

MINISTAT

Swiss based Trafag is a leading international supplier of high quality sensors and monitoring instruments for measurement of pressure and temperature.



Applications

- Railways
- Machine tools
- HVAC
- Refrigeration
- Process technology

Features

- Short response time
- Protection IP54
- Electrical connection on terminal screw

03/2025

Data sheet H72184a

Technical Data

Designation of application	Liquid filled thermostat	Switching differential	Adjustable / not adjustable
Measuring range	-30°C ... +40°C to +70°C ... +350°C	Repeatability	± 0.5 % FS typ.
Output signal	Floating change-over contact	Approval / conformity	EN60730-1/ EN60730-2-9: Type 2.B.H

Subject to change

Ordering information/type code

		XXX	XX	XX	XXX	XX	XXXXXXXXXX	XX	XX
Custom build code	External adjustment	624							
	Internal adjustment	634							
Microswitch	Small switching differential, not adjustable		10						
	Average switching differential, not adjustable		11						
	With gold plated contacts, switching differential not adjustable		21						
	Adjustable large switching differential		24						
	Adjustable standard switching differential		25						
Range	Range	Sensor max.							
	[°C]	[°C]							
	-30 ... 40	45			01				
	0 ... 35	50			09				
	-10 ... 35 ⁴⁾	70			94				
	-10 ... 80 ⁴⁾	85			95				
	5 ... 95	105			20				
	20 ... 110 ⁴⁾	115			23				
	20 ... 150	165			31				
	20 ... 230	250			24				
	40 ... 300 ⁴⁾	330			53				
	70 ... 350 ⁴⁾	380			54				
Sensor ¹⁾	Range	Sensor diameter	Sensor material	Range	Sensor diameter	Sensor material			
		[mm]			[mm]				
	20,23	Ø7	Copper	322	01, 07, 09, 11, 13, 17	Ø7	Copper	422	
	20,23	Ø9	Copper	332	01, 07, 09, 11, 13, 17	Ø9	Copper	432	
Fixing ²⁾	Nut M10 (for remote sensing version)						10		
	Grubscrew locked, lateral (direct mounting version) ⁵⁾						12		
	Cap nut (for direct mounting version) ⁵⁾						14		
	Angle bracket (for remote sensing version)						17		
	Grubscrew locked with spacer (cooling element) (for direct mounting version)						18		
	Mounting bracket (for remote sensing version)						19		
	With spring tube and flange, for direct mounting, Ø 16.5 x 200mm						30		
Protection tube	See data sheet www.trafag.com/H72114 and www.trafag.com/H72163						XXXX.XXXX		
Accessories	Switchpoint locking ⁴⁾							15	
	Switchpoint fixed and sealed upon customer's request ⁴⁾							88	
	Switchpoint preset upon customer's request, no guarantee on switching accuracy ⁴⁾							83	
	Switchpoint adjustment please indicate when ordering:								
	- Switchpoint [°C]								
	- Increasing or decreasing								
	Capacitor over Pin 1-4							13	
	Railway version IEC 61373, category 2							28	
	Capillary tube protection: Flexible metal tube, brass nickel-plated							90	
	Capillary tube protection: Flexible metal tube 1.4301 (AISI 304)							91	
	Capillary tube protection: PVC tube							92	
Capillary tube length	Capillary tube length up to 5000 mm (no specification required for direct mounting on protection tube) L=XXXX ³⁾								

¹⁾ See data sheet www.trafag.com/H72114 and www.trafag.com/H72163
²⁾ See data sheet www.trafag.com/H72106
³⁾ Overlengths upon request

⁴⁾ Only with type 634 internal adjustment

⁵⁾ Media max. 150°C in continuous operation

Ordering no. for sensors

Range	Sensor-Ø	Sensor material	
		Stainless steel	Copper
01, 09	7.0 mm	421	422
	9.0 mm	–	432
94, 95, 20, 23	7.0 mm	321	322
	9.0 mm	–	332
31	7.0 mm	121	122
	9.0 mm	–	132
24, 53, 54	7.0 mm	021	022
	9.0 mm	–	032

Standard products (extra short lead time)

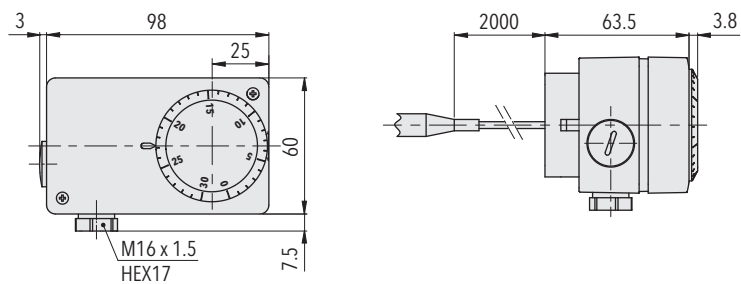
Product No.	Type Code	Sensor material	Temperature range [°C]	Switching differential [°C]	Sensor max. [°C]
M35	624 2509 422 19	Copper	0 ... +35	0.7 ... 10 (adjustable)	70
M40	624 2501 422 19	Copper	-30 ... +40	0.7 ... 10 (adjustable)	45
M95	624 2520 322 19	Copper	+5 ... +95	2 ... 12 (adjustable)	105
M150	624 2531 122 19	Copper	+20 ... +150	2.5 ... 16 (adjustable)	165
M230S	624 2524 021 19	1.4435 (AISI316L)	+20 ... +230	3 ... 32 (adjustable)	250
MS35	634 2509 422 19	Copper	0 ... +35	0.7 ... 10 (adjustable)	70
MS40	634 2501 422 19	Copper	-30 ... +40	0.7 ... 10 (adjustable)	45
MS95	634 2520 322 19	Copper	+5 ... +95	2 ... 12 (adjustable)	105
MS150	634 2531 122 19	Copper	+20 ... +150	2.5 ... 16 (adjustable)	165
MS230S	634 2524 021 19	1.4435 (AISI316L)	+20 ... +230	3 ... 32 (adjustable)	250
MS350S	634 2554 021 19	1.4435 (AISI316L)	+70 ... +350	4 ... 40 (adjustable)	380
MST8015	634 2595 322 12 1216 0150		-10 ... +80	2 ... 12 (adjustable)	85
MST8040	634 2595 322 12 1216 0400		-10 ... +80	2 ... 12 (adjustable)	85
MST9511	634 2520 332 12 1217 0110		+5 ... +95	2 ... 12 (adjustable)	105
MST9515	634 2520 322 12 1216 0150		+5 ... +95	2 ... 12 (adjustable)	105
MST9540	634 2520 322 12 1216 0400		+5 ... +95	2 ... 12 (adjustable)	105
MST15015	634 2531 122 12 1216 0150		+20 ... +150	2.5 ... 16 (adjustable)	165
MST15040	634 2531 122 12 1216 0400		+20 ... +150	2.5 ... 16 (adjustable)	165
MSK35	634 2509 432 30	Copper	0 ... +35	0.7 ... 10 (adjustable)	50
MSK40	634 2501 432 30	Copper	-30 ... +40	0.7 ... 10 (adjustable)	45

Specifications		
Accuracy	Repeatability	$\pm 0.5 \% \text{ FS typ.}$
	Scale accuracy typ.	$\pm 2 \% \text{ FS typ.}$
	Switching differential	See table
	Switching point	Temperature compensated with bimetal switch lever
Environmental conditions	Ambient temperature	Range $\leq +45^{\circ}\text{C}$: $-30^{\circ}\text{C} \dots +50^{\circ}\text{C}$ Range $+45^{\circ}\text{C} \dots +250^{\circ}\text{C}$: $-30^{\circ}\text{C} \dots +70^{\circ}\text{C}$ Range $> +250^{\circ}\text{C}$: $-10^{\circ}\text{C} \dots +70^{\circ}\text{C}$ (Important: Temperature at sensor may not exceed maximum sensor temperature)
	Storage temperature	$-20^{\circ}\text{C} \dots +40^{\circ}\text{C}$
	Protection	IP54
	Humidity	Max. 95 % relative
Mechanical data	Sensor housing	See ordering information
	Filling	Liquid
	Protection tube	See ordering information
	Housing	PC/ABS-Blend V0
	Screwed cable gland	Polyamide (PA)
Microswitch	Rating	See table
	Resistance of insulation	$> 2 \text{ M}\Omega$
	Dielectric strength	$U \leq 250\text{V}$: 1.45 kV $U \leq 500\text{V}$: 2 kV terminal ground
	Life time (mechanical)	Microswitch 10/11/25: 20 Mio. cycles Microswitch 21: 0.5 Mio. cycles Microswitch 24: 0.3 Mio. cycles
Electrical connection	Cable gland	M16x1.5 Cable- $\varnothing$ 4...9 mm
	Terminal screw	3 x 1 ... 2.5 mm ²

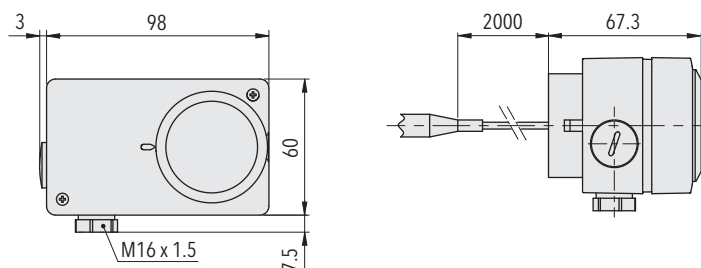
Additional information		
Documents	Data sheet	www.trafag.com/H72184
	Instructions	www.trafag.com/H73624

Dimensions

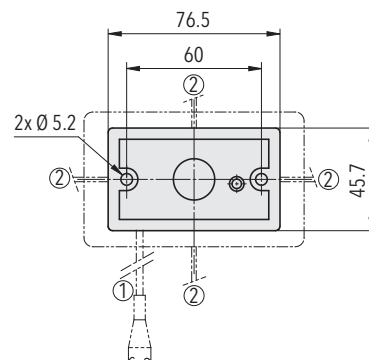
M/MS



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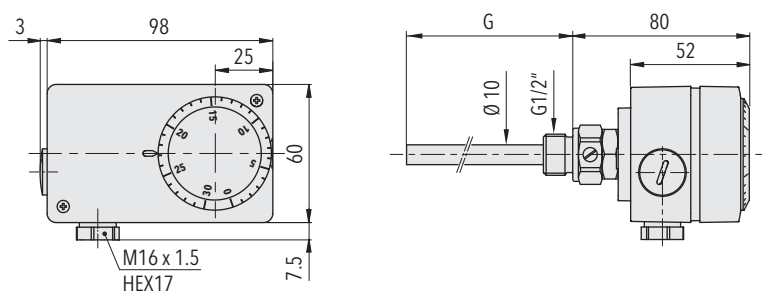


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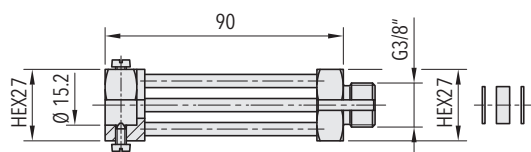
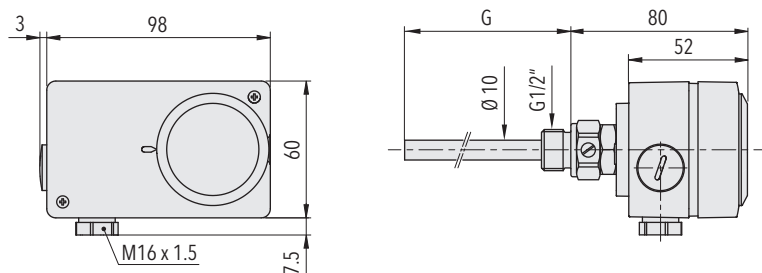


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MST



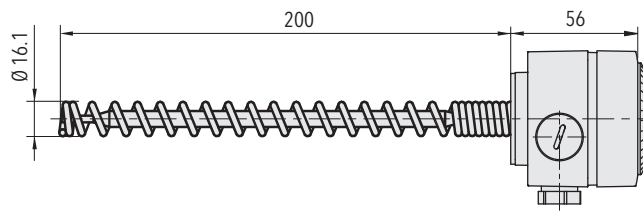
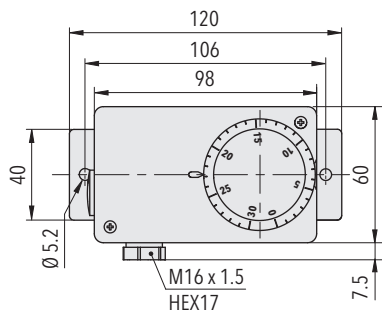
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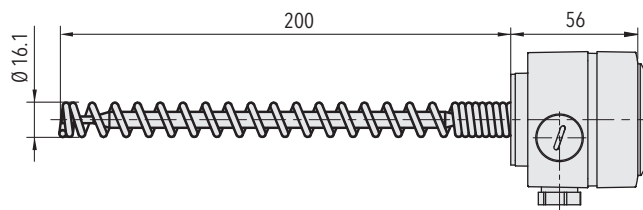
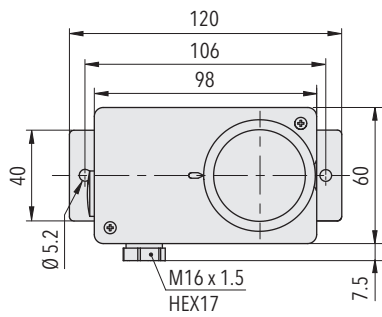
Fixation 35

Dimensions

MSK



624.XXXX.XXX.30.XX



634.XXXX.XXX.30.XX

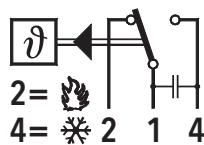
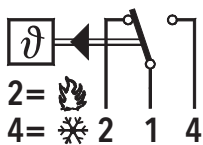
Switching differential typ.

Measuring range	[°C]	-30 ... +40 0 ... +35	-10 ... +35 -10 ... +80 +5 ... +95 +20 ... +110	+20 ... +150	+20 ... +230	+40 ... +300 +70 ... +350
Microswitch 10: Switching differential not adjustable	[°C]	0.3	0.8	1	1.2	2
Microswitch 11/21: Switching differential not adjustable	[°C]	0.7	2	2.5	3	4
Microswitch 24: Switching differential adjustable	[°C]	4 ... 21	5.5 ... 26	7 ... 34	15 ... 65	18 ... 84
Microswitch 25: Switching differential adjustable	[°C]	0.7 ... 10	2 ... 12	2.5 ... 16	3 ... 32	4 ... 40

Electrical data switch

Type	Features	Rating Resistive Load (Inductive Load)	
		AC	DC
10	Small switching differential, not adjustable	125 V, 10 (1.5) A 250 V, 10 (1.25) A	250 V, 0.2 (0.02) A 125 V, 0.4 (0.03) A 30 V, 2 (1) A 14 V, 15 (2.5) A
11	Average switching differential, not adjustable	125 V, 15 (1.5) A 250 V, 15 (1.25) A 500 V, 10 (0.75) A	250 V, 0.25 (0.03) A 125 V, 0.5 (0.05) A 30 V, 6 (1.5) A 14 V, 15 (1.5) A
21	Gold plated contacts, not adjustable	24 V, 0.1 (0.1) A 12 V, 1 (1) A 5 V, 2 (2) A	24 V, 0.1 (0.1) A 12 V, 1 (1) A 5 V, 2 (2) A
25	Adjustable standard switching differential	125 V, 15 (1.5) A 250 V, 15 (1.25) A 500 V, 10 (0.75) A	250 V, 0.25 (0.03) A 125 V, 0.5 (0.05) A 30 V, 6 (1.5) A 14 V, 15 (2.5) A
24	Adjustable large switching differential	125 V, 15 (1.5) A 250 V, 15 (1.25) A 500 V, 10 (0.75) A	250 V, 0.3 (0.2) A 125 V, 0.75 (0.4) A 30 V, 15 (1.5) A 14 V, 15 (1.5) A

Electrical connection



With accessory 13