

Special-Sensors for Automation



Temperature Sensors

- Compact model
- Programmable
- 2 Switching points
- Analog output



ISO 9001
certified

Technology and application

Functionality

The compact models TN 552 GPP and TN 552/1 GPP have two independent adjustable switching points. The compact models TN 552 GAPP and TN 552/1 GAPP have one independent adjustable switching point and one scalable 4...20 mA analog output.

The detecting range for fluids is from $-40\text{ }^{\circ}\text{C}$ to $+120\text{ }^{\circ}\text{C}$, the tolerance is $0.3\text{ }^{\circ}\text{C}$ ($0...80\text{ }^{\circ}\text{C}$).

The compact models TN 552... offer a window function as an alternative to the standard limit monitoring. Additionally, the NO/NC output function is programmable. Transient temperature changes can be bridged with a switch-on / switch-off time delay.

The push-buttons on the front of the sensor are used for programming the sensor functions. The programmed switching point and parameters are displayed and set by keyboard request. This function is possible while the sensor is measuring.

Temperature sensor with threaded sleeve allowing for exchange during ongoing operations

The temperature sensor TN 553 can easily be exchanged during ongoing operations. This is made possible through the use of a special stainless steel (AISI 316 Ti) threaded sleeve that is mounted in the tank or pipe. In this way the compact device can at any time be removed without compromising the seal of the tank or pipe. The temperature sensor measures temperatures from $-40\text{ }^{\circ}\text{C}$ to $+120\text{ }^{\circ}\text{C}$ and offers, among other features, two programmable switching points, freely selectable hysteresis and a temperature window function. The device is available as a 24 V DC device with PNP or analog output as well as a 230 V and 115 V AC model with Opto-MOS. Various cable lengths and optional plug-in or hardwire connections allow the device to be installed in various configurations. The thread is a G1/2 gauge.

Installation

EGE temperature sensors can be installed in standard T-pieces or welded T-pieces. The packing is made with an additional flat seal or with other suitable materials. Please note the temperature and pressure resistance of the seals for increased process conditions. Fixing the sensor in the T-pieces is only allowed on the screw head of the sensor. After the installation the display can be turned through an angle of 330 ° for best reading. In applications with temperature over $+80\text{ }^{\circ}\text{C}$ the sensor should be mounted from the side into the pipe.

Application

The hysteresis function is for controlling a temperature value. A limiting value can be programmed in this mode. As soon as the measured temperature is higher than the programmed limiting value, the output signals are switched as programmed (NC or NO). The hysteresis value is the difference temperature for the switch-on and switch-off signal of the limiting value. An additional time delay for the switching signals can be programmed for each switching point.

In the frame function mode the switching function is set depending of a programmed temperature range. The temperature range starts with the programmed lower value and end with programmed upper frame value.

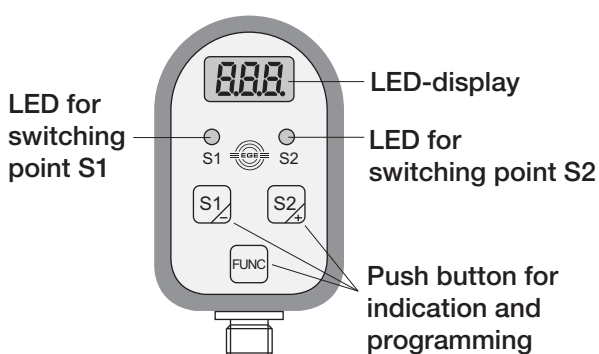
The time delay for the switching signal can also be used in this switching mode.

The analog output can be use for transmitting the temperature and getting the proportional current. For that you assign one temperature for the 4 mA first-value and one temperature for the 20 mA last-value in the programming mode. Between the temperature values it is permissible to have a minimal difference of $16\text{ }^{\circ}\text{C} / 29\text{ }^{\circ}\text{F}$.

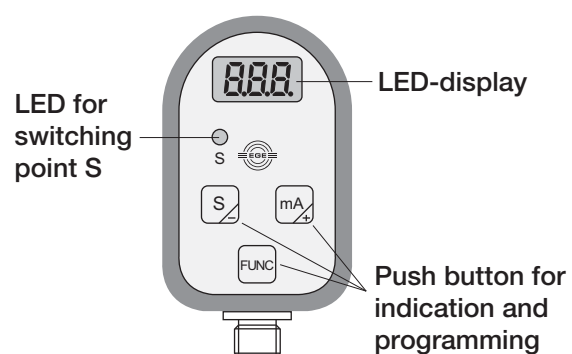
Color code:

BK = black BN = brown BU = blue WH = white

TN 552... GPP
TN 553... GPP/WP



TN 552... GAPP
TN 553... GAPP



Two switching points and analog output

Series TN 553

Exchangeable during ongoing operations through use of threaded sleeve

Measuring range $-40...+120\text{ }^{\circ}\text{C}$

Two switching points, hysteresis and temperature window easily programmable



| Design | DC • G1/2 | | AC • G1/2 |
|----------------------------|--|--------------------|-------------------|
| Dimensions | | | |
| Detection range [°C] | -40...+120 | | |
| Output | 2x PNP NC/NO | + 4...20 mA | 2x NC/NO, progr. |
| ID-No. | P71021 | P71022 | P71023 |
| Type | TN 553/1 GPP | TN 553/1 GAPP | TN 553/1 WP |
| Supply voltage [V] | 24 DC $\pm 10\%$ | 24 DC $\pm 10\%$ | 230 AC $\pm 10\%$ |
| Current consumption [mA] | 60 | 60 | 20 |
| Voltage drop [V] | <2.5 | <2.5 | <10 |
| Ambient temperature [°C] | -20...+60 | | |
| Medium temperature [°C] | -40...+120 | | |
| Response time [s] | typ. 10...30 | | |
| Resolution display [°C] | 0.1 | | |
| Range limit values [°C] | -39...+120 (0.5 / 1 Step) | | |
| Range hysteresis [°C] | 0.5...99 (0.5 / 1 Step) | | |
| Range window [°C] | 0.5...99 (0.5 / 1 Step) | | |
| Time delay [s] | 0...50 (0.5 / 1 Step) | | |
| Programmable functions | two switching points, hysteresis / window, switching output NC/NO, MIN- / MAX- memory function | | |
| Compressive strength [bar] | 20 | | |
| Housing material | housing: PBT sensor and sleeve: AISI 316 Ti | | |
| Protection [EN 60529] | IP 65 | | |
| Connection | M12 connector | 1/2"-20UNF, 5-pol. | |
| Accessories | 2x flat gasket, threaded sleeve, heat conducting paste | | |
| | | | |

Two switching points

Series TN 552

Measuring range

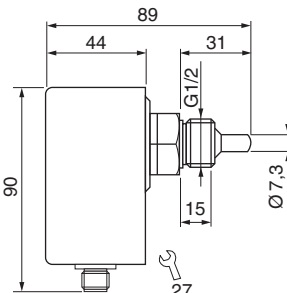
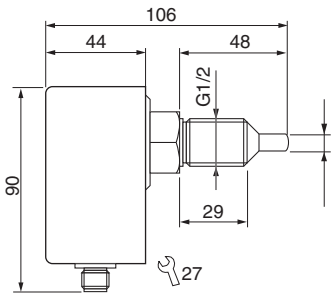

-40 °C...+120 °C / -40 °F...+248 °F

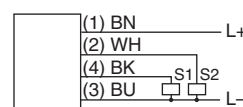
Two switching points, hysteresis and temperature window easily programmable

Rotable display

Switch-over °C - °F



| Design | DC • G1/2 • L= 31 mm | DC • G1/2 • L= 48 mm |
|----------------------------|--|--|
| Dimensions |  |  |
| Detection range | -40...+120 °C (-40...+248 °F) | |
| Output | 2x  PNP NC/NO | |
| ID-No. | P71017 | P71018 |
| Type | TN 552 GPP | TN 552/1 GPP |
| Supply voltage [V] | 24 DC ±10% | |
| Current consumption [mA] | <100 | |
| Voltage drop [V] | <2.5 | |
| Switching current [mA] | 200 | |
| Ambient temperature [°C] | -20...+60 | |
| Medium temperature [°C] | -40...+120 | |
| Response time [s] | typ. 10 | |
| Resolution display [°C/°F] | 0.1 / 0.5 | |
| Range limit values [°C/°F] | -39...+120 / -39...248 | (0.5 / 1 Step) |
| Range hysteresis [°C/°F] | 0.5...99 / 1...179 | (0.5 / 1 Step) |
| Range window [°C/°F] | 0.5...99 / 1...179 | (0.5 / 1 Step) |
| Time delay [s] | 0...50 | (0.5 / 1 Step) |
| Programmable functions | two switching points, hysteresis/window, switching output NC/NO, MIN-/MAX- memory function | |
| Compressive strength [bar] | 100 | |
| Housing material | housing: PBT sensor: AISI 316 Ti | |
| Protection [EN 60529] | IP 65 | |
| Connection | M12 connector | |



Switching point and analog output

Series TN 552

Measuring range

$-40\text{ }^{\circ}\text{C} \dots +120\text{ }^{\circ}\text{C} / -40\text{ }^{\circ}\text{F} \dots +248\text{ }^{\circ}\text{F}$

Switching point and analog output, hysteresis and temperature window easily programmable

Rotable display

Switch-over $^{\circ}\text{C} - ^{\circ}\text{F}$

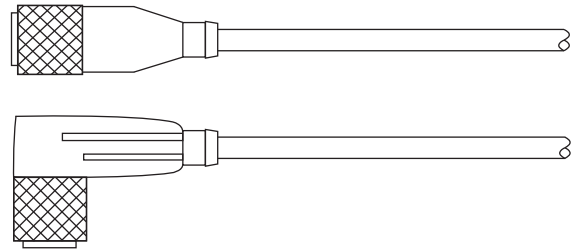


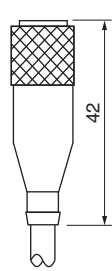
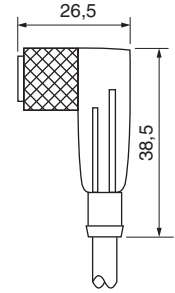
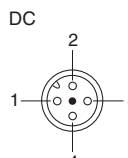

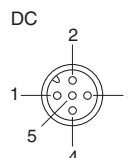
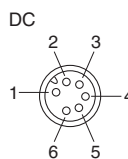
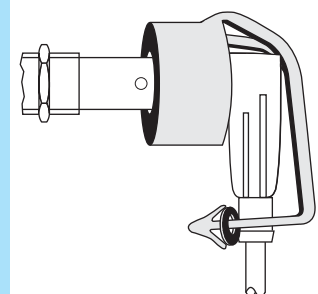
| Design | DC • G1/2 • L= 31 mm | DC • G1/2 • L= 48 mm |
|----------------------------|---|----------------------|
| Dimensions | | |
| Detection range | -40...+120 °C (-40...+248 °F) | |
| Output | | |
| ID-No. | P71019 | P71020 |
| Type | TN 552 GAPP | TN 552/1 GAPP |
| Supply voltage [V] | 24 DC ±10% | |
| Current consumption [mA] | <200 | |
| Voltage drop [V] | <2.5 | |
| Analog output [mA] | 4...20, scalable, Detection range min. 16 °C / 29 °F | |
| Switching current [mA] | 200 | |
| Ambient temperature [°C] | -20...+60 | |
| Medium temperature [°C] | -40...+120 | |
| Response time [s] | typ. 10 | |
| Resolution display [°C/°F] | 0.1 / 0.5 | |
| Range limit values [°C/°F] | -39...+120 / -39...248 | (0.5 / 1 Step) |
| Range hysteresis [°C/°F] | 0.5...99 / 1...179 | (0.5 / 1 Step) |
| Range window [°C/°F] | 0.5...99 / 1...179 | (0.5 / 1 Step) |
| Time delay [s] | 0...50 | (0.5 / 1 Step) |
| Programmable functions | one switching point, hysteresis / window, switching output NC/NO, MIN- / MAX- memory function | |
| Compressive strength [bar] | 100 | |
| Housing material | housing: PBT sensor: AISI 316 Ti | |
| Protection [EN 60529] | IP 65 | |
| Connection | M12 connector | |
| | | |
| Accessories | see page 7.06 | |

Accessories • M12 connector

System SL

Finished cable plug housing
Self locking screw plug
Protection IP 67



| Cable plug housing | Pin-assignment | Plug-lock |
|---|--|--|
| <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>straight</p>  <p>42</p> <p>SLG...</p> </div> <div style="text-align: center;"> <p>angular</p>  <p>26,5</p> <p>38,5</p> <p>SLW...</p> </div> </div> | <p>DC</p> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;">  <p>3-wire 1: BN 2: - 3: BU 4: BK</p> </div> <div style="text-align: center;">  <p>4-wire 1: BN 2: WH 3: BU 4: BK</p> </div> </div> <p>DC</p> <div style="text-align: center;">  <p>5-wire 1: BN 2: WH 3: BU 4: BK 5: GY</p> </div> <p>DC</p> <div style="text-align: center;">  <p>6-wire 1: BN 2: WH 3: BU 4: BK 5: GY 6: PK</p> </div> |  <p>PL-M12</p> |

| TYPE | ID-NO. | DESIGN |
|-------------|--------|--|
| SLG 3-2 | Z01076 | Cable plug housing straight, 2 m cable 3x0.34 mm ² max. 250 V / 4 A |
| SLG 3-5 | Z01077 | Cable plug housing straight, 5 m cable 3x0.34 mm ² max. 250 V / 4 A |
| SLW 3-2 | Z01078 | Cable plug housing angular, 2 m cable 3x0.34 mm ² max. 250 V / 4 A |
| SLW 3-5 | Z01079 | Cable plug housing angular, 5 m cable 3x0.34 mm ² max. 250 V / 4 A |
| SLW 3-2-LED | Z00052 | Cable plug housing angular, 2 m cable 3x0.34 mm ² max. 250 V / 4 A PNP with LED |
| SLG 4-2 | Z00445 | Cable plug housing straight, 2 m cable 4x0.25 mm ² max. 250 V / 4 A |
| SLG 4-5 | Z00449 | Cable plug housing straight, 5 m cable 4x0.25 mm ² max. 250 V / 4 A |
| SLW 4-2 | Z00446 | Cable plug housing angular, 2 m cable 4x0.25 mm ² max. 250 V / 4 A |
| SLW 4-5 | Z00450 | Cable plug housing angular, 5 m cable 4x0.25 mm ² max. 250 V / 4 A |
| SLW 4-2-LED | Z01157 | Cable plug housing angular, 2 m cable 4x0.25 mm ² max. 250 V / 4 A PNP with LED |
| SLG 5-2 | Z01150 | Cable plug housing straight, 2 m cable 5x0.34 mm ² max. 60 V / 2 A |
| SLW 5-2 | Z01151 | Cable plug housing angular, 2 m cable 5x0.34 mm ² max. 60 V / 2 A |
| SLG 6-2 | Z01197 | Cable plug housing straight, 2 m cable 6x0.25 mm ² max. 36 V / 2 A |
| SLW 6-2 | Z01198 | Cable plug housing angular, 2 m cable 6x0.25 mm ² max. 36 V / 2 A |
| PL-M12 | Z01182 | Plug-lock for sensors in Ex areas |

DATA

| | | | |
|-------------------|--------------|-----------------------|--|
| Thread | M12x1 | Contact resistance | ≤ 5 mΩ |
| Material | PVC | Insulation resistance | >10 ⁹ |
| Protection | IP 67 | Testing voltage | 2.0 KV eff. / 5 and 6 pol. 1.5 KV eff. |
| Temperature range | -25...+80 °C | | |

Note

Sensors with NC output are connected to 4 pole cable plug housings. In this case, the break output is connected to the white lead (connection 2).

A selection

Flow sensors

- Electronical monitoring of flow
- Lubrication monitoring
- Measuring range 0.1 ml/min...100 l/min
- Detection range 1...300 cm/s
- Reaction time 0.5 s

Level sensors for Ex-applications

- For level monitoring in Ex areas
- For temperatures $-35...+200\text{ }^{\circ}\text{C}$
- With PTFE connector cable
- Sensors for connection to amplifiers

Level sensors

- For level monitoring $-230...+230\text{ }^{\circ}\text{C}$
- Steam proof at a pressure of up to 30 bar
- For hot motor oil
- For liquid nitrogen
- For chemically aggressive media

Ultrasonic sensors

- Switching distance up to 5000 mm
- Level monitoring
- Watertight housing
- Teach-in functions

Pressure sensors

- Monitoring in pipes and containers
- Pressure up to 16 bar
- Level up to 10 m ($\pm 1\text{ cm}$)
- Compact models
- Programmable

Infrared detectors

- Measurement of temperature
- Monitoring of hot media
- Position control





Headquarters
EGE-Elektronik
Spezial-Sensoren GmbH

Ravensberg 34
D-24214 Gettorf
Tel. +49 (0) 4346 / 41580
Fax +49 (0) 4346 / 5658

Internet: www.ege-elektronik.com



EGE-Elektronik ApS
Forstallé 79
DK-6200 Aabenraa
Tel. +45 70207271
Fax +45 70207272



EGE-Specialsenserer AB
Stationsgatan 4
S-51250 Svenljunga
Tel. +46 32512060
Fax +46 32512064



Stork AS
Brynsveien 100
N-1352 Kolsås
Tel. +47 67176400
Fax +47 67176401



Vision Systems OY
PL353
FI-40101 Jyväskylä
Tel. +358 (0)10 322 7100
Fax +358 (0)10 322 7119



Molex France
18 Parc Burospace
F-91571 Bièvres Cedex
Tel. +33 2 32 96 04 28
Fax +33 2 32 96 04 21



Cematic-Electric B.V.
Postbus 777
NL-7550 AT Hengelo
Tel. +31 742433422
Fax +31 742913333



ICM Ital Control Meters Srl
Via della Valle 67
I-20048 Carate Brianza (Mi)
Tel. +39 0362 8052 00
Fax +39 0362 8052 01



Bibus Spain, S. L.
Rua do Arroncal, Vial C – Nave 4A
ES-36350 Nigran
Tel. +34 986 247286
Fax +34 986 209247



Powelectrics Limited
Sandy Hill Park, Sandy Way
Amington, Tamworth
GB-Staffordshire B77 4DU
Tel. +44 1827310666
Fax +44 1827310999



Bachofen AG
Ackerstraße 42
CH-8610 Uster
Tel. +41 449441111
Fax +41 449441233



VWR International GmbH
Graumannsgasse 7
A-1150 Wien
Tel. +43 1 97 002 - 0
Fax +43 1 97 002 - 600



Countapulse Controls (PTY) LTD.
P.O.B. 40393
ZA-2022 Cleveland
Tel. +27 116157556
Fax +27 116157513



HITECH Ltd.
1-35-2 Simouma, Setagaya,
JPN-Tokyo 154-0002
Tel. +81 35430 2301
Fax +81 35430 2302



Micromax S&A P/L
Unit 2 106-110 Beaconsfield Street
AUS-Silverwater NSW 2128
Tel. +61 1300 362626
Fax +61 1300 017100



**PROTEK TEKNİK ELEKTRİK
TİC. SAN. LTD. ŞTİ.**
Okçumusa Cad. Kismet Han
No: 36/2 P.K.
TR-34420 Karaköy-Istanbul
Tel. +90 212 237 20 00
Fax +90 212 235 46 09



IAC & Associates
2180 Fasan Drive
Oldcastle
CDN-Ontario N0R 1L0
Tel. +1 519 7370311
Fax +1 519 7370314
TF +1 800 711 1900



Yuden-Tech Co., Ltd.
5F., No. 121, Lide St.,
Zhonghe City, Taipei County 235,
Taiwan (R.O.C.)
Tel. +886 2 8221 2958
Fax +886 2 8221 2492



**Shanghai Beishidietian
Business Trade Co., Ltd.**
4F, No. 88-1, Lane 7039,
Zhongchun Rd., Minhang Area
Shanghai City
Tel. +86 21 54887307
Fax +86 21 54887305



CSE-W. Arthur Fischer Ltd.
15 Polaris Place, Greenmount
NZ-East Tamaki, Auckland
Tel. +64 9 271 3810
Fax +64 9 265 1362



KOLEKTOR SISTEH d.o.o.
Šlandrova ulica 10
SI-1231 Ljubljana - Črnuče
Slovenija
Tel. +386 1 5636 300
Fax +386 1 7227 930



Introl Sp. z o.o.
ul. Kościuszki 112
40-519 Katowice
Tel. +48 32 789 00 00
Fax +48 32 205 33 77



Bibus Portugal, LDA
Centro Empresarial AAA
Rua Ponte da Pedra, 240 - C4
4470-108 Gueifães - Maia
Porto
Tel. +351 22 906 50 50
Fax +351 22 906 50 53



Futron Electronics PTE Ltd.
1004 Toa Payoh North
#04-08/09/10
Singapore 318995
Tel. +65 6250 2456
Fax +65 6250 6592



Useong Electrade Co.,
D-1006, Technopark
No. 1345, Soha-dong, Gwangmyeong-si
Gyeonggi-do,
Korea
Tel. +82 (0) 2 2686 7314
Fax +82 (0) 2 2686 7316