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Operation Manual

DIN Mounting Rail Min.-Max. Value Memory Unit

GM 42



1 Imprint

Manufacturer, Place	*Lorenz Messtechnik GmbH, D-73553 Alfdorf*
Valid for...	*DIN Mounting Rail Min.-Max. Value Memory Unit GM 42*
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Change Notice	*Technical changes are reserved.*

2 Notes

2.1 General Notes

This operation manual is intended for technically qualified personnel with appropriate skills in the field of measurement and automatic control techniques. The information regarding all safety precautions and warnings in this manual as well as their flawless technical implementation is prerequisite for the safe installation, the commissioning, the safe operation and maintenance of **Lorenz Messtechnik GmbH** devices. Therefore it is imperative that all measures are carried out by qualified personnel, only. All persons involved with project planning, installation and operation of **Lorenz Messtechnik GmbH** devices must be familiar with the safety concepts in automation and control technology and qualified in the above mentioned sense.
For the sake of clarity, this operation manual may not constitute a detailed use of **Lorenz Messtechnik GmbH** devices in all possible applications. Also, not all possible types of installation, operation and maintenance are considered. If further information is required or should particular problems arise, which are not or not sufficiently detailed represented in this manual, please request this information from **Lorenz Messtechnik GmbH.**

The safety precautions must observed in order to prevent property damage, injuries and/or even death results.

Lorenz Messtechnik GmbH devices may only be operated in accordance with the applications prescribed in this manual. Built-in appliances may be used professional installations, only.

With the connection and commissioning of the device, the buyer accepts the General Terms of Sale and Delivery of **Lorenz Messtechnik GmbH**. Furthermore, the buyer accepts possible incompleteness of the manual and that information described therein is subject to change. Errors and changes are reserved.

Provisions for Use

A **Lorenz Messtechnik GmbH** device is used for displaying, processing and controlling of processes. It may not be used as a sole instrument for the prevention of dangerous conditions of machines and plants. Machinery and equipment must be designed in a way that erroneous states do not lead to a dangerous situation for operators (e.g. by independent limit switches, mechanical interlocks). In particular, it must be ensured that an incorrect entry on the device, its malfunction or failure does not lead to property damage or cause hazard to persons. It is also important to prevent the evasion of the security provisions of a plant. Emergency stop equipment must always be active.

Installation Notes

Lorenz Messtechnik GmbH devices must be installed and connected in compliance with the relevant DIN and VDE Standards. They must be installed in a way that inadvertent operation is sufficiently excluded. In order to avoid an undefined or hazardous state caused by interruption of the supply and signal lines, the appropriate hardware and software-related safety precautions must be observed. Supply and signal lines must be installed in such way that impairment of function of **Lorenz Messtechnik GmbH** devices cannot be caused by interfering signals (such as inductive or capacitive interference).

Malfunction, Maintenance and Repair Notes

The devices do not contain parts which need or can be serviced by the user. Repairs may be carried out by **Lorenz Messtechnik GmbH**, exclusively. If assuming that safe operation of the device is no longer possible, it must be taken out of service and secured against inadvertent operation, immediately. This applies in particular, if:

- the device shows visible damage
- the device is no longer functional
- parts of the device are loose
- the connection lines show visible damage

It is also pointed out that all obligations of **Lorenz Messtechnik GmbH** are exclusively arising from the respective sales contract in which the warranty is conclusively settled.

2.2 Intended Use

Lorenz Messtechnik GmbH devices may only be used for measurement tasks and the directly related control tasks. Any other use is considered improper.

2.3 General Dangers by not following the Safety Precautions

The device complies with the state of current safety requirements. Residual risks can occur, if the device is improperly used and operated by untrained personnel. Any person commissioned with the installation, operation and maintenance of the device must have read and understood the operation manual and the safety precautions, in particular.

2.4 Residual Dangers

The device only covers part of the scope of measurement technology.
Safeguarding interests of the measurement technology must be planned and realized by the plant designer/supplier in a way to minimize residual dangers. The valid rules regulations and laws must be observed. Residual risks in connection with measurement technology must be pointed out.

2.5 Safety and Caution Symbols

If residual risks occur while working with the device, the following symbols in this operation manual must be noted:



Warning:
Warns of a potential risk of serious life-threatening injuries. The accident prevention regulations of the employer's liability insurance association must be considered.



Caution:
Warns of a potential danger of damage for the device, process, persons, or environment.



Note:
Supplemental information.



Important / Tip:
Reference to more detailed technical information.

2.6 Health Protection and Safety

To ensure that our products are safe and do not pose health hazard, following points must be considered:

1. All relevant sections of this manual must be read attentively in prior to the operation.
2. All warning labels on containers and packages must be noted.
3. Installation, operation and maintenance work may only be carried out by accordingly trained personnel under observance of the given instructions. If one of these instructions is not considered, the user of the product bears the complete responsibility for all consequences, occurring from the failure to comply.
4. Before opening the device, it must be disconnected from any power supply.

2.7 Qualified Personnel

Qualified personnel are persons who are familiar with the installation, operation and the maintenance of the device and have appropriate qualifications. The device shall only be used by qualified personnel according to the technical data in connection with the following safety regulations and rules. During the operation, legal and safety rules for the respective application case must be noted. The same applies for the use of accessories.

2.8 Changes

The device may not be changed constructively or safety-related without the explicit permission of **Lorenz Messtechnik GmbH**. Any modification shall exclude liability on our part for damages resulting from this. Repairs and changes to the circuit boards are prohibited.

3 Continuative Documents

Following documents contain reference information about DIN Mounting Rail Min.-Max. Value Memory Unit GM 42

080643.pdf, data sheet of the DIN Mounting Rail Min.-Max. Value Memory Unit GM 42

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5 Introduction

5.1 Product Description

The GM 42 is a universally applicable fast min.-max. value memory with a ±10V input. The slim housing shape allows space-saving installation in control cabinets on standard DIN mounting rails. The analog outputs minimum and maximum value memory of ±10V enable direct signal processing with a PLC. The minimum and maximum value memory can be cleared by a reset input. All indicators are protected behind a transparent plexiglass plate.

5.2 Power Supply

Mains operation:

Power supply:	10-30V DC min. 300mA, safe from reverse polarity
Ripple:	< 10%
Fuse:	self-resettable fuse 200mA...
Undershoot/overshoot:	can lead to erroneous measurements or defects.
Voltage peaks:	are being discharged by fast protection components.
Voltage dropouts:	voltage dropouts up to 10ms have no effect.

5.3 Safe and Proper Use

Caution:



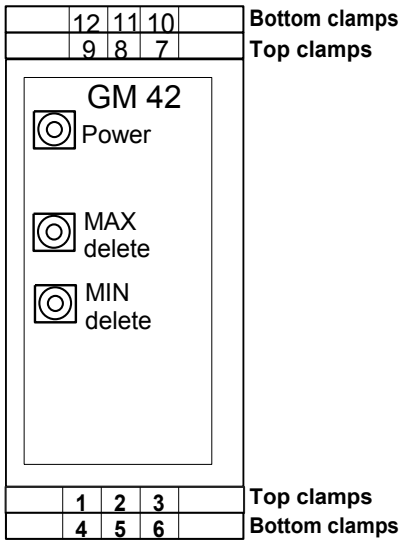
- Protect the device against moisture, condensation, rain, snow....
- Protect the device against direct solar radiation
- Protect the device against dust and pollution
- Protect the device against excessive ambient temperature
- Protect the device against excessive vibration

5.4 Dimensions – Weight

Device dimensions in mm: 23 x 111 x 76 … Weight: 0,1 kg

6 Instruction / Description of the Operating Mode

6.1 Connection Description



Terminal Assignment:

1	Signal ±10V	Input
2	GND	Input
3	Unassigned	
4	10-30V DC	Supply
5	GND	Supply
6	Shield	Supply
7	Clear Min. value	Input
8	GND	Input
9	Clear Max. value	Input
10	Min. value	Output
11	GND	Output
12	Max. value	Output

Status Display (LED):

Power:	On during operation
MAX delete:	On during deletion
MIN delete:	On during deletion

6.2 Switching the Device on

The device is activated and ready to operate as soon as supply voltage is applied. The readiness for operation is signaled by the Power-LED.

6.3 Minimum – Maximum Value Memory

A signal is measured at terminals 1 and 2. If the following measurement is smaller, the signal output at the minimum value memory is updated at terminals 10 and 11. If the measurement is higher, the respective value of the previous measurement is held and issued. The minimum value output is from -10V to +10V.

A signal is measured at terminals 1 and 2. If the following measurement is smaller, the signal output at the minimum value memory is updated at terminals 12 and 11. If the measurement is higher, the respective value of the previous measurement is held and issued. The minimum value output is from -10V to +10V.

A control signal of 10-30V DC is required in order to reset the minimum and maximum values. In order to delete the minimum value, the control signal must be applied to terminals 7 and 8. In order to delete the maximum value, the control signal must be applied to terminals 9 and 8.

6.4 Interfaces and Connections

Voltage input:	Signal:	±10V
	Control signal:	10-30V DC
Voltage output:	Signal:	±10V

Note:

The device must be disconnected from mains during all connection work. The safety precautions must be observed.

6.5 Troubleshooting

Output signal not available?
- No supply voltage, power LED must be on
- Control signal for resetting of min. or max. value is constantly activated

Voltage output in control limit?
- Signal voltages higher than ±10V

Resetting of min. or max. value not possible?
- Control signal too small

Voltage output indicates undefined values?
- Signal voltage not applied

7 Product Phases

7.1 Transportation

Note:

Please pack the equipment suitable for transportation

The equipment may not be able to move back and forth in the package

Please protect the equipment against moisture

7.2 Commissioning and Installation

Safety measures before the installation:

Caution:

The device may not be connected to the power supply system, directly. The specifications of the supply voltage in chapter 5.2 must be considered.

Cable connections:

Caution:

Never connect voltage levels to unoccupied pins!

7.3 Standard Operation

EMC:

Caution:

The device may not be exposed to higher EMS transients than determined by the standard.

Cable:

Caution:

Never disconnect the connectors by pulling the cables. Always separate the connector at the plug, directly.

Storage

Note:

Store the device in dry and dust-free spaces, only.

7.4 Maintenance and Cleaning

Cleaning:

Warning:



Please disconnect the device from the power supply before cleaning.

Caution:

Clean the housing with a soft and slightly moisturized cloth. Never use solvents, as they may damage the front panel labeling and the display panel.
While cleaning, ensure that no liquids enter the device or the connections

Caution:

Note the correct polarity of the batteries.

Preventive maintenance and inspection:

Note:

Check the plug connections.

Repair:

Note:

The device does not contain any parts which must or can be serviced by the user. Repairs may be carried out by **Lorenz Messtechnik GmbH**, exclusively. If assuming that safe operation of the device is no longer possible, it must be taken out of service and secured against inadvertent operation, immediately.
This applies in particular, if:

- the device shows visible damage
- the device is no longer functional
- parts of the device are loose

- the connection lines show visible damage

7.5 Safe Disposal

Equipment disposal:

Please dispose obsolete equipment in accordance with the applicable statutory provisions. By this, you meet the legal obligations and also contribute to the environmental protection!

