

# EX INDUSTRISTAT

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



## Applications

- Ex II 2 G / D

## Features

- Compact design
- Rugged housing
- Any mounting position possible
- Ex d e IIC T6 Gb
- Ex tb IIIC T80°C Db

## Technical Data

Designation of application	Ex Industrial thermostat with remote sensor	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	SEV 15 ATEX 0156 X

12/2015

Data sheet H72108m

Subject to change

## Ordering information/type code

		XXX	XX	XX	XXX	XX	XXXXXXXXXX	XX	XX
<b>Custom build code</b>	External adjustment	404							
	Internal adjustment	414							
<b>Microswitch</b>	Standard, switching differential not adjustable		91						
<b>Range</b>	<b>Range [°C]</b>	<b>Sensor max. [°C]</b>		<b>Range [°C]</b>	<b>Sensor max. [°C]</b>				
	-30 ... +40	50	01	-10 ... +80	85	95			
	-10 ... +25	60	07	+5 ... +95	105	20			
	0 ... +35	70	09	+20 ... +110	115	23			
	+10 ... +45	85	11	+20 ... +150	165	31			
	+10 ... +80	100	13	+20 ... +230	250	24			
	+15 ... +30	60	17	+40 ... +300	330	53			
	-10 ... +35	70	94	+35 ... +175	200	56			
	+10 ... +70	85	59	+20 ... +270	330	55			
	+20 ... +85	100	58	+70 ... +350	380	54			
	+20 ... +115	130	57						
	<b>Sensor <sup>1)</sup></b>	<b>Range</b>	<b>Sensor diameter [mm]</b>	<b>Sensor material</b>					
01, 07, 09, 11, 13, 17, 58, 59		Ø7	Stainless steel	421					
94, 95, 20, 23, 31, 56, 57		Ø4.7	Stainless steel	311					
94, 95, 20, 23, 31, 56, 57		Ø7	Stainless steel	321					
94, 95, 20, 23, 31, 56, 57		Ø9	Stainless steel	331					
24, 53, 54, 55		Ø4.7	Stainless steel	111					
24, 53, 54, 55		Ø7	Stainless steel	121					
24, 53, 54, 55		Ø9	Stainless steel	131					
01, 07, 09, 11, 13, 17, 58, 59		Ø4.7	Copper	412					
01, 07, 09, 11, 13, 17, 58, 59		Ø7	Copper	422					
01, 07, 09, 11, 13, 17, 58, 59		Ø9	Copper	432					
94, 95, 20, 23, 31, 56, 57		Ø4.7	Copper	312					
94, 95, 20, 23, 31, 56, 57		Ø7	Copper	322					
94, 95, 20, 23, 31, 56, 57		Ø9	Copper	332					
24, 53, 54, 55		Ø4.7	Copper	112					
24, 53, 54, 55		Ø7	Copper	122					
24, 53, 54, 55		Ø9	Copper	132					
01, 07, 09, 11, 13, 17, 58, 59		Ø4.7	Copper nickel plated	413					
01, 07, 09, 11, 13, 17, 58, 59		Ø7	Copper nickel plated	423					
01, 07, 09, 11, 13, 17, 58, 59		Ø9	Copper nickel plated	433					
94, 95, 20, 23, 31, 56, 57		Ø4.7	Copper nickel plated	313					
94, 95, 20, 23, 31, 56, 57		Ø7	Copper nickel plated	323					
94, 95, 20, 23, 31, 56, 57		Ø9	Copper nickel plated	333					
24, 53, 54, 55		Ø4.7	Copper nickel plated	113					
24, 53, 54, 55		Ø7	Copper nickel plated	123					
24, 53, 54, 55		Ø9	Copper nickel plated	133					
<b>Fixing <sup>2)</sup></b>	Nut M10 (for remote sensing version)			10					
	Bracket (for remote sensing version)			27					
	Grubscrew locked, lateral (direct mounting version)			12					
	Captive nut (for direct mounting version)			14					
	Grubscrew locked with thermal distance piece (for direct mounting version)			18					

	XXX	XX	XX	XXX	XX	XXXXXXXXXX	XX	XX	
<b>Protection tube</b>	See data sheet H72114/H72163						XXXX.XXXX		
<b>Accessories</b>	Set blocking <sup>4)</sup>							15	
	Switchpoint fixed and sealed upon customer's request <sup>4)</sup>							88	
	Switchpoint preset upon customer's request, no guarantee on switching accuracy <sup>4)</sup>							83	
	Switchpoint adjustment please indicate when ordering:								
	- Switchpoint [bar]								
	- Increasing or decreasing								
	Capillary tube protection: Flexible metal tube, brass nickel plated							90	
	Capillary tube protection: Flexible metal tube 1.4541/V2A							91	
<b>Capillary tube length</b>	Capillary tube length up to 5000 mm (no specification required for direct mounting on protection tube) L=XXXX <sup>3)</sup>								

<sup>1)</sup> See data sheet H72114/H72163

<sup>2)</sup> See data sheet H72106

<sup>3)</sup> Overlengths upon request

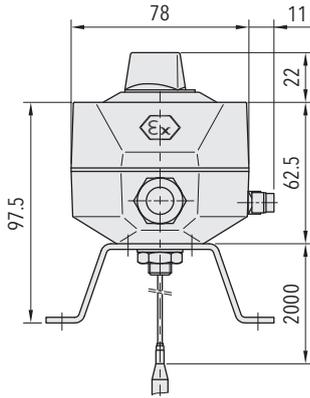
<sup>4)</sup> Only with type 414, internal adjustment

## Standard products (extra short lead time)

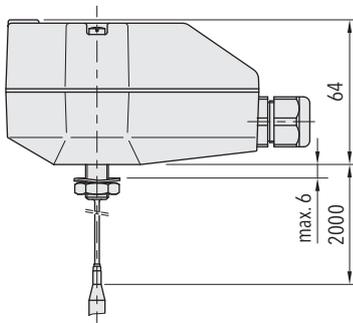
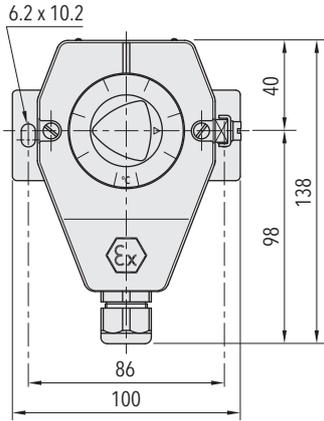
Product No.	Type Code	Sensor material	Temperature range [°C]	Switching differential [°C]	Sensor max. [°C]
EXS35	414 9109 423 27 0000 0000 02	Copper nickel plated	0 ... +35	2.5 (fixed)	50
EXS40	414 9101 423 27 0000 0000 02	Copper nickel plated	-30 ... +40	2.5 (fixed)	45
EXS95	414 9120 323 27 0000 0000 02	Copper nickel plated	+5 ... +95	3.5 (fixed)	105
EXS150	414 9131 323 27 0000 0000 02	Copper nickel plated	+20 ... +150	5.5 (fixed)	165
EXS230S	414 9124 121 27 0000 0000 02	1.4435/316L	+20 ... +230	8 (fixed)	250
EXS350S	414 9154 121 27 0000 0000 02	1.4435/316L	+70 ... +350	10 (fixed)	380

Specifications		
<b>Accuracy</b>	Repeatability	$\pm 0.5$ % FS typ.
	Scale accuracy typ.	$\pm 2$ % FS typ.
	Switching differential	See table
	Switching point	Temperatur compensated with bimetal switch lever
<b>Environmental conditions</b>	Ambient temperature	Range $\leq +45^{\circ}\text{C}$ : $-30^{\circ}\text{C} \dots +50^{\circ}\text{C}$ Range $+45^{\circ}\text{C} \dots +250^{\circ}\text{C}$ : $-30^{\circ}\text{C} \dots +60^{\circ}\text{C}$ Range $> +250^{\circ}\text{C}$ : $-10^{\circ}\text{C} \dots +60^{\circ}\text{C}$
	Storage temperature	Range $\leq +45^{\circ}\text{C}$ : $-30^{\circ}\text{C} \dots +50^{\circ}\text{C}$ Range $> +45^{\circ}\text{C}$ : $-30^{\circ}\text{C} \dots +60^{\circ}\text{C}$
	Protection	IP65
	Humidity	Max. 95 % relative
	Vibration	5...25 Hz: $\pm 1.6$ mm 25...100 Hz: 4 g
	Shock	50g/ 11ms
<b>Mechanical Data</b>	Sensor housing	See ordering information
	Filling	Liquid
	Housing	AlSi9Cu3, coated
	Screwed cable gland	Polyamide
	Installation	any position
	Weight	$\sim 950$ g
<b>Microswitch</b>	Rating	See table
	Resistance of insulation	$> 2$ M $\Omega$
	Dielectric strength	1.5 kV
	Life time (mechanical)	1 Mio. cycles
<b>Electrical connection</b>	Cable gland	M20x1.5/SW24 Cable- $\varnothing$ 5.5...13 mm Approval: PTB 99 ATEX 3128 X
	Terminal screw	3 x 1...2.5 mm <sup>2</sup>

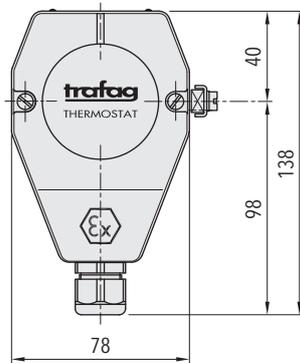
## Dimensions



404.XXXX.XXX.27...



414.XXXX.XXX.10...



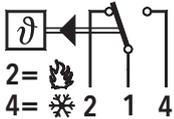
## Switching differential typ.

Range	[°C]	-30 ... +40	-10 ... +35	+20 ... +150	+35 ... +175	+40 ... +300
		-10 ... +25	-10 ... +80		+20 ... +230	+70 ... +350
		0 ... +35	+5 ... +95			
		+15 ... +30	+20 ... +110			
		+10 ... +45	+20 ... +115			
		+10 ... +70				
		+10 ... +80				
		+20 ... +85				
<b>Microswitch 91</b>	[°C]	2.5	3.5	5.5	8	10
Switching differential (fixed value, not adjustable)						

## Electrical data switch

Type	Features	Rating	
		Resistive Load (Inductive Load)	
		AC	DC
<b>91</b>	Standard BASO1ATEX2358U ⊕ II 2 G Ex d IIC T6	250V 5(5) A 125V 5(5) A	250 V 0.25 (0.03) A 125 V 0.5 (0.06) A 75 V 0.75 (0.25) A 50 V 1 (1) A 30 V 5 (3) A 15 V 5 (3) A

## Electrical connection



404 / 414

## Additional information

Documents		
	Data sheet	<a href="http://www.trafag.com/H72108">www.trafag.com/H72108</a>
	Instructions	<a href="http://www.trafag.com/H73172">www.trafag.com/H73172</a>
	Flyer	<a href="http://www.trafag.com/H70970">www.trafag.com/H70970</a>