

Residual quantity sensor, type 6729-23

- Monitors the filling level of combustible liquids of the hazard classifications AI, All and B (VbF = provision on combustible liquids) in zone 0.
- Suitable for tanks, containers or pipes on tank trucks.
- Also for stationary use.



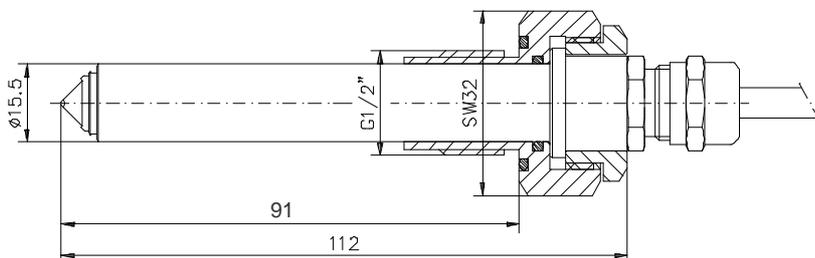
Technical data				
Auxiliary energy	DC 5 V ... 24 V			
Residual ripple	≤ 0,5 %			
Current consumption	≤ 7 mA			
Type of protection	Ex ia IIB T6...T3 Ga/Gb Ex ib IIB T6...T4 Gb			
Device group-/category/II 1/2 G resp. II 2 G	PTB 99 ATEX 2040			
Connection cable	4 x 0,5 shielded, length: 5 m			
Terminal assignment	Wire colour	Function	Connection	
	pink	+UB	X1	
	brown	GND	X2	
	yellow	OUT 1	X3	
	green	OUT 2	X4	
Signal outputs OUT1 and OUT2	Open collector (switching to GND), Switching current max. 15 mA			
	Signal status	OUT 2 (D1)	OUT 1 (D0) Description	
		0	0 empty (no residual quantity)	
		0	1 empty (faulty)	
	1	1 not empty (residual quantity!)		
	O: Signal output is high-resistive 1: Signal output is low-resistive (connected with GND) D0: Databit D0 ≙ OUT 1 D1: Databit D1 ≙ OUT 2			
EX data	Intrinsically safe signal and supply circuit			
	$U_i = 30\text{ V}$			
	$I_i =$	Ex ia IIB, 175mA (limited power)		
	$I_i =$	Ex ib IIB, 350mA (limited power)		
	$P_i =$	Ex ia IIB	P_i	
		Temperature class	Ambient temperature	
			max. 40 °C	max. 60 °C
		T3	533 mW	444 mW
		T4	302 mW	213 mW
	T5	177 mW	88 mW	
	T6	124 mW	35 mW	
	$P_i =$	Ex ib IIB	P_i	
		Temperature class	Ambient temperature	
max. 40 °C			max. 60 °C	
T4		1300 mW	1200 mW	
T5		466 mW	377 mW	
T6	155 mW	88 mW		
	$C_i = 130\text{ nF}$			
	$L_i =$ negligibly small			
Operating temperature	- 20 °C... + 60 °C			
Protective type (in acc. With EN 60529)	IP 67			
Casing material	Stainless steel			
Admissible ambient pressure p_N	0.8 bar ... 20 bar			

Functional description

The monitoring of the liquid level is based on an optical principle. The infrared light emitted by infrared luminescent diodes is conveyed through a glass cylinder with a prismatic tip. If the tip is in the air, the infrared light is reflected in a way that it falls on photo transistors. If the tip is in a liquid (there is a residual quantity = not empty), the infrared light is not reflected.

Assembly

By means of a thread connection G1/2" attached on the wall of the tank, the container or the pipe, the residual quantity sensor is mounted.

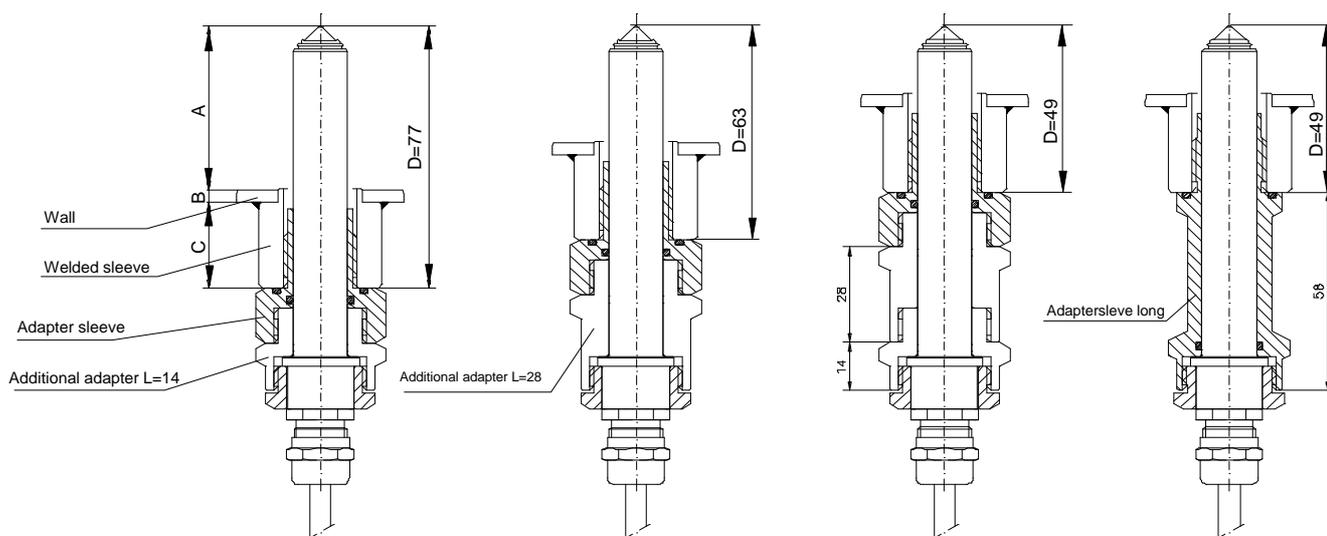


For different installation depths, additional adapters are available.

At first the adapter sleeve (6729-00-047), optionally the adapter sleeve long (6729-00-052) is screwed into the attached screw connection. The adapter sleeve (6729-00-047) can optionally be combined with the additional adapter L=14 (6729-00-050) or the additional adapter L=28 (6729-00-051). After that, the residual quantity sensor is pushed into the adapter sleeve. Make sure that the O-ring in the adapter sleeve is not damaged. By means of a sleeve nut, the residual quantity sensor is finally tightened in the adapter sleeve.

Ordering details:

Designation	Order number	Remarks
Residual quantity sensor, type 6729-23	U 891 1 672 923	
Accessories		
Adapter sleeve long (6729-00-052)	U 050 0 8158	As a substitute for adapter sleeve 6729-00-047 (scope of delivery)
Additional adapter L=14 (6729-00-050)	U 050 0 8156	
Additional adapter L=28 (6729-00-051)	U 050 0 8157	
Welded sleeve (6729-00-008)	U 050 0 069 28	
O-ring 15.5 x 2,0	U 220 7 82	Sealing surface: Adapter sleeve – casing of residual quantity sensor
O-ring 22.0 x 2,0	U 220 7 53	Sealing surface: adapter sleeve – thread connection (container)
Protective cap	U 050 0 674 8	For protection against damages and scattered light



Installation instructions:

In explosion-hazardous areas, the standards EN 60079-0 EN 60079-14, EN 60079-11, EN 60079-26 have to be complied with. For the application in zone 1, the residual quantity sensor can be connected to an attested, intrinsically safe circuit of category ib. For all other applications, an attested, intrinsically safe circuit of category ia has to be used. The residual quantity sensor has to be included in the pressure test of the tank, the container or the pipeline.