



DMP3

Programmable digital multimeter. User manual

V1. 12/2025

Safety Precautions

If you need to handle the equipment for installation, commissioning, or maintenance, please keep in mind that:



Incorrect handling or installation of the equipment may cause both personal injury and material damage. In particular, working on the equipment while it is live may result in death or serious injuries due to electric shock. Faulty installation or maintenance also poses a risk of fire.

Carefully read this manual before connecting the equipment. Follow all installation and maintenance instructions throughout the entire life of the product. In particular, comply with the installation standards indicated in the National Electrical Code.

Liability Limitation

S.A. de Construcciones Industriales reserves the right to make modifications to the equipment or to the specifications described in this instruction manual without prior notice.

S.A. de Construcciones Industriales provides its customers with the latest versions of equipment specifications and the most up-to-date manuals on its website.



S.A. de Construcciones Industriales recommends using the original cables and accessories supplied with the equipment.

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1. Product overview

This three-phase digital multimeter is designed to meet the intelligent energy monitoring requirements of electrical systems in industrial and mining companies, public facilities and smart buildings. It can accurately measure common power parameters in three-phase networks, such as three-phase voltage, current and frequency.

This digital multimeter is widely used in control systems, SCADA systems and energy management systems. It offers simple wiring and convenient maintenance, as well as the ability to program input parameters on site and connect to different PLCs and industrial control communication software.

1.1. Function Introduction

Measurement function		Notes
Real-time measurement	three-phase voltage	Basic function
	three-phase current	
	frequency	
Display mode		LED digital tube display

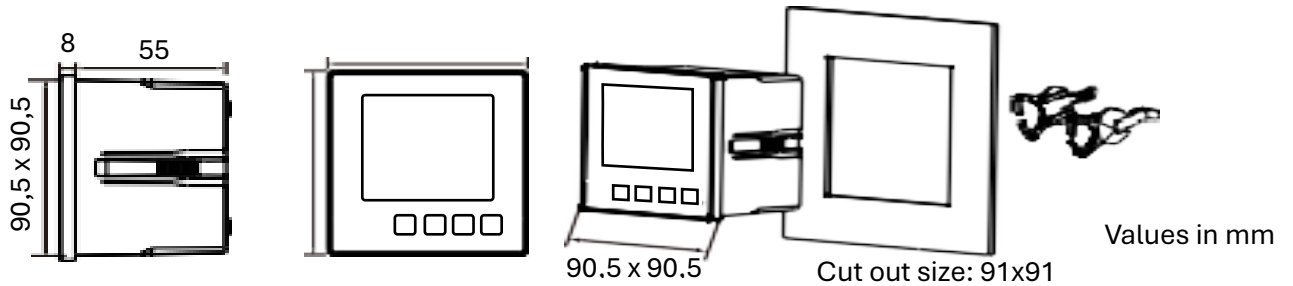
1.2. Technical Data

Parameter		Description	
Signal input	Wiring method		
	Voltage	Range	3P3L/3P4L
		Overload	AC 15~500V
		Power dissipation	Continuous:1.2 times Short time: 2 times/5S
	Current	Range	< 1VA (per phase)
		Overload	AC 25mA~5A
		Power dissipation	Continuous:1.2 times Short time: 10 times/5S
Frequency	< 0.4VA (per phase)		
Power Supply		45-65 Hz	
		AC 85~265V/DC 100~300V	

Parameter	Description
Accuracy class	Current:0.5 Voltage:0.5 Frequency: ±0.05Hz
Environment	Working temperature:-10~+55°C Storage temperature:-25~+70°C Relative humidity :≤93% No condensation, Non corrosive gas occasions
Security	Insulation: shell resistance of input, power supply and output terminals > 100M Ω Withstand voltage: input/power supply: 2KV, power Supply/output: 2KV Input/output: 1kV
Protection class	Front panel IP52

2. Installation and wiring

2.1. Installation dimension drawing



2.2. Function description of terminal block

Signal	Terminal block No.	Description
Power supply	1, 2	AC 85~265V
Current signal	4, 5, 6, 7, 8, 9	4, 6, 8 Three phase current incoming terminal 5, 7, 9 Three phase current outlet terminal
Voltage signal	11, 12, 13, 14	Three phase voltage input: UL1, UL2, UL3 Un

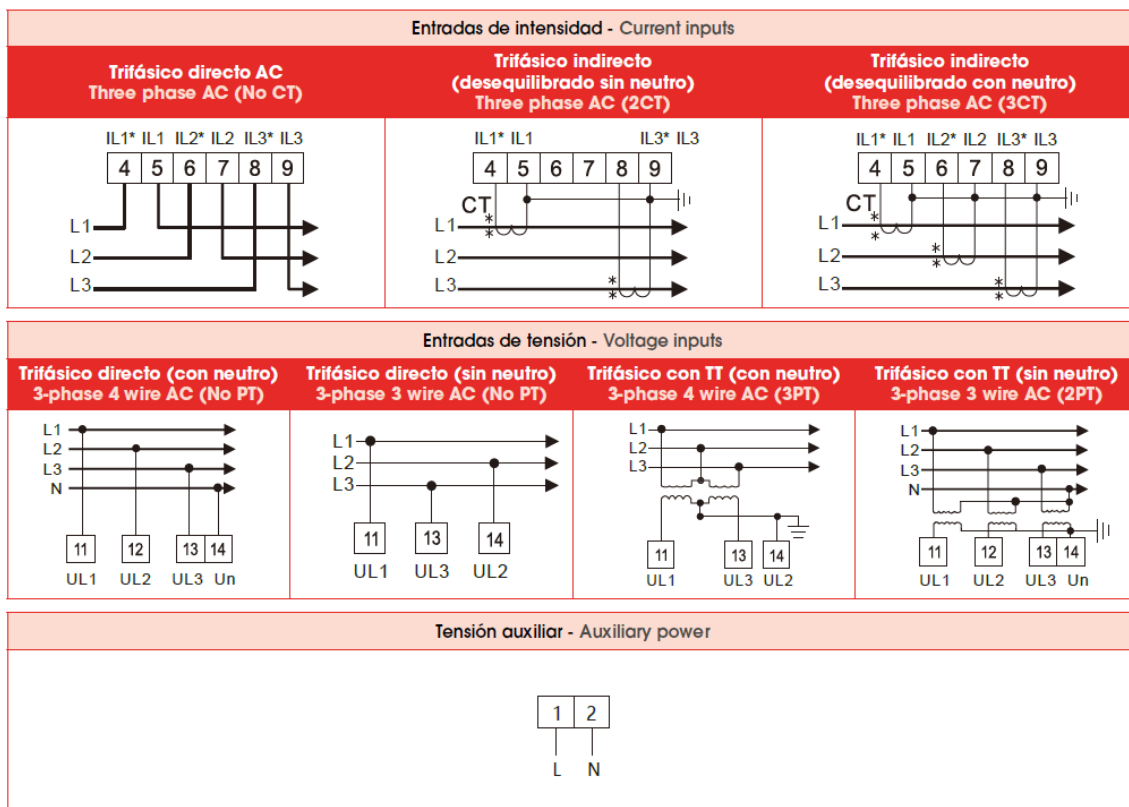
2.3. Instructions for using terminal blocks

Terminals 1 and 2 provide auxiliary power for operating the equipment. Please ensure that the provided power supply is adequate to prevent damage to the product.

Terminals 4, 6 and 8 are the incoming line terminals of the current transformer and the (*) symbol indicates the incoming line terminal of the current.

The three-wire, three-phase connection method involves the L2 phase current not being connected. UL2 is connected to terminal 14 and the specific wiring can be referred to in Figures 3 and 4.

Follow the specific instructions in the diagram on the product housing to correctly connect the wiring terminals.

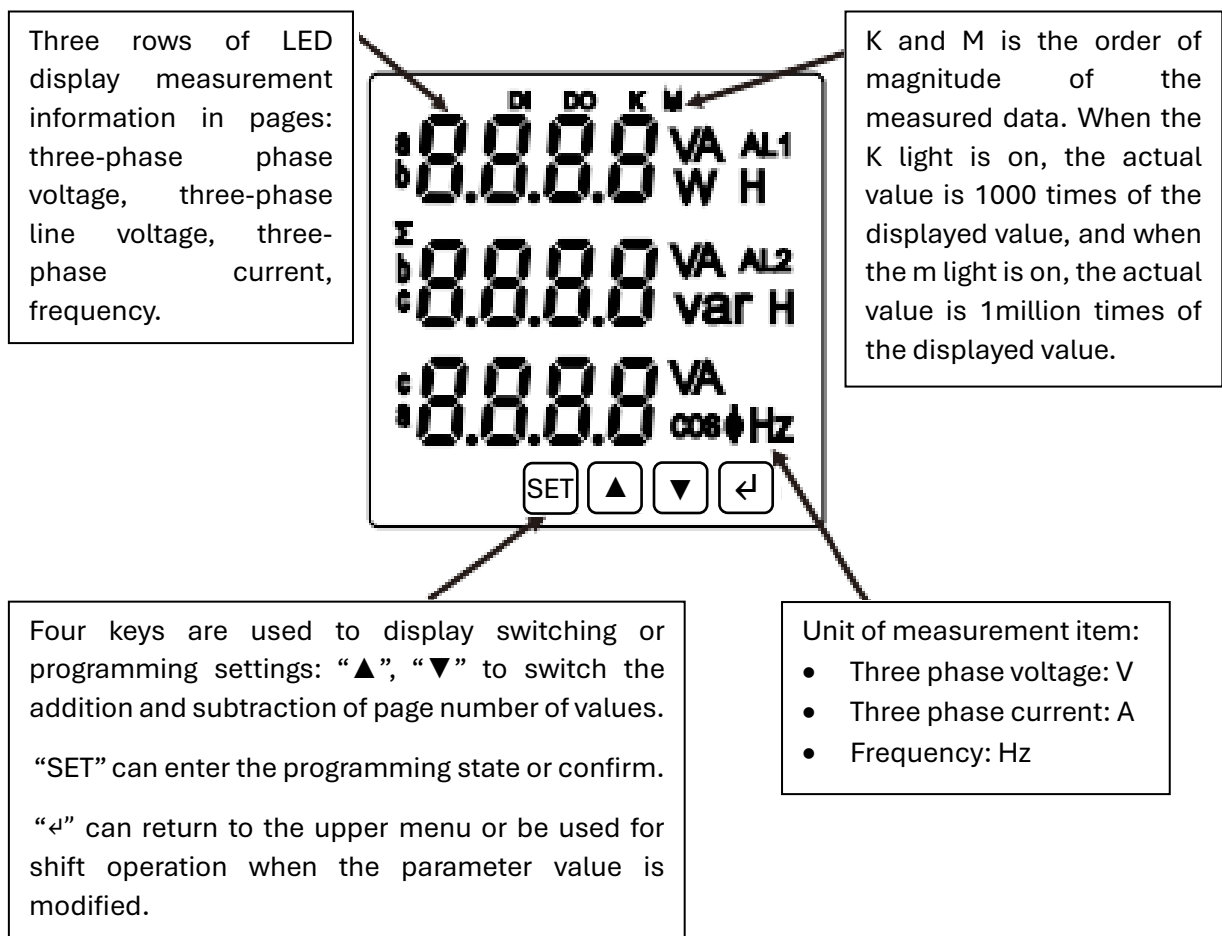


Note: Two wiring modes can be set in the instrument. The actual wiring mode must be consistent with the setting mode in the table, otherwise the measurement data of the instrument is inaccurate. The specific wiring mode shall be subject to the wiring diagram attached with the product.

3. Panel description, menu operation description and measurement information display

3.1. Panel description

If there is no relevant information (or relevant information does not work) during display switching, it means that the model does not have this part of function.



3.2. Menu operation description

When the measured value is displayed, press the "SET" key to prompt the instrument to enter the programming password (the initial password is 1).

If the password is entered correctly and press "SET", you can enter the menu and modify the parameters. If the password is incorrect, you can only enter the keyboard browsing mode.

At this time, you can view the menu settings but not modify them (you can view the product password, then exit the menu and re-enter the programming password interface and enter the correct password).

Page	Content	Description
Enter password		Initial password is 1

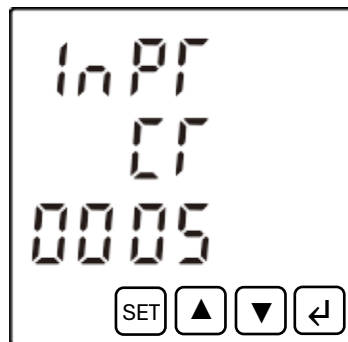
3.3. Measurement information display

Page	Content	Description
DISP=1 Three-phase voltage		Display voltage UL1, UL2, UL3 (three-phase four-wire system) UL1=220.0V UL2=220.0V UL3=220.0V
DISP=1 Three-phase voltage		Display voltage UL1L2, UL2L3, UL3L1 (line voltage) UL1L2=380.1V UL2L3=380.2V UL3L1=380.0V
DISP=1 Three-phase voltage		Display three-phase current IL1, IL2, IL3 IL1=5.000A IL2=5.000A IL3=5.000A
DISP=4 Three-phase voltage		Frequency= 50Hz

4. Programming operation

Under the programming state, the digital tube display interface adopts the menu mode of hierarchical structure, and the instrument provides three-row digital display:(See Table 5) The first row, second row, and third row are the menu information for the first, second, and third layers, respectively

For example, as shown in Figure 6 on the right: Layer 1: INPT signal input, Layer 2: CT current transformer Layer 3: 5 is the current CT value, which is set to the current specification CT value of $25/5A=5$.



The organization structure of digital tube display interface menu is as follows. Users can select appropriate setting parameters according to the actual situation.

Level 1 menu	Level 2 menu	Level 3 menu	Description
System settings SET	d, SP	ULN ULL Curr Frq	The startup display interface, the default display interface after the instrument is powered on or exits the parameter design interface 0: Phase voltage 1: line voltage 2: current 3: frequency
	L, GH	0-2	Digital tube brightness adjustment
	U-0	0-20.0%	Voltage zero point blanking value
	I-0	0-20.0%	Current zero point blanking value
	Code	1-9999	Edit menu password (default 1)

		0-20s	Display time alternately, do not display alternately for less than 5 seconds
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Level 1 menu	Level 2 menu	Level 3 menu	Description
Signal input 		0-1	Wiring method, P3L4 three-phase four wire, P3L3 three-phase three wire.
		0-3	Input voltage specifications 0 : 100V 1 : 220V 2 : 400V 3 : 500V
		0-1	Input current specification 0:1A, 1:5A
		1-2000	Voltage multiplying ratio: it is used to set the voltage transformation ratio of the input circuit. When the voltage is connected through the transformer, PT=primary side voltage/secondary side voltage. When the voltage is directly connected, PT is set to 1.
		1-5000	Current multiplying ratio: it is used to set the current transformation ratio of the input circuit. When the current is connected through the transformer, CT=primary side current / secondary side current. When the current is directly connected, CT is set to 1.
		0-1	Number of CT, used to set the number of Ct used in three-phase three-wire. 0:2Ct, 1:3Ct

5. Common problems and solutions

5.1. Inaccurate measurement of U, I, etc

Answer: First of all, you need to ensure that the correct voltage and current signals have been connected to the instrument. You can use a multimeter to measure the voltage signal, and use a clamp meter to measure the current signal if necessary.

Secondly, ensure the connection of signal line is correct, such as the same name terminal of current signal (i.e. incoming terminal), and whether the phase sequence of each phase is wrong.

It should be noted that the electric quantity displayed by the instrument is the primary grid value. If the multiplying ratio of the voltage and current transformer set in the instrument is

inconsistent with the actual transformer multiplying ratio, the electric quantity displayed by the instrument will be inaccurate. The range of voltage and current in the meter shall not be modified after delivery.

The wiring network can be modified according to the actual connection method on site, but the setting of the wiring mode in the programming menu shall be consistent with the actual wiring mode, otherwise it will also lead to wrong display information.

5.2. Instrument does not illuminate

Answer: Ensure that the appropriate auxiliary current (refer to the physical specification label of the product) has been added to the auxiliary power terminal of the instrument. The auxiliary power voltage exceeding the specified range may damage the instrument and cannot be recovered.

The multimeter can be used to measure the voltage value of the auxiliary power supply. If the power voltage is normal and the instrument has no display, power off and power on again. If the instrument still fails to display normally, please contact the technical service department of our company.

5.3. Instrument does not respond to any operation

Answer: The instrument does not respond by pressing the instrument keyboard. Try to power off the instrument and then power it on again. If the instrument fails to return to normal, please contact the technical service department of our company.

5.4. Other abnormal conditions

Answer: Please contact the technical service department of our company in time. The user shall describe the site in detail. Our technical personnel will analyze the possible causes according to the site feedback. If the problem cannot be solved through communication, the Company will arrange technical personnel to solve the problem on site as soon as possible.

6. Transportation and storage

The product must be transported and unpacked carefully.

It must be stored in its original packaging. The storage environment temperature should be between -25 °C and +50 °C, with an average relative humidity of no more than 85%. There should be no corrosive gases in the storage environment, which should be moisture-proof.

Products should be stored on a bench in the warehouse with a stacking height of no more than six boxes. After unpacking, the stacking height of an individual package should not exceed 10 layers.

Do not use the equipment and contact the supplier as soon as possible if there are obvious signs of damage to the box caused by severe impact or a heavy fall during handling, removal or installation.

7. Guarantee

Within 3 years from the date of delivery of the product, under the condition of normal storage, transportation, maintenance and use of the customer, complete seal of the company and not removed, if the product cannot be normally used due to manufacturing problems, the guarantee service shall be provided.

8. Standards

- EN 60051
- EN 60068
- EN 61010
- EN 60529
- EN 61000
- UL 94
- IEC 664
- IEC 255