Reed sensor
For bypass level indicators
Model BLR

Applications

- Sensor for continuous level measurement of liquids in bypass level indicators
- Chemical and petrochemical industries, oil and natural gas extraction (on- and offshore)
- Shipbuilding, machine building
- Power generating equipment, power plants
- Pharmaceutical, food, water treatment, environmental engineering industries

Special features

- Installation of head-mounted transmitters in the connection housing possible
- Various contact separations selectable
- Programmable and configurable head-mounted transmitters for field signal 4 ... 20 mA, HART®, PROFIBUS® PA or FOUNDATION™ Fieldbus
- Explosion-protected versions
- Temperature ranges from -100 … +350 °C

Reed sensor, model BLR-S

Description

The model BLR reed sensors are used for continuous monitoring and recording of the liquid level in connection with transmitters. They work on the float principle with magnetic transmission (permanent magnet, reed switch and resistance measuring chain) in a 3-wire potentiometer circuit.

A magnetic system built into the float actuates, through the walls of the bypass chamber and of the sensor tube, reed contacts at a resistance measuring chain (potentiometer). The measurement voltage generated by this is proportional to the fill level.

The resistance measuring chain is made up from reed contacts and resistors soldered onto a PCB. Depending on requirements and design several different contact separations from 5 to 18 mm are available.
For selecting the optimum sensor (sensor model, connection housing, electrical connection, sensor tube (material and total length), contact separation, head-mounted transmitter, measuring range, approval) we offer application-related technical advice.

Model overview

Sensor model	Description	Approval							Temperature range
		without	Ex i	Ex d	GL	DNV	Ex i + GL	Ex i + DNV	
BLR-S	Reed sensor, standard	x			x	x			-50 ... +350 °C
BLR-S-Ex i	Reed sensor, intrinsically safe version Ex i		x				x	x	-50 ... +100 °C
BLR-S-Ex d	Reed sensor, explosion-protected version Ex d			x					-50 ... +100 °C

Ex approvals

Explosion protection	Ignition protection type	Model	Zone	Approval number
ATEX	Ex i	BLR-S-Ex i	Zone 1, gas	KEMA 01ATEX1052 X II 2G Ex ia IIC T4 ... T6 Gb
	Ex d	BLR-S-Ex d	Zone 1, gas	TÜV 09 ATEX 7632 X II 2G Ex d IIC T6
	Ex i + GL	BLR-S-Ex i	Zone 1, gas	KEMA 01ATEX1052 X II 2G Ex ia IIC T4 ... T6 Gb + GL 35949-87 HH
	Ex i + DNV	BLR-S-Ex i	Zone 1, gas	KEMA 01ATEX1052 X II 2G Ex ia IIC T4 ... T6 Gb + DNV A-11451

Type approval

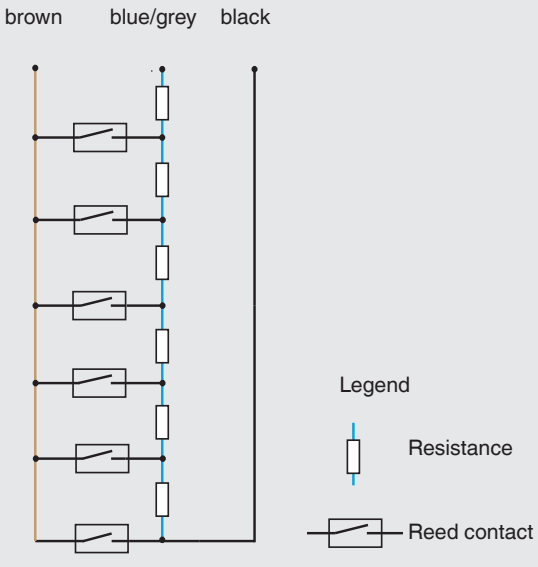
Approval	Model	Approval number
GL	BLR-S	GL - 35 949 - 87 HH
DNV	BLR-S	DNV A-11451
GOST-R	all	0959333

Further approvals on request

Options

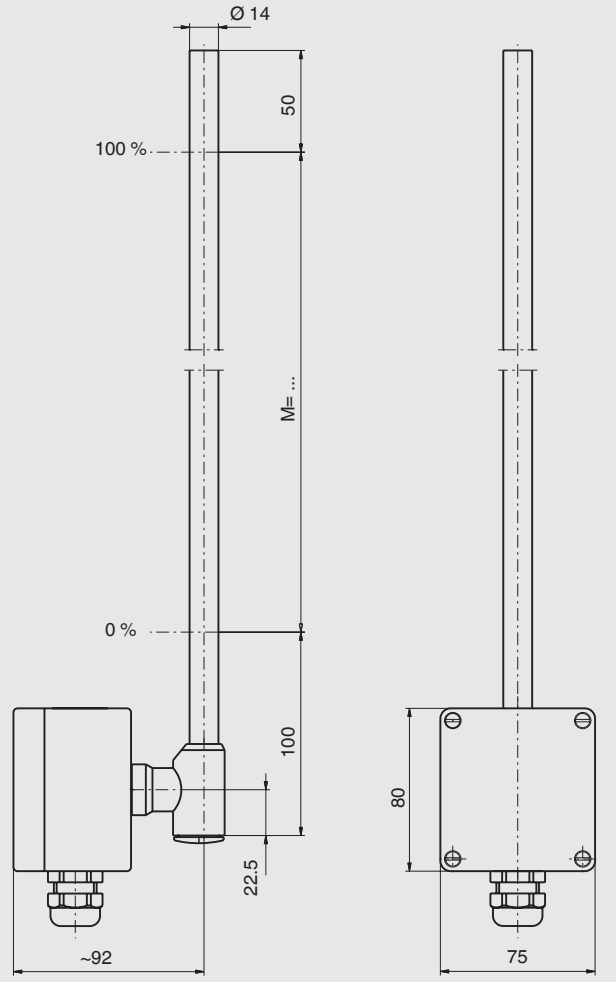
- 2-wire head-mounted transmitter in the connection housing
- Stainless steel connection housing with digital indicator

Internal circuit diagram of the reed sensors

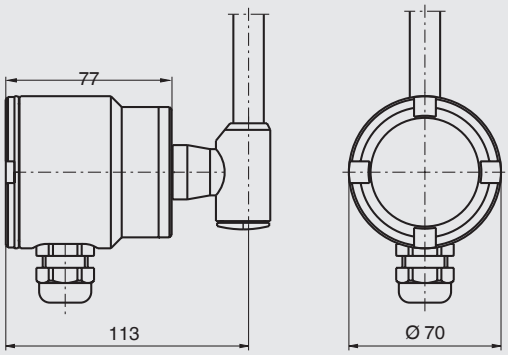


Reed sensors, models BLR-S and BLR-S-Ex i

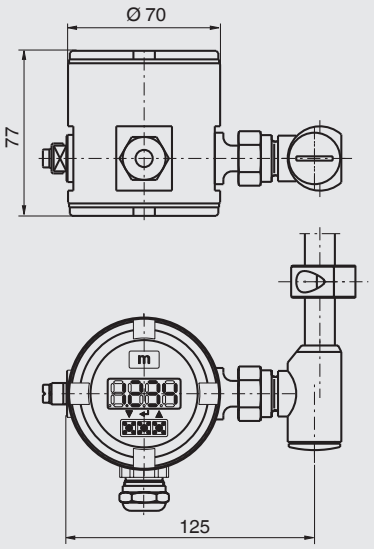
Aluminium and polyester connection housing



Stainless steel connection housing



Stainless steel connection housing with digital indicator (option)



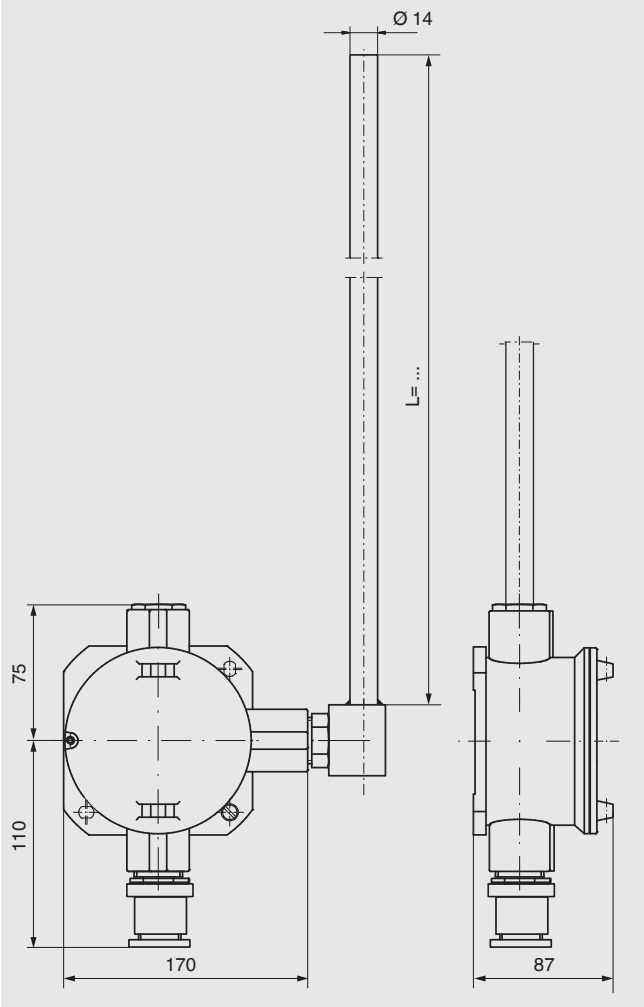
Model BLR-S

Specifications		
Connection housing	Aluminium Polyester Stainless steel 1.4571 Stainless steel 1.4571 with digital indicator	80 x 75 x 57 mm 80 x 75 x 55 mm Ø 70 x 77 mm Ø 70 x 77 mm
Sensor tube	Stainless steel 1.4571, tube Ø 14 x 1 mm	
Contact separation	18 mm, standard 15 mm, high temperature, low temperature 10 mm, standard, high temperature, low temperature 5 mm, standard, high temperature, low temperature	
Overall resistance of the measuring chain	Length and separation dependent	
Ambient temperature	Standard version High temperature version Low temperature version Standard version with Microtherm® High temperature version with Microtherm®	-50 ... +100 °C -50 ... +200 °C -100 ... +100 °C -50 ... +250 °C -50 ... +350 °C
Ingress protection	Aluminium and polyester connection housing: IP 65 Stainless steel connection housing: IP 67	

Model BLR-S-Ex i

Specifications		
Connection housing	Aluminium Polyester Stainless steel 1.4571 Stainless steel 1.4571 with digital indicator	80 x 75 x 57 mm 80 x 75 x 55 mm Ø 70 x 77 mm Ø 70 x 77 mm
Sensor tube	Stainless steel 1.4571, tube Ø 14 x 1 mm	
Contact separation	18 mm 10 mm 5 mm	
Overall resistance of the measuring chain	3.2 ... 50 kΩ	
Max. permissible surface temperature at the sensor tube	T4 T5 T6	+100 °C +65 °C +50 °C
Ingress protection	Aluminium and polyester connection housing: IP 65 Stainless steel connection housing: IP 67	
Approval	Ex i	

Reed sensor, model BLR-S-Ex d



Specifications

Connection housing	Aluminium 170 x 151 x 87 mm
Sensor tube	Stainless steel 1.4571, tube Ø 14 x 1 mm
Contact separation	18 mm 10 mm 5 mm
Overall resistance of the measuring chain	Length and separation dependent
Max. permissible surface temperature at the sensor tube	T4 +100 °C T5 +65 °C T6 +55 °C
Ingress protection	IP 65
Approval	Ex d

Head-mounted transmitter

Model TE | **Model T32E** | **Model T53F** | **Model TLEH**

Model	4 ... 20 mA	HART®	PROFIBUS® PA	Fieldbus™	Exi	Display	Order no.
TE	x				x		014832
TS	x						005894
T32E	x	x			x		025216
T32S	x	x					114795
T53F				x	x		025727
T53P			x		x		034422
TLH	x	x				x	019989
TLEH	x	x			x	x	021104

CE conformity

Electromagnetic compatibility (EMC)
2004/108/EC

ATEX directive (option)
94/9/EC, ignition protection type Ex i and Ex d, zone 1, gas

Approvals

- **GL**, ships, shipbuilding, offshore, Germany
- **DNV**, ships, shipbuilding, offshore, Norway
- **GOST**, national standard for Russia, Kazakhstan and Belarus

Approvals and certificates, see website

Ordering information
To order the described product the order number (if available) is sufficient.

Alternatively:
Sensor model / Connection housing / Electrical connection / Sensor tube (material and total length) / Contact separation, head-mounted transmitter / Measuring range / Approval

01/2015 EN