

## DESCRIPTION

DIGITAL METER for the following input signals:

- PROCESS ( $\pm 10V$ ,  $\pm 200V$  and  $\pm 20mA$ )
- TEMPERATURE (Pt100, Pt1000, TC J, K, T and N)
- POTENTIOMETER (100 $\Omega$  to 100k $\Omega$ )
- RESISTANCE (999.9 $\Omega$ , 9999 $\Omega$  and 50.00k $\Omega$ )

**JR-P** and **JR20-P** models admit several signal input types to control industrial processes. Easy to scale into desired engineering units, directly by frontal keys or real input signal value in teach mode.

**Universal AC/DC voltage supply.** Fully configurables through 3 frontal keys, they allow signal input type selection and also provide a **24VDC@30mA** and **10VDC@30mA** outputs for sensor excitation.

**4 digit indicator** with **14mm** digit and **-9999** to **9999** display range for JR-P and **20mm** digit and **-1999** to **9999** display range for JR20-P, configurable decimal point and 2 led for setpoints status indication (if output 2RE option card is installed).



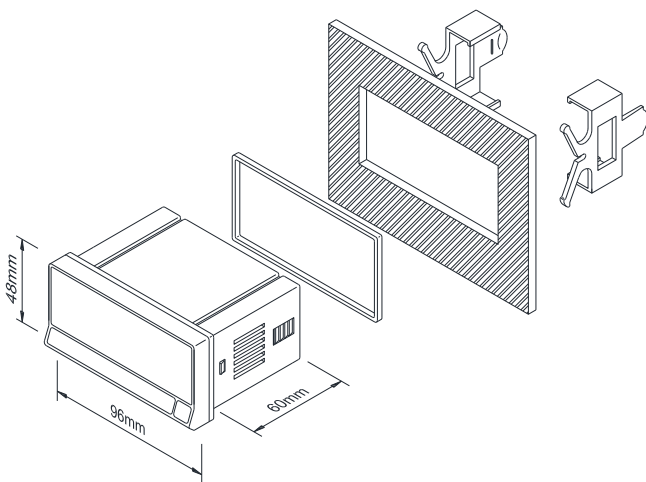
Detection, saving, later recalling and resetting of maximum and minimum values reached by the input signal since last reset activation. Reset function sets automatically memorized value to current input signal value when maximum or minimum value are displayed. Maximum and minimum values recalling to display and reset functions are directly available through frontal keys.

Capable of measuring 3-wire **Pt100** and 2-wire **Pt1000** (IEC 60751) and **Thermocouple** (IEC 60584-1) **Temperature**, 3-wire **Potentiometer**, 2-wire **Resistance** and **Process** input signals.

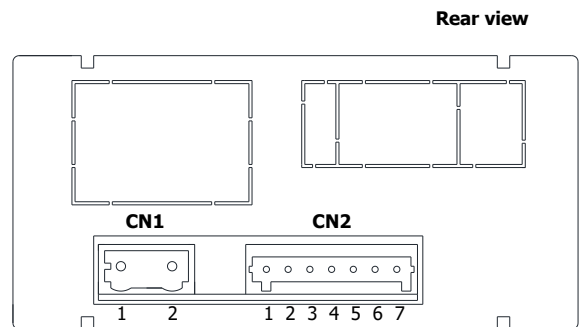
## DIMENSIONS AND MOUNTING

Dimensions ..... 96 x 48 x 60 mm (1/8 DIN).  
 Panel cutout ..... 92 x 45 mm.  
 Weight ..... 150g.  
 Case material ..... UL 94 V-0 polycarbonate

Instruments include a sealing gasket and 2 fixing clips for frontal and rear panel installation.



## CONNECTIONS



CN1	POWER SUPPLY				
	1	V DC / V AC			
2	V DC / V AC				
CN2	INPUT SIGNAL				
	PROCESS	TEMPERATURE		RESISTANCE	POTENT.
		Pt100 Pt1000	TC		
1	COMMON	Pt100 Pt1000	-TC	COMMON	Term 1
2		Pt100 Pt1000	+TC	999.9 $\Omega$ 9999 $\Omega$	Cursor
3				50.00k $\Omega$	Term 2
4		Pt100 COMMON			
5	+mA				
6	+EXC 24V				
7	+V				

## ORDERING CODES

**JR-P:** ..... 20-265V AC 50/60Hz and 11-265V DC (14mm digit)  
**JR20-P:** ..... 20-265V AC 50/60Hz and 11-265V DC (20mm digit)

# TECHNICAL SPECIFICATIONS

## SPECIAL FUNCTIONS

Return to factory configuration.  
Software configuration lockout.

## PRECISION

Temperature coefficient ..... 100 ppm/°C  
Warm-up time ..... 5 minutes  
Specifications range ..... 23°C±5°C

## POWER SUPPLY AND FUSES (DIN 41661) (not included)

**JR-P:** 20-265 V AC 50/60 Hz and 11-265 V DC.. F 3A/ 250V  
**JR20-P:** 20-265 V AC 50/60 Hz and 11-265 V DC.. F 3A/ 250V  
Power consumption (both models)..... 3W  
Sensor excitation . 24V±3V DC@30mA / 10V@30mA (stabilized)

## CONVERSION

Technique ..... Sigma-Delta  
Resolution ..... 16 bits  
Conversion rate ..... 20/s

## FILTER

Cutoff frequency (-3dB) ..... 7.3Hz to 0.2Hz  
Slope ..... -20dB/Dec.

## DISPLAY

Range:  
JR-P ..... 9999 ÷ 9999, 14mm RED LED  
JR20-P ..... 1999 ÷ 9999, 20mm RED LED  
Decimal point ..... Configurable  
Leds ..... 2 for setpoints state indication  
Display refresh rate ..... 50ms  
Display/input overrange indication ..... "-OuE", "OuE"  
Sensor failure indication ..... "OuE"

## ENVIRONMENTAL CONDITIONS

Operating temperature ..... -10°C ÷ +60°C  
Storage temperature ..... -25°C ÷ +85°C  
Relative humidity (non-condensing) ..... <95% @ 40°C  
Maximum altitude ..... 2000m  
Frontal protection degree ..... IP65

## INPUT SIGNAL

Configuration ..... Differential asymmetrical

## PROCESS

±10V and ±200V input impedance ..... 2MΩ  
±20mA input impedance ..... <20Ω  
Maximum input signal (±10V range) ..... ±11V  
Maximum input signal (±20mA range) ..... ±22mA  
EMI max. Influence (±10V) ..... ±7mV  
EMI max. Influence (±200V) ..... ±60mV  
EMI max. Influence (±20mA) ..... ±6μA

## POTENTIOMETER

RANGE	RESOLUTION	ACCURACY
±10V	1mV	±(0.1%rdg + 6mV)
±200V	20mV	±(0.1%rdg + 0.1V)
±20mA	2μA	±(0.1%rdg + 15μA)

RANGE	RESOLUTION	ACCURACY
100Ω-100kΩ	0.01%F.S.	±(0.1%rdg + 0.05%F.S.)

## TEMPERATURE

Pt100 measurement current ..... 1mA  
Pt1000 measurement current ..... 100μA  
Pt100 maximum wire resistance ..... 40Ω (balanced)  
Pt100/Pt1000 linearization ..... IEC 60751  
Pt100/Pt1000 α coefficient ..... 0.00385  
Thermocouple cold junction compensation range .. -10°C to 60°C  
EMI max. Influence (Pt100) ..... ±1.3°C  
EMI max. Influence (Pt1000) ..... ±0.6°C  
EMI max. Influence (Thermocouple) ..... ±6°C

Pt100 (3 wires)		
RANGE	RESOLUTION	ACCURACY
-200.0°C to +800.0°C	0.1°C	±(0.15%rdg + 0.5°C)
-200°C to +800°C	1°C	±(1%rdg + 0.5°C)*

\*Only for temperatures t< -50°C/-58°F

Pt1000 (2 wires)		
RANGE	RESOLUTION	ACCURACY
-200.0°C to +800.0°C	0.1°C	±(0.15%rdg + 0.5°C)
-200°C to +800°C	1°C	±(1%rdg + 0.5°C)*

\*Only for temperatures t< -50°C/-58°F

THERMOCOUPLE J		
RANGE	RESOLUTION	ACCURACY
-150.0°C to +999.9°C	0.1°C	±(0.1%rdg + 0.6°C)
-150°C to +1100°C	1°C	

THERMOCOUPLE K		
RANGE	RESOLUTION	ACCURACY
-150.0°C to +999.9°C	0.1°C	±(0.1%rdg + 0.6°C)
-150°C to +1200°C	1°C	

THERMOCOUPLE T		
RANGE	RESOLUTION	ACCURACY
-150.0°C to +400.0°C	0.1°C	±(0.2%rdg + 0.8°C)
-150°C to +400°C	1°C	

**RESISTANCE**  
999.9Ω range max. measurement current ..... 2.3mA

THERMOCOUPLE N		
RANGE	RESOLUTION	ACCURACY
-150.0°C to +999.9°C	0.1°C	±(0.1%rdg + 0.6°C)
-150°C to +1300°C	1°C	

RANGE	RESOLUTION	ACCURACY
999.9Ω	0.1Ω	±(0.1%rdg + 0.7Ω)
9999Ω	1Ω	±(0.1%rdg + 6Ω)
50.00kΩ	10Ω	±(0.1%rdg + 35Ω)

