

**Duct/Immersion sensor Temperature**

For measuring temperature in duct applications. In connection with a stainless steel or brass thermowell also applicable for pipe applications. IP65 / NEMA 4X rated housing.


**Type Overview**

| Type     | Output signal | Probe length | Probe diameter |
|----------|---------------|--------------|----------------|
| 01DT-1CH | Ni1000        | 50 mm        | 6 mm           |
| 01DT-1CL | Ni1000        | 100 mm       | 6 mm           |
| 01DT-1CN | Ni1000        | 150 mm       | 6 mm           |
| 01DT-1CP | Ni1000        | 200 mm       | 6 mm           |
| 01DT-1CR | Ni1000        | 300 mm       | 6 mm           |
| 01DT-1CT | Ni1000        | 450 mm       | 6 mm           |

**Technical data**

|                                          |                        |                                            |                                                                                                                                         |
|------------------------------------------|------------------------|--------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|
|                                          | <b>Electrical data</b> | Electrical connection                      | Pluggable spring loaded terminal block max. 2.5 mm <sup>2</sup>                                                                         |
|                                          |                        | Cable entry                                | Cable gland with strain relief ø6...8 mm                                                                                                |
|                                          | <b>Functional data</b> | Medium                                     | Air<br>Water                                                                                                                            |
|                                          | <b>Measuring data</b>  | Measured values                            | Temperature                                                                                                                             |
| <b>Specification temperature passive</b> |                        | Measuring range                            | -50...160°C [-60...320°F]                                                                                                               |
|                                          |                        | Measuring current                          | <0.3 mA @ 21°C [70°F]                                                                                                                   |
|                                          |                        | Accuracy temperature                       | ±0.4°C @ 0°C [±0.7°F @ 32°F]                                                                                                            |
|                                          |                        | Time constant $\tau$ (63%) in water pipe   | With thermowell A-22P-A.. and thermal contact fluid<br>Typical 7 s with thermowell brass<br>Typical 9 s with thermowell stainless steel |
|                                          |                        | Time constant $\tau$ (63%) in the air duct | Typical 210 s @ 0 m/s<br>Typical 46 s @ 3 m/s                                                                                           |
|                                          | <b>Safety data</b>     | Protection class IEC/EN                    | III, Protective Extra-Low Voltage (PELV)                                                                                                |
|                                          |                        | Power source UL                            | Class 2 Supply                                                                                                                          |
|                                          |                        | Degree of protection IEC/EN                | IP65                                                                                                                                    |
|                                          |                        | Degree of protection NEMA/UL               | NEMA 4X                                                                                                                                 |
|                                          |                        | EU Conformity                              | CE Marking                                                                                                                              |
|                                          |                        | Certification IEC/EN                       | IEC/EN 60730-1                                                                                                                          |
|                                          |                        | Quality Standard                           | ISO 9001                                                                                                                                |
|                                          |                        | UL Approval                                | cULus acc. to UL60730-1A/-2-9, CAN/CSA E60730-1/-2-9                                                                                    |
|                                          |                        | Type of action                             | Type 1                                                                                                                                  |
|                                          |                        | Rated impulse voltage supply               | 0.8 kV                                                                                                                                  |
|                                          |                        | Pollution degree                           | 3                                                                                                                                       |
|                                          |                        | Ambient humidity                           | Max. 95% RH, non-condensing                                                                                                             |
|                                          |                        | Ambient temperature                        | -35...50°C [-30...120°F]                                                                                                                |

## Technical data

|                    |                             |                                                                               |
|--------------------|-----------------------------|-------------------------------------------------------------------------------|
| <b>Safety data</b> | Fluid temperature           | -50...160°C [-60...320°F]                                                     |
|                    | Housing surface temperature | Max. 90°C [195°F]                                                             |
| <b>Materials</b>   | Housing                     | Cover: PC, orange<br>Bottom: PC, orange<br>Seal: NBR70, black<br>UV resistant |
|                    | Cable gland                 | Plug Adapter: PA66, black<br>Nut: PA6, black                                  |
|                    | Probe material              | V4A (1.4404)                                                                  |

## Safety notes



This device has been designed for use in stationary heating, ventilation and air-conditioning systems and must not be used outside the specified field of application. Unauthorised modifications are prohibited. The product must not be used in relation with any equipment that in case of a failure may threaten humans, animals or assets.

Ensure all power is disconnected before installing. Do not connect to live/operating equipment.

Only authorised specialists may carry out installation. All applicable legal or institutional installation regulations must be complied with during installation.

The device contains electrical and electronic components and must not be disposed of as household refuse. All locally valid regulations and requirements must be observed.

## Remarks

|                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|-------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>General remarks concerning sensors</b> | <p>Due to self-heating with 2 wire passive sensors, the supply wire current affects the measurement accuracy. So the supply current should not be higher than the measuring current values specified in this data sheet.</p> <p>When using lengthy connecting cables (depending on the cross section used), the cable resistance must be taken into account. The lower the impedance of the sensor used, the greater the effect of the line resistance on the measurement, because it generates an offset.</p> |
|-------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## Parts included

| Description                                  | Type      |
|----------------------------------------------|-----------|
| Mounting clip, with screws and adhesive foil | A-22D-A11 |

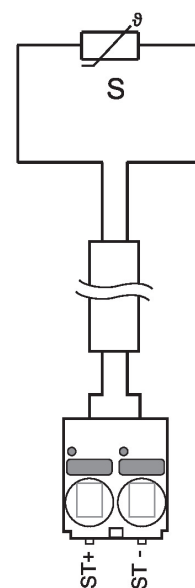
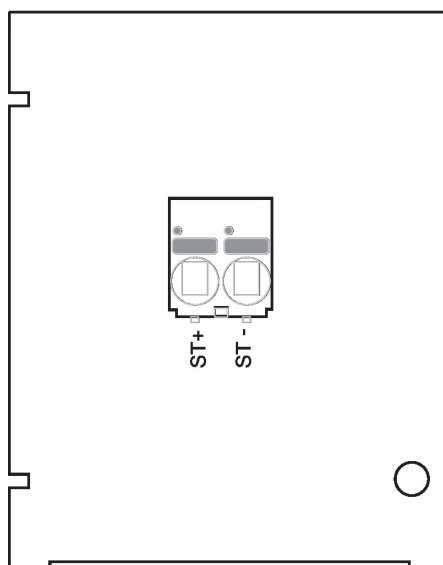
## Accessories

| <b>Optional accessories</b>                                                                | <table> <tr> <th>Description</th><th>Type</th></tr> <tr> <td>Mounting plate S housing</td><td>A-22D-A09</td></tr> <tr> <td>Connection adapter flex conduit, M20x1.5, for cable gland 1x 6 mm, Multipack 10 pcs.</td><td>A-22G-A01.1</td></tr> </table>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Description | Type | Mounting plate S housing                                                 | A-22D-A09 | Connection adapter flex conduit, M20x1.5, for cable gland 1x 6 mm, Multipack 10 pcs. | A-22G-A01.1 |                       |           |                                                                                            |           |                                                  |           |                                        |           |                                                          |           |                                |           |                                                  |           |
|--------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|------|--------------------------------------------------------------------------|-----------|--------------------------------------------------------------------------------------|-------------|-----------------------|-----------|--------------------------------------------------------------------------------------------|-----------|--------------------------------------------------|-----------|----------------------------------------|-----------|----------------------------------------------------------|-----------|--------------------------------|-----------|--------------------------------------------------|-----------|
| Description                                                                                | Type                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |             |      |                                                                          |           |                                                                                      |             |                       |           |                                                                                            |           |                                                  |           |                                        |           |                                                          |           |                                |           |                                                  |           |
| Mounting plate S housing                                                                   | A-22D-A09                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |             |      |                                                                          |           |                                                                                      |             |                       |           |                                                                                            |           |                                                  |           |                                        |           |                                                          |           |                                |           |                                                  |           |
| Connection adapter flex conduit, M20x1.5, for cable gland 1x 6 mm, Multipack 10 pcs.       | A-22G-A01.1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |             |      |                                                                          |           |                                                                                      |             |                       |           |                                                                                            |           |                                                  |           |                                        |           |                                                          |           |                                |           |                                                  |           |
| <b>Optional accessories air</b>                                                            | <table> <tr> <th>Description</th><th>Type</th></tr> <tr> <td>Mounting flange for sensor probe 6 mm, up to max. 120°C [248°F], Plastic</td><td>A-22D-A03</td></tr> <tr> <td>Mounting flange for sensor probe 6 mm, up to max. 260°C, Brass</td><td>A-22D-A05</td></tr> </table>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Description | Type | Mounting flange for sensor probe 6 mm, up to max. 120°C [248°F], Plastic | A-22D-A03 | Mounting flange for sensor probe 6 mm, up to max. 260°C, Brass                       | A-22D-A05   |                       |           |                                                                                            |           |                                                  |           |                                        |           |                                                          |           |                                |           |                                                  |           |
| Description                                                                                | Type                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |             |      |                                                                          |           |                                                                                      |             |                       |           |                                                                                            |           |                                                  |           |                                        |           |                                                          |           |                                |           |                                                  |           |
| Mounting flange for sensor probe 6 mm, up to max. 120°C [248°F], Plastic                   | A-22D-A03                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |             |      |                                                                          |           |                                                                                      |             |                       |           |                                                                                            |           |                                                  |           |                                        |           |                                                          |           |                                |           |                                                  |           |
| Mounting flange for sensor probe 6 mm, up to max. 260°C, Brass                             | A-22D-A05                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |             |      |                                                                          |           |                                                                                      |             |                       |           |                                                                                            |           |                                                  |           |                                        |           |                                                          |           |                                |           |                                                  |           |
| <b>Recommended accessories water</b>                                                       | <table> <tr> <th>Description</th><th>Type</th></tr> <tr> <td>Thermowell Stainless steel, 50 mm, G 1/2", SW27</td><td>A-22P-A06</td></tr> <tr> <td>Thermowell Brass, 50 mm, R 1/2", SW22</td><td>A-22P-A18</td></tr> <tr> <td>Thermal contact fluid</td><td>A-22P-A44</td></tr> <tr> <td>Compression fitting, Stainless steel, G 1/4" (external thread) for 6 mm, with cutting ring</td><td>A-22P-A45</td></tr> <tr> <td>Thermowell Stainless steel, 100 mm, G 1/2", SW27</td><td>A-22P-A08</td></tr> <tr> <td>Thermowell Brass, 100 mm, R 1/2", SW22</td><td>A-22P-A20</td></tr> <tr> <td>Cold barrier, Plastic, L 50 mm, for thermowell A-22P-A..</td><td>A-22P-A51</td></tr> <tr> <td>Adapter for Siemens thermowell</td><td>A-22P-A53</td></tr> <tr> <td>Thermowell Stainless steel, 150 mm, G 1/2", SW27</td><td>A-22P-A10</td></tr> </table> | Description | Type | Thermowell Stainless steel, 50 mm, G 1/2", SW27                          | A-22P-A06 | Thermowell Brass, 50 mm, R 1/2", SW22                                                | A-22P-A18   | Thermal contact fluid | A-22P-A44 | Compression fitting, Stainless steel, G 1/4" (external thread) for 6 mm, with cutting ring | A-22P-A45 | Thermowell Stainless steel, 100 mm, G 1/2", SW27 | A-22P-A08 | Thermowell Brass, 100 mm, R 1/2", SW22 | A-22P-A20 | Cold barrier, Plastic, L 50 mm, for thermowell A-22P-A.. | A-22P-A51 | Adapter for Siemens thermowell | A-22P-A53 | Thermowell Stainless steel, 150 mm, G 1/2", SW27 | A-22P-A10 |
| Description                                                                                | Type                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |             |      |                                                                          |           |                                                                                      |             |                       |           |                                                                                            |           |                                                  |           |                                        |           |                                                          |           |                                |           |                                                  |           |
| Thermowell Stainless steel, 50 mm, G 1/2", SW27                                            | A-22P-A06                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |             |      |                                                                          |           |                                                                                      |             |                       |           |                                                                                            |           |                                                  |           |                                        |           |                                                          |           |                                |           |                                                  |           |
| Thermowell Brass, 50 mm, R 1/2", SW22                                                      | A-22P-A18                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |             |      |                                                                          |           |                                                                                      |             |                       |           |                                                                                            |           |                                                  |           |                                        |           |                                                          |           |                                |           |                                                  |           |
| Thermal contact fluid                                                                      | A-22P-A44                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |             |      |                                                                          |           |                                                                                      |             |                       |           |                                                                                            |           |                                                  |           |                                        |           |                                                          |           |                                |           |                                                  |           |
| Compression fitting, Stainless steel, G 1/4" (external thread) for 6 mm, with cutting ring | A-22P-A45                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |             |      |                                                                          |           |                                                                                      |             |                       |           |                                                                                            |           |                                                  |           |                                        |           |                                                          |           |                                |           |                                                  |           |
| Thermowell Stainless steel, 100 mm, G 1/2", SW27                                           | A-22P-A08                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |             |      |                                                                          |           |                                                                                      |             |                       |           |                                                                                            |           |                                                  |           |                                        |           |                                                          |           |                                |           |                                                  |           |
| Thermowell Brass, 100 mm, R 1/2", SW22                                                     | A-22P-A20                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |             |      |                                                                          |           |                                                                                      |             |                       |           |                                                                                            |           |                                                  |           |                                        |           |                                                          |           |                                |           |                                                  |           |
| Cold barrier, Plastic, L 50 mm, for thermowell A-22P-A..                                   | A-22P-A51                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |             |      |                                                                          |           |                                                                                      |             |                       |           |                                                                                            |           |                                                  |           |                                        |           |                                                          |           |                                |           |                                                  |           |
| Adapter for Siemens thermowell                                                             | A-22P-A53                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |             |      |                                                                          |           |                                                                                      |             |                       |           |                                                                                            |           |                                                  |           |                                        |           |                                                          |           |                                |           |                                                  |           |
| Thermowell Stainless steel, 150 mm, G 1/2", SW27                                           | A-22P-A10                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |             |      |                                                                          |           |                                                                                      |             |                       |           |                                                                                            |           |                                                  |           |                                        |           |                                                          |           |                                |           |                                                  |           |

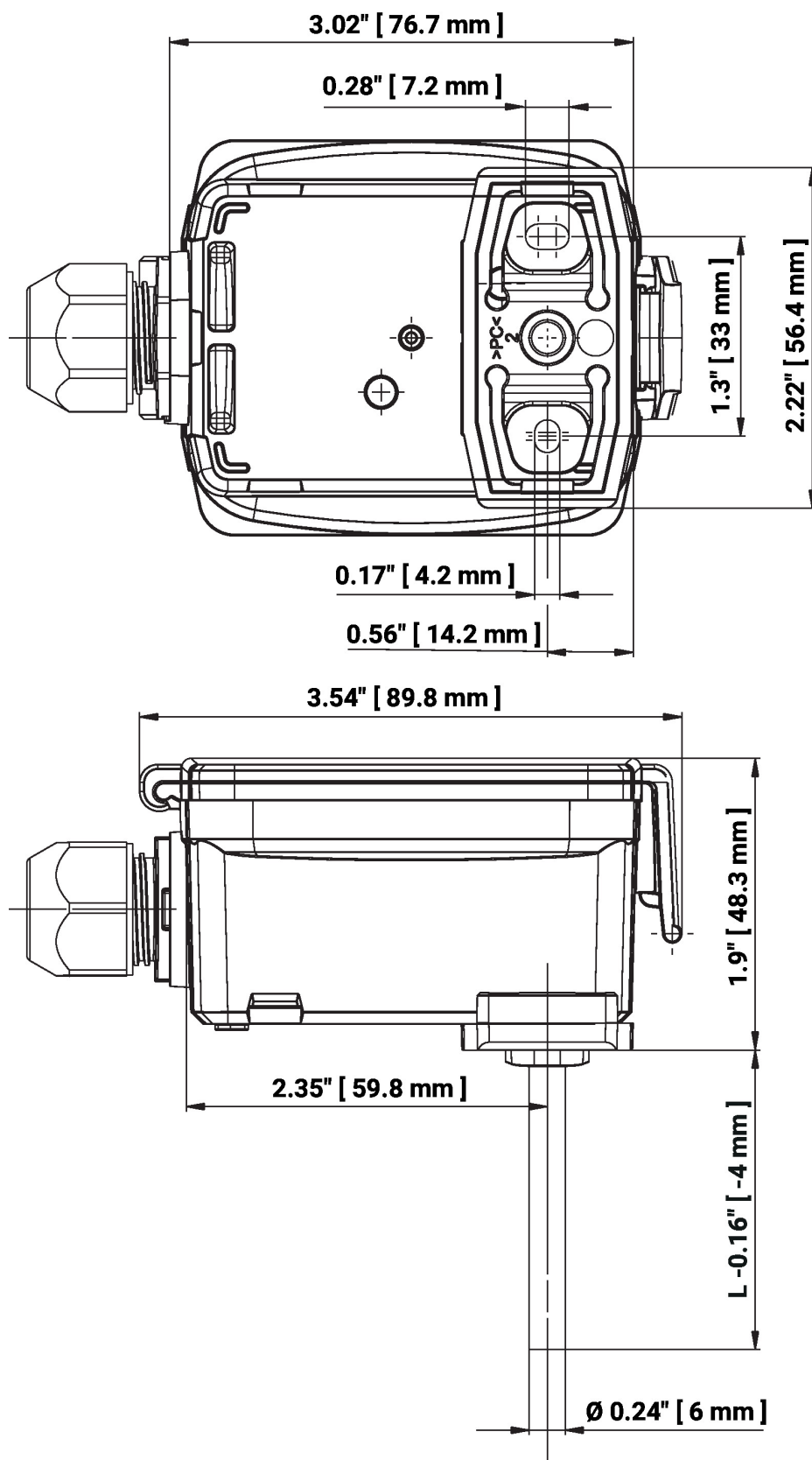
## Accessories

| Description                                      | Type      |
|--------------------------------------------------|-----------|
| Thermowell Brass, 150 mm, R 1/2", SW22           | A-22P-A22 |
| Thermowell Stainless steel, 200 mm, G 1/2", SW27 | A-22P-A12 |
| Thermowell Brass, 200 mm, R 1/2", SW22           | A-22P-A24 |
| Thermowell Stainless steel, 300 mm, G 1/2", SW27 | A-22P-A14 |
| Thermowell Brass, 300 mm, R 1/2", SW22           | A-22P-A26 |
| Thermowell Stainless steel, 250 mm, G 1/2", SW27 | A-22P-A29 |
| Thermowell Brass, 250 mm, R 1/2", SW22           | A-22P-A30 |
| Thermowell Stainless steel, 450 mm, G 1/2", SW27 | A-22P-A16 |
| Thermowell Brass, 450 mm, R 1/2", SW22           | A-22P-A28 |

## Wiring diagram



## Dimensions



L = Probe length

| Type     | Probe length | Weight  |
|----------|--------------|---------|
| 01DT-1CH | 50 mm        | 0.12 kg |
| 01DT-1CL | 100 mm       | 0.12 kg |
| 01DT-1CN | 150 mm       | 0.13 kg |
| 01DT-1CP | 200 mm       | 0.13 kg |

**Dimensions**

| Type     | Probe length | Weight  |
|----------|--------------|---------|
| 01DT-1CR | 300 mm       | 0.14 kg |
| 01DT-1CT | 450 mm       | 0.15 kg |

**Further documentation**

- Installation instructions
- Resistance characteristics
- Sensor length calculator