

2902832

<https://www.phoenixcontact.com/us/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.

Commercial data

Item number	2902832
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	C403
Product key	DK1136
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

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



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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 value transformer
Product family	MINI Analog
No. of channels	1
Operating elements	Press/slide button
Configuration	DIP switches

#### Insulation characteristics

Overvoltage category	II
Pollution degree	2

### System properties

#### Functionality

Configuration	DIP switches
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### 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 Input/output/power supply

Rated insulation voltage	50 V AC/DC
Test voltage	1.5 kV AC (50 Hz, 60 s)
Insulation	Basic insulation in accordance with IEC/EN 61010

#### 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 $\Omega$ )
Power consumption	< 800 mW (at $I_{OUT} = 20$ mA, 9.6 V DC, load 500 $\Omega$ )

### Input data

Measurement: Frequency

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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 <sub>PP</sub>
	< 20 mV <sub>PP</sub> (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)
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## Dimensions

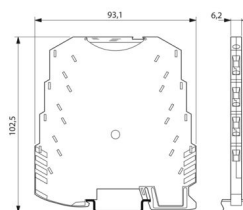
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Dimensional drawing



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
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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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### Shipbuilding data

Temperature	B
Humidity	B
Vibration	B

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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 immunity	EN 61000-6-2
Note	When being exposed to interference, there may be minimal deviations.

## Noise emission

Standards/regulations	EN 61000-6-4
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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 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

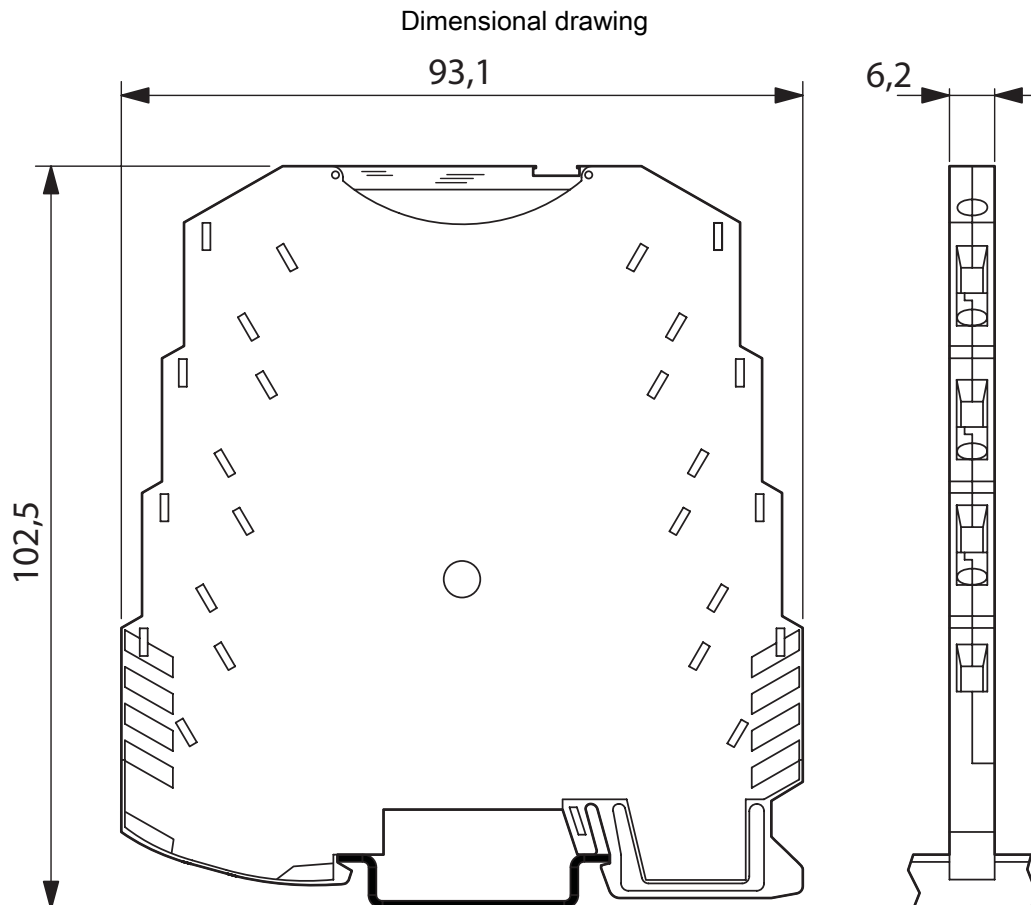
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## Drawings



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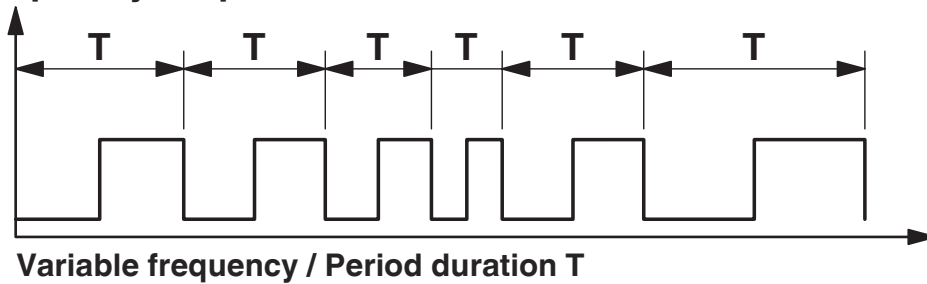


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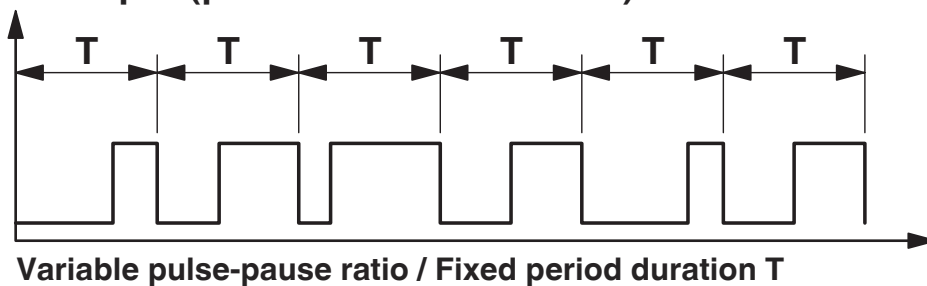
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Diagram

## Frequency output



## PWM output (pulse width modulation)



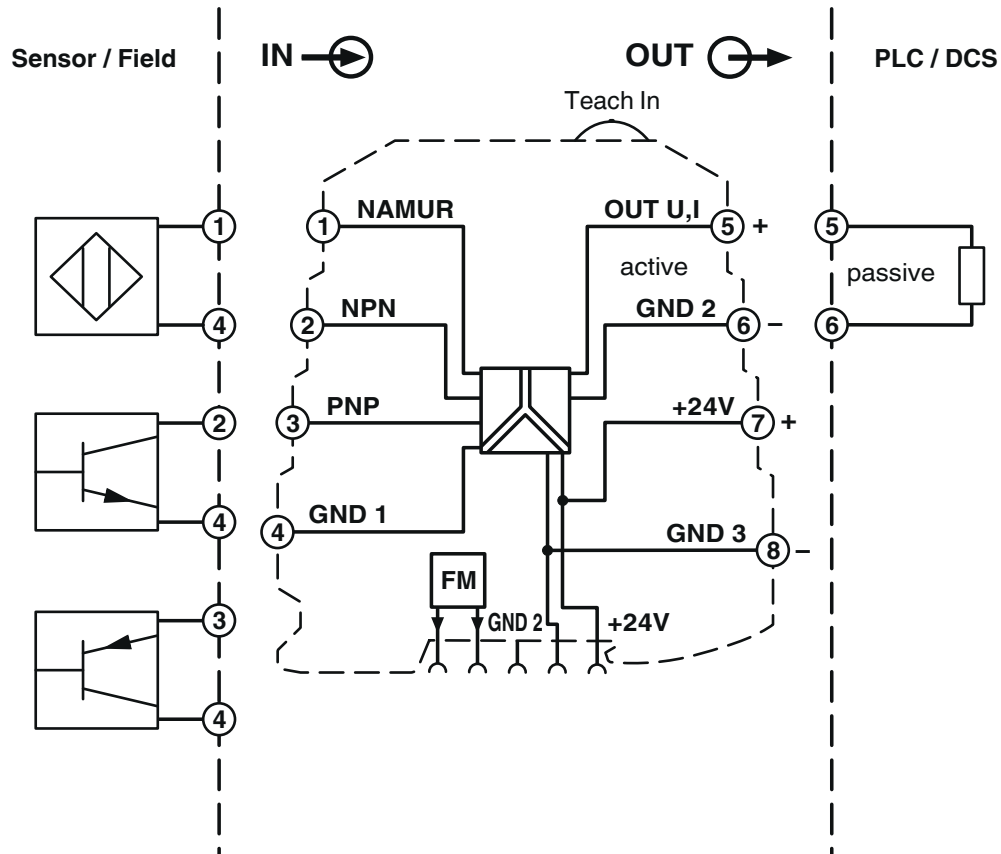
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Block diagram










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## Approvals

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- **DNV GL**  
Approval ID: TAA00002R0
- **UL Listed**  
Approval ID: E238705
- **cUL Listed**  
Approval ID: E238705
- **cUL Listed**  
Approval ID: E199827
- **UL Listed**  
Approval ID: FILE E 199827

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## Classifications

### ECLASS

ECLASS-13.0	27210128
ECLASS-15.0	27210128

### ETIM

ETIM 9.0	EC002918
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### UNSPSC

UNSPSC 21.0	39121000
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## 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)
	2,2',6,6'-tetrabromo-4,4'-isopropylidenediphenol(CAS: 79-94-7)
SCIP	343b353d-cae5-41f8-b03c-b880e96783c7

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