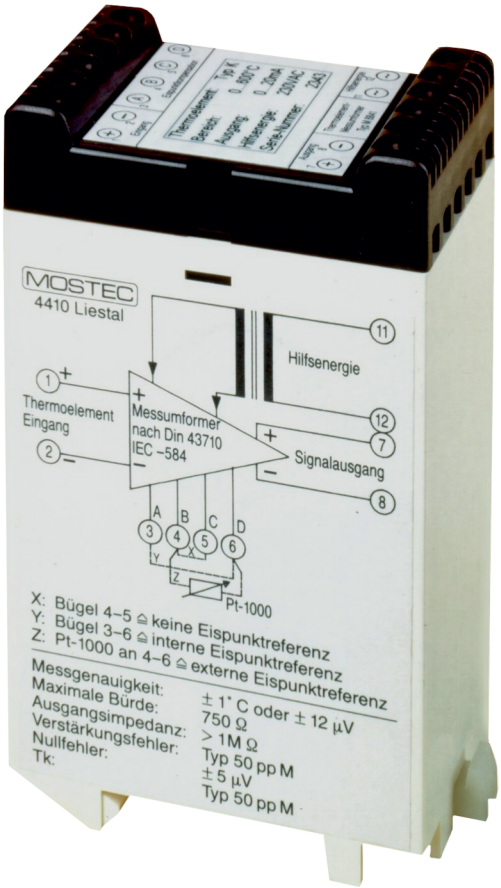
MOSTEC AG
Elektronische Mess- und Regelsysteme
Lausenerstrasse 13A
CH-4410 Liestal, Switzerland

T: +41 61 921 40 90
F: +41 61 921 40 83
www.mostec.ch
info@mostec.ch

MOSTEC
Swiss Electronics

Thermocouple Transmitter Type M8841



Technical description

The M8841 "Snap-On" temperature transmitter amplifies signals generated by thermocouples which can be used for process control equipment. Standard output current signals are in the range of 0...20mA or 4...20mA. Because thermocouples can only detect temperature differences, there still remains the problem of calibrating and calculating the absolute temperature. Built into the M8841 is a platinum probe (connected to the unit's terminal connector) which measures the cold junction reference temperature. This is algebraically added to the measured thermocouple's signal to determine the absolute temperature. There are three configured options possible: external, internal or without cold junction compensation. External compensation is recommended when the thermocouple is connected to the transmitter with copper wire. The remote platinum sensor is now located in the junction box where the thermocouple wire connects to the copper wire. It measures there the "junction" temperature. Long copper cabling does not add error signals along the line. The selection of the cold junction mode is programmable with wire jumpers an the screw terminals. Internal cold junction compensation is the same as the external. A platinum probe measures the temperature of the screw terminal and compensates for an absolute value.

All commercially available thermocouples with temperature operating ranges between -100°C and +1800°C (-148°F to 3272°F) can be connected to the M8841. As thermocouples generate nonlinear output signals, the M8841 incorporates an 13-bit digital linearization. Computation of the linearizing elements is done by a factory computer program and any transfer function is possible.

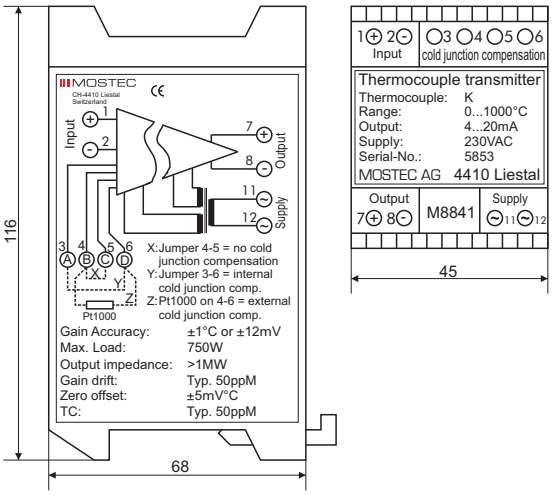
Technical Data:

Linearization:	13-bit, digital
Linearization error:	typ. 0.1%
Input voltage:	Maximum ±100 mV
Input protection:	Diode protection
Input impedance:	1GW
Damping:	Maximum bandwidth 0.2 Hz
Accuracy:	±1°C or ±12 mV whichever is greater
Zero error:	Maximum ±5 mV/°C (chopper amplifier)
Gain error:	typ. 50 ppM/°C
Cold junction compensation:	1. No compensation. Wire Jumper "X" from 4 to 5. 2. Internal compensation with Pt-1000 platinum probe -10 to +50°C (14 to 122°F). Wire Jumper "Y" from 3 to 6. 3. External compensation with Pt-1000 platinum probe. The measurement is made in the thermocouple junction box. Compensated junction box temp. range -10 to +50°C (14 to 122°F). Connect the external Pt-1000 platinum probe to 4 and 6.
Signal current output :	0...20mA / 4...20mA, others on request
Current outout impedance:	>1MW at 20mA
Current output load:	>750W
Supply voltage:	115V/60 Hz or 230V/50 Hz, ca. 5 VA, others on request
Terminals:	12-pole screw terminal
Terminal description:	1 = Signal Input + 7 = Signal output + 2 = Signal Input - 8 = Signal output - 3 = Cold junction comp. A 9 = not used 4 = Cold junction comp. B 10 = not used 5 = Cold junction comp. C 11 = Power supply N 6 = Cold junction comp. D 12 = Power supply L
Mounting:	35mm mounting rail, EN50022-35
Weight:	280 grams (9.8 oz)
Warranty:	2 years
Options:	- Special supply voltage - Special ranges for thermocouples below - Special Output Signal currents - Special Input Signals supplied by customer - Pt-1000 platinum probes for junction boxes

Part number list:

– Pt30Rh-Pt6Rh	(B), DIN/IEC 584	0...1700°C	= M8841-B1-(*)
		0...1000°C	= M8841-B2-(*)
– NiCr-CuNi	(E), IEC 584	-100... 1000°C	= M8841-E1-(*)
		0...1000°C	= M8841-E2-(*)
– Fe-CuNi	(J), DIN/IEC 584	-100...760°C	= M8841-J1-(*)
		0...700°C	= M8841-J2-(*)
– NiCr-Ni	(K), IEC 584	-100...1300°C	= M8841-K1-(*)
		0... 1000°C	=-M8841-K2-(*)
– Fe-CuNi	(L), DIN 43710	-100...890°C	= M8841-L 1-(*)
		0...800°C	= M8841-L 2-(*)
– Pt13%Rh-Pt	(R), DIN/IEC 584	0...1700°C	= M8841-R1-(*)
		0...1000°C	= M8841-R2-(*)
– Pt10'%Rh-Pt	(S), DIN/IEC 584	0...1700°C	= M8841-S1-(*)
		0... 1000°C	= M8841-S2-(*)
– Cu-CuNi	(T), DIN/IEC 584	-100...400°C	= M8841-T1-(*)
		0...400°C	= M8841-T2-(*)
– Cu-CuNi	(U), DIN 43710	-100...590°C	= M8841-U1-(*)
		0...500°C	= M8841-U2-(*)

Dimensions:



How to order:

M8841 -E 1 -A

-E = for Thermocouple «E»

-1 = Standard range 1, see list

-2 = Standard range 2, see list

-3 = Special range for example -100...+100°C

(*) -A = Output 0...20 mA,

-B = Output 4... 20 mA,

-C = Special output for example 0...10V

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