CAMILLE BAUER

DCM 817
Passive DC signal isolator

without power supply, modular design

The signal isolator serves to electrically insulate a DC signal in the range 0/4…20 mA (see Fig. 1). It operates passively, i.e. it does not require a separate power supply. The signal isolator is available in two versions which differ in the shape of the connection pins (see Figures 2 and 3 and Table 1). Its modular design enables one or several signal isolators to be mounted on a printed circuit board.

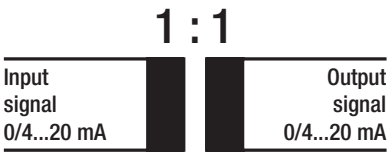


Fig. 1

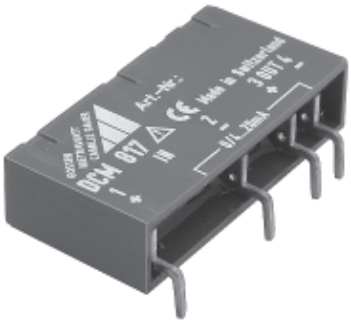


Fig. 2. Signal isolator type DCM 817-4.

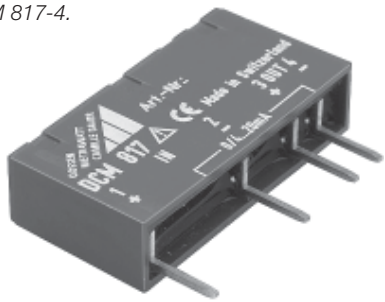


Fig. 3. Signal isolator type DCM 817-5.

Features / Benefits

- **Electrically insulated between input and output signal / Prevents the transfer of interference voltages and currents, solves grounding problems in meshed signal networks and is cheap and small**
- **No power supply required / Less termination and wiring work**
- **Modular design / Versatility of application**
- **Small dimensions / Saves space**

Layout and mode of operation

The DC signal isolator comprises a DC chopper Z, an isolating stage T, a rectifier R and an oscillator O (see Fig. 4). The chopper converts the DC signal E into an AC signal. This signal is passed through a transformer serving as an isolating stage. On the secondary site, it is rectified, smoothed and converted into a DC signal A.

The DC chopper is controlled by the oscillator which obtains its power from the input signal.

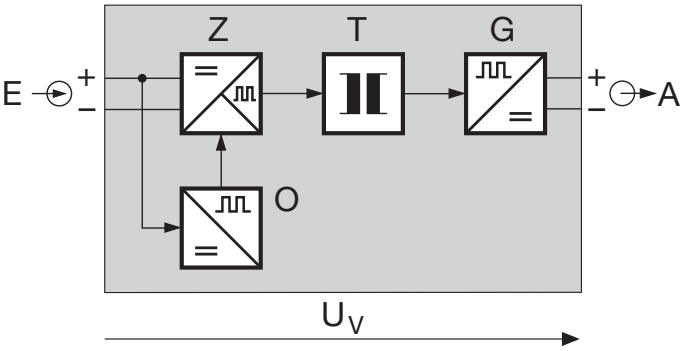


Fig. 4. Schematic diagram.

Technical data

Input E

Current signal:	0/4...20 mA
Max. permissible current:	50 mA
Voltage limiter:	18 V ±5% (with zener diode)
Voltage drop U_V:	< 2.1 V (for 500 Ω burden)
Overshoot:	< 20 µA (typical 5 µA)

Output A

Current signal:	0/4...20 mA
Limit:	Approx. 30 mA

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Residual ripple:	< 20 mVss
Time constant:	Approx. 5 ms
Max. burden:	600 Ω

Accuracy data

Error limits:	< ± 0.1% (reference value 20 mA, linearity error included)

Reference conditions

Ambient temperature:	23 °C, ± 1 K
Output burden:	100 Ω

Additional error

Burden influence:	< 0.2 % (at 500 Ω)
Temperature coefficient:	< 50 ppm/K

Regulations

Test voltage:	500 Veff, 50 Hz, 1 min (acc. to IEC 1010)
Max. surge voltage:	800 V (acc. to IEC 1010)

Ambient conditions

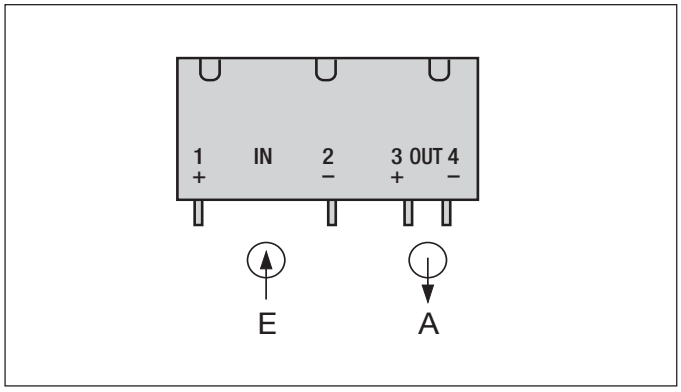
Ambient temperature:	Operation –20...65 °C Storage –40...85 °C
Seismic test:	5 g, < 200 Hz, 2 h in each of 3 directions
Shock test:	**50 g** 10 shocks in each of 3 directions

Table 1: Units available ex stock

Both versions of the signal isolator are available ex stock. Quoting the order No. is sufficient when ordering.

Type	Version	**Order No.**
DCM 817-4	bent contact pins	988 719
DCM 817-5	straight contact pins	988 727

Electrical connections



Dimensional drawings

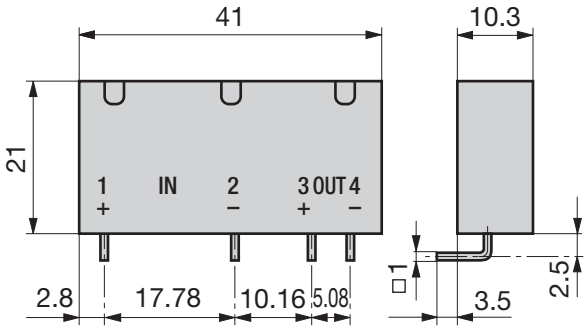


Fig. 5. Signal isolator type DCM 817-4.

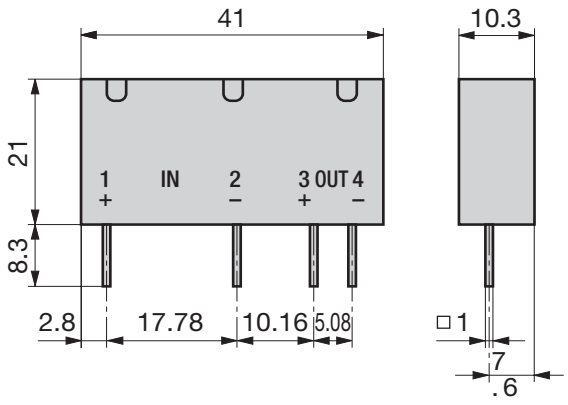


Fig. 6. Signal isolator type DCM 817-5.

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