

# migra SC/MC 5/3 AD

Graphics and Text Compatible Large Format LED Display with A-D Converter

## User's Manual

# migra SC/MC 5/3 AD

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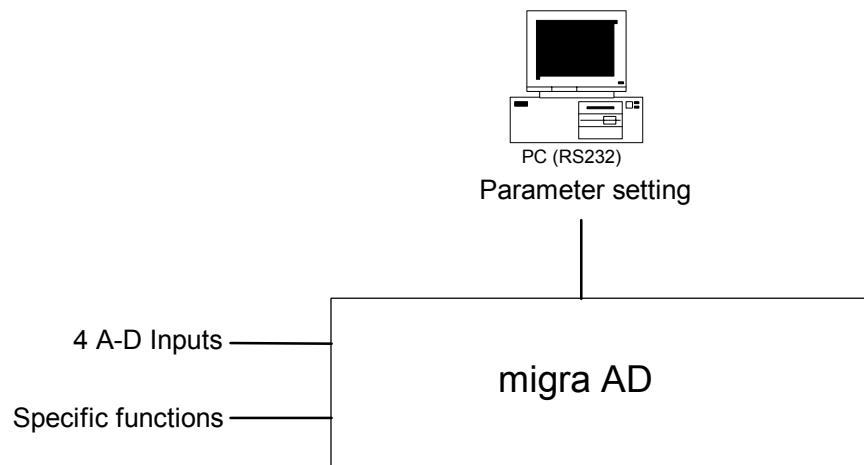
## 1 General

This device can be used universally for displaying production data, or as an information board.

The modular design allows for cost-effective models of various sizes, and with different character heights and numbers of digits.

Thus integration into existing equipment or systems is easy and simple.

## 2 Overview



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## 3 Technical Data

Display type:	LED dot matrix display
Pixel size:	3 / 5 mm
Display color:	single colour: red (SC) or multicolour: red, green and yellow (MC)
Operating voltage:	230 V / 50 Hz, 110 V / 60 Hz or 24 VDC $\pm 20\%$
View:	single or double sided
Channels:	1 to max. 4
Display:	0 to $\pm 19999$ or customer specific
Display range and decimal point:	adjustable via software
Input range:	0 to $\pm 10$ VDC, 0 to 20 mA
Labelling:	upon request
Housing:	industrial version, powder coated aluminium
Housing dimensions:	see chapters "Device Configuration" and "Housing dimensions"
Mounting:	articulated arm, angle bracket, hanging with chain or mounting frame
Protection:	IP54 or IP65
Operating temperature:	0 to +50 °C
Storage temperature:	-25 to +70 °C
Features:	under and overflow display, relay output (optional)

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## 3.1 Device Details

*Number of Lines:*

1     2     3     4

*Number of Digits:*

1     2     3     4     5     Signed

*Display range and dimension:*

Line 1:        \_\_\_\_\_ - \_\_\_\_\_  
Line 2:        \_\_\_\_\_ - \_\_\_\_\_  
Line 3:        \_\_\_\_\_ - \_\_\_\_\_  
Line 4:        \_\_\_\_\_ - \_\_\_\_\_

*Input range:*

Line 1:     0 to 20 mA     0 to 10 VDC     \_\_\_\_\_  
Line 2:     0 to 20 mA     0 to 10 VDC     \_\_\_\_\_  
Line 3:     0 to 20 mA     0 to 10 VDC     \_\_\_\_\_  
Line 4:     0 to 20 mA     0 to 10 VDC     \_\_\_\_\_

*View:*

single sided         double sided

*Operating voltage:*

230 V / 50 Hz     110 V / 60 Hz     24 V DC

*Protection:*

IP54                     IP65

*Housing dimensions:* \_\_\_\_\_ x \_\_\_\_\_ x \_\_\_\_\_ mm

*Housing colour:*        RAL \_\_\_\_\_

*Housing material:*

Aluminium profile  
 Stainless steel  
 Sheet material

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## 3.2 Notes for the start-up

- When putting on the power supply, the following sequence has to be observed:
  - Connect the power supply cable to the display.
  - Connect the power supply cable to the power supply.
- Directly after connecting the A-D inputs, the display shows the corresponding values.
- When disconnecting the power supply, the following sequence has to be observed:
  - Disconnect the power supply cable from the power supply.
  - Disconnect the power supply cable from the display.

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## 3.3 Device Configuration

The device is already configured at the time of delivery. However, if you want to do some changes, you can use the tools “micon AD” and “micon”.

The software “micon AD” serves for settings regarding the A-D converter.

The software “micon” serves for display configuration.

### 3.3.1 Settings with “micon AD”

- Output characteristics
- Limiting values
- Update interval
- Number of decimal places
- Suppressing of leading zeros
- Rounding output value
- Increment
- Averaging
- Blinking rate
- Bargraph
- Status outputs

Please refer to the user’s manual “micon AD” for further information’s.

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## 3.3.2 Settings with “micon”

- Character set
- Font size
- Display colour
- Length of variables
- Start coordinates

### Notes:

In order to display values, you must create variables. Every variable is assigned to one measuring channel (V0 -> channel 1, V1 -> channel 2, V2 -> channel 3, V3 -> channel 4).

If only one channel for measuring of current is used, you need channel 3 (see chapter “Connector Pin Assignments”). This means, variable 2 must be used. But in addition, the variables V0 and V1 must be created, even if their content is not relevant, because the variable numbers are automatically generated.

If you use output values without a decimal point, the length of the variable must agree with the actual number of display digits.

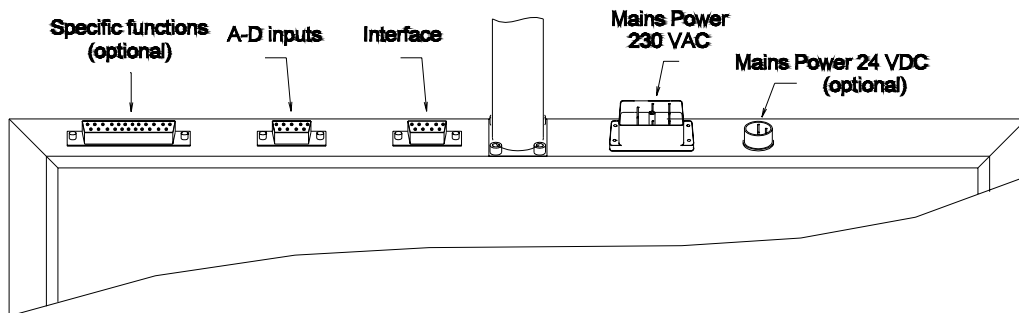
If you want to display values with decimal point, notice that:  
Length of the variable = number of display digits + 1.

Please refer to the user’s manual “micon” for creating variables.

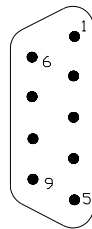
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## 4 Connector Pin Assignments



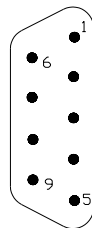
### 9-Pole Sub-D Plug Connector (A-D inputs)



Pin	Assignment
1	Channel 1 +
2	Channel 2 +
3	Channel 3 +
4	Channel 4 +
5	
6	Channel 1 -
7	Channel 2 -
8	Channel 3 -
9	Channel 4 -

If using only one voltage input, channel 1 is used!  
 If using only one current input, channel 3 is used!

### 9-Pole Sub-D Plug Connectors (RS232-AD / RS232-migra)

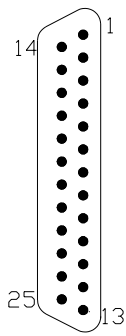


Pin	Assignment
1	
2	RS232 RxD
3	RS232 TXD
4	
5	RS232 GND
6	
7	
8	
9	

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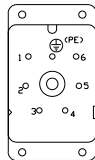
## 9-Pole Sub-D Plug Connector (Specific functions, optional mounted)



Pin	Assignment	Pin	Assignment
1	Overflow + (+ is external...)	14	Overflow -
2	Underflow +	15	Underflow -
3	Upper critical value +	16	Upper critical value -
4	Lower critical value +	17	Lower critical value -
5	User defined value 1 +	18	User defined value 1 -
6	User defined value 2 +	19	User defined value 2-
7	Relay, break contact*	20	Relay, close contact*
8	GND	21	Relay, common contact*
9	External Vin	22	n. c.
10	Display hold	23	GND
11	Button „+“	24	GND
12	Button „-“	25	GND
13	Button „Select“		

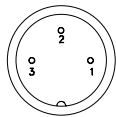
\*max. switching voltage: 175 VDC or 175 VAC peak  
 max. switching current: 250 mADC or 250 mAAC peak

## 7-Pole Mains Plug (230 VAC)



Pin	Assignment
1	L1
2	N
⊕ (PE)	PE

## 3-Pole Circular Connector (24 VDC, optional mounted)



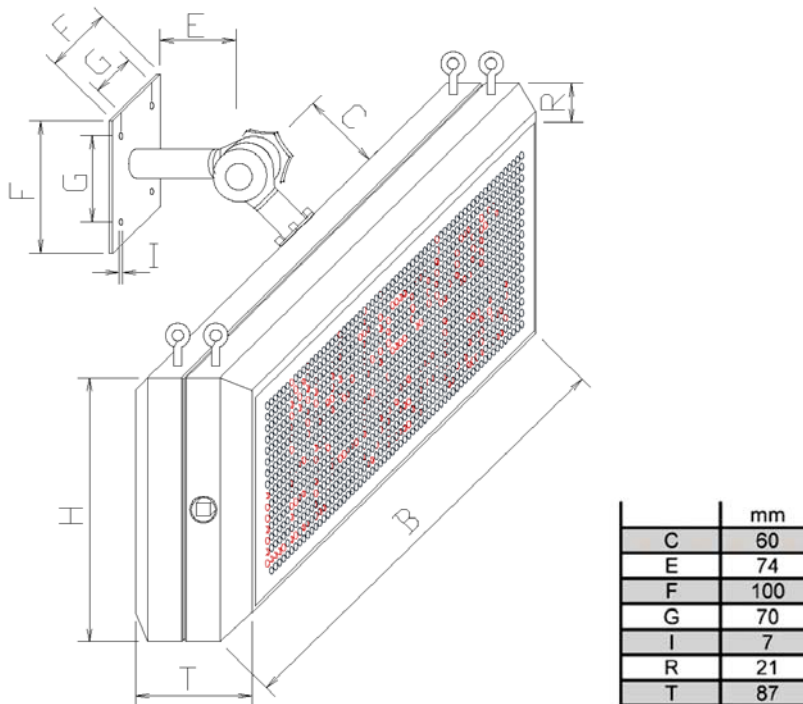
Pin	Assignment
1	GND
2	+24 VDC
3	PE

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## 5 Housing dimensions

### 5.1 migra SC/MC 3

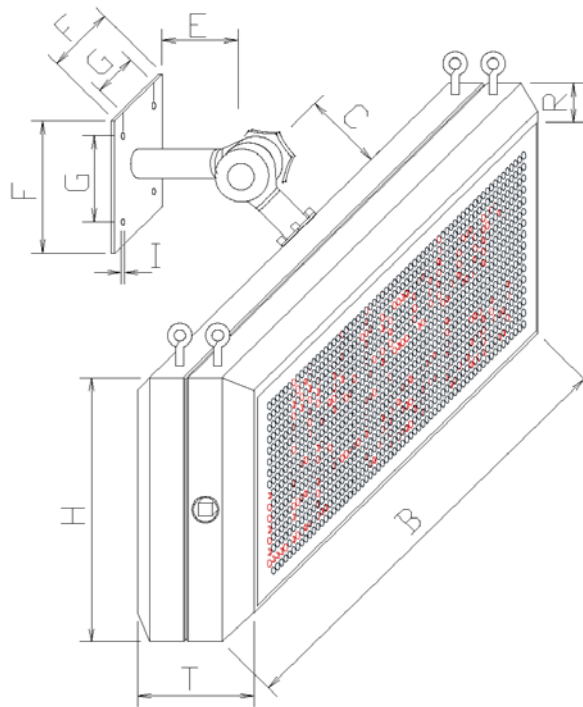


Module in x-Richtung Modules in x direction Module in y-Richtung Modules in y direction	1 Modul / 1 Module		2 Module / 2 Modules		3 Module / 3 Modules		4 Module / 4 Modules	
	H	B	H	B	H	B	H	B
	mm	mm	mm	mm	mm	mm	mm	mm
1 Modul / 1 Module	202	368	202	620	202	920	202	1150
2 Module / 2 Modules	238	368	238	620	328	920	238	1150
3 Module / 3 Modules	280	368	280	620	280	920	280	1150
4 Module / 4 Modules	338	368	338	620	338	920	338	1150
5 Module / 5 Modules	410	368	410	620	410	920	410	1150
6 Module / 6 Modules	475	368	475	620	475	920	475	1150
7 Module / 7 Modules	540	368	540	620	540	920	540	1150
8 Module / 8 Modules	605	368	605	620	605	920	605	1150

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## 5.2 migra SC/MC 5



	mm
C	60
E	74
F	100
G	70
I	7
R	21
T	87

Module in x-Richtung Modules in x direction	1 Modul / 1 Module		2 Module / 2 Modules		3 Module / 3 Modules		4 Module / 4 Modules	
	H	B	H	B	H	B	H	B
Module in y-Richtung Modules in y direction	mm	mm	mm	mm	mm	mm	mm	mm
1 Modul / 1 Module	202	620	202	1080	202	1559	202	2047
2 Module / 2 Modules	338	620	338	1080	338	1559	338	2047
3 Module / 3 Modules	448	620	448	1080	448	1559	448	2047
4 Module / 4 Modules	571	620	571	1080	571	1559	571	2047
5 Module / 5 Modules	701	620	701	1080	701	1559	701	2047
6 Module / 6 Modules	823	620	823	1080	823	1559	823	2047
7 Module / 7 Modules	945	620	945	1080	945	1559	945	2047
8 Module / 8 Modules	1067	620	1067	1080	1067	1559	1067	2047

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## 6 Appendix

### 6.1 Standard Equipment

- Display unit with current software and hardware versions
- Square socket key
- User's manual
- Mating plug.

### 6.2 Optional Accessories

- Square socket key
- User's manual, DIN A4 format.

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## 6.3 Maintenance and Care

Observe the following instructions in order to assure best possible performance of the display.

- Make sure that the housing can be opened for adjustment and maintenance even after the display has been installed. Allow for adequate clearance at the back, front and top of the display unit in order to follow for sufficient ventilation (if vent slots are included).
- Display quality is impaired by direct illumination with bright light sources and/or direct sunlight.
- The display must be switched off before cleaning.
- Protect the display from excessive humidity, extreme vibration, direct sunlight and extreme temperatures. Non-observance may lead to malfunctioning or destruction of the device. Under certain circumstances electrical shock, fire and explosion may occur as well. Information concerning allowable ambient conditions, including recommended temperature ranges, can be found in the chapter entitled „Technical Data“.
- The display may not be placed into service if the device and/or the power cable are known to be damaged.
- Do not attempt to repair the device yourself. The guarantee is rendered null and void if unauthorized persons tamper with the device.

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## 6.4 Guarantee

The display is guaranteed for the duration, specified in the “General Terms and Conditions regarding manufactured products and services rendered for the electrical industry” against defects which existed at the time the device was delivered to the buyer.

The device is subject to technical change without notice. Errors and omissions are excepted. No claims can be honoured for the shipment of a new product. The buyer is required to make notification of defects within 2 weeks after identification of such. Non-observance of notification requirements is equated with acceptance of the defect.

Defects and their symptoms must be described as accurately as possible in order to allow for reproducibility and elimination. The buyer must provide for access to all required and/or useful information regarding defects at no charge, as well as to the affected devices, and must make all of the required data and machine time available free of charge.

The guarantee does not cover defects, which result from non-observance of the prescribed conditions of use, or from improper handling.

If the device has been placed at the disposal of the buyer for test purposes and has been purchased subsequent to such testing, both parties agree that the product is to be considered “used” and that it has been purchased “as is”. No guarantee claims may be made in such cases.

The “General Terms and Conditions” regarding manufactured products and services rendered for the electrical industry apply as well.

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## 6.5 Versions Overview

Ver.	Date	Remark, Description
1.00	8/17/05	Kreuzer
1.10	11/7/05	Kreuzer: Additional information to RS232 (chapter "Connector Pin Assignments")

Certified per **DIN EN ISO 9001:2000**.