

FP-SURGE 100M2

3 Phase Coupling / Decoupling Network for Surge

■ **IEC and EN** standards cover testing of 3 phase AC and DC power ports. They include recommendations for the coupling and decoupling component values within the CDN. These values are largely based on the European model for AC power lines. FP-SURGE 100M2 includes all the IEC and EN requirements with manual coupling path switching. FP-SURGE 100M2 EUT output has specially designed HV terminals, which provide enhanced personnel safety in relation to the high voltage impulse.

In December 2005 the **IEC 61000-4-5 Edition 2** was approved. This new edition 2 defines the maximum voltage drop due to the decoupling inductors. This requires different decoupling inductors dependant on the EUT current. The higher the current the lower the inductance must be. The FP-SURGE 100M2 is compliant to the edition 2.

The **ANSI** standards **C62.41** and **C62.45** contains much the same information as the IEC but based around the American experience with AC power lines. No requirements about voltage drop across the decoupling inductors are included.

Impedance of the low voltage mains supply to earth is simulated by the addition of a 10 ohm resistor for IEC tests. ANSI has NO series resistor in the impulse path This difference comes from the practice in Europe of connecting ground to neutral at the distribution transformer, not the power service entry as in the USA. At the FP-SURGE 100M2 correct coupling elements for either IEC or ANSI can be selected by the user.



■ Features

- ☑ **Combination wave** 1.2/50us - 8/20us
- ☑ **Ring wave** 100kHz
- ☑ **8kV** impulse voltage
- ☑ Line voltage **690Vac** phase-phase
- ☑ **100A** EUT Current per phase
- ☑ **Phase angle** synchronization for each coupling path
- ☑ **Manual selection** of coupling elements and coupling path

■ Benefits

International application – Specifically designed to meet and exceed the requirements of IEC, EN, and ANSI tests for power line applications.

Synchronization path Switching - The FP-SURGE 100M2 synchronizes impulses with the selected coupling path.

Safe and Easy - The interlocked HV connections allow your operators to test safely and easily.

Full 100A capability – Both AC and DC loads up to 100A per phase can be connected through the FP-SURGE 100M2.

Sturdy and Reliable – Careful component selection ensures that the FP-SURGE 100M2 will continue to operate under the most strenuous testing regime.

Upgrade possible - Previously delivered FP-SURGE 100M couplers can be upgraded in our factory.

■ Applications

- ☑ Single & Three phase power line systems
- ☑ **IEC 61000-4-5 Edition 1 & 2** Power line testing
- ☑ IEC 61000-4-12 Power line testing
- ☑ ANSI C62.41 & C.62.45 Power lines
- ☑ Many IEC & EN Product standards

■ Technical Specifications

Impulse voltage	max. 8kV	EUT Connections	HV Safety terminals
Impulse current	max. 4kA	Phase Sync.	Follows coupling path
Maximum AC Voltage 50 / 60Hz	690V (phase - phase) 400V (phase - neutral)	Phase Sync accuracy	$\pm 1^\circ$
Maximum DC Voltage	110V	Power Supply	85 – 264V 50/60Hz
Current Ranges AC and DC for IEC 61000-4-5 Ed. 2	0...25A 25...60A 60...100A	Current Ranges AC and DC for IEC 61000-4-5 Ed. 1 and ANSI C62.41	0...100A
Residual voltage at Test supply input	max. twice the peak value of the rated line voltage	Voltage drop due to the decoupling inductors	$\leq 10\%$ with max. current and $\cos \varphi \geq 0.7$

Weights and Dimensions (W x H x D, net weight)

FP-SURGE 100M2	60 x 100 x 190 cm	220 kg
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■ FP-SURGE 100M2 Art. No. 249018 Scope of supply

- Qty. 1 FP-SURGE 100M2
- Qty. 1 HV cable to connect the generator
- Qty. 1 Coaxial cable 1m
- Qty. 1 Earth bonding cable 1m
- Qty. 1 10A Mains Cable (country specific)
- Qty. 1 Users Manual

■ Upgrade for previously delivered FP-SURGE 100M Art. No. 249019 Scope of supply

The upgraded coupler contains:

- all the necessary components for the new current ranges
- provides a better synchronisation circuit
- has also DC capability
- new user manual

■ Options and Accessories

- PIM 100 Combination Wave tester according to ANSI C62.41 and IEC 61000-4-5.
Art. No. 249902
- PIM 110 100kHz Ring wave tester according to ANSI C62.41 and IEC 61000-4-12
Art. No. 249903
- WinFEAT&R Control and reporting software. Runs under windows 98, NT, ME, 2000, XP
Art. No. 249970

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