MATELSAN

Installation and Operation Guide for
F1 Series Level Switches

EN

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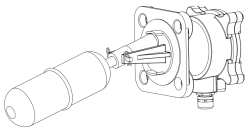
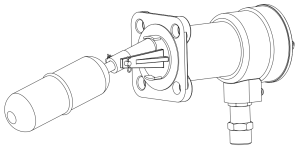
- READ THIS DOCUMENT CAREFULLY BEFORE COMMISSIONING THE DEVICE,
- ELECTRICAL CONNECTION OF THE DEVICE MUST BE MADE BY AUTHORIZED PERSONNEL OTHERWISE THERE IS DANGER OF SERIOUS INJURY OR DEATH,
- THIS DOCUMENT LATER SHOULD BE KEPT IN AN EASILY ACCESSIBLE PLACE,
- ENERGY STRICTLY SHOULD NOT BE GIVEN TO THE DEVICE EXCEPT FOR CONNECTION SCHEMA AND TECHNICAL INFORMATION GIVEN IN THIS GUIDE,
- APPLICATIONS DEFINED IN THIS GUIDE AS INAPPROPRIATE CAN TERMINATE WARRANTY OF PRODUCT,
- IF YOU THINK THIS GUIDE IS NOT HELPFULL PLEASE CONTACT US FROM OUR CONTACT INFORMATION,



F1
Standard Models



F1
Ex - Proof Models

1. GENERAL

1.1 General Informations

F1 Standard and F1 Exproof Type Magnetic Float Level Switches are used to determine the levels of all kinds of liquids in the tanks. They have a wide usage area with their working property without external power supplies, with their sidewise montage (L Types top mounting), wide pressure and temperature range, complete AISI 316 corrosion resistant liquid contact surface.

1.2 Method of Operation

Kayse F1 Standart and F1 Exproof type Magnetic Level Switches can check the levels of the liquids in pressurized and unpressurized containers. The float, which moves with the change of the liquid level, enables the magnet to change its location, and hence, to stimulate the microswitch and its switching. With the dry contact received, not only can information be sent to the automation systems, but also it gives dry contact by controlling directly or indirectly the tank armatures as well, and it keeps the liquid within the tank under continuous control.

1.3 Properties

- Doesn't require external power,
- Possibility to use in wide pressure and temperature ranges,
- AISI 316 quality stainless steel wetted parts,
- Long switch life, can operate in high vibration,
- Possibility to use in liquids with various densities and spec.,
- Aesthetic look, special production on-demand in different types,
- Ex II 1/2 Gc Ex d II AT6 environments available (only F1 Exproof Types)

1.4 Application Areas

- Shipbuilding Industry, Fuel-Oil Tanks, Waste-Clean Water Tanks,
- Asid Tanks, Condense Tanks,
- Alarms and all kinds of Automation Systems,
- Pumps, Solenoid Valves, Valves with Actuators, Hydrophore On/Off Systems,
- Chemical - Petro Chemical Industry,
- Inflammable, Explosive Gas Environments (only F1 Exproof Types),
- All Pressurized and Non-Pressurized Containers,

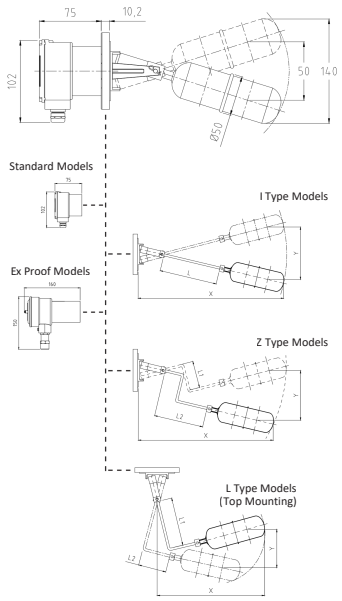
2. TECHNICAL DATAILS

Switch Form	: 1 Piece NO (Normally Open) + NC (Normally Closed) Changeover Switch - Dry Contact
Switch Capacity	: 250 VAC 15A max. (EN 61058-1)
Switch Box	: Alüminium Injection
Terminal Conn.	: Non-screw Terminal Connector System
Cable Conn.	: M16 (IP68) Cable Gland (ø4-8mm max. 1,5mm2) (for Exproof Models, 1/2" Exproof Cable Gland ø4-10mm max. 3x2,5mm2)
Mounting	: Side Mounting (L Type Models top mounting)
Working Pressure	: PN10 / PN16 (Optional)
Working Temp.	: -25 +150 OC
Storage Temp.	: -15 +60 OC
Wetted Parts	: AISI316 (1.4401)
Min. Density	: > 0,7 g/cm3
Weight	: Min. 1,4 kg - Max. 1,6 kg according to models
Approvals	: TSEK, TL, BV, Atex (only Exproof types)

Rated Voltage	Non-Inductive Load (A)				Inductive Load (A)			
	Resistive Load		Lamp Load		Inductive Load		Motor Load	
	NC	NO	NC	NO	NC	NO	NC	NO
125 VAC 250 VAC	15		3 2,5	1,5 1,25	15 15		5 3	2,5 1,5
8 VDC 14 VDC 30 VDC 125 VDC 250 VDC	15 15 2 0,4 0,2		3 3 2 0,4 0,2	1,5 1,5 1,4 0,4 0,2	15 10 1 0,03 0,02		5 5 1 0,03 0,02	2,5 2,5 1 0,03 0,02

3. MODELS

F1 Standard models are **F1 I Type**, **F Z Type** and **F1 L Type**. F1 Exproof models are **F1 Exproof I Type**, **F1 Exproof Z Type** and **F1 Exproof L Type**. F1 Series Level Switches are include 94x94 square flange. DIN, ANSI and JIS norms can applicable to all models.



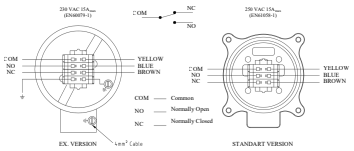
	L	X	Y (Regulation)
I Type Models	100 mm	290 mm	105 mm
	200 mm	390 mm	155 mm
	300 mm	485 mm	210 mm
	400 mm	580 mm	265 mm

	L1	L2	X	Y (Regulation)
Z Type Models	100 mm	50 mm 100 mm	235 mm 285 mm	80 mm 100 mm
	200 mm	150 mm 200 mm	310 mm 355 mm	125 mm 150 mm
	300 mm	250 mm 300 mm	380 mm 430 mm	170 mm 195 mm
	400 mm	350 mm 400 mm	455 mm 505 mm	220 mm 240 mm

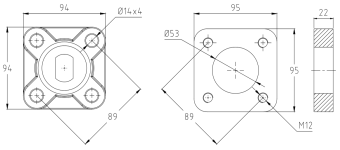
	L1	L2	X	Y (Regulation)
L Type Models	100 mm	100 mm	260 mm	105 mm
	200 mm	200 mm	385 mm	155 mm
	300 mm	300 mm	505 mm	210 mm
	400 mm	400 mm	630 mm	265 mm

4. CONNECTIONS

4.1 Electrical Connections



4.2 Mechanical Connections

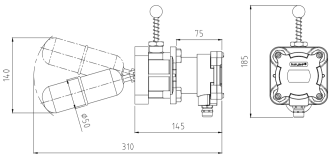


F1 Connection Flange F1 Counter Flange

The flange standart should be considered if DIN, ANSI or JIS norms applied.

5. TEST ARM APPLICATIONS

Thanks to the test equipment mountable between F1 and counter flange, the operating test can be performed without having or remove F1 level switch or perform tank fill-discharge operations.



6. MALFUNCTION

6.1 Mechanical Test Applications

The float should be able to move freely by hand as mechanical. And the float should work easily at vertical position.

6.2 Electrical Test Applications

Switch form of product is dry contact. At Ω level of measuring device,

- Short circuit should be read (the resistance value close to zero) between COM - NO contacts and open circuit should be read between COM - NC contacts when the float looks down,
- Short circuit should be read (the resistance value close to zero) between COM - NC contacts and open circuit should be read between COM - NO contacts when the float looks up,

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