

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	

For RN3002-Rope: pos.2 O includes GOST-R, pos.2 W includes RTN-Ex and GOST-R

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
• •	G / H	24V DC PNP	..... Motor Speed: G=1/min H= 5/min
• •	F / X	24V DC / 22...230V AC universal voltage ⁽¹⁾ 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))
• •	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 ⁽²⁾ 40 x 98mm (1.57 x 3.86")	..... for 1 1/2" socket
• •	D	boot-shaped ⁽²⁾ 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").

⁽¹⁾ not for FM/CSA
⁽²⁾ maximum length of socket 40mm

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																																																
•	•	•	•	•	•			•	•	•	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	Pos. 16a	Material of housing plastics PA6																																														
												Radial shaft sealing																																														
2	2	2	2	2	2	2	2	2	2	2	pos. 17a	FPM (Viton)																																														
3	3	3	3	3	3	3	3	3	3	3	pos. 17b	PTFE (Teflon)																																														
											pos. 18x	Stainless steel ball bearing for RN ..001/ RN ..002/ RN ..004/ RN ..005																																														
4	4	4	4	4	4			4	4	•		for RN ..003																																														
5	5	5	5	5	5	5	5	5	5	5	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
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•	•	•	•	•	•	•	•	•	•	•	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																																														
6	6	6	6	6	6	6	6	6	6	6	pos. 25a	Switchable signal output FSH/FSL																																														
											pos. 25x	Fail safe alarm (for 24V DC/22 .. 230V AC universal voltage)																																														
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)																																														
											pos. 27a	Signal lamp Bulb in cable gland, 2W green																																														
8	8	8	8	8	8	8	8	8	8	8	Pos. 27c	Bulb in cable gland, 2W red																																														
9	9	9	9	9	9	9	9	9	9	9	pos. 27b	LED (glass window in lid)																																														
10	10	10	10	10	10	10	10	10	10	10	pos. 27d	LED (transparent lid section)																																														
											pos. 28x	Cable entry optionally available: Selection of the following options only necessary, if a deviation from the default cable gland / conduit is required:																																														
•	11	•	11	•	11	•	11	•	11	•	pos. 28d	M20x1,5 2x screwed cable gland																																														
•	12	•	12	•	12	•	12	•	12	•	pos. 28a	M20x1,5 1x screwed cable gland +1x blind plug																																														
•	•	•	•	•	•	•	•	•	•	•	pos. 28b	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)																																														
13	13	13	13	13	13	13	13	13	13	13	pos. 29y	Food grade materials (in contact with process)																																														
												(according to 1935/2004/EC, with FDA conform sealing)																																														
											pos. 29a	EHDG approval Process connection G 1 1/2" (without flush welding socket)																																														
14	14	14	14					14	14		pos. 29b	Process connection flush welding socket ø69/G 1 1/2" made of aluminium ...																																														
14	14	14	14					14	14		pos. 29c	Process connection flush welding socket ø69/G 1 1/2" made of 1.4301 (304)																																														
14	14	14	14					14	14		pos. 29d	Process connection flush welding socket ø69/G 1 1/2" made of 1.4404 (316L)																																														

Options

	15	15							pos. 30x	Sliding sleeve for applications without process overpressure
	16	16							pos. 31x	Sliding sleeve for applications with process overpressure (1.4305 (303))
	•	•							pos. 32x	Bearing at tube end max. +80°C (176°F) max. +150°C (302°F) max. +250°C (482°F) max. +600°C (1112°F)
									pos. 33x	Extension and flange welded $\alpha = \text{ }^\circ$ 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
17	17	17	17	17	17	17	17	17	pos. 35x	Valve connector (incl. mating plug) 4-pole (incl. PE) max. 230V
17	17	17	17	17	17	17	17	17	pos. 35a	M12 (without mating plug) 4-pole max. 25V
17	17	17	17	17	17	17	17	17	pos. 35b	M12 (without mating plug) 5-pole (incl. PE) max. 60V
17	17	17	17	17	17	17	17	17	pos. 35c	Harting Han 4A (incl. mating plug) 5-pole (incl. PE) max. 230V
										Kit pendulum shaft only for vertical installation, max. pulling force 400N, only with pos.8 A
	•	•							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"))
18									pos. 39x	Kit rope extension L=2m, only available as full detector

- Available for certificat CE, ATEX and IEC-Ex dust explosionproof (pos.2 0, W, A). Not with cable entry NPT (pos.28 a, c) and control lamp LED (pos.27 b). For ATEX and IEC-Ex the min. ambient temperature is -20°C (-4°F).
- 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.
- Available for temp. up to 150°C and for pressure up to 0.8 bar, except M30x1.5 (pos. 6E). Note: Above 250°C and 5bar/10bar PTFE included as standard.
- 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.
- Available for all versions except explosionproof / flameproof version (pos.2 R,T,S,U).
- Available for power supply 230V/115V/48V/24V AC (pos.5 A, B, C, D, S, T, U, V). Not for FM/CSA (pos.2 M, N, S, U). Not with fail safe alarm (pos. 25x).
Note: Universal voltage implements FSH/FSL by default.
- 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).
- 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.
- Available for all versions except explosionproof / flameproof version (pos.2 R,T,S,U) not in combination with weather protection cover (pos 21).
- Available for certificate CE (pos. 2,0)
- Available for all versions except flameproof version (pos.2 T,U).
- Available for FM/CSA versions (pos.2 M,N,S) except flameproof version (pos.2 T,U).
- Available up to max. 250°C. Not for M30x1.5 (pos. 6E), vane (pos.10 M), flange sealings (pos.22). The option does not automatically implement a food conform design (food conform gaps and radiuses).
- 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. Vane pos.10 A can not 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.
- Available for CE (pos.2 0). Process connection and material as choosen in pos.6 and 7.
- Available for temperatures up to 250°C. Process connection as choosen in pos.6.
- Available for CE (pos.2 0). Without connection of stranded wires for installation and internal terminals (standard) or according to customer specification.
- Available for certificate CE, ATEX, IEC-Ex (pos. 2,0,W,A), Extension 100mm (pos.8,A) and 1.4305 (pos.9,3)