

# Thermometers

On the next pages you will find a broad range of thermometers with fixed probes or exchangeable probes, with rigid probes or probes with cable and hand grip. The thermometers are applicable at the broadest site of applications.

## Applications

- Core temperature measurement
- Surface temperature measurement
- Temperature measurement of fluids
- Environmental temperature measurement
- Process monitoring
- Temperature regulation



## Find your perfect thermometer:

| Probe Thermometers                      | Measurement range     | High accuracy | Probe type          | Probe connection                | Channels | Fast response time | MIN/MAX/hold | Waterproof housing | Conformity valued | Control Thermometer |
|-----------------------------------------|-----------------------|---------------|---------------------|---------------------------------|----------|--------------------|--------------|--------------------|-------------------|---------------------|
| TFX 430 Precision Thermometer           | -100 °C ... +500 °C   | ✗             | Pt 100              | Lemo , probe not included       | 1        |                    | ✗            | ✗                  |                   |                     |
| TFX 422C Laboratory Thermometer         | -50 °C ... +200 °C    | ✗             | Pt 1000             | Fixed                           | 1        |                    | ✗            | ✗                  | ✗                 |                     |
| TFX 420 Core Thermometer                | -50 °C ... +400 °C    | ✗             | Pt 1000             | Lemo , probe not included       | 1        |                    | ✗            | ✗                  |                   |                     |
| TFX 410-1 Core Thermometer              | -50 °C ... +300 °C    | ✗             | Pt 1000             | Lemo , probe not included       | 1        |                    |              | ✗                  |                   |                     |
| TFX 410 Core Thermometer                | -50 °C ... +300 °C    | ✗             | Pt 1000             | Fixed                           | 1        |                    |              | ✗                  |                   |                     |
| TFE 510-1 Core Thermometer              | -50 °C ... +300 °C    |               | Thermocouple type T | Lemo , probe not included       | 1        | ✗                  |              | ✗                  |                   |                     |
| GFX 460 Electronic Control Thermometer  | -50 °C ... +300 °C    |               | Pt 1000             | Fixed                           | 1        |                    |              | ✗                  |                   | ✗                   |
| GFX 460G Electronic Control Thermometer | -50 °C ... +300 °C    |               | Pt 1000             | Fixed glass-coated probe        | 1        |                    |              | ✗                  |                   | ✗                   |
| GFX 460B Electronic Control Thermometer | -50 °C ... +300 °C    |               | Pt 100              | Lemo                            | 1        |                    |              | ✗                  |                   | ✗                   |
| TFN 520 Type K Thermometer              | -200 °C ... +1,200 °C | ✗             | Thermocouple type K | Lemo or SMP, probe not included | 1        |                    | ✗            |                    |                   |                     |
| TFN 520 Type J Thermometer              | -100 °C ... +800 °C   | ✗             | Thermocouple type J | Lemo or SMP, probe not included | 1        |                    | ✗            |                    |                   |                     |
| TFN 520 Type T Thermometer              | -50 °C ... +300 °C    | ✗             | Thermocouple type T | Lemo or SMP, probe not included | 1        |                    | ✗            |                    |                   |                     |
| TFN 520 Type E Thermometer              | -100 °C ... +600 °C   | ✗             | Thermocouple type E | Lemo or SMP, probe not included | 1        |                    | ✗            |                    |                   |                     |
| TFN 530 Type K Thermometer              | -200 °C ... +1,200 °C | ✗             | Thermocouple type K | Lemo or SMP, probe not included | 2        |                    | ✗            |                    |                   |                     |
| TFN 530 Type J Thermometer              | -100 °C ... +800 °C   | ✗             | Thermocouple type J | Lemo or SMP, probe not included | 2        |                    | ✗            |                    |                   |                     |
| TFN 530 Type T Thermometer              | -50 °C ... +300 °C    | ✗             | Thermocouple type T | Lemo or SMP, probe not included | 2        |                    | ✗            |                    |                   |                     |
| TFN 530 Type E Thermometer              | -100 °C ... +600 °C   | ✗             | Thermocouple type E | Lemo or SMP, probe not included | 2        |                    | ✗            |                    |                   |                     |
| TTX 110 Type T Thermometer              | -50 °C ... +350 °C    |               | Thermocouple type T | Fixed                           | 1        | ✗                  |              |                    |                   |                     |
| TTX 200 Type T Thermometer              | -30 °C ... +199.9 °C  |               | Thermocouple type T | Fixed cable probe               | 1        | ✗                  |              | ✗                  |                   |                     |
| TTX 210 Type T Thermometer              | -30 °C ... +199.9 °C  |               | Thermocouple type T | pluggable, probe not included   | 1        | ✗                  |              | ✗                  |                   |                     |
| TDC 110 Basic Thermometer               | -50 °C ... +150 °C    |               | NTC                 | Fixed                           | 1        |                    |              |                    |                   |                     |
| TDC 150 Basic Thermometer               | -50 °C ... +150 °C    |               | NTC                 | Fixed                           | 1        |                    |              | ✗                  |                   |                     |

GFX 460 Series **Electronic Contact Thermometers**



GFX 460



GFX 460 G



GFX 460 B

**General Technical Specifications**

|                       |                                                                                                                                                                                                        |
|-----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Measurement range     | -50 °C ... +300 °C (-58 °F ... +572 °F)                                                                                                                                                                |
| Resolution            | 1 °C                                                                                                                                                                                                   |
| Measurement accuracy  | ±1 °C                                                                                                                                                                                                  |
| Measurement interval  | 1 sec                                                                                                                                                                                                  |
| Operating temperature | -5 °C ... +60 °C                                                                                                                                                                                       |
| Storage temperature   | -30 °C ... +70 °C                                                                                                                                                                                      |
| Regulation            | Fuzzy regulation                                                                                                                                                                                       |
| Security features     | <ul style="list-style-type: none"><li>• Identification of probe breakage</li><li>• Identification of probe access</li><li>• Security and regulation cycle according to DIN 12878 class 1 / 2</li></ul> |
| Access                | DIN 45322 Diode plug, 5-pole                                                                                                                                                                           |
| Other options         | Green display background lighting                                                                                                                                                                      |
| Protection class      | IP65                                                                                                                                                                                                   |

GFX 460 **Electronic Contact Thermometer**  
*with fixed stainless steel Pt 1000 probe*



- Fuzzy control
- Control loop according to DIN EN 12878 class 1 and 2
- Green display background light

**Technical Data**

| Probe   | Pt 1000, permanently attached                                                                                   |            |
|---------|-----------------------------------------------------------------------------------------------------------------|------------|
| Type    | Description                                                                                                     | Part No.   |
| GFX 460 | Electronic contact thermometer with fixed stainless steel Pt 1000 probe, L = 205 mm, Ø 3 mm, cable length 70 cm | 1340-5460A |

## GFX 460 G Electronic Contact Thermometer with fixed glass-coated Pt 1000 probe



- Fuzzy control
- Control loop according to DIN EN 12878 class 1 and 2
- Green display background light

### Technical Data

|       |                                             |
|-------|---------------------------------------------|
| Probe | Pt 1000, glass-coated, permanently attached |
|-------|---------------------------------------------|

| Type      | Description                                                                                    | Part No.   |
|-----------|------------------------------------------------------------------------------------------------|------------|
| GFX 460 G | Electronic contact thermometer with glass coated probe, L = 235 mm, Ø 7 mm, cable length 70 cm | 1340-5462A |

## GFX 460 B Electronic Contact Thermometer for replaceable Pt 100 probes



- Fuzzy control
- Control loop according to DIN EN 12878 class 1 and 2
- Green display background light

### Technical Data

|       |                                    |
|-------|------------------------------------|
| Probe | Pt 100, replaceable, see next page |
|-------|------------------------------------|

| Type      | Description                                  | Part No.   |
|-----------|----------------------------------------------|------------|
| GFX 460 B | Electronic contact thermometer without probe | 1340-5464A |

## Accessories for GFX 460 Series



AG 151 Stand adapter



AX 110 Extension cable for GFX 460 B only



AX 400 Relay box

| Type   | Description                                            | Part No.  |
|--------|--------------------------------------------------------|-----------|
| AG 151 | Stand bracket                                          | 1340-5001 |
| AX 110 | Extension cable for GFX 460 B, silicone cable, L = 1 m | 1340-5020 |
| AX 400 | Relay box                                              | 1340-0157 |

## External Probes for GFX 460 B

### *Pt 100, 4 conductors class A, Lemo size 1*

#### **TPX 130** blunt probe

(Needle length = 200 mm,  
Ø 3 mm, stainless steel needle,  
up to +400 °C)



GFX 460 B + TPX 130

#### **TPX 230** pointed probe

(Needle length = 200 mm,  
Ø 3 mm, stainless steel needle,  
up to +400 °C)



GFX 460 B + TPX 230



GFX 460 B + TPX 330

#### **TPX 330** blunt, glass coated probe

(Needle length = 190 mm,  
Ø 8 mm, stainless steel needle,  
up to +400 °C)

#### Technical Data

Accuracy Pt 100, 4 conductors class A, size 1

| Type    | Description                                               | Part No.  |
|---------|-----------------------------------------------------------|-----------|
| TPX 130 | Blunt probe, needle length = 200 mm, Ø 3 mm               | 1341-5437 |
| TPX 230 | Pointed probe, needle length = 200 mm, Ø 3 mm             | 1341-5438 |
| TPX 330 | Blunt, glass coated probe, needle length = 190 mm, Ø 8 mm | 1341-5439 |

## TFN-520/530 Series 1-/2-Channel-Thermometers



#### General Technical Specifications

|                                 |                                                                         |
|---------------------------------|-------------------------------------------------------------------------|
| Measurement range type K        | -200 °C ... +1,200 °C (-328 °F ... +2,192 °F)                           |
| Measurement range type J        | -100 °C ... +800 °C (-148 °F ... +1472 °F)                              |
| Measurement range type T        | -100 °C ... +300 °C (-148 °F ... +572 °F)                               |
| Measurement range type E        | -100 °C ... +600 °C (-148 °F ... +1,112 °F)                             |
| Accuracy at +25 °C, type K      | ±0.3 °C (-99.9 °C ... +250 °C)                                          |
| Accuracy at +25 °C, type J      | ±0.3 °C (-50 °C ... +190 °C)                                            |
| Accuracy at +25 °C, type T      | ±0.3 °C (-50 °C ... +220 °C)                                            |
| Accuracy at +25 °C, type E      | ±0.3 °C (-50 °C ... +150 °C) ±0.5 % for the remaining measurement range |
| Resolution type K               | 0.1 °C (-99.9 °C ... +250 °C), 1 °C for the remaining measurement range |
| Resolution type J               | 0.1 °C (-99.9 °C ... +190 °C), 1 °C for the remaining measurement range |
| Resolution type T               | 0.1 °C (-99.9 °C ... +220 °C), 1 °C for the remaining measurement range |
| Resolution type E               | 0.1 °C (-99.9 °C ... +150 °C), 1 °C for the remaining measurement range |
| Operating temperature           | -5 °C ... +50 °C                                                        |
| Storage temperature             | -25 °C ... +60 °C                                                       |
| Sampling rate                   | 0.5 sec to 15 sec                                                       |
| Sensor                          | External; Thermocouple type K, J, T, E                                  |
| Battery                         | Lithium, 3V CR 2477                                                     |
| Battery lifetime                | 5 years                                                                 |
| Dimensions (l x w x h)          | 115 x 54 x 22 mm                                                        |
| Weight                          | Approximately 90 g                                                      |
| Housing material                | ABS                                                                     |
| Factory calibration certificate | -100 °C, 0 °C, +200 °C and +1,000 °C                                    |