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

2902832

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CRA-READY



The configurable frequency transducer is suitable for the connection of NAMUR proximity sensors as well as for sensors with NPN and PNP outputs. Configurable via DIP switch and teach-in wheel. Screw connection, standard configuration.

Product description

The configurable 3-way isolated frequency transducer is suitable for the connection of NAMUR proximity sensors (IEC 60947-5-6 and EN 50227) as well as for sensors with NPN and PNP outputs that generate a frequency signal.
The measured values are converted into a linear current or voltage signal.
The device is configured via DIP switches. Alternatively, the frequency range can be configured with extended options via the teach-in wheel. The measuring transducer supports fault monitoring.

Commercial data

Item number	2902832
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	DK1136
Product key	DK1136
GTIN	4046356682367
Weight per piece (including packing)	61.8 g
Weight per piece (excluding packing)	52.8 g
Customs tariff number	85437090
Country of origin	DE

Technical data

Notes

Note on application

Note on application	As things stand now, we are preparing the product so that, as of December 11, 2027, it will comply with the requirements of the EU Cyber Resilience Act (CRA) based on the information currently available regarding the CRA.

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
Operating elements	Press/slide button
Configuration	DIP switches

System properties

Functionality

Configuration	DIP switches

Electrical properties

Electrical isolation	3-way isolation
Electrical isolation between input and output	yes
Protective circuit	Transient protection
Step response (0–99%)	< 35 ms (At f > 500 Hz)
Maximum temperature coefficient	0.01 %/K
Transmission error in the set measuring range	0.1 %

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	50 V AC/DC
Test voltage	1.5 kV AC (50 Hz, 60 s)
Insulation	Basic insulation

Supply

Supply voltage range	9.6 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)
Typical current consumption	< 28 mA (at I_{OUT} = 20 mA, 24 V DC, load 500 Ω)
Power consumption	< 800 mW (at I_{OUT} = 20 mA, 9.6 V DC, load 500 Ω)

Input data

Measurement: Frequency

Configurable/programmable	Yes
Available input sources	NPN/PNP transistor outputs
	NAMUR initiators
	Floating relay contact (dry contact)
Max. voltage input signal	30 V (incl. DC voltage)
Frequency measuring range	0.002 Hz ... 20 kHz (DIP switch)
	0.002 Hz ... 80 kHz (Teach-in wheel)

Signal

Number of inputs	1
Input signal	Frequency

Output data

Signal: Voltage/current

Number of outputs	1
Configurable/programmable	Yes
Voltage output signal	0 V ... 5 V
	1 V ... 5 V
	0 V ... 10 V
	10 V ... 0 V
Max. voltage output signal	≈ V
Current output signal	0 mA ... 20 mA
	4 mA ... 20 mA
	20 mA ... 0 mA
	20 mA ... 4 mA
Max. current output signal	24.6 mA
Load/output load voltage output	≥ 10 kΩ
Load/output load current output	500 Ω (20 mA)
Ripple	< 20 mV_{PP}
	< 20 mV_{PP} (500 Ω)

Connection data

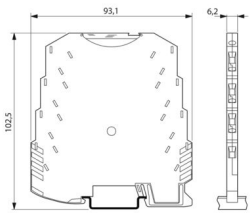
Connection method	Screw connection
Stripping length	12 mm
Screw thread	M3
Conductor cross-section rigid	0.2 mm² ... 2.5 mm²

Conductor cross-section flexible	0.2 mm² ... 2.5 mm²
Conductor cross-section AWG	26 ... 12

Signaling

Status display	LED (red)

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 Listed
	Class I, Div. 2, Groups A, B, C, D T4
	Class I, Zone 2, Group IIC

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	0.1 %

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

Conducted interference

Designation	Conducted interferences
Standards/regulations	EN 61000-4-6
Typical deviation from the upper range value	0.3 %

Standards and regulations

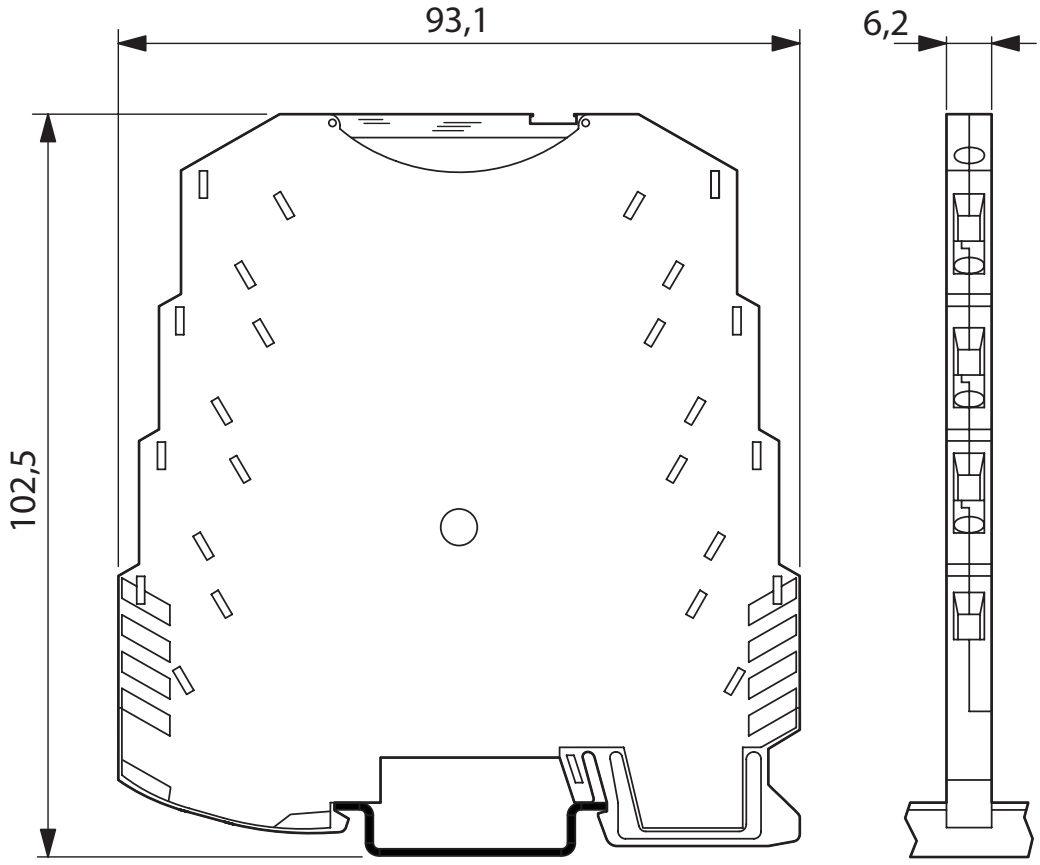
Electrical isolation	3-way isolation

Mounting

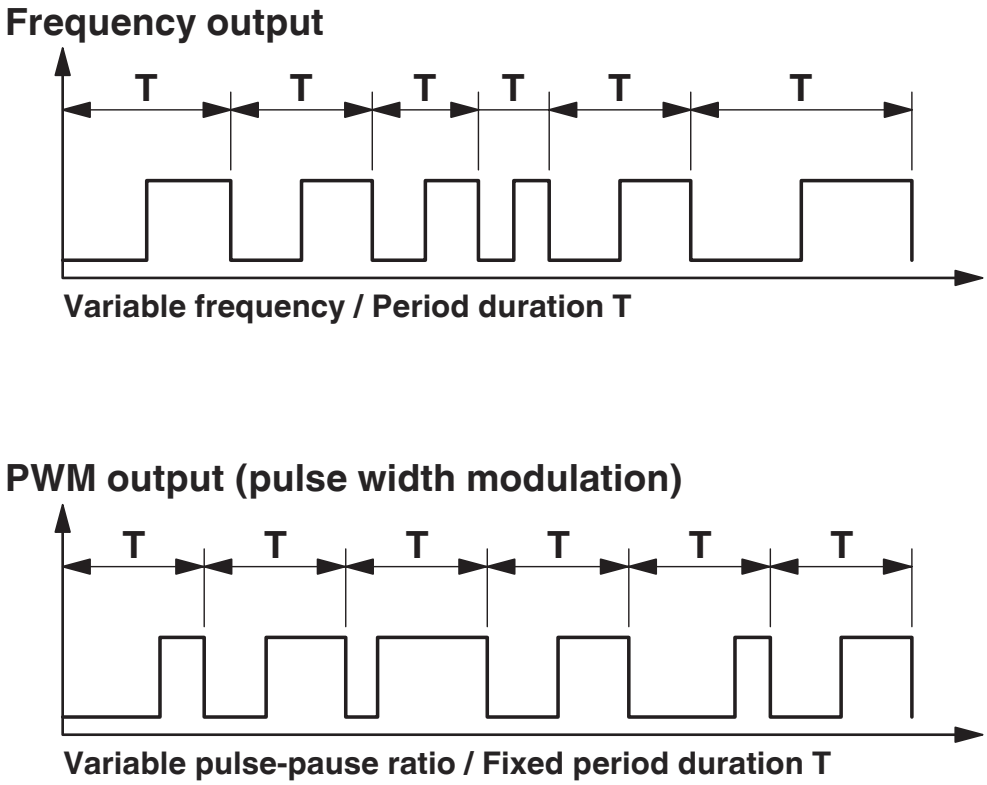
Mounting type	DIN rail mounting
Assembly note	The DIN rail connector can be used for bridging the supply voltage. It can be snapped onto a 35 mm EN 60715 DIN rail.
Mounting position	any

Drawings

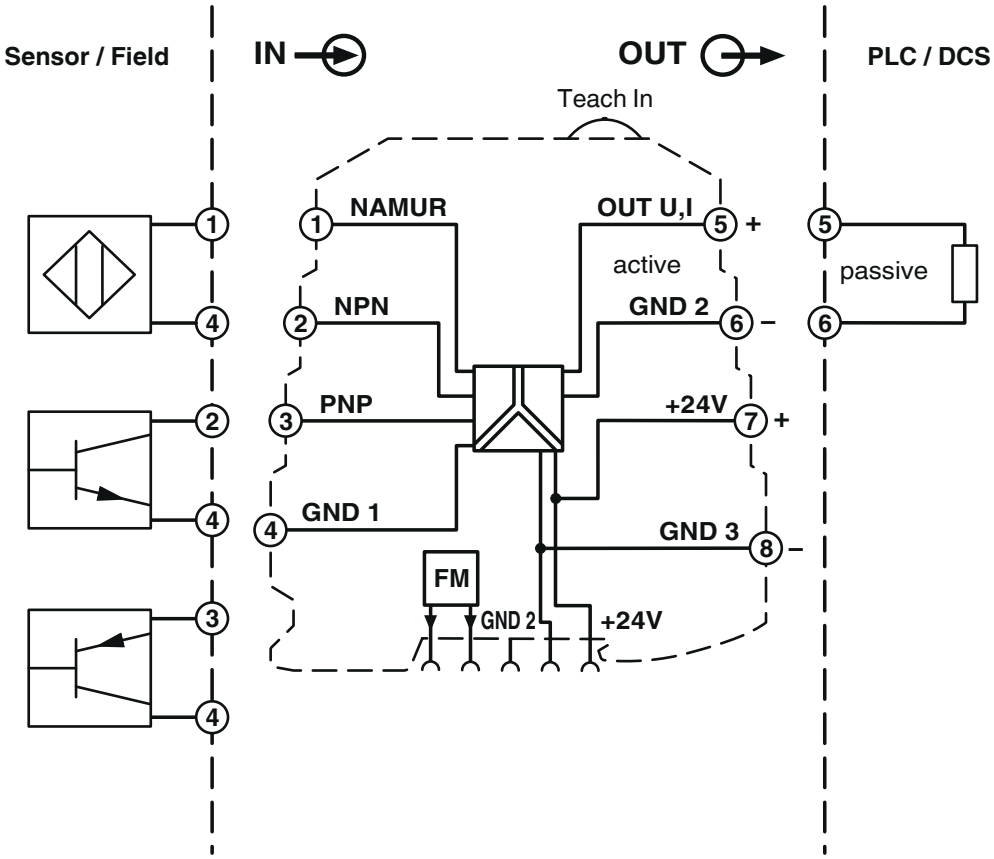
Dimensional drawing



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/gb/products/2902832

UL Listed
Approval ID: E238705

cUL Listed
Approval ID: E238705

cUL Listed
Approval ID: E199827

UL Listed
Approval ID: FILE E 199827

cULus 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	343b353d-cae5-41f8-b03c-b880e96783c7

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PHOENIX CONTACT Ltd
Halesfield 13, Telford
Shropshire, TF7 4PG
01952 681700
info@phoenixcontact.co.uk