

# INDUSTAT

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



## Applications

- Hazardous area

## Features

- Compact design
- Rugged housing
- Protection IP65
- Any mounting position possible
- May be used as „simple apparatus“ in zones at risk of explosions

Technical Data			
Designation of application	Industrial room 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 / conformity	EN60730-1/ EN60730-2-9: Typ 2.B.H EN60079-0, EN60079-11 Zone 1 and 2, 21 and 22

02/2017

Data sheet H72183f

Subject to change

# «Simple Apparatus» conformity to ATEX 414

## Ordering information/type code

		XXX	XX	XX	XXX	XX	XXXXXXXXXX	XX	XX
<b>Custom build code</b>	Internal adjustment	414							
<b>Microswitch</b>	With gold plated contacts, switching differential not adjustable		71						
<b>Range</b>	<b>Range [°C]</b>	<b>Sensor max. [°C]</b>							
	-30 ... +40	50							01
	-10 ... +25	60							07
	0 ... +35	70							09
	+10 ... +45	85							11
	+10 ... +80	100							13
	+15 ... +30	60							17
	-10 ... +35	70							94
	-10 ... +80	85							95
	+5 ... +95	105							20
	+20 ... +110	115							23
	+20 ... +150	165							31
	+20 ... +230	250							24
	+40 ... +300	330							53
	+70 ... +350	380							54
<b>Sensor <sup>1)</sup></b>	<b>Range</b>	<b>Sensor diameter [mm]</b>	<b>Sensor material</b>		<b>Range</b>	<b>Sensor diameter [mm]</b>	<b>Sensor material</b>		
	01, 07, 09, 11, 13, 17	Ø7	Stainless steel	421	24, 53, 54	Ø4.7	Copper		112
	94, 95, 20, 23, 31	Ø4.7	Stainless steel	311	24, 53, 54	Ø7	Copper		122
	94, 95, 20, 23, 31	Ø7	Stainless steel	321	24, 53, 54	Ø9	Copper		132
	94, 95, 20, 23, 31	Ø9	Stainless steel	331	01, 07, 09, 11, 13, 17	Ø4.7	Copper nickel plated		413
	24, 53, 54	Ø4.7	Stainless steel	111	01, 07, 09, 11, 13, 17	Ø7	Copper nickel plated		423
	24, 53, 54	Ø7	Stainless steel	121	01, 07, 09, 11, 13, 17	Ø9	Copper nickel plated		433
	24, 53, 54	Ø9	Stainless steel	131	94, 95, 20, 23, 31	Ø4.7	Copper nickel plated		313
	01, 07, 09, 11, 13, 17	Ø4.7	Copper	412	94, 95, 20, 23, 31	Ø7	Copper nickel plated		323
	01, 07, 09, 11, 13, 17	Ø7	Copper	422	94, 95, 20, 23, 31	Ø9	Copper nickel plated		333
	01, 07, 09, 11, 13, 17	Ø9	Copper	432	24, 53, 54	Ø4.7	Copper nickel plated		113
	94, 95, 20, 23, 31	Ø4.7	Copper	312	24, 53, 54	Ø7	Copper nickel plated		123
	94, 95, 20, 23, 31	Ø7	Copper	322	24, 53, 54	Ø9	Copper nickel plated		133
	94, 95, 20, 23, 31	Ø9	Copper	332					
<b>Fixing <sup>2)</sup></b>	Nut M10 (for remote sensing version)								10
	Flange (for remote sensing version)								16
	Console (for remote sensing version)								17
	Bracket (for remote sensing version)								27
	Grubscrew locked, lateral (direct mounting version)								12
	Captive nut (for direct mounting version)								13
	Captive nut (for direct mounting version)								14
	Grubscrew locked with thermal distance piece (for direct mounting version)								18

# «Simple Apparatus» conformity to ATEX 414

	XXX	XX	XX	XXX	XX	XXXXXXXXXX	XX	XX	
<b>Protection tube</b>	See data sheet H72114/H72163						XXXX.XXXX		
<b>Accessories</b>	Switchpoint locking							15	
	Switchpoint fixed and sealed upon customer's request							88	
	Switchpoint preset upon customer's request, no guarantee on switching accuracy							83	
	Switchpoint adjustment please indicate when ordering:								
	- Switchpoint [°C]								
	- 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

## Optional accessories of third party supplier

Ex-i barriers are suitable for intrinsically safe applications. The device transmits binary signals from the hazardous area into the safe area.

Ex-i-barriers: 24 VDC $U_0 = 10.5 \text{ V} / I_0 = 13 \text{ mA} / P_0 = 34 \text{ mW}$	ZEN24VDC
Ex-i-barriers: 230 VAC $U_0 = 10.6 \text{ V} / I_0 = 19.1 \text{ mA} / P_0 = 51 \text{ mW}$	ZEN230VAC



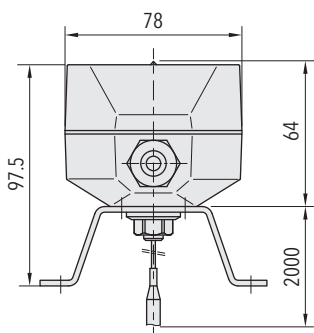
**i** Thermostats, when combined with a certified Ex-barrier (see "optional accessories of third party supplier"), can be used as "simple electrical apparatus" in Zone 1 and 2, as well as in Zone 21 and 22, according to IEC/EN 60079-14. These thermostats are not suitable for Zone 0 and Zone 20. Use in safety relevant applications (approved electrical apparatus) is not permitted.

# «Simple Apparatus» conformity to ATEX 414

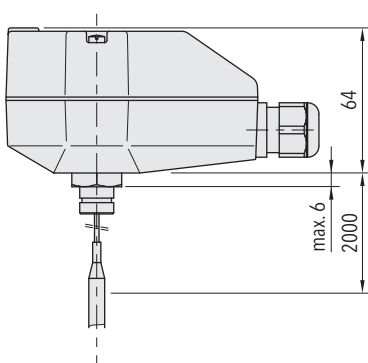
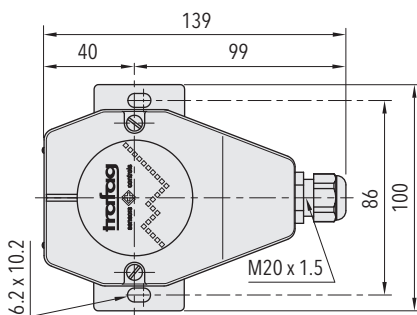
Specifications		
<b>Accuracy</b>	Repeatability	± 0.5 % FS typ.
	Scale accuracy typ.	± 2 % FS typ.
	Switching differential	See table
<b>Environmental conditions</b>	Ambient temperature	Range ≤ +45°C: -30°C ... +50°C Range > +45°C: -30°C ... +65°C (important: Temperature at sensor may not exceed maximum sensortemperature)
	Storage temperature	Range ≤ +45°C: -30°C ... +50°C Range > +45°C: -30°C ... +70°C
	Protection	IP65
	Humidity	Max. 95 % relative
	Vibration	5...25 Hz: ±1.6 mm 25...100 Hz: 4g
	Shock	50g/ 11ms
<b>Mechanical Data</b>	Sensor housing	See ordering information
	Filling	Liquid
	Housing	AlSi9Cu3, coated
	Screwed cable gland	Polyamide (PA), light blue
	Installation	Any position Recommendation: screwage pointing downwards
	Weight	~ 950 g
<b>Microswitch</b>	Rating	See table
	Resistance of insulation	> 2 MΩ
	Dielectric strength	1.25 kV terminal ground
	Life time (mechanical)	1 Mio. cycles
<b>Electrical connection</b>	Cable gland	M20x1.5 Cable-Ø 4...10 mm, max. cable length according to EN60079-11
	Terminal screw	3 x 1...2.5 mm <sup>2</sup>

# «Simple Apparatus» conformity to ATEX 414

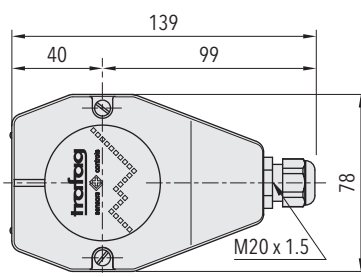
## Dimensions



414.71.XX.XXX.XX.XX...



414.71.XX.XXX.XX.XX...

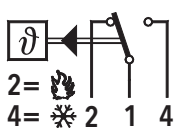


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Switching differential typ.						
<b>Range</b>	<b>[°C]</b>	-30 ... +40 -10 ... +25 0 ... +35 +15 ... +30 +10 ... +45 +10 ... +80	-10 ... +35 -10 ... +80 +5 ... +95 +20 ... +110	+20 ... +150	+20 ... +230	+40 ... +300 +70 ... +350
<b>Microswitch 71</b> Switching differential (fixed value, not adjustable)	<b>[°C]</b>	0.7	2	2.5	3	4

Electrical data switch		
Type	Features	Rating
71	Gold plated contacts	$U_0 = 24\text{ V}$ $I_0 = 100\text{ mA}$ $P_0 = 600\text{ mW}$

## Electrical connection



Additional information		
<b>Documents</b>	Data sheet	<a href="http://www.trafag.com/H72183">www.trafag.com/H72183</a>
	Instructions	<a href="http://www.trafag.com/H73173">www.trafag.com/H73173</a>
	Flyer	<a href="http://www.trafag.com/H70971">www.trafag.com/H70971</a>