Energy Management Accessories Type Eos-Gate

- **Embedded PC with data acquisition, data logging and protocol conversion capabilities**
- **Internet Gateway from Eos-Array and Eos-Array Lite to Fat Spaniel® Web Platform**
- **Two RS485 communication ports (Modbus)**
- **Two Ethernet ports**

Product Description

The Eos-Gate is a device which allows to monitor a photovoltaic installation by means of a remote Web Portal. The Eos-Gate polls data (measurements and alarms) from a set of monitoring devices installed in the plant location and transmits those data to a remote web-server through internet using a shared communication protocol. Data-logging features are used to secure the communication so to not lose data. The Eos-Gate polls data from the Carlo Gavazzi's AC meter and from the Eos-Array/Eos-Array Lite string combiner DC monitoring system, so that it provides a complete AC and DC monitoring of a photovoltaic plant. The Eos-Gate transmits data to the Fat Spaniel® Portal using a push-based tecnology which avoids firewall related issues. The Fat Spaniel® Portal is a web portal platform which allows the user to manage its data remotely with an easy and powerful web based user interface.

How to order

Eos-Gate D XX X

Model
Power Supply
Option
Special features

Type Selection

Power Supply		Option		Special features	
D:	from 12 to 48VDC	**XX:**	none	**X:**	none

Hardware

Type	Embedded PC
Operating System	Linux kernel 2.6
Processor	ARM9 RISC 32-bit 192Mhz
Operation	Fan-less
Memory	
RAM	32MB
Flash ROM	16MB
Integrated SD	1 GB industrial grade, SLC type
Alert tools	Built-in RTC (real-time clock) Built-in buzzer

Comunication Port	
Ethernet	2 ports for internet/LAN connection
RS485	1 port for Eos-Array/Eos-Array Lite and Carlo Gavazzi's AC meters connection 1 port for third party devices

Supply specification

DC supply	12 to 48 VDC
Power-on indication	System ready LED
Power consumption	340 mA @ 12V (4.5W)

AC/DC power supply adapter	Universal power adapter included

Input/Output specifications

LAN	
Ethernet	2 auto sensing 10/100 Mbps ports
Connector	RJ45 Magnetic Isolation Protection: 1.5kV built-in
"Link" indication	LED 10M/Link (x2), 100M/Link (x2)
Serial Interface	
RS485 ports	2
Connector	DB9 male
ESD protection	15kV for all signals
Indicators	LED TxD (x2), RxD (x2)
Baudrate	selectable from 9600bps to 115200bps
Management	
Eos-Gate	Web based software for configuration and testing.The software is based on the Eos-Gate internal web server and allows to configure and test the Eos-Gate through a TCP/IP connection.

General specifications

Operating Temperature	-10°C to +60°C 5% to 95% RH (non-condensing)
Storage Temperature	-20°C to 80°C
EMC	CE (EN55022 Class A, EN61000-3-2 Class A, EN61000-3-3, EN55024) FCC (Part 15 Subpart B, CISPR 22 Class A)
Standard compliance	
Safety	UL/cUL (UL60950-1, CSA C22.2 No 60950-1-03) EN60950-1
Approvals	CE
Housing	
Dimensions (LxWxH)	100 x26 x 111 mm
Weight	Approx. 280 g (packing included)
Mounting	wallmount or DIN rail

Main Function

Supported field devices	Carlo Gavazzi AC meter (up to 1 meter): EM21, EM24, EM26, WM30, WM40, WM5. Carlo Gavazzi DC monitoring device (up to 10 Eos Array): Eos-Array/Eos-Array Lite
Supported Web Portals	Fat Spaniel® Insight Platform and Fat Spaniel® Solar Vision
Polling time interval	Sampling interval: 30 seconds; data are transmitted to the remote web platform every 10 minutes
Historical data storing	up to 30 days if internet connection is out of order
Managed data	
Eos-Array	
Electrical measurements	instantaneous values for DC current, DC voltage, DC power, DC energy, string Efficiency at string level and string-combiner level.
Environmental measurements	instantaneous values for ambient temperature, solar irradiation, wind speed according to the installed Eos-Array modules and sensors
Alarms	relevant Eos-Array's status information
Eos-Array Lite	
Electrical measurements	instantaneous values for DC current, DC voltage, at string level and string-combiner level.
Environmental measurements	instantaneous values for ambient temperature and solar irradiation according to the installed Eos-Array Lite modules and sensors
Alarms	relevant Eos-Array Lite's status information
Managed data for AC meters, 1-phase system	V= AC Voltage, instantaneous variable A= AC Current, instantaneous variable W = AC active power, instantaneous variable kWh-= AC energy produced, instantaneous variable kWh+= AC energy consumed, instantaneous variable

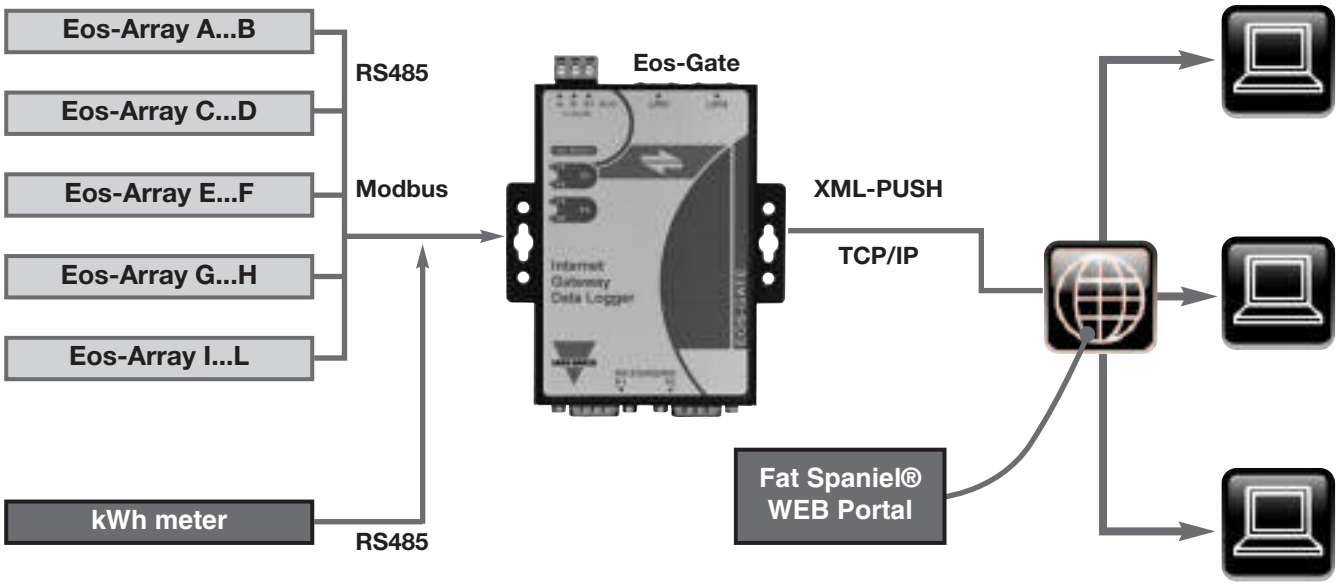
Main Function (cont.)

Managed data for AC meters, 3-phase 4-wires system	V_{L1}= AC Voltage phase L1, instantaneous variable; V_{L2}= AC Voltage phase L2, instantaneous variable; V_{L3}= AC Voltage phase L3, instantaneous variable; V_{L1-2}= AC Voltage phase L1 to L2, instantaneous variable; V_{L2-3}= AC Voltage phase L2 to L3, instantaneous variable; V_{L3-1}= AC Voltage phase L3 to L1, instantaneous variable; I_{L1}= AC Current phase L1, instantaneous variable; I_{L2}= AC Current phase L2, instantaneous variable; I_{L3}= AC Current phase L3, instantaneous variable; W_{L1}= AC Current phase L1, instantaenous variable; W_{L2}= AC Current phase L2, instantaenous variable; W_{L3}= AC Current phase L3, instantaenous variable; Wsys= AC active power, system, instantaneous variable; kWh-= AC energy produced, instantaneous variable kWh+= AC energy consumed, instantaneous variable
Managed data for AC meters, 3-phase 3-wires system	V_{L1-2}= AC Voltage phase A to B, instantaneous variable; V_{L2-3}= AC Voltage phase B to C, instantaneous variable; V_{L3-1}= AC Voltage phase C to A, instantaneous variable; I_{L1}= AC Current phase A, instantaneous variable; I_{L2}= AC Current phase B, instantaneous variable; I_{L3}= AC Current phase C, instantaneous variable; W_{L1}= AC Current phase A, instantaenous variable; W_{L2}= AC Current phase B, instantaenous variable; W_{L3}= AC Current phase C, instantaenous variable; Wsys= AC active power, system, instantaneous variable; kWh-= AC energy produced, instantaneous variable kWh+= AC energy consumed, instantaneous variable

Eos-GateSoft programming parameters

Internal web server	Configuration software based on a web server integrated into the Eos-Gate; the web based interface allows to configure parameters and test the Eos-Gate functionalities
Network Configuration	RS485 parameters configuration TCP/IP network parameters configuration
Field devices configuration	Scanning mode available for Eos-Array/Eos-Array Lite and Carlo Gavazzi's AC meters
Web Portal parameters configuration	Configuration of the relevant Web Portal parameters (internet address, authentication codes)
Added services	dyndns management, NTP (network time protocol) synchronization

Example of communication architecture



Dimension