







### Operating overview

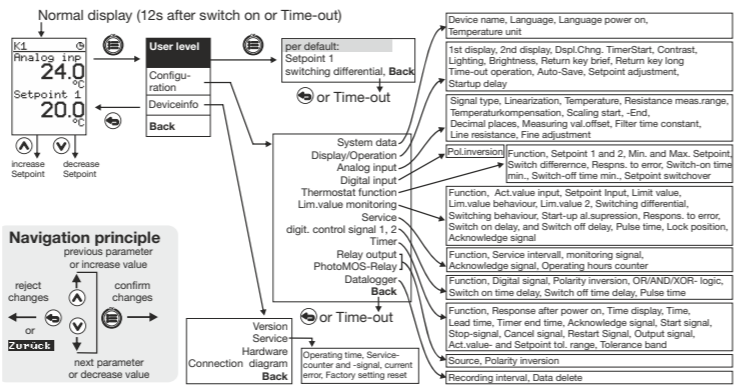
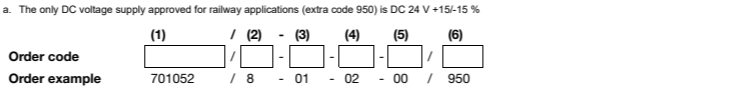


Table with 2 columns: Options and Extra codes. Lists configuration options like 'None', 'Digital output PhotoMOS® relay', and 'Digital input for potential-free contact'.



- 2.1 Scope of delivery: Type 701052, 1 operating manual. 2.2 Service addresses: See back cover. Caution: Any interference with the inside of the device is prohibited!

### 2 Identifying the device version

The front plate can be cleaned with commercial detergents, rinsing, and cleaning agents.

### 4.2 Connection diagram

Connection diagram showing terminal block wiring for conductor types (Rigid, Flexible), AWG (12 to 24), and Stripping length (10 mm). Includes a photo of the terminal block.

### 4 Electrical connection

Legend and Screen section. Legend: LCD display (Black/white with background lighting), Keys (Increase/reduce value, Back, One level down), USB device. Screen: LCD display showing 'K1 Analog inp 23.6', 'Setpoint: 1 0.0', and 'Relay output K1'.

### 5 Starting operation of the device

1 Brief description: The electronic thermostat acquires the temperature via a RTD temperature probe, thermocouple, or current 0(4) to 20 mA. 1.1 Safety information: Table with symbols for Note, Danger, and Caution.

### 2 Identifying the device version

3 Mounting: 3.1 Dimensions: Dimensions diagram showing 22.5, 51, 62, 47, 28.3, 22.5, 4.5, 5.0, 2.45 mm. Includes a photo of the device being mounted on a DIN rail.

4 Electrical connection: Table mapping Screen (4.2.1 Actual value of analog input) to Connection (RTD temperature probe, Thermocouple, Current 0(4) to 20 mA) and Symbol and terminal designation.

5 Starting operation of the device: 5.2 Checking device function: Diagrams for Cooling (switches to ON above 9 °C, OFF under 8 °C) and Heating (switches to OFF above 0 °C, ON under -1 °C). Information: All of the other parameters are outlined in the section on configuration.

### 5 Starting operation of the device

Table with 3 columns: Symbol, Meaning, Explanation. Symbols include Warning, Read, Reference, Footnote, and Action instruction.

2 Identifying the device version: Caution: The voltage supply that is connected must correspond to the voltage specified on the nameplate! The device can be supplied with power via the USB socket for testing purposes.

### 2 Identifying the device version

3.2 Mounting site, DIN-rail mounting: Warning: The device is not suitable for installation in potentially explosive areas. 3.3 Close mounting: Maintain the minimum distance of 20 mm above and below.

### 2 Identifying the device version

4.2.2 Digital input or output (option): Digital input or PhotoMOS® relay K2. 4.2.3 Digital outputs: Relay output K1 (zero-current state). Includes photos of the terminal block and wiring diagrams.

### 4 Electrical connection

5 Starting operation of the device: 5.1 Display and control elements: Apply the voltage supply and you will see: JUMO eTRON T100. Then the actual value and setpoint value is displayed: 23.6, Setpoint: 1 0.0.

### 5 Starting operation of the device

6 Technical data

6.1 Analog input

6.1.1 Measurement input group 1 (RTD temperature probe)

Designation	Standard	Measuring range	Measuring accuracy <sup>a</sup>	Ambient temperature influence	ITS
Pt100, Pt1000 in two/three-wire circuit	IEC 60751:2008	-200 to +600 °C	≤ 0.25 %	≤ 0.1×10 <sup>-3</sup> 1/K	90
KTY 2X-6 in two-wire circuit		-50 to +150 °C	≤ 1 %	≤ 0.1×10 <sup>-3</sup> 1/K	-
Customer table		150 Ω to 3000 Ω	≤ 0.25 %	≤ 0.1×10 <sup>-3</sup> 1/K	-
Measuring current	Approx. 0.5 mA				
Sensor line resistance	≤ 30 Ω per line for two and three-wire circuit				
Lead compensation	Not required for 3-wire circuit. In 2-wire circuits, lead compensation is performed in the software by entering a fixed line resistance.				
Special features	Can also be programmed in "F"				

<sup>a</sup> The accuracy specifications refer to the maximum measuring range. Smaller measuring spans lead to reduced linearization accuracy.

6.1.2 Measurement input group 2 (thermocouple)

Designation	Standard	Measuring range	Measuring accuracy <sup>b</sup>	Ambient temperature influence <sup>c</sup>	ITS
Fe-CuNi "L"	DIN 43710:1985-12	-200 to +900 °C	±0.4 %	≤ 0.1×10 <sup>-3</sup> 1/K	68
Fe-CuNi "J"	DIN EN 60584-1:2014	-210 to +1200 °C	±0.4 % from -100 °C	≤ 0.1×10 <sup>-3</sup> 1/K	90
NiCr-Ni "K"	DIN EN 60584-1:2014	-270 to +1300 °C	±0.4 % from -80 °C	≤ 0.1×10 <sup>-3</sup> 1/K	90
Customer table		-15 to 75 mV	±0.4 %	≤ 0.1×10 <sup>-3</sup> 1/K	-

Measuring range start/end	Freely programmable within the limits in increments of 0.1 K
Cold junction	Internal measurement via Pt1000 or external constant 0 °C
Cold junction accuracy (internal)	±1 K
Special features	Can also be programmed in "F"

<sup>b</sup> The accuracy specifications refer to the maximum measuring range. Smaller measuring spans lead to reduced linearization accuracy.  
<sup>c</sup> The ambient temperature influence is valid if it is in the range of -20 to +55 °C.

6.1.3 Measurement input group 3 (standard signal)

Designation	Measuring range	Measuring accuracy <sup>d</sup>	Ambient temperature influence
Current (voltage drop ≤ 2.5 V), freely scalable	0 to 20 mA 4 to 20 mA	≤ 0.125 %	≤ 0.1×10 <sup>-3</sup> 1/K, deviation of 22 °C
Customer table	0 to 20 mA	≤ 0.125 %	
Special features	Scaling adjustable		

<sup>d</sup> The accuracy specifications refer to the maximum measuring range. Smaller measuring spans lead to reduced linearization accuracy.

6 Technical data

Weight	Approx. 110 g
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6.6 Electrical data

Voltage supply	AC 230 V, +10/-15 %, 48 to 63 Hz or AC 115 V, +10/-15 %, 48 to 63 Hz or DC 12 to 24 V +15/-15 % / AC 24 V +15/-15 %, 48 to 63 Hz (The device may only be connected to SELV or PELV electrical circuits)
Power consumption	With voltage supply 230 V: max. 1.5 W, 2.0 VA With voltage supply 115 V: max. 1.5 W, 2.0 VA With voltage supply DC 12 to 24 V: max. 0.7 W With voltage supply AC 24 V +15/-15 %: max. 0.8 W, 1.8 VA
Inputs and outputs	Conductor cross section Max. 2.5 mm <sup>2</sup> , wire or stranded wire with ferrule
Electrical safety	According to DIN EN 61010-1 Overvoltage category III, pollution degree 2
Sampling rate	250 ms
Input filter	Digital filter, 2nd order; filter time constant can be adjusted from 0 to 100.0 s
Accuracy of timer and operating hours counter	1 %

<sup>f</sup> The only DC voltage supply approved for railway applications (extra code 950) is DC 24 V +15/-15 %

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6.1.4 Measurement input group 4 (NTC railway)

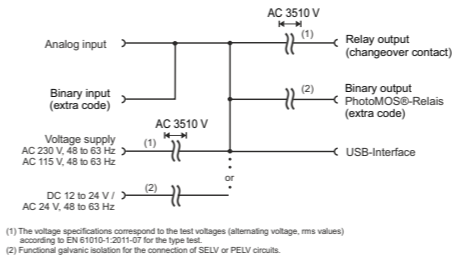
Designation	Measuring range	Measuring accuracy	Ambient temperature influence
NTC resistance (5 kΩ at 25 °C) for railway applications	-55 to +150 °C		Deviation of 22 °C in the following ranges: -55 °C to 100 °C: ≤ 0.1×10 <sup>-3</sup> 1/K  100 °C to 130 °C: ≤ 0.2×10 <sup>-3</sup> 1/K  130 °C to 150 °C: ≤ 0.45×10 <sup>-3</sup> 1/K
Customer table	400 Ω to 40 kΩ	≤ 0.15%	≤ 0.1×10 <sup>-3</sup> 1/K
Connection type	Two-wire circuit		
Measuring current	Approx. 0.1 mA		

6.1.5 Measurement input group 5

Designation	Measuring range	Measuring accuracy <sup>a</sup>	Ambient temperature influence	ITS	
Ni1000	DIN 43760:1987-09	-60 to +250 °C	≤ 0.2 %	≤ 0.1×10 <sup>-3</sup> 1/K, deviation of 22 °C	68

6 Technical data

6.7 Galvanic isolation



(1) The voltage specifications correspond to the test voltages (alternating voltage, rms values) according to EN 61010-1:2011-07 for the type test.  
 (2) Functional galvanic isolation for the connection of SELV or PELV circuits.

6.8 Environmental influences

Operating, storage temperature range	-40 to +55 °C (display to min. -10 °C), -40 to +70 °C
Resistance to climatic conditions	≤ 85% relative humidity, annual average, no condensation
Electromagnetic compatibility	According to DIN EN 61326-1, DIN EN 50121-1/50121-3-2
Interference emission	Class B <sup>g</sup>
Interference immunity	Industrial requirement

<sup>g</sup> The product is suitable for industrial use as well as for households and small businesses.

6 Technical data

Designation	Measuring range	Measuring accuracy <sup>a</sup>	Ambient temperature influence	ITS	
LG-Ni1000	Landis & Gyr TK5000 (Siemens HVAC)	-60 to +250 °C	≤ 0.2 %	≤ 0.1×10 <sup>-3</sup> 1/K, deviation of 22 °C	
Customer table	150 Ω to 3000 Ω	≤ 0.25%			
Sensor line resistance	≤ 30 Ω per line				
Connection type	Two-wire circuit				
Special features	Can also be programmed in "F"				

<sup>a</sup> The accuracy specifications refer to the maximum measuring range. Smaller measuring spans lead to reduced linearization accuracy.

6.2 Measuring circuit monitoring

In the event of a malfunction, the outputs change to defined (configurable) statuses.

Measuring probe	Probe/cable break	Probe/cable short circuit
RTD temperature probe	Is detected	Is detected
KTY 2X-6	Is detected	Is detected
Thermocouple (single)	Is detected	Is not detected
Current 4 to 20 mA 0 to 20 mA	Is detected Is not detected	Is detected Is not detected
NTC railway applications	Is detected	Is detected
Ni1000, LG-Ni1000	Is detected	Is detected

6.9 Approvals/approval marks

Approval mark	Test facility	Certificate/certification number	Inspection basis	Valid for
c UL US	Underwriters Laboratories	Approval submitted	UL 61010-1	All modules

6.10 Data logger

The configuration and the data logger data are saved in the EEPROM. They are retained after a power failure.

Recording rate	Recording duration
1 min	Approx. 1 day, 20 hours
5 min	Approx. 9 days, 8 hours
15 min	Approx. 28 days, 2 hours
30 min	Approx. 1 month, 25 days
60 min	Approx. 3 months, 9 days

6 Technical data

6 China RoHS

Product group: 701052	China EEP Hazardous Substances Information					
Component Name	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr(VI))	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
外壳 (Housing)	○	○	○	○	○	○
过程连接 (Processanschluss)	○	○	○	○	○	○
螺母 (Nuts)	○	○	○	○	○	○
螺钉 (Screw)	○	○	○	○	○	○

本表格按照SJ/T 11364的规定编制。  
 This table is prepared in accordance with the provisions SJ/T 11364.  
 ○ : 表示该有害物质在该部件所有均质材料中的含量均在GB/T 26572规定的限量要求以下。  
 Indicate the hazardous substances in all homogeneous materials of the part is below the limit of the GB/T 26572.  
 \* : 表示该有害物质至少在该部件的某一均质材料中的含量超出GB/T 26572规定的限量要求。  
 Indicate the hazardous substances in at least one homogeneous materials of the part is exceeded the limit of the GB/T 26572.



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