



# Bypass level gauge with a sight glass

## RIZUR-NBK-GLASS

### Intended use and application area

Bypass glass level gauges RIZUR-NBK-GLASS are used for continuous measurement and display of liquid level in tanks.

RIZUR-NBK-GLASS is designed to control the level of liquids in open or closed tanks, including the ones under pressure, in processing units at industrial facilities of chemical, petrochemical, pharmaceutical, food and other industries.

It can also be used as an indicator of liquid presence/absence at a predetermined height of the tank. Bypass glass level gauge RIZUR-NBK-GLASS can be used both indoors and outdoors in a wide range of climatic conditions. The operating principle of RIZUR-NBK-GLASS is based on the law of interconnected vessels – the level in the glass column is equal to the level of the measured liquid in the tank. Bypass glass level gauges RIZUR-NBK-GLASS are a simple and reliable solution for liquid level indication in large and small tanks.

Usually, bypass glass level gauges RIZUR-NBK-GLASS are installed on a tank wall. If necessary, the mounting elements of the bypass level gauge can be located at the top or distanced to a side.



### Technical regulations

TU 26.51.52-001-12189681-2018

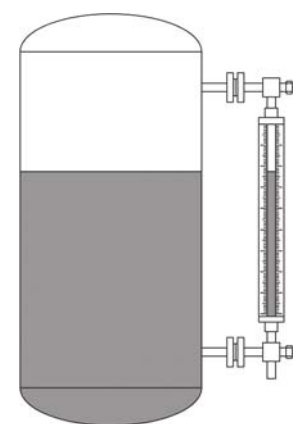
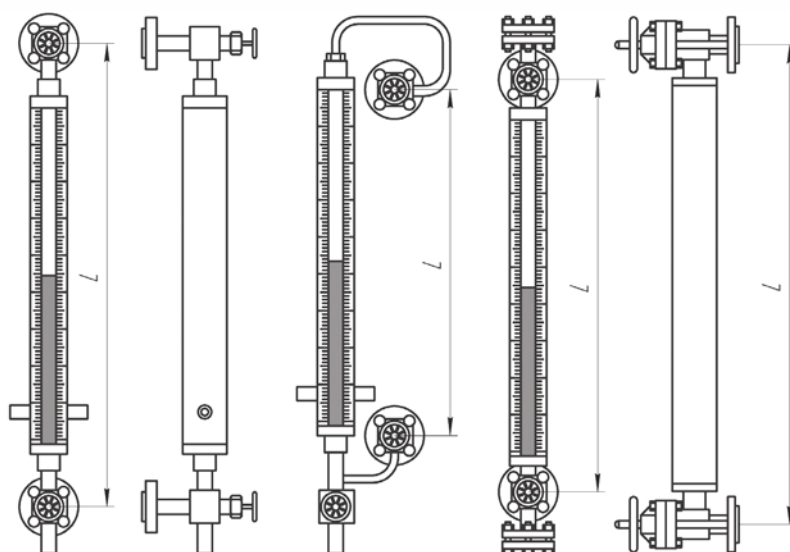
TR Customs Union conformity certificate

№EAEU RU C-RU.HA91.B.00029/19

### Benefits

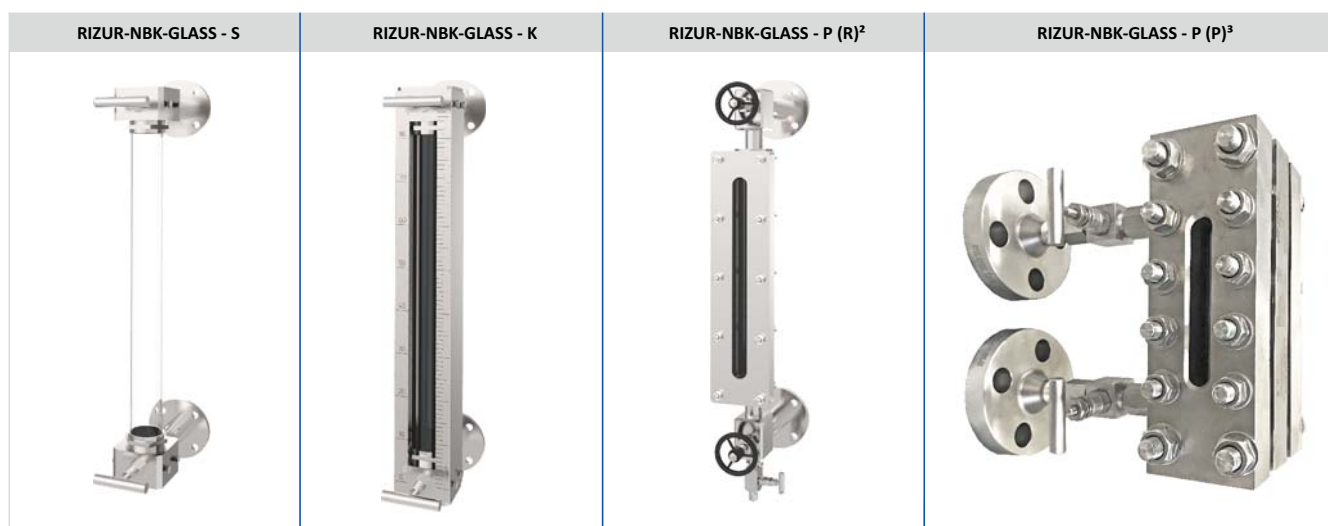
- Accuracy of reading;
- Maximum operating temperature - up to + 450 °C;
- Maximum operating pressure - up to 16 MPa;
- Various materials, including the ones for corrosive liquids;
- Long service life, simple design, easy cleaning and maintenance;
- Optional leakage protection. Bypass glass level gauges RIZUR-NBK-GLASS are equipped with valves with automatic leakage protection. Each valve has two steel balls which in case of a tube breaking automatically block the channel to prevent the liquid leaking from the tank. This protection is activated when a difference between inside and outside pressure is above 0,3MPa.

### Mounting positions for RIZUR-NBK-GLASS



Mounting of  
RIZUR-NBK-GLASS  
on a tank

## Design variants



## Technical specifications

Recommended distance between centers, L, mm	500, 600, 800, 1000, 1200, 1400 (other, upon an agreement with the manufacturer)	550, 850, 1150, 1450, 1750 (other, upon an agreement with the manufacturer)	300, 500, 800, 1100, 1400, 1700, 2000 (other, upon an agreement with the manufacturer)
Valve material	<ul style="list-style-type: none"> <li>Stainless steel AISI 304</li> <li>Stainless steel AISI 316L</li> </ul>	<ul style="list-style-type: none"> <li>Stainless steel AISI 304</li> <li>Stainless steel AISI 316L</li> </ul>	<ul style="list-style-type: none"> <li>Stainless steel AISI 304</li> <li>Stainless steel AISI 304 with PTFE coating</li> <li>Stainless steel AISI 321</li> <li>Stainless steel AISI 316L</li> <li>Polypropylene</li> <li>Other materials - upon an agreement with the manufacturer</li> </ul>
Glass type	Glass	Glass	<ul style="list-style-type: none"> <li>Single color quartz glass</li> <li>Bi-color quartz glass<sup>1</sup></li> </ul>
Design version	Sight tube	<ul style="list-style-type: none"> <li>Transparent type glass plate<sup>2</sup></li> <li>Reflex type glass plate<sup>3</sup></li> </ul>	<ul style="list-style-type: none"> <li>Sight tube</li> <li>Sight tube without blind zone</li> </ul>
Maximum process temperature, °C	+200	+450	+450
Process pressure, MPa	1,6	2,5; 4,0; 6,3 - for transparent and reflex types, 0,1; 0,6 - for sight type Versions for pressure up to 10 and 16MPa are to be agreed upon with the manufacturer	<ul style="list-style-type: none"> <li>2,5</li> <li>4,0</li> <li>6,3</li> <li>10</li> </ul>
Process connection	Flange Thread Welded	Flange Thread Welded	Flange Thread Welded
Steam tracer connection	no	Flange Thread Welded	Flange Thread Welded
Steam tracer pressure, MPa	-	≤1,0	≤1,0
Air vent/drain	<ul style="list-style-type: none"> <li>No</li> <li>Plug</li> <li>Needle valve</li> <li>Flange</li> </ul>	<ul style="list-style-type: none"> <li>No</li> <li>Plug</li> <li>Needle valve</li> <li>Flange</li> </ul>	<ul style="list-style-type: none"> <li>No</li> <li>Plug</li> <li>Needle valve</li> <li>Flange</li> </ul>
Ambient temperature, °C	-60...+80	-60...+80	-60...+80

<sup>1</sup> The principle of refraction and reflection of light flux in different media is applied in bi-color quartz glass. Due to the fact that the red part of the light flux spectrum is almost completely refracted and reflected from the surface of the glass in the liquid medium, the part of the level gauge sight tube, where the liquid is present, will be green to the observer. Accordingly, the part of the sight tube without liquid will be red for the observer. This technical solution ensures precise determination of liquid level: liquid medium - green, gas medium - red.

<sup>2</sup> Transparent type - in the gauge housing the two glasses are located opposite each other (on the front and on the rear walls of the level gauge) in such a way that they are see-through.

<sup>3</sup> Reflex type - in the gauge housing one glass is located on the front wall of the level gauge. The rear wall of the gauge is blind.

# Order code for bypass level gauge with a sight glass

## RIZUR-NBK-GLASS

Ordering information:

**RIZUR-NBK-GLASS-P-2-R-BB-1/20/16-1000/900-1-KZ/NPT1/2-FZ/NPT1/2-1(R4)-0-930/0,5/30**

1                      2   3   4                      5                      6                      7                      8                      9                      10   11                      12

1. Glass level gauge type	
RIZUR-NBK-GLASS-S	Level gauge with glass tube
RIZUR-NBK-GLASS-P	Level gauge with flat glass
RIZUR-NBK-GLASS-K	Level gauge with quartz glass
2. Chamber material	
1	Stainless steel 08H18N10 (an analogue of SS304)
2	Stainless steel 03H17N13M2 (an analogue of SS316L)
3	Stainless steel 08H18N10 (an analogue of SS304) with PTFE covering, only for RIZUR-GLASS-K
4	Stainless steel 08H18N10T (an analogue of SS321), only for RIZUR-GLASS-K
5	Polypropylene, only for RIZUR-GLASS-K
X	Other material (specified in written form outside the order code)
3. Glass type and execution	
T	Glass sight tube - design version only for RIZUR-GLASS-S
P	Transparent type glass plate - execution only for RIZUR-GLASS-P
R	Reflex type glass plate - execution only for RIZUR-GLASS-P
O	Sight type glass plate - execution only for RIZUR-GLASS-P
V	Single color quartz glass - execution only for RIZUR-GLASS-K
D	Bi-color quartz glass - execution only for RIZUR-GLASS-K
X	Other material (specified in written form outside the order code)
4. Design version	
BB	Side mounting ( «side-side» )
BV	Side mounting ( «remote side-side» )
X	Other mounting type (manufactured in acc. with the approved drawings)
5. Type of process connection	
<b>THREAD</b> (thread type)	
R1	M20x1,5, male thread
R2	M27x1,5, male thread
R3	NPT ¾", male thread
R4	NPT ½", male thread
R5	G ¾", male thread
R6	G ½", male thread
R7	M20x1,5, sleeve nut
X	Other type (specified in writing outside the order code)
<b>WELDED</b> (nominal inside diameter, mm)	
P15	DN15
P20	DN20
P25	DN25
P32	DN32
X	Other type (specified in writing outside the order code)
<b>FLANGE</b> (acc. to GOST 33259-2015)	
XX/_/_	Flange face
A	Type A, flat face
B	Type B, raised face
C	Type C, tongue
D	Type D, groove
E	Type E, spigot
F	Type F, recess
J	Type J, O-ring gasket
K	Type K, oval section gasket
X	Other type (specified in writing outside the order code)

_ /XX/_	Nominal inside diameter, mm
10	DN10
15	DN15
20	DN20
25	DN25
32	DN32
X	Other type (specified in writing outside the order code)
_ /_ /XX	Nominal pressure, kgf/cm²
16	PN 16
25	PN 25
40	PN 40
63	PN 63
100	PN 100
160	PN 160
320	PN 320
420	PN 420
X	Other type (specified in writing outside the order code)
6. Distance between the centers / measurement range	
XXX/XXX	Specify the required distance between connection centers in mm / Specify the measurement range in mm
7. Scale	
0	No
1	Yes
8. Top end of the chamber	
KG/0	Blind cap
KZ/XX	Cap with a screw plug (specify thread type and size)
KV/XX	Cap with a vent valve (specify thread type and size)
F/0	Blind flange
FZ/XX	Flange with a screw plug (specify thread type and size)
FV/XX	Flange with a vent valve (specify thread type and size)
C	Other material (specified in written form outside the order code)
9. Bottom end of the chamber	
KG/0	Blind cap
KZ/XX	Cap with a screw plug (specify thread type and size)
KV/XX	Cap with a vent valve (specify thread type and size)
F/0	Blind flange
FZ/XX	Flange with a screw plug (specify thread type and size)
FV/XX	Flange with a vent valve (specify thread type and size)
C	Other material (specified in written form outside the order code)
10. Steam tracing	
0	Without insulation and electrical heating
1 (X)	Yes (please specify connection type and size, see marking sample in the section «Type of process connection»)
11. Insulation, electrical tracing	
0	No
1	Soft enclosure with electrical heating
2	Soft enclosure without electrical heating
C	Other material (specified in written form outside the order code)
12. Medium parameters (All three parameters should be specified)	
XX/XX/XX	Medium density, kg/m³ / Operating pressure, MPa / Operating temp., °C



000 «NPO RIZUR» www.rizur.ru +7 (4912) 20-20-80

# INQUIRY FORM № \_\_\_\_\_

Technical regulations  
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## Bypass level gauge with a sight glass RIZUR-NBK-GLASS

Company name	
Contact person, position	
Contact details, tel., e-mail	
Number of level gauges, pcs.	
Operating medium	
Liquid density, kg/m <sup>3</sup>	
Viscosity, cP	
Process temperature/design temperature, °C	
Process pressure / design pressure, MPa	
Medium characteristics: aggressive to stainless steel	
Ambient temperature, °C	
Valve material	
Glass type	<input type="checkbox"/> Glass sight tube (execution only for RIZUR-NBK-GLASS-C) <input type="checkbox"/> Transparent type glass plate (execution only for RIZUR-NBK-GLASS-P) <input type="checkbox"/> Reflex type glass plate (execution only for RIZUR-NBK-GLASS-P) <input type="checkbox"/> Single color quartz glass (execution only for RIZUR-NBK-GLASS-K) <input type="checkbox"/> Bi-color quartz glass (execution only for RIZUR-NBK-GLASS-K) <input type="checkbox"/> Other version (specify execution and glass type)
Mounting type: - side mounting («side-side») - side mounting («remote side-side»)	
Process connection type: - welding pipe (specify DN) - thread (specify type) - flange (specify DN, PN and sealing surface)	
Distance between process connection centers, mm	
Measuring range, mm	
Scale (yes/no)	
Upper end of the chamber - a blind cap / with a valve / with a screw plug - a blind flange / with a valve / with a screw plug (please specify the connection size, thread type, flange facing)	
Lower end of the chamber - a blind cap / with a valve / with a screw plug - a blind flange / with a valve / with a screw plug (please specify the connection size, thread type, flange facing)	
Steam heating and insulation (please specify the connection size, thread type, flange facing)	
Electrically heated enclosure/soft enclosure (please specify the maintained temperature)	
Additional requirements	