Exa Pro D6 & 96 RS485

- **High Performance with 0.5S Accuracy**
- **Harmonic and Power Quality Analysis**
- **Integrated Datalogger**
- **Double Insulation Suitable for Harsh Environments**

The **Exa Pro D6 and 96** are extremely versatile and precise microprocessor-based **Harmonic & Power Quality Energy Analyzers**, featuring double internal insulation, making them suitable for harsh environments and for monitoring high-current loads. **High 0.5S accuracy class** for Active Energy, **THD and TDD** measurement of voltage and current, neutral current, maximum and minimum voltage, maximum current and power, and active energy for each phase. Continuous sampling of voltage and current waveforms with extremely high resolution, thus ensuring maximum accuracy even in the presence of rapidly variable loads (e.g., spot welders). Depending on the version, it measures **individual harmonics** up to the 31st order and **power quality** with functions related to the EN 50160 standard (peaks, dips, interruptions, and harmonics) and EN 61000-4-30.

Exa Pro is equipped with an **RS485 slave port** for data reading via the standard **Modbus RTU** protocol or for integration into an existing Electrex monitoring network. Thanks to its high-capacity memory, it allows for the **implementation of multiple functions via PUK codes** (even after commissioning) and its architecture allows for **firmware updates or modifications via remote upload.** It features an **integrated datalogger** for pre-set measurement campaigns of the main parameters: total and phase energy (load curve), frequency and voltage, current, total and phase power, voltage and current harmonics, and voltage events (Power Quality). It is available in various versions with **digital and/or analogue inputs/outputs**, or with **SIO (Sensor Input Output) expansion bus** for the integration, at any time, of additional modules (**Milli Pro**) with digital and/or analogue inputs/outputs and/or environmental parameter sensors (various combinations up to 4 Milli Pro I/O and Sensor).

Versatile in application

The Exa Pro D6 and 96 are suitable for monitoring any type of load and for applications on any type of network: three-phase, 3 and 4 wires, symmetrical or asymmetrical, balanced or unbalanced, two-phase, up to 3 single-phase lines, low and medium voltage, with 1, 2 or 3 CTs as well as for measurements on 2/4 quadrants (import/export). Keyboard programming allows you to set all operating parameters such as the RS485 port, network type, LV/MV, CT ratio and any VTs (free value), integration time and, depending on the version: digital or analog inputs/outputs, environmental sensors and alarms (thresholds, delay and hysteresis). The programming system is password protected against unwanted changes.

Simplicity

The Exa Pro D6 and 96 are equipped with a graphic LCD display (dot matrix) with white/blue LED backlighting and adjustable contrast. Simultaneous reading of 4 or more measurements and their identification symbol with high-visibility characters.

The 6-key joystick keyboard (in-line for the Exa 96) allows for simple and rational use of the instrument, while the page displayed upon power-up is user-definable. On the front, two red LEDs for calibration control pulse with a frequency proportional to the active and reactive energy imported (one for Active Energy for the Exa 96). Under the symbol next to Electrex, a red LED indicates operation, while 2 LEDs (one red and one green) under the white band indicate communication activity on the RS485 port.

Different versions for every application

Exa Pro instruments are available in two versions:
Exa Pro D6: for DIN rail installation
Exa Pro 96: for front panel mounting (96x96)
Thanks to **flexible and expandable firmware**, each model can be configured with different features, based on specific electrical load monitoring needs.
Below are some available versions (others can be freely configured using the code creation table):

- **Exa Pro (basic):** Real-time THD and TDD measurements of voltages and currents, neutral current, average, minimum, and maximum voltage, current, and power values. Includes total and single-phase energy counters. Phase sequence detection and configuration function. Up to 4 operating times and 8 alarms, configurable even with complex logic.
- **Exa Pro H:** Adds real-time analysis of individual harmonics up to the 31st order of the 3 phase voltages and 3 line currents to the previous measurements.
- **Exa Pro H PQ Log Energy:** real-time measurements, harmonic analysis, and integrated data logger for recording total and phase energy counters and voltage events (interruptions, sags, and swells) useful for monitoring power quality.
- **Exa Pro Full:** complete version with all the advanced PUK features (see dedicated section). Real-time analysis and recording (data logger) of 4 harmonic components, total and phase energy counters (load curves), voltage events (interruptions, sags, and swells), and average, minimum, and maximum voltage, current, power, and frequency values.

IEC EN 50470 and 62053-22

All versions of Exa Pro meet the essential requirements of IEC 50470-1 + 50470-3 as well as 62053-22 as required for white certificates.

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Enabling additional features via PUK activation codes

The following functions can be remotely implemented in Exa Pro instruments by ordering the PUK Pro Upgrades:

- **Pro Upgrade H:** Real-time harmonic analysis and display.
- **Pro Upgrade Log PQ:** Detection and storage (datalogger) of voltage events (interruptions, voltage sags, and swells) useful for monitoring power quality.
- **Pro Upgrade Log Energy:** Storage (datalogger) of total and phase energy counters (load curves).
- **Pro Upgrade Log H:** Storage (datalogger) of average and maximum amplitudes of four voltage and current harmonic components.
- **Pro Upgrade Log Voltages & Currents:** Storage (datalogger) of average, minimum, and maximum voltage and current values.
- **Pro Upgrade Log Powers:** Storage (datalogger) of average, minimum, and maximum power values.
- **Pro Upgrade Log Options:** Data logging of internal options (digital, analog inputs/outputs, etc.) and/or Milli devices connected to the instrument's SIO bus (see the dedicated section).
- **Pro Upgrade Advanced Alarms:** Enables the ability to generate even complex alarms using internal logic (see Alarms section).
- **Pro Upgrade Full Bundle:** Puk bundle that enables all the previous features.

True-RMS and measurement accuracy

The true-RMS measurements, obtained by continuously sampling (on intervals of 10 periods at 50 Hz and 12 periods at 60 Hz) the voltage and current waveforms, and the automatic compensation of the internal amplifier offsets ensure maximum precision regardless of the variability of the loads over time (e.g. spot welders), the signal level and the environmental operating conditions. **The 64-bit resolution** also ensures high accuracy of the energy measurement even in the presence of small loads (e.g. equipment in stand-by).

Harmonics Measurement up to 31st order

Exa Pro H measures the individual harmonics up to the 31st order of the 3 phase voltages and the 3 line currents. The harmonics calculation is performed with FFT method in amplitude and phase.

Power Quality (EN 61000-4-30): Events Log

Exa Pro PQ detects and stores various voltage events with a period resolution (and updates every half-period), useful for monitoring energy quality (Functions also related to the EN 50160 and EN 61000-4-30 standards). The following information is stored for each event: date/time indication, type of event, phase involved, duration and min/max voltage value reached. The parameters for defining the anomalous event are programmable. Event types:

- **Voltage dip (dip)**
- **Overvoltage (swell)**
- **Interruption**

Indication of the phases sequence

Exa Pro detects the phase sequence and allows you to sort it in case of wiring errors. The correct phase sequence is L123.

Measures

Parameter	Type	Range
Voltage	U L-N	20,0V...400 kV
	U L-L	
	U L-N Min	
	U L-L Min	
	U L-N Max	
	U L-L Max	
Current	I	10 mA …10,0 kA
	I Max	
	I AVG *(1)*	
	I MD *(1)*	
Power Factor	PF	0,00ind..1,00..0,00cap
Frequency	F	45 … 65 Hz
Phases sequence		123 / 132 / L---
Harmonic distortion	U THD L-N	0…199,9%
	U THD L-L	
	I THD	
	I TDD	
Active Power	P	± 0,00…1999 MW
	P Max *(3)*	
	P AVG *(2)*	
	P MD *(2)*	
Reactive Power	Q Ind	± 0,00…1999 Mvar
	Q Cap	
	Q AVG Ind *(2)*	
	Q AVG Cap *(2)*	
	Q MD Ind *(2)*	
	Q MD Cap *(2)*	
Apparent Power	S	± 0,00…1999 MVA
	S AVG *(2)*	
	S MD *(2)*	
Operating time (4)	h, h/100 *(4)*	0,01…99.999,99 h
Active Energy	Ea Imp *(5)*	0,1 kWh…100 GWh
	Ea Exp *(5)*	
Reactive Energy	Er Ind Imp *(5)*	0,1 kvarh…100 Gvarh
	Er Cap Imp *(5)*	
	Er Ind Exp *(5)*	
	Er Cap Exp *(5)*	
Apparent Energy	Es Imp *(5)*	0,1kVAh…100 GVAh
	Es Exp *(5)*	
Pulse Counter	CNT *(6)*	

Exa Pro H - Single Harmonics

Parameters [9]		Management
Harmonics analysis	H voltage	Value (H01), % (H02-H31)
	H current	Value (H01), % (H02-H31)

Exa Pro PQ - Voltage Events

Parameters [9]	Management
Dips and swells	Events logged in the internal memory with time-stamp
Overvoltage	
Sags and interruptions	

All instantaneous measurements are calculated on 10 cycles, for example 200mS at 50Hz.
(1) Average value on the integration time (1.. 60 min. programmable) and peak (MD).
(2) Average value (moving average) both in Import and Export on the integration time (1.. 60 min. programmable) and peak (MD) i.e. the maximum average value.
(3) Maximum Power values both in Import and Export.
(4) Non-resettable life time and four operating times.
(5) The energies both in Import and Export are displayed in 9 digits (one decimal). The internal counters are stored with 64-bit resolution that ensures a minimum definition of 0.1 Wh and a maximum count of 100 GWh
(6) Only for versions with digital inputs or analog inputs
(7) Calculation with FFT method of the harmonics in amplitude and phase up to the 31st for the 3 phase voltages and the 3 line currents accumulated for 10 cycles at 50Hz and 12 cycles at 60Hz, as prescribed by 61000-4-30.
8) Recording of events with date and time, duration of the event, maximum / minimum value. Programmable thresholds EN 50160 and EN 61000-4-30.

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Serial communication

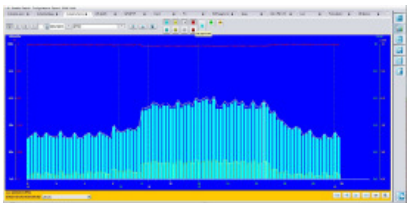
Exa Pro is equipped with an RS485 serial port with overvoltage protection. The communication protocol used is the Modbus-RTU “full compliant” suitable for communications with PLC and SCADA programs. The processed data are read as numeric registers composed of mantissa and exponent in IEEE format. A transmission of up to 115,200 bps (default 38,400) with max. 125 requestable registers (equal to approximately 62 parameters) ensure an unsurpassed dialogue speed.

Built-in memory

Exa Pro s equipped with an 8 MB flash memory for recording various information divided into files, each file can contain a maximum of **1024 records** and is characterized by a pre-established sampling frequency. The memory is also used for recording energy quality events (see paragraph **Power Quality**), instrument start-up and shutdown and configuration changes (max 128 events in memory). The memory is divided into files readable by **Modbus port** via the **Energy Brain Pro** software and/or third-party systems.

Load profiles and consumption/production data

Exa Pro continuously stores consumption/production and power data, organizing them into daily files, each of which contains all the information needed to build the load diagram and study the trend of consumption/production (downloadable from the Modbus port with the Energy Brain Pro software). The stored data can be viewed by day, week, month and year using the Energy Brain Pro software:



Integrated Clock

Exa Pro is equipped with a real-time astronomical clock with rules for the automatic transition from solar time (Standard Time) to daylight saving time (Daylight Saving Time) and vice versa and with the configurable management of Coordinated Universal Time (UTC).

Alarms

Exa Pro depending on the version) is equipped with **8 alarm channels that can be associated via logical combinations (or/nor/and/nand/xor/xnor) to 8 configurable comparators;** the alarms can be used to drive digital outputs and/or to generate states on Modbus registers. Each comparator can be associated with any of the available parameters (e.g. voltages, currents, power, etc.) and can be configured either as a min/max threshold or as a comparison between two variables (e.g. voltage imbalance). All alarm outputs can also refer to the same parameter to have multiple alarm thresholds. It is possible to set the activation and deactivation delay of each alarm (from 1 second to 99 minutes), the hysteresis (in % of the threshold value) and the polarity of the output contact (NA/NC). The alarm status is always available on the serial line (via Modbus “coils”). Given the numerous combinations available, only a part of the alarms can be programmed via keyboard while they can be completely programmed via Energy Brain Pro software or via serial line via “holding registers” with Modbus protocol.

Operating time counters

Exa Pro can record the life time of the instrument and are equipped with four operating time partial counters that can be activated by internal alarms through configuration via the Energy Brain software; for example, to manage the operating time of a user/machinery when it is operating, when it is in standby and when it is off. The partial operating time counters can be reset.

Types of inputs/outputs modules of Exa Pro

The Exa Pro an be equipped with internal modules with inputs/outputs, the main types available are as follows:

- **Standard:** No built-in inputs or outputs
- **4DI 4COMMON:** 4 digital inputs and separate commons
- **4DO 4COMMON:** 4 digital outputs and separate commons
- **2DI 2DO 4COMMON:** 2 digital inputs and 2 digital outputs
- **2AO4-20mA: 2 analog outputs 4-20mA**
- **4AI***: with 4 analog inputs 0÷10V (4-20mA)*
- **Bus SIO:** port for integrating Milli Pro I/O and Milli Pro sensor expansion modules

Power supply and Special versions on request

All the versions of **Exa Pro** can also be requested in other hardware configurations such as with different power supply:

- Transformer type rated 230/240 Vac (Standard)
- Transformer type rated 110/120 Vac
- Transformer type rated 400/440 Vac
- Switching type: 15÷36Vac / 18÷60Vdc
- Switching type: 9÷24Vac / 9÷36Vdc
- Switching type: 85÷265Vac/100÷374Vdc (only for 96)

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- **Bus SIO:** port for integrating Milli Pro I/O and Milli Pro sensor expansion modules

Digital inputs

The 2DI or 4DI versions are supplied with opto-isolated digital inputs with separate common terminals and equipped with programmable anti-bounce filter. The inputs are normally used to count externally generated pulses, such as gas meters (a galvanic separator is required according to ATEX regulations), water, piece counters, etc. Maximum sampling frequency 500Hz (2ms). The inputs can also function as remote status indicators (e.g. ON/OFF of machines, switches, etc.). They require an external 10-30Vdc power supply.

Digital outputs

The 2DO or 4DO versions are equipped with opto-isolated transistor outputs with a capacity of 27 Vdc 27 mA according to DIN 43864. The outputs are programmable for the transmission of pulses, including weighted ones, or as outputs of internal alarms (see Alarms paragraph) or as output units controlled remotely via serial line and Modbus commands.

Analog inputs

The 4AI version is equipped with four analogue inputs -10÷10V (compatible 0÷10V, 0÷5V, -5÷5V, 4÷20mA with 200 ohm resistance) available to integrate measurements coming from field sensors.

Analog 4-20mA outputs

The version 2AO4-20mA are equipped with 2 galvanic insulated analogue outputs 4-20 mA or 0-20 mA providing an extremely high accuracy and signal stability. The outputs are active for resistor loads up to 250 ohm, for higher loads an external power supply (12Vdc) will be needed (up to 750 ohm).

The outputs ensure a response time of max. 200 ms. Each output can be associated to any of the parameters.

SIO (Sensor Input Output) Bus Communication

The **Exa Pro SIO** version is equipped with a SIO Bus port that allows the integration of expansion modules from the Electrex Milli Pro I/O range with digital and/or analog inputs/outputs and/or Milli Pro Sensor environmental parameter sensors (various combinations up to 4 Milli Pro). The maximum overall distance of the SIO Bus is 20 m..

Additional inputs/outputs via Milli Pro I/O

The **Exa Pro SIO supports Milli Pro I/O RJ Box**, expansion modules with digital or analog inputs/outputs equipped with RJ45 ports for quick connection to Electrex devices with SIO BUS. The input and/or output circuits require external power supply (e.g. 12Vdc or 24Vdc). Black box size: 38x73x20 mm.

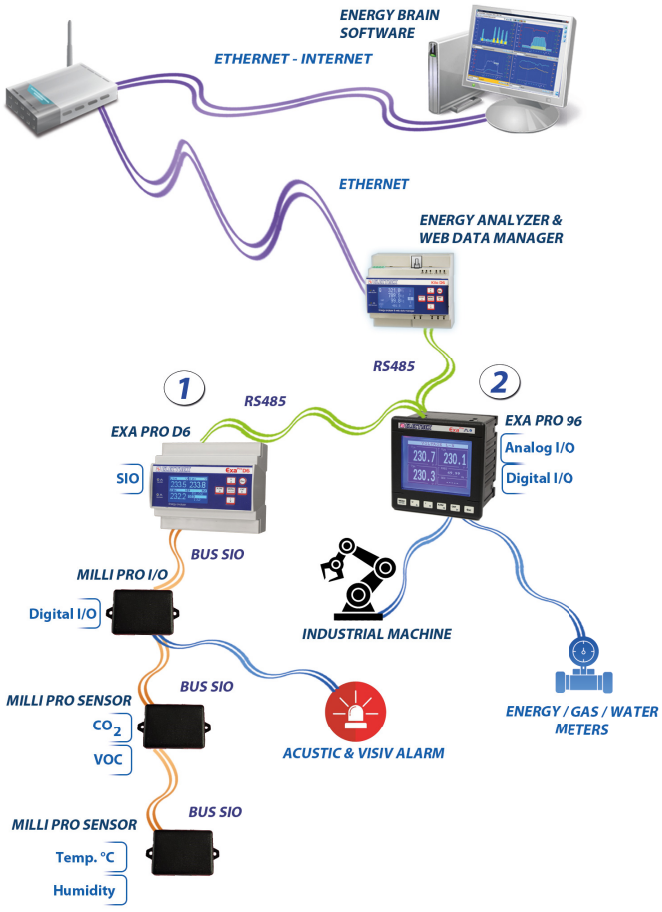
Environmental measurements using Milli Pro Sensor

The **Exa Pro SIO supports Milli Pro Sensor environmental sensors**. Up to 4 sensors can be connected to the same Bus with various combinations. Different sensors are available such as Temperature, Humidity, Lux and air quality parameters. The maximum total distance of the SIO Bus is 20 m.

Electrex Monitoring Network Example with Exa Pro

In the image below, two examples of Electrex monitoring networks with **Exa Pro** D6 and 96 are shown, both Exa Pro are connected in RS485 subnet to an Electrex Net instrument, which acts as a Master Gateway. Looking in detail:

1. The Exa Pro D6 is equipped with a SIO BUS, to which both Milli Pro I/O with digital inputs/outputs and Milli Pro Sensor environmental sensors (Temp, Hum, Lux etc.) are connected.
2. The Exa Pro 96 is equipped with digital and/or analog inputs/outputs for counting pulses from existing meters (Energy, Gas, Water etc.) and for carrying out commands for machinery or alarms.



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The Energy Brain 7.x and PRO 7.x software (additional option)

Energy Brain is the software created for the creation of instrument networks, even very complex ones, both locally and remotely. It is suitable for application with all Electrex instruments equipped with a communication port and provides all the necessary functions for **the monitoring and accurate management of energy efficiency** (consumption / production of electricity, gas, water, etc.), of the **environmental** (temperatures, humidity, brightness, CO2, etc.) and **process parameters**.

MAIN FEATURES

Configuration

The available options allow maximum flexibility in adapting the software to the network of instruments (even to different types of networks connected simultaneously) and to the needs of the operator.

- Remote instrument configuration (CT, TV, alarms, etc.)
- Network configuration (per instrument, per customer, in groups, per location) with autonomous setting of the type of local connection (direct RS485, Ethernet, E-Wi) or remote (Internet, Wi-Fi) and of the communication parameters (speed , etc.).
- Configuration of the data download frequency divided by location, by customer, on a daily, weekly or monthly basis via programmable agenda.

Display of graphs and consumption / production curves

- Graphs of daily, weekly, monthly, yearly power curves.
- Graphs of daily, weekly, monthly, yearly consumption curves.
- Electrex environmental sensor graphics and / or commercial transducers with pulse / analog output (light, temperature, gas, calories, etc.).
- Graphs of powers, power peaks and energies divided by tariffs.
- Up to 4 simultaneous graphs
- Export and printing of graphs and numerical data.

Parameter display

- Online display of all the measurements provided by each of the instruments in the field.

Data storage

- Automatic or manual download of power, energy and other variables data from connected instruments and automatic archiving in PostgresSQL® database.
- Data export to other DBs via ODBC module or txt or xls format.

Tariffs

- Data management by tariffs
- Tariffs and calendar configuration editor

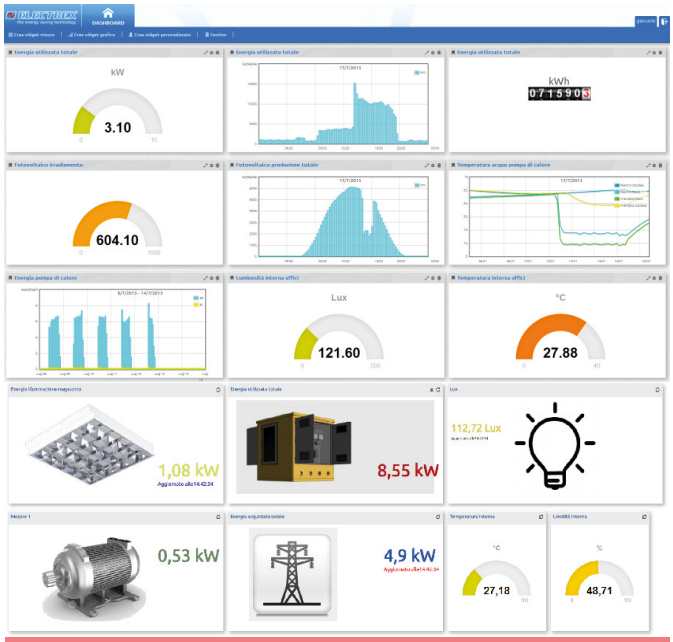
Virtual and Multiple Channels

- Creation of virtual channels that is “groups” of instruments (example “summation” of various departments) and their display, in graphic form, in the same way as a physical channel
- Creation of multiple channels to be able to view overlapped graphs of multiple instruments for quick comparison.
- Insertion of variables and mathematical formulas, even very complex ones, particularly useful, for example, for simulations.

ENERGY BRAIN CLOUD

Energy Brain Cloud is the software that allows to display and manage via a web browser, on a variety of devices such as PCs, tablets, Smart phones, data, measures and real-time and historical charts acquired by Electrex instruments.
Taking advantage of the technology of cloud computing, users can manage the data collected through a standard Internet browser without installing any software on their computer or mobile device.
Energy Brain Cloud can be used in 4 modalities:

1. **Energy Brain Personal Cloud** is a single-user version that can only be used on the PC where the Energy Brain application is installed.
2. Energy Brain Cloud is installed and managed directly by the end user of the Electrex monitoring networks.
3. A third party (Energy Consultants, Energy Saving Company, associations, etc.). Installs and manages Energy Brain Cloud and makes available to its customers/members the access to their data as a service.
4. Electrex offers to the end users of the monitoring solutions access to their data through Energy Brain Cloud as a service.



Energy Brain PRO 6.x software

For a description of all the additional functions introduced by the PRO 6.x version, refer to the product sheet of the Energy Brain software.
The Energy Brain software is available in various versions according to the functions and the number of channels required.
For more details on the software: *www.electrex.it/en*

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TECHNICAL SPECIFICATIONS

Functional characteristics

Measurement system	True-RMS meas. up to the 31st harmonic	
	2 and 4 quadrant measurement (programmable)	
	12bit A/D converter (6-channel)	
	Continuous sampling of voltage and current waveforms (64 sampling per period, with PLL)	
	Automatic compensation of the offset and of the angle error of the current transformer	
RS485 serial port	Galvanically insulated	
	2.400 to 38.400 bps programmable speed	
	Built-in over-voltage protection	
	Modbus-RTU protocol, full compliant	
Digital Input (depending on type):	Galvanically insulated	
	Programmable functionality: external pulse count, ON/OFF state detection , tariff change-over	
	Programmable 10/100 Hz filter for input glitches (500Hz for versions 2DI 2DO and 4DI)	
	External powered needed	10-30Vdc
	Current absorbed	2 ... 10mA
Digital Output (depending on type):	Galvanically insulated	
	Programmable function: weighted pulse outputs, alarm signaling, control outputs	
	NPN compliant with DIN 43864 (max 27Vdc, 27mA)	
	Or Self-Powered version with a solid state relay (opto-mos) (max 250V 100mA ac/dc)	
Analog 4-20mA output (depending on type):	Galvanically insulated	
	Scale: 0-20mA or 4-20mA (programmable)	
	Update interval: 200 mS	
	Max load resistance:	250 ohm
	Maximum current supplied:	27 mA
	Accuracy: 1% of the reading from 4 to 20mA	

Accuracy

Voltage	0,25% of reading +/- 1 from 40 to 300V, min. reading: 10V
Current	0,25% of reading +/- 1
Frequency	0,02 Hz from 45 to 65 Hz
Power	0,5% of reading +/- 1
Active Energy	Class 0,5S according to CEI EN 62053-22 Class C according to EN 50470-3
Reactive Energy	Class 1 EN 62053-24

Standards

General	EN 50470-1
Static counters	EN 50470-3
Safety	CEI EN 61010-1 CAT III-300V, class 2
E.M.C.	CEI EN 61326-1A
Accuracy	CEI EN 62053-22, EN 50470-1, EN 50470-3
Digital Outputs	DIN 43864
MTBF (100.000 h)	MIL-HDBK-217F

Electrical characteristics

Connection	single-, bi-phase & 3-phase, LT and MT systems, balanced, unbalanced, 3- and 4 wires	
Voltage inputs	Direct	up to 300 Vrms phase-neutral, up to 519 Vrms phase-phase
	Via external VTs	max. 400 kV primary max 300V secondary (programmable)
	Max voltage to ground:	300 Vrms
	Absorbed power	< 0,3 VA
	Input impedance	> 2 MΩ
	Overload	max, 900 Vrms PH-PH for 1 sec.
Current Inputs	External CTs standard	Max 10kA primary ../1A and ../5A secondary Programmable CT value
	Load on the CT	< 0,7 VA
	Overload	max. 40 Arms peak for 1 sec
Auxiliary power supply	230/240 Vac +/- 10% 50/60 Hz	
	115/120 Vac +/- 10% 50/60Hz	
	400 Vac +/- 10% 50/60 Hz	
	15÷36 Vac 50/60 Hz, 18÷60 Vdc	
	9÷24 Vac 50/60 Hz, 9÷36 Vdc	
Consumption	< 2,5 VA	
Frequency	45-65 Hz	
Galvanic isolation	Auxiliary power supply: 4 kV RS-485 port: 1.5 kV Digital inputs and outputs: 1.5 kV Analog outputs 4-20 mA: 1.5 kV	

Mechanical characteristics

Working temperature range	Exa Pro D6	-25/+60 °C
	Exa Pro 96	-25/+70 °C
Relative Humidity	95% R.H. non condensing	
Enclosure	Self-extinguishing plastic material class UL94 V-0	
Protection degree	IP40 (Front panel), IP20 (Terminals side)	
Mounting	Exa Pro D6	DIN rail
	Exa Pro 96	flush mount 96x96
Size	Exa Pro D6	106,3 x 90,5 x 62 mm (6 moduli DIN)
	Exa Pro 96	96 x 96 x 78 mm (Cut out 92x92mm)
Maximum cable section	2.5 mm2 (flexible wire) / 4 mm2 (rigid wire)	
Weight	around 315 g (packaging included)	

Front panel

Display	D6	graphic LCD white/blue with adjustable contrast 100x64 dots, 43x25mm
	96	graphic LCD white/blue with adjustable contrast 240x260 dots, 49x71,8mm
Backlight	White / Blue LEDs	
Keyboard	D6	6-keys joystick
	96	6 linear keys
Calibration LEDs	D6	2 reds for Ea and Er (10,000 pulses per kWh or Kvarh)
	96	1 for Active Energy (10.000 pulses / kWh)
Operation LED:	1 red under the symbol	
RS485 LED:	1 green and 1 red under the white band	

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HOW TO ORDER

EXA PRO	
TYPE	**CODE**
Exa Pro 96 5A	
Exa Pro 96 5A RS485 230-240V	PFAE9-10102-E00
Exa Pro 96 5A RS485 H 230-240V	PFAE9-1H102-E00
Exa Pro 96 5A RS485 H PQ Log Energy 230-240V	PFAE9-1B102-EM0
Exa Pro 96 5A RS485 Full 230-240V SIO	PFAE9-1B1Z2-EMF
Exa Pro D6 5A	
Exa Pro D6 5A RS485 230-240V	PFAE6-10102-E00
Exa Pro D6 5A RS485 H 230-240V	PFAE6-1H102-E00
Exa Pro D6 5A RS485 H PQ Log Energy 230-240V	PFAE6-1B102-EM0
Exa Pro D6 5A RS485 Full 230-240V SIO	PFAE6-1B1Z2-EMF

PRO UPGRADE PUK	
TYPE	**CODE**
Pro Upgrade H (PUK)	PFSU000-01
Pro Upgrade Log PQ (PUK)	PFSU000-02
Pro Upgrade Bundle H & Log PQ (PUK)	PFSU000-03
Pro Upgrade Log Energy (PUK)	PFSU000-10
Pro Upgrade Bundle H & PQ Log Energy (PUK)	PFSU000-11
Pro Upgrade Log H (PUK)	PFSU000-20
Pro Upgrade Log Voltages & Currents (PUK)	PFSU000-21
Pro Upgrade Log Powers (PUK)	PFSU000-22
Pro Upgrade Bundle Log Volt. & Curr., Powers, H (PUK)	PFSU000-24
Pro Upgrade Log Options AI/DI & Sensors (PUK)	PFSU000-23
Pro Upgrade Advanced Alarms (PUK)	PFSU000-15
Pro Upgrade Bundle Full (PUK)	PFSU000-25

MILLI PRO SIO MODULES (only for Exa Pro SIO)	
TYPE	**CODE**
Milli Pro I/O (Input/Output)	
Milli Pro I/O RJ Box 4DI 4COMMON	PFAMR0Z-N0EB
Milli Pro I/O RJ Box 4DO 4COMMON	PFAMR0Z-P0EB
Milli Pro I/O RJ Box 2DI 2DO 4COMMON	PFAMR0Z-Q0EB
Milli Pro I/O RJ Box 2DO Relè Passo	PFAMR0Z-70EB
Milli Pro I/O RJ Box 4AI	PFAMR0Z-R0EB
Milli Pro Sensor	
Milli Pro Sensor Bus RJ Black Box T H	PFAMRHZ-00EB
Milli Pro Sensor Bus RJ Black Box T H L P	PFAMRSZ-00EB
Milli Pro Sensor Bus RJ Black Box T H CO2 P	PFAMDZZ-00EB

For other Milli Pro devices see the related product sheet.

Other versions of Exa Pro

Building code

Example: P F A E $\underline{6}^{1}$ - 1 $\underline{B}^{2}$ 1 $\underline{Z}^{3}$ $\underline{2}^{4}$ - $\underline{E}^{5}$ $\underline{M}^{6}$ $\underline{F}^{7}$

N. DIGIT ^{X}	AVAILABLE VERSIONS	CODE
1	***Size***	***6***
	6 DIN Rail modules	**6**
	96x96	**9**
2	***Harmonics and Power Quality Analysis***	***B***
	None	**0**
	Real-time harmonics	**H**
	Power Quality event detection	**Q**
	Real-time power quality and harmonics	**B**
3	***Internal module***	***Z***
	No internal module	**0**
	Module 2AO4-20mA	**6**
	Module 4DI 4COMMON	**N**
	Module 4DO 4COMMON	**C**
	Module 2DI 2DO 4COMMON	**Q**
	Module 4AI	**R**
	Module SIO (Sensor Input Output)	**Z**
	E-Wi EDA 868 (On request)	**L**
	Module 4PT100 / PT1000	**U**
	Module NTC (On request)	**Y**
4	***Power Supply***	***2***
	120Vac +/- 10%	**1**
	230-240VAC	**2**
	400Vac +/- 10%	**3**
	15÷36Vac/18÷60Vdc	**8**
	9÷24Vac/9÷36Vdc	**7**
	85÷265Vac/100÷374Vdc	**9** (96)
5	***Alarms***	***E***
	None	**0**
	Logic Alarms	**L**
	Comparator Alarms	**K**
	Comparator and Logic Alarms	**E**
6	***Data storage services***	***M***
	None	**0**
	Log Energy counters	**M**
7	***Advanced Log Services***	***F***
	None	**0**
	Harmonics Log	**H**
	Voltage and Current Log	**U**
	Power Log	**P**
	Harmonics, Voltage, Current, and Power Log	**S**
	AI/DI and Sensor Options Log	**R**
	Full (complete with all features)	**F**

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Subject to change without prior notice
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