iGrid T&D
SMART SOLUTIONS FOR SMART GRIDS

iGW series

Versatile communication gateway for electrical facilities

Overview

iGW series products are specialized communication units for electrical facilities that require data conversion between different protocols.

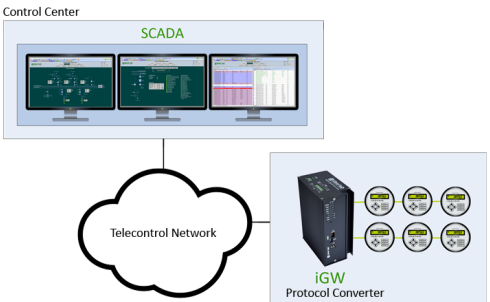
Data from multiple devices (meters, protection relays, and other IEDs) may be acquired using field protocols (IEC60870-5-101/102/103/104, IEC61850 (MMS & GOOSE), DNP3.0, DLMS, Modbus, Procome, etc.), processed and transferred to a Control Center using IEC60870-5-104/101, IEC61850, DNP3.0, and Modbus RTU/TCP protocols.

Highlights

- From meter data concentration to protocol conversion, iGW can act in any kind of control or automation system, specially in generation plants or high voltage substations, using any kind of communication protocol and media.
- Availability of a wide range of protocols including IEC60870-5-101/102/103/104, IEC61850, Modbus RTU/TCP, DNP3.0, DLMS, Procome and Profibus DP.
- Multiple communication media options, from serial ports to GPRS, or fiber optic Ethernet with SFP modules or ST/SC connectors, with RSTP redundancy.

Features

- Multiple simultaneous control centers, with one or more communication protocols.
- iGW has capability for remote diagnosis of functionality correctness
- Up to 10.000 tags (I/O and calculated signals)
- IEC 62351 Cyber security compliance (TLS/SSL, VPN, SSH, HTTPS, RBAC, ACL).
- IEC61850-3 EMC compliant.
- IEC61131-3 PLC automation programming.
- IEEE1588 and NTP time synchronization, with microseconds timestamp resolution and high accuracy RTC with 1.5ppm time drift.
- Two separate Ethernet interfaces with independent MAC address and multiple IP address configuration.
- Internal switch with HSR/PRP/RSTP redundancy.
- Multiple communication media support (serial, 10/100TX Ethernet, FX100 Ethernet, GPRS, 3G and 4G modems).
- Support for VLAN, VPN and Transparent TCP bridging.
- **iGW** models come with a full range of protocols including IEC60870-5-101, IEC60870-5-104, **IEC61850 MMS client/server**, **IEC61850 GOOSE publisher/subscriber**, Modbus RTU/TCP, DNP3.0 (serial and TCP), among others.
- Meter connection with **DLMS**, **IEC62056-21** and **IEC60870-5-102** protocols.
- Protection relay connection with **IEC60870-5-103**, **Procome**, **Profibus** and **IEC61850** (MMS and GOOSE) protocols.



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Specification Sheet

General	Configuration & Maintenance	Easy configuration with iConf tool. Internal web server, allowing the real time monitoring of the system and all internal parameters. Command console with complete information of packet exchange, on all available protocols. Local or remote maintenance connection using USB or Ethernet ports.
	RTC	High accuracy real time clock with 1.5ppm drift and microseconds resolution timestamp.
	CPU features	ARM Cortex-A7 @ 528MHz, with 4GBytes Flash and 256MBytes RAM.
	Communication ports options	**Serial ports:** up to 4 ports with RS232/RS485/RS422 selected by software. **Wireless connection:** internal 4G(LTE), 3G and GPRS modem. **Ethernet:** (2) 10/100BaseTX ports with independent MAC addresses. **Internal Ethernet Switch:** up to (4) 10/100BaseTX ports with RJ45 connection and (2) FX100 with ST, SC connectors or SFP interface, and supporting RSTP, HSR and PRP configurations.
iGComms Software application	Time synchronization	**Server**: NTP, IEC60870-5-101, IEC60870-5-104, DNP3.0, NTP. **Client**: IEEE1588(PTP), SNTP, IEC60870-5-101, IEC60870-5-102, IEC60870-5-103, IEC60870-5-104, DNP3.0, DLMS, Procome and Profibus DP.
	Redundancy	iRTU can be deployed on a hot-standby configuration, and including an optional redundant power supply.
	iGComms communication stack	Master/Slave IEC60870-5-101 Master/Slave DNP3.0 (serial, UDP, TCP) Master/Slave Modbus TCP/UDP and JBUS (master) Master IEC60870-5-102 Master Profibus DP Master IEC62056-21 IEC61850 MMS Client/Server Master/Slave IEC60870-5-104 Master/Slave ModbusRTU Master IEC60870-5-103 Master DLMS Master Procome SNMP Agent/Manager IEC61850 GOOSE Publisher/Subscriber
	Security	IEC 62351-3 and IEC 62351-5 support, including TLS/SSL, SSH and VPN connections.
	IEC61131-3 Automation	Logic and PLC programming, with LD, FBD, ST and SFC editor.
	Logical and mathematical expressions	LUA language for creating simple and complex logic and mathematical expressions.
Device features	Power consumption	Depending on the model.
	Power supply	W : wide range, 32 - 250Vdc / 80 - 250Vac (2.5kVrms isolation) 24 : 19.5-60Vdc (2.5kVrms isolation)
	MTBF	177,000h (one hundred seventy seven thousand hours)
	EMC type test	IEC 60950-1, IEC 60255-5:2000, EC 60255-22:2000, EN 55022, IEC 61000-6-4, IEC 61000-6-5, IEC 61000-4-2, IEC 61000-4-3, IEC 61000-4-4, IEC 61000-4-5, IEC 61000-4-6, IEC 61000-4-8, IEC 61000-4-9, IEC 61000-4-10, IEC 61000-4-12, IEC 61000-4-16, IEC 61000-4-17, IEC 61000-4-18, IEC 61000-4-29
	Environmental	Operating temperature : -25ºC to +70ºC, with up to 95% RH IEC 60068-2-1, IEC 60068-2-2, IEC 60068-2-3, IEC 60068-2-14, IEC 60068-2-30, IEC 60068-2-38
	Vibration & Shock test	IEC 60068-2-6, IEC 60068-2-7
	Physical	External dimensions: 173 **x** 137 **x** 78.4 (mm)
		DIN Rail mounting

Ordering information

iGW-b#bbvvfs

Main board + communications
- **B#01** : (2) 10/100BaseTX RJ45 Ethernet + (4) serial RS232/RS485/RS422 ports
- **S#01** : PRP/HSR switch with (4) 10/100BaseTX and (2) FX100 Ethernet + (4) serial RS232/RS485/RS422 ports
- **S#31** : RSTP switch with (3) 10/100BaseTX and (2) FX100 Ethernet + (4) serial RS232/RS485/RS422 ports
- **M#01** : 2G modem + (2) 10/100BaseTX Ethernet + (3) serial RS232/RS485/RS422 ports
- **M#11** : 3G modem + (2) 10/100BaseTX Ethernet + (3) serial RS232/RS485/RS422 ports
- **M#21** : 4G modem + (2) 10/100BaseTX Ethernet + (3) serial RS232/RS485/RS422 ports

Power supply
- **24** : 19.2-60 Vdc
- **WV** : 32-250Vdc // 80-250Vac

SD card
- **S** : Internal 8 GB microSD card
- **0** : No SD card

Fiber optic interfaces (S models)
- **T** : ST connectors
- **C** : SC connectors
- **F** : SFP interface
- **0** : No fiber optics available

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