

Trilliant® Libra Series Edge Ready Smart Electric Meter

The Trilliant® Libra Series Edge Ready Smart Electric Meter is perfect for all residential and commercial and industrial (C&I) use. Configurable energy accumulation modes, field interchangeable communication modules and a developer's toolkit are proven advantages for boosting operational performance and simplifying data acquisition.

Features & Benefits

- **Interval Data Recording and Self Reads:** 8MB NV memory for storing profile, data logs, and self read data. This feature provides an easy upgrade path without the need for an additional option board.
- **Instrumentation:** Libra meters can display over 50 different instrumentation quantities. With this, the Libra meter can provide the equivalent functions of all the following devices: voltmeter, wattmeter, VA meter, distortion indicator, ammeter, VAR meter, phase angle meter, phase rotation indicator.
- **Revenue Metering:** Libra is a revenue meter with high accuracy (0.2 accuracy class), providing advanced four quadrant revenue functions, transformer and line loss compensation, and increased data profiling without adding hardware option boards.
- **Power Quality Monitoring:** A power guard component in Libra detects and identifies power quality problems before they become complaints. (Multiple ST-5s can be connected via a RS-485 cable)
- **ANSI Communications Protocols Compliant:** Libra provides full support of ANSI C12.18, C12.19, C12.21 and C12.22 communication protocols and data structures for reading and programming.
- **Input and Output Options:**
 - KYZ with Programmable Pulse Output Value
 - EOI
 - Demand Threshold Alert
 - Voltage Threshold Alert
 - Diagnostics
 - Load Control
 - Up to 2 Inputs from External Devices
 - Pulses Input to Load Profile
 - Activate Real-Time Rate
- **Compatible Standards:**
 - ANSI C12.18-1996
 - ANSI C12.19-1997
 - ANSI C12.1-2001
 - ANSI C12.10-2004
 - ANSI C12.20 (Class0.2)-2002
 - FCC Part 15, Class B
 - FCC Part 15, Subpart C
- **General Features:**
 - Field Serviceable communications and battery replacement
 - 200A disconnect switch
 - LCD display
 - Polycarbonate cover
 - Demand reset
 - Optical tower
 - Test Mode push button
 - Test LED



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Features:

Measurements

- Present energy (kWh) and demands plus last reset values
 - Delivered only
 - Received only
 - Delivered + received
 - Delivered - received
- Energy (kvarh) in two ways:
 - Delivered and Received
- Instantaneous values
 - Per phase voltage; L-L or L-N & current with phase angles
 - Active power (kW)
 - Power quality measures: DPF, THD, TDD, Distortion kVA
 - Frequency, temperature, etc.

Display

- Display of Energy configurable to 4, 5 or 6 digits
- Energy and instantaneous power are displayed on LCD
- Four display modes:
 - Normal, display energy and instantaneous power
 - Test, display data for testing the meter
 - Alternate, display all measurement items
 - Frozen, display error and caution inner meter

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(Features continued):

Automatic Meter Reading (AMR)

| | |
|----------------------------|---|
| Two UART Port | One is used to work with third party suppliers of communication systems to integrate AMR technology. The other is optical port, local read by handset. Compliant ANSI C12.18 and ANSI C12.19. |
| MeterBuddy Software | Read the state information and data from meter. Program and build the meter. Perform a master reset to clear energy values; voltage event and power fail record. Obtain a meter program and data summary report. |
| Demand | Maximum demand Cumulative demand Continuous cumulative demand Thermal demand |
| Time-of-Use | Up to 4 TOU periods & 4 Seasons Up to 3 daily rate schedule types, plus one holiday schedule Up to 80 TOU Schedule set points Up to 150 programmable dates (50 in kV) Holidays, Season Change, DST, Self Read, Reset Perpetual calendar handles most dates Up to 5 billing & 5 demand measures per TOU period Each demand measure capable of 2 coincident values Future activation of TOU Schedule & Calendar possible Enables load control output switch capabilities Enables Self Read actions on specified dates -- with or without a Demand Reset |
| Load Profile | 2 independently timed recorders each with 16 channels (32 total) Configurable intervals between 1 and 60 minutes 5.4MB of on-board memory for each recorder (10.8 MB total) |
| Event Log | Ability to select the event types that are logged and the number of occurrences to track - up to 500 occurrences max. Date and time of event is logged in Libra-T/Libra-L Logged events include: <ul style="list-style-type: none">• Diagnostics• Cautions: Under voltage, Demand overload, leading kvarh, reverse energy flow• Real Time Pricing activation and deactivation• Test Mode activation and deactivation• Externally initiated meter reading (local or remote)• Programming sessions• Power up, power down• Demand resets• Self reads |

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Option Board

Communication Option Boards

Communication option boards:

- T-2, internal modem
- WH 109, communications (RS-232/485 or ext. modem)
- RF mesh
- Cellular

Edge Computing

Peer-to-peer data exchange
Powerful Edge analytics

Input/Output Option Boards

LBS-1:

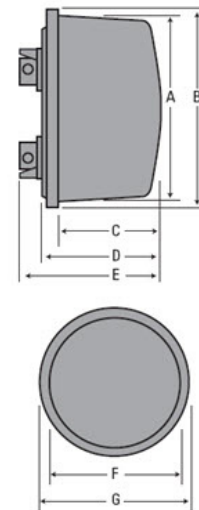
- 2 Three-wire outputs
- 1 Two-wire output

LBM-1:

- 2 Three-wire outputs
- 6 Two-wire outputs
- 4 Pulse inputs (three-wire or two-wire)

Availability

| Form | Volts | Elements | SC/TR | Class |
|--------|----------------------|----------|-------|-------|
| 1S | 120V | 1 | SC | 200 |
| 2S | 240V | 1.5 | SC | 200 |
| 3S | 120V to 240V | 1 | TR | 20 |
| 4S | 120V to 240V | 1.5 | TR | 20 |
| 9S | 69/120V to 277/480V | 3 | TR | 20 |
| 9S | 120/208V to 347/600V | 3 | TR | 20 |
| 12S | 120/208V and 600V | 2 | SC | 200 |
| 12S | 120/208V and 600V | 2 | SC | 320 |
| 16S | 120/208V to 347/600V | 3 | SC | 200 |
| 16S | 120/208V to 347/600V | 3 | SC | 320 |
| 35S | 69/120V to 277/480V | 2 | TR | 20 |
| 35/45S | 120/208V to 347/600V | 2 | TR | 20 |
| 36/46S | 120/208V to 347/600V | 2.5 | TR | 20 |



Dimensions

| A | B | C | D | E | F | G |
|-------|--------|-------|---------|-------|-------|--------|
| 6.29" | 6.95" | 3.93" | 4.93" | 5.93" | 6.29" | 6.95" |
| 16cm | 17.7cm | 10cm | 12.54cm | 15.08 | 16cm | 17.7cm |

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Specifications

| | | |
|------------------------------------|---|--|
| Operating Volt | Rated: 120V to 480V, Range: 57V to 600V | |
| Operating Frequency | Rated: 60Hz,50Hz, Range: 46-64Hz without re-calibration | |
| Operating Environment | Temperature: -40°to +85°C Humidity:0%~95% non-condensing | |
| Transient/Surge Suppression | 2.5kV, 2500 strikes (ANSI C37.90.1-1989) x 4kV, 2.5 kHz repetitive burst for 1min; 6kV at 1.2/50 us, 10 strikes (IEC 61000-4-4) ANSI C62.41 | |
| Accuracy | ANSI C12.20 - 0.2, 0.5 Accuracy Class | |
| LCD Display | Six-digit, Data Digit Height: 0.4", Annunciator Height: 0.088", Load Indicator | |
| Pri. Time Base | Power line frequency (50 Hz or 60 Hz), with selectable crystal oscillator | |
| Sec. Time Base | Meets the ANSI limit of 0.02 % using the 32.768 kHz crystal. Initial performance is expected to be equal to or better than ±55 seconds per month at room temperature. | |
| Power Supply Burden | Less than 4W | x Per phase current burden: 0.1 mOhm typical at 25°C Per phase voltage burden: 0.008W@120V 0.03W@240V 0.04W@480V |
| Starting Current | 5mA for Class 20 50mA for Class 200 80mA for Class 320 | Creep 0.000A, no more than one pulse measured per quantity, conforming to ANSI C12.1 requirements |
| Outage Carryover Capacity | 6 hours at 25 °C. Super capacitor rated at 1/0.5 Farads, 3.6V | |
| Battery (optional) | Li-SOCI2 battery rated 1000 mAh, 3.6 V and shelf life of 10+ years. 5 years continuous duty at 25 °C | |
| Comm. Rate | Optical port: 1200~19200bps; Remote port: 9600~38400bps | |
| Temp. Rise | Meets ANSI C12.1 Section 4.7.2.9 | |