Signal calculator

2289

– Two analog inputs

– Multiple functions

– Front-programmable

– 3-digit LED display

– Version with a Pt100 input

– Analog output

Advanced features

• Programmed via the user interface which consists of a 3-digit display and 3 function keys in the front panel.

Application

• Operates as a PID controller with an analog or a Pt100 input.
• Functions include a manual / automatic controller, an analog calculator with a scale function on both inputs, a samplehold transmitter, a peak-hold transmitter, a delay transmitter, a signal limiter, averaging of noisy signals, monitoring of a signal's slope, or an analog multiplexer.

Technical characteristics

• The A and B inputs can be programmed to receive current signals in the range 0...20 mA (eg. 4...20 mA), or voltage signals in the range 0...10 VDC.
• Input A is a linearized Pt100 with a 3-wire connection. input B is an analog current / voltage input.
• Digital inputs are jumper selectable NPN or PNP.
• Analog standard current / voltage output of 0/4...20 mA / 0/2...10 VDC.
• Both the input signals and the output signal can be inverted.
• Mounting for a standard 11-pole socket which can be adapted for DIN rail or plate use with PR's 7023 adaptor and 7024 mounting keying. In environments with strong vibrations the PR 7002 can be mounted as an additional safety catch for system 2200 devices on the relay socket.

Applications
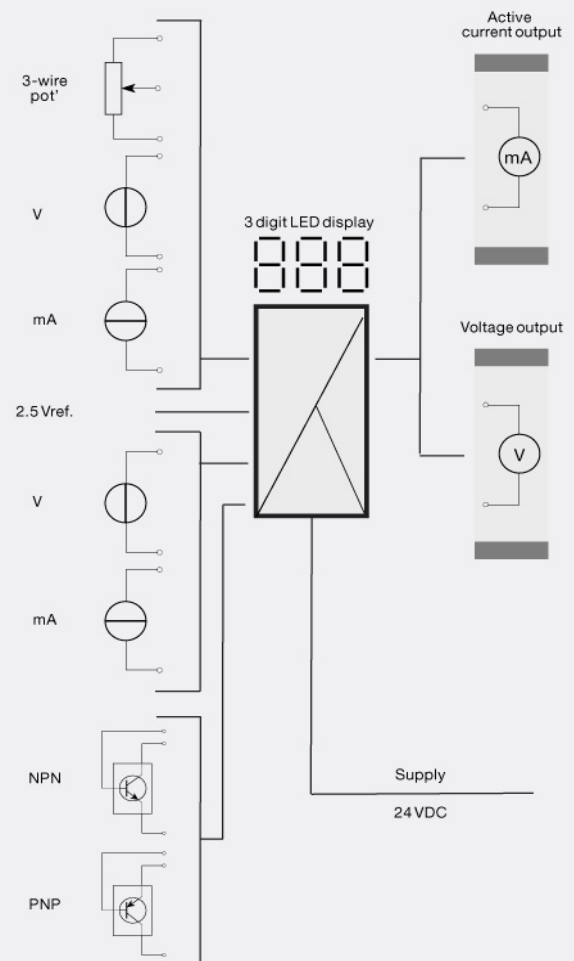
Type	Input		
2289	Current / voltage	:	A
	Pt100 & current / voltage	:	B

Environmental Conditions

Operating temperature.................................... -20°C to +60°C
Calibration temperature................................. 20...28°C
Relative humidity.. < 95% RH (non-cond.)
Protection degree... IP50

Mechanical specifications

Dimensions (HxWxD).................................... 80.5 x 35.5 x 84.5 mm (D is without pins)
Weight approx.. 130 g

Common specifications

Supply
Supply voltage... 19.2...28.8 VDC
Max. required power....................................... 2.7 W
Internal power dissipation.............................. 2.4 W

Response time
Response time... < 60 ms

Signal / noise ratio.. Min. 60 dB
Updating time.. 20 ms
Signal dynamics, input................................... 20 bit
Signal dynamics, output................................. 16 bit
Proportional band (XP)................................... 0.01...999%
Gain, 1/XP =.. 0.1...10000
Integrating time (TI)....................................... 0...999 s
Differentiating time (TD)................................ 0...999 s
Effect of supply voltage change..................... < ±0.002% of span / %V
Auxiliary voltages: Reference
voltage... 2.5 VDC ±0.5% / 15 mA
Temperature coefficient................................. < ±0.01% of span / °C
Linearity error.. < 0.1% of span
EMC immunity influence................................. < ±0.5%

Input specifications

Common input specifications
Max. offset.. 50% of selected max. value

Current input
Measurement range.. 0...20 mA
Min. measurement range (span)..................... 4 mA
Input resistance... Nom. 50 Ω

Voltage input
Measurement range.. 0...10 VDC
Min. measurement range (span)..................... 200 mV
Input resistance... Nom. 10 MΩ

RTD input
RTD type.. Pt100 (2289B)
Cable resistance per wire
(max.).. 25 Ω
Sensor current... Nom. 1.25 mA

NPN, digital input... Pull up 24 VDC / 6.9 mA
PNP, digital input.. Pull down 0 VDC / 6.9 mA
Pulse length... > 50 ms

Output specifications

Current output
Signal range... 0...20 mA
Min. signal range.. 5 mA
Load (@ current output)................................. ≤ 600 Ω
Load stability.. ≤ 0.01% of span / 100 Ω
Current limit... 20.5 mA

Voltage output through internal
shunt.. See manual for details
*of span... = of the presently selected range

Observed authority requirements

EMC... 2014/30/EU

Approvals

EAC.. TR-CU 020/2011