MINI MCR-SL-F-UI-NC

Frequency transducer



Data sheet
105442_en_03

© Phoenix Contact 2026-03-05

1 Description

Configurable 3-way isolated frequency transducer. The device 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. The frequency range is configured with extended options via a press/slide button ("teach-in wheel").

The device supports fault monitoring.

Features

- Configurable 3-way frequency transducer
- Configurable via DIP switch
- Screw connection available

Make sure you always use the latest documentation.
It can be downloaded from the product at phoenixcontact.com/products.

This document is valid for the products listed in the “Ordering data” chapter.

2 Table of contents

1 Description 1
2 Table of contents 2
3 Ordering data 3
4 Technical data 4
5 Safety regulations and installation notes 6
5.1 Installation notes 6
5.2 UL notes 6
6 Installation 7
6.1 Connection notes 7
6.2 Structure 7
6.3 Block diagram 7
6.4 Connecting the sensors 7
6.5 Power supply 8
6.6 Mounting 8
6.7 Partition plate 8
6.8 Connection of the cables 9
7 Fault monitoring FM 10
8 Configuration 11
8.1 Configuration tables 11
9 Configuration via the “teach-in” press/slide button. 14
9.1 Lower teach-in value (1) 14
9.2 Upper teach-in value (2) 14
9.3 Reset both values (3) 14
9.4 Adjustment of the frequency range final value 15
10 Diagnostic indicator 15

3 Ordering data

Description	Type	Item no.	Pcs./Pkt.
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.	MINI MCR-SL-F-UI-NC	2902832	1

Accessories	Type	Item no.	Pcs./Pkt.
DIN rail bus connector (TBUS), 5-pos., for bridging the supply voltage, can be snapped onto NS 35/... DIN rail in accordance with EN 60715	ME 6,2 TBUS-2 1,5/5-ST-3,81 GY	2695439	10
DIN rail bus connector for DIN rail mounting. Universal for TBUS housing. Gold-plated contacts, 5-pos.	ME 6,2 TBUS-2 1,5/5-ST-3,81 GN	2869728	10
The partition plate is used to maintain Ex i isolating distances when Ex i and non-Ex i devices are mounted side by side on a DIN rail.	MCR-DP	1430594	1
Universal termination carrier for connecting 16 MINI Analog signal conditioners to digital or analog I/O cards, via D-SUB connector, 37-pos. (1:1 connection), with HART multiplexer connection	TC-D37SUB-AIO16-M-PS-UNI	2902934	1
Universal termination carrier for connecting 16 MINI Analog signal conditioners to digital or analog I/O cards, via D-SUB connector, 37-pos. (1:1 connection)	TC-D37SUB-ADIO16-M-P-UNI	2902933	1
Fold up transparent cover for MINI MCR modules with additional labeling option using insert strips and flat Zack marker strip 6.2 mm	MINI MCR DKL	2308111	10
Label for extended marking of MINI MCR modules in connection with the MINI MCR-DKL	MINI MCR-DKL-LABEL	2810272	10
The MINI MCR-SL-PTB-FM(-SP) power terminal block is used to supply the supply voltage to the DIN rail connector. The FM power terminal block offers the additional function of monitoring in combination with the fault monitoring module. Screw connection.	MINI MCR-SL-PTB-FM	2902958	1
The fault monitoring module is used to evaluate and report group errors from the fault monitoring system and to monitor the supply voltages. The error is reported via an N/O contact. Screw connection, standard configuration.	MINI MCR-SL-FM-RC-NC	2902961	1
Primary-switched power supply, QUINT POWER, screw connection, DIN rail mounting, supply of devices possible via the TBUS DIN rail connector, protective coating, input: single-phase, output: 24 V DC/2.5 A	QUINT4-SYS-PS/1AC/24DC/2.5/SC	2904614	1
Actuation tool, for ST terminal blocks, insulated, also suitable for use as a bladed screwdriver, size: 0.6 x 3.5 x 100 mm, 2-component grip, with non-slip grip	SZS 0,6X3,5	1205053	10

4 Technical data

Input Frequency input	
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)
Output Voltage output / current output	
Number of outputs	1
Voltage output signal	0 V ... 5 V 1 V ... 5 V 0 V ... 10 V 10 V ... 0 V
Max. voltage output signal	≈ 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
Configurable/programmable	Yes
Load/output load voltage output	≥ 10 kΩ
Ripple	< 20 mV_{PP}
Load/output load current output	500 Ω (20 mA)
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 Ω)
Power consumption	< 800 mW (at I_{OUT} = 20 mA, 9.6 V DC, load 500 Ω)
Status and diagnostics indicators	
Status display	LED (red)

General data	
Transmission error in the set measuring range	0.1 %
Maximum temperature coefficient	0.01 %/K
Step response (0–99%)	< 35 ms (At f > 500 Hz)
Degree of protection	IP20
Mounting position	any
Dimensions W/H/D	6.2 mm / 93.1 mm / 101.2 mm
Type of housing	PBT

Electrical isolation	
Electrical isolation	3-way isolation
Overvoltage category Pollution degree	II 2
Input/output/power supply Standards/regulations Rated insulation voltage Test voltage Insulation	 IEC/EN 61010 50 V AC/DC 1.5 kV AC (50 Hz, 60 s) Basic insulation

Connection data	
Connection method	Screw connection
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
Stripping length	12 mm

Ambient conditions	
Ambient temperature (operation)	-20 °C ... 65 °C
Ambient temperature (storage/transport)	-40 °C ... 85 °C
Permissible humidity (operation)	5 % ... 95 % (non-condensing)
Maximum altitude for use above sea level	≤ 2000 m

Conformance with EMC directive
Immunity in accordance with EN 61000-6-2 When being exposed to interference, there may be minimal deviations.
Noise emission in accordance with EN 61000-6-4

Conformance/approvals	
CE CE-compliant	
UL, USA/Canada	UL 508 Listed Class I, Div. 2, Groups A, B, C, D T4 Class I, Zone 2, Group IIC

5 Safety regulations and installation notes

5.1 Installation notes

- Installation, operation, and maintenance may only be carried out by qualified electricians. Follow the installation instructions as described.
- When installing and operating the device, observe the applicable regulations and safety directives (including national safety directives), as well as the generally recognized technical regulations.
- Observe the safety information, conditions, and limits of use specified in the product documentation. Comply with them.
- The device must not be opened or modified. Do not repair the device yourself, replace it with an equivalent device. Repairs may only be carried out by the manufacturer. The manufacturer is not liable for damage resulting from violation.
- The IP20 degree of protection (IEC/EN 60529) specifies that the device is intended for use in a clean and dry environment. Do not subject the device to mechanical and/or thermal stress that exceeds the specified limits.
- The device is not designed for use in atmospheres with a danger of dust explosions.

5.2 UL notes

PROCESS CONTROL EQUIPMENT FOR HAZARDOUS LOCATIONS 31ZN

1 Suitable for use in class 1, division 2, groups A, B, C and D hazardous locations, or nonhazardous locations only.

2 WARNING - EXPLOSION HAZARD: Do not disconnect equipment while the circuit is live or unless the area is known to be free of ignitable concentrations.

3 WARNING - EXPLOSION HAZARD: Substitution of any components may impair suitability for Class I, Division 2.

4 CAUTION: Use copper supply wires that are approved up to 60 °C.

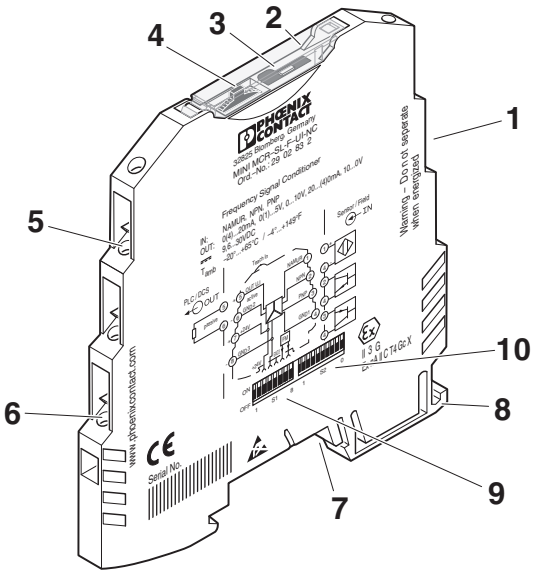
6 Installation

6.1 Connection notes

NOTE: Electrostatic discharge!
The device contains components that can be damaged or destroyed by electrostatic discharge. When handling the device, observe the necessary safety precautions against electrostatic discharge (ESD) according to EN 61340-5-1 and IEC 61340-5-1.

6.2 Structure

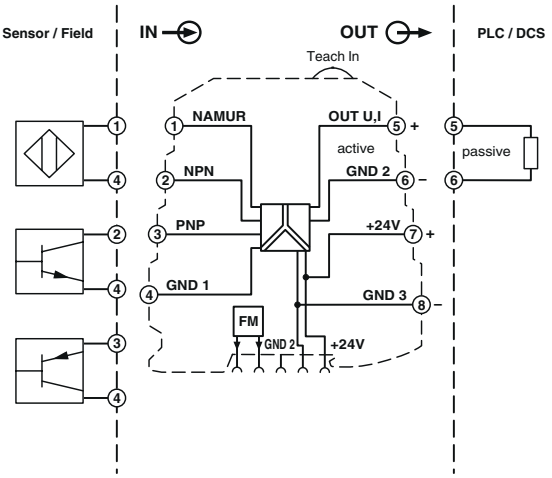
Figure 1 Structure



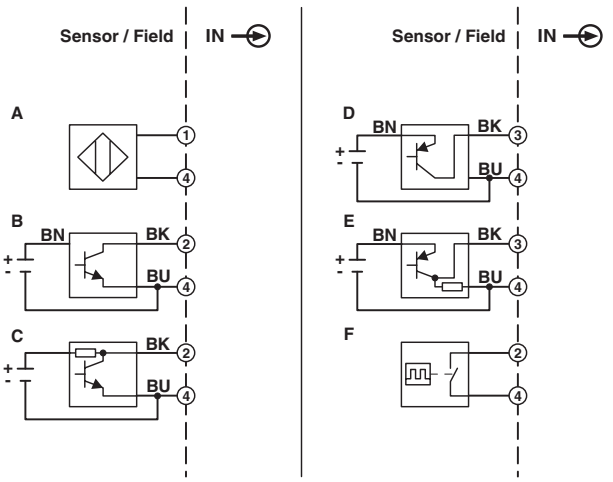
1 Input: Frequency sensors
2 Cover
3 Diagnostics LED
4 Press/slide button for teach-in
5 Output: Standard signals
6 Supply voltage
7 Connection for DIN rail connector
8 Universal snap-on foot for EN DIN rails
9 DIP switch S1
10 DIP switch S2

6.3 Block diagram

Figure 2 Block diagram



6.4 Connecting the sensors



Connection scheme	Description
A	NAMUR
B	NPN without pullup
C	NPN with pullup
D	PNP without pulldown
E	PNP with pulldown
F	Dry contact
BK: black, BN: brown, BU: blue	

6.5 Power supply

You must refer to the “MACX and MINI Analog power manual“ for the design of the power supply; it is available to download at www.phoenixcontact.com/products under the item listing.

NOTE: Never connect the supply voltage directly to the DIN rail connector. It is not permitted to draw power from the DIN rail connector or from individual modules.

Supply via the MINI Analog Module

Where the total current consumption of the aligned MINI Analog modules does not exceed 400 mA, the power can be supplied directly at the connection terminal blocks of one MINI Analog module.

A 400 mA fuse should be connected upstream.

Supply via a Power Terminal Block

The MINI MCR-SL-PTB power terminal block (Item No. 2864134) of the same shape is used to feed in the supply voltage to the DIN rail connector.

We recommend connecting a 2.5 A slow-blow fuse (e.g., SIBA 179 120.2,5 20x5).

Supply via a system power supply unit

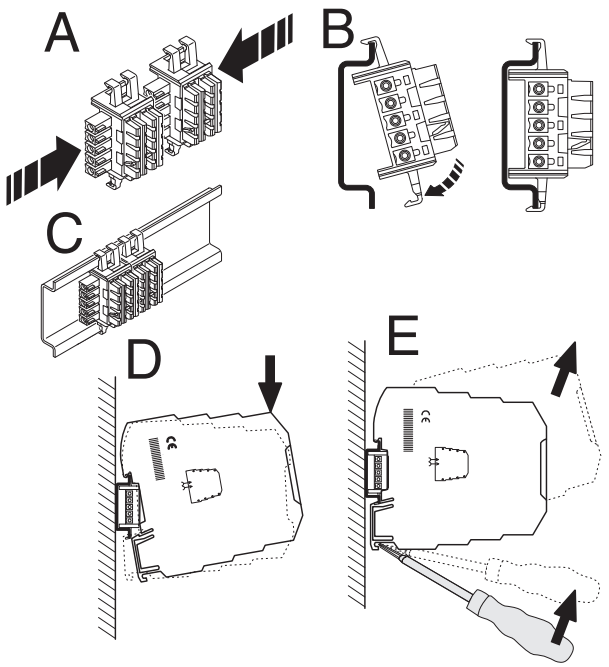
Use the QUINT4-SYS-PS/1AC/24DC/2.5/SC (Item No. 2904614) as the system power supply.

The power supply can be installed on all 35 mm DIN rails in accordance with EN 60715. The normal mounting position is horizontal (input terminals facing down). The minimum clearance to other devices is 30 mm above/below.

If you would like to supply adjacent items using the power supply, use a DIN rail bus distributor. To do so, insert the DIN rail bus adapter ME 22,5 TBUS ADAPTER KMGY (Item No.: 2201756) and the DIN rail connector ME 17,5 TBUS 1,5/ 5-ST-3,81 KMGY (Item No.: 2713645) plugged together in the DIN rail.

6.6 Mounting

Figure 3 Mounting and removing



– Mount the module on a 35 mm DIN rail in accordance with EN 60715.
– When using the DIN rail connector, first place it into the DIN rail (see A – C). It is used to bridge the power supply. It is also absolutely vital that you snap the module and the DIN rail connector into position in the correct direction: the snap-on foot should be at the bottom and the connector on the left.

6.7 Partition plate

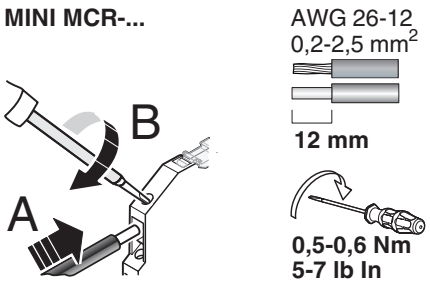
If you want to mount Ex i and non-Ex i devices next to each other on a DIN rail, you will require the MCR-DP partition plate (item no. 1430594). The partition plate ensures that Ex i isolating distances are maintained.

The partition plate is tailored to the MINI Analog, MINI Analog Pro, and MACX Analog device series and the QUINT4 system power supply (item no. 2904614).

The partition plate is compatible with the ME … TBUS DIN rail connectors (e.g., item no. 1090049, 2695439).

6.8 Connection of the cables

Figure 4 Screw connection



- Insert the wire into the corresponding connection terminal block.
- Use a screwdriver to tighten the screw in the opening above the connection terminal block.

7 Fault monitoring FM

Detected errors on the signal input or in the device itself are reported via the DIN rail bus connector to the MINI MCR-SL-FM-RC-NC fault monitoring module (item no. 2902961), which is the same shape. The module reports the error centrally via a N/C contact.

Only one fault monitoring module is required per group. Any individual evaluation of the up to 80 Phoenix Contact signal conditioners can be omitted.

The fault monitoring module can also be used to monitor the supply voltage.

- For the behavior of the fault monitoring contact for the different DIP switch configurations, please refer to the table.

Error response		**Fault monitoring: N/C contact**			
		Measuring range overrange	Measuring range underrange	Cable break	Short-circuit
A		activated	deactivated	activated	deactivated
B		activated	activated	activated	activated
C		deactivated	deactivated	activated	activated
D		deactivated	deactivated	deactivated	deactivated
NE43	Upscale	activated	activated	activated	activated
	Downscale				
	0 mA				
	Upscale/downscale				
Module error		activated (error is always reported)			
Invalid DIP switch configuration		activated (error is always reported)			

8 Configuration

The modules have the standard configuration:

– NAMUR sensor
– Mean value generation “OFF”
– Frequency range 0.002 Hz ... 20 kHz
– Output 4 mA ... 20 mA
– Error evaluation according to NE43 (downscale)
– Fault monitoring contact reacts to all errors

At delivery, all DIP switches are in the "OFF" position.

Configure the DIP switches according to the planned application using the configuration tables.

DIP switch S1 is used for specifying the sensor type, mean value generation, output signal range, measuring range start value, and measuring range final value.

DIP switch S2 is used for specifying the measuring range final value, error evaluation, and standard configuration.

8.1 Configuration tables

				• ≙ ON DIP S1							
				1	2	3	4	5	6	7	8
Input	NAMUR	(Error detection cable break/short circuit ON)									
	NPN/PNP	(Error detection cable break/short circuit OFF)		•							
Mean-value generation			OFF								
			ON		•						
Analog output signal			0...20 mA								
			20...0 mA			•					
			4...20 mA				•				
			20...4 mA			•	•				
			0...10 V					•			
			10...0 V			•		•			
			0...5 V				•	•			
			1...5 V			•	•	•			
Start frequency			0.002 Hz (> 8 min)								
(Recognition time)			0.1 Hz (~ 10 s)						•		
			1 Hz (~ 1 s)							•	
			10 Hz (~ 0.1 s)						•	•	

Measuring range final value • ≙ ON

DIP S1	DIP S2						
	8	1	2	3	4	5	6
20000 Hz							
19 500 Hz	•						
19000 Hz		•					
18500 Hz	•	•					
18000 Hz			•				
17500 Hz	•		•				
17000 Hz		•	•				
16500 Hz	•	•	•				
16000 Hz				•			
15500 Hz	•			•			
15000 Hz		•		•			
14500 Hz	•	•		•			
14000 Hz			•	•			
13500 Hz	•		•	•			
13000 Hz		•	•	•			
12500 Hz	•	•	•	•			
12000 Hz					•		
11500 Hz	•				•		
11000 Hz		•			•		
10500 Hz	•	•			•		
10000 Hz			•		•		
9800 Hz	•		•		•		
9600 Hz		•	•		•		
9400 Hz	•	•	•		•		
9200 Hz				•	•		
9000 Hz	•			•	•		
8800 Hz		•		•	•		
8600 Hz	•	•		•	•		
8400 Hz			•	•	•		
8200 Hz	•		•	•	•		
8000 Hz		•	•	•	•		
7800 Hz	•	•	•	•	•		
7600 Hz						•	
7400 Hz	•					•	
7200 Hz		•				•	
7000 Hz	•	•				•	
6800 Hz			•			•	
6600 Hz	•		•			•	
6400 Hz		•	•			•	
6200 Hz	•	•	•			•	
6000 Hz				•		•	
5800 Hz	•			•		•	
5600 Hz		•		•		•	

DIP S1	DIP S2						
	8	1	2	3	4	5	6
5400 Hz	•	•		•		•	
5200 Hz			•	•		•	
5000 Hz	•		•	•		•	
4800 Hz		•	•	•		•	
4600 Hz	•	•	•	•		•	
4400 Hz					•	•	
4200 Hz	•				•	•	
4000 Hz		•			•	•	
3800 Hz	•	•			•	•	
3600 Hz			•		•	•	
3400 Hz	•		•		•	•	
3200 Hz		•	•		•	•	
3000 Hz	•	•	•		•	•	
2800 Hz				•	•	•	
2600 Hz	•			•	•	•	
2400 Hz		•		•	•	•	
2200 Hz	•	•		•	•	•	
2000 Hz			•	•	•	•	
1800 Hz	•		•	•	•	•	
1600 Hz		•	•	•	•	•	
1400 Hz	•	•	•	•	•	•	
1200 Hz							•
1000 Hz	•						•
980 Hz		•					•
960 Hz	•	•					•
940 Hz			•				•
920 Hz	•		•				•
900 Hz		•	•				•
880 Hz	•	•	•				•
860 Hz				•			•
840 Hz	•			•			•
820 Hz		•		•			•
800 Hz	•	•		•			•
780 Hz			•	•			•
760 Hz	•		•	•			•
740 Hz		•	•	•			•
720 Hz	•	•	•	•			•
700 Hz					•		•
680 Hz	•				•		•
660 Hz		•			•		•
640 Hz	•	•			•		•
620 Hz			•		•		•
600 Hz	•		•		•		•

DIP S1	DIP S2										
	8	1	2	3	4	5	6	7	8	9	0
580 Hz		•	•		•		•				
560 Hz	•	•	•		•		•				
540 Hz				•	•		•				
520 Hz	•			•	•		•				
500 Hz		•		•	•		•				
480 Hz	•	•		•	•		•				
460 Hz			•	•	•		•				
440 Hz	•		•	•	•		•				
420 Hz		•	•	•	•		•				
400 Hz	•	•	•	•	•		•				
380 Hz						•	•				
360 Hz	•					•	•				
340 Hz		•				•	•				
320 Hz	•	•				•	•				
300 Hz			•			•	•				
280 Hz	•		•			•	•				
260 Hz		•	•			•	•				
240 Hz	•	•	•			•	•				
220 Hz				•		•	•				
200 Hz	•			•		•	•				
180 Hz		•		•		•	•				
160 Hz	•	•		•		•	•				
140 Hz			•	•		•	•				
120 Hz	•		•	•		•	•				
100 Hz		•	•	•		•	•				
95 Hz	•	•	•	•		•	•				
90 Hz					•	•	•				
85 Hz	•				•	•	•				
80 Hz		•			•	•	•				
75 Hz	•	•			•	•	•				
70 Hz			•		•	•	•				
65 Hz	•		•		•	•	•				
60 Hz		•	•		•	•	•				
55 Hz	•	•	•		•	•	•				
50 Hz				•	•	•	•				
45 Hz	•			•	•	•	•				
40 Hz		•		•	•	•	•				
35 Hz	•	•		•	•	•	•				
30 Hz			•	•	•	•	•				
25 Hz	•		•	•	•	•	•				
20 Hz		•	•	•	•	•	•				
Teach	•	•	•	•	•	•	•				

Fault evaluation		Analog OUT								• ≙ ON DIP S2			
										7	8	9	0
		0...20 mA	20...0 mA	4...20 mA	20...4 mA	0...10 V	10...0 V	0...5 V	1...5 V				
A	Cable break	21 mA	21 mA	21 mA	21 mA	10.5 V	10.5 V	5.25 V	5.25 V				
	Measuring range overrange	20.5 mA	20.5 mA	20.5 mA	20.5 mA	10.25 V	10.25 V	5.125 V	5.125 V				
	Measuring range underrange	0 mA	0 mA	4 mA	4 mA	0 V	0 V	0 V	1 V				
	Short circuit	0 mA	0 mA	4 mA	4 mA	0 V	0 V	0 V	1 V				
B	Cable break	21 mA	21 mA	21 mA	21 mA	10.5 V	10.5 V	5.25 V	5.25 V				
	Measuring range overrange	20.5 mA	20.5 mA	20.5 mA	20.5 mA	10.25 V	10.25 V	5.125 V	5.125 V	•			
	Measuring range underrange	0 mA	0 mA	3.5 mA	3.5 mA	0 V	0 V	0 V	0.875 V				
	Short circuit	0 mA	0 mA	3 mA	3 mA	0 V	0 V	0 V	0.75 V				
C	Cable break	21 mA	21 mA	21 mA	21 mA	10.5 V	10.5 V	5.25 V	5.25 V				
	Measuring range overrange	20 mA	20 mA	20 mA	20 mA	10 V	10 V	5 V	5 V		•		
	Measuring range underrange	0 mA	0 mA	4 mA	4 mA	0 V	0 V	0 V	1 V				
	Short circuit	21 mA	21 mA	21 mA	21 mA	10.5 V	10.5 V	5.25 V	5.25 V				
D	Cable break	0 mA	0 mA	4 mA	4 mA	0 V	0 V	0 V	1 V				
	Measuring range overrange	20 mA	20 mA	20 mA	20 mA	10 V	10 V	5 V	5 V	•	•		
	Measuring range underrange	0 mA	0 mA	4 mA	4 mA	0 V	0 V	0 V	1 V				
	Short circuit	0 mA	0 mA	4 mA	4 mA	0 V	0 V	0 V	1 V				
NE43	(Only OUT = 4...20 mA or 20...4 mA)												
	Upscale	Cable break, measuring range overrange, measuring range underrange, short circuit							= 21.5 mA			•	
	Downscale	Cable break, measuring range overrange, measuring range underrange, short circuit							= 3.5 mA	•		•	
	0 mA	Cable break, measuring range overrange, measuring range underrange, short circuit							= 0 mA		•	•	
	Up/downscale	Cable break, short circuit					= 3.5 mA						
		Measuring range overrange, measuring range underrange					= 21.5 mA			•	•	•	
Configuration		Standard configuration											
		via DIP switch											•

9 Configuration via the “teach-in” press/slide button.

The "teach-in" configuration can be used to extend the frequency range via 20 kHz up to 80 kHz.

In order not to exceed the 0.1% uncertainty of measurement of the module, the range values must be set up with a minimum range variable.

Default = range start value	Minimum range final value
0.002 Hz ... 1 Hz	Start value + 1%
> 1 Hz ... 60 Hz	Start value + 10 %
> 60 Hz ... 200 Hz	Start value + 20 %
> 200 Hz ... 1100 Hz	Start value +30 %
> 1100 Hz	Start value +40 %

Example calculation:

The range which is to be set via the teach-in wheel starts at 10 Hz.

- Calculate the minimum range final value to be set: Start value (10 Hz) + 10 % = 10 Hz + 1 Hz = **11 Hz**

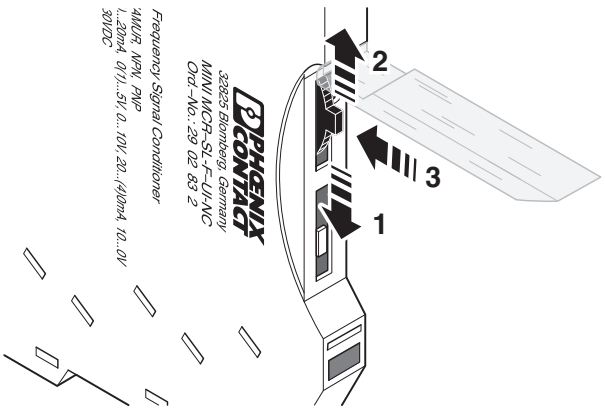
Default = range final value	Maximum range start value
0.002 Hz ... 1 Hz	Final value - 1%
> 1 Hz ... 60 Hz	Final value - 10 %
> 60 Hz ... 600 Hz	Final value - 20 %
> 600 Hz	Final value - 30 %

Example calculation:

The range which is to be set via the teach-in wheel ends at 10 Hz.

- Calculate the maximum range start value to be set: Final value (10 Hz) - 10 % = 10 Hz - 1 Hz = **9 Hz**
- Set the ranges with the press/slide button.

Figure 5 Configuration



9.1 Lower teach-in value (1)

- Set the frequency value of the application to the lowest teach-in value and press the button downwards for approximately 1 second (towards terminal 1).

If the value is saved successfully, the LED flashes once.

- Press down the button for longer than 3 seconds (towards terminal 1) to reset the lower teach-in value to the lowest start value.

If the value has been reset successfully, the LED flashes twice.

9.2 Upper teach-in value (2)

- Set the frequency range of the application to the highest teach-in value and press the button upwards for approximately 1 second (towards terminal 5).

If the value is saved successfully, the LED flashes once.

- Press the button up for longer than 3 seconds (toward terminal 5) to reset the upper teach-in value to 20 kHz.

If the value has been reset successfully, the LED flashes twice.

9.3 Reset both values (3)

- Press the button for longer than 3 seconds to reset both teach-in values. The complete measuring range (0.002 Hz ... 20 kHz) is used.

If the value has been reset successfully, the LED flashes twice.

9.4 Adjustment of the frequency range final value

If any frequency range final value is set via the DIP switch (all DIP switch combinations except "Teach"), you can adjust the range final value with the push-type button.

In this way you can set the frequency values between the values that you have specified via the DIP switch.

The adjusted range final value is also at your disposal following a module reset or a separation of the module supply.

Pressing of the push-type button in the direction:

1. You raise the final value once, the analog output value is lowered correspondingly.
2. You lower the final value once, the analog output value is raised correspondingly.

A single flash of the LED signals this process.

The increments depend on the DIP setting of the frequency final value.

Frequency final value	Length of step
10000 Hz ... 20000 Hz	2.5 Hz
1000 Hz ... 9800 Hz	1.0 Hz
100 Hz ... 980 Hz	0.1 Hz
20 Hz ... 95 Hz	0.025 Hz

By holding down the push-type button in the direction:

1. You raise the final value up to the maximum value of this final value.
2. You lower the final value down to the minimum value of this final value.

Repeated short flashing of the LED signals this process.

Releasing the push-type button ends this process.

By holding down the push-type button for longer than 10 seconds in the direction:

1. You accelerate the increase of the final value.
2. You accelerate the decrease of the final value.

If you do not press the push-type button for 2 seconds, the set value is automatically saved in the module.

A double flash of the LED signals this process.

Holding down the push-type button in direction 3 resets the final value on the DIP switch value.

A single flash of the LED signals this process.

10 Diagnostic indicator

The LED indicates the following error states:

State	Description
Flashing (2.8 Hz)	Cable or sensor error, measuring value overrange, measuring value underrange, or invalid DIP switch configuration
Lit	Internal device error