



DESCRIPTION

Digital panel meter with 3½-digit LED display.

The panel meter is used for monitoring and measurement of:

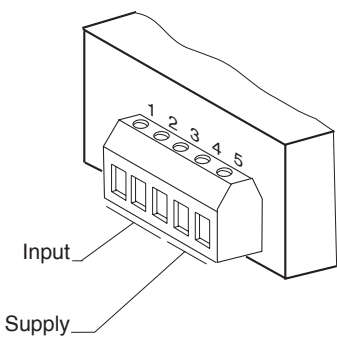
- AC/DC voltage.
- AC/DC current.
- Temperature with Pt-100/500/1000, Ni-100, thermistors and thermocouples.
- Standard process signals.

The actual input signal type and measuring range must be specified when the panel meter is ordered.

Splash proof front panel with integrated display in standardized housing (48 x 24 mm) with plug-in terminals at the rear of the panel meter.

Version with galvanic isolation between input signal and power supply.

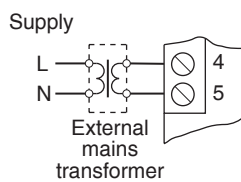
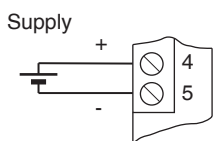
REAR PANEL/CONNECTIONS



Supply voltage

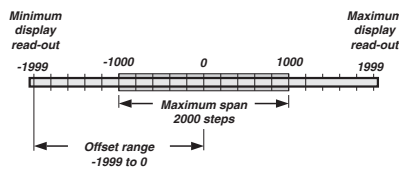
DC

AC



CALIBRATION/CONFIGURATION

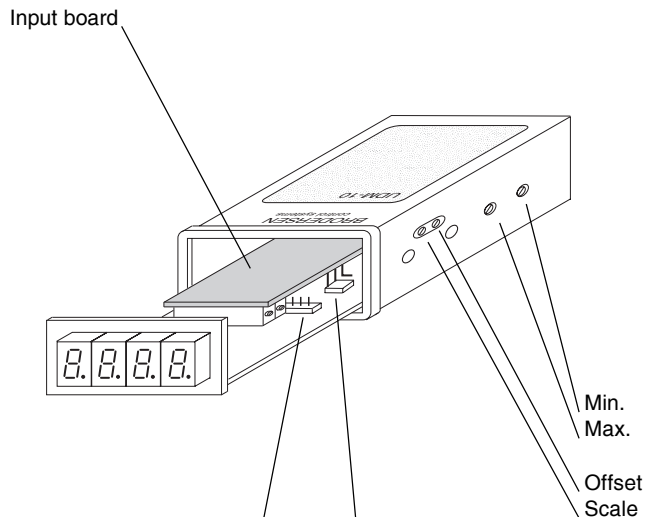
The panel meter for monitoring of standard process signals is fully user adjustable within in the scale limits -1999 to 1999 with a maximum span of 2000 steps, e.g. a scale from -1000 to 1000.



The offset is adjustable within the range -1999 to 0.

The decimal point position is selectable . _ _ _ _ _ _ _ _ _ _

The input range is selectable 0-20mA/0-10V or 4-20mA/2-10V.



Decimal point position

| Jumper | Display |
|--|---------|
| <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | 1.999 |
| <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | 19.99 |
| <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> | 199.9 |
| <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> | 1999 |

Input selection

| Jumper | Input |
|--|--------------|
| <input checked="" type="checkbox"/> <input type="checkbox"/> | 0-20mA/0-10V |
| <input type="checkbox"/> <input checked="" type="checkbox"/> | 4-20mA/2-10V |

VERSION/ORDERING CODES

| | | | |
|--|-------------------|-----|----|
| Type: | UDM-10 | G24 | P1 |
| Supply voltage: 12-24V AC/DC | G24 | | |
| Input: | | | |
| Current: | | | |
| DC: | DC ³⁾ | | |
| 0-19.99mA. | DC1 | | |
| 0-199.9mA. | DC2 | | |
| 0-10.00A. | DC3 ¹⁾ | | |
| 0-100.0A. | DC4 ¹⁾ | | |
| AC: | AC ³⁾ | | |
| 0-19.99mA. | AC1 | | |
| 0-199.9mA. | AC2 | | |
| Voltage: | | | |
| DC: | DV ³⁾ | | |
| 0-19.99V. | DV1 | | |
| 0-100.0V. | DV2 | | |
| AC: | AV ³⁾ | | |
| 0-19.99V. | AV1 | | |
| 0-100.0V. | AV2 | | |
| RTDs: | | | |
| Pt-100: | P ³⁾ | | |
| -50.0-199.9°C. | P1 | | |
| -50-850°C. | P3 | | |
| Pt-500: | P ³⁾ | | |
| -50.0-199.9°C. | P51 | | |
| -50-850°C. | P53 | | |
| Pt-1000: | P ³⁾ | | |
| -50.0-199.9°C. | P11 | | |
| -50-850°C. | P13 | | |
| Ni-100: | N ³⁾ | | |
| -50.0-199.9°C. | N1 | | |
| Thermistor (KTY): | T ³⁾ | | |
| -30.0-100.0°C. | T1 | | |
| Thermocouples: | | | |
| Fe-CuNi: | J ³⁾ | | |
| -50-1200°C. | J1 ⁴⁾ | | |
| NiCr-Ni: | K ³⁾ | | |
| -50-1350°C. | K1 ⁴⁾ | | |
| PtRh-Pt 10%: | S ³⁾ | | |
| -50-1750°C. | S1 ⁴⁾ | | |
| PtRh-Pt 13%: | R ³⁾ | | |
| -50-1750°C. | R1 ⁴⁾ | | |
| Standard process signals U: ³⁾ | | | |
| 0-20mA/4-20mA DC and | U1 | | |
| 0-10V/2-10V DC | | | |

TECHNICAL DATA

| | |
|-----------------------------|---|
| Temperature drift: | Max. 0.01% per °C. |
| Display: | 3½-digit LED-type (-1999 to 1999). |
| Digit height: | 10 mm. |
| Scale: | The scale is adjusted to the actual measuringrange listed in the ordering key, except U1 version with user adjustable scale (-1999 to 1999, max. 2000 steps). |
| Decimal point: | Selectable . _ _ _ . _ _ _ . _ _ _ |
| Terminals: | 1.5 mm ² plug-in screw terminals. |
| Supply voltage: | 12-24V AC/DC (10-30V), |
| Mains frequency: | 45-66Hz. |
| Consumption: | |
| G24 version: | 0.7VA. |
| Protection: | |
| Front: | IP54 (IP65 on request). |
| Rear: | IP20. |
| Ambient temperature: | -10-55°C. |
| Isolation: | |
| G24 version: | 100V AC |
| Dimensions: | According to DIN 43700. |
| Front: | 48 x 24 mm. |
| Cut-out: | 43.5 x 21.5 mm. |
| Depth: | 80 mm + frame 5 mm + terminals 10mm. |
| Housing: | |
| Front: | Plastic. |
| House: | Self-extinguishing ABS. |
| Weight: | Approx. 85 g. |

NOTES/REMARKS

- 1) With external shunt (60mV voltage drop) type AAS-010 (0-10.0 A DC) or AAS-100 (0-100 A DC).
- 2) There is no galvanic isolation between input and supply. External isolation should be provided to prevent damage to the meter when measuring voltage/current or a G24-version with internal isolation should be used.
- 3) Special range. Please specify input and scale.
- 4) The specified accuracy is valid within the subranges:
 J1: 0 -1100 °C, S1: 150 -1550 °C,
 K1: 0 -1150 °C, R1: 150 -1550 °C.

AC/DC VOLTAGE

DESCRIPTION

Input for direct measurement of AC or DC voltages up to 100V. The AC input is equipped with a full wave rectifier for accurate AC measurement.
The scale of the panel meter is adjusted to the actual measuring range.

Typical applications:

- Monitoring systems (over/undervoltage).
- Generator monitoring systems.
- Battery charge monitor.
- Battery monitoring in power back-up systems.

MEASURING RANGES

| AC | DC |
|----------|----------|
| 0-19.99V | 0-19.99V |
| 0-100.0V | 0-100.0V |

Other ranges are available on request.

Input impedance:

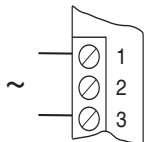
- AC: 1kOhm/V.
- DC: 1MOhm (>10V).

Measuring accuracy:

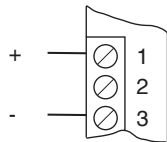
- AC: 0.3% of full scale ± 1 digit.
- DC: 0.1 of full scale ± 1 digit.

WIRING DIAGRAMS

AC



DC



AC/DC CURRENT

DESCRIPTION

Input for direct measurement of AC or DC current up to 200mA DC/ AC. The measuring range is easily extended by adapting an external shunt.
The AC input is equipped with a full wave rectifier for accurate AC measurement.
The scale of the panel meter is adjusted to the actual measuring range.

Typical applications:

- General monitoring applications.
- Monitoring/protection of motors.
- Battery charge monitor.

MEASURING RANGES

| AC | DC |
|-----------|------------------------------|
| 0-19.99mA | 0-19.99mA |
| 0-199.9mA | 0-199.9mA |
| | 0-10.00A with external shunt |
| | 0-100.0A (60mV voltage drop) |

Other ranges are available on request.

Input impedance:

- 1V
- I max.

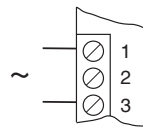
- 60mV with shunt.
- I max

Measuring accuracy:

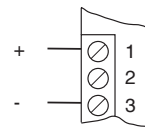
- AC: 0.3% of full scale ± 1 digit.
- DC: 0.1% of full scale ± 1 digit.

WIRING DIAGRAMS

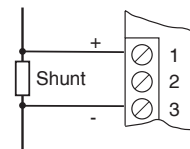
AC



DC



DC with shunt



TEMPERATURE

DESCRIPTION

Input for all types of temperature sensors, both thermocouples and resistor types, makes the UDM-10 suitable for most temperature monitoring applications.
The scale of the panel meter is adjusted to the actual measuring range.

Typical applications:
General temperature monitoring.

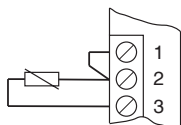
MEASURING RANGES

| RTDs/Thermistors | | | |
|------------------|---------------|-----------------|-------------|
| Pt-100/500/1000 | Ni-100 | Thermistor(KTY) | |
| -50.0-199.9°C | -50.0-199.9°C | -30.0-100.0°C | |
| -50-850°C | | | |
| Thermocouples | | | |
| Fe-CuNi | NiCr-Ni | PtRh-Pt 10% | PtRh-Pt 13% |
| -50-1200°C | -50-1350°C | -50-1750°C | -50-1750°C |

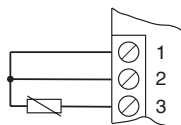
Measuring accuracy:
RTD/thermistor: 0.1% of full scale ±1 digit.
Thermocouples: 1% of full scale ±1 digit ⁴⁾.

WIRING DIAGRAMS

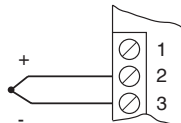
RTD/Thermistor (2-wire)



RTD/Thermistor (3-wire)



Thermocouple



STANDARD PROCESS SIGNAL

DESCRIPTION

The scaling facilities of the UDM-10 makes it ideal as a monitor device for normal standard process signals, e.g. 4-20mA. Any output from a transmitter can be scaled to engineering units and a unit label can be inserted on front of the panel meter. A sheet with common units is enclosed with the panel meter.

Typical applications:
General process instrumentation.
Signal monitor with read-out in engineering units.

MEASURING RANGES

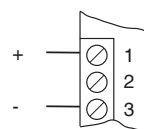
| DC |
|---|
| 0-20mA/4-20mA and 0-10V/2-10V. |
| The actual input signal is selected via a jumper on the input board of the panel meter. |

Measuring accuracy: 0.1% of full scale ± 1 digit.

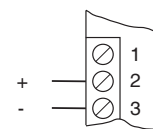
Input impedance:
Voltage: 1Mohm.
Current: 50Ohm.

WIRING DIAGRAMS

Voltage



Current



CONFIGURATION/CALIBRATION

Example: Adjust the panel meter to a scale -1000 to 1000, input signal 4-20mA.

- 1) Remove the front frame, the screw on the under side, and the plug-in terminal and pull out carefully the circuit board. Place jumpers for input signal selection and decimal point position. Assemble the panel meter and connect the supply voltage.
- 2) Apply min. signal 4mA and adjust **Min** to display read-out 0000.
- 3) Apply max. signal 20mA and adjust **Scale** (coarse) and **Max. input** (fine) to a display read-out of 1999. Adjust **Offset** to display read-out 1000.
- 4) Apply min. signal 4mA and check display read-out is -1000. If incorrect, return to step 2 and readjust the panel meter.

The panel meter is now calibrated and ready to use.