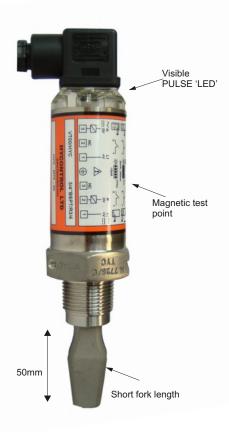


SWITCHES FOR LIQUID APPLICATIONS



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								
HYC-MTF-	MTF Serie	s Stainless	s Stainless Steel						
	Code	Output	Output						
	0	Direct Loa	d Switching						
	1	PNP trans	PNP transistor (PLC)						
		Code	Process Connection						
		0	3/4" BSPT	150°C	100 bar				
		3	1" BSPT (R1")	150°C	100 bar				
		5	3/4" NPT	150°C	100 bar				
		F	1" BSPP (G1")	150°C	100 bar				
		7	2" Tri Clover Hand Polished	150°C	30 bar				
		L	1" BSPP (G1") Semi-extended	150°C	100 bar				
	₩								
HYC-MTF-			Part number						

Model nos. for order		Dimensions					
Direct load switching	PNP switching	Mounting thread	А	В	С	D	41 A/F Notch to indicate fork orientation
MTF00	MTF10	¾" BSPP	69	50	188	N/A	
MTF05	MTF15	3/4" NPT	69	50	188	N/A	Nominal & San
MTF03	MTF13	1" BSPP	69	50	188	N/A	Nominal sensing \otimes
MTF0F	MTF1F	1" BSPP	78	60	201	N/A	level
MTF07	MTF17	51mm 2"	N/A				(vertically mounted) 13
WITI O7	10111 17	Tri-clover	65	50	188		B External Cable gland
MTF0L	MTF1L	Semi- extended	116	98	239	N/A	A earth supplied

Caché Instrumentation

SWITCHES FOR LIQUID APPLICATIONS







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

TF SERIES - FOR PROCESS PLANTS

FEATURES

- ¾" 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.

TF SERIES PART NUMBERING & PRODUCT SELECTOR

Series Code TD TE TF TG	Material										
TD TE TF TG											
TE TF TG	13 IOL Stall	316L Stainless Steel									
TF TG	Eully cortif										
TG		ully certified and traceable 316L SS. (3.1b) lalar coated 316L Stainless Steel									
	Halar Coated fully certified and traceable 316L SS (3.1b)										
TC	Hastelloy	In	• "								
	Code		Connection			N/A 1 11 1					
	5A	3/4" BSP				N/A in Halar					
	1A	1" BSPT				N/A in Halar					
	5B	3/4" BSPI				N/A in Halar					
	1B	1" BSPP	(G)			N/A in Halar					
	5D	3/4" NPT				N/A in Halar					
	1D	1" NPT				N/A in Halar					
	1P		(can be used	d with SK26	7)	N/A in Halar					
	6R	1.5" Tri-C				N/A in Halar					
	2R	2" Tri-Clo				N/A in Halar					
	6K	DN40 PN									
	6L	DN40 PN									
	2K	DN50 PN									
	2L	DN50 PN									
	7K	DN65 PN									
	7L	DN65 PN									
	3K	DN80 PN									
	3L	DN80 PN									
	4K	DN100 P									
	4L	DN100 P									
	6G	1.5" ANS	150								
	6H	1.5" ANS	300								
	2G	2" ANSI 1	50								
	2H	2" ANSI 3	00								
	3G	3" ANSI 1	50								
	3H	3" ANSI 3	00								
	4G	4" ANSI 1	50								
	4H	4" ANSI 3	00								
		Code	Output								
		S	Direct load	switching							
		В	PNP trans	istor (PLC)							
		R	SPDT rela	У							
		C	IS NAMUF	3							
			Code	Wetside F							
			1	Standard 6	electropolish	ed N/A in Halar					
			2	Hand polis	hed to bette	r than Ra <0.8um N/A in Halar					
				Code	Approvals	& Housing					
				NE	No approv	al. GFN Housing M20 entry					
				NF	1	al. GFN Housing 1/2"NPT entry					
				AE	ATEX & F	M (IS) GFN Housing M20 entry					
				AF	ATEX & F	M (IS) GFN Housing 1/2"NPT entry					
				EG	ATEX (EE	kd) Aluminium Housing M20 entry					
				FJ	FM (EExd)	Aluminium Housing 3/4"NPT entry					
					Code	Options					
					Α	Standard length for threaded and tri-clover senso	r N/A in Halar				
					Н	Standard length for flanged sensor					
					L	Short extension					
					В	150mm extension					
					C	300mm extension					
					D						
					E***						
					E***		N/A in Halar				
					E***		N/A in Halar				
\downarrow	\downarrow	↓	\downarrow	↓	-	1					
						H L B C D E***	H Standard length for flanged sensor L Short extension B 150mm extension C 300mm extension D 500mm extension E*** Up to 1000mm E*** 1001mm to 2000mm				

The existence of a type number does not imply that all combinations of part numbers are available. Consult Hypersis Sensors & Systems Ltd

SPECIFICATION FOR LIQUID SWITCHES

Construction	MTF	<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 / ½" NPT / ¾ " NPT
Extended Length	No	Up to 3m

Operating Condition

	<u>operating contained</u>					
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°CL					
Liquid Specific Gravity	0.6 to 2.0					
Liquid Viscosity	.2 to 10,000 cps					
Switch Point	13mm from tip or edge					
Hysteresis	<u>+</u> 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

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

