Magnetic Float Level Switches

E2713

User Manual

Evikon

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Specifications

Sensing method	Magnetic floats and reed switches
Installation type	Vertical
Mounting	M16 thread, internal mount
Stem length	From 50 to 3000 mm, specified at ordering
Number of floats	1...5, specified at ordering
Distance between setpoints	Min 35 mms
Setpoint accuracy	± 3 mm
Contacts	SPST (NO) - normally open (default) SPST (NC) - normally closed SPDT (SO) - switchover
Switching power	Max 10 W as standard, 30 / 50 W on request
Switching current	Max 0,5 A
Switching voltage	200 V AC/DC standard, 350 V AC/DC on request
Wires and body insulation	Resistance > 2 GΩ, breakdown voltage >2 kV
Wetted parts	V2A stainless steel/PA, IP68
Float material	V2A stainless steel, for liquids with density > 0.9 g/cm3 polyamide, for liquids with density < 0.9 g/cm3
Shock Resistance	Max 50 G (1/2 sine wave duration 11 ms)
Vibration resistance	Max 20 G
Cable (option S3)	FEP / silicone insulated, standard length 3 m
Connector (option M12)	M12 type A, IP68 (available only for versions with 1 or 2 floats)
Fluid temperature	V2A stainless steel float: -40...+130 °C Polyamide float: -10...+90 °C
Fluid density	0,7...1,2 g/cm3
Pressure in the tank	Max 20 bar
Ambient temperature	-40...+130 °C (cable), -40...+85 °C (M12 connector)
CE marking	According to 2014/30/EU and 2014/35/EU, EN 50491-4-1:2012 EN 61000-6-3:2020, EN 61326-1:2013(EMC, emissions) EN 61000-6-1:2019, EN 61000-6-2:2019(EMC, Immunity)

Product description

Magnetic float level switch E2713 is intended for control of liquids level in tanks. The instrument uses magnetic floats, moving along the stem, and reed switches, installed inside the stem at selected setpoints. Each reed switch is actuated when the float is positioned at the corresponding setpoint.

The setpoint positions are specified at ordering and cannot be later adjusted by the user.

E2713 may be ordered in several versions, providing Min, Max, Min+Max or up to five level setpoints. Options with various stem length, as well as normally open (NO), normally closed (NC) or switch-over (SO) contacts, are available.

Thanks to wetted parts fully made of V2A grade stainless steel, the E2713 level switch may be used in various liquids including water, beverages, oils, fuel, and operates at fluid temperatures up to +130 °C.

Note! For liquids with density less than 0.9 g/cm3, polyamide floats are recommended .

Operating temperature range for PA floats is -10...+90 °C

Safety requirements

The specified pressure, temperature and electrical limitations must not be exceeded.

The pressures and temperatures must take into consideration possible surges in the tank.

The liquid should not be heavily contaminated or tend to crystallize. The liquid must be compatible with the AISI316 / A4 grade stainless steel.

Ambient temperature changes can affect E2713 setpoints, since density of liquids vary with temperature.

E2713 level switches are designed to be shock and vibration resistant, however for maximum operation life shock and vibration should be minimized. Any strong mechanical stress like bending of the stem, dropping, bumping or shaking should be avoided as the reed sensors are fragile.

Do not use the switch in ferromagnetic surroundings. Installation in a tank made from magnetic materials may affect E2713 operation.

Do not operate E2713 in the immediate vicinity of strong electromagnetic fields. The distance from sources of electromagnetic fields should be at least 1 m.

To determine suitability of E2713 for your application consult manufacturer

Installation and connections

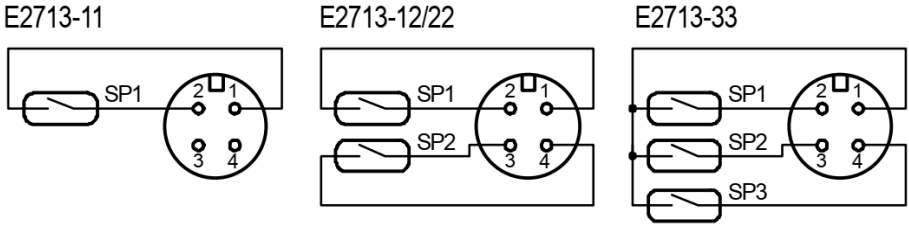
To prepare the mounting place make a 16 mm diameter hole in the upper side of the tank in a way that the probe inserted through the hole is positioned strictly vertically.

The E2713 float level switch should be mounted away from liquid inlet, as strong liquid fluctuation may produce error output signals.

Unscrew the nut and remove the metal washer. Pass the switch through the hole from inside of the tank, attach the metal washer and fix the nut.

The E2713 switch is available either with M12 connector or cable output. M12 connector output option can be ordered only for versions with 1, 2 or 3 setpoints. Cable output options can be ordered for all versions. Reed sensor connections for different versions are shown below (setpoint SP1 is always the topmost).

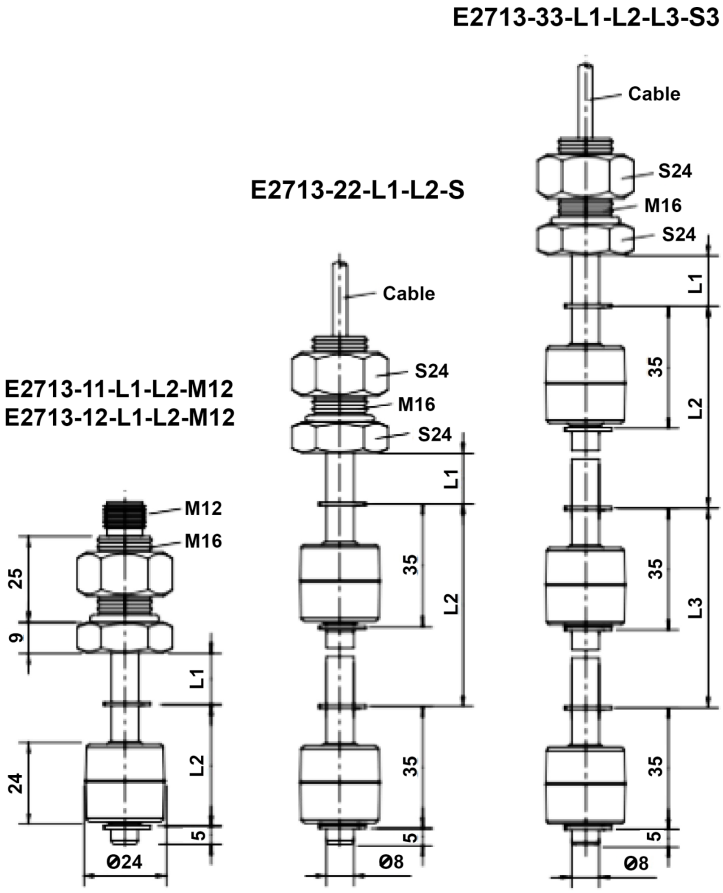
Connections for M12 connector output



Connections for cable output

Wire number	Color	Short form	Setpoint
1	white	WH	SP1
2	brown	BN	
3	green	GN	SP2
4	yellow	YE	
5	grey	GY	SP3
6	pink	PK	
7	blue	BU	SP4
8	red	RD	
9	black	BK	SP5
10	violet	VT	

Dimensions and typical versions



Changing switching mode by reversing the float

Switching mode for each reed switch can be changed from normally open to normally closed by removing the corresponding float and putting it reversed (turned upside down) back on the stem.

Maintenance

In case of viscous, contaminated or crystallizing liquid the E2713 float level switch should be regularly inspected to provide that the floats are moving freely on the stem and that the floats and the stem are not coated with any substance, which significantly changes float weight or dimensions.

If contamination is observed, the floats and the stem of E2713 should be cleaned carefully to remove the build-up, while not deforming or damaging the parts.

Warranty

This product is warranted to be free from defects in material and workmanship for a period of one year from the date of the original sale. During this warranty period, the Manufacturer will, at its option, either repair or replace a product that proves to be defective. This warranty is void if the product has been operated in conditions outside ranges specified by the Manufacturer or damaged by customer error or negligence or if there has been an unauthorized modification.

Manufacturer contacts

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