

Smart Demand Controller - EM 3460

Comes with a TOU (Time of Use) option. Helps to reduce electrical energy bills.
Better management of electrical energy usage... pay back could be less than a year!



Benefits

- Offers comprehensive power and energy monitoring feeders and individual loads
- Retrieves previous energy reading to cross check utility meter readings or electricity bills
- Analyses loading patterns
- Visualizes unbalance in system
- Checks for wrong connection, reversed phase sequence, deteriorating power factor compensation on one of the phases etc
- Offers demand monitoring
- Ensures automatic synchronisation of demand with utility meter
- Displays max demand along with date and time of occurrence
- Helps to set realistic demand target
- Predictive feature enables prior indication of crossing demand
- Facilitates tripping of non essential loads
- Analyzes electrical faults & planning of load schedules
- Optimizes demand utilization
- Improves system efficiency
- 3 Potential Free Relay Configurable for
 - Predictive Demand >UL (PdDM>UL)
 - Demand >UL (DM>UL)
 - Restore

Applications

- Sub-metering of loads, feeders, equipment on continuous basis for cost allocation and analysis
- Record and analyze Power & Energy Data of Energy intensive loads
- Separately monitor Import/Export of energy (optional)
- Relate energy input to product output in batch operation
- Monitor large loads which contribute to Demand Peaks
- Assess Energy Efficiency of operations

Features

- True RMS
- Easy to install
- Facility to store previous period integrated data under the Function 'OLD'
- Data maintained under Power Failure
- Built-in Phase Analyser
- Programmable PF Lock to match EB requirement
- Security : Access to Set & Clear functions through User programmable Code
- Display : Crisp, High visibility, Bright Red LED, 0.56" height, digital readout 7 digit. Instantaneous Parameters 4 digit, Energy Parameters 6 Digit
- Maximized Resolution through Floating Decimal Point with auto scaling Kilo to Mega values.
- Auto scrolling with user selectable parameters (upto 16 parameters)

Features	EM 3460
■ Measures :	
- Voltage Line to Line per phase and average	●
- Voltage Line to Neutral per phase and average	●
- Voltage Neutral to Earth	●
- Current per phase and average	●
- Neutral Current	●
- Phase Angles of V1, V2, V3, I1, I2, I3	●
- % Total Harmonic Distortion of V1, V2, V3, I1, I2, I3	●
■ Frequency of supply and Generator RPM.	●
■ Power Parameters Per phase and Total (kVA, kW, kVAR,)	●
■ PF per phase and 3 phase	●
■ All Energy Parameters (kVAh, kWh, kVARh, Avg PF, Avg V, Amp Hours, Avg Hz). Also, Run Hrs, and No of Interruptions.	●
■ Monitors Demand Parameters : (kVA or kW) Instantaneous Demand & Maximum Demand, Day, Date & Time of MD occurrence	●
■ TOU (Factory selectable) :	□
- Energy TOU	□
- Maximum Demand TOU	□
- Demand Control TOU	□
■ User Programmable Upper Limit, Lower Limit, Essential Load and Prediction Interval for Sophisticated Demand Control	●
■ 3 Change Over Potential free control outputs for: Predicted Demand exceeds Target, Demand exceeds Target & Restore Load	●
■ Records High-Low Profiles with 4 peaks and 4 lows for V, A, Hz, PF and all power parameters with Day, Date and Time of occurrence	●
■ Generation of High-Low Profiles for Maximum Demand with Day, Date and Time of occurrence	●
■ Generates Demand Profile at 19 Demand Levels for setting realistic Demand Targets according to user-programmed Demand Level 0 and Step size	●
■ Real Time Clock (Shows current Date, Time, Power ON Time, Power, OFF Time, RUN Hrs & OFF Hrs.), No. of interruptions	●
■ Relay Outputs to control shedding and restoration of loads	●
■ User Programmable Demand Targets for control	●
■ Auto reset feature to clear or reset the INTG to zero on a pre-programmed date and time (only in TOU version)	□
■ Accuracy Class 1.0, 0.5	□
■ Optically isolated RS 485 serial port	□
■ Import & Export Energy (IE) recording	□

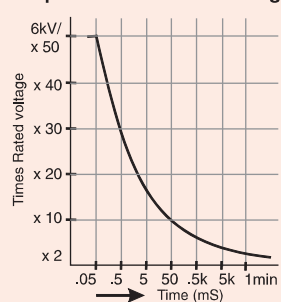
The EM 3460 meter can accept Full Scale up to 650MVA Only. Full scale is given by $(3 \times V_{\text{pri}} \times I_{\text{pri}})$
 Note: RS 485 is standard for meters with TOU

Note: ● = Standard, □ = Optional

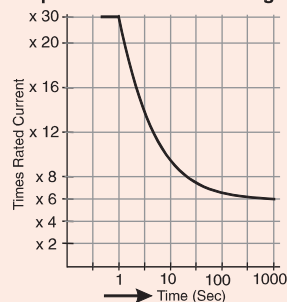
Technical Specifications

- Sensing : 3 Phase, 3 Wire/4Wire (field configurable)
- Measurement : True RMS
- Voltage Input : 110 to 415 V nominal (Range 80 - 500V)
- Current Input : 5 or 1 Amp (Factory set) nominal
- Maximum Current : 120% of nominal
- Frequency : 50 Hz \pm 5%, 60 Hz \pm 5%
- Burden on PT or CT : 0.2 VA Max.
- Accuracy (For V, A, PF & all Power & Energy parameters)
- Class 1.0 : \pm (0.2% of Full Scale + 0.8% of reading + 1 digit).
- Class 0.5 : \pm (0.1% of Full Scale + 0.4% of reading + 1 digit).
- Accuracy of Hz : \pm 0.2% of reading
- Accuracy of \emptyset : \pm 1° (20% to 120% of Full Scale).
- Display Update : Every 1 second (Demand Par - 15 Secs)
- Front Panel Keys : Easy to operate sealed Membrane type
- Auxiliary Supply : Factory Set, Single Ph 50 Hz 240V (190-270V) or 110V (85-130V). Burden 5VA max A Only.
- Power Factor : 0.5 PF Lag -Unity-0.8 PF Lead
- Dimensions : Bezel 192 x 144mm. Depth behind Bezel 110mm.
- Weight : 1800 gms. Approximately
- Panel Cutout : 186 x 138mm (+1 - 0 mm)
- Operating temp. : 0° - 60°C ambient.
- Rugged Construction Conforms to:
- Emission : CISPR 22
- Fast Transient : Upto 2kV, IEC 61000 - 4 - 4, level 3,
- ESD : IEC 61000 - 4 - 2
- Impulse voltage : 6kV, IEC 60060, 1.2/50
- Protection against : Front IP 51
- dust & water : Rear IP 40
- Warranty : 3 Year from data of the invoice

V input overload withstanding



I input overload withstanding



“3d” VA measurement (For Version 06 & above)

- The EM 3460 is equipped with “3d VA Measurement” capability. This accurately includes Distortion power(D) per IEEE100, into the VA calculation.

$$\text{So, } VA_{3d} = \sqrt{W^2 + VAR^2 + D^2}$$

- However Arithmetic VA ($VA_{Arith} = VA_1 + VA_2 + VA_3$) is also available as a set-up option if you need to match with simpler or older meters.

User Programmable

Using Front Panel Keys

- EHT, HT or LT, Delta 2E or Star 3E measurement; PT, CT Ratios; KVA or kW Demand;
- VA measurement - ‘3D’ VA / Arithmetic VA
- Programmable 1-30 minute Demand Period
- Manual Synchronisation (fixed window, to suit most popular EB meters) or sliding window
- Auto Synchronisation: User Programmable pass word for all Setup, Demand Synchronisation and Clear Functions.

Using setup utility

All above parameters and more

- TOU calender
- Auto reset date between 1 to 28th day of month

TOU Feature

Programmable for

- 6 seasons in a year
- 3 weekend profiles in a season
- 10 public holidays
- 8 tariff zones per day

TOU Enabling

- TOU is Factory enabled on Order
- TOU Setup
 - TOU Tariff time zone setup & sub integrators configurable through setup utility (ConPAD)
 - Demand Control limits (UL & LL) user selectable through partial setup or setup utility
- TOU for all integrated parameters
 - Energy Parameters - kWh, kVAh, kVARh and Ah
 - PF avg, V avg, F avg, and Run hrs
 - MaxDM
- Demand Control TOU - User Selectable VA / W This meter can also be used for non TOU application

Auto Reset Feature

- Auto reset is optional. Factory enabled on Order
- Set up and Enabling through PC
- Clear all Integrator parameters on a preset date & time and stores the previous data into OLD register
- Programmable auto reset date between 1 to 28th day of month

Setup Utility

- A GUI based software tool for programing meters
- Downloadable from website on registration

TOU Calendar

Country / State / Region:
(with respect to Electric Utility Co.)

With effective from:

Seasons	Start Date & Month (DD/MM)	Week End Days		
		E1	E2	E3
1				
2				
3				
4				
5				
6				

Sl. No.	Public Holidays	Date & Month (DD/MM)
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		

Note : In week end, Week day and public Holidays as mentioned in the following table, fill the start hours in left side of semicolon, and minutes in the right side of semicolon as 24 hour format. For e.g., 14:0 Time slots should not be overlapped. For e.g., Slot start - 19.00, slot 2 start 21-00, slot3 start-20:00. Sub intg no should be in between 1 to 8. In case of week end and Public Holiday falls in same day, Priority is given to Public Holiday profile.

Tariff Time Slot	Season - 1 (HH & MM)		Season - 2 (HH & MM)		Season - 3 (HH & MM)		Season - 4 (HH & MM)		Season - 5 (HH & MM)		Season - 6 (HH & MM)		Public Holidays			
	Week Start time	End Intg No	Week Start time	Day Intg No	Week Start time	End Intg No	Week Start time	Day Intg No	Week Start time	End Intg No	Week Start time	Day Intg No	Week Start time	End Intg No	Start time	Intg No
1																
2																
3																
4																
5																
6																
7																
8																

Ordering Information

Specify

Model	Accuracy	Input Current (in Amps)	AUX Supply (in volts)	TOU Enable	RS 485 COM Port	Import / Export
<input type="checkbox"/> EM 3460	<input type="checkbox"/> CL 1.0 <input type="checkbox"/> CL 0.5	<input type="checkbox"/> 1 <input type="checkbox"/> 5	<input type="checkbox"/> 110 <input type="checkbox"/> 240	<input type="checkbox"/> Energy + Max DM + DM Ctrl	<input type="checkbox"/>	<input type="checkbox"/>

Note 1: Non TOU meter is Upgradable to TOU meter at authorized service center, bangalore.

Note 2: RS 485 is standard for meters with TOU.

Note 3: If customer insist on external authority certification for accuracy, the charges to be born by customer.

Note 4: For Meters with Acc.Class 0.2 please contact our product manager at global head quarters.

Note 5: Auto reset option can be provided on request.