

Frequency transducer - MINI MCR-SL-UI-F - 2864082

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Analog frequency transducers for converting analog standard signals into frequency signals or PWM signals, configurable via DIP switch, with screw connection

Product Description

The 6.2 mm wide configurable analog frequency transducer MINI MCR-SL-UI-F... is used for converting analog standard signals into frequency signals or into pulse width modulated (PWM) signals.

On the input side, there are the analog signals 0...20 mA, 4...20 mA, 0...10 mA, 2...10 mA, 0...10 V, 2...10 V, 0...5 V or 1...5 V

The DIP switches are accessible on the side of the housing and allow the following parameters to be configured:

- Input signal,
- Output signal,
- Output behavior in case the measuring range is exceeded or undershot and
- Filter type (for eliminating malfunctions in the input signal)


Voltage (19.2 V DC to 30 V DC) can be supplied through connection terminal blocks on the modules or in conjunction with the DIN rail connector.

Your advantages

- ✓ Power supply possible via the foot element (TBUS)
- ✓ Error indication via diagnostic LED and analog signal
- ✓ PWM output of 5 ... 95 %
- ✓ Highly-compact analog-to-frequency transducer for electrical isolation, amplification, conversion, and filtering of standard signals to create frequencies or PWM signals
- ✓ Input and output signals can be configured via DIP switches
- ✓ Configurable interference filter
- ✓ 3-way isolation



Key Commercial Data

Packing unit	1 pc
GTIN	 4 046356 046435
GTIN	4046356046435
Weight per Piece (excluding packing)	72.000 g

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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
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Dimensions

Width	6.2 mm
Height	93.1 mm
Depth	101.2 mm

Ambient conditions

Ambient temperature (operation)	-20 °C ... 65 °C
Ambient temperature (storage/transport)	-40 °C ... 85 °C
Maximum altitude	≤ 2000 m
Permissible humidity (operation)	5 % ... 95 % (non-condensing)
Degree of protection	IP20
Noise immunity	EN 61000-6-2 When being exposed to interference, there may be minimal deviations.

Input data

Configurable/programmable	Yes
Current input signal	0 mA ... 20 mA
	4 mA ... 20 mA
	0 mA ... 10 mA
	2 mA ... 10 mA
Input resistance current input	approx. 50 Ω
Voltage input signal	0 V ... 5 V
	1 V ... 5 V
	0 V ... 10 V
	2 V ... 10 V
Input resistance of voltage input	approx. 110 kΩ

Output data

Number of outputs	1
Frequency output	0 Hz ... 10 kHz
	0 Hz ... 5 kHz
	0 Hz ... 2.5 kHz
	0 Hz ... 1 kHz
	0 Hz ... 500 Hz

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Technical data

Output data

	0 Hz ... 250 Hz
	0 Hz ... 100 Hz
	0 Hz ... 50 Hz
Load min.	$4 \text{ mA} \leq (U_L / R_L) \leq 20 \text{ mA}$
Output signal PWM	7.8 kHz (10 bit)
	3.9 kHz (10 bit)
	1.9 kHz (12 bit)
	977 Hz (12 bit)
	488 Hz (14 bit)
	244 Hz (14 bit)
	122 Hz (16 bit)
	61 Hz (16 bit)
Load min.	$12 \text{ mA} \leq (U_L / R_L) \leq 20 \text{ mA}$
Maximum switching voltage	30 V
Load current maximum	20 mA
Overrange/underrange	Can be set (via DIP switch)
Type of protection	Short-circuit protection, polarity reversal protection
Step response (0–99%)	< 15 ms (+ (1/f) smallest filter)
	< 1 s (+ (1/f) largest filter)

Power supply

Nominal supply voltage	24 V DC
Supply voltage range	19.2 V DC ... 30 V DC (The DIN rail bus connector (ME 6,2 TBUS-2 1,5/5-ST-3,81 GN, Order No. 2869728) can be used to bridge the supply voltage. It can be snapped onto a 35 mm DIN rail according to EN 60715))
Max. current consumption	< 10 mA (at 24 V DC)
Power consumption	< 200 mW

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	$\leq 0.1 \% (> 7 \text{ kHz} \leq 0.2 \%)$

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Technical data

General

Maximum temperature coefficient	< 0.02 %/K
Temperature coefficient, typical	< 0.02 %/K
Electrical isolation	Basic insulation according to EN 61010
Overvoltage category	II
Degree of pollution	2
Rated insulation voltage	30 V AC
Test voltage, input/output/supply	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
Conformance	CE-compliant
ATEX	# II 3 G Ex nA IIC T4 Gc X
UL, USA/Canada	UL 508 Recognized
	Class I, Div. 2, Groups A, B, C, D T4
Certificate of classification	DNV GL TAA00000N1
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	2 %
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	2 %

Standards and Regulations

Electromagnetic compatibility	Conformance with EMC directive
Noise emission	EN 61000-6-4
Connection in acc. with standard	CUL
Standards/regulations	EN 61000-4-2

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Technical data

Standards and Regulations

Designation	Electromagnetic RF field
Standards/regulations	EN 61000-4-3
	EN 61000-4-4
	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 Recognized
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Fire protection for rail vehicles (DIN EN 45545-2) R24	HL 1 - HL 2

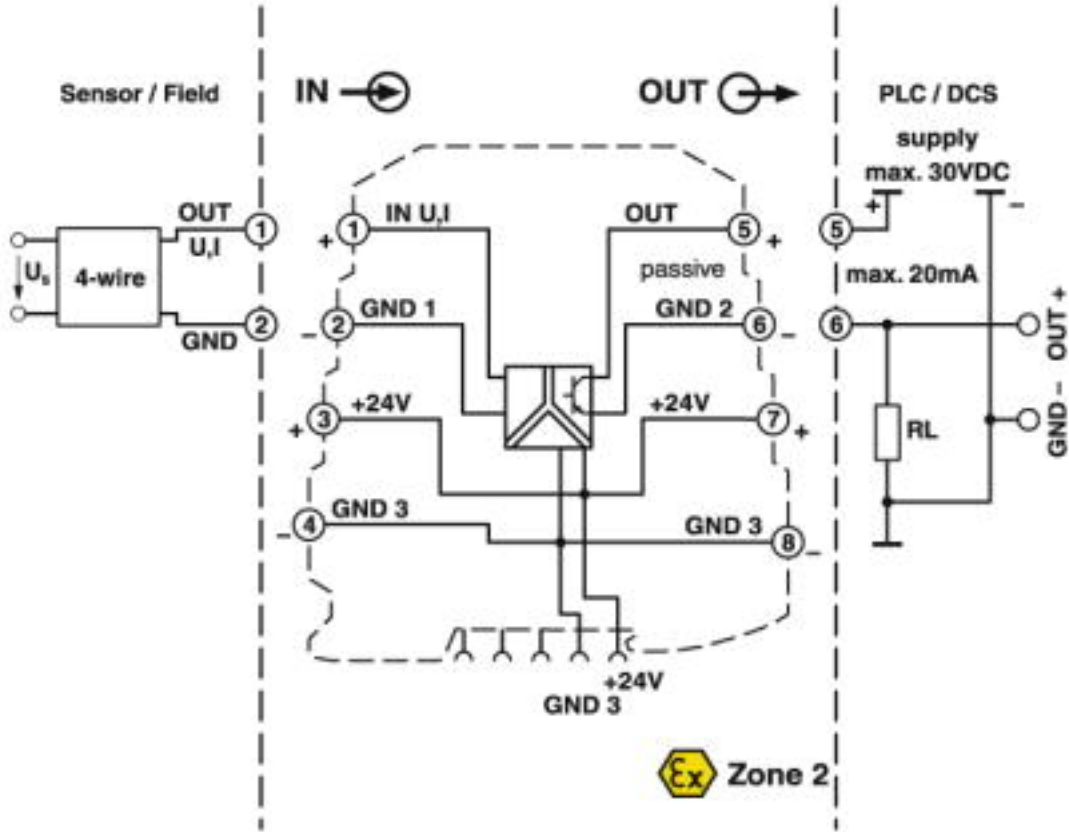
Environmental Product Compliance

China RoHS	Environmentally Friendly Use Period = 50
	For details about hazardous substances go to tab "Downloads", Category "Manufacturer's declaration"

Drawings

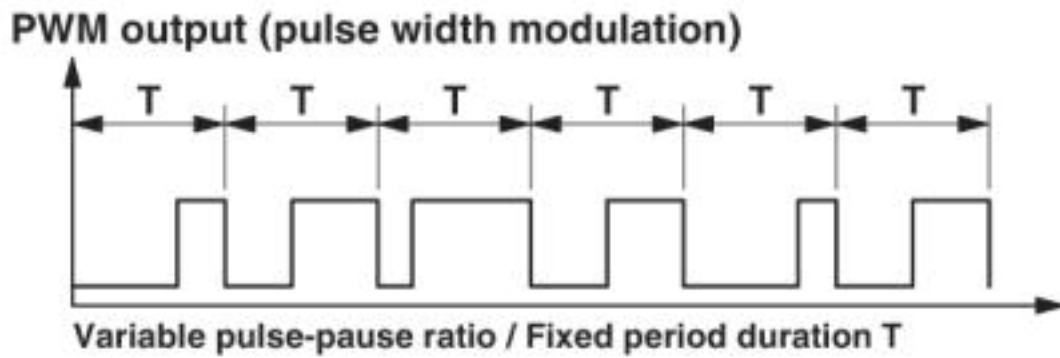
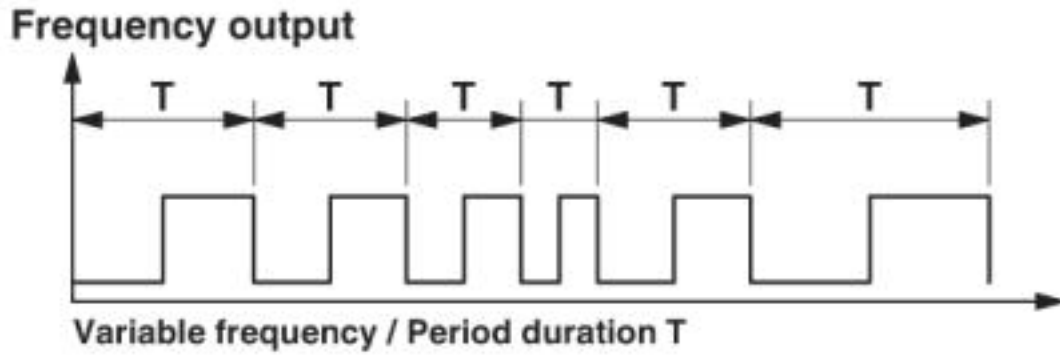
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Block diagram



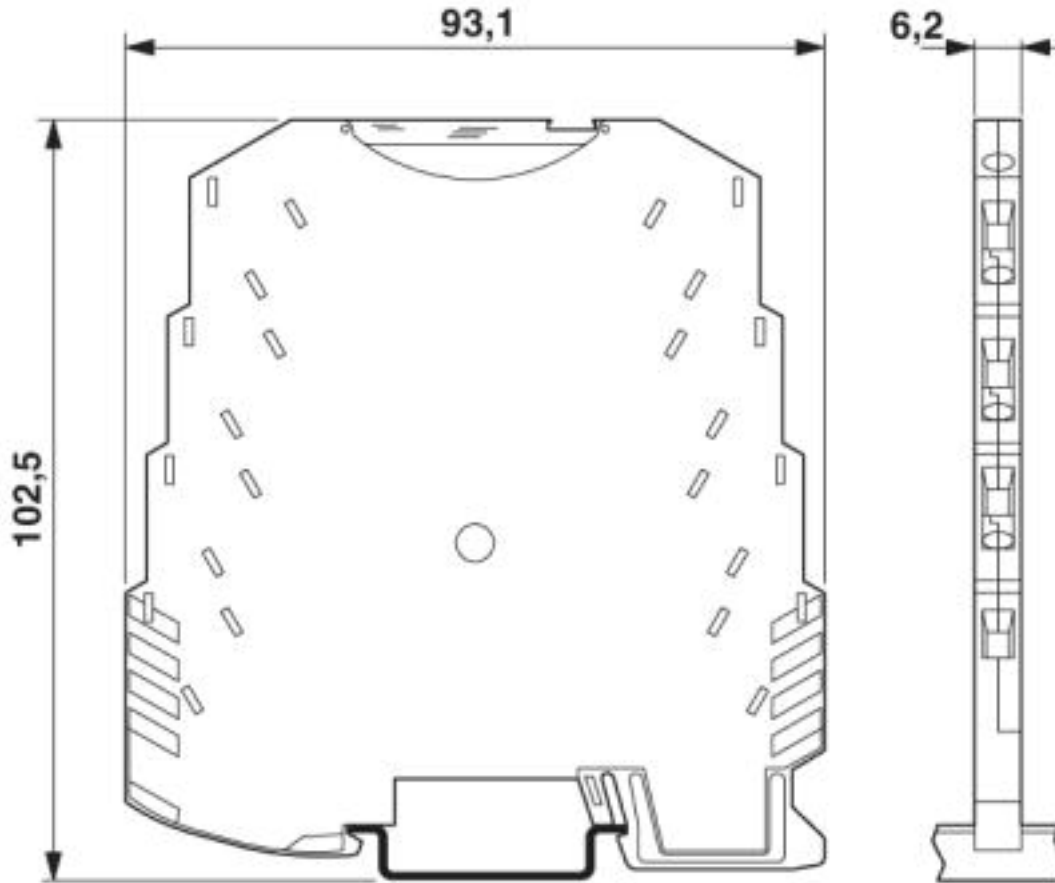
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Diagram



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Dimensional drawing



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



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Classifications

ETIM

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

Approvals

Approvals

Approvals

DNV GL / BV / UL Recognized / cUL Recognized / cULus Recognized

Ex Approvals

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

Approval details

DNV GL		https://approvalfinder.dnvgl.com/	TAA00000N1
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BV		http://www.veristar.com/portal/veristarinfo/generalinfo/approved/approvedProducts/equipmentAndMaterials	39933/A0_BV
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UL Recognized		http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm	FILE E 238705
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cUL Recognized		http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm	FILE E 238705
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<https://www.phoenixcontact.com/us/products/2864082>



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Approvals

cULus Recognized



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