

INDU LIMISTAT

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



Applications

- Machine tools
- Process technology

Features

- Compact design
- Rugged housing
- Protection IP65
- Any mounting position possible

Technical Data

Designation of application	Industrial thermostat with remote sensor and limiter	Switching differential	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: Typ 2.B.H

05/2024

Data sheet H72138t

Subject to change

Ordering information/type code

		XXX . XX	XX	XXX	XX	XXXXXXXXXX	XX	XX
Custom build code	For increasing temperatures, internal resetting	410 . 12						
	For increasing temperatures, external resetting	412 . 12						
Range	Range [°C]	Sensor max. [°C]		Range [°C]	Sensor max. [°C]			
	-30 ... +40	45	01	+5 ... +95	105	20		
	-10 ... +25 ⁶⁾	60	07	+20 ... +110	115	23		
	0 ... +35	70	09	+20 ... +150	165	31		
	+10 ... +45 ⁶⁾	85	11	+20 ... +230	250	24		
	+10 ... +80 ⁶⁾	100	13	+40 ... +300	330	53		
	-10 ... +35 ⁵⁾	70	94	+70 ... +350	380	54		
	-10 ... +80 ⁵⁾	85	95					
Sensor ¹⁾	See table "Ordering-no. for sensors"					XXX		
Fixing ²⁾	Nut M10 (for remote sensing version)						10	
	Flange connection (for remote sensing version)						16	
	Angle bracket (for remote sensing version)						17	
	Bracket (for remote sensing version)						27	
	Grubscrew locked, lateral (direct mounting version) ⁴⁾						12	
	Cap nut (for direct mounting version) ⁴⁾						14	
	Grubscrew locked with spacer (cooling element) (for direct mounting version)						18	
Protection tube	See data sheet www.trafag.com/H72114 and www.trafag.com/H72163					XXXX.XXXX		
Accessories	Switchpoint locking	15		Capacitor over Pin 1-3		13		
	Switchpoint fixed and sealed upon customer's request	88		Capacitors over Pin 1-2 / 1-3 ⁶⁾		23		
	Switchpoint preset upon customer's request, no guarantee on switching accuracy	83		Railway version IEC 61373, category 2		28		
	Switchpoint adjustment please indicate when ordering: - Switchpoint [°C]			Outdoor application (vented)		44		
	- Increasing or decreasing			Capillary tube protection: Flexible metal tube, brass nickel-plated		90		
	Capacitor over Pin 1-2 ⁶⁾	12		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⁾ Media max. 150°C in continuous operation

⁵⁾ Only with type 410 internal adjustment

⁶⁾ Do not use for new designs. Will be phased out in 2024.

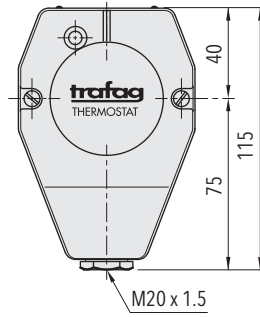
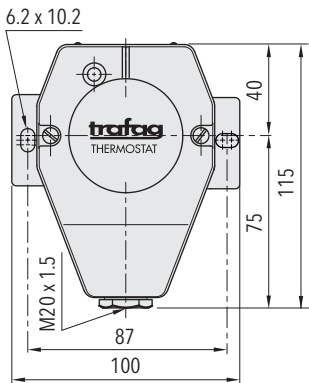
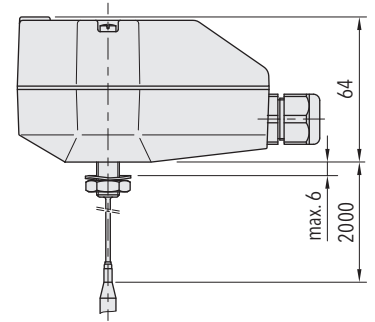
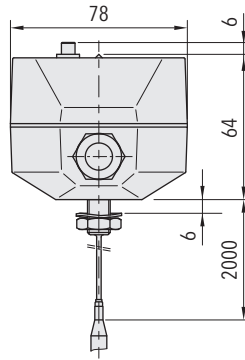
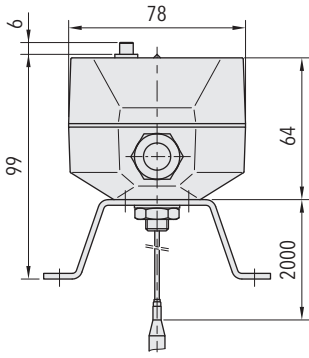
Ordering no. for sensors				
Range	Sensor-Ø	Sensor material		
		Stainless steel	Copper	Copper nickel plated
01, 07, 09, 11, 13, 17	4.7 mm		412 ¹⁾	413 ¹⁾
	7.0 mm	421	422	423 ¹⁾
	9.0 mm		432	433 ¹⁾
	12.0 mm	441	442	443 ¹⁾
94, 95, 20, 23	4.7 mm	311 ¹⁾	312 ¹⁾	313 ¹⁾
	7.0 mm	321	322	323 ¹⁾
	9.0 mm	331 ¹⁾	332	333 ¹⁾
31	4.7 mm	111 ¹⁾	112 ¹⁾	113 ¹⁾
	7.0 mm	121	122	123 ¹⁾
	9.0 mm	131 ¹⁾	132	133 ¹⁾
24, 53, 54	4.7 mm	011 ¹⁾	012 ¹⁾	013 ¹⁾
	7.0 mm	021	022	023 ¹⁾
	9.0 mm	031 ¹⁾	032	033 ¹⁾

¹⁾ Do not use for new designs. Will be phased out in 2024.

Standard products (extra short lead time)				
Product No.	Type Code	Sensor material	Temperature range [°C]	Sensor max. [°C]
IS95R	412 1220 322 27	Copper	+5 ... +95	105
IS150R	412 1231 122 27	Copper	+20 ... +150	165
IS230SR	412 1224 021 27	1.4435 (AISI316L)	+20 ... +230	250
IS350SR	412 1254 021 27	1.4435 (AISI316L)	+70 ... +350	380

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	Range $< +45^{\circ}\text{C}$: $-30^{\circ}\text{C} \dots +50^{\circ}\text{C}$ Range $> +45^{\circ}\text{C}$: $-30^{\circ}\text{C} \dots +85^{\circ}\text{C}$
	Protection	IP65
	Humidity	Max. 95 % relative
	Vibration	5...25 Hz: $\pm 1.6 \text{ mm}$ 25...100 Hz: 4g
	Shock	50 g / 11 ms
Mechanical data	Sensor housing	See ordering information
	Filling	Liquid
	Housing	AlSi9Cu3, coated
	Screwed cable gland	Brass, nickel-plated
	Installation	any position
	Weight	$\sim 950 \text{ g}$
Microswitch	Rating	See table
	Resistance of insulation	$> 2 \text{ M}\Omega$
	Dielectric strength	2 kV terminal ground
	Life time (mechanical)	0.3 Mio. cycles
Electrical connection	Cable gland	M20x1.5 Cable- \varnothing 4...10 mm
	Terminal screw	3 x 1 ... 2.5 mm ²

Dimensions



412.12XX.XXX.27...

412.12XX.XXX.10...

410.12XX.XXX.10...

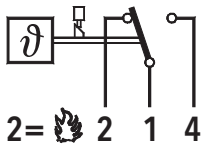
Switching differential typ.

Measuring range	[°C]	-30 ... +40	-10 ... +35	+20 ... +150	+20 ... +230	+40 ... +300
		-10 ... +25	-10 ... +80			+70 ... +350
		0 ... +35	+5 ... +95			
		+15 ... +30	+20 ... +110			
		+10 ... +45				
		+10 ... +80				
Microswitch 12:	[°C]	2.0	6.0	7.5	9.0	12.0
Switching differential not adjustable						

Electrical data switch

Type	Features	Rating	
		Resistive Load (Inductive Load)	
		AC	DC
12	Average switching differential, high vibration resistance	125 V, 15 (1.5) A	250 V, 0.3 (0.2) A
		250 V, 15 (1.25) A	125 V, 0.75 (0.4) A
		500 V, 10 (0.75) A	30 V, 15 (1.5) A
			14 V, 15 (1.5) A

Electrical connection



410/412.12

Limiter for increasing temperatures

Additional information

Documents	Data sheet	www.trafag.com/H72138
	Instructions	www.trafag.com/H73111