

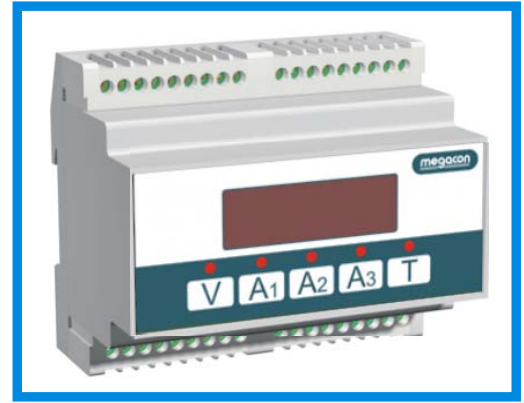
AVH60 ELECTRICAL MULTIFUNCTION METER

GENERALITY

The AVH60 digital multimeter allows to monitor three currents (max 5A) and one voltage (max 1000V). Three digital inputs manage three hour counters. A great display shows all data measured.

VERSIONS

- Version with power supply: 20÷60 Vac/dc
- Version with power supply: 110-230 Vac



MEASURED PARAMETERS

parameters	unit of measurement	initial identification		
voltage	[V]	V		
currents	[A]	A ₁	A ₂	A ₃
hour counter	[hr]	h _{A1}	h _{A2}	h _{A3}

INSTALLATION

WARNING FOR THE USER

Read carefully the instructions/indications contained in this manual before installing and using the instrument. The instrument described in this manual is intended for use by properly trained staff only.

SAFETY

This instrument has been manufactured and tested in compliance with EN 61010-1 standards. In order to maintain these conditions and to ensure safe operation, the person must comply with the indications and markings contained in the manual. When the instrument is received, before beginning installation, check that it's O.K. And it has not suffered any damage during transport. When starting installation make sure that the operating voltage and mains voltage are compatible with the device instructions. The instrument power supply must not be earthed. Maintenance and/or repair must be carried out only by qualified and authorized personnel. If there is ever the suspicious that, that there is a lack of safety ,during operation, the instrument must be disconnected and cautions taken against accidental use.

Operation is no longer safe when: - The instrument doesn't work. / - The measured value are obviously wrong or unreasonable / - There is clearly visible damage. / - After serious damage incurred during transport. / - After a storage under unfavourable conditions

CONNECTION

For a correct use of the device, the wiring diagram contained in the present manual, must be respected. The connections are the same for all models and are subdivided in three groups:

- auxiliary power supply:

On the instrument are available 3 terminals to connect the auxiliary power supply to the instrument:

Vac version		Vac/dc version	
Terminals	Power Supply	Terminals	Power Supply
4-5	0-110V = 100-125Vac 50-60Hz	5-6	20-60Vac
4-6	0-230V = 220-240Vac 50-60Hz		24-72Vdc

- measure voltage input:

2 terminals are available for the connection to the single phase voltage, the maximum shouldn't be over 1000 V rms.

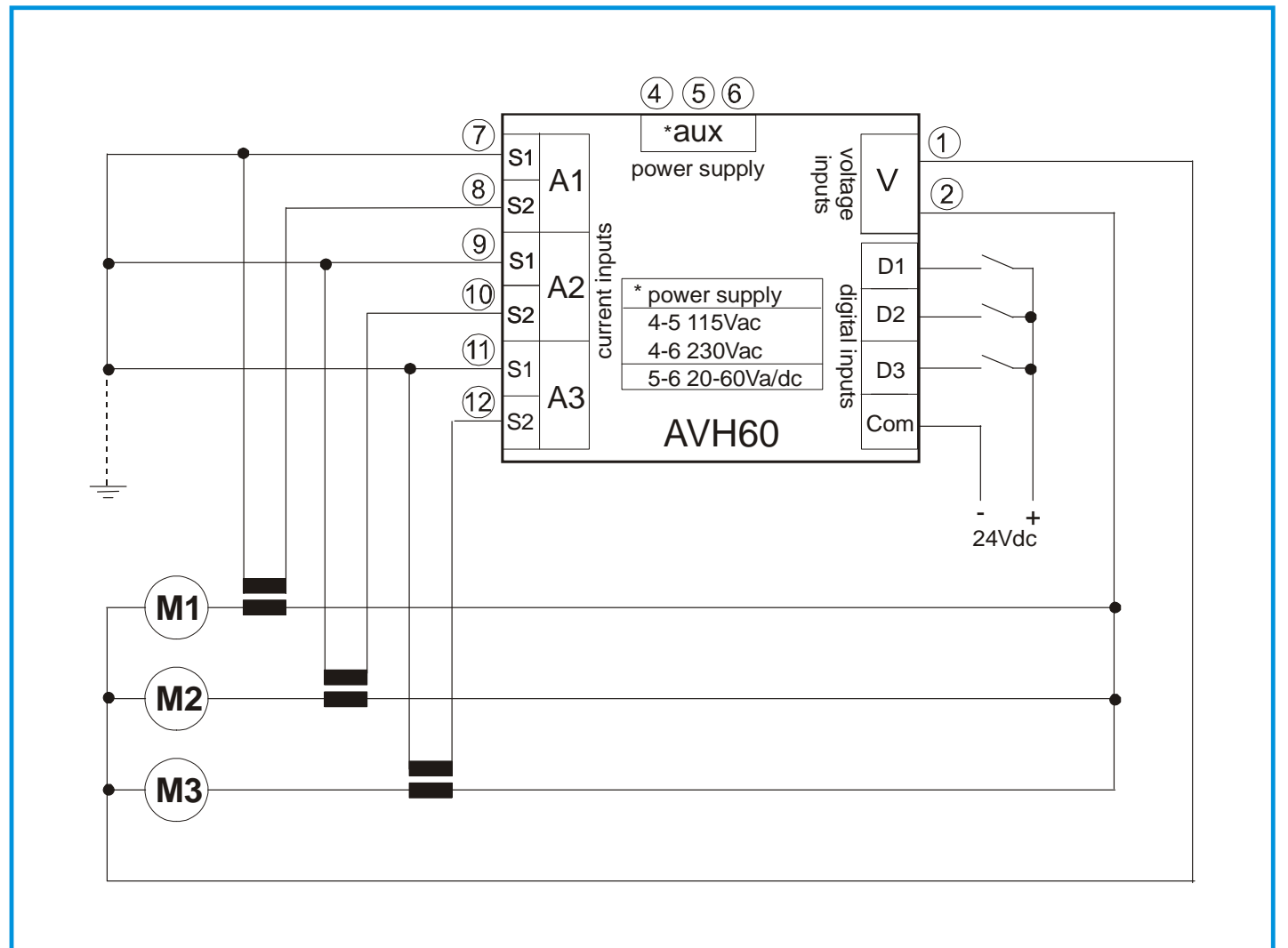
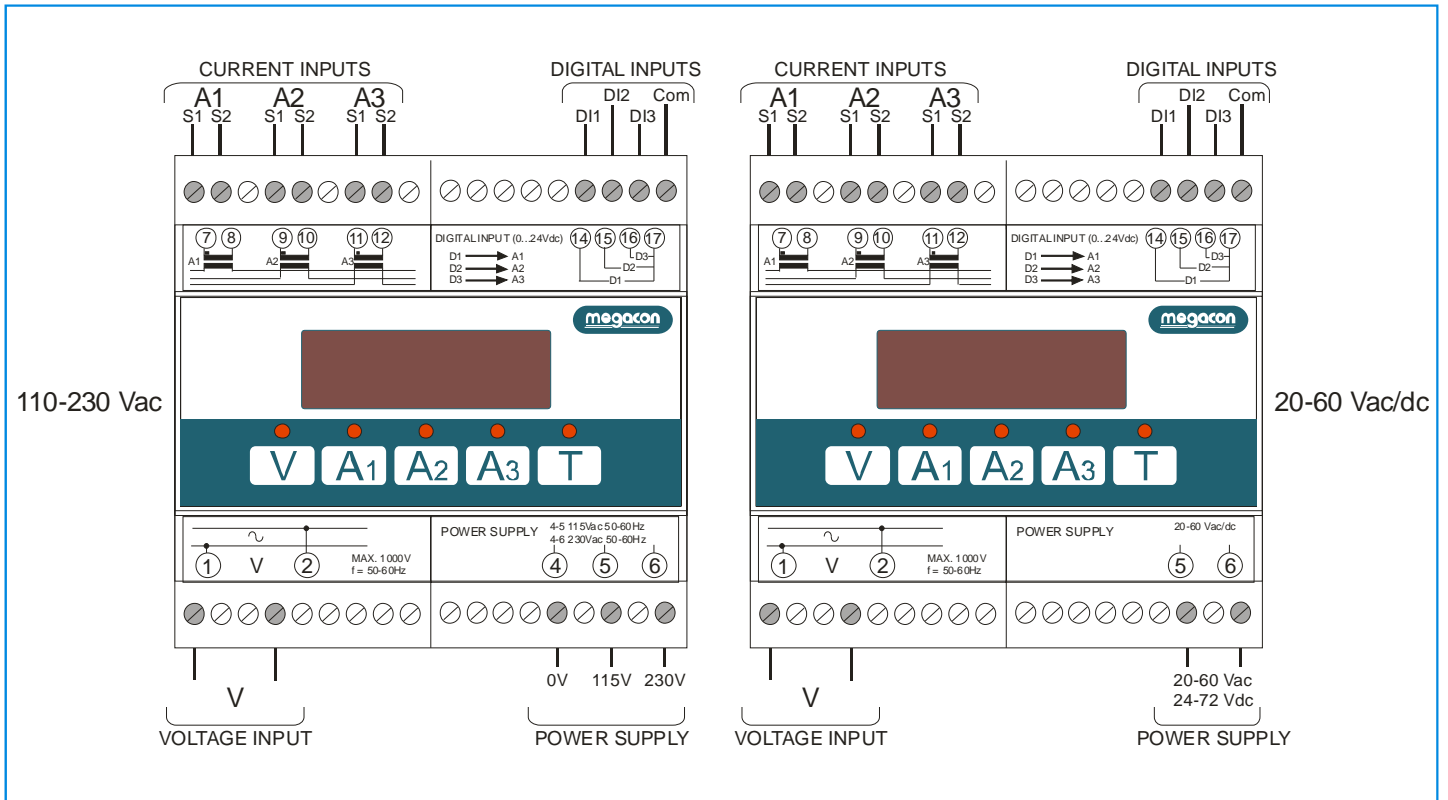
- measure current inputs:

6 terminals are available for the connection to 3 external amperometric transformers with secondary 5A.

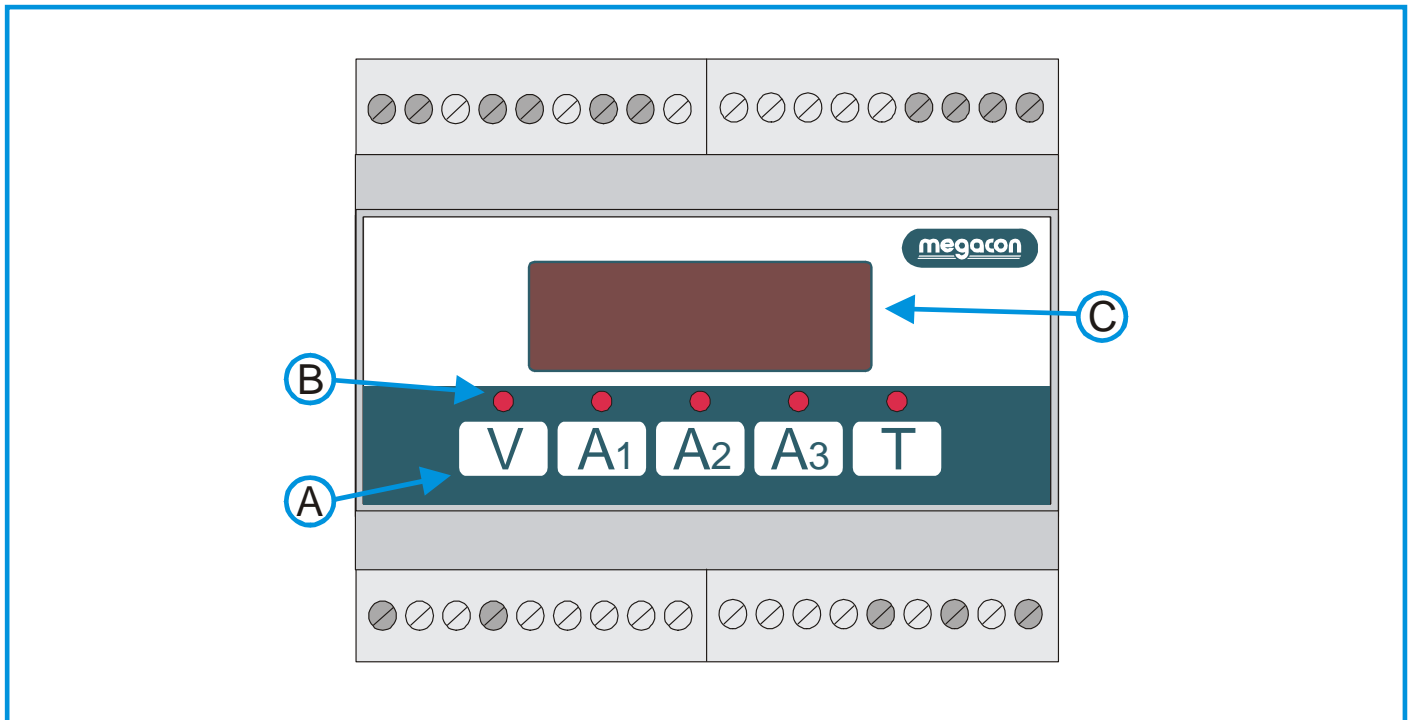
The utilization of external CT is obligatory.

REMARKS: For safety reasons, place an external fuse protection at the input voltages, and use adequate cables for the working voltages and currents, with a cross sections from 0,5 to 2,5 mm².

WIRING DIAGRAMS



DESCRIPTION FRONT PANEL- OPERATORS



LEGEND:

A: Push-button for the visualization of electrical parameters.

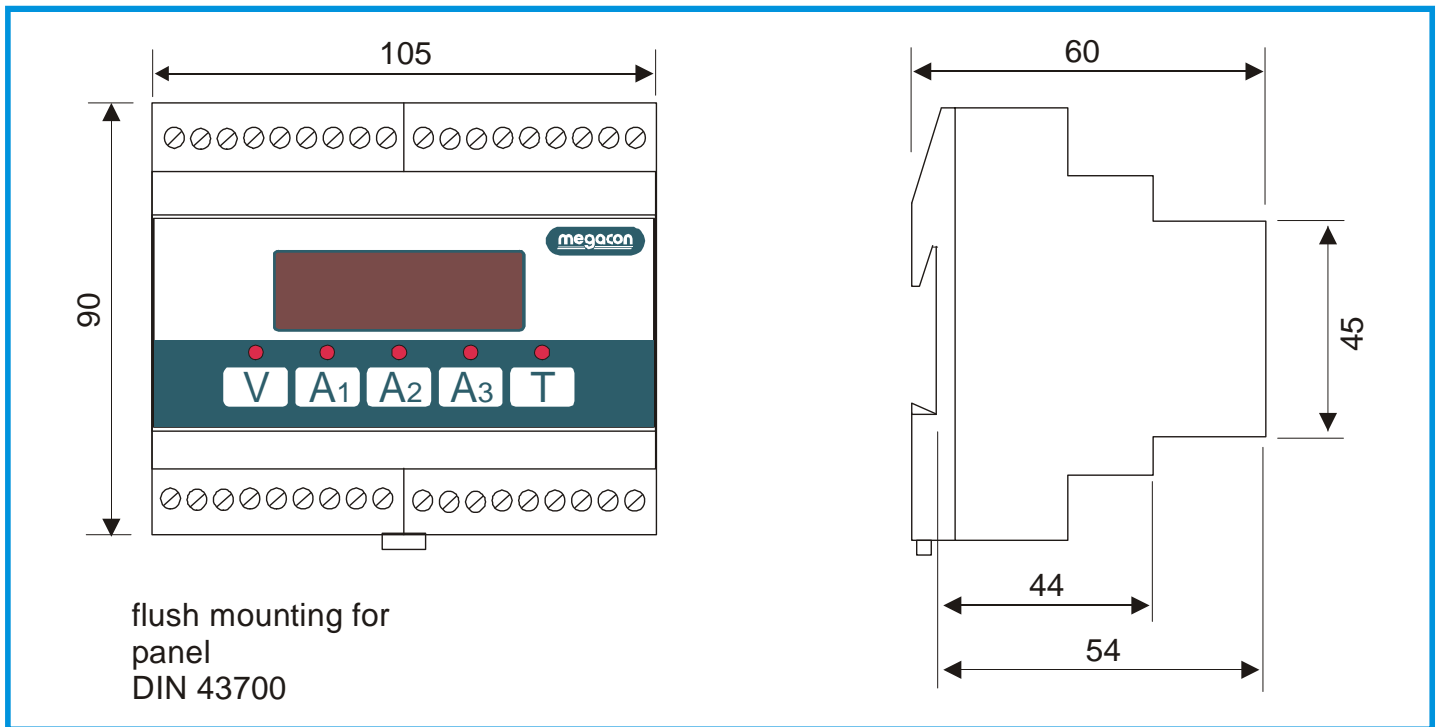
ACTION	DISPLAY
Press V push button	Appear V Voltage from terminals 1 and 4
Press A ₁ push button	Appear A ₁ Current from terminals 7 and 8
Press A ₂ push button	Appear A ₂ Current from terminals 9 and 10
Press A ₃ push button	Appear A ₃ Current from terminals 11 and 12
Press A ₁ and after T push button	Appear hour counter relative to D ₁ digital input
Press A ₂ and after T push button	Appear hour counter relative to D ₂ digital input
Press A ₃ and after T push button	Appear hour counter relative to D ₃ digital input
With instrument OFF, press at the same time A ₁ and A ₂ push buttons, turn ON the device, release them when appear the CT value chosen	When the instrument turn ON, on the display will appear the CT to set (60, 150, 300, 500, 1000). When you release the push-buttons the value displayed is set at new CT ratio. The default value is 150.

B: indications led.

The led turn on when the relative key is pressed and it shows the type of the parameter showed on **C** display. The led A₁, A₂ and A₃ blink when the respectively digital input (D₁, D₂ or/and D₃) is activated.

C: display at 4 digit used to display the parameters selected with **A** push-buttons.

DIMENSIONS



TECHNICAL FEATURES

MEASURES, PRECISIONS

voltage	range of total measure: 20÷1000V trms visualization (20-1000V) - measure precision: 1% ±1 digit- management maximum values
current	true RMS of the phase currents and of the value of three phase system range of measure: 0,02÷5A trms - measure precision: 1% ±1 digit visualization 0,3÷1000A
hours counters	precision: ±1%; resolution 1 hour

AUXILIARY POWER SUPPLY, INPUTS

auxiliary power supply	Version Vac: 100-125V / 220-240V ±10% - frequency 50-60Hz Version Vca/dc: 20-60Vac – 24-72Vdc consumption max 4VA
voltage inputs	from 20 to 750V; permanent overload +20% - input impedance: 1 MΩ
current inputs	from 0,02 to 5A; permanent overload 30% - from external CT with secondary 5A, primary programmable: 60A – 150A – 300A – 500A – 1000A - auto-consumption <0,5VA

INPUTS / OUTPUTS

digital Input	3 opto-isolated input: Insulation: 2500 Vrms 60 seconds Impedance: 44 kohm
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GENERAL

display, operators	1 display with red LED 18mm everyone of 4 digit by 7 segments 5 push-button for selecting measure and programming
mechanic	protection degree: IP52 frontal - IP20 enclosure and terminals - weight: about 2,5 kg connections with screw terminals for cable 2,5 mm ² enclosure thermoplastic self-extinguishing - for DIN rail mounting, 6 modules of 17,5mm
environmental	working temperature: -10÷60°C; humidity <90% storing temperature: -25÷70°C insulation test: 3 kV for 1 minute
standards	EN 50081-2; EN 61000-6-2 EN 61036-1; EN 61010-1



NOTE

At reason of the evolution of standards and products, the company reserves to modify in every time the features of the product described in this document, that it's necessary to verify preventively.

The liability of the producer for damage caused by defect of the product "can be reduced or deleted (...) when the damage is caused joint by a defect of product or for blame of the damaged or a person of which the damaged is responsible" (Article 8, 85/374/CEE).

