

ebro TFX Series Precision Core Temperature Thermometers

TFX 430 Precision Thermometer
Reference thermometer with
exchangeable Pt 100 probe



TFX 430 without probe TFX 430 + TPX 130 TFX 430 + TPX 230 TFX 430 + TPX 330

TFX 430 set

Various probes available
(please see page 45).

- MIN/MAX and hold options
- Approximately 5 years battery life time

Technical Data

| | |
|---------------------------------|--|
| Measurement range | -100 °C ... +500 °C (-148 °F ... +932 °F) |
| Measurement accuracy | 0.05 °C (-50 °C ... +199.99 °C) ±0.2 ° for the remaining measurement range |
| Resolution | 0.01 °C (-10.00 °C ... +199.99 °C) 0.1 °C for the remaining measurement range |
| Operating temperature | -20 °C ... +50 °C |
| Storage temperature | -30 °C ... +70 °C |
| Sensor | Pt 100 |
| Sampling rate | 1 sec to 15 sec |
| Battery | Lithium battery 3 V / 1 Ah, Type CR 2477 |
| Battery lifetime | Approximately 5 years |
| Deactivation | Automatic after 2 hours, deactivatable |
| Dimensions (L x W x H) | 109 x 54 x 22 mm |
| Housing material | ABS |
| Protection class | IP67 |
| Weight | Approximately 90 g |
| Factory calibration certificate | -50 °C, 0 °C, +121 °C and +250 °C |

| Type | Description | Part No. |
|-------------------|--|------------|
| TFX 430 | Thermometer Pt 100 (without probe) | 1340-5430A |
| TFX 430 + TPX 130 | Thermometer Pt 100 with probe (needle length = 200 mm, Ø 3 mm, blunt) | 1340-5437A |
| TFX 430 + TPX 230 | Thermometer Pt 100 with probe (needle length = 200 mm, Ø 3 mm, pointed) | 1340-5438A |
| TFX 430 + TPX 330 | Thermometer Pt 100 with probe (needle length = 190 mm, Ø 8 mm, glazed) | 1340-5439A |
| TFX 430 set | TFX set (Thermometer TFX 430, blunt probe TPX 130, extension cable AX 110, DAKkS calibration, Aluminum case AG130) | 1340-5432 |

Accessories for TFX devices



AG 120 Artificial leather case



AG 130 Small case



AG 140 Protective cover for handheld devices, red



AG 150 Plastic bracket, suitable for 10 mm and 12 mm lamus tripods



AX 110 Extension cable for TFX 430 only



AG 170 Battery exchange set

| Type | Description | Part No. |
|--------|--|-----------|
| AG 120 | Plastic case | 1341-0619 |
| AG 130 | Transport case | 1341-3854 |
| AG 140 | Protective cover for handheld devices, red | 1340-5005 |
| AG 150 | Plastic bracket | 1340-5000 |
| AX 110 | Extension cable for TFX 430 (1m silicone) | 1340-5020 |
| AG 170 | Battery-change set (incl. 3V lithium CR 2477 battery, needle, screws, tamping, O-ring, manual) | 1100-0106 |

Alternate probes for TFX 430 *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)



TPX 230 pointed probe
(Needle length = 200 mm,
Ø 3 mm, stainless steel needle,
up to +400 °C)



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, Lemo 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, blunt, needle length = 190 mm, Ø 8 mm | 1341-5439 |

TFX 422C Conformity Certified Laboratory Thermometer with fixed Pt 1000 probe



The device has been certified together with the EB 4401 food inspection case (please see page 93).



Due to the new German calibration law which became effective on January 01 2015, we were forced to stop the sales of the TFX 422 Laboratory Thermometer with PTB certification. The so called certification of conformity replaces the calibration by the measurement office. Our new Conformity Certified Laboratory Thermometer TFX 422C is the equivalent successor: same properties, same quality.

Technical Data

| | |
|----------------------------------|---|
| Measurement range | -50 °C ... +200 °C |
| Operating temperature | -25 °C ... +50 °C |
| Accuracy | ± 0,3 °C |
| Sensor | Pt 1000, stainless steel, Ø 3 mm, L = 120 mm, pointed probe |
| Cable | Silicone, L = 60 cm or 150 cm, waterproof, oil resistant, food safe |
| Response time (t ₉₉) | Approximately 8 Sec. (moving water) |
| Resolution | 0,1 °C |
| Storage Temperature | -30 °C ... +70 °C |
| Dimensions (L x W x H) | 109 x 54 x 22 mm, without probe |
| Weight | 90 g |
| Housing material | ABS |
| Protection class | IP67 |
| Battery | Lithium battery (CR 2477), 3V |
| Battery life time | Up to 5 years, dependent pn the application |
| Factory calibration certificate | 0 °C, +60 °C and +120 °C |

- MIN/MAX and hold options
- High precision
- Approximately 5 years battery life time
- Waterproof (IP67)

| Type | Description | Part No. |
|--------------|---|------------|
| TFX 422C-60 | Conformity Certified Thermometer, with 60 cm cable | 1340-5433A |
| TFX 422C-150 | Conformity Certified Thermometer, with 150 cm cable | 1340-5434A |

TFX-410/420 Series Core Thermometers



TFX 410



TFX 410-1



TFX 420

General Technical Specifications

| | |
|------------------------|--|
| Accuracy | ±0.3 °C |
| Resolution | 0.1 °C |
| Sensor | Pt 1000 |
| Operating temperature | -25 °C ... +50 °C |
| Storage temperature | -30 °C ... +70 °C |
| Battery lifetime | Approximately 5 years |
| Housing material | ABS |
| Protection class | Waterproof (IP67) |
| Weight | Approximately 90 g |
| Dimensions (L x W x H) | 109 x 54 x 22 mm (without probe) |
| Deactivation | Automatic after 2 hours, deactivatable |

TFX 410 Core Thermometer with fixed Pt 1000 probe



- High precision
- Approximately 5 years battery life time
- Waterproof (IP67)

Technical Data

| | |
|-------------------|--|
| Measurement range | -50 °C ... +300 °C (-58 °F ... +572 °F) |
| Battery | 3.0 V lithium, user replaceable |
| Certificate | 3-point factory calibration (-20 °C, 0 °C and +120 °C) |

| Type | Description | Part No. |
|---------|---|------------|
| TFX 410 | Thermometer with TPX 410 probe, pointed, 60 cm silicone cable | 1340-5410A |
| AG 190 | Drill for frozen food | 1341-3834 |

TFX 410-1 Core Thermometer without Probe for various Pt 1000 probes



Various probes available
(see page 48).

- High precision
- Approximately 5 years battery life time

Technical Data

| | |
|-------------------|--|
| Measurement range | -50 °C ... +300 °C (-58 °F ... +572 °F) |
| Sensor connection | Lemos a size 0 |
| Battery | 3.0 V Lithium, replaceable |
| Certificate | 3-point factory calibration (-20 °C, 0 °C and +120 °C) |

| Type | Description | Part No. |
|---------------------|--------------------------------|------------|
| TFX 410-1 | Thermometer without probe | 1340-5415A |
| AG 190 | Drill for frozen food | 1341-3834 |
| TFX 410-1 & TPX 400 | Thermometer with TPX 400 probe | 1340-5416 |
| TFX 410-1 & TPX 100 | Thermometer with TPX 100 probe | 1340-5417 |
| TFX 410-1 & TPX 200 | Thermometer with TPX 200 probe | 1340-5418 |
| TFX 410-1 & TPX 300 | Thermometer with TPX 300 probe | 1340-5419 |

TFX 420 Core Thermometer without Probe with MIN/MAX and hold options



Various probes available
(see page 48).

- High precision
- Approximately 5 years battery life time

Technical Data

| | |
|-------------------|---|
| Measurement range | -50 °C ... +400 °C (-58 °F ... +752 °F) |
| Sensor connection | Lemos a size 0 |
| Battery | 3.0 V Lithium, replaceable |
| Extra functions | Hold, MIN / MAX |
| Certificate | 3-point factory calibration (-20 °C, 0 °C, +120 °C and +250 °C) |

| Type | Description | Part No. |
|-------------------|--------------------------------|------------|
| TFX 420 | Thermometer without probe | 1340-5425A |
| AG 190 | Drill for frozen food | 1341-3834 |
| TFX 420 & TPX 400 | Thermometer with TPX 400 probe | 1340-5426 |
| TFX 420 & TPX 100 | Thermometer with TPX 100 probe | 1340-5427 |
| TFX 420 & TPX 200 | Thermometer with TPX 200 probe | 1340-5428 |
| TFX 420 & TPX 300 | Thermometer with TPX 300 probe | 1340-5429 |

Probes for TFX 410-1 / TFX 420

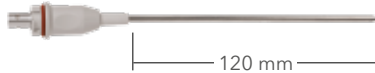
Pt 1000 Probe (with Lemosa size 0)

The probes of the TFX 410-1 and TFX 420 core thermometers are all changeable - and yet the devices have protection class IP67, i.e. protection against immersion up to 1 m. Even little mishaps like plummeting the device into a bucket of water won't have consequences. The various probes and cables allow for a use in many different applications, e.g. heating of food (PTFE) or in rough and humid environments (silicone).

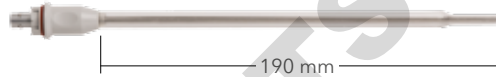
TPX 100 blunt probe
(Needle length = 120 mm, Ø 3 mm, blunt, stainless steel needle, up to +400 °C)



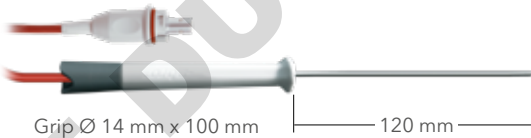
TPX 200 pointed probe
(Needle length = 120 mm, Ø 3 mm, pointed, stainless steel needle, up to +400 °C)



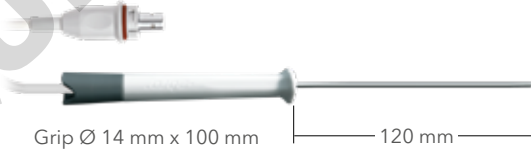
TPX 300 glass-coated probe
(Needle length = 190 mm, Ø 8 mm, glass-coated, stainless steel needle, up to +400 °C)



TPX 400 pointed probe
(Needle length = 120 mm, Ø 3 mm, pointed, with 60 cm silicone cable, stainless steel needle, up to +400 °C)



TPX 440 pointed probe
(Needle length = 120 mm, Ø 3 mm, with 150 cm PTFE cable, stainless steel needle, up to +400 °C)



Technical Data

Accuracy Exceeds DIN EN 60584, class 1



TF 410 - still working, thanks to IP67

| Type | Description | Part No. |
|-------------|--|-----------|
| TPX 100 | Blunt probe, needle length = 120 mm, Ø 3 mm, without cable | 1341-5417 |
| TPX 200 | Pointed probe, needle length = 120 mm, Ø 3 mm, without cable | 1341-5418 |
| TPX 200-20 | Pointed probe, needle length = 200 mm, Ø 3 mm, without cable | 1341-4182 |
| TPX 200-30 | Pointed probe, needle length = 300 mm, Ø 3 mm, without cable | 1341-4183 |
| TPX 200-40 | Pointed probe, needle length = 400 mm, Ø 3 mm, without cable | 1341-4184 |
| TPX 300 | Glass-coated probe, needle length = 120 mm, Ø 8 mm, without cable | 1341-5419 |
| TPX 400 | Pointed probe with 60 cm silicone cable (red) and grip, needle length = 120 mm, Ø 3 mm | 1341-5416 |
| TPX 400-40 | Pointed probe with 40 cm silicone cable (red) and grip, needle length = 120 mm, Ø 3 mm | 1341-4164 |
| TPX 400-150 | Pointed probe with 150 cm silicone cable (red) and grip, L = 120 mm, Ø 3 mm | 1341-4168 |
| TPX 440 | Pointed probe with 150 cm PTFE cable (white) and grip, L = 120 mm, Ø 3mm | 1341-4169 |