



Product Presentation

**Power Sources
Resistance Meter**



Families of Single Phase Power Sources



Family	Type of Interface	Voltage Range	Frequency Range*	Output impedance	Current limit Programmability	Other	Used fo
RPS/M: <i>Rack Power Supply</i>	without	Single	Remote: 10-80Hz*	Low	Peak Current	Not Isolated Stability better than 0,1%	Functional and Quality Test
CPS/M: <i>Compact Power Supply</i>	Knob & Buttons	Single	Local: 50-60Hz Remote: 10-80Hz*	Low	No		
TPS/M: <i>Test Power Supply</i>	Display Touch & Knob	Double	10-80Hz*	Very Low	Peak Current		Laboratory Test & EMC
XPS/M: <i>Xtreme Power Supply</i>	Display Touch & Knob	Single	Till 1kHz	The Lowest	Peak or RMS Current		

* The maximum frequency settable via remote is 320Hz with derating of performance



Families of Single-Three Phase Power Sources



Family	Type of Interface	Voltage Range	Frequency Range	Output Impedance	Isolation	DC output	Limit Current Programmability	Used for
RPS/T: <i>Rack Power Supply</i>	Without	Single	Remote: 10-80Hz*	Medium	Output Transformers required	No	No	Functional and Quality Test
CPS/T: <i>Compact Power Supply</i>	Knob & Buttons	Double	Local: 50-60Hz Remote: 10-80Hz*	Medium	Not isolated	No	No	
TPS/T: <i>Test Power Supply</i>	Display Touch & Knob	Double	10-80Hz*	Very Low	Isolated	No	Pick**	Laboratory Test & EMC
XPS/T: <i>Xtreme Power Supply</i>	Display Touch & Knob	Single	Till 1kHz	The Lowest	Isolated	Yes	Pick and RMS	

* The maximum frequency settable via remote is 320Hz with derating of performance

**Display version only

Areas where you can expand your offer with Elettrotest Power Sources

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Request from the Customers	Elettrotest Families	Specifications
Programmable Power Source from 200kVA to 1MVA	• HPS200kVA stand alone • HPS/P/200kVA master slave (till 5 units in parallel)	1 x 200kVA = 200kVA 2 x 200kVA = 400kVA 3 x 200kVA = 600kVA 4 x 200kVA = 800kVA 5 x 200kVA = 1MkVA
Galvanic Isolation	• TPS/T/xx-D • HPS • XPS/T	Isolation between Input and Output with inner Transformers
Power grid 3F+PE (without N)	• TPS/T/xx-D • HPS • XPS/T	3F+PE request in the Input (In many power grids Neutral is not present)
Better THD%	• TPS/T/xx-D • HPS • XPS/T	Better than 0,3%

Families of Three Phase Power Sources

HPS:

- Isolated
- Double Range
- Stability 0,1%
- THD 0,6%
- Output Frequency till 80Hz
- Balanced Three phase

HPS/P

- Isolated
- Double Range
- Stability 0,1%
- THD 0,6%
- Output Frequency till 80Hz
- Master Slave configuration till 5 Units (1MW)
- Independent three phase



Used for functional
and quality test



Remote Interface

Family	RS232	RS485	TCP-IP	Elettrotest Protocol	SCPI Protocol	ModBus Protocol	Input 0-10V	Digital I/O
<i>TPS/M /D</i>	Yes	Yes	Yes	Yes	Yes	Yes	No	No
<i>CPS/M</i>	Yes	Option	Yes*	Yes	Yes	No	No	No
<i>RPS/M:</i>	Yes	Option	Yes*	Yes	No	No	Yes	Yes
<i>XPS/M:</i>	Yes	Yes	Yes	Yes	Yes	Yes	No	No
<i>TPS/T/D</i>	Yes	Yes	Yes	Yes	Yes	Yes	No	No
<i>CPS/T</i>	Yes	Option	Yes*	Yes	Yes	No	No	No
<i>HPS/T</i>	Yes	Option	Yes*	Yes	Yes	No	No	No
<i>HPS/P</i>	Yes	Option	Yes*	Yes	Yes	No	No	No
<i>RPS/T</i>	Yes	Option	Yes*	Yes	No	No	No	No
<i>XPS/T</i>	Yes	Yes	Yes	Yes	Yes	Yes	No	No

*With Option TCP-IP



Graphics and Values TPS/T/15K45S





Typical Values of Output Voltage



PORTATA	T/M	Freq	Vset	Freq I	VL1	VL2	VL3	ER L1%	ER L2%	ER L3%
300	T	50	50,0	50,00	50,13	49,79	50,40	0,04%	-0,07%	0,13%
300	T	50	100,0	50,00	100,15	99,91	100,36	0,05%	-0,03%	0,12%
300	T	50	200,0	50,00	200,13	200,12	200,28	0,04%	0,04%	0,09%
300	T	50	300,0	50,00	300,06	300,08	300,11	0,02%	0,03%	0,04%



Typical Output Impedance

Capacitive Load

Line	No load	With load	Current	Impedance (mΩ)	Ls (μH)
L1	231,30	231,45	7,44	20,16	64,21
L2	231,51	231,66	7,48	20,05	63,86
L3	231,44	231,59	7,42	20,22	64,38



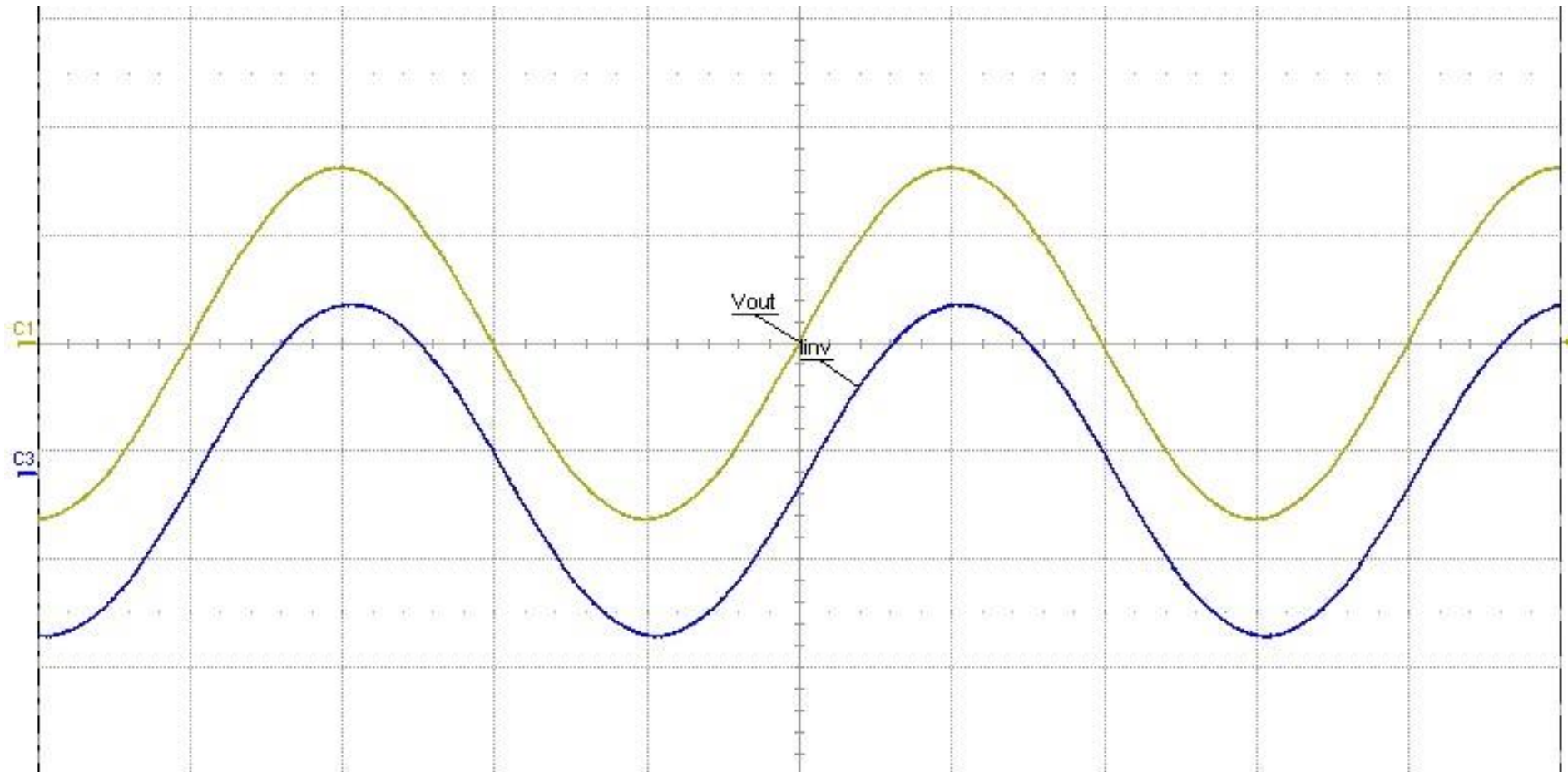
Resistive load

Line	No Load	With load	Current	Rs (mΩ)
L1	231,32	231,17	8,54	17,56
L2	231,53	231,39	8,55	16,37
L3	231,42	231,28	8,52	16,43



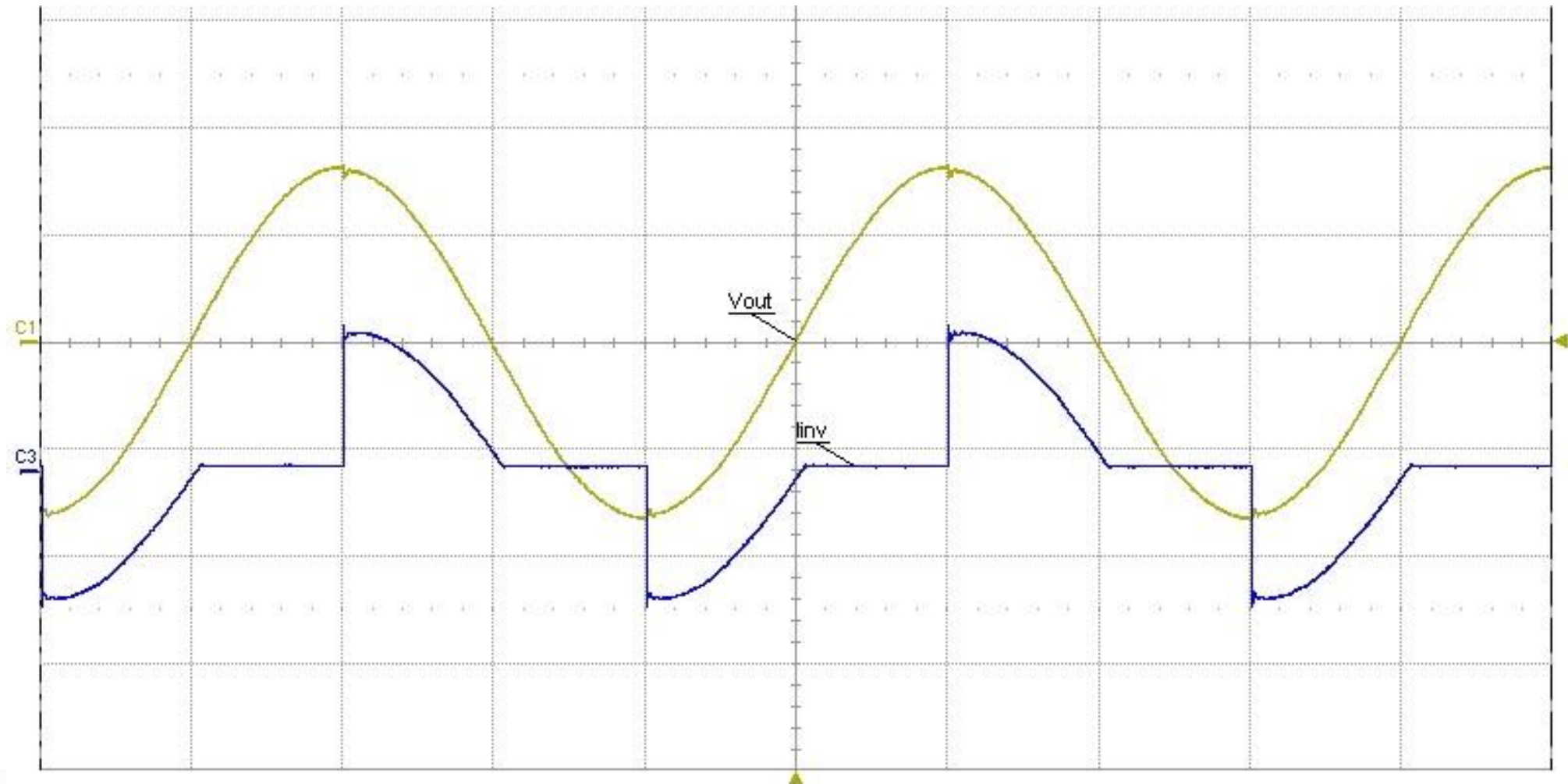


Typical Output Waveform R Load (Voltage and Current)



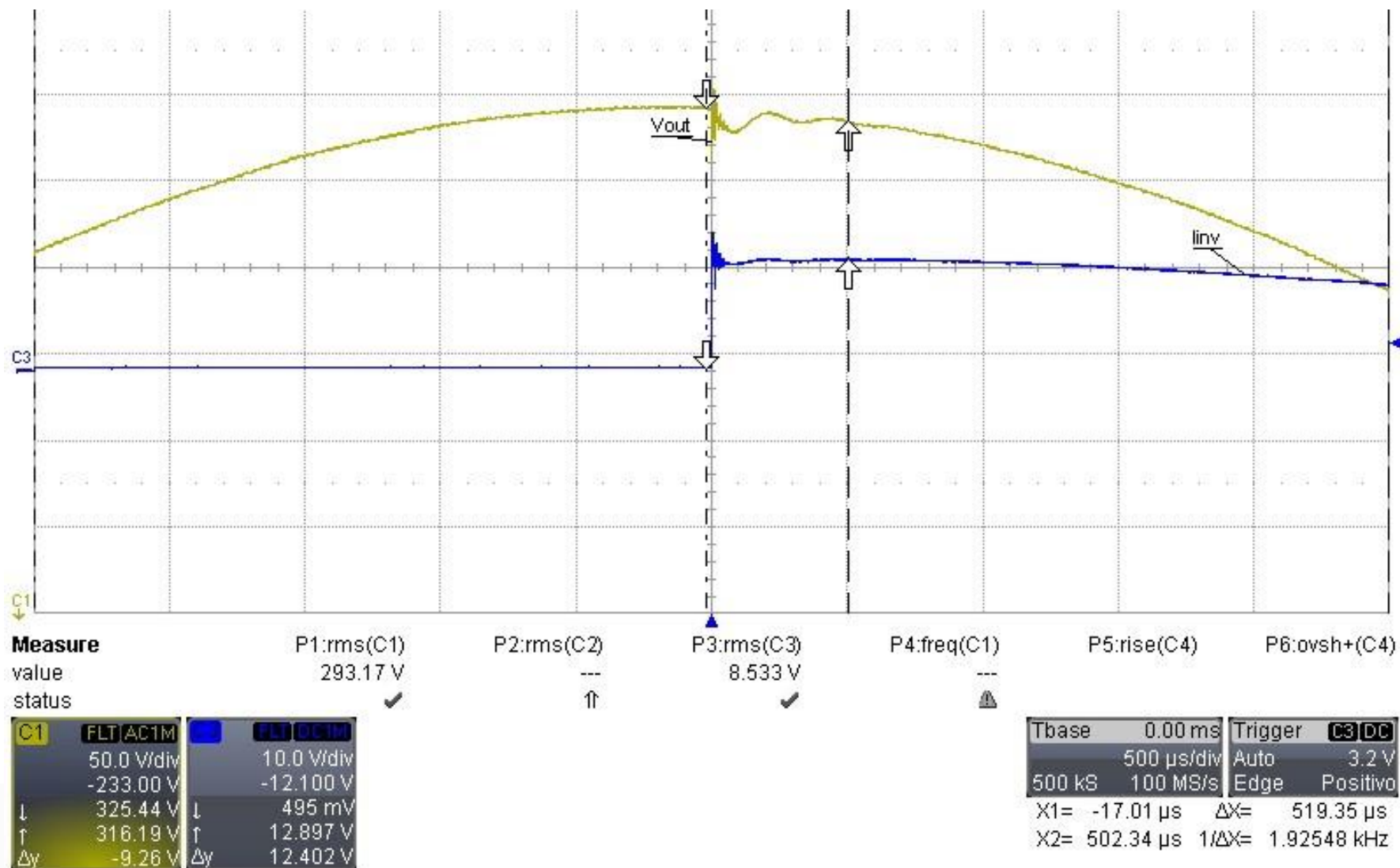


Typical Output Waveform Triac Load (Voltage and Current)



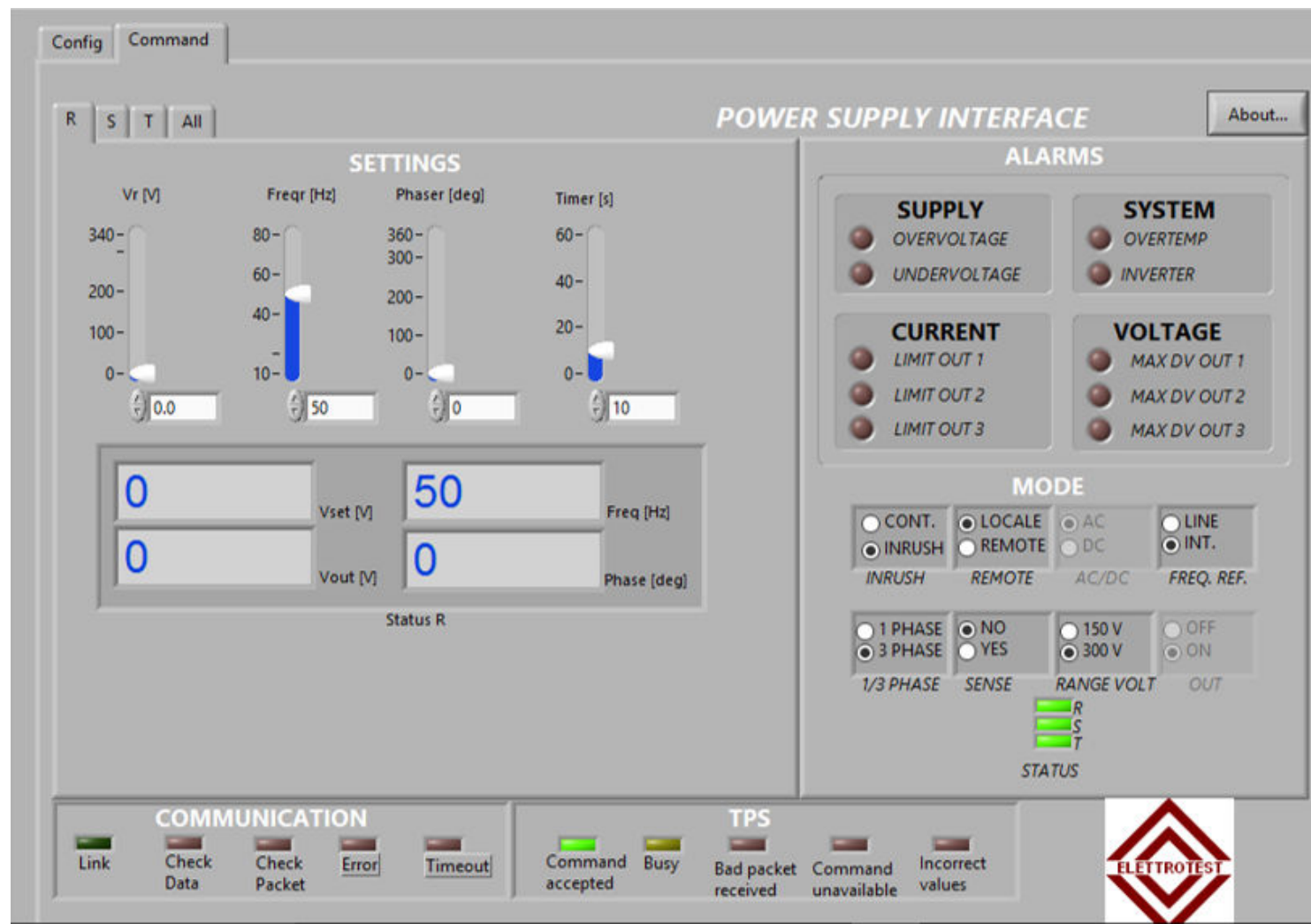


Recovery of Output Waveform with Triac Load





Power Supply Interface





Power Sources vs Motogenerator vs Autotransformer

	Electronic Power Supply	Motogenerator	Autotransformer
Voltage programmability	Yes	Yes	Fixed value
Double ranges	Yes	No	Yes fixed
Frequency programmability	Yes	Yes (50/60)	No
Stability	Excellent	Bad	Bad
Efficiency	Good	Not good	Good
Compensation of drop voltage	Excellent	Bad	No
Voltage/frequency ramp	Yes	No	No
Short circuit protection	Yes	No	No
Inrush Capability	Yes	Yes	Yes
Output impedance	Very good	Bad	Bad
Noise	Good	Male	Good

RMIS: Resistance Meter Inverter Supply

The logo for Elettrotest features a large, stylized diamond shape composed of three nested chevrons pointing upwards and three nested chevrons pointing downwards. The word "ELETTROTEST" is written in a bold, dark red, sans-serif font across the center of the diamond.

ELETTROTEST

Technical Guide



Main Specifications

- Ø Rack 4U - 19" (483x430x178mm)
- Ø Approx. 20Kg
- Ø 7" Touch screen display

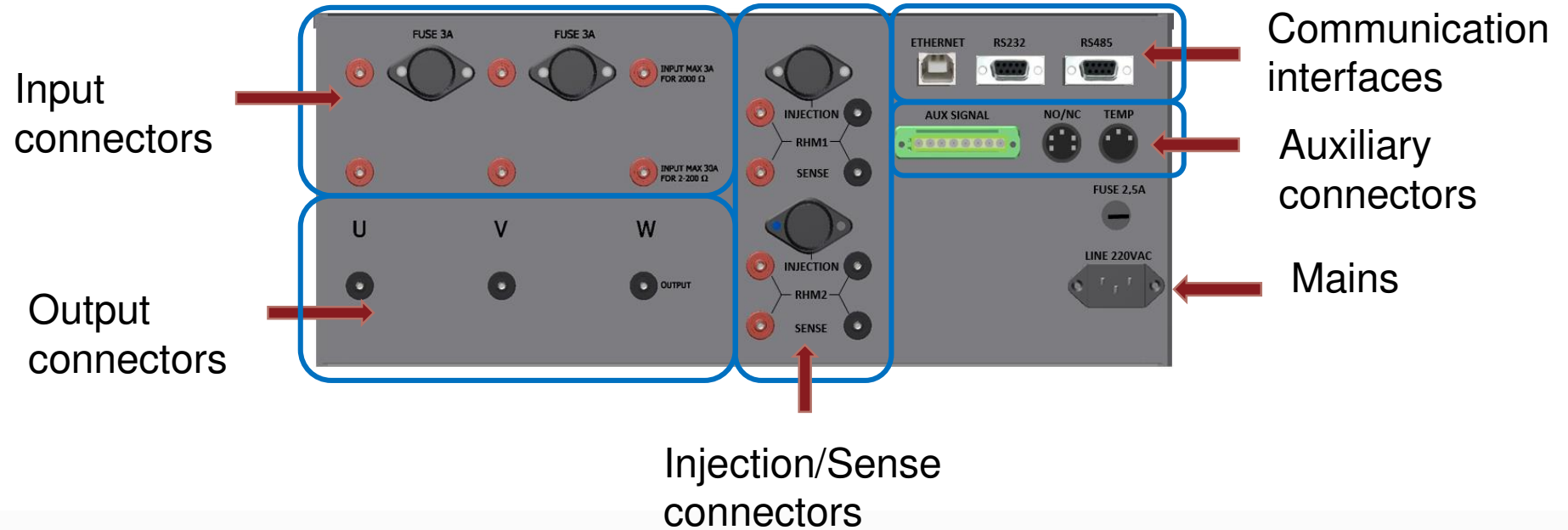




Front Panel :



Rear Panel:





Key Features

Measure the resistance (temperature) of the motor winding, transformer winding, etc..

Measure while the EUT is running

- **Communication via Serial/LAN interface**
- **Two independent channels of measure**
- **Bypass function**
- **Data logging on USB Key**
- **ModBus protocol available**



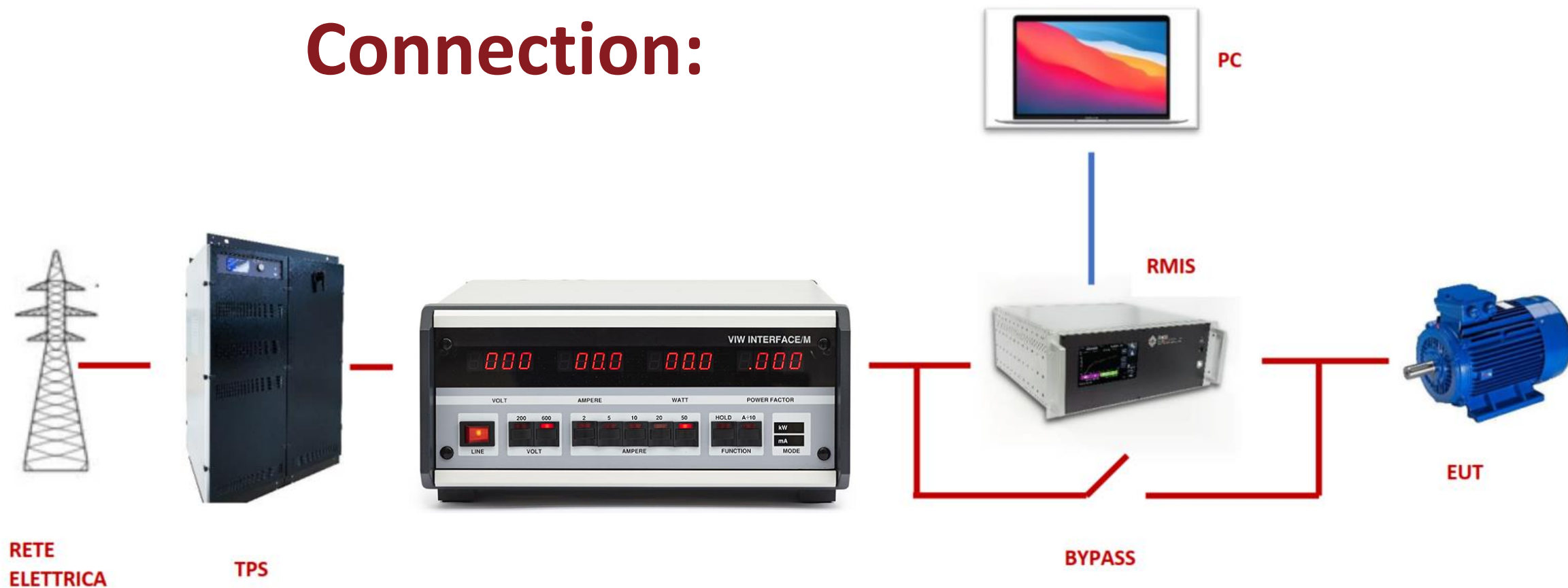
RMIS 30A/2



***Available New RMIS3A/2!**

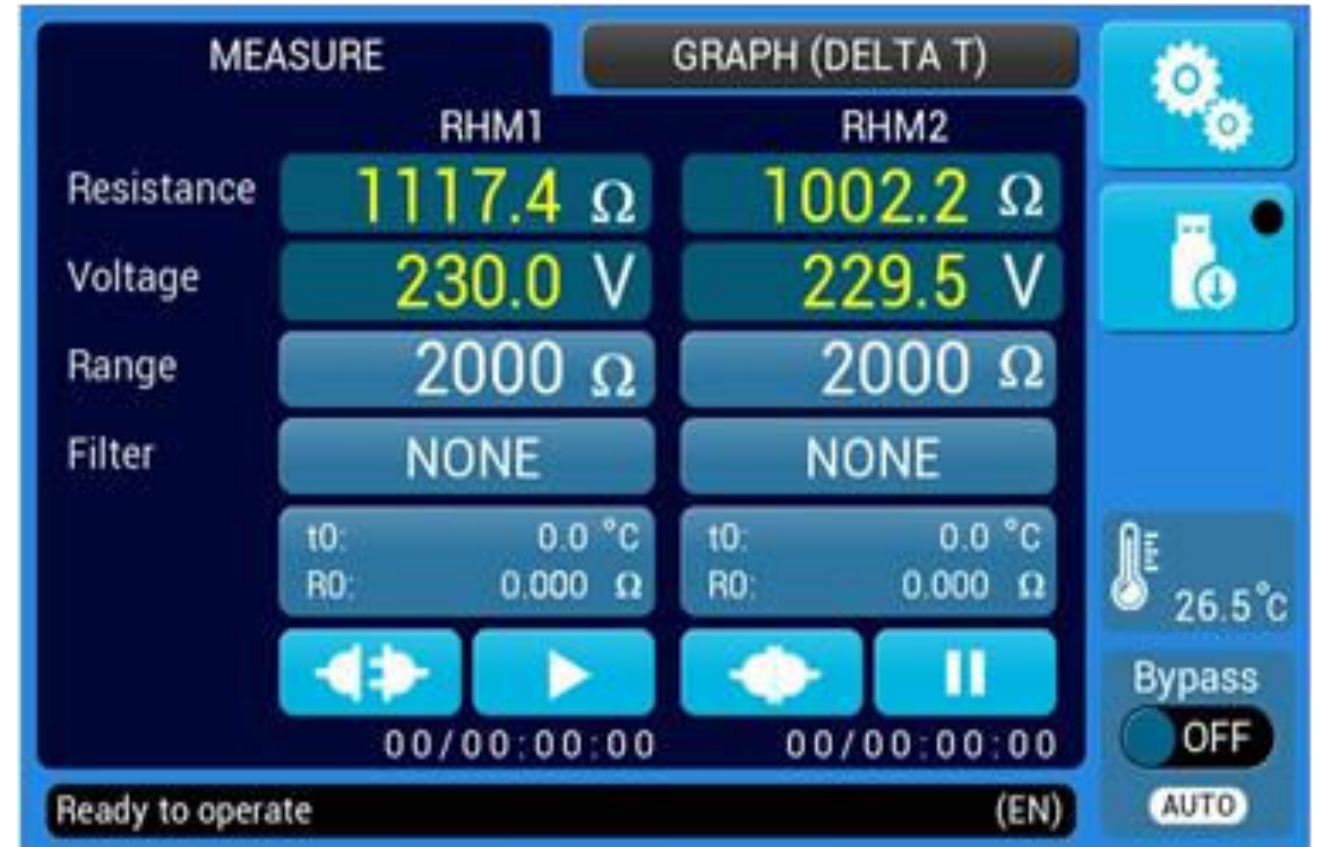
ALIMENTAZIONE / SUPPLY		
Ingresso alimentazione	230 Vac $\pm$ 10%	Input supply
Frequenza di ingresso	50 Hz / 60 Hz	Input frequency
Fusibili	Supply = 5x20 2,5A Fast	Fuses
RANGE FUNZIONAMENTO / WORKING RANGE		
Resistenza	20, 200, 2000, 20000	Resistance
Tensione	500Vrms 40 $\div$ 400 Hz linear reducing 12.5V/Hz until 10Hz (PWM 4 - 20 KHz)	Voltage
Corrente	3 A (1,5A*) 20 $\div$ 400 Hz 30 A (15A*) 20 $\div$ 400 Hz * reduced linearly until 10 Hz	Current
Temperatura	0 $\div$ 50° C Linearity 0.05°C (with linearized probe) Accuracy 0.5°C	Temperature
Isolamento	2000 Vdc, 60 sec	Insulation
SPECIFICHE MISURA/ MEASUREMENT SPECIFICATION		
Precisione	0.5% f.s. - 12 bit resolution (0.025%)	Accuracy
Corrente di iniezione DC	100mA - 20 f.s. 100mA - 200 f.s. 10mA - 2000 f.s. 1mA - 20000 f.s. Disconnect with bypass on	DC injected current
Capacità di disaccoppiamento nel bypass	6,800 uF @3A line 60,000 uF @30A line Short circuit with bypass on	Decoupling capacitor with bypass
Protezioni	3 A line - limiter and fuse (10X38 AM-4A) 30 A - voltage detect with BYPASS	Protections
Filtraggio lettura resistenza	None : Light Hw LP filter only to remove HF freq variation Low : Hw LP filter - 0.2 Hz Medium : Sw filter - remove big variation High : HW LP + SW	Filtering resistance reading
CONTROLLO REMOTO / REMOTE CONTROL		
Interfaccia	Ethernet, RS-485	Interface
Protocollo	Modbus, Modbus/TCP	Protocol

Connection:



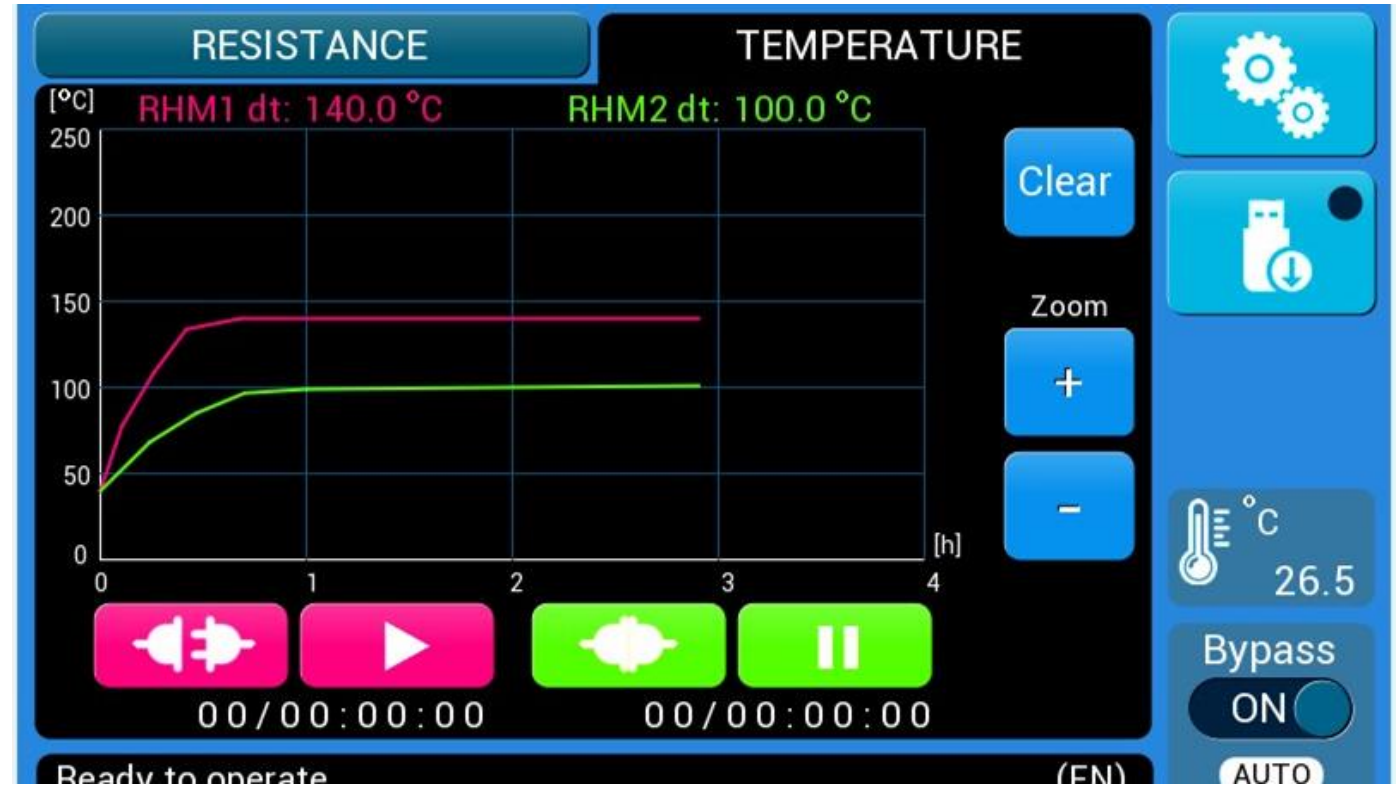
Operating Procedure:

1. Connect the RMIS as per the diagram in the manual
2. Select the resistance range and the level of filtering
3. Resistance measurement with motor off – take initial temperature and resistance values
4. Set bypass ON
5. Switch on the motor
6. Set bypass OFF
7. Start the measurement



Graphs and data logger:

- ✓ Resistance
- ✓ Temperature
- ✓ ΔT
- ✓ Data Logger on USB



FAQ



Where I can find all the informations?

Our website: www.elettrotestspa.it/elenco-prodotti/.

What is the typical impedance of the ac-sources?

It varies according to the models.

Which is the maximum programmable voltage?

Standard maximum programmable voltage is 300V Line to Neutral , 520V Line to Line. Custom Range can be required

Which is the maximum programmable frequency?

It varies according to the models. For RPS CPS TPS HPS series is 80Hz in local mode and 320Hz in remote mode with derating of characteristic. For XPS series is 1000Hz

Is it possible to program the angle and value of each voltage vector?

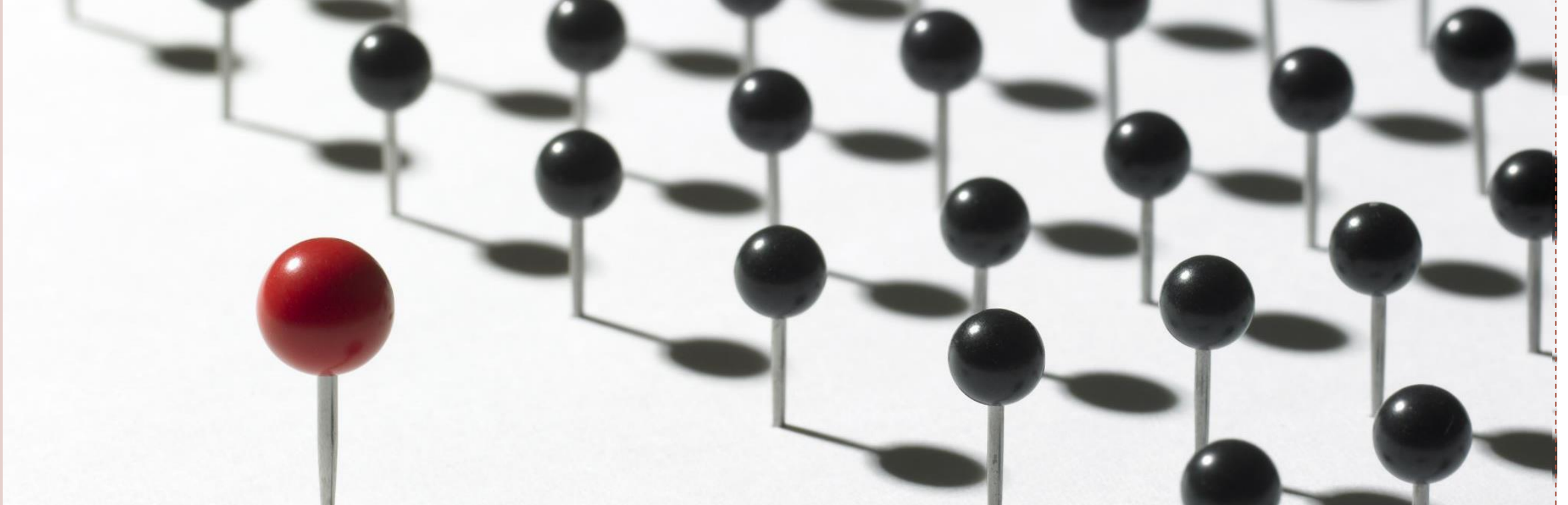
Yes, in remote mode on CPS/T - TPS/T - XPS/T .

Is it possible to have a floating output?

Yes, adding the floating PE option.

Questions about Power Sources	Response
Is it possible to preset the value of voltage and frequency?	Yes, It is. See the Manual
Which are the available protocols?	• Elettrotest protocol • SCPI protocol • ModBus protocol (only on new display versions)
Is it possible to set a limit current?	Yes, It is possible to program rms and pick limit (only on new display versions).
Which family of power source have the lower impedance?	XPS family
What does it mean «isolated» power source ?	It means that the output is galvanically isolated from the Input with a transformer.
Which are the mandatory protection devices required in Input and Output?	See manual. Power source requires Magneto-thermal circuit breaker and residual-current device (RCD)

Questions about RMIS	Response
How many models of RMIS?	We have two models: RMIS 30A/2 ed RMIS 3A/2.
How does the AUTO bypass work?	Set bypass ON during the start of the motor and bypass OFF after the start.
Which are the provided accessories?	We provide: fuses, temperature probe, USB key.
Which is the accuracy of the resistance (temperature)?	0,5% f.s.
Ranges?	2-20-200-2000 ohm.
Filtering available?	None: Low pass filter light Low: Low pass filter Medium: Software filter High: Low pass filter + Software filter



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