

Mostec AG
Mess- und Regeltechnik
Lausenerstrasse 13a
CH-4410 Liestal
Switzerland
Tel. +41 61 921 40 90
Fax +41 61 921 40 83
Internet www.mostec.ch
E-Mail info@mostec.ch

MOSTEC

Isolation Amplifier and Line Conditioner Type M8742/22



Technical description

The M8742/22 series "snap-on" isolation amplifier and line conditioner separates and/or converts an analog process signal for use in computers and industrial control equipment. Also, a computer or control equipment's analog signal can be adapted to the process environment. Isolation amplifiers are also installed where signals need to separate different signal grounds to avoid ground loops or when signals with different electrical grounds has to be isolated from each other. An additional application is to extract and isolate the measuring signal out of a 2-wire transmitter, no external power supply is necessary.

The isolation amplifier can also be used to convert a signal from one range to another. For example: To convert and isolate a 4...20mA process signal to a 0...10V

signal connected to a computer.

Power supply:
Universal supply 20 to 253VAC/DC.

With the type «-17» (special conversions), any conversion within the limits of the technical data can be realized.

Example: The 100mV output of a temperature transmitter has to be fed to a process control computer which has an input interface of 4...20mA.

The necessary line conditioner:
M8742/22-17 $U_i=0...100\text{mV}$, $I_o=4...20\text{mA}$.

The isolation amplifier consists of the following blocks: Input circuit and amplifier, modulator and pulse transformer, demodulator, voltage/current source and the power supply.

Technical Data:

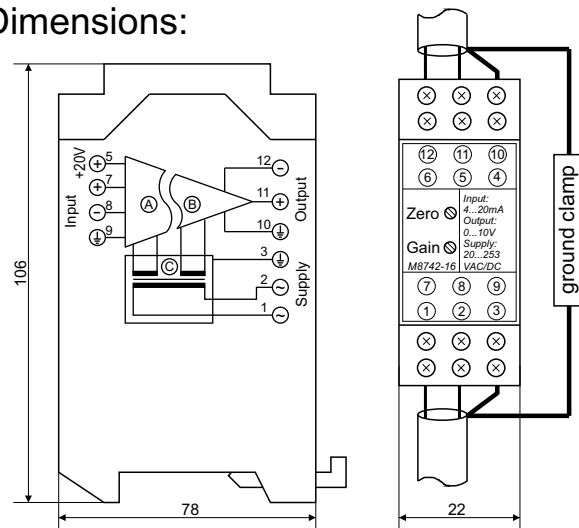
Input:	See part number list
Output:	See part number list
Input Impedance:	- Current input = 50 - Voltage input up to 1V = 1G - Voltage input 1V and up = 100k
Output Impedance:	- Current output = >1M - Voltage output = <0.1 - 700
Max. Load at 24mA:	15mA short circuit proof
Max. Output Current Limit, Voltage only:	20VDC max. 25mA
Input, 2-wire Transmitter:	- Voltage input: $\pm 100\text{mV} \dots \pm 500\text{V}$, others on request - Current input: $\pm 10\mu\text{A} \dots \pm 1\text{A}$, others on request - Voltage output: $\pm 100\text{mV} \dots +13\text{V}/10\text{mA} \dots -6\text{V}/4\text{mA}$ - Current output: $\pm 10\mu\text{A} \dots +25\text{mA}/-2\text{mA}$
Special Signal Range:	<10mV@10V output DC...10Hz, -3dB@10Hz 1kHz
Carrier Ripple:	2500VAC/1', input output power supply
Bandwidth:	The input is converted to a pulse with modulated digital signal, transmitted to the secondary by means of a pulse transformer and then demodulated to a DC signal
Internal Oscillator:	>140dB@1000VDC >100dB@1000VAC, measured with the M8742/22-1
Test Isolation Voltage:	<0.05% of full scale
Mode of Signal Transfer:	<0.05% of full scale
Common Mode Rejection Ratio:	-5...+55°C
Gain Error:	20 to 253 VDC or AC
Zero Offset:	2.4W@25mA output
Working Temperature Range:	fulfilled
Supply:	Screw terminals, 12-pole for 1.5mm ² wire
Supply Load:	35mm mounting rail, EN50022-35
CE Conformity:	130g
Terminals:	1 = supply AC/DC+, 2 = supply AC/DC-, 3 = supply PE, 4/6= option, 5 = +20VDC for 2-wire transmitter
Mounting:	7 = signal input + or - for 2-wire transmitter
Weight:	8 = sign inut -, 9 = signal input PE, 10= signal output PE, 11 = signal output +, 12= signal output -
Terminal Pinning:	2 years
Warranty:	

Part Number List:

Input Signal:	Output Signal:	Part Number:
0...1V	0...1V	M8742/22-1
0...1V	0...10V	M8742/22-2
0...1V	0...20mA	M8742/22-3
0...1V	4...20mA	M8742/22-4
0...10V	0...1V	M8742/22-5
0...10V	0...10V	M8742/22-6
0...10V	0...20mA	M8742/22-7
0...10V	4...20mA	M8742/22-8
0...20mA	0...1V	M8742/22-9
0...20mA	0...10V	M8742/22-10
0...20mA	0...20mA	M8742/22-11
0...20mA	4...20mA	M8742/22-12
4...20mA	0...1V	M8742/22-13
4...20mA	0...10V	M8742/22-14
4...20mA	0...20mA	M8742/22-15
4...20mA	4...20mA	M8742/22-16
*	*	M8742/22-17

*User specify range

Dimensions:



Wiring instructions:

- Install into metallic panels only
- Shields: All signal lines must be grounded on both sides of the cable

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