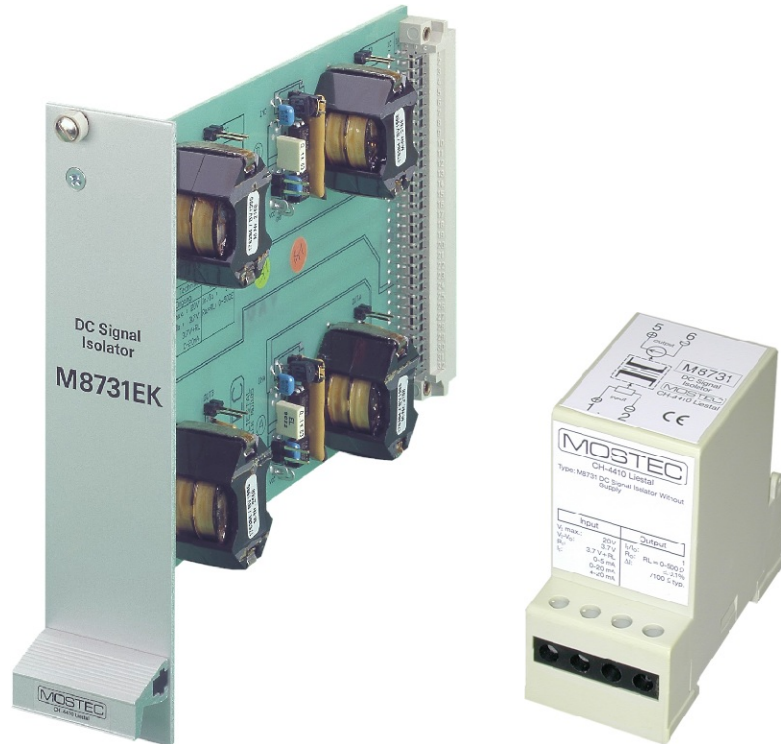


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DC isolation amplifier without supply Type M8731 / M8731EK



Technical description

This "snap-on" interface utilize an isolating amplifier channel to galvanically isolate DC current signals without a power supply.

The input current signal can be in the range of 0...27mA.

The DC signal is converted to an AC signal by a chopper, transformed 1:1 to the secondary of a transformer, rectified and ripple rejected by a filter, thus restoring the original DC current signal.

The output may be on a common mode voltage or on different grounds and feeds remote displays, recorders, PLC's analog input, computers etc.

Applications:
 Heating, air conditioning, signal isolation, data logging etc.

How to order:
 M8731 for snap-on version
 M8731-EK 4-channels on a small eurocard

Technical Data

Type

M8731: Molded plastic, gray,
35mm mounting rail,
EN50022-35
M8731EK: 4 x M8731 eurocard
19" rack mounting
100x160mm, 6TE

Input

Input current (I_E): 0...5mA, 0...20mA, 4...20mA, max. 27mA
Max. Input current: 50mA (= thermal limitation)
Max. Input voltage (U_E): +20V
Max. voltage drop: $\approx 3,7V$

Output

Current transfer ratio ($I_E: I_A$): 1,0 : 1,0
Load: $\leq 500\Omega$
transfer gain error: See diagram Fig. 1,
Typ. $\pm 0,1\%$ @ 280 Ω
Output ripple: 0,9% ($R_L=280\Omega$, $I_A=20mA$, $f=3,5kHz$)
Rise time: Typ. 75ms
Working temperature range: -10 to +60°C (max. $\pm 0,1\%/20mA$)

Coupling

Internal oscillator: Typ. 3,5 kHz with MosFet-switches
Max. common mode voltage (U_{cmv}): 230V_{eff}, V_{TEST} 2500V_{eff}/1minute.
Operation principle: The input current is chopped with 3.5 kHz, transformed from the primary to the secondary by a transformer, rectified and filtered, see block diagram
Supply: None, $\sim 40\mu A$ will be drawn out of the primary signal fulfilled
CE Conformity:

Mechanical Data

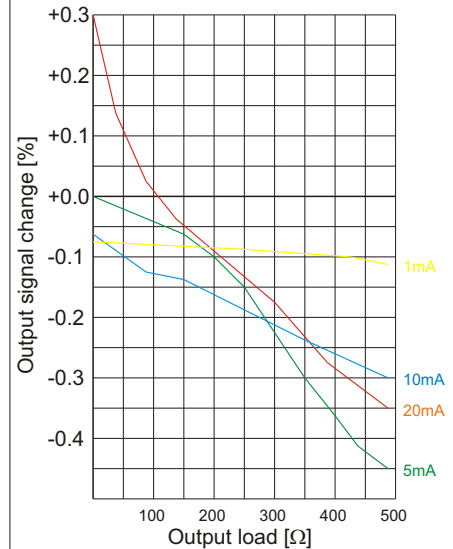
Terminals: M8731: 2 screw terminals 2-pole
M8731EK: Terminal 64pole; DIN41612, A+C used

Terminal description: M8731: Input (+) = 1, (-) = 2, output (+) = 5, (-) = 6

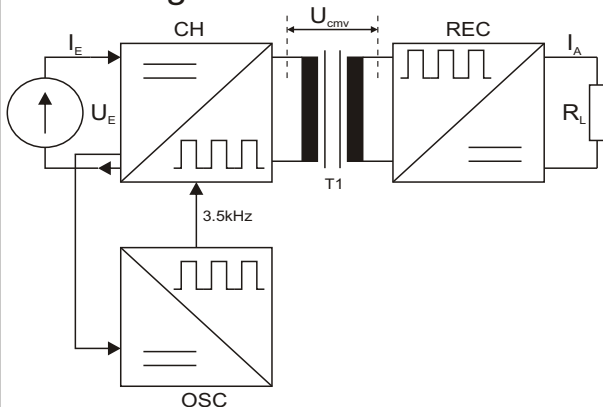
M8731EK: -A: Input (+) = 32A, (-) = 32C, output (+) = 28A, (-) = 28C
-B: Input (+) = 23A, (-) = 23C, output (+) = 19A, (-) = 19C
-C: Input (+) = 14A, (-) = 14C, output (+) = 10A, (-) = 10C
-D; Input (+) = 5A, (-) = 5C, output (+) = 1A, (-) = 1C

Dimensions: M8731: W x H x D = 35 x 68 x 70mm
M8731EK: W x H x D = 30 x 128 x 172 mm, 6 TE, 3 HE, system "Schroff"
Weight: M8731: 86 g
M8731EK: 245 g
Warranty: 2 years

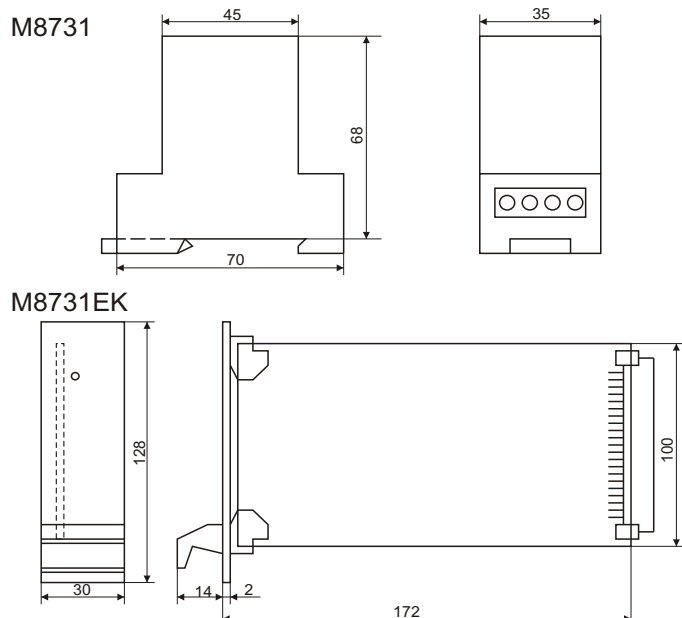
Fig. 1



Block diagram:



Dimensions in mm:



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