

# Enel X Site Server—S2

## A Communications Gateway for Energy Management and Demand Response Applications

The Enel X Site Server (ESS) S2 is designed with three key concepts in mind: flexibility, reliability, and accuracy. Easily connected to a customer’s existing equipment, the S2 can monitor and control hardware used in commercial and industrial applications.

Feature	Customer Benefit
<b>High-durability hardware</b>	Designed to be operated maintenance free for more than 5 years.
<b>Robust communication with low latency</b>	Sends energy usage information from each customer site to the Enel X Network Operations Center (NOC) at short regular intervals (e.g., 1-min, 5-min).
<b>Flexible internet connectivity options</b>	Connects to the internet using a cellular modem with a private VPN or using an internal Ethernet port and an existing local area network (LAN).
<b>Secure data</b>	Communicates using the high performance XMPP data transmission protocol, secured by TLS encryption and SASL authentication.
<b>Accepts wide range of meter inputs</b>	Accepts KYZ pulse-based inputs not exceeding 15Hz or not less than 35 milliseconds and Enel X supported Modbus RTU devices on six available pulse inputs. Two pulse inputs support rates up to 300,000 pulses per second. The high pulse rates are prescaled by 5,000:1 or 50,000:1.
<b>Monitors multiple commodities</b>	Monitors up to 20 unique meter inputs for the following standard commodity types: electricity, natural gas, propane, water, hot/chilled water, and heating oil. Can be customized for additional commodities and data types.
<b>AutoDR capable</b>	Performs automated demand response [AutoDR] using a variety of control methods. OpenADR 2.0a certified and OpenADR 1.0 compatible.

## Specifications

- > Computational Performance
- > Embedded LINUX system with an ARM9 processor
- > Data logging: Data logging with automatic transfers to historical data repositories capable of logging data in one or five minute intervals
- > High performance capability in low latency applications: Can be programmed to process and transmit data readings every five seconds

## Power Considerations

- > Operating input voltage: Connects directly to a Class 2, UL listed power transformer (minimum 14VA, 24VAC)
- > Power consumption: Less than 14 Watts
- > Performance during power loss: Capacitive energy storage allows for continued operations during power blips or “last gasp” messages during power loss

## Ethernet Port

- > 10/100BaseT, auto-selecting, auto polarity
- > RJ-45, 8 conductor

## Serial Ports

- > 1 RS-485 port
- > Connectors: Screw terminals

## Modem

- > Optional digital modem
- > Universal Serial Bus (USB)

## Relay Outputs

- > 2 SPDT relays rated at 120VAC @ 0.5A, 30VDC @ 2A, or 24V @ 0.5A; configured for normally-open or normally closed operation
- > Connectors: Screw terminals

## Meter Pulse Inputs

- > 5VDC wetting voltage
- > Connectors: Screw terminals

## Data Storage

- > Able to store 6 months of interval data locally
- > Enterprise-grade encryption of critical storage



## Standards-based Protocols

- > OpenADR 1.0 and 2.0a
- > MODBUS
- > IP local and wide area networking protocols and Internet standards include TCP, IPv4, DHCP, DNS, and SSL
- > Additional IP application protocols: HTML, XML, SOAP, REST, and XMPP

## Indicators

- > Power On/Wink
- > Ethernet link
- > Wireless signal strength

## Environmental Specifications

- > The components are housed in a NEMA 4X, polycarbonate, weatherproof enclosure with a hinged, gasketed lid.

UL 916 and cUL C22.2 No. 60950-00 certified.  
Other certifications:



**Enclosure size including mounting tabs, hinges, etc:**  
11.06L x 10.2W x 3.5D inches (28.09 x 25.91 x 1.27 cm)

**Recommended operating temperature range:**  
-13 to 140° F (-25 to 60° C)