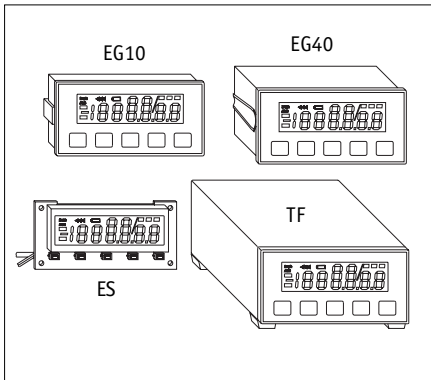


MA503/1

Electronic Display



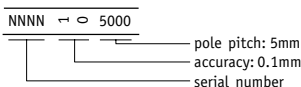
ENGLISH

1. Warranty information

- In order to carry out installation correctly, we strongly recommend this document is read very carefully. This will ensure your own safety and the operating reliability of the device.
- Your device has been quality controlled, tested and is ready for use. Please observe all warnings and information which are marked either directly on the device or specified in this document.
- Warranty can only be claimed for components supplied by SIKO GmbH. If the system is used together with other products, there is no warranty for the complete system.
- Repairs should be carried out only at our works. If any information is missing or unclear, please contact the SIKO sales staff.

2. Identification

Magnetic strip: identification by printing on the strip. Example Magnetic strip printing:



Electronic display: Please check the particular type of unit and type number from the identification plate. Type number and the corresponding version are indicated in the delivery documentation.

e.g. MA503/1-0023
 ————— version number
 ————— type of unit

3. Installation

For mounting, the degree of protection specified must be observed. If necessary, protect the unit against environmental influences such as sprayed water, dust, knocks, extreme temperatures, solvents.

3.1 Panel case type EG10

Below are the dimensions for panel mounting (DIN 43700):

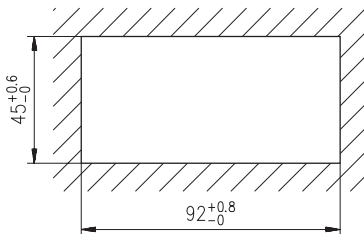


Fig. 1: Panel mounting

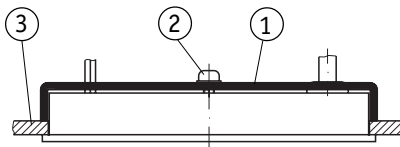


Fig. 2: Mounting of panel case EG10

EG10: Push device into panel (3). Tighten bracket screw on the rear (2). Align device on front plate and tighten screw.

3.2 Panel case type EG40

1. Panel (A) must be provided with cutout for MA503/1.
2. Push the display into the panel cutout until the mounting tabs snap completely.
3. Mounting tabs hold the unit, but allow easy removal, too.

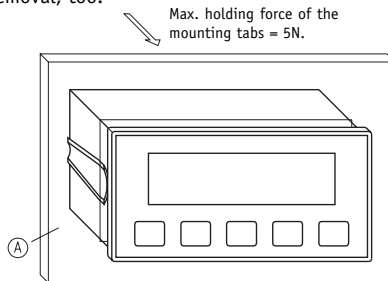


Fig. 3: Mounting of panel case EG40

3.3 Bench housing TF

The rubber feet can be removed to enable the unit to be screwed down.



Attention ! Max. reach of screw is 5.0 mm!

3.4 Mounting the magnetic strip

The mounting surface / measuring track must be flat. Buckles or bumps will lead to measuring inaccuracies.

For applications which do not allow properly glueing of the magnetic strip, it can be inserted into a **profile rail** (accessory) - eg. rail type **PS** thus forming a compact mounting unit.

For technical reasons the strip should be approx. 100mm longer than the actual measuring distance.



Attention! To guarantee **optimal adhesion** oil, grease dust etc. must be removed by using cleansing agents which evaporate without leaving residues. Suitable cleansing agents are eg. ketones (acetone) or alcohols; Messrs. Loctite and 3M can both supply such cleansing liquid. Make sure that the surface to be glued is dry and apply the strip with maximum pressure. Glueing should preferably be undertaken at temperatures between 20 to 30°C and in dry atmosphere.

Advice! When applying long pieces of magnetic strip do not immediately remove the complete protective foil, but rather peel back a short part from the end sufficient to fix the strip. Now align the strip. As the protective strip is then peeled back and out press the tape firmly onto the mounting surface. A wall paper roller wheel could be used to assist in applying pressure onto the magnetic strip when fixing it in position.

Mounting steps (see fig. 2)

- Clean mounting surface (1) carefully.
- Remove protective foil (2) from the adhesive side of the magnetic strip (3).
- Stick down the magnetic strip (4).
- Clean surface of magnetic strip carefully.
- Remove protective foil (6) from adhesive tape on the cover strip (5).
- Fix cover strip (both ends should slightly overlap).
- Also fix cover strip's ends to avoid unintentional peeling.

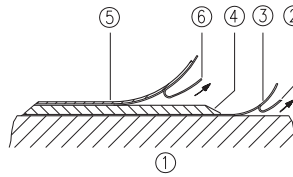


Fig. 4: Mounting of the magnetic strip

Attention ! Do not expose the system to magnetic fields. Any direct contact of the magnetic strip with magnetic fields (eg. adhesive magnets or other permanent magnets) is to be avoided. Sensor movements during power loss are not captured by the follower electronics.



Mounting examples

Mounting with chamfered ends (fig. 5) is not recommended unless the strip is installed in a safe and protected place without environmental influences. In less protected mounting places the strip may peel. There we recommend mounting accord. to fig. 6 and 7.

Mounting in a groove (fig. 8) best protects the magnetic strip. The groove should be deep enough to totally embed the magnetic strip.

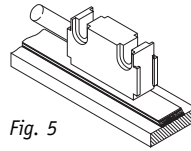


Fig. 5

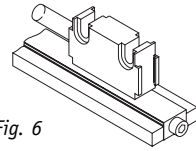


Fig. 6

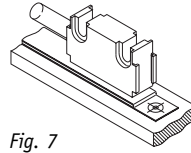


Fig. 7

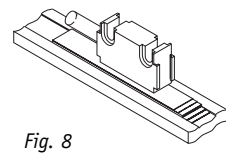


Fig. 8

3.5 Mounting the sensor

Use two M3 screws to fix the magnetic **sensor L** via the $\varnothing 3.2$ mm through holes.

Magnetic **sensor F** can for example be mounted by using a mounting bracket. For fixing sensor to mounting bracket use bores and the two nuts M8x0.5.

- Cable layout should avoid damages due to cable strain or other machine parts. If necessary use a drag chain or protective hose and provide for strain relief.
- When mounting the magnetic sensor, ensure that the gap between strip and sensor and the max. admissible deviation are maintained over the total measuring length! (see fig. 9)

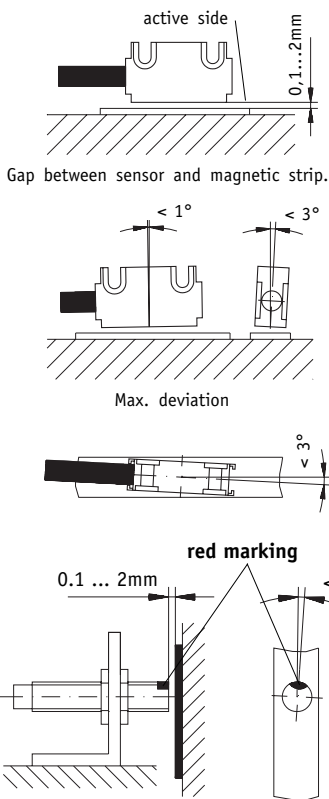


Fig. 9: Mounting of sensor

3.4 Mounting of the battery box

The battery box supplied together with the display are for panel mounting. The battery box should be mounted at a 'cold' site: heat accelerates the self-discharge of batteries.

Below are the dimensions for panel mounting:

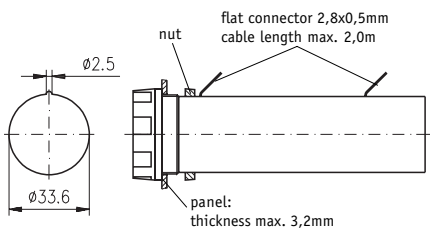


Fig. 10: Battery box for operating voltage 7 (3Volt, 2xBaby/R14)

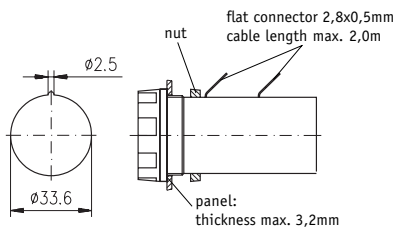


Fig. 11: Battery box for operating voltage 8 (1,5Volt, 1xBaby/R14)

4. Electrical connection

- Wiring must only be carried out with power off!
- Provide stranded wires with ferrules.
- Check all lines and connections before switching on the equipment.

Interference and distortion

All connections are protected against the effects of interference. **The location should be selected to ensure that no capacitive or inductive interferences can affect the sensor or the connection lines!** Suitable wiring layout and choice of cable can minimise the effects of interference (eg. interference caused by SMPS, motors, cyclic controls and contactors).

The sensor should be positioned well away from cables with interference; if necessary a **protective screen or metal housing** must be provided. The running of wiring parallel to the mains supply should be avoided.

Power supply

Battery powered, via external connection cable and enclosed battery box.

$U_b = 3 \text{ VDC}$ (operating voltage 7)

$U_b = 1,5 \text{ VDC}$ (operating voltage 8)

Designation	Color
+ UB	red
GND	black

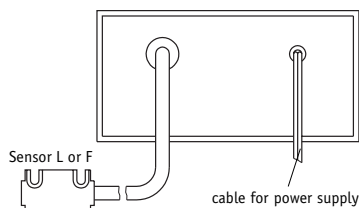


Fig. 12: Built-in housing EG10, EG40

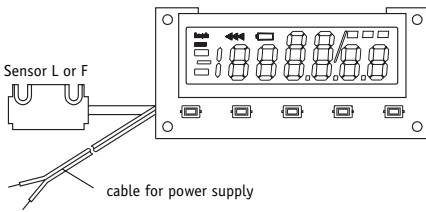


Fig. 13: Kit ES

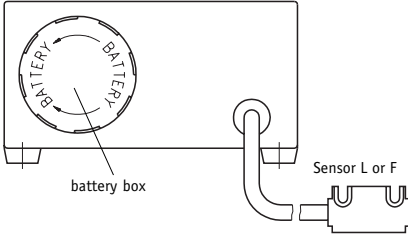


Fig. 14: Bench housing TF

Connection of the battery box

The battery box (mounted as described in chapter 3.6) has to be connected as follows:

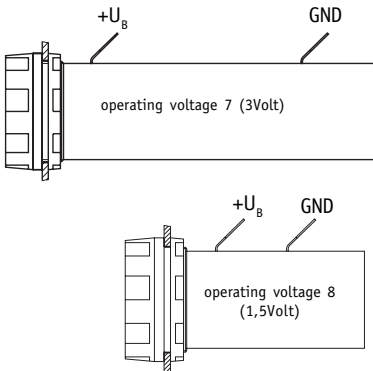


Fig. 15: Connection of the battery box

Battery types

Batteries are **not** supplied together with the MA503/1. The following standard types could be used:

for operating voltage 7 (3Volt):

2 x Baby / R14

for operating voltage 8 (1,5Volt):

1 x Baby / R14

Change of batteries

When display shows battery symbol, battery should

be replaced as soon as possible.

Unscrew cap to insert / remove batteries.

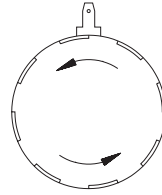


Fig. 16: Change of batteries

When exchanging the batteries take care that their polarity is correct ! Take the marking on the bottom of the box as orientation.

Attention! No modification of the sensor connection, eg. by cable extension, is permitted.

5. Commissioning

Five membrane keys on the front panel are used for programming and operation of the display.

Switch on

Use key ON/OFF to switch on the display. Then a starting routine begins:

- value 0 – now the display is ready for use!
(The last measured value is displayed if the parameter 'Last value memory' is programmed to 'on'.)

Attention! MA503/1 does not automatically switch on when the operating voltage is applied.

Switch off

- Press ON/OFF key to switch off the unit (switch-off delayed, if parameter "_4_off" has been programmed to "on" before).
- After the last measurement the display switches off automatically.

Operating modes

There are two operating modes accessible via the keyboard:

- 1. Programming mode:** to program the display at initial installation.
- 2. Input mode:** to enter parameters/select functions used during standard operation.

6. Joining magnetic strips together

For some applications it may be necessary to extend the magnetic strip. The magnetic strip can be cut and rejoined using standard tools.

But however carefully this is done the accuracy of

the strip at the join will be impaired (error of at least 0,1 ... 0,2 mm).

The following tools / accessories are required:

- magnet magnifier, magnetic foil or metal dust
- rule or suitable tool
- compass needle

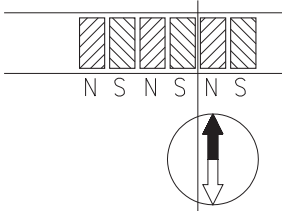


Fig. 17: Determination of the pole position. Cutting the magnetic strip

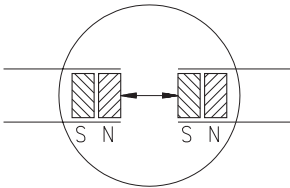


Fig. 18: Determination of the pole position. Joining the magnetic strip

Steps

- If there is a cover strip, this is to be removed first.
- To determine the pole division either use metal dust, a magnet magnifier or magnetic foil.
- If necessary, use a compass needle to determine the location of the poles on the magnetic strip (fig. 17).
- Use a rule and a sharp knife to cut the magnetic strip at a right angle. Then also cut the carrier strip accordingly.
- Previous steps are to be repeated with the other part of strip.
- Check polarity before joining the two parts. Both ends must attract each other (if necessary, use compass needle). In case both ends have the same polarity, shorten one end by a half pole division (fig. 18).
- Join the two ends closely together and add the cover strip.

7. Maintenance of the magnetic strip

We recommend cleaning the magnetic strip's surface from time to time with a soft rag. This avoids dirt (dust, chips, humidity ...) sticking to the strip.

Key's function / Programming mode / Parameter description / Input mode etc., see enclosed page with software description.



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