# THERMASGARD® ATM 2

**Outside temperature / wet room temperature measuring transducers, calibratable, with multi-range switching and active output (Automatic Output Switching)**

NEW

S+S REGELTECHNIK

**Patented quality product** (patent no. DE 10 2015 015 941 B4)

Calibratable outside temperature measuring transducer **THERM**ASGARD® **ATM 2**, with eight switchable measuring ranges (max. –20...+150 °C), active output, external sensor, housing made from impact-resistant plastic with quick-release screws, with cable gland or M12 connector according to DIN EN 61076-2-101, optionally with / without display. The standard display can be changed from SI [°C] to imperial [°F] units via DIP switch.

The measuring transducer converts the measured variables into a standard signal of 0 - 10 V or 4...20 mA. The unit with **Automatic Output Switching** (AOS variant) detects the required output type and automatically switches to U or I output. Alternatively, a **type version** (2-wire I variant) with 2-wire connection and I output is available.

It is used to detect outside temperatures, temperatures in wet rooms, e.g. for installation on outside walls, in cold storage buildings and greenhouses, in the industrial sector and in agriculture. Installation in outdoor areas preferably at the north side of a building or in a protected place. In case of direct solar irradiation, we recommend the use of our sun and ball-impact protection hood **WS 01** or **WS 04** (accessories) or the device version with the installed sun protection **SS 02** (on request).
The sensor is factory-calibrated; an environmental precision adjustment by an expert is possible.

**ATM 2**
with sun protection SS 02 (on request)



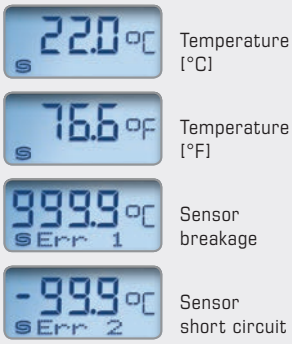
**ATM 2 - Q**
with M12 connector



## TECHNICAL DATA

| | |
|---|---|
| **ATM 2 - I** | |
| Power supply: | 15...36 V DC, depending on working resistance, residual ripple stabilised ± 0.3 V |
| Working resistance: | $R_a$ (Ohm) = ($U_b$ -14 V) / 0.02 A |
| Connection type: | 2-wire connection |
| Output: | **4...20 mA** |
| **ATM 2 - A** (**AOS**) | |
| Power supply: | 24 V AC / DC (± 10 %) |
| Load resistance: | $R_L$ = 25...450 Ohm with AOS I variant<br>$R_L$ > 15 kOhm with AOS U variant |
| Connection type: | 3-wire connection |
| Output: | **automatic 0-10 V / 4...20 mA** (via **Automatic Output Switching** – the unit detects the required output type and automatically switches to U or I output) |
| **GENERAL** | |
| Power consumption: | < 1.0 VA / 24 V DC; < 2.2 VA / 24 V AC |
| System of units: | **SI** (default) or **Imperial** (switchable via DIP switch) |
| Data points: | Temperature [°C] [°F] |
| Measuring ranges: | **multi-range switching with 8 measuring ranges,** see table (other ranges optional) **with manual zero point correction** (**± 10 K**) |
| Sensor: | Pt1000, DIN EN 60751, class B (**Perfect Sensor Protection**) |
| Deviation, temperature: | typically ± 0.2 K at +25 °C |
| Protective tube: | made from stainless steel **V4A** (1.4571), Ø 6 mm, NL = 65 mm |
| Housing: | plastic, UV-resistant, material polyamide, 30 % glass-globe reinforced, with quick-release screws (slotted / Phillips head combination), colour traffic white (similar to RAL 9016), cover for display is transparent! |
| Housing dimension: | 72 x 64 x 37.8 mm (Typ 1 without display)<br>72 x 64 x 43.3 mm (Typ 1 with display) |
| Cable connection: | **cable gland**, plastic (M 16 x 1.5; with strain relief, exchangeable, max. inner diameter 10.4 mm) **or** **M12 connector** (male, 5-pin, A-code) according to DIN EN 61076-2-101 |
| Electrical connection: | 0.14 - 1.5 mm², via terminal screws |
| Process connection: | by means of screws |
| Ambient temperature: | measuring transducer –30...+70 °C |
| Permissible humidity: | < 95 % RH, non-precipitating air |
| Protection class: | III (according to EN 60 730) |
| Protection type: | **IP 65** (according to EN 60 529) Housing tested, TÜV SÜD, Report No.713139052 (Typ 1) |
| Standards: | CE conformity, electromagnetic compatibility according to EN 61326, according to EMC directive 2014 / 30 / EU |
| Optional: | two-line **display with illumination**, cutout approx. 36 x 15 mm (W x H), for displaying the ACTUAL temperature and the internal diagnostics (sensor breakage, sensor short circuit) |
| **ACCESSORIES** | (see table) |

Display and internal diagnostics
**THERM**ASGARD®
**Measuring transducer with display**



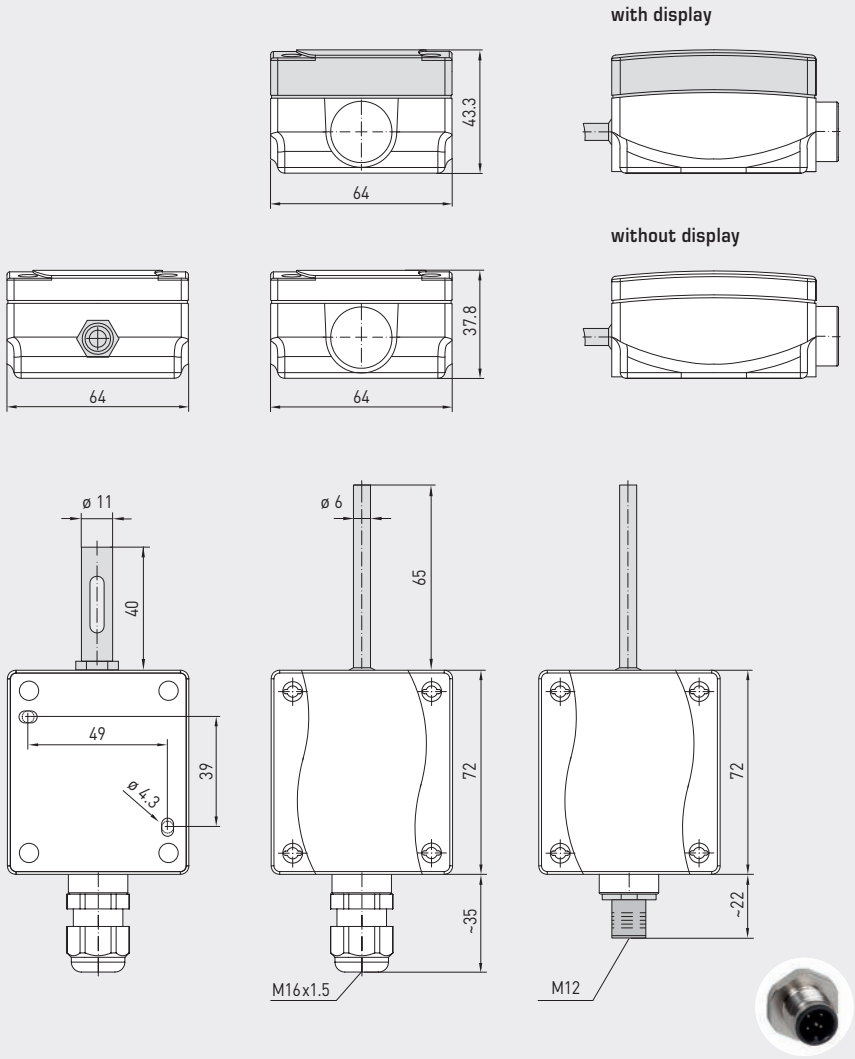
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Dimensional drawing
[mm]

**ATM 2**




Housing with
**SS-02** (on request)

Housing with
**cable gland**

Housing with
**M12 connector**

**ATM 2**
with cable gland
and display




**ATM 2 - Q**
with M12 connector
and display






High-performance encapsulation against vibration, mechanical stress and humidity

**PS-PROTECTION**
PERFECT SENSOR PROTECTION

Automatic detection and switching to standard signal 0...10 V or 4...20 mA

**AOS-PATENTED**
AUTOMATIC OUTPUT SWITCHING

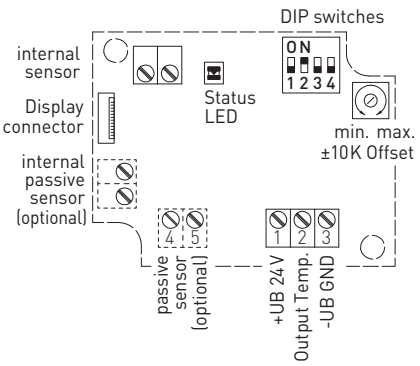
# THERMASGARD® ATM 2

**Outside temperature / wet room temperature measuring transducers, calibratable, with multi-range switching and active output (Automatic Output Switching)**

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Schematic diagram **ATM 2 xx**




2-wire connection* **ATM 2 - I**

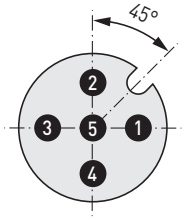
1 +UB 24V DC
2 Output Temp. 4...20mA
3 –UB GND (optional for backlighting)

* 2-wire connection for devices with / without display (not illuminated)
3-wire connection for devices with illuminated display

3-wire connection (AOS) **ATM 2 - A**

1 +UB 24V AC/DC
2 Output Temp. 0-10V / 4...20mA
3 –UB GND

Pin assignment (M12) **ATM 2 xx**




1 +UB 24V
2 Output temperature
3 free
4 –UB GND
5 Shield

| Measuring ranges [°C] (adjustable) | DIP 1 | DIP 2 | DIP 3 |
|---|---|---|---|
| –20...+150 °C | **ON** | **ON** | **ON** |
| –50... +50 °C | OFF | **ON** | **ON** |
| –20... +80 °C | **ON** | OFF | **ON** |
| –30... +60 °C | OFF | OFF | **ON** |
| 0... +40 °C | **ON** | **ON** | OFF |
| **0... +50 °C** (default) | OFF | **ON** | OFF |
| 0...+100 °C | **ON** | OFF | OFF |
| 0...+150 °C | OFF | OFF | OFF |

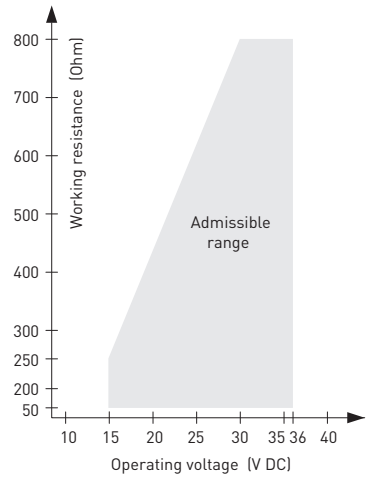
| Display (switchable) | | DIP 4 |
|---|---|---|
| Imperial | [°F] | **ON** |
| **SI** (default) | [°C] | OFF |

**Display Temperature** [°C] → [°F]

The display value depends on the set unit system (**DIP4**).

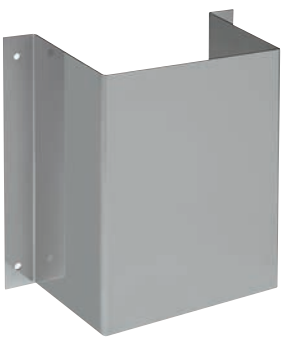
SI IMP

Load resistance diagram (2-wire) **ATM 2 - I**




For further technical information, see the operating instructions

Accessories **WS-01**



Accessories **WS-04**



**Outside temperature / wet room temperature measuring transducers, calibratable, with multi-range switching and active output (Automatic Output Switching)**

**ATM 2 - Q**
with M12 connector





**ATM 2**
with cable gland

| THERMASGARD® ATM 2 | Outside temperature / wet room temperature measuring transducers (with cable gland) | | | |
|---|---|---|---|---|
| **Type / WG01** | **Output** | **Display** | **Item No.** | **Price** |
| **ATM 2 - I** | **(2-wire)** | | | |
| ATM2-I | 4...20 mA | | 1101-1142-0009-900 | **103,55 €** |
| ATM2-I LCD | 4...20 mA | ■ | 1101-1142-2009-900 | **155,98 €** |
| **ATM 2 - A** | **(3-wire AOS)** | | | |
| ATM2-A | 0-10 V / 4...20 mA | | 1101-114E-0009-900 | **103,55 €** |
| ATM2-A LCD | 0-10 V / 4...20 mA | ■ | 1101-114E-2009-900 | **155,98 €** |
| **Automatic Output Switching (AOS):** | Patented analogueinterface (patent no. DE 10 2015 015 941 B4)<br>Unit automatically detects the required output type 0-10 V or 4...20 mA. | | | |
| **Housing variant:** | Cable connection **with cable gland** | | | |
| Extra charge: | other measuring ranges optional<br>with sun protection **SS02** | | on request | **26,16 €**<br>**10,03 €** |

| THERMASGARD® ATM 2-Q | Outside temperature / wet room temperature measuring transducers (with M12 connector) | | | |
|---|---|---|---|---|
| **Type / WG01** | **Output** | **Q / Display** | **Item No.** | **Price** |
| **ATM 2 - I Q** | **(2-wire)** | | | |
| ATM2-I Q | 4...20 mA | ● | 2001-6111-2100-001 | **146,71 €** |
| ATM2-I Q LCD | 4...20 mA | ● ■ | 2001-6112-2100-001 | **199,17 €** |
| **ATM 2 - A Q** | **(3-wire AOS)** | | | |
| ATM2-A Q | 0-10 V / 4...20 mA | ● | 2001-6111-B100-001 | **146,71 €** |
| ATM2-A Q LCD | 0-10 V / 4...20 mA | ● ■ | 2001-6112-B100-001 | **199,17 €** |
| **Automatic Output Switching (AOS):** | Patented analogueinterface (patent no. DE 10 2015 015 941 B4)<br>Unit automatically detects the required output type 0-10 V or 4...20 mA. | | | |
| **Housing variant "Q":** | Cable connection **with M12 connector** (male, **5-pin**, A-code) | | | |
| Extra charge: | other measuring ranges optional<br>with sun protection **SS02** | | on request | **26,16 €**<br>**10,03 €** |

| ACCESSORIES | | | |
|---|---|---|---|
| **WS-01** | **Sun and ball-impact protection hood,** 184 x 180 x 80 mm, stainless steel **V2A** (1.4301) | 7100-0040-2000-000 | **32,72 €** |
| **WS-04** | **Weather and sun protection hood,** 130 x 180 x 135 mm, stainless steel **V2A** (1.4301) | 7100-0040-7000-000 | **38,61 €** |
| | **Special accessories for M12 connector**<br>see chapter Accessories ! | | |