



## Commercial: E650 S4x Polyphase



### Enhanced Metering for Commercial and Industrial Applications

#### Overview

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 milli-unit resolution. All instrumentation metrics such as voltage, current, and phase are stored in micro-units.

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 of additional hardware. 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 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® AMI 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.

#### LOAD PROFILE:

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

#### SUPERIOR METRICS:

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

#### UNIQUE SECURITY:

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

#### HARDWARE OPTIONS:

- Series 4, Series 5, Series 6 RF modules
- I/O board
- Three-phase power supply

## Product Specifications: Commercial E650 S4x Polyphase

### Specifications

General Specifications	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				
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)			
	3 Phase Power Supply Option	120–277V (2 and 3 wire 120, 208, 240, 277. 4 wire 120/208, 277/480)			
Operating Voltage	Standard Power Supply	98 to 552 VAC (line to neutral) Auto Ranging Power Supply			
	3 Phase Power Supply Option	98 to 318 VAC (line to neutral) Auto Ranging Power Supply			
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				
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 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				
	CAN3-C12-M84 Canadian Specs for approval of electrical meters				
	CAN3-Z234.4-79 Canadian Specs for all numeric dates and times				
Voltage Burden	≤ 2.5W				

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