DATA SHEET

AC volt-amperometric clamp

FE03

The FE03 unit is equipped with the necessary electronic circuitry for conditioning and the AD conversion of current and voltage signal. The RMS and active power values are obtained through digital processing of a dedicated DSP (Digital Signal Processor). The digital output data (16/32 bit) are made available externally via a galvanic isolated RS485 serial bus.

The number of FE03 devices connected together on the communication bus depends essentially on the power capacity of the master; if the master is a DL02 datalogger this number is limited to 16.

As each analog channel is individually calibrated with the calibration curve stored in EEPROM, every FE03 is fully interchangeable. In particular, the current clamp is calibrated linearizing the response throughout the operating range so to provide maximum accuracy in all conditions.

The communication bus is accessed via an high quality push-pull connector, each device also makes available an additional connector so to allow a daisy chain scheme with multiple devices. The instrument power supply is provided through the communication bus, there is no battery on board.

INT11 adapter enables DL01 dataloggers to interface one or more FE03/04 devices. DL02 dataloggers can be provided with the INT11 interface embedded onboard.

Among the accessories available for the voltage channel are offered probes with test clips, alligator clips and the exclusive Optivelox's magnetic hooking probes, able to establish electrical contact directly above the screws of the electrical terminal without requiring any preliminary operation. All accessories are designed to operate with maximum safety.

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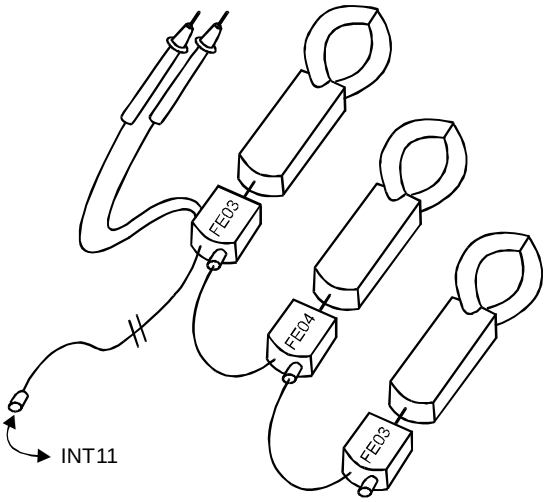

Example of cascade connection between 3 FE03/04 devices

Ordering codes:

Code	Part	Description
8802750	FE03	AC volt-amperometric clamp
8802740	INT11	Interface DL01-FE03/04
2400185	-	Adapter cable pair 2mm/4mm L=50 cm blue/black
2400187	-	Test clips pair CAT III 1000V blue/black
2400189	-	Alligator clips pair CAT IV 1000V blue/black
8802421	-	Magnetic hooking probes 4mm L=50cm blue/black

Technical specifications

VOLTAGE
Range: 0.0...600.0 Vrms (TRMS)
Resolution: 0.1 Vrms
Accuracy: ±(1% rdg + 2 dgt) @50Hz, V>50V
Input impedance: 2 Mohm

CURRENT
Range: 0.0...400.0 Arms (TRMS)
Resolution: 0.1 Arms
Accuracy(1): ±(1% rdg + 2 dgt) @50Hz ±10%

ACTIVE POWER
Range: 0÷240000 W
Resolution: 1 W
Accuracy(1): ±(1.5% rdg + 2 dgt) @50Hz ±10%, V>50V, I>4A

PEAK VOLTAGE(2)
Range: 0.0...850.0 V
Resolution: 0.1 V
Accuracy: ±(5% rdg + 2 dgt) @50Hz ±10%
Input impedance: 2 Mohm

PEAK CURRENT(2)
Range: 0.0...570.0 A
Resolution: 0.1 A
Accuracy: ±(5% rdg + 2 dgt) @50Hz ±10%

POWER SUPPLY (Vs)
3.5...5.1 Vdc
28 mA typ

ENVIRONMENT
Reference temperature: 23°±2°C (45% < RH< 75%)
Working temperature: 0°...40°C (RH < 85%)
Storage temperature: -10°...60°C (RH < 95%)
Max height of use: < 2.000 m

DIMENSIONS
160 mm x 75 mm x 40 mm (Clamp)
35 mm (Internal jaw diameter)
40 mm x 40 mm x 20 mm (Front End)

WEIGHT
~250 g

COMPLIANCE
Safety: EN 61010-1, EN 61010-2-031, EN 61010-2-032
Category of measure: CATIII 600V
Pollution degree: 2
Double insulation ⧈
RS485 isolation voltage: 2500 Vrms

(1)
The specified accuracy refers to measurements made at the reference temperature with the conductor at the center of the jaw. The measured value will increase by about 0.5% with the conductor near the opening of the jaw and will drop by about 0.5% with the conductor on the opposite side.

(2)
Optional channel.

Under a policy of continuous improvement, Optivelox reserves the right to make unannounced changes to the specifications of the products described in this document.