



C201 / C201X Analog PC-Programmable 2-wire Transmitters for Pt100 Input



C201 is an analog, non-isolated, easy-to-use 2-wire transmitter for Pt100 input.

C201X is the Intrinsically Safe version for use in hazardous areas.

Configuration is made in seconds with the user friendly software, ConSoft, without need for external power.

C201/C201X are designed for Pt100 input in 2- and 3-wire connection. Different Pt100 standards can be chosen.

Reduced height simplifies mounting in low connection heads.

Measurements with Pt100 sensors in 2- and 3-wire connection

C201/C201X accept inputs from three different standardized Pt100 sensors: Pt100 acc. to IEC 60751 ($\alpha=0.00385$), JIS C 1604 ($\alpha=0.003916$) and US standards ($\alpha=0.003902$). 2- and 3-wire connection can be selected.

PC programmable without need for calibration

Input type and measuring range are set from PC. Full accuracy is provided without any need for calibration.

Temperature linear output

Fully temperature linear 4-20 mA output.

High accuracy

With an accuracy of 0.1 °C / 0.2 °F or 0.1 % of span (the largest apply) C201/C201X offer an outstanding performance in their class.

Compensation for wire resistance in 2-wire connection

With Pt100 input in 2-wire connection, a compensation for wire resistance up to 15 Ω can be performed.

Sensor matching for maximum accuracy

A matching to a calibrated temperature sensor can easily be performed by entering the sensor errors in the low and high ends of the measuring range.

Designed for harsh conditions

Rugged design tested for 10 g vibrations.

Mounting, wiring and testing

C201/C201X are designed to fit inside connection heads type DIN B or larger.

The large centre hole, dia. 7 mm / 0.28 inch, the robust terminals with test connections and the low height greatly simplify the mounting, wiring and testing procedure.

Configuration without external power

Edit or read the configuration off-line, i.e. without power supply, by just connecting to a USB port of a PC

ConSoft, easy-to-use Windows configuration software

The simple and user friendly software, ConSoft, is used for transmitter configuration in seconds. In one window all parameters are set, such as sensor type, measuring range, sensor failure action, error corrections etc.

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Specifications

Input RTD

Pt100 (IEC 60751, $\alpha=0.00385$)	2-, 3-wire connection	-50 to +850 °C / -58 to +1562 °F
Pt100 (JIS C 1604, $\alpha=0.003916$)	2-, 3-wire connection	-50 to +850 °C / -58 to +1562 °F
Pt100 (US, $\alpha=0.003902$)	2-, 3-wire connection	-50 to +850 °C / -58 to +1562 °F
Sensor current		~ 0.5 mA
Maximum sensor wire resistance	3-wire connection	20 Ω /wire
	2-wire connection	Compensation for 0 to 15 Ω loop resistance

Monitoring

Sensor break monitoring	Selectable	Upscale (≥ 21.0 mA) or downscale (≤ 3.6 mA) action
Sensor short-circuit	Fixed	Downscale (≤ 3.6 mA) action

Adjustments

Zero adjustment		-50, -25, 0, +25, +50 °C / -58, -13, +32, +77, +122 °F
Minimum span		20 °C / 36 °F

Output

Analog		4-20 mA, temperature linear
Response time (90 %)		~50 ms
Permissible load, see load diagram		700 Ω @ 24 VDC

General data

Isolation In - Out		Non-isolated
Ex-approval	C201	ATEX: II 3 G Ex nL IIC T4-T6 FM: NI CL I, DIV 2, GP A - D CSA: Class I, Division 2
	C201X	ATEX: II 1 G EEx ia IIC T4-T6 FM: IS CL I, DIV 1, GP A - D CSA: Class I, Division 1 per Intrinsic Safety
Power supply, polarity protected	C201	8,5 to 32 VDC, Standard power supply
	C201X	8,5 to 30 VDC, I.S. power supply

Environment conditions

Ambient, temperature	Storage and operation	-40 to +85 °C / -40 to +185 °F
Humidity		0 to 100 %RH
Vibrations		Acc. to IEC 68-2-6, Test Fc, 84-2000 Hz, 10 g
Shock		Acc. to IEC-60068-2-31, test Ec
EMC	Standards	EN 61326, NAMUR NE 21
	Immunity performance	ESD, Radiated EM-field: Criteria A Surge: ~3 % of span Burst, Conducted RF: ~1 % of span

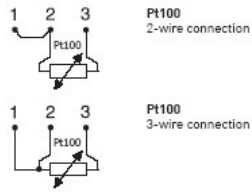
Accuracy and stability

Linearity & calibration error		Max. of ± 0.1 °C / ± 0.2 °F or ± 0.1 % of span
Temperature influence	Deviation from 20 °C / 68 °F	Max. of ± 0.25 °C / 25 °C or ± 0.25 % of span / 25 °C Max. of ± 0.5 °F / 50 °F or ± 0.28 % of span / 50 °F
Sensor wire influence	2-wire connection	Adjustable wire resistance compensation
	3-wire connection	Negligible, with equal wire resistance
Supply voltage influence		Negligible
Long-term stability		± 0.1 % of span per year

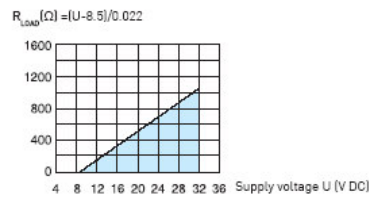
Housing

Material, Flammability (UL)		PC/ABS + PA, V0
Mounting		DIN B-head or larger, DIN rail (with mounting kit)
Connection	Single/stranded wires	Max. 1.5 mm ² , AWG 16
Weight		32 g
Protection, housing / terminals		IP 65 / IP 00

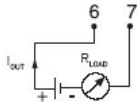
Input connections



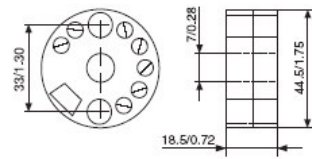
Output load diagram



Output connections



Dimensions



Ordering information

C201	70C2010010
C201X	70C201X010
PC configuration kit (USB-conn.)	70CFGUS001
Configuration	70CAL00001
Head mounting kit	70ADA00017
Rail mounting kit	70ADA00013