



Supplementary Test Voltage Source
for the PTE range of Relay Test Sets

User's Manual



PTE-FCN

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Quality is the core reference for EuroSMC's activities, aimed to fully satisfy our customers' needs and expectations.

USER'S MANUAL

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PTE-FCN PACKING LIST

1	PTE-FCN module
1	Set of fittings, bolts, nuts and rubber frame
1	AC supply cord
1	BUS-PTE interconnection cable
1	Set of spare fuses
2	0.75 m safety test leads
1	Warranty Registration Form
1	Measurements Certificate
1	This user’s manual

INTRODUCTION

The PTE-FCN is an electronically controlled independent voltage channel that allows you to test overcurrent, distance, synchronism, frequency and many other types of relays easily when combined with other units in the EuroSMC's PTE range of relay test sets.

Although this module can be used with all the relay test sets of the PTE range, it must be operated manually even when the test set is controlled from an external PC using optional software.

DESCRIPTION

Powering the PTE-FCN

The PTE-FCN module can only be powered from the PTE set's built-in 110VAC auxiliary output. This is due to the fact that we use switching amplifiers where the output is NOT isolated from the power input.



To power the PTE-FCN module, use the included bipolar cord to connect the module exclusively to the 110 VAC auxiliary output next to the mains AC power supply input of your PTE test set. Using any other AC supply can permanently damage the unit and will invalidate the warranty.

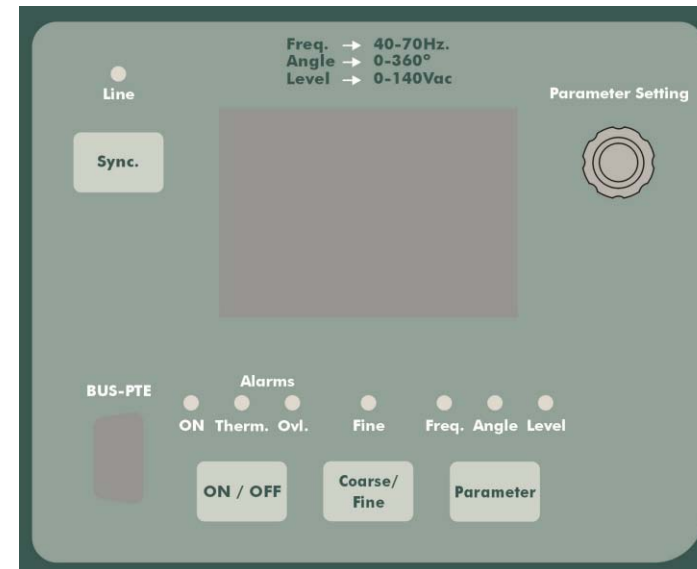
Power output

Output from the module is located at the black/red 4-mm, 25A rated female connectors at the lower left corner. Remember, the output is NOT isolated from the input. Always ground the unit using the yellow EARTH connector.



Adjusted voltage Level, Frequency and Phase Angle at the PTE-FCN's output are shown at the built-in LCD display.

BUTTONS AND LEDS



The PTE-FCN's output is regulated by means of a single rotary knob and four control buttons, used as follows:



Press this button to switch the output ON and OFF. The associated red LED will indicate the present output state.



Press this button to toggle the module's phase reference from "Line" (i.e. the PTE set's 50 or 60-Hz AC supply line) to its internal wave generator, whose frequency you can change as described next.

When Line is selected as the synch reference, the LCD display shows the phase angle between this voltage and the phase reference being used by your PTE set.

When Line is deselected, the LCD display shows the adjustable output voltage's frequency, which is generated by the PTE-FCN module and, therefore, is no longer referenced to the PTE set's current or voltage outputs.



The rotary knob adjusts the parameter that you have previously selected here. If *Synch* is set to "Line", the frequency is fixed so you can only regulate *Phase Angle* and *Level*. If *Synch* is not "Line", the internal frequency generator is used as reference, so you can only regulate *Frequency* and *Level*.



Select the rotary knob's adjustment resolution here, according to these Fine and Coarse step values:

Parameter	Fine	Coarse
Level	0.1 V	10 V
Frequency	0.1 Hz	1 Hz
Phase	0.1 °	10 °



Alarm indicators

The PTE-FCN module is protected against overheating and overcurrent by means of these automatic LED-signalled *Therm* and *Ovl.* alarms respectively.

The thermal protection operates when temperature builds up inside the module excessively, and is automatically cleared when it cools down.

The overload protection operates when the module cannot maintain the adjusted voltage across the connected load, or when the AC supply drops more than 10%.

In both cases, the module's output is suspended and cannot be resumed until the faulty condition is cleared.

INTERNAL PROTECTIONS

The module's output will also be suspended if the supply level falls below a minimum level. At even lower supply levels the module would automatically reset itself.

POWER-UP STATE

Upon connection to the supply source, the unit will have these settings:

- Output: OFF.
- Voltage Level: 0.
- Frequency: 50.0 Hz.
- Phase Angle: 0.0 °.
- Synchronizing reference: Line (same one as PTE's).
- Adjustment resolution: Coarse.

Working with the PTE-FCN module

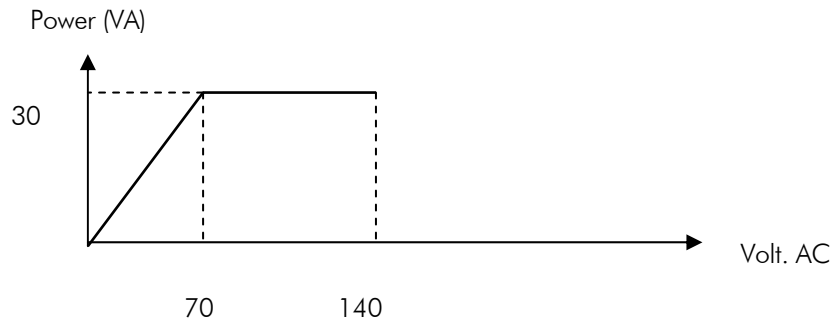
1. **Power Supply:** Use the supplied bipolar cord to take 110VAC from the PTE set's 110 Vac auxiliary output into the PTE-FCN's power input. Do NOT use any other power supply.
2. **Ground:** Use the supplied yellow/green cord to connect the yellow GROUND tap in the PTE-FCN module to the main unit's chassis.
3. **BUS-PTE:** Link the main unit and the PTE-FCN module by connecting the supplied communications cable to their respective BUS-PTE connectors. This will provide the necessary phase angle reference to the PTE-FCN module's phase angle measurement.
4. Turn the main unit on; the PTE-FCN module will also turn itself on automatically.

Adjusting the LCD screen's contrast

Press the adjustment knob for 3 seconds to enter the LCD contrast adjustment mode; then, rotate the knob to adapt the contrast to the surrounding light conditions. To return to the normal adjustment mode, press the knob again for 3 seconds and release it. This display will automatically compensate the effect of small temperature variations in the contrast before you need to readjust it again. The PTE-FCN 'remembers' the LCD's contrast adjustment from one work session to the next.

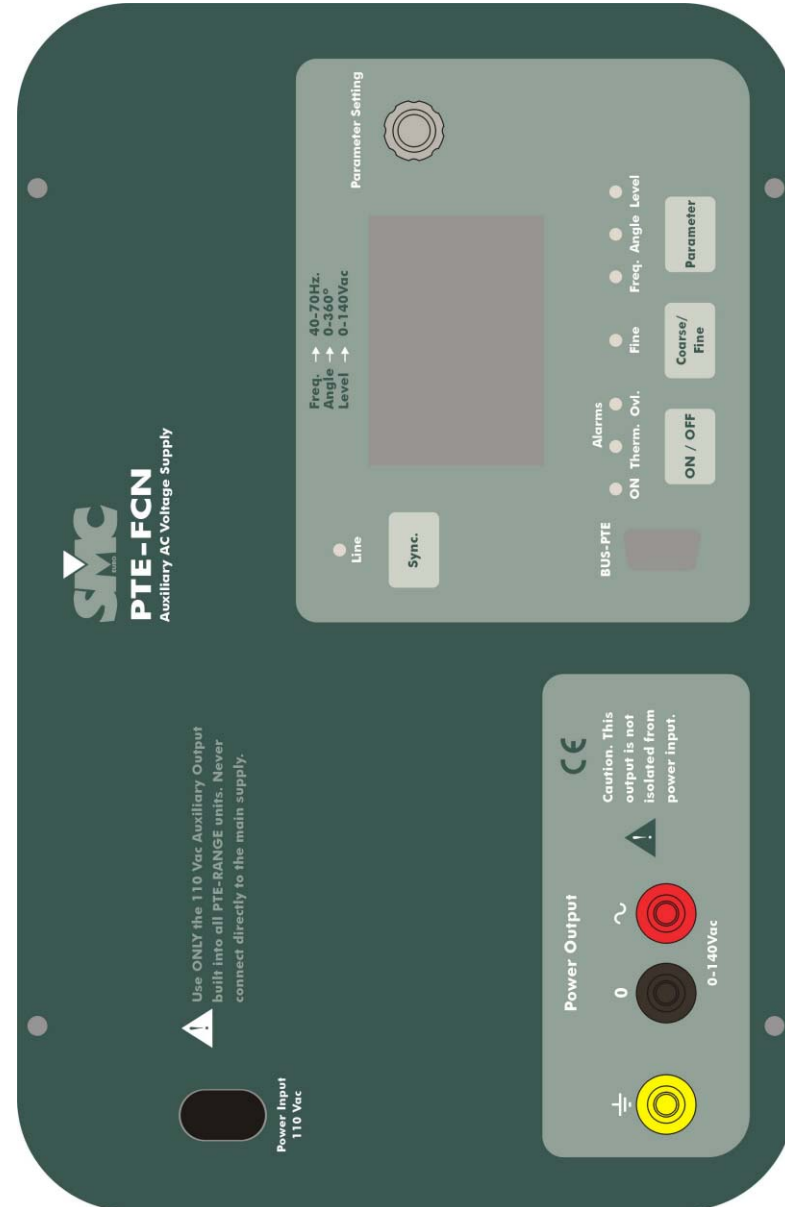
PTE-FCN TECHNICAL CHARACTERISTICS

Power supply: taken from the main PTE unit.	110 Vac \pm 10 %
Output voltage regulation	0.0 – 140.0 Vac
Voltage adjustment resolution / accuracy	0.1 Vac / \pm 0.1 V
Output frequency range	40.0 – 70.0 Hz
Frequency adjustment resolution / accuracy	0.1 Hz / \pm 0.1 Hz
Phase angle adjustment range	0 – 359.9 °
Phase angle adjustment resolution / accuracy	0.1° / \pm 0.1°
Output Power (70 – 140 Vac)*	30 VA
Max Current (0 – 70 Vac)*	0.42 Aac
Output mode	Ground-isolated
Protections	Thermal and overload



* Output power / output voltage characteristic curve.

PTE-FCN FRONT PANEL



AFTER SALES SUPPORT

WARRANTY

This is an expression of trust that our products obtain, based on the reliability and functionality standards that our customers expect.

The warranty covers the free replacement or repair of defective components for one year in the terms specified in the supplied warranty statement and registration card.

Damages resulting from improper handling of the product, use outside the scope and limits of the product's specifications, negligence, installation not in accordance with the standards or warnings listed in the Instructions Manual and servicing or manipulation by unauthorized persons are not covered by the warranty.

CUSTOMER SUPPORT

EUROSMC guarantees the supply of materials and components for its products up to 3 years after discontinuation. This support is extendable to 5 years for technical service.

OTHER EUROSMC PRODUCTS

Portable Relay Test Equipment and Software

Primary injection units up to 20.000 A

Digital handheld chronometer.

Digital handheld phase angle meter

Digital Portable microhmeter up to 100 A Test current.

Test systems for automatic miniature circuit breakers.

Voltage and current regulation equipment.

Step & Touch Voltage measurement equipment

Power transformer maintenance equipment

Rotary machine insulation analysis equipment