Signal conditioner - MINI MCR-SL-UI-I-LP-NC - 2902829

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2-way loop-powered isolating amplifier (supplied on the output side), can be configured via DIP switches, with screw connection technology and standard configuration.

Product Description

The 6.2 mm wide MINI MCR-SL-UI-I-LP... configurable 2-way isolating amplifier is used to electrically isolate, condition, and filter analog signals.
The output loops that supply the loop-powered isolating amplifier enable the isolating amplifier to operate on an active analog input module. The modules are supplied via the current loop of the controller.
On the input side, standard analog signals and non-standard analog signals can be connected, starting from 2 mA or 50 mV up to 40 mA or 30 V. These are converted to a 4...20 mA signal.
The DIP switches accessible on the housing side enable the configuration of input signal ranges.

Key Commercial Data

Packing unit	1 pc
Weight per Piece (excluding packing)	86.8 g
Custom tariff number	85437090
Country of origin	Germany

Technical data

Note

Utilization restriction	EMC: class A product, see manufacturer's declaration in the download area

Dimensions

Width	6.2 mm
Height	93.1 mm
Depth	102.5 mm

Ambient conditions

Ambient temperature (operation)	-25 °C ... 70 °C

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Ambient conditions

Ambient temperature (storage/transport)	-40 °C ... 85 °C
Degree of protection	IP20

Input data

Number of inputs	1
Voltage input signal	0 mV ... 1000 mV
	0 mV ... 750 mV
	0 mV ... 500 mV
	0 mV ... 300 mV
	0 mV ... 250 mV
	0 mV ... 200 mV
	0 mV ... 150 mV
	0 mV ... 125 mV
	0 mV ... 120 mV
	0 mV ... 100 mV
	0 mV ... 75 mV
	0 mV ... 60 mV
	0 mV ... 50 mV
	0 V ... 10 V
	0 V ... 7.5 V
	0 V ... 5 V
	0 V ... 3 V
	0 V ... 2.5 V
	0 V ... 2 V
	0 V ... 1.5 V
	0 V ... 1.25 V
	0 V ... 1.2 V
	0 V ... 30 V
	0 V ... 25 V
	0 V ... 20 V
	0 V ... 12.5 V
	0 V ... 12 V
	0 V ... 15 V
	-1000 mV ... 1000 mV
	-750 mV ... 750 mV
	-500 mV ... 500 mV
	-300 mV ... 300 mV
	-250 mV ... 250 mV

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Input data

	-200 mV ... 200 mV
	-125 mV ... 125 mV
	-120 mV ... 120 mV
	-150 mV ... 150 mV
	-100 mV ... 100 mV
	-75 mV ... 75 mV
	-60 mV ... 60 mV
	-50 mV ... 50 mV
	-10 V ... 10 V
	-7.5 V ... 7.5 V
	-5 V ... 5 V
	-3 V ... 3 V
	-2.5 V ... 2.5 V
	-2 V ... 2 V
	-1.25 V ... 1.25 V
	-1.2 V ... 1.2 V
	-1.5 V ... 1.5 V
	-30 V ... 30 V
	-25 V ... 25 V
	-20 V ... 20 V
	-12.5 V ... 12.5 V
	-12 V ... 12 V
	-15 V ... 15 V
	200 mV ... 1000 mV
	150 mV ... 750 mV
	100 mV ... 500 mV
	60 mV ... 300 mV
	50 mV ... 250 mV
	40 mV ... 200 mV
	25 mV ... 125 mV
	24 mV ... 120 mV
	30 mV ... 150 mV
	20 mV ... 100 mV
	15 mV ... 75 mV
	12 mV ... 60 mV
	10 mV ... 50 mV
	2 V ... 10 V (additional areas can be configured, see table)

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Input data

	1.5 V ... 7.5 V
	1 V ... 5 V
	0.6 V ... 3 V
	0.5 V ... 2.5 V
	0.4 V ... 2 V
	0.25 V ... 1.25 V
	0.24 V ... 1.2 V
	0.3 V ... 1.5 V
	6 V ... 30 V
	5 V ... 25 V
	4 V ... 20 V
	2.5 V ... 12.5 V
	2.4 V ... 12 V
	3 V ... 15 V
Current input signal	0 mA ... 40 mA
	0 mA ... 30 mA
	0 mA ... 20 mA
	0 mA ... 12 mA
	0 mA ... 10 mA
	0 mA ... 8 mA
	0 mA ... 7.5 mA
	0 mA ... 5 mA
	0 mA ... 6 mA
	0 mA ... 4 mA
	0 mA ... 3 mA
	0 mA ... 2.5 mA
	0 mA ... 2 mA
	-40 mA ... 40 mA
	-30 mA ... 30 mA
	-20 mA ... 20 mA
	-12 mA ... 12 mA
	-10 mA ... 10 mA
	-8 mA ... 8 mA
	-7.5 mA ... 7.5 mA
	-5 mA ... 5 mA
	-6 mA ... 6 mA
	-4 mA ... 4 mA

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Input data

	-3 mA ... 3 mA
	-2.5 mA ... 2.5 mA
	-2 mA ... 2 mA
	8 mA ... 40 mA
	6 mA ... 30 mA
	4 mA ... 20 mA
	2.4 mA ... 12 mA
	2 mA ... 10 mA
	1.6 mA ... 8 mA
	1.5 mA ... 7.5 mA
	1 mA ... 5 mA
	1.2 mA ... 6 mA
	0.8 mA ... 4 mA
	0.6 mA ... 3 mA
	0.5 mA ... 2.5 mA
	0.4 mA ... 2 mA
Max. input voltage	< 40 V
Max. input current	< 50 mA (Dielectric strength up to 30 V)
Input resistance of voltage input	approx. 100 kΩ (At ≤ 1 V, otherwise approximately 1 MΩ)
Input resistance current input	≤ 50 Ω

Output data

Number of outputs	1
Configurable/programmable	Yes, preconfigured
Current output signal	4 mA ... 20 mA
Max. output current	35 mA (output limit)
Load/output load current output	(U_B - 8 V) / 22 mA

Power supply

Supply voltage range	no separate supply voltage necessary
Power consumption	28 mW (without signal)

Connection data

Connection method	Screw connection
Conductor cross section solid min.	0.2 mm²
Conductor cross section solid max.	2.5 mm²
Conductor cross section AWG min.	26
Conductor cross section AWG max.	12
Conductor cross section flexible min.	0.2 mm²

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Connection data

Conductor cross section flexible max.	2.5 mm²
Stripping length	12 mm
Screw thread	M3

General

No. of channels	1
Maximum transmission error	< 0.1 % (of final value)
	< 0.2 % (Without adjustment)
Maximum temperature coefficient	0.01 %/K
Temperature coefficient, typical	0.005 %/K
Limit frequency (3 dB)	approx. 30 Hz
Alignment zero	± 2 %
Alignment span	± 2 %
Step response (10-90%)	approx. 16 ms
Electrical isolation	Basic insulation according to EN 61010
Overvoltage category	II
Degree of pollution	2
Rated insulation voltage	50 V AC/DC
Test voltage input/output	1.5 kV (50 Hz, 1 min.)
Electromagnetic compatibility	Conformance with EMC Directive 2004/108/EC
Noise emission	EN 61000-6-4
Noise immunity	EN 61000-6-2 When being exposed to interference, there may be minimal deviations.
Color	green
Housing material	PBT
Mounting position	any
Conformance	CE-compliant
ATEX	# II 3 G Ex nA IIC T4 Gc X
UL, USA / Canada	UL 508 Listed
	Class I, Div. 2, Groups A, B, C, D T5
	Class I, Zone 2, Group IIC
Certificate of classification	DNV GL 14085-15HH

EMC data

Designation	Electromagnetic RF field
Standards/regulations	EN 61000-4-3
Typical deviation from the measuring range final value	0.5 %
Designation	Fast transients (burst)
Standards/regulations	EN 61000-4-4

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EMC data

Typical deviation from the measuring range final value	2 %
Designation	Conducted interferences
Standards/regulations	EN 61000-4-6
Typical deviation from the measuring range final value	0.5 %

Standards and Regulations

Electromagnetic compatibility	Conformance with EMC Directive 2004/108/EC
Noise emission	EN 61000-6-4
Designation	Electromagnetic RF field
Standards/regulations	EN 61000-4-3
	EN 61000-4-4
Designation	Conducted interferences
Standards/regulations	EN 61000-4-6
Electrical isolation	Basic insulation according to EN 61010
Conformance	CE-compliant
ATEX	# II 3 G Ex nA IIC T4 Gc X
UL, USA / Canada	UL 508 Listed
	Class I, Div. 2, Groups A, B, C, D T5
	Class I, Zone 2, Group IIC

Classifications

eCl@ss

eCl@ss 4.0	27210120
eCl@ss 4.1	27210120
eCl@ss 5.0	27210120
eCl@ss 5.1	27210120
eCl@ss 6.0	27210120
eCl@ss 7.0	27210120
eCl@ss 8.0	27210120
eCl@ss 9.0	27210120

ETIM

ETIM 3.0	EC001485
ETIM 4.0	EC001485
ETIM 5.0	EC002653

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Classifications

UNSPSC

UNSPSC 6.01	30211506
UNSPSC 7.0901	39121008
UNSPSC 11	39121008
UNSPSC 12.01	39121008
UNSPSC 13.2	39121008

Approvals

Approvals

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UL Listed / cUL Listed / EAC / GL / cULus Listed

Ex Approvals

UL Listed / cUL Listed / ATEX / cULus Listed

Approvals submitted

Approval details

UL Listed

cUL Listed

EAC

GL

cULus Listed

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Drawings

Block diagram