

Digalox® DPM72-AV Instruction manual (Rev-2024-05)

In the “Downloads” area of **www.digalox.com** you can find the latest version of the instruction manual and the software “Digalox® Manager”.

Package contents: Panel meter Digalox® DPM72-AV, mounting bracket, 5 jumpers, 2 instruction manuals (EN + DE)

1. Intended use

- Measurement of current, voltage and frequency in the specified measuring ranges.
- Indoor use non condensing, non corrosive.
- Panel mounting.
- Failure to comply with these instructions will void all guarantee and warranty.

2. Safety instructions

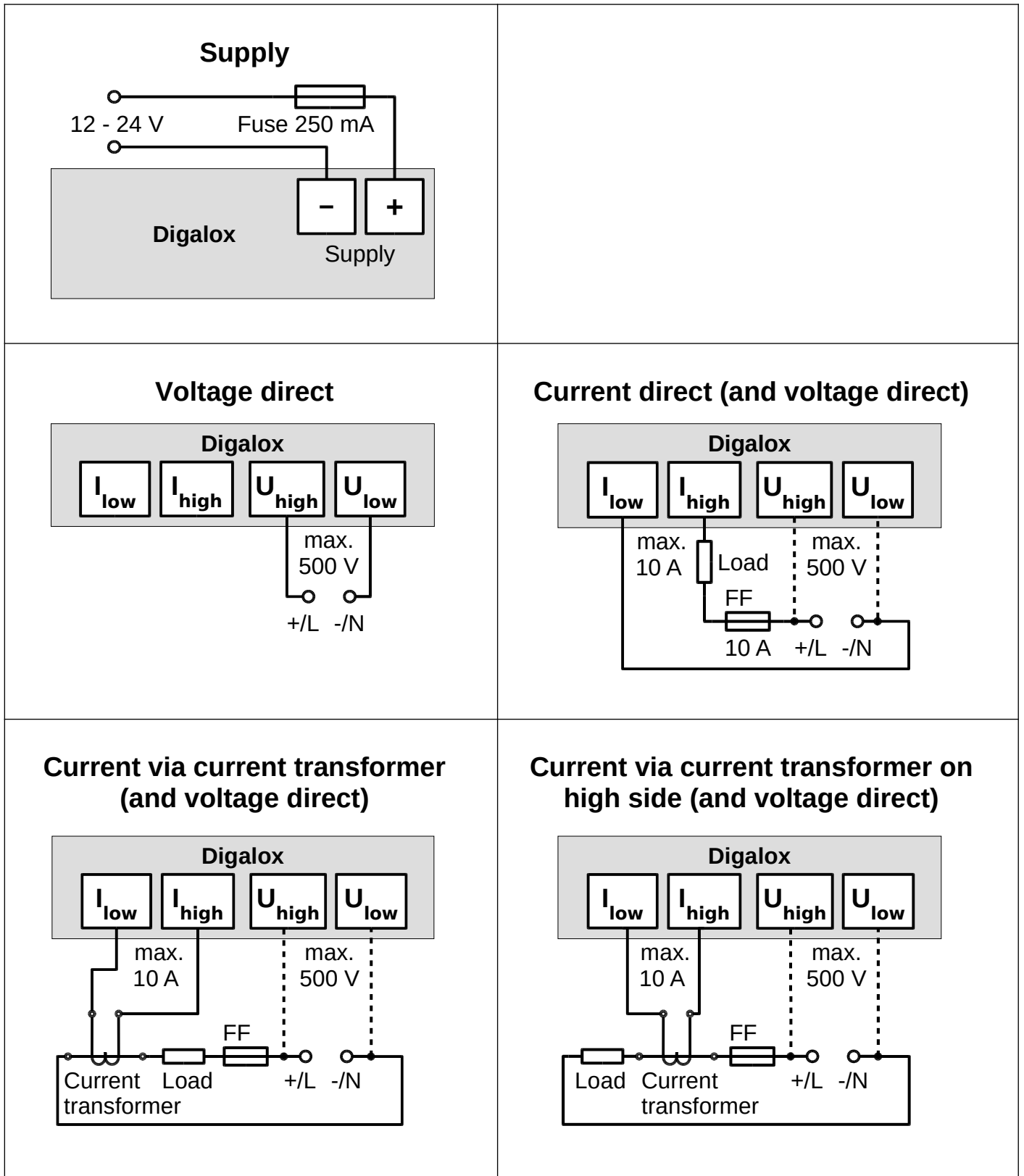
- Read instruction manual carefully before operating the device! Keep for later reference.
- Mounting and installation must be carried out by suitably qualified and competent persons only.
- **WARNING: The measurement inputs of the device can carry life-threatening voltages!**
- **WARNING: When working on the device hazardous voltages must not be connected to the device! The terminals J1-J6 are not isolated from the measuring circuit.**
- The device is not intended to protect persons or facilities against harm. Specific devices must be used to guarantee safety (protection relays, cut-off switches, etc.).
- When connecting switches to the terminals J1-J6, only switches must be used whose isolation voltage is at least twice the maximum occurring measurement voltage. For example, when measuring 250 V AC switches must be isolated for at least 500 V.
- Do not open the housing!
- Do not use the device in the presence of explosive or flammable substances!
- All cables carrying hazardous voltages must be secured with external separators.

3. Description

The measurement types volt AC/DC, ampere AC/DC, frequency and 5 A or 1 A for current transformer are supported. The unit can be switched between different measurement modes via an external switch. Minimum and maximum values are recorded and can be displayed optionally using an external switch. Measured values are recorded over a time span of 36 seconds up to 14 days. The time base as well as the display of the measuring history can be switched by an external switch. The measured values remain stored as long as the device is supplied with voltage.

	<p>Front</p> <ol style="list-style-type: none"> 1 Measurement unit 2 Upper scale caption 3 Graphical measurement display 4 Digital measurement value
	<p>Back</p> <ol style="list-style-type: none"> 1 DIP switch for setting upper scale caption and measurement mode 2 Supply voltage input 3 Jumper pins J1 – J6 for activating/switching of graphical historic data display, min/max display, auto-scaling and measurement mode 4 Measurement inputs

4. Electrical Connections



WARNING: The device may only be operated in one of the connection options shown above! Use an ultra-fast-acting fuse (FF) at the current measurement input.

5. Configuration

The device can be configured via DIP switches and jumpers.

Scaling

If the measurement mode "5A AC scaled" or "1A AC scaled" is selected, the upper scale caption must correspond to the primary value of the current transformer for correct scaling of the measured value.

Configuration of measurement mode via DIP switches and jumpers if only one measurement mode is required (Manual mode)

1. Set DIP switch 10 to ON position.
2. Set measurement mode with jumpers at J4-J6 according to table "measurement mode", column "Manual mode".
3. Set upper scale caption for the first measurement mode with DIP switches 1-9 (see "Configuration of the upper scale caption").
4. Connect supply voltage.

Configuration of measurement modes via DIP switches and jumpers if it is required to switch between multiple measurement modes via an external switch (Save mode)

The required measurement modes are configured and saved sequentially.

1. Set DIP-switch 10, 11 and 12 to OFF position.
2. Connect supply voltage.
3. Set the measurement mode with jumpers at J4-J6 according to table "measurement mode", column "Save mode".
4. Set DIP switch 10 to ON position.
5. Set upper scale caption for the first measurement mode with DIP switches 1-9 (see "Configuration of the upper scale caption").
6. Set time base for graphical historic data display (optional, see "Other settings").
7. Set DIP switch 10 to OFF position.
8. "Saved" appears on the display. The configuration of the first measurement mode is now completed.
9. When using multiple measurement modes repeat steps 3-8 until all required measurement modes are configured. The time base does not need to be set again, as it is used for all measurement modes.
10. In operation the measurement modes can be changed with a switch at J4-J6 according to table "measurement mode", column "Save mode".

Configuration of the upper scale caption

The upper scale caption is binary coded using DIP switches 1-9. Possible values are 1 to 500. Switch 1 corresponds to 256, switch 2 corresponds to 128, switch 3 corresponds to 64, etc., switch 9 corresponds to 1. For configuration, proceed as follows:

1. Connect supply voltage.
2. Set DIP switches 1-9 to OFF position.
3. Set DIP switch 10 to ON position.
4. Start with 1st switch.
5. Set switch to ON position.
6. If the displayed value is greater than the desired value, set the switch back to OFF position.
7. If the displayed value is less than the desired value, leave the switch in ON position and move on to the next switch.
8. Repeat steps 5 to 7 until the desired value is displayed.

Table common switch combinations (DIP switch 1-9)

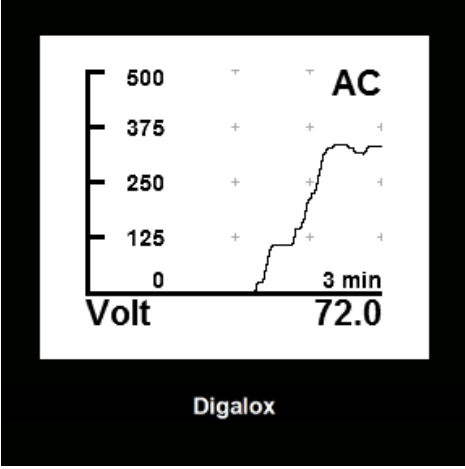
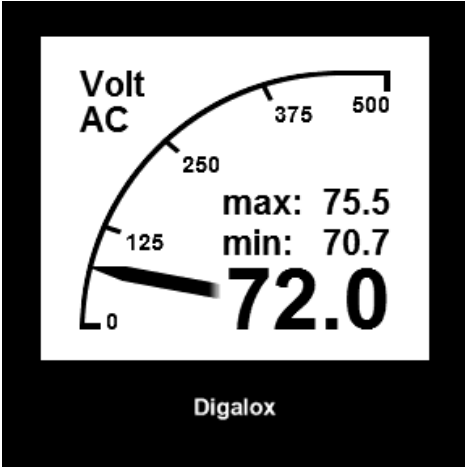
Value	Combination	Value	Combination
10		150	
20		200	
25		250	
50		400	
100		500	

Table measurement mode

Measurement mode	Display	Scale	Manual mode	Save mode
V AC direct	Volt AC			
A AC direct	Ampere AC			
V DC direct	Volt DC			
A DC direct	Ampere DC			
AC Frequency	Freq. Hz			
5A AC scaled (Current transformer)	Ampere CT	Upper scale cap-tion		
1A AC scaled (Current transformer)	Ampere CT	Upper scale cap-tion		

6. Other settings

The following functions can be activated independently by short-circuiting connectors J1-J3 by jumper or switch during operation:

	<p>J1: Graphical historic data display</p> <p>The unit displays the stored values within the set time base as a graphical trend. The time base can be set to days (7, 14), hours (1, 3, 6, 12, 24, 48, 72), minutes (3, 15, 30) or seconds (36).</p> <p>The time base can be changed by alternately opening and closing J1 (interval < 2 sec). When first opening and closing J1 the current time base is displayed. For each subsequent opening and closing the time base changes to the next setting. This setting is not saved permanently.</p>
	<p>J2: Min-Max-display</p> <p>The display shows the maximum and minimum values recorded since the last reset. The values can be reset by opening and closing connection J2 shortly (interval < 2 sec). The display shows "Minmax reset".</p>
	<p>J3: Auto scaling</p> <p>The device automatically changes the upper scale caption depending on the current measuring value, e.g. between 10, 100 and the set upper scale caption.</p>

7. Mounting

Carefully insert the device into the panel cut-out. Insert the mounting bracket from the back and push towards the panel until the device sits tight. Make sure the mounting bracket is snapped into the side of the housing. To ensure IP65 protection (dust and water jet) when mounting in a front panel, use optional gasket (separately available).

8. Cleaning

Observe the safety instructions before cleaning the device. Clean the device with a dry lint-free soft cloth. Do not use solvents.

9. Specification

Supply	12 - 24 V AC/DC $\pm 10\%$ (50/60 Hz $\pm 10\%$)
Required external fuse for supply	250 mA, fast (F)
Power consumption	Max. 1.2 W
Display	LCD graphic display 192 \times 160 pixels
Measuring range voltage	± 500 V AC/DC, 10 - 500 Hz
Accuracy voltage	± 1 % true RMS
Internal resistance voltage	2.6 M Ω
Measuring range ampere	± 10 A AC/DC and 5 A AC for current transformer, 10 - 500 Hz
Accuracy ampere	± 1 % true RMS
Internal resistance ampere	5 m Ω
Required external fuse for ampere	For rated current, ultrafast (FF)
Measuring range frequency	10 - 1000 Hz
Accuracy frequency	± 0.1 Hz
Measuring value update	5 Hz (32 kHz sampling rate)
Recording of measurement	36 seconds to 14 days, 180 internal memory locations
Operating temperature	0 °C to +50 °C
Storage temperature	-20 °C to +70 °C
Operating altitude	0 to 2000 m above sea level
IP code	IP65 (front), IP00 (back)
Dimensions	72 mm \times 72 mm \times 54.8 mm
Panel cut-out	68 mm \times 68 mm
Mounting depth	51.8 mm
Net weight	137 g

10. Available accessories

- TDE Instruments Digalox[®] DPM72 gasket EPDM/SBR
- ENTES ENT.A Current transformer with 5 A secondary current

11. Contact Information

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