Zertifiziertes QM-System
DIN EN ISO 9001
Zertifikat-Nr. 01017

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




N1

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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, wich 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/cm³ (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/cm³	0.185 g/cm³	0.214 g/cm³
V	0.038 g/cm³	0.047 g/cm³	0.057 g/cm³
X	0.04 g/cm³	0.05 g/cm³	0.06 g/cm³
A	0.45 g/cm³	0.55 g/cm³	0.65 g/cm³

* Approximate value

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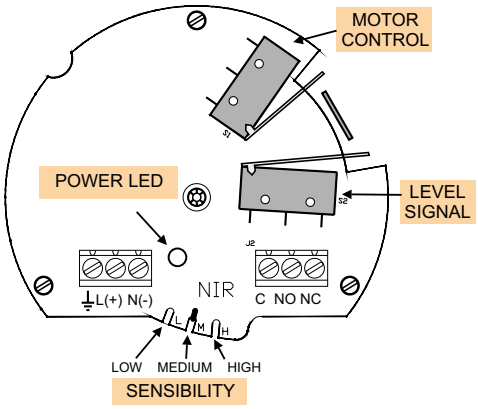
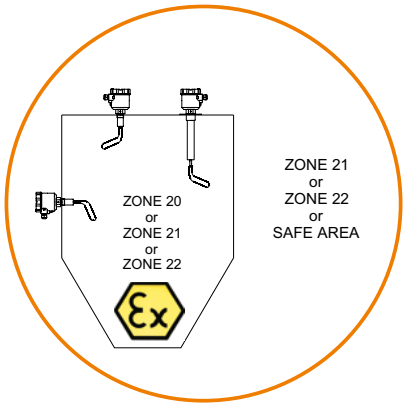
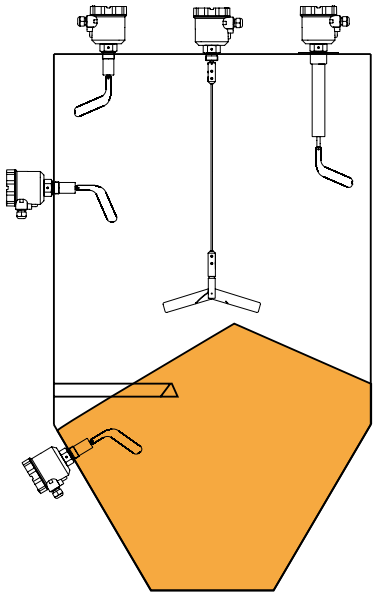
Connection



ATEX Mounting



Mounting Examples



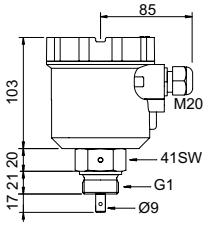
Order Details (Example: **NIR-91 0 N G6 0 0)**

Model	Extension	Vane	Process connection	Supply voltage	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**[2)] = extension without protection pipe (until 1500 mm) **L**[1)2)] = extension with protection pipe (until 4000 mm) **Y** = special length	**0** = without **N** = standard **V** = foldable **X** = cruciform[3)] **Y** = special	**G6** = G1 **G7** = G1¼ **G8** = G1½ **F1** = flange 110 mm **F2** = flange 200 mm **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-95... **NIR-E95... (ATEX)** (flexible cable)	**F** = flexible cable max. 10 m **0** = without extension				
NIR-96... **NIR-E96... (ATEX)** (neck pipe l = 200 mm)	**2** = 200 mm **Y**[2)] = special length				
NIR-93... **NIR-E93... (ATEX)** (reinforced)	**0** = without	**0** = without **R** = reinforced **A** = aggregate **Y** = special	**G8** = G1½ **F3** = flange 110 mm reinforced G1½ **YY** = special		

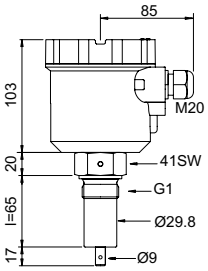
[1)] Only for G8, F1 and F2 connections [2)] Specify length in clear text [3)] For easy mounting/demounting we recommend to choose process connection »F2«

Dimensions [mm]

NIR-94(E94)...



NIR-91(E91)...



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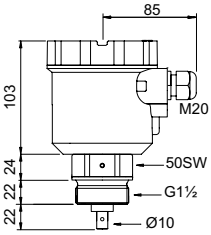

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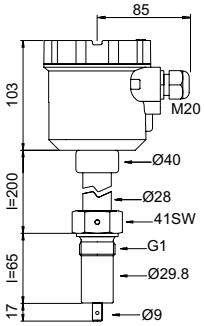

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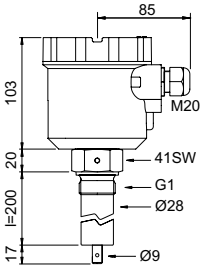
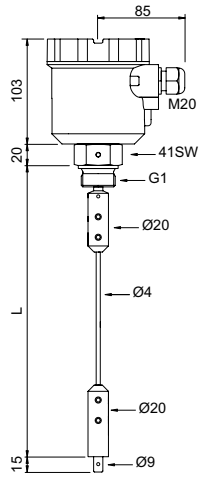


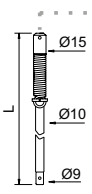
Maximum Level Switch

(Vertical Mounting)

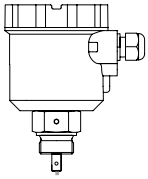
NIR-95F(E95F)...



W...



NIR-94(E94)...



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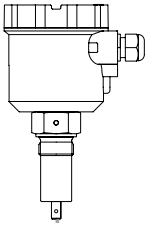

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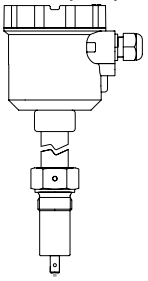
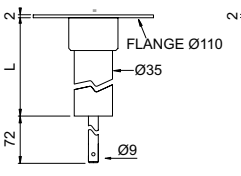
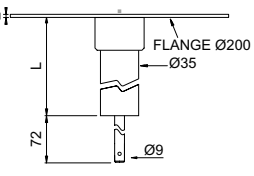


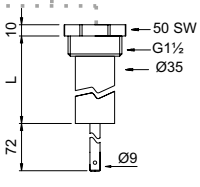
L.F1.



L.F2.



L.G8.

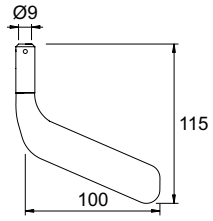


Accessories / Spare parts (Example: **NMZ-A G8 0**)

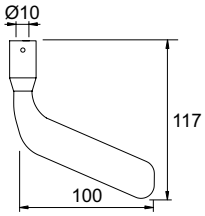
Model			Option
NMZ-	**A** = process connections	**G7** = thread adapter stainless steel 1.4305, 1¼" GM-1"GF **G8** = thread adapter stainless steel 1.4305, 1½" GM-1"GF **F1** = flange stainless steel 1.4305,Ø110 mm,1"GF **F2** = flange stainless steel 1.4305,Ø200 mm, 1"GF **F3** = reinforced flange stainless 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 = 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	

Dimensions [mm]

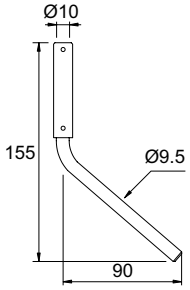
Type of vane



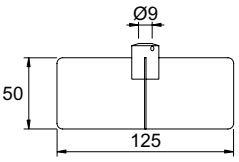
NMZ-DN00
(Type N)



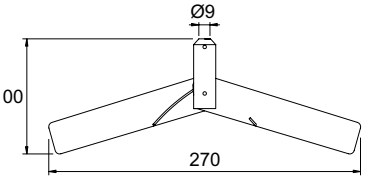
NMZ-DR00
(Type R)



NMZ-DA00
(Type A)

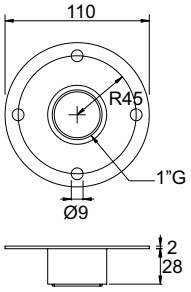


NMZ-DX00
(Type X)

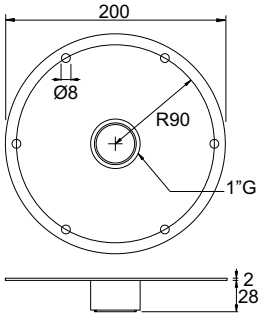


NMZ-DV00
(Type V)

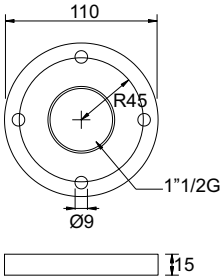
Process connections



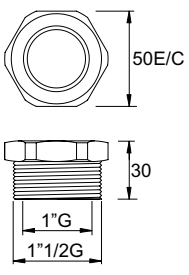
NMZ-AF10
(Type F1)



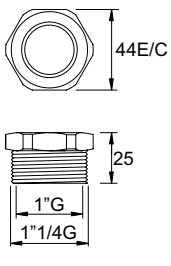
NMZ-AF20
(Type F2)



NMZ-AF30
(Type F3)



NMZ-AG80
(Type G8)



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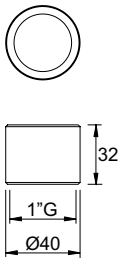

NMZ-AS60