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

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

Commercial data

Item number	2864082
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	C403
Product key	DK1136
GTIN	4046356046435
Weight per piece (including packing)	61.6 g
Weight per piece (excluding packing)	108.3 g
Customs tariff number	85437090
Country of origin	DE

Technical data

Notes

Utilization restriction

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

Product properties

Product type	Frequency value transformer
Product family	MINI Analog
No. of channels	1
Configuration	DIP switches

System properties

Functionality

Configuration	DIP switches

Electrical properties

Electrical isolation	3-way isolation
Electrical isolation between input and output	yes
Step response (0–99%)	< 15 ms (+ (1/f) smallest filter)
	< 1 s (+ (1/f) largest filter)
Maximum temperature coefficient	< 0.02 %/K
Temperature coefficient, typical	< 0.02 %/K
Maximum transmission error	≤ 0.1 % (> 7 kHz ≤ 0.2 %)

Electrical isolation

Overvoltage category	II
Pollution degree	2

Electrical isolation Input/output/power supply IEC/EN 61010

Standards/regulations	IEC/EN 61010
Rated insulation voltage	30 V AC
	50 V DC
Test voltage	1.5 kV AC (50 Hz, 60 s)
Insulation	Basic insulation

Supply

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

Input data

Signal: Voltage/current

Number of inputs	1
Configurable/programmable	Yes
Voltage input signal	0 V ... 5 V
	1 V ... 5 V
	0 V ... 10 V
	2 V ... 10 V
Max. voltage input signal	30 V DC
Current input signal	0 mA ... 20 mA
	4 mA ... 20 mA
	0 mA ... 10 mA
	2 mA ... 10 mA
Max. current input signal	100 mA
Input resistance of voltage input	approx. 110 kΩ
Input resistance current input	approx. 50 Ω
Behavior in the event of an error	Alarm in the form of a red LED

Output data

Frequency: Frequency

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 mA ≤ (U_L / R_L) ≤ 20 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 bits)
	61 Hz (16 bits)
Load min.	12 mA ≤ (U_L/R_L) ≤ 20 mA
Load current maximum	20 mA
Maximum switching voltage	30 V
Overrange/underrange	can be set (via DIP switch)
Protective circuit	Short-circuit protection, polarity reversal protection

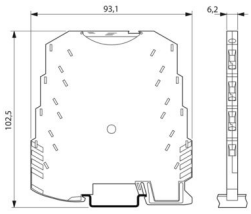
Signal

Number of outputs	1

Connection data

Connection method	Screw connection
Stripping length	12 mm
Screw thread	M3
Conductor cross-section rigid	0.2 mm² ... 2.5 mm²
Conductor cross-section flexible	0.2 mm² ... 2.5 mm²
Conductor cross-section AWG	26 ... 12

Dimensions

Dimensional drawing	
Width	6.2 mm
Height	93.1 mm
Depth	101.2 mm

Material specifications

Color	green (RAL 6021)
Housing material	PBT
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

Environmental and real-life conditions

Ambient conditions

Degree of protection	IP20
Ambient temperature (operation)	-20 °C ... 65 °C
Ambient temperature (storage/transport)	-40 °C ... 85 °C
Altitude	≤ 2000 m
Permissible humidity (operation)	5 % ... 95 % (non-condensing)

Approvals

CE

Certificate	CE-compliant

UL, USA/Canada

Identification	UL 508 Recognized

	Class I, Div. 2, Groups A, B, C, D T4

EMC data

Electromagnetic compatibility	Conformance with EMC directive
Noise immunity	EN 61000-6-2
Note	When being exposed to interference, there may be minimal deviations.

Noise emission

Standards/regulations	EN 61000-6-4

Electrostatic discharge

Standards/regulations	EN 61000-4-2

Electrostatic discharge

Comments	Safety measures must be taken to prevent electrostatic discharge.

Electromagnetic HF field

Designation	Electromagnetic RF field
Standards/regulations	EN 61000-4-3
Typical deviation from the upper range value	2 %

Fast transients (burst)

Designation	Fast transients (burst)
Standards/regulations	EN 61000-4-4
Typical deviation from the upper range value	2 %

Surge current load (surge)

Standards/regulations	EN 61000-4-5

Surge current load (surge)

Comments	Criterion B

Conducted interference

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

Standards and regulations

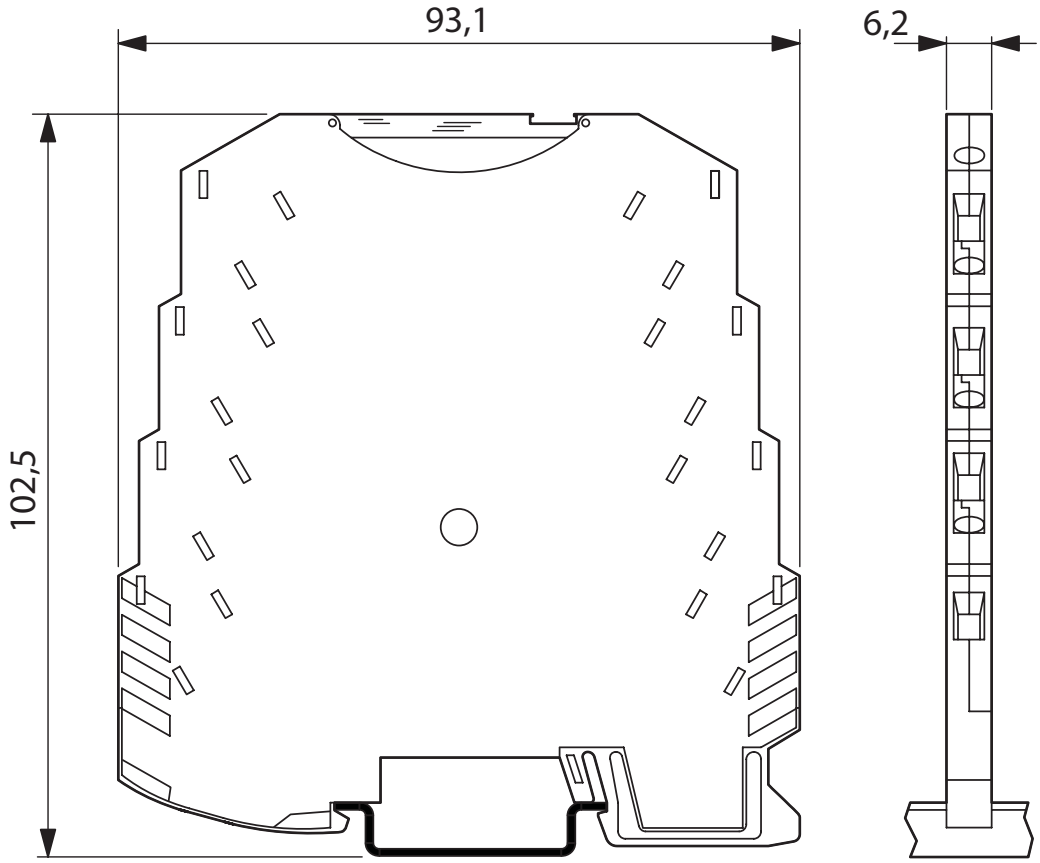
Electrical isolation	3-way isolation

Mounting

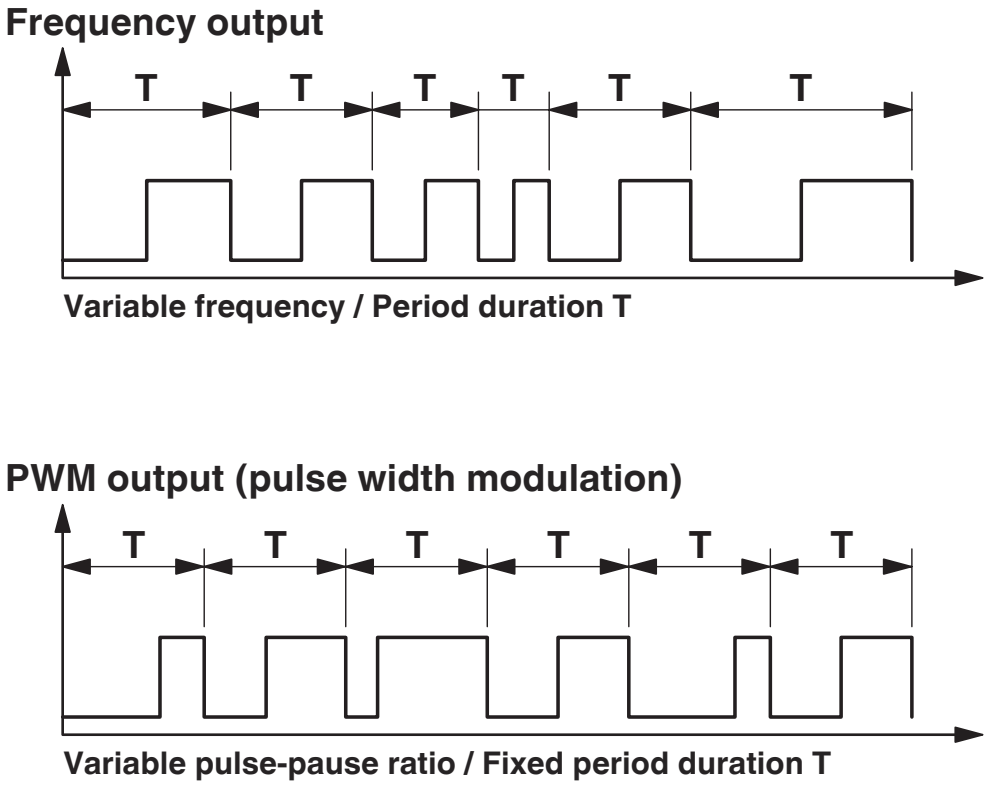
Mounting type	DIN rail mounting
Mounting position	any

Drawings

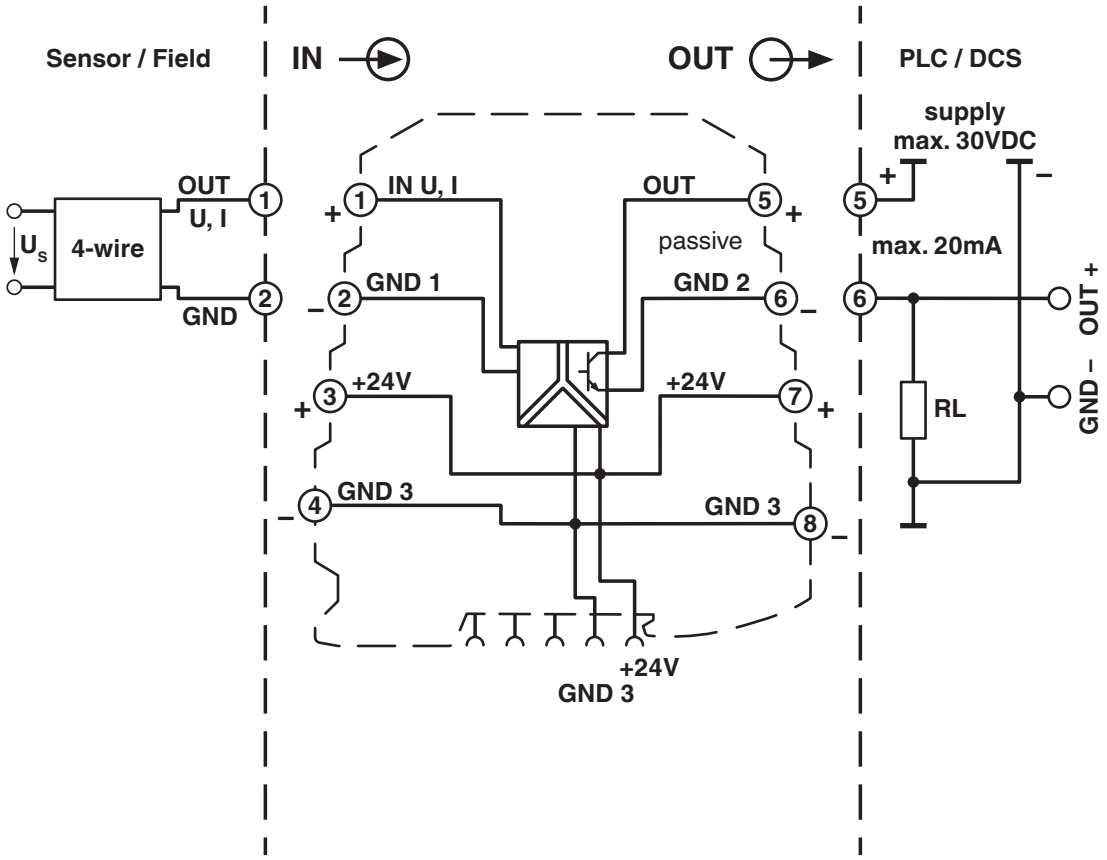
Dimensional drawing



Diagram


Frequency output
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Variable frequency / Period duration T
PWM output (pulse width modulation)
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Variable pulse-pause ratio / Fixed period duration T

Block diagram



Approvals

To download certificates, visit the product detail page: https://www.phoenixcontact.com/us/products/2864082

cUL Recognized
Approval ID: E238705

UL Recognized
Approval ID: E238705

BV
Approval ID: 39933/C0 BV

cUL Listed
Approval ID: E199827

UL Listed
Approval ID: E199827

Classifications

ECLASS

ECLASS-13.0	27210128
ECLASS-15.0	27210128

ETIM

ETIM 10.0	EC002918

UNSPSC

UNSPSC 21.0	39121000

Environmental product compliance

EU RoHS

Fulfills EU RoHS substance requirements	Yes
Exemption	7(a), 7(c)-I

China RoHS

Environment friendly use period (EFUP)	EFUP-50
	An article-related China RoHS declaration table can be found in the download area for the respective article under "Manufacturer declaration". For all articles with EFUP-E, no China RoHS declaration table issued and required.

EU REACH SVHC

REACH candidate substance (CAS No.)	Lead(CAS: 7439-92-1)
SCIP	c4b793f9-7223-41cb-8e4d-47399aac04d7

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