



OPERATING INSTRUCTIONS

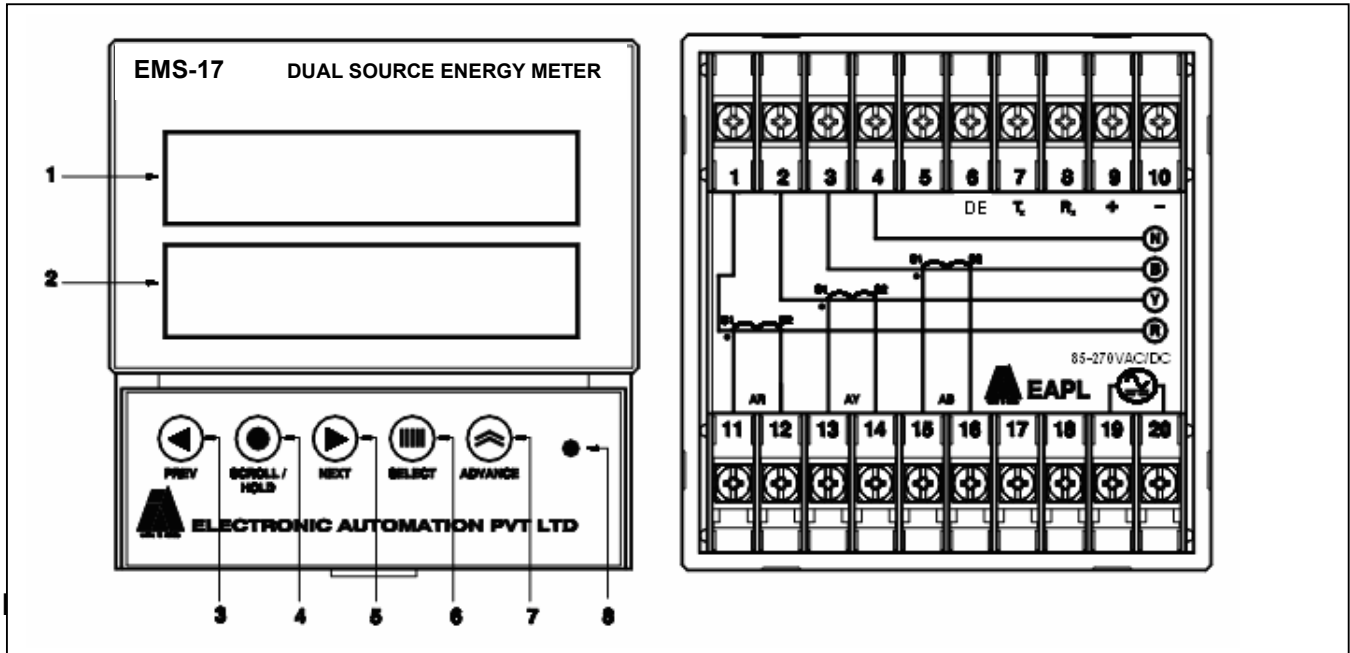
Model : EMS-17

OPI No : OPI/131

PAGE : 01 Of 05

DATE : 10/12/2009

Front Panel Layout:



- 1) **Display 1(Top Display)** : Shows the numerical values of the parameter.
- 2) **Display 2 (Bottom Display)** : Shows the units of the corresponding parameter.
- 3) **HOLD/SCROLL** : By pressing this button either display can be made to scroll or display can be held in selected parameter.
- 4) **PREVIOUS**: This button is active only when “HOLD” is selected. Upon pressing this button previous parameters can be viewed one by one.
- 5) **NEXT**: This button is active only when “HOLD” is selected. Upon pressing this button next parameters can be viewed one by one.
- 6) **SELECT**: This button is used to select the values during programming.
- 7) **ADVANCE**: This button is used to increment the values during programming and view the page2 parameters during Run mode.
- 8) **LED**: Pulse constant output.

FUNCTION:

- 1) Connect 3phase 4 wire voltage and current circuit as per the diagram given on the back panel of the product.
- 2) Connect rated auxiliary supply at terminal 19 & 20.
- 3) Moment voltage is applied on auxiliary terminal, display starts showing parameter one by one in auto scrolling mode. Following are the parameters displayed.

PARAMETERS		EMS-17	
BASIC	V L-N (R, Y, B)	✓	
	V L-L (R-Y, Y-B, B-R)	✓	
	Ampere (R,Y,B)	✓	
	Frequency	✓	
	PF (R,Y,B)	✓	
	PF (Total) *	✓	
	RPM	✓	
	Phase Angle (R,Y,B)	✓	
POWER	Active Power (W) R, Y,B	✓	
	Active Power (W) Total	✓	
	Reactive Power (VAr) R,Y,B	NA	
	Reactive Power (VAr) Total	NA	
	Apparent Power (VA) R,Y,B	NA	
	Apparent Power (VA Total)	NA	
ENERGY	Active Energy (Wh)	✓	
	Total Reactive Energy (VArh)	NA	
	Reactive Energy Inductive (VArh)	NA	
	Reactive Energy Capacitive (-VArh)	NA	
	Apparent Energy (VAh)	NA	
OTHERS	Load On Hours	✓	
	Old Active Energy(Wh)	NA	
	Old Reactive Energy Inductive (VArh)	NA	
	Old Reactive Energy Capacitive(-VArh)	NA	
	Old Apparent Energy (VAh)	NA	
	Old Load On Hours	NA	
	Communication RS485/RS232	✓	

- $PF (Total) = T-KW / T-KVA$

4) When “**HOLD/SCROLL**” button is pressed scrolling will stop (hold mode) & by again pressing the same scrolling will continue from where it stopped (scrolling mode). Status of “**HOLD**” or “**SCROLL**” is maintained on resumption of power after power failure.

5) When display is in “**HOLD**” mode “**NEXT**” & “**PREVIOUS**” can be pressed to view the forward or backward parameters respectively.

How to Record Energy?

- 1) Energy information saving to EEPROM is executed once in 1 minute approx.
- 2) Due to this, difference may be observed between the last energy saved when load is off and the energy saved when power is off to the unit.
- 3) While recording the energy for any initial and final measurement purposes, suggested to interrupt the auxiliary supply to the unit and then record the energy.

How to read pg2 (Page 2) parameters?

- 1) When unit is in HOLD/SCROLL mode, Press “ADVANCE”.
 - 2) Following parameters are displayed upon pressing “ADVANCE” constantly.
 - a) Active Energy (Wh) (M) (when generator is ON)
 - b) Load Hour (M) (when generator is ON)
- OR
- c) Active Energy (Wh) (G) (when generator is OFF)
 - d) Load Hour (G) (when generator is OFF)

Dual Energy Recording in EMS-17

- a) EMS-17 is a Dual Source Energy Meter where there is a separate set of Energy Registers for Mains and Generator source/supply.
- b) The type of source/supply is identified by the EMS-17 through a potential input of 12VAC/DC to 240VAC/220VDC.
- c) All the parameters related to Mains are identified with suffix M and all the parameters related to Generator are identified with suffix G.

PROGRAM MODE :

PRESS	DISPLAY 1 SHOWS	DISPLAY 2 SHOWS	COMMENTS / RANGE / DEFAULT VALUE
“SELECT”	‘1’ 0 0	PASSWd	# Enter 3 digit PASS WORD. # DEFAULT VALUE : 100. # If password is forgotten contact EAPL. # Press “ADVANCE” to set 1 st digit (Rolls from 0 to 1)
“SELECT”	1 ‘0’ 0	PASSWd	# Press “ADVANCE” to set 2 nd digit (Rolls from 0 to 9)
“SELECT”	1 0 ‘0’	PASSWd	# Press “ADVANCE” to set 3 rd digit (Rolls from 0 to 9)
“SELECT”	‘0’ 0 0 0 5	CT-PRI	# Enter 5 digit CT-PRIMARY VALUE # RANGE : 00001 - 50000 # DEFAULT VALUE : 00005 # Press “ADVANCE” to set 1 st digit (Rolls from 0 to 5)
“SELECT”	0 ‘0’ 0 0 5	CT-PRI	# Press “ADVANCE” to set 2 nd digit (Rolls from 0 to 9)
“SELECT”	0 0 ‘0’ 0 5	CT-PRI	# Press “ADVANCE” to set 3 rd digit (Rolls from 0 to 9)
“SELECT”	0 0 0 ‘0’ 5	CT-PRI	# Press “ADVANCE” to set 4 th digit (Rolls from 0 to 9)
“SELECT”	0 0 0 0 ‘5’	CT-PRI	# Press “ADVANCE” to set 5 th digit (Rolls from 0 to 9)
“SELECT”	‘5’	CT-SEC	# Enter CT-SECONDARY VALUE # RANGE : 1 - 5 # DEFAULT VALUE : 5 # Press “ADVANCE” to set the digit (Rolls from 1 to 5)
“SELECT”	‘0’ 0 0 4 1 5	PT-PRI	# Enter 6 digit PT-PRIMARY VALUE # RANGE : 000100 - 999000 # DEFAULT VALUE : 000415 # Press “ADVANCE” to set 1 st digit (Rolls from 0 to 9)
“SELECT”	0 ‘0’ 0 4 1 5	PT-PRI	# Press “ADVANCE” to set 2 nd digit (Rolls from 0 to 9)
“SELECT”	0 0 ‘0’ 4 1 5	PT-PRI	# Press “ADVANCE” to set 3 rd digit (Rolls from 0 to 9)
“SELECT”	0 0 0 ‘4’ 1 5	PT-PRI	# Press “ADVANCE” to set 4 th digit (Rolls from 0 to 9)
“SELECT”	0 0 0 4 ‘1’ 5	PT-PRI	# Press “ADVANCE” to set 5 th digit (Rolls from 0 to 9)
“SELECT”	0 0 0 4 1 ‘5’	PT-PRI	# Press “ADVANCE” to set 6 th digit (Rolls from 0 to 9)

PRESS	DISPLAY 1 SHOWS	DISPLAY 2 SHOWS	COMMENTS / RANGE / DEFAULT VALUE
“SELECT”	‘4’ 1 5	PT-SEC	# Enter 6 digit PT-SECONDARY VALUE # RANGE : 080 - 500 # DEFAULT VALUE : 415 # Press “ADVANCE” to set 1 st digit (Rolls from 0 to 5)
“SELECT”	4 ‘1’ 5	PT-SEC	# Press “ADVANCE” to set 2 nd digit (Rolls from 0 to 9)
“SELECT”	4 1 ‘5’	PT-SEC	# Press “ADVANCE” to set 3 rd digit (Rolls from 0 to 9)
“SELECT”	‘0’ 4	POLES	# Enter 2 digit number to set the no. of poles for rpm measurement # RANGE: 01 – 28. # DEFAULT VALUE: 04. # Press “ADVANCE” to set 1 st digit. (Rolls from 0 to 2). # Refer above parameter table for applicability.
“SELECT”	0 ‘4’	POLES	# Press “ADVANCE” to set 2 nd digit (Rolls from 0 to 9). # Refer above parameter table for applicability.

“SELECT”	‘0’ 0 1	dEV-Id	# Enter 3 digit device ID. # RANGE: 01 – 247. # DEFAULT VALUE: 001. # Press “ADVANCE” to set 1 st digit. (Rolls from 0 to 2)
“SELECT”	0 ‘0’ 1	dEV-Id	# Press “ADVANCE” to set 2 nd digit (Rolls from 0 to 9)
“SELECT”	0 0 ‘1’	dEV-Id	# Press “ADVANCE” to set 3 rd digit (Rolls from 0 to 9)
“SELECT”	‘n’	ChPASS	# If select is pressed for “n” condition, same password is retained and comes out of program mode. # Press “ADVANCE” to change ‘n’ to ‘Y’ if current password to be changed.
“SELECT”	‘0’ 0 1	ChPASS	# Enter 3 digit PASS WORD to change the current password. # RANGE : 001 – 100. # Press “ADVANCE” to set 1 st digit. (Rolls from 0 to 1)
“SELECT”	0 ‘0’ 0	ChPASS	# Press “ADVANCE” to set 2 nd digit (Rolls from 0 to 9)
“SELECT”	0 0 ‘0’	ChPASS	# Press “ADVANCE” to set 3 rd digit (Rolls from 0 to 9) # After setting the new password press “ SELECT” to come out of program mode.