

Mechanical temperature switches

ML1H

Local mount type

Features

- ▶ Local mount type single switch
- ▶ Explosion proof housing
- ▶ Terminal clip and set point adjustment in °C and °F under tamper protected cover
- ▶ Protection class: IP65, NEMA 4 / 13
- ▶ Optional:
 - Disconnection with manual reset, G (RD)-micro switch
 - Adjustable hysteresis (switch-back difference), S-micro switch
- ▶ Thermowell in stainless steel and brass
3/4" NPT male thread
- ▶ Option thermowell: W = Brass
WS = Stainless steel SS316Ti, 1.4571
- ▶ Approvals: Ex ia, UL, CSA, SIL2 (IEC 61508)

Adjustment ranges

-45 °C...+24 °C to +66 °C...+232 °C

Applications

Temperature monitoring in machine and machine tool industry, shipbuilding, power plants, antifreeze, heating systems, compressor monitoring



Technical Data

Housing material:	Die-cast aluminium, anodized
Process connection:	Standard 1/2" NPT male, option W/WS 3/4" NPT male
Temperature sensor material:	Standard: brass / copper, version S: stainless steel (SS304 / 1.4301). If not equipped with thermowell the sensor may only be used up to 21 bar max. For W and WS pressure values refer to table in chap. Accessories.
Operation pressure: without thermowell: with thermowell:	max. 21 bar (max. 300 psi) see page "Accessories" table 1.4
Operation temperature: Housing: Sensor:	-40°C...+75°C (-40°F...167°F) except temperature code 454: -18°C...+75°C (0°F...167°F) see table "Adjustment range" (Sensor temperature limits)
Electrical values:	All models are equipped with SPDT contacts

Micro switch type:	H, M, GH, GM, S, G (RD)
Electrical connection:	1/2" NPT female, internal screw terminal, cable gland in PA, for cable size 6...12 mm is included
Protection class:	IP65, NEMA 4 / 13
Set point adjustment:	Turn adjustment knob clockwise to increase the actuation point
Standards:	The equipment is in conformity with the following harmonised European standards: EN 60014 1977 + A1 to A4 and EN 500120 1977 + A1
Intrinsic safety:	The switches are also suitable for intrinsically safe applications. In this case we recommend gold contacts. Add "Exi" in case of ordering. Maximum rating according to ATEX: U _{max} = 28 V I _{max} = 50 mA
Approvals:	Ex ia, UL, CSA
Weight:	1.0 kg approx.

Adjustment ranges

Code adjustment range	Sensor temperature limits (°C)	Adjustment range (°C)	Hysteresis (°C)* for micro switch			
			H, GH	M, GM	S	G (RD)
						2.8...manual
201	-73 ... +121	-45... +24	0.5... 1.6	1.7... 3.3	3.3... 11.2	
202	-73 ... +121	-9... +60	0.5... 1.6	1.7... 3.3	3.3... 11.2	
203	-73 ... +121	+24... +93	0.5... 1.6	1.7... 3.3	3.3... 11.2	
204	-73 ... +121	-45... +93	0.5... 1.6	1.7... 3.3	3.3... 11.2	
351	-73 ... +205	+38... +107	0.5... 1.6	1.7... 3.3	3.3... 11.2	
354	-73 ... +205	+38... +177	0.5... 1.6	1.7... 3.3	3.3... 11.2	
454	-18 ... +260	+66... +232	1.6... 3.3	3.3... 5.0	5.5... 16.8	

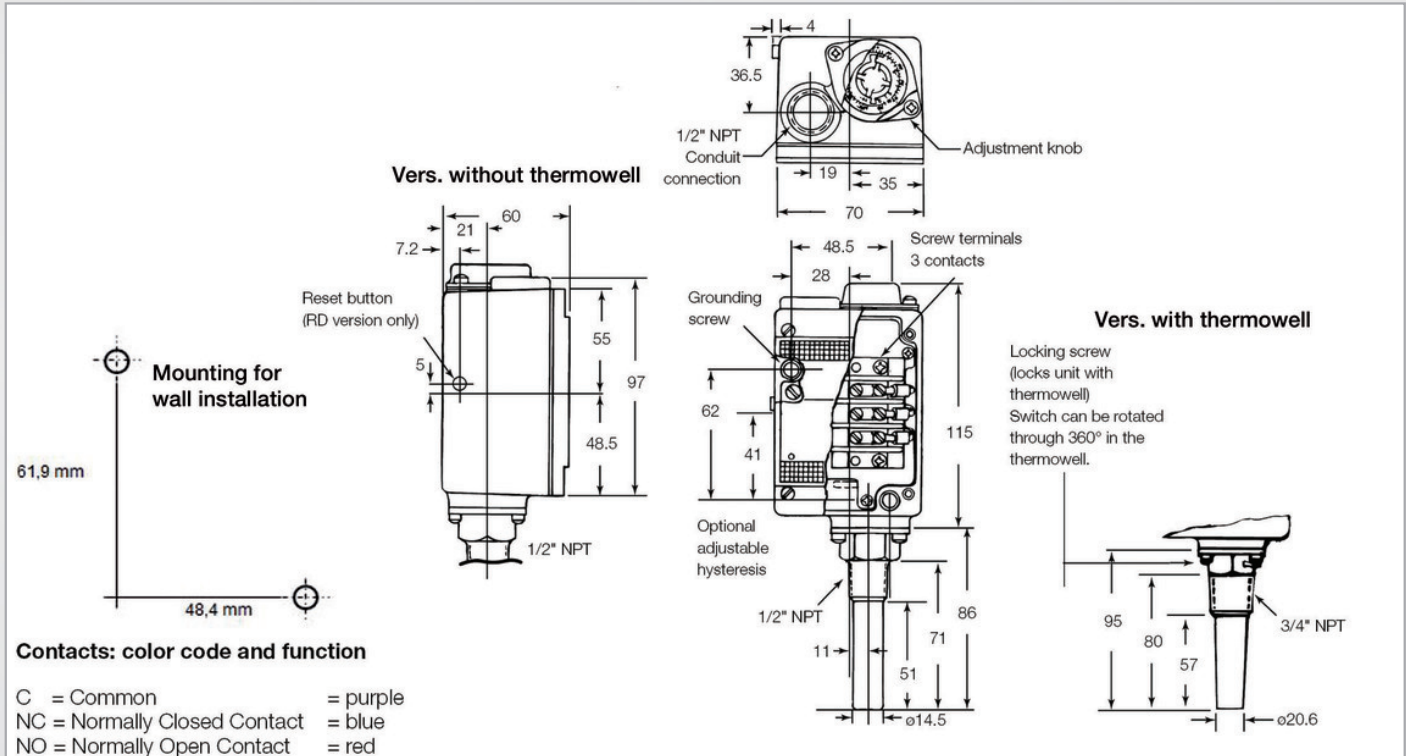
* Dependent on medium

Temperature

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Dimensions (mm / inch)



Electrical Ratings

Micro switch	Special features	Volt AC 50/60 Hz	Ind. Load A	Res.load A	Volt DC	Ind load A	Res. Load A	Comments
H	Micro switch with silver contacts	125 250 480	10 10 3	10 10 3	6 to 28	0.50	0.5	Small hysteresis; High AC / low DC loads
M	Micro switch with silver contacts	125 250 480	10 10 3	10 10 3	12 24 250	5.00 1.00 0.25	15.0 2.0 0.4	Medium hysteresis; High AC and DC loads
GH	Micro switch with gold contacts for low voltage and low current (e. g. "Exi")	125	1	1	24	1.00	1.00	Small hysteresis
GM		30	0.1	0.1	30	0.10	0.1	Medium hysteresis
S	Micro switch with silver contacts	480	15	15	125	0.05	0.4	Adjustable hysteresis
G	Micro switch with silver contacts	480	10	10	125	0.4	0.75	Manual reset (RD)

Hermetically sealed micro switch (HML1H) on request

Sensor material / Options

Sensor material		Options 1		Options 2	
---	Brass/copper	W	Thermowell of brass	RD	Manual reset
S	Stainless steel	WS	Thermowell of SS (1.4571, SS316 Ti)	EXI	for intrinsically safe application, Ex ia

Order Code

Example for order number

Type	Micro switch	Code Adjustment range	Sensor length*	Option 1	Option 2
ML1H	GH	202	S	WS	EXI

* Brass/cooper, option: S = Stainless steel

Your order number

ML1H	-		-		-	
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