

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



2902832

<https://www.phoenixcontact.com/gb/products/2902832>

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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.

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Commercial Data

Item number	2902832
Packing unit	1 pc
Minimum order quantity	1 pc
Sales Key	CK1231
Product Key	CK1231
Catalog Page	Page 109 (C-7-2015)
GTIN	4046356682367
Weight per Piece (including packing)	116.9 g
Weight per Piece (excluding packing)	114.7 g
Customs tariff number	85437090
Country of origin	DE

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Technical Data

Notes

Utilization restriction

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

Product type	Frequency transducer
No. of channels	1
Operating elements	Press/slide button
Configuration	DIP switches

Insulation characteristics

Overvoltage category	II
Pollution degree	2

Electrical properties

No. of channels	1
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 Input/output/power supply

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

Supply

Supply voltage range	9.6 V DC ... 30 V DC (The DIN rail bus 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 according to 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)

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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

Output name	Voltage output / current output
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	approx. 12.3 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	$\geq 10 \text{ k}\Omega$
Load/output load current output	500 Ω (at 20 mA)
Ripple	$< 20 \text{ mV}_{PP}$
	$< 20 \text{ mV}_{PP}$ (at 500 Ω)

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

LED signaling

Status display	LED red
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Software

Functionality

Configuration	DIP switches
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Dimensions

Width	6.2 mm
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Height	93.1 mm
Depth	101.2 mm

Material specifications

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
Housing material	PBT

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)

Approval data

CE

Certificate	CE-compliant
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UKCA

Certificate	UKCA-compliant
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UL, USA / Canada

Identification	UL 508 Listed
	Class I, Div. 2, Groups A, B, C, D T4
	Class I, Zone 2, Group IIC

Shipbuilding approval

Certificate	DNV GL TAA00002R0
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DNV GL data

Temperature	B
Humidity	B
Vibration	B
EMC	A
Enclosure	Required protection according to the Rules shall be provided upon installation on board

EMC data

Electromagnetic compatibility	Conformance with EMC directive
Noise emission	EN 61000-6-4
Noise immunity	EN 61000-6-2
Note	When being exposed to interference, there may be minimal deviations.

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Electrostatic discharge

Standards/regulations	EN 61000-4-2
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Electrostatic discharge

Comments	Safety measures must be taken to prevent electrostatic discharge.
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Electromagnetic HF field

Designation	Electromagnetic RF field
Standards/regulations	EN 61000-4-3
Typical deviation from the measuring range final value	0.1 %

Fast transients (burst)

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

Surge current load (surge)

Standards/regulations	EN 61000-4-5
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Conducted interference

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

Standards and regulations

Electrical isolation	3-way isolation
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Mounting

Mounting type	DIN rail mounting
Assembly instructions	The T connector can be used to bridge the supply voltage. It can be snapped onto a 35 mm DIN rail according to EN 60715.
Mounting position	any

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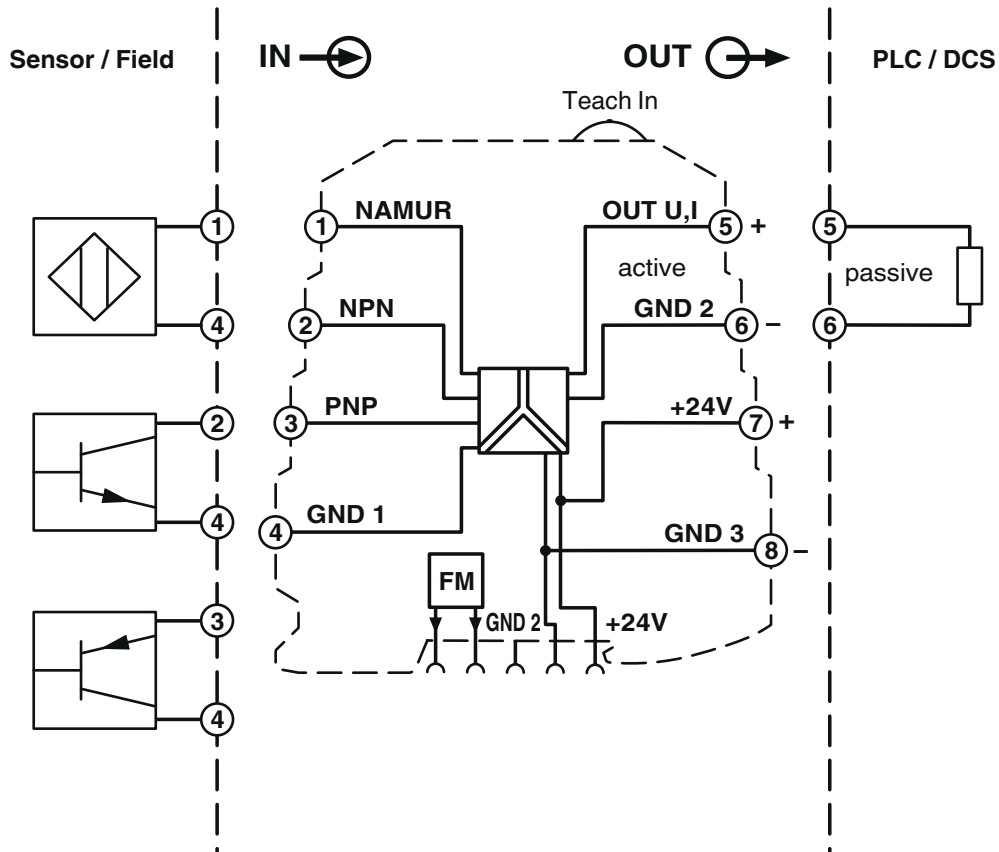


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Drawings

Block diagram



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Approvals

DNV GL

UL Listed

cUL Listed

cUL Listed

UL Listed

cULus Listed

cULus Listed

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Classifications

ECLASS

ECLASS-9.0	27210120
ECLASS-10.0.1	27210120
ECLASS-11.0	27210120

ETIM

ETIM 8.0	EC002653
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UNSPSC

UNSPSC 21.0	39121008
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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"

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