



Rotating Vane Level Monitor for bulks



measuring
•
monitoring
•
analysing

NIR-9



- Heavy design
- Aluminium housing
- Easy connection
- New motor
- Different mounting options
- Competitive price
- ATEX approval
- Adjustable sensibility



**1
2**

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Rotating Vane Level Monitor Model NIR-9

Description

The NIR-9 level monitor is suitable for wide applications for bulks and solids in silos and hoppers. Regardless of humidity and conductivity of the product, the maximum or minimum level is controlled reliably. Available are different vanes and process connections according to each product and tank size.

Operation

A synchronous motor drives a rotating vane that is extended into the tank by means of a shaft. As soon as the bulk reaches the rotating vane, its rotation is blocked. The restoring force moves the pivoted motor away from its original position. Hereby, a micro switch is actuated, which gives out an alarm signal. A second microswitch turns off the motor. If the filling level decreases, the rotating vane is released again and the force of a spring pulls the motor back to its original position. The motor gets turned on again and the working contact is switched back.

The switching sensitivity can be adjusted in three steps by changing the spring position.

Applications

- Cereal
- Flour
- Granulated plastics
- Cement
- Sand
- Cacao
- Sugar
- Various bulk materials

Technical Details

Measuring principle:	rotating vane
Medium temperature:	-20 ... +90 °C -20 ... +200 °C (NIR-92)
Ambient temperature:	-20 ... +60 °C
Pressure:	-0.5 ... +0.5 bar
Max. grain size:	50 mm
Min. bulk density:	0.038 g/cm ³ (depends on vane and sensibility) see table below
Sensibility:	adjustable in 3 steps
Rotation speed:	5 r.p.m.

Materials

Housing:	polyester coated aluminium 360° rotatable
Connection, cable, extension, tube, vane:	stainless steel, aluminium (page 5)

Process connection (standard)

-NIR-910 / E910	G1 male stainless steel 1.4305
-NIR-920 / E920	G1 male stainless steel 1.4305
-NIR-962 / E962	G1 male stainless steel 1.4305
-NIR-95F / E95F	G1 male stainless steel 1.4305
-NIR-940 / E940	G 1 male aluminium
-NIR-930 / E930	G 1½ male stainless steel 1.4305
Other connections:	thread adapters for G 1¼, G 1½, 110 mm and 200 mm flanges
Vane types:	standard N, foldable vane V, cruciform vane X, aggregate vane A, reinforced vane R
ATEX approval:	Ex II 2/1D Ex t IIIC T85 °C Db/Da
Power supply:	24 V _{DC} , 24 V _{AC} , 48 V _{AC} , 110 V _{AC} , 230 V _{AC} , 50/60 Hz power led
Power consumption:	max. 2 VA
Electrical connection:	2 x M20 x 1.5
Contact:	micro switch (SPDT) max. 250 V _{AC} , 2 A (max. 125 VA)
Protection:	IP 66

Bulk density with different types of rotating vanes*

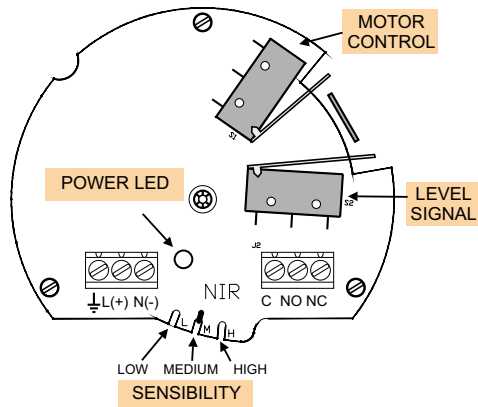
Rotating vane types	High sensibility	Medium sensibility	Low sensibility
N and R	0.14 g/cm ³	0.185 g/cm ³	0.214 g/cm ³
V	0.038 g/cm ³	0.047 g/cm ³	0.057 g/cm ³
X	0.04 g/cm ³	0.05 g/cm ³	0.06 g/cm ³
A	0.45 g/cm ³	0.55 g/cm ³	0.65 g/cm ³

* Approximate value

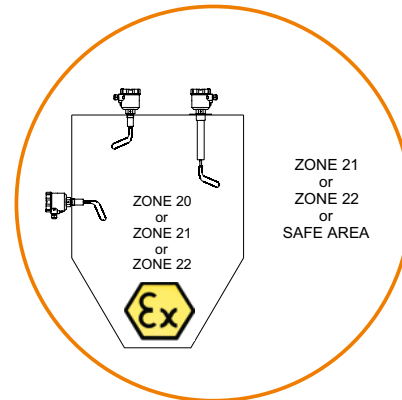
Rotating Vane Level Monitor Model NIR-9



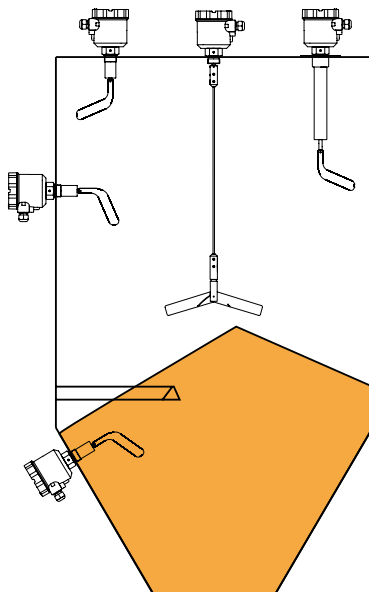
Connection



ATEX Mounting



Mounting Examples





Rotating Vane Level Monitor Model NIR-9

Order Details (Example: NIR-91 0 N G6 0 0)

Model	Extension	Vane	Mechanical connection ⁴⁾	Supply	Option
NIR-91... NIR-E91... (ATEX) (neck pipe l = 65 mm) NIR-92... NIR-E92... (ATEX) (t _{max} : 200 °C) NIR-94... NIR-E94... (ATEX) (aluminium thread)	0 = without extension W ¹⁾ = extension without protection pipe (until 1500 mm) L ²⁾ = extension with protection pipe (until 4000 mm) Y = special	0 = without N = standard V = foldable X = cruciform (only with F2 connection) Y = special	G6 = G 1 G7 = G 1¼ G8 = G 1½ F1 = flange 110 mm 1" GF F2 = flange 200 mm 1" GF YY = special	0 = 230 V _{AC} 4 = 110 V _{AC} 2 = 24 V _{AC} 5 = 48 V _{AC} 3 = 24 V _{DC} Y = special	0 = without Y = special
NIR-96... NIR-E96... (ATEX) (neck pipe l = 200 mm)	2 = 200 mm (reinforced version, lateral installation) Y = special				
NIR-95... NIR-E95... (ATEX) (flexible cable)	0 = without extension F ³⁾ = flexible cable max. 10 m	V = foldable X = cruciform (only with F2 connection)			
NIR-93... NIR-E93... (ATEX) (reinforced)	0 = without	0 = without R = reinforced A = aggregate Y = special	G8 = G1½ F3 = flange 110 mm reinforced 1½" GF YY = special		

¹⁾ Only for top installation. Rigid extension without protection pipe max. 1,5 m. Please specify length »L«.

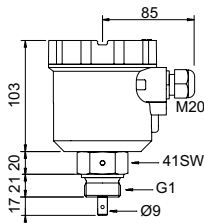
²⁾ Only for top installation. Rigid extension with protection pipe max. 4 m. Not available with mechanical connection G6 and G7. Please specify length »L«.

³⁾ Only for top installation. Flexible stainless steel cable extension max. 10 m, (max. pull force of the cable 4 kN). Please specify length »L«.

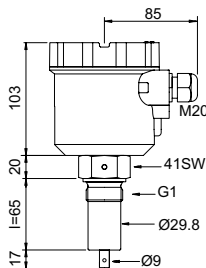
⁴⁾ Please check mechanical connection in order to ensure a perfect match between mechanical connection and vane size.

Dimensions [mm]

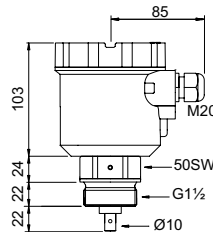
NIR-94(E94)...



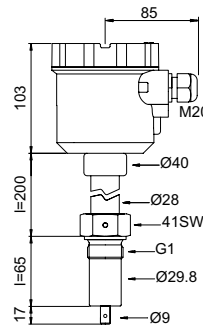
NIR-91(E91)...



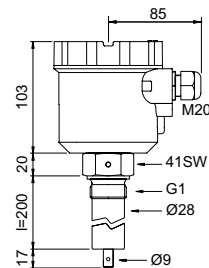
NIR-93(E93)...



NIR-92(E92)...



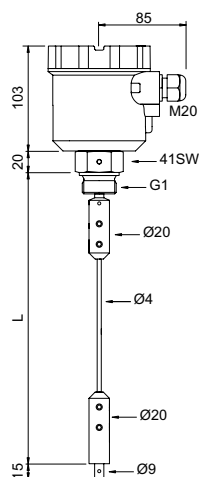
NIR-96(E96)...



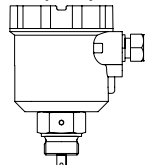
Maximum Level Switch

(Vertical Mounting)

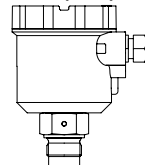
NIR-95F(E95F)...



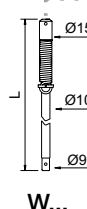
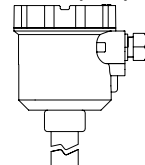
NIR-94(E94)...



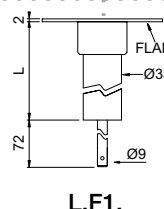
NIR-91(E91)...



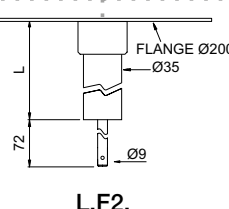
NIR-92(E92)...



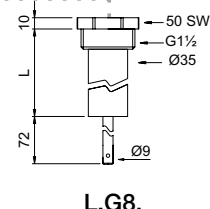
W...



L.F1.



L.F2.



L.G8.

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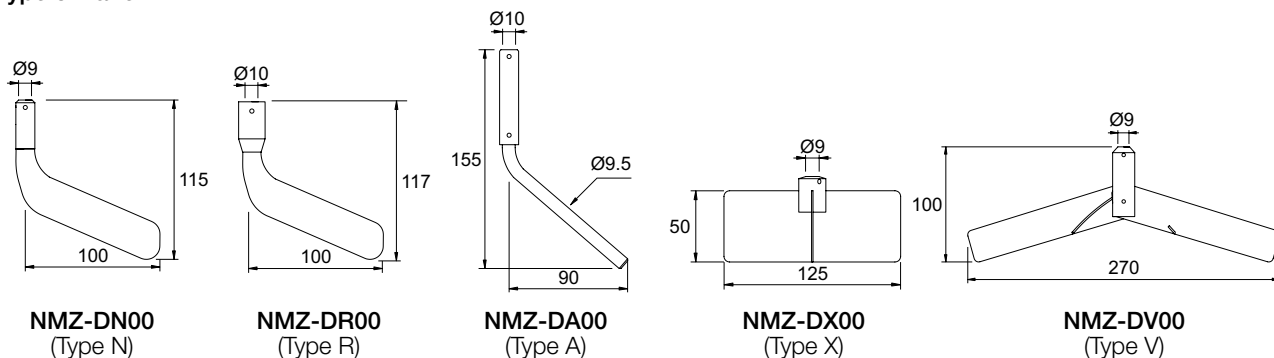
Accessories / Spare parts (Example: NMZ-A G8 0)

Model			Option
NMZ-	A = process connections	G7 = thread adapter stainless steel 1.4305, 1¼" GM-1"GF G8 = thread adapter stainless steel 1.4305, 1½" GM-1"GF F1 = flange stainless steel 1.4305, Ø110 mm, 1"GF F2 = flange stainless steel 1.4305, Ø200 mm, 1"GF F3 = reinforced flange stainless steel 1.4301, Ø110 mm, 1½"GF S6 = welding sleeve stainless steel 1.4404, 1"G YY = special	0 = without Y = special
	D = type of vanes	N0 = standard stainless steel 1.4305 V0 = foldable stainless steel 1.4305 X0 = cruciform stainless steel 1.4305 R0 = reinforced stainless steel 1.4305 A0 = aggregate stainless steel 1.4305 YY = special	
	E ¹⁾ = extensions	L8 = protection pipe stainless steel 1.4301, G1½ L1 = protection pipe with F1 flange stainless steel 1.4301 L2 = protection pipe with F2 flange stainless steel 1.4301 W1 = without protection pipe and flexible union stainless steel 1.4301 F1 = flexible cable Ø4 mm stainless steel 1.4305 YY = special	

¹⁾ Please specify length "L"

Dimensions [mm]

Type of vane



Process connections

