

Float switch

with switching contacts and temperature contact,
with resistance measuring chain / resistance
thermometer, with display and control unit

RE 50222/05.10
Replaces: 50214

1/18

Type ABZMS-41

Component series 1X



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Features

Float switches are switching devices operated by a float moved by fluid. They serve the control of filling levels in power unit tanks.

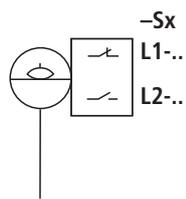
Three series are available:

Float switch Type ABZMS...M with a maximum of four adjustable switching contacts normally closed / normally open or a maximum of three switching contacts and optionally fixedly set temperature contact as normally closed contact for 60 °C [140 °F], 70 °C [158 °F] or 80 °C [176 °F].

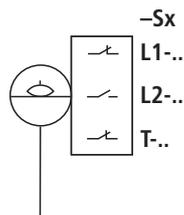
Float switch Type ABZMS...RTA with resistance measuring chain (level) and resistance thermometer (temperature) with analog output from 4 to 20 mA.

Float switch Type ABZMS...D with resistance measuring chain and resistance thermometer as with Type ABZMS...RTA and additional display and control unit for level and temperature setting.

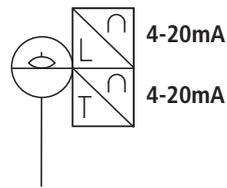
Symbols



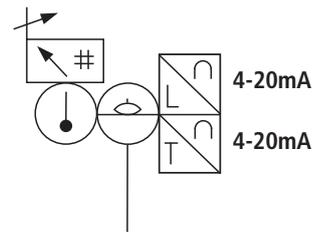
with two switching contacts



with two switching contacts and one temperature contact



with resistance measuring chain / resistance thermometer



with display and control unit, resistance measuring chain / resistance thermometer

Standard types

Float switch with two switching contacts, Type ...M2...

Ordering length L in mm [inch]	Type	Material number
0370 [14.57]	ABZMS-41-1X/0370/M2/DC-K24	R901212588
0500 [19.69]	ABZMS-41-1X/0500/M2/DC-K24	R901212589

Float switch with two switching contacts and temperature contact, Type ...M2-TF70F...

Ordering length L in mm [inch]	Type	Material number
0370 [14.57]	ABZMS-41-1X/0370/M2-T70F/DC-K24	R901212590
0500 [19.69]	ABZMS-41-1X/0500/M2-T70F/DC-K24	R901212591

Float switch with resistance measuring chain and resistance thermometer, Type ...RTA...

Ordering length L in mm [inch]	Type	Material number
0370 [14.57]	ABZMS-41-1X/0370/RTA/DC-K24	R901212592
0500 [19.69]	ABZMS-41-1X/0500/RTA/DC-K24	R901212593

Float switch with display and control unit, resistance measuring chain and resistance thermometer, Type ...D2...

Ordering length L in mm [inch]	Type	Material number
0370 [14.57]	ABZMS-41-1X/0370/D2/DC-K24	R901212594
0500 [19.69]	ABZMS-41-1X/0500/D2/DC-K24	R901212595

Standard types and standard units are contained in the EPS (standard price list).

Technical data (For applications outside these parameters, please consult us!)

general						
Installation position	Vertical $\pm 10^\circ$					
Medium temperature range	$^\circ\text{C}$ [F]	-20 to +80 [-4 to +176]				
Ambient temperature range	- M... and RTA	$^\circ\text{C}$ [F]	-20 to +85 [-4 to +185]			
	- D1 and D2	$^\circ\text{C}$ [F]	-20 to +70 [-4 to +158]			
Material	- Sliding tube \varnothing 20 mm [0.79 inch]	CU alloy				
	- Float	1.4571				
	- Flange	PA12 + 25GF (25 % of glass fiber)				
	- Protective tube \varnothing 60.3 mm [2.37 inch]	Stainless steel 1.4301				
Seal material	Klinger C-4400					
Maximum switching point L1	mm [inch]	1140 [44.88]				
Max. weight with ordering length	mm [inch]	0370 [14.57]	0500 [19.69]	0800 [31.50]	1000 [39.37]	1200 [47.24]
	kg [lbs]	0.5 [1.10]	1.3 [2.87]	1.8 [3.97]	2.0 [4.41]	2.2 [4.85]
hydraulic						
Maximum operating pressure	bar [psi]	1 [14.5]				
Hydraulic fluid						
- Density	g/cm^3	> 0.8				
- Resistance						Resistant
• Mineral oils	Mineral oil	HLP	according to DIN 51524			
• Flame-resistant hydraulic fluids	Emulsions	HFA-E	according to DIN 24320			
	Water solutions	HFC	according to VDMA 24317			
	Phosphoric acid ester	HFD-R				
	Organic esters	HFD-U				
• Fast biodegradable hydraulic fluids	Triglycerides (rape seed oil)	HETG	according to VDMA 24568			
	Synthetic esters	HEES				
	Polyglycols	HEPG				
electrical						
Protection class according to DIN EN 60529	IP 65					
Plug-in connection	4-pole M12x1 (material: metal) (K24) 4-pole (3+PE) DIN EN175301-803 (K14) 7-pole (6+PE) DIN EN175201-804 (K6)					
Reed contacts of the float switches with connection K24, K14, K6/DC						
Switching voltage range	VDC	10 to 36				
Max. switching current	A	0.5				
Max. contact load	VA	10				
Temperature contacts of the float switches with connection K24, K14, K6/DC						
Switching voltage range	VDC	10 to 50				
Max. switching current	A	0.5				
Max. contact load	VA	10				
Max. switching cycles		100.000				
Response tolerance	K	± 3 with max. 1k/min.				
Hysteresis	K	up to 10 with max. 1k/min.				
Max. temperature change velocity	K/min.	1				

Technical data (For applications outside these parameters, please consult us!)**Reed contacts of the float switches**

with connection K14 according to DIN EN 175301-803 / K6 according to DIN EN 175201-804/AC

Switching voltage range	VDC/VAC	10 to 230
Max. switching current	A	0.5
Max. contact load	VA	10

Temperature contacts of the float switches

with connection K14 according to DIN EN 175301-803 / K6 according to DIN EN 175201-804/AC

Switching voltage range	VDC/VAC	10 to 230
Max. switching current	A	2.5
Max. contact load	VA	100
Max. switching cycles		100.000
Response tolerance	K	±3 with max. 1k/min.
Hysteresis	K	up to 10 with max. 1k/min.
Max. temperature change velocity	K/min.	1

PT100

Sensor element		PT100 class B; DIN EN 60751
Temperature measuring range	°C [°F]	0 to 100 [32 to 212]
Accuracy	K	±0.8

Resistance measuring chain and resistance thermometer with connection K24 for mating connector M12x1; 4-pole

Operating voltage	VDC	10 to 36
Signal output	mA	4 to 20 (alternatively 0 to 10, 2 to 10 or 0 to 5 V can be set)
Resolution resistance measuring chain	mm	5
Max. load	Ω	(U – 9.0 V) / 0.02 A
Measuring range temperature	°C [°F]	0 to 100 [32 to 212]

Display and control unit

Supply voltage	VDC	10 to 32	
Display range	°C [°F]	–20 to +120 [–4 to +248]	
Alarm adjustment range:	– Temperature	°C [°F]	0 to 100 [32 to 212]
	– Level	% / liter [US gal]	0 to 100 / 0 to 999 [263.91]
Switching points		4 programmable switching outputs (2 level + 2 temperature)	
Housing design		PA, IP65 (antistatic)	
Display		4 digits, seven-segment LED display	
Current consumption upon switch-on		ca. 100 mA for 100 ms	
Current consumption in operation		ca. 50 mA with UB 24 V	
Switching output		PNP, max. 0.5 A switching power	
Max. ambient temperature	°C [°F]	–20 to +70 [–4 to +158]	
Accuracy		1 % of the measurement range end value	
Operation		3 buttons	