



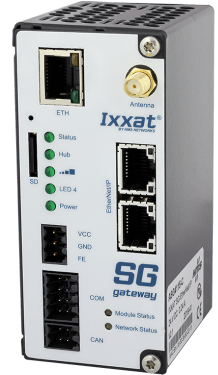
SG-gateway with EtherNet/IP

Bridging the gap between industrial and energy communication

The SG-gateway supports the communication protocols used in the energy sector, including IEC60870-5-104, DNP3 and IEC61850 and enables connectivity for energy devices to EtherNet/IP-based automation systems. On top of that the simultaneously usable OPC-UA and MQTT functionality empower direct integration into the companies' cloud-based applications.

The EtherNet/IP interface for Allen-Bradley PLCs implements a real-time EtherNet/IP adapter interface with an integrated 2-port switch, allowing seamless network integration.

In addition to EtherNet/IP, IEC and DNP3 protocols, other electric equipment in the field can also be connected via Modbus-TCP and RTU. As an option, the SG-gateway can also include a 3G modem for remote connectivity.



EtherNet/IP™

FEATURES & BENEFITS

- Connects intelligent electrical devices (IEDs) with IEC or DNP3 protocols to industrial automation PLC systems using EtherNet/IP or Modbus.
- Easy way to transport I/O data from electrical equipment in the field to SCADA systems
- Connects industrial machines to energy SCADA systems
- Connects switchgear to industrial PLCs
- Supports several communication protocols (IEC61850, IEC60870-5-104, DNP3, Modbus, OPC-UA, MQTT)
- Connectivity via Ethernet or via optional 3G modem
- Easy web-based configuration using any standard browser
- Onboard WebPLC for easy data conversion and control functions
- Robust metal housing for stand-alone operation with DIN rail mounting
- Global technical support and consulting services
- Range of cybersecurity features including password protection, user management, and OpenVPN
- Continuous software maintenance by HMS, devices can be upgraded in the field
- Easy export and import of configuration to ease volume installations

ETHERNET/IP INTERFACE

- Support for generic device profile
- Dual port cut-through switch
- Device Level Ring (DLR) beacon-based
- Supports QuickConnect Class B
- CIP energy object support
- Customized identity information
- Up to 128 groups
- Up to 509 bytes of process data in each direction using Forward Open command
- Up to 1448 bytes of process data in each direction using Large Forward Open command
- Multiple I/O assembly support
- Modular device support
- 2 x RJ-45 EtherNet/IP 100 Mbit/s ports available simultaneously

ADDITIONAL INTERFACES

ETHERNET INTERFACE

- 10/100 Mbit/s
- DHCP server
- SNTP
- NAT routing
- SNMP manager

SERIAL INTERFACE

- Selectable RS-232/485
- Serial baud rate 300 bps - 187,5 kbps

SECURITY FEATURES

- OpenVPN client
- TLS version 1.3 data encryption
- Integrated Firewall
- Password protection with password policy
- Support for user roles
- Root access authentication
- Usage of standard ports for easy integration into firewalled environments
- Encrypted and signed files for firmware-updates
- Password protection for configuration export & import

MODBUS/TCP

- Supports Modbus TCP Client/Server
- Connects up to 128 server devices and supports 4096 values

MODBUS RTU

- Supports Modbus RTU Master/Slave
- Connects up to 128 serial Modbus RTU slave devices and supports up to 4096 values

DNP3 (OPTIONAL)

- Outstation: 1 TCP link, up to 4 local/master links
- Up to 4096 data objects (each data object with value, quality and timestamp)

IEC61850 (OPTIONAL)

- Client/Server
- Goose Publisher/Subscriber
- Up to 4096 data objects (each data object with value, quality and timestamp)
- 32 server devices supported in Client configuration

IEC60870-5-104 (OPTIONAL)

- Client/Server functionality
- Up to 4096 data objects (each data object with value, quality and timestamp)
- 32 server devices supported in Client configuration
- Support for IEC60870-5-104 redundancy according to Norwegian User Convention

3G/UMTS MODEM (OPTIONAL)

- SMS Send and Receive
- Telecontrol access to the control room communicating IEC60870-5-104 or IEC61850 remote telecontrol protocols
- GSM/GPRS Quad band 850/900/1800/1900 MHz
- UMTS Seven band: 800/850/900/AWS 1700/1900/2100 MHz
- Mini SIM (2FF)
- The Ixxat SG-gateway Switch with EtherNet/IP is also available with integrated 4G/LTE modem

OPC-UA

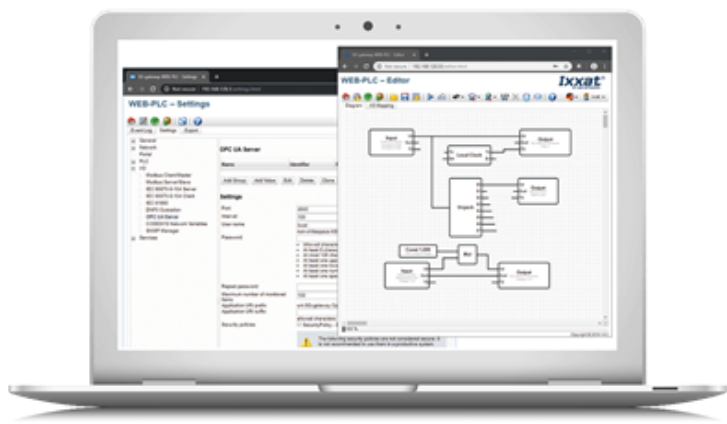
- Micro Embedded Device Server Profile
- UA-TCP, UA-SC, UA-Binary protocol and encoding
- Up to 128 groups, 4096 values
- Up to 4 concurrent client sessions

MQTT

- Client version 3.1 and 3.11
- Flexible for own definition of payloads
- Last will, QoS, Keep alive interval
- TLS encryption

CONFIGURATION INTERFACE

The application logic can be realized on the device either using the integrated graphical web editor or by using a predefined configuration loaded to the device. The graphical web editor is a very intuitive and easy to use interface to program software applications and configure the gateway. No engineering tools are required, and it can easily be accomplished by service technicians.



TECHNICAL SPECIFICATIONS

Dimensions (L•W•H)	79 x 46 x 107 mm with included connectors plugged
Weight	350 g or 0.8 lbs
Operating temperature	0 to +55 °C or +32 to +131 °F
Enclose material	Powder-coated, aluminum-zinc hot-dipped steel, RAL 7021
Power supply	24 VDC (+/- 15%); Weidmüller BL 3.50/03 (connector included)
Current consumption	200 mA at 24 V DC / with modem: 240 mA at 24 V DC
Ethernet interface	1x 10/100 BaseT RJ45, link and traffic LED indicators
EtherNet/IP interface	EtherNet/IP Adaptor with 2-port cut-through switch 10/100 BaseT
Serial interface	1 x RS232/RS485 (selectable), Weidmüller B2L 3.50/08 (included)
SD-card	microSD card SD/SDHC, push/push slot
Optional cellular modem	3G Tri Band UTMS modem (Antenna not included. See accessories for recommended antenna with SMA plug.)
Mechanical rating	IP20, NEMA rating 1
Mounting	DIN-rail (EN 50022 standard)

Always included protocols	Modbus TCP Client/Server, Modbus RTU Master/Slave, OPC-UA Server, MQTT Publisher/Subscriber, Kolibri (for HMS Hub connectivity)
Optional protocols	IEC61850 Client/Server, IEC60870-5-104 Client/Server, DNP3 Outstation
Config method	Integrated webserver
Certifications	CE, cUL, KC*, FCC** * KC only for variants without wireless modem (3G) ** FCC for devices with wireless modem (3G)

TECHNICAL SERVICES

The Ixxat Energy Technical Services Team is always on your side. We offer different service levels to fit your needs and fill the knowledge gaps you have for your next project!

→ [Learn more...](#)

Ordering information

Order Code	ASG4115 (IEC60870-5-104 client/server + IEC61850 client/server + DNP3 Outstation + 3G)
Additional Order Codes	ASG4114 (IEC60870-5-104 client/server + IEC61850 client/server + DNP3 Outstation) ASG4106 (IEC60870-5-104 client/server + IEC61850 client/server) ASG4104 (IEC61850 client/server) ASG4102 (IEC60870-5-104 client/server) ASG4100 (Entry-level device without any options)
Included components	4 GByte microSD memory card Power connector (Weidmüller BL 3.50/3) Serial connector (Weidmüller B2L 3.50/8) CAN connector (Weidmüller B2L 3.50/04) (Power supply NOT included)
Accessories	ISG9500-C (3G/4G stub Antenna with SMA plug)
Required software	Ixxat IP configurator (for IP configuration - Freeware) Downloadable under Support Files and Documents
Technical services	From getting started up to full support during the entire project. Our different service levels cover all your needs.