

# NIVOSWITCH

VIBRATING FORK LEVEL SWITCHES  
FOR LIQUIDS AND SOLIDS



3 YEARS WARRANTY

**NIVELCO**

LEVEL SWITCHES

NIVOSWITCH RC-400 vibrating fork level switches with parallel vibrating fork are suitable for detecting the level of liquids. Mounted on pipes, tanks it can control filling/emptying, also can generate fail-safe alarms providing overflow- or dry run protection. The operation principle is based on that the electronic circuit excites a vibration in the fork probe. When the medium reaches and covers the fork, its vibration changes. The fork will start vibrating freely again as the medium sets it free. The electronics senses the change of vibration and gives output signal after a selected delay. The plastic-coated version is recommended to use for aggressive mediums, the highly polished version is recommended to use for abrasive mediums. The PNP/NPN transistor output versions can be connected directly to PLC, or relay unit.

Certain types of NIVOSWITCH vibrating forks are able to solve switching tasks of high-current loads with the help of UNICONT PKK switching amplifiers. UNICONT PKK-312-8 Ex is a recommended Intrinsic safety switching unit designed for Ex rated vibrating forks.

**FEATURES**

- Integrated version
- Rod length up to 3 meters
- ECTFE/PFA-coated version
- Polished vibrating part
- Hygienic versions with various process connections and 0.5 micron fine polishing
- Selectable sensitivity
- Electronic output
- Switching performance does not depend on the change of liquid conductivity, dielectric constant, pressure and temperature
- Process temperature max. +130 °C
- Output can be toggled by test magnet
- NIFLANGE weldable stainless steel flange variants
- Ex, DNV variants
- IP65/IP68

**APPLICATIONS**

- For liquids: min. 0.7 kg/dm<sup>3</sup> density and max. 10<sup>4</sup> mm<sup>2</sup>/s viscosity
- Food & beverages industry, water industry, chemical industry, oil industry
- For normal or hazardous, aggressive (acids, solvents) liquids
- Covers a large variety of level detection, applications such as high/low fail-safe limit switch, overflow or dry-run protection, pump controls

**CERTIFICATES**

- ATEX (Ex ia G)

**VARIANTS**

This table helps choose the proper version for a given level switching task. Most essential aspect is the consistency of the measurement medium.

		RC□-400
Stainless steel housing		■
Aluminum housing		-
Plastic housing		-
Extension		■
High-polished version		■
Plastic-coated fork		■
2" process connection		■
1", 1½" process connection		■
Relay output		-
Electronic output		■
Electrical connection	Terminal	-
	DIN connector	■
	M12 connector	■
Cable		■
Intrinsic safety version		■
Flameproof enclosure		-
DNV		-
Mode setting (low-high level)		■ <sup>(1)</sup>
Mode indication		■
Output test magnet		■

<sup>(1)</sup> Only for 3-wire DC versions



RPS-101-0 test magnet



PKK-312-8 Ex  
Ex ia power supply  
for Ex ia vibrating forks



RBM-401-3

RCM-401  
cable version

RCM-402  
with M12  
connector

RCM-400  
with DIN connector

TECHNICAL DATA

	2-wire AC version		2-wire DC version			3-wire DC version	
	R□□-4□□						
	-1, -2		-6, -7, -K, -8 Ex, -9 Ex, -L Ex			-3, -4, -M	
Insertion length	69...3000 mm, as per order code						
Material of wetted parts	1.4571 stainless steel or ECTFE/PFA-coating						
Process connection	As per order code						
Process temperature	-40...+130 °C (see "Temperature diagram"), for ECTFE-coated versions: -40...+120 °C						
Ambient temperature	-40...+70 °C (see "Temperature diagram") with M12 connector: -25...+70 °C						
Process pressure	Up to 40 bar (4 MPa); PP flange: 6 bar (0.6 MPa) (see "Pressure-temperature diagram")						
Medium density	≥ 0.7 kg/dm <sup>3</sup>						
Medium viscosity	≤ 10 000 mm <sup>2</sup> /s (cSt)						
Response time	Getting immersed: 0.5 s						
	Getting free: ≤ 1 s (see response time diagram)						
Output mode indication	Bi-color (LED)						
Operation test	Output can be toggled by test magnet						
Housing material	1.4571 stainless steel						
Electrical protection	Class I			Class III			
Output protection	-					Reverse polarity, overcurrent and short-circuit protection	
Weight	~0.5 kg + 1.2 kg/m extension						

TYPE-SPECIFIC DATA

	2-wire AC version		2-wire DC version			3-wire DC version		
	R□□-4□□							
	-1	-2	-6, -8 Ex	-K, -L Ex	-7, -9 Ex	-3	-M	-4
Electrical connection	DIN connector	3 m integrated cable <sup>(1)</sup> , (4× 0.75 mm <sup>2</sup> )	DIN connector	M12 connector	3 m integrated cable <sup>(1)</sup> , (2× 0.5 mm <sup>2</sup> )	DIN connector	M12 connector	3 m integrated cable <sup>(1)</sup> , (5× 0.5 mm <sup>2</sup> )
Ingress protection	IP65	IP68	IP65	IP67	IP68	IP65	IP67	IP68
High/low mode setting (Low fail-safe - "L", High fail-safe - "H")	Determined by the wiring inside the connector		Determined by the wiring			By switch on the remote switching unit		Switch selectable
Supply voltage	20...255 V AC		15...29 V DC			12...55 V DC		
Power consumption	depending on load		< 0.5 W			< 0.6 W		
Output	2-wire AC, for serial connection		DC current change: When free: 9 ±1 mA; When immersed: 14 ±1 mA			Field selectable, NPN / PNP transistor switch		Field selectable, galvanically isolated PNP/NPN transistor switch
Load current (I <sub>L</sub> )	max. continuous: 350 mA AC 13 min. continuous: 10 mA / 255 V, 25 mA / 24 V – max. impulse: 1.5 A / 40 ms		-			max. continuous: I <sub>Lmax</sub> = 350 mA DC / U <sub>max</sub> = 55 V DC		
Residual current, in switched off state (I <sub>min</sub> )	< 6 mA		-			< 100 µA		
Voltage drop when switched on	< 10.5 V		-			< 4.5 V		

<sup>(1)</sup> Available cable length: up to 30 m

Ex INFORMATION

	R□□-4□□-8 Ex (DIN connector)	R□□-4□□-L Ex (M12 connector)	R□□-4□□-9 Ex (integrated cable <sup>(1)</sup> )
Explosion protection	Intrinsically safe <sup>(2)</sup>		
Ex marking	⊕ II 1G Ex ia IIB T6...T4 Ga; ⊕ II 1G Ex ia IIC T6...T4 Ga		
Intrinsic safety limits	U <sub>i</sub> = 29 V; I <sub>i</sub> = 100 mA; P <sub>i</sub> = 1,4 W; C <sub>i</sub> = 7 nF; L <sub>i</sub> = 0 mH		U <sub>i</sub> = 29 V; I <sub>i</sub> = 100 mA; P <sub>i</sub> = 1,4 W; C <sub>i</sub> = 15 nF; L <sub>i</sub> = 0 mH
Supply voltage	15...29 V DC		

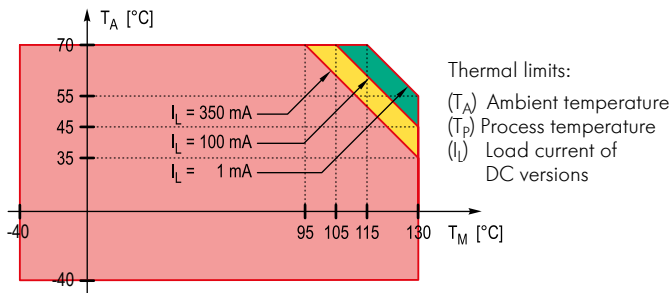
<sup>(1)</sup> Available cable length: max. 30 m

<sup>(2)</sup> Intrinsically safe vibrating forks must be powered by [Ex ia] certified devices, for example by UNICONT PKK-312-8 Ex.

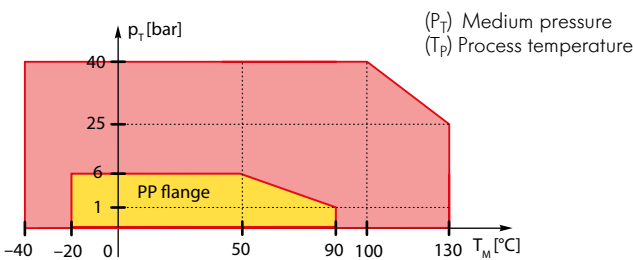
TEMPERATURE DATA FOR Ex CERTIFIED MODELS

Temperature classes	R□□-4□□-8 Ex, -L Ex, -9 Ex			
	T6	T5	T4	
Highest ambient temperature	+70 °C	+60 °C		
Highest process temperature	+70 °C	+75 °C	+95 °C	+130 °C

TEMPERATURE DIAGRAM

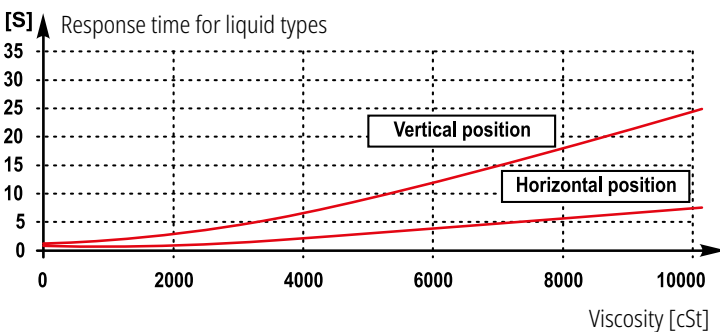


PRESSURE-TEMPERATURE DIAGRAM



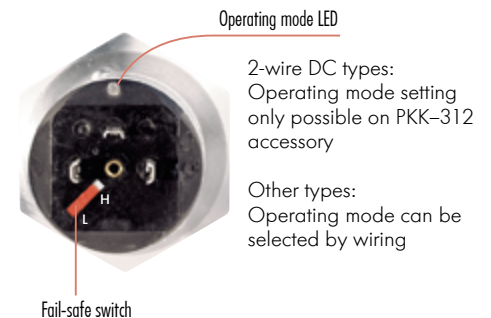
RGB-400-3

RESPONSE TIME DIAGRAM

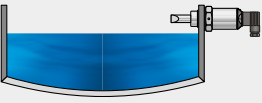

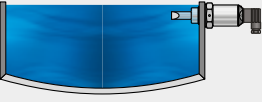

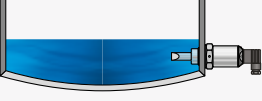

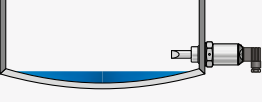




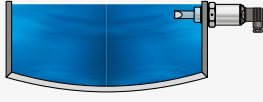

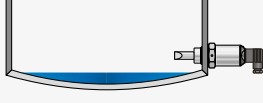


MODE SELECT

R□□-4□□-3



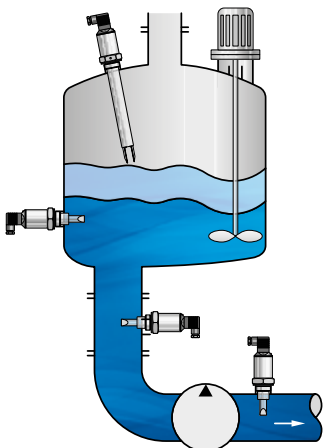
OPERATION

2-wire AC, 3-wire DC version					
Power supply	Fork location		Fail-Safe setting <sup>(2)</sup>	Status LED	Output
ON	High level		High		ON (I <sub>l</sub> )
			High		OFF (I <sub>min</sub> )
	Low level		Low		ON (I <sub>l</sub> )
			Low		OFF (I <sub>min</sub> )
OFF	-	-	High / Low		OFF (I = 0)

2-wire DC version			
Power supply	Fork location	Status LED	Output
ON			14 ± 1 mA
			9 ± 1 mA
OFF	Fork immersed, or fork is free		-

<sup>(2)</sup> In the case of the integrated version with integrated cable, it is determined by the appropriate wiring.

INSTALLATION



RCT-401-3

**NIVOSWITCH RC-400 standard version** **3 years**

Mini compact vibrating fork level switch for liquids

**Type**

R ■ ■ - 4 ■ ■ - ■

0 0	69 mm
0 1	125 mm

**Fork material**

R ■ ■ - 4 ■ ■ - ■

<b>C</b>	Tumble-polished stainless steel
<b>G</b>	High-polished stainless steel
<b>B</b>	ECTFE-coated fork, PFA-coated extension (only 1" BSP (PVDF) or flange (PP or ECTFE-coated) process connection)
<b>E</b>	Stainless steel without reed sensor (Ex version not available)

**Process connection**

R ■ ■ - 4 ■ ■ - ■

<b>M</b>	1" BSP
<b>P</b>	1" NPT
<b>T</b>	1½" TriClamp (ISO 2852)
<b>R</b>	2" TriClamp (ISO 2852)
<b>D</b>	DN40 Pipe coupling (DIN 11851)
<b>E</b>	DN50 Pipe coupling (DIN 11851)
<b>U</b>	Stainless steel flanges; welded (MF_ ___ -H type flanges [available from size DN40] should be ordered separately)

Stainless steel flanges;

Flanges conform to: EN 1092-1 / ANSI B 16.5

<b>S</b>	DN40 PN40/25/16/10
<b>G</b>	DN50 PN40 / 25
<b>B</b>	ANSI 2" RF 600/400 psi
<b>K</b>	JIS 40K 50A

ECTFE-coated stainless steel flange

Flanges conform to: EN 1092-1 / ANSI B 16.5

<b>S</b>	DN40 PN40/25/16/10
<b>G</b>	DN50 PN40 / 25
<b>B</b>	ANSI 2" RF 600 / 400 psi
<b>K</b>	JIS 40K 50A

PP flanges (max. 6 bar; -20 °C to +90 °C), DIN PN16 / ANSI 150 psi

<b>F</b>	DN50 PN16
<b>A</b>	ANSI 2" FF 150 psi
<b>J</b>	JIS 10K 50A

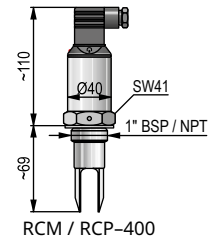
**Output / Certificates**

R ■ ■ - 4 ■ ■ - ■

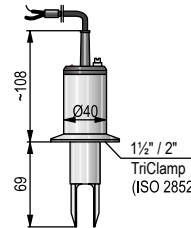
<b>1</b>	2-wire AC, DIN connector
<b>2</b>	2-wire AC, cable
<b>3</b>	3-wire DC, DIN connector
<b>4</b>	3-wire DC, cable
<b>6</b>	2-wire DC, DIN connector
<b>7</b>	2-wire DC, cable
<b>8</b>	2-wire DC, DIN connector / Ex ia G
<b>9</b>	2-wire DC, cable / Ex ia G
<b>K</b>	2-wire DC, M12 connector
<b>L</b>	2-wire DC, M12 connector / Ex ia G
<b>M</b>	3-wire DC, M12 connector

**Cable**

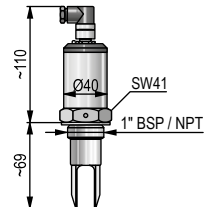
Maximum length 30 m; sold by the meter over the standard 3 m



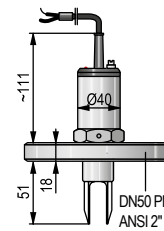
RCM / RCP-400



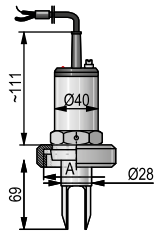
RCT / RCR-400



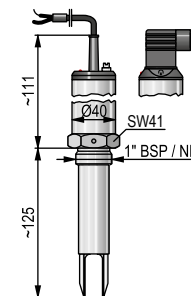
RCM / RCP-400 with M12 connection



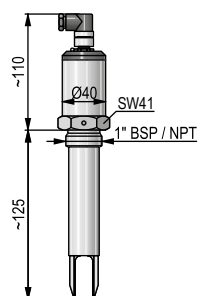
RCG-400



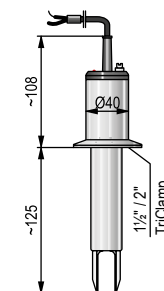
RCD-400



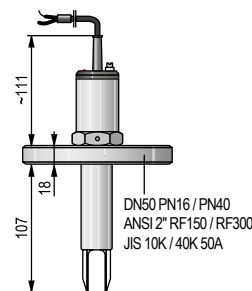
RCM / RCP-401



RCM / RCP-401 with M12 connection



RCT / RCR-401



RCG / RCF-401

	RCD	RCE
Nominal size	DN40	DN50
A	RD 65 x 1/6	RD 78 x 1/6

**NIV24**

- RCM-400-3
- RCM-401-3

**NIVOSWITCH RC-400 extension rod version**

**3 years**

Mini compact vibrating fork level switch for liquids with stainless steel extension rod probe up to 3 m

**Fork material**

R   - 4   -

<b>C</b>	Tumble-polished stainless steel
<b>G</b>	High-polished stainless steel
<b>B</b>	ECTFE-coated fork, PFA-coated extension (only 1" BSP (PVDF) or flange (PP or ECTFE-coated) process connection)
<b>E</b>	Stainless steel without reed sensor (Ex version not available)

**Process connection**

R   - 4   -

<b>M</b>	1" BSP
<b>P</b>	1" NPT
<b>T</b>	1½" TriClamp (ISO 2852)
<b>R</b>	2" TriClamp (ISO 2852)
<b>D</b>	DN40 Pipe coupling (DIN 11851)
<b>E</b>	DN50 Pipe coupling (DIN 11851)
<b>U</b>	Stainless steel flanges; welded (MF_ - _ - H type flanges [available from size DN40] should be ordered separately)

Stainless steel flanges;

Flanges conform to: EN 1092-1 / ANSI B 16.5

<b>S</b>	DN40 PN40/25/16/10
<b>G</b>	DN50 PN40/25
<b>B</b>	ANSI 2" RF 600/400 psi
<b>K</b>	JIS 40K 50A

ECTFE-coated stainless steel flange

Flanges conform to: EN 1092-1 / ANSI B 16.5

<b>S</b>	DN40 PN40/25/16/10
<b>G</b>	DN50 PN40 / 25
<b>B</b>	ANSI 2" RF 600 / 400 psi
<b>K</b>	JIS 40K 50A

PP flanges (max. 6 bar; -20 °C to +90 °C), DIN PN16 / ANSI 150 psi

<b>F</b>	DN50 PN16
<b>A</b>	ANSI 2" FF 150 psi
<b>J</b>	JIS 10K 50A

**Probe length**

R   - 4   -

For standard polished forks (RC, RE)

<b>0 2</b>	0.2 m
<b>n n</b>	0.3...3 m; sold by the 0.1 m

For high-polished forks (RG)

<b>0 2</b>	0.2 m
<b>n n</b>	0.3...3 m; sold by the 0.1 m

For ECTFE-coated stainless steel forks (RA, RB)

<b>0 2</b>	0.2 m
<b>n n</b>	0.3...3 m; sold by the 0.1 m

nn = 03...30 : 0,3...3 m

**Output / Certificates**

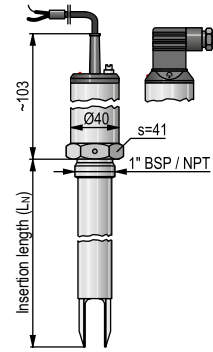
R   - 4   -

<b>1</b>	2-wire AC, DIN connector
<b>2</b>	2-wire AC, cable
<b>3</b>	3-wire DC, DIN connector
<b>4</b>	3-wire DC, cable
<b>6</b>	2-wire DC, DIN connector
<b>7</b>	2-wire DC, cable
<b>8</b>	2-wire DC, DIN connector / Ex ia G
<b>9</b>	2-wire DC, cable / Ex ia G
<b>K</b>	2-wire DC, M12 connector
<b>L</b>	2-wire DC, M12 connector / Ex ia G
<b>M</b>	3-wire DC, M12 connector

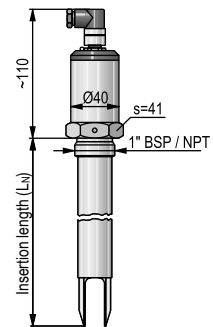
**Cable**

Maximum length 30 m; sold by the meter over the standard 3 m

R\_ - 4\_ - 9 Ex version comes with 3 m cable only



RCM / RCP-402 / 430



RCM / RCP-402 / 430

NIVOSWITCH RF-400/500 vibrating fork level switches with parallel vibrating fork are suitable for detecting the level of liquids. Mounted on pipes, tanks it can control filling/emptying, also can generate fail-safe alarms providing overflow- or dry run protection. The operation principle is based on that the electronic circuit excites a vibration in the fork probe. When the medium reaches and covers the fork, its vibration changes. The fork will start vibrating freely again as the medium sets it free. The electronics senses the change of vibration and gives output signal after a selected delay. The plastic-coated version is recommended to use for aggressive mediums, the highly polished version is recommended to use for abrasive mediums. The PNP/NPN transistor output versions can be connected directly to PLC, or relay unit.



RFM-401-G



RFM-500

**FEATURES**

- Compact version
- Rod length up to 3 meters
- ECTFE/PFA-coated version
- Polished vibrating part
- Hygienic versions with various process connections and 0.5 micron fine polishing
- Selectable sensitivity
- Relay output
- Switching performance does not depend on the change of liquid conductivity, dielectric constant, pressure and temperature
- Process temperature max. +130 °C
- NIFLANGE weldable stainless steel flange variants
- Ex, DNV variants
- IP67

**APPLICATIONS**

- For liquids: min. 0.7 kg/dm<sup>3</sup> density and max. 10<sup>4</sup> mm<sup>2</sup>/s viscosity
- Food & beverages industry, water industry, chemical industry, oil industry
- For normal or hazardous, aggressive (acids, solvents) liquids
- Covers a large variety of level detection, applications such as high/low fail-safe limit switch, overflow or dry-run protection, pump controls

**CERTIFICATES**

- ATEX (Ex d G)
- IEC Ex (Ex d G)
- DNV (only for RF-400 types))
- CE
- UKCA

**VARIANTS**

This table helps choose the proper version for a given level switching task. Most essential aspect is the consistency of the measurement medium.

		RF□-400/500	RN□-400 Ex
Housing material	Painted aluminum	■	■
	Plastic	■	-
	Stainless steel	-	-
Extension		■	■
High-polished version		■	■
Plastic-coated fork		■	-
2" process connection		■	■
1", 1½" process connection		■	■
Relay output		■	■
Electronic output		-	-
Electrical connections	Terminal block	■	■
	DIN connector	-	-
	M12 connector	-	-
	Cable	-	-
Intrinsic safety version		-	-
Flameproof enclosure		-	■
DNV		■	-
Mode setting (low-high level)		■	■
Mode indication		■	■
Output test magnet		-	-



RVG-501



RNM-402



TECHNICAL DATA

	Ex d version	Coated version	Standard version
	RN□-4□□-□ Ex, RM□-4□□-□ Ex	RVO-□□□-□	RFO-□□□-□, RJO-□□□-□
Insertion length	69...3000 mm, as per order code		
Material of wetted parts	1.4571 stainless steel	ECTFE/PFA-coating	1.4571 stainless steel
Process connection	As per order code		
Process temperature	See "Temperature data for Ex certified models"	-40...+130 °C (see "Temperature diagrams"), PP flange: -20...+90 °C; ECTFE-coated with 1.4571 flange <sup>(1)</sup> : -40...+120 °C	
Ambient temperature		R□□-4□□: -40...+70 °C, R□□-5□□: -30 ...+70 °C	
Process pressure	max. 40 bar (4 MPa) (see pressure diagrams)	6 bar (0.6 MPa)	max. 40 bar (4 MPa) (with PP flange 6 bar (0.6 MPa) (see "Pressure diagrams")
Medium density	≥ 0.7 kg/dm <sup>3</sup>		
Medium viscosity	≤ 10,000 mm <sup>2</sup> /s (cSt)		
Response time	Getting immersed: ≤ 0.5 s Getting free: ≤ 1 s (see "Response time diagram")		
Output mode indication	Bi-color (LED)		
Supply voltage	See Ex information	20...255 V AC / 20...60 V DC	
Power consumption	< 3 W		
Housing material	Painted aluminum	R□□-4□□: fiberglass-reinforced plastic (PBT) R□□-5□□: painted aluminum	
High/low mode setting	By switch (Low fail-safe - "L", High fail-safe - "H")		
Output	1 or 2 SPDT relays 250 V AC, 8 A, AC1 / 250 V AC, 6 A, AC1		
Electrical connection	See "Ex information"	2× M20×1.5 plastic cable glands for Ø6...Ø12 mm cable, 2× or 3 terminal blocks for max. 1.5 mm <sup>2</sup> wire cross section, 2× internally threaded ½" NPT connection for protective pipes	
Electrical protection	Class I		
Ingress protection	IP67		
Weight	~2.1 kg + 1.2 kg/m extension	R□□-4□□: ~1.3 kg + 1.2 kg/m extension; R□□-5□□: ~0.95 kg + 1.2 kg/m extension	

<sup>(1)</sup> The temperature difference between inner and outer surface of the ECTFE-coated flanges must not exceed +60 °C. If necessary, insulate outer surface of the flange.

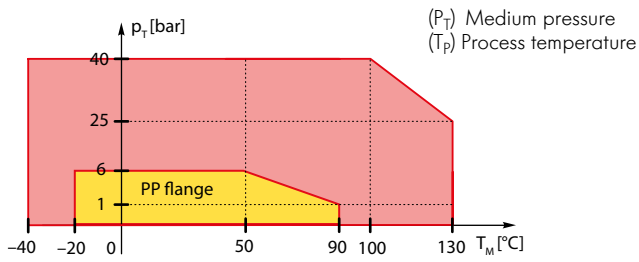
Ex INFORMATION

		Metal housing
		RN□-4□□-N Ex, RN□-4□□-P Ex, RM□-4□□-N Ex, RM□-4□□-P Ex
Explosion protection		Flame-proof housing
Ex marking	IEC Ex	Ex d IIB T6...T4 Ga/Gb, -40 °C ≤ T <sub>amb</sub> ≤ +70 °C
	ATEX	⊕ II 1/2 G Ex d IIB T6...T4 Ga/Gb
Supply voltage		20...250 V AC (50/60 Hz) / 20...36 V DC
Electrical connection		2× M20×1.5 cable glands with Ex d IIC protection for Ø7...Ø12 mm cable 2× or 3× terminal blocks for max. 1.5 mm <sup>2</sup> wire cross section, 2× ½" NPT internal threads for cable protective pipes.

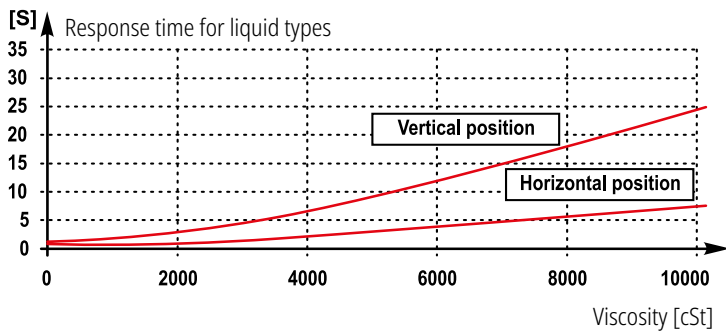
TEMPERATURE DATA FOR Ex CERTIFIED MODELS

Temperature classes	RN□-4□□-N Ex, -P Ex, RM□-4□□-N Ex, -P Ex			
	T6	T5	T4	
Process temperature minimum: -40 °C; Maximum:	+70 °C	+80 °C	+95 °C	+130 °C
Ambient temperature minimum: -40 °C; Maximum:	+65 °C	+50 °C	+65 °C	+70 °C
Highest surface temperature of the process connection	+70 °C	+80 °C	+95 °C	+125 °C
Highest surface temperature	+75 °C			+130 °C

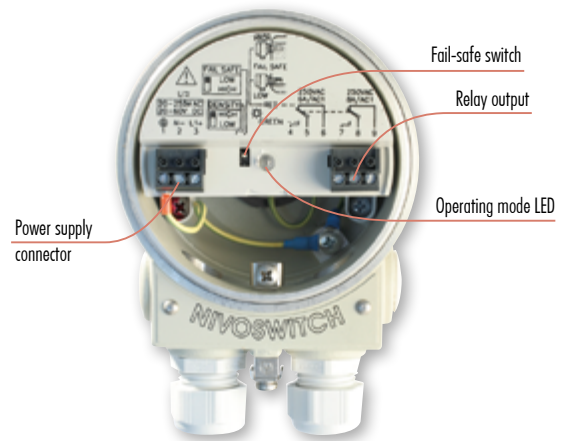
**PRESSURE-TEMPERATURE DIAGRAM**



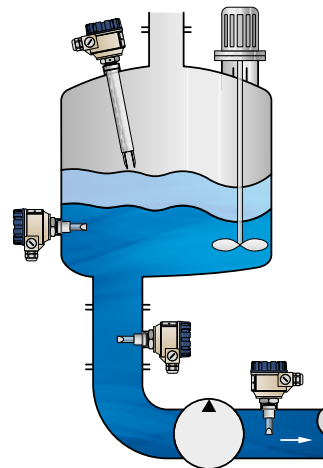
**RESPONSE TIME DIAGRAM**



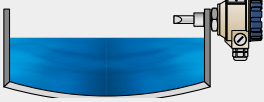


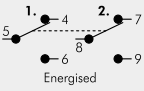



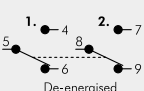



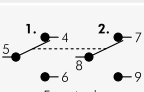
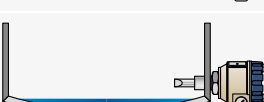


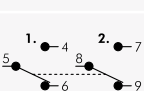

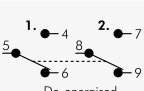
**WIRING**



**INSTALLATION**



**OPERATION**

Power supply	Fork location	Fail-Safe setting	Status LED	Output <sup>(2)</sup>
ON		 HIGH		 Energised
		 HIGH		 De-energised
		 LOW		 Energised
		 LOW		 De-energised
OFF	-	High / Low		 De-energised

<sup>(2)</sup> Emergency is signaled by de-energized relay.

**NIVOSWITCH RF-400 standard version**

**3 years**

Compact vibrating fork level switch for liquids

**Type**

R	■	■	-	■	■	-	■
	0	0					69 mm
	0	1					125 mm

**Fork material**

R	■	■	-	■	■	-	■
F							Stainless steel with tumble polish
V							ECTFE-coated fork, PFA-coated extension (only 1" BSP (PVDF) or flange (PP or ECTFE-coated) process connection)
J							High-polished stainless steel

**Process connection**

R	■	■	-	■	■	-	■
M							1" BSP
P							1" NPT
T							1½" TriClamp (ISO 2852)
R							2" TriClamp (ISO 2852)
D							DN40 Pipe coupling (DIN 11851)
E							DN50 Pipe coupling (DIN 11851)
U							Stainless steel flanges; welded (MF_ - ____ -H type flanges [available from size DN40] should be ordered separately)

Stainless steel flanges;

Flanges conform to: EN 1092-1 / ANSI B 16.5

S							DN40 PN40/25/16/10
G							DN50 PN40/25
B							ANSI 2" RF 600/400 psi
K							JIS 40K 50A

ECTFE-coated stainless steel flange

Flanges conform to: EN 1092-1 / ANSI B 16.5

S							DN40 PN40/25/16/10
G							DN50 PN40/25
B							ANSI 2" RF 600/400 psi
K							JIS 40K 50A

PP flanges (max. 6 bar; from -20 °C to +90 °C)

F							DN50 PN16
A							ANSI 2" FF 150 psi
J							JIS 10K 50A

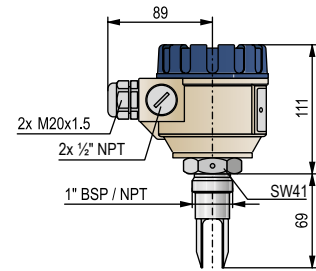
**Housing**

R	■	■	-	■	■	-	■
	4						Painted aluminum
	5						Fiberglass-reinforced plastic (PBT)

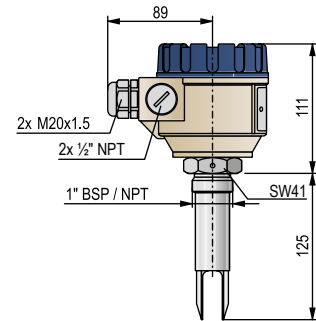
**Output**

R	■	■	-	■	■	-	■
	0						1 SPDT relay: 250 V AC, 8 A
	A						2 SPDT relay: 1x 250 V AC, 8 A and 1x 250 V AC, 6 A
	G	*					1 SPDT relay: 250 V AC, 8 A / DNV
	H	*					2 SPDT relay: 1x 250 V AC, 8 A and 1x 250 V AC, 6 A / DNV

\* RF version only, 1" BSP / 1" NPT and stainless steel flanged version only, with DNV certification.



RFM / RFP-400 / 500



RFM / RFP-401 / 501

LEVEL SWITCHES

**NIVOSWITCH RF-400 extension rod version** **3 years**

Compact vibrating fork level switch for liquids with stainless steel extension rod probe up to 3 m

**Fork material**

R	█ █ - █ █ █ - █	
F		Stainless steel with tumble polishing
V		ECTFE-coated fork, PFA-coated extension (only 1" BSP (PVDF) or flange (PP or ECTFE-coated) process connection)
J		High-polished stainless steel

**Process connection**

R	█ █ - █ █ █ - █	
M		1" BSP
P		1" NPT
T		1½" TriClamp (ISO 2852)
R		2" TriClamp (ISO 2852)
D		DN40 Pipe coupling (DIN 11851)
E		DN50 Pipe coupling (DIN 11851)
U		Stainless steel flanges; welded (MF_ _ _ _ -H type flanges [available from size DN40] should be ordered separately)

Stainless steel flanges;

Flanges conform to: EN 1092-1 / ANSI B 16.5

S		DN40 PN40/25/16/10
G		DN50 PN40/25
B		ANSI 2" RF 600/400 psi
K		JIS 40K 50A

ECTFE-coated stainless steel flange

Flanges conform to: EN 1092-1 / ANSI B 16.5

S		DN40 PN40/25/16/10
G		DN50 PN40/25
B		ANSI 2" RF 600/400 psi
K		JIS 40K 50A

PP flanges (max. 6 bar; -20...+90 °C)

F		DN50 PN16
A		ANSI 2" FF 150 psi
J		JIS 10K 50A

**Housing**

R	█ █ - █ █ █ - █	
4		Painted aluminum
5		Fiberglass-reinforced plastic (PBT)

**Probe length**

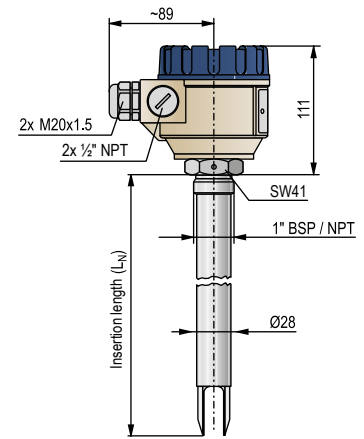
R	█ █ - █ █ █ - █	
For standard polished forks (RF)		
0 2		0.2 m
n n		0.3...3 m; sold by the 0.1 m
For high-polished forks (R)		
0 2		0.2 m
n n		0.3...3 m; sold by the 0.1 m
For ECTFE-coated stainless steel forks (RD, RV)		
0 2		0.2 m
n n		0.3...3 m; sold by the 0.1 m
nn = 03...30 : 0.3...3 m		

**Output**

R	█ █ - █ █ █ - █	
0		1 SPDT relay: 250 V AC, 8 A
A		2 SPDT relay: 1x 250 V AC, 8 A and 1x 250 V AC, 6 A
G *		1 SPDT relay: 250 V AC, 8 A / DNV
H *		2 SPDT relay: 1x 250 V AC, 8 A and 1x 250 V AC, 6 A / DNV

\* RF version only, 1" BSP / 1" NPT and stainless steel flanged version only, max. 300 mm, with DNV certification.

Non-standard probe lengths are available on request



RFM / RFP-402 / 430  
RFM / RFP-502 / 530

## NIVOSWITCH RN-400 Ex standard or extension rod version

3 years

Explosion proof compact vibrating fork level switch for liquids, standard probe length: 125 mm or with stainless steel extension rod version up to 3 m

### Fork material / Ex certificate

R   - 4   -

<b>N</b>	Tumble-polished stainless steel / Ex d G
<b>M</b>	High-polished stainless steel / Ex d G

### Process connection

R   - 4   -

<b>M</b>	1" BSP
<b>P</b>	1" NPT
<b>H</b>	1½" BSP
<b>N</b>	1½" NPT
<b>C</b>	2" BSP
<b>L</b>	2" NPT
<b>T</b>	1½" TriClamp (ISO 2852)
<b>R</b>	2" TriClamp (ISO 2852)
<b>D</b>	DN40 Pipe coupling (DIN 11851)
<b>E</b>	DN50 Pipe coupling (DIN 11851)
<b>U</b>	Stainless steel flanges; welded (MF_----H type flanges [available from size DN40] should be ordered separately)

Stainless steel flanges;

Flanges conform to: EN 1092-1 / ANSI B 16.5

<b>S</b>	DN40 PN40 / 25 / 16 / 10
<b>G</b>	DN50 PN40 / 25
<b>B</b>	ANSI 2" RF 600/300 psi
<b>K</b>	JIS 40K 50A

### Housing

R   -    -

<b>4</b>	Painted aluminum
----------	------------------

### Probe length

R   - 4   -

For standard polished forks (RN)

<b>0 0</b>	Standard probe: 69 mm
<b>0 1</b>	Standard probe: 125 mm
<b>n n</b>	0.2...3 m; sold by the 0.1 m

For high-polished forks (RM)

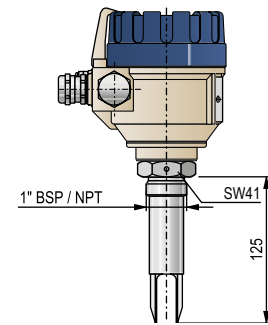
<b>0 0</b>	Standard probe: 69 mm
<b>0 1</b>	Standard probe: 125 mm
<b>n n</b>	0.2...3 m; sold by the 0.1 m

nn = 02...30 : 0,2...3 m

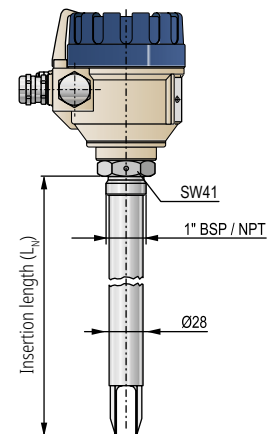
### Output

R   - 4   -

<b>N</b>	1 SPDT relay: 250 V AC, 8 A
<b>P</b>	2 SPDT relay: 1x 250 V AC, 8 A and 1x 250 V AC, 6 A



RNM / RNP-401



RNM / RNP-402 / 430

NIVOSWITCH RL/RC-200/300 vibrating fork level switches are suitable for detecting the level of granular or powdered solids. Mounted on silos, bins it can control filling/emptying, also can generate fail-safe alarms providing overflow protection. The operation principle is based on that the electronic circuit excites a vibration in the fork probe. When the medium reaches and covers the fork, its vibration changes or stops. The fork will start vibrating freely again as the medium sets it free. The electronics senses the change of vibration and gives output signal after a selected delay.

The PNP/NPN transistor output versions can be connected directly to PLC, or relay unit. Certain types of NIVOSWITCH vibrating forks are able to solve switching tasks of high-current loads with the help of UNICONT PPK switching amplifiers.

**FEATURES**

- Integrated version
- Rod length up to 3 meters
- Selectable sensitivity
- Electronic output
- Switching performance does not depend on the change of liquid conductivity, dielectric constant, pressure and temperature
- Process temperature max. +130 °C
- Output can be toggled by test magnet (optional)
- Ex variants
- NIFLANGE weldable stainless steel flange variants
- IP65 / IP68
- 3 years warranty

**APPLICATIONS**

- For solids: min. 0.01 kg/dm<sup>3</sup> density
- Level switching for powders, granules
- Chemical industry, food & beverages, paper mill and plastic industry
- For free-flowing, powdered solids, granules
- Covers a large variety of level detection, applications such as high/low fail-safe limit switch, overflow protection

**VARIANTS**

This table helps choose the proper version for a given level switching task. Most essential aspect is the consistency of the measurement medium.

		RCC-300	RLC-300
Housing material	Stainless steel	■	■
	Plastic	-	-
	Aluminum	-	-
Extension		■	■
1" process connection		■	-
1½" process connection		■	■
Relay output		-	-
Electronic output		■	■
Electrical connection	Terminal block	-	-
	DIN connector	■	■
	Cable	■	■
Dust Ex version		-	-
Mode setting (low-high level)		■ <sup>(1)</sup>	■ <sup>(1)</sup>
Mode indication		■	■
Density selection		■	■
Output test magnet		■	■

<sup>(1)</sup> Only for 3-wire DC versions



## TECHNICAL DATA

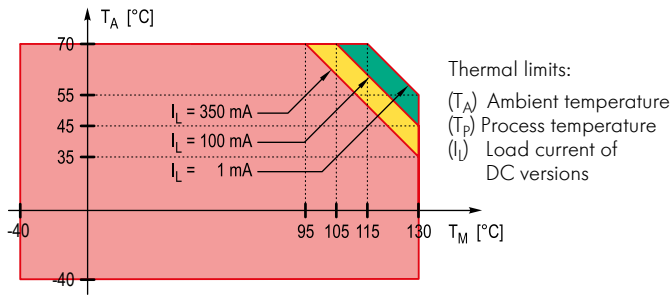
	2-wire AC version		2-wire DC version		3-wire DC version	
	R□□-3□□-1, -2		R□□-3□□-6, -7		R□□-3□□-3, -4	
Insertion length	125...3000 mm, as per order code					
Material of wetted parts	1.4571 stainless steel					
Process connection	As per order code					
Process temperature	-40...+130 °C (see "Temperature diagram")					
Ambient temperature	-40...+70 °C (see "Temperature diagram")					
Process pressure	Up to 40 bar (4 MPa); PP flange: 6 bar (0.6 MPa) (see "Pressure-temperature diagram")					
Medium density	≥ 0.01 kg/dm <sup>3</sup>					
Response time	Getting immersed: 0.5 s					
	Getting free: ≤ 1 s at high-density ("H") setting ( $\rho \geq 0.5 \text{ kg/dm}^3$ ) ≤ 3 s at low-density ("L") setting ( $\rho < 0.5 \text{ kg/dm}^3$ )					
Output mode indication	Bi-color (LED)					
Operation test	Output can be toggled by test magnet					
Housing material	1.4571 stainless steel					
Electrical protection	Class I			Class III		
Output protection	-			Reverse polarity, overcurrent and short-circuit protection		
Weight	~0.5 kg + 1.2 kg/m extension					

## TYPE-SPECIFIC DATA

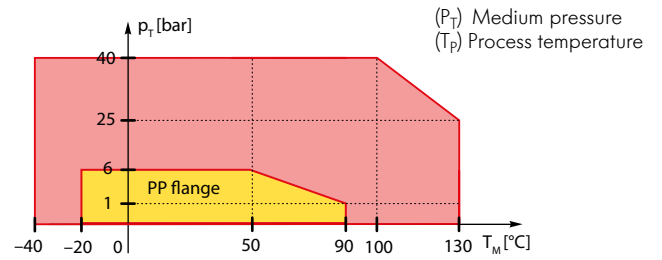
	2-wire AC version		2-wire DC version		3-wire DC version	
	R□□-3□□					
	-1	-2	-6	-7	-3	-4
Electrical connection	DIN connector	3 m integrated cable <sup>(1)</sup> ; (4× 0.75 mm <sup>2</sup> )	DIN connector	3 m integrated cable <sup>(1)</sup> ; (2× 0.5 mm <sup>2</sup> )	DIN connector	3 m integrated cable <sup>(1)</sup> ; (5× 0.5 mm <sup>2</sup> )
Ingress protection	IP65	IP68	IP65	IP68	IP65	IP68
High/low mode setting (Low fail-safe - "L", High fail-safe - "H")	Determined by the wiring inside the connector	Determined by the wiring	By switch on the remote switching unit		Switch selectable	Wire selectable
Selection of density (Low density - "L", high density - "H")	Not possible, $\rho \geq 0.5 \text{ kg/dm}^3$		By inverting the polarity of connection		By switch on the cover	With wiring
Supply voltage	20...255 V AC		15...27 V DC		DC: 12...55 V DC	
Power consumption	depending on load		< 0.5 W		< 0.6 W	
Output	2-wire AC, for serial connection		DC current change: When free: 9 ± 1 mA; When immersed: 14 ± 1 mA		Field selectable, NPN / PNP transistor switch	Field selectable, galvanically isolated PNP/NPN transistor switch
Load current (I <sub>L</sub> )	max. continuous: 350 mA AC 13 min. continuous: 10 mA / 255 V, 25 mA / 24 V max. impulse: 1.5 A / 40 ms		-		max. continuous: I <sub>Lmax</sub> = 350 mA DC / U <sub>max</sub> = 55 V DC	
Residual current, in switched off state (I <sub>min</sub> )	< 6 mA		-		< 10 µA	
Voltage drop when switched on	< 10.5 V		-		0...1.8 V	

<sup>(1)</sup> Available cable length: up to 30 m

THERMAL PROPERTIES



PRESSURE-TEMPERATURE DIAGRAM



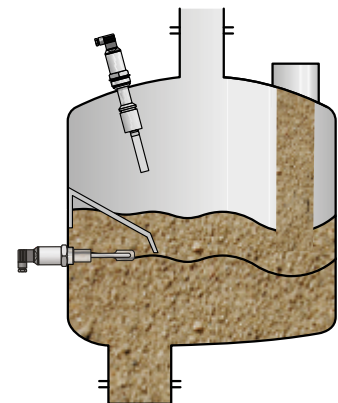
OPERATION

2-wire AC, 3-wire DC version					
Power supply		Fork location	Fail-Safe setting <sup>(2)</sup>	Status LED	Output
ON	High level		High		ON (I <sub>L</sub> )
			High		OFF (I <sub>min</sub> )
	Low level		Low		ON (I <sub>L</sub> )
			Low		OFF (I <sub>min</sub> )
OFF	-	-	High / Low		OFF (I = 0)

2-wire DC version			
Power supply	Fork location	Status LED	Output
ON			14 ± 1 mA
			9 ± 1 mA
OFF	Fork immersed, or fork is free		-

<sup>(2)</sup> In the case of the integrated version with integrated cable, it is determined by the appropriate wiring.

INSTALLATION



MODE SELECT

R□□-3□□-3



Fail-safe switch<sup>(3)</sup>      Density switch<sup>(3)</sup>

Operating mode LED  
 2-wire DC types  
 R□□-3□□-6, -7:  
 Operating mode setting only possible on PKK-312 accessory  
 Other types:  
 Operating mode can be selected by wiring

<sup>(3)</sup> Only for 3-wire DC versions.



**NIVOSWITCH RC-300 standard version**

**3 years**

Mini compact vibrating fork level switch for light, free-flowing solids  
 Standard probe length: 125 mm

**Process connection**

**R C**  - **3**   -

<b>M</b>	1" BSP
<b>P</b>	1" NPT
<b>U</b>	Stainless steel flanges; welded (MF_---H type flanges [available from size DN40] should be ordered separately)

Stainless steel flanges;  
 Flanges conform to: EN 1092-1 / ANSI B 16.5

<b>G</b>	DN50 PN40 / 25
<b>B</b>	ANSI 2" RF 600 / 400 psi
<b>K</b>	JIS 40K 50A
PP flanges (max.: 6 bar; -20 °C to +90 °C)	
<b>F</b>	DN50 PN16
<b>A</b>	ANSI 2" FF 150 psi
<b>J</b>	JIS 10K 50A

**Probe length**

**R C**  - **3**   -

<b>0 1</b>	125 mm
------------	--------

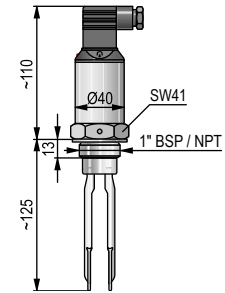
**Output / Certificates**

**R C**  - **3**   -

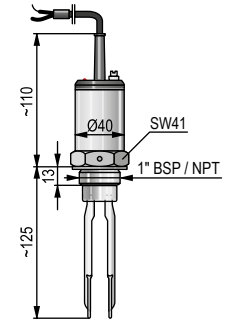
<b>1</b>	2-wire AC, connector
<b>2</b>	2-wire AC, cable
<b>3</b>	3-wire DC, connector
<b>4</b>	3-wire DC, cable
<b>6</b>	2-wire DC, connector
<b>7</b>	2-wire DC, cable

**Cable**

Maximum length 30 m; sold by the meter over the standard 3 m



RCM / RCP-301  
with DIN connection



RCM / RCP-301  
with integrated cable

**NIVOSWITCH RC-300 extension rod version** **3 years**

Mini compact vibrating fork level switch for light, free-flowing solids with stainless steel extension rod up to 3 m

**Process connection**

<b>R C</b> <input type="checkbox"/> <input type="checkbox"/> - <b>3</b> <input type="checkbox"/> <input type="checkbox"/> - <input type="checkbox"/>	
<b>M</b>	1" BSP
<b>P</b>	1" NPT
<b>U</b>	Stainless steel flanges; welded (MF_----H type flanges [available from size DN40] should be ordered separately)

Stainless steel flanges;  
Flanges conform to: EN 1092-1 / ANSI B 16.5

<b>G</b>	DN50 PN40 / 25
<b>B</b>	ANSI 2" RF 600 / 400 psi
<b>K</b>	JIS 40K 50A
PP flanges (max.: 6 bar; -20 °C to +90 °C)	
<b>F</b>	DN50 PN16
<b>A</b>	ANSI 2" FF 150 psi
<b>J</b>	JIS 10K 50A

**Probe length**

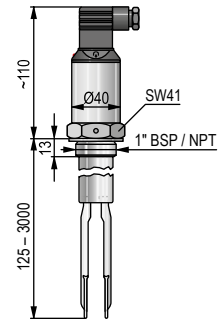
<b>R C</b> <input type="checkbox"/> - <b>3</b> <input type="checkbox"/> <input type="checkbox"/> - <input type="checkbox"/>	
<b>0 2</b>	0.2 m
<b>n n</b>	0.3...3 m; sold by the 0.1 m
nn = 03...30 : 0.3...3 m	

**Output / Certificates**

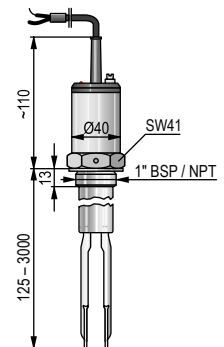
<b>R C</b> <input type="checkbox"/> - <b>3</b> <input type="checkbox"/> <input type="checkbox"/> - <input type="checkbox"/>	
<b>1</b>	2-wire AC, connector
<b>2</b>	2-wire AC, cable
<b>3</b>	3-wire DC, connector
<b>4</b>	3-wire DC, cable
<b>6</b>	2-wire DC, connector
<b>7</b>	2-wire DC, cable

**Cable**

Maximum length 30 m; sold by the meter over the standard 3 m



RCM / RCP-302 / 330 with DIN connector



RCM / RCP-302 / 330 with integrated cable

**NIVOSWITCH RL-300 short or standard version**

**3 years**

Mini compact vibrating fork level switch with welded fork for powders and granules  
 Short probe length: 137 mm, standard probe length: 175 mm

**Type**

**R L** ■ - 3 □ □ - ■

<b>0 1</b>	137 mm
<b>0 2</b>	175 mm

**Process connection**

**R L** □ - 3 ■ ■ - ■

<b>H</b>	1½" BSP
<b>N</b>	1½" NPT
<b>U</b>	Stainless steel flanges; welded (MF_ - ___ -H type flanges [available from size DN40] should be ordered separately)

Stainless steel flanges;

Flanges conform to: EN 1092-1 / ANSI B 16.5

<b>G</b>	DN50 PN40 / 25
<b>B</b>	ANSI 2" RF 600 / 400 psi
<b>K</b>	JIS 40K 50A

PP flanges (max. 6 bar; -20 °C to +90 °C)

<b>F</b>	DN50 PN16
<b>A</b>	ANSI 2" FF 150 psi
<b>J</b>	JIS 10K 50A

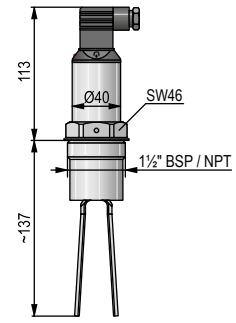
**Output / Certificates**

**R L** ■ - 3 ■ ■ - □

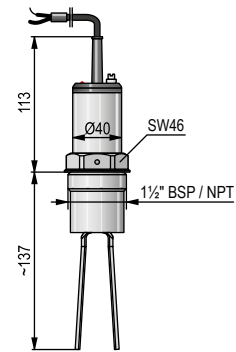
<b>1</b>	2-wire AC, DIN connector
<b>2</b>	2-wire AC, integrated cable
<b>3</b>	3-wire DC, DIN connector
<b>4</b>	3-wire DC, integrated cable
<b>6</b>	2-wire DC, DIN connector
<b>7</b>	2-wire DC, integrated cable

**Cable**

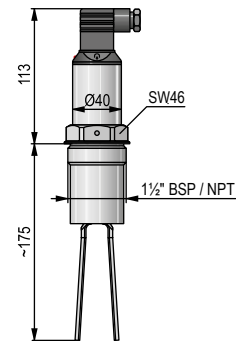
Maximum length 30 m; sold by the meter over the standard 3 m



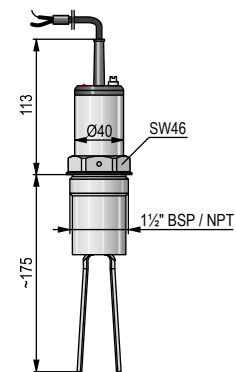
RLH / RLN-301 with DIN connector



RLH / RLN-301 with integrated cable



RLH / RLN-302 with DIN connector



RLH / RLN-302 with integrated cable

**NIVOSWITCH RL-300 extension rod version** **3 years**

Mini compact vibrating fork level switch with welded fork for powders and granules with stainless steel extension rod up to 3 m

**Process connection**

<b>R L</b> <input type="checkbox"/> - <b>3</b> <input type="checkbox"/> <input type="checkbox"/> - <input type="checkbox"/>	
<b>H</b>	1½" BSP
<b>N</b>	1½" NPT
<b>U</b>	Stainless steel flanges; welded (MF_----H type flanges [available from size DN40] should be ordered separately)

Stainless steel flanges;

Flanges conform to: EN 1092-1 / ANSI B 16.5

<b>G</b>	DN50 PN40 / 25
<b>B</b>	ANSI 2" RF 600 / 400 psi
<b>K</b>	JIS 40K 50A
PP flanges (max. 6 bar; -20 °C to +90 °C)	
<b>F</b>	DN50 PN16
<b>A</b>	ANSI 2" FF 150 psi
<b>J</b>	JIS 10K 50A

**Probe length**

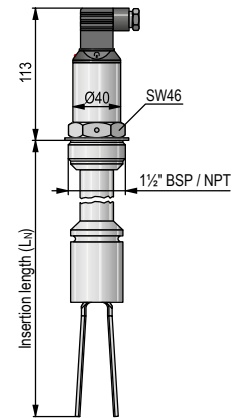
<b>R L</b> <input type="checkbox"/> - <b>3</b> <input type="checkbox"/> <input type="checkbox"/> - <input type="checkbox"/>	
<b>0 3</b>	0.3 m
<b>n n</b>	0.4...3 m; sold by the 0.1 m
nn = 04...30 : 0.4...3 m	

**Output / Certificates**

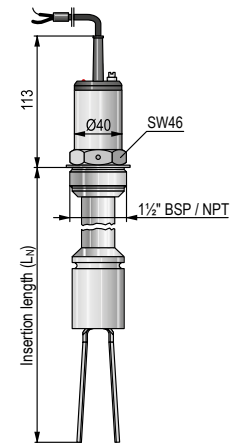
<b>R L</b> <input type="checkbox"/> - <b>3</b> <input type="checkbox"/> <input type="checkbox"/> - <input type="checkbox"/>	
<b>1</b>	2-wire AC, DIN connector
<b>2</b>	2-wire AC, integrated cable
<b>3</b>	3-wire DC, DIN connector
<b>4</b>	3-wire DC, integrated cable
<b>6</b>	2-wire DC, DIN connector
<b>7</b>	2-wire DC, integrated cable

**Cable**

Maximum length 30 m; sold by the meter over the standard 3 m



RLH / RLN-303 / 330 with DIN connector



RLH / RLN-303 / 330 with integrated cable

NIVOSWITCH RF/RR-200/300 vibrating fork level switches with diverging vibrating fork are suitable for detecting the level of granular or powdered solids. Mounted on silos, bins it can control filling/emptying, also can generate fail-safe alarms providing overflow protection. The operation principle is based on that the electronic circuit excites a vibration in the fork probe. When the medium reaches and covers the fork, its vibration changes or stops. The fork will start vibrating freely again as the medium sets it free. The electronics senses the change of vibration and gives output signal after a selected delay.

**FEATURES**

- Compact version
- Rod length up to 3 meters
- Selectable sensitivity
- Relay output
- Switching performance does not depend on the change of liquid conductivity, dielectric constant, pressure and temperature
- Process temperature max. +130 °C
- Ex variants
- NIFLANGE weldable stainless steel flange variants
- IP67
- 3 years warranty

**APPLICATIONS**

- For solids: min. 0.01 kg/dm<sup>3</sup> density
- Level switching for powders, granules
- Chemical industry, food & beverages, paper mill and plastic industry
- For free-flowing, powdered solids, granules
- Covers a large variety of level detection, applications such as high/low fail-safe limit switch, overflow protection

**CERTIFICATES**

- ATEX (Ex ta/tb D)

**TECHNICAL DATA**

	Aluminum housing (R□□-3□□-□)	Plastic housing (R□□-2□□-□)
Insertion length	125...3000 mm, as per order code	
Material of wetted parts	1.4571 stainless steel	
Process connection	As per order code	
Process temperature	-40...+130 °C, PP flange: -20...+90 °C	
Ambient temperature	-40...+70 °C	
Process pressure	max. 40 bar (4 MPa), with PP flange: 6 bar (0.6 MPa) (see "Pressure-temperature diagram")	
Medium density	≥ 0.01 kg/dm <sup>3</sup>	
Response time	Getting immersed: ≤ 0.5 s	
	Getting free: ≤ 1 s – selected high density ("H") (ρ ≥ 0.5 kg/dm <sup>3</sup> ). ≤ 3 s – selected low density ("L") (ρ < 0.5 kg/dm <sup>3</sup> )	
Output mode indication	Bi-color (LED)	
Supply voltage <sup>(1)</sup>	20...255 V AC/DC	
Power consumption	DC: < 3 W	
Housing material	Painted aluminum	Fiberglass-reinforced plastic (PBT)
High/low mode setting	By switch (Low fail-safe – "L", High fail-safe – "H")	
Selection of density	By switch (Low density – "L", high density – "H")	
Output <sup>(1)</sup>	1 or 2 SPDT relays 250 V AC, 8 A, AC1 / 250 V AC, 6 A, AC1	
Electrical connection <sup>(1)</sup>	2× M20×1.5 plastic cable glands for Ø6...Ø12 mm cable, 2× or 3× terminal blocks for max. 2.5 mm <sup>2</sup> wire cross section, 2× internally threaded ½" NPT connection for protective pipes	
Electrical protection	Class I	
Ingress protection	IP67	
Weight	1.3 kg + 1.2 kg/m extension	0.95 kg + 1.2 kg/m extension

<sup>(1)</sup> For Ex type see "Ex Information" table.

**VARIANTS**

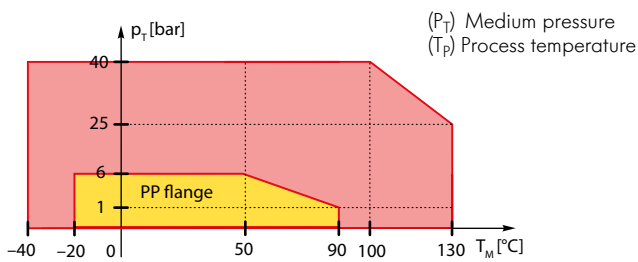
This table helps choose the proper version for a given level switching task. Most essential aspect is the consistency of the measurement medium.

		RF□-200/300	RR□-200/300
Housing material	Stainless steel	-	-
	Plastic	■	■
	Aluminum	■	■
Extension		■	■
1" process connection		■	-
1½" process connection		■	■
Relay output		■	■
Electronic output		-	-
Electrical connection	Terminal block	■	■
	DIN connector	-	-
	Cable	-	-
Dust Ex version		■	■
Mode setting (low-high level)		■	■
Mode indication		■	■
Density selection		■	■
Output test magnet		-	-

Ex INFORMATION

		Compact version, metal housing (RFO/RRH-300-B Ex)
Explosion protection		Dust Ex
Ex marking	ATEX	Ⓜ II 1/2 D Ex ta/tb IIIC T140 °C Da/Db
Supply voltage		20...250 V AC / 20...50 V DC
Electrical connection		2× M20×1.5 cable glands for Ø7...Ø12 mm cable
		Ex ta IIIC protection 2× terminal blocks for max. 1.5 mm <sup>2</sup> wire cross section, 2× ½" NPT internal threads for cable protective pipes.

PRESSURE-TEMPERATURE DIAGRAM



RFM-301

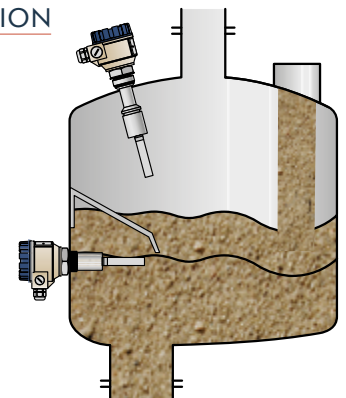


RRH-301

OPERATION

Compact and Mini compact version					
Power supply		Fork location	Fail-Safe setting	Status LED	Output
ON	High level				
	Low level				
OFF	-	-	High / Low		

INSTALLATION



OPERATING MODE SWITCHES

Compact Fail-safe	Compact Density
  Fail-safe alarm is indicated with de-energized relay	 Medium density ≥ 0.5 kg/dm <sup>3</sup>  Medium density < 0.5 kg/dm <sup>3</sup>

## NIVOSWITCH RF-200 standard version

3 years

Compact vibrating fork level switch for light free-flowing solids  
Standard probe length: 125 mm

### Process connection

R F  -    -   -

<b>M</b>	1" BSP
<b>P</b>	1" NPT
<b>U</b>	Stainless steel flanges; welded (MF_----H type flanges [available from size DN40] should be ordered separately)

Stainless steel flanges;  
Flanges conform to: EN 1092-1 / ANSI B 16.5

<b>G</b>	DN50 PN40 / 25
<b>B</b>	ANSI 2" RF 600 / 400 psi
<b>K</b>	JIS 40K 50A
PP flanges (max. 6 bar; -20 °C to +90 °C)	
<b>F</b>	DN50 PN16
<b>A</b>	ANSI 2" FF 150 psi
<b>J</b>	JIS 10K 50A

### Housing

R F  -    -   -

<b>2</b>	Fiberglass-reinforced plastic (PBT) (Ex version not available)
<b>3</b>	Painted aluminum

### Probe length

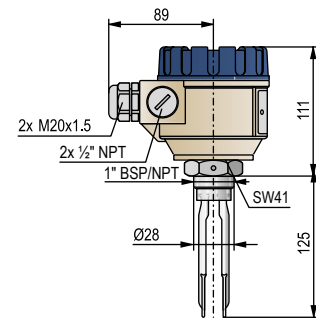
R F  -    -   -

<b>0 1</b>	125 mm
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### Output / Certificates

R F  -    -   -

<b>0</b>	1 SPDT relay: 250 V AC, 8 A
<b>A</b>	2 SPDT relays: 1x 250 V AC, 8 A and 1x 250 V AC, 6 A
<b>B</b>	1 SPDT relay: 250V AC, 8 A / Ex ta/tb D



RFM / RFP-201 / 301

**NIVOSWITCH RF-200 extension rod version** **3 years**

Compact vibrating fork level switch for light free-flowing solids with stainless steel extension rod up to 3 m

**Process connection**

<b>R F</b> <input type="checkbox"/> - <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> - <input type="checkbox"/>	
<b>M</b>	1" BSP
<b>P</b>	1" NPT
<b>U</b>	Stainless steel flanges; welded (MF_----H type flanges [available from size DN40] should be ordered separately)

Stainless steel flanges;  
Flanges conform to: EN 1092-1 / ANSI B 16.5

<b>G</b>	DN50 PN40 / 25
<b>B</b>	ANSI 2" RF 600 / 400 psi
<b>K</b>	JIS 40K 50A
PP flanges (max. 6 bar; -20 °C to +90 °C)	
<b>F</b>	DN50 PN16
<b>A</b>	ANSI 2" FF 150 psi
<b>J</b>	JIS 10K 50A

**Housing**

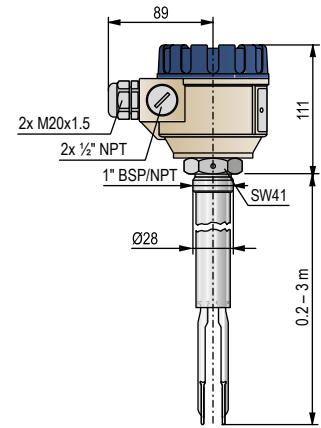
<b>R F</b> <input type="checkbox"/> - <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> - <input type="checkbox"/>	
<b>2</b>	Fiberglass-reinforced plastic (PBT) (Ex version not available)
<b>3</b>	Painted aluminum

**Probe length**

<b>R F</b> <input type="checkbox"/> - <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> - <input type="checkbox"/>	
<b>0 2</b>	0.2 m
<b>n n</b>	0.3...3 m; sold by the 0.1 m
nn = 03...30 : 0.3...3 m	

**Output / Certificates**

<b>R F</b> <input type="checkbox"/> - <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> - <input type="checkbox"/>	
<b>0</b>	1 SPDT relay: 250 V AC, 8 A
<b>A</b>	2 SPDT relays: 1x 250 V AC, 8 A and 1x 250 V AC, 6 A
<b>B</b>	1 SPDT relay: 250V AC, 8 A / Ex ta/tb D



RFM / RFP-202 / 230  
RFM / RFP-302 / 330



**NIVOSWITCH RR-200 short or standard version**

**3 years**

Compact vibrating fork level switch with welded fork for powders and granules  
 Short probe length: 137 mm, standard probe length: 175 mm

**Type**

R	R	-	□	□	-	□
0	1					Short probe, Probe length: 137 mm
0	2					Standard probe, Probe length: 175 mm

**Process connection**

R	R	□	-	□	□	□	□	-	□
H									1½" BSP
N									1½" NPT
U									Stainless steel flanges; welded (MF_ _ _ _H type flanges [available from size DN40] should be ordered separately)

Stainless steel flanges;  
 Flanges conform to: EN 1092-1 / ANSI B 16.5

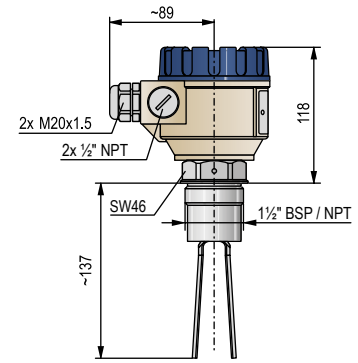
G	DN50 PN40 / 25
B	ANSI 2" RF 600 / 400 psi
K	JIS 40K 50A
PP flanges (maximum 6 bar; -20 °C to +90 °C)	
F	DN50 PN16
A	ANSI 2" FF 150 psi
J	JIS 10K 50A

**Housing**

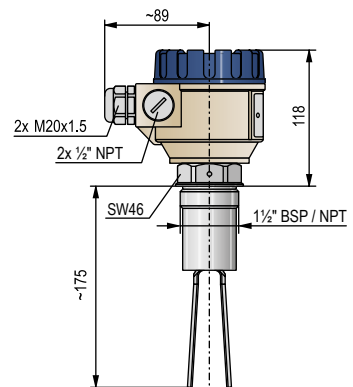
R	R	-	□	□	□	□	-	□
2								Fiberglass-reinforced plastic (PBT) (Ex version not available)
3								Painted aluminum

**Output / Certificates**

R	R	-	□	□	□	□	-	□
0								1 SPDT relay: 250 V AC, 8 A
A								2 SPDT relays: 1x 250 V AC, 8 A and 1x 250 V AC, 6 A
B								1 SPDT relay: 250 V AC, 8 A / Ex ta/tb D



RRH / RRN-201 / 301



RRH / RRN-202 / 302

**NIVOSWITCH RR-200 extension rod version** **3 years**

Compact vibrating fork level switch with welded fork for powders and granules with stainless steel extension rod up to 3 m

**Process connection**

<b>R R</b> <input type="checkbox"/> - <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> - <input type="checkbox"/> <input type="checkbox"/>	
<b>H</b>	1½" BSP
<b>N</b>	1½" NPT
<b>U</b>	Stainless steel flanges; welded (MF_----H type flanges [available from size DN40] should be ordered separately)

Stainless steel flanges;  
Flanges conform to: EN 1092-1 / ANSI B 16.5

<b>G</b>	DN50 PN40 / 25
<b>B</b>	ANSI 2" RF 600 / 400 psi
<b>K</b>	JIS 40K 50A
PP flanges (maximum 6 bar; -20 °C to +90 °C)	
<b>F</b>	DN50 PN16
<b>A</b>	ANSI 2" FF 150 psi
<b>J</b>	JIS 10K 50A

**Housing**

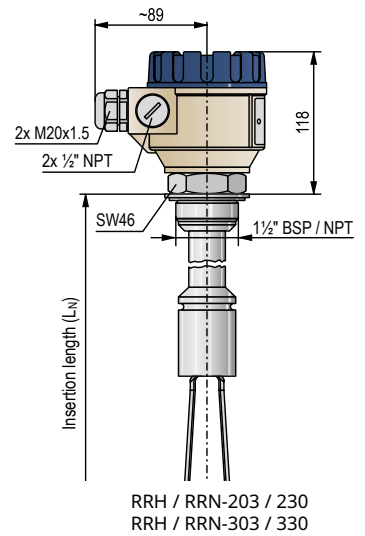
<b>R R</b> <input type="checkbox"/> - <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> - <input type="checkbox"/> <input type="checkbox"/>	
<b>2</b>	Fiberglass-reinforced plastic (PBT) (Ex version not available)
<b>3</b>	Painted aluminum

**Probe length**

<b>R R</b> <input type="checkbox"/> - <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> - <input type="checkbox"/> <input type="checkbox"/>	
<b>0 3</b>	0.3 m
<b>n n</b>	0.4...3 m; sold by the 0.1 m
nn = 04...30 : 0.4...3 m	

**Output / Certificates**

<b>R R</b> <input type="checkbox"/> - <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> - <input type="checkbox"/> <input type="checkbox"/>	
<b>0</b>	1 SPDT relay: 250 V AC, 8 A
<b>A</b>	2 SPDT relay: 1x 250 V AC, 8 A and 1x 250 V AC, 6 A
<b>B</b>	1 SPDT relay: 250 V AC, 8 A / Ex ta/tb D



**UNICONT PKK-312-8 Ex**

**3 years**

DIN-rail-mountable intrinsically safe remote switching unit dedicated to the Ex ia rated NIVOSWITCH R-400 series mini compact vibrating fork level switches

Type

**PKK - 3 1 2 - 8** 24 V DC / [Ex ia G/D] (for Ex ia G vibrating forks)

**UNICONT PK-300**

**3 years**

DIN-rail-mountable programmable current controlled remote switching unit featuring 1...22 mA input current and powering capabilities for transmitters

Type

- PKK - 3 1 2 - 1** 230 V AC
- PKK - 3 1 2 - 2** 110 V AC
- PKK - 3 1 2 - 3** 24 V AC
- PKK - 3 1 2 - 4** 24 V AC/DC
- PKK - 3 1 2 - 7** 24 V AC/DC / [Ex ia G/D]

**NIVOSWITCH RP**

**3 years**

Sliding sleeve for NIVOSWITCH R-300/R-400 series vibrating forks only for extended versions without coating and with a minimum length of 300 mm

Type

- RPH - 1 1 2 - 0** 1½" BSP (1.4571, max. up to 6 bar process pressure)
- RPN - 1 1 2 - 0** 1½" NPT (1.4571, max. up to 6 bar process pressure)
- RPH - 1 2 2 - 0** 1½" BSP (1.4571, max. up to 6 bar process pressure, for coated version)
- RPN - 1 2 2 - 0** 1½" NPT (1.4571, max. up to 6 bar process pressure, for coated version)

**NIVOSWITCH RP**

**3 years**

Stainless steel weld-in socket for flush mounting with O-ring seal for NIVOSWITCH R\_M-400 vibrating forks

Type

- RPG - 1 0 1 - 0** 1" BSP
- RPK - 1 0 1 - 0** 1" NPT

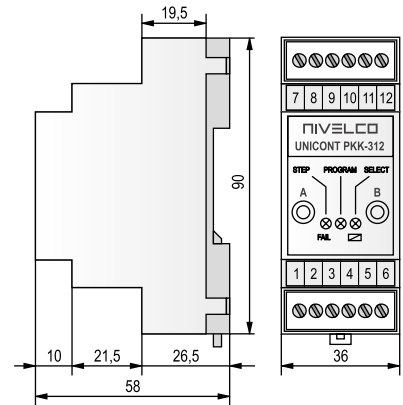
**NIVOSWITCH RPS**

**3 years**

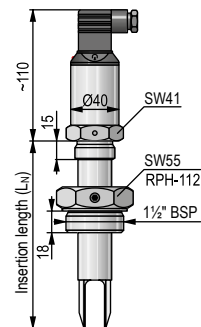
Magnetic screwdriver for operation test of mini compact NIVOSWITCH vibration forks

Type

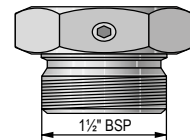
- RPS - 1 0 1 - 0** Test magnet



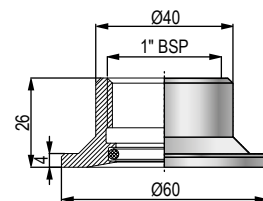
PKK-312



RCM-403 / 430 + RPH-112



RPH-112 / 122



RPG-101