OPERATING MANUAL

ADAPTER FOR MEASURING LEAKAGE CURRENTS
PAT IPE

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1 Safety

The adapter with PAT-806 meter is designed to measure primary leakage current during control tests on equipment used for single-phase and three-phase arc welding. In addition, the adapter may be used to measure PE leakage current in three-phase devices. Standard three-phase sockets: 16A and 32A.

CAUTION!
The adapter may be used only with PAT-806 meter to measure the leakage current in the welding machine primary circuit and to measure the PE leakage current in three-phase devices. Any application that differs from those specified in the present manual may result in danger to the user. Do not use the adapter as an extension cord. Do not use the adapter for power measurements.

CAUTION!
Do not touch the device connected to the adapter.

CAUTION!
During the test, use only one circuit of the adapter. Unused adapter plugs should be placed in its appropriate sockets.

CAUTION!
Tested device connected to the adapter has no direct connection to PE of the mains.

CAUTION!
The manufacturer shall not be responsible for losses caused by connecting the adapter to a damaged device.

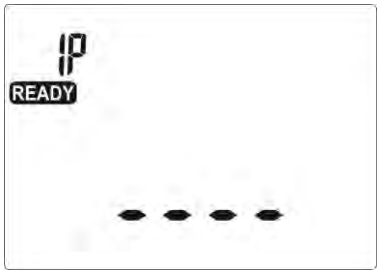
2 Intended use of the adapter

2.1 Leakage current measurement on welding machine circuit.

The adapter, connected to PAT-806 meter, may be used for easy measurements of the leakage current in the primary circuit of a welding machine powered form single-phase 230 V AC network or from three-phase network with the protection of 16 A or 32 A.

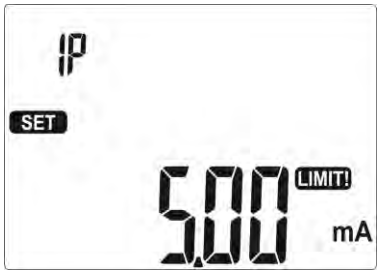
1. 

Turn on the power supply of PAT-806 meter. Press **I_T/I_P** button twice. The screen informing about the readiness for measurement will be displayed.



2. 

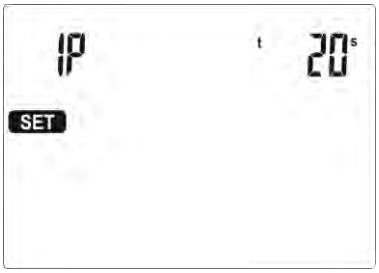
When parameters must be changed press **SET**.



3. 
Use ▲, ▼ buttons to set the upper limit of leakage current I_P.

4

Use ◀, ▶ buttons to start setting the time of measurement, using ▲, ▼ buttons set the measurement time.



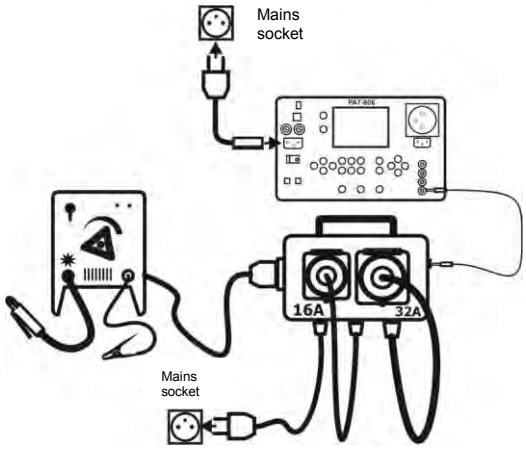
5

Press **ENTER** to confirm the settings.

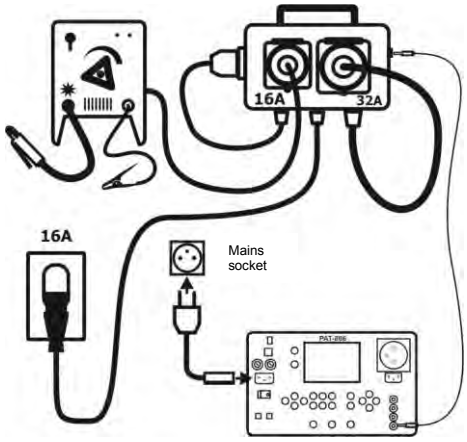
6

Depending on the type of power supply provided to the welding machine - apply one of the following diagrams. Unused leads must be plugged into appropriate sockets. Connect the banana socket of the adapter to **I2** socket of PAT-806.

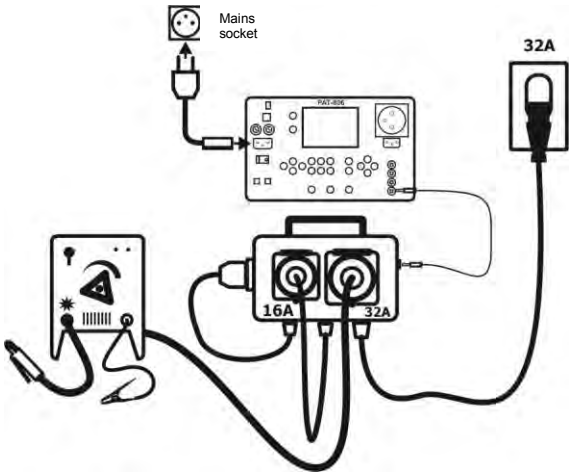
Power supply from 230 V mains



Three-phase power supply (16 A)

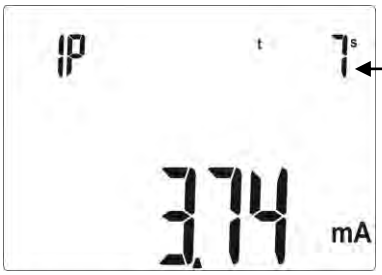


Three-phase power supply (32 A)



⑦

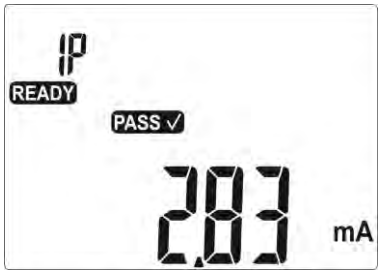
With continuous measurement set (time = Cont) press and hold **START**. To block the measurement press **ENTER**.
At the time with pre-set value it is not necessary.



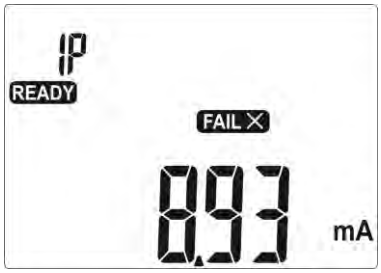
View of the screen during measurement.

Time remaining to the end of the measurement

8 The measurement ends after a preset time runs out or after pressing **STOP/ESC**. After the measurement is completed, read the result.



Correct result: I_P < LIMIT



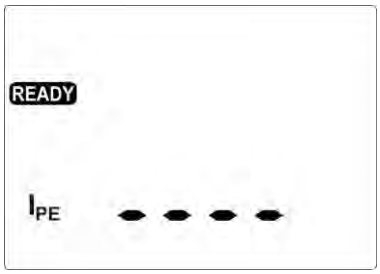
Incorrect result: I_P > LIMIT

2.2 Measurement of PE leakage current in three-phase devices.

The adapter may be also used for easy checking the PE leakage current in three-phase devices supplied from a three-phase network with protection of 16 A or 32 A.

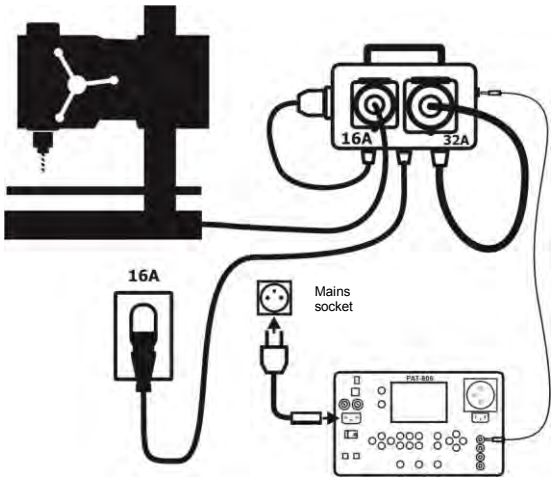
1. 

Press **I_{PE}**. The screen informing about the readiness for measurement will be displayed.

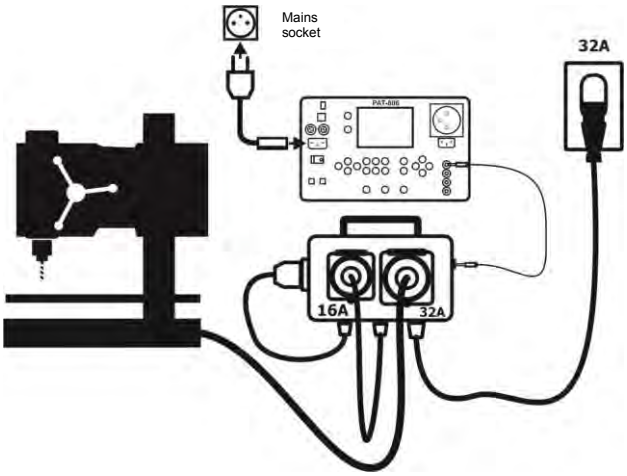


2. Connect the socket plug of the tested device into the test socket of the meter. In addition, it is possible to carry out the measurement with the probe connected to **R_{ISO}-** socket.

Three-phase power supply (16 A)



Three-phase power supply (32 A)



Note:

During the measurement in the test socket the voltage of mains is present.

During the measurement of a faulty device, RCD switch may be triggered off.

- PE leakage current is measured directly on this line, so it may be precisely measured, even if the device consumes current of 10A, 16A or more. However, you should consider the fact that if the current leakage is not directed to EP but to other grounded elements (e.g. water pipe) - it cannot be measured in this measurement function.
- Ensure that the location of the tested device is isolated.
- Tested device must be turned on.
- Details for setting parameters of individual measurements are presented in the manuals of PAT meters.
- Measurement of PE leakage current in single-phase devices must be performed directly on the measuring socket of a PAT meter manufactured by Sonel S.A., without using the PAT-IP adapter.

3 Cleaning and maintenance

CAUTION!
Use only the maintenance methods specified by the manufacturer in this manual.

The casing of the adapter may be cleaned with a soft, damp cloth using all-purpose detergents. Do not use any solvents or cleaning agents which might scratch the casing (powders, pastes, etc.).

4 Dismantling and Disposal

Worn-out electric and electronic equipment should be gathered selectively, i.e. it must not be placed with waste of another kind.

Worn-out electronic equipment should be sent to a collection point in accordance with the law of waste electrical and electronic equipment.

Before the equipment is sent to a collection point, do not dismantle any elements.

Observe the local regulations concerning disposal of packages.

5 Manufacturer

The manufacturer of the device and provider of guarantee and post-guarantee service:

Note:
Service repairs must be performed only by the manufacturer.

6 Laboratory services

Research and Calibration Laboratory of SONEL SA offers calibration of the following instruments used for electrical/non-electrical measurements:

- meters for electrical protective measurements: insulation resistance, impedance and resistance of short-circuit loops, earthing resistances and earth resistivity, RCD parameters and multi-functional meters that perform the above functions,
- electrical safety meters,
- multimeters,
- power quality analysers,
- meters for measuring low resistance values,
- infra-red cameras,
- pyrometers,
- luxmeters.

In addition, the Laboratory performs voltage, current and resistance calibration.

A calibration certificate is a document confirming compliance of parameters declared by the manufacturer of tested device with national standards, specifying the measurement uncertainty.

Pursuant to standard **EN ISO 10012:2003** "Measurement management systems — Requirements for measurement processes and measuring equipment", SONEL S.A. recommends for its instruments to be periodically tested, observing --the interval of **13 months**.

For new devices with calibration certificates, the next metrological inspection (calibration) is recommended within **13 months** from the date of purchase, but not later than **19 months** from the date of manufacture.

Note:
In case of instruments used for tests related to the protection against electric shock, the person - performing measurements should have complete confidence in the efficiency of operated apparatus. Measurements carried out with malfunctioning meter may cause wrong assessment of tested equipment in terms of its protection features