2 Enclosure Ø65mm, internal terminal block, conduit NPT 1/2"
- 3 Enclosure Ø65mm, M12-plug (mounted in M20x1.5) ⁽¹⁾
- 4 Enclosure Ø35mm, M12-plug

pos.4

Electronic

- A 4-wire Relay DC and 2-wire (8/16mA or 4-20mA) ⁽²⁾
- B 3/4-wire IO-Link, PNP, NPN, Push/Pull ⁽¹⁾

pos.5

Process connection

- D Thread G 1" DIN ISO 228-1
- F Thread NPT 3/4" ASME B 1.20.1

pos.6

Material of sensor

- A PPS
- B PVDF ⁽³⁾

pos.7

Material of process connection and extension "L" ⁽⁴⁾

- 1 PPS
- 3 PVDF ⁽³⁾

Further options: see page 14

CN 7121 Short extension length - Plastic process connection

⁽¹⁾ Available with General Purpose (pos.2 0,Q). With pos.4 B: IO-Link certificate pending.

⁽²⁾ With certificate General purpose (pos.2. 0,Q):

4-wire Relay 9-33 V DC and

2-wire (8/16mA or 4-20mA*)

With certificate Intrinsically safe:

2-wire (8/16mA or 4-20mA*) and

4-wire Solid state relay 10.8-30 V DC (not implemented with Enclosure Ø35mm, M12-plug (pos.3 4))

*If required, the unit can be set to 4-20mA continuous current output (direct output of the measured capacitance).

⁽³⁾ Available with General Purpose CE / UKCA / TR-CU (pos.2 0)

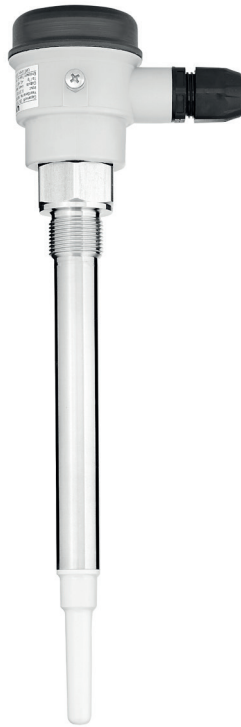
⁽⁴⁾ Material must be similar to Material of sensor (pos.6)

⁽⁵⁾ CE, ATEX, IEC-Ex available. Other approvals pending

CN 7121	B					A	1	1	← Order code
position	1	2	3	4	5	6	7	8	

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

CN 7130 Pipe extension



Enclosure Ø65mm
 with cable gland
 and G 3/4"

CN 7130

pos.2

Certificate ⁽⁴⁾ (detailed Ex-markings: see page 16)

		Gas	Dust	Protection method
0	CE / UKCA / TR-CU	-	-	General purpose
Q	CE / UKCA / FM / CSA	-	-	General purpose
Y	ATEX / IEC-Ex	Zone 0, 0/1	Zone 20/21	Intrinsically Safe
P	FM / CSA	Cl. I Div.1	Cl. II, III Div.1	Intrinsically Safe
V	TR-CU	Zone 0, 0/1	Zone 20/21	Intrinsically Safe
B	INMETRO	Zone 0, 0/1	Zone 20/21	Intrinsically Safe
T	KC	Zone 0, 0/1	Zone 20/21	Intrinsically Safe
G	CCC	Zone 0, 0/1	Zone 20/21	Intrinsically Safe
J	UKCA	Zone 0, 0/1	Zone 20/21	Intrinsically Safe

pos.3

Enclosure

- 1 Enclosure Ø65mm, internal terminal block, cable gland M20x1,5 (attached)
- 2 Enclosure Ø65mm, internal terminal block, conduit NPT 1/2"
- 3 Enclosure Ø65mm, M12-plug (mounted in M20x1.5) ⁽¹⁾

pos.4

Electronic

- A 4-wire Relay DC and 2-wire (8/16mA or 4-20mA) ⁽²⁾
- B 3/4-wire IO-Link, PNP, NPN, Push/Pull ⁽¹⁾

CN 7130 Pipe extension

pos.5	Process connection	
	C Thread G 3/4" DIN ISO 228-1	•
	D Thread G 1" DIN ISO 228-1	•
	F Thread NPT 3/4" ASME B 1.20.1	•
	N Flange DN 25, PN 16/40 EN 1092-1 type A flat faced	•
	P Flange DN 40, PN 16/40 EN 1092-1 type A flat faced	•
	Q Flange DN 50, PN 16/25/40 EN 1092-1 type A flat faced	•
	R Flange 1" 150 lbs ASME B16.5, raised face	•
	S Flange 1" 300 lbs ASME B16.5, raised face	•
	T Flange 1 1/2" 150 lbs ASME B16.5, raised face	•
	U Flange 1 1/2" 300 lbs ASME B16.5, raised face	•
	V Flange 2" 150 lbs ASME B16.5, raised face	•
	W Flange 2" 300 lbs ASME B16.5, raised face	•
pos.6	Material of sensor	
	A PPS	•
	B PVDF	•
pos.7	Material of process connection and extension "L"	
	2 1.4404 (316L)	•
pos.8	Length of extension "L"	
	A 250mm (9.84")	•
	B 500mm (19.7")	•
	C 1000mm (39.4")	•
	Z Price per 100mm or part thereof (starting from 0mm) ⁽³⁾	•
	min. 250mm, max. 4.000mm	

Further options: see page 14

⁽¹⁾ Available with General Purpose (pos.2 0,Q). With pos.4 B: IO-Link certificate pending.

⁽²⁾ With certificate General purpose (pos.2. 0,Q):

4-wire Relay 9-33 V DC and

2-wire (8/16mA or 4-20mA*)

With certificate Intrinsically safe:

2-wire (8/16mA or 4-20mA*)

*If required, the unit can be set to 4-20mA continuous current output (direct output of the measured capacitance).

⁽³⁾ Alternative use of "Sliding sleeve" (option pos.19) in combination with fix length (pos.8 B, C) is possible

⁽⁴⁾ CE, ATEX, IEC-Ex available. Other approvals pending

CN 7130	C							2		L= mm	← Order code
position	1	2	3	4	5	6	7	8			

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

CN 7150 Cable extension



Enclosure Ø65mm
 with cable gland and
 process connection
 G 3/4" made of
 1.4404 (316L)

CN 7150

pos.2

Certificate ⁽⁵⁾ (detailed Ex-markings: see page 16)

	Gas	Dust	Protection method
0	CE / UKCA / TR-CU	-	General purpose
Q	CE / UKCA / FM / CSA	-	General purpose
Y	ATEX / IEC-Ex	Zone 0, 0/1	Intrinsically Safe
P	FM / CSA	Cl. I Div.1	Intrinsically Safe
V	TR-CU	Zone 0, 0/1	Intrinsically Safe
B	INMETRO	Zone 0, 0/1	Intrinsically Safe
T	KC	Zone 0, 0/1	Intrinsically Safe
G	CCC	Zone 0, 0/1	Intrinsically Safe
J	UKCA	Zone 0, 0/1	Intrinsically Safe

pos.3

Enclosure

- 1 Enclosure Ø65mm, internal terminal block, cable gland M20x1,5 (attached)
- 2 Enclosure Ø65mm, internal terminal block, conduit NPT 1/2"
- 3 Enclosure Ø65mm, M12-plug (mounted in M20x1.5) ⁽¹⁾

pos.4

Electronic

- A 4-wire Relay DC and 2-wire (8/16mA or 4-20mA) ⁽²⁾

pos.5

Process connection

- C Thread G 3/4" DIN ISO 228-1
- D Thread G 1" DIN ISO 228-1
- F Thread NPT 3/4" ASME B 1.20.1
- N Flange DN 25, PN 16/40 EN 1092-1 type A flat faced
- P Flange DN 40, PN 16/40 EN 1092-1 type A flat faced
- Q Flange DN 50, PN 16/25/40 EN 1092-1 type A flat faced
- R Flange 1" 150 lbs ASME B16.5, raised face
- T Flange 1 1/2" 150 lbs ASME B16.5, raised face
- V Flange 2" 150 lbs ASME B16.5, raised face

CN 7150 Cable extension

pos.6	Material of sensor	
	A PPS	•
pos.7	Material of process connection and extension "L"	
	1 PPS, extension cable FEP, extension cable fixing PPS ⁽³⁾	•
	2 1.4404 (316L), extension cable FEP, extension cable fixing PPS	•
pos.8	Length of extension "L"	
	B 500mm (19.7")	•
	C 1000mm (39.4")	•
	D 1500mm (59.0")	•
	E 2000mm (78.7")	•
	Z Price per 100mm or part thereof (starting from 0mm) ⁽⁴⁾	•
	min. 500mm, max. 20.000mm	

Further options: see page 14

⁽¹⁾ Available with General Purpose (pos.2 0,Q)

⁽²⁾ With certificate General purpose (pos.2. 0,Q):

4-wire Relay 9-33 V DC and

2-wire (8/16mA or 4-20mA*)

With certificate Intrinsically safe:

2-wire (8/16mA or 4-20mA*)

*If required, the unit can be set to 4-20mA continuous current output (direct output of the measured capacitance).

⁽³⁾ Selectable with process connection thread G 1" and NPT 3/4" (pos.5 D,F)

⁽⁴⁾ Alternative use of "Shortening kit for extension cable" (accessory) in combination with fix length (pos.8 C-E) is possible

⁽⁵⁾ CE, ATEX, IEC-Ex available. Other approvals pending

CN 7150	D			A				
position	1	2	3	4	5	6	7	8

L= mm ← Order code

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

Options / Accessories / Spare parts

Options

pos.11 x	Guarantee extension to 5 years	•
pos.17 x	FFKM wetted seals ⁽¹⁾	•
	Sliding sleeve ⁽²⁾	
Pos.19 a	G 1 1/4" DIN ISO 228-1 1.4404 (316L)	•
Pos.19 b	G 1 1/2" DIN ISO 228-1 1.4404 (316L)	•
Pos.19 c	NPT 1 1/4" ASME B 1.20.1 1.4404 (316L)	•
Pos.19 d	NPT 1 1/2" ASME B 1.20.1 1.4404 (316L)	•
	Overfill and Leakage certificate	
pos.23 a	WHG	•
pos.23 b	VLAREM	•
	Hygiene certificate ⁽³⁾	
pos.24 a	EHEDG, Type EL	•
	Declaration, Certificate, Testreport ⁽⁴⁾	
CA	Declaration of compliance with the order, EN 10204 clause 2.1	•
CC	Inspection certificate, EN 10204 clause 3.1, material process connection	•
	Marking	
DA	Stainless steel tag (Measuring point number / identification, max. 27 char.)	•

⁽¹⁾ Ambient- and process temperature limited to -20°C

⁽²⁾ Available for CN 7130 with process connection of the unit 3/4" (pos.5 C or F). Sliding sleeve has process connection as selected in pos. 19. With FKM seal between sliding sleeve and pipe extension. Max. process pressure -1 to 10 bar (146 psi)

⁽³⁾ Available for CN 7120 with thread G 1/2" Hygienic

⁽⁴⁾ The documents are enclosed with the delivered goods

Accessories

Minimum order value for separate orders of accessories is 75 €.

	Adapter ⁽¹⁾	
bu400620	G 1" to G 1 1/2" DIN ISO 228-1 1.4404 (316L)	•
bu400631	NPT 3/4" to NPT 1 1/4" ASME B 1.20.1 1.4404 (316L)	•
bu400630	NPT 3/4" to NPT 1 1/2" ASME B 1.20.1 1.4404 (316L)	•
	EHEDG process connection ⁽²⁾	
bu400512	Flush welding socket ø30/ G 1/2", 1.4404 (316L), without leakage borehole	•
bu400514	Flush welding socket ø30/ G 1/2", 1.4404 (316L), with leakage borehole	•
	Sensguard ⁽³⁾	
cl440402	G 1" DIN ISO 228-1 PPS	•
cl440411	NPT 3/4" ASME B 1.20.1 PPS	•
zu400000	Shortening kit for CN 7150 extension cable	•

⁽¹⁾ Max. process pressure: -1 to 25 bar (363 psi)

⁽²⁾ Fitting to CN 7120 with process connection G 1/2" Hygienic (pos.5 A) and EHEDG certificate (pos.24 a). Max. process pressure: -1 to 25 bar (363 psi)

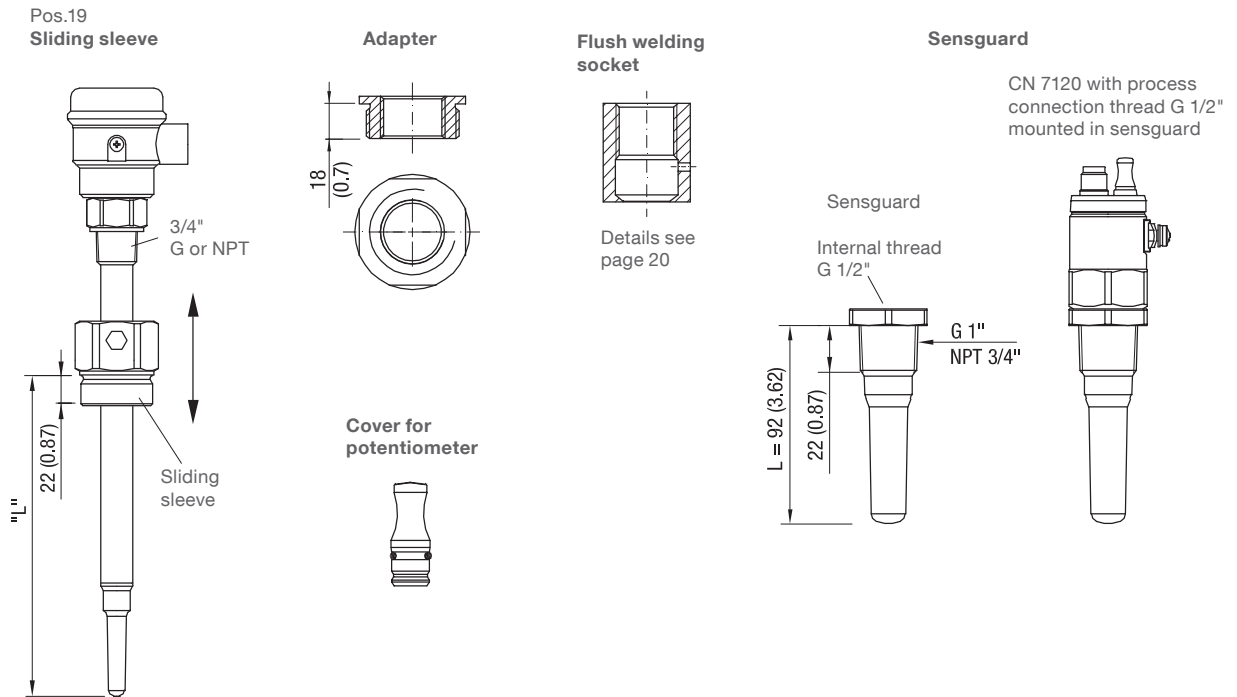
⁽³⁾ Fitting to CN 7120 with process connection G 1/2" (pos.5 B). Max. process pressure: -1 to 10 bar (146 psi)

Spare parts

Minimum order value for separate orders of spare parts is 75 €.

zu400001	Cover for potentiometer, for enclosure Ø35mm, incl. seal ring	•
zu400002	Cable gland M20 x 1.5 (applicable as well for Ex versions)	•
zu400003	Lid, for enclosure Ø65mm	•
zu400004	Lid seal, for enclosure Ø65mm	•

Options / Accessories / Spare parts / Complementary products



Complementary products (from outside companies)

Remote instrument for 8/16 mA electronic

Operation with 8/16 mA, 2-wire current loop:

Input: 8/16 mA from CN 7000 unit

Output: Relay

Intrinsically safe and non-intrinsically safe operation:

Implements self diagnostics when power supply is applied or test button on remote instrument is pressed (remote test)

Possible manufacturer / Type:

VEGA: VEGATOR 121 (single channel) or 122 (double channel)

Siemens: Sitrans SCSC (single channel) or TCSC (double channel)

M12 mating plug

4 polig, female, for version CN 7000 with M12 plug:

Possible manufacturer / Type:

Phoenix Contact: SACC-M12 - Series

Lapp: EPIC Sensor M12 V4A

Murr Elektronik: M12 Bu. - Series

The specification of the respective datasheets must be checked with the application.

Detailed Ex markings

Detailed Ex-markings

Certificate

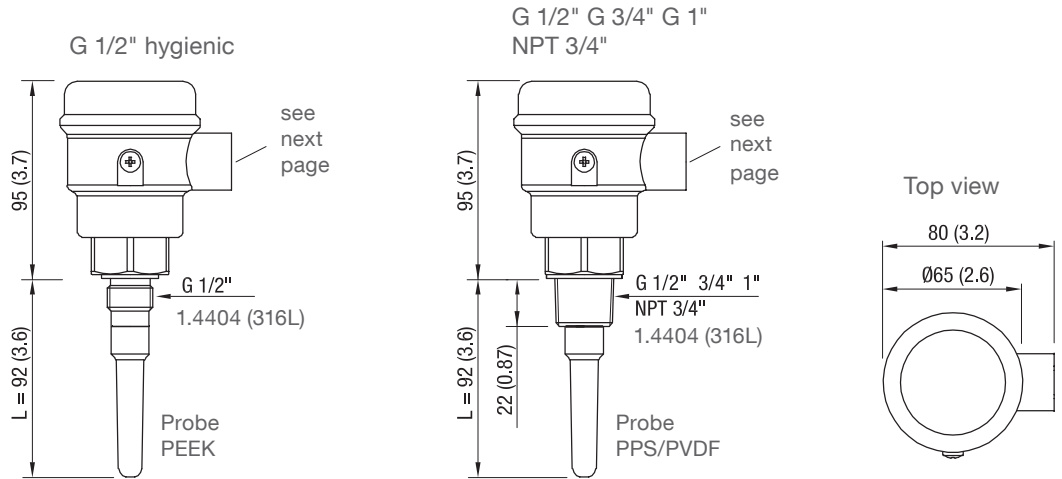
	CN 7120 / 7121 / 7130	CN 7150	
Pos.2	Y	ATEX II 1 G Ex ia IIC T! Ga ATEX II 1/2 G Ex ia IIC T! Ga/Gb ATEX II 1/2 D Ex ia IIIC T! Da/Db IEC Ex ia IIC T! Ga IEC Ex ia IIC T! Ga/Gb IEC Ex ia IIIC T! Da/Db	ATEX II 1 G Ex ia IIC T! Ga ATEX II 1/2 G Ex ia IIC T! Ga/Gb IEC Ex ia IIC T! Ga IEC Ex ia IIC T! Ga/Gb
	P	FM / CSA IS Cl. I, II, III Div.1 Gr. A-G	FM / CSA IS Cl. I Div.1 Gr. A-D
	V	TR-CU 0Ex ia IIC T! Ga TR-CU 0Ex ia IIC T! Ga/Gb TR-CU Ex ia IIIC T! Da/Db	TR-CU 0Ex ia IIC T! Ga TR-CU 0Ex ia IIC T! Ga/Gb
	B	INMETRO Ex ia IIC T! Ga INMETRO Ex ia IIC T! Ga/Gb INMETRO Ex ia IIIC T! Da/Db	INMETRO Ex ia IIC T! Ga INMETRO Ex ia IIC T! Ga/Gb
	T	KC Ex ia IIC T! KC Ex ia IIIC T!	KC Ex ia IIC T!
	G	CCC Ex ia IIC T! Ga CCC Ex ia IIC T! Ga/Gb CCC Ex iaD 20/A21 T!	CCC Ex ia IIC T! Ga CCC Ex ia IIC T! Ga/Gb
	J	UKCA II 1 G Ex ia IIC T! Ga UKCA II 1/2 G Ex ia IIC T! Ga/Gb UKCA II 1/2 D Ex ia IIIC T! Da/Db	UKCA II 1 G Ex ia IIC T! Ga UKCA II 1/2 G Ex ia IIC T! Ga/Gb

Dimensions

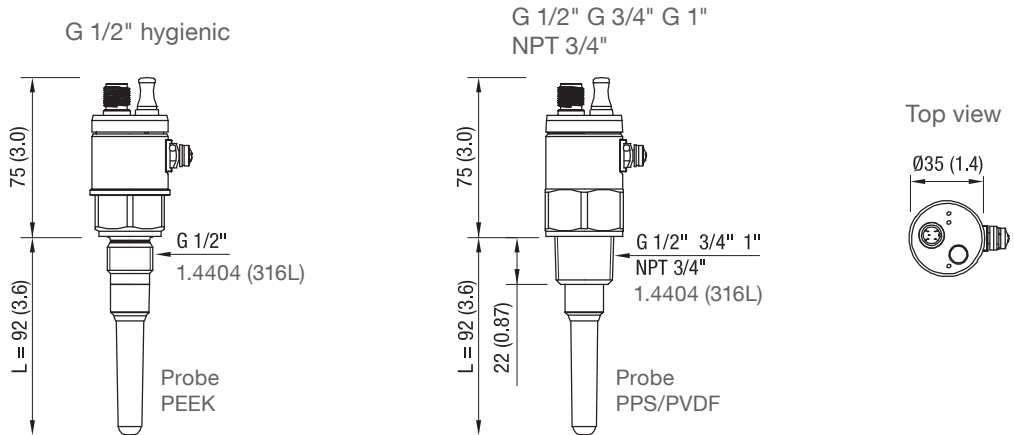
Dimensions All dimensions in mm (inch)

CN 7120 - Short extension length
 Stainless steel process connection

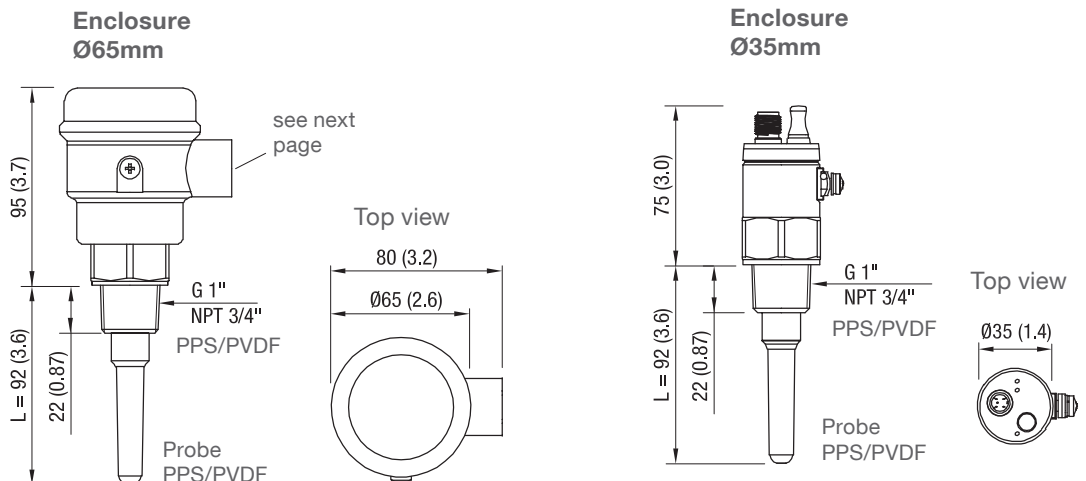
Enclosure
 Ø65mm



Enclosure
 Ø35mm

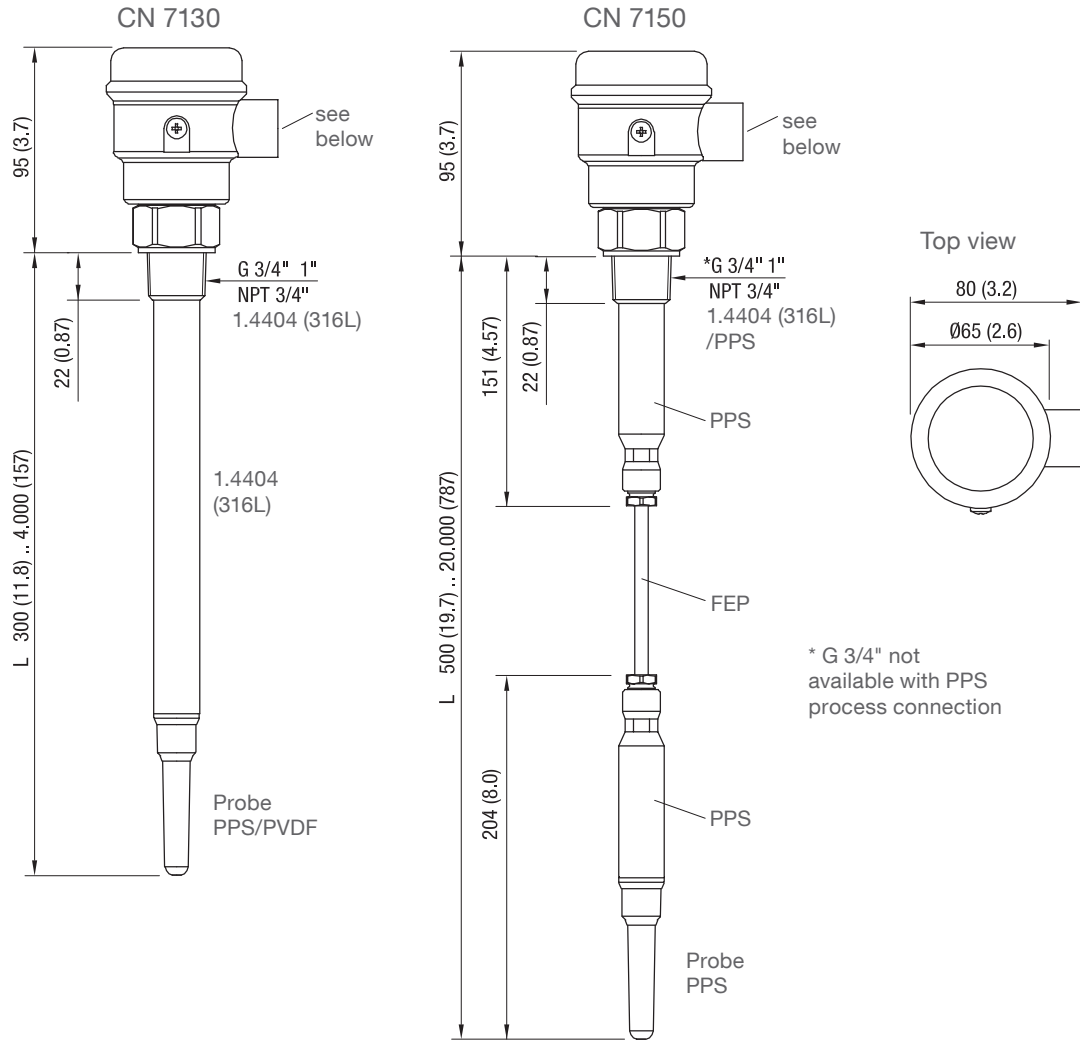


CN 7121 - Short extension length
 Plastic process connection



Dimensions

CN 7130 - Pipe extension
 CN 7150 - Cable extension



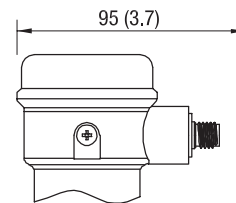
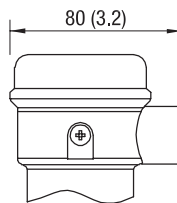
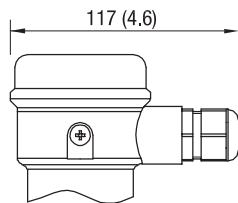
Enclosure Ø65mm

Possible wiring

M20x1,5
 cable gland

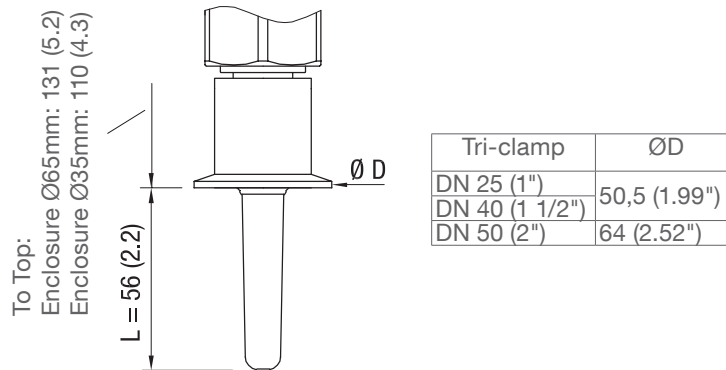
1/2" NPT
 conduit

M12
 plug

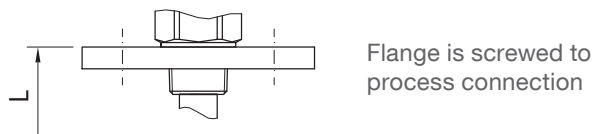


Dimensions

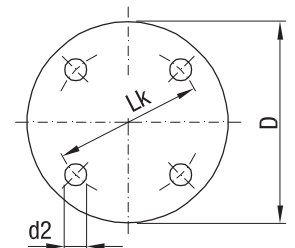
Tri-clamp



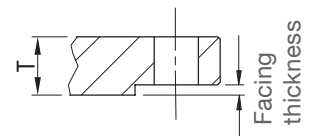
Flange



	Code	Type	Number of holes	d2 mm (Inch)	Lk mm (Inch)	D mm (Inch)	T thickness mm (Inch)
ASME B16.5, raised face	R	1" 150 lbs	4	15,9 (0.63)	79,3 (3.12)	108,0 (4.25)	14,3 (0.56)
	S	1" 300 lbs	4	19,1 (0.75)	88,9 (3.5)	123,8 (4.87)	17,5 (0.69)
	T	1½" 150 lbs	4	15,9 (0.63)	98,6 (3.88)	127,0 (5.0)	17,5 (0.69)
	U	1½" 300 lbs	4	22,2 (0.87)	114,3 (4.5)	155,6 (6.13)	20,6 (0.81)
	V	2" 150 lbs	4	19,1 (0.75)	120,7 (4.75)	152,4 (6.01)	19,1 (0.75)
	W	2" 300 lbs	8	19,1 (0.75)	127,0 (5.0)	165,1 (6.5)	22,2 (0.87)
EN 1092-1 type A, flat faced	N	DN25 PN16/40	4	14,0 (0.55)	85,0 (3.35)	115,0 (4.53)	18,0 (0.71)
	P	DN40 PN16/40	4	18,0 (0.71)	110,0 (4.33)	150,0 (5.91)	18,0 (0.71)
	Q	DN50 PN16/25/40	4	18,0 (0.71)	125,0 (4.92)	165,0 (6.5)	18,0 (0.71)



Raised face



Type	Facing thickness
ASME 150 lbs	2 mm (0.08")
ASME 300 lbs	

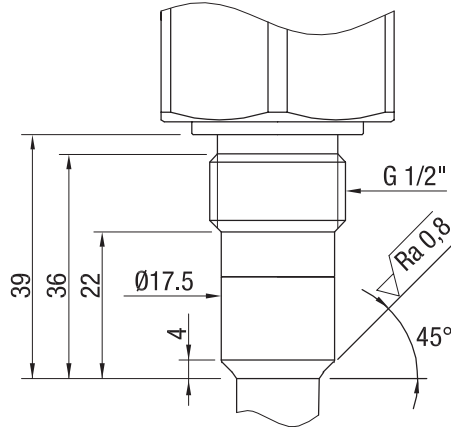
Dimensions

CN 7120 - G 1/2" hygienic process connection / EHEDG approval

EHEDG versions

EHEDG approval is available with CN7120 with process connection G 1/2" hygienic

CN 7120 process connection



Metal
 1.4404 (316L)

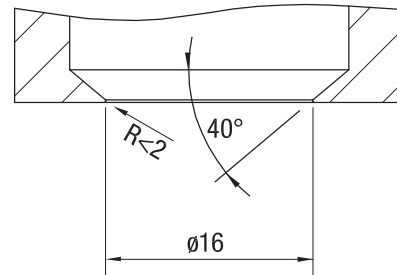
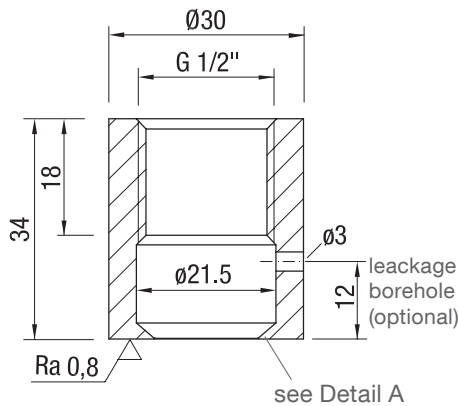
PEEK
 FDA registration number:
 21 CFR 177.2415

Flush welding socket: Design

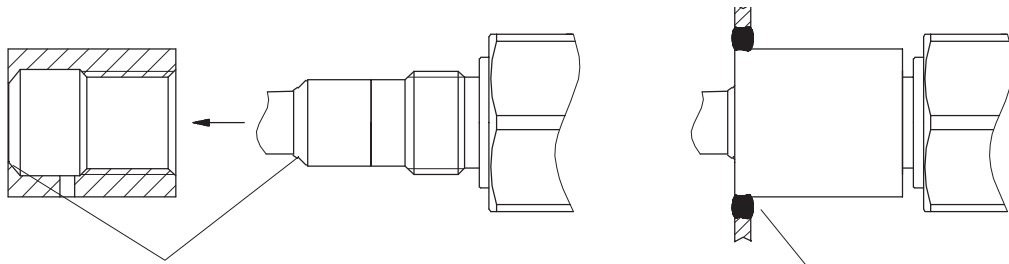
The flush welding socket must meet the following design:

Metal type according to hygienic and further external requirements.

Detail A:
 Sealing area between CN 7120 (PEEK) and the on site process connection (metal)



Flush welding socket: Installation



- Metal-peek sealing
- The support must be plane and without any gap. No teflon tape (or similar) is allowed to be in between.
 - Fixing torque 30 Nm

The quality of the welding with the container wall must be according to the respective regulations (e.g. gaps, transitions, surface finish).

Electrical installation - Relay DC and 8/16mA electronic

Standard version (General Purpose)

4-wire operation with DC supply and relay (signal output)

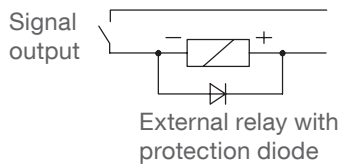
Power supply:
 9 .. 33 V DC, 0,7W
 incl. 10% of EN 61010-1

Signal output:
 Floating relay SPST

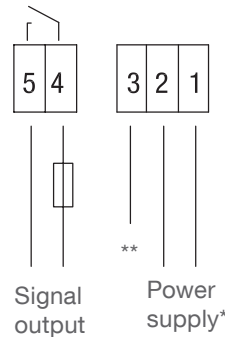
Max. 60 V DC or 30 V AC;
 Limited to 35 V DC or 16 V AC in wet locations
 Max. 1 A, 60 W

External fuse:
 max.1A, fast or slow, HBC, 250V

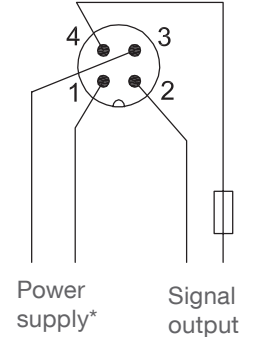
Protection of Relay contact:
 Observe a protection diode in case of connecting an inductance (e.g. external relay)



Terminal block



M12 plug



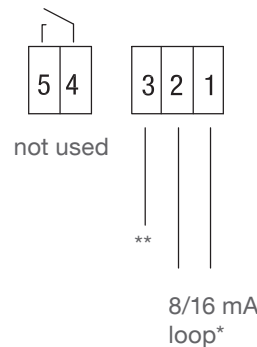
* Polarity determines output logic, see table page 23
 ** See "cable shield" below

2-wire operation with 8/16 mA loop

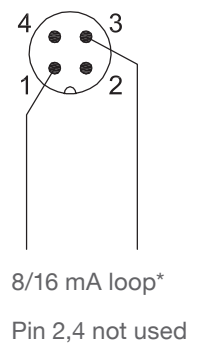
8/16 mA loop:
 9 .. 33 V DC, 0,7W
 incl. 10% of EN 61010-1

External resistor in loop:
 The above stated voltage is the resulting voltage on the unit. Any voltage drop on an external series resistance must be considered.
 $R_{max} = (V_{supply} - 9 V) / 16 mA$
 Example: 24 V supply allows R_{max} of 938 Ohms

Terminal block



M12 plug



* Polarity determines output logic, see table page 23
 ** See "cable shield" below

Cable shield

It is recommended to use a shielded cable for stable measurement.

With Terminal block: The cable shield can be connected either to terminal 3 or on the other side to earth. Do not connect both sides of the shield to earth. Note: terminal 3 is internal connected to the external equipotential bonding terminal on the enclosure.

With M12 plug: With use of common M12 cables, the cable shield is connected with the M12 cap nut. Since the M12 thread on CN7 is made of plastics, the cable shield on the M12 cap nut is not connected with CN7 and must be connected on the other side to ground.

Electrical installation - Relay DC and 8/16mA electronic

Intrinsically safe version

2-wire operation 8/16 mA loop:
with 8/16 mA loop 10.8 .. 30 V DC, 0,7W
 incl. 10% of EN 61010-1

Intrinsically safe supply required (barrier or signal conditioning instruments):

$U_i=30\text{ V}$ $I_i=160\text{ mA}$ $P_i=0,8\text{ W}$,
 $C_i=7,6\text{ nF}$ $L_i=0,3\text{ mH}$

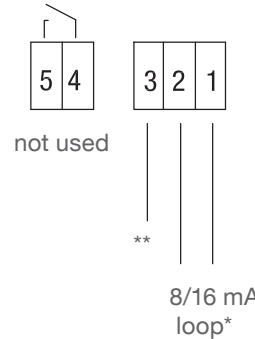
External resistor in loop:

The above stated voltage is the resulting voltage on the unit. Any voltage drop on an external series resistance must be considered.

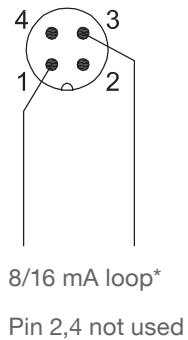
$R_{\max} = (V_{\text{supply}} - 10.8\text{ V}) / 16\text{ mA}$

Example: 24 V supply allows R_{\max} of 825 Ohms

Terminal block



M12 plug



* Polarity determines output logic, see table page 23
 ** See "cable shield" below

4-wire operation with DC supply and solid state relay (signal output) This operation is only available for CN 7120/7121 with enclosure Ø65mm and connection via terminal block (Solid state relay integrated).

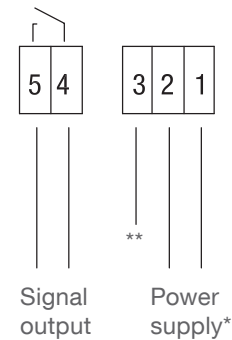
Power supply:
 10.8 .. 30 V DC, 0,7W
 incl. 10% of EN 61010-1

Intrinsically safe barrier required:
 $U_i=30\text{ V}$ $I_i=160\text{ mA}$ $P_i=0,8\text{ W}$, $C_i=7,6\text{ nF}$ $L_i=0,3\text{ mH}$

Signal output:
 Solid state relay
 Max. switching voltage / current: 30 V DC / 82mA

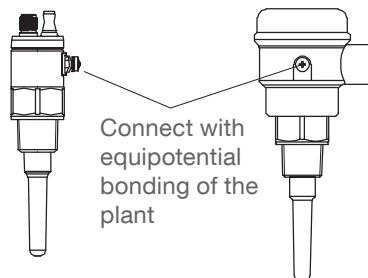
For connection to an intrinsically safe "switch amplifier for contact input" or to an intrinsically safe PLC with integrated input card for contact input.
 $U_i=30\text{ V}$ $I_i=200\text{ mA}$ $P_i=350\text{ mW}$, $C_i=4,2\text{ n}$ $L_i=0$

Terminal block



* Polarity determines output logic, see table page 23
 ** See "cable shield" below

External equipotential bonding terminal



Cable shield It is recommended to use a shielded cable for stable measurement.

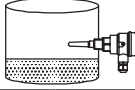
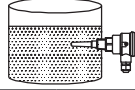





With Terminal block: The cable shield can be connected either to terminal 3 or on the other side to earth. Do not connect both sides of the shield to earth. Note: terminal 3 is internal connected to the external equipotential bonding terminal on the enclosure.

With M12 plug: With use of common M12 cables, the cable shield is connected with the M12 cap nut. Since the M12 thread on CN7 is made of plastics, the cable shield on the M12 cap nut is not connected with CN7 and must be connected on the other side to ground.

Electrical installation - Relay DC and 8/16mA electronic

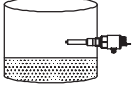
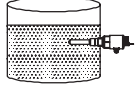





Output logic

Terminal block

					Fault
White LED	●		☀		☉ 2Hz
Setting	FSL	FSH	FSL	FSH	n.a.
Supply polarity Terminal 1 Terminal 2	L+ L-	L- L+	L+ L-	L- L+	n.a.
Yellow LED	●	☀	☀	●	●
Relay (Terminal 4+5)					
8/16 mA loop (Terminal 1+2)	8 mA	16 mA	16 mA	8 mA	3,6 mA

FSL = Fail safe low FSH = Fail safe high

M12 plug

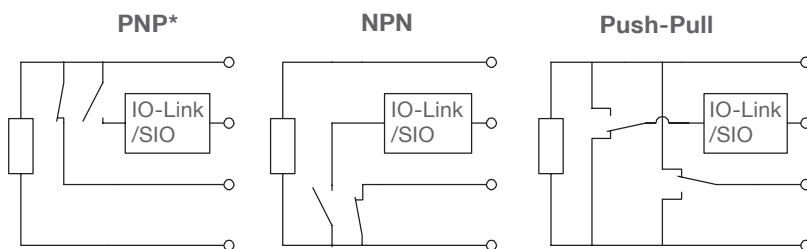
					Fault
White LED	●		☀		☉ 2Hz
Setting	FSL	FSH	FSL	FSH	n.a.
Supply polarity M12, Pin 1 M12, Pin 3	L+ L-	L- L+	L+ L-	L- L+	n.a.
Yellow LED	●	☀	☀	●	●
Relay (M12, Pin 2+4)					
8/16 mA loop (M12, Pin 1+3)	8 mA	16 mA	16 mA	8 mA	3,6 mA

FSL = Fail safe low FSH = Fail safe high

Electrical installation - IO-Link electronic

Electrical ratings	Power supply (L+, L-):	10 .. 30 V DC incl. 10% of EN 61010-1 Operation with IO-Link requires min. 18V <55mA
	Signal outputs (Out1, Out2):	One output active: max. 200 mA Both outputs active: max. 100 mA each

Output type



*factory setting

Change to NPN or Push-Pull can be done in IO-Link registers.

	Pin assignment	
	M12 plug	Terminal block
L+	1	1
Out 1	4	4
Out 2	2	5
L-	3	2

External fuse in L+:
max. 0,5A, fast or slow, HBC, 250V

Terminal 3 see "Cable shield" below

Cable shield

It is recommended to use a shielded cable for stable measurement.

With M12 plug: With use of common M12 cables, the cable shield is connected with the M12 cap nut. Since the M12 thread on CN7 is made of plastics, the cable shield on the M12 cap nut is not connected with CN7 and must be connected on the other side to ground.

With Terminal block: The cable shield can be connected either to terminal 3 or on the other side to earth. Do not connect both sides of the shield to earth. Note: terminal 3 is internal connected to the external equipotential bonding terminal on the enclosure.

Output logic

Output logic (factory setting)					Fault	
	PNP/NPN	Push-Pull	PNP/NPN	Push-Pull	PNP/NPN	Push-Pull
White LED	●	☀	☀	☀	2Hz	⊗
Yellow LED	●	☀	☀	☀	●	●
Output type	PNP/NPN	Push-Pull	PNP/NPN	Push-Pull	PNP/NPN	Push-Pull
Out 1	FSL					
Out 2	FSH					

FSL = Fail safe low
 FSH = Fail safe high

Factory setting of output logic: Out 1 is set to FSL, Out 2 is set to FSH.
 Output logic can be changed in IO-Link registers