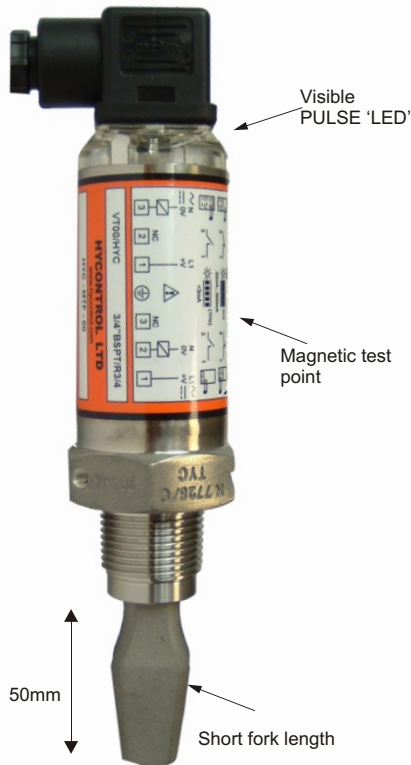




### SWITCHES FOR LIQUID APPLICATIONS



#### MTF SERIES LOW COST LEVEL SWITCH

This compact low cost switch has a rugged 316 stainless steel body and stainless steel forks for use in a wide range of liquids. MTF is the simple answer to your level switch needs.

#### FEATURES

- ◆ Low cost
- ◆ 3/4" mounting suitable for pipes or tanks
- ◆ Hygienic mounting for food industry use
- ◆ Small fork size for minimal intrusion into vessel
- ◆ 'PULSE' LED shows status of the switch
- ◆ Protection against reverse polarity and short circuit connection
- ◆ Magnetic test point

#### BENEFITS

- ◆ Operates on virtually any liquid
- ◆ Continuous operating temperature of 150°C
- ◆ Pressure to 100 bar G
- ◆ Specific operating frequency avoids false switching from plant vibration
- ◆ Industry standard DIN plug electrical connection for simple installation
- ◆ Direct load switching model suits all supplies: 24 to 264V ac/dc, 50/60Hz
- ◆ Solid state PNP output for direct interface to PLCs

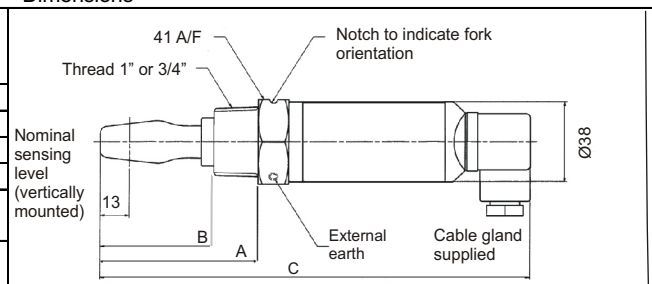
#### MTF SERIES PART NUMBERING & PRODUCT SELECTOR

Code	Product																												
<b>HYC-MTF-</b>	MTF Series Stainless Steel																												
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**HYC-MTF-** [ ] Part number

Model nos. for order			A	B	C	D
Direct load switching	PNP switching	Mounting thread				
MTF00	MTF10	3/4" BSPP	69	50	188	N/A
MTF05	MTF15	3/4" NPT	69	50	188	N/A
MTF03	MTF13	1" BSPP	69	50	188	N/A
MTF0F	MTF1F	1" BSPP	78	60	201	N/A
MTF07	MTF17	51mm 2" Tri-clover	N/A	50	188	
MTF0L	MTF1L	Semi-extended	116	98	239	N/A

#### Dimensions





### SWITCHES FOR LIQUID APPLICATIONS

#### TF SERIES - FOR PROCESS PLANTS

##### FEATURES

- ◆ 3/4" and 1" threaded (BSPT, BSPP, NPT) as standard or extended lengths to 3m
- ◆ Choice of international flanges and range of hygienic fittings
- ◆ Versatile switch outputs - Relay, Direct load switching, PLC/PNP and IS NAMUR
- ◆ ATEX hazardous area approval for flameproof (EExd) and intrinsically safe (EExia) applications
- ◆ Hastelloy or Halar/PFA coating for chemical resistance
- ◆ Continuous operating temperature up to 150°C and pressure up to 100 bar G

##### SPECIAL FEATURES

TF Series has a status indicating 'PULSE' LED which can be seen at all times through a lens in the cover. The LED will flash (once per second) when the TF Series is 'off' and will be constantly lit when the TF Series is 'on'. The LED gives an indication that the switch is functioning correctly and gives a visual indication of the state of the wetside.

A mode switch allows the user to select whether the TF Series is to be set to switch from wet to dry (typically low alarm) or from dry to wet (typically high alarm). A time delay from 0.3, 1, 3, 10, or 30 seconds may be selected to eliminate false switching when the liquid surface is turbulent or agitated.

A magnetic test point on the side of the housing, allows the user to perform a functional test of the TF Series. By touching a magnet on the point indicated on the side of the switch the output will change state for as long as the magnet is present, allowing testing of any connected alarms or other outputs.

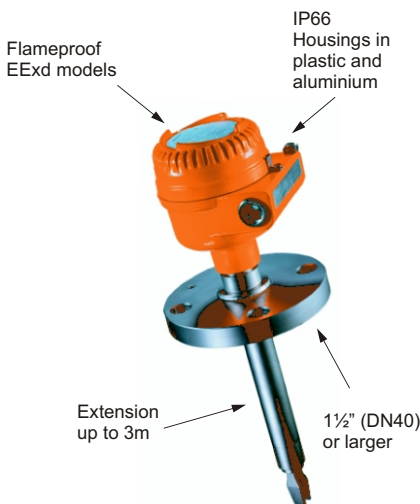
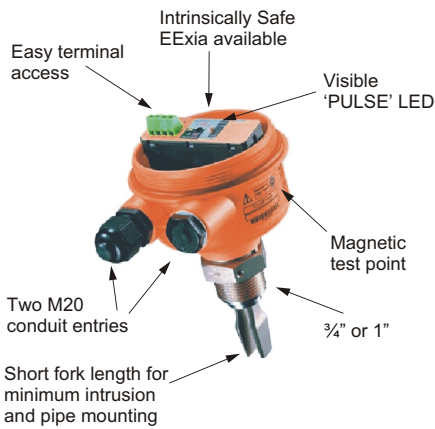
##### ELECTRONICS

Standard two core cable with any power supply from 24 to 260V ac or 24 to 60Vdc is used to connect TF Series with the load and achieve directly load switching. The output acts as a simple SPST switch that changes with liquid presence. Alternatively use the switching function of the SPCO relay for volt free contacts. The TF Series also has the option of electronics which can be interfaced directly to a PLC using the PNP transistor output model (three-wire).

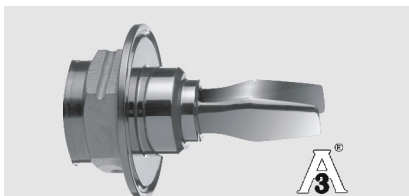
Intrinsically Safe (IS) units to ATEX EExia approval interface directly with standard NAMUR (DIN 19234, IEC 60947-5-6) isolation amplifiers.

##### SHORT FORK TECHNOLOGY

Using Short Fork Technology offers many advantages to the user enabling the switch to operate in small vessels or pipes. Extensive research has maximised the operational effectiveness of the fork to enable it to operate with aerated liquids and slurries, and to function even when coated with product.



**SIL 2 APPROVED**



The industry standard 51mm Tri-clover mounting flange, with its hand polished wetside is suitable for use where 3A and EHEDG approvals are required.





### SPECIFICATION FOR LIQUID SWITCHES

<u>Construction</u>	<u>MTF</u>	<u>TF</u>
Housing Enclosure	304 Stainless Steel	Glass filled Nylon Aluminium for EExd
Wetside Materials	316 St. St.	316 St. St. or Hastelloy or Halar
Hygienic	Polished Stainless Steel	Polished Stainless Steel
Safety Integrity Level	SIL2	SIL2
Electrical Connection	4-way DIN Plug	2 x M20 / 1/2" NPT / 3/4" NPT
Extended Length	No	Up to 3m

### Operating Condition

Process Temperature	-40°C + 150°C	
Ambient Temperature	-40°C + 80°C (Derated to 50°C if 150°C Wetside)	
Process Pressure	-0.25 bar to 100 bar at 50°C	
Liquid Specific Gravity	0.6 to 2.0	
Liquid Viscosity	.2 to 10,000 cps	
Switch Point	13mm from tip or edge	
Hysteresis	+ 1mm nominal in water	
Switching Delay	Fixed 1 sec.	Selectable 0.3, 100, 3, 10 & 30 sec

### Electrical

Direct load switch	24 – 264 V AC 50/60Hz or 24 to 60 V DC	
PNP	26 – 60 V DC	
Maximum switch load	500mA	
Maximum peak load	5A	

<u>Protection</u>	- Mechanical	Housing IP 66
	- Electrical	24 – 264 V AC reverse polarity and short circuit protected

### Approvals

EMC Directive	EN61326	EN50081-1 & EN50082-2
Hazardous Area	N/A	ATEX II 1GD EExia IIC T5
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LV Directive	EN61010	

