



Rotating Vane Level Monitor for bulks



measuring
•
monitoring
•
analysing

NIR-8



- Probe length up to max. 4000 mm
- p_{\max} : -0,5...+0,5 bar; t_{\max} : 200 °C
- Process connection:
G 1 male thread, G 1½ male thread,
thread, flange and weld-in adapter
- Contact max. 250 V_{AC}, 2 A, max. 50 W
- For min-/max position,
installation horizontal and vertical,
various rotating vanes
- Grain size up to max. 50 mm,
bulk density min. 100 g/L



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Description

The KOBOLD rotating vane level monitors model NIR-8 can be delivered in various models and thus cover a broad range of different applications.

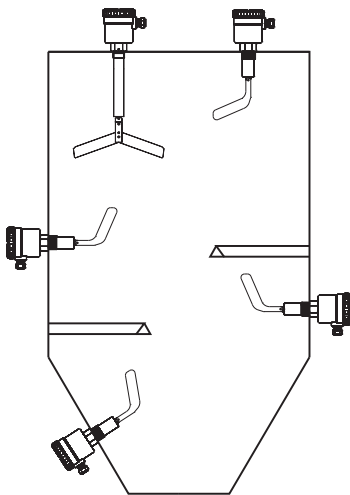
Independent of humidity and conductivity of the medium, they reliably monitor the minimum or maximum filling level in silos and tanks. Different vane types are available for adaption to the bulk density. The monitors are installed lateral or from the top. When installing them from the top, the sensor extension can be delivered up to a length of 4 meters.

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 microswitch is actuated, which gives out an alarm signal. A second micro switch 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 tension of a spring.

Mounting Examples



Applications

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

Technical Details

Measuring principle: rotating vane

Immersion lengths (length without vane): 65 mm in standard version, 25 mm in heavy duty design, 200 mm with neck pipe extension (reinforced for horizontal/lateral mounting), max. 4000 mm (special neck pipe extension)

Medium temperature: -20...+80 °C [NIR-(E)81, NIR-(E)83]
-20...+200 °C [NIR-(E)82]

Ambient temperature: -20...+60 °C

Max. pressure: -0.5...+0.5 bar

Max. grain size: 50 mm

Min. bulk density: 100 g/L

Materials

Housing: polyamide fibreglass-reinforced (non-ATEX version), aluminium (ATEX version), stainless steel (on request - ATEX version)

Connection, neck pipe extension and vane: stainless steel 1.4305

Process connection:
- NIR-(E)810, NIR-(E)820, NIR-(E)812, NIR-(E)822: G 1 male (standard) G 1½ and G 1¼ (optional adapters for thread), circular flange Ø 110 mm, 200 mm and weld-in sleeve Ø external 40 mm

- NIR-(E)81L and NIR-(E)82L: thread G 1½ male, circular flange Ø 110 mm, 200 mm

- NIR-(E)83: thread G 1½ male

Mounting position: NIR-(E)810, NIR-(E)820, NIR-(E)812, NIR-(E)822 and NIR-(E)83, horizontal and vertical
NIR-(E)81L and NIR-(E)82L only vertical

Supply voltage: 24 V_{DC} (18... 36 V_{DC}), 24 V_{AC} ± 10% 50/60 Hz, 48 V_{AC} ± 10% 50/60 Hz, 110 V_{AC} ± 10% 50/60 Hz, 230 V_{AC} ± 10% 50/60 Hz


Power input: max. 2 VA

Electr. connection: 1 cable gland M 20x1.5 standard version
2 cable gland M 20x1.5 ATEX version

Contact: SPDT max. 250 V_{AC}, 2 A (125 VA max.)

Protection: IP 65

Sensibility: adjustable in 3 points: low, medium, high

ATEX-approval:  II 2/1 D Ex tD A21 IP65 T85 °C
Ta: -20 °C/+60 °C

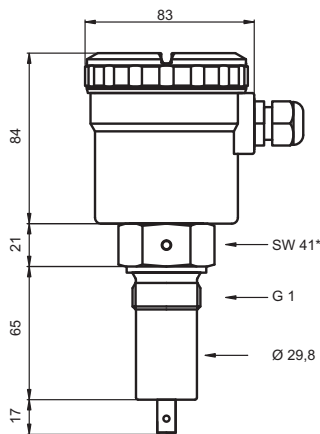
Order Details (Example: NIR-81 0 0 N G6 0)

Model	Neck pipe length*	Axis extension*	Vane	Mechanical connection	Supply voltage
NIR-81... (standard) NIR-82... (high temperature +200°C) NIR-E81... (standard ATEX) NIR-E82... (high temperature +200°C ATEX)	0 = without 2 = 200 mm (reinforced version lateral mounting)	0 = without 4 = special length max. 500 mm (only for vertical mounting)	N = standard V = flap version X = cruciform (only with connection F2)	G6 = G 1 G7 = G 1½ G8 = G 1½ F1 = flange 110 mm F2 = flange 200 mm S6 = welding sleeve	0 = 230 V _{AC} 4 = 110 V _{AC} 2 = 24 V _{AC} 5 = 48 V _{AC} 3 = 24 V _{DC}
	L = special length until max. 4000 mm	0 = without		G8 = G 1½ F1 = flange 110 mm F2 = flange 200 mm	
NIR-83... (heavy duty) NIR-E83... (heavy duty ATEX)	0 = without	0 = without	N = standard	G8 = G 1½	

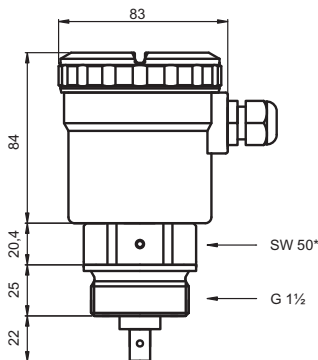
* Please specify neck pipe length "L" and axis extension "4", where necessary, in writing.

Dimensions Standard Version

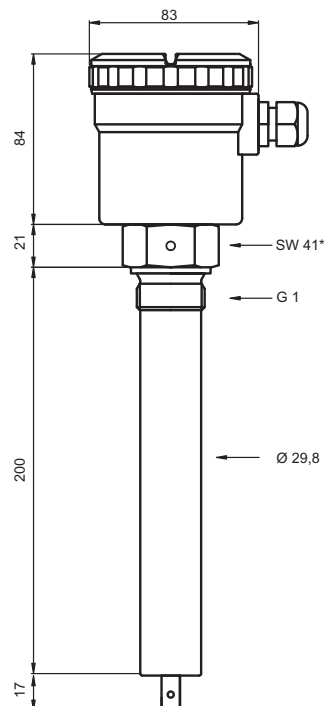
NIR-8100...G6...



NIR-8300...G8...



NIR-8120...G6...

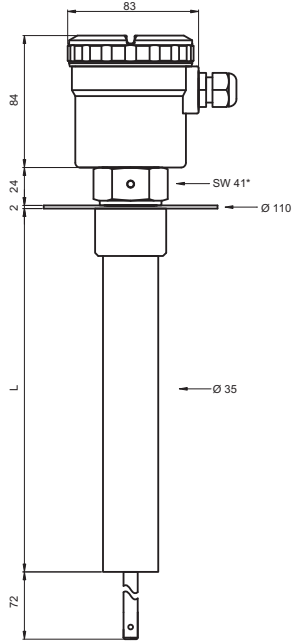


* SW = Wrench size

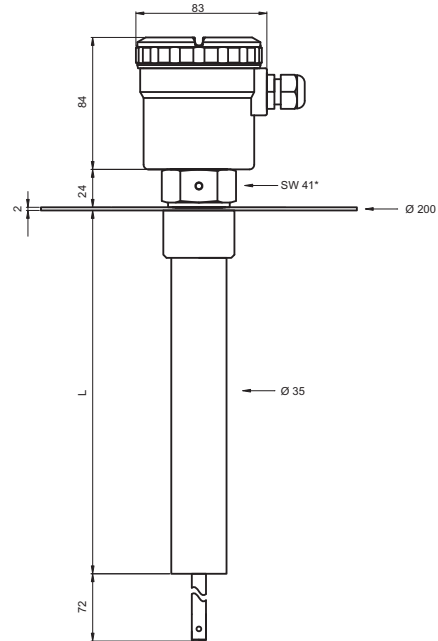


Dimensions with Neck Pipe Extension and Flanged Connection

NIR-81L0...F1...



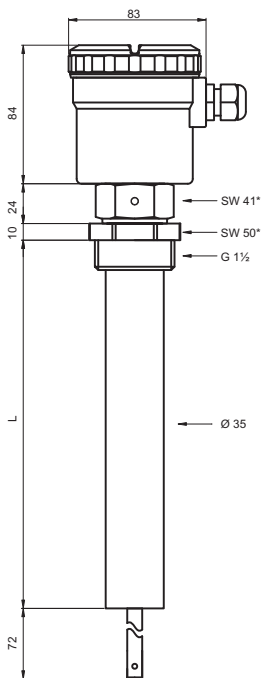
NIR-81L0...F2...



* SW = Wrench size

Dimensions with Neck Pipe Extension and Thread Connection

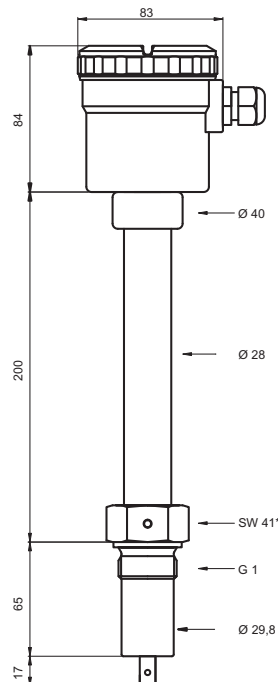
NIR-81L0...G8...



* SW = Wrench size

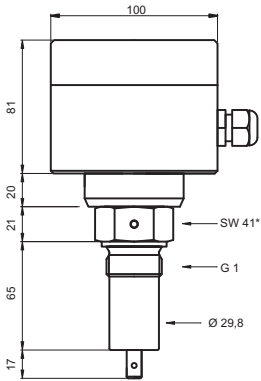
Dimensions for High Temperature Design

NIR-8200...G6...

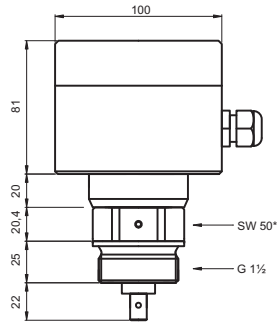


Dimensions ATEX Version

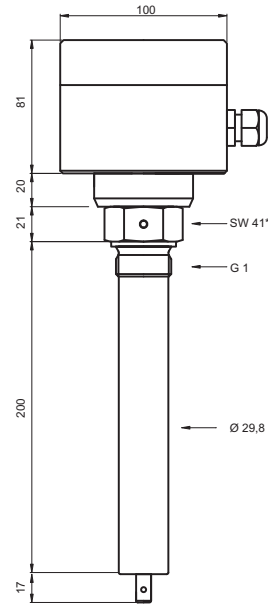
NIR-E8100...G6...



NIR-E8300...G8...



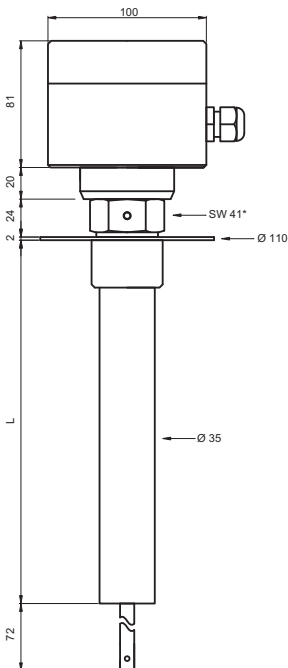
NIR-E8120...G6...



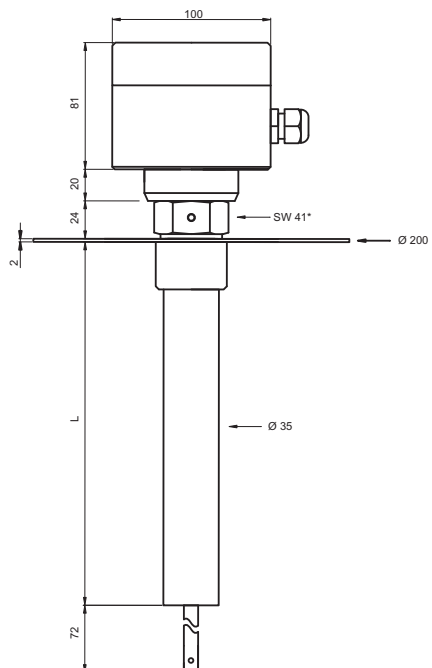
* SW = Wrench size

Dimensions with Neck Pipe Extension and Flanged Connection (ATEX version)

NIR-E81L0...F1...



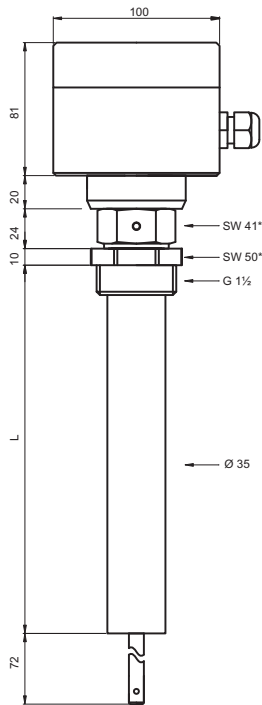
NIR-E81L0...F2...



* SW = Wrench size

Dimensions with Neck Pipe Extension and Thread Connection (ATEX version)

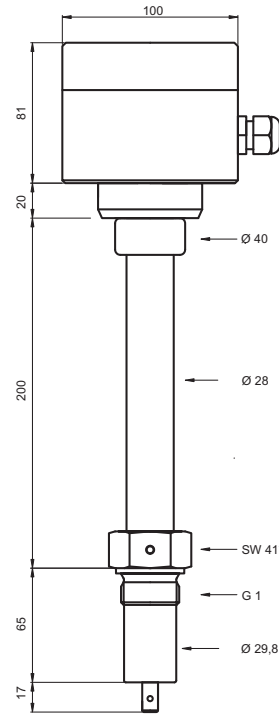
NIR-E81L0...G8...



* SW = Wrench size

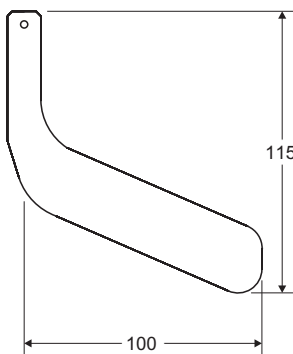
Dimensions for High Temperature Design (ATEX version)

NIR-E8200...G6...

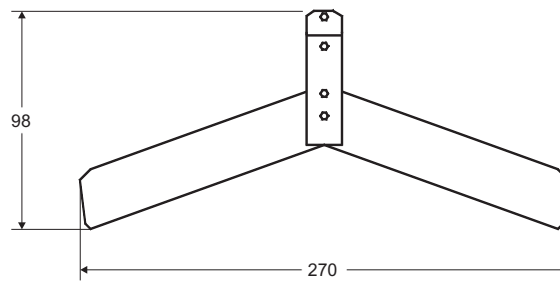


Spare Parts/Accessories

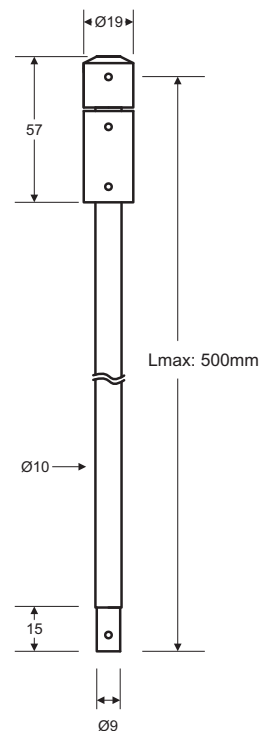
Vane type (standard): N0



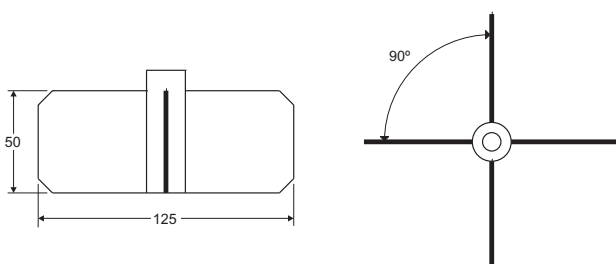
Vane type: V0



Extended axis: A0
(only for vertical mounting)

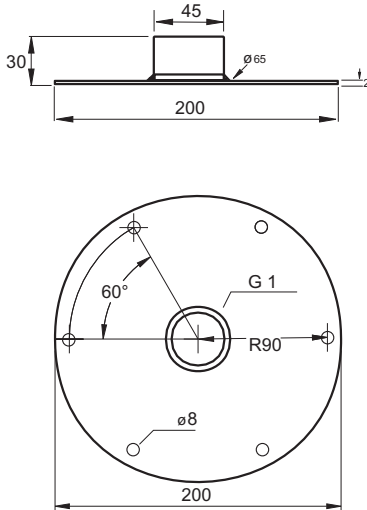


Vane type: X0

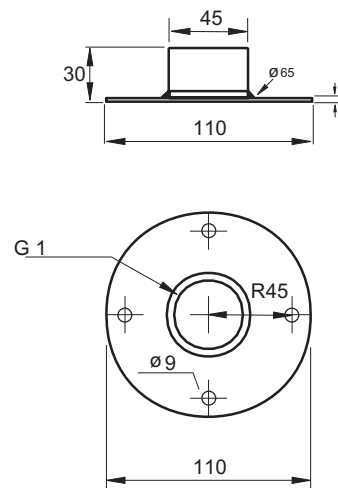


Mechanical connections

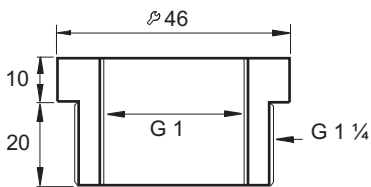
Flange type: F2



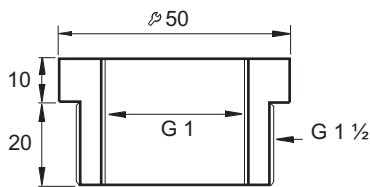
Flange type: F1



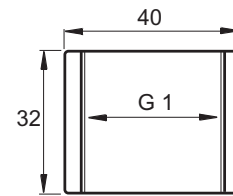
**Thread adapter
G 1½:G7**



**Thread adapter
G 1½:G8**



Welding sleeve: S6



Spare Parts/Accessories Model NMZ

Model	Design	Description	Specials
NMZ-	A = installation adapter	<p>G7 = stainless steel thread adapter for G 1½ thread</p> <p>G8 = stainless steel thread adapter for G 1½ thread</p> <p>F1 = st. steel circular flange for thread, Ø 110 mm</p> <p>F2 = st. steel circular flange for thread, Ø 200 mm</p> <p>S6 = st. steel welding sleeve, external Ø 40 mm</p>	<p>0 = without</p> <p>Y = version acc. to description</p>
	D = vane type or extended axis	<p>N0 = single vane</p> <p>V0 = double vane</p> <p>X0 = vane type cruciform</p> <p>A0* = extended axis for vertical mounting, max. 500 mm</p>	

* Please specify the axis length in writing, max. 500mm