

MCR-F-UI-DC - Frequency measuring transducer



2814605

<https://www.phoenixcontact.com/us/products/2814605>

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MCR frequency measuring transducer, programmable, for converting frequencies into analog signals, with 3-way isolation and configurable output

Your advantages

- Replacement product MINI MCR-2-F-UI(-PT) 2902056 (2902058, Push-in version) in combination with MINI MCR-2-SPS-24-15(-PT) 1033202 (1033201, Push-in version)
- Can be programmed via membrane keypad or software
- Display of the input or output signal
- 3-way isolation
- Analog and switching output
- For NAMUR sensors, floating contacts, frequency generators, and NPN/PNP transistor outputs
- Frequencies up to 120 kHz

Commercial data

Item number	2814605
Packing unit	1 pc
Note	Made to order (non-returnable)
Sales key	C401
Product key	DK1XXX
GTIN	4017918168827
Weight per piece (including packing)	234.9 g
Weight per piece (excluding packing)	234.9 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
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Product properties

Product type	Frequency value transformer
Operating elements	Membrane keypad with 3 keys and LCD display

Electrical properties


Alignment span	± 25 %
Alignment zero	± 25 %
Electrical isolation between input and output	yes
Maximum power dissipation for nominal condition	1.8 W
Test voltage, input/output/supply	1.5 kV (50 Hz, 1 min.)
Protective circuit	Transient protection
	Reverse polarity protection
Step response (10-90%)	< 25 ms
Maximum temperature coefficient	0.015 %/K
Temperature coefficient, typical	0.01 %/K
Maximum transmission error	≤ 0.15 % (of measured value)
Transmission error, typical	0.1 %

Supply

Supply voltage range	20 V DC ... 30 V DC
Max. current consumption	< 60 mA (without load, without switching output)

Input data

Measurement: Frequency

Configurable/programmable	Yes
Available input sources	NPN/PNP transistor outputs
	NAMUR initiators
	Floating relay contact (dry contact)
	Frequency generator
Encoder supply voltage	≈  V DC
Encoder supply current	≤ 25 mA (constant)
Signal level	2 V _{PP} (In case of rectangle 0.1 Hz ... 120 kHz)
	2 V _{PP} (In case of sine 8 Hz ... 120 kHz)
	13 V _{PP} (In case of sine 1 Hz ... 120 kHz)
Max. voltage input signal	30 V (incl. DC voltage)
Impulse form	any

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Pulse time	$\geq 1 \mu\text{s}$
Measured value resolution	$> 12 \text{ bit}$
A/D conversion time	$\leq 32 \text{ ms}$
Frequency measuring range	0.1 Hz ... 120 kHz

Signal: I analog

Description of the input	Current input (isolating amplifier function)
Number of inputs	1
Configurable/programmable	Yes
Current input signal	0 mA ... 20 mA (freely adjustable)
Max. current input signal	24 mA
Input resistance current input	200 Ω
Measured value resolution	14 bit (full-scale)
Step response (10-90%)	$< 25 \text{ ms}$
Supply voltage	24 V DC

Signal: U digital

Description of the input	Voltage input (isolating amplifier function)
Configurable/programmable	Yes
Voltage input signal	0 V ... 10 V (freely adjustable)
Max. voltage input signal	12 V
Input resistance of voltage input	95 k Ω
Measured value resolution	14 bit (full-scale)
Step response (10-90%)	$< 25 \text{ ms}$

Output data

Switching: Transistor

Output description	Switches supply voltage to terminal block SW, can carry a load of 100 mA, not protected against short-circuit
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Signal: U

Number of outputs	1
Configurable/programmable	Yes
Voltage output signal	0 V ... 10 V 0 V ... 5 V 10 V ... 0 V 5 V ... 0 V
Max. voltage output signal	12.5 V
Load/output load voltage output	$\geq 500 \Omega$
Ripple	$< 20 \text{ mV}_{\text{PP}}$

Signal: I

Configurable/programmable	Yes
Current output signal	0 mA ... 20 mA 4 mA ... 20 mA 20 mA ... 0 mA

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	20 mA ... 4 mA
Max. current output signal	25 mA
Load/output load current output	$\leq 500 \Omega$
Ripple	$< 20 \text{ mV}_{PP}$

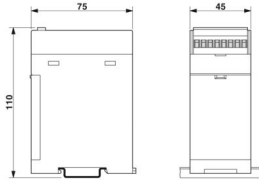
Connection data

Connection method	Screw connection
Stripping length	8 mm
Screw thread	M3
Conductor cross-section rigid	0.2 mm ² ... 2.5 mm ²
Conductor cross-section flexible	0.2 mm ² ... 2.5 mm ²
Conductor cross-section AWG	24 ... 14

Signaling

Status display	LC display
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Dimensions

Dimensional drawing	
Width	45 mm
Height	75 mm
Depth	110 mm

Material specifications

Color	green (RAL 6021)
Housing material	ASA-PC (V0)

Environmental and real-life conditions

Ambient conditions

Ambient temperature (operation)	-20 °C ... 65 °C (for specified data)
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Approvals

CE

Certificate	CE-compliant
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UL, USA/Canada

Identification	Class I, Div. 2, Groups A, B, C, D or Non-Hazardous Locations
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GL

Identification	DNV GL
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Mounting

Mounting type	DIN rail mounting
Mounting position	any

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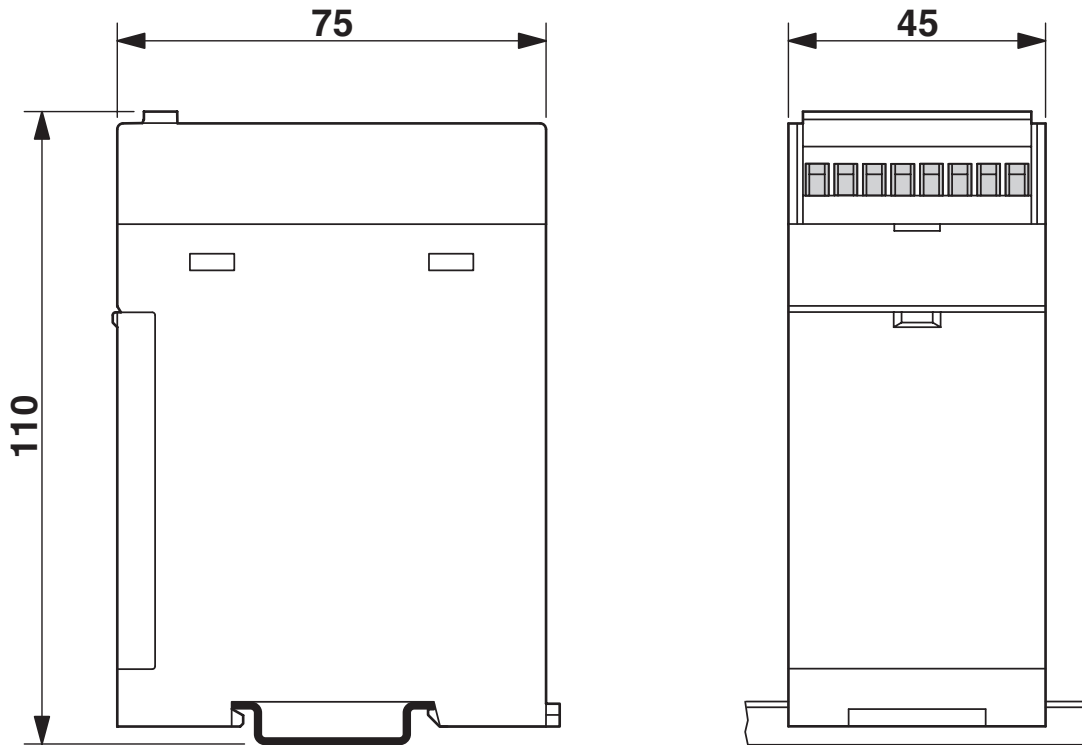


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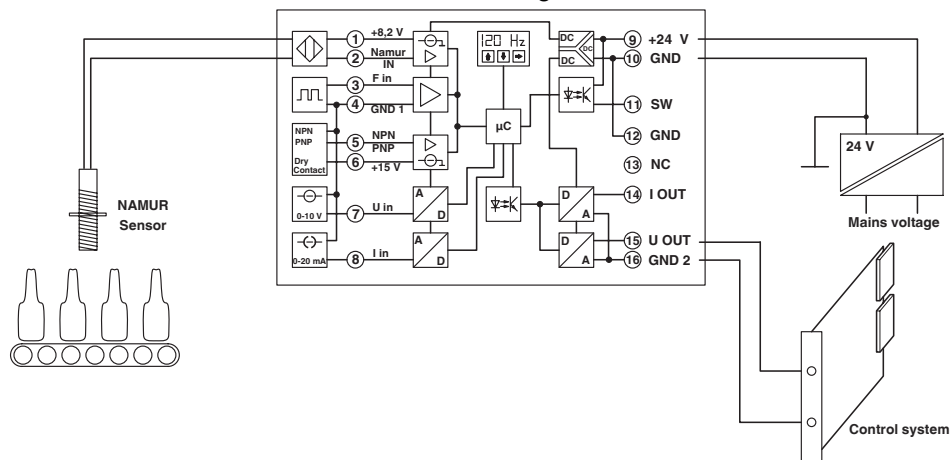
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Drawings

Dimensional drawing



Connection diagram



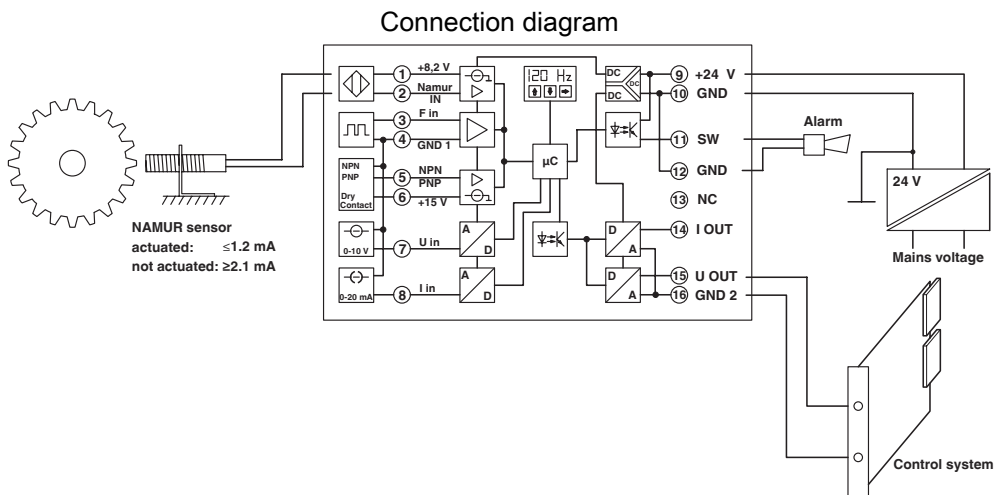
Application example: Flow measurement

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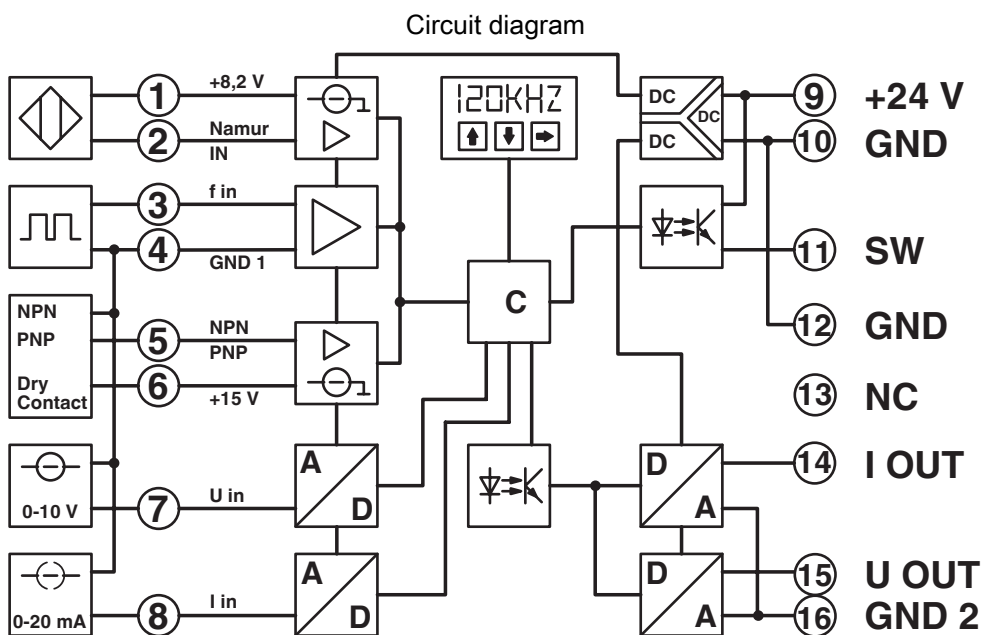


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Application example: Measurement of revolutions of a drive



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Environmental product compliance

EU RoHS

Fulfills EU RoHS substance requirements	Yes
Exemption	6(c), 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)
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