



DS403en

Data Sheet



TOW1-Series (T)

Outdoor Temperature Sensor with Active Output

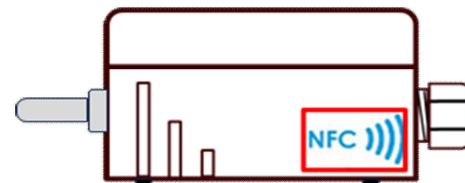
The TOW1-Series (T) is designed to measure temperature in outdoor areas, plant rooms, cold stores, greenhouses, production plants and warehouses

In accordance with RESET® and WELL Building Standard™ Reading

Cover/bottom housing connected with magnets and two screws

Parameter settings via NFC technology

The temperature sensor output is active



Use

Compatible to all common HVAC DDC and Analog Controls systems, with/without Building Automation System

Used in all common HVAC applications

Used in Commercial and Industrial Buildings

Features

Sensor with active output

Sensor outputs 0–10 V or 4–20 mA

Reading/parameter settings via NFC technology

Professional and practical product design

Cover/bottom housing connected with magnets and screws

Firmware updates via service connector

Easy to use, install and maintain

Product Range

| Order Codes | Active Output | Measuring Element | Power Supply | Measuring Range | Accuracy | IP Rating | Product Dimension |
|-------------|---------------|---------------------|--------------------|--|------------------------------------|------------------|-----------------------|
| TOW1G.DA | 0–10 V | Outside the housing | AC/DC 24 V (±10 %) | -40 °C to +60 °C (default) Free selectable via NFC -40 °C to +135 °C | ± 0.2 °C between 0 °C to +50 °C | IP65 to IEC60529 | 78 mm x 58 mm x 47 mm |
| TOW1G.DD | 4–20 mA | | | | | | |

| | | | | |
|-------------------------------------|--------------------------------|---|---|-----------------------------|
| Sensor Specification | Sensor Specification | Measured | Temperature | |
| | | Sensor Characteristics | Active | |
| | | Sensing Element | PT1000 Class A | |
| | | Sensor Output | 0–10 V or 4–20 mA | |
| | | Output Load | | |
| | | 0–10 V Output | Min. load 5 kΩ @ AC/DC 24 V | |
| | | 4–20 mA Output | Max. load 700 Ω @ DC 24 V | |
| | | Accuracy | ±0.2 °C between 0 °C to +50 °C | |
| | | Default Measuring Range | –40 °C to +60 °C | |
| | | Maximum Measuring Range | Free selectable via NFC –40 °C to +135 °C | |
| Technical Information | Electrical Information | Power Supply | AC/DC 24 V (±10 %) | |
| | | Frequency | 50/60 Hz at AC 24 V | |
| | | Terminal Clamp | Screw terminal, max. 1.5 mm ² | |
| | | Power Consumption | | |
| | | 0–10 V output | ≤1 W | |
| | 4–20 mA output | ≤1 W | | |
| | Mechanical Information | Sensor Pocket Diameter | 6 mm | |
| | | Sensor Pocket Length | 35 mm | |
| | | Cable Entry | M16, Ø6~Ø8 mm cables | |
| | | Sensing Element Position | External, top of the immersion rod | |
| | Materials and Colours | Housing Cover | ABS, white | |
| | | Housing Bottom | ABS, white | |
| | | Lock Screws | US:AISI 304; EU: EN X 6 CrNi 18 10; GER: W.N. 1.301 | |
| | | Lock Nuts | Brass | |
| | | Cable Gland | ABS, white | |
| | | Gland Rubber Seal | TPS, natural | |
| | | Protection Caps | ABS, white | |
| | | Immersion Rod | US:AISI 304; EU: EN X 6 CrNi 18 10; GER: W.N. 1.301 | |
| | | Environmental Conditions | Operation Temperature | –25 °C to +70 °C |
| | | | Operation Humidity | 100 % RH, with condensation |
| | Transport Temperature | | –35 °C to +70 °C | |
| | Transport Humidity | | <90 % RH | |
| | Storage Temperature | | –10 °C +70 °C | |
| | Storage Humidity | | <85 % RH, no condensation | |
| | Norms and Directives | IP-Rating | IP65 to IEC60529 | |
| | | Product Safety | Safety class III, in accordance with EN IEC 60730-1 | |
| | | Product Standard | Automatic electrical controls for household and similar use in accordance with EN IEC 60730-1:2022 | |
| | | CE marking in accordance with Directive | 2014/30/EU Electromagnetic Compatibility (EMC) | |
| EMC Emissions, in accordance with | | EN IEC 60730-1:2022 | | |
| EMC Immunity, in accordance with | | EN IEC 60730-1:2022 | | |
| RoHS Compliance, in accordance with | | Directive 2011/65/EU, as amended by (EU) 2015/863 | | |
| Operation Climatic Condition | | IEC 60 721-3-3 | | |
| Operation Mechanical Condition | | IEC 60 721-3-2 to class2M2 | | |
| Transport to Climatic Condition | | IEC 60 721-3-2 | | |
| Transport Mechanical Condition | | IEC 60 721-3-2 to class2M2 | | |
| Storage Climatic Condition | | IEC 60 721-3-1 | | |
| Storage Mechanical Condition | IEC 60 721-3-1 to class2M2 | | | |
| Miscellaneous | Accessories | N/A | | |
| | Shipping & Handling | Minimum Order | 1 box with 2 pieces, multiple of 2 pieces | |
| | | Package Material | Rigid cardboard packaging | |
| | Order Note | Order Code | See product range, page 1, e.g. TOW1G.DA | |

All Information and technical data are subject to alteration

TOW1-Series (T) V26.1

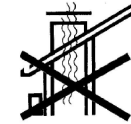
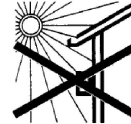
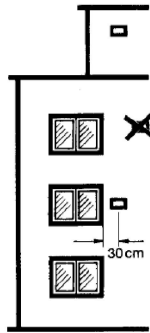
Installation Notes

Observe the following general regulation for engineering and installation:



- All relevant national and local electrical installation codes
- Other country-specific regulations
- Comply with all local safety regulations, schematics, cable listings, dispositions, specifications, and arrangements from the engineering office in charge
- Third-party specifications, e.g., general contractors' or constructors' notes

Mounting Advices



Advices

Disposal Notes



The device is considered an electronic device for disposal in terms of the European Directive 2012/19/EU

The device may not be disposed as domestic garbage

The device must be disposed through channels provided for this purpose

It is mandatory to comply with local currently applying laws and regulations

NFC Setting



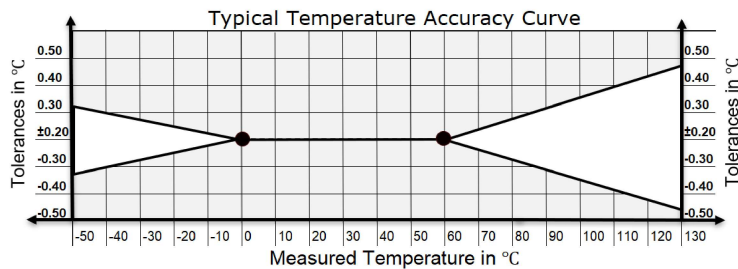
All devices marked with the NFC Logo can be parameterized via the Gruner AP NFC APP

The NFC APP is available on the Gruner AP Website, <https://www.grunerasiapacific.com/>

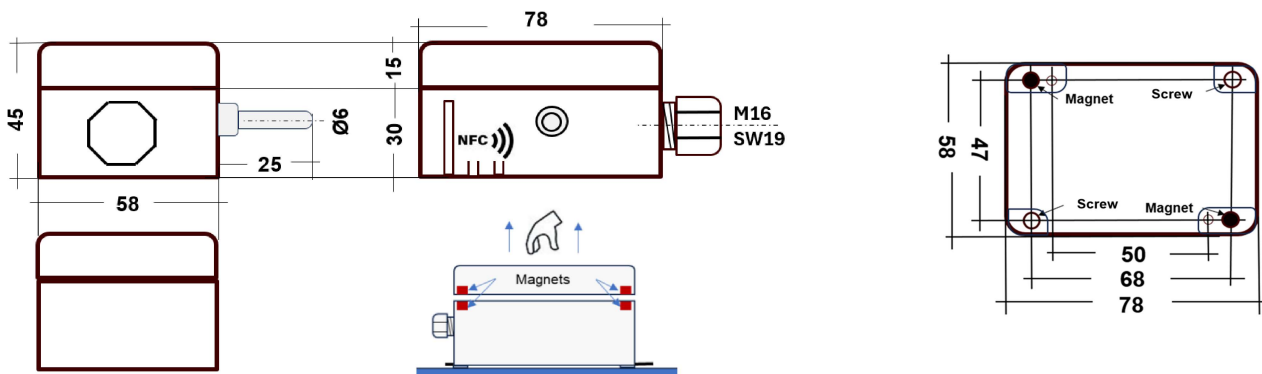
Hold your NFC-capable Android phone to the NFC Logo, the installed APP will start automatically

Commissioning Note: The sensor will reach its specified accuracy after 1 hour of being powered up

Accuracy Curves



Dimensional Drawing



Connections

| Terminal Connections | | |
|----------------------|-----|-------------|
| S1 | S2 | S3 |
| UB+ 24V | GND | Temperature |