

MUP 400

FAST DIGITAL TRANSMITTERS TO DIN RAIL

1. DESCRIPTION



DESCRIPTION

The MUP 400 model range are very fast digital transmitters to DIN rail with a Teach-in function.

MUP 400 Linear poten. ⇔ analog output
(4...20mA or 0...10V)

The instrument is based on a single chip microcontroller, 24-bit A/D and 16-bit D/A converter, which ensures excellent accuracy, stability and easy operation of the instrument.

The transmitter is in a plastic DIN box with a terminal board to rail of 35 mm in width.

OPERATION

The instrument is controlled by two push buttons on the front panel. The mode of the output signal and the access to the teach-in mode is realised by a switch at the rear.

All settings are stored in the EEPROM memory (they are retained even after the instrument is switched off).

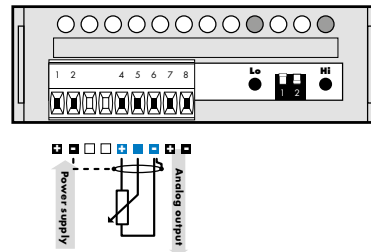
2. CONNECTION

The power input leads should not be in the proximity of the incoming low-potential signals.

Contactors, motors with larger input power and other efficient elements should not be in the proximity of the instrument.

The lead into the input of the instrument (the measured quantity) should be in sufficient distance from all power leads and appliances. Provided this cannot be secured, it is necessary to use shielded leads with connection to ground.

The instruments are tested in compliance with standards for use in industrial areas, yet we recommend to abide by the above mentioned principles.



! Analog output (4...20 mA)
Compensation of conduct up to 500 Ohm

SAFETY INSTRUCTIONS

Please, read the enclosed safety instructions carefully and observe them! These instruments should be safeguarded by either individual or shared fuses (circuit breakers) with respect to their actual power consumption! For safety information the EN 61 010-1 + A2 standard must be observed. This instrument is not explosion-safe!

Our products are regularly not approved for aeronautic or aerospace applications and are not allowed to be used in nuclear or military, in particular ABC-relevant applications.

For more information see our Terms and Conditions.

TECHNICAL DATA

Transmitters of the MUP 400 series conform to the European regulation No. 2014/35/EU and No. 2014/30/EU.

They are up to the following European standards:
EN 61326-1

The instrument is suitable for non-restricted use in agricultural and industrial areas.

3. SETTING

TYPES OF ANALOGUE OUTPUT

The type of analogue output can be selected by the first switch on the front panel.

Output 4...20 mA **DEF**

Output 0...10 V

TEACH - IN

The Teach-in function is used to set the output range. To activate it, the second switch needs to be in a specified position.

Teach-in function is blocked **DEF**

Teach-in function activated

Teach-in

- flip the second switch into the „ON“ position
- LED „Lo“ starts flashing
- move the lin. pot slider into its minimum working range (electrical signal is at its minimum)
- press button „Lo“ > LED „Lo“ is illuminated in green *if during the calibration process the electrical working range is reduced by > 80% , the red LED „Hi“ starts flashing*
- LED „Lo“ is flashing
- move the linpot slider into its maximum working range (electrical signal is at its maximum)
- press button „Hi“ > LED „Hi“ is illuminated in green *if during the calibration process the electrical working range is reduced by > 80% , the red LED „Hi“ starts flashing*
- LED „Lo“ is flashing
- by flipping the second switch into the „OFF“ position you end the calibration mode and enter the measuring mode
- LED „Lo“ is illuminated in green

LED SIGNALLING

LED „Lo“

- transmitter is on when button „Lo“ is pressed > calibration is „OK“ (in teach-in mode)
- transmitter is in the calibration mode
- measured value/input signal is out of the calibration range
- transmitter is in the calibration mode, but out of range

LED „Hi“

- when button „Hi“ is pressed > calibration is „OK“ (in teach-in mode)
- range of calibration values is $\leq 19\%$ of the range (Accuracy and stability of the transmitted signal cannot be guaranteed) when button „Lo“ is pressed > calib. out of range when button „Hi“ is pressed > calib. out of range

RESTORE FACTORY SETTINGS

This is how to return to the original manufacturer's settings especially when making a mistake during the set up process.

- The device must be in powered off state (No supply voltage attached).
- Switch dipswitch no. 2 to „ON and connect power supply while pressing **both push buttons simultaneously**
- LEDs „Lo“ and „Hi“ are flashing alternatively for approx. 3 seconds to indicate the process of restoration of manufacturer's settings
- To complete the restoration process, turn dipswitch no. 2 back to „OFF“

4. TECHNICAL DATA

Input

Lin. potentiometer: 0.5...100 kOhm
 Pot. power supply: 2.5 V, $\pm 0.2\%$
 Unlock: 5...24 VDC

Instrument accuracy

TC: 10 ppm/ $^{\circ}\text{C}$
 Accuracy: $\pm 0.01\%$ of range
 Rate: 7 500 meas./s
 Overload capacity: 10x ($t < 30$ ms); 2x
 Watch-dog: reset after 400 ms
 Functions: Teach-in
 Calibration: at 23 $^{\circ}\text{C}$ and 40% r.h.

Analog output

Type: programmable with resolution of 16 bit, type and range are selectable
 Non-linearity: 0.01% of the range
 TC: 10 ppm/ $^{\circ}\text{C}$
 Rate: response to change of value < 0.2 ms
 Voltage: 0...10 V, max. load 1 kOhm
 Current: 4...20 mA, compensation of conduct up to 500 Ohm
 Ripple: 5 mV of residual corrugation upon input signal 10 V

Power supply

18...30 VDC, $\pm 10\%$, max. 2.5 W
 10...30 VDC, $\pm 10\%$, max. 2.5 W, isolated*

Mechanic properties

Material: PA 66S, incombustible UL 94 V0, green
 Dimensions: 90.5 x 79 x 25 mm
 Installation: to DIN rail, width 35 mm

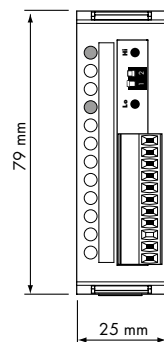
Operating conditions

Connection: connector terminal board - conductor section up to 1.5 mm²
 Stabilizat. period: within 15 minutes after switch-on
 Working temp.: -20...60 $^{\circ}\text{C}$
 Storage temp.: -20...85 $^{\circ}\text{C}$
 Cover: IP 20 (NEMA 1)
 El. safety: EN 61010-1, A2
 Dielectric strength: 1.5 kV after 1 min between supply and input/output
 Insulation resist.: for pollution degree II, measuring cat. III.
 power supply > 550 V (ZI), 255 V (DI)
 EMC: EN 61326-1

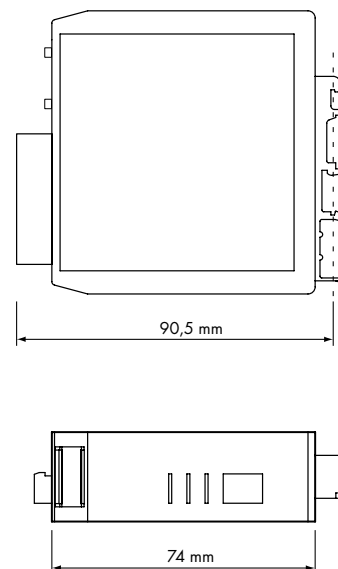
*see the order code

5. INSTRUMENT DIMENSIONS

Front view



Side view



Installation to DIN rail of 35 mm width

6. CERTIFICATE OF GUARANTEE

Product: **MUP 400**

Manufact.No.:

Date of sale:

For this instrument applies a guarantee period of 24 months of the date of sale to the user.

Defects occurring during this period due to manufacturing error or due to material faults shall be eliminated free of charge.

For instrument quality, function and construction the guarantee shall apply provided the instrument was connected and used accurately in compliance with the instructions for use.

The guarantee does not apply to defects caused by:

- mechanical damage
- transportation
- intervention of unqualified person including the user
- irreversible event
- other unprofessional interference

The manufacturer performs guarantee and post-guarantee repairs unless provided for otherwise.

novotechnik
 Siedle Group

Novotechnik Messwertaufnehmer OHG

Postfach 4220, 73745 Ostfildern (Ruit)
 Horbstraße 12, 73760 Ostfildern (Ruit)

Telefon +49 711 4489-0

Telefax +49 711 4489-118

info@novotechnik.de

www.novotechnik.de

