

# AMBISTAT

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



## Applications

- HVAC
- Refrigeration

## Features

- Switching differential adjustable or fixed
- Short response time
- Protection IP54
- Electrical connection on terminal screw

06/2024

Data sheet H72170m

## Technical Data

Designation of application	Room thermostat	Switching differential	Adjustable / not adjustable
Measuring range	-45°C ... +15°C to 0°C ... +60°C	Repeatability	± 0.5 % FS typ.
Output signal	Floating change-over contact	Approval / conformity	EN60730-1/ EN60730-2-9: Typ 2.B.H

Subject to change

## Ordering information/type code

		XXX	XX	XX	XXX	XX	XX
<b>Custom build code</b>	External adjustment	645					
	Internal adjustment	650					
<b>Microswitch</b>	Small switching differential, not adjustable <sup>3)</sup>		10				
	Average switching differential, not adjustable <sup>3)</sup>		11				
	With gold plated contacts, switching differential not adjustable		21				
	Adjustable large switching differential		24				
	Adjustable standard switching differential		25				
<b>Range</b>	<b>Range [°C]</b>	<b>Operating temperature [°C]</b>					
	-45 ... +15 <sup>1) 3)</sup>	-45 ... +30		05			
	-30 ... +30	-30 ... +40		02			
	-20 ... +40 <sup>1) 3)</sup>	-30 ... +50		06			
	0 ... +30	-30 ... +50		03			
	+10 ... +40	-30 ... +70		04			
	0 ... +60	-30 ... +70		12			
	-5 ... +50 <sup>1)</sup>	-30 ... +70		14			
<b>Sensor</b>	Copper				402		
	Copper nickel plated <sup>3)</sup>				403		
<b>Fixing <sup>2)</sup></b>	Mounting bracket						19
<b>Accessories</b>	Switchpoint locking <sup>1)</sup>						15
	Switchpoint fixed and sealed upon customer's request <sup>1)</sup>						88
	Switchpoint preset upon customer's request, no guarantee on switching accuracy <sup>1)</sup>						83
	Switchpoint adjustment please indicate when ordering: - Switchpoint [°C] - Increasing or decreasing						
	Railway version IEC 61373, category 2						28

<sup>1)</sup> Only with type 650 internal adjustment

<sup>2)</sup> See data sheet [www.trafag.com/H72106](http://www.trafag.com/H72106)

<sup>3)</sup> Do not use for new designs. Will be phased out in 2024.

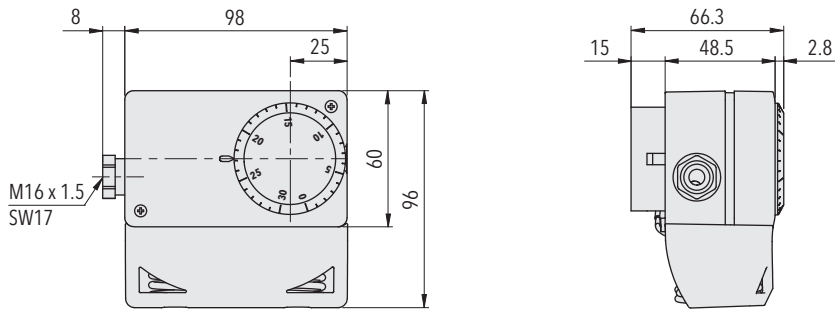
## Standard products (extra short lead time)

Product No.	Type Code	Temperature range [°C]	Switching differential [°C]	Operating temperature [°C]
A30	645 2503 402 19	0 ... +30	0.7 ... 6 (adjustable)	-30 ... +50
A33	645 2502 402 19	-30 ... +30	0.7 ... 6 (adjustable)	-30 ... +40
A40	645 2504 402 19	+10 ... +40	0.7 ... 6 (adjustable)	-30 ... +70
A60	645 2512 402 19	0 ... +60	0.7 ... 6 (adjustable)	-30 ... +70
AS30	650 2503 402 19	0 ... +30	0.7 ... 6 (adjustable)	-30 ... +50
AS33	650 2502 402 19	-30 ... +30	0.7 ... 6 (adjustable)	-30 ... +40
AS40	650 2504 402 19	+10 ... +40	0.7 ... 6 (adjustable)	-30 ... +70
AS60	650 2512 402 19	0 ... +60	0.7 ... 6 (adjustable)	-30 ... +70
ASE40	650 2404 402 19 0000 0000 00 00 00 01	+10 ... +40	5 (fixed)	-30 ... +70

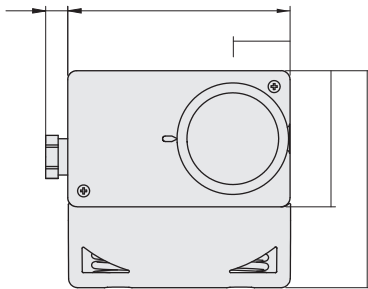
Specifications		
<b>Accuracy</b>	Repeatability	± 0.5 % FS typ.
	Scale accuracy typ.	± 2 % FS typ.
	Switching differential	see table
<b>Environmental conditions</b>	Ambient temperature	see ordering information
	Storage temperature	Range < +40°C: -30...+50°C Range > +40°C: -30...+85°C
	Protection	IP54
	Humidity	Max. 95 % relative
<b>Mechanical Data</b>	Sensor housing	see ordering information
	Filling	Liquid
	Housing	PC/ABS-Blend V0
	Screwed cable gland	PA, Polyamid
	Installation	any position
	Weight	~ 300 g
<b>Microswitch</b>	Rating	see table
	Resistance of insulation	> 2 MΩ
	Dielectric strength	U ≤ 250V: 1.45 kV U ≤ 500V: 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
<b>Electrical connection</b>	Cable gland	M16x1.5 Cable-Ø 4...9 mm
	Terminal screw	3 x 1...2.5 mm <sup>2</sup>

Additional information		
<b>Documents</b>	Data sheet	<a href="http://www.trafag.com/H72170">www.trafag.com/H72170</a>
	Instructions	<a href="http://www.trafag.com/H73624">www.trafag.com/H73624</a>

## Dimensions



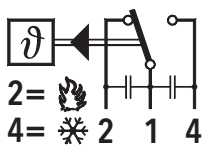
645.XXXX.XXX.XX.XX



Switching differential typ.		
<b>Range</b>	[°C]	-45 ... +15 -30 ... +30 -20 ... +40 0 ... +30 +10 ... +40 0 ... +60
<b>Microswitch 10</b> Switching differential (fixed value, not adjustable)	[°C]	0.3
<b>Microswitch 11</b> Switching differential (fixed value, not adjustable)	[°C]	0.7
<b>Microswitch 21</b> Switching differential (fixed value, not adjustable)	[°C]	0.7
<b>Microswitch 24</b> Switching differential (adjustable value)	[°C]	3 ... 10
<b>Microswitch 25</b> Switching differential (adjustable value)	[°C]	0.7 ... 6

Electrical data switch			
Type	Features	Rating	
		Resistive Load (Inductive Load)	
		AC	DC
<b>10</b>	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
<b>11</b>	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
<b>21</b>	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
<b>25</b>	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
<b>24</b>	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



645/650