Frequency transducer - MCR-F-UI-DC - 2814605

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

Product Features

- 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

Key Commercial Data

Packing unit	1 pc
Weight per Piece (excluding packing)	238.9 g
Custom tariff number	85437090
Country of origin	Germany

Technical data

Note

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

Dimensions

Width	45 mm
Height	75 mm
Depth	110 mm

Ambient conditions

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Ambient conditions

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

Input data

Frequency input	Frequency input
Configurable/programmable	Yes
Frequency measuring range	0.1 Hz ... 120 kHz
Available input sources	NPN/PNP transistor outputs
	NAMUR initiators
	Floating relay contact (dry contact)
	Frequency generator
Encoder supply voltage	approx. 15 V DC
Encoder supply current	max. 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. input amplitude	30 V (incl. DC voltage)
Impulse form	any
Pulse time	≥ 1 µs
Measured value resolution	> 12 bit
A/D conversion time	≤ 32 ms
Signal input	Current input (isolating amplifier function)
Configurable/programmable	Yes
Current input signal	0 mA ... 20 mA (freely adjustable)
Input resistance current input	200 Ω
Measured value resolution	14 bit (full-scale)
Step response (10-90%)	< 25 ms
Signal input	Voltage input (isolating amplifier function)
Configurable/programmable	Yes
Voltage input signal	0 V ... 10 V (freely adjustable)
Input resistance of voltage input	95 kΩ
Measured value resolution	14 bit (full-scale)
Step response (10-90%)	< 25 ms

Output data

Output name	Voltage output
Number of outputs	1
Configurable/programmable	Yes
Voltage output signal	0 V ... 10 V

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Output data

	0 V ... 5 V
	10 V ... 0 V
	5 V ... 0 V
Max. output voltage	12.5 V
Load/output load voltage output	≥ 500 Ω
Output name	Current output
Configurable/programmable	Yes
Current output signal	0 mA ... 20 mA
	4 mA ... 20 mA
	20 mA ... 0 mA
	20 mA ... 4 mA
Max. output current	25 mA
Load/output load current output	≤ 500 Ω

Switching output

Output name	Transistor output, pnp
Output description	Switches supply voltage to terminal block SW, can carry a load of 100 mA, not protected against short-circuit

Output data

Step response (10-90%)	< 25 ms

Power supply

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

Connection data

Connection method	Screw connection
Conductor cross section solid min.	0.2 mm²
Conductor cross section solid max.	2.5 mm²
Conductor cross section AWG min.	24
Conductor cross section AWG max.	14
Conductor cross section flexible min.	0.2 mm²
Conductor cross section flexible max.	2.5 mm²
Stripping length	8 mm
Screw thread	M3

General

Maximum transmission error	≤ 0.15 % (of measured value)
Transmission error, typical	0.1 %

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General

Maximum temperature coefficient	0.015 %/K
Temperature coefficient, typical	0.01 %/K
Alignment zero	± 25 %
Alignment span	± 25 %
Step response (10-90%)	< 25 ms
Status display	LC display
Operating elements	Membrane keypad with 3 keys and LCD display
Protective circuit	Transient protection
	Reverse polarity protection
Test voltage, input/output/supply	1.5 kV (50 Hz, 1 min.)
Color	green
Housing material	ASA-PC (V0)
Mounting position	any
Conformance	CE-compliant
UL, USA / Canada	Class I, Div. 2, Groups A, B, C, D or Non-Hazardous Locations
GL	Germanischer Lloyd

Standards and Regulations

Connection in acc. with standard	CUL
Conformance	CE-compliant
UL, USA / Canada	Class I, Div. 2, Groups A, B, C, D or Non-Hazardous Locations
GL	Germanischer Lloyd

Classifications

eCl@ss

eCl@ss 4.0	27210904
eCl@ss 4.1	27210904
eCl@ss 5.0	27210904
eCl@ss 5.1	27210904
eCl@ss 6.0	27210904
eCl@ss 7.0	27210904
eCl@ss 8.0	27210120
eCl@ss 9.0	27210120

ETIM

ETIM 2.0	EC001442
ETIM 3.0	EC001442

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Classifications

ETIM

ETIM 4.0	EC001442
ETIM 5.0	EC002653

UNSPSC

UNSPSC 6.01	30211506
UNSPSC 7.0901	39121008
UNSPSC 11	39121008
UNSPSC 12.01	39121008
UNSPSC 13.2	39121008

Approvals

Approvals

Approvals

UL Recognized / cUL Recognized / GL / EAC / GL / cULus Recognized

Ex Approvals

UL Listed / cUL Listed / cULus Listed

Approvals submitted

Approval details

UL Recognized

cUL Recognized

GL

EAC

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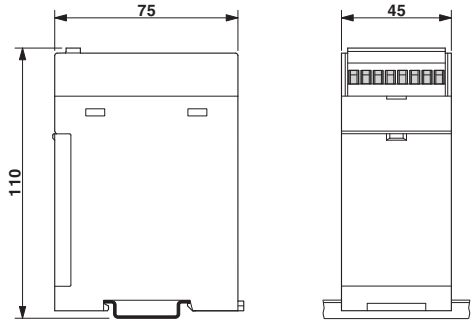
Approvals

GL

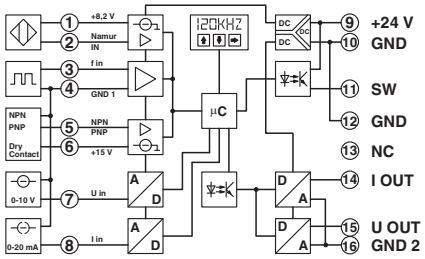
cULus Recognized

Drawings

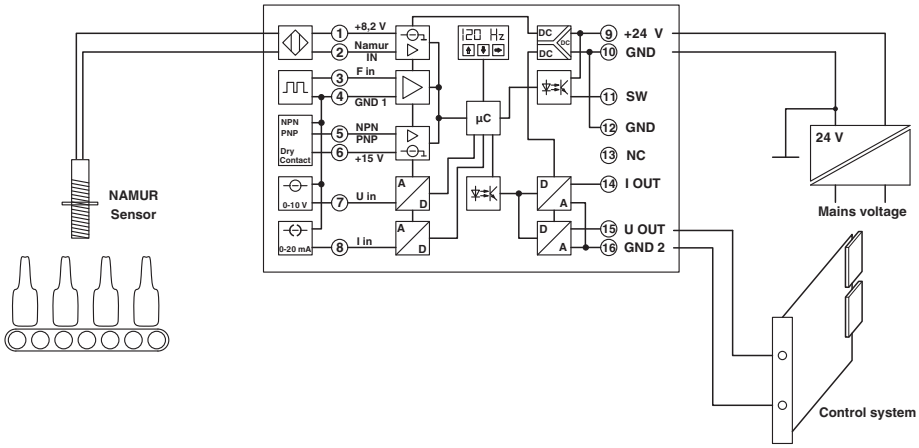
Dimensional drawing



Circuit diagram



Connection diagram



Application example: Flow measurement

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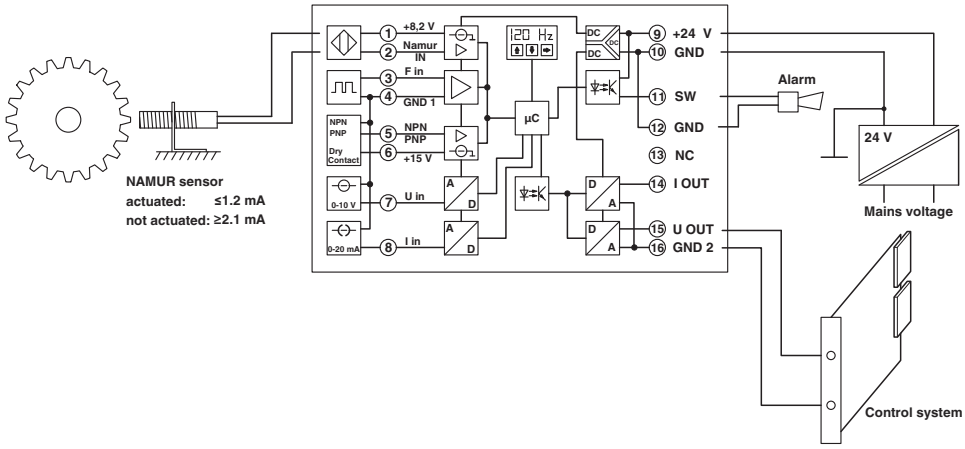
Connection diagram



Application example: Measurement of revolutions of a drive