PERFORMANCE MADE SMARTER



Temperature / mA converter

9113A

– 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

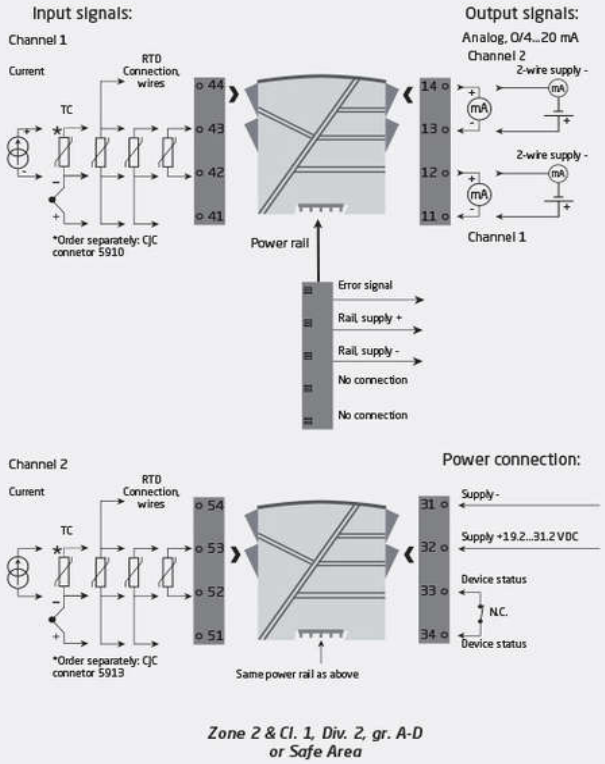
Advanced features
- Configuration and monitoring by way of detachable display front (PR 4500); process calibration and signal simulation.
- Copying of the configuration from one device to others of the same type via the display front.
- TC inputs can use either the internal CJC or a terminal with a built-in Pt100 sensor (PR 5910, channel 1 / PR 5913, 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.

Application
- 9113A can be mounted in the safe area or in zone 2 / Class I, Division 2, Groups A, B, C, D.
- Conversion and scaling of temperature (Pt, Ni and TC) and active current signals.
- 9113A has been designed, developed and certified for use in SIL 2 applications according to the requirements of IEC 61508.
- Suitable for the use in systems up to Performance Level “d” according to ISO-13849.

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.

Applications



This page is automatically generated on the basis of information provided on www.prelectronics.com and affiliated websites. It is provided to you as a service and for information purpose only. While we have attempted to maintain the information as accurately as possible, the page may contain errors or omissions for which we disclaim any and all liability

Order

Type	Channels		I.S. / Ex approvals	
9113A	Single	: A	ATEX, IECEx, FM, INMETRO, EAC-Ex, UKEX	: -
	Double	: B	UL 913, ATEX, IECEx, FM, INMETRO, EAC-Ex, UKEX	: -U9
			KCs, ATEX, IECEx, FM, INMETRO, EAC-Ex, UKEX	: -KCs

Example: 9113AB

Environmental Conditions

Operating temperature ..... -20°C to +60°C
Storage temperature ..... -20°C to +85°C
Calibration temperature ..... 20...28°C
Relative humidity ..... < 95% RH (non-cond.)
Protection degree IP20
Installation in ..... Pollution degree 2 & meas. / overvoltage cat. II

Mechanical specifications

Dimensions (HxWxD) ..... 109 x 23.5 x 104 mm
Dimensions (HxWxD) w/ PR 4500 ..... 109 x 23.5 x 131 mm
Weight approx ..... 250 g
DIN rail type ..... DIN EN 60715/35 mm
Wire size ..... 0.13...2.08 mm^2 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 / 2 ch ..... ≤ 0.8 W / ≤ 1.4 W

Isolation voltage

Test /working: Input to any ..... 2.6 kVAC / 300 VAC reinforced isolation
Analog output to supply ..... 2.6 kVAC / 300 VAC reinforced isolation
Status relay to supply ..... 1.5 kVAC / 150 VAC reinforced isolation

Response time

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

Programming ..... PR 4500 communication interfaces
Signal / noise ratio ..... Min. 60 dB (0...100 kHz)
Signal dynamics, input ..... 24 bit
Signal dynamics, output ..... 16 bit
Accuracy ..... Better than 0.1% of sel. range
EMC immunity influence ..... < ±0.5% of span
Extended EMC immunity: NAMUR NE21, A criterion, burst ..... < ±1% of span

Input specifications

RTD input

RTD type Pt10/20/50/100/200/250/300/Pt400/500/1000; Ni50/100/120/1000
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

Thermocouple type ..... B, E, J, K, L, N, R, S, T, U, W3, W5, LR
Cold junction compensation (CJC) via ext. sensor in 5910 ..... 20...28°C ≤ ±1°C, -20...20°C / 28...70°C ≤ 2°C
CJC via int. mounted sensor ..... ±(2.0°C + 0.4°C * Δt)
Sensor error detection ..... Programmable ON or OFF (only wire breakage)
Sensor error current: When detecting / else ..... Nom. 2 µA / 0 µA

Current input

Measurement range ..... 0...23 mA
Programmable measurement ranges ..... 0...20 and 4...20 mA
Input resistance ..... Nom. 20 Ω + PTC 50 Ω
Sensor error detection ..... Programmable ON / OFF

Output specifications

Current output

Signal range ..... 0...23 mA
Programmable signal ranges ..... 0...20/4...20/20...0/20...4 mA
Load (@ current output) ..... ≤ 600 Ω
Load stability ..... ≤ 0.01% of span / 100 Ω
Sensor error indication ..... 0 / 3.5 / 23 mA / none
NAMUR NE43 Upscale/Downscale ..... 23 mA / 3.5 mA
Output limitation, on 4...20 and 20...4 mA signals ..... 3.8...20.5 mA
Output limitation, on 0...20 and 20...0 mA signals ..... 0...20.5 mA
Current limit ..... ≤ 28 mA

Passive 2-wire mA output

Max. external 2-wire supply ..... 26 VDC
Effect of external 2-wire supply voltage variation ..... < 0.005% of span / V

Status relay

Max. voltage ..... 125 VAC / 110 VDC
Max. current ..... 0.5 AAC / 0.3 ADC
Max. AC power ..... 62.5 VA / 32 W

of span ..... = of the presently selected range

Observed authority requirements

EMC ..... 2014/30/EU & UK SI 2016/1091
LVD ..... 2014/35/EU & UK SI 2016/1101
ATEX ..... 2014/34/EU & UK SI 2016/1107
RoHS ..... 2011/65/EU & UK SI 2012/3032
EAC ..... TR-CU 020/2011
EAC Ex ..... TR-CU 012/2011
EAC LVD ..... TR-CU 004/2011

Approvals

ATEX ..... KEMA 07ATEX0148 X
IECEx ..... KEM 09.0052X
UKEX ..... DEKRA 21UKEX0175X
c FM us ..... FM19US0059X / FM19CA0032X
c UL us, UL 61010-1 ..... E314307
c UL us, UL 913 ..... E233311 (only 9113xx-U9)
KCs ..... 21_AV4BO_0175X (only 9113Ax-KCs)
EAC Ex ..... RU C-DK.HA65.B.00355/19
DNV Marine TAA00000JD

ClassNK	TA18527M
SIL	SIL 2 certified & fully assessed acc. to IEC 61508