

Test & Measurement Instruments

Portable and laboratory measuring instruments



FTV500 PHOTOVOLTAIC TESTER

- The increasingly rapid decline of fossil fuels has led to the development of the alternative and renewable energy sector in the last decade with a significant increase in the percentage of global installed power
- In 2021, **renewable energies** set new records in terms of installed systems, **photovoltaic systems** alone accounted **for 60% of installations**.
- Governments around the world have applied measures to fuel the development of solar energy. The production of solar energy has increasingly gained an important role



- Over the next decade, the goal is to have 95% of all new global electricity capacity from renewables and more than 50% will be represented by photovoltaics.
- Leading the growth of solar energy will mainly be countries such as China, India, the United States and Europe, and it will above all be the **residential sector** that will ensure its success.

***Photovoltaics is a credible and reliable
Source of energy, with better
performances and returns t
than other renewable energy sources***



The "heart" of the photovoltaic system undergoes new transformations

- More and more performing modules:
 - Predominance of monocrystalline over polycrystalline
 - Size of individual PV cells (higher power / efficiency)
 - Overlapping cell technology
- Inverter significant evolution:
 - More modulable powers (more models available)
 - Type: string / multi-string / central

and maintenance "follows suit"

- New technologies and new problems
- Maintenance necessary and no longer occasional
- Greater technical competence
- Request for performing analysis tools



What are the possibilities?

As for the AMRA photovoltaic instruments, Chauvin Arnoux responded with two well-known instruments FTV100 and FTV200.

Although they arrived much later than the competition, in particular Italian (HT Italy, Eldes, Asita), these two devices have allowed us to meet the needs of the Italian market, and not only.



FTV500
allows to complete
the Chauvin Arnoux
offer in the electrical
sector.

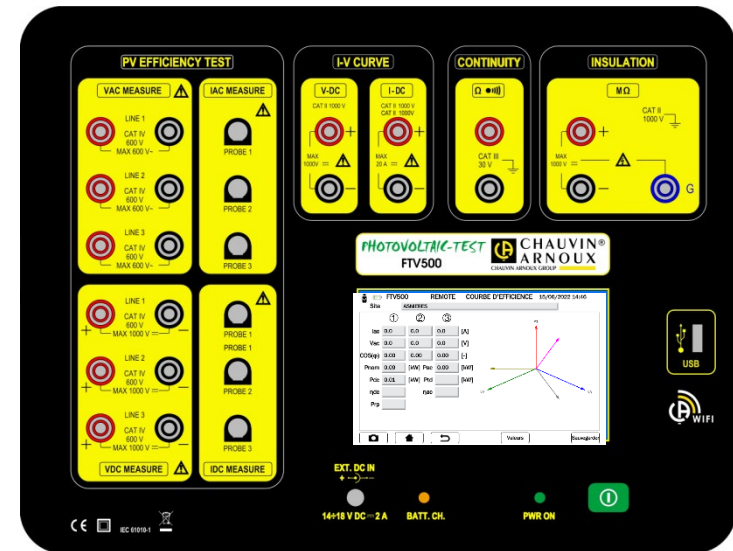
PHOTOVOLTAIC-TEST FTV500



FTV500 photovoltaic tester

The FTV500 device has the following functions:

- DC / AC operation and efficiency test
- DC / AC current measurement (3 inputs)
- DC / AC voltage measurement (3 inputs)
- I-V current-voltage curve measurement
- Measurement of the RS resistance of the modules
- Continuity measurement
- **Measurement of cell / module / string insulation resistance with system in operation, without interrupting the power supply**
- Logger function for saving and recording measurements with programmable sampling





An high quality display

High resolution display

Touch screen

TFT 16.7M colors

anti-reflection display

Size 5 "

Resolution 800x480

Human machine interface

The image displays the user interface of the CHAUVIN ARNOUX FTV500 remote control. The interface is divided into several sections:

- Top Left:** CHAUVIN ARNOUX logo and the text "PHOTOVOLTAIC-TEST FTV500". Below this, the firmware version "1.1.109 180221" is shown next to a progress bar.
- Top Center:** "Select Language" screen with flags for French, UK, Germany, China, Spain, and Italy.
- Top Right:** A form for editing client data. The title bar shows "FTV500 REMOTE MODIFICA CLIENTE 19/09/2019 05:11". The form includes fields for:
 - Cognome/Azienda: ROSSI
 - Nome: PAOLO
 - C.F./P.IVA: RSIPL21J54N433B
 - Codice: 233
 - Città: ROMA
 - Provincia: RM
 - Indirizzo: VIA DEI PLATANI 111
 - CAP: 00001
 - Telefono: 330123467
 - E-mail: INFO@GMAIL.IT
 Buttons include "Inserisci logo", "Nuovo impianto", "Modifica impianto", and "Elimina impianto".
- Bottom Center:** A main menu with buttons for:
 - Impostazioni
 - Clienti e Impianti
 - Database Misure
 - Moduli FV
 - Seleziona lingua
 - Aziende
 - Misura
 - USB
- Bottom Right:** A virtual keyboard with keys for letters, numbers, and a "Spazio" (space) key. Navigation buttons (back, home, forward) and a "Conferma" (confirm) button are also present.

Remote unit« hearth of the instrument »

- The remote unit of the FTV500 PHOTOVOLTAIC TESTER samples the values of the environmental parameters in real time
- Irradiation, ambient / module temperature
- Wi-Fi technology
- Datalogger function in case of communication loss
- Fixing system to ensure the module inclination



REMOTE CONTROL WI-FI & VNC TECHNOLOGY MEASUREMENT REPORT



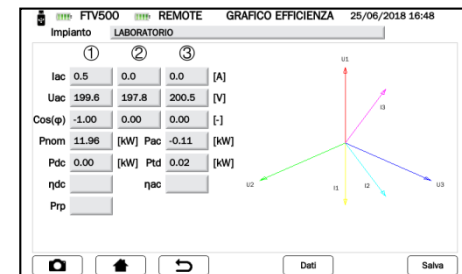
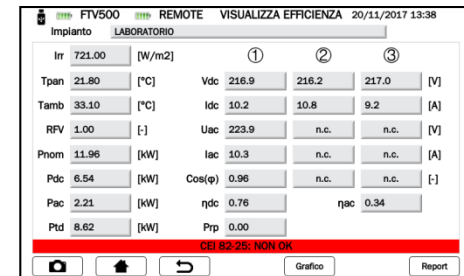
- First portable multifunction instrument with **VNC (Virtual Network Computing) technology**
- Remote control and management from smartphone / PC / Tablet
- Internal memory of over 10000 measurements
- Immediate creation of reports with a simple click
- USB-key for exporting all values

EFFICIENCY YIELD DATALOGGER



(CEI 82-25, IEC 61724, IEC 62446)

- 3 DC inputs and 3 AC voltage and current inputs
- Detailed measurement of the photovoltaic system parameters
- DC / AC yields
- Active and theoretical power available
- Power factor
- Graphic representation
- Irradiation, ambient / module temperature
- Test result compared with the normative references.

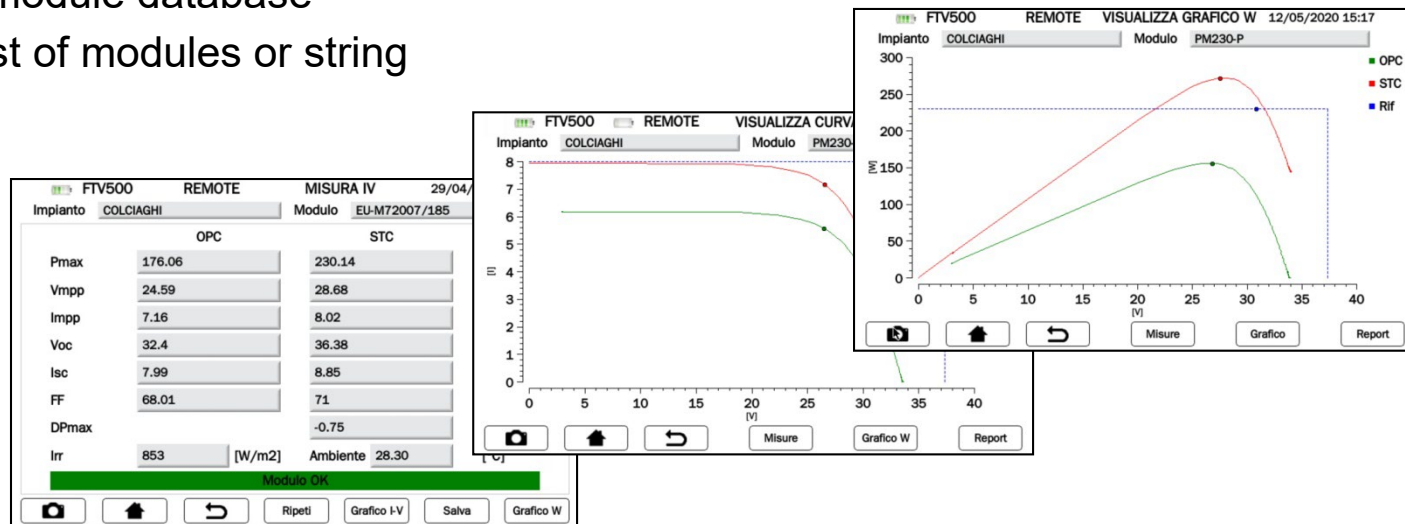


I-V CURVE RAPID TEST I-V



(IEC 62446, IEC 60891)

- Analysis of the I-V and Power curve of the modules / strings
- Comparison with the STC reference values of the manufacturer
- Display of the main characteristic parameters and the outcome of the test
- Internal module database
- Quick test of modules or string



- Location : A company, A site, An actor
- Material : A panel, A site
- Measurements : Real time, recordings, acquisitions

FTV500 REMOTE ECRAN PRINCIPAL 09/06/2022 15:41

Réglage

USB

Clients et sites

Modules PV

Installateurs

Recherche données

Choix langue

Mesure

FTV500 REMOTE VOIR SITE 15/06/2022 10:42

Client MY COMPANY

ID Site ASNIERES

Ville ASNIERES SUR SEINE

Adresse RUE SARAH BERNHARDT

Puissance onduleur 5 [KW]

État FRANCE

Téléphone 01030204506

Code Postal 92600

Contact CONTACT

Ensemble chaîne Total: 0.09 kW

Module	Nom
1.490J	A

Parcourir mémoire

FTV500 REMOTE MODIFIER INSTALLATEUR 15/06/2022 14:03

Société 1 SUPER INSTALL

Société 2 SI

Code fiscal ZZA

Code II

Ville ANTONY

Province FRANCE

Adresse RUE DE LA GARE

Code postal 92200

Téléphone 0302010405

E-mail CONTACT@SI.COM

Opérateurs

Nom	Nom
1 DUPOND	HENRY

Ajouter Logo

Ajouter opérateur

Modifier opérateur

Supprimer opérateur

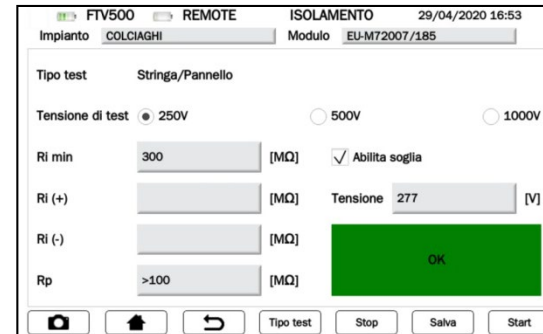
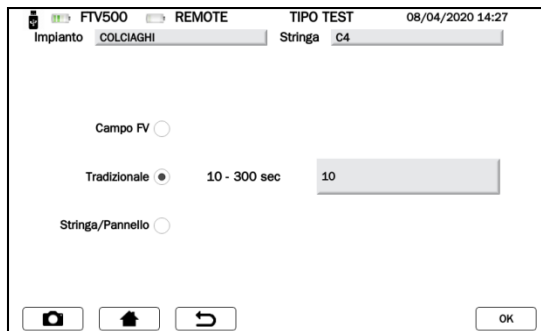
SAUVEGARDER

RESISTANCE INSULATION CONTINUITY



(IEC 62446, IEC 61557, CEI 64-8, IEC 60364)

- Insulation resistance measurement:
 - Traditional (megohmmeter)
 - With system in operating conditions
- Test voltage selection 250- 500-1.000VDC
- Threshold programming for the immediate outcome of the verification
- Continuity test of protective conductors with 200mA current



5 MEASUREMENTS 1 INSTRUMENT

FAULT INVESTIGATION

I-V Curve
Insulation
Continuity

+

ELECTRICAL SAFETY CHECK

Insulation
Continuity

+

SYSTEM PERFORMANCE (PRp)

DC / AC Efficiency
Monitoring



> 12k€



< 10k€

PHOTOVOLTAIC TEST FTV500

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P01129600

Instrument supplied with:

- Transport bag
- 2P + T mains power supply / charger
- Remote unit + charging cable / USB charger
- AC MiniFlex MA500 clamp (x3)
- DC PAC500 clamp (x3)
- Cables 3 mt R / N (x6)
- I-V R / N measuring cables
- Crocodile clip R / N (x2)
- R / N flex test point (x6)
- Inclinator
- Cable-markers kit 12 colors
- Certificate of conformity
- User manual in digital format



Remote module P01102184

- Ambient and contact temperatures
- Sun measurement
- Power on battery
- USB charger

MA500 AC MiniFlex clamp P01120600

- Up to 3 000A
- Ø 110 mm / Length 350 mm

PAC500 DC clamp P01120480

- Up to 1 400A

Inclinometer P01102115



Flex test leads P01102184

FTV500 power adapter P01120600

I-V cords Red/Black P01120480

Crocodiles clamp P01102115



THANKS FOR YOUR ATTENTION