



**ESPAÑOL**

**INDICADOR PARA CONTROL DE PROCESOS**

FICHA TÉCNICA ..... 2/3

**FRANÇAIS**

**INDICATEUR POUR LE CONTRÔLE DE PROCES**

FICHE TECHNIQUE ..... 4/5

**ENGLISH**

**INDICATOR FOR PROCESS CONTROL**

DATA SHEET ..... 6/7

## DESCRIPCIÓN

INDICADOR DIGITAL para entradas de señal:

- PROCESO ( $\pm 10V$ ,  $\pm 200V$  y  $\pm 20mA$ )
- TEMPERATURA (Pt100, Pt1000, TC J, K, T y N)
- POTENCIÓMETRO (100 $\Omega$  a 100k $\Omega$ )
- RESISTENCIA (999.9 $\Omega$ , 9999 $\Omega$  y 50.00k $\Omega$ )

Los modelos **JR-P** y **JR20-P** aceptan gran variedad de señales de entrada para controlar variables de procesos industriales. Fácilmente escalables en las unidades de ingeniería deseadas, ya sea directamente por el teclado o bien, por el nivel real de la señal de entrada.

**Alimentación universal AC/DC** para un amplio rango de tensiones. Totalmente programables, permiten seleccionar el tipo de entrada deseada y suministrar una señal de excitación de **24V DC @ 30mA**.

Indicador de **4 dígitos** de **14mm** de altura y rango máximo de lectura **-9999** a **9999** para JR-P y de **20mm** y rango máximo de lectura **-1999** a **9999** para JR20-P, y punto decimal programable. Dispone de tres pulsadores frontales mediante los cuales es posible configurar totalmente el aparato, y de un led indicador de setpoint activo para cada uno de los dos relés de salida (cuando se encuentra instalada la opción de salida 2RE).



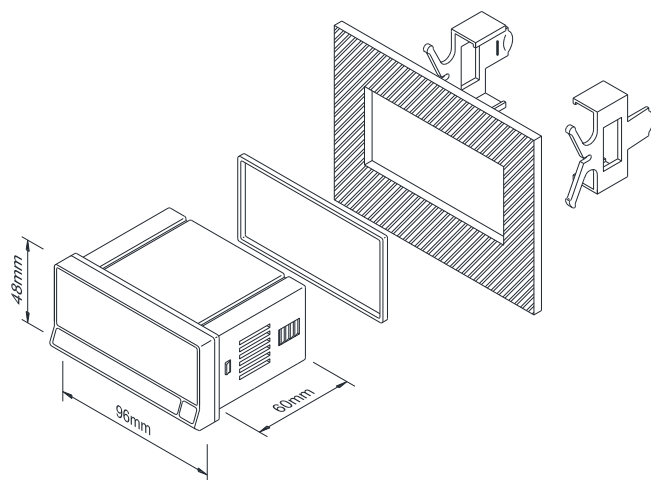
Indicación de valor máximo y mínimo y puesta a valor actual de display de los mismos en el momento de efectuar el RESET. El instrumento detecta y memoriza las lecturas máxima y mínima alcanzadas por la variable controlada después del último RESET efectuado. Estas funciones están accesibles desde el mismo teclado del instrumento.

Capaz de medir **Temperatura** para señal de entrada **Pt100** (3 hilos), **Pt1000** (2 hilos) (IEC 60751) y **Termopar** (IEC 60584-1), **Proceso**, **Potenciométrica** (3 hilos) y **Resistencia** (2 hilos).

## DIMENSIONES Y MONTAJE

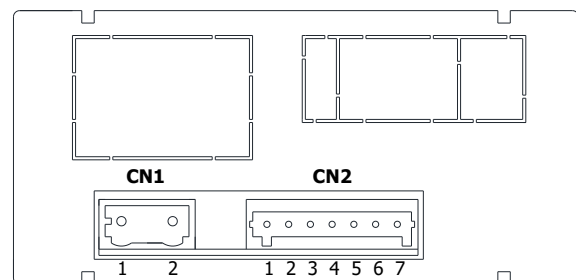
Dimensiones ..... 96 x 48 x 60 mm (1/8 DIN).  
 Orificio en panel ..... 92 x 45 mm.  
 Peso ..... 150g.  
 Material de la caja ..... Policarbonato s/ UL 94 V-0

El instrumento dispone de una junta de estanqueidad y de dos pinzas de sujeción para su fijación tanto anterior como posterior en el panel.



## CONEXIONES

Vista posterior



| CN1 | ALIMENTACIÓN     |             |     |                                 |         |
|-----|------------------|-------------|-----|---------------------------------|---------|
| 1   | V DC / V AC      |             |     |                                 |         |
| 2   | V DC / V AC      |             |     |                                 |         |
| CN2 | SEÑAL DE ENTRADA |             |     |                                 |         |
|     | PROCESO          | TEMPERATURA |     | RESISTENCIA                     | POTENC. |
|     |                  | Pt100       | TC  |                                 |         |
|     |                  | Pt1000      |     |                                 |         |
| 1   | COMÚN            | Pt100       | -TC | COMÚN                           | Term 1  |
| 2   |                  | Pt100       | +TC | 999.9 $\Omega$<br>9999 $\Omega$ | Cursor  |
| 3   |                  |             |     | 50.00k $\Omega$                 | Term 2  |
| 4   |                  | Pt100       |     |                                 |         |
|     |                  | COMÚN       |     |                                 |         |
| 5   | +mA              |             |     |                                 |         |
| 6   | +EXC 24V         |             |     |                                 |         |
| 7   | +V               |             |     |                                 |         |

## REFERENCIAS DE PEDIDO

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

**JR20-P:** ..... 20-265V AC 50/60Hz y 11-265V DC (dígitos 20mm)

# CARACTERÍSTICAS TÉCNICAS

## FUNCIONES ESPECIALES

Retorno a la configuración de fábrica.  
Bloqueo de la programación por software.

## PRECISIÓN

Coefficiente de temperatura .....100 ppm/°C  
Tiempo de calentamiento ..... 5 minutos  
Rango de especificaciones .....23°C±5°C

## ALIMENTACIÓN y FUSIBLES (DIN 41661) (no incorporados)

**JR-P:** 20-265 V AC 50/60 Hz y 11-265 V DC F 3A/ 250V  
**JR20-P:** 20-265 V AC 50/60 Hz y 11-265 V DC F 3A/ 250V  
Potencia (ambos modelos) ..... 3W  
Excitación (ambos modelos) ..... 24V±3V@30mA

## CONVERSIÓN

Técnica ..... Sigma-Delta  
Resolución ..... 16 bits  
Cadencia ..... 20/s

## FILTRO

Frecuencia de corte (-3dB) ..... 7.3Hz a 0.2Hz  
Pendiente .....-20dB/Década

## DISPLAY

Rangos:  
JR-P ..... -9999 ÷ 9999, 14mm LED ROJO  
JR20-P ..... -1999 ÷ 9999, 20mm LED ROJO  
Punto decimal .....programable  
Leds .....2 para indicación estado setpoints  
Cadencia presentación ..... 50ms  
Indicación de sobre-escala display/entrada ..... *-OvE, OvE*  
Indicación sonda cortada ..... *OvE*

## AMBIENTALES

Temperatura de trabajo ..... -10°C ÷ +60°C  
Temperatura de almacenamiento ..... -25°C ÷ +85°C  
Humedad relativa no condensada ..... <95% @ 40°C  
Altitud máxima ..... 2000m  
Estanqueidad frontal ..... IP65

## SEÑAL DE ENTRADA

Configuración .....Diferencial asimétrica

## PROCESO

Impedancia de entrada para ±10V y ±200V .....1MΩ  
Impedancia de entrada para ±20mA .....<20Ω  
Máxima señal de entrada (±10V range) ..... ±11V  
Máxima señal de entrada (±20mA range) ..... ±22mA  
Máxima influencia EMI (±10V) .....±7mV  
Máxima influencia EMI (±200V) .....±60mV  
Máxima influencia EMI (±20mA) .....±6μA

| RANGO | RESOLUCIÓN | PRECISIÓN       |
|-------|------------|-----------------|
| ±10V  | 1mV        | ±(0.1%L + 6mV)  |
| ±200V | 20mV       | ±(0.1%L + 0.1V) |
| ±20mA | 2μA        | ±(0.1%L + 15μA) |

## POTENCIÓMETRO

Máxima corriente de medida .....<0.4mA  
Máxima influencia EMI .....±0.07%F.S.

| RANGO      | RESOLUCIÓN | PRECISIÓN            |
|------------|------------|----------------------|
| 100Ω-100kΩ | 0.01% F.E. | ±(0.1%L + 0.05%F.E.) |

## TEMPERATURA

Corriente de medida para Pt100 .....1mA  
Corriente de medida para Pt1000 .....100μA  
Máxima resistencia cables para Pt100 .....40Ω (balanceado)  
Linealización para Pt100/Pt1000 .....IEC 60751  
Coefficiente α para Pt100/Pt1000 .....0.00385  
Rango compensación unión fría para termopar .....-10°C a 60°C  
Máxima influencia EMI (Pt100) .....±1.3°C  
Máxima influencia EMI (Pt1000) .....±0.6°C  
Máxima influencia EMI (Termopar) .....±6°C

| Pt100 (3 hilos)     |            |                                      |
|---------------------|------------|--------------------------------------|
| RANGO               | RESOLUCIÓN | PRECISIÓN                            |
| -150.0°C a +800.0°C | 0.1°C      | ±(0.15%L + 0.5°C)<br>±(1%L + 0.5°C)* |
| -150°C a +800°C     | 1°C        |                                      |

| Pt1000 (2 hilos)    |            |                                      |
|---------------------|------------|--------------------------------------|
| RANGO               | RESOLUCIÓN | PRECISIÓN                            |
| -150.0°C a +800.0°C | 0.1°C      | ±(0.15%L + 0.5°C)<br>±(1%L + 0.5°C)* |
| -150°C a +800°C     | 1°C        |                                      |

\*Solo para temperaturas t<-50°C/-58°F

| TERMOPAR J          |            |                  |
|---------------------|------------|------------------|
| RANGO               | RESOLUCIÓN | PRECISIÓN        |
| -150.0°C a +999.9°C | 0.1°C      | ±(0.1%L + 0.6°C) |
| -150°C a +1100°C    | 1°C        |                  |

| TERMOPAR K          |            |                  |
|---------------------|------------|------------------|
| RANGO               | RESOLUCIÓN | PRECISIÓN        |
| -150.0°C a +999.9°C | 0.1°C      | ±(0.1%L + 0.6°C) |
| -150°C a +1200°C    | 1°C        |                  |

| TERMOPAR T          |            |                  |
|---------------------|------------|------------------|
| RANGO               | RESOLUCIÓN | PRECISIÓN        |
| -150.0°C a +400.0°C | 0.1°C      | ±(0.2%L + 0.8°C) |
| -150°C a +400°C     | 1°C        |                  |

| TERMOPAR N          |            |                  |
|---------------------|------------|------------------|
| RANGO               | RESOLUCIÓN | PRECISIÓN        |
| -150.0°C a +999.9°C | 0.1°C      | ±(0.1%L + 0.6°C) |
| -150°C a +1300°C    | 1°C        |                  |

## RESISTENCIA

Máxima corriente de medida para 999.9Ω ..... 2.3mA  
Máxima corriente de medida para 9999Ω ..... 230μA  
Máxima corriente de medida para 50.00kΩ ..... 23μA  
Máxima influencia EMI (999.9Ω) .....±0.7Ω  
Máxima influencia EMI (9999Ω) .....±2Ω  
Máxima influencia EMI (50.00kΩ) .....±20Ω

| RANGO   | RESOLUCIÓN | PRECISIÓN       |
|---------|------------|-----------------|
| 999.9Ω  | 0.1Ω       | ±(0.1%L + 0.7Ω) |
| 9999Ω   | 1Ω         | ±(0.1%L + 6Ω)   |
| 50.00kΩ | 10Ω        | ±(0.1%L + 35Ω)  |

## DESCRIPTION

INDICATEUR DIGITAL pour signaux d'entrée :

- PROCESS ( $\pm 10V$ ,  $\pm 200V$  et  $\pm 20mA$ )
- TEMPÉRATURE (Pt100, Pt1000, TC J, K, T et N)
- POTENTIOMÈTRE (100 $\Omega$  à 100k $\Omega$ )
- RÉSISTANCE (999.9 $\Omega$ , 9999 $\Omega$  et 50.00k $\Omega$ )

Les modèles **JR-P** et **JR20-P** acceptent une grande variété de signaux d'entrée utilisés dans le contrôle de process industriels.

Échelle facilement configurable quelque soit l'unité d'ingénierie en utilisant le mode manuel (valeurs théoriques du transducteur) ou le mode apprentissage (valeurs réels).

### Alimentation universelle AC/DC.

Fournit éxitation pour le transducteur de 24V DC @ 30mA.

Indicateur de **4 chiffres** de **14mm** et affichage – **9999** à **9999** pour JR-P, **20mm** et affichage –**1999** à **9999** pour JR20-P avec point décimal programmable.

Dispose de trois touches en face avant qui permettent la programmation totale de l'instrument et différentes fonctions en mode opérationnel ainsi que de 2 leds indicateurs de l'état des relais (seulement avec option 2RE installée).



Fonction MAX/MIN: l'instrument détecte et enregistre les valeurs maximum et minimum de la variable contrôlée.

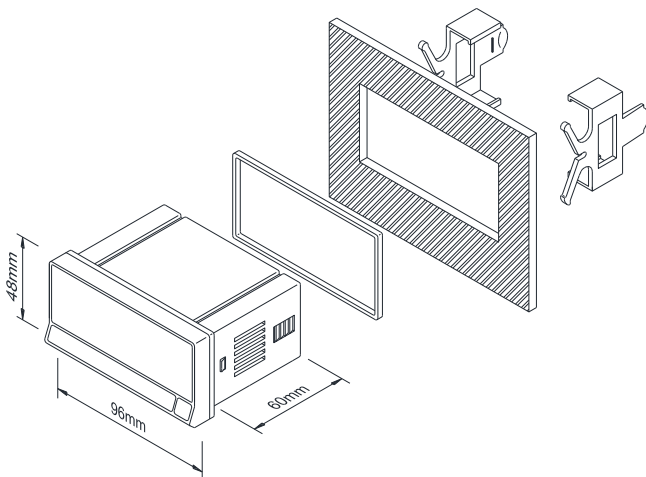
L'affichage du MAX et MIN et le RESET à la valeur actuel de l'affichage se réalisent depuis les touches fonctionnelles.

Compatible avec les signaux d'entrée **Température Pt100** (3 fils), **Pt1000** (2 fils) (IEC 60751) et **Thermocouples** (IEC 60584-1), **Process, Potentiomètre** (3 fils) et **Résistance** (2 fils).

## DIMENSIONS ET MONTAGE

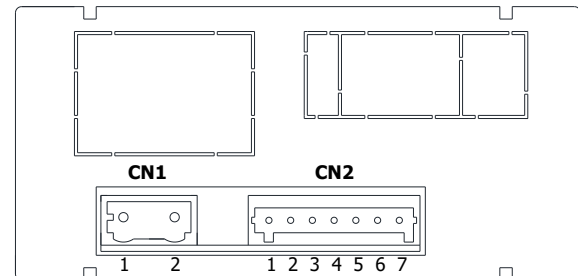
Dimensions ..... 96 x 48 x 60 mm (1/8 DIN).  
 Découpe du panneau ..... 92 x 45 mm.  
 Poids..... 150g.  
 Matériau du boîtier..... Polycarbonate s/ UL 94 V-0

L'instrument dispose d'un joint d'étanchéité et deux clips de fixation pour son montage.



## RACCORDEMENTS

Vue postérieure



| CN1 |          | ALIMENTATION    |     |                                 |         |
|-----|----------|-----------------|-----|---------------------------------|---------|
| 1   |          | V DC / V AC     |     |                                 |         |
| 2   |          | V DC / V AC     |     |                                 |         |
| CN2 |          | SIGNAL ENTRÉE   |     |                                 |         |
|     | PROCESS  | TEMPÉRATURE     |     | RÉSISTANCE                      | POTENT. |
|     |          | Pt100<br>Pt1000 | TC  |                                 |         |
| 1   | COM.     | Pt100<br>Pt1000 | -TC | COM.                            | Term 1  |
| 2   |          | Pt100<br>Pt1000 | +TC | 999.9 $\Omega$<br>9999 $\Omega$ | Curseur |
| 3   |          |                 |     | 50.00k $\Omega$                 | Term 2  |
| 4   |          | Pt100<br>COM.   |     |                                 |         |
| 5   | +mA      |                 |     |                                 |         |
| 6   | +EXC 24V |                 |     |                                 |         |
| 7   | +V       |                 |     |                                 |         |

## RÉFÉRENCES POUR COMMANDES

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

# SPÉCIFICATIONS TECHNIQUES

## FONCTIONS SPÉCIALES

Récupération de la programmation d'usine.  
Blocage de la programmation par software.

## PRÉCISION

Coefficient de température ..... 100 ppm/°C  
Temps d'échauffement ..... 5 minutes  
Température pour la précision spécifiée ..... 23°C±5°C

## ALIMENTATION ET FUSIBLES (DIN 41661) (non inclus)

**JR-P:** 20-265 V AC 50/60 Hz et 11-265 V DC F 3A/ 250V  
**JR20-P:** 20-265 V AC 50/60 Hz et 11-265 V DC F 3A/ 250V  
Consommation (les deux modèles) ..... 3W  
Excitation (les deux modèles) ..... 24V±3V@30mA

## CONVERSION

Technique ..... Sigma-Delta  
Résolution ..... 16 bits  
Cadence ..... 20/s

## FILTRE

Fréquence de coupure (-3dB) ..... 7.3Hz à 0.2Hz  
Pente ..... -20dB/Décade

## AFFICHAGE

Plages:  
JR-P ..... -9999 ÷ 9999, 14mm LED Rouge  
JR20-P ..... -1999 ÷ 9999, 20mm LED Rouge  
Point décimal ..... programmable  
Leds ..... 2 pour indication état des setpoints  
Rafraîchissement affichage ..... 50ms  
Dépassement d'échelle affichage/entrée ..... *0.0E, 0.0E*  
Rupture de sonde ..... *0.0E*

## ENVIRONNEMENT

Température de travail ..... -10°C ÷ +60°C  
Température de stockage ..... -25°C ÷ +85°C  
Humidité relative non condensée ..... <95% @ 40°C  
Altitude maximale ..... 2000m  
Étanchéité du frontal ..... IP65

## SIGNAL D'ENTRÉE

Configuration ..... Différentiel asymétrique

## PROCESS

Impédance d'entrée pour ±10V et ±200V ..... 1MΩ  
Impédance d'entrée pour ±20mA ..... <20Ω  
Maximale signal d'entrée (±10V range) ..... ±11V  
Maximale signal d'entrée (±20mA range) ..... ±22mA  
Maximale influence EMI (±10V) ..... ±7mV  
Maximale influence EMI (±200V) ..... ±60mV  
Maximale influence EMI (±20mA) ..... ±6μA

| PLAGE | RÉSOLUTION | PRÉCISION       |
|-------|------------|-----------------|
| ±10V  | 1mV        | ±(0.1%L + 6mV)  |
| ±200V | 20mV       | ±(0.1%L + 0.1V) |
| ±20mA | 2μA        | ±(0.1%L + 15μA) |

## POTENTIOMÈTRE

Courant maximum de mesure ..... <0.4mA  
Maximale influence EMI ..... ±0.07%P.E.

| PLAGE      | RÉSOLUTION | PRÉCISION            |
|------------|------------|----------------------|
| 100Ω-100kΩ | 0.01%P.E.  | ±(0.1%L + 0.05%P.E.) |

## TEMPÉRATURE

Courant de mesure pour Pt100 ..... 1mA  
Courant de mesure pour Pt1000 ..... 100μA  
Résistance maximale des fils pour Pt100 ..... 40Ω (équilibré)  
Linéarisation Pt100/Pt1000 ..... IEC 60751  
Coefficient α pour Pt100/Pt1000 ..... 0.00385  
Compensation jonction froide pour thermocouple ..... -10°C à 60°C  
Maximale influence EMI (Pt100) ..... ±1.3°C  
Maximale influence EMI (Pt1000) ..... ±0.6°C  
Maximale influence EMI (Thermocouple) ..... ±6°C

| Pt100 (3 fils)      |            |                                      |
|---------------------|------------|--------------------------------------|
| PLAGE               | RÉSOLUTION | PRÉCISION                            |
| -150.0°C à +800.0°C | 0.1°C      | ±(0.15%L + 0.5°C)<br>±(1%L + 0.5°C)* |
| -150°C à +800°C     | 1°C        |                                      |

| Pt1000 (2 fils)     |            |                                      |
|---------------------|------------|--------------------------------------|
| PLAGE               | RÉSOLUTION | PRÉCISION                            |
| -150.0°C à +800.0°C | 0.1°C      | ±(0.15%L + 0.5°C)<br>±(1%L + 0.5°C)* |
| -150°C à +800°C     | 1°C        |                                      |

\*Uniquement pour des températures < 50°C/58°F

| THERMOCOUPLE J      |            |                  |
|---------------------|------------|------------------|
| PLAGE               | RÉSOLUTION | PRÉCISION        |
| -150.0°C à +999.9°C | 0.1°C      | ±(0.1%L + 0.6°C) |
| -150°C à +1100°C    | 1°C        |                  |

| THERMOCOUPLE K      |            |                  |
|---------------------|------------|------------------|
| PLAGE               | RÉSOLUTION | PRÉCISION        |
| -150.0°C à +999.9°C | 0.1°C      | ±(0.1%L + 0.6°C) |
| -150°C à +1200°C    | 1°C        |                  |

| THERMOCOUPLE T      |            |                  |
|---------------------|------------|------------------|
| PLAGE               | RÉSOLUTION | PRÉCISION        |
| -150.0°C à +400.0°C | 0.1°C      | ±(0.2%L + 0.8°C) |
| -150°C à +400°C     | 1°C        |                  |

| THERMOCOUPLE N      |            |                  |
|---------------------|------------|------------------|
| PLAGE               | RÉSOLUTION | PRÉCISION        |
| -150.0°C à +999.9°C | 0.1°C      | ±(0.1%L + 0.6°C) |
| -150°C à +1300°C    | 1°C        |                  |

## RÉSISTANCE

Courant maximum de mesure pour 999.9Ω ..... 2.3mA  
Courant maximum de mesure pour 9999Ω ..... 230μA  
Courant maximum de mesure pour 50.00kΩ ..... 23μA  
Maximale influence EMI (999.9Ω) ..... ±0.7Ω  
Maximale influence EMI (9999Ω) ..... ±2Ω  
Maximale influence EMI (50.00kΩ) ..... ±20Ω

| PLAGE   | RÉSOLUTION | PRÉCISION       |
|---------|------------|-----------------|
| 999.9Ω  | 0.1Ω       | ±(0.1%L + 0.7Ω) |
| 9999Ω   | 1Ω         | ±(0.1%L + 6Ω)   |
| 50.00kΩ | 10Ω        | ±(0.1%L + 35Ω)  |

## 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).



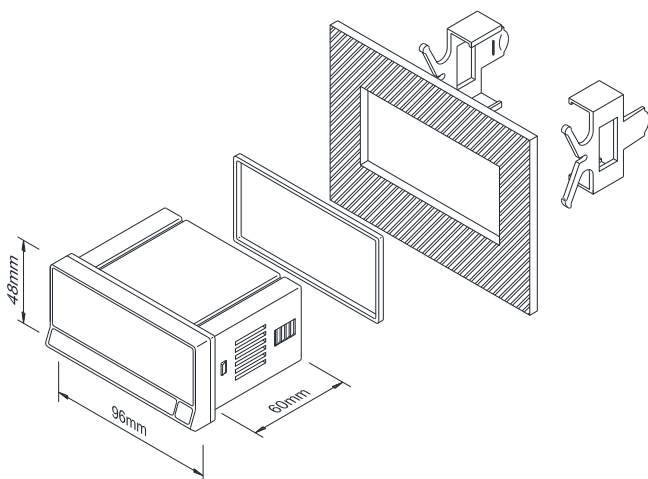
Detection, saving, later recalling and resetting of maximum and minimum values reached by the input signal since last reset activation. Reset function sets automatically memorized value to current input signal value when maximum or minimum value are displayed. Maximum and minimum values recalling to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

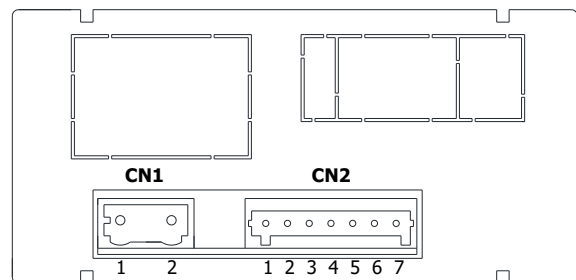
Dimensions..... 96 x 48 x 60 mm (1/8 DIN).  
 Panel cutout ..... 92 x 45 mm.  
 Weight ..... 150g.  
 Case material..... UL 94 V-0 polycarbonate

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



## CONNECTIONS

Rear view



| CN1 | POWER SUPPLY |             |        |                                 |         |
|-----|--------------|-------------|--------|---------------------------------|---------|
|     | 1            | V DC / V AC |        |                                 |         |
| 2   | V DC / V AC  |             |        |                                 |         |
| CN2 | INPUT SIGNAL |             |        |                                 |         |
|     | PROCESS      | TEMPERATURE |        | RESISTANCE                      | POTENT. |
|     |              | Pt100       | TC     |                                 |         |
|     |              | Pt1000      |        |                                 |         |
| 1   | COMMON       | Pt100       | -TC    | COMMON                          | Term 1  |
| 2   |              | Pt100       | +TC    | 999.9 $\Omega$<br>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.

## ACCURACY

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/Decade

## 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 .....  $-D_{UE}$ ,  $D_{UE}$   
Sensor failure indication .....  $D_{UE}$

## ENVIRONMENTAL CONDITIONS

Operating temperatura ..... -10°C ÷ +60°C  
Storage temperatura ..... -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 .....1MΩ  
±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

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

## POTENTIOMETER

Maximum measurement current<0.4mA  
EMI max. influence ±0.07%F.S.

| 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)*   |

| 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        |                    |

| 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        |                    |

## RESISTANCE

999.9Ω range max. measurement current ..... 2.3mA  
9999Ω range max. measurement current ..... 230μA  
50.00kΩ range max. measurement current ..... 23μA  
EMI max. Influence (999.9Ω) .....±0.7Ω  
EMI max. Influence (9999Ω) .....±2Ω  
EMI max. Influence (50.00kΩ).....±20Ω

| 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)  |



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