LGP & MGP
DIGITAL MULTIFUNCTION LOAD MANAGER

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

SIMULTANEOUS MEASUREMENT OF VARIOUS ELECTRICAL PARAMETERS!

www.elmeasure.com
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 kWh* 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 kWh (default kWh) for meters with Energy parameter.
- Wide Measurement range - 10mA - 6A.
- Displays more than 25 parameters Basic, Power and Energy.
- 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%.

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 plus models only).
- Programmable Relay output - refer Product Selection Table.

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:

<table>
<thead>
<tr>
<th>Full Scale Watts</th>
<th>0.4k to 4.0k</th>
<th>4.01k to 40k</th>
<th>40.1k to 400k</th>
<th>400.1k to 4000k</th>
<th>4 M to 40 M</th>
<th>40 M to 400 M</th>
<th>400 M to 4000 M</th>
</tr>
</thead>
<tbody>
<tr>
<td>kVAh × Transformer Ratio</td>
<td>🟢 V Pri LL x A Pri</td>
<td>0.01</td>
<td>0.1</td>
<td>1.0</td>
<td>10</td>
<td>100</td>
<td>1000</td>
</tr>
</tbody>
</table>

Energy Reset: 999999 kWh × 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.
  - 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 & Phase wise).
- 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.
  - 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%.

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Typical Connection Scheme for Dual Energy Measurements

**OPTION 1**

![AMF PANEL](Image)

**OPTION 2**

![Wireless Non-Dual Source Meter (Zigbee or WiFi)](Image)

**OPTION 3**

![Non-Dual Source Meter](Image)

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**Technical Specification**:

<table>
<thead>
<tr>
<th>Specification</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Accuracy</strong></td>
<td>Class 1 Default as per IEC 62053-21, Class 0.5 as per IEC 62053-22.</td>
</tr>
<tr>
<td>Sensing/Measurement</td>
<td>True RMS, 1 Sec update time. 4 Quadrant Power &amp; Energy.</td>
</tr>
<tr>
<td><strong>Input voltage</strong></td>
<td>4 Voltage inputs (VR, VR, VB, VN), Programmable 110 or 415V LL Nominal (Range 50 to 550V LL). Primary Programmable up to 999 kV. Burden: 0.2V/A Max. per phase.</td>
</tr>
<tr>
<td><strong>Input Frequency</strong></td>
<td>45 - 65Hz</td>
</tr>
<tr>
<td><strong>Input current</strong></td>
<td>Current inputs (AR, AY, AB) 500mA - 6A (Field configurable 1A or 5A). Primary programmable up to 99 kA. Overload: 10A max continuous, 50A max for 3 Sec. Burden: 0.2V/A Max. per phase.</td>
</tr>
<tr>
<td><strong>Aux-Supply</strong></td>
<td>(Control Power) 80 - 300V AC/DC, 40-70Hz. Burden: 5V Max.</td>
</tr>
<tr>
<td><strong>Display Type</strong></td>
<td>LG+/µG+: 10mm height bright red LED display. LCD: 10mm height bright LCD.</td>
</tr>
<tr>
<td><strong>Display Resolution</strong></td>
<td>4 digits for instantaneous, Integrated: 6 digits for LED, 7 digits for LCD</td>
</tr>
<tr>
<td><strong>CT PT Ratio Max</strong></td>
<td>2000 MVA programmable.</td>
</tr>
<tr>
<td><strong>Weight</strong></td>
<td>Unpacked: 300 gms, Packed: 400 gms.</td>
</tr>
</tbody>
</table>

**Note**: Additional error of 0.1% of full scale, for meter input current below 500mA
## Product Selection Guide:

<table>
<thead>
<tr>
<th>MODEL NO.</th>
<th>BASIC</th>
<th>POWER</th>
<th>ENERGY</th>
<th>OPTIONAL FEATURE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>VLL RYB</td>
<td>VLN RYB</td>
<td>AMP RYB</td>
<td>Hz</td>
</tr>
<tr>
<td>LG* 5310</td>
<td>VLL</td>
<td>VLN</td>
<td>AMP</td>
<td>Hz</td>
</tr>
<tr>
<td>LG* 5110</td>
<td>VLL</td>
<td>VLN</td>
<td>AMP</td>
<td>Hz</td>
</tr>
<tr>
<td>LG* 3399</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>LG* 5220 (DS)</td>
<td>VLL</td>
<td>VLN</td>
<td>AMP</td>
<td>Hz</td>
</tr>
<tr>
<td>LG* 3220 (DS)</td>
<td>W</td>
<td>PF</td>
<td>Wh</td>
<td>LH &amp; DH</td>
</tr>
<tr>
<td>LG* 3100</td>
<td>W</td>
<td>PF</td>
<td>VA</td>
<td>Wh</td>
</tr>
<tr>
<td>LG* 1119</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>LG* 1129</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>LG* 1100</td>
<td>VLL</td>
<td>VLN</td>
<td>AMP</td>
<td>Hz</td>
</tr>
<tr>
<td>µG* 5110</td>
<td>VLL</td>
<td>VLN</td>
<td>AMP</td>
<td>Hz</td>
</tr>
<tr>
<td>µG* 1119</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>µG* 1129</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>µG* 1100</td>
<td>VLL</td>
<td>VLN</td>
<td>AMP</td>
<td>Hz</td>
</tr>
</tbody>
</table>

For DinRail Version only RS485 Communication Option • Zigbee Communication Option • Analog Output # kWh / kVAh Programmable at site.

### LCD / DinRail Version

| LG* 5110L | VLL | VLN | AMP | Hz | W | PF | VA | Wh | LH | OL |  |
| LG* 5110D | VLL | VLN | AMP | Hz | W | PF | VA | Wh | LH | OL |  |
| LG* 5120L | VLL | VLN | AMP | Hz | W | PF | VA | Wh | LH | OL |  |
| LG* 1119/L/D | • | • | • | • | Wh | OL |  |
| LG* 1129/L/D | • | • | • | • | Wh | OL |  |
| µG* 5110L | VLL | VLN | AMP | Hz | W | PF | VA | Wh | LH | OL |  |
| µG* 1119/L | • | • | • | • | Wh | OL |  |
| µG* 1129/L | • | • | • | • | Wh | OL |  |
| µG* 1100/L | VLL | VLN | AMP | Hz | Wh | OL |  |

### 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: IEC60069-2
- Test of resistance to heat and fire: IEC60101–1

### 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 14SWG

### Mechanical Specification:

- **Dimension Bezel:** 96 x 46 mm (Depth 45mm behind Bezel)
- **Panel Cutout:** 90° x 42° mm
- **Applicable Standards:**
  - IEC60060-1
  - IEC62052-11
  - IEC62052-11
  - CISPR22
  - IEC61000-4.4
  - IEC61000-4.12
  - IEC61000-4.3
  - IEC61000-4.6
  - IEC61000-4.2
  - IEC61000-4.5
  - IEC60068-2
  - IEC60068-2
  - IEC60069-2
  - IEC60101–1