GOSSEN Müller & Weigert

DIGEM 48 x 24 AK5

2786688608
09/03

For measuring:

– DC current / DC voltage up to 200 mA / 50 V max.
– the standard signals 4 ... 20 mA / 0 ... 20 mA via transducer

The meters are suited for the measuring task given on the nameplate at a time.

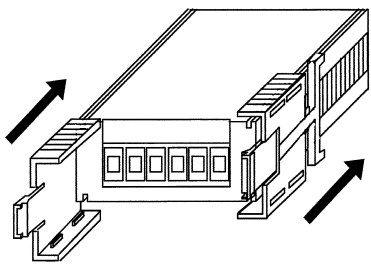
1 Ambient conditions

Operating temperature	0 ... 50 °C
Storage temperature	–20 ... 70 °C
Relative humidity	85 % max.
Application class	KWG acc. to DIN 40040
Climatic test	IEC 68-2 / -3; 96 h
Vibration resistance	EN 61010-1.01

2 Standards

Versions	EN 61010-1.01
Protection class	III
Overvoltage categorie	II
Pollution degree	2
Protection type	EN 60529/ VDE 0470-1
Case	IP 40
Connections	IP 00
EMC	
Emission	EN 61000-4-
Immunity	EN 61000-3-

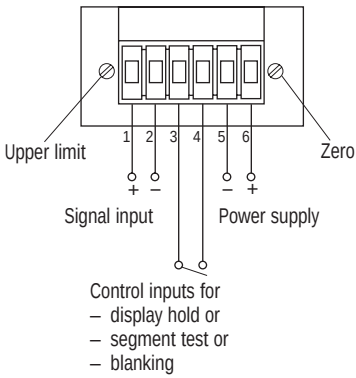
3 Installation



From the front, slide the meter into the panel without fasteners. Then, from the rear, insert the fasteners into the guides provided on the case and tighten them towards the panel.

The max. permissible ambient temperature range on location is 0 … 50 °C.

4 Pin assignment



Note information on the nameplate!

The input has to be free of potential to ground!

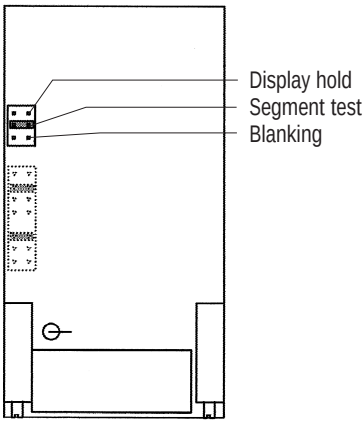
The control input is only for potential-free contact!

5 Opening the meter

The circuit board must be uncased for presetting of parameters, for setting of options and for calibration. To open the meter, first detach the screw terminal block connector at the rear. Then, remove bezel, window and mask. The meter can be uncased to the front.

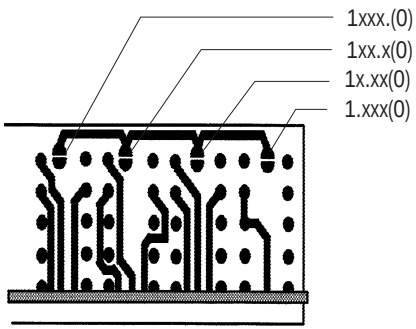
6 Settings of the options

Plug the coding plug to the position of the desired option.



7 Setting of the decimal points

Connect the two soldering surfaces for the decimal point which is to light.



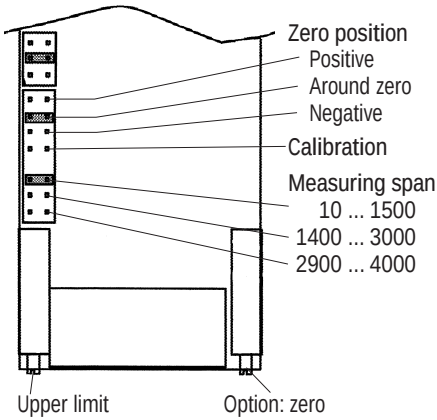
8 Adapting input range

Definition of measuring span and zero shift

The measuring span corresponds to the entire display span from lower range limit to upper range limit. A decimal point is not considered when setting.
Example: a meter with a 4 ... 20 mA measuring range and a –30,0 ... 190,0 display range has the value 2200 = |-300|+|1900|.
The zero shift corresponds to the number of digits by which the lower limit of the measuring range is displaced.
In the above example, the zero shift is –300.

8.1 Calibration of meters for transducers with the measuring ranges 4 ... 20 mA and 0 ... 20 mA

The meter has each one coding plug and one potentiometer for measuring span and zero. Perform calibration in the following order.



Measuring span:

1. Plug the zero coding plug to the mid position (calibration). This renders the zero potentiometer inactive.
2. Plug the coding plug for the measuring span to the corresponding ranges.
3. Apply the signal of the measuring span (upper limit – lower limit) to the signal input.
4. Set the value of the measuring span with the upper limit potentiometer.

Simplified calibration of the measuring span for meters with the measuring range 4 ... 20 mA

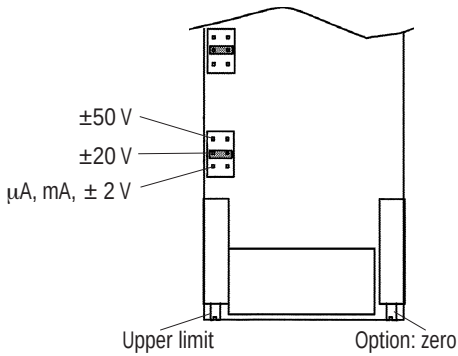
Instead of the points 3. and 4. proceed as follows: Apply 4 mA to the signal input. With the upper limit potentiometer, set the value that corresponds to 1/4 of the measuring span.

Example: Measuring span = 2200
Value to be set = 550

Zero calibration:

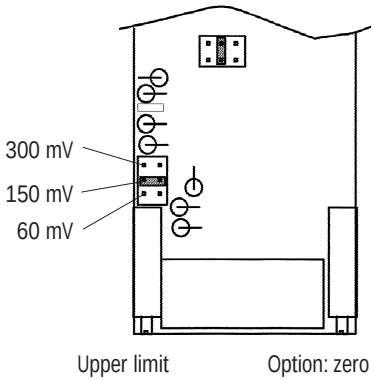
– Plug the zero coding plug to the position that corresponds to the intended display (positive or negative display at the lower range limit).
– Apply the signal with the value of the lower range limit to the signal input.
– Set the exaxt value with the zero potentiometer.

8.2 Calibration of meters with the measuring ranges DC V, µA and mA



– Plug the coding plug to the position of the corresponding range.
– If the meter is fitted with the option „Offset“, adjust to a „000“ display with the zero potentiometer [1]).
– Apply a signal to the signal input which corresponds to 95 % of the upper limit. Set the exaxt value with the upper limit potentiometer.

8.3 Calibration of meters with DC-mV measuring ranges



– Plug the coding plug to the position of the corresponding range.

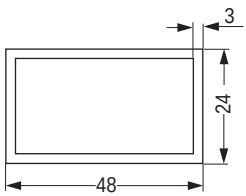
Particularities:

With connection to shunts, select the 60 mV range for the 60 mV shunts, the 150 mV range for the 150 mV shunts and the 300 mV range for the 300 mV shunts.

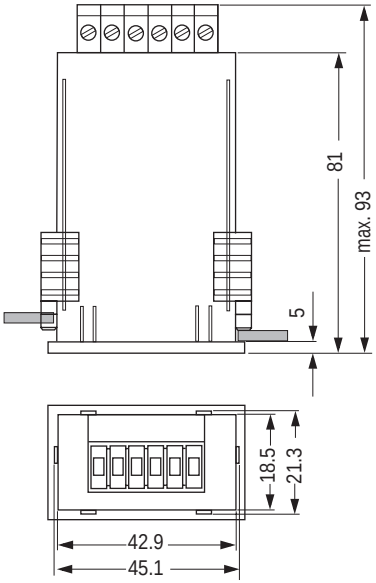
– If the meter is fitted with the option „Offset“, adjust to a „000“ display with the zero potentiometer [1]).
– Apply a signal to the signal input which corresponds to 95 % of the upper limit. Set the exaxt value with the upper limit potentiometer.

9 Dimensional drawing

Panel cutout: $45^{+0.2}$ x $21^{+0.2}$ mm
Bezel DIN 43718



1) With the options E91 ... E96 it is sometimes not possible to adjust the zero potentiometer to a „000“ display. A factory calibration is necessary.



10 Specifications

Display

Type	7-segments LED
Color	Red; optional green
Numeral height	approx. 8 mm
Display range	±1999; 3½-digit ±19990; 4½-digit
Decimal points	Fixed
Overflow	„1...“ if measuring value > 1999
Polarity	„–“ is indicated automatically

Note: Using the 4½ digit meter the lowest decimal position is fixed to zero

Input

DC ranges depending on version	Note nameplate
Input resistance as per DC V	> 1 MΩ
DC mV	> 50 kΩ
Voltage drop as per current ranges	< 1 V
Overflow DC V	10 times, max. 50 V
DC I	2 times, contin.
CMRR	> 60 dB with 50 Hz

Error limits

Basic error for 3½-digit	± ((0.05 % + 2 digits)
for 4½-digit	± ((0.05 % + 20 digits)
Additional error Warm-up time	approx. 1 minute
Temperature coeff.	< 100 ppm/K
Zero drift	< 0.2 digits/K

Control input

Control input preselectable via internal plug link and addressable via potential-free external contact

1) Display hold	Externally controllable
2) Segment test	Externally controllable
3) Blanking	Externally controllable

Supply voltage

18 ... 36 V DC

Power consumption

max. 1,6 W

A/D conversion

System	Dual slope
Integration time	approx. 100 ms
Sampling rage	Typ. 3

Case

Style	Polycarbonate
Front dimensions	48 x 24 mm
Bezel	Black dull or optional: gray, light gray, silica gray, dark beige (all dull)
Bezel height	5 mm
Mounting depth	max. 81 mm (without plug)
Weight	approx. 0.2 kg
Fasteners	Sliding element
Connection type	Screw terminal blocks

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