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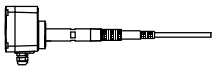
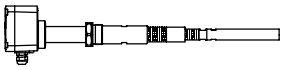
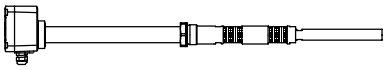
RF 3100 Standard version		6
RF 3200 Heavy Duty version		8
RF 3300 High temperature version		10
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Subject to change.

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 01.04.2018 until 31.03.2019, 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 bulk goods/ solids
- Compact unit
- Wide range of applications
- No maintenance
- Full, demand, empty detector
- Aluminium or plastics housing
- RF technology
- Active shield technology
- Self diagnostics
- Auto calibration
- ATEX, IEC-Ex, FM, FMc, TR-CU GasEx and DustEx approvals
- FDA and 1935/2004/EC Food grade materials

Approvals	**CE**	
	ATEX/ IEC-Ex	
	Zone 20/21	Dust Ignition Proof
	Zone 1	Flameproof/ Increased Safety
	FM/ FMc	
	General purp.	
	Cl. II, III Div. 1	Dust Ignition Proof
	Cl. I Div. 1 Cl. I Zone 1	Explosionproof
	TR-CU	
	Zone 20/21	Dust Ignition Proof
	Zone 1	Flameproof/ Increased Safety

Electronics	Supply voltage/ Signal output	21 .. 230 V AC/ DC ±10% Relais DPDT
	Technology	RF with active shield
	Signal output delay	0.5 .. 60 sec
	Measuring range/ max.s ensitivity	3 .. 100 pF/ 0.5 pF 3 .. 400 pF/ 2 pF
	Preset sensitivty	2 pF default, other sensitivity optional
	Calibration	Auto power up calibration at first time operation Auto recalibration with uncovered probe Push button calibration Manual calibration
	Display	4 digit LCD Display of actual measured capacitance, signal output state and self diagnostics
	Self diagnostics	Auto or manual function test Over and Under Range Actual calibrated switchpoint capacitance Min. and max. electronics temperature

Housings		
Standard Aluminium	d Aluminium	de Aluminium

Overview

RF 3100 Standard version	
Total length L	200 .. 2,500 mm (7.9 .. 98.4“) rod 450 .. 20,000 mm (17.7 .. 787“) rope
Active rod/ rope diameter	Rod ø10 mm (ø0.39") Rope ø4 mm (ø0.16")
Ambient temperature	-40 .. +70°C (-40 .. 158°F)
Process temperature	-40 .. +240°C (-40 .. +464°F)
Process pressure	-1 .. +25 bar (-14.5 .. +363 psi)
Lateral load (rod version)	max. 20 Nm (ø10 mm probe), max. 125 Nm (ø22 mm pipe)
Tensile load (rope version)	max. 4 kN
Process connection material/ Extension material	1.4301/ 1.4305/ 1.4541 (SS303/ 304/ 321) or 1.4404/ 1.4401 (SS316L/ 316)
Probe isolation material	PPS reinforced FDA and 1935/2004/EC conform
Probe gasket material	FKM

Rod version
Shortest length

Rod version
Inactive
extension

Rope version
Inactive
extension

Remote version

Overview / Applications

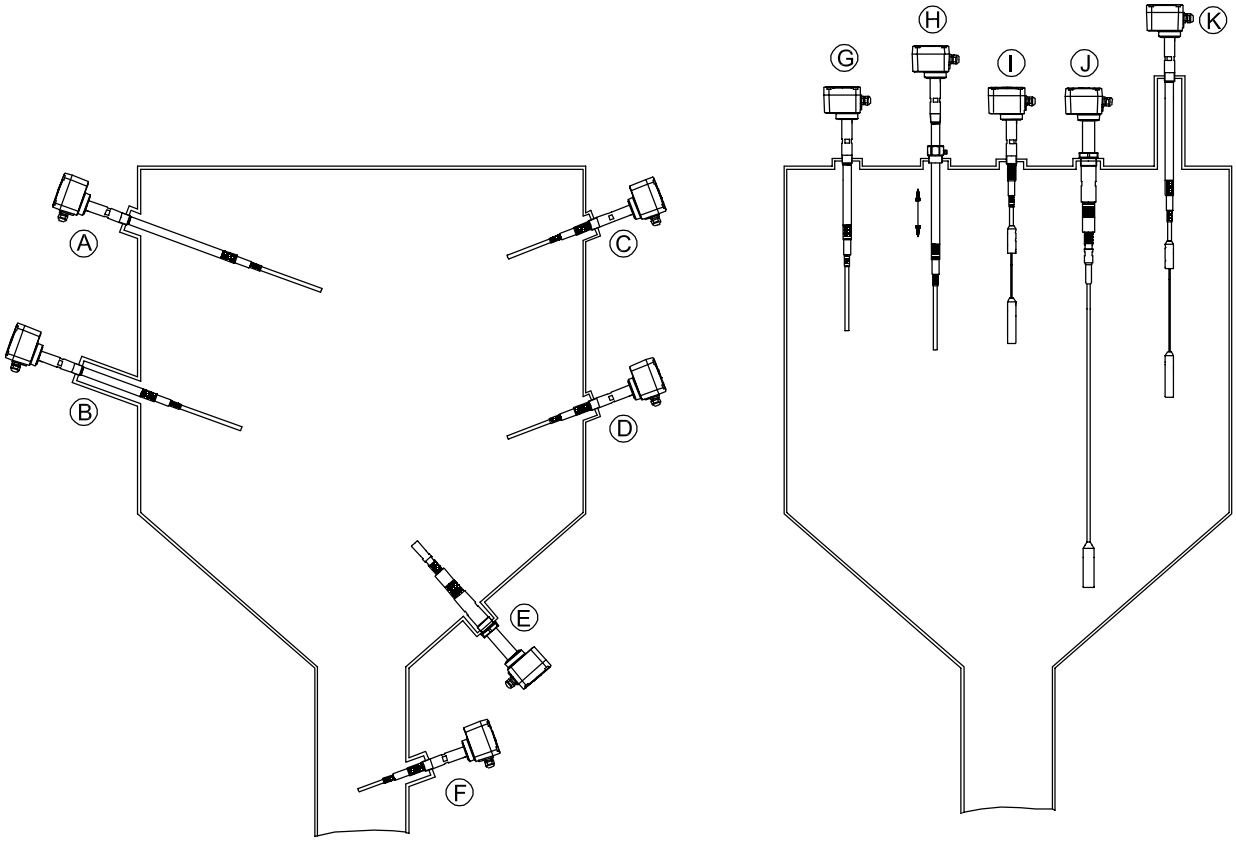
RF 3200 Heavy Duty version	
Total length L	300 .. 2,500 mm (11.8 .. 98.4”) rod 550 .. 20,000 mm (21.7 .. 787“) rope
Active rod/ rope diameter	Rod ø22 mm (ø0.87") Rope ø8 mm (ø0.31")
Ambient temperature	-40 .. +70°C (-40 .. +158°F)
Process temperature	-40 .. +240°C (-40 .. +464°F)
Process pressure	-1 .. +25 bar (-14.5 .. +363 psi)
Lateral load (rod version)	max. 90 Nm (ø22 mm probe), max. 525 Nm (ø33 mm pipe)
Tensile load (rope version)	max. 40 kN
Process connection material/ Extension material	1.4301/ 1.4305/ 1.4541 (SS303/ 304/ 321) or 1.4404/ 1.4401 (SS316L/ 316)
Probe isolation material	PPS reinforced FDA and 1935/2004/EC conform
Probe gasket material	FKM or FFKM

Example:
Rod version

RF 3300 High temperature version	
Total length L	320 … 2,500 mm (12.6 .. 98.4“) rod 560 .. 20,000 mm (22.0 .. 787“) rope
Active rod/ rope diameter	Rod ø22 mm (ø0.39") Rope ø8 mm (ø0.16")
Ambient temperature	-40 .. +70°C (-40 .. +158°F)
Process temperature	-40 .. +500°C (-40 .. +932°F) Ex versions: +445°C (833°F)
Process pressure	-1 .. +10bar (-14.5 .. +145 psi)
Lateral load (rod version)	max. 20 Nm (ø22 mm probe), max. 525 Nm (ø33 mm pipe)
Tensile load (rope version)	max. 10 kN
Process connection material/ Extension material	1.4301/ 1.4305/ 1.4541 (SS303/ 304/ 321) or 1.4404/ 1.4401 (SS316L/ 316)
Probe isolation material	Ceramic FDA and 1935/2004/EC conform
Probe gasket material	Graphite

Example:
Rod version

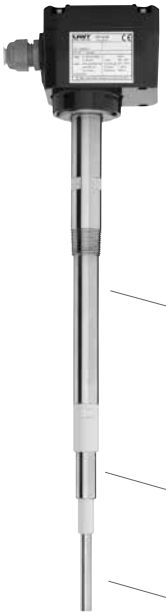
Applications



		RF 3100	RF 3200	RF 3300
A	Inactive length to reach distance from silo wall	•	•	•
B	Inactive length due to long mounting nozzle	•	•	•
C	Full detector with short length	•	•	•
D	Demand detector with short length, observe max. load	•	•	•
E	Empty detector with short length, observe max. load	•	•	•
F	Application in down pipe, observe max. load	•	•	•
G	Inactive length to bring active probe to required level	•	•	•
H	Inactive length and sliding sleeve for adjustable height	•	•	
I	Full detector, rope version	•	•	•
J	Empty detector, rope version, observe max. load	•	•	•
K	Inactive length due to long mounting nozzle	•	•	•

RF 3100 Standard version

Rod version
Shortest length
(pos.6 1 and pos.8 1)



Rod version
Inactive extension
(pos.6 1 and pos.8 Z)

Rope version with
Inactive extension
(pos.6 Z and pos.8 Z)

Units shown with
Standard housing

Cable entries (by default)
Depending on model selected, the following cable entries are supported (options see pos.33 on page 13):

Version:	Cable entries:
ATEX/IEC-Ex flameproof (pos.2 T,D)	M20 x 1.5 (1x open conduit + 1x Ex-d blind plug)
FM/FMc (pos.2 M,N,U)	NPT ½“ tapered ANSI B1.20.1 (1x open conduit + 1x Ex-d blind plug)
All other versions	M20 x 1.5 (1x screwed cable gland + 1x blind plug)

DK*
<1.5
≥1.6
≥1.8
≥2.2
≥10

*see external DK table

Length L1
Rod version, horizontal mounting

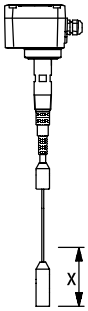
L1 (pos.6)/ mm (inch)
n.a.
≥300 (11.8")
≥200 (7.9")
≥100 (3.9")
≥50 (2.0")

With stated L1 the unit works with factory setted sensitivity (2 pF). For shorter L1 see option pos.16

Switchpoint
Rope version

x mm (inch)
n.a.
≤300 (11.8")
≤200 (7.9")
≤100 (3.9")
≤50 (2.0")

The table states the switchpoint with factory setted sensitivity (2 pF). For smaller x see option pos.16



Dimensions see pages 17, 18

RF 3100 Standard version

Basic type

RF 3100 ..... •

pos.2 **Certificate** (detailed Ex-markings: see page 22)

		Dust	Gas	Protection method	
0	CE/ TR-CU	-	-		•
W	ATEX	Zone 20/21	-	Dust Ignition Proof	•
R	ATEX	Zone 20/21	Zone 1	Flameproof/ Increased Safety/ Dust Ignition Proof	•
T	ATEX	Zone 20/21	Zone 1	Flameproof/ Dust Ignition Proof	•
A	IEC-Ex	Zone 20/21	-	Dust Ignition Proof	•
C	IEC-Ex	Zone 20/21	Zone 1	Flameproof/ Increased Safety/ Dust Ignition Proof	•
D	IEC-Ex	Zone 20/21	Zone 1	Flameproof/ Dust Ignition Proof	•
M	FM/ FMc	-	-	General purpose	•
N	FM/ FMc	Cl. II, III, Div.1	-	Dust Ignition Proof	•
U	FM/ FMc	Cl. II, III, Div.1	Cl. I Div.1/ Zone 1	Explosion Proof/ Dust Ignition Proof	•
E	TR-CU	Zone 20/21	-	Dust Ignition Proof	•
K	TR-CU	Zone 20/21	Zone 1	Flameproof/ Increased Safety/ Dust Ignition Proof	•
L	TR-CU	Zone 20/21	Zone 1	Flameproof/ Dust Ignition Proof	•

pos.4 **Electronic module**

L Relay DPDT 21 .. 230 V AC/ DC ..... •

pos.5 **Process connection**

A	Thread G 1½", DIN 228	•	•
B	Thread G 1¼", DIN 228	•	•
C	Thread G 1", DIN 228	•	•
W	Thread G ¾", DIN 228	•	•
D	Thread M32 x 1.5	•	•
E	Thread M30 x 1.5	•	•
F	Thread NPT 1½", conical ANSI B1.20.1	•	•
Q	Thread NPT 1¼", conical ANSI B1.20.1	•	•
G	Thread NPT 1", conical ANSI B1.20.1	•	•
J	Thread NPT ¾", conical ANSI B1.20.1	•	•
P	Triclamp 2" (DN50) ISO 2852	•	•
R	Triclamp 1" (DN25) and 1½" (DN40) ISO 2852	•	•
L	Flange DN100 PN6, EN 1092-1 (max. 6 bar (87 psi))	•	•
M	Flange DN100 PN16, EN 1092-1 (max. 16 bar (232 psi))	•	•
S	Flange 2" 150lbs ANSI B16.5	•	•
T	Flange 3" 150lbs ANSI B16.5	•	•
U	Flange 4" 150lbs ANSI B16.5	•	•
V	Flange 40NB	•	•

pos.6 **Active Probe length L1** (1)

1	Rod, L1=100 mm (3.94")		•	•
2	Rod, L1=200 mm (7.87")		•	•
3	Rod , L1=300 mm (11.8")		•	•
Y	Rod, L1=custom specified	Price per 100 mm (3.94") or part thereof (starting from 0 mm) min. L1=50 mm (1.97"), max. L1=2,000 mm (78.7")	•	•
Z	Rope, Base price		•	•
	L1=custom specified	Price per 100 mm (3.94") or part thereof (starting from 0 mm) min. L1=350 mm (13.8"), max. L1=20,000 mm (787"), observe max. load	•	•

pos.8 **Inactive extension length L2** (2,3)

1	Without		•	•
Z	L2=custom specified	Base price	•	•
		Price per 100 mm (3.94") or part thereof (starting from 0 mm)	•	•

Rod version: min. L2=50 mm (1.97"), max. L2=2,400 mm (94.5") - L1
Rope version: min. L2=50 mm (1.97"), max. L2=1,900 mm (74.8")

pos.9 **Material of process connection and extension "L"**

1 Stainless steel 1.4301/ 1.4305/ 1.4541 (303/ 304/ 321) and PPS, gaskets FKM
2 Stainless steel 1.4404 (316L), 1.4401 (316) for rope, PPS, gaskets FKM

Further options: see page 12

(1) See recommendations on page before
(2) Inactive extension: the active probe shall have at least 50 mm (1.97") distance to the vessel wall
(3) Total length L = L1 + L2 + 100 mm (3.94")

RF 3100	A		3	L			A		
Position	1	2	3	4	5	6	7	8	9

L1 =	mm
L2 =	mm

Order code

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

SOLUTIONS

RF 3200 Heavy Duty version

Rod version
Shortest length
(pos.6 1 and pos.8 1)

Rod version
Inactive extension
(pos.6 1 and pos.8 Z)

Rope version with
Inactive extension
(pos.6 Z and pos.8 Z)

Units shown with
Standard housing

Cable entries (by default)
Depending on model selected, the following cable entries are supported (options see pos.33 on page 13):

Version:	Cable entries:
ATEX/IEC-Ex flameproof (pos.2 T,D)	M20 x 1.5 (1x open conduit + 1x Ex-d blind plug)
FM/FMc (pos.2 M,N,U)	NPT ½“ tapered ANSI B1.20.1 (1x open conduit + 1x Ex-d blind plug)
All other versions	M20 x 1.5 (1x screwed cable gland + 1x blind plug)

DK*
<1.5
≥1.6
≥1.8
≥2.2
≥10

*see external DK table

Length L1
Rod version, horizontal mounting

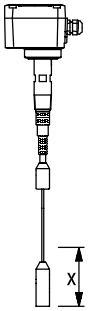
L1 (pos.6)/ mm (inch)
n.a.
≥300 (11.8")
≥200 (7.9")
≥100 (3.9")
≥50 (2.0")

With stated L1 the unit works with factory setted sensitivity (2 pF). For shorter L1 see option pos.16

Switchpoint
Rope version

x mm (inch)
n.a.
≤300 (11.8")
≤200 (7.9")
≤100 (3.9")
≤50 (2.0")

The table states the switchpoint with factory setted sensitivity (2 pF). For smaller x see option pos.16



Dimensions see pages 17, 18

RF 3200 Heavy Duty version

Basic type

RF 3200 ..... •

pos.2 **Certificate** (detailed Ex-markings: see page 22)

		Dust	Gas	Protection method	
0	CE	-	-		•
W	ATEX	Zone 20/21	-	Dust Ignition Proof	•
R	ATEX	Zone 20/21	Zone 1	Flameproof/ Increased Safety/ Dust Ignition Proof	•
T	ATEX	Zone 20/21	Zone 1	Flameproof/ Dust Ignition Proof	•
A	IEC-Ex	Zone 20/21	-	Dust Ignition Proof	•
C	IEC-Ex	Zone 20/21	Zone 1	Flameproof/ Increased Safety/ Dust Ignition Proof	•
D	IEC-Ex	Zone 20/21	Zone 1	Flameproof/ Dust Ignition Proof	•
M	FM/ FMc	-	-	General purpose	•
N	FM/ FMc	Cl. II, III, Div.1	-	Dust Ignition Proof	•
U	FM/ FMc	Cl. II, III, Div.1	Cl. I Div.1/ Zone 1	Explosion Proof/ Dust Ignition Proof	•
E	TR-CU	Zone 20/21	-	Dust Ignition Proof	•
K	TR-CU	Zone 20/21	Zone 1	Flameproof/ Increased Safety/ Dust Ignition Proof	•
L	TR-CU	Zone 20/21	Zone 1	Flameproof/ Dust Ignition Proof	•

pos.4 **Electronic module**

L Relay DPDT 21 .. 230 V AC/ DC ..... •

pos.5 **Process connection**

A	Thread G 1½", DIN 228	•	•
B	Thread G 1¼", DIN 228	•	•
F	Thread NPT 1½", conical ANSI B1.20.1	•	•
Q	Thread NPT 1¼", conical ANSI B1.20.1	•	•
L	Flange DN100 PN6, EN 1092-1 (max. 6 bar (87 psi))	•	•
M	Flange DN100 PN16, EN 1092-1 (max. 16 bar (232 psi))	•	•
S	Flange 2" 150lbs ANSI B16.5	•	•
T	Flange 3" 150lbs ANSI B16.5	•	•
U	Flange 4" 150lbs ANSI B16.5	•	•
V	Flange 40NB	•	•

pos.6 **Active Probe length L1** (1)

1	Rod, L1=100 mm (3.94")		•	•
2	Rod, L1=200 mm (7.87")		•	•
3	Rod , L1=300 mm (11.8")		•	•
Y	Rod, L1=custom specified	Price per 100 mm (3.94") or part thereof (starting from 0 mm) min. L1=100 mm (3.94"), max. L1=2,000 mm (78.7")	•	•
Z	Rope, Base price		•	•
	L1=custom specified	Price per 100 mm (3.94") or part thereof (starting from 0 mm) min. L1=350 mm (13.8"), max. L1=20,000 mm (787")	•	•

pos.8 **Inactive extension length L2** (2,3)

1	Without		•	•
Z	L2=custom specified	Price per 100 mm (3.94") or part thereof (starting from 0 mm) Rod version: min. L2=100 mm (3.93"), max. L2=2,300 mm (90.6") - L1 Rope version: min. L2=100 mm (3.93"), max. L2=1,800 mm (70.9")	•	•

pos.9 **Material of process connection and extension "L"**

1 Stainless steel 1.4301/ 1.4305/1 .4541 (303/ 304/ 321) and PPS, gaskets FKM
2 Stainless steel 1.4404 (316L), 1.4401 (316) for rope, PPS , gaskets FKM

Further options: see page 12

(1) See recommendations on page before
(2) Inactive extension: the active probe shall have at least 50 mm (1.97") distance to the vessel wall
(3) Total length L = L1 + L2 + 200 mm (7.87")

RF 3200	B		3	L			A		
Position	1	2	3	4	5	6	7	8	9

L1 =	mm
L2 =	mm

Order code

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

RF 3300 High Temperature version (500°C)

Rod version
Shortest length
(pos.6 1 and pos.8 1)

Rod version
Inactive extension
(pos.6 1 and pos.8 Z)

Rope version with
Inactive extension
(pos.6 Z and pos.8 Z)

Units shown with
Standard housing

Cable entries (by default)
Depending on model selected, the following cable entries are supported (options see pos.33 on page 13):

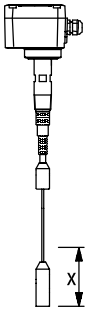
Version:	Cable entries:
ATEX/IEC-Ex flameproof (pos.2 T,D)	M20 x 1.5 (1x open conduit + 1x Ex-d blind plug)
FM/FMc (pos.2 M,N,U)	NPT ½" tapered ANSI B1.20.1 (1x open conduit + 1x Ex-d blind plug)
All other versions	M20 x 1.5 (1x screwed cable gland + 1x blind plug)

DK*	**Length L1** Rod version, horizontal mounting L1 (pos.6)/ mm (inch)	**Switchpoint** Rope version x mm (inch)
<1.5	n.a.	n.a.
≥1.6	≥300 (11.8")	≤300 (11.8")
≥1.8	≥200 (7.9")	≤200 (7.9")
≥2.2	≥100 (3.9")	≤100 (3.9")
≥10	≥50 (2.0")	≤50 (2.0")

*see external DK table

With stated L1 the unit works with factory setted sensitivity (2 pF). For shorter L1 see option pos.16

The table states the switchpoint with factory setted sensitivity (2 pF). For smaller x see option pos.16



Dimensions see pages 17, 28

RF 3300 High Temperature version (500°C)

Basic type

RF 3300 ..... •

pos.2 **Certificate** [1] (detailed Ex-markings: see page 22)

		Dust	Gas	Protection method	
0	CE	-	-		•
W	ATEX	Zone 20/21	-	Dust Ignition Proof	•
R	ATEX	Zone 20/21	Zone 1	Flameproof/ Increased Safety/ Dust Ignition Proof	•
T	ATEX	Zone 20/21	Zone 1	Flameproof/ Dust Ignition Proof	•
A	IEC-Ex	Zone 20/21	-	Dust Ignition Proof	•
C	IEC-Ex	Zone 20/21	Zone 1	Flameproof/ Increased Safety/ Dust Ignition Proof	•
D	IEC-Ex	Zone 20/21	Zone 1	Flameproof/ Dust Ignition Proof	•
M	FM/ FMc	-	-	General purpose	•
N	FM/ FMc	Cl. II, III, Div.1	-	Dust Ignition Proof	•
U	FM/ FMc	Cl. II, III, Div.1	Cl. I Div.1/ Zone 1	Explosion Proof/ Dust Ignition Proof	•
E	TR-CU	Zone 20/21	-	Dust Ignition Proof	•
K	TR-CU	Zone 20/21	Zone 1	Flameproof/ Increased Safety/ Dust Ignition Proof	•
L	TR-CU	Zone 20/21	Zone 1	Flameproof/ Dust Ignition Proof	•

pos.4 **Electronic module**

L Relay DPDT 21 .. 230 V AC/ DC ..... •

pos.5 **Process connection**

A	Thread G 1½", DIN 228	•	•
B	Thread G 1¼", DIN 228	•	•
F	Thread NPT 1½", conical ANSI B1.20.1	•	•
Q	Thread NPT 1¼", conical ANSI B1.20.1	•	•
L	Flange DN100 PN6, EN 1092-1 (max. 6 bar (87 psi))	•	•
M	Flange DN100 PN16, EN 1092-1 (max. 16 bar (232 psi))	•	•
S	Flange 2" 150lbs ANSI B16.5	•	•
T	Flange 3" 150lbs ANSI B16.5	•	•
U	Flange 4" 150lbs ANSI B16.5	•	•
V	Flange 40NB	•	•

pos.6 **Active Probe length L1** [2]

1	Rod, L1=100 mm (3.94")		•	•
2	Rod, L1=200 mm (7.87")		•	•
3	Rod , L1=300 mm (11.8")		•	•
Y	Rod, L1=custom specified	Price per 100 mm (3.94") or part thereof (starting from 0 mm) min. L1=100 mm (3.94"), max. L1=1,000 mm (39.4")	•	•
Z	Rope, Base price		•	•
	L1=custom specified	Price per 100 mm (3.94") or part thereof (starting from 0 mm) min. L1=350 mm (13.8"), max. L1=20,000 mm (787")	•	•

pos.8 **Inactive extension length L2** [3,4]

1	Without		•	•
Z	L2=custom specified	Price per 100 mm (3.94") or part thereof (starting from 0 mm) Rod version: min. L2=100 mm (3.93"), max. L2=2,300 mm (90.6") - L1 Rope version: min. L2=100 mm (3.93"), max. L2=1,800 mm (70.9")	•	•

pos.9 **Material of process connection and extension "L"**

1 Stainless steel 1.4301/ 1.4305/ 1.4541 (303/ 304/ 321) and ceramic, gaskets graphite
2 Stainless steel 1.4404 (316L), 1.4401 (316) for rope, ceramic, gaskets graphite

Further options: see page 12

(1) Max. process temperature for Ex versions limited to 445°C
(2) See recommendations on page before
(3) Inactive extension: the active probe shall have at least 50 mm (1.97") distance to the vessel wall
(4) Total length L = L1 + L2 + 220 mm (8.66")

RF 3300	C		5	L			A		
Position	1	2	3	4	5	6	7	8	9

L1 =	mm
L2 =	mm

Order code

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

Options

RF 3100	RF 3200	RF 3300			
•	•		pos.11 x	**Guarantee extension to 5 years**	•
				Remote version:	
•	•	•	pos.12 x	**Remote version**	•
				Including hexagon nut, not including remote cable and angle bracket	
•	•	•	pos.13 a	**Remote cable, both sides wired**	
				Spezial Triaxial cable, min. 1,000 mm (39.4"), max. 20,000 mm (65ft)	
				Basic price	•
				Price per 1,000 mm (39.4") or part there of (starting from 0 mm)	•
•	•	•	pos.13 x	**Remote cable, not wired** specify cable length, price per 1,000 mm (39.4")	•
				Special triaxial cable, no other cable permitted, max. 20,000 mm (65ft)	
•	•	•	pos.14 x	**Angle bracket** aluminium	•
				Electronics:	
				Presetted sensitivity	•
				Standard calibration is 2 pF, other sensitivities as follows:	
•	•	•	pos.16 a	0,5 pF	
•	•	•	pos.16 b	1 pF	
•	•	•	pos.16 c	4 pF	
•	•	•	pos.16 d	10 pF	
				Probes:	
				Probe gaskets	
•	•		pos.17 a	Material FFKM, for increased requirements (such as superheated steam applications)	on request
				Coating (coating material PFA)	
1			pos.18 a	Coating of active probe (rod version)	•
2			pos.18 b	Coating of complete probe (rod version) L1≤400 mm (15.7") L≤880 mm (34.6")	•
2			pos.18 d	Coating of complete probe (rod version) L1≤400 mm (15.7") L=881 .. 1,480 mm (34.7" .. 58.3")	•
3			pos.18 c	Coating of rope (rope version), price per meter or part thereof	•
				Rod extension kit, rigid	
•			pos.19 a	For ø10 mm (ø0.39") rod, length 400 mm (15.7"), 1.4404 (316L)	•
	•	•	pos.19 b	For ø22 mm (ø0.87") rod, length 400 mm (15.7"), 1.4404 (316L)	•
				Rod extension kit, flexible (pendulum rod)	
•			pos.20 a	For ø10 mm (ø0.39") rod, length 1,000 mm (39.4"), 1.4301/ 1.4305 (304/303)	•
				Rope extension kit	
•			pos.21 a	For ø10 mm (ø0.39") rod, rope ø4 mm (ø0.16"), length 2,000 mm (78.7"), 1.4301/ 1.4305 (304/ 303)	•
•			pos.21 b	For ø10 mm (ø0.39") rod, rope ø4 mm (ø0.16"), length 2,000 mm (78.7"), 1.4404 (316L)/ rope 1.4401(316)	•
	•	•	pos.21 c	For ø22 mm (ø0.87") rod, rope ø8 mm (ø0.31"), length 2,000 mm (78.7"), 1.4404 (316L)/ rope 1.4401(316)	•
			pos.22 x	**Fixing hole in probe rod**	
•				For ø10 mm (ø0.39") rod, for fixing of the extensions. Not with pos.18 a,b and pos.25	•
				Mounting:	
				Sliding sleeve	
4	4		pos.24 a	Material 1.4305/ 1.4541 (303/321)	•
4	4		pos.24 b	Material 1.4404 (316L)	•
				EHEDG approval (Type ED)	
5			pos.25 a	Process connection G 1½" (without flush welding socket)	•
5			pos.25 b	Process connection flush welding socket ø69/ G 1½" made of aluminium	•
5			pos.25 c	Process connection flush welding socket ø69/ G 1½" made of 1.4301 (304)	•
5			pos.25 d	Process connection flush welding socket ø69/ G 1½" made of 1.4404 (316L)	•

Options

Mounting set for flange mounting

			process connection flange	for counter flange with	consists of screws*	nuts*	washers*	sealing**		
•	•	•	pos.26 c	L	hole ø18	4x M16 x 60	4x M16	4 pcs	1 pc	•
•	•	•	pos.26 d	L	thread M16	4x M16 x 40		4 pcs	1 pc	•
•	•	•	pos.26 e	M	hole ø18	8x M16 x 60	8x M16	8 pcs	1 pc	•
•	•	•	pos.26 f	M	thread M16	8x M16 x 40		8 pcs	1 pc	•

* material stainless steel 1.4301 (304) **max. 240°C (464°F), material not food grade

Hexagon nut

•	•	•	pos.27 e	For thread G 1½", G 1¼", G 1", G ¾", 1.4305 (303), 1 pc	•
•	•	•	pos.27 f	For thread G 1½", G 1¼", G 1", G ¾", 1.4305 (303), 2 pcs	•

Flat sealing

•	•	•	pos.28 x	For process connection thread G 1½", G 1¼", G 1", G ¾", M32 x 1.5, M30 x 1.5, max. 240°C (464°F)	•

Housing:

6	6	6	pos.31 a	**Housing material** Plastics PA6 reinforced	•
7	7	7	pos.32 x	**Weather protection cover** (for Ex approved for Zone 2 or 22 or Div. 2)	•

Cable entry

Selection of the following options only necessary,
if a deviation from the default cable gland/ conduit is required:

8	8	8	pos.33 x	M20 x 1.5 2x screwed cable gland	•
9	9	9	pos.33 d	M20 x 1.5 1x screwed cable gland +1x blind plug	•
10	10	10	pos.33 a	NPT ½" tapered ANSI B1.20.1 (1x conduit + 1x Ex-d blind plug)	•
11	11	11	pos.33 c	NPT ¾" tapered ANSI B1.20.1 (1x conduit + 1x Ex-d blind plug)	•

Signal lamp

12	12	12	pos.34 a	Bulb, mounted in cable gland M20 x 1.5, 2 W green	•
12	12	12	pos.34 c	Bulb, mounted in cable gland M20 x 1.5, 2 W red	•
13	13	13	pos.34 d	LED (transparent lid section)	•

Plug

13	13	13	pos.35 x	Valve connector (incl. mating plug)	4-pole (incl. PE)	max. 230 V	•
13	13	13	pos.35 a	M12 (without mating plug)	4-pole	max. 25 V	•
13	13	13	pos.35 b	M12 (without mating plug)	5-pole (incl. PE)	max. 60 V	•
13	13	13	pos.35 c	Harting Han 4A (incl. mating plug)	5-pole (incl. PE)	max. 230 V	•

1 Recommended with excessive, mainly conductive material buildup and for reduction of abrasion.
Avaliable for CE/ TR-CU and FM General purpose (pos.2 0,M). Max. length L1=700 mm (27.6").

2 Reccomended with corrosive materials.
Avaliable for CE/ TR-CU and FM General purpose (pos.2 0,M). Process connection NPT 1½", G 1½".

3 Recommended with excessive material buildup and for reduction of abrasion.
Avaliable for CE/ TR-CU and FM General purpose (pos.2 0,M). Not in combination with rod or rope extension kits (pos.19,20,21).

4 Process connection as selected in pos.5. Material must be the same as selected in pos.9.
RF 3100 available with NPT 1¼", NPT 1½", G 1¼", G 1½". RF 3200 available with NPT 1½", G 1½". Not with pos.18 b.

5 Certificate only valid with the use of the "flush welding socket". With pos.25 a this socket must be manufactured on site.
Only for G 1½" (pos.5 A). Not in combination with rope version (pos.6 Z). Not in combination with options pos.18,19,20,21,24,26,27,28.
Selected length "L" is increased by 9 mm (0.35").

6 Available for CE and ATEX/ IEC-Ex/ TR-CU Dust Ignition proof (pos.2 0,W,A,E). Ambient temperature for ATEX/ IEC-Ex/ TR-CU: -20°C (-4°F).

7 Available for all versions except flameproof/ increased safety versions (pos.2 R,T,C,D,U,K,L)

8 Available for all versions except flameproof version (pos.2 T,U,D,L)

9 Available for FM version (pos.2 M,N) except flameproof version (pos.2 U)

10 Available for all versions except FM (pos.2 M,N,U)

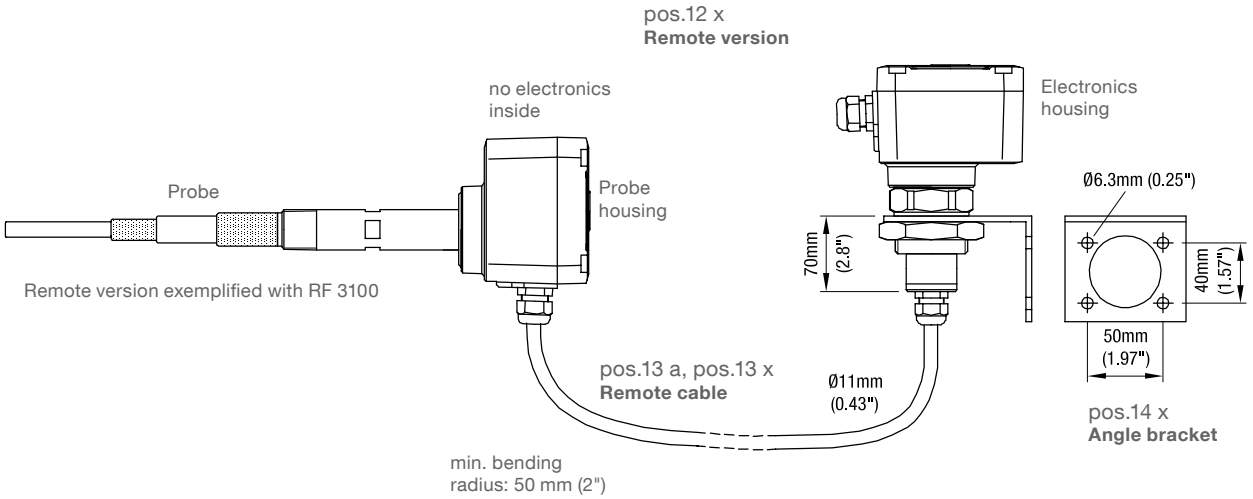
11 Available for all versions except pos.2 0,W,A,M,N,E

12 Available for CE/ TR-CU (pos.2 0), not in combination with weather protection cover (pos.32 x) and cable entries pos.33 x,a,c Three bulbs (24 V, 115 V and 230 V) will be delivered. Without connection of bulb wires to internal terminals (standard) or according to customer specification.

13 Available for CE/ TR-CU (pos.2 0). Without connection of plug wires to internal terminals (standard) or according to customer specification.

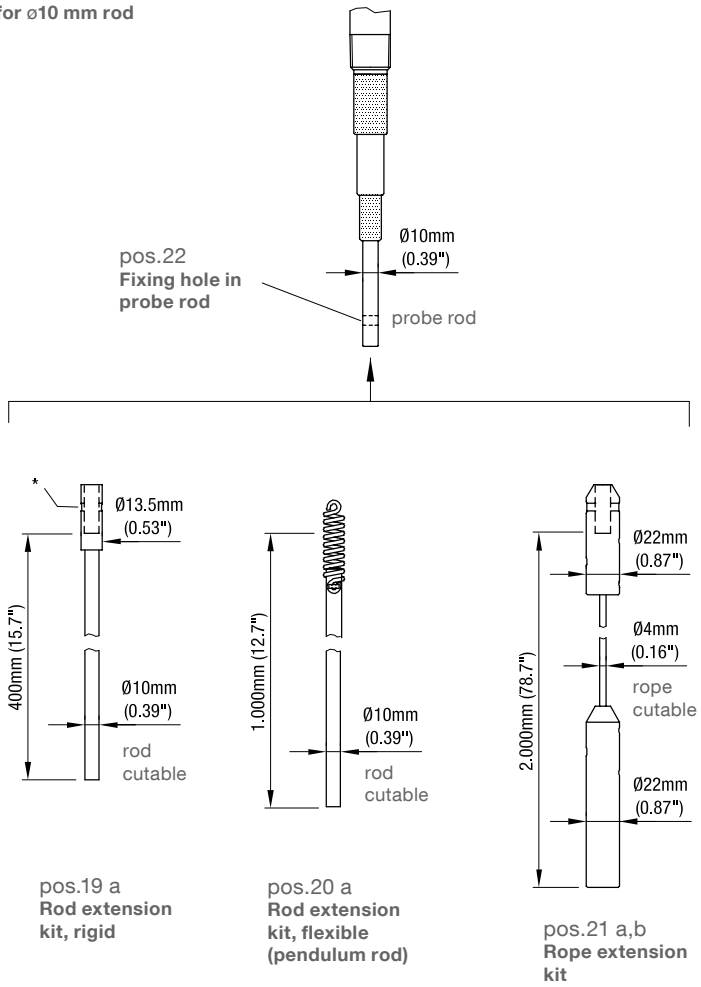
Options

Remote version



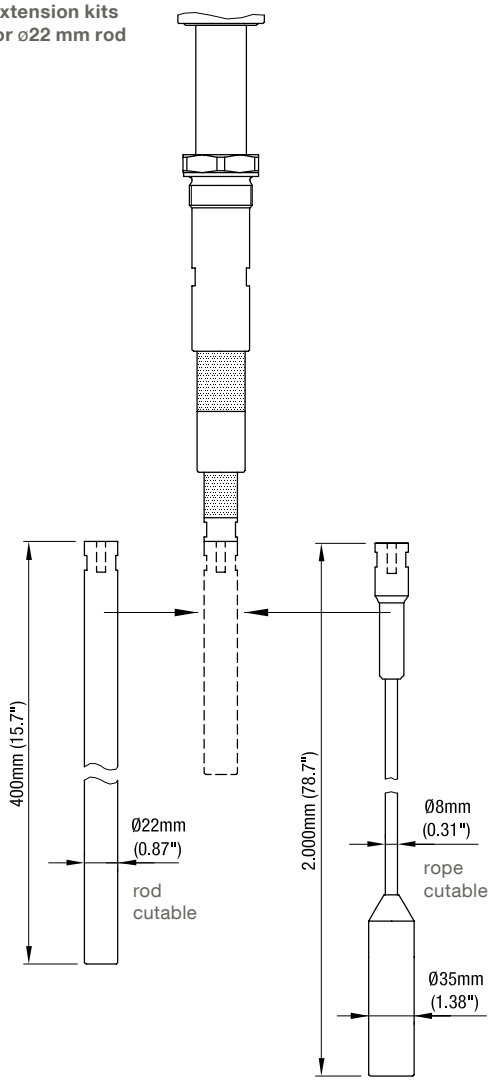
Probes

Extension kits for ø10 mm rod



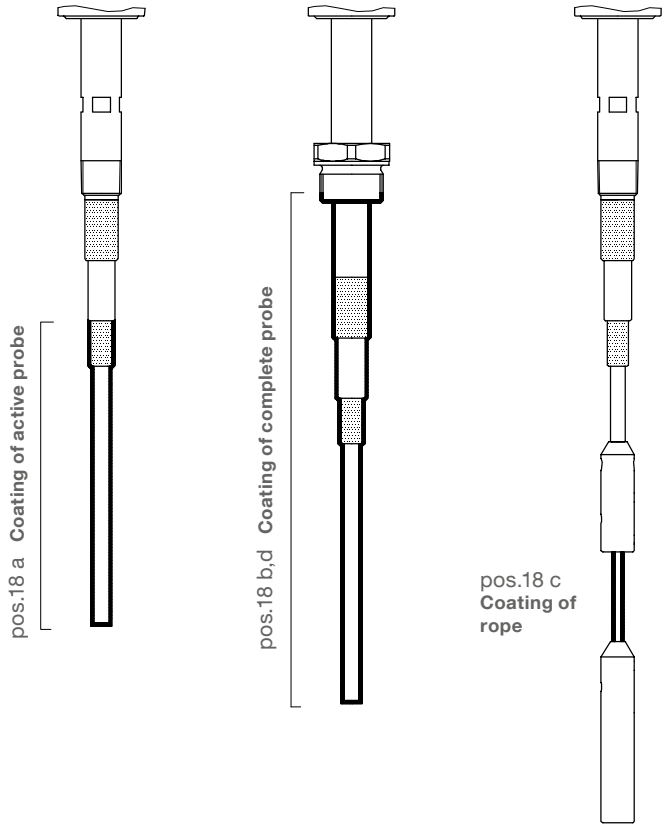
* Fixing by drilling a hole through the probe rod and fixing with a split pin

Extension kits for ø22 mm rod



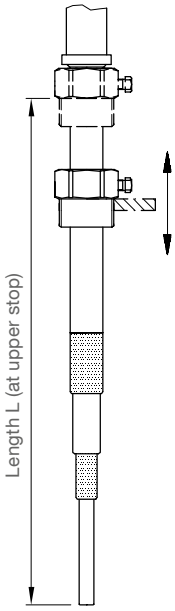
Options

Coatings

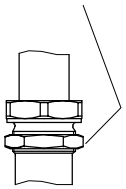


Mounting

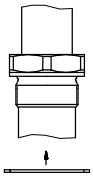
pos.24
Sliding sleeve



pos.27
Hexagon nut

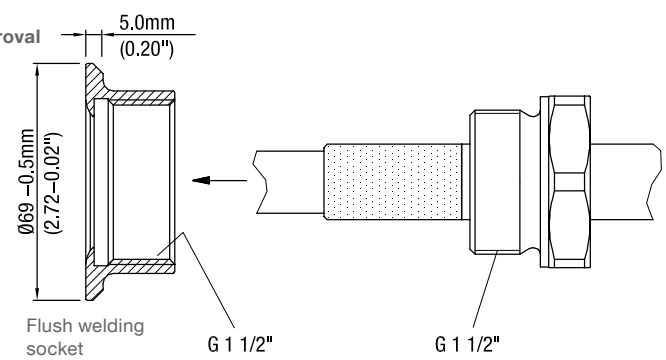


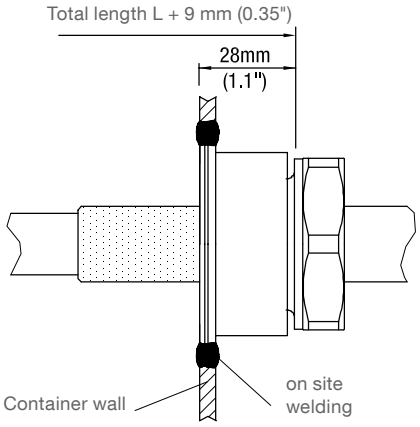
pos.28
Flat sealing



Flat sealing

pos.25
EHEDG approval

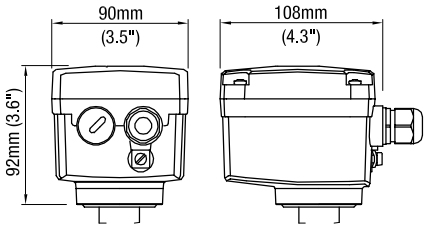




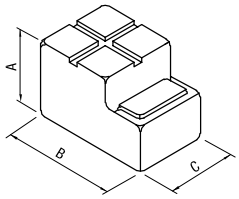
Options

Housing

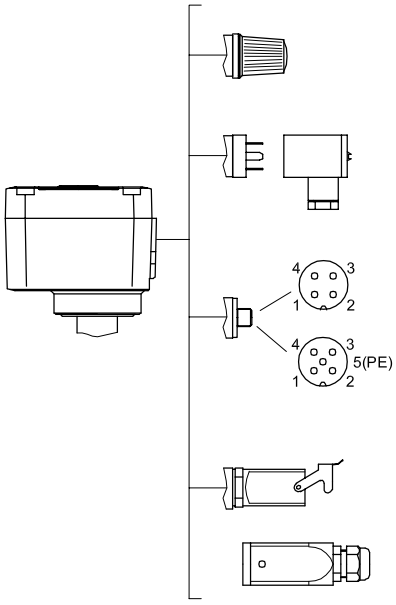
pos.31 a
Housing material Plastics PA6



pos.32 x
Weather protection cover



A	100 mm (3.94“)
B	165 mm (6.5“)
C	95 mm (3.7“)



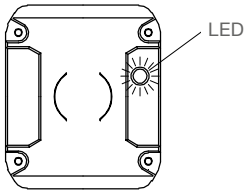
pos.34 a
Bulb

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

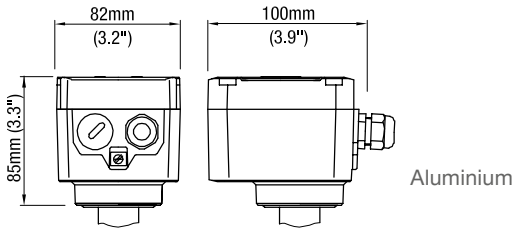
pos.34 d
LED (transparent lid section)



Dimensions

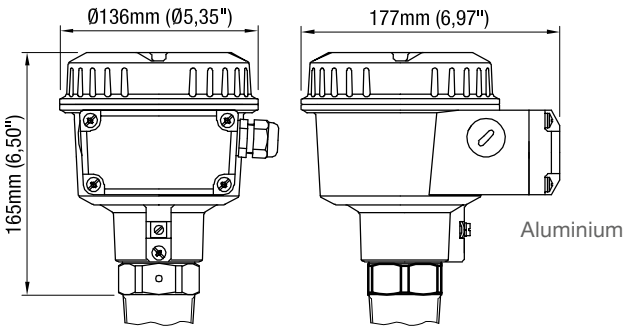
Housing versions

Standard



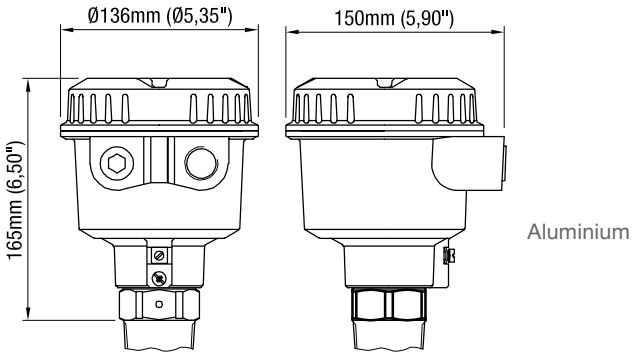
de

Explosionproof with increased safety terminal box



d

Flameproof/ explosionproof

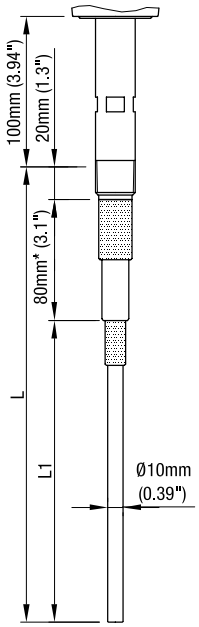


Dimensions

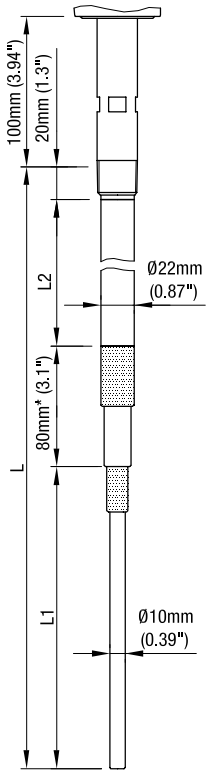
Probes

RF 3100 Standard version

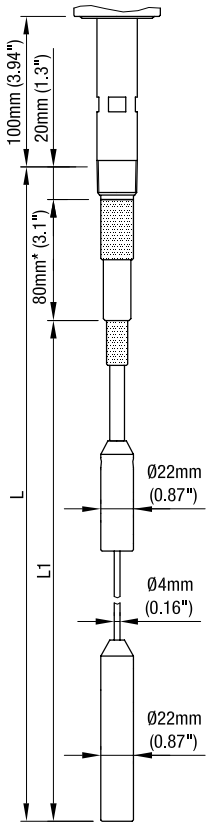
Rod version
Shortest length



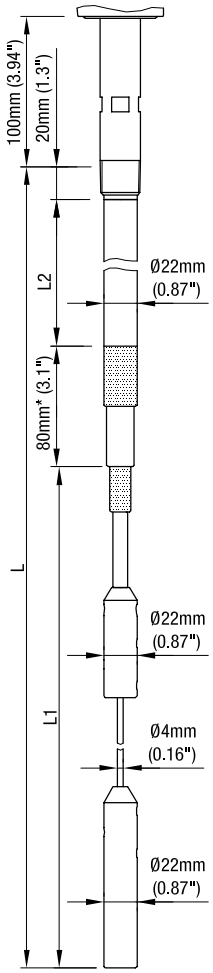
Rod version
Inactive extension



Rope version
Shortest length



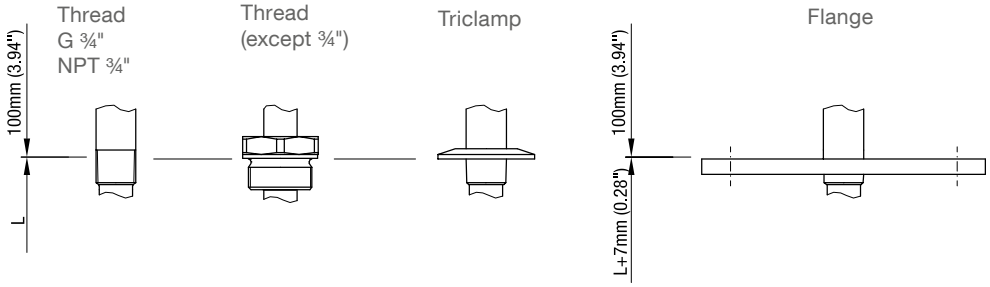
Rope version
Inactive extension



* Active shield

Only units with rod version are avaliable with EHEDG Certificate. On rod versions with EHEDG Certificate the length "L" is increased by 9 mm (0.35")

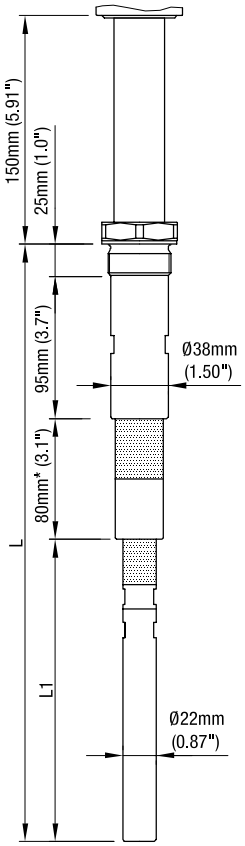
Process connections:



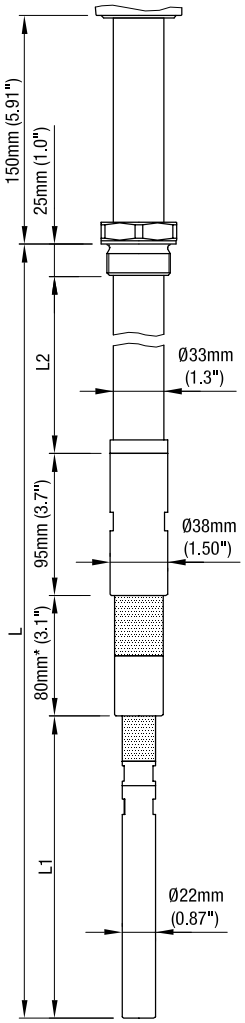
Dimensions

RF 3200 Heavy Duty version

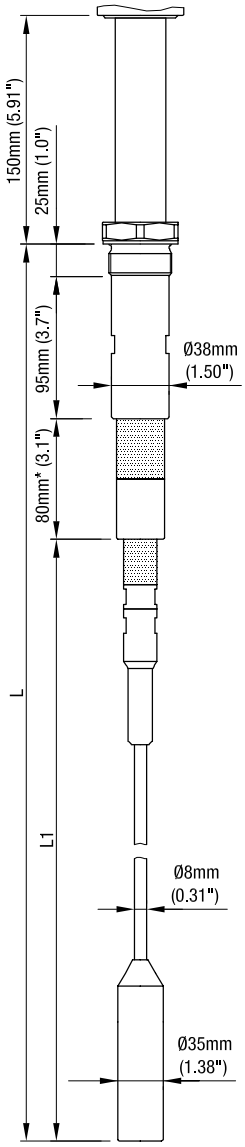
Rod version
Shortest length



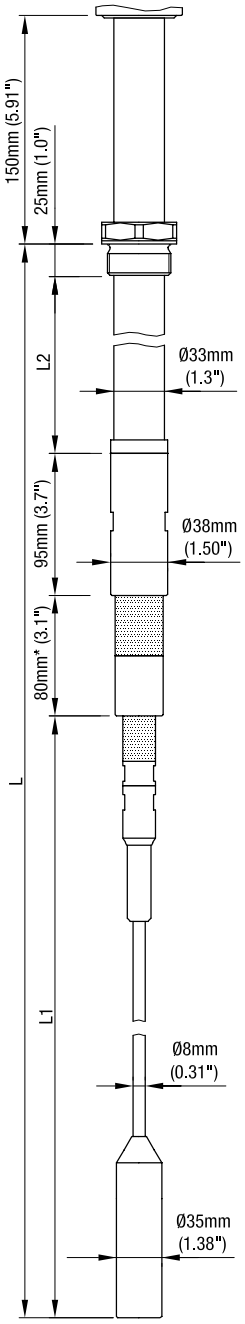
Rod version
Inactive extension



Rope version
Shortest length

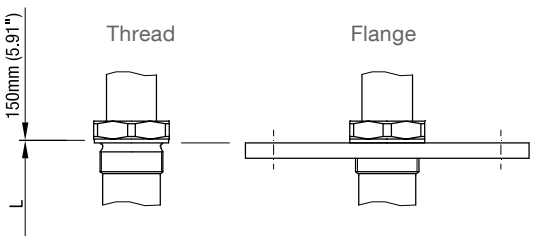


Rope version
Inactive extension



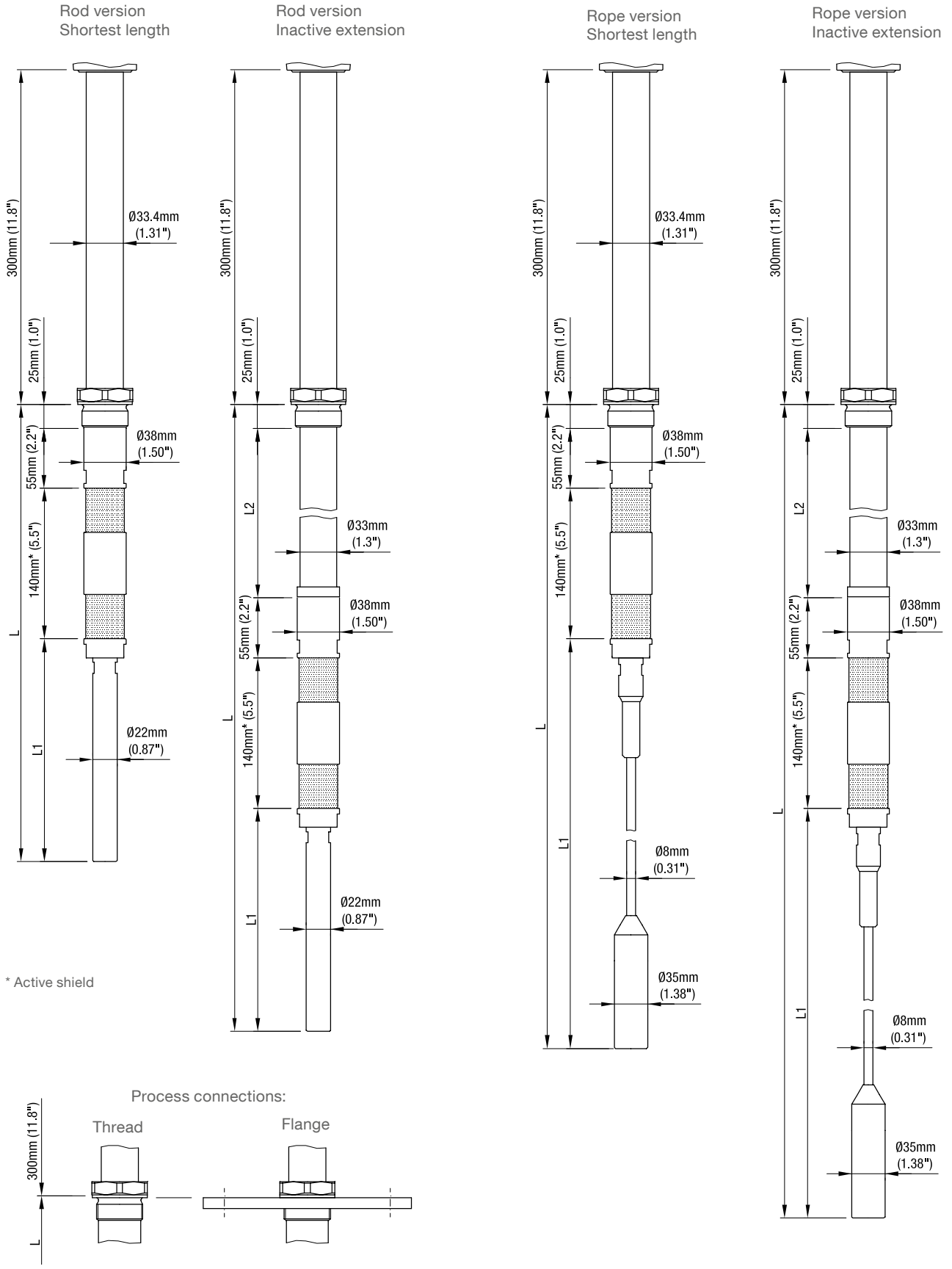
* Active shield

Process connections:



Dimensions

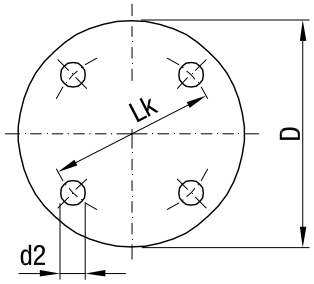
RF 3300 High temperature version



Dimensions

Flanges

Code	type	number of holes	d2	Lk	D	T (thickness)
L	Flange DN100 PN6	4	18 mm (0.71“)	170 mm (6.69“)	210 mm (8.27“)	16 mm (0.63“)
M	Flange DN100 PN16	8	18 mm (0.71“)	180 mm (7.09“)	220 mm (8.66“)	20 mm (0.79“)
S	Flange 2“ 150lbs	4	19.1 mm (0.75“)	120.7 mm (4.75“)	152.4 mm (6.01“)	19.1 mm (0.75“)
T	Flange 3“ 150lbs	4	19.1 mm (0.75“)	152.4 mm (6.01“)	190.5 mm (7.5“)	23.9 mm (0.94“)
U	Flange 4“ 150lbs	8	19.1 mm (0.75“)	190.5 mm (7.5“)	228.6 mm (9.0“)	23.9 mm (0.94“)
V	Flange 40NB	4	14 mm (0.55“)	98 mm (3.86")	133 mm (5.24“)	12 mm (0.47“)



Detailed Ex-markings

Compact version (without pos.12 x)

pos.2	Certificate		Housing
0	CE		Standard
W	ATEX II 1/2D	Ex ia/tb IIIC T! Da/Db	Standard
R	ATEX II 2G ATEX II 1/2D	Ex de ia IIC T! Gb and Ex ia/tb IIIC T! Da/Db	de
T	ATEX II 2G ATEX II 1/2D	Ex d ia IIC T! Gb and Ex ia/tb IIIC T! Da/Db	d
A	IEC	Ex ia/tb IIIC T! Da/Db	Standard
C	IEC	Ex de ia IIC T! Gb and Ex ia/tb IIIC T! Da/Db	de
D	IEC	Ex d ia IIC T! Gb and Ex ia/tb IIIC T! Da/Db	d
M	FM/ FMc	General purpose	Standard
N	FM/ FMc	Cl. II, III Div.1 Gr. E,F,G	Standard
U	FM/ FMc	XP-IS Cl. I,II,III Div.1 Gr. B-G and Cl. I Zone 1 Gr. IIB+H2 and DIP-IS Cl. II; III Div.1 Gr. E,F,G	d
E	TR-CU	Ex ia/tb IIIC T! Da/Db X	Standard
K	TR-CU	Ex de ia IIC T! Gb X and Ex ia/tb IIIC T! Da/Db X	de
L	TR-CU	Ex d ia IIC T! Gb X and Ex ia/tb IIIC T! Da/Db X	d

Remote Version (with pos.12 x)

pos.2	Certificate electronic housing		Electronic housing	Certificate Probe/ Probe housing	
0	CE/ TR-CU		Standard	CE/ TR-CU	
W	ATEX II 2D	Ex tb [ia] IIIC T! Db	Standard	ATEX II 1/2D	Ex ia/tb IIIC T! Da/Db
R	ATEX II 2G ATEX II 2D	Ex de [ia] IIC T! Gb and Ex tb [ia] IIIC T! Db	de	ATEX II 2G ATEX II 1/2D	Ex ia IIC T! Gb and Ex ia/tb IIIC T! Da/Db
T	ATEX II 2G ATEX II 2D	Ex d [ia] IIC T! Gb and Ex tb [ia] IIIC T! Db	d		
A	IEC	Ex tb [ia] IIIC T! Db	Standard	IEC	Ex ia/tb IIIC T! Da/Db
C	IEC	Ex de [ia] IIC T! Gb and Ex tb [ia] IIIC T! Db	de	IEC	Ex ia IIC T! Gb and Ex ia/tb IIIC T! Da/Db
D	IEC	Ex d [ia] IIC T! Gb and Ex tb [ia] IIIC T! Db	d		
M	FM/ FMc	General purpose	Standard	-	
N	FM/ FMc	Cl. II, III Div.1 Gr. E,F,G	Standard	FM/ FMc	DIP-IS Cl. II, III Div.1 Gr. E,F,G
U	FM/ FMc	XP-IS Cl. I,II,III Div.1 Gr. B-G and Cl. I Zone 1 Gr. IIB+H2 and DIP-IS Cl. II; III Div.1 Gr. E,F,G	d	FM/ FMc	IS Cl. I Div.1 Gr. B,C,D and Cl. I Zone 1 Gr. IIB+H2 and DIP-IS Cl. II, III Div.1 Gr. E,F,G
E	TR-CU	Ex ia/tb IIIC T! Da/Db X	Standard	TR-CU	Ex ia/tb IIIC T! Da/Db X
K	TR-CU	Ex de ia IIC T! Gb X and Ex ia/tb IIIC T! Da/Db X	de	TR-CU	Ex ia IIC T! Gb X and Ex ia/tb IIIC T! Da/Db X
L	TR-CU	Ex d ia IIC T! Gb X and Ex ia/tb IIIC T! Da/Db X	d		

Electrical installation

Universal voltage
Relay DPDT

Power supply:

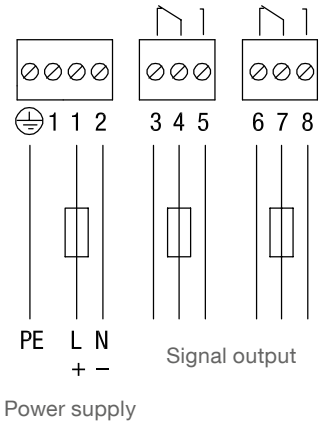
21 .. 230 V 50/60 Hz or DC ±10%
1.5 VA or 1.5 W

Fuse on power supply:
max. 10 A, 250 V, HBC, fast or slow

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, 250 V, HBC, fast or slow



Spare parts

	Fitting to unit/ model code	Description see page	Spare part Article number	
Electronics				
Universal voltage, Relais DPDT	pos.3 L	7, 9, 11	pl407100	•
				•
Remote version				
Remote cable (special Triaxial cable), price per 1,000 mm (39.4")	pos.13 x	12, 14	zu400700	•
Angle bracket, 1.4301 (304)	pos.14 x	12, 14	zu400701	•
Rod extension kit, rigid				
For ø10 mm (ø0.39") rod, length 400 mm (15.7"), 1.4404 (316L)	pos.19 a	12, 14	zu400710	•
For ø22 mm (ø0.87") rod, length 400 mm (15.7"), 1.4404 (316L)	pos.19 b	12, 14	zu400711	•
Rod extension kit, flexible (pendulum rod)				
For ø10 mm (ø0.39") rod, length 1.000 mm (39.4"), 1.4301/ 1.4305 (304/303)	pos.20 a	12, 14	zu400720	•
Rope extension kit				
For ø10 mm (ø0.39") rod, rope ø4 mm (ø0.16"), length 2,000 mm (78.7"), 1.4301/ 1.4305 (304/303)	pos.21 a	12, 14	zu400730	•
For ø10mm (ø0.39") rod, rope ø4 mm (ø0.16"), length 2,000 mm (78.7"), 1.4404 (316L)/ rope 1.4401(316)	pos.21 b	12, 14	zu400731	•
For ø22 mm (ø0.87") rod, rope ø8 mm (ø0.31"), length 2,000 mm (78.7"), 1.4404 (316L)/ rope 1.4401(316)	pos.21 c	12, 14	zu400732	•
Single parts for rope version				
Rope ø4 mm (ø0.16"), 1.4401 (316), not coated, price per 1,000 mm (39.4")	RF 3100	18	zu400740	•
Rope ø4 mm (ø0.16"), 1.4401 (316), coated, price per 1,000 mm (39.4")	RF 3100	18	zu400741	•
Rope weight ø22 mm (ø0.87"), 1.4301/ 1.4305 (304/ 303) *	RF 3100	18	zu400742	•
Rope weight ø22 mm (ø0.87"), 1.4404 (316L) *	RF 3100	18	zu400743	•
Rope holder ø22 mm (ø0.87"), 1.4301/ 1.4305 (304/303) *	RF 3100	18	zu400744	•
Rope holder ø22 mm (ø0.87"), 1.4404 (316L) *	RF 3100	18	zu400745	•
Rope ø8 mm (ø0.31"), 1.4401 (316), not coated, price per 1,000 mm (39.4")	RF 3200, RF 3300	19, 20	zu400746	•
Rope weight ø35 mm (ø1.38"), 1.4301/ 1.4305 (304/ 303) *	RF 3200, RF 3300	19, 20	zu400747	•
Rope weight ø35 mm (ø1.38"), 1.4404 (316L) *	RF 3200, RF 3300	19, 20	zu400748	•
Rope holder ø22 mm (ø0.87"), 1.4301/ 1.4305 (304/ 303) *	RF 3200, RF 3300	19, 20	zu400749	•
Rope holder ø22 mm (ø0.87"), 1.4404 (316L) *	RF 3200, RF 3300	19, 20	zu400750	•

*delivery including fixing parts

Hexagon nut				
G 1½" 1.4305 (303)	pos.27	13, 15	zu300180	•
G 1¼" 1.4305 (303)	pos.27	13, 15	zu300181	•
G 1" 1.4305 (303)	pos.27	13, 15	zu200160	•
G ¾" 1.4305 (303)	pos.27	13, 15	zu200140	•
M32 x 1.5 1.4305 (303)	pos.27	13, 15	zu200130	•
M30 x 1.5 1.4305 (303)	pos.27	13, 15	zu200180	•
Weather protection cover				
For standard housing	pos.32 x	13, 16	zu300232	•