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<td>Electronic Temperature Controller Modutronic</td>
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<td>Type</td>
<td>Modutronic ELT-GP1</td>
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<td>------</td>
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<tr>
<td>Measuring range</td>
<td>0...+100 °C</td>
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<td></td>
<td>0...+200 °C</td>
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<tr>
<td></td>
<td>0...+400 °C</td>
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<tr>
<td>Enclosure (wxhxd) mm</td>
<td>175 x 125 x 75</td>
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<tr>
<td>Standard rail installation</td>
<td>✔</td>
</tr>
<tr>
<td>Wall mounting</td>
<td>✔</td>
</tr>
<tr>
<td>Supply voltage</td>
<td>90 - 260 VAC / 50/60 Hz</td>
</tr>
<tr>
<td>Measurement</td>
<td>Capillary tube</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Alarm indication</td>
<td>✔</td>
</tr>
<tr>
<td>Analogue output</td>
<td>✔</td>
</tr>
<tr>
<td>Digital display</td>
<td>✔</td>
</tr>
<tr>
<td>Power consumption (VA)</td>
<td>5 VA</td>
</tr>
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<td>IP protection class front</td>
<td>IP 66</td>
</tr>
<tr>
<td>Switching capacity</td>
<td>16 A</td>
</tr>
<tr>
<td>For hazardous areas</td>
<td>✔</td>
</tr>
</tbody>
</table>

**Legend:**
- Standard
- Option
- Alternatives
- Configuration
<table>
<thead>
<tr>
<th>ELTC/H-14</th>
<th>ELTC-15</th>
<th>ELTC 05</th>
<th>ELTC21</th>
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<th>*1 ISD-2</th>
<th>*2 ELHC</th>
<th>*3 ELHKV</th>
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</thead>
<tbody>
<tr>
<td>-50...+400°C with socket</td>
<td>-50...+999°C (rampmode function)</td>
<td>–</td>
<td>-50...+400°C</td>
<td>-50...+400°C</td>
<td>-60...+410°C</td>
<td>-60...+410°C</td>
<td>0-250°C</td>
<td>-10...+40°C</td>
<td>-30...+80°C</td>
<td>-30...+80°C</td>
<td>–</td>
<td>–</td>
</tr>
</tbody>
</table>

| 130 x 130 x 75 | 130 x 130 x 75 | 130 x 130 x 75 | 51.5 x 87.5 x 58.0 | 51.5 x 87.5 x 58.0 | 70 x 60 x 30 | 70 x 60 x 30 | 122 x 120 x 90 | 220 x 120 x 90 | 260 x 160 x 90 | 153 x 59 x 93 | 105 x 86 x 57 | 105 x 86 x 57 | 295 x 458 x 129 |

| 122 x 120 x 90 | 220 x 120 x 90 | 260 x 160 x 90 | 153 x 59 x 93 | 105 x 86 x 57 | 105 x 86 x 57 | 295 x 458 x 129 |

| 90 - 260 VAC / 50/60 Hz | 90 - 260 VAC / 50/60 Hz | 24 VDC | 24 VDC | 24 VDC | 90 - 260 VAC / 50/60 Hz |

| 230/400 VAC | 100-253 V | 230/400 VAC |

| Capillary tube | NTC | NTC | NTC | NTC | NTC | NTC | NTC |

| max. 4 mA | max. 4 mA | 5 VA | < 5 W | < 5 W | 6,5 VA | 20 VA | 20 VA max |

| IP 65 | IP 65 | IP 65 | IP 30 | IP 20 | IP 20 | IP 65 | IP 20 | IP 20 | IP 50 | IP 54 |

| max. 20 A with hybridrelay (Relay 1) | max. 20 A with hybridrelay (Relay 1) | 16 A | 16 A | 16 A | 12 A | 12 A | 16 A | 16 A | 6 A | 8 A | 2 A |

*1: Ice- and Snow Detectors  
*2: Heating Circuit Distributors  
*3: Control Cabinets
Ex-Box Temperature Controller with Display

Ex-Box REG/DIS: complying with latest Ex-protection directives 94/9/CE (ATEX 95) this electronic temperature controller has been designed and developed especially for its use in hazardous areas. Programming and operation is done via the integrated operating panel with display.

Advantages:
- Rugged enclosure IP 65
- Operation and programming in hazardous areas
- Increased safety through fail alarm
- Integrated heating circuit monitoring
- Display

Applications:
- Hazardous areas
- Power plants
- Chemical & petrochemical industries
- Oil & gas industries
- Pharmaceutical industry
- Plastics industry
- Wastewater treatment plants

Type Ex-Box REG/DIS
### Technical Information

<table>
<thead>
<tr>
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<th></th>
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</thead>
<tbody>
<tr>
<td>Certificate</td>
<td>IBExU 04 ATEX 1165 X</td>
</tr>
<tr>
<td>Classification</td>
<td>II 2G Ex emb [ib] IIIC T4 Gb II 2D Ex tb IIIC T100 °C Db -32 °C &lt;= Ta &lt;= 60 °C</td>
</tr>
<tr>
<td>Dimensions</td>
<td>140 x 140 x 150 mm (w x h x d) (without wall-mounting bracket, excluding glands)</td>
</tr>
<tr>
<td>Enclosure</td>
<td>Aluminium</td>
</tr>
<tr>
<td>IP rating</td>
<td>IP 65</td>
</tr>
<tr>
<td>Ambient temperature</td>
<td>-32 up to 60 °C</td>
</tr>
<tr>
<td>Switching capacity</td>
<td>16 A</td>
</tr>
<tr>
<td>Display</td>
<td>2 x 4 35-segment LED</td>
</tr>
<tr>
<td>Operating voltage</td>
<td>230 V +/– 10 %</td>
</tr>
<tr>
<td>Nominal current</td>
<td>Max. 100 mA</td>
</tr>
<tr>
<td>Load current, max.</td>
<td>16 A (ohm resistive load)</td>
</tr>
<tr>
<td>Load output</td>
<td>230 V / 16 A, 2-pole</td>
</tr>
<tr>
<td>Alarm output</td>
<td>Optically separated 100 mA</td>
</tr>
<tr>
<td>Interface</td>
<td>Intrinsically safe for Ex-Connect (bus connection)</td>
</tr>
<tr>
<td>Measurement input</td>
<td>Pt100 2/3 wire, intrinsically safe</td>
</tr>
<tr>
<td>Measurement range</td>
<td>-40 °C up to +300 °C</td>
</tr>
<tr>
<td>Control characteristics</td>
<td>Dual mode controller</td>
</tr>
<tr>
<td>Weight</td>
<td>Approx. 3.5 kg</td>
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</table>

<table>
<thead>
<tr>
<th>Designation</th>
<th>Art. No.</th>
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</thead>
<tbody>
<tr>
<td>Ex-Box REG/DIS</td>
<td>0X60020</td>
</tr>
</tbody>
</table>

### Cable Entries

- 1 x M25 for voltage supply (9-13 mm; with add-ons for 11-15 mm)
- 1 x exchangeable panel seal 7-10.5 mm
- 1 x M25 for heating line (2-fold 6 mm)
- 1 x M20 for sensor (tension range 3-4 mm)
- 1 x vent screw M20
Ex-Box Temperature Controller with LED-Display

Ex-Box REG/LED: complying with latest Ex-protection directives 94/9/CE (ATEX 95) this electronic temperature controller has been designed and developed especially for its use in hazardous areas. Programming and operation is done via external Ex-Control manual control.

**Advantages:**
- Rugged enclosure IP 65
- Increased safety, tamperproof, no unauthorised adjustments
- Increased safety through fail alarm
- Integrated heating circuit monitoring

**Applications:**
- Hazardous areas
- Power plants
- Chemical & petrochemical industries
- Oil & gas industries
- Pharmaceutical industry
- Plastics industry
- Wastewater treatment plants

Type **Ex-Box REG/LED**
Technical Information

Data

- Certificate: IBExU 04 ATEX 1165 X
- Classification: II 2G Ex emb [ib] IIIC T4 Gb / II 2D Ex tb IIIC T100°C Db -32 °C <= Ta <= 60 °C
- Dimensions: 140 x 140 x 150 mm (w x h x d) without wall-mounting bracket, excluding glands
- Enclosure: Aluminium
- IP rating: IP 65
- ambient temperature: -32 up to 60 °C
- Switching capacity: 16 A
- Display: 2 x 4 35-segment LED
- Operating voltage: 230 V +/- 10 %
- Nominal current: Max. 100 mA
- Load current, max.: 16 A (ohm resistive load)
- Load output: 230 V / 16 A, 2-pole
- Alarm output: Optically separated 100 mA
- Interface: Intrinsically safe for Ex-Connect
- Measurement input: Pt100 2/3 wire, intrinsically safe
- Measurement range: -40 °C up to +300 °C
- Control characteristics: Dual mode controller
- Load disconnection: 2-phase
- Weight: Approx. 3.5 kg

Cable Entries

- 1 x M25 for voltage supply (9-13 mm; with add-ons for 11-15 mm)
- 1 x exchangeable panel seal 7-10.5 mm
- 1 x M25 for heating line (2-fold 6 mm)
- 1 x M20 for sensor (tension range 3-4 mm)
- 1 x vent screw M20

Features

- Interface for manual control panel Ex-Control
- LED green: OK, no heating
- LED orange: OK, heating on
- LED red blinking: alarm or fault, but still ready for operation
- LED red permanent: severe fault, load disconnection

Designation | Art. No.
--- | ---
Ex-Box REG/LED | 0X60021

Certificate IBExU 04 ATEX 1165 X
Classification II 2G Ex emb [ib] IIIC T4 Gb / II 2D Ex tb IIIC T100°C Db -32 °C <= Ta <= 60 °C
Dimensions 140 x 140 x 150 mm (w x h x d) without wall-mounting bracket, excluding glands
Enclosure Aluminium
IP rating IP 65
ambient temperature -32 up to 60 °C
Switching capacity 16 A
Display 2 x 4 35-segment LED
Operating voltage 230 V +/- 10 %
Nominal current Max. 100 mA
Load current, max. 16 A (ohm resistive load)
Load output 230 V / 16 A, 2-pole
Alarm output Optically separated 100 mA
Interface Intrinsically safe for Ex-Connect
Measurement input Pt100 2/3 wire, intrinsically safe
Measurement range -40 °C up to +300 °C
Control characteristics Dual mode controller
Load disconnection 2-phase
Weight Approx. 3.5 kg

Designation | Art. No.
--- | ---
Ex-Box REG/LED | 0X60021
**Ex-Box Limiter with Display**

The Ex-Box LIM/DIS is a limiter for switching off heating circuits in case of excess temperature or current overload. Furthermore, output signal values for maximum and minimum temperatures are programmable. Programming and operation is done via the integrated operating panel with display.

**Advantages:**
- Rugged enclosure IP 65
- Operation and programming in hazardous areas
- Increased safety through fail alarm
- Integrated heating circuit monitoring
- Display

**Applications:**
- Hazardous areas
- Power plants
- Chemical & petrochemical industries
- Oil & gas industries
- Pharmaceutical industry
- Plastics industry
- Wastewater treatment plants
## Technical Information

### Data

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<th>Specification</th>
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<tr>
<td>Certificate</td>
<td>IBExU 04 ATEX 1165 X</td>
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<tr>
<td>Classification</td>
<td>II 2G Ex emb [ib] IIIC T4 Gb II 2D Ex tb IIIIC T100 °C Db -32 °C &lt;= Ta &lt;= 60 °C</td>
</tr>
<tr>
<td>Dimensions</td>
<td>140 x 140 x 150 mm (w x h x d) (without wall-mounting bracket, excluding glands)</td>
</tr>
<tr>
<td>Enclosure</td>
<td>Aluminium</td>
</tr>
<tr>
<td>IP rating</td>
<td>IP 65</td>
</tr>
<tr>
<td>Ambient temperature</td>
<td>-32 up to 60 °C</td>
</tr>
<tr>
<td>Switching capacity</td>
<td>16 A</td>
</tr>
<tr>
<td>Operating voltage</td>
<td>230 V +/- 10 %</td>
</tr>
<tr>
<td>Nominal current</td>
<td>Max. 100 mA</td>
</tr>
<tr>
<td>Load current, max.</td>
<td>16 A (ohm resistive load)</td>
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<tr>
<td>Load output</td>
<td>230 V / 16 A, 2-pole</td>
</tr>
<tr>
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<td>Intrinsically safe for Ex-Connect (bus connection)</td>
</tr>
<tr>
<td>Measurement input</td>
<td>Pt100 2/3 wire, intrinsically safe</td>
</tr>
<tr>
<td>Measurement range</td>
<td>-40 °C up to +300 °C</td>
</tr>
<tr>
<td>Control range</td>
<td>+50 °C up to +300 °C</td>
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<tr>
<td>Load disconnection</td>
<td>2-phase</td>
</tr>
<tr>
<td>Weight</td>
<td>Approx. 3.5 kg</td>
</tr>
</tbody>
</table>

### Cable Entries

- 1 x M20 for voltage supply (9-13 mm; with add-ons for 11-15 mm)
- 1 x exchangeable panel sea 7-10.5 mm
- 1 x M20 for heating line (2-fold 6 mm)
- 1 x M20 for sensor (tension range 3-4 mm)
- 1 x vent screw M20

### Designation

<table>
<thead>
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<th>Designation</th>
<th>Art. No.</th>
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<tbody>
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<td>Ex-Box LIM/DIS</td>
<td>0X60024</td>
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</table>
The Ex-Box LIM/LED is a limiter for switching off connected heating circuits in case of excess temperature or current overload. Furthermore, signal values for maximum and minimum temperatures are programmable. Programming and operation is done via external panel Ex-Control for manual control.

**Advantages:**
- Rugged enclosure IP 65
- Increased safety against unauthorised changes of rated value
- Increased safety through fail alarm
- Integrated heating circuit monitoring

**Applications:**
- Hazardous areas
- Power plants
- Chemical & petrochemical industries
- Oil & gas industries
- Pharmaceutical industry
- Plastics industry
- Wastewater treatment plants

Type **Ex-Box LIM/LED**
## Technical Information

### Data

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<th>IBExU 04 ATEX 1165 X</th>
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<td>II 2G Ex emb [ib] IIIC T4 Gb II 2D Ex tb IIIC T100°C, Db -32°C &lt;= Ta &lt;= 60°C</td>
</tr>
<tr>
<td>Dimensions</td>
<td>140 x 140 x 150 mm (w x h x d) without wall-mounting bracket, excluding glands</td>
</tr>
<tr>
<td>Enclosure</td>
<td>Aluminium</td>
</tr>
<tr>
<td>IP rating</td>
<td>IP 65</td>
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<tr>
<td>Ambient temperature</td>
<td>-32 up to 60 °C</td>
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<tr>
<td>Switching capacity</td>
<td>16 A</td>
</tr>
<tr>
<td>Display</td>
<td>2 x 4 35-segment LED</td>
</tr>
<tr>
<td>Operating voltage</td>
<td>230 V +/- 10 %</td>
</tr>
<tr>
<td>Nominal current</td>
<td>Max. 100 mA</td>
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<tr>
<td>Load current, max.</td>
<td>16 A (ohm resistive load)</td>
</tr>
<tr>
<td>Load output</td>
<td>230 V / 16 A, 2-pole</td>
</tr>
<tr>
<td>Alarm output</td>
<td>Optically separated 100 mA</td>
</tr>
<tr>
<td>Interface</td>
<td>Intrinsically safe for Ex-Control</td>
</tr>
<tr>
<td>Measurement input</td>
<td>Pt100 2/3 wire, intrinsically safe</td>
</tr>
<tr>
<td>Measurement range</td>
<td>-40 °C up to +300 °C</td>
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<td>Control range</td>
<td>+50 °C up to +300 °C</td>
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<tr>
<td>Load disconnection</td>
<td>2-phase</td>
</tr>
<tr>
<td>Weight</td>
<td>Approx. 3.5 kg</td>
</tr>
</tbody>
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### Certificate IBExU 04 ATEX 1165 X

- Classification: II 2G Ex emb [ib] IIIC T4 Gb II 2D Ex tb IIIC T100°C, Db -32°C <= Ta <= 60°C
- Ambient temperature: -32 up to 60 °C
- Switching capacity: 16 A
- Display: 2 x 4 35-segment LED
- Operating voltage: 230 V +/- 10 %
- Nominal current: Max. 100 mA
- Load current, max.: 16 A (ohm resistive load)
- Load output: 230 V / 16 A, 2-pole
- Alarm output: Optically separated 100 mA
- Interface: Intrinsically safe for Ex-Control
- Measurement input: Pt100 2/3 wire, intrinsically safe
- Measurement range: -40 °C up to +300 °C
- Control range: +50 °C up to +300 °C
- Load disconnection: 2-phase
- Weight: Approx. 3.5 kg

### Cable Entries

- 1 x M25 for voltage supply (9-13 mm; with add-ons for 11-15 mm)
- 1 x gland 7-10.5 mm
- 1 x M25 for heating line (2-fold 6 mm)
- 1 x M20 for sensor (tension range 3-4 mm)
- 1 x vent screw M20

### Features

- Interface for manual control panel Ex-Control
- Programmable parameter are identical to Ex-Control
- LED green: normal operation state
- LED red, blinking: alarm
- LED red, permanent: fault

If a fault (excess temperature, overcurrent and internal fault) is indicated, it will not automatically reset. Reset of the fault is done via the Ex-Control.
Ex-Control

Hand-held Controller Pad

Intrinsically safe hand held controller pad for use with the Ex-Box REG/LED and LIM/LED. The Ex-Control pad provides additional safety in a potentially explosive atmosphere. Adjustment of settings by unauthorized persons is not possible since the controller can be removed.

Advantages:
- Intrinsically safe controller pad
- Without an independent power supply
- Programming and operation in hazardous areas

Applications:
- Hazardous areas
- Power plants
- Chemical & petrochemical industries
- Oil & gas industries
- Pharmaceutical industry
- Plastics industry
- Wastewater treatment plants

Type Ex-Control
Technical Information

Type Ex-Control

### Data
- **Certificate**: IBExU 04 ATEX 1165 X
- **Dimensions (enclosure)**: 135 x 80 x 35 mm (w x h x d)
- **Classification**: II 2G Ex ib IIC T4 Gb - II 2D Ex tb IIC T100°C Db -32°C <= Ta <= 60°C
- **IP rating**: IP 65
- **Cable entrance**: 1.5 m connecting cable with 5-pole plug
- **Display**: 2 x 4 35-segment LED illuminated
- **Interface**: Intrinsically safe for Ex-Box LED/LIM
- **Weight**: 0.5 kg

### Programmable Parameters
- Upper set point of adjustable temperature range
- Temperature set point
- Alarm, excess temperature
- Alarm, low temperature
- Load disconnection – excess temperature
- Bus address 1 – 32
- Adjusting point Pt100
- Temperature unit °C and °F

### Fault indication
- Sensor short
- Sensor cut
- Excess temperature Pt100
- Low temperature Pt100
- Internal excess temperature
- External bus fault
- Internal bus fault
- Internal hardware fault
- Supply voltage fault

### Designation and Art. No.

<table>
<thead>
<tr>
<th>Designation</th>
<th>Art. No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ex-Control</td>
<td>0X60026</td>
</tr>
</tbody>
</table>
Ex-Capillary Thermostat

The capillary thermostat EL-CT is approved for use in hazardous areas Zones 1 and 2 for gas and Zones 21 and 22 for dust as a surface thermostat on pipes and vessels. There are different temperature ranges possible. The material of the capillary tube is stainless steel and the rugged enclosure is made of aluminium.

**Advantages:**
- Robust
- Versatile use

**Applications:**
- Industrial applications
- Use in hazardous areas
- Heat tracing on pipes, valves and vessels
- Oil & gas industry

Type EL-CT
### Technical Information

**Type EL-CT**

#### Data

- **Ex-Classification**: II 2G Ex db IIC T6 Gb  II 2D Ex tb IIC T80°C Db Ta -32°C...+50°C [CT]  
  Ta -50°C...+50°C [CT(2)] (Important: Classification is subject to modification depending on the cable entrances used by the customer!)

- **Certificate**: IBExU 03ATEX1130X  
  IECEx IBE 14.0069

- **IP rating**: IP 66

- **Ambient temperature**: -32 up to +50 °C [CT], -50 °C up to + 50 °C [CT(2)]

- **Switching capacity**: 16 A at 230 V [CT] / 10 A at 400 V [CT(2) only]

- **Switching differential**: 1 pol. [CT], 1 pol., changeover contact [CT(2)]

- **Switching contact**: 1 pole

- **Capillary tube**: Stainless steel

- **Length of capillary tube**: 2 m

- **Enclosure**: Lacquer-coated aluminium, dimensions (l x h x d), approx. 120 x 120 x 110 mm

- **Bending radius capillary tube**: 5 mm

- **Cable entrance**: 1 x gland M20, clamping range 10-14 mm  
  1 x thread M 20 x 1.5

- **Salt-water proof**: Yes

<table>
<thead>
<tr>
<th>Designation</th>
<th>Temperature range</th>
<th>Admissible sensor temperature, max.</th>
<th>Art. No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>EL-CT(2) 30</td>
<td>-10 °C up to +30 °C</td>
<td>60 °C</td>
<td>0X63032</td>
</tr>
<tr>
<td>EL-CT(2) 65</td>
<td>+5 °C up to +65 °C</td>
<td>100 °C</td>
<td>0X63065</td>
</tr>
<tr>
<td>EL-CT(2) 180</td>
<td>0 °C up to +180 °C</td>
<td>220 °C</td>
<td>0X63180</td>
</tr>
<tr>
<td>EL-CT(2) 320</td>
<td>+50 °C up to +320 °C</td>
<td>330 °C</td>
<td>0X63320</td>
</tr>
<tr>
<td>EL-CT 30</td>
<td>-50 °C up to +30 °C</td>
<td>50 °C</td>
<td>0X63030</td>
</tr>
<tr>
<td>EL-CT 50</td>
<td>0 °C up to +50 °C</td>
<td>105 °C</td>
<td>0X63050</td>
</tr>
<tr>
<td>EL-CT 200</td>
<td>0 °C up to +200 °C</td>
<td>230 °C</td>
<td>0X63200</td>
</tr>
<tr>
<td>EL-CT 500</td>
<td>+20 °C up to +500 °C</td>
<td>575 °C</td>
<td>0X63500</td>
</tr>
</tbody>
</table>
Pt100 Temperature Sensors and Thermocouples

We present an overview of our Pt100 temperature sensors and thermocouples here, appropriate for a very wide and diverse range of applications. Our products have a long service life, even in demanding fields of application. ELTF-PTEx temperature sensors are suitable for use in hazardous (Ex) areas.

**Advantages:**
- Can be used for a wide range of applications
- Coordinated with our trace heating product line
- Easy assembly

**Applications:**
- Industrial applications
- Building services
- Frost protection
- Process temperatures to 1000 °C
- Hazardous (Ex) area
## Technical Information

### Pt100 Temperature Sensors

<table>
<thead>
<tr>
<th>Type</th>
<th>Designation</th>
<th>Art. No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>ELTF-PT.1</td>
<td>Pt100 2-wire, measuring sleeve 5 x 50 mm, mat. 1.4571, connection cable PVC, length = 5 m, class B, Tmax 80 °C, IP 65</td>
<td>0650001</td>
</tr>
<tr>
<td>ELTF-PT.3</td>
<td>Pt100 2-wire, measuring sleeve 5 x 50 mm, mat. 1.4571, connection cable fluoropolymer, length = 3 m, class B, Tmax 250 °C, IP 65</td>
<td>0650003</td>
</tr>
<tr>
<td>ELTF-PT.31</td>
<td>Pt100 3-wire, measuring sleeve 5 x 50 mm, mat. 1.4571, connection cable fluoropolymer, length = 3 m, class B, Tmax 250 °C, IP 65</td>
<td>0650002</td>
</tr>
<tr>
<td>ELTF-PT.33</td>
<td>Pt100 2-wire, measuring sleeve 6 x 6 x 46 mm, mat. 1.4301, connection cable fluoropolymer, length = 5 m, class 1/3 B, Tmax 250 °C, IP 65</td>
<td>0650000</td>
</tr>
<tr>
<td>ELTF-PT.5</td>
<td>Pt100, 4-wire, measuring sleeve 4 x 50 mm, mat. 1.4571, connection cable fluoropolymer length = 5 m, class 1/3 B, Tmax 250 °C, IP 65</td>
<td>0650022</td>
</tr>
<tr>
<td>ELTF-PT.61</td>
<td>Pt100, 2-wire, measuring sleeve 3 x 200 mm, mat. 1.4571, connection cable fluoropolymer, length = 5 m, class B, Tmax 500 °C, IP 65</td>
<td>0650040</td>
</tr>
<tr>
<td>ELTF-PTEx.2</td>
<td>Pt100 4-wire, measuring sleeve 8 x 12 x 46 mm, mat. 1.4301, connection cable fluoropolymer, length = 3 m, class B, Tmax 235 °C, IP 65</td>
<td>0X70002*</td>
</tr>
<tr>
<td>ELTF-PTEx.4</td>
<td>Pt100 2 x 3-wire, measuring sleeve 8 x 12 x 46 mm, mat. 1.4301, connection cable fluoropolymer, length = 3 m, class B, Tmax 235 °C, IP 65</td>
<td>0X70030*</td>
</tr>
</tbody>
</table>

* see also section „Hazardous (Ex) area“.

### Thermocouples

<table>
<thead>
<tr>
<th>Type</th>
<th>Designation</th>
<th>Art. No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>ELTF-Te.4</td>
<td>Thermocouple type K, measuring sleeve 3 x 250 mm, mat. 2.4816, connection cable fluoropolymer/silicone, length = 5 m, DIN IEC 584 1-2, Tmax 1150 °C, IP 65</td>
<td>0670001</td>
</tr>
<tr>
<td>ELTF-Te.41</td>
<td>Thermocouple type K, measuring sleeve 1.5 x 400 mm, mat. 2.4816, connection cable fluoropolymer/silicone, length = 5 m, DIN IEC 584 1-2, Tmax 1150 °C, IP 65</td>
<td>0670019</td>
</tr>
</tbody>
</table>

This is only a selection. Additional temperature sensors and thermocouples are available on request.
Electronic Frost Protection Thermostat

The electronic temperature controller ELTC 05-Frostcontrol is designed for use as an ambient thermostat and surface thermostat with remote sensor. Cable glands and terminals are provided for power input. The unit is supplied in a weather proof plastic enclosure for wall mounting, with a grey cover.

The controller should be protected from direct sunlight when used outdoors. In case of use as ambient temperature controller, the sensor cable is shortened to allow fastening of the sensor sleeve within the M12 gland. The sleeve should project by approximately 15 mm.

**Advantages:**
- Weather proof
- Fixed switching set point

**Applications:**
- Heat tracing for frost protection
- Can be used as ambient and surface thermostat
- Suitable for resistance heating lines and self-regulating heating cables

**Type** ELTC 05–Frostcontrol
**Technical Information**

<table>
<thead>
<tr>
<th>Data</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supply voltage</td>
<td>230 V, +/- 10 %, 50 Hz, optional voltages upon request</td>
</tr>
<tr>
<td>Switching capacity</td>
<td>16 A</td>
</tr>
<tr>
<td>Hysteresis</td>
<td>Approx. 1 Kelvin</td>
</tr>
<tr>
<td>Measurement input</td>
<td>Pt100 DIN 2-wire, with 5 m PVC connecting cable (temp. max. 90 °C)</td>
</tr>
<tr>
<td>Switching point ELTC/05</td>
<td>+3 °C (set point)</td>
</tr>
<tr>
<td>Ambient temperature</td>
<td>-30 up to +60 °C</td>
</tr>
<tr>
<td>Control characteristics</td>
<td>Dual mode controller</td>
</tr>
<tr>
<td>Output</td>
<td>1 relay contact</td>
</tr>
<tr>
<td>LED</td>
<td>Heating ON (yellow)</td>
</tr>
<tr>
<td>Enclosure</td>
<td>Polycarbonate</td>
</tr>
<tr>
<td>Dimensions</td>
<td>130 x 130 x 75 mm</td>
</tr>
<tr>
<td>IP rating</td>
<td>IP 65</td>
</tr>
<tr>
<td>Weight</td>
<td>520 g</td>
</tr>
</tbody>
</table>

**Electronic Temperature Controller**

- **Type ELTC 05 Frostcontrol**, switching point +3 °C (set point)

**Function**

If the sensed temperature is lower than the adjusted set point, the relay contact closes and the heating switches on.

**Special designs available – just ask us!**

---

**Type Designation Art. No.**

<table>
<thead>
<tr>
<th>Type</th>
<th>Designation</th>
<th>Art. No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>ELTC 05</td>
<td>Incl. Pt100, with 1 Relay, 230 V, 2xM25, 1xM12</td>
<td>0610002</td>
</tr>
<tr>
<td>ELTC 05</td>
<td>Incl. Pt100, with 1 Relay, 110 V, 2xM25, 1xM12</td>
<td>0610003</td>
</tr>
<tr>
<td>ELTC 05</td>
<td>Incl. Pt100, with 2 Relay, 230 V, 2xM25, 1xM12</td>
<td>0610005</td>
</tr>
<tr>
<td>ELTC 05</td>
<td>Without Pt100, with 1 Relay, 230 V, 2xM25, 1xM12</td>
<td>0610092</td>
</tr>
</tbody>
</table>

**Note:** Versions for higher temperatures are available upon request.

---

**Wiring diagram**

![Wiring diagram](image-url)
Electronic Temperature Controller

The ELTC-14 is an electronic temperature controller with digital display for wall mounting. The temperature is measured by a Pt100 sensor, processed by the microcontroller and displayed. After having evaluated the actual and preset values, the appropriate output relays are switched, depending on the configuration.

Cable glands and terminals are provided for the power connection. The unit is supplied in a weather proof plastic enclosure, with a transparent cover.

**Advantages:**
- LED display operable down to -25 °C
- Programmable 0 °C up to +390 °C
- For switching 20 A resistive load with hybridrelay
- Signaling contact (configurable to operate either as alarm or release contact, potential-free)
- Suitable for Pt100 with 2 or 3 wires
- For connection of up to 2 heating cables
- Operating voltage: 90 - 260 VAC / 50/60 Hz

**Applications:**
- Industrial applications
- Mechanical, electrical and plumbing (MEP)
### Technical Information

#### Type ELTC-14

<table>
<thead>
<tr>
<th>Data</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating voltage</td>
<td>90-260 VAC 50/60Hz</td>
</tr>
<tr>
<td>Power consumption</td>
<td>Max. 4 mA, &lt; 5 W</td>
</tr>
<tr>
<td>Switching capacity relay 1</td>
<td>20 A with hybrid relay</td>
</tr>
<tr>
<td>Switching capacity relay 2</td>
<td>8 A, changover contact (alarm)</td>
</tr>
<tr>
<td>Operating temperature</td>
<td>-25 up to +55 °C</td>
</tr>
<tr>
<td>Storage temperature</td>
<td>-30 up to +60 °C</td>
</tr>
<tr>
<td>Display range</td>
<td>-50 up to +400 °C</td>
</tr>
<tr>
<td>Adjustable range</td>
<td>0 up to +390 °C, optional configuration</td>
</tr>
<tr>
<td>Sensor connection</td>
<td>Pt100 2-wire, 3-wire, optional configuration</td>
</tr>
<tr>
<td>Display</td>
<td>LED, red</td>
</tr>
<tr>
<td>IP rating</td>
<td>IP 65</td>
</tr>
<tr>
<td>Dimensions (w x h x d)</td>
<td>130 x 130 x 75 mm polycarbonate enclosure</td>
</tr>
</tbody>
</table>

**Sensors and display:** It is possible to use two types of sensors, either Pt100/2-wire or Pt100/3-wire. Optional display of °C or °F values. In case of use of a Pt100/2-wire unit the actual temperature value can be corrected. Range +/- 10K or +/-18F, respectively. In case of use of a Pt100/3-wire unit the temperature is automatically corrected. Also suitable for use with ELTF-PTEx 1 and 2 sensor.

**Relay configuration:** relay 1: regulator, relay 2: alarm / temperature reached

**Temperature alarm:** If the actual value deviates from the preset limit values, an alarm is given and transmitted via alarm relay K2.

<table>
<thead>
<tr>
<th>Type</th>
<th>Designation</th>
<th>Art. No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>ELTC-14</td>
<td>Standard: Set with cable glands, reducer and blind cover</td>
<td>0620000</td>
</tr>
</tbody>
</table>

**Wiring diagram**

```
Wiring diagram
```

---

6.23

www.etherm.com
Electronic Temperature Controller

The ELTC/H-14 is an electronic temperature controller with digital display for wall mounting. The temperature is measured by a Pt100 sensor, processed by the microcontroller and displayed. After having evaluated the actual and preset values, the appropriate output relays are switched, depending on the configuration.

The controller is equipped with a socket. The unit is supplied in a weather proof plastic enclosure, with a transparent cover.

Advantages:
- LED display operable down to -25 °C
- Programmable 0 °C up to +390 °C
- For switching 20 A resistive load with hybridrelay
- Signaling contact (configurable to operate either as alarm or release contact, potential-free)
- Suitable for Pt100 with 2 or 3 wires
- Operating voltage: 90 - 260 VAC / 50/60 Hz

Applications:
- Industrial applications
- Heating mats, heated hoses
Technical Information

Type ELTC/H-14

Operating voltage 90-260 VAC 50/60 Hz
Power consumption Max. 4 mA, < 5 W
Switching capacity relay 1 20 A with hybrid relay*
Switching capacity relay 2 8 A, changeover contact (alarm)
Operating temperature -25 up to +55 °C
Storage temperature -30 up to +60 °C
Display range -50 up to +400 °C
Adjustable range 0 up to +390 °C, optional configuration
Sensor connection Pt100 2-wire, 3-wire, optional configuration
Display LED, red
IP rating IP 65
Dimensions (w x h x d) 130 x 130 x 75 mm polycarbonate enclosure

* depends on respective socket

Sensors and display: It is possible to use two types of sensors, either Pt100/2-wire or Pt100/3-wire. Optional display of °C or °F values. In case of use of a Pt100/2-wire unit the actual temperature value can be corrected. Range +/- 10K or +/- 18F, respectively. In case of use of a Pt100/3-wire unit the temperature is automatically corrected. Also suitable for use with ELTF-PTEx 1 and 2 sensor.

Relay configuration: relay 1: regulator, relay 2: alarm / temperature reached

Temperature alarm: If the actual value deviates from the preset limit values, an alarm is given and transmitted via alarm relay K2.

Wiring diagram

7-pole

3- + 4-pole

5-pole
Electronic Temperature Controller

The ELTC-15 is an electronic temperature controller with digital display and rampmode functionality. It supports a 2- or 3-wire Pt100 input or thermocouple type K. After having evaluated the actual and preset values, the appropriate output relays are switched, depending on the configuration.

Cable glands and terminals are provided for the power connection. The unit is supplied in a weather proof plastic enclosure, with a transparent cover.

Advantages:
- LED display operable down to -25 °C
- Programmable 0 °C up to +999 °C
- For switching 20 A resistive load with hybridrelay
- Signaling contact (configurable to operate either as alarm or release contact, potential-free)
- Suitable for Pt100 with 2 or 3 wires and Thermocouples type K
- For connection of up to 2 heating cables (only self-regulating)
- Operating voltage: 90 - 260 VAC / 50/60 Hz
- Rampmode functionality

Applications:
- Industrial applications
- Applications at high temperatures

Type ELTC-15
**Technical Information**

**Data**

- **Operating voltage**: 90-260 VAC 50/60 Hz
- **Power consumption**: Max. 4 mA, < 5 W
- **Switching capacity relay 1**: 20 A with hybrid relay
- **Switching capacity relay 2**: 8 A, changover contact (alarm)
- **Operating temperature**: -25 up to +55 °C
- **Storage temperature**: -30 up to +60 °C
- **Display range**: -50 up to +999 °C
- **Adjustable range**: 0 up to +950 °C, optional configuration
- **Sensor connection**: Pt100 2-wire, 3-wire, thermocouple type K
- **Display**: LED, red
- **IP rating**: IP 65
- **Dimensions (w x h x d)**: 130 x 130 x 75 mm polycarbonate enclosure

**Sensors and display**: It is possible to use three types of sensors, either Pt100/2-wire, Pt100/3-wire or thermocouples type K. Optional display of °C or °F values. In case of use of a Pt100/2-wire unit the actual temperature value can be corrected. Range +/- 10K or +/-18°F, respectively. In case of use of a Pt100/3-wire unit the temperature is automatically corrected. Also suitable for use with ELTF-PTE 1 and 2 sensor.

**Relay configuration**: relay 1: regulator, relay 2: alarm / temperature reached

**Temperature alarm**: If the actual value deviates from the preset limit values, an alarm is given and transmitted via alarm relay K2.

**Rampmode functionality**: Specific heating-up and defined cooling with counter heating to avoid rapid cooling of the heated components.

**Wiring diagram**

```
--- Wiring Diagram for ELTC-15 ---

X1, X2, X3, X4, X5
L1, L2, L3
K1, K2
K3
K4
P1, P2

90-260 VAC

--- End of Wiring Diagram ---
```
Electronic Temperature Controller

The plug-in ELTC/L-15, specially developed for laboratory applications, is a controller with digital display in a stable desk-top housing. After having evaluated the actual and preset values, the appropriate output relays are switched, depending on the configuration.

On the back, there is a mains lead for direct connection to a socket, a built-in socket for connection of ready-made heating tapes and one built-in socket each for connection of either a Pt100 or a thermocouple type K.

Advantages:
- Direct connection to the socket
- Direct connection of heating tapes, heating jackets or heated hoses
- LED display operable down to -25 °C
- Programmable 0 °C up to +999 °C
- For switching 10 A resistive load with hybridrelay
- Operating voltage: 90 - 260 VAC / 50/60 Hz
- Rampmode functionality

Applications:
- Constant use in laboratories and technology centres
- Applications in the high-temperature field
### Technical Information

**Data**

- Operating voltage: 230 V AC +/- 10%
- Power consumption: Max. 5 W
- Switching capacity relay 1: 10 A contact (heating)
- Operating temperature: -25 up to +55 °C
- Storage temperature: -30 up to +60 °C
- Display range: -50 up to +999 °C
- Adjustable range: 0 up to +950 °C, optional configuration
- Sensor connection: Pt100 2-wire, 3-wire, thermocouple type K
- Display: LED, red
- IP rating: IP 20
- Dimensions (w x h x d): 125 x 70 x 180 mm

<table>
<thead>
<tr>
<th>Type</th>
<th>Designation</th>
<th>Art. No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>ELTC-15</td>
<td>Temperature controller up to 999°C, desktop device with rampmode functionality</td>
<td>0621501</td>
</tr>
</tbody>
</table>

**Sensors and display:** It is possible to use three types of sensors, either Pt100/2-wire, Pt100/3-wire or thermocouples type K. Optional display of °C or °F values. In case of use of a Pt100/2-wire unit the actual temperature value can be corrected. Range +/- 10K or +/-18°F, respectively. In case of use of a Pt100/3-wire unit the temperature is automatically corrected. Also suitable for use with ELTF-PTEx 1 and 2 sensor.

**Relay configuration:** relay 1: regulator

**Rampmode functionality:** Specific heating-up and defined cooling with counter heating to avoid rapid cooling of the heated components.

**Wiring diagram:**

```
3- + 4-pole
ELTC/L-15

[Diagram showing wiring connections]
```
Electronic Temperature Controller

The ELTC-21 is an electronic temperature controller with digital display for top-hat rail mounting. The temperature is measured by a Pt100 sensor, processed by the microcontroller and displayed. After having evaluated the actual and preset values, the appropriate output relays are switched, depending on the configuration.

**Advantages:**
- LED display operable down to –25 °C
- Programmable -50 °C up to +400 °C
- For switching 16 A resistive load
- Alarm contact
- Pt100 with 2 or 3 wires

**Applications:**
- Industrial applications
- Mechanical, electrical and plumbing (MEP)
Technical Information

Data

- Operating voltage: 230 V
- Power consumption: Max. 4 mA, < 5 W
- Switching capacity, relay 1: 16 A close contact (heating)
- Switching capacity, relay 2: 8 A, changeover contact (alarm)
- Operating temperature: -25 up to +55 °C
- Storage temperature: -25 up to +60 °C
- Temperature range: 0 up to +400 °C, optional configuration
- Sensor connection: Pt100 2-wires, 3-wires, optional configuration
- Display: LED, red
- IP rating: IP 20
- Mounting: Top-hat rail
- Dimensions (w x h x d in mm): 51.5 x 87.5 x 58.0

Sensors and display: It is possible to use two types of sensors, either Pt100/2-wire or Pt100/3-wire. Optional display of °C or °F values. In case of use of a Pt100/2-wire unit the actual temperature value can be corrected. Range +/- 10K or +/-18°F, respectively. In case of use of a Pt100/3-wire unit the temperature is automatically corrected. Also suitable for use with ELTF-PTE 1 and 2 sensor.

Relay configuration: relay 1: regulator, relay 2: alarm

Temperature alarm: If the actual value deviates from the preset limit values, an alarm is given and transmitted via alarm relay K2.

Wiring diagram

<table>
<thead>
<tr>
<th>Type</th>
<th>Art. No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>ELTC-21</td>
<td>0610093</td>
</tr>
</tbody>
</table>
The ELTC-22 is an electronic temperature controller with digital display for standard rail mounting. The temperature is measured by a Pt100 sensor, processed by the microcontroller and displayed. After having evaluated the actual and preset values, the appropriate output relays are switched, depending on the configuration.

**Advantages:**
- LED display operable down to –25 °C
- Programmable -50 °C up to +400 °C
- For switching 16 A ohm load
- Alarm contact
- Pt100 with 2 or 3 wires

**Applications:**
- Industrial applications
- Mechanical, electrical and plumbing (MEP)
Technical Information

**Data**

- Operating voltage: 24 VDC
- Power consumption: Max. 4 mA, < 5 W
- Switching capacity, relay 1: 16 A close contact (heating)
- Switching capacity, relay 2: 8 A, changeover contact (alarm)
- Operating temperature: -25 up to +55 °C
- Storage temperature: -25 up to +60 °C
- Temperature range: 0 up to +400 °C, optional configuration
- Sensor connection: Pt100 2-wires, 3-wires, optional configuration
- Display: LED, red
- IP rating: IP 20
- Mounting: Top-hat rail
- Dimensions (w x h x d in mm): 51.5 x 87.5 x 58.0

**Sensors and display:** It is possible to use two types of sensors, either Pt100/2-wire or Pt100/3-wire. Optional display of °C or °F values. In case of use of a Pt100/2-wire unit the actual temperature value can be corrected. Range +/- 10K or +/-18°F, respectively. In case of use of a Pt100/3-wire unit the temperature is automatically corrected. Also suitable for use with ELTF-PTEx 1 and 2 sensor.

**Relay configuration:** relay 1: regulator, relay 2: alarm

**Temperature alarm:** If the actual value deviates from the preset limit values, an alarm is given and transmitted via alarm relay K2.

**Type ELTC-22**

**Wiring diagram**

**Type** | **Art. No.**
--- | ---
ELTC-22 | 0610094
Micro-processor Operated Temperature Controller

The micro-processor operated ELTC-41 is specially designed for temperature control. The unit works with two temperature-sensors Pt100 or two thermocouples type K input with two individual programmable output relays. Current and voltage input and RS485 interface with ModBus protocol available. Frontpanel mounting.

Advantages:
- LED-Display up to -25 °C
- Programmable -50 up to +400 °C
- For switching 16 A resistive load
- Alarm contact
- Pt100 with 2 or 3 wires, thermocouple type K, optional configuration

Applications:
- Industrial Applications
- Mechanical, electrical and plumbing (MEP)
- Heat tracing on pipes, valves and vessels
- Tankcontainer

Type ELTC-41
Technical Information

Data

- Operating voltage: 100..240 V AC, 50/60 Hz, +/-10 %
- Power consumption: <= 5 W
- Analog input: 1 x power input (4...20 mA), 1 x voltage input (0...10 V)
- Interface: 1 x RS 485 (Mod-bus protocol)
- Switching capacity, relay 1: 16 A close contact (heating)
- Switching capacity, relay 2: 8 A, changeover contact (alarm)
- Sensor connection: 2 x Pt100 2 or 3-wire or 2 x thermocouple type K, optional configuration
- Temperature range: Pt100 input -60...400 °C, thermocouple -50...999 °C
- Control range: Pt100 input -50...390 °C, thermocouple -50...950 °C
- Control mode: 2-level controller
- Hysteresis: +/- 0.5 K, +/- 0.5 % with Pt100, +/- 2 K, +/- 0.5 % with thermocouple Type K
- Operating temperature: -25 up to +55 °C
- Storage temperature: -25 up to +60 °C
- Temperature indicator: 3 digits
- Display: LED, red
- IP rating: IP 54 front
- Mounting: Frontpanel mounting 70 x 30 cm, installation depth 78 mm, fixing through brackets
- Front dimensions: 75 x 35 mm

Sensors and display: It is possible to use different types of sensors, either Pt100/2-wire, Pt100/3-wire or thermocouples type K. Optional display of °C or °F values. In case of use of a Pt100/2-wire unit the actual temperature value can be corrected. Range +/- 10 K or +/-18 °F, respectively. In case of use of a Pt100/3-wire unit the temperature is automatically corrected. Also suitable for use with ELTF-PTEx 1 and 2 sensor.

Relay configuration: relay 1: regulator, relay 2: alarm

Temperature alarm: If the actual value deviates from the preset limit values, an alarm is given and transmitted via alarm relay K2.

Wiring diagram

Type ELTC-41

Type | Art. No.
--- | ---
ELTC-41 | 0620041

Purchased parts package
1 controller
1 sealing
2 mounting-latches
2 mating plugs 5mm-spacing, coded
5 mating plugs 3,5mm-spacing, coded
The micro-processor operated ELTC-42 is specially designed for temperature control, e.g. for tank containers. The unit works with the input of two temperature-sensors Pt100 or two thermocouples type K with two individual programmable output relays. Current and voltage input and RS485 interface with ModBus protocol available. Front panel mounting.

**Advantages:**
- LED-Display up to -25 °C
- Programmable -50 up to +400 °C
- For switching 16 A resistive load
- Alarm contact
- Pt100 with 2 or 3 wires, thermocouple type K, optional configuration

**Applications:**
- Industrial Applications
- Mechanical, electrical and plumbing (MEP)
- Heat tracing on pipes, valves and vessels
- Tank container

**Type ELTC-42**
## Technical Information

### Type ELTC-42

### Data

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating voltage</td>
<td>24 V DC or 22-28 V AC</td>
</tr>
<tr>
<td>Power consumption</td>
<td>&lt;= 2.4 W</td>
</tr>
<tr>
<td>Analog input</td>
<td>1 x power input (4...20 mA), 1 x voltage input (0...10 V)</td>
</tr>
<tr>
<td>Interface</td>
<td>1 x RS 485 (Mod-bus protocol)</td>
</tr>
<tr>
<td>Switching capacity, relay 1</td>
<td>16 A close contact (heating)</td>
</tr>
<tr>
<td>Switching capacity, relay 2</td>
<td>8 A, changeover contact (alarm)</td>
</tr>
<tr>
<td>Sensor connection</td>
<td>2 x Pt100/2 or 3-wire or 2 x thermocouple type K, optional configuration</td>
</tr>
<tr>
<td>Temperature range</td>
<td>Pt100 input -60...400 °C, thermocouple -50...999 °C</td>
</tr>
<tr>
<td>Control range</td>
<td>Pt100 input -50...390 °C, thermocouple -50...950 °C</td>
</tr>
<tr>
<td>Control mode</td>
<td>2-level controller</td>
</tr>
<tr>
<td>Hysteresis</td>
<td>+/- 0.5 K, +/- 0.5 °C with Pt100, +/- 2 K, +/- 0.5 °C with thermocouple Type K</td>
</tr>
<tr>
<td>Operating temperature</td>
<td>-25 up to +55 °C</td>
</tr>
<tr>
<td>Storage temperature</td>
<td>-25 up to +60 °C</td>
</tr>
<tr>
<td>Temperature indicator</td>
<td>3 digits</td>
</tr>
<tr>
<td>Display</td>
<td>LED, red</td>
</tr>
<tr>
<td>IP rating</td>
<td>IP 54 front</td>
</tr>
<tr>
<td>Mounting</td>
<td>Frontpanel mounting 70 x 30 cm, installation depth 78 mm, fixing through brackets</td>
</tr>
<tr>
<td>Front dimensions</td>
<td>75 x 35 mm</td>
</tr>
</tbody>
</table>

**Sensors and display:** It is possible to use different types of sensors, either Pt100/2-wire, Pt100/3-wire or thermocouples type K. Optional display of °C or °F values. In case of use of a Pt100/2-wire unit the actual temperature value can be corrected. Range +/- 10 K or +/-18 °F, respectively. In case of use of a Pt100/3-wire unit the temperature is automatically corrected. Also suitable for use with ELTF-PTEx 1 and 2 sensor.

**Relay configuration:** relay 1: regulator, relay 2: alarm

**Temperature alarm:** If the actual value deviates from the preset limit values, an alarm is given and transmitted via alarm relay K2.

### Wiring Diagram

![Wiring Diagram](image)

### Type | Art. No.
--- | ---
ELTC-42 | 0620042

### Purchased parts package

<table>
<thead>
<tr>
<th>Component</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 controller</td>
<td>1</td>
</tr>
<tr>
<td>1 sealing</td>
<td>1</td>
</tr>
<tr>
<td>2 mounting-latches</td>
<td>1</td>
</tr>
<tr>
<td>2 mating plugs 5mm-spacing, coded</td>
<td>5</td>
</tr>
<tr>
<td>5 mating plugs 3.5mm-spacing, coded</td>
<td>5</td>
</tr>
</tbody>
</table>
This power regulator with timer, for the energy-saving usage of the ELRS-W heating tape, enables reliable Legionella protection. High user friendliness and selectable preset parameters ensure quick and easy installation.

Using the Water Comfort System with the etherm ELSR-W heating tape and accessories a potable water piping system can be operated without a circulation system. Associated pump, valves and fitting are therefore not necessary any more. The heating tape is used for temperature maintenance. With electrical heat tracing warm water is provided all the way to the water outlet. This saves water because the warm water is readily available when opening the faucet. This system requires less room because the heating tape is placed directly on the warm water pipe. So it is less expensive to install and requires no maintenance. With electrical heat tracing you can save up to 65% of your energy costs compared to a circulation system.*

The wide range of operating voltage inputs and the additional possibility to operate at 24 VDC make the ELTC-W outstanding. A further advantage is given by the additional heating circuit for frost protection.

* Exemplary system: 1/2” piping, heated length 10m, 15 mm thermal insulation, power consumption of pump 75 W, temperature maintenance 45°C, ambient temperature 15°C.
Technical Information

Type ELTC-W

**Data**

- Operating voltage range
  - Input A: 100 .. 253 VAC, 50 Hz
  - Input B: 24 VDC, +/- 5 %
- Power consumption, max.: <= 6.5 VA @ 253 VAC
- Power consumption, stand-by: <= 3.5 VA @ 230 VAC

**Heating tape**

- Nominal current: 20 A
- Current in softstart: Max. 50 A

**Temperature**

- Temperature inputs: 2 x NTC sensor
- Measuring range: – 20 .. 60 °C
- Interface: RS485

**Power consumption, max.**

- <= 6,5 VA @ 253 VAC

**Power consumption, stand-by**

- <= 3.5 VA @ 230 VAC

**Operating temperature range**

- – 10 .. 40 °C

**Storage temperature range**

- – 20 .. 65 °C

**Admissible humidity**

- Max. 80 % (non-condensing)

**IP rating**

- IP 20

**Enclosure (l x w x h)**

- 153 x 93 x 59 mm

**Assembly type**

- 35 mm, standard rail

---

**Frost Protection Output**

- Nominal current: 16 A
- Operating temperature range: – 10 .. 40 °C
- Storage temperature range: – 20 .. 65 °C
- Admissible humidity: Max. 80 % (non-condensing)
- IP rating: IP 20
- Enclosure (l x w x h): 153 x 93 x 59 mm
- Assembly type: 35 mm, standard rail

---

**Wiring diagram:**

- Separate 24 VDC supply
- Separate feeders for controller device and heating circuit
- Heater and temperature controller connected on same feeding circuit

**Type**

<table>
<thead>
<tr>
<th>Type</th>
<th>Designation</th>
<th>Art. No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>ELTC-W</td>
<td>Water-Comfort-System</td>
<td>0630000</td>
</tr>
</tbody>
</table>
Electronic

Ice and Snow Detector

For roof and gutter heating

The ice and snow detector protects guttering and roof surfaces against winter damage caused by heavy snow loads and ice formation. Formation of ice is not possible because water can drain off.

The use of an ISD-1 controller is recommended for economic reasons. An energy-saving method of operation is possible as a result of detecting both moisture and temperature, the heating is only switched if the ambient temperature is slightly above the frost limit and moist air is present. The micro-processor controlled ISD-1 features an illuminated LCD-display to set and view its values for temperature, moisture and expired heating period.

Advantages:
- Energy-saving
- Safe and economic use
- Simple operation

Applications:
- Frost protection for guttering and downpipes
- Prevention of frost damages on structural elements and buildings as well as snow loads on roofs

Type ISD-1
Technical Information

**Type ISD-1 / ISD-1.1**

**Data**
- **Power supply**: 230 V AC 50/60 Hz
- **Power consumption**: 3 VA (max.)
- **Ambient temperature**: -10 up to +50 °C
- **Storage temperature**: -40 °C up to +80 °C
- **Output 1**: Closer relay, 250 VAC/30 VDC, 8A cos φ =1
- **Output 2**: Closer relay, 250 VAC/30 VDC, 8A cos φ =1
- **Output probe heating**: Electronic closer 250 VAC/30 VDC, 8A cos φ =1
- **Digital display**: Illuminated, 2-lines, 16-digits
- **Probe**: 4 probe entries (parallel)
- **Temperature setting range**: 0 up to 9°C
- **Accuracy**: +/- 1K
- **Humidity setting range**: OFF, 0...9
- **Adjustable post-heating time**: OFF 10...240 minutes
- **Language setting**: German, English
- **Connections**: Conductor cross section 0.5...2.5 mm²
- **Type of protection**: II
- **Assembly (ISD 1)**: 35 mm, standard rail size ratio 6TE
- **Dimensions**: 105 x 86 x 57 mm
- **Weight**: Approx. 400 g

**Probe**
- **to measure temperature and humidity**
  - Connecting cable: 4 x 0.34 mm², L: 5.0 m
  - Power supply: 6 - 12 VDC (max.)
  - Power consumption: 0.2 VA (max.)
  - Ambient temperature: -40 up to +85 °C
  - Storage temperature: -40 up to +85 °C
  - Accuracy: +/- 1K
  - Weight: Approx. 20 g
  - Dimensions: Ø 12 mm, L: 70 mm
  - Type of protection: II
  - IP rating: IP 68
  - Assembly: Installation inside gutters

**Type** | **Designation** | **Art. No.**
--- | --- | ---
ISD-1 | Ice and snow detector for roof and gutter heaters, standard rail installation | 0620623
ISD 1.1 | Ice and snow detector for roof and gutter heaters, wall-mounted | 0620624
ISD-STH | Probe for temperature and humidity measurement | TBC0001

**Wiring diagram**

Electronic micro-processor controller, with illuminated LCD text display to set and view its values for temperature, moisture and expired heating period. Potential-free relay outputs 6A, 230 V AC/DC for heating (close) and controller fault for power failure and sensor break (open). For installation in control panel with 35 mm standard rail, normal cut-out 45x108 mm.
Electronic Ice and Snow Detector

For open space heaters

The ice and snow detector for open space heaters is used to keep parking garage entrances and exits, stairs and other open space applications free of ice. The combination of a temperature probe and a moisture probe makes sure that heating only starts when it is required. So a waste of energy by unnecessary heating can be avoided.

The micro-processor controlled ISD-2 features an illuminated LCD-display to set and view its values for temperature, moisture and expired heating period.

Advantages:
- Energy-saving
- Simple operation
- Safe and economic use
- Short response time

Applications:
- Open spaces (footpaths, driveways, exits, etc.)
- Parking garage entrances and exits
- Garages
- Stairs
- Bridges
- Loading ramps
- Helicopter landing sites

Type ISD-2
Electronic micro-processor controller, with illuminated LCD text display to set and view its values for temperature, moisture and expired heating period. Potential-free relay outputs 6A, 230 V AC/DC for heating (close) and controller fault for power failure and sensor break (open). For installation in control panel with 35 mm standard rail, normal cut-out 45x108 mm.
Heating Circuit
Monitoring Device

Heating circuit monitoring device ELHC/ is used to monitor self-regulating heating cables. Due to the capacitive load of the terminal equipment there is a phase displacement between the heating current and the supply voltage which is measured by the monitoring unit. The operating status is indicated by a potential-free change-over contact. In addition, the failure of the heating circuit voltage and supply voltage is detected. In case of a disconnection of the heating cable the phase displacement disappears, releasing a fault message via the potential-free change-over contact. Simultaneously, the fault is indicated by a red LED (if the operating voltage is available).

ELHC/ 4 is used to monitor resistance heating lines. It monitors the resistance of a single and double phase heating circuit, respectively, with regard to disconnection in the switched-on mode. Moreover, a failure of the heating circuit and control voltages is detected. A potential-free change-over contact indicates the operating status.

Advantages:
- Economic
- Direct connection to heating cable

Applications:
- Industrial applications
- Mechanical, electrical and plumbing (MEP)

Type ELHC/2, ELHC/4
**Technical Information**

### Type ELHC/2, ELHC/4

#### Data Type ELHC/2

- **Operating voltage**: 230 V/50 Hz
- **Heating current**: Min. 0.15 A, max. 16 A
- **Output**: 1 change-over contact
- **Contact switching capacity**: 250 VAC/2 A
- **Enclosure**: For standard rail installation (ELHC 2.1); wall housing made of plastic material, 130 x 130 x 75 mm (ELHC 2.2)
- **Dimensions**: 45 x 75 x 120 mm (w x h x d)
- **IP rating**: IP 50
- **Weight**: 250 g
- **Ambient temp., admissible**: 0 up to +50 °C

#### Data Type ELHC/4

- **Operating voltage**: 230 V/50 Hz
- **Heating circuit voltage**: 170-500 V AC
- **Heating current**: Min. 0.15 A, max. 16 A with shunt max. 25 A
- **Output**: 1 change-over contact
- **Contact switching capacity**: 250 VAC/6 A
- **Enclosure**: For standard rail installation
- **Dimensions**: 45 x 75 x 120 mm (w x h x d)
- **IP rating**: IP 30
- **Weight**: 500 g
- **Ambient temp., admissible**: -20 up to +60 °C

The heating circuit monitor ELHC/2 for monitoring self-regulating heating cables features a monitoring relay ELHC/2.1 and the terminal unit ELHC/2.2. Since the unit is linked to the supply voltage of the heating cable, the heating cable can only be monitored during operation. The heating being switched off, the contact is in the ‘fault’ status.

The heating circuit monitor ELHC/4 is used to monitor resistance heating cables.

---

**Wiring diagram ELHC...**

**ELHC/2**

```
NO NC COM L N
```

**ELHC/4**

```
L1 L2 power relay
1 changer
L N N L
```

---

The heating circuit monitor ELHC/2 for monitoring self-regulating heating cables features a monitoring relay ELHC/2.1 and the terminal unit ELHC/2.2. Since the unit is linked to the supply voltage of the heating cable, the heating cable can only be monitored during operation. The heating being switched off, the contact is in the ‘fault’ status.

The heating circuit monitor ELHC/4 is used to monitor resistance heating cables.
Control Cabinets

Custom Designs

Based on our long-term experience, combined with developed standard components and modules, eltherrm designs, assembles and delivers complete bespoke control cabinets for every range of electrical heat tracing. Existing customer systems are always considered to avoid such issues as holding additional spare parts, as well as special customer requirements for accuracy, safety and usability.

Advantages:
- Tailored to customised requirements
- User-friendly
- From simple applications to complex switchboard plants

Applications:
- Antenna heating systems
- General industrial applications
- Mechanical, electrical and plumbing (MEP)
Custom solutions: eltherm control cabinets

eltherm designs, manufactures and delivers customised and user-friendly control cabinets, from simple applications to complex switchboard plant for heat tracing projects. Examples included:

- Heat tracing systems for rail heating
- Heating of a white sugar silo
- BPA-Plant heating
- Antenna heating

Also available: control cabinets with pressure-capsulated enclosure for Ex-areas.
Heating Circuit Distributors for ELSR Heating Cables

Control cabinets ELHKV are designed for the supply and control of heat tracing systems with self-regulating heating cables. For each single heating circuit breakers, leakage protection switches, contactors, control lamps, main switches, fault indicating relays for central control stations are fully installed and wired.

The standard designs ELHKV-ST… allows a switching of three heating groups via an external thermostat. In case of ELHKV-E1 each heating circuit is separately supplied and switched via an external thermostat.

Advantages:
- Integrated fuse

Applications:
- Industrial applications
- Mechanical, electrical and plumbing (MEP)
## Technical details

### Data

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wall enclosure</td>
<td>IP rating IP 54 / IP 65</td>
</tr>
<tr>
<td>Power supply</td>
<td>400/230 VAC</td>
</tr>
<tr>
<td></td>
<td>3-phase current with neutral and earth</td>
</tr>
</tbody>
</table>

### Type ELHKV

<table>
<thead>
<tr>
<th>Type</th>
<th>Designation</th>
<th>Dimensions (w x h x d)</th>
<th>Art. No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>ELHKV-E1-1</td>
<td>complete control cabinet for 1 heating circuit</td>
<td>295 x 458 x 129</td>
<td>0640001</td>
</tr>
<tr>
<td>ELHKV-E1-2</td>
<td>complete control cabinet for 2 heating circuits</td>
<td>295 x 583 x 129</td>
<td>0640002</td>
</tr>
<tr>
<td>ELHKV-ST-3</td>
<td>complete control cabinet for a single group of 3</td>
<td>295 x 458 x 129</td>
<td>0640003</td>
</tr>
<tr>
<td>ELHKV-ST-6</td>
<td>complete control cabinet for two groups of 3</td>
<td>295 x 583 x 129</td>
<td>0640006</td>
</tr>
<tr>
<td>ELHKV-ST-9</td>
<td>complete control cabinet for three groups of 3</td>
<td>295 x 708 x 129</td>
<td>0640009</td>
</tr>
<tr>
<td>ELHKV-ST-12</td>
<td>complete control cabinet for four groups of 3</td>
<td>590 x 583 x 129</td>
<td>0640012</td>
</tr>
</tbody>
</table>

* also available in sheet steel cabinets
Accurate temperature control is vital for complex production plants and processes. To meet the high demands of industry, we developed the Modutronic product range which guarantees the constant process temperatures required in many production processes.

Modutronic is a modular system designed for electronic temperature control. It has been deployed successfully in many areas of industry and is suitable for use up to 800 °C. Applications range from frost protection for impulse, measuring and analysis lines as well as to temperature maintenance in tanks and vessels. This is essential for many transport and production processes.

As partner of the industry we have committed ourselves to the specific problems of heating and temperature control. From the initial design and manufacturing to delivery and installation – eltherm is your partner. Our solutions are economic and efficient. Our program delivers high quality controllers, fast commissioning, rugged enclosure material and an optimized cost-performance ratio.

Modutronic provides one or two load relays and two signal relays for the alarm- and limit-value indication. The temperature set point can be changed by a potentiometer (external analogue signal) or an integrated serial interface (electronic display and control unit ELT-ANZ). Coloured LED’s indicate the operating status. Add on capabilities are possible at any time if required. Thus Modutronic can be adapted to suit all measurement and control demands.

Modutronic is so flexible that, thanks to the modular design, versatile variants of application-specific equipment can be created easily & economically. The high-precision control input with integrated PID control algorithm together with eltherm’s heat-tracing systems guarantee exact temperature maintenance. The serial interface allows customer-specific configuration of the controller.

The Modutronic modular system includes the electronic display and control unit ELT-ANZ as well as the series controllers ELT-GP1-3. Available for wall mounting (ELT-GP1+3) and standard rail installation (ELT-GP2).
### Ordering Key

#### Ordering key for Temperature Controller Modutronic

<table>
<thead>
<tr>
<th>Order n°</th>
<th>Customer</th>
<th>Serial n°</th>
<th>Software status</th>
</tr>
</thead>
</table>

**for wall mounting:**

- **ELT-GP1.1** (1xM20; 2xM16; 1xM25; 1xM12)
- **ELT-GP1.2** (3xM20; 1xM16; 1xM12)

**for standard rail installation:**

- **ELT-GP2**

Type ELT-GP1-1 is mainly intended for heating cables with cold tails on both sides.

**Operating range:**

1. 0–100°C
2. 0–200°C
3. 0–400°C
4. 0–800°C

**Heating exit:**

1. with 1 load relay
2. with 2 load relay

**Signal output options:**

- 0: without signal relay
- 1: with relay K3, „general fault“
- 2: with relay K4 „excess temperature“
- 3: with relay K3 and K4

**Sensor type:**

1. sensor Pt100 2/4-wire
2. sensor Pt100 3-wire
3. thermocouple Type J
4. thermocouple Type K

**Controller operation:**

1. 2-limit
2. 2-limit-PID
3. PID with PWM
4. PID with continuity exit
5. limiter

**Option 1 digital indication:**

- 0: without indication
- 1: with ELT-ONA

**Option 2 analogue output:**

- 0: without analogue output
- 1: with ELT-OAA 0…20 mA / 0…10 V
- 2: with ELT-OAA 4…20 mA / 2…10 V

**Value setting:**

- 0: internal potentiometer
- 1: external value setting 0…10V
- 2: bus interface (ELT-ANZ)

1) Connection of a SSR to the terminals 15 + 16
2) In combination with option ELT-OAA
Electronic Display and Control Unit

The electronic display and control unit ELT-ANZ of the Modutronic product range is used for the remote control, monitoring and operation of all the individual GP-type devices in a control system.

Advantages:
- Individual use thanks to modular design
- Easy to operate up to 24 connected controllers
- Can be connected to serial interface via superposed control station

Applications:
- Refineries
- Chemical & petrochemical industries
- Food processing industry
- Pharmaceutical industry
- Plastics industry
- Wastewater treatment plants
Technical Information

<table>
<thead>
<tr>
<th>Type</th>
<th>Designation</th>
<th>Display Language</th>
<th>Art. No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>ELT-ANZ</td>
<td>For ELT-GP controller</td>
<td>German</td>
<td>0611010</td>
</tr>
<tr>
<td>ELT-ANZ</td>
<td>For ELT-GP controller</td>
<td>English</td>
<td>0611042</td>
</tr>
</tbody>
</table>
Electronic

Temperature Controller

The modular Modutronic system performs up to temperatures of 800 °C. Applications range from frost protection for impulse, measuring and analysis lines to temperature maintenance in tanks and vessels. This is essential for transport and production processes.

Advantages:
- Individual use thanks to modular design
- Accurate temperature maintenance
- Customized configuration possible

Applications:
- Refineries
- Chemical & petrochemical industries
- Food processing industry
- Pharmaceutical industry
- Plastics industry
- Wastewater treatment plants

Type ELT-GP1
## Technical Information

### Data

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nominal voltage</td>
<td>230 V, 50 Hz</td>
</tr>
<tr>
<td>Power consumption</td>
<td>Max. 5 VA</td>
</tr>
<tr>
<td>Controller temp. range</td>
<td>0 up to 100 °C, 0 up to 200 °C, 0 up to 400 °C, 0 up to 800 °C</td>
</tr>
<tr>
<td>Switching capacity</td>
<td>16 A</td>
</tr>
<tr>
<td>Accuracy with Pt100</td>
<td>+/- (0.5°K + 0.5 % v. M.)</td>
</tr>
<tr>
<td>With Thermocouple Type K</td>
<td>+/- (1.0°K + 1.0 % v. M.)</td>
</tr>
<tr>
<td>With Thermocouple Type J</td>
<td>+/- (1.5°K + 1.5 % v. M.)</td>
</tr>
<tr>
<td>Resolution (internal)</td>
<td>0.1 °C (Pt100), 0.4 °C (Thermocouple)</td>
</tr>
<tr>
<td>Measurement current (Pt100)</td>
<td>Approx. 0.75 mA</td>
</tr>
<tr>
<td>Enclosure</td>
<td>Polycarbonate enclosure with transparent cover and cable gland</td>
</tr>
<tr>
<td>IP rating</td>
<td>IP 65</td>
</tr>
<tr>
<td>Ambient conditions</td>
<td>0 up to 40 °C max. 90 % rel. humidity (non-condensing)</td>
</tr>
<tr>
<td>Dimensions</td>
<td>180 x 130 x 75 mm (w x h x d)</td>
</tr>
</tbody>
</table>

### Optional Extensions

#### for ELT-GP1, -GP2 and -GP3

<table>
<thead>
<tr>
<th>Type</th>
<th>Designation</th>
<th>Art. No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>ELT-OAA</td>
<td>Analogue output for ELT-GP-1/2/3</td>
<td>0611009</td>
</tr>
<tr>
<td>ELT-OAA</td>
<td>0-20 mA / 0-10 V</td>
<td>0611001</td>
</tr>
<tr>
<td>ELT-OMR-1</td>
<td>Signal relay for ELT-GP-1, 2 and 3</td>
<td>0611004</td>
</tr>
<tr>
<td>ELT-OMR-1</td>
<td>2 x signal relay K3 and K4</td>
<td>0611002</td>
</tr>
<tr>
<td>ELT-OLR 1</td>
<td>Second load relay (230 V/max. 16A) for ELT-GP1+3</td>
<td></td>
</tr>
</tbody>
</table>

**Special designs available – just ask us!**
Electronic Temperature Controller

The modular Modutronic system performs up to temperatures of 800 °C. Applications range from frost protection for impulse, measuring and analysis lines as well as to temperature maintenance in tanks and vessels. This is essential for transport and production processes.

Advantages:
- Individual use thanks to modular design
- Accurate temperature maintenance
- Customized configuration possible

Applications:
- Refineries
- Chemical & petrochemical industries
- Food processing industry
- Pharmaceutical industry
- Plastics industry
- Wastewater treatment plants

Type ELT-GP2
**Technical Information**

**Type ELT-GP2**

**Nominal voltage** 230 V, 50 Hz

**Power consumption** Max. 5 VA

**Controller temp. range**
- 0 up to 100 °C
- 0 up to 200 °C
- 0 up to 400 °C
- 0 up to 800 °C

**Switching capacity** 12 A

**Accuracy with Pt100** +/- (0.5°K+0.5 % v. M.)

**With Thermocouple**
- Type K: +/- (1.0°K+1.0 % v. M.)
- Type J: +/- (1.5°K+1.5 % v. M.)

**Resolution (internal)**
- Pt100: 0.1 °C
- Thermocouple: 0.4 °C

**Measurement current**
- Pt100: Approx. 0.75 mA

**Enclosure** Polycarbonate enclosure with transparent cover for standard rail installation (DIN-rail, TS 35)

**IP rating** IP 20

**Ambient conditions**
- 0 up to 40 °C max. 90 % rel. humidity (non-condensing)

**Dimensions** 45 x 119 x 127 mm (w x h x d)

**Optional Extensions**

**for ELT-GP1, -GP2 and -GP3**

- **ELT-OAA** Analogue output for ELT-GP-1/2/3
  - 0–20 mA / 0–10 V
  - 4–20 mA / 2–10 V

- **ELT-OMR-1** Signal relay for ELT-GP-1,2 and 3

- **ELT-OLR 2** Second load relay (230 V/max. 16A) for ELT-GP2

**Type Designation**
- **ELT-GP2** LED-Display, 230 V, temperature controller Modutronic, standard rail installation
- **ELT-GP2** Without LED-Display, 230 V, temperature controller Modutronic, standard rail installation

**Art. No.**
- 0611032
- 0611035

**Special designs available – just ask us!**
Electronic Temperature Controller and Limiter Unit

The modular Modutronic system performs up to temperatures of 800 °C. Applications range from frost protection for impulse, measuring and analysis lines as well as to temperature maintenance in tanks and vessels. This is essential for transport and production processes.

**Advantages:**
- Individual use thanks to modular design
- Accurate temperature maintenance
- Customized configuration possible

**Applications:**
- Refineries
- Chemical & petrochemical industries
- Food processing industry
- Pharmaceutical industry
- Plastics industry
- Wastewater treatment plants

Type **ELT-GP3**
**Technical Information**

**Data**
- Nominal voltage: 230 V, 50 Hz
- Power consumption: Max. 5 VA
- Controller temp. range: 0 up to 400 °C
- Switching capacity: 16 A
- Accuracy with Pt100: +/- (0.5°K + 0.5 % v. M.)
- With Thermocouple Type K: +/- (1.0°K + 1.0 % v. M.)
- With Thermocouple Type J: +/- (1.5°K + 1.5 % v. M.)
- Resolution (internal): 0.1 °C (Pt100), 0.4 °C (Thermocouple)
- Measurement current (Pt100): Approx. 0.75 mA
- Enclosure: Polycarbonate enclosure with transparent cover and cable gland
- IP rating: IP 65
- Ambient conditions: 0 up to 40 °C
- Dimensions: 213 x 185 x 118 mm (w x h x d)
- Connections: 30 cage pull-terminal screws, 2.5 mm² each
- Cable entrance: 2 x M20, 3 x M16, 2 x M12; loose items

**Optional Extensions**

**for ELT-GP1, -GP2 and -GP3**
- ELT-OAA: Analogue output for ELT-GP1/2/3
  - 0–20 mA / 0–10 V
  - 4–20 mA / 2–10 V
- ELT-OMR-1: Signal relay for ELT-GP1,2 and 3
- ELT-OLR 1: Second load relay (230 V/max. 16A) for ELT-GP1+3

**Type ELT-GP3**

<table>
<thead>
<tr>
<th>Type</th>
<th>Designation</th>
<th>Art. No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>ELT-GP3</td>
<td>LED-Display, 230 V, controller/limiter combination Modutronic wall-mounted</td>
<td>0611041</td>
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<tbody>
<tr>
<td>ELT-OAA</td>
<td>4–20 mA / 2–10 V</td>
<td>0611009</td>
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<tr>
<td>ELT-OAA</td>
<td>0–20 mA / 0–10 V</td>
<td>0611001</td>
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<tr>
<td>ELT-OMR-1</td>
<td>2 x signal relay K3 and K4</td>
<td>0611004</td>
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<tr>
<td>ELT-OLR 1</td>
<td>Second Load relay</td>
<td>0611002</td>
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Special designs available – just ask us!