

## 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.

### Product Features

- ✓ 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
Weight per Piece (excluding packing)	72.0 g
Custom tariff number	85389091
Country of origin	Germany

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## 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	102.5 mm

### Ambient conditions

Ambient temperature (operation)	-20 °C ... 65 °C
Ambient temperature (storage/transport)	-40 °C ... 85 °C
Degree of protection	IP20

### 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
	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)

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#### Output data

	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
Conductor cross section solid min.	0.2 mm <sup>2</sup>
Conductor cross section solid max.	2.5 mm <sup>2</sup>
Conductor cross section AWG min.	26
Conductor cross section AWG max.	12
Conductor cross section flexible min.	0.2 mm <sup>2</sup>
Conductor cross section flexible max.	2.5 mm <sup>2</sup>
Stripping length	12 mm
Screw thread	M3

#### General

No. of channels	1
Maximum transmission error	$\leq 0.1 \% (> 7 \text{ kHz} \leq 0.2 \%)$
Maximum temperature coefficient	< 0.02 %/K
Electrical isolation	Basic insulation according to EN 61010
Overvoltage category	II

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### General

Pollution degree	2
Rated insulation voltage	50 V AC/DC
Test voltage, input/output/supply	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 Recognized
	Class I, Div. 2, Groups A, B, C, D T5 applied for
GL	GL EMC 2 D

### 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 %

## 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

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## Classifications

### ETIM

ETIM 2.0	EC001485
ETIM 3.0	EC001485
ETIM 4.0	EC001485
ETIM 5.0	EC002653

### 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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#### Approvals

UL Recognized / cUL Recognized / GL / BV / EAC / cULus Recognized

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#### Ex Approvals

#### ATEX


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#### Approvals submitted

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### Approval details

UL Recognized 
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cUL Recognized 
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GL
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## Approvals

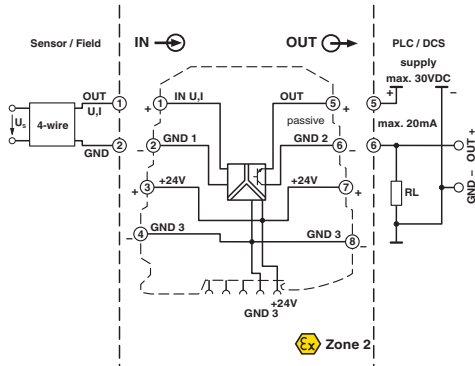
BV

EAC

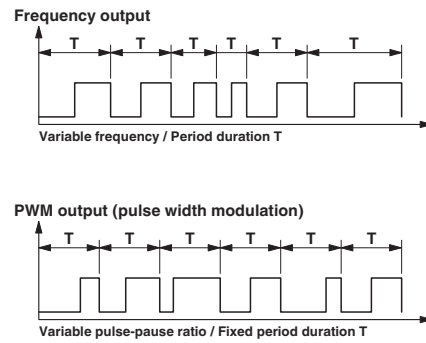
cULus Recognized

## Drawings

Block diagram



Diagram



Dimensional drawing

