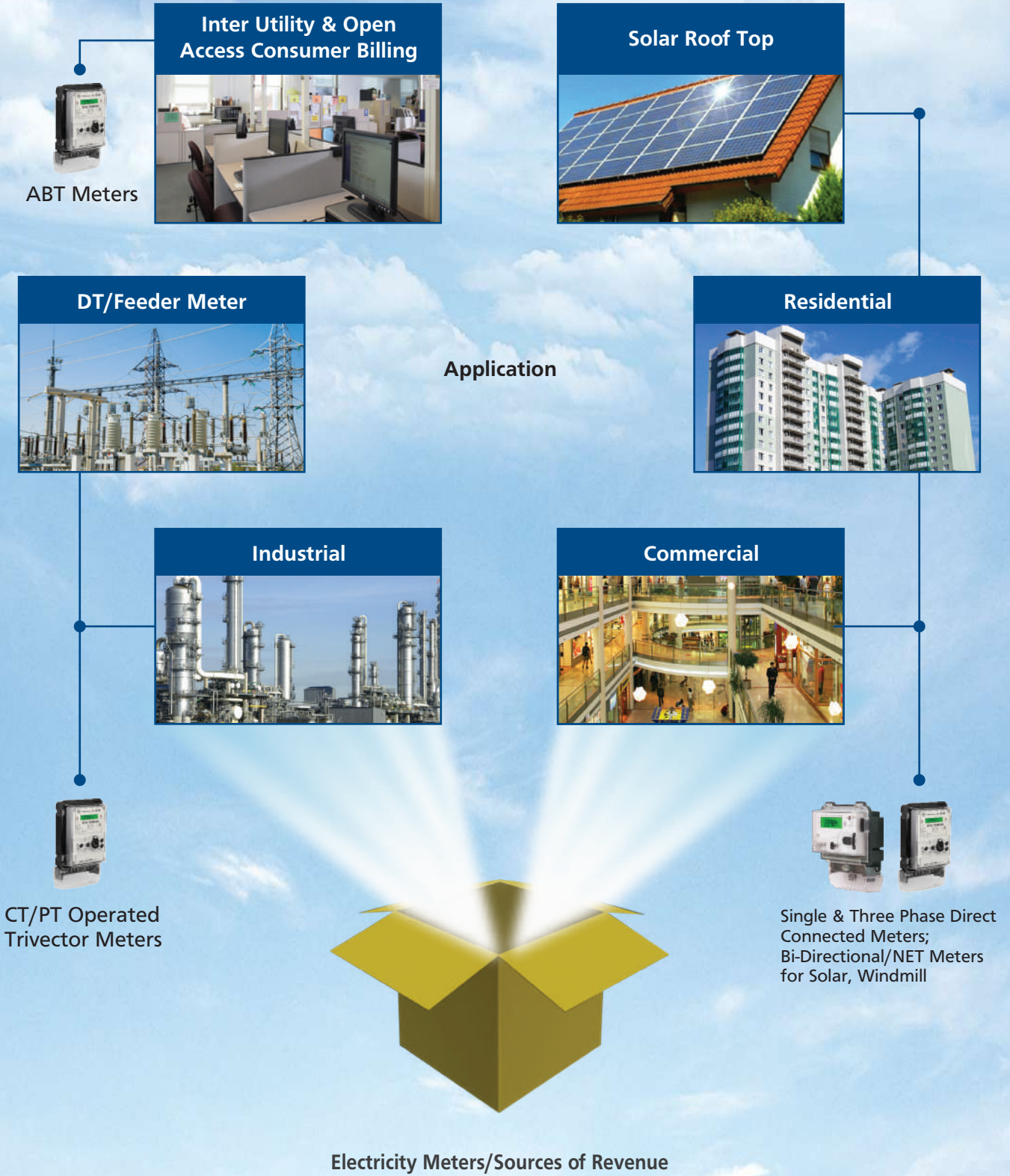


## The Right Measure



# Meters for all consumer segments and applications



## Single Phase Energy Meter



### EM101+

#### Salient Features

- Class 1 accuracy as per IS13779
- Fully static & compact in size with bright LCD display
- Current rating 5-30A & 10-60A
- Display consists of auto scrolling, manual scrolling (6+0 digit), battery mode & high resolution mode (2+4 digits)
- Wide range of communication options - Optical/ RS 232/RF (optional)/DLMS (Optional)
- Anti-tamper features
- Forward energy recording irrespective of current direction
- High surge withstand capability
- Load surveys are available for 90 days with voltage, current, PF, KW & KVA
- Non time based reset backup or billing profile for last 12 months
- Display and data reading in power OFF condition (with in-built battery model only)
- Bi-directional energy recording available (Optional-applicable for solar application)
- Meters are available with suitable hinge type polycarbonate enclosures/boxes (optional)
- Provisions for meter terminal sealing arrangement to prevent tamperers
- To download NVM data base computer software & optical to USB cables are also available (on request & chargeable basis)

#### Technical Specifications

##### ELECTRICAL

Connection	1 Phase 2 Wire Whole Current type
Accuracy	Class 1 as per IS13779
Rated voltage	240 V
Voltage variation	+20% to -50%
Current rating	5-30 A, 10-60 A
Starting current	0.2% of basic current
Frequency	50Hz ±5%
Power consumption	As per IS13779

##### STANDARD COMPLIANCE

Applicable standards	IS13779
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##### ENVIRONMENTAL CONDITIONS

Operating temperature	-10°C to +55°C
Ingress Protection (IP)	IP51

##### DISPLAY

LCD	(6+0) digits backlit display & (2+4) digits high resolutions display.
LED indicators	Pulse LED for kWh

##### PARAMETERS SUPPORTED (As per customer requirements)

Maximum Demand (MD)	kW and kVA along with date and demand integration period is 30 min.
Instantaneous parameters	Voltage, phase and neutral current, active and apparent powers, power factor, frequency
Time of day tariff	TOD 1 for 00-24Hr
Cumulative parameters	kWh, kVAh energies

##### OTHER FEATURES

Tamper proofing provision	1. Top cover open 2. Single wire operation or neutral missing 3. Earth load tamper 4. Current reversal. 5. Magnetic logging.
Communication	Optical IEC1107/ DLMS (optional)



## Technical Specifications

### ELECTRICAL

Connection	Meter is 3P 4W suitable for 3P 4W Wire and 3P 3W system
Accuracy	Class 0.2s/0.5s as per IS14697 Class 1.0 as per IS13779
• Whole current / Direct Connected	240 V (P-N)
• CT Operated	
3 Phase 4 Wire	240 V (P-N)
• CT\PT Operated	
3 Phase 4 Wire	63.5 V (P-N)
3 Phase 3 Wire	110 V (P-P)
Voltage variation	
• Whole current / Direct Connected	-40% to +20%
CT Operated	-30% to +20%
CT\PT Operated	
Current Rating	
• Whole current / Direct Connected	10-60 A, 20-100 A
• CT\VT Operated	
Basic	1A, 5A
Maximum	120 % of basic current (200 % basic current- Optional)
Frequency	50Hz ±5%
Power Consumption	As per IS14697 for CT/PT operated As per IS13779 for whole current

### STANDARD COMPLIANCE

Applicable standards	IS13779 for class 1 IS14697 for Class 0.2s/0.5s IEC62053-21, IEC62053-22
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### ENVIRONMENTAL CONDITIONS

Operating temperature	-10°C to +55°C
Ingress Protection (IP)	P51

### PARAMETERS SUPPORTED (As per customer requirements)

Maximum Demand (MD)	kW and kVA along with date and time
Instantaneous parameters	Phase wise voltages and currents, active reactive and apparent powers, power factor, frequency
Time of Day Tariff	Up to 8 Registers, profiles and seasons
Energy measurement	4 quadrant measurement of kWh, kVAh, and kVAh

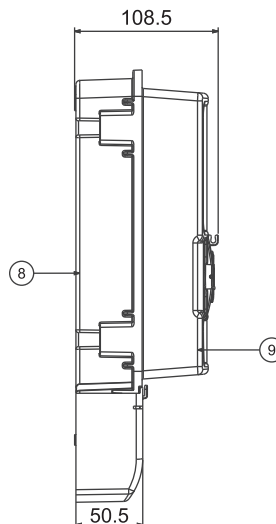
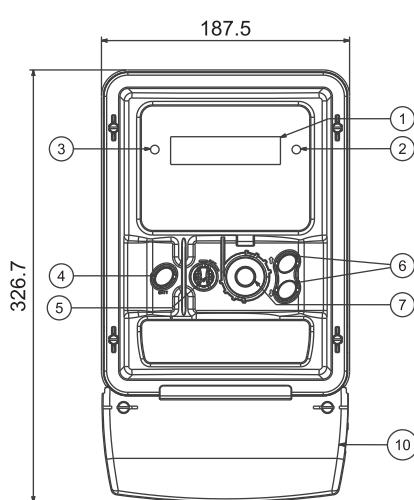
### Display

LCD	8 digit backlit display
Display Mode	Auto scroll, push button and high resolution modes
LED	Pulse LEDs for kWh and kVAh

### OTHER FEATURES

Load survey	kVAh, kWh, kVAh lag, kVAh lead, voltages and currents
Data Security	Multi level password for data reading and programming
Communication	Electrically isolated optical port as per IS15959/ IEC62056-21 (DLMS)
Optional communication	RS 232 / RS 485 / IR / IrDA/ RF (2.4 Gliz/865-867 MHz)
Protocol supported	DLMS as per IS15959 (optional)
Tamper Detection (as per	Missing Potential, Voltage related tampers, Current related tampers, Low Power Factor, Meter Cover Open, Abnormal Magnetic influence, Wrong phase sequence detection
Tamper proofing provision	Ultrasonic welding available (optional)

## Mechanical Dimensions



1. LCD Display
2. LED kVAh
3. LED kWh
4. Battery Push Button
5. Reset Push Button
6. Up/Down Scroll Push Button
7. Optical Port
8. Meter Base
9. Meter Cover
10. Terminal Cover

**Note: Actual meter dimensions will depend on meter configuration**

## Ordering information for Trivector Meters, WC & LTCT Meters, Accuracy -1.0 for WC & 0.5s for LTCT

CAT No	Accuracy Class	Internal Battery	RTC	Additional Port-RS485 Modbus	Rated Voltage (V) (P-P/P-N)	Current Rating (A)	Display Digits (Nos)	Cumulative KWH	MD in KW & KVA	Load Survey 40 days for all energy values	CT Ratio need to be provided at the time of ordering
WR300BC7300	1	Yes	Yes	No	415/240	10-60A	6+2	Yes	Yes	Yes	NO
WR300BC73RS485	1	Yes	Yes	Yes	415/240	10-60A	6+2	Yes	Yes	Yes	NO
WR300BC5200	0.5s	Yes	Yes	No	415/240	/5	6+2	Yes	Yes	Yes	Yes
WR300BC1200	0.5s	Yes	Yes	No	415/240	/1	6+2	Yes	Yes	Yes	Yes
WR300BC52RS	0.5s	Yes	Yes	Yes	415/240	/5	6+2	Yes	Yes	Yes	Yes
WR300BC12RS	0.5s	Yes	Yes	Yes	415/240	/1	6+2	Yes	Yes	Yes	Yes

## Ordering information for Trivector Meters-HT CT/PT Operated 0.5s or 0.2s

CAT No	Accuracy Class	Internal Battery	RTC	Additional Port-RS485 Modbus	Rated Voltage (V) (P-P/P-N)	Current Rating (A)	Display Digits (Nos)	Cumulative KWH	MD in KW & KVA	Load Survey 40 days for all energy values	CT Ratio need to be provided at the time of ordering
WR300BB5200	0.5s	Yes	Yes	No	110/63.5	/5	6+2	Yes	Yes	Yes	Yes
WR300BB52RS	0.5s	Yes	Yes	Yes	110/63.5	/5	6+2	Yes	Yes	Yes	Yes
WR300BB1200	0.5s	Yes	Yes	No	110/63.5	/1	6+2	Yes	Yes	Yes	Yes
WR300BB12RS	0.5s	Yes	Yes	Yes	110/63.5	/1	6+2	Yes	Yes	Yes	Yes
WR300BB5100	0.2s	Yes	Yes	No	110/63.5	/5	6+2	Yes	Yes	Yes	Yes
WR300BB51RS	0.2s	Yes	Yes	Yes	110/63.5	/5	6+2	Yes	Yes	Yes	Yes
WR300BB1100	0.2s	Yes	Yes	No	110/63.5	/1	6+2	Yes	Yes	Yes	Yes
WR300BB11RS	0.2s	Yes	Yes	Yes	110/63.5	/1	6+2	Yes	Yes	Yes	Yes

## ABT (Availability Based Tariff) Meter



### Salient Features

- Accuracy class 0.2s as per relevant IS 14697
- Frequency based energy measurement
- Suitable for inter-utility or open access consumer billing
- Store energy values in every 15 mints block along with avg frequency in same interval
- ABT meters are also available as per PGCIL specs, guidelines & capable of convert data in NPC format (Power Grid's report format)
- Consider Step frequency 0.01Hz.
- Communication via optical (IEC1107/DLMS) / RS232 / RS485 (MODBUS/DLMS)-(Optional)
- Anti-tamper features
- Display and data reading in power OFF condition
- Capable of recording Load Survey data & easy download through Base Computer Software
- Approved in all major utilities across the country

**ER300 P**

## Technical Specifications

### ELECTRICAL

Connection	3 Phase 4 Wire
Accuracy	Class 0.2s/0.5s (active/reactive) as per IS14697 or 0.2s/0.2s (active/active).
• CT\PT Operated	
3 Phase 4 Wire	63.5 V (P-N)
3 Phase 3 Wire	110 V (P-P)
Voltage variation	
• Whole current / Direct Connected	-40% to +20%
• CT Operated	-30% to +20%
CT/PT operated	
Current Rating	
• CT\VT Operated	
Basic	1A, 5A
Maximum	120 % of basic current (200 % basic current-Optional)
Frequency	50Hz ±5%
Power Consumption	As per IS14697 for CT/PT operated

### STANDARD COMPLIANCE

Applicable standards	IS14697 for Class 0.2s/0.5s IEC62053-21, IEC62053-22
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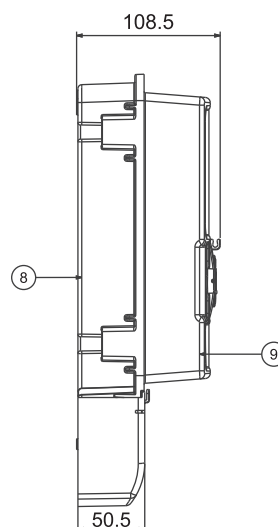
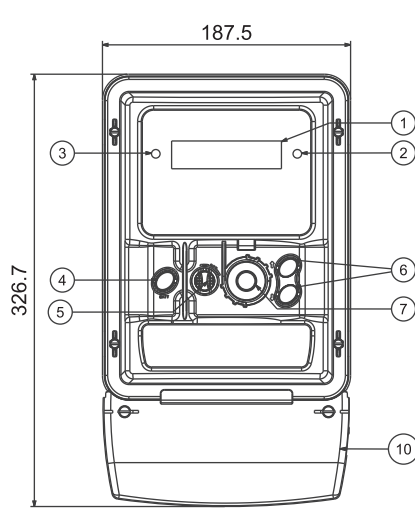
### ENVIRONMENTAL CONDITIONS

Operating temperature	-10°C to +55°C
Ingress Protection (IP)	P51

### PARAMETERS SUPPORTED (As per customer requirements)

Maximum Demand (MD)	kW and kVA along with date and time (Optional)
Instantaneous parameters	Phase wise voltages and currents, active reactive and apparent powers, power factor, frequency
Time of Day Tariff	Up to 8 Registers, profiles and seasons (Optional)
Energy measurement	Frequency based.
<b>Display</b>	
LCD	8 digit backlit display
Display Mode	Auto scroll, push button and high resolution modes
LED	Pulse LEDs for kWh and kVAh
<b>OTHER FEATURES</b>	
Load survey	kVAh, kWh, kVAh lag, kVAh lead, phase wise voltages and currents
Data Security	Multi level password for data reading and programming
Communication	Electrically isolated optical port as per IS15959/ IEC62056-21 (DLMS, CAT B)
Optional communication interfaces	RS 232 / RS 485.
Protocol supported	DLMS as per IS15959 and MODBUS (For RS485)
Tamper Detection (as per customer requirements)	Missing Potential, Voltage related tampers, Current related tampers, Low Power Factor, Meter Cover Open, Abnormal Magnetic influence, Wrong phase sequence detection
Tamper proofing provision	Ultrasonic welding available.

## Mechanical Dimensions



1. LCD Display
2. LED kVAh
3. LED kWh
4. Battery Push Button
5. Reset Push Button
6. Up/Down Scroll Push Button
7. Optical Port
8. Meter Base
9. Meter Cover
10. Terminal Cover

**Note: Actual meter dimensions will depend on meter configuration**

**For CAT Nos. details of ABT meters contact with nearest branch offices.**

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Product improvement is a continuous process. For the latest information and special application, please contact any of our offices listed here. Product photographs shown for representative purpose only.



**L&T Electrical & Automation**

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