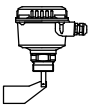
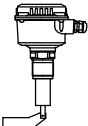
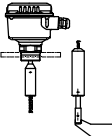
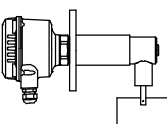
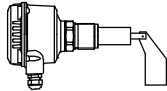
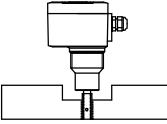


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Subject to change.

All dimensions in mm (inches).

All prices in Euro, excluding VAT.

All prices are EXW Betzigau, excluding packaging costs.

Valid: From 01.04.2011 until 31.03.2012, 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
- Die-casted housing aluminium
- Very robust and reliable sensors
- Wide range of applications, no maintenance
- Full-, demand-, empty detector
- ATEX, IEC-Ex, FM, CSA Gas Ex and Dust Ex approvals
- GOST-R Ex and RTN Ex Dust Ex approval

Series	RN 3000	RN 6000
	ATEX / IEC-Ex / GOST-R Ex / RTN Ex approval Small housing Sensitivity > 15 g/l (0.9lb/ft ³)	ATEX / IEC-Ex / FM / CSA approval Spacious housing Sensitivity > 15 g/l (0.9lb/ft ³)

Housing	Standard	Standard	d	de
				

RN ..001 Short extension length	RN 3001 	RN 6001 
	RN 3002 	RN 6002 

Overview

RN ..002-rope
 Rope extension

RN 3002-rope

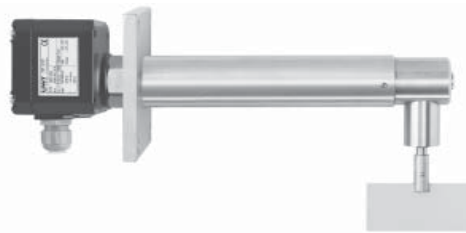


RN 6002-rope

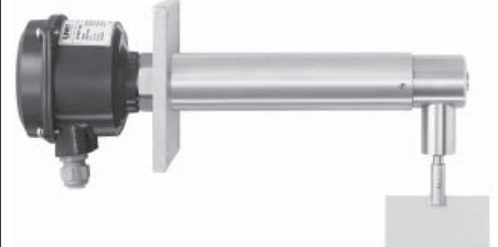


RN ..003
 Angled extension

RN 3003



RN 6003



RN ..004
 Pipe extension
 horizontal

RN 3004



RN 6004



RN 3005
 Extra short version
 for use in
 loading bellow

RN 3005



Specifications

Series		RN 3000	RN 6000	
Approvals	CE	•	•	
	ATEX / IEC-Ex:			
	Zone 20/21	Dust Ignition Proof	•	•
	Zone 1	Flameproof / Increased Safety		•
	FM / CSA:			
	General purp.			•
	Cl. II, III Div. 1	Dust Ignition Proof		•
	Cl. I Div. 1	Explosionproof		•
	Zone 1	Flameproof / Increased Safety		•
	GOST-R Ex / RTN Ex:			
	Dust Ignition Proof	•		
Electronics	Power supply			
	AC version	24V or 48V or 115V or 230V AC	•	•
	DC version	24V DC	•	•
	Multivoltage	24V DC / 115V AC / 230V AC	•	•
	Universal voltage	24V DC / 20...230V AC	•	
	Output signal:			
	Microswitch or Relais with SPDT contact. Adjustable delay for version with universal voltage.	•	•	
	Microswitch DPDT contact (option pos.25y)		•	
Technical data	Ambient temperature	-20 .. +60°C (-4 .. +140°F) -40 .. +60°C (-40 .. +140°F) with heating		
	Process connection material	Aluminium or 1.4305 (SS 303) or 1.4404 (316L)		
	Material of measuring vane and shaft	1.4301 (SS 304) or 1.4305 (SS 303) or 1.4404 (316L)		

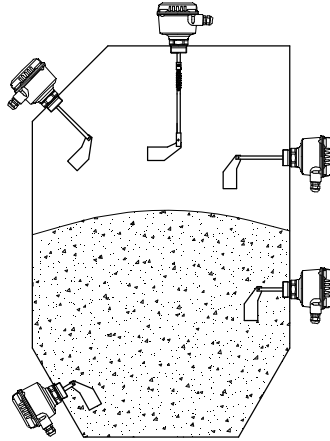
Specifications

		RN 3000	RN 6000	
Extensions	RN ..001	Process temperature	-40/ -25 .. +80 /150 /250 /600°C (-40/-13 .. +176 /302 /482 /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	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°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	250 .. 3.000mm (9.84 .. 118") / 10.000mm (394") 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 /600°C (-40/-13 .. +176 /302 /482 /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

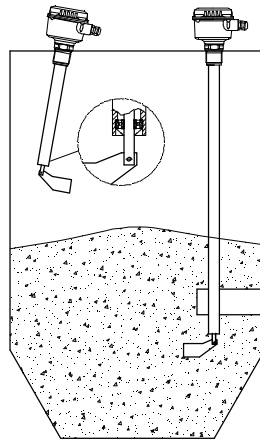
RN..001 Short extension length



Extension for vertical instalation
with pendulum shaft

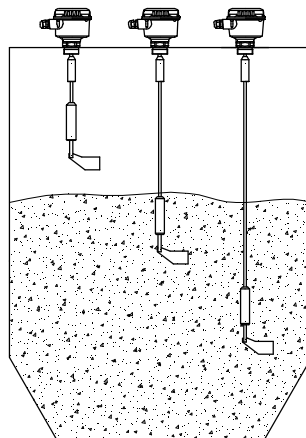
Horizontal mounting:
Boot shaped vane
recommended
(min. mech. loading as
the vane aligns itself to
the material flow).

RN..002 Pipe extension vertical



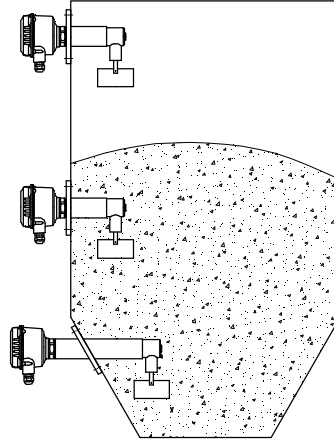
Deviation up to max.
10° from vertical
instalation only with
option „bearing at
tube end“ possible

RN..002 - rope Rope extension

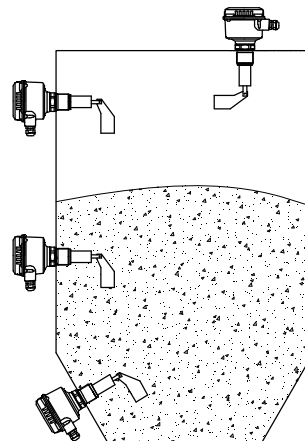


Applications

RN ..003
Angled extension

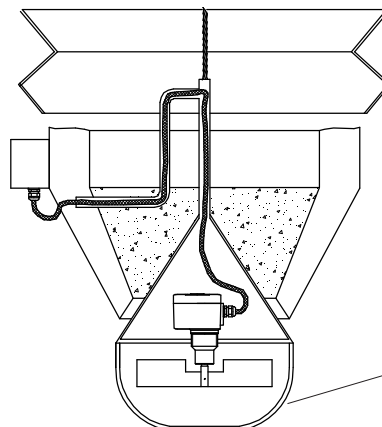


RN ..004
Pipe extension horizontal



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 28)

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	Expulsion Proof / Dust Ignition Proof
	CSA A 20/21		

pos. 3 **Process temperature**

- 1 max. + 80°C (176°F)
- 2 max. + 150°C (302°F)
- 3 max. + 250°C (482°F) (220°C (428°F) for RN 3001 ATEX)
- 5 max. + 600°C (1112°F) (not for Ex, only with pos. 4.1)

pos. 4 **Process overpressure**

- 1 max. 0,8 bar (11,6psi) (0,1bar (14.5psi) with Pos. 3.5)
- 2 max. 5 bar (73psi)
- 3 max. 10 bar (145psi)

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) 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
- RN 6002

pos. 2 **Certificate** (detailed Ex-markings: see page 28)

Certificate	Zone / Div		Protection method
	Dust	Gas	
O 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		

RN ..002-rope Rope extension

RN 3002 - rope



RN 6002 - rope



Housings RN 6002-rope



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 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 28)

Certificate	Zone / Div		Protection method
	Dust	Gas	
O 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	

RN ..002-rope Rope extension

• •	pos. 3	Process temperature	
• •		1 max. + 80°C (176°F)	.....
• •		2 max. + 150°C (302°F)	.....
• •		3 max. + 250°C (482°F)	.....
• •		5 max. + 600°C (1112°F)	..... (not for Ex, only with pos. 4.1)
• •	pos. 4	Process overpressure	
• •		1 max. 0.8 bar (11.6psi)	..... (0,1bar (14.5psi) 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
• •		F / X 24V DC / 20...230V AC universal voltage	..... Motor Speed: F=1/min X= 5/min
• •		M / Y 230V AC/115V AC/24V DC multivoltage	..... Motor Speed: M=1/min Y= 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))
• •		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))
• •		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	.....
• •	pos. 8	Length of extension "L"	
• •		Z price per 100mm (3.94") or part thereof (starting from 0mm)	.....
• •		min. 500mm (19.69") pos 1C / 1000mm (39.4") pos 1H; max. 10.000mm (394")	.....
• •		Y without rope (incl. rope fixing parts) (only with pos.1.C and pos.2.0)	.....
• •	pos. 10	Measuring vane	
• •		A boot-shaped* 40 x 98mm (1.57 x 3.86")	..... for 1 1/2" socket
• •		D boot-shaped* 35 x 106mm (1.38 x 4.17")	..... for 1 1/4" socket ("L"=16mm 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)	.....
• •		S hinged vane 98 x 100mm (3.86 x 3.93") single sided (L=10mm longer)	.....
• •		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

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

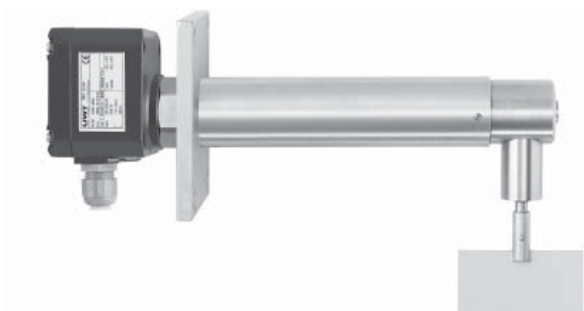
— **L =** **mm** ← **Order code**

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

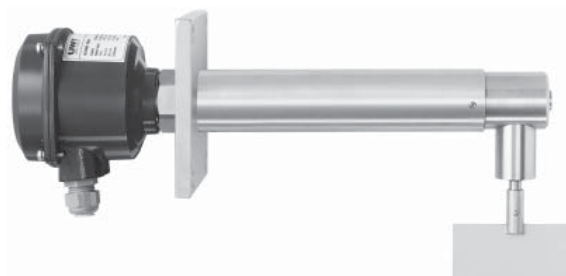
* maximum length of socket 40mm

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)	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

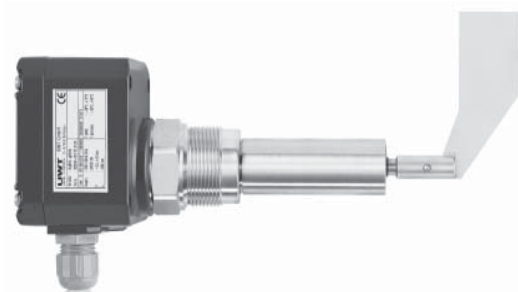
- RN 3003
- RN 6003

pos. 2 Certificate (detailed Ex-markings: see page 28)

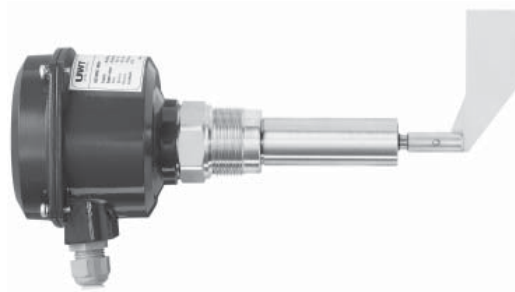
Certificate	Zone / Div		Protection method
	Dust	Gas	
0 CE	-	-	
W ATEX	Zone 20/21	-	Dust Ignition Proof
R ATEX	Zone 20/21	Zone 1	Flameproof / Increased Safety / Dust Ignition Proof
T ATEX	Zone 20/21	Zone 1	Flameproof / Dust Ignition Proof
A IEC-Ex	Zone 20/21	-	Dust Ignition Proof
C IEC-Ex	Zone 20/21	Zone 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	Exclusion Proof / Dust Ignition Proof
	CSA A 20/21		

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)	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 3004
- RN 6004

pos. 2 **Certificate** (detailed Ex-markings: see page 28)

Certificate	Zone / Div		Protection method
	Dust	Gas	
O 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	

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)	.....
• •		5 max. + 600°C (1112°F)	..... (not for Ex, only with pos. 4.1)
• •	pos. 4	Process overpressure	
• •		1 max. 0,8 bar (11,6psi)	..... (0,1bar (14.5psi) 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
• •		F / X 24V DC / 20...230V AC universal voltage	..... Motor Speed: F=1/min X= 5/min
• •		M / Y 230V AC/115V AC/24V DC multivoltage	..... Motor Speed: M=1/min Y= 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 Triclampe 2" (DN 50) ISO 2852	..... (max. 80°C)
• •		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)
• •		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)	.....
• •		7 stainless steel 1.4404 (316L)	..... (only with pos.7.7 and 10.A,D)
• •	pos. 10	Measuring vane	
• •		A boot-shaped*	40 x 98mm (1,57 x 3,86") for 1 1/2" socket (with pos.9.7 L=10mm longer)
• •		D boot-shaped*	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)
• •		S hinged vane	98 x 100mm (3,86 x 3,93") single sided (L= 10mm longer)
• •		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

	E								
--	----------	--	--	--	--	--	--	--	--

Position 1 2 3 4 5 6 7 8 9 10

← **Order code**

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

* maximum length of socket 40mm

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
•	W ATEX Zone 20/21 Dust Ignition Proof (ATEX II 1/2D)
•	A IEC-Ex Zone 20/21 Dust Ignition Proof (ta/tb IIIC)
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
•	F / X 24V DC / 20...230V AC universal voltage Motor Speed: F=1/min X= 5/min
•	M / Y 230V AC/115V AC/24V DC multivoltage Motor Speed: M=1/min Y= 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

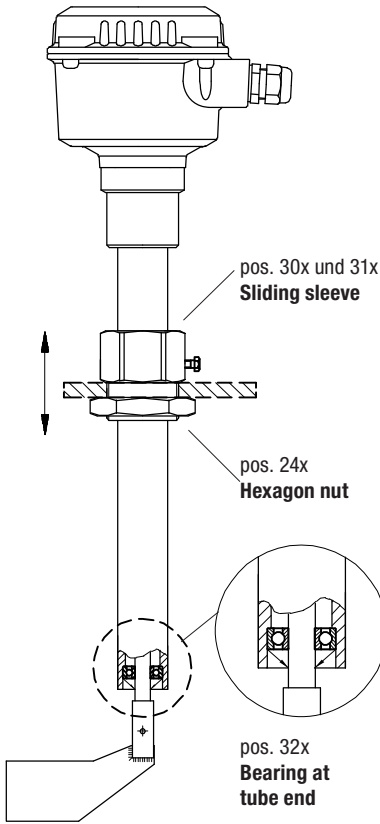
← **Order code**

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

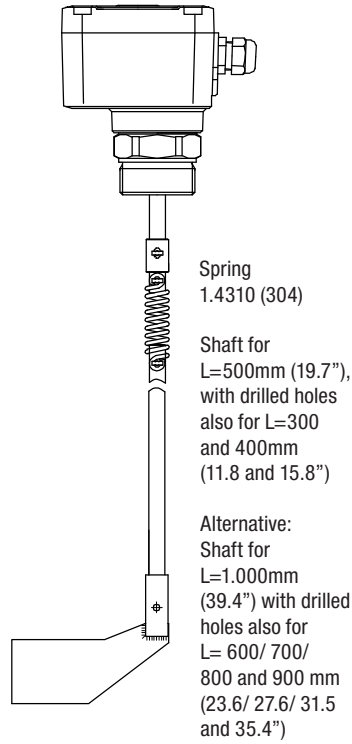
Options

RN 3001	RN 6001	RN 3002	RN 6002	RN 3002-ropo	RN 6002-ropo	RN 3003	RN 6003	RN 3004	RN 6004	RN 3005																																																
•	•	•	•	•	•			•	•	•	Pos. 15a	Flat gasket (max. 250°C) 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																																														
1	1	1	1	1	1	1	1	1	1	1	pos. 17a	Radial shaft sealing FPM (Viton)																																														
2	2	2	2	2	2	2	2	2	2	2	pos. 17b	PTFE (Teflon)																																														
3	3	3	3	3	3	•	•	3	3	•	pos. 18x	Stainless steel ball bearing for RN ..001/ RN ..002/ RN ..004/ RN ..005																																														
												for RN ..003																																														
4	4	4	4	4	4	4	4	4	4	4	pos. 21x	Weather protection cover																																														
												(for Ex, only approved for Zone 2 or 22 or 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																																																					
•	•	•	•	•	•	•	•	•	•	•	pos. 22a	* material stainless A2 **max. 250°C																																														
•	•	•	•	•	•	•	•	•	•	•	pos. 22b																																															
•	•	•	•	•	•	•	•	•	•	•	pos. 22c																																															
•	•	•	•	•	•	•	•	•	•	•	pos. 22d																																															
•	•	•	•	•	•	•	•	•	•	•	pos. 22e																																															
•	•	•	•	•	•	•	•	•	•	•	pos. 22f																																															
•	•	•	•	•	•			•	•	•	pos. 24a	Hexagon nut 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																																														
5	5	5	5	5	5	5	5	5	5	5	pos. 25x	Fail safe alarm: for power supply																																														
5	5	5	5	5	5	5	5	5	5	5		230V AC																																														
5	5	5	5	5	5	5	5	5	5	5		115V AC /48V AC /24V AC																																														
												24V DC																																														
	6	6	6	6	6	6	6	6	6	6	pos. 25y	Output signal DPDT																																														
7	7	7	7	7	7	7	7	7	7	7	pos. 26x	Heating of housing 2,5 watts for ambient/process temp. to -40°C (-40°F)																																														
8	8	8	8	8	8	8	8	8	8	8		for series RN 3000																																														
												for series RN 6000																																														
9	9	9	9	9	9	9	9	9	9	9	pos. 27a	Signal lamp Bulb in cable gland, 2W green																																														
9	9	9	9	9	9	9	9	9	9	9	Pos. 27c	Bulb in cable gland, 2W red																																														
10	10	10	10	10	10	10	10	10	10	10	pos. 27b	LED (glass window in lid)																																														
•	11	•	11	•	11	•	11	•	11	•	pos. 28x	Cable entry optionally available: Selection of the following options only necessary, if a deviation from the default cable gland / conduit is required:																																														
•	12	•	12	•	12	•	12	•	12	•	pos. 28d	M20x1,5 2x screwed cable gland																																														
•	•	•	•	•	•	•	•	•	•	•	pos. 28a	M20x1,5 1x screwed cable gland +1x blind plug																																														
•	•	•	•	•	•	•	•	•	•	•	pos. 28c	NPT 1/2" tapered ANSI B1.20.1 (1x conduit + 1x Ex-d blind plug)																																														
												NPT 3/4" tapered ANSI B1.20.1 (1x conduit + 1x Ex-d blind plug)																																														
13	13	13	13	13	13	13	13	13	13	13	pos. 29y	Food grade materials (in contact with process)																																														
												(with FDA conform sealing)																																														

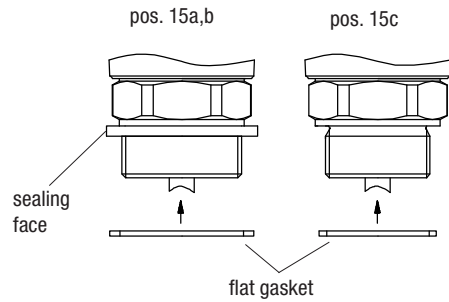
Options



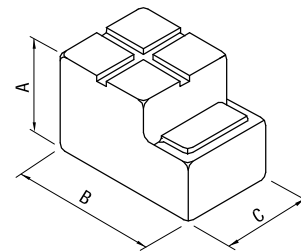
pos. 36
Kit "pendulum shaft"



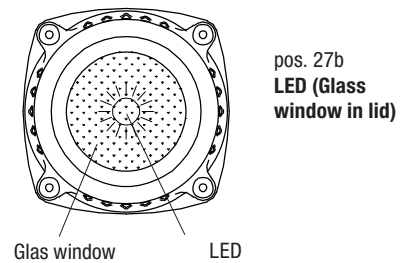
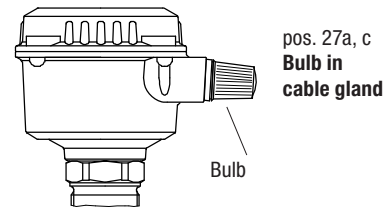
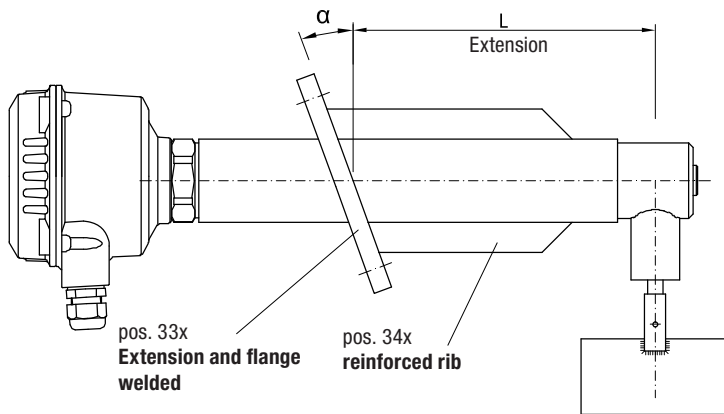
Pos. 15
Flat gasket



pos. 21x
Weather protection cover

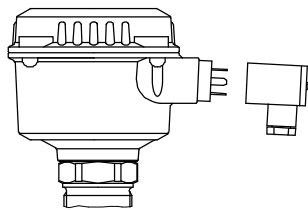
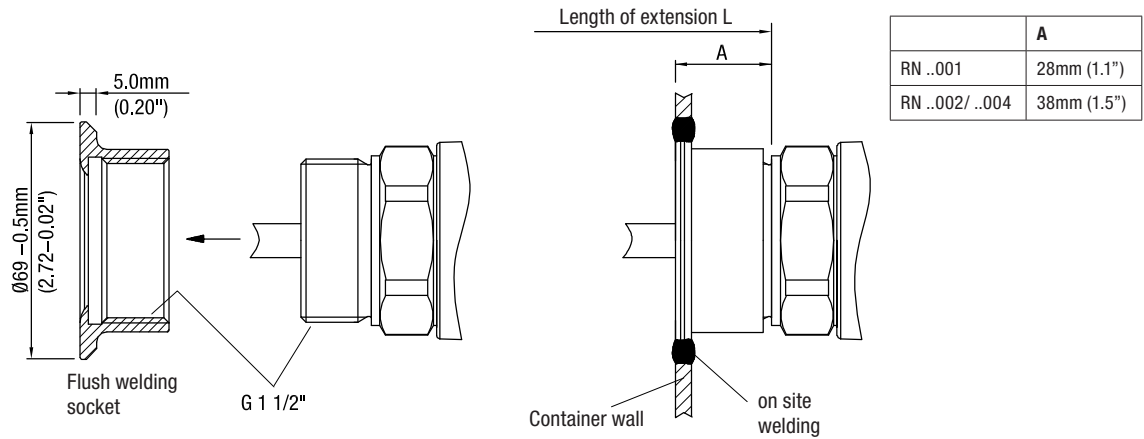


	RN 3000	RN 6000
A	100mm (3.94")	130mm (5.12")
B	165mm (6.30")	200mm (7.87")
C	95mm (3.54")	125mm (4.92")

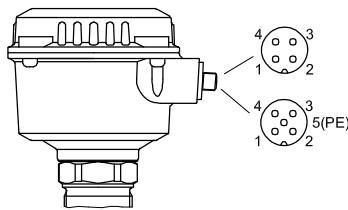


Options

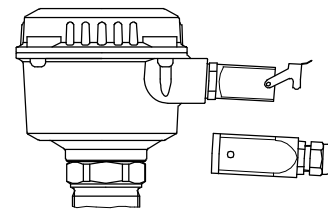
Pos. 29
 EHEDG approval



Pos. 35x
Valve connector
 Enclosure plastic
 Protection IP65



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

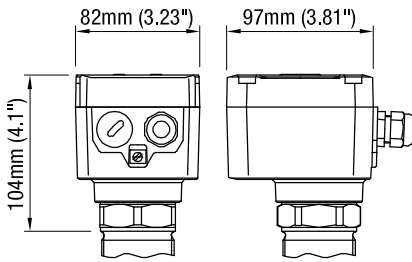


Pos. 35c
Plug Han 4A
 Enclosure zinc
 Protection IP65

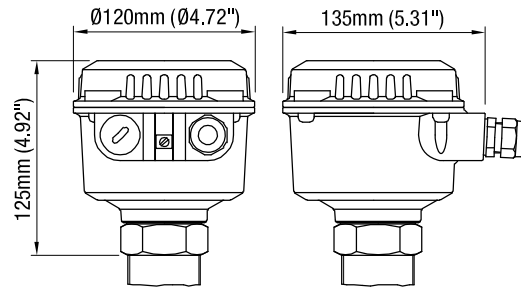
Dimensions

Housing versions

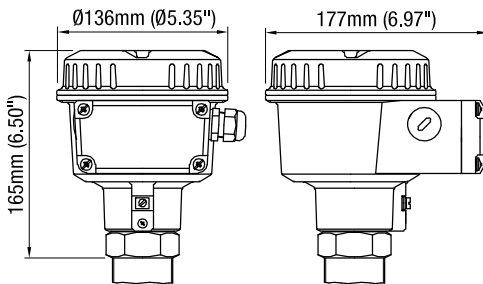
Series RN 3000
Standard



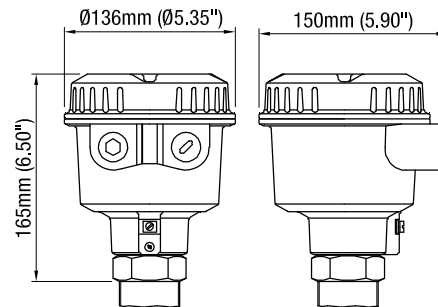
Series RN 6000
Standard



Series RN 6000
de explosionproof with increased
safety terminal box



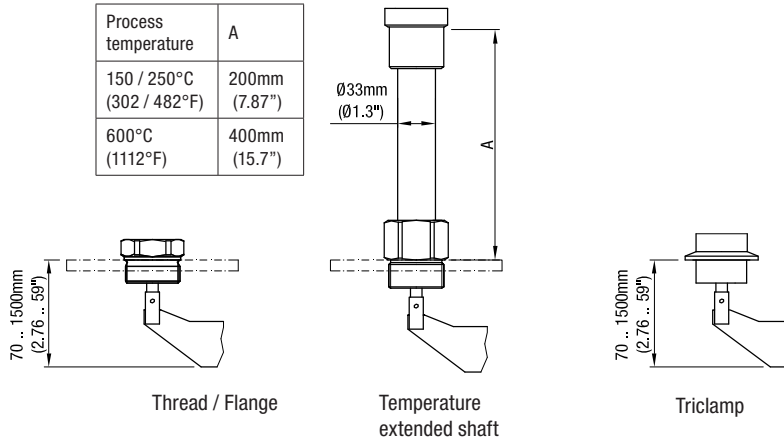
Series RN 6000
d flameproof /explosionproof



Extensions

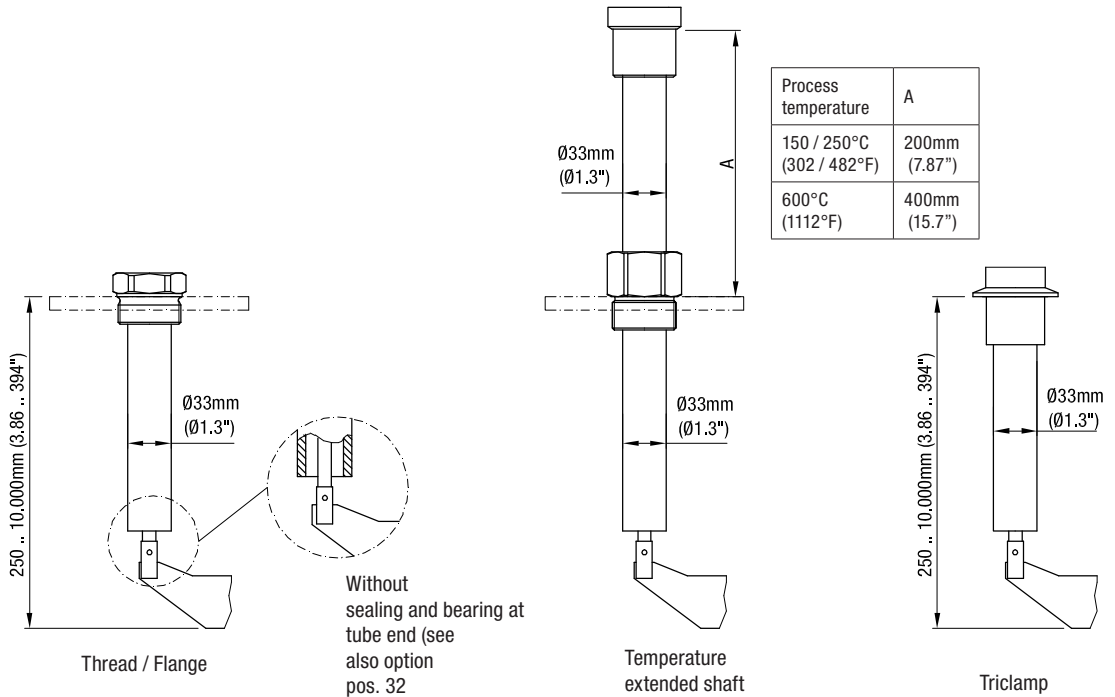
RN ..001

Process temperature	A
150 / 250°C (302 / 482°F)	200mm (7.87")
600°C (1112°F)	400mm (15.7")

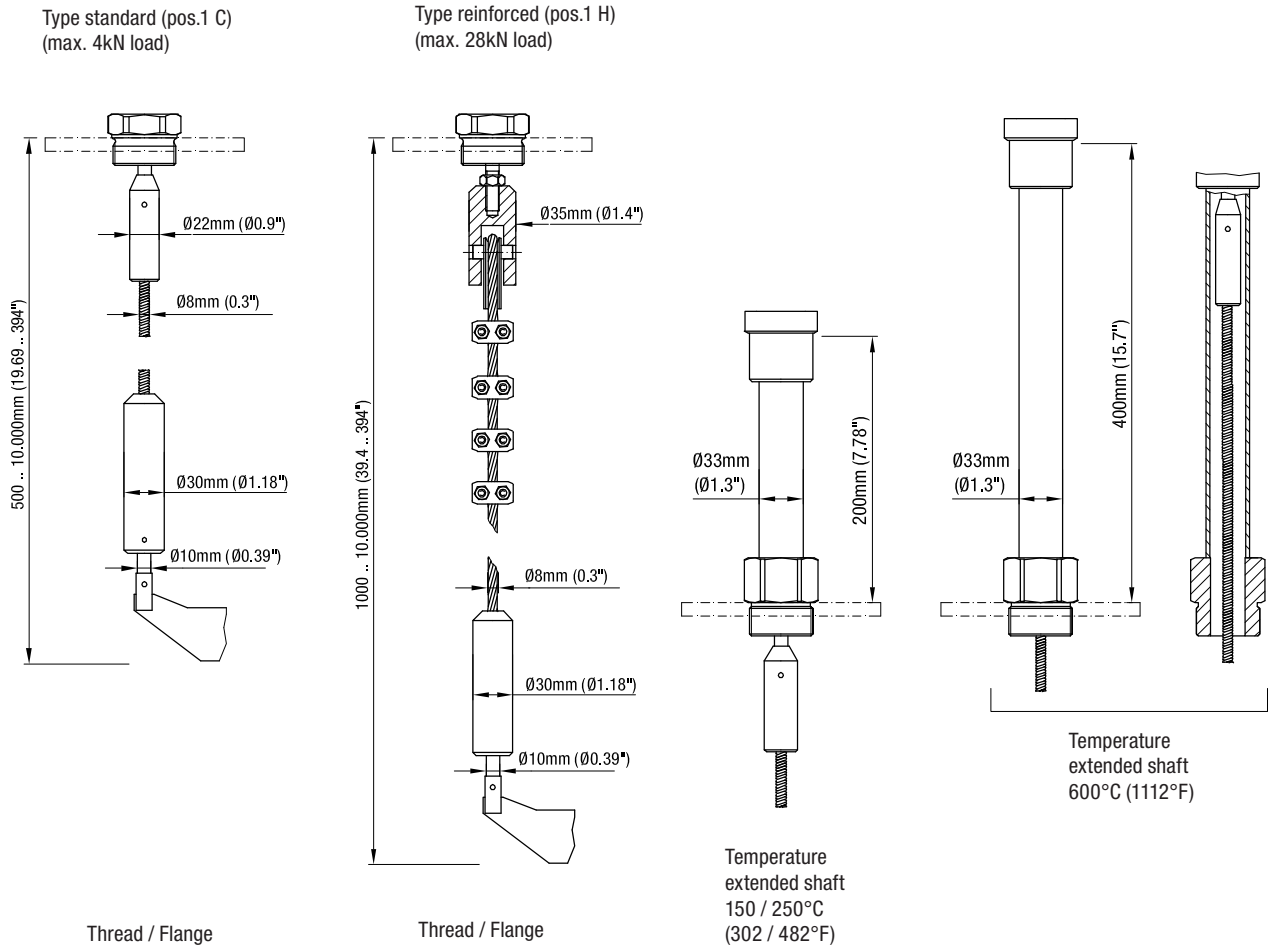


Dimensions

RN ..002

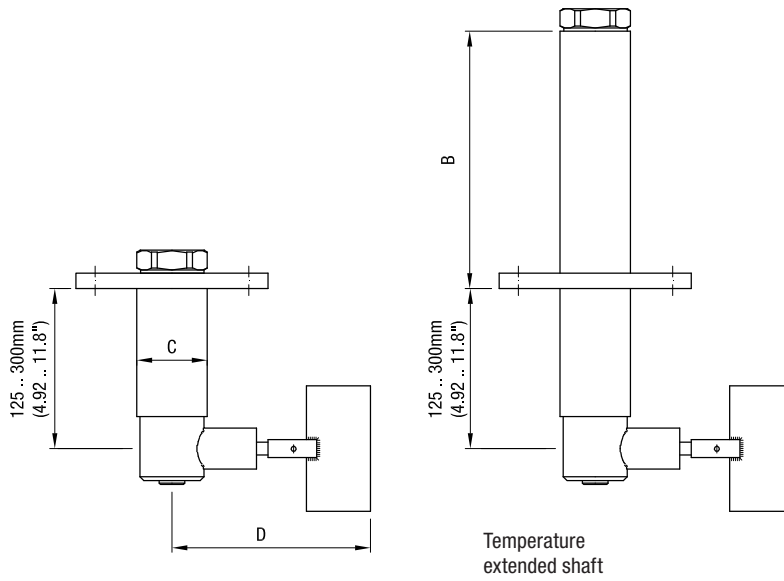


RN ..002 rope



Dimensions

RN ..003

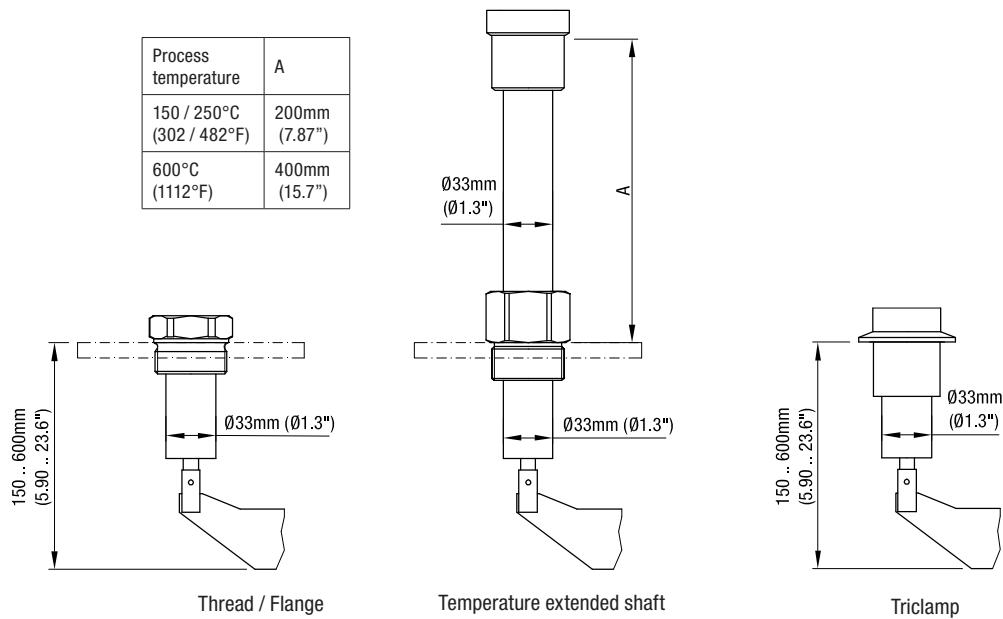


Process temperature	B
80°C (176°F) 0.8 bar (11.6psi)	10mm (0.39")
80°C (176°F) 5/ 10bar (73/ 145psi)	75mm (2.95")
150/ 250°C (302/ 482°F) 0.8/5/10 bar (11.6/73/145psi)	210mm (8.27")

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

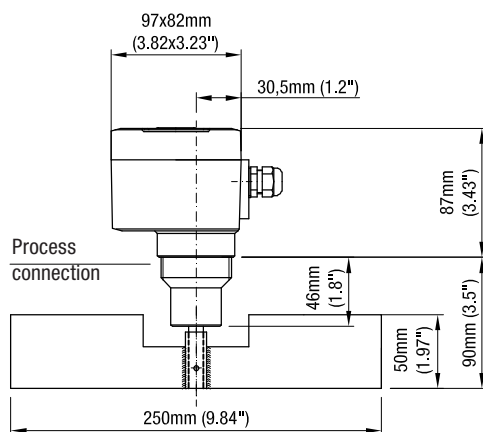
Vane	D
50mm x ..mm (1.97" x ..")	139mm (5.47")
98mm x ..mm (3.86" x ..")	187mm (7.36")

RN ..004



Process temperature	A
150 / 250°C (302 / 482°F)	200mm (7.87")
600°C (1112°F)	400mm (15.7")

RN 3005

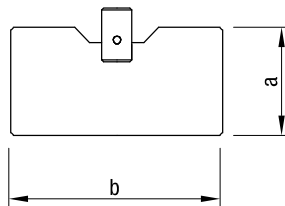


Dimensions

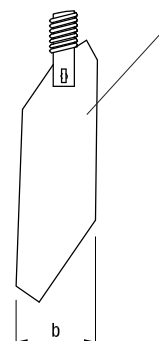
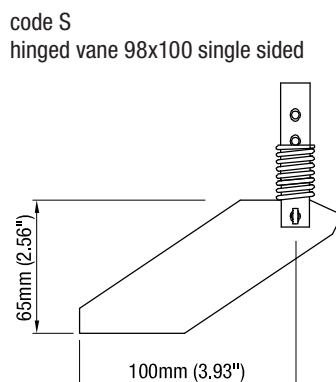
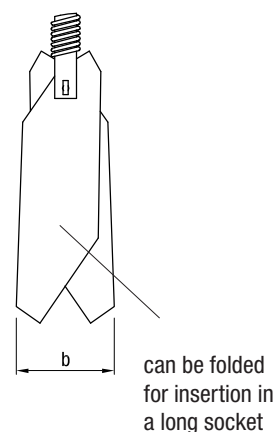
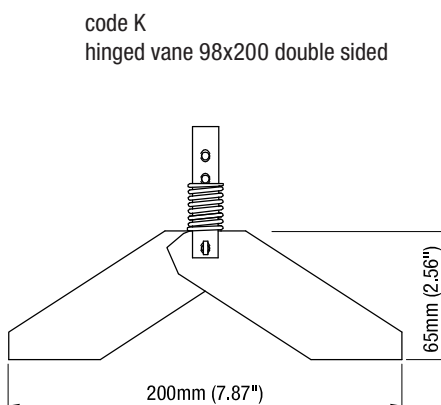
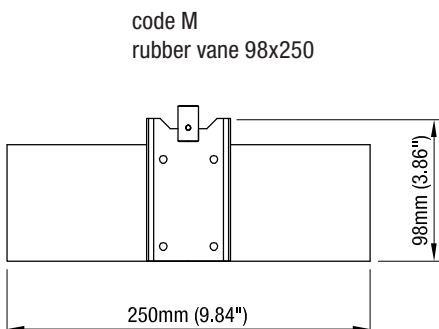
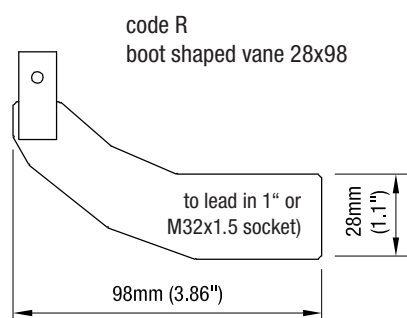
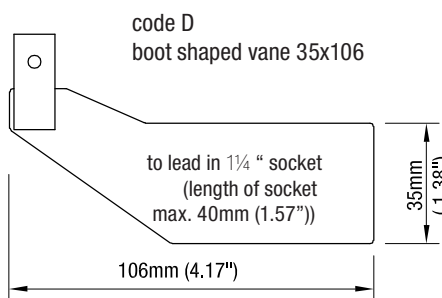
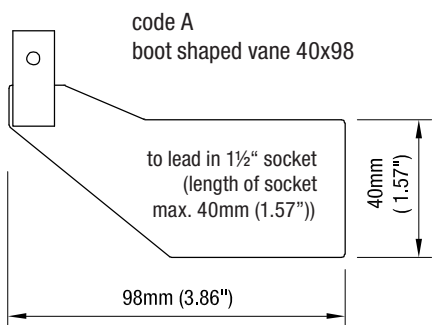
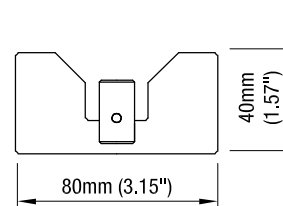
Measuring vanes

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



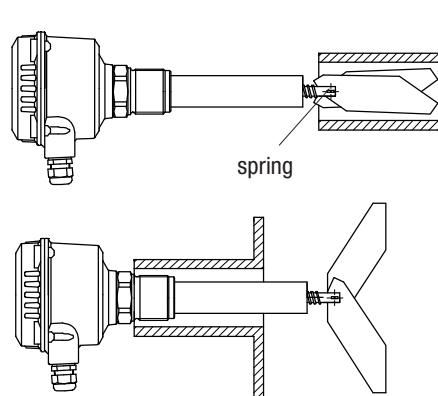
code P
 notched 40x80



socket	b*
1½" / 1¼"	37mm (1.46")
1" / M32x1.5	28mm (1.1")

*delivery according to selected thread size

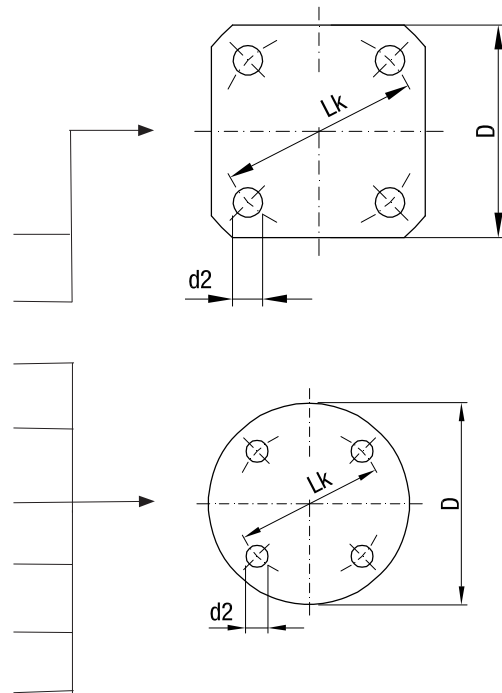
Insertion of the hinged vane through a long socket



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")
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	Standard
R	ATEX II 2G Ex de IIC and ATEX II 1/2D	de
T	ATEX II 2G Ex d IIC and ATEX II 1/2D	d
A	IEC-Ex ta/tb IIIC T! Da/Db IP66	Standard
C	IEC-Ex de IIC T! Gb and ta/tb IIIC T! Da/Db IP66	de
D	IEC-Ex d IIC T! Gb and ta/tb IIIC T! Da/Db IP66	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

Electrical installation

Version:
 - AC
 - DC
 - **Universal voltage**
 without fail safe alarm

RN 3000:

Power supply AC version:
 24V or 48V or 115V or 230V 50/60Hz
 max. 4VA

Supply voltage as selected.
 All voltages $\pm 15\%$ ⁽¹⁾
 Fuse on power supply: max 10A

Power supply DC version:
 24V DC max. 2.5W

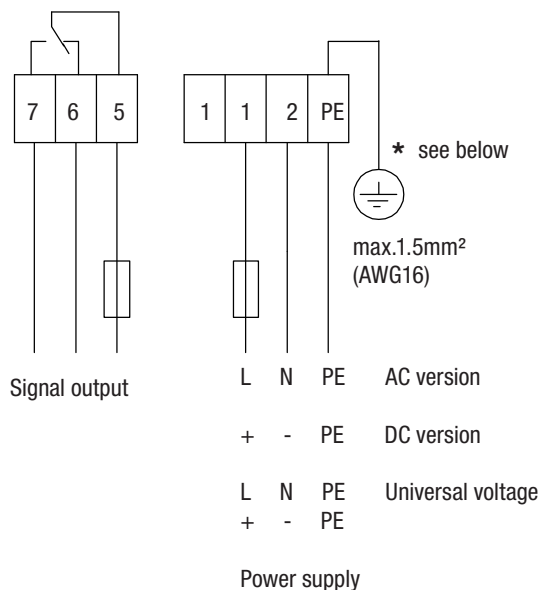
Voltage $\pm 15\%$ ⁽¹⁾
 Fuse on power supply: not necessary

Power supply Universal voltage:
 24V DC max.4W
 20 .. 230V 50/60Hz max.10VA

Voltages:
 24V DC $\pm 15\%$ ⁽¹⁾ , 20 .. 230V AC $+10\%$ ⁽¹⁾
 Fuse on power supply: not necessary

Signal output:
 Micro switch (with universal voltage: relay) SPDT contact:
 max. 2*50V AC, 2A, 500VA ($\cos\phi = 1$)
 max. 300V DC, 2A, 60W
 Fuse on signal output: max 10A

⁽¹⁾ including 10% of EN 61010



Version:
 - AC
 - DC
 without fail safe alarm

RN 6000:

Power supply AC version:
 24V or 48V or 115V or 230V 50/60Hz
 max. 4VA

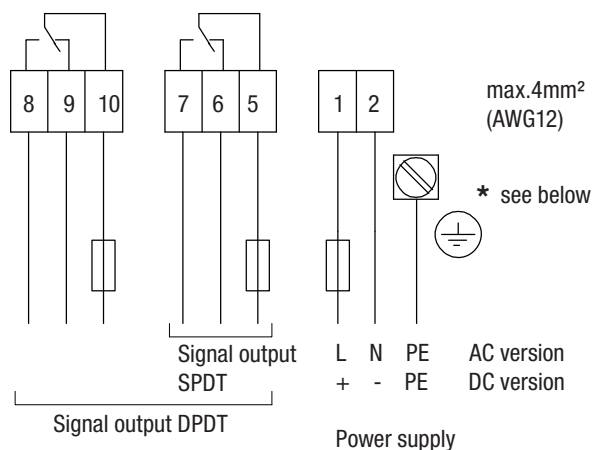
Supply voltage as selected.
 All voltages $\pm 15\%$ (including 10% of EN 61010)
 Fuse on power supply: max 10A

Power supply DC version:
 24V DC max. 2.5W

Voltage $\pm 15\%$ (including 10% of EN 61010)
 Fuse on power supply: not necessary

Signal output:
 Micro switch SPDT or DPDT contact:
 max. 250V AC, 5A, non inductive;
 max. 30V DC, 4A, non inductive

Fuse on signal output: max 10A



*

Protection against static charching:

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.

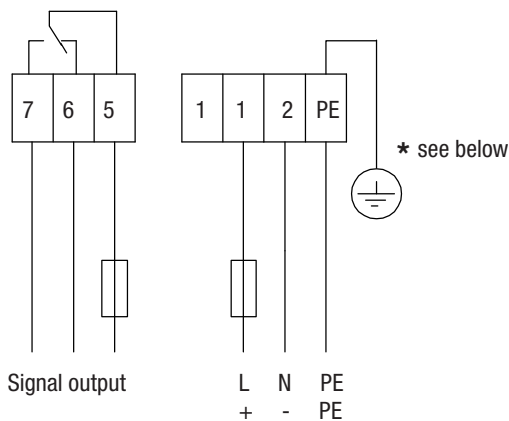
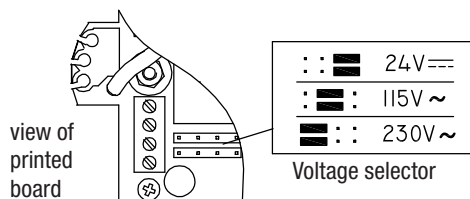
Electrical installation

Version:
- Multivoltage
 without fail safe
 alarm

RN 3000:

Power supply:
 24V DC max. 2.5W or
 115V 50/60Hz max. 4VA or
 230V 50Hz max. 6VA

Set the voltage-selector on the PCB to the desired voltage.



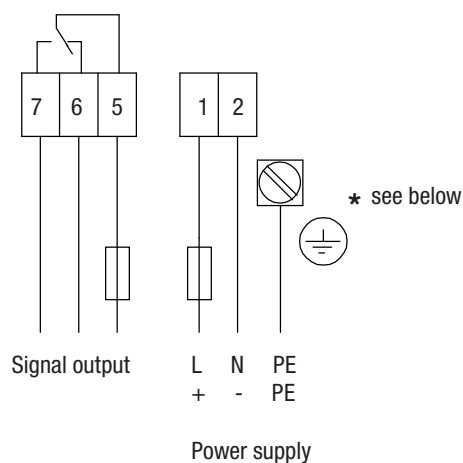
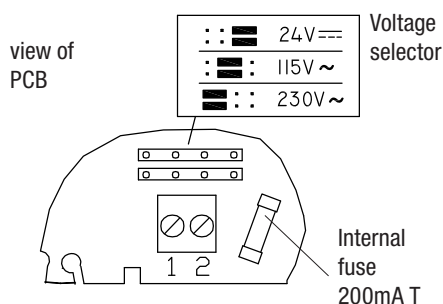
Signal output:
 Micro switch SPDT contact:
 max. 250V AC, 2A, 500VA ($\cos\varphi = 1$)
 max. 300V DC, 2A, 60W

Fuse on signal output: max 10A

RN 6000:

Power supply:
 24V DC max. 2.5W or
 115V 50/60Hz max. 4VA or
 230V 50Hz max. 6VA

Set the voltage-selector on the printed board to the desired voltage.



Signal output:
 Micro switch SPDT contact:
 max. 250V AC, 5A, non inductive;
 max. 30V DC, 4A, non inductive;

Fuse on signal output: max 10A

* **Protection against static charching:**
 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

Version:

- AC
- DC

with fail safe alarm

RN 3000:

Power supply AC version:

24V or 48V or 115V or 230V 50/60Hz
 max. 5VA

Supply voltage as selected (see name plate).
 All voltages $\pm 15\%$ (including 10% of EN 61010)

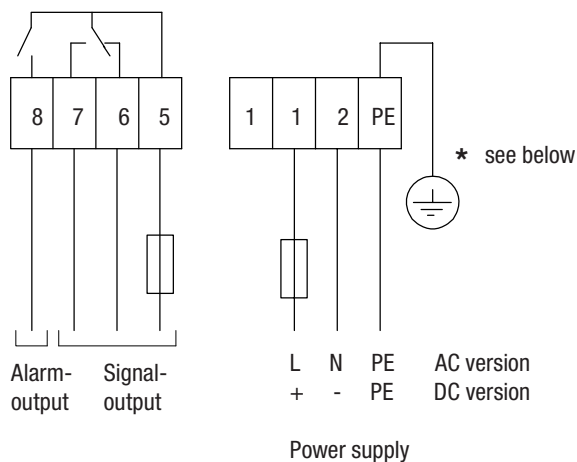
Power supply DC version:

24V DC max. 2,5W
 voltage $\pm 15\%$ (including 10% of EN 61010)

Signal output: Micro switch on terminal 5-6-7
Alarm output: Relay on terminal 8

Relay and Micro switch SPDT contact:
 max. 250V AC, 2A, 500VA ($\cos\phi = 1$)
 max. 300V DC, 2A, 60W

Fuse on signal output: max 10A



RN 6000:

Power supply AC version:

24V or 48V or 115V or 230V 50/60Hz
 max. 5VA

Supply voltage as selected (see name plate).
 All voltages $\pm 15\%$ (including 10% of EN 61010)

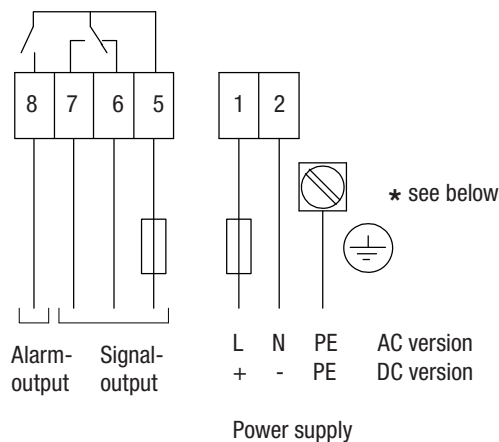
Power supply DC version:

24V DC max. 2.5W
 voltage $\pm 15\%$ (including 10% of EN 61010)

Signal output: Micro switch on terminal 5-6-7
Alarm output: Relay on terminal 8

Relay and Micro switch SPDT contact:
 max. 250V AC, 5A, non inductive;
 max. 30V DC, 4A, non inductive;

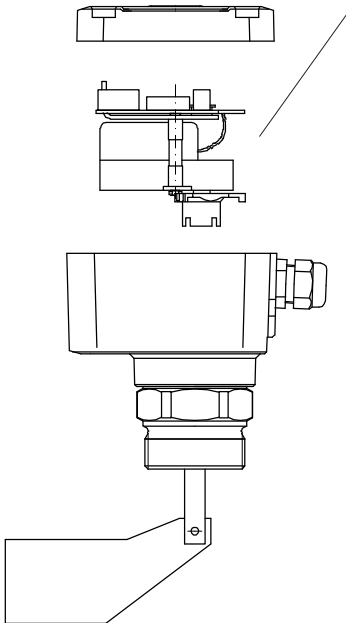
Fuse on signal output: max 10A



* **Protection against static charging:**
 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

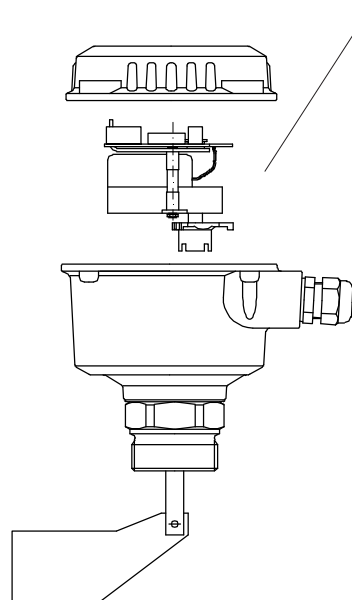


Motor / PCB (without heating)

Article number		with fail safe alarm	without fail safe alarm
Motor Speed			
1/min	5/min		
gm402000	gm403000		230V 50-60Hz
gm402005	gm403005		115V 50-60Hz
gm402015	gm403015		48V 50-60Hz
gm402010	gm403010		24V 50-60Hz
gm402020	gm403020		24V DC
gm402025	gm403025		230V AC/115V AC/24V DC Multivoltage
gm402028*	gm403028*		24V DC / 20 .. 230V AC Universal voltage
gm404000	gm405000		230V 50-60Hz
gm404005	gm405005		115V 50-60Hz
gm404020	gm405020		24V DC

* 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.

Series RN 6000



Motor / PCB (without heating)

Output signal SPDT

Article number		with fail safe alarm	without fail safe alarm
Motor Speed			
1/min	5/min		
gm412000	gm413000		230V 50-60Hz
gm412005	gm413005		115V 50-60Hz
gm412015	gm413015		48V 50-60Hz
gm412010	gm413010		24V 50-60Hz
gm412020	gm413020		24V DC
gm410000	gm420000		230V AC/115V AC/24V DC Multivoltage
gm414000	gm415000		230V 50-60Hz
gm414005	gm415005		115V 50-60Hz
gm414020	gm415020		24V DC

Output signal DPDT

Article number		without fail safe alarm
Motor Speed		
1/min	5/min	
gm416000	gm417000	230V 50-60Hz
gm416005	gm417005	115V 50-60Hz
gm416015	gm417015	48V 50-60Hz
gm416010	gm417010	24V 50-60Hz
gm416020	gm417020	24V DC