

LG+ & μ G+



Contact for certification details

DIGITAL MULTIFUNCTION LOAD MANAGER

Basic | Power | Energy | Load Manager | Digital Output | Pulse Output



SIMULTANEOUS MEASUREMENT
OF VARIOUS ELECTRICAL
PARAMETERS!



MULTIFUNCTION METER

Features :

- Accuracy Class 1.0 (default) as per IEC 62053-21, Class 0.5 as per IEC 62053-22 (Optional).
- True RMS measurement.
- Simultaneous sampling of Volts & Amps.
- Energy display programmable-counter based or resolution based.
- Energy resetting at 999999 kVAh* Transformer Ratio
- Positive energy accumulation even with CT polarity reversal, reverse lock programmable.
- User programmable password protection.
- Auto scrolling.
- Auto-scaling of Kilo, Mega, Giga and Decimal point.
- Low PT, CT burden.
- Front LED pulse 1250 imp/kWh of secondary input.
- Programmable PT, CT ratio upto 2000 MVA.
- Programmable kVAh (default kWh) for meters with Energy parameter.
- Wide Measurement range of 50mA - 6A.
- Clearance and Creepage distance meets safety standard.
- Finger touch proof terminals to voltage and current connections.
- Parameter name & value displaying using 7 seg LEDs.
- 6 digits display on each row for better readability.
- Available in LED (3 row, 2 row and 1 row), LCD, Dinrail (1 row).
- Field programmable Star (Wye) or Delta or Single phase configuration.

Optional Features :

- Communication with PCs, PLCs, DCS through optional optically isolated RS 485/ RS 232 serial Interface.
- Pulse output - programmable pulse width of 50 mS to 500 mS (for LG+ models only).
- Programmable Relay output - refer Product Selection Table.



LG+ 3399

- Displays PF, Wh or VAh (programmable), OLD and user selectable parameters from Basic (VLL, VLN, A, Hz) or W or VA (any 2).
- Displays more than 15 parameters.
- 3 row LED display with 6 digits each.
- 'OLD' register to store the previously cleared energy value.

Note: No up-gradations and no optional features except RS 485



LG+ 5310

- Quick and Easy navigation and programming.
 - Displays more than 25 parameters Basic, Power and Energy.
 - Basic : VLL, VLN, A, (Avg. & PW), F, RPM.
 - Power : W, PF, VA, (Avg. & PW)
 - Energy : Wh, Hi. Amps, LH, OLD Wh, OLD LH, ON Time (non resettable).
 - OLD register to store the previously cleared energy value and its corresponding LH.
 - **Optional** - Programmable relay output (upto 2) for any threshold of Under & Over (Voltage, Amps, Frequency), Under PF, Over Watts, Over Wh, Phase missing.
- Programmable tripping time up to 180 sec. with hysteresis of 1%.



LG+ 5110 μ G+/Dinrail/LCD

- Displays Basic : VLL, VLN, A (Avg. & PW), F, Power: W, PF, VA (Avg. & PW). Energy : Wh, LH, Old Wh, Old LH.
 - Energy is programmable to Wh or VAh with 7 digit resolution (LCD), 6 digit resolution (LED) and 4 digit resolution for instantaneous parameters.
 - OLD register to store the previously cleared energy value and its corresponding LH.
 - 80 to 300 V AC/DC auxiliary supply.
 - **Optional** - Programmable relay output (upto 2 in LCD version and 1 in LG+ 5110) for any threshold of Under & Over(Voltage, Amps, Frequency), Under PF, Over Watts, Over Wh, Phase missing.
- Programmable tripping time upto 180 sec with hysteresis of 1%.



LG+ 1129 /LCD, μ G+ 1129

- Field programmable to Basic (VLL, VLN, A, F) or W or VA or PF or Wh (any two parameters). Factory configured : Wh, PF.
- Displays programmed parameter name and value for instantaneous parameters.
- Reduces complexity of stocking as this can be used for multiple measurement applications.
- OLD register to store the previously cleared energy value.
- Dinrail version available.



LG+ 1119 /LCD, μ G+ 1119

- Field programmable W or VA or PF or Wh (any one parameter). Factory configured : Wh.
- Displays programmed parameter name and value for instantaneous parameters.
- Reduces complexity of stocking as this can be used for multiple measurement applications.
- OLD register to store the previously cleared energy value.
- Dinrail version available.

Application Information:

LG+ series has optional optically isolated RS485 or pulse output, which can be integrated into a process through a PLC/DCS for online energy management

For pulse output, if the DCS/PCS has a self excited 12V or 24V, external 24V DC supply is not required.

Multiplication factor for counter based energy mode:

Full Scale in Watts = $\sqrt{3} \times V_{Pri} \times LL \times A_{Pri}$	0.4k to 4.0k	4.01k to 40k	40.1k to 400k	400.1k to 4,000k	4 M to 40 M	40 M to 400 M	400 M to 4000 M
Multiplication Factor:	0.01	0.1	1.0	10	100	1000	10000
Unit of display	KWH			MWH		GWH	

Energy Reset : 999999 kVAh \times Transformer Ratio.

DUAL SOURCE ENERGY METER



LG+5220 / LG+3220 / LG+5120L

Common Features

- Automatic switching of display based on input source (EB/DG).
- Load hours and ON hours for both sources.
- Positive energy accumulation / reverse lock programmable.
- Programmable to kWh or kVAh.
- 'OLD' registers to store the previously cleared energy values.

Additional Features: LG+ 5220

- 2 Row display with 6 digits each.
- Simultaneous display of Energy for EB & DG in single page.
- Displays Basic : VLL, VLn, A (Avg. & PW), F.
Power : W, PF (Avg. & PW).
Energy : Wh, LH, ON hrs OLD Wh, OLD LH(both for EB & DG)
- Optional** - Programmable relay output upto 2 relays.
- Options : Under Voltage, Over Voltage, Under Amps, Over Amps, Under Frequency, Over Frequency, Under PF, Over Watts, Over Wh, and Phase missing (both for EB & DG).
- Programmable tripping time upto 180 sec with hysteresis of 1%.

LG+ 3220 (Two Row) / 3121 (Single Row)

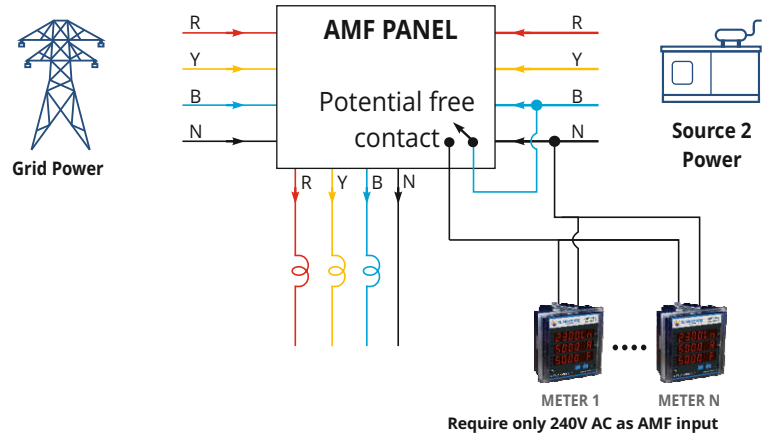
- 2 Row display with 6 digits each.
- Simultaneous display of Energy for EB & DG in single page.
- Displays W, PF (Average & Phasewise).
Wh, OLD Wh, (both for EB & DG)
- Optional** - Programmable relay output upto 2 relays.
- Options : Under PF, Over Watts, Over Wh, and Phase missing (both for EB & DG).
- Programmable tripping time upto 180 sec with hysteresis of 1%.

LG+ 5120L

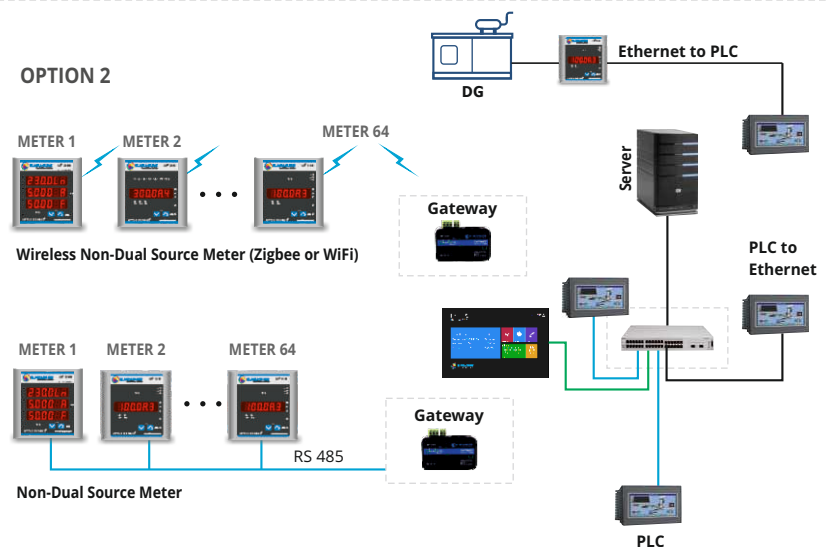
- Energy is programmable to Wh or VAh with 7 digit resolution and 4 digit resolution for instantaneous parameters.
- Displays Basic : VLL, VLn, A (Avg. & PW), F.
Power : W, PF (Avg. & PW).
Energy : Wh, LH, ON hrs., OLD Wh, OLD LH (both for EB & DG)
- Optional** - Programmable relay output upto 2 relays.
- Options : Under & Over (Voltage, Amps, Frequency), Under PF, Over Watts, Over Wh, and Phase missing (both for EB & DG).
- Programmable tripping time upto 180 sec with hysteresis of 1%.

Typical Connection Scheme for Dual Energy Measurements

OPTION 1



OPTION 2



Technical Specification :

Specification	Description
Accuracy:	Class 1 (Default) as per IEC 62053-21, Class 0.5 as per IEC 62053-22.
Sensing/Masurement:	True RMS, 1 Sec update time. 4 Quadrant Power & Energy.
Input voltage:	4 Voltage inputs (VR, VY, VB, VN). Programmable 110 or 415V LL Nominal (Range 50 to 550V LL). Primary Programmable up to 999 kV. <i>Burden:</i> 0.2VA Max. per phase.
Input Frequency:	45 - 65Hz
Input current:	Current inputs (AR, AY, AB) 50mA - 6A (Field configurable 1A or 5A). Primary programmable up to 99 kA. <i>Overload:</i> 10A max continuous, 50A max for 3 Sec. <i>Burden:</i> 0.2VA Max. per phase.
Aux-Supply:	(Control Power)- 80 - 300V AC/DC, 40-70Hz. <i>Burden:</i> 5VA Max
Display Type:	LG+/μG+: 10mm height bright red LED display. LCD: 10mm height bright LCD.
Display Resolution:	4 digits for instantaneous, Integrated: 6digits for LED, 7digits for LCD
CT PT Ratio Max:	2000 MVA programmable.
Communication:	Rs485 serial channel connection, Industry standard Modbus RTU protocol (RS232 optional). <i>Baud rate:</i> 4800 bps to 19200 bps. (Preferred 9600bps). <i>Isolation:</i> 2000 volts AC isolation for 1 minute between communication and other circuits.
Weight:	<i>Unpacked:</i> 300 gms, <i>Packed:</i> 400 gms.

ECO friendly lead free

18 months warranty

Note: Additional error of 0.1% of full scale, for meter input current below 500mA

Product Selection Guide :

MODEL NO.	BASIC				POWER			ENERGY			ACC CLASS 1.0/0.5	OPTIONAL FEATURE			
	VLL RYB	VLN RYB	AMP RYB	Hz	W RYB	PF RYB	VA RYB	kWh/ kVAh	# Load Hrs/ ON Hrs	OLD ENERGY		RS232	RS485	PULSE O/P	DIGITAL O/P
LG+ 1100	VLL	VLN	AMP	Hz							✓	✓	✓		1
LG+ 1119					●	●	●	●		OLD	✓	✓	✓		
LG+ 1129	●	●	●	●	●	●	●	●		OLD	✓	✓	✓		
LG+ 3100					W	PF	VA	Wh		OLD	✓	✓	✓	✓	1
LG+ 3399	●	●	●	●	●	PF	●	Wh		OLD	✓	✓	✓		
LG+ 5110	VLL	VLN	AMP	Hz	W	PF	VA	Wh	LH	OLD	✓	✓	✓	✓	1
LG+ 5310	VLL	VLN	AMP	Hz	W	PF	VA	Wh	LH & OH	OLD	✓	✓	✓	✓	2
LG+ 3220 (DS)					W	PF		Wh		OLD	✓	✓	✓		2
LG+ 5220 (DS)	VLL	VLN	AMP	Hz	W	PF		Wh	LH & OH	OLD	✓	✓	✓		2
μG+ 1100	VLL	VLN	AMP	Hz							✓		✓		
μG+ 1119					●	●	●	●		OLD	✓		✓		
μG+ 1129	●	●	●	●	●	●	●	●		OLD	✓		✓		
μG+ 5110	VLL	VLN	AMP	Hz	W	PF	VA	Wh	LH	OLD	✓		✓		

LCD / DinRail Version

LG+ 1119L/D					●	●	●	●		OLD	✓	✓	✓		
LG+ 1129L/D	●	●	●	●	●	●	●	●		OLD	✓	✓	✓		
LG+ 5110L	VLL	VLN	AMP	Hz	W	PF	VA	Wh	LH	OLD	✓	✓	✓	✓	2
LG+ 5110D	VLL	VLN	AMP	Hz	W	PF	VA	Wh	LH	OLD	✓		✓	✓	
LG+ 5120L (DS)	VLL	VLN	AMP	Hz	W	PF		Wh	LH	OLD	✓	✓	✓		2

- ▲ For DinRail Version only RS485 Communication Option ★ Zigbee Communication Option ○ Analog Output # kWh / kVAh Programmable at site.
- LG+ 3399: Wh and PF and any two parameters [Basic (VLL,VLN,AMP,Hz) or W or VA] programmable
LG+/μG+ 1119/L/D: Any one parameter [W or PF or VA or Wh] programmable
LG+/μG+ 1129/L/D: Any two parameters [Basic (VLL,VLN,AMP,Hz) or W or PF or VA or Wh] programmable
- ◆ Restricted Option

Applicable Standards :

Test of insulation properties	IEC60060-1
Test of Accuracy requirements	IEC62052-11
Test of electrical requirements	IEC62052-11
Radio interference suppression	CISPR22
Fast transient burst test	IEC61000-4.4
Damped oscillatory waves immunity test	IEC61000-4.12
Test of immunity to electromagnetic RF fields	IEC61000-4.3
Test of immunity to conducted disturbances, Induced by radio-frequency fields	IEC61000-4.6
Test of immunity to electrostatic discharges	IEC61000-4.2
Surge immunity test	IEC61000-4.5
Test of the effect of the climatic environments	IEC60068-2
Mechanical tests	IEC60068-2
Test of protection against penetration of dust and water	IEC60529
Test of resistance to heat and fire	IEC60695-2
Safety standard	IEC61010-1

Safety and Environmental Specification

Safety:

Designed to meet protection class III, pollution degree 2.
Protection against shock by double insulation.
Clearance and Creepage meets as per UL 61010 safety standard.
Finger touch proof terminals to voltage and current connections.

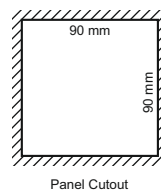
Environment:

Operating temperature -10°C to +55°C (14°F to 131°F)
Storage temperature -25°C to +70°C (-13°F to 158°F)
Humidity 5% to 95% non condensing.
Protection index IP 51 (IP 54 front option)
Recommended wire gauge 12 to 14 SWG

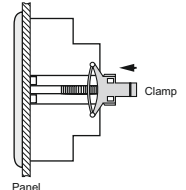
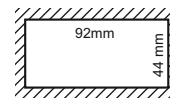
Mechanical Specification:

Dimension Bezel:
96 x 96 mm (Depth 50mm behind Bezel)
96 x 48 mm (Depth 45mm behind Bezel)

Panel Cutout:
90⁺²₋₀ x 90⁺²₋₀ mm
90⁺²₋₀ x 42⁺²₋₀ mm



Panel Cutout



Panel

Range of Products: Energy Management System (EMS) | Textile Energy & Process (TMS) | Prepaid/Postpaid Metering | Street Light Management | Water management (WMS) | Process Automation | Smart I/O | Gateway | Power Analyzer | Automatic Changeover with Current Limiter (ACCL) | Demand Controller | Power Factor Controller (PFC) | Branch Circuit Monitor | Multifunction Meters | Dual Source Energy Meter | DC Energy meter | Transducers | Digital Panel Meters (Basic Meter) | Earth Leakage Relay (ELR) | Earth Fault Relay (EFR) | Generator Monitoring Unit | Motor Protection System | Energy & Process Monitor



Sales Offices: BANGALORE | CHENNAI | COIMBATORE | MUMBAI | DELHI | HYDERABAD | USA | UAE

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