

THANK YOU FOR CHOOSING A NIVELCO INSTRUMENT.
WE ARE SURE THAT YOU WILL BE SATISFIED THROUGHOUT ITS USE.

NIVOROTA

ROTARY PADDLE SWITCH

User's Manual



NIVELCO

1. APPLICATION

The NIVOROTA rotary paddle level switch series of robust design can be used for detecting level of lumpy or powdery materials and granules. Mounted to tanks, silos and hoppers it can monitor and control level, filling and emptying of stored materials such as stone, fly ash, sand, coal, feed, beet slice, etc. A small power motor drives the paddle, which rotates freely in the absence of the material. When the paddle is impeded by the material reaching it, the motor will be switched off the same time triggering a dry contact switch. When the material level drops, the paddle runs free again, the motor is reactivated and the switch returns to its original position. Using a flex coupling the shaft of the device can be protected against hard mechanical effects caused by falling of stone or other coarse material. Dust Ex version of the device is also available.

2. TECHNICAL DATA

2.1 GENERAL DATA

Type	EK□-6□□-□
Insertion length	max. 2 m
Housing material	Paint coated aluminium
Material of wetted parts	DIN 1.4571 stainless steel, aluminium
Medium density	min. 0.5 g/cm ³
Ambient temperature	-30...+70 °C
Medium temperature	-30...+70 °C; Ex: -10...+70 °C
Power supply	24 V AC, 110 V AC, 230 V AC, 50/60 Hz
Power consumption	max. 3 W
Output	SPDT 250V AC, 5A AC11
Rotation speed	1 rpm
Mechanical connection	1" BSP, 1½" NPT
Electrical connection	½" BSP cable gland for Ø 8...12mm cable, terminal for 0.5...2.5mm ² wire cross-section
Electrical protection	Class I.
Ingress protection	IP 65
Dust Ex marking	ATEX II 1/2 D IP65 T85°C
Mass	1.7 kg, cable: 0.6 kg/m

2.2 ORDER CODE

NIVOROTA E □ □ - 6 □ □ - □ *

FUNCTION	CODE	VERSION	CODE	CODE	INSERTION	CODE	POWER SUPPLY / EX	CODE
Switch	K	Standard / 1" BSP	H	0	0 m	0 dm	230 V AC	1
		Standard / 1½" NPT	N	1	1 m	1 dm	110 V AC	2
		Cable / 1" BSP	K	2	2 m	2 dm	24 V AC**	3
		Cable / 1½" NPT	D			3 dm	230 V AC / Ex	5
					4 dm	4	110 V AC / Ex	6
					5 dm	5	24 V AC / Ex**	7
					6 dm	6		
					7 dm	7		
					8 dm	8		
					9 dm	9		

* The order code of an Ex version should end in 'Ex'

** Under development

ACCESSORIES TO BE ORDERED

PADDLE

E A P - 6 □ □

PADDLE	CODE	MATERIAL	CODE
Single vane	1	1.4571	1

MOUNTING PLATE

E A M - 6 0 □

MOUNTING PLATE	CODE
For standard and cable versions	1

FLEX COUPLING

E A S - 6 0 1

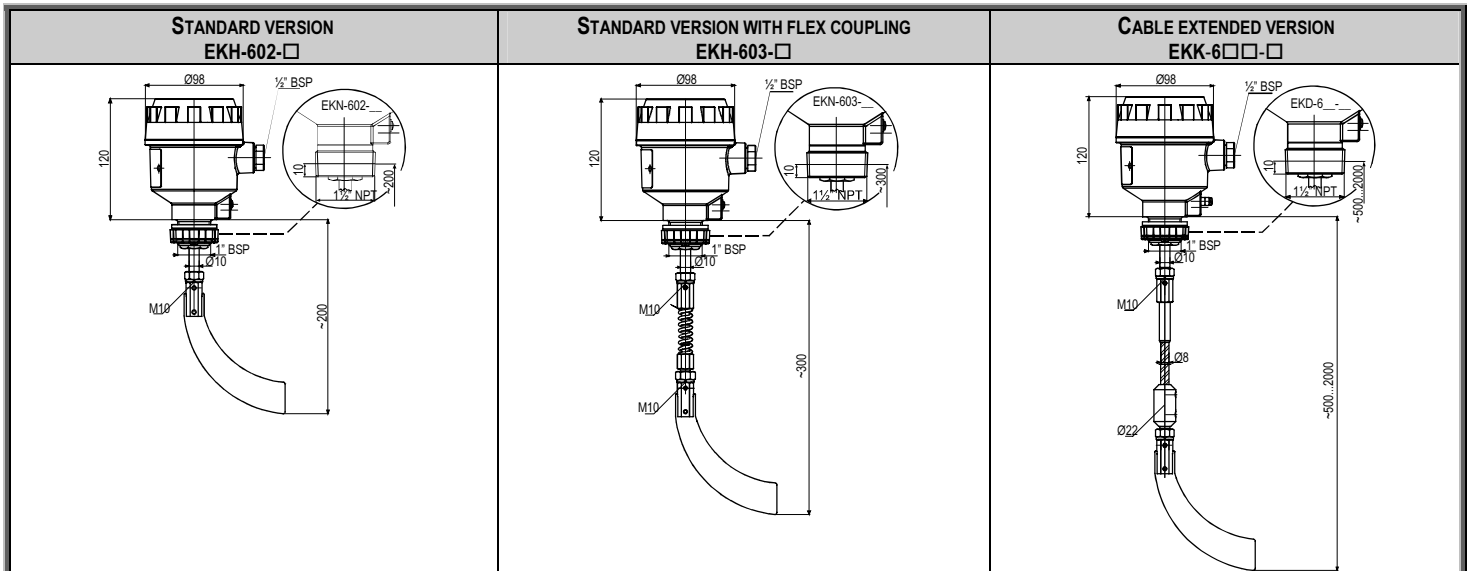
ADAPTER

E A A - 6 0 1

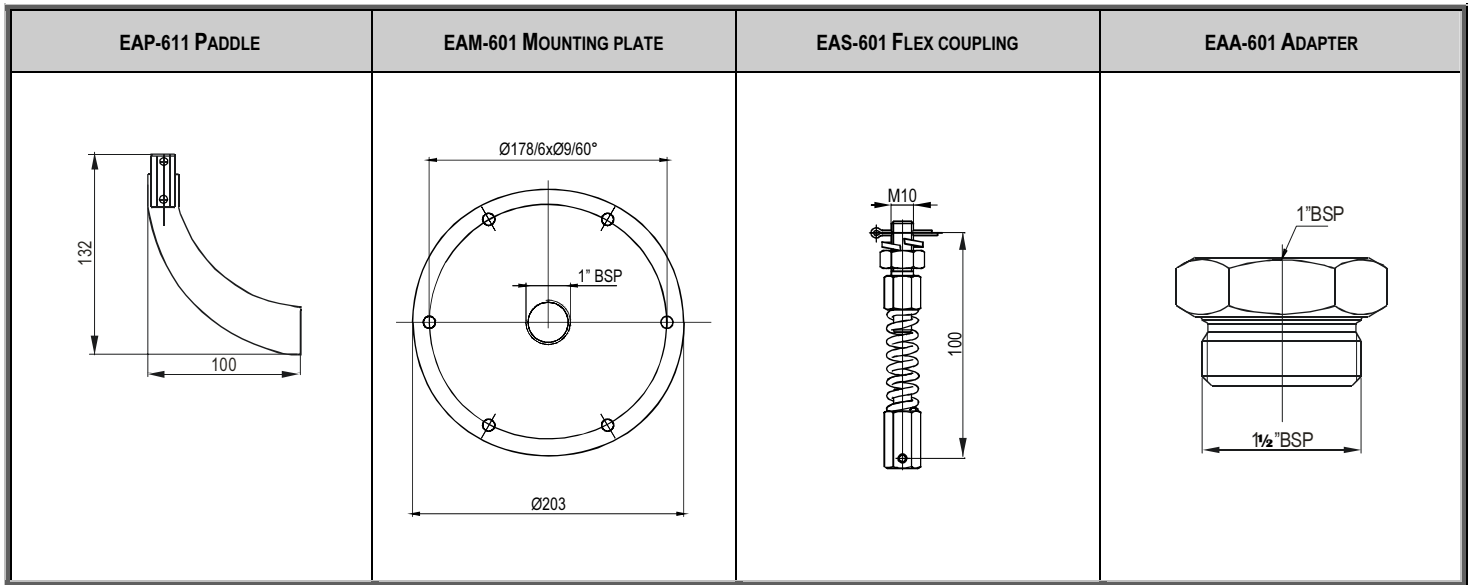
2.3 ACCESSORIES

- User's Manual
- Certificate of Warranty
- Declaration of Conformity
- 1pc EAP-611 paddle
- 1pc 1" metal washer (1" BSP ver.)
- 1pc 1" rubber washer (1" BSP ver.)
- 1pc 1" nut (1" BSP version)
- 1pc M10 spring washer
- 1pc split pin

2.4 DIMENSIONS



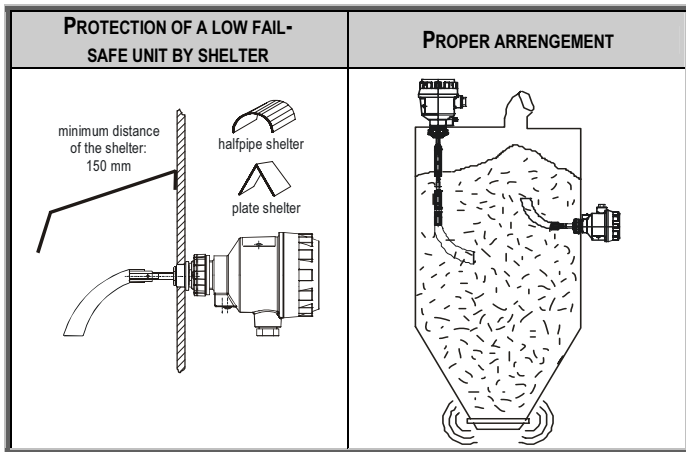
2.5 ACCESSORIES



3. ARRANGEMENT

The unit should be protected from material flow by appropriate selection of the installation place or by shelter.

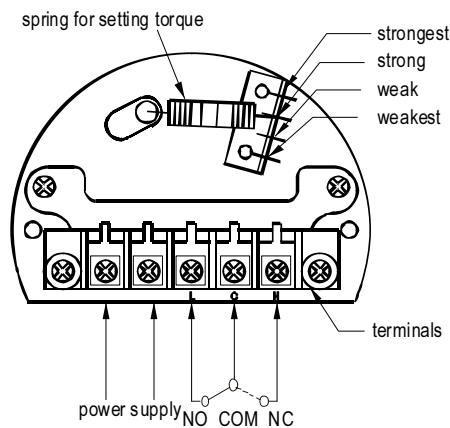
Location with the least mechanical vibration is preferred.



4. INSTALLATION

The device should be screwed in into a 1" BSP or 1½" NPT female process connection. The single vane paddle will pass through the 1" BSP hole. If the thread is 1½" BSP an EAA-601 type adapter should be used. If the hole is even wider or other considerations warrant it the EAM-601 type mounting plate can be used. When mounting on a console use the 1" sized washers and 1" nut shipped along. The 1" nut is to be locked with the screw to avoid loosening. Adjust the position of the torque spring according to the density of the material (for higher density higher torque setting should be used).

5. WIRING



The housing should be connected to the functional earthing with the internal or external grounding screw.

5.1 SAFETY REGULATIONS OF THE EX APPROVED MODELS

The metal housing of the device should be connected to the EP grounding network in the place of installation.

6. MAINTENANCE, REPAIR

The device does not require regular maintenance. In some instances, however, the unit may need occasional cleaning to remove material deposits. Repairs during or beyond the warranty period are to be carried out solely by the Manufacturer.

7. STORAGE CONDITIONS

Ambient temperature: -10 °C ... +70 °C

8. WARRANTY

All NIVELCO products are warranted free of defects in materials or workmanship for a period of two years from the date of purchase, as indicated in the Certificate of Warranty.