**Temperature / mA converter**

**9113B**

- Input for RTD, TC and mA
- Active / passive mA output via the same two terminals
- 1 or 2 channels
- Can be supplied separately or installed on power rail, PR type 9400
- SIL 2-certified via Full Assessment

### Advanced features

- Configuration and monitoring by way of detachable display front (PR 45xx); process calibration and signal simulation.
- Copying of the configuration from one device to others of the same type via the display front.
- TC inputs can use either the internal CJC or a terminal with a built-in Pt100 sensor (PR 5910Ex, channel 1 / PR 5913Ex, channel 2) for higher accuracy.
- Advanced monitoring of internal communication and stored data.
- SIL 2 functionality is optional and must be activated in a menu point.

### Applications

**Input signals:**
- **Channel 1**
  - Current, TC, RTD

**Output signals:**
- Analog, 0/4...20 mA

- **Channel 2**
  - 2-wire supply

**Power connection:**
- **Supply**
  - Supply + 230...31.2 VAC
- **Device status**
  - N.C.
- **Device status**
  - N.O.

### Technical characteristics

- 1 green and 2 red front LEDs indicate operation status and malfunction.
- 2.6 kVAC galvanic isolation between input, output and supply.

### Mounting

- The devices can be mounted vertically or horizontally without distance between neighbouring units.

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**Environmental Conditions**

- Operating temperature: -20°C to +60°C
- Storage temperature: -20°C to +85°C
- Calibration temperature: 20°C to 28°C
- Relative humidity: < 95% RH (non-cond.)
- Protection degree: IP20
- Pollution degree: acc. overvoltage cat. II

**Mechanical specifications**

- Dimensions (HxWxD): 109 x 23.5 x 104 mm
- Dimensions (HxWxD) w/ 4501/451x: 109 x 23.5 x 116 / 131 mm
- Weight approx. 250 g
- Weight incl. 4501 / 451x (approx.): 265 g / 280 g
- DIN rail type: DIN EN 60715/35 mm
- Wire size: 0.13...2.06 mm² AWG 26...14 stranded wire
- Screw terminal torque: 0.5 Nm
- Vibration: IEC 60068-2-6
  - 2...13.2 Hz: ±1 mm
  - 13.2...100 Hz: ±0.7 g

**Common specifications**

- Supply
  - Supply voltage: 19.2...31.2 VDC
  - Fuse: 400 mA SB / 250 VAC
  - Max. required power: ≤ 0.8 W / ≤ 1.4 W (1 ch./2 ch.)
  - Max. power dissipation, 1 ch. ≤ 0.8 W / ≤ 1.4 W

- Test/working: Input to any
  - Screw terminal torque: 0.5 Nm
  - Vibration: IEC 60068-2-6
  - 2...13.2 Hz: ±1 mm
  - 13.2...100 Hz: ±0.7 g

- Analog output to supply
  - 2.6 kVAC / 300 VAC
  - 2.6 kVAC / 300 VAC
  - 1.5 kVAC / 150 VAC

- Response time
  - Temperature input, programmable (0...90%, 100...10%)... 1...60 s
  - mA / V input (programmable)... 0.4...60 s

- Programming
  - PR 45xx

- Signal / noise ratio
  - Min. 60 dB (0...100 kHz)

- Signal dynamics, output
  - 24 bit

- Sensor error indication
  - ±(2.0°C + 0.4°C * Δt)
  - ≤ 0.01% of span / 100 Ω

- Load stability
  - ≤ 600 Ω

- EMC immunity influence
  - < ±0.5% of span

- Expanded EMC immunity: NAMUR NE21, A criterion, burst:...< ±1% of span

**Input specifications**

- RTD input
  - RTD type: Pt10/20/50/100/200/250/300/P
  - Cable resistance per wire: 50 Ω (max.)
  - Sensor current: Nom. 0.2 mA
  - Effect of sensor cable resistance (3-4/wire): < 0.002 Ω / Ω
  - Sensor error detection: Programmable ON / OFF

- TC input

- Low junction compensation (CJC) via ext. sensor in 5910...
- Cold junction compensation (CJC) via int. mounted sensor RTD 5910...
- Cold junction compensation (CJC) via ext. sensor in 5910...

**Output specifications**

- Current output
  - Signal ranges...
  - Programmable measurement ranges...
  - Input resistance...
  - Sensor error detection...
  - Programmed ON / OFF

- Passive 2-wire output
  - Max. external 2-wire supply...

- Status relay
  - Max. voltage...
  - Max. current...
  - Max. AC power...

**Observed authority requirements**

- EMC: 2014/30/EU
- LVD: 2014/35/EU
- RoHS: 2011/65/EU
- ATEX: 2014/34/EU
- EAC: TR-CU 020/2011
- EAC Ex: TR-CU 012/2011

**Approvals**

- ATEX: KEMA 07ATEX0148 X
- IECEx: KEM 09.0052X
- FM: FM19US0059X / FM19CA0032X
- INMETRO: DEKRA 16.0003 X
- cULus: UL 61010-1 / UL 61010-1 / E314307
- EAC: RU C-DK.GB08.V.00410
- DNV-GL Marine: TAA00000UD
- ClassNK: TA18527M
- SII: SIL 2 certified & fully assessed acc. to IEC 61508