

Universal display unit UZJ



Description

The UZJ model is a 5 digit panel process monitor designed for direct projection of analog signals or sensors (Pt, Ni, Thermocouple).

The instrument is based on an 8-bit processor and very precise A/D converter (16-bit), that secures high accuracy, stability and easy operation of the instrument.

In basic version the instrument is designed for simple measurements.

In version with single, dual, third or fourth comparators are on the outputs relays.

All setting is made by three control keys.

It is possible make version with 16-bit analog output (0...5V, 0...10V, 4...20mA, 0...20mA).

It is possible make version with datalogger and RTCC.

Technical data

Working temperature	-20...60 °C
Power supply	230VAC, 50/60Hz $\pm 10\%$ 5VA 19...30VDC/max 200mA
Covering	IP40, upon request IP65 (front panel only)

Mechanic properties

Dimensions	98 x 49 x 115 mm
Panel cut	91 x 45 mm
Measuring Range	TAB1
EMC	EN 61 000 -4-2; -3; -4; -5 ... level 3 EN 61 000 -4-6 ... level 2

Instrument accuracy

Tempco :	50 ppm/°C	
Accuracy :	Pt Ni	max. $\pm(0,1\% + 0,1^{\circ}\text{C})$ – 4-wire sensor connection
		max. $\pm(0,1\% + 0,15^{\circ}\text{C})$ – 3wire sensor connection
	Thermocouple E,J,K,L,T	max. $\pm(0,1\% + 0,15^{\circ}\text{C})$ – without CJC compensation
	Thermocouple B,S,R,A	max. $\pm(0,1\% + 0,2^{\circ}\text{C})$ – without CJC compensation
	R, potentiometer	max. $\pm(0,1\% + 50\text{m}\Omega)$
	U	max. $\pm(0,1\% + 50\mu\text{V})$
	CJC compenzation error:	max. $\pm 0,5^{\circ}\text{C}$
Rate:	3 measurements/s	
Comparator:	digital adjustable by control keys (hysteresis or window mode, trigger values and selectable delay)	
Number of comparators:	1...4 relais (250VAC/4A)	

Analog outputs

Type	isolated, analog output corresponds with the input signal (0...5V, 0...10V, 0...20mA, 4...20mA)
Non-linearity	0,1% of range
Excitation:	24 VDC/50 mA, galvan. separated from power supply and input signal

TAB. 1: INPUT SENSORS AND SIGNALS

TYPE	MEASURING RANGE	MIN. SPAN	NOTICE
RESISTOR SENSORS:			
Pt100 (0,003850)	-200 ... +850 °C	25 °C	3, 4 – wire connection or 2 – wire compenzation loop
Pt1000 (0,003850)	-200 ... +850 °C	25 °C	3, 4 – wire connection or 2 – wire compenzation loop
Ni100 (0,00618)	-70 ... +250 °C	20 °C	3, 4 – wire connection or 2 – wire compenzation loop
Ni1000 (0,00618)	-70 ... +250 °C	20 °C	3, 4 – wire connection or 2 – wire compenzation loop
RESISTOR TRANSMITTER			
POTENTIOMETER-abs.measur.	20 ... 4000 Ohm		4 – wire connection or 3 – wire compenzation loop
POTENTIOMETER-rel. measur.	20 ... 4000 Ohm		4 - wire, 3 – wire comp. loop
RHEOSTAT	0 ... 4000 Ohm	20 Ohm	3, 4 – wire connection or 2 – wire compenzation loop
THERMOCOUPLES:			
B (PtRh30 - PtRh6)	+100 ... +1820 °C	500 °C	guaranted accuracy: +500 ... +1820 °C
E (NiCr - CuNi , ch - ko)	-200 ... +1000 °C	100 °C	guaranted accuracy: -200 ... 0 °C; -50 ... +200 °C; 0 ... +1000 °C
J (Fe- CuNi)	-100 ... +1200 °C	100 °C	guaranted accuracy: -100 ... 0 °C; -50 ... +200 °C; 0 ... +1200 °C
K (NiCr - Ni, ch - a)	-200 ... +1370 °C	100 °C	guaranted accuracy: -200 ... 0 °C; -50 ... +200 °C; 0 ... +1370 °C
N (NiCrSi - NiSi)	-200 ... +1300 °C	200 °C	guaranted accuracy: -200 ... 0 °C; -50 ... +200 °C; 0 ... +1300 °C
L (Fe - CuNi, Fe - ko)	-200 ... +900 °C	100 °C	guaranted accuracy: -200 ... 0 °C; -50 ... +200 °C; 0 ... +800 °C
R (PtRh13 - Pt)	0 ... +1760 °C	500 °C	guaranted accuracy: +100 ... +1760 °C
S (PtRh10 - Pt)	0 ... +1760 °C	500 °C	guaranted accuracy: +100 ... +1760 °C
T (Cu-CuNi, Cu-ko)	-200 ... +400 °C	100 °C	guaranted accuracy: -200 ... 0 °C; -50 ... +200 °C; 0 ... +400 °C
VOLTAGE AND CURRENT:			
DIRECT VOLTAGE	-0.01 ... 0,1 V	20 mV	it is possible make voltage divider for other voltage
	-0.0016 ... 0.016 V	3 mV	
DIRECT CURRENT	0 ... 200 mA	40 mA	shunt resistor 0,51 Ohm
	0 ... 2 mA	0,4 mA	shunt resistor 51 Ohm
	0 ... 0.2 mA	0,04 mA	shunt resistor 510 Ohm

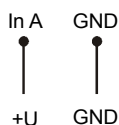
Next special inputs:

0...20 mA (4...20mA)

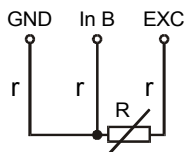
0...10 V (Rin > 2 MΩ)

Picture 1. Input connection

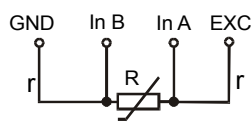
Direct voltage
or current



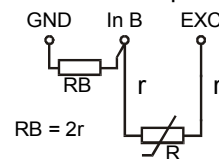
Resistive sensor
or rheostat - 3-wire
connection



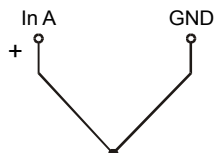
Resistive sensor
or rheostat - 4-wire
connection



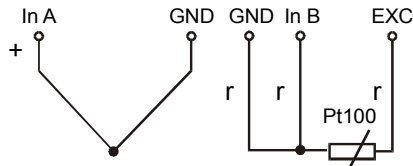
Resistive sensor
or rheostat - 2-wire
connection with compensation loop



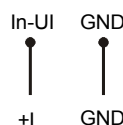
Thermocouple (CJC
is measured with internal Pt100)



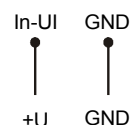
Thermocouple (CJC
is measured with external Pt100)



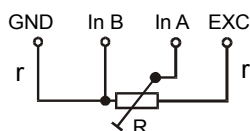
Input
0...20 mA
(4...20 mA)



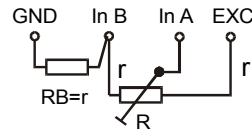
Input
0...10 V



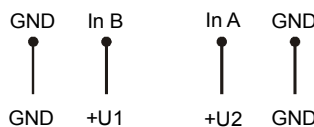
Linear potentiometer,
4-wire connection,
evaluation absolute
or relative



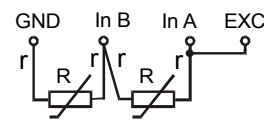
Linear potentiometer
3-wire connection
evaluation absolute
or relative



Voltage difference

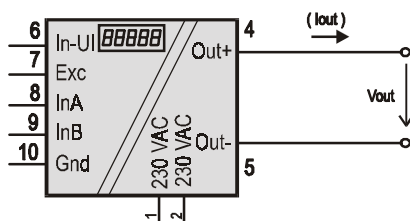


Resistor difference

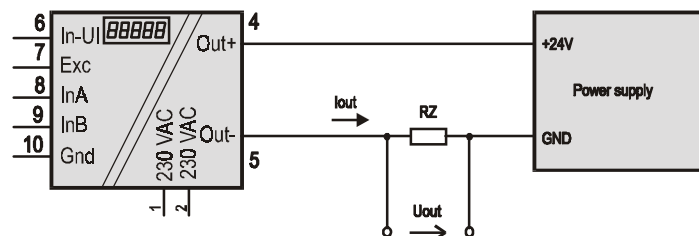


Picture 2. Output connection

Active output 0...10 V



Passive output 4...20 mA



Picture 3. Connection (230 VAC)

(when supply 24 VDC: clamp nr.1 ... +24 VDC, clamp nr.2 ... +24 GND)

