



E650 S4x Polyphase

Enhanced metering for commercial and industrial applications

Expanding upon the industry-leading flexibility of Landis+Gyr polyphase meters, the E650 S4x sets a new standard for versatility in a C&I metering platform. Out of the box, the S4x is a full-featured C&I meter that provides four-quadrant measurements of active and reactive energy, load profile, and TOU without a battery when existing on an AMI network.

The E650 S4x provides the metrics utilities need to take full advantage of advanced grid management technologies. Delivered, received, and per quadrant measurements of active, reactive, and apparent energy are all simultaneously calculated, as are their respective demand values. Additionally, the S4x provides two alternative methods for calculating reactive and apparent energy and demand values. They can be either directly measured or vectorially derived, giving an electric utility the ultimate flexibility in how they measure and bill their customers.

The E650 S4x provides all of its metrics at significantly higher resolution than most competitive C&I meters. All energy and demand metrics are stored with milliunit resolution. All instrumentation metrics such as voltage, current, and phase are stored in microunits.

The E650 S4x raises the bar on security and tamper detection capabilities. A tilt and vibration sensor can identify significant shock force applied to the meter. A dedicated Hall effect sensor is used to detect strong magnetic field presence. The physically actuated cover removal switch can trigger an alarm and log an event. A new optical port lockout feature allows total control over port access through a compatible communication module.

The S4x has significantly more RAM, ROM, and non-volatile memory for load profile, self-reads, and event logs. Standard 16 channel load profile memory of 256 KB can be upgraded to 1 MB without the need for additional hardware.

Superior Metrics

- Four-quadrant measurement
- Delivered and received kW, kVA and kVAR demands
- Two alternate methods of VAR and VA calculation
- Milliunit energy and demand resolution
- Microunit instrumentation resolution

Load Profile

- 16 CH 256K standard, 1 MB option
- 2nd recorder option
- 32 bit data storage

Hardware Options

- Enhanced Gridstream RF module
- I/O board
- Three-phase power supply

Unique Security

- Magnetic tamper detection
- Cover removal switch
- Tilt and vibration sensor

RF Communication Options

- Series 5

E650 S4x Polyphase

An optional second 16 channel recorder can be configured with a different interval length than the first, making it an ideal instrumentation recorder for continuously monitoring voltage, current, phase, and frequency. Load profile data is stored in 32 bit registers that can easily handle the increased data resolution the S4x offers without interval overflow or the need for a scale factor.

The meter is available with multiple hardware options that further expand its capabilities. With the addition of an enhanced

RF communications module, the S4x becomes a powerful C&I endpoint on the industry-leading Landis+Gyr Gridstream® Connect IoT network. An I/O board enables inputs that can increment a load profile channel or trigger a different billing rate; and outputs that can provide KYZ pulses or trigger load control devices. The Enhanced RF module and I/O board are available together for even greater functional versatility. A true three-phase power supply can ensure that the S4x keeps metering, even if a voltage phase is lost.

Product Specifications

Specifications	<ul style="list-style-type: none">• Active and reactive energy are standard• TOU and 256K load profile are standard• ANSI C12.19 standard protocol• Unsurpassed 10KV surge protection for safety• Designed for 20+ years of life• Extensive event logging• Magnetic tamper detection via Hall effect sensor• Cover removal switch• Tilt and vibration sensor
Operating Temperature	-40C to +85C under cover
Frequency	50 or 60Hz ± 5%
Humidity	Less than or equal to 95% relative humidity, non-condensing
Accuracy Class	Class 20, 120, 200, & 320 meters ± 0.2% Class 480 meters and forms 36S, 29S, 36A ± 0.5%
Over Voltage Withstand	Temporary (.5 sec) 150% rated voltage Continuous (5 hours) 120% rated voltage
Voltage Burden	≤ 2.5W
Nominal Voltage	
Standard Power Supply	120–480V (2 and 3 wire 120, 208, 240, 277, 347, 480. 4 wire 120/208, 240/416, 277/480, 347/600)
Three-Phase Power Supply Option	120– 277V (2 and 3 wire 120, 208, 240, 277. 4 wire 120/208, 277/480)

Kbps = Kilobytes per second

This information is provided on an “as is” basis and does not imply any kind of guarantee or warranty, express or implied. Changes may be made to this information.

Operating Voltage	
Standard Power Supply	98 to 552 VAC (line to neutral) autoranging power supply
Three-Phase Power Supply Option	98 to 318 VAC (line to neutral) autoranging power supply
Starting Current (Amps)	
Class 20	0.005 Amp
Class 150	0.050 Amp
Class 200	0.050 Amp
Class 320	0.080 Amp
Class 480	0.120 Amp
Available Forms	
Self-Contained: S-Base	2S, 12S, 14/15/16/17S, 25S, 1S, 2SE, 12SE, 14/15/16/17SE, 25SE
Self-Contained: K-Base	12K, 14/15/16K, 27K
Self-Contained: A-Base	16A
Transformer Rated: S-Base	3S, 3SC, 4S, 8/9S, 45S, 36S, 29S
Transformer Rated: A-Base	8/10A, 45A, 36A
Applicable Standards	
ANSI	<ul style="list-style-type: none">• ANSI C12.1 for electric meters• ANSI C12.10 for physical aspects of watt hour meters• ANSI C12.20 for electricity meters, 0.2 and 0.5 accuracy class
CAN	<ul style="list-style-type: none">• CAN3-C12-M84 Canadian specs for approval of electrical meters• CAN3-Z234.4-79 Canadian specs for all numeric dates and times

Let’s build a brighter future together.

Landis+Gyr is a leading global provider of integrated energy management solutions. We measure and analyze energy utilization to generate empowering analytics for smart grid and infrastructure management, enabling utilities and consumers to reduce energy consumption. Our innovative and proven portfolio of software, services and intelligent sensor technology is a key driver to decarbonize the grid. Having enabled 9 million tons of CO₂ savings in FY 2024 through our product offerings, Landis+Gyr manages energy better – since 1896. With sales of USD 1.7 billion in FY 2024, Landis+Gyr employs around 6,300 talented people across five continents. For more information, please visit our website www.landisgyr.com.