

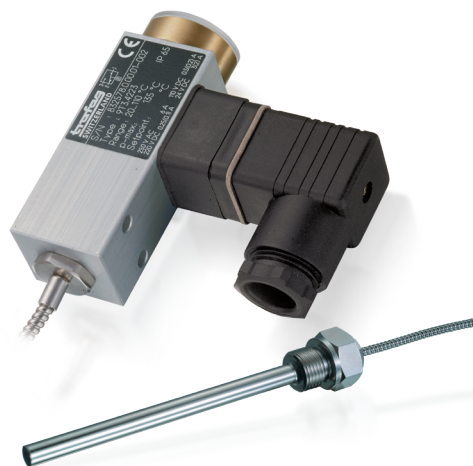
# PICOTHERM

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



## Applications

- Shipbuilding
- Engine manufacturing
- Railways
- Hydraulics
- HVAC



## Features

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

05/2020

Data sheet H72113n

### Technical Data

|                            |                                     |                        |  |
|----------------------------|-------------------------------------|------------------------|--|
| Designation of application | Compact thermostat for shipbuilding | Switching differential | Not adjustable   |
| Measuring range            | +5°C ... +95°C to +20°C ... +150°C  | Repeatability          | ± 1 % FS typ.  |
| Output signal              | Floating change-over contact        | Approval / conformity  | ABS, BV, CCS, DNV-GL, KRS, LRS, NKK, RINA, RMRS<br>EN60730-1/ EN60730-2-9: Typ 2.B.H |

Subject to change

## Ordering information/type code

|                               |  | 474 .                      | XX | XX | XXX | XX | XXXX | XXXX | XX | XX   |
|-------------------------------|--|----------------------------|----|----|-----|----|------|------|----|------|
| <b>Micro-switch</b>           | Standard, switching differential not adjustable  | 03                         |    |    |     |    |      |      |    |      |
| <b>Range</b>                  | <b>Range</b><br>[°C]   | <b>Sensor max.</b><br>[°C] |    |    |     |    |      |      |    |      |
|                               | +5 ... +95   | 100                        |    |    |     |    |      |      |    | 20   |
|                               | +20 ... +110   | 115                        |    |    |     |    |      |      |    | 23   |
|                               | +20 ... +150   | 165                        |    |    |     |    |      |      |    | 31   |
| <b>Sensor</b>                 | <b>Sensor diameter</b><br>[mm]   | <b>Range</b>               |    |    |     |    |      |      |    |      |
|                               | Ø7   | 20, 23                     |    |    |     |    |      |      |    | 322  |
|                               | Ø9   | 20, 23                     |    |    |     |    |      |      |    | 332  |
|                               | Ø12  | 20, 23                     |    |    |     |    |      |      |    | 342  |
|                               | Ø7   | 31                         |    |    |     |    |      |      |    | 122  |
|                               | Ø9   | 31                         |    |    |     |    |      |      |    | 132  |
|                               | Ø12  | 31                         |    |    |     |    |      |      |    | 142  |
| <b>Fixing</b>                 | Flange connection (for remote sensing version)   |                            |    |    |     |    |      |      |    | 00   |
|                               | Cap nut (for direct mounting version)  |                            |    |    |     |    |      |      |    | 14   |
| <b>Protection tube</b>        | <b>Mounting</b>  | <b>Suitable for sensor</b> |    |    |     |    |      |      |    |      |
|                               | For direct mounting on protection tube   | 122, 322                   |    |    |     | 10 |      |      |    | 1416 |
|                               | For direct mounting on protection tube   | 142, 342                   |    |    |     | 15 |      |      |    | 1419 |
|                               | For remote sensing version   | 122, 322                   |    |    |     | 10 |      |      |    | 8316 |
|                               | For remote sensing version   | 142, 342                   |    |    |     | 15 |      |      |    | 8319 |
| <b>Protection tube length</b> | Length G see data sheet <a href="http://www.trafag.com/H72114">www.trafag.com/H72114</a> and <a href="http://www.trafag.com/H72163">www.trafag.com/H72163</a>            |                            |    |    |     |    |      |      |    | XXXX |
| <b>Accessories</b>            | Female electrical connector EN 175301-803-A (DIN43650-A)   |                            |    |    |     |    |      |      |    | 58   |
|                               | Capillary tube protection: Flexible metal tube, brass nickel plated  |                            |    |    |     |    |      |      |    | 90   |
|                               | Fixing set   |                            |    |    |     |    |      |      |    | V3   |
|                               | Cover with window  |                            |    |    |     |    |      |      |    | 77   |
| <b>Capillary tube length</b>  | Capillary tube length up to 5000 mm (no specification required for direct mounting on protection tube) L = XXXX<br>Standard length: L = 3000 mm with flexible metal tube |                            |    |    |     |    |      |      |    |      |

## Standard products (extra short lead time)

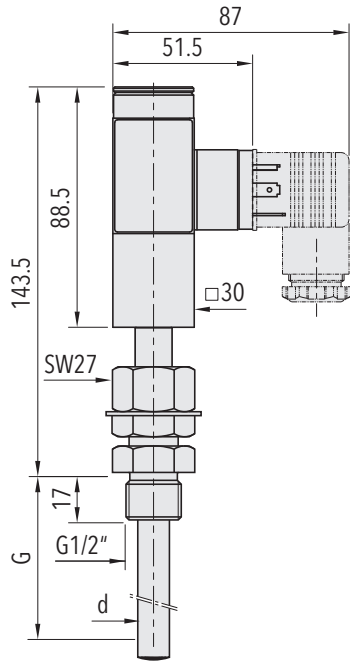
| Product No. | Type Code                          | Temperature range [°C] | Protection tube diameter [mm] | Protection tube length [mm] | Switching differential [°C] | Sensor max. [°C] |
|-------------|------------------------------------|------------------------|-------------------------------|-----------------------------|-----------------------------|------------------|
| ISPT9515    | 474 0320 322 14 1416 0150 58 V3    | +5 ... +95             | 10                            | 150                         | 4 (fixed)                   | 100              |
| ISPT9565    | 474 0320 342 14 1419 0065 58 V3    | +5 ... +95             | 15                            | 65                          | 4 (fixed)                   | 100              |
| ISPT11015   | 474 0323 322 14 1416 0150 58 V3    | +20 ... +110           | 10                            | 150                         | 4 (fixed)                   | 115              |
| ISPT11065   | 474 0323 342 14 1419 0065 58 V3    | +20 ... +110           | 15                            | 65                          | 4 (fixed)                   | 115              |
| ISPT15015   | 474 0331 122 14 1416 0150 58 V3    | +20 ... +150           | 10                            | 150                         | 5 (fixed)                   | 165              |
| ISPT15065   | 474 0331 142 14 1419 0065 58 V3    | +20 ... +150           | 15                            | 65                          | 5 (fixed)                   | 165              |
| ISP9515     | 474 0320 322 00 8316 0150 58 90 V3 | +5 ... +95             | 10                            | 150                         | 4 (fixed)                   | 100              |
| ISP9565     | 474 0320 342 00 8319 0065 58 90 V3 | +5 ... +95             | 15                            | 65                          | 4 (fixed)                   | 100              |
| ISP11015    | 474 0323 322 00 8316 0150 58 90 V3 | +20 ... +110           | 10                            | 150                         | 4 (fixed)                   | 115              |
| ISP11065    | 474 0323 342 00 8319 0065 58 90 V3 | +20 ... +110           | 15                            | 65                          | 4 (fixed)                   | 115              |
| ISP15015    | 474 0331 122 00 8316 0150 58 90 V3 | +20 ... +150           | 10                            | 150                         | 6 (fixed)                   | 165              |
| ISP15065    | 474 0331 142 00 8319 0065 58 90 V3 | +20 ... +150           | 15                            | 65                          | 6 (fixed)                   | 165              |

| Specifications                  |                          |   |
|---------------------------------|--------------------------|---|
| <b>Accuracy</b>                 | Repeatability            | ± 1 % FS typ.                                     |
|                                 | Stability typ.           | ± 1 % FS typ.                                     |
|                                 | Scale accuracy typ.      | ± 4 % FS typ.                                     |
|                                 | Switching differential   | See table   |
|                                 | Switching point          | Temperature compensated with bimetal switch lever |
| <b>Environmental conditions</b> | Ambient temperature      | -30°C ... +70°C                                   |
|                                 | Storage temperature      | -40°C ... +85°C                                   |
|                                 | Protection               | IP65  |
|                                 | Humidity                 | Max. 95 % relative                                |
|                                 | Vibration                | 5...25 Hz: ±1.6 mm<br>25...100 Hz: 4g             |
|                                 | Shock                    | 50 g / 11 ms                                      |
| <b>Mechanical Data</b>          | Sensor housing           | Copper (Cu)                                       |
|                                 | Filling                  | Liquid  |
|                                 | Protection tube          | Brass nickel plated                               |
|                                 | Housing                  | AlMgSi1 anodized                                  |
|                                 | Male electrical plug     | Polyamide (PA)                                    |
|                                 | Installation             | any position                                      |
|                                 | Weight                   | ~ 260 g   |
| <b>Microswitch</b>              | Rating                   | See table   |
|                                 | Resistance of insulation | > 10 MΩ   |
|                                 | Dielectric strength      | 2 kV terminal ground                              |
|                                 | Life time (mechanical)   | 10 Mio. cycles                                    |
| <b>Electrical connection</b>    | Cable gland              | Cable-Ø: 6...13 mm                                |
|                                 | Terminal screw           | 4 x 0.5...1.5 mm <sup>2</sup>                     |

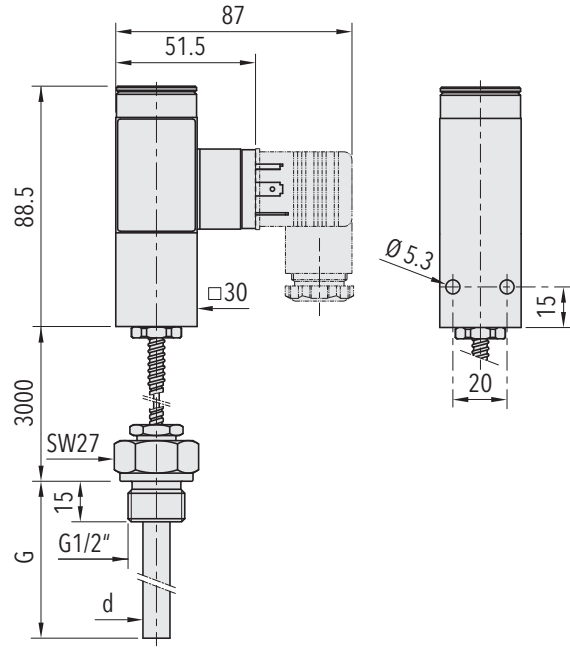
### Additional information

|                  |              |  |
|------------------|--------------|--|
| <b>Documents</b> | Data sheet   | <a href="http://www.trafag.com/H72113">www.trafag.com/H72113</a> |
|                  | Instructions | <a href="http://www.trafag.com/H73113">www.trafag.com/H73113</a> |
|                  | Flyer        | <a href="http://www.trafag.com/H70953">www.trafag.com/H70953</a> |

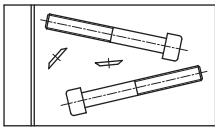
## Dimensions



474.XXXX.XXX.14.14XX...



474.XXXX.XXX.00.83XX...



M5x40 ISO4762

474...V3

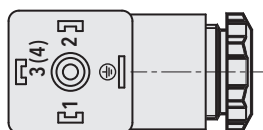
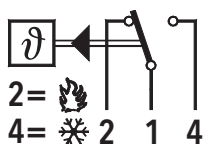
## Switching differential typ.

|  |      |            |              |              |
|--|------|------------|--------------|--------------|
| Measuring range  | [°C] | +5 ... +95 | +20 ... +110 | +20 ... +150 |
| Sensor max.  | [°C] | 100        | 115          | 165          |
| Microswitch 03:<br>Switching differential not adjustable | [°C] | 4.0        | 4.0          | 6.0          |

## Electrical data switch

| Type | Features        | Rating                          |   |
|------|-----------------|---------------------------------|---|
|      |                 | Resistive Load (Inductive Load) |   |
|      |                 | AC                              | DC  |
| 03   | Silver contacts | 250 V, 3 (1) A                  | 250 V, 0.1 (0.05) A<br>220 V, 0.25 (0.2) A<br>110 V, 0.5 (0.3) A<br>24 V, 2.0 (1.0) A |

## Electrical Connection



DIN 43650-A