**di eco**

**Digital Indicator**

76mm x 36mm format

**Brief description**

The JUMO di eco compact digital indicator is used for the simple visualization of temperatures or standard signals. The measurement input permits the connection of resistance thermometers or thermocouples, or standard current or voltage signals. The measured value is shown on a 3-digit backlit display. Limit infringements are monitored by means of a 10A relay (changeover contact) and indicated by an LED.

The 3 keys on the front panel can be used to configure, among others, the switching hysteresis and alarm suppression.

The electrical connection is made via screw terminals on the back of the instrument.

A setup program and a PC interface are available as accessories, for simple configuration and parameterization from a PC.

**Block structure**

- **Setup interface**: for configuration from a PC
- **Output**: 1 floating changeover contact 10 A 250 V for limit monitoring
- **LC display**: 3-digit display with background lighting for the visualization of input signals and parameters
- **LED indication**: 1 LED for the switching status of relay K1

**Displays and controls**

- LC display: 3-digit segment display, 13 mm high, and symbols for temperature unit, h, min and s, with red background lighting
- Status indication: LED K1 flashes during alarm suppression, LED K1 lights up when limits are infringed, or on a probe error
- Keys: 
  - ▼: programming
  - ▲: increase parameter value
  - ▼: decrease parameter value
  - ▲+▼: version display
  - P: exit, jump to basic status (temperature indication)

**Setup interface**: The instrument is linked to the PC via a PC interface with TTL/RS232 converter and adapter (3-pin).

**Key features**

- Limit monitoring
- Available for resistance thermometer, thermocouple, standard current or voltage signals, according to choice
- 10A relay (changeover contact)
- Adjustable switching hysteresis
- Programmable switch-on delay after power-on
- Configurable alarm suppression
- Symbols in display for temperature unit, minutes and seconds
- Parameter level protected by code
- Setup program for configuration and archiving via PC
- Customized linearization via tabular function in the setup program
- UL approval
## Technical data

<table>
<thead>
<tr>
<th>Measurement input</th>
<th>Designation</th>
<th>Measuring range</th>
<th>Meas. accuracy¹/ ambient temperature error</th>
<th>Recognition of ...</th>
<th>Probe short-circuit</th>
<th>Probe break</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resistance</td>
<td>Pt100 EN 60 751</td>
<td>-200 to +600°C</td>
<td>0.1%/≤100ppm/°C</td>
<td>is recognized</td>
<td>is recognized</td>
<td></td>
</tr>
<tr>
<td>thermometer</td>
<td>Pt1000 EN 60 751</td>
<td>-200 to +600°C</td>
<td>0.1%/≤100ppm/°C</td>
<td>is recognized</td>
<td>is recognized</td>
<td></td>
</tr>
<tr>
<td></td>
<td>KTY2X-6 (PTC)</td>
<td>-50 to +150°C</td>
<td>1%/≤100ppm/°C</td>
<td>is recognized</td>
<td>is recognized</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Resistance 0 — 3000 Ω</td>
<td>customer table ³</td>
<td>0.1%/≤100ppm/°C³ = 0Ω</td>
<td>is recognized</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1.) The accuracies refer to the measuring range span.
2.) valid from -50°C
3.) A valid customer table must be entered via the setup program and switched over to ‘Ω’ in the instrument.

### Additional data

- **Sampling time**: 250 msec
- **Input filter**: 1st order digital filter; filter constant \( gF \) adjustable from 0.1 — 99.9 sec
- **Measurement offset**: adjustable from -99.9 to +99.9 via the parameter \( gF \)
- **Special features**: display of temperature unit: °C, °F (Fahrenheit) or switched off
- **Customer table**: The setup program acquires a maximum of 20 value pairs and uses them for the linear interpolation of 20 new calibration points.

### Ambient conditions

- **Ambient temperature range**: 0 to +55°C
- **Ambient temperature range with side-by-side mounting**: 0 to +40°C
- **Storage temperature range**: -40 to +70°C
- **Temperature drift**: ≤100ppm/°C of measuring range
- **Climatic conditions**: ≤75% rel. humidity, no condensation
- **Cleaning and care of front panel**: The front panel can be cleaned with all the usual cleaning and rinsing agents. Do not use solvents such as methylated spirit, white spirit, P1 or xylene!

### Output

- **Relay**: 150,000 operations at 10A 250V AC 50Hz resistive load

### Supply

- **Supply voltage**: 230V AC +10/-15%, 48 — 63Hz or 115V AC +10/-15%, 48 — 63Hz (isolated from measurement input)
- **Power consumption**: <3VA
Housing

<table>
<thead>
<tr>
<th>Material</th>
<th>polycarbonate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mounting</td>
<td>in panel cut-out with bezel seal</td>
</tr>
<tr>
<td>Operating position</td>
<td>unrestricted</td>
</tr>
<tr>
<td>Weight</td>
<td>approx. 160g</td>
</tr>
<tr>
<td>Protection</td>
<td>front IP65,</td>
</tr>
<tr>
<td></td>
<td>rear IP20</td>
</tr>
<tr>
<td>Flammability class</td>
<td>UL 94 V0</td>
</tr>
</tbody>
</table>

Electrical data

<table>
<thead>
<tr>
<th>Data backup</th>
<th>EEPROM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Connection</td>
<td>via screw terminals for wire cross-sections up to 4 mm² solid wire and 2.5 mm² stranded wire</td>
</tr>
<tr>
<td>EMC</td>
<td>EN 61 326</td>
</tr>
<tr>
<td></td>
<td>Class B</td>
</tr>
<tr>
<td>Operating conditions</td>
<td>The instrument is designed as a panel-mounting unit.</td>
</tr>
<tr>
<td>Electrical safety</td>
<td>to EN 61 010, Part 1 overvoltage category III, pollution degree 2</td>
</tr>
</tbody>
</table>

Connection diagram

Type 701540/XX1-31: Measurement input and supply voltage are not isolated from each other!

 Relay K1

10A 250V AC resistive load

Supply voltage as per nameplate

Thermocouples: Fe-Con J, L and NiCr-Ni K

Standard signals: current 0(4) – 20 mA voltage 0 – 10 V

Dimensions

<table>
<thead>
<tr>
<th>Bezel size</th>
<th>76mm x 36 mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Panel cut-out</td>
<td>+2.5 69° mm x 28.5 °mm</td>
</tr>
<tr>
<td>Side-by-side mounting up to 40°C ambient temperature</td>
<td>Spacing of units: 10mm horizontal, 15mm vertical</td>
</tr>
</tbody>
</table>

07.05/00440445
Order details

(1) Basic version
701540/
JUMO di eco
(2) Basic type extension
Version

8 factory-set, configurable within the measurement input group
9 configured to customer specifications

Measurement input group¹
1 Pt100 in 2-wire circuit
Pt1000 in 2-wire circuit
KTY2X-6
2 Fe-Con J
Fe-Con L
NiCr-Ni K
3 0 — 20 mA
4 — 20 mA
4 0 — 10 V

1 1 relay (changeover contact 10A 250V)

(3) Supply
02 230V AC +10/-15% 48 — 63Hz
05 115V AC +10/-15% 48 — 63Hz
31 12 — 24V DC +15/-15% /
24V AC +15/-15% 48 — 63Hz

(4) Approvals
000 none
061 Underwriters Laboratories Inc. (UL)

Order code

<table>
<thead>
<tr>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
<th>(4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>701540</td>
<td>/</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Order example

factory-set

1.) It is not possible to switch from one meas. input group to another

Suitable transducers can be found in these data sheets:
- 90.2005 Push-in resistance thermometers
- 90.2105 Screw-in resistance thermometers
- 90.1002 and subsequent ones for screw-in thermocouples
- 90.1101 and subsequent ones for push-in thermocouples
- 90.1221 Mineral-insulated thermocouples

Standard accessories
- 1 Operating Manual B 70.1540.0
- 1 mounting frame
- 1 bezel seal

Accessories
Setup program, multilingual
PC interface with TTL / RS232C converter and adapter (pins)