

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)	82.000 g
Custom tariff number	85437096
Country of origin	Germany

Technical data

Note

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

Width	6.2 mm
Height	93.1 mm
Depth	101.2 mm

Ambient conditions

Ambient temperature (operation)	-25 °C ... 70 °C
Ambient temperature (storage/transport)	-40 °C ... 85 °C
Maximum altitude	≤ 2000 m
Permissible humidity (operation)	5 % ... 95 % (non-condensing)
Degree of protection	IP20

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Ambient conditions

Noise immunity	EN 61000-6-2 When being exposed to interference, there may be minimal deviations.
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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
	-200 mV ... 200 mV
	-125 mV ... 125 mV
	-120 mV ... 120 mV

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Input data

	-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)
	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

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Input data

	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
	-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

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Input data

	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 k Ω (At ≤ 1 V, otherwise approximately 1 M Ω)
Input resistance current input	$\leq 50 \Omega$

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	< 1000 Ω (($U_B - 8$ V) / 22 mA)
Ripple	< 20 mV _{PP} (at 500 Ω)

Power supply

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

Connection data

Connection method	Screw connection
Stripping length	12 mm
Screw thread	M3
Conductor cross section solid	0.2 mm ² ... 2.5 mm ²
Conductor cross section flexible	0.2 mm ² ... 2.5 mm ²
Conductor cross section AWG	26 ... 12

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

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Technical data

General

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
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
Fire protection for rail vehicles (DIN EN 45545-2) R22	HL 1 - HL 2
Fire protection for rail vehicles (DIN EN 45545-2) R23	HL 1 - HL 2
Fire protection for rail vehicles (DIN EN 45545-2) R24	HL 1 - HL 2

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
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
Noise emission	EN 61000-6-4
Standards/regulations	EN 61000-4-2
Designation	Electromagnetic RF field
Standards/regulations	EN 61000-4-3
	EN 61000-4-4
Comments	Criterion B
Standards/regulations	EN 61000-4-5
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

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Technical data

Standards and Regulations

	Class I, Zone 2, Group IIC
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Conformance/approvals

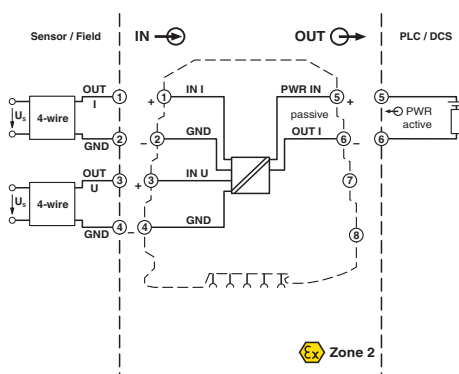
Designation	CE
Identification	CE-compliant
Designation	UL, USA/Canada
Identification	UL 508 Listed
	Class I, Div. 2, Groups A, B, C, D T5
	Class I, Zone 2, Group IIC
Designation	Shipbuilding approval
Certificate	DNV GL TAA00002R0
Temperature	B
Humidity	B
Vibration	B
EMC	B
Enclosure	Required protection according to the Rules shall be provided upon installation on board

Environmental Product Compliance

REACH SVHC	Lead 7439-92-1
China RoHS	Environmentally Friendly Use Period = 50 years
	For details about hazardous substances go to tab "Downloads", Category "Manufacturer's declaration"

Drawings

Block diagram



Classifications

eCl@ss

eCl@ss 10.0.1	27210120
eCl@ss 11.0	27210120

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Classifications

eCl@ss

eCl@ss 4.0	27210100
eCl@ss 4.1	27210100
eCl@ss 5.0	27210100
eCl@ss 5.1	27210100
eCl@ss 6.0	27210100
eCl@ss 7.0	27210120
eCl@ss 8.0	27210120
eCl@ss 9.0	27210120

ETIM

ETIM 4.0	EC002653
ETIM 5.0	EC002653
ETIM 6.0	EC002653
ETIM 7.0	EC002653

UNSPSC

UNSPSC 6.01	30211506
UNSPSC 7.0901	39121008
UNSPSC 11	39121008
UNSPSC 12.01	39121008
UNSPSC 13.2	39121008
UNSPSC 18.0	39121008
UNSPSC 19.0	39121008
UNSPSC 20.0	39121008
UNSPSC 21.0	39121008

Approvals

Approvals

Approvals

UL Listed / cUL Listed / DNV GL / cULus Listed

Ex Approvals

ATEX / UL Listed / cUL Listed / EAC Ex / cULus Listed

Approval details

UL Listed		http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm	FILE E 238705
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Approvals

cUL Listed		http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm	FILE E 238705
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DNV GL		https://approvalfinder.dnvgl.com/	TAA00002R0
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cULus Listed			
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Accessories

Accessories

Marking material

Transparent cover - MINI MCR DKL - 2308111



Fold up transparent cover for MINI MCR modules with additional labeling option using insert strips and flat Zack marker strip 6.2 mm

Marking label - MINI MCR-DKL-LABEL - 2810272



Label for extended marking of MINI MCR modules in connection with the MINI MCR-DKL