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JUMO di 32 / di 08

**Digital microprocessor indicators
 with 1 measurement input
 and a maximum of 3 signal outputs,
 case for flush-panel mounting to DIN 43 700**



Brief description

The single-channel digital indicators with the bezel sizes 48mm x 24mm and 96mm x 48mm are available for displaying measurements and monitoring limit values in industrial applications.

The configurable analog input permits the direct connection of thermocouples, resistance thermometers, resistance transmitters, potentiometers or transducers with a standard signal. The sampling rate for the measurement input is 4 measurements per second.

The indicators have a clearly legible 4-digit LED display which, depending on the version, is 10mm (JUMO di 32) or 20mm (JUMO di 08) high, and serves to display the measurements, as well as being available for dialogs. Only three buttons are used for configuration. The parameter setting is arranged dynamically, and after two seconds without any operation the value is accepted automatically.

The front protection is to IP66, at the rear IP20. The electrical connection is by plug-in screw terminals. The possible input and output configurations are shown in the following block structure.

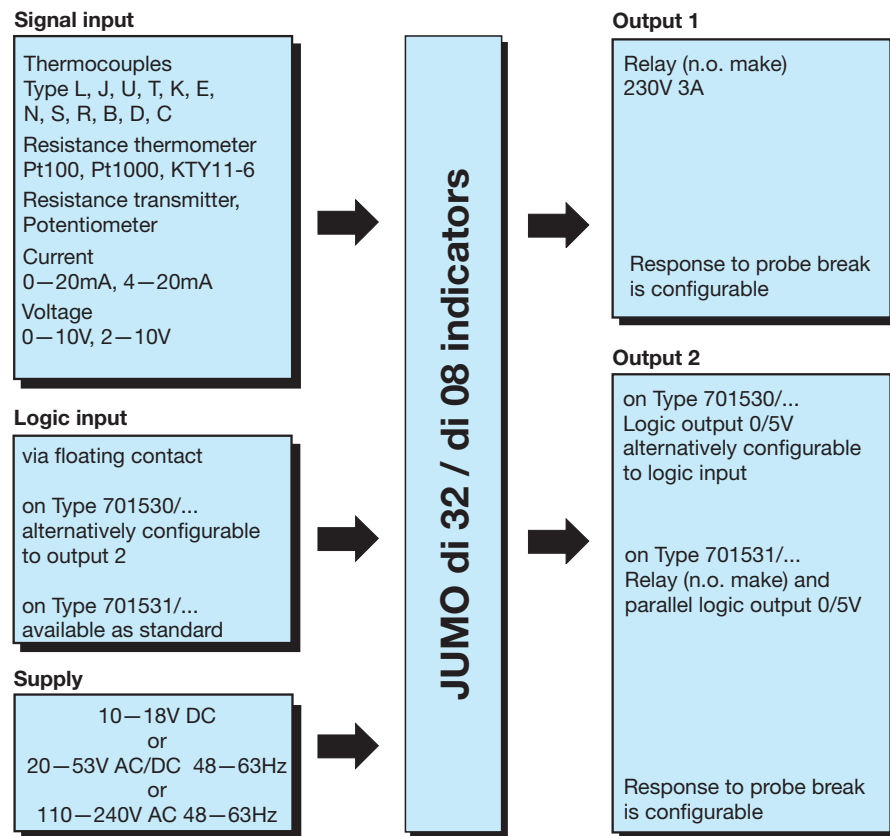


Type 701530/...



Type 701531/...

Block structure



Features

- structured operating and programming layout
- customer-specific linearization correction
- 2 limit comparators for limit monitoring
- digital input filter with programmable filter time constant
- time-delayed switching, programmable per relay
- switch-on delay after power-on is programmable

Technical data

Input for thermocouple

Designation	Range limits	Range	Measurement accuracy in range	Ambient temperature error
Fe-Con L	-200 + 900°C	-200 + 900°C	≤0.4%	100 ppm/°C
Fe-Con J EN 60 584	-210 +1200°C	-200 +1200°C	≤0.4%	100 ppm/°C
Cu-Con U	-200 + 600°C	-200 + 600°C	≤0.4%	100 ppm/°C
Cu-Con T EN 60 584	-270 + 400°C	-200 + 400°C	≤0.4%	100 ppm/°C
NiCr-Ni K EN 60 584	-270 +1372°C	-200 +1372°C	≤0.4%	100 ppm/°C
NiCr-Con E EN 60 584	-270 +1000°C	-150 +1000°C	≤0.4%	100 ppm/°C
NiCrSi-NiSi N EN 60 584	-270 +1300°C	-100 +1300°C	≤0.4%	100 ppm/°C
Pt10Rh-Pt S EN 60 584	-50 +1768°C	0 – 1768°C	≤0.4%	100 ppm/°C
Pt13Rh-Pt R EN 60 584	-50 +1768°C	0 – 1768°C	≤0.4%	100 ppm/°C
Pt30Rh-Pt6Rh B EN 60 584	0 – 1820°C	+300 +1820°C	≤0.4%	100 ppm/°C
W3Re-W25Re D	0 – 2495°C	0 – 2495°C	≤0.4%	100 ppm/°C
W5Re-W26Re C	0 – 2320°C	0 – 2320°C	≤0.4%	100 ppm/°C
Sampling rate	4 measurements per second			
Cold junction	Pt100 internal or external constant (CJT)			
Decimal place	configurable			

Input for resistance thermometer

Designation	Connection circuit	Range	Measurement accuracy	Ambient temperature error
Pt100 EN 60 751	2-wire	-200 +850°C	≤0.1%	50 ppm/°C
Pt100 EN 60 751	3-wire	-200 +850°C	≤0.1%	50 ppm/°C
Pt1000 EN 60 751	2-wire	-200 +850°C	≤0.1%	50 ppm/°C
Pt1000 EN 60 751	3-wire	-200 +850°C	≤0.1%	50 ppm/°C
KTY11-6	2-wire	-50 +150°C	≤1.0%	50 ppm/°C
Sensor lead resistance	20Ω max. per lead in 2-wire and 3-wire circuit			
Measuring current	250µA			
Lead compensation	not required for 3-wire circuit. For 2-wire circuit, lead compensation can be implemented in software through actual-value correction.			
Decimal place	configurable			

■ = factory setting

Input for resistance transmitter

Designation	Range	Measurement accuracy	Ambient temperature error
0 – 4kΩ	0 – 4kΩ	≤0.5%	50 ppm/°C
Sensor lead resistance	20Ω max. per lead		
Measuring current	25µA or 250µA (depending on size of resistance)		
Decimal place	configurable		

Input for potentiometer

Designation	Connection circuit	Range	Measurement accuracy	Ambient temperature error
0 – 4kΩ	2-wire	0 – 4kΩ	≤0.4%	50 ppm/°C
0 – 4kΩ	3-wire	0 – 4kΩ	≤0.4%	50 ppm/°C
Sensor lead resistance	20Ω max. per lead in 2-wire and 3-wire circuit			
Measuring current	250µA			
Lead compensation	not required for 3-wire circuit. For 2-wire circuit, lead compensation can be implemented in software through actual-value correction.			
Decimal place	configurable			

Input for standard signals

Designation	Range	Measurement accuracy	Ambient temperature error
Voltage	0 – 10V, input resistance $R_E > 100k\Omega$ 2 – 10V, input resistance $R_E > 100k\Omega$	$\leq 0.1\%$ $\leq 0.1\%$	100 ppm/°C 100 ppm/°C
Current	4 – 20mA, voltage drop $\leq 1V$ 0 – 20mA, voltage drop $\leq 1V$	$\leq 0.15\%$ $\leq 0.15\%$	100 ppm/°C 100 ppm/°C
Decimal place	configurable		

Measurement circuit monitoring¹

Transducer	Out-of-range	Probe/lead short-circuit ¹	Probe/lead break
Thermocouple	•	-	•
Resistance thermometer	•	•	•
Resistance transmitter	•	•	•
Potentiometer	•	-	•
Voltage 2 – 10V	•	•	•
0 – 10V	•	-	-
Current 4 – 20mA	•	•	•
0 – 20mA	•	-	-

¹ In fault condition, the outputs move to a defined state (configurable: active or inactive).

- recognized
- not recognized

Logic input

Assignment	Type 701530/...	Type 701531/...
Number	1 (instead of the logic output only)	1 (standard)
Function (configurable)	Hold, Min/Max reset, level inhibit	
Operation	through floating contact	

Outputs

Assignment	Type 701530/...	Type 701531/...
Output 1	relay	relay
Output 2	logic output or logic input	relay and parallel logic output
Relay contact rating contact life	make contact (n.o.) 3A at 230VAC resistive load 150,000 operations at rated load	
Logic output current limiting load resistance	0/5V 20mA $R_{load} \geq 250\Omega$	
Feature	time-delayed switching of relays separately programmable per relay within the range 0 – 9999sec	

■ = factory setting

Switch-on delay

Switch-on delay after power ON	programmable within the range 4 – 9999sec
Feature	display and relays will only be activated after the programmed time has elapsed

Electrical data

Supply (switch-mode power supply)	10 – 18V DC ±0% or 110 – 240V AC -15/+10% 48 – 63Hz, or 20 – 53V AC/DC 48 – 63Hz
Test voltages (type test)	to EN 61 010, Part 1, March 1994, overvoltage category II, pollution degree 2, for Type 701530/... overvoltage category III, pollution degree 2, for Type 701531/...
Power drawn	5VA max.
Data backup	EEPROM
Electrical connection	at the rear, via plug-in screw terminals, conductor cross-section ≤ 1.5mm ² (1.0mm ² for Type 701530/...) or 2x 1.5mm ² (1.0mm ² for Type 701530/...), with core end sleeves
EMC - interference emission - immunity to interference	EN 61 326 Class B to industrial requirements
Safety regulation	to EN 61 010-1

Case

Case type	plastic case for panel mounting to DIN 43 700	
Size in mm (for Type)	Type 701530/...	Type 701531/...
Bezel	48 x 24	96 x 48
Depth behind panel	100	70
Panel cutout	45 ^{+0.6} x 22.2 ^{+0.3}	92 ^{+0.8} x 45 ^{+0.6}
Ambient/storage temperature range	0 – 55°C / -40 to +70°C	
Climatic conditions	≤ 75% rel. humidity, no condensation	
Operating position	any	
Protection	to EN 60 529, front IP66, rear IP20	
Weight	75g approx.	160g approx.

Displays and controls

(1) Display	7-segment display, 4 digits, red	
Height of digits	Type 701530/...: 10mm, Type 701531/...: 20mm	
Display range/unit	-1999 to +9999 digit / °C/°F	
Decimal places	none, one, two	
(2) Status indicators	two LEDs for the outputs 1 and 2, yellow	
(3) Buttons	select next parameter, select parameter and configuration level (> 2sec)	
	▲, ▼	increase ¹ , decrease ¹ parameter value
	P + ▼	instant return to basic status

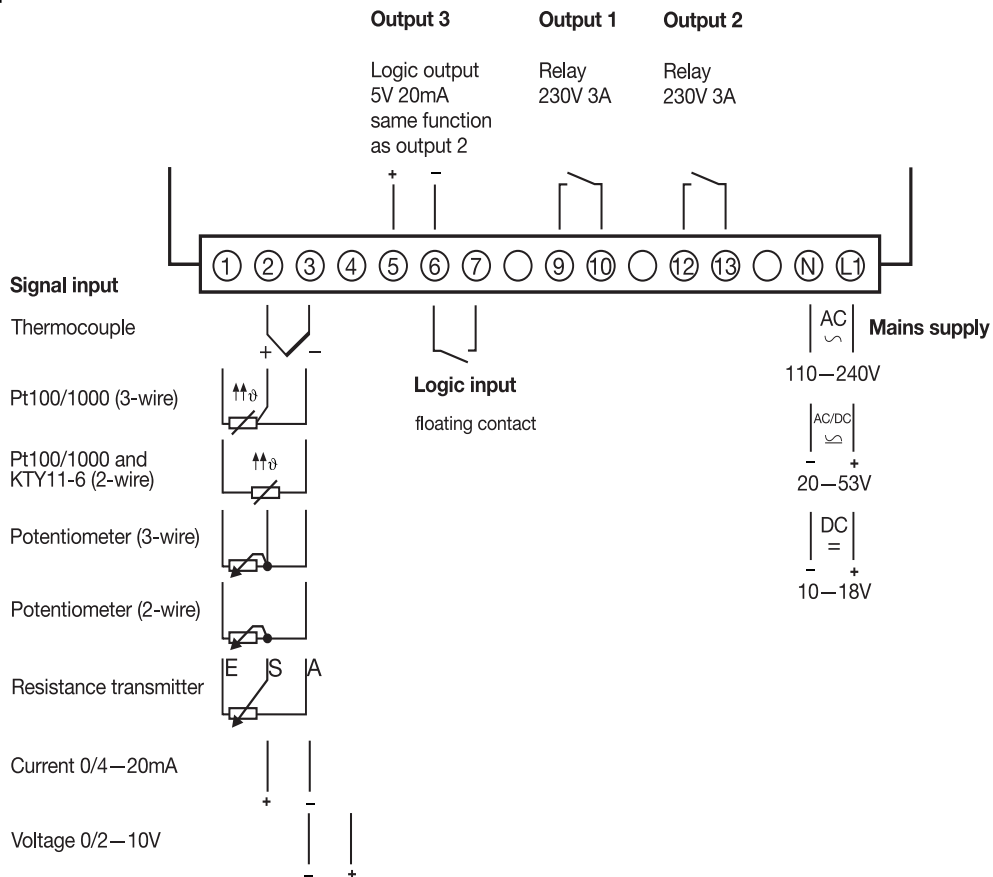
¹ Dynamic value setting; automatic acceptance of value after two seconds without pressing a button (also configuration codes)

Connection diagrams

JUMO di32, Type 701530/...

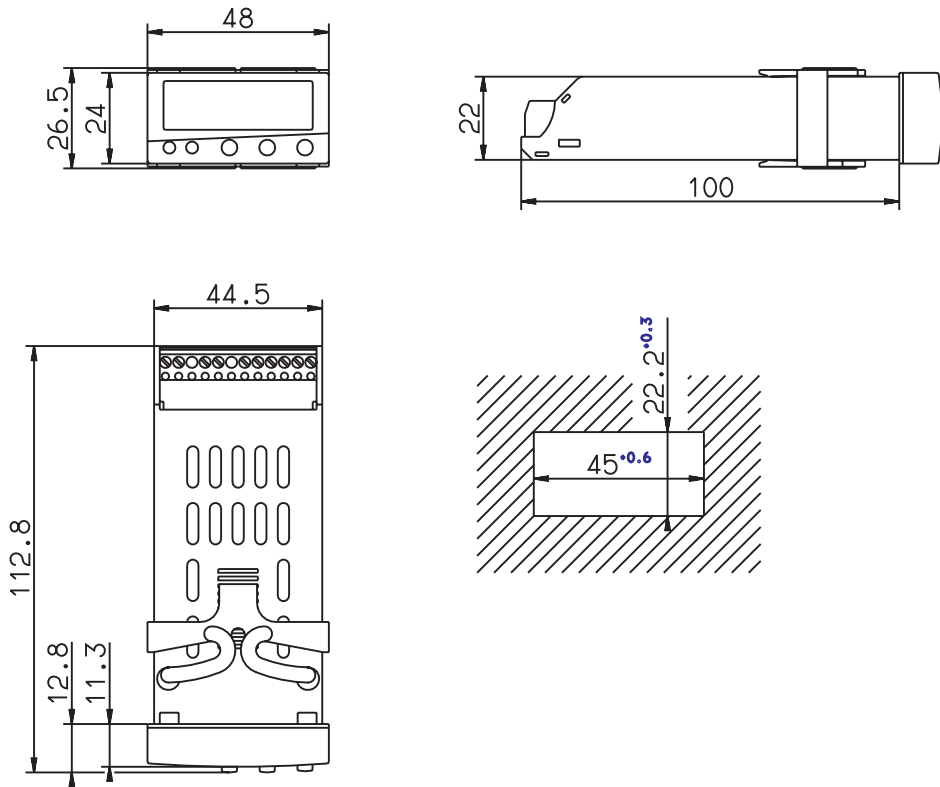


JUMO di08, Type 701531/...

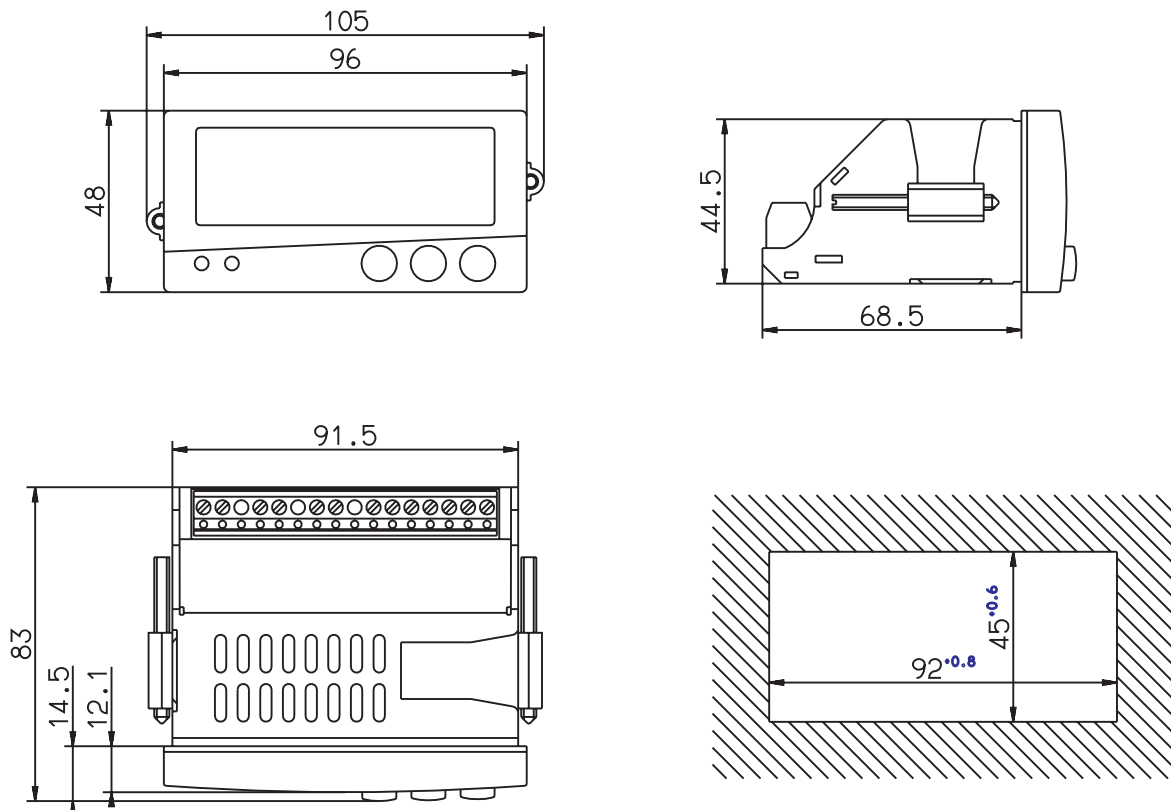


Dimensions

Type 701530/...



Type 701531/...



Side-by-side mounting (minimum spacing of panel cutouts)

Type	horizontal	vertical
701530/...	> 8mm	> 8mm
701531/...	> 10mm	> 10mm

