



Single Phase 2 Wire Integrated Electricity Meter

The Landis+Gyr GEM Lite Single Phase meter which was specifically developed to provide utilities with a quality, low cost, highly reliable STS keypad prepayment metering solution with excellent tamper proofing. This meter is mechanically sealed against tampering through the use of a factory-sealed screw plug in the rear of the panel and a utility-sealed wire seal on the front of the meter. In addition this meter is equipped with a tamper sensor.



Features

- Maximum current: 80 Amps
- Compact meter in BS format
- Meter fitted with LCD and a keypad
- Clear language independent icons on the display and membrane of the meter
- Clear load switch status indicator
- Fully STS compliant
- Scrolling display for 11 digit STS meter serial number
- Displays last 50 vouchers entered. (Displays the 20 digit STS voucher and the date and time of the voucher)
- Mechanically sealed against tampering
- Significant Reverse Energy detection
- Programmable software power limit

- Tamper detection facility
- Meter enclosure manufactured with UV stable, flame-retardant plastic material
- Degree of protection, IP54
- Improved sealing against ingress of insects
- Supports short codes (refer to user guide)

Functionalities

Tamper Detection Facility

Cashpower Gem Lite is mechanically sealed against tampering through the use of a factory sealed screw plug on the rear panel and a utility sealed wire seal on the front of the meter. The use of these mechanical seals ensures that there are visible signs of tampering if unauthorised entry to the system is attempted. In addition, the meter is equipped with a tamper sensor that will automatically disconnect the power to the load in the event of tampering.

The meter includes a Significant Reverse Energy (SRE) detection feature. If the line and load wires are swapped during installation, the meter will continue to operate and decrement credit, however the meter can be factory-programmed to disconnect the load should SRE be detected.

Virtual Token Carrier (VTC) port

The Gem Lite is fitted with an industry standard VTC port at the rear of the meter. While this port is typically used to program the meter during the manufacturing process, it can also be used to extract vital meter information, such as remaining credit.

Surge Immunity

The meter exceeds the IEC62055-31 Voltage Impulse Withstand of 4kV.

Technical Specifications

Meter Format	Single phase, 2 wire (Line1, N, N, Load1) directly connected keypad prepayment meter
Meter Type Variant	Single Phase, 2 Wire 230V, 50 Hz Single Phase, 2 Wire 220V, 50 Hz Single Phase, 2 Wire 120V, 60 Hz
General	Prepayment Mode only
Credit entry mechanism	20 digit STS encrypted numbers, via the keypad of the meter
Token Encryption Mechanism	20 digit STS1 according to IEC62055-41
Nominal Voltage (Un) – Rated Voltage	Refer to “Meter Type Variants”
Nominal Frequency	50 Hz and 60 Hz variants available
Operating Voltage Range	80% to 120% of Un
Maximum continuous current (Imax)	80 Amps (programmable to lower power limits)
Burden	Voltage circuit <1.5W / <10VA @ 230V, 50Hz Current circuit <2.5 VA @ Ib=10A
Protective Class (according to IEC62052-11)	Class II (double insulated)
Type (Disconnection Device)	1 (single pole) latching contactor 100 A
Layout	According to British Standard, BS5685
Mains Terminals	Type: Double screw (M6) moving cage terminal Material: Mild Steel, yellow passivated Maximum cable size: 25mm ²
Terminal Block Material	UV Stable Polycarbonate with flame-retardant
Resistance to Heat and Fire	Complies with 960°C glow wire (IEC60695-2-1)
Resistance to Spread Fire	UL94-V0 rated @ 1.5mm. No toxic gases emitted: “Green Material”



Technical Specifications

Enclosure Details	Type Bottom connected according to BS5685
Enclosure Details	UV Stable Polycarbonate with flame-retardant
Resistance to Heat and Fire	Complies with 960°C glow wire (IEC60695-2-1)
Resistance to Spread Fire	UL94-V0 rated @ 1.5mm. No toxic gases emitted: "Green Material"
Rating	Degree of protection IP54 (IEC60529)
Mounting Arrangements	Two mounting screws at the bottom (spacing according to BS5685). Top mounting bracket available as an option
Sealing	Terminal cover: 1 sealing screw Meter enclosure: Factory sealed with screw sealing plugs inserted at the time of manufacture
Weight	Approximately 536 grams
External Dimensions	Width: 122 mm Height: (with long terminal cover) 168.5 mm Depth: 68 mm
Meter Directions	Forward and reverse power detection and metering ^{^2} (credit is decremented in both directions)
Metrological (General)	Meter constant: (LED Flash rate) 1000 pulses/kWh Basic reference current: (Ib) 10A Accurate metering range: 0.05Ib to 1.25I _{max} 3 Starting current: (Class 2) 0.005 Ib 4 Accuracy Class Index: Class1 & Class2 available Maximum error: <+2% (Cl 2) and <+1% (Cl 1)5
Power Threshold (Creep)	Out of threshold 9.2W (approx 40mA @230V)6 Into threshold 6.4W (approx 28mA @230V)
Insulation & Overvoltage	Insulation system classification: Protective Class II7 Insulation level: 4kV for 1 minute Overvoltage withstand: 440Vac for 48 hours 600Vdc for 1 minute



Technical Specifications

Voltage Impulse Withstand	Differential In excess of 6kV, 1.2/50μS, with 2Ω source impedance (according to SANS1524-1)
Current Impulse Withstand	Service Rating 5kA 8/20μS 8 Withstand Rating 30kA 4/10μS 9
Specification Compliance	SABS1524-1, IEC 62052-11
General EMC	Radio Interference Complies with CISPR22 Immunity to fast transient bursts 4kV Electrostatic discharge 15kV air discharge
Immunity to HF Fields	80Mhz to 2Ghz @10V/m with load, 80Mhz to 2Ghz @30V/m no load
Specification Compliance	IEC 6100-4-2; IEC 61000-4-3; IEC 61000-4-4; IEC 61000-4-6, CISPR 22
Operating Environment	Area of application: Indoor Meter Operating temperature range: -10°C to +55°C Storage temperature range: -25°C to +70°C Relative humidity: Max <95%; Annual mean 75%
Type (man-machine interface)	Language independent
Components	Pictographic / numeric LCD display, keypad, LED Rate of consumption indicator, audio feedback for key press.
Liquid Crystal Display (LCD)	Size Area: 5.5 mm ² [39.6mm (W) x 14mm (H)] LCD Icon information: Happy face, Sad face, Switch open, Switch closed, Information icon, Watts, kWh, Alert Icon, 4 segment credit wedge.
Keypad	12-key international standard layout including "Information" and "Backspace" keys
Buzzer	Audio feedback on key-press
Rate of consumption Indicator	Visual Red, 1000 pulses per kWh



Technical Specifications

SMART Prepaid Electricity Meter

Diagnostic Information	Additional meter parameters accessible via the information key.
Virtual Token Carrier (VTC)	Port Rear programming port according to Eskom DISCAA9 and IEC62055-52
IEC	IEC62055-31
STS	IEC62055-41/51
BS	Conforms to BS5685:1979

Meter Dimensions

