

Для твердых веществ



RusAutomation

# NIVOCONT R

ВИБРАЦИОННЫЕ СТЕРЖНЕВЫЕ ДАТЧИКИ УРОВНЯ



ДАТЧИКИ УРОВНЯ

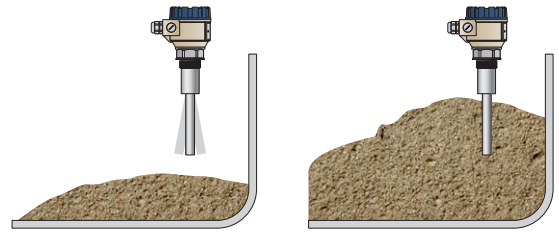
В С Е Г Д А Н А В Ы С Ш Е М У Р О В Н Е



С  
Л  
У  
Ж  
И  
Т

## GENERAL DESCRIPTION

The NIVOCONT R series of vibrating rod level switches are robust instruments designed for low and high level indication of granules and powders with a minimum of 0.05 kg/dm<sup>3</sup> density. Mounted on tanks, silos or hopper bins it can control filling / emptying, or give fail-safe alarm signals. The highly polished version is recommended to use for abrasive mediums. The operation principle is based on that the electronic circuit excites a vibration in the rod probe. When the medium reaches and covers the rod, its vibration stops, when the medium leaves the rod it returns to vibrate freely. The electronics senses the change of vibration and gives output signal after a selected delay.



## MAIN FEATURES

- Extension up to 20 m
- Adjustable sensitivity
- Max. medium temperature: +160 °C
- Universal supply voltage
- Dust explosion protection
- Fine polished probe
- IP67 protection

## APPLICATIONS

- Powders, pellets, granulates
- Grains
- Ground products
- Stone-powder, chippings
- Cement, sand
- Coal, slag

## CERTIFICATIONS

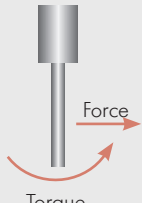
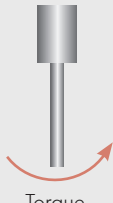

- ATEX (Dust Ex)
- IEC (Dust Ex)



RKR-500 / 600

## TYPE SELECTION

Position of the switching point (high, low) and the mounting (side, top) determines the selection of the appropriate type.

Version	Standard	Rod extended	Cable extended	
High limit switch	Side mounted	Top mounted	Top mounted	
Low limit switch		Top mounted	Top mounted	
Loadability				
Max. load	Force	500 N	-	45 kN
	Torque	100 Nm	100 Nm	-



RKK-500 / 600

TECHNICAL DATA

Version		Standard	Rod extended	Cable extended
Insertion length		207 mm	0.3 – 3 m	1 – 20 m
Material of wetted parts		1.4571		Vibrating part: 1.4571 Cable: PE cover
Process connection		1½" BSP; 1½" NPT as per order code		
Output		See: output data		
Temperature range		Standard: -30 °C ... +110 °C; High temp. version <sup>(2)</sup> : -30 °C ... +160 °C		-30 °C ... +80 °C
		Ex version: see temperature data		
Medium pressure		Max. 2.5 MPa (25 bar)		Max. 0.6 MPa (6 bar)
Max. load	Force	500 N	–	45 kN
	Torque	100 Nm	100 Nm	–
Medium density <sup>(1)</sup>		Minimum 0.05 kg/dm <sup>3</sup> (granular size 10 mm)		
Response time (selectable)		< 2 sec or 5 sec ±1.5 sec		
Power supply		20 – 255 V AC/DC, Ex: 20 – 250 V AC, 20 – 50 V DC		
Power consumption		≤ 2.5 VA / 2 W		
Housing material		Paint coated aluminium or plastic (PBT)		
Electrical connection		2x M20x1.5 plastic cable glands, for Ø6 – 12 mm cable + 2x NPT ½" internal thread for cable protective pipe 2 pcs. terminal blocks for 0.5 – 1.5 mm <sup>2</sup> wire cross section		
Electrical protection		Class I		
Ingress protection		IP67		
Mass	Metal housing	1.88 kg	1.88 kg + 1.4 kg/m	1.88 kg + 0.6 kg/m
	Plastic housing	1.5 kg	1.5 kg + 1.4 kg/m	1.5 kg + 0.6 kg/m

<sup>(1)</sup> Depends on the internal friction and the granular size of the medium

<sup>(2)</sup> Only with metal housing

OUTPUT DATA

Output	Relay	Electronic
Output type and rating	SPDT 250 V AC, 8 A, AC1	SPST 50 V, 350 mA
Output protection	–	Overvoltage, overcurrent and overload
Voltage drop (switched on)	–	< 2.7 V 350 mA
Residual current (switched off)	–	< 10 µA

SPECIAL DATA FOR Ex CERTIFIED MODELS

Type	R□□-5□□-5Ex	
Protection type	Dust Ex	
Ex marking <sup>(2)</sup>	ATEX	Ⓔ III/2 D Ex ta/tb IIIC T90 °C...T170 °C Da/Db
	IEC Ex <sup>(3)</sup>	Ex t IIIC T* Da/Db IP67 *(see Temperature data table)
Electrical connection	2 pcs. M20x1.5 cable glands with Ex ta IIIC protection type, 2 pcs. plug-in type terminal blocks for max. 1.5 mm <sup>2</sup> wire cross section	

<sup>(2)</sup> Only with metal housing

<sup>(3)</sup> Need of IEC is to be specified with order

TEMPERATURE DATA

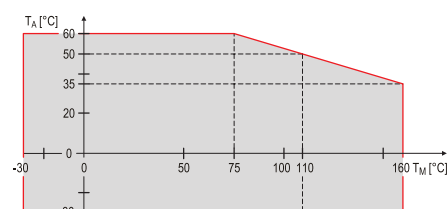
Temperature limit values for Ex versions:

Temperature data	Cable extended			Standard and rod extended			High temp.	
Medium temp. (T <sub>M</sub> ) <sup>(4)</sup> Min.: -30 °C	+60 °C	+70 °C	+80 °C <sup>(5)</sup>	+60 °C	+70 °C	+95 °C	+110 °C	+160 °C
Ambient temp. (T <sub>A</sub> ) <sup>(4)</sup> Min.: -30 °C	+60 °C	+50 °C	+60 °C	+60 °C	+50 °C	+60 °C	+50 °C	+35 °C
Max. surface temp. of process connection	+85 °C	+95 °C	+85 °C	+95 °C			+135 °C	
Max. surface temp.	+85 °C	+95 °C	+85 °C	+95 °C	+110 °C		+160 °C	
<b>Temp. classes</b>	<b>T90°C</b>		<b>T100°C</b>	<b>T90°C</b>	<b>T100°C</b>	<b>T115°C</b>	<b>T170°C</b>	

<sup>(4)</sup> To operate the level switch with the maximum values of the related temperature data the applied cable should permanently withstand up to +90 °C temperature.

<sup>(5)</sup> Medium temperature for max. 1 hour: +95 °C

Temperature diagram



Ambient temperature (T<sub>A</sub>) versus Medium temperature (T<sub>M</sub>)