Frequency transducer - MINI MCR-2-UI-FRO - 2902031

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Analog frequency transducer with limit value functionality and plug-in connection technology for converting standard signals into frequency or PWM signals. Configurable via DIP switch or software. Screw connection technology, standard configuration.

Product Description

Configurable, freely adjustable analog frequency transducer with additional switching output, limit value functionality, and plug-in connection technology for converting standard analog signals to frequency signals or to pulse width modulated signals (PWM signals). Current signals between 0 mA ... 24 mA and voltage signals between 0 V ... 12 V can be processed on the input side. Frequency signals between 0 ... 11 kHz and PWM signals between 0% ... 100% are possible on the output side. In addition, the output can also be operated as a switching output, which means that two switching thresholds can be set independently of one another. The minimum measuring span is 1 mA and 0.5 V. Full accuracy is maintained with a measuring span greater than 10 mA and 5 V. You can configure the device using one of the free software solutions. Default settings can also be made directly on the device by simply using the DIP switches (see configuration table). The measuring transducer supports fault monitoring and NFC communication.

Key Commercial Data

Packing unit	1 pc
GTIN	4 046356 652032
GTIN	4046356652032
Weight per Piece (excluding packing)	126.500 g
Custom tariff number	85437090
Country of origin	Germany
Sales Key	CK1431

Technical data

Note

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

Dimensions

Width	6.2 mm
Height	109.81 mm
Depth	119.2 mm

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Ambient conditions

Ambient temperature (operation)	-40 °C ... 70 °C
Ambient temperature (storage/transport)	-40 °C ... 85 °C
Maximum altitude	≤ 2000 m
Permissible humidity (operation)	5 % ... 95 % (non-condensing)
Degree of protection	IP20 (not assessed by UL)
Noise immunity	EN 61000-6-2 When being exposed to interference, there may be minimal deviations.

Input data

Number of inputs	1
Configurable/programmable	Yes
Voltage input signal	0 V ... 10 V (via DIP switch)
	2 V ... 10 V (via DIP switch)
	0 V ... 5 V (via DIP switch)
	1 V ... 5 V (via DIP switch)
	10 V ... 0 V (via DIP switch)
	10 V ... 2 V (via DIP switch)
	5 V ... 0 V (via DIP switch)
	5 V ... 1 V (via DIP switch)
	0 V ... 12 V (can be set via software)
Current input signal	0 mA ... 20 mA (via DIP switch)
	4 mA ... 20 mA (via DIP switch)
	0 mA ... 10 mA (via DIP switch)
	2 mA ... 10 mA (via DIP switch)
	20 mA ... 0 mA (via DIP switch)
	20 mA ... 4 mA (via DIP switch)
	10 mA ... 0 mA (via DIP switch)
	10 mA ... 2 mA (via DIP switch)
	0 mA ... 24 mA (can be set via software)
max. input voltage	12 V
Max. input current	24 mA
Input resistance of voltage input	> 120 kΩ
Input resistance current input	approx. 50 Ω (+0.7 V for test diode)

Output data

Number of outputs	1

Switching output

Output name	Switching output
Number of outputs	1
Minimum switching voltage	1 V DC
Maximum switching voltage	30 V DC
Min. switching current	100 µA

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Switching output

Max. switching current	100 mA (30 V DC)

Frequency output

Number of outputs	1
Output name	Frequency output / switching output
Frequency output: signal	0 Hz ... 10 kHz (via DIP switch)
	0 Hz ... 5 kHz (via DIP switch)
	0 Hz ... 2.5 kHz (via DIP switch)
	0 Hz ... 1 kHz (via DIP switch)
	0 Hz ... 500 Hz (via DIP switch)
	0 Hz ... 250 Hz (via DIP switch)
	0 Hz ... 100 Hz (via DIP switch)
	0 Hz ... 50 Hz (via DIP switch)
	0 Hz ... 10.5 kHz (can be set via software)
Frequency output: min. load	4 mA ≤ (U_L / R_L) ≤ 100 mA
PWM output: signal	15.6 kHz (10 bits, via DIP switch)
	1.9 kHz (10 bits, via DIP switch)
	3.9 kHz (12 bits, via DIP switch)
	488 Hz (12 bits, via DIP switch)
	977 Hz (14 bits, via DIP switch)
	122 Hz (14 bits, via DIP switch)
	244 Hz (16 bits, via DIP switch)
	31 Hz (16 bits, via DIP switch)
	31 Hz ... 15.6 kHz (can be set via software)
PWM output: min. load	12 mA ≤ (U_L / R_L) ≤ 100 mA
Maximum switching voltage	30 V DC
Load current maximum	100 mA
Overrange/underrange	Can be set (via software)
Step response (0–99%)	120 ms (15 Hz sample rate)
	35 ms (60 Hz sample rate)
	15 ms (240 Hz sample rate, can only be set via software)
	130 ms (15 Hz sample rate)
	40 ms (60 Hz sample rate)
	20 ms (240 Hz sample rate, can only be set via software)

Power supply

Nominal supply voltage	24 V DC
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, Order 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	27 mA (12 V DC)
	13.5 mA (24 V DC)

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Power supply

Power consumption	≤ 350 mW (9.6 V DC)

Connection data

Connection method	Screw connection
Stripping length	10 mm
Screw thread	M3
Conductor cross section solid	0.2 mm² ... 1.5 mm² (with ferrule)
	0.14 mm² ... 2.5 mm² (without ferrule)
Conductor cross section flexible	0.14 mm² ... 2.5 mm²
Conductor cross section AWG	24 ... 12 (flexible)
Torque	0.5 Nm ... 0.6 Nm

General

No. of channels	1
Maximum temperature coefficient	< 0.01 %/K
Temperature coefficient, typical	0.01 %/K
Electrical isolation	Reinforced insulation in accordance with IEC 61010-1
Overvoltage category	II
Degree of pollution	2
Rated insulation voltage	300 V (effective)
Test voltage, input/output/supply	3 kV (50 Hz, 1 min.)
Electromagnetic compatibility	Conformance with EMC directive
Noise emission	EN 61000-6-4
Noise immunity	EN 61000-6-2 When being exposed to interference, there may be minimal deviations.
Color	gray
Housing material	PBT
Mounting position	any
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.
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

Standards and Regulations

Electromagnetic compatibility	Conformance with EMC directive
Noise emission	EN 61000-6-4
Electrical isolation	Reinforced insulation in accordance with IEC 61010-1
Conformance	CE-compliant
ATEX	# II 3 G Ex nA IIC T4 Gc X
UL, USA/Canada	UL 508 Listed
	Class I, Div. 2, Groups A, B, C, D T6
	Class I, Zone 2, Group IIC T6

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Standards and Regulations

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

Conformance/approvals

Designation	CE
Identification	CE-compliant
Designation	ATEX
Identification	# II 3 G Ex ec IIC T4 Gc
Certificate	BVS 19 ATEX E 083 X
Designation	IECEx
Identification	Ex ec IIC T4 Gc
Certificate	IECEx BVS 19.0072X
Designation	CCC / China-Ex
Identification	Ex nA IIC T4 Gc
Certificate	NEPSI GYJ20.1318X
Designation	UL, USA/Canada
Identification	UL 508 Listed
	Class I, Div. 2, Groups A, B, C, D T6
	Class I, Zone 2, Group IIC T6
Designation	Shipbuilding approval
Certificate	DNV GL TAA000021E
Temperature	B
Humidity	B
Vibration	A
EMC	A
Enclosure	Required protection according to the Rules shall be provided upon installation on board

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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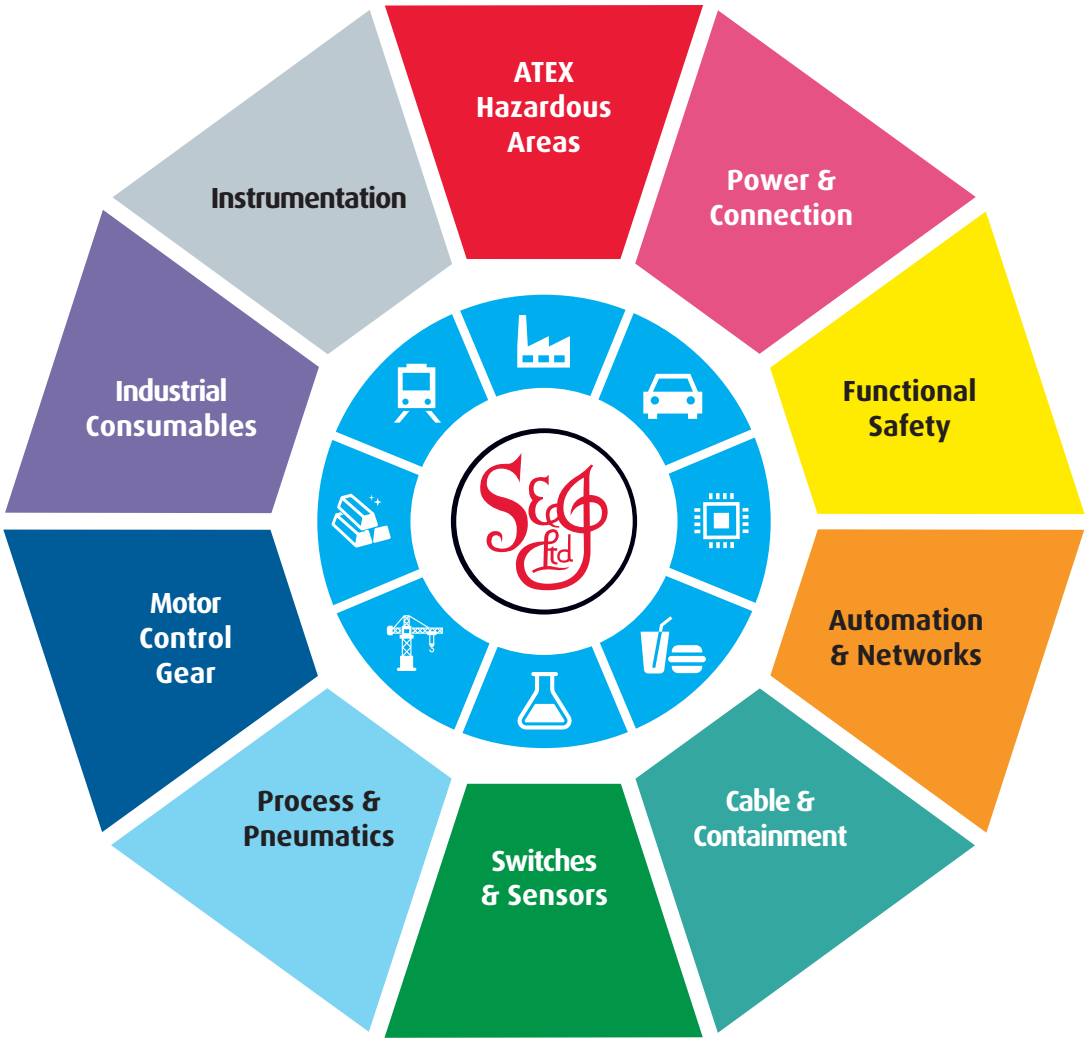

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