JUMO GmbH & Co. KG
Delivery address: Mackenrodtstraße 14,
36039 Fulda, Germany
Postal address: 36035 Fulda, Germany
Phone: +49 661 6003-0
Fax: +49 661 6003-607
e-mail: mail@jumo.net
Internet: www.jumo.net

JUMO Instrument Co. Ltd.
JUMO House
Temple Bank, Riverway
Harlow, Essex CM20 2DY, UK
Phone: +44 1279 635533
Fax: +44 1279 635262
e-mail: sales@jumo.co.uk
Internet: www.jumo.co.uk

JUMO Process Control, Inc.
8 Technology Boulevard
Canastota, NY 13032, USA
Phone: 315-697-JUMO
1-800-554-JUMO
Fax: 315-697-5867
e-mail: info@jumo.us
Internet: www.jumo.us

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 IEC 61554

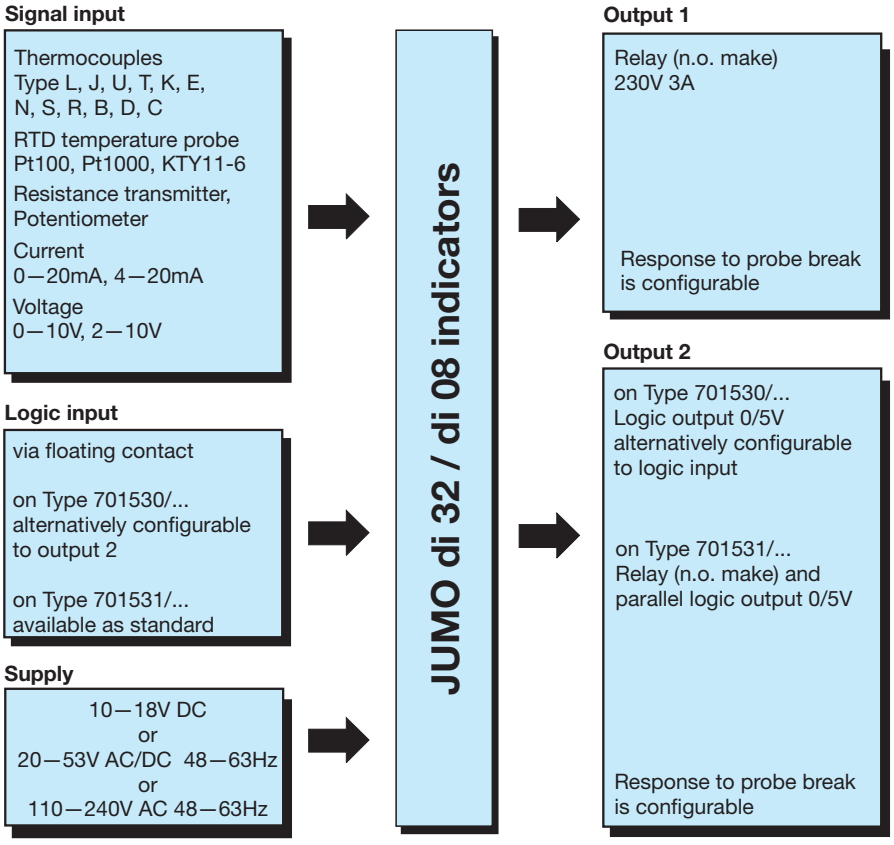
Type 701530/...

Type 701531/...

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, RTD temperature probes, 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.

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[1]	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 60584	-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 60584	-270 + 400 °C	-200 + 400 °C	≤ 0.4 %	100 ppm/°C
NiCr-Ni	K	EN 60584	-270 +1372 °C	-200 +1372 °C	≤ 0.4 %	100 ppm/°C
NiCr-Con	E	EN 60584	-270 +1000 °C	-150 +1000 °C	≤ 0.4 %	100 ppm/°C
NiCrSi-NiSi	N	EN 60584	-270 +1300 °C	-100 +1300 °C	≤ 0.4 %	100 ppm/°C
Pt10Rh-Pt	S	EN 60584	-50 +1768 °C	0 — 1768 °C	≤ 0.4 %	100 ppm/°C
Pt13Rh-Pt	R	EN 60584	-50 +1768 °C	0 — 1768 °C	≤ 0.4 %	100 ppm/°C
Pt30Rh-Pt6Rh	B	EN 60584	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			

[1] The specifications refer to an ambient temperature of 20°C.

Input for RTD temperature probe

Designation		Connection circuit	Range	Measurement accuracy	Ambient temperature error
Pt100	EN 60751	2-wire	-200 +850 °C	≤ 0.1 %	50 ppm/°C
Pt100	EN 60751	3-wire	-200 +850 °C	≤ 0.1 %	50 ppm/°C
Pt1000	EN 60751	2-wire	-200 +850 °C	≤ 0.1 %	50 ppm/°C
Pt1000	EN 60751	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		20 Ω max. per lead in 2-wire and 3-wire circuit			
Measuring current		250 µA			
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 — 4 kΩ	0 — 4 kΩ	≤ 0.5%	50 ppm/°C
Sensor lead resistance	20 Ω max. per lead		
Measuring current	25 µA or 250 µA (depending on size of resistance)		
Decimal place	configurable		

Input for potentiometer

Designation	Connection circuit	Range	Measurement accuracy	Ambient temperature error
0 — 4 kΩ	2-wire	0 — 4 kΩ	≤ 0.4%	50 ppm/°C
0 — 4 kΩ	3-wire	0 — 4 kΩ	≤ 0.4%	50 ppm/°C
Sensor lead resistance	20 Ω max. per lead in 2-wire and 3-wire circuit			
Measuring current	250 µA			
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 > 100kΩ 2 — 10V, input resistance R_E > 100kΩ	≤ 0.1% ≤ 0.1%	100 ppm/°C 100 ppm/°C
Current	4 — 20mA, voltage drop ≤ 3V 0 — 20mA, voltage drop ≤ 3V	≤ 0.15% ≤ 0.15%	100 ppm/°C 100 ppm/°C
Decimal place	configurable		

Measurement circuit monitoring[1]

Transducer	Overrange	Underrange	Probe or lead short-circuit[1]	Probe or lead break
Thermocouple	●	●	-	●
RTD temperature probe	●	●	●	●
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} ≥250Ω	
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

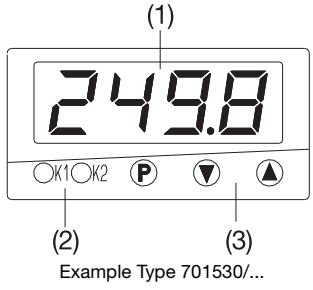
Electrical data

Supply (switch-mode power supply)	10 — 18V DC ±0% or 20 — 53V AC/DC 48 — 63Hz, or 110 — 240V AC +10/-15% 48 — 63Hz
Test voltages (type test)	to EN 61010, Part 1, March 1994, overvoltage category II, pollution degree 2, for Type 701530/... overvoltage category III, pollution degree 2, for Type 701531/...
Power drawn	7VA 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
Electromagnetic compatibility (EMC) - interference emission - immunity to interference	EN 61326-1 Class B to industrial requirements
Safety regulation	to EN 61010-1

Case

Case type	plastic case for panel mounting to IEC 61554	
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 60529, front IP66, rear IP20	
Weight	75g approx.	160g approx.

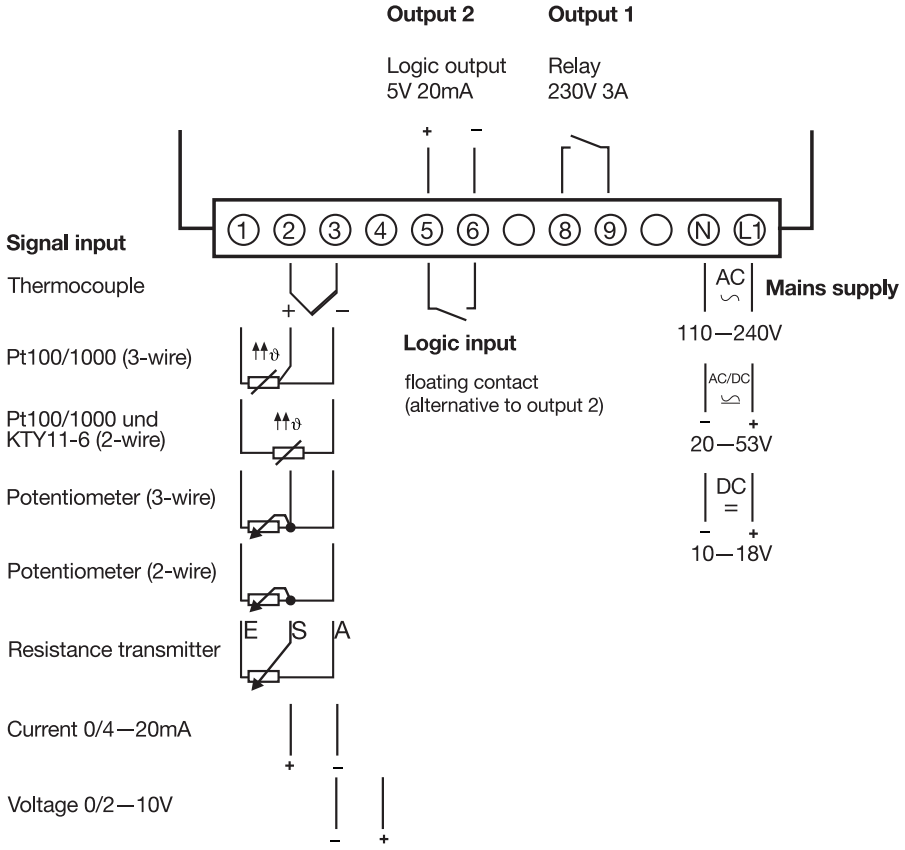
Displays and controls

(1) Display	7-segment display, 4 digits, red	 Example Type 701530/...
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 P	select next parameter, select parameter and configuration level (> 2sec)	
▲ , ▼	increase[1], decrease[1] parameter value	
P + ▼	instant return to basic status	
P + ▲	display firmware version	

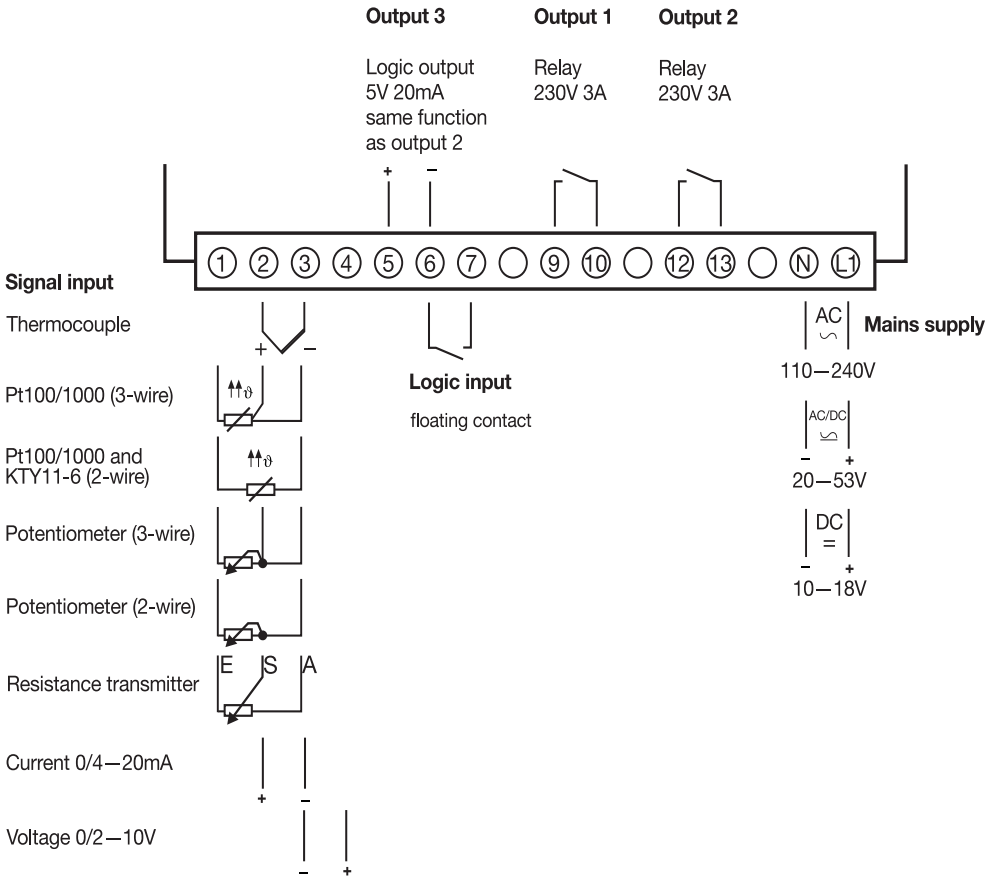
[1] Dynamic value setting; automatic acceptance of value after two seconds without pressing a button (also configuration codes)

Connection diagrams

JUMO di 32, Type 701530/...

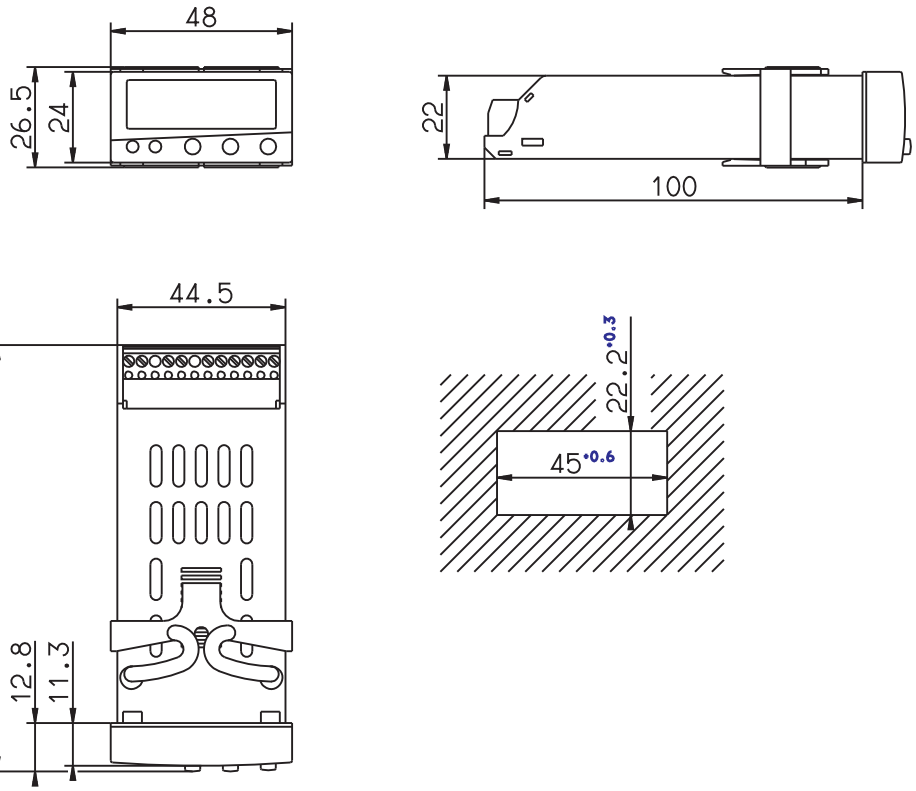


JUMO di 08, Type 701531/...

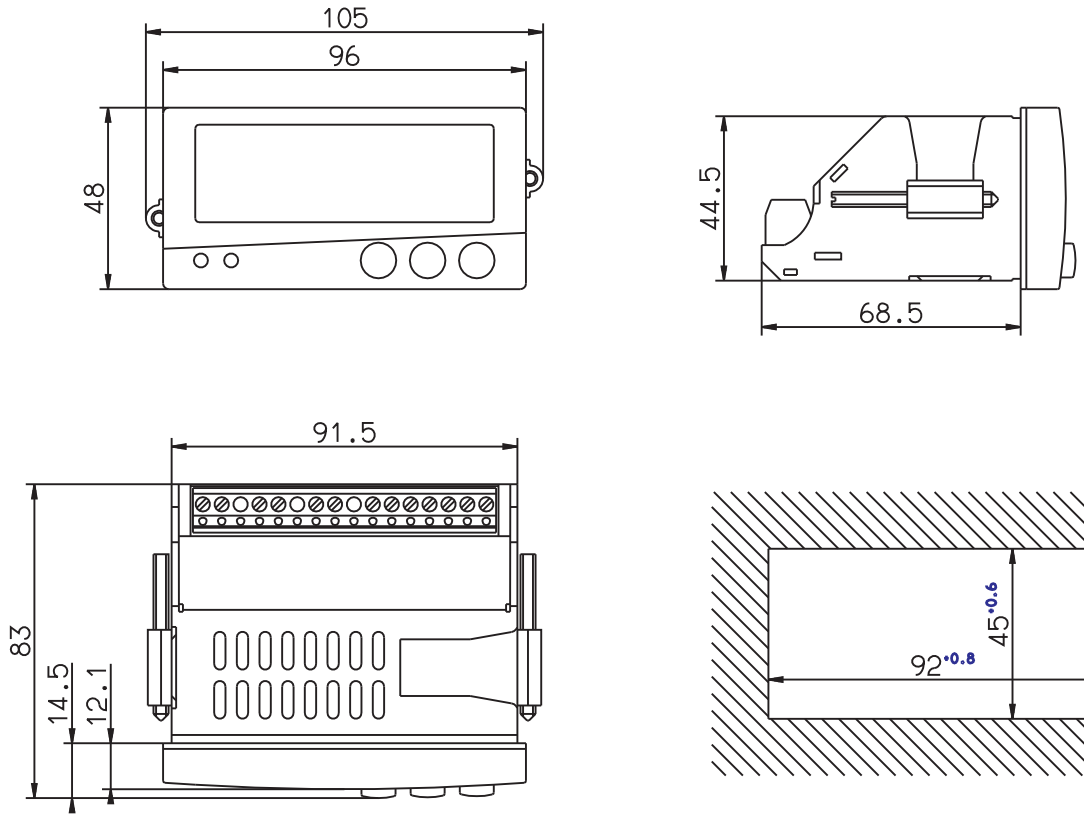


Dimensions

Type 701530/…



Type 701531/...



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

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

Order details: Digital microprocessor indicators with 1 measurement input and a maximum of 3 signal outputs, case for flush-panel mounting to IEC 61554

			(1) Basic version
		701530/	di 32 - size 48mm x 24mm
		701531/	di 08 - size 96mm x 48mm
			(2) Input (programmable)
x	x	888	factory-set
x	x	999	configuration to customer specification[1]
			(3) Supply
x	x	16	10 — 18V DC ±0%
x	x	22	20 — 53V AC/DC 48 — 63Hz
x	x	23	110 — 240V AC +10/-15% 48 — 63Hz

	(1)		(2)		(3)
Order code		/		-	
Order example	701530	/	888	-	23

[1] For configuration to customer specification, please specify the probe type and the required settings in plain text.

Standard accessories

- 1 Operating Instructions B 701530.0
- 1 set of mounting brackets
- 1 seal