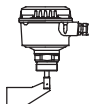
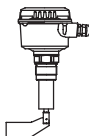
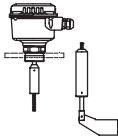
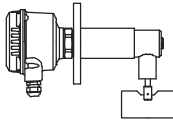
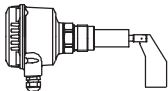
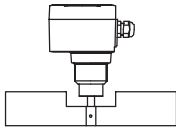


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Subject to change.

All dimensions in mm (inches).

All prices in Euro, excluding VAT.

All prices are EXW Betzigau, excluding packaging costs.

Valid: From 01.04.2016 until 31.03.2017, unless otherwise agreed.

By publishing this selection list all other lists become invalid.

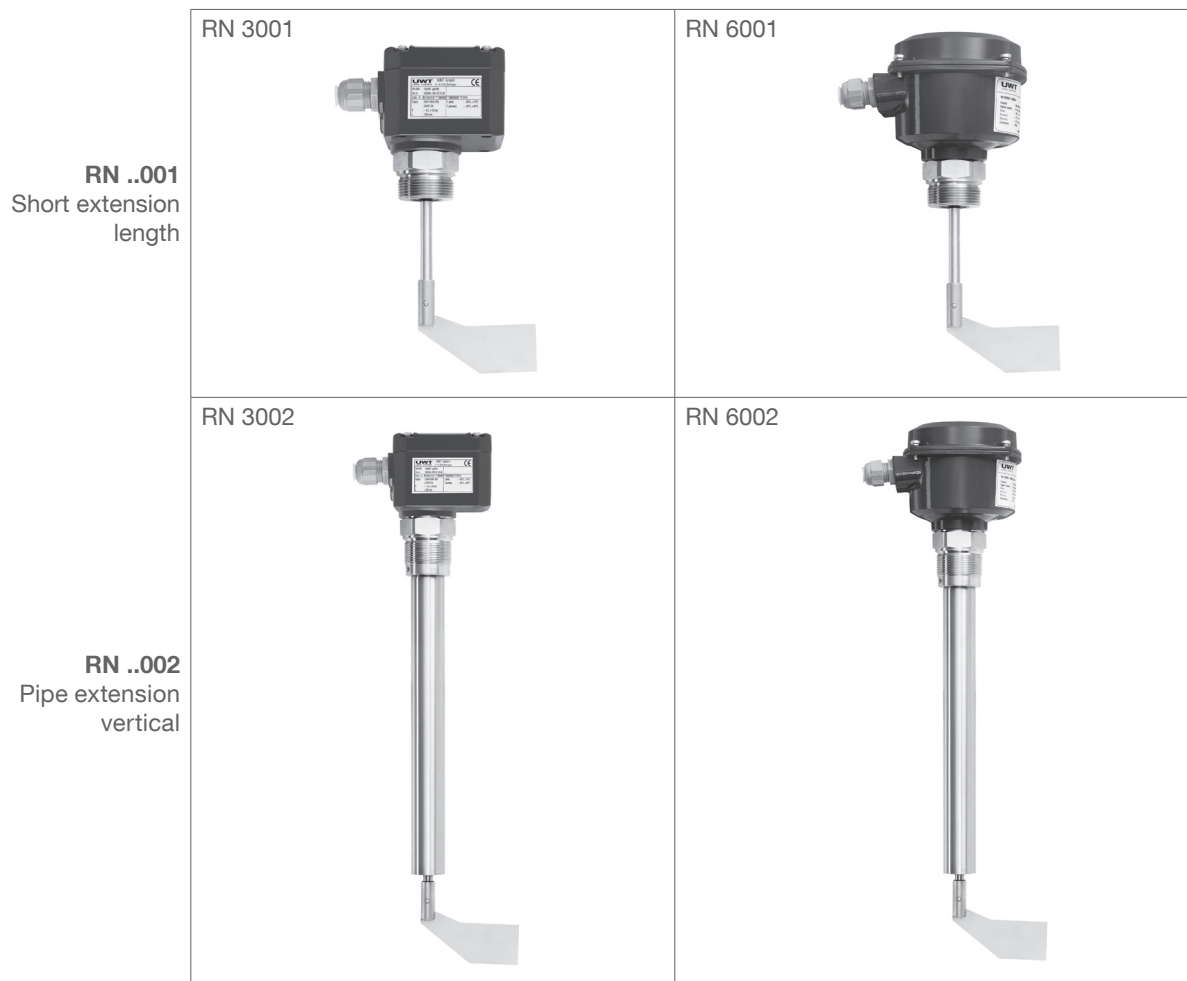
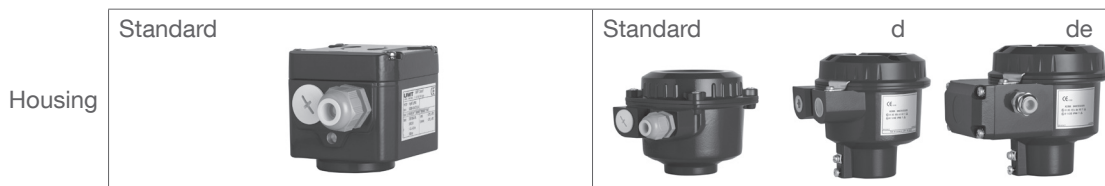
We assume no liability for typing errors.

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



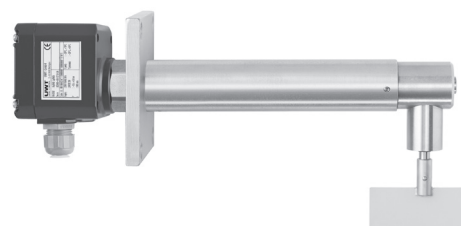
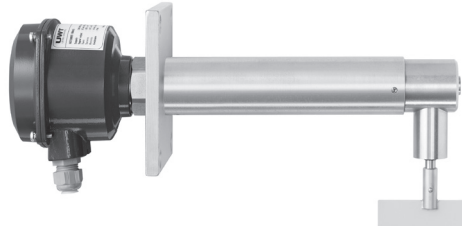
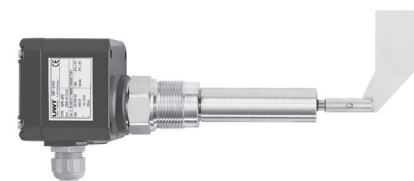
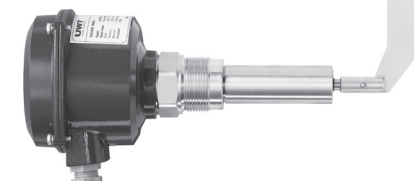

Overview

- | | | |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> - Level limit detection in bulk goods / solids - Compact unit - Very robust and reliable sensors - Wide range of applications, no maintenance - Full-, demand-, empty detector | <ul style="list-style-type: none"> - ATEX, IEC-Ex , FM, CSA, INMETRO - TR-CU - SIL 2 - 1935/2004/EC - 2011/65/EU | <ul style="list-style-type: none"> Gas Ex and Dust Ex approvals Dust Ex approval Functional safety Food grade material RoHS Conform |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

Series	RN 3000	RN 6000
	ATEX / IEC-Ex / TR-CU / INMETRO Small housing Sensitivity > 15 g/l (0.9lb/ft³)	ATEX / IEC-Ex / FM / CSA / INMETRO / SIL 2 Spacious housing Sensitivity > 15 g/l (0.9lb/ft³)



Overview

<p>RN ..002-rope Rope extension</p>	<p>RN 3002-rope</p> 	<p>RN 6002-rope</p> 
<p>RN ..003 Angled extension</p>	<p>RN 3003</p> 	<p>RN 6003</p> 
<p>RN ..004 Pipe extension horizontal</p>	<p>RN 3004</p> 	<p>RN 6004</p> 
<p>RN 3005 Extra short version for use in loading bellow</p>	<p>RN 3005</p> 	

Specifications

Series		RN 3000	RN 6000	
Approvals	CE	•	•	
	ATEX /IEC-Ex/INMETRO:			
	Zone 20/21	Dust Ignition Proof	•	•
	Zone 1	Flameproof / Increased Safety		•
	FM / CSA:			
	Ordinary Locations			•
	Cl. II, III Div. 1	Dust Ignition Proof		•
	Cl. I Div. 1	Explosionproof		•
	Zone 1	Flameproof / Increased Safety		•
	TR-CU:			
	Ordinary Locations		•	
	Zone 20/21	Dust Ignition Proof	•	
Functional safety			•	
SIL 2 (IEC 61508)				

Technical data			
Ambient temperature		-20°C .. +70°C (-4°F ..+158°F) CE -20°C .. +60°C (-4°F ..+140°F) EX -40°C with heating	-20°C .. +50°C (-4°F ..+122°F) -40°C with heating
Type of protection		IP66 and NEMA Type 4/4X (RN6000)	
Material housing		Aluminium or plastics PA6 (RN3000, optional)	
Process connection material		Aluminium or 1.4305 (303) / 1.4541 (321) or 1.4404 (316L)	
Material of measuring vane and shaft		1.4301 (SS 304) / 1.4305 (303) or 1.4404 (316L)	

Electronics		Output signal						
RN 3000								
Power supply		SPDT ⁽¹⁾	DPDT	PNP	FSH/ FSL ⁽²⁾	Adjustable delay	Fail safe alarm	
AC version	24V or 48V or 115V or 230V AC	•	-	-	-	-	-	-
DC version	24V DC	•	-	-	-	-	-	-
DC version	24V DC PNP	-	-	•	•	•	-	-
Universal voltage	24V DC / 22...230V AC	•	-	-	•	•	option	-
RN 6000								
Power supply		SPST	SPDT ⁽¹⁾	DPDT	PNP	FSH/ FSL ⁽²⁾	Adjustable delay	Fail safe alarm
AC version	24V or 48V or 115V or 230V AC	-	•	-	-	-	-	-
DC version	24V DC	-	•	-	-	-	-	-
Universal voltage	24V DC / 22...230V AC	-	-	• ⁽³⁾	-	•	•	option
Universal voltage SIL 2	24V DC / 22...230V AC	•	• ⁽⁴⁾	-	-	•	•	-

⁽¹⁾ Micro switch, with Universal voltage Relais

⁽²⁾ Switchable signal output (Fail safe high /low)

⁽³⁾ For Ex approval "Increased safety" (pos.2 C,R,S) not in combination with option Fail safe alarm

⁽⁴⁾ Additional output, not SIL conform

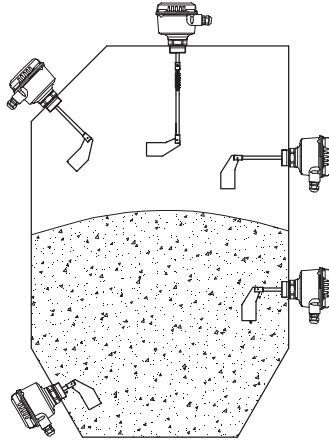
Specifications

Extensions	RN .001	Process temperature	-40/ -25 .. +80 /150 /250 /350 /600 /1100°C (-40/ -13 .. +176 /302 /482 /662 /1112 /2012°F)
		Process pressure	-0.9 .. +0.8bar; -0.9 .. +5 / 10bar (-13.1 ..+11.6; -13.1 .. +72.5 / 145psi)
		Length of extension	
		Full detector vertical from the top	70 .. 300mm (2.76 .. 11.8")
		Full detector with pendulum shaft, vertical from the top	300 .. 1000mm (11.8 .. 39.4")
		Full detector oblique from the top	70 .. 300mm (2.76 .. 11.8")
		Full detector horizontal	70 .. 300mm (2.76 .. 11.8")
		Demand or empty detector horizontal	70 .. 150mm (2.76 .. 5.9") *
		Empty detector oblique from the bottom	70 .. 150mm (2.76 .. 5.9") *
	RN .002	Process temperature	-40/ -25 .. +80 /150 /250 /350 /600 /1100°C (-40/ -13 .. +176 /302 /482 /662 /1112 /2012°F)
		Process pressure	-0.9 .. +0.8bar; -0.9 .. +5 / 10bar (-13.1 ..+11.6; -13.1 .. +72.5 / 145psi)
		Length of extension	
		Full detector vertical from the top	250 .. 3.000mm (9.84 .. 118") / 4.000mm (158") with support of the extension pipe
	Full detector oblique from the top	250 .. 3.000mm (9.84 .. 118") with option "Bearing at tube end"	
	RN..002-rope	Process temperature	-40/-25 ..+80 /150 /250 /350 /600°C (-40/-13 ..+176 /302 /482 /662 /1112°F)
		Process pressure	-0.9 .. +0.8bar; -0.9 .. +5 / 10bar (-13.1 ..+11.6; -13.1 .. +72.5 / 145psi)
		Length of extension	
		Full detector vertical from the top	500 .. 10.000mm (19.7 .. 394") (observe max. traction)
	RN .003	Process temperature	-40/-25 .. +80 /150 /250°C (-40/-13 .. +176 /302 /482°F)
		Process pressure	-0.9 .. +0.8bar; -0.9 .. +5 / 10bar (-13.1 ..+11.6; -13.1 .. +72.5 / 145psi)
		Length of extension	
		Demand or empty detector horizontal	125 .. 300mm (4.92 .. 11.8")
		Empty detector oblique from the bottom	125 .. 300mm (4.92 .. 11.8")
	RN .004	Process temperature	-40/-25 .. +80 /150 /250 /350 /600°C (-40/-13 .. +176 /302 /482 /662 /1112°F)
		Process pressure	-0.9 .. +0.8bar; -0.9 .. +5 / 10bar (-13.1 ..+11.6; -13.1 .. +72.5 / 145psi)
		Length of extension	
		Full detector vertical from the top	150 .. 300mm (5.90 .. 11.8")
		Full detector oblique from the top	150 .. 300mm (5.90 .. 11.8")
Full detector horizontal		150 .. 300mm (5.90 .. 11.8")	
Demand or empty detector horizontal		150 .. 300mm (5.90 .. 11.8") *	
Empty detector oblique from the bottom		150 .. 300mm (5.90 .. 11.8") *	
RN 3005	Process temperature	-40/-25 .. +80°C (-40/-13 .. +176°F)	
	Process pressure	-0.9 .. +0.8bar (-13.1 .. +11.6psi)	
	Length of extension		
	Application "Loading bellow"	90mm (3.5")	

* A protective canopy is recommended for applications with high mechanical loads

Applications

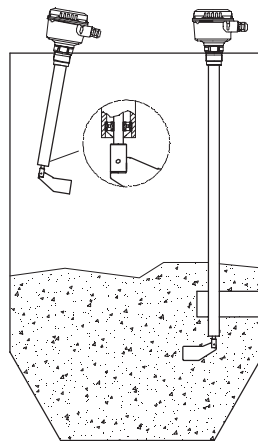
RN..001
 Short extension length



Extension for vertical installation with pendulum shaft

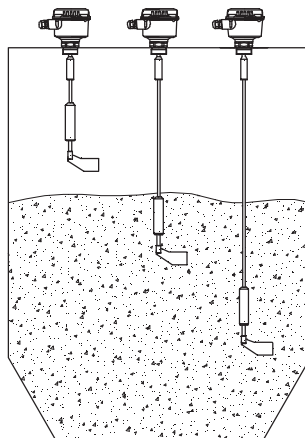
Horizontal mounting:
 Boot shaped vane recommended
 (min. mech. loading as the vane aligns itself to the material flow).

RN..002
 Pipe extension vertical



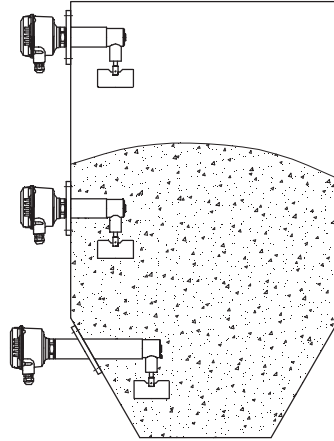
Deviation up to max. 10° from vertical installation only with option „bearing at tube end“ possible

RN..002 - rope
 Rope extension

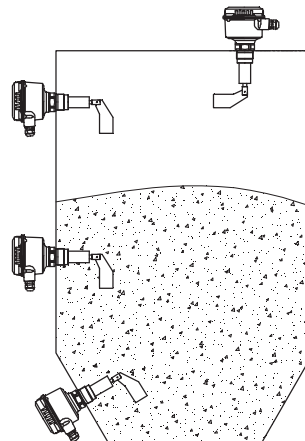


Applications

RN ..003
Angled extension

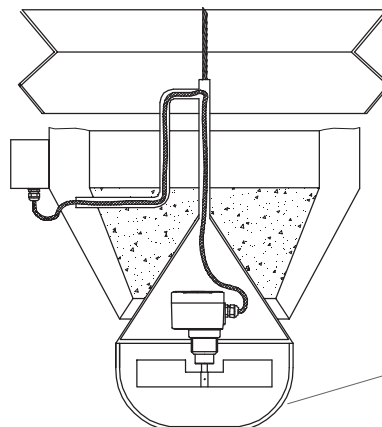


RN ..004
Pipe extension horizontal



Horizontal mounting:
Boot shaped vane
recommended
(min. mech. loading as
the vane aligns itself to
the material flow).

RN 3005
Extra short version



Application
„Loading bellow“

mechanical
protection for
sensor

RN ..001 Short extension length

RN 3001



RN 6001



Housings RN 6001



Standard



d (flameproof)



de (flameproof/
increased safety)

Cable entries (by default)

Depending on model selected, the following cable entries will be delivered (options see pos 28 on page 20):

Version:	Cable entries:
ATEX / IEC-Ex flameproof (pos.2 T) FM and CSA (pos.2 M,N,S,U) All other versions	M20x1.5 (1x open conduit + 1x Ex-d blind plug) NPT 1/2" tapered ANSI B1.20.1 (1x open conduit + 1x Ex-d blind plug) M20x1.5 (1x screwed cable gland + 1x blind plug)

Dimensions see pages 24 - 28

Basic Type

- RN 3001
- RN 6001

pos. 2 **Certificate** (detailed Ex-markings: see page 29)

Certificate	Zone / Div		Protection method
	Dust	Gas	
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 /CSA	-	-	General purpose
N FM /CSA	Cl. II, III, Div.1	-	Dust Ignition Proof
CSA	A 20/21		
S FM /CSA	Cl. II, III, Div.1	Zone 1	Flameproof / Increased Safety / Dust Ignition Proof
CSA	A 20/21		
U FM /CSA	Cl. II, III, Div.1	Cl. I Div.1 / Zone 1	Explosion Proof / Dust Ignition Proof
CSA	A 20/21		
E TR-CU	Zone 20/21	-	Dust Ignition Proof

For RN3001: pos.2 0 includes TR-CU (Ordinary Locations)

For RN3001/6001: pos.2 A,C,D includes INMETRO

pos. 3 **Process temperature**

- 1 max. + 80°C (176°F)
- 2 max. + 150°C (302°F)
- 3 max. + 250°C (482°F)
- 4 max. + 350°C (662°F) (not for pos.10 K,S in 1.4404; not for Ex, only with pos. 4.1, L min=200mm)
- 5 max. + 600°C (1112°F) (not for pos.10 K,S in 1.4404; not for Ex, only with pos. 4.1)
- 6 max. + 1100°C (2012°F) Installation vertical / obliquely downward on request

pos. 4 **Process overpressure**

- 1 max. 0,8 bar (11,6psi) (0,1bar (1.45psi) with Pos. 3.5)
- 2 max. 5 bar (73psi)
- 3 max. 10 bar (145psi)

RN ..001 Short extension length

pos. 5	Power supply			
• •	A / S	230V AC 50-60 Hz	Motor Speed: A=1/min S= 5/min	• / •
• •	B / T	115V AC 50-60 Hz	Motor Speed: B=1/min T= 5/min	• / •
• •	C / U	48V AC 50-60 Hz	Motor Speed: C=1/min U= 5/min	• / •
• •	D / V	24V AC 50-60 Hz	Motor Speed: D=1/min V= 5/min	• / •
• •	E / W	24V DC	Motor Speed: E=1/min W= 5/min	• / •
• •	G / H	24V DC PNP	Motor Speed: G=1/min H= 5/min	• / •
• •	F / X	24V DC / 22...230V AC universal voltage	Motor Speed: F=1/min X= 5/min	• / •
pos. 6	Process connection			
• •	A	thread G 1½ inch, DIN 228		• • •
• •	B	thread G 1¼ inch, DIN 228 (max. 250°C (482°F))		• • •
• •	C	thread G 1 inch, DIN 228 (max. 250°C (482°F)) (not for pos 2. R,S,T,U)		• • •
• •	D	thread M32x1.5 (max. 250°C (482°F)) (not for pos 2. R,S,T,U)		• • •
• •	E	thread M30x1.5(max.0.8 bar (11.6psi)/80°C (176°F)) (not for pos 2. R,S,T,U)		• • •
• •	F	thread NPT 1½ inch, conical ANSI B1.20.1		• • •
• •	Q	thread NPT 1¼ inch, conical ANSI B1.20.1 (max. 250°C (482°F))		• • •
• •	G	thread NPT 1 inch, conical ANSI B1.20.1 (max. 250°C; not for pos 2. R,S,T,U)		• • •
• •	P	Triclamp 2" (DN 50) ISO 2852 (max. 250°C (482°F))		• • •
• •	H	flange 150x150, 4x ø18 LK-ø170 (max. 0.8 bar (11.6psi))		• • •
• •	I	flange 150x150, 4x ø14 LK-ø170 (max. 0.8 bar (11.6psi))		• • •
• •	K	flange DN32 PN6, EN 1092-1 (max. 5 bar (73psi) / 250°C (482°F))		• • •
• •	N	flange DN50 PN16, EN 1092-1		• • •
• •	L	flange DN100 PN6, EN 1092-1 (max. 5 bar (73psi))		• • •
• •	M	flange DN100 PN16, EN 1092-1		• • •
• •	S	flange 2" 150lbs ANSI B16.5		• • •
• •	T	flange 3" 150lbs ANSI B16.5		• • •
• •	U	flange 4" 150lbs ANSI B16.5		• • •
pos. 7	Material Process connection			
• •	1	aluminium (max. 0.8 bar (11.6psi) / 80°C (176°F))		• • •
• •	3	stainless steel 1.4305 (303) A-G / 1.4301 (304) P-I / 1.4541 (321) K-U		• • •
• •	7	stainless steel 1.4404 (316L) (only with pos. 9.7)		• • •
pos. 8	Length of extension "L"			
• •	K	70 mm (2,76") (only with vane P)		• • •
• •	A	100 mm (3,93") (only with vane A,D,R,J,B,C,E)		• • •
• •	B	150 mm (5,90")		• • •
• •	C	200 mm (7,87")		• • •
• •	D	250 mm (9,84")		• • •
• •	E	300 mm (11,8")		• • •
• •	Z	other lengthes price per 50mm (1.97") or part thereof (starting from 0mm) min. 350 mm (13.8"), max. 1000mm (39.4")		• • •
pos. 9	Material of extension "L"			
• •	3	stainless steel 1.4305 (303)		• • •
• •	7	stainless steel 1.4404 (316L) (only with pos.7.7 and 10.A,D,F,K,S,P)		• • •
pos. 10	Measuring vane			
• •	A	boot-shaped ⁽¹⁾ 40 x 98mm (1.57 x 3.86") for 1 1/2" socket (with pos.9.7 L=10mm longer)		• • •
• •	D	boot-shaped ⁽¹⁾ 35 x 106mm (1.38 x 4.17") for 1 1/4" socket ("L"=10mm longer)		• • •
• •	R	boot-shaped ⁽¹⁾ 28 x 98mm (1.10 x 3.86") for 1" and M32 socket		• • •
• •	J	boot-shaped ⁽¹⁾ 26 x 77mm (1.02 x 3.03") for M30 socket		• • •
• •	B	rectangular 50 x 98mm (1.97 x 3.86")		• • •
• •	C	rectangular 50 x 150mm (1.97 x 5.90")		• • •
• •	E	rectangular 50 x 250mm (1.97 x 9.84")		• • •
• •	F	rectangular 98 x 98mm (3.86 x 3.86")		• • •
• •	G	rectangular 98 x 150mm (3.86 x 5.90")		• • •
• •	I	rectangular 98 x 250mm (3.86 x 9.84")		• • •
• •	K	hinged vane 98 x 200mm (3.86 x 7.87") double sided (L=10mm longer) 1.4301/1.4404	• / •	(1.4404)
• •	S	hinged vane 98 x 100mm (3.86 x 3.93") single sided(L=10mm longer) 1.4301/1.4404	• / •	(1.4404)
• •	M	rubber vane 98 x 250mm (3.86 x 9.84") (max.80°C (176°F), not for Ex)	• / •	(1.4404)
• •	P	notched 40 x 80mm (1.57 x 3.15") (only with pos. 8K) 1.4301/1.4404	• / •	(1.4404)
• •	Y	without including splint pin for fixation	• / •	(1.4404)

Basic type

Further options and accessories: see page 20

	A									
Position	1	2	3	4	5	6	7	8	9	10

← **Order code**

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

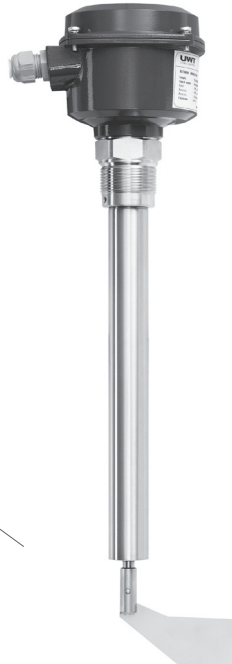
⁽¹⁾ maximum length of socket 40mm

RN ..002 Pipe extension vertical

RN 3002



RN 6002



Without sealing and bearing at tube end (see also option pos. 32)

Housings RN 6002



Standard



d (flameproof)



de (flameproof/
increased safety)

Cable entries (by default)

Depending on model selected, the following cable entries will be delivered (options see pos 28 on page 20):

Version:	Cable entries:
ATEX / IEC-Ex flameproof (pos.2 T)	M20x1.5 (1x open conduit + 1x Ex-d blind plug)
FM and CSA (pos.2 M,N,S,U)	NPT 1/2" tapered ANSI B1.20.1 (1x open conduit + 1x Ex-d blind plug)
All other versions	M20x1.5 (1x screwed cable gland + 1x blind plug)

Dimensions

see pages 24 - 28

Basic Type

- RN 3002
- RN 6002

pos. 2 **Certificate** (detailed Ex-markings: see page 29)

Certificate	Zone / Div		Protection method
	Dust	Gas	
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 /CSA	-	-	General purpose
N FM /CSA	Cl. II, III, Div.1	-	Dust Ignition Proof
	A 20/21		
S FM /CSA	Cl. II, III, Div.1	Zone 1	Flameproof / Increased Safety / Dust Ignition Proof
	A 20/21		
U FM /CSA	Cl. II, III, Div.1	Cl. I Div.1 / Zone 1	Explosion Proof / Dust Ignition Proof
	A 20/21		
E TR-CU	Zone 20/21	-	Dust Ignition Proof

For RN3002: pos.2 0 includes TR-CU (Ordinary Locations)

For RN3002/6002: pos.2 A,C,D includes INMETRO

RN ..002-rope Rope extension

RN 3002 - rope



RN 6002 - rope



Housings RN 6002-rope



Cable entries (by default)

Depending on model selected, the following cable entries will be delivered (options see pos 28 on page 20):

Version:	Cable entries:
ATEX / IEC-Ex flameproof (pos.2 T) FM and CSA (pos.2 M,N,S,U) All other versions	M20x1.5 (1x open conduit + 1x Ex-d blind plug) NPT 1/2" tapered ANSI B1.20.1 (1x open conduit + 1x Ex-d blind plug) M20x1.5 (1x screwed cable gland + 1x blind plug)

Dimensions

see pages 24 - 28

Basic Type

- RN 3002-Rope •
- RN 6002-Rope •

pos. 1

Types

- C Standard (max. 4kN load) •
- H Strengthened (max. 28kN load) (max. 80°C (176°F), only with pos7 3, with pos.2 R,S,T,U on request) •

pos. 2

Certificate (detailed Ex-markings: see page 29)

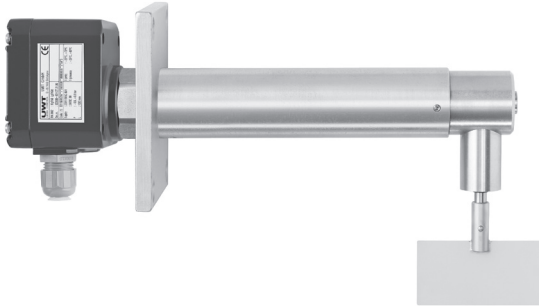
Certificate	Zone / Div		Protection method
	Dust	Gas	
0 CE	-	-	
W ATEX	Zone 20/21	-	Dust Ignition Proof
R ATEX	Zone 20/21	Zone 1	Flameproof / Increased Safety / Dust Ignition Proof
T ATEX	Zone 20/21	Zone 1	Flameproof / Dust Ignition Proof
A IEC-Ex	Zone 20/21	-	Dust Ignition Proof
C IEC-Ex	Zone 20/21	Zone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

For RN3002-Rope: pos.2 0 includes TR-CU (Ordinary Locations)

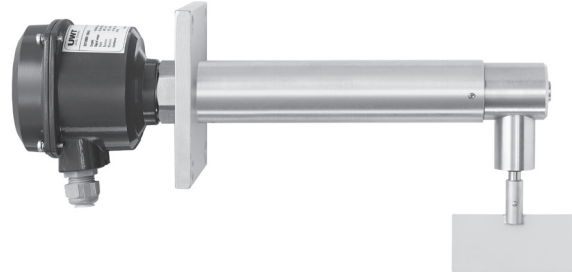
For RN3002/6002-Rope: pos.2 A,C,D includes INMETRO

RN ..003 Angled extension

RN 3003



RN 6003



Housings RN 6003



Cable entries (by default)

Depending on model selected, the following cable entries will be delivered (options see pos 28 on page 20):

Version:	Cable entries:
ATEX / IEC-Ex flameproof (pos.2 T) FM and CSA (pos.2 M,N,S,U) All other versions	M20x1.5 (1x open conduit + 1x Ex-d blind plug) NPT 1/2" tapered ANSI B1.20.1 (1x open conduit + 1x Ex-d blind plug) M20x1.5 (1x screwed cable gland + 1x blind plug)

Dimensions

see pages 24 - 28

Basic Type

- RN 3003
- RN 6003

pos. 2 **Certificate** (detailed Ex-markings: see page 29)

Certificate	Zone / Div		Protection method
	Dust	Gas	
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 /CSA	-	-	General purpose
N FM /CSA	Cl. II, III, Div.1	-	Dust Ignition Proof
CSA A 20/21			
S FM /CSA	Cl. II, III, Div.1	Zone 1	Flameproof / Increased Safety / Dust Ignition Proof
CSA A 20/21			
U FM /CSA	Cl. II, III, Div.1	Cl. I Div.1 / Zone 1	Explosion Proof / Dust Ignition Proof
CSA A 20/21			
E TR-CU	Zone 20/21	-	Dust Ignition Proof

For RN3003: pos.2 0 includes TR-CU (Ordinary Locations)

For RN3003/6003: pos.2 A,C,D includes INMETRO

RN ..003 Angled extension

pos. 3	Process temperature		
• •	1 max. + 80°C (176°F)	•	
• •	2 max. + 150°C (302°F)	•	
• •	3 max. + 250°C (482°F)	•	
pos. 4	Process overpressure		
• •	1 max. 0,8 bar (11,6psi)	•	
• •	2 max. 5 bar (73psi)	•	
• •	3 max. 10 bar (145psi)	•	
pos. 5	Power supply		
• •	A / S 230V AC 50-60 Hz	Motor Speed: A=1/min S= 5/min	• / •
• •	B / T 115V AC 50-60 Hz	Motor Speed: B=1/min T= 5/min	• / •
• •	C / U 48V AC 50-60 Hz	Motor Speed: C=1/min U= 5/min	• / •
• •	D / V 24V AC 50-60 Hz	Motor Speed: D=1/min V= 5/min	• / •
• •	E / W 24V DC	Motor Speed: E=1/min W= 5/min	• / •
• •	G / H 24V DC PNP	Motor Speed: G=1/min H= 5/min	• / •
• •	F / X 24V DC / 20...230V AC universal voltage	Motor Speed: F=1/min X= 5/min	• / •
pos. 6	Process connection		
• •	H flange 150x150, 4x ø18 LK-ø170	(max. 0,8 bar (11.6psi))	• •
• •	I flange 150x150, 4x ø14 LK-ø170	(max. 0,8 bar (11.6psi))	• •
• •	L flange DN100 PN6, EN 1092-1	(max. 5 bar (73psi))	• •
• •	M flange DN100 PN16, EN 1092-1		• •
• •	U flange 4" 150lbs ANSI B16.5		• •
pos. 7	Material Process connection		
• •	1 aluminium	(max. 0.8 bar (11.6psi) / 80°C (176°F))	• •
• •	3 stainless steel 1.4301 (304) / 1.4541 (321)		• •
pos. 8	Length of extension "L"		
• •	1 125 mm (4,92")		• •
• •	2 150 mm (5,90")		• •
• •	3 200 mm (7,87")		• •
• •	4 250 mm (9,84")		• •
• •	5 300 mm (11,8")		• •
• •	Z other lengthes price per 50mm (1.97") or part thereof (starting from 0mm)	min. 350 mm (13.8"), max. 600mm (23.6")	• •
pos. 9	Material of extension "L"		
• •	(must be the same material as pos.7)		
• •	1 aluminium		• •
• •	3 stainless steel 1.4305 (303)/1.4301 (304)		• •
pos. 10	Measuring vane		
• •	A boot-shaped ⁽¹⁾ 40 x 98mm (1.57 x 3.86")		•
• •	B rectangular 50 x 98mm (1.97 x 3.86")		•
• •	C rectangular 50 x 150mm (1.97 x 5.90")		•
• •	E rectangular 50 x 250mm (1.97 x 9.84")		•
• •	F rectangular 98 x 98mm (3.86 x 3.86")		•
• •	G rectangular 98 x 150mm (3.86 x 5.90")		•
• •	I rectangular 98 x 250mm (3.86 x 9.84")		•
• •	K hinged vane 98 x 200mm (3.86 x 7.87") double sided		•
• •	S hinged vane 98 x 100mm (3.86 x 3.93") single sided		•
• •	M rubber vane 98 x 250mm (3.86 x 9.84")	(max.80°C (176°F), not for Ex)	•
• •	Y without	including splint pin for fixation	•

Further options and accessories: see page 20

Basic Type

	D									
Position	1	2	3	4	5	6	7	8	9	10

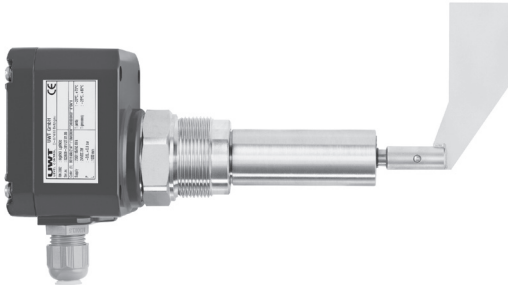
← **Order code**

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

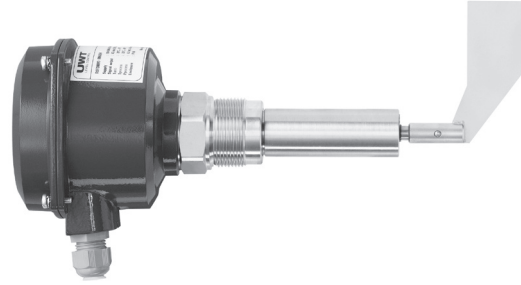
⁽¹⁾ maximum length of socket 40mm

RN ..004 Pipe extension horizontal

RN 3004



RN 6004



Housings RN 6004



Cable entries (by default)

Depending on model selected, the following cable entries will be delivered (options see pos 28 on page 20):

Version:	Cable entries:
ATEX / IEC-Ex flameproof (pos.2 T) FM and CSA (pos.2 M,N,S,U) All other versions	M20x1.5 (1x open conduit + 1x Ex-d blind plug) NPT 1/2" tapered ANSI B1.20.1 (1x open conduit + 1x Ex-d blind plug) M20x1.5 (1x screwed cable gland + 1x blind plug)

Dimensions
see pages 24 - 28

Basic Type

- RN 3004
- RN 6004

pos. 2 **Certificate** (detailed Ex-markings: see page 29)

Certificate	Zone / Div		Protection method
	Dust	Gas	
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 /CSA	-	-	General purpose
N FM /CSA	Cl. II, III, Div.1	-	Dust Ignition Proof
CSA	A 20/21		
S FM /CSA	Cl. II, III, Div.1	Zone 1	Flameproof / Increased Safety / Dust Ignition Proof
CSA	A 20/21		
U FM /CSA	Cl. II, III, Div.1	Cl. I Div.1 / Zone 1	Explosion Proof / Dust Ignition Proof
CSA	A 20/21		
E TR-CU	Zone 20/21	-	Dust Ignition Proof

For RN3004: pos.2 0 includes TR-CU (Ordinary Locations)

For RN3004/6004: pos.2 A,C,D includes INMETRO

RN ..004 Pipe extension horizontal

pos. 3	Process temperature			
• •	1	max. + 80°C (176°F)	.....	•
• •	2	max. + 150°C (302°F)	.....	•
• •	3	max. + 250°C (482°F)	.....	•
• •	4	max. + 350°C (662°F) (not for pos.10 K,S in 1.4404; not for Ex, only with pos. 4.1) (Lmin=200mm) .....	.....	•
• •	5	max. + 600°C (1112°F) (not for pos.10 K,S in 1.4404; not for Ex, only with pos. 4.1) .....	.....	•
pos. 4	Process overpressure			
• •	1	max. 0,8 bar (11,6psi)	(0,1bar (1.45psi) with pos. 3.5)	•
• •	2	max. 5 bar (73psi) .....	.....	•
• •	3	max. 10 bar (145psi) .....	.....	•
pos. 5	Power supply			
• •	A / S	230V AC 50-60 Hz	Motor Speed: A=1/min S= 5/min	• / •
• •	B / T	115V AC 50-60 Hz	Motor Speed: B=1/min T= 5/min	• / •
• •	C / U	48V AC 50-60 Hz	Motor Speed: C=1/min U= 5/min	• / •
• •	D / V	24V AC 50-60 Hz	Motor Speed: D=1/min V= 5/min	• / •
• •	E / W	24V DC	Motor Speed: E=1/min W= 5/min	• / •
• •	G / H	24V DC PNP	Motor Speed: G=1/min H= 5/min	• / •
• •	F / X	24V DC / 22...230V AC universal voltage	Motor Speed: F=1/min X= 5/min	• / •
pos. 6	Process connection			
• •	A	thread G 1½ inch, DIN 228 .....	.....	• • •
• •	B	thread G 1¼ inch, DIN 228	(max. 250°C (482°F))	• • •
• •	F	thread NPT 1½ inch, conical ANSI B1.20.1 .....	.....	• • •
• •	Q	thread NPT 1¼ inch, conical ANSI B1.20.1	(max. 250°C (482°F))	• • •
• •	P	Triclamp 2" (DN 50) ISO 2852	(max. 250°C (482°F))	• • •
• •	H	flange 150x150, 4x ø18 LK-ø170	(max. 0.8 bar (11.6psi))	• • •
• •	I	flange 150x150, 4x ø14 LK-ø170	(max. 0.8 bar (11.6psi))	• • •
• •	K	flange DN32 PN6, EN 1092-1	(max. 5 bar / 250°C)	• • •
• •	N	flange DN50 PN16, EN 1092-1 .....	.....	• • •
• •	L	flange DN100 PN6, EN 1092-1	(max. 5 bar (73psi))	• • •
• •	M	flange DN100 PN16, EN 1092-1 .....	.....	• • •
• •	S	flange 2" 150lbs ANSI B16.5 .....	.....	• • •
• •	T	flange 3" 150lbs ANSI B16.5 .....	.....	• • •
• •	U	flange 4" 150lbs ANSI B16.5 .....	.....	• • •
pos. 7	Material Process connection			
• •	1	aluminium	(max. 0.8 bar (11.6psi) / 80°C (176°F))	• • •
• •	3	stainless steel 1.4305 (303) A-Q / 1.4301 (304) P-I / 1.4541 (321) K-U .....	.....	• • •
• •	7	stainless steel 1.4404 (316L)	(only with Pos. 9.7)	• • •
pos. 8	Length of extension "L"			
• •	N	150 mm (5,90") (only with vane A, D, B, C, E) .....	.....	• • •
• •	P	200 mm (7,87") .....	.....	• • •
• •	Q	250 mm (9,84") .....	.....	• • •
• •	R	300 mm (11,8") .....	.....	• • •
• •	Z	other lengths price per 50mm (1.97") or part thereof (starting from 0mm)	min. 350 mm (13.8"), max. 600mm (23.6")	• • •
pos. 9	Material of extension "L"			
• •	1	aluminium	(max. 0,8 bar / 80°C)	• • •
• •	3	stainless steel 1.4305 (303)/1.4301 (304) .....	.....	• • •
• •	7	stainless steel 1.4404 (316L)	(only with pos.7.7 and 10.A,D,F,K,S,P)	• • •
pos. 10	Measuring vane			
• •	A	boot-shaped ⁽¹⁾ 40 x 98mm (1.57 x 3.86") for 1 1/2" socket (with pos.9.7 L=10mm) .....	.....	•
• •	D	boot-shaped ⁽¹⁾ 35 x 106mm (1,38 x 4,17") for 1 1/4" socket (L =10mm longer) .....	.....	•
• •	B	rectangular 50 x 98mm (1.97 x 3.86") .....	.....	•
• •	C	rectangular 50 x 150mm (1.97 x 5.90") .....	.....	•
• •	E	rectangular 50 x 250mm (1.97 x 9.84") .....	.....	•
• •	F	rectangular 98 x 98mm (3.86 x 3.86") .....	.....	•
• •	G	rectangular 98 x 150mm (3.86 x 5.90") .....	.....	•
• •	I	rectangular 98 x 250mm (3.86 x 9.84") .....	.....	•
• •	K	hinged vane 98 x 200mm (3.86 x 7.87") double sided (L= 10mm longer) 1.4301/1.4404 .....	.....	• / • 1.4404
• •	S	hinged vane 98 x 100mm (3.86 x 3.93") single sided(L= 10mm longer) 1.4301/1.4404 .....	.....	• / • 1.4404
• •	M	rubber vane 98 x 250mm (3.86 x 9.84")	(max.80°C (176°F), not for Ex)... ..	•
• •	Y	without	including splint pin for fixation	•

Basic Type **Further options and accessories:** see page 20

	E									
Position	1	2	3	4	5	6	7	8	9	10

Order code

⁽¹⁾ maximum length of socket 40mm

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



RN 3005 Extra short version

RN 3005



RN 6005
not available

Cable entries (by default)
M20x1.5 (1x screwed cable gland + 1x blind plug)
Options see pos.28 on page 20

Dimensions see pages 24 - 28

RN 3005 Extra short version

Basic Type

	RN 3005	.....	•
• • • • •	pos. 2	Certificate		
		0 CE ⁽¹⁾	•	
		W ATEX Zone 20/21 Dust Ignition Proof (ATEX II 1/2D)	•	
		A IEC-Ex ⁽²⁾ Zone 20/21 Dust Ignition Proof (ta/tb IIIC)	•	
		E TR-CU Zone 20/21 Dust Ignition Proof (DIP A20/ A21)	•	
• • • • • • •	pos. 5	Power supply		
		A / S 230V AC 50-60 Hz Motor Speed: A=1/min S= 5/min	•	/ •
		B / T 115V AC 50-60 Hz Motor Speed: B=1/min T= 5/min	•	/ •
		C / U 48V AC 50-60 Hz Motor Speed: C=1/min U= 5/min	•	/ •
		D / V 24V AC 50-60 Hz Motor Speed: D=1/min V= 5/min	•	/ •
		E / W 24V DC Motor Speed: E=1/min W= 5/min	•	/ •
		G / H 24V DC PNP Motor Speed: G=1/min H= 5/min	•	/ •
	F / X 24V DC / 22...230V AC universal voltage Motor Speed: F=1/min X= 5/min	•	/ •	
• •	pos. 6	Process connection		
		A thread G 1½ inch, DIN 228	•	•
	F thread NPT 1½ inch, conical ANSI B1.20.1	•	•	
• • •	pos. 7	Material process connection		
		1 aluminium		↑
		3 stainless steel (1.4305 / 303)		↑
• •	pos. 10	Measuring vane		
		N VT-vane	•	
		others on request		

Further options and accessories: see page 20

Basic Type

RN 3005	F		1	1				A	3	
Position	1	2	3	4	5	6	7	8	9	10

← **Order code**

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

⁽¹⁾ TR-CU (Ordinary Locations) included

⁽²⁾ INMETRO included

Options

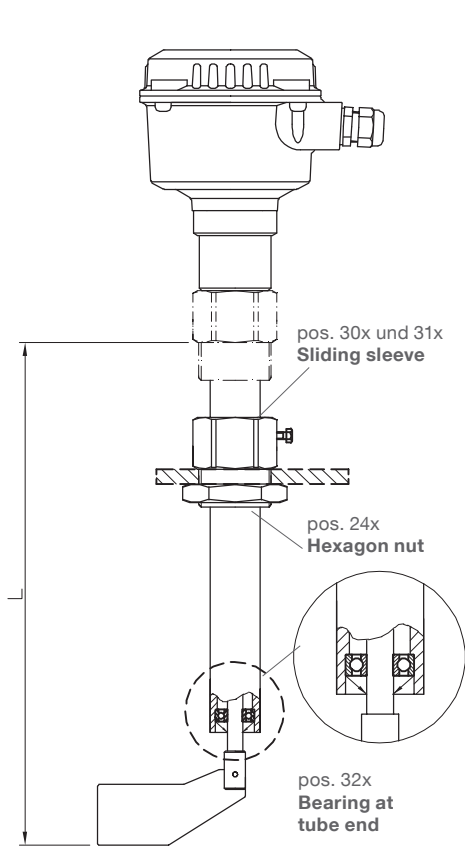
RN 3001	RN 6001	RN 3002	RN 6002	RN 3002- rope	RN 6002- rope	RN 3003	RN 6003	RN 3004	RN 6004	RN 3005																																															
1	1	1	1	1	1	1	1	1	1	1	pos. 11x Guarantee extension to 5 years																																														
•	•	•	•	•	•			•	•	•	Flat gasket (max. 250°C)																																														
•	•	•	•	•	•			•	•	•	pos. 15a for process connection thread 1½, incl. sealing face in aluminium																																														
•	•	•	•	•	•			•	•	•	pos. 15b for process connection thread 1½, incl. sealing face in 1.4404 (316L)																																														
											pos. 15c for process connection thread 1¼ / 1" / M32x1.5 / M30x1.5																																														
2		2		2		2		2		2	pos. 16a Material of housing plastics PA6																																														
											Radial shaft sealing																																														
3	3	3	3	3	3	3	3	3	3	3	pos. 17a FPM (Viton)																																														
4	4	4	4	4	4	4	4	4	4	4	pos. 17b PTFE (Teflon)																																														
											pos. 18x Stainless steel ball bearing																																														
5	5	5	5	5	5			5	5	•	for RN ..001/ RN ..002/ RN ..004/ RN ..005																																														
						•	•				for RN ..003																																														
6	6	6	6	6	6	6	6	6	6	6	pos. 21x Weather protection cover (for Ex, only for Zone 2/22/Div. 2)																																														
											Mounting set for flange mounting																																														
											<table border="1"> <thead> <tr> <th rowspan="2">for flange</th> <th rowspan="2">for counter flange with</th> <th colspan="4">consists of</th> </tr> <tr> <th>screws*</th> <th>nuts*</th> <th>washers*</th> <th>sealing**</th> </tr> </thead> <tbody> <tr> <td>H</td> <td>hole ø18</td> <td>4 x M16x50</td> <td>4 x M16</td> <td>4 pcs</td> <td>1 piece</td> </tr> <tr> <td>H</td> <td>thread M16</td> <td>4 x M16x30</td> <td></td> <td>4 pcs</td> <td>1 piece</td> </tr> <tr> <td>L</td> <td>hole ø18</td> <td>4 x M16x60</td> <td>4 x M16</td> <td>4 pcs</td> <td>1 piece</td> </tr> <tr> <td>L</td> <td>thread M16</td> <td>4 x M16x40</td> <td></td> <td>4 pcs</td> <td>1 piece</td> </tr> <tr> <td>M</td> <td>hole ø18</td> <td>4 x M16x60</td> <td>8 x M16</td> <td>8 pcs</td> <td>1 piece</td> </tr> <tr> <td>M</td> <td>thread M16</td> <td>4 x M16x40</td> <td></td> <td>8 pcs</td> <td>1 piece</td> </tr> </tbody> </table>	for flange	for counter flange with	consists of				screws*	nuts*	washers*	sealing**	H	hole ø18	4 x M16x50	4 x M16	4 pcs	1 piece	H	thread M16	4 x M16x30		4 pcs	1 piece	L	hole ø18	4 x M16x60	4 x M16	4 pcs	1 piece	L	thread M16	4 x M16x40		4 pcs	1 piece	M	hole ø18	4 x M16x60	8 x M16	8 pcs	1 piece	M	thread M16	4 x M16x40		8 pcs	1 piece
for flange	for counter flange with	consists of																																																							
		screws*	nuts*	washers*	sealing**																																																				
H	hole ø18	4 x M16x50	4 x M16	4 pcs	1 piece																																																				
H	thread M16	4 x M16x30		4 pcs	1 piece																																																				
L	hole ø18	4 x M16x60	4 x M16	4 pcs	1 piece																																																				
L	thread M16	4 x M16x40		4 pcs	1 piece																																																				
M	hole ø18	4 x M16x60	8 x M16	8 pcs	1 piece																																																				
M	thread M16	4 x M16x40		8 pcs	1 piece																																																				
											* material stainless A2 **max. 250°C																																														
											Hexagon nut																																														
											pos. 24a aluminium 1 pc																																														
											pos. 24b aluminium 2 pcs																																														
											pos. 24e stainless steel 1.4305 (303) 1 pc																																														
											pos. 24f stainless steel 1.4305 (303) 2 pcs																																														
	8	8		8		8		8		8	pos. 25b Functional safety SIL 2 (IEC 61508)																																														
•	9	•	9	•	9	•	9	•	9	•	pos. 25x Fail safe alarm (for 24V DC/22 .. 230V AC universal voltage)																																														
10	10	10	10	10	10	10	10	10	10	10	pos. 26x Heating of housing 2,5 watts for ambient/process temp. to -40°C (-40°F)																																														
											Signal lamp																																														
11	11	11	11	11	11	11	11	11	11	11	pos. 27a Bulb in cable gland, 2W green																																														
11	11	11	11	11	11	11	11	11	11	11	Pos. 27c Bulb in cable gland, 2W red																																														
	12		12		12		12		12		pos. 27b LED (glass window in lid)																																														
13		13		13		13		13		13	pos. 27d LED (transparent lid section)																																														
											Cable entry optionally available:																																														
											Selection of the following options only necessary, if a deviation from the default cable gland / conduit is required:																																														
•	14	•	14	•	14	•	14	•	14	•	pos. 28x M20x1,5 2x screwed cable gland																																														
	15		15		15		15		15		pos. 28d M20x1,5 1x screwed cable gland +1x blind plug																																														
•	16	•	16	•	16	•	16	•	16	•	pos. 28a NPT 1/2" tapered ANSI B1.20.1 (1x conduit + 1x Ex-d blind plug)																																														
											pos. 28c NPT 3/4" tapered ANSI B1.20.1 (1x conduit + 1x Ex-d blind plug)																																														
17	17	17	17	17	17	17	17	17	17	17	pos. 29y Food grade materials (in contact with process)																																														
											(according to 1935/2004/EC, with FDA conform sealing)																																														
											EHEDG approval																																														
18	18	18	18					18	18		pos. 29a Process connection G 1 1/2" (without flush welding socket)																																														
18	18	18	18					18	18		pos. 29b Process connection flush welding socket ø69/G 1 1/2" made of Aluminium																																														
18	18	18	18					18	18		pos. 29c Process connection flush welding socket ø69/G 1 1/2" made of 1.4301 (304)																																														
18	18	18	18					18	18		pos. 29d Process connection flush welding socket ø69/G 1 1/2" made of 1.4404 (316L)																																														

Options

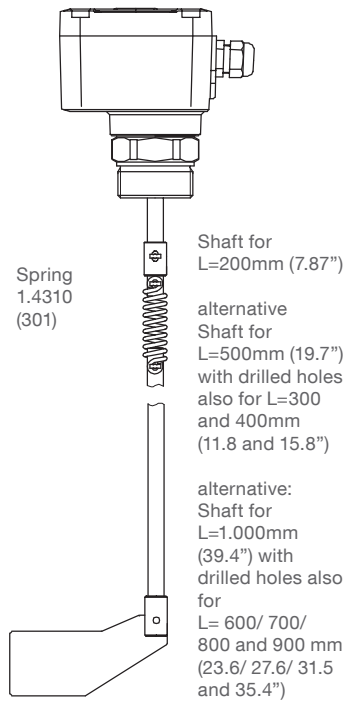
	19	19									pos. 30x	Sliding sleeve for applications without process overpressure	•
	20	20									pos. 31x	Sliding sleeve for applications with process overpressure	•
	21	21									pos. 32x	Bearing at tube end	
	21	21										max. +80°C (176°F)	•
	21	21										max. +150°C (302°F)	•
	21	21										max. +250°C (482°F)	•
	21	21										max. +600°C (1112°F)	•
											pos. 33x	Extension and flange welded $\alpha = \square^\circ$ min. 0° max. 45°	
												for aluminium (see pos. 7/9)	•
												for stainless steel (1.4305 (303)) (see pos. 7/9)	•
											pos. 34x	Reinforced rib (only with pos. 33, max. $\alpha = 30^\circ$)	•
												Plug	
22	22	22	22	22	22	22	22	22	22	22	pos. 35x	Valve connector (incl. mating plug) 4-pole (incl. PE) max. 230V	•
22	22	22	22	22	22	22	22	22	22	22	pos. 35a	M12 (without mating plug) 4-pole max. 25V	•
22	22	22	22	22	22	22	22	22	22	22	pos. 35b	M12 (without mating plug) 5-pole (incl. PE) max. 60V	•
22	22	22	22	22	22	22	22	22	22	22	pos. 35c	Harting Han 4A (incl. mating plug) 5-pole (incl. PE) max. 230V	•
												Kit pendulum shaft	
												Max. pulling force 400N, only with pos.8 A	
												For vertical and horizontal installation:	
											pos. 36w	L=200 mm (7,87")	•
												For vertical installation:	
											pos. 36x	L=500 mm (19,7") (drilled holes also for 300 and 400mm (11.8 and 15.8"))	•
											pos. 36y	L=1.000 mm (39,4") (drilled holes also for 600/ 700/ 800 and 900mm (23,6/ 27,6/ 31,5 und 35,4"))	•
23	23										pos. 39x	Kit rope extension	
												L=2m, only available as full detector	•

- 1 Available for temperatures up to 250°C (pos.3 1,2,3).
- 2 Available for certificat CE, ATEX, IEC-Ex and TR-CU dust explosionproof (pos.2 0, W, A,E). Not with cable entry NPT (pos.28 a, c) and control lamp LED (pos.27 b). For ATEX, IEC-Ex and TR-CU the min. ambient temperature is -20°C (-4°F).
- 3 Available for temp. up to 80°C and for pressure up to 0.8 bar, except M30x1.5 (pos. 6E). Note: 150°C version including FPM as standard.
- 4 Available for temp. up to 150°C and for pressure up to 0.8 bar, except M30x1.5 (pos. 6E). Note: 250°C and 5bar/10bar PTFE included as standard.
- 5 Available for temperature up to 250°C except M30x1.5 (pos. 6E), not for RN3002-rope strengthened (pos. 1H).
All bearings mounted in the extension are made of stainless steel.
- 6 Available for all versions except explosionproof / flameproof version (pos.2 R,T,S,U).
- 8 Available with universal voltage (Pos.5 F,X). Not for CSA. Not in combination with fail safe alarm pos. 25x.
- 9 Not with Ex-certification "increased safety" (Pos. 2 C,R,S).
- 10 Available with universal voltage (pos.5 F,X) and PNP (Pos.5 G,H). Consider reduced switching sensitivity (see technical data).
Note: For temperatures down to -20°C (-4°F) the electronic "universal voltage" and "PNP" have "heating of housing" implemented by default (in this case option pos. 26x is not required).
- 11 Available for CE (pos.2 0), not in combination with weather protection cover (pos 21) and cable entries pos.28 x,a,c.
In combination with universal voltage (pos.5 F, X) three bulbs (24V, 115V and 230V) will be delivered.
Connection of bulb signal lamp wires with internal terminals: without (standard) or according to customer specification.
- 12 Available for all versions except explosionproof / flameproof version (pos.2 R,T,S,U) not in combination with weather protection cover (pos 21).
- 13 Available for certificate CE (pos. 2,0).
- 14 Available for all versions except flameproof version (pos.2 T,U).
- 15 Available for FM/CSA versions (pos.2 M,N,S) except flameproof version (pos.2 T,U).
- 16 Available for CE, ATEX, IEC-Ex, TR-CU (pos.2 0,W,R,T,A,C,D,E)
- 17 Available up to max. 250°C. Not for M30x1.5 (pos.6 E), vane (pos.10 M), flange sealings (pos.22). The option does not automatically implement a food conform design (food conform gaps and radiuses).
- 18 Certificate only valid with the use of the "flush welding socket". With pos.29a this socket must be manufactured on site.
Available up to max. 250°C. Only for G 1 1/2" (pos.6 A). Not with vane pos.10 K, P,S,M,Y. Only vane D,R,J can be inserted through the flush welding socket. RN 3002/6002 only with bearing at tube end (pos 32x). Not in combination with options pos.15, 22, 24, 29y, 30, 31, 36, 39.
- 19 Available for CE (pos.2 0). Process connection and material as choosen in pos.6 and 7.
- 20 Available for temperatures up to 250°C. Process connection as choosen in pos.6. Not with material process connection alu (pos.7 1).
- 21 Available for length L>300mm (pos.8 Z).
- 22 Available for CE (pos.2 0). Without connection of stranded wires for installation and internal terminals (standard) or according to customer specification.
- 23 Available for extension 100mm (pos.8,A) and 1.4305 (pos.9,3).

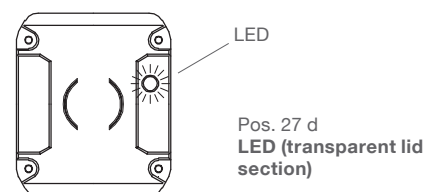
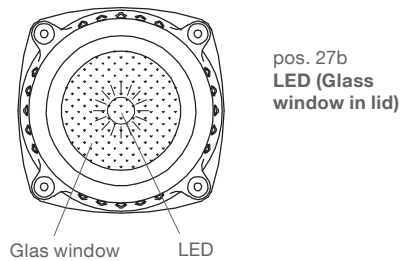
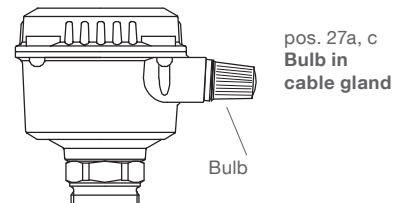
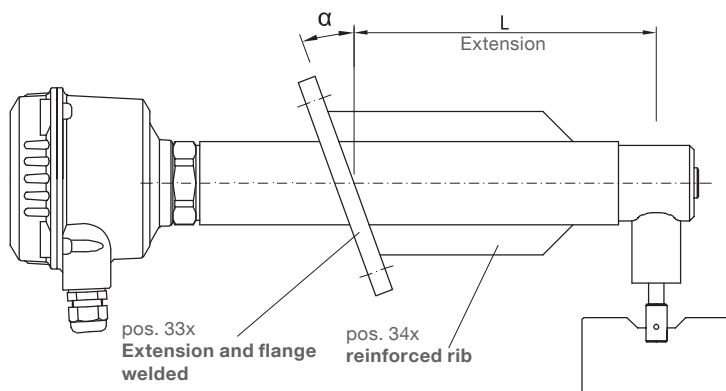
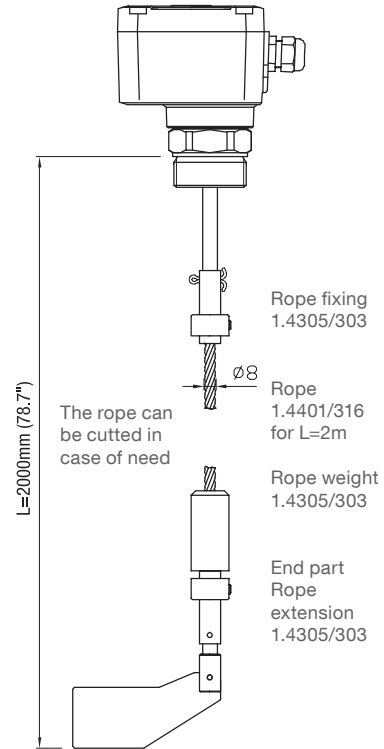
Options



pos. 36
Kit "pendulum shaft"

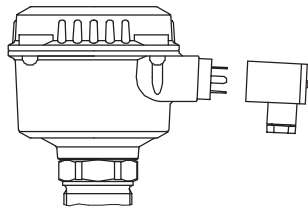
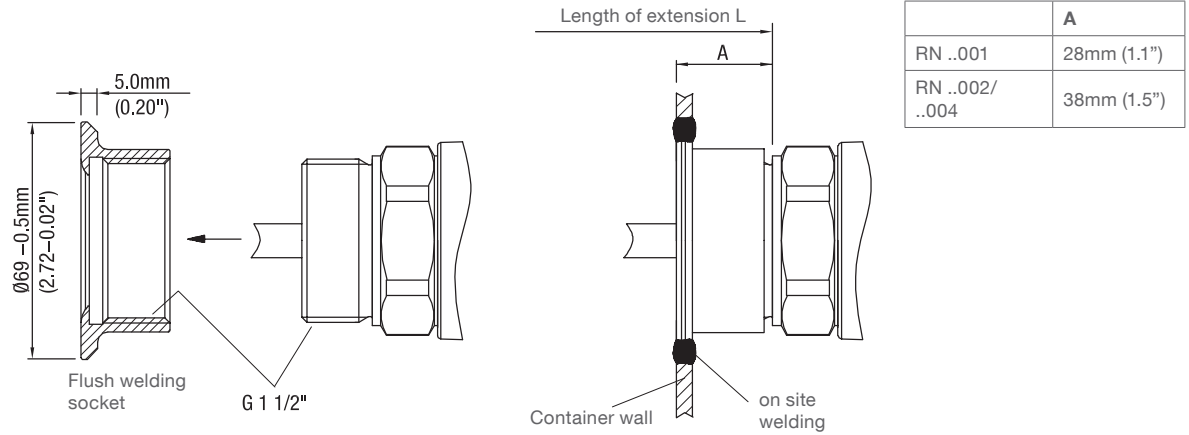


pos. 39
Kit „rope extension“

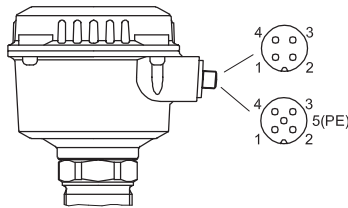


Options

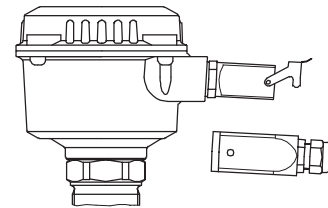
Pos. 29
 EHEDG approval



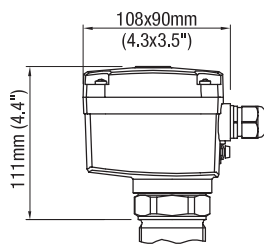
Pos. 35x
Valve connector
 Enclosure plastic
 Protection IP65



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

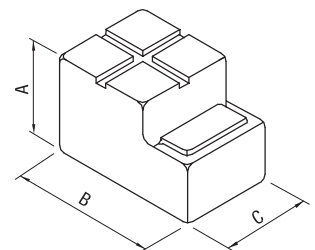


Pos. 35c
Plug Han 4A
 Enclosure zinc
 Protection IP65



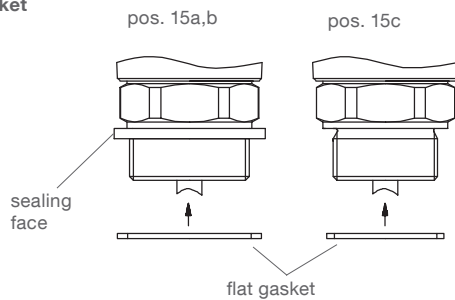
Pos. 16a
 Material of housing
 Plastics PA6

pos. 21x
Weather protection cover



	RN 3000	RN 6000
A	100mm (3.9")	130mm (5.1")
B	165mm (6.5")	200mm (7.9")
C	95mm (3.7")	125mm (4.9")

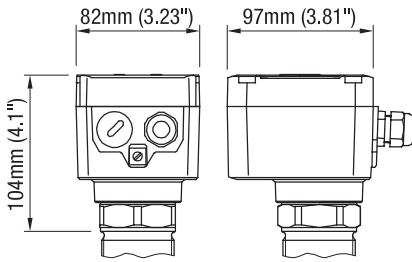
Pos. 15
Flat gasket



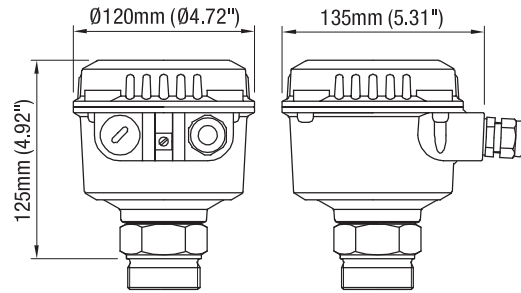
Dimensions

Housing versions

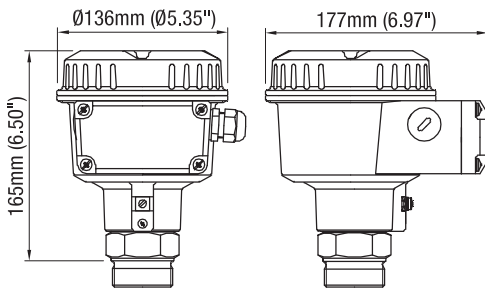
Series RN 3000
Standard



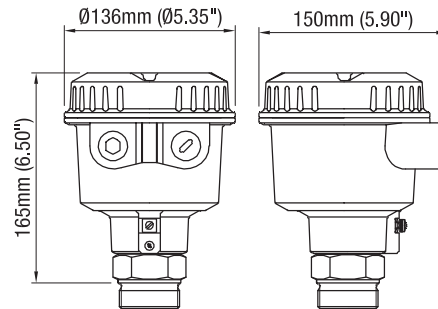
Series RN 6000
Standard



Series RN 6000
de explosionproof with increased
safety terminal box

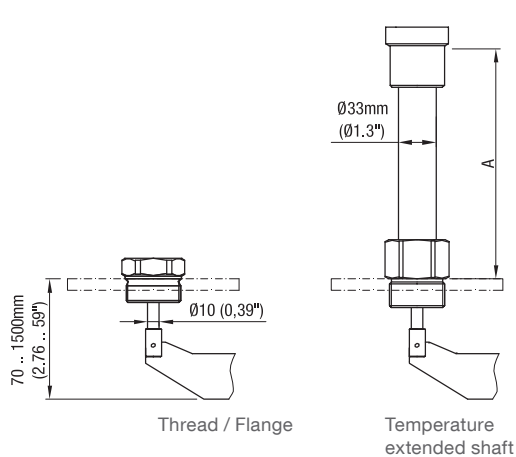


Series RN 6000
d flameproof /explosionproof



Extensions

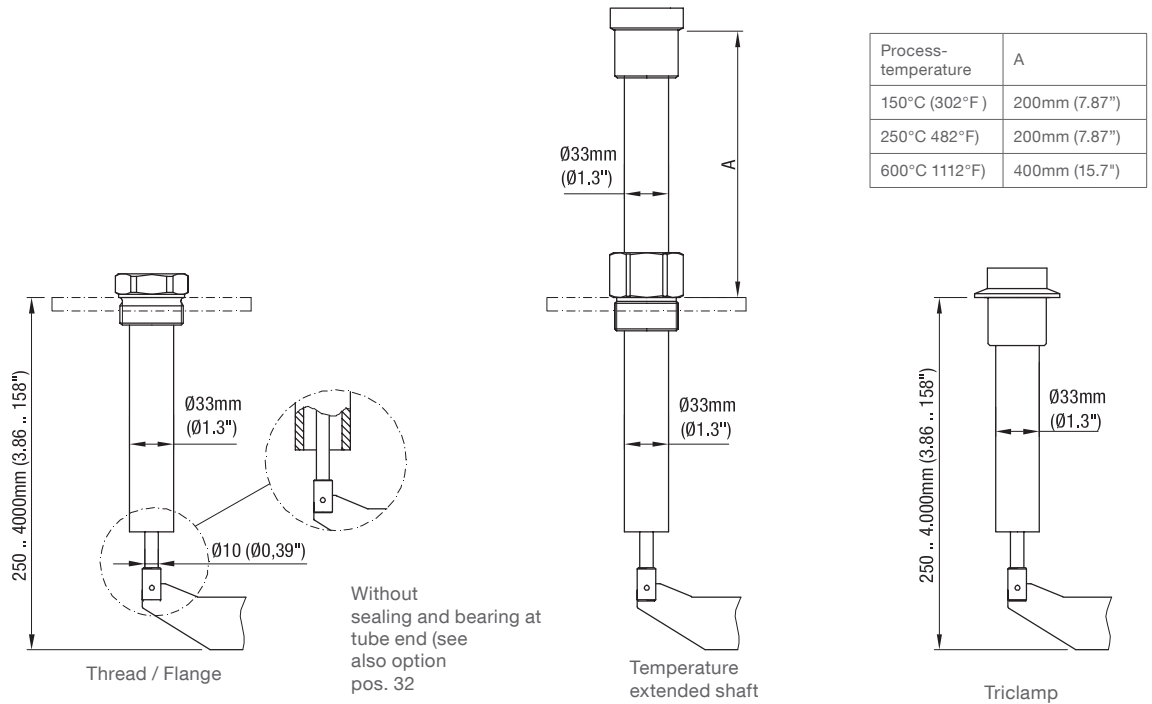
RN ..001



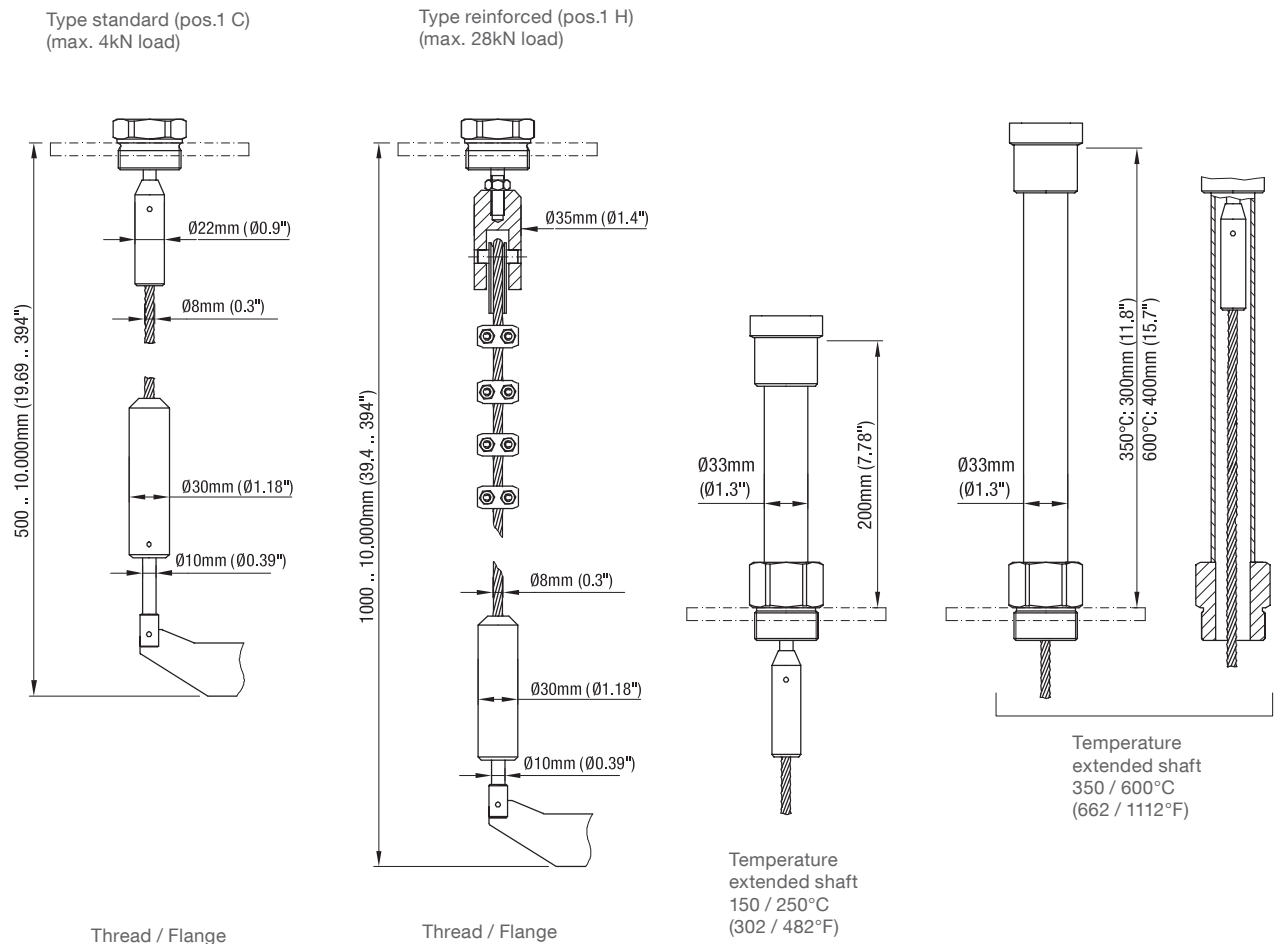
Process-temperature	A
150°C (302°F)	200mm (7.87")
250°C (482°F)	200mm (7.87")
350°C (662°F)	300mm (11.8")
600°C (1112°F)	400mm (15.7")

Dimensions

RN ..002

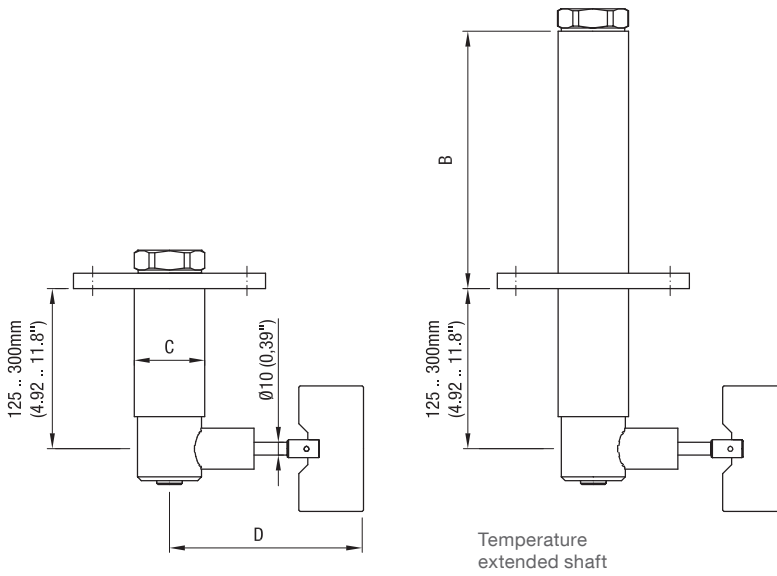


RN ..002 rope



Dimensions

RN ..003

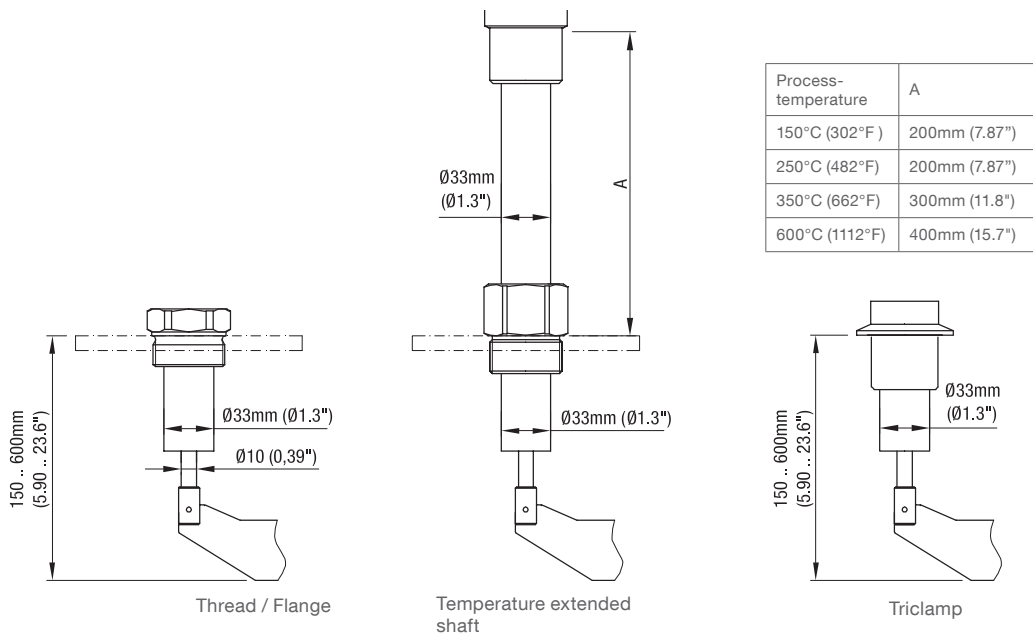


Process temperature	B
80°C (176°F) 0.8 bar (11.6psi)	10mm (0.39")
80°C (176°F) 5/ 10bar (73/ 145psi)	75mm (2.95")
150/ 250°C (302/ 482°F) 0.8/5/10 bar (11.6/73/145psi)	210mm (8.27")

Material	C
steel	ø55mm (2.17")
aluminium	ø60mm (2.36")

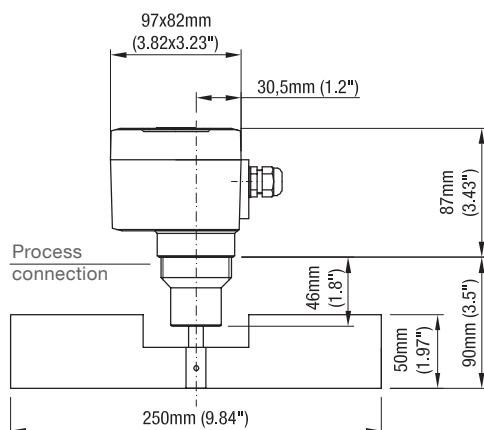
Vane	D
50mm x ..mm (1.97" x ..")	139mm (5.47")
98mm x ..mm (3.86" x ..")	187mm (7.36")

RN ..004



Process-temperature	A
150°C (302°F)	200mm (7.87")
250°C (482°F)	200mm (7.87")
350°C (662°F)	300mm (11.8")
600°C (1112°F)	400mm (15.7")

RN 3005

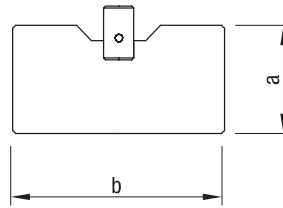


Dimensions

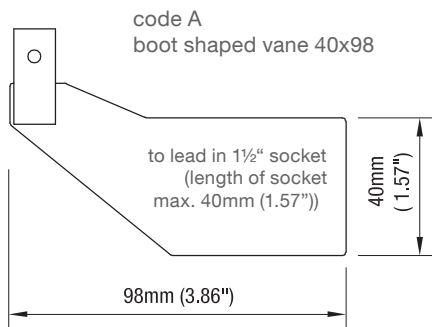
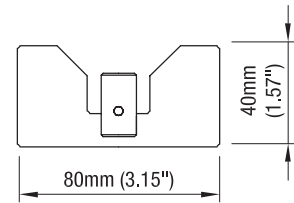
Measuring vanes

code	type	a	b
B	rectangular	50mm (1.97")	98mm (3.86")
C	rectangular	50mm (1.97")	150mm (5.90")
E	rectangular	50mm (1.97")	250mm (9.84")
F	rectangular	98mm (3.86")	98mm (3.86")
G	rectangular	98mm (3.86")	150mm (5.90")
I	rectangular	98mm (3.86")	250mm (9.84")

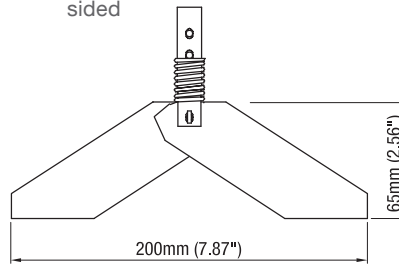
code B,C,E,F,G,I
 rectangular vane



code P
 notched 40x80

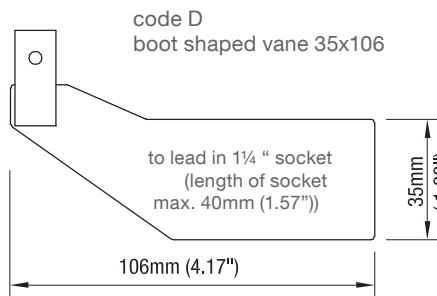
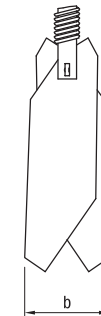


code K
 hinged vane 98x200 double
 sided

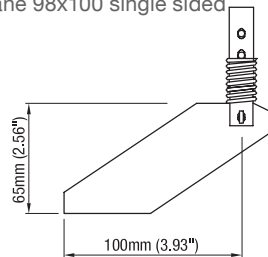


b=37mm (1,46")
 for 1½" / 1¼"

b=28mm (1,1")
 for 1" / M32x1,5

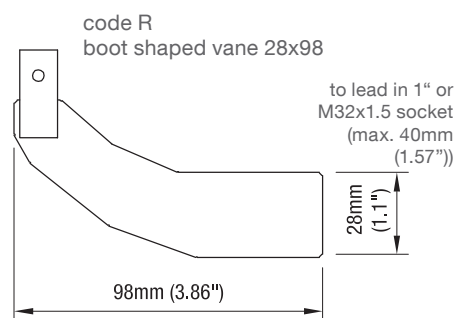


code S
 hinged vane 98x100 single
 sided

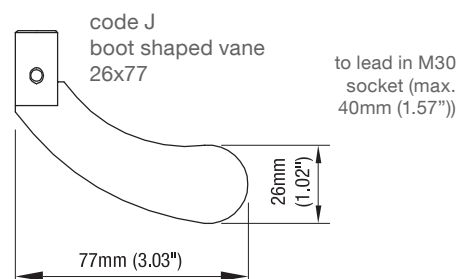
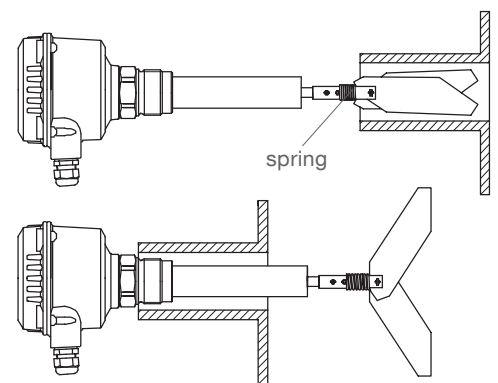


b=37mm (1,46")
 für 1½" / 1¼"

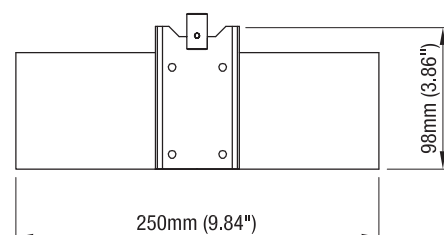
b=28mm (1,1")
 for 1" / M32x1,5



Insertion of the hinged vane
 through a long socket



code M
 rubber vane 98x250



Dimensions

Sensitivity The table shows approximate values for the minimum densities, at which a normal function should be possible.

Vane	*Minimum density in g/l = kg/m ³ (lb/ft ³) (without guarantee)			
	Vane completely covered with bulk material		Bulk material covers vane up to 100mm (3.93")	
	Spring adjustment		Spring adjustment	
	fine	medium (factory setting)	fine	medium (factory setting)
Boot shaped vane 40x98	200 (12)	300 (18)	100 (60)	150 (9)
Boot shaped vane 35x106	200 (12)	300 (18)	100 (60)	150 (9)
Boot shaped vane 28x98	300 (18)	500 (30)	150 (9)	200 (12)
Boot shaped 26x77	350 (21)	560 (33)	200 (12)	250 (15)
Vane 50x98	300 (18)	500 (30)	150 (9)	250 (15)
Vane 50x150	80 (4.8)	120 (7.2)	40 (2.4)	60 (3.6)
Vane 50x250	30 (1.8)	50 (3)	15 (0.9)	25 (1.5)
Vane 98x98	100 (60)	150 (9)	50 (3)	75 (4.5)
Vane 98x150	30 (1.8)	50 (3)	15 (0.9)	25 (15)
Vane 98x250	20 (1.2)	30 (1.8)	15 (0.9)	15 (0.9)
Hinged vane 98x200 b=37 double sided	70 (4.2)	100 (60)	35 (2.16)	50 (3)
Hinged vane 98x200 b=28 double sided	100 (60)	150 (9)	50 (3)	75 (4.5)
Hinged vane 98x100 b=37 single sided	200 (12)	300 (18)	100 (60)	150 (9)
Hinged vane 98x100 b=28 single sided	300 (18)	500 (30)	150 (9)	250 (15)

The above mentioned data is a guideline and is for loose, non compacted material.

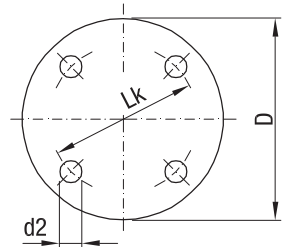
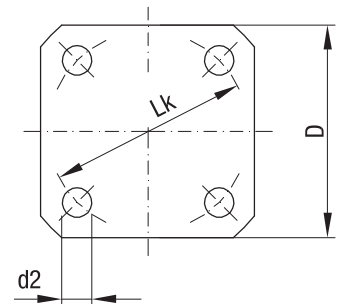
During the filling the bulk density can change (e. g. for fluidised material).

*For versions with option 26 (heating of housing) the above mentioned data must be multiplied by 1.5.

Dimensions / Detailed Ex-markings

Flanges

Code	Type	Number of holes	d2	Lk	D	T (thickness)
H	flange 150x150	4	18mm (0.71")	170mm (6.69")	150mm (5.90")	10mm (0.39")
I	flange 150x150	4	14mm (0.55")	170mm (6.69")	150mm (5.90")	10mm (0.39")
K	flange DN32 PN6	4	14mm (0.55")	90mm (3.54")	120mm (4.72")	14mm (0.55")
N	flange DN 50 PN16	4	18mm (0.71")	125mm (4.92")	165mm (6.50")	18mm (0.71")
L	flange DN100 PN6	4	18mm (0.71")	170mm (6.69")	210mm (8.27")	16mm (0.63")
M	flange DN100 PN16	8	18mm (0.71")	180mm (7.09")	220mm (8.66")	20mm (0.79")
S	flange 2" 150lbs	4	19.1mm (0.75")	120.7mm (4.75")	152.4mm (6.01")	19.1mm (0.75")
T	flange 3" 150lbs	4	19.1mm (0.75")	152.4mm (6.01")	190.5mm (7.5")	23.9mm (0.94")
U	flange 4" 150lbs	8	19.1mm (0.75")	190.5mm (7.5")	228.6mm (9")	23.9mm (0.94")



Detailed Ex-markings

pos. 2	Certificate	Housing
0	CE	Standard
W	ATEX II 1/2D Ex t IIIC T! Da/Db IP6X	Standard
R	ATEX II 2G Ex de IIC T! Gb and ATEX II 1/2D Ex t IIIC T! Da/Db IP6X	de
T	ATEX II 2G Ex d IIC T! Gb and ATEX II 1/2D Ex t IIIC T! Da/Db IP6X	d
A	IEC-Ex t IIIC T! Da/Db IP6X	Standard
C	IEC-Ex de IIC T! Gb and t IIIC T! Da/Db IP6X	de
D	IEC-Ex d IIC T! Gb and t IIIC T! Da/Db IP6X	d
M	FM / CSA general purpose	Standard
N	FM / CSA DIP Cl. II, III Div. 1 Gr. E,F,G CSA Ex DIP A20/21	Standard
S	FM Cl. I Zone 1 AEx de IIC and FM / CSA DIP Cl. II,III Div. 1 Gr. E,F,G CSA Cl. I Zone 1 Ex de IIC and CSA Ex DIP A20/21	de
U	FM XP Cl. I,II,III Div. 1 Gr. B-G and FM Cl. I Zone 1 AEx d IIC CSA XP Cl. I,II,III Div. 1 Gr. B-G CSA Cl. I Zone 1 Ex d IIC and CSA Ex DIP A20/21	d
E	TR-CU DIP A20/ A21	Standard

Electrical installation Series RN 3000

Version:

- AC
- DC
- **Universal voltage**

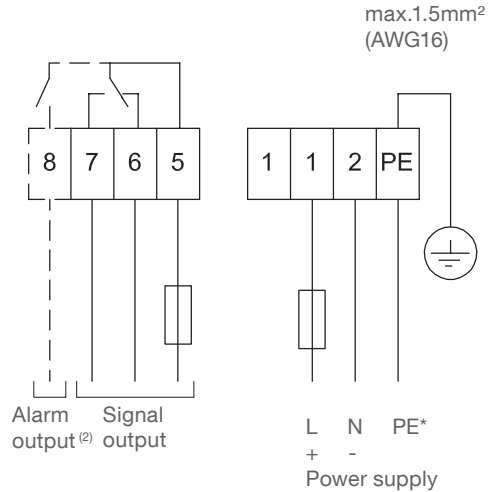
Power supply:

- **AC version:**
 24V or 48V or 115V or 230V 50/60Hz max. 4VA
 All voltages $\pm 10\%$ ⁽¹⁾
 Supply voltage as selected.
 External fuse: max 10A, fast or slow, HBC, 250V
- **DC version:**
 24V DC $\pm 15\%$ ⁽¹⁾ max. 2.5W
 External fuse: not required
- **Universal voltage:**
 24V DC $\pm 15\%$ ⁽¹⁾ max.4W
 22 .. 230V 50/60Hz $\pm 10\%$ ⁽¹⁾ max.10VA
 External fuse: not required

⁽¹⁾ including $\pm 10\%$ of EN 61010

Signal and alarm output:

Micro switch or relay, SPDT contact
 max. 250V AC, 2A, 500VA ($\cos\phi = 1$)
 max. 300V DC, 2A, 60W
 External fuse: max 10A, fast or slow, HBC, 250V



⁽²⁾ With option Fail safe alarm (rotation control)
 Contact open when de-energised

Version:

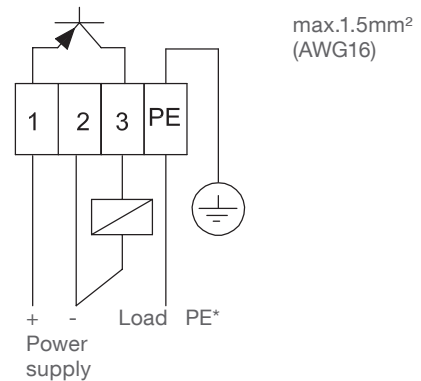
- PNP

Power supply:

24V DC $\pm 15\%$ ⁽¹⁾
⁽¹⁾ including $\pm 10\%$ of EN 61010
 Input current: max. 0.6A

Signal output:

Load max.0.4A
 Output voltage equal to input voltage, drop <2,5V
 Open collector
 Protected against short circuit and overload



*** Protection against static charge:**

The PE terminal of the unit must be grounded to avoid static charging of the unit.
 This is particularly important for applications with pneumatic conveying.

Electrical installation Series RN 6000

Version:

- AC
- DC

Power supply:

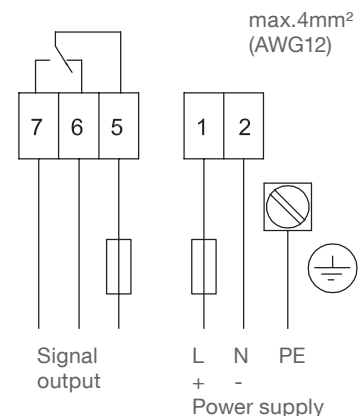
- **AC version:**
 24V or 48V or 115V or 230V 50/60Hz max. 4VA
 All voltages $\pm 10\%$ ⁽¹⁾
 Supply voltage as selected.
 External fuse: max 10A, fast or slow, HBC, 250V

- **DC version:**
 24V DC $\pm 15\%$ ⁽¹⁾ max. 2.5W
 External fuse: not required

⁽¹⁾ including $\pm 10\%$ of EN 61010

Signal output:

Micro switch, SPDT contact
 max. 250V AC, 5A, non inductive
 max. 30V DC, 4A, non inductive
 External fuse: max 10A, fast or slow, HBC, 250V



Version:

- Universal voltage
 (ohne SIL 2)

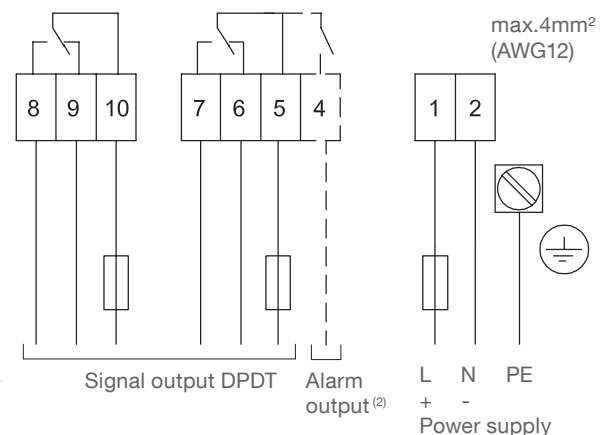
Power supply:

24V DC $\pm 15\%$ ⁽¹⁾ max.4W
 22 .. 230V 50/60Hz $\pm 10\%$ ⁽¹⁾ max.10VA

⁽¹⁾ including $\pm 10\%$ of EN 61010

Signal and alarm output:

Relay DPDT contact
 max. 250V AC, 5A, non inductive;
 max. 30V DC, 4A, non inductive
 External fuse: max 10A, fast or slow, HBC, 250V



⁽²⁾ With option Fail safe alarm (rotation control)
 Contact open when de-energised

Version:

- Universal voltage
 SIL 2

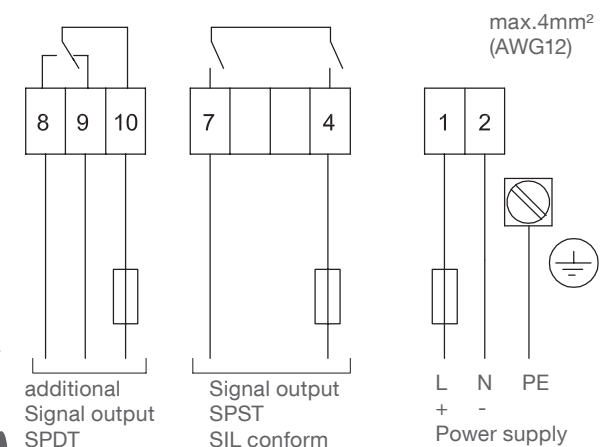
Power supply:

24V DC $\pm 15\%$ ⁽¹⁾ max.4W
 22 .. 230V 50/60Hz $\pm 10\%$ ⁽¹⁾ max.10VA

⁽¹⁾ including $\pm 10\%$ of EN 61010

Signal output:

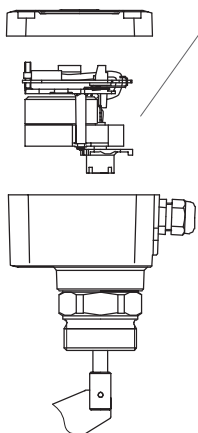
Relay SPST/ SPDT
 max. 250V AC, 5A, non inductive;
 max. 30V DC, 4A, non inductive
 External fuse: max 10A, fast or slow, HBC, 250V



* Protection against static charge:

- The PE terminal of the unit must be grounded to avoid static charging of the unit.
- This is particularly important for applications with pneumatic conveying.

Spare parts



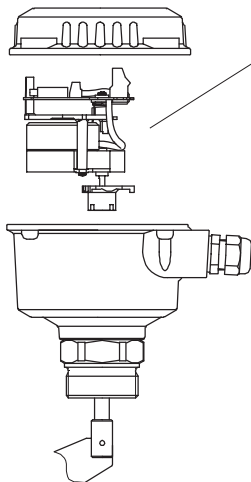
Series RN 3000 Motor / PCB

Order code			Voltage	Motor Speed	Spare part Article number	
Pos. 5 Power supply	Pos. 25x Fail safe alarm	Pos. 26x Heating of housing				
A	-	-	230V AC	1/min	gm402000	•
S	-	-		5/min	gm403000	•
B	-	-	115V AC	1/min	gm402005	•
T	-	-		5/min	gm403005	•
C	-	-	48V AC	1/min	gm402015	•
U	-	-		5/min	gm403015	•
D	-	-	24V AC	1/min	gm402010	•
V	-	-		5/min	gm403010	•
E	-	-	24V DC	1/min	gm402020	•
W	-	-		5/min	gm403020	•
G	-	-	24V DC PNP	1/min	gm402026*	•
H	-	-		5/min	gm403026*	•
F	-	-	24V DC / 22 ... 230V AC Universal voltage	1/min	gm402038*	•
F	x	-		1/min	gm404038**	•
F	-	x		1/min	gm402039*	•
F	x	x		1/min	gm404039**	•
X	-	-		5/min	gm403038*	•
X	x	-		5/min	gm405038**	•
X	-	x		5/min	gm403039*	•
X	x	x		5/min	gm405039**	•
M	-	-	230V AC/115V AC/24V DC Mutivoltage	1/min	gm402025	•
Y	-	-		5/min	gm403025	•

* This module requires a higher housing lid than the other modules. Therefore it can not be mounted into a housing, where a different module was present before.

** This module requires a sensor to detect the motor rotation, which is mounted inside the housing. Therefore it can not be mounted into a housing where a different module was present before.

Spare parts



Series RN 6000 Motor / PCB

Equipment code				Voltage	Motor Speed	Spare part Article number	
Pos. 5 Power supply	Pos. 25b SIL 2**	Pos. 25x Fail safe alarm	Pos. 26x Heating of housing				
A	-	-	-	230V AC	1/min	gm412000	•
S	-	-	-		5/min	gm413000	•
B	-	-	-	115V AC	1/min	gm412005	•
T	-	-	-		5/min	gm413005	•
C	-	-	-	48V AC	1/min	gm412015	•
U	-	-	-		5/min	gm413015	•
D	-	-	-	24V AC	1/min	gm412010	•
V	-	-	-		5/min	gm413010	•
E	-	-	-	24V DC	1/min	gm412020	•
W	-	-	-		5/min	gm413020	•
F	-	-	-	24V DC / 22 ... 230V AC Universal voltage	1/min	gm412038	•
F	-	x	-		1/min	gm414038*	•
F	-	-	x		1/min	gm412039	•
F	-	x	x		1/min	gm414039*	•
X	-	-	-		5/min	gm413038	•
X	-	x	-		5/min	gm415038*	•
X	-	-	x		5/min	gm413039	•
X	-	x	x		5/min	gm415039*	•
M	-	-	-	230V AC/115V AC/ 24V DC Mutivoltage	1/min	gm410000	•
Y	-	-	-		5/min	gm420000	•

* This module requires a sensor to detect the motor rotation, which is mounted inside the housing. Therefore it can not be mounted into a housing where a different module was present before.

** Moduls for units with SIL certificate must be replaced by the manufacturer.

Spare parts

	Fitting to unit / model code	Description see page	Spare part Article number	
Measuring vane (delivery incl. cotter pin)				
Boot shaped 40 x 98mm (1.4305)	Pos.10 A mit 9.3	P27	fg400605	•
Boot shaped 40 x 98mm (1.4404)	Pos.10 A mit 9.7	P27	fg400502	•
Boot shaped 35 x 106mm (1.4305)	Pos.10 D mit 9.3	P27	fg400508	•
Boot shaped 35 x 106mm (1.4404)	Pos.10 D mit 9.7	P27	fg400509	•
Boot shaped 28 x 98mm	Pos.10 R	P27	fg400603	•
Boot shaped 26 x 77mm	Pos.10 J	P27	fg400607	•
Rectangular 50 x 98mm	Pos.10 B	P27	fg400610	•
Rectangular 50 x 150mm	Pos.10 C	P27	fg400620	•
Rectangular 50 x 250mm	Pos.10 E	P27	fg400630	•
Rectangular 98 x 98mm (1.4305)	Pos.10 F with 9.3	P27	fg400635	•
Rectangular 98 x 98mm (1.4404)	Pos.10 F with 9.7	P27	fg400032	•
Rectangular 98 x 150mm	Pos.10 G	P27	fg400637	•
Rectangular 98 x 250mm	Pos.10 I	P27	fg400650	•
Hinged vane 98 x 200mm double sided (37mm for G 1 1/2" and G 1 1/4") (1.4305,max.250°C)	Pos.10 K with 9.3	P27	fg400081	•
Hinged vane 98 x 200mm double sided (37mm for G 1 1/2" and G 1 1/4") (1.4404,max.250°C)	Pos.10 K with 9.7	P27	fg400087	•
Hinged vane 98 x 200mm double sided (28mm for G 1" and M32) (1.4305,max.250°C)	Pos.10 K with 9.3	P27	fg400085	•
Hinged vane 98 x 100mm single sided (37mm for G 1 1/2" and G 1 1/4") (1.4305,max.250°C)	Pos.10 S with 9.3	P27	fg400084	•
Hinged vane 98 x 100mm single sided (37mm for G 1 1/2" and G 1 1/4") (1.4404,max.250°C)	Pos.10 S with 9.7	P27	fg400088	•
Hinged vane 98 x 100mm single sided (28mm for G 1" and M32) (1.4305,max.250°C)	Pos.10 S with 9.3	P27	fg400086	•
Rubber vane 98 x 250mm	Pos.10 M	P27	fg400565	•
Notched 40 x 80mm	Pos.10 P	P27	fg400614	•
VT vane	Pos.10 N	P18	fg400026	•

Extension parts

Extension shaft ø10mm: (delivery incl. fixing parts)	by 50mm	RN 3001/6001	-	we400005	•
	by 100mm	RN 3001/6001	-	we401023	•
	by 150mm	RN 3001/6001	-	we401025	•
	by 200mm	RN 3001/6001	-	we401026	•
Pendular shaft L=500mm (delivery incl. fixing parts)		RN 3001/6001/pos.36	P22	zu400131	•
Pendular shaft L=1000mm (delivery incl. fixing parts)		RN 3001/6001/pos.36	P22	zu400132	•
Kit rope extension L=2000mm (implements 2m single rope (zu400729) and rope fixing parts (zu400110))		RN 3001/6001/Pos.39	P22	zu400100	•
Single rope ø8mm, tail welded, price per meter		RN 3002/6002-rope RN3001/RN6001/Pos.39	P25 P22	zu400729	•
Rope fixing parts, usable for kit rope extension		RN3001/RN6001/Pos.39	P22	zu400110	•
Rope weight ø30mm (delivery incl. fixing parts)		RN 3002/6002-rope	P25 below	we400720	•
Rope holder ø22mm (for version Pos.1C) (delivery incl. fixing parts)		RN 3002/6002-rope	P25 below	we400700	•

Spare parts

Fitting to unit / model code	Description see page	Spare part Article number
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Hexagon nut

1 1/2" aluminium	Pos.6 A	P22	zu300170	•
1 1/2" stainless steel 1.4305	Pos.6 A	P22	zu300180	•
1 1/4" aluminium	Pos.6 B	P22	zu300171	•
1 1/4" stainless steel 1.4305	Pos.6 B	P22	zu300181	•
1" aluminium	Pos.6 C	P22	zu200150	•
1" stainless steel 1.4305	Pos.6 C	P22	zu200160	•
M32 aluminium	Pos.6 D	P22	zu200120	•
M32 stainless steel 1.4305	Pos.6 D	P22	zu200130	•
M30 aluminium	Pos.6 E	P22	zu200170	•
M30 stainless steel 1.4305	Pos.6 E	P22	zu200180	•

Weather protection cover

RN 3000 (for lower housing, dimension H = 66mm)	Pos.21 x	P23	zu300230	•
RN 3000 (for higher housing, dimension H = 70mm)	Pos.21 x	P23	zu300232	•
RN 6000 standard housing	Pos.21 x	P23	zu300240	•

