

Conzerv®
is becoming

Schneider
Electric

CONZERV®
Smart Energy Management

Warranty³

3 Year Enhanced Warranty Period

NEW
Class 0.2S
accuracy


DigitAN™ - EM 6400 Series v3.03

■ Digital & Analog display ■ Compact ■ Smart ■ Global; CE,UL marks ■ Universal



- Auto Scaling K, M and G
- Brilliant 3 line, 8 segment LED display
- Color coded analog load bar
- True RMS, RS 485 optional
- Auto CT correction

Features

- Global: UL, CUL Listed, CE, C- Tick certified
- Accuracy Class 1.0 (0.5S & 0.2S Optional)
- True RMS, Accurate on Distorted waveforms
- Simultaneous sampling of Volts & Amps
- Low PT, CT burden
- Wide range of Auxiliary Supply (Control power)
- Programmable CT, PT ratios
- Built-in phase analyzer
- Quick and easy installation
- Auto Scrolling
- Communication with PCs, PLCs, DCS through RS 485 Serial Port (Built-in for EM 6434 & EM 6433 and optional for EM 6436, EM 6400)
- 10 year back-up of integrated data
- Turbo Key  for 'One Touch' operation and setup
- Measures 4 Quadrant Power & 2 Quadrant Energy (IE Optional measures 4 Quadrant Energy in EM 6400)
- CT reversal: auto-correction for Energy Integration in star (wye) mode **NEW!**
- Demand Monitoring (Optional)
- PF per phase and 3 phase
- Sealed dust-proof construction
- Touch safe terminals
- Easy set up through Front Panel keys
- Keypad lock

Display Features

- Patented Alpha numeric bright display
- Brilliant 3 line, 4 digit per line, (digit height 14mm) LED display with auto-scaling capability for Kilo, Mega, Giga)
- View 3 Parameters together
- Password protection for setup parameters
- User selectable default display page through keypad lock

Benefits

EM 6459

- Displays Volts, Amps, Frequency/PF simultaneously
- Monitors generator speed (RPM)
- Monitors generator loading efficiency
- ON hours & number of power interruptions

EM 6434

- Displays all power and energy parameters, Run hours, ON hours & number of power interruptions
- Monitors loading characteristics of motors

EM 6433

- Monitors active/apparent power & energy consumption, load current, Run hours, ON hours in a single meter
- Displays Amps, Power simultaneously

EM 6436: All benefits of EM 6433 and more

- Displays Volts, Amps, Frequency/PF simultaneously
- Displays Amps, Power, PF simultaneously

EM 6400: All benefits of the above models and more

- Monitors all instantaneous, integrated and demand parameters
- Analyses power quality
- Helps energy balancing

User Programmable

- Delta/Star (Wye)/2Phase/1Phase **NEW!**
- PT, CT Ratios Primary & Secondary
- User selectable VAh/Wh (EM 6436, EM 6433)

Applications

- Control Panels
- Motor Control Centers
- Power Distribution Panels
- Connection to Plant Monitoring & Control Systems
- Genset Panels
- Original Equipment Manufactures (OEMs)
- Building Management System

Rugged Construction

Conforms to

Emission	: CISPR22
Fast Transient	: 4kV IEC 61000-4-4
Burst	: MEE 62.41:1991
Surge withstand	: IEEE C37.90.1:2002
ESD	: IEC 61000-4-2
Impulse voltage	: 6kV, IEC 60060, 1.2/50µSec
Safety Construction	: Self extinguishable VO plastic
Protection against dust & water	: Front IP 51 Rear IP 40



ISO 14001:2004 Certified
ISO 9001:2000 Certified

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Technical Specification

Sensing/ Measurement	: True RMS, 1 sec update time 4 Quadrant Power & Energy
Accuracy	: Class 1.0 as per IEC 62052-11 and IEC 62053-21 Class 0.5S (optional) as per IEC 62052-11, 62053-22 and ANSIC12. 20 Class 0.2S (optional) as per IEC 62052-11 and IEC 62053-22 New!
Aux Supply (Control Power)	: 44 to 300 Vac/dc
Input voltage	: 4 Voltage inputs (V1, V2, V3, VN) 110 or 415 Vac LL nominal(Range 80 to 600Vac LL)
Input current (Energy Measurement)	: Current inputs (A1, A2, A3) 5A Class 1.0 0.5:5mA (Starting) to 6A* 5A Class 0.5S 0.2S: 5mA (Starting) to 6A 1A Class 0.5S 0.2S: 1mA (Starting) to 1.2A
Overload	: 5A meter : 10A max continuous 1A meter : 2A max continuous
Burden	: 0.2VA max for each phase input voltage and current, 3VA max on Aux Supply
Frequency	: 45 to 65 Hz
Resolution	: RMS 4 digit, INTG 8 digit
Communication	: RS 485 serial channel connection Industry standard Modbus RTU protocol
Isolation	: 2kV ac isolation for one min between all isolated circuits including communication port
Safety	: Measurement category III, Pollution Degree 2, Protection against shock by double insulation at user accessible area
Environmental	: Operating Temperature -10° C to 60° C (140 F to 140° F) Storage Temperature -25° C to +70° C (13°F to 158° F) Humidity 5% to 95% non condensing
Weight	: 400 gms approx. Unpacked 500 gms approx. Shipping
Warranty	: 3 Years from date of Invoice New!

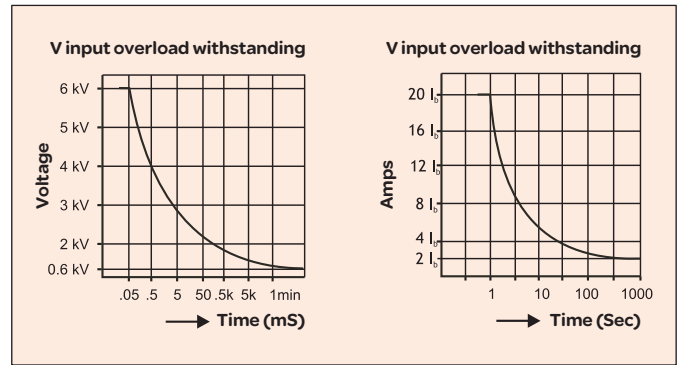
Note: * For 5A universal meter additional error of 0.05% of full scale, for meter input current below 100mA

Accuracy

Measurement	Accuracy % of Reading		
	CI 1.0	CI 0.5S	CI 0.2S
Volts LN per phase & Avg	1.0	0.5	0.2
Volts LL per phase & Avg	1.0	0.5	0.2
Amps per phase & Avg	1.0	0.5	0.2
Amps phase angle per phase	2°	1°	1°
Frequency	0.1	0.1	0.1
Active Power per phase & total	1.0	0.5	0.2
Reactive Power per phase & total	2.0	1.0	0.5
Apparent Power per phase & total	1.0	0.5	0.2
Active Energy Import/Export	1.0	0.5	0.2
Reactive Energy (Inductive/Capacitive)	2.0	1.0	0.5
Apparent Energy	1.0	0.5	0.2
RPM	1.0	0.5	0.2

Note: PF error limit is same as W error limit in %

Overload



Models

v3.03

Parameter	EM 6459	EM 6433	EM 6434	EM 6436	EM 6400
V V1 V2 V3 V12 V23 V31	●			●	●
A A1 A2 A3	●	●		●	●
An Neutral Current New!	C				C
F	●			●	●
%Load	●				●
%A Unbal %V UnbaU New!	●				●
PF PF1 PF2 PF3	●		●	●	●
%AFS Analog color coded load bar	●	●	●	●	●
RPM	●				●
A° Phase Angle A°1 A°2 A°3	●				●
W W1 W2 W3		⊙	●	⊙	●
VA VA1 VA2 VA3		⊙	●	⊙	●
VAR VAR1 VAR2 VAR3			●		●
V%1 V%2 V%3					THD
A%1 A%2 A%3					□
Demand VA/ W/ A New!					
Rising demand					DM
Time remaining					□
MD Maximum demand					
Hr MD occurred					
Wh		⊙	●	⊙	●
VAh		⊙	●	⊙	●
VARh			●		●
-VARh			●		●
Run hours		●	●	●	●
ON hours	●	●	●	●	●
INTR	●	●	●	●	●
R.Wh					
R.VAh					
R.VARh					IE
-R.VARh					□
Run hours					
Wh		⊙	●	⊙	●
VAh		⊙	●	⊙	●
VARh			●		●
-VARh			●		●
Run hours		●	●	●	●
R.Wh					
R.VAh					
R.VARh					IE
-R.VARh					□
Run hours					

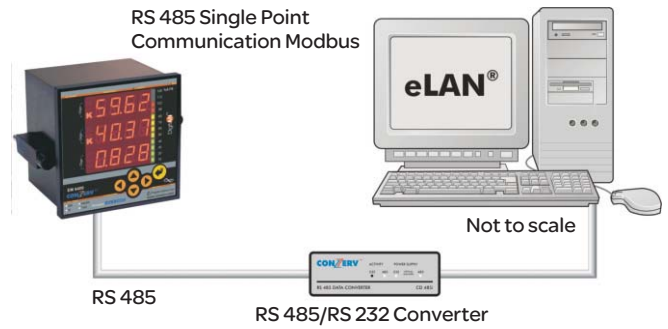
Note: ● = Standard □ = Option specified while ordering
C = Only through communication
⊙ = User selectable VAH/Wh through setup mode (EM 6436, EM 6433)

Digital Communication

RS 485 standard, communication capability using open Modbus RTU protocol. The meters can be multi-dropped using RS 485 twisted pair. The baud rate can be set from 1200 bps to 19200 bps. (Preferred settings is 9600 bps.) RS 485 Half duplex isolated serial channel connection.

BMS Compatible

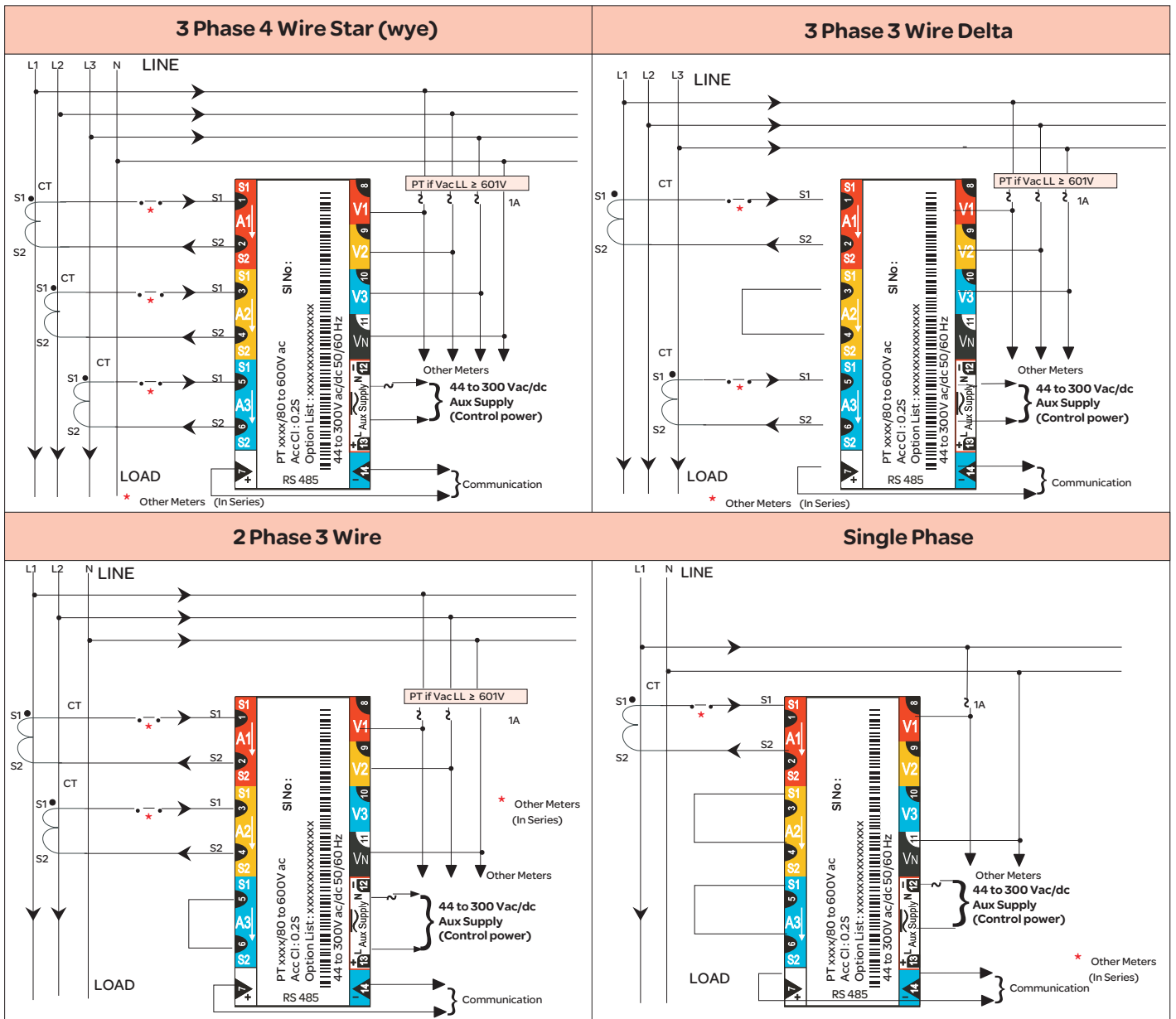
Access of either single (individual) parameter or block of parameters through RS 485 communication port. Integrates with Honeywell, Siemens Building Technologies and other BMS packages.



RS 485 Multi-Point Communication Modbus



Wiring Diagram



“3d” VA measurement

- EM 6400, EM 6433, EM 6436 is equipped with "3d VA Measurement" capability. This accurately include Distortion power (D) per IEEE 100, into the VA Calculation

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


- However Arithmetic VA=VA1+VA2+VA3 is also available as a set-up option

Demand Parameters Optional (for EM 6400 only)

- Monitors Demand - Present, Rising & Maximum, Time remaining
- VA or W or A demand is selectable through setup table
- User selectable demand interval through set up in steps of 5 minutes (5, 10, 15, 20, 25 & 30)
- Demand may be Sliding window (auto) or Fixed window (User), selectable through setup mode
- The time of occurrence for the Maximum Demand is based on "ON hrs" of the system
- Maximum Demand can be cleared independently or along with the integrators through the CLR function

Ordering Information

Specify

Model No.	RS485 COM Port	
<input type="checkbox"/> EM 6459		
<input type="checkbox"/> EM 6433	✓ Built-in	
<input type="checkbox"/> EM 6434	✓ Built-in	
<input type="checkbox"/> EM 6436	<input type="checkbox"/>	
<input type="checkbox"/> Demand		
<input type="checkbox"/> EM 6400	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Import/Export		
<input type="checkbox"/> THD		

Input Current	Accuracy
<input type="checkbox"/> 5A Universal	<input type="checkbox"/> CI 1.0 <input type="checkbox"/> CI 0.5
<input type="checkbox"/> 5A	<input type="checkbox"/> CI 0.5S <input type="checkbox"/> CI 0.2S
<input type="checkbox"/> 1A	<input type="checkbox"/> CI 0.5S <input type="checkbox"/> CI 0.2S

Accessories (optional)

- Fused Voltage Probes & Clamp-on Current Probes for portable use
- Connector Kit

ConPAD Setup Utility* (optional)

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

*for meters with RS 485 port only

Integrated Parameters

- Import / Export is optional. Factory selectable on order (For EM 6400 only)
- Energy Parameter (kWh, kVAh, kVARh inductive and kVARh Capacitive) (Total, Import & Export)
- Separate Run hrs for Import, Export and Total Run hrs, ON hrs, No of interruptions

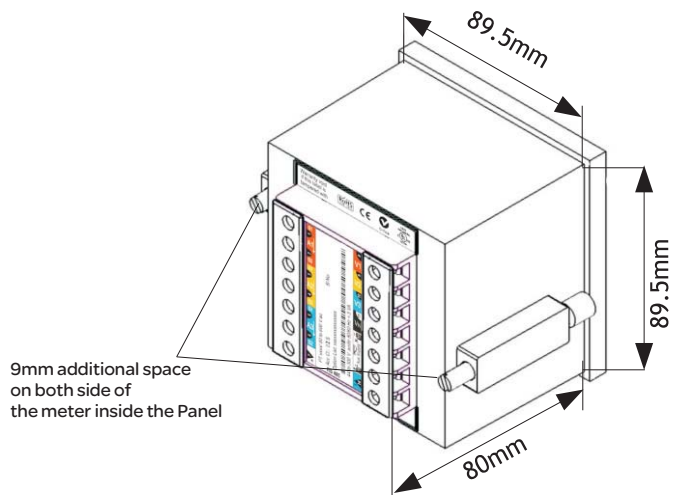
Colour Coded TB label

Terminals are numbered, coloured and grouped such that defect free wiring is ensured.



Dimensions

- Bezel : 96 x 96 mm
- Depth : 80 mm behind Bezel
- Panel cutout : 92^{+0.5} x 92^{+0.5} mm



Schneider Conzerv strives for continuous product innovation. Product specifications are therefore subject to change without notice.

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