

Multifunction Network Parameter Meter

RMM-683-02



User Manual

Thank you for choosing the multifunction RMM-683-02 series. This manual will provide you with the detailed steps and precautions regarding Installation, Wiring, Setting of functional parameters, Routine maintenance, Malfunction diagnosis and Solution etc.

To utilize the meter to its full potential and ensure the safety of both users and the product, please read this manual carefully before using the meter. Any incorrect operations may lead to fault, Malfunction or shortened lifetime, or even damage to the device or the people around it.

This manual is available on our website and is accessible through the QR code provided on the unit. We request that you keep it safe considering its importance in commissioning, inspecting, and maintaining the product. In the pursuit of constant improvement, kindly note that all information contained in these materials, including products and product specifications represent information on the product at the time of publication and are subject to change without notice.

1. Introduction	Page No.2
2. Safety recommendations	Page No.6
• Warning	
• Delivery installation	
• Safety guidelines	
• Caution	
3. Installation.	Page No.7
• Installation environment	
• Installation guidelines	
4. Feature summary	Page No.8
• Features	
• Salient features	
5. Specification	Page No.10
• Technical specification	
• Accuracy	
• Electrical specification	
• Mechanical specification	
6. Meter overview.	Page No.13
• Front panel view	
• Back panel view	
7. Meter panel	Page No.14
• Meter Mounting	
• Meter Demounting	
• IO Module Mounting	
• IO Module Demounting	
• Mechanical Specification	
• Wiring diagram	
• Description of terminals	
8. Display overview	Page No.22
• LCD description	
• Function - LCD symbols, LED description	
9. Key board.	Page No.24
• Key description	
• Illustration of keyboard operations	
10. Operating modes	Page No.26
• Measurement mode	
• Configuration mode	
• Diagnostic mode	
• Scrolling mode	
11. Measurement	Page No.38
• Display measured parameter	
• Phase / System Measurement	
• Harmonics overview	
• Min / Max Values	
• Power factor & sign convention	
• Demand measurement	
• Energy - Mains / DG (Import / Export)	
• Terminology	

• Voltage Sequence Detection	
• Current Polarity(CT reversal detection & correction)	
• Real time clock	
12. Communication	Page No.47
• RS485	
• Ethernet	
13. Multi-tariffs	Page No.53
• Command mode overview• Terminology	
• Time of day mode overview	
• Input mode overview	
14. Alarms	Page No.58
• Alarms overview	
• Available alarms	
• Unary alarms	
• Available unary alarms	
• Digital alarms	
• Standard alarms	
• Available Standard alarms	
• Alarm priorities	
• Alarm setup overview	
• LED alarm indicator	
• Alarm History	
15. Datalogging	Page No.69
16. Inputs/Outputs	Page No.74
• Available Internal IO ports	
• Digital Input(DI)	
• Digital Output(DO)	
• Configuring Internal IO(2DI:2DO)	
• Available External IO ports	
• Digital Input(DI)	
• Relay Output(RO)	
17. Energy Pulsing	Page No.79
• Overview	
• Configuration	
18. RTD	Page No.79
• Overview	
• RTD Sensor	
• RTD Connection	
19. Firmware Update	Page No.80

SAFETY

The **RMM-683 SERIES** is a high end multifunction meter series that offers comprehensive 3 phase electrical metering and energy monitoring.

The meter is a panel-mounted 96 x 96 mm panel meter that measures important electrical parameters in 3P4W, 3P3W, and 1P2W L-L and 1P2W L-N networks with field-programmable CT / VT (current transformers/voltage transformers) primary and secondary values.

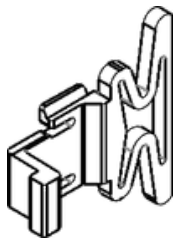
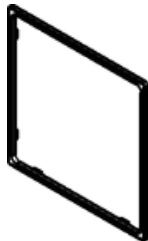
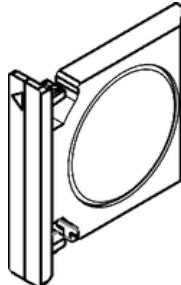
The meter is easy to install, easy to use, compact in size, and meets all safety and reliability standards. The meter is normally supplied readily pre-programmed for operation and can be directly installed in the usual manner. Meter read/write operations can be performed either manually or through communication protocols, including MODBUS RTU over RS485 and MODBUS TCP over Ethernet.

This user manual describes the basic functions and operational methods of the meter. Please read through this manual carefully before using the product.

Contents of the package:

Unpack the box and check the contents before using the product. If any part or accessory is missing or if the product appears to be damaged, contact our sales representative.

List of accessories

Sr no.	Description of accessories	Image	Qty
1	Panel mount clamp		4
2	Gasket		1
3	Battery holder		1

Read this manual carefully and follow all safety precautions before mounting, installing, operating, and servicing the multifunction meter. Ignoring the safety protocols may cause harm, a loss of life, or damage to property.

Warning

People working on the device should take part in professional electrical and safety training, receive the certification, and be familiar with all steps and requirements of installing, commissioning, operating and maintaining the device to avoid any hazards.

Delivery installation

A pre-delivery inspection for each meter is implemented strictly by our QC department. The packaging is adequately strengthened with special packing materials to protect it from justifiable harm during handling and transportation.

However, as an added precaution, we request that you kindly check the following points upon receipt of the device.

- Please check for any damage caused during transportation
- Please check if the enclosed documents are all inside the case, namely the instruction manual and record test certificate
- Please check if this is the model of the product for which you placed an order

Safety guidelines

All safety related codifications, symbols and instructions that appear in this operating manual or on the meter must be strictly followed to ensure the safety of the operating personnel as well as the instrument. If the meter is not used in the manner specified by the manufacturer, it might impair the protection provided by the meter.

Caution

- Do not use the meter if there is any mechanical damage
- Ensure that the equipment is supplied with the correct voltage
- Read the complete instructions prior to the installation and operation of the unit
- The equipment in its installed state must not come in close proximity to any heating sources, oils, steam, caustic vapors, or other unwanted process by products
- Power must be shut of completely before performing any kind of wiring on the auxiliary terminals
- Do not touch the internal components for your own and the product's safety
- Only qualified professional engineers are allowed to assemble, wire, commission or maintain
- Do not conduct the procedure of inspection or maintenance until the meter has been shut down for at least 3 minutes
- No permission is granted to change or modify the internal components or circuits

INSTALLATION

Installation environment

- The surroundings must be free from Dust, Caustic / Corrosive / Inflammable gases / Liquids
- There should not be any metal particulate in the surrounding air
- The ambient temperature should be -10 °C to +55 °C

Installation guidelines

- This equipment, being built-in, normally becomes part of the main control panel
- The terminals do not remain accessible to the end user after installation and internal wiring
- Conductors must not come into contact with the internal circuitry of the meter or else it may lead to a safety hazard that may in turn endanger life or cause an electrical shock to the operator
- A circuit breaker or mains switch must be installed between the power source and supply terminals to facilitate power ON or OFF functions. however, this switch or breaker must be installed in a convenient position that is normally accessible to the operator
- Before disconnecting the secondary of the external current transformer from the equipment, make sure that the current transformer is short circuited to avoid the risk of electric shock and injury
- The equipment does not have a built-in-type fuse; installation of an external fuse of rating 300V 0.5A AC for electrical circuitry.

FEATURES SUMMARY

Features

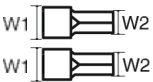
- LCD display screen.
- True RMS measurement.
- Measurement of 3-phase energy.
- Maximum and minimum of peak, present, predictive and last demand measurements
- Password protected programmable features.
- Pages auto scrolling and manual mode provision.
- Site programmable for CT / VT ratio.
- Site programmable for network selection.
- 33 built-in types of configurable alarms with user-selected priorities.
- User configurable multi-tariff and datalogging.
- External IO modules available: 2DI+4RO
- RS485 MODBUS and Ethernet communication.
- Enclosure protection for dust and water.
- Compliance with the international standard IEC 61557-12 & IEC61326-1.

Salient features

- Accuracy class for active energy (Wh) class 0.2S as per IEC62053-22.
- Accuracy class for reactive energy (VARh) class 1 as per IEC62053-24.
- On site firmware update downloading via the bootloader functionality through ethernet and RS485 communication.
- Endianness selection (MSRF/LSRF).
- Energy auto resolution for Kilo, Mega and Giga values
- Programmable minimum suppression current (2mA to 99mA).
- Power factor sign convention (IEC/IEEE standards).
- Four quadrant measurements of Power Factor & Power.
- Supports data logging up to 30 user-selectable parameters from a total of 105, with a retention period of 90 days at a 5-minute sampling interval.
- 3 Phase Import, Export, Import + Export, Import - Export (Active, Reactive, Apparent) Energies.
- Demand parameters with various methods (Peak, Present, Last, Predictive).
- Time-stamping for the occurrence of Peak demand, Min/Max parameter values (Voltage, Current, Power factor, Power, Frequency) and reset of energies and tariff parameters.
- Measurements of true, Displacement and Distortion power factor.
- Digital input (DI1) for dual energy measurement - Mains and DG.
- Configurable Digital Input(DI2) of 24/48V for external input and demand sync application.
- Configured system error code to define the errors.
- Configurable digital output (DO) for control, synchronization and pulsing application.
- Configurable pulse weight from 1 to 9999999 (pulse/k_h).
- Measurement of motor RPM.
- Real - Time clock (RTC) with 4 and 7 register format.
- RTD (temperature range: -150 to 850 °C).
- THD% , thd% and individual harmonics upto 40th harmonics for voltage & current.
- TDD for calculation of Total demand distortion.
- Crest Factor, K-Factor, CO2 emission.
- Self - Test mode
- 4 tariff with each having 4 time slots settings
- Voltage phase sequence detection
- Current polarity reversal detection and correction
- Load run hour - Based on accumulated energy - Import and Export (mains and DG both), ON hour, Active load timer.
- Number of auxiliary interruptions

SPECIFICATIONS

Technical specifications		
Type of measurement	Networks	3P4W, 3P3W, 1P2W L-N, 1P2W-L-L
		True RMS
Measurement accuracy		Class 0.2S as per IEC62053-22
Display	LCD	Negative (blue) LCD with backlight. 4 line 4 digit: 12.46 x 6.72mm last line of 9 digit: 6.85 x 3.73mm bar graph for % load for each phase
Auxiliary input	Aux voltage	40V - 300V AC/DC
	Power consumption	<10VA
	Freq range	50/60Hz
Measurement input	Input voltage	20 to 277V AC (L-N); 35 to 480V AC (L-L) CAT III 20 to 347V AC (L-N); 35 to 600V AC (L-L) CAT II
	VT secondary	100,110,115,120 V (programmable)
	VT primary	100 V to 999 000 V (programmable)
	Frequency	45 to 65Hz
	Current transformer CT primary	1A / 5A to 32767A (programmable)
	Current transformer CT secondary	1A / 5A (programmable)
	Input current	nominal 5A AC (Min-2mA, Max-8.5A)
	Wire thickness	18-14 AWG (UL)
	Measurement method	True RMS
	Input voltage (Budren)	< 0,2 VA at 300 V AC
	Input current (Budren)	0,5 VA at 5 A
Digital input	DC input	24V/48V DC
Digital output	Digital output	Voltage range: External 48V DC max Current capacity: 20mA max
	Pulse width	1 to 9999999 (pulse per k_h)
	Pulse duration	POP: 50ms For LED: 25ms
	Output type	Open collector RS485
Communication (RS485)	Type	MODBUS RTU
	Baud rate	9600, 19200, 38400, 57600, 115200, bps (programmable)
	Slave ID	1 to 247 (programmable)
	Parity	Odd, Even, None
	Isolation	2 kV AC isolation for 1 minute between communication and other circuits
Communication (ethernet)	Connector	8 pin RJ45
	Speed	10/100 Mbps
	Protocol	TCP (Server, Client), MODBUS TCP
	Standards	IEEE802.3, IEEE802.3u
	Magnetic isolation	1.5KV
	IP configuration	DHCP/Auto IP, Static IP

Accuracy	Compliance with the standard	Measurement error
Measurement type	Class of accuracy as per IEC 61557-12 ($I_N = 5A$ -nominal CT)	0.2%
Active energy	Class 0.2S (class 0.2S as per IEC 62053-22 at $I_N = 5A$ nominal CT).	$\pm 0.2\%$
Reactive energy	Class 1 (class 1 as per IEC 62053-24 at $I_N = 5A$ nominal CT)	$\pm 1\%$
Apparent energy	Class 0.5S (class 0.5S at $I_N = 5A$ nominal CT)	$\pm 0.5\%$
Active power	$\pm 0.2\%$	
Reactive power	$\pm 1\%$	
Apparent power	$\pm 0.5\%$	
Current	$\pm 0.2\%$	
Voltage (L-L)	$\pm 0.2\%$	
Voltage (L-N)	$\pm 0.2\%$	
Frequency	$\pm 0.005\%$	
Power factor		
THD and Individual harmonics till 15harmonics	Class 2	$\pm 2\%$
Electrical specification		
Insulation properties	Impulse voltage test	$\pm 4kV$ as per IEC 61010-1
	AC voltage test	$\pm 2kV$ double insulation as per IEC 61010-1
	Insulation resistance	500V DC voltage as per IEC 61010-1
Electrical requirements	Test of power consumption	As per IEC 61010-1
	Voltage dips and Interrupts	As per IEC 61000-4-11
	Short time over current protection	20 times of I _{MAX} for half a second as per IEC 61010-1
Electromagnetic compatibility (EMC)	Electrical fast transient / burst immunity test	IEC 61000-4-4
	Electrostatic discharge immunity test	IEC 61000-4-2
	Radiated, radio-frequency, electromagnetic field immunity test	IEC 6100-4-3
	Immunity to conduct disturbances, induced by radio-frequency fields	IEC 61000-4-6
	Surge immunity test	IEC 61000-4-5
	Rated power frequency magnetic fields	30A/m as per IEC 61000-4-8 for continuous duration 300A/m as per IEC 61000-4-8 for short duration
	Emission	Class A as per CISPR 11
Environmental	Temperature	Operating: -10 °C to 55 °C Storage: -25 °C to 70 °C
	Humidity	Up to 85% non-condensing
Lug dimension		W1 = 4.2mm W2 = 1.8mm W1 = 3.8mm W2 = 1.6mm

Recommended fuse specifications	300V 0.5A AC	
Battery specifications	Coin type lithium battery (CR3032)	3V/220mAh
Mechanical specifications		
Mounting type	Panel mount	
Size	96 x 96mm	
Front bezel	96 x 96mm	
Panel cutout	90.7 x 90.7mm	
Material	Poly carbonate - Lexan 923	
Accessories	Panel mount clamp, Terminal cover	
Weight	350 gm approx.	
Protection rating	IP rating Front: IP65 Back: IP30	
Mechanical testing	Casing plastic mold protected to IP65 from front	
Certification		CE, RoHS

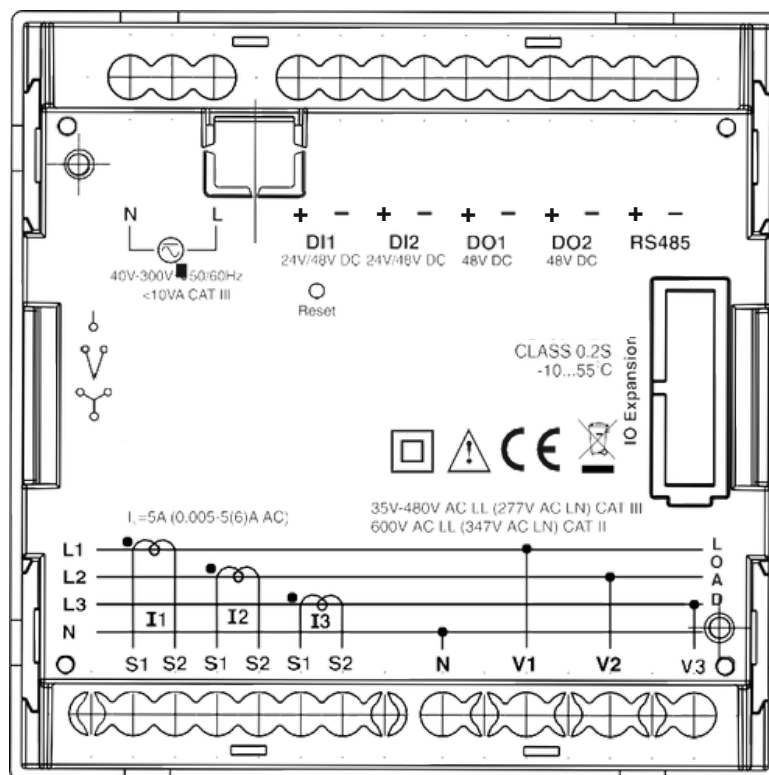
NOTE: Cable size (mm²): 0.75 to 2.5; Tightening torque (Nm): 0.4 to 0.6

METER OVERVIEW

Front panel view

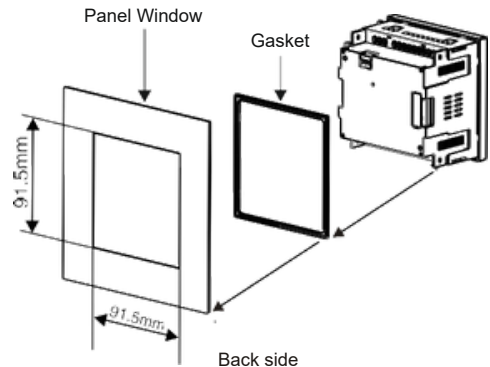
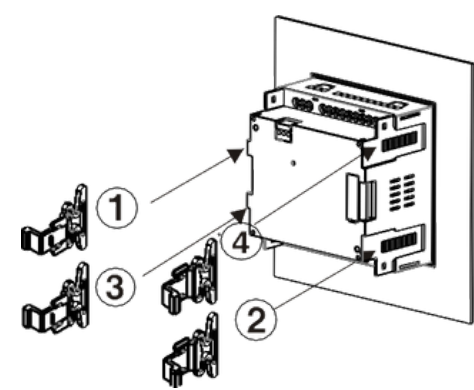
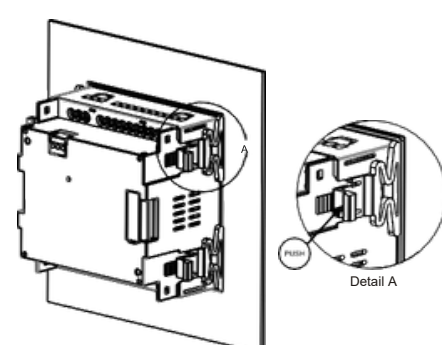
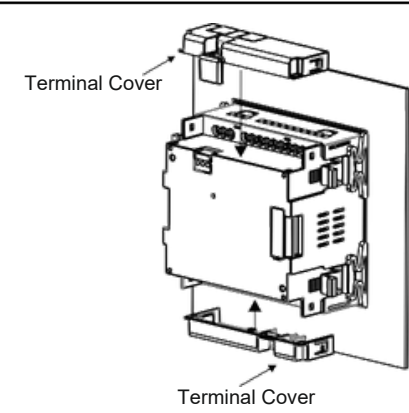


Back panel view

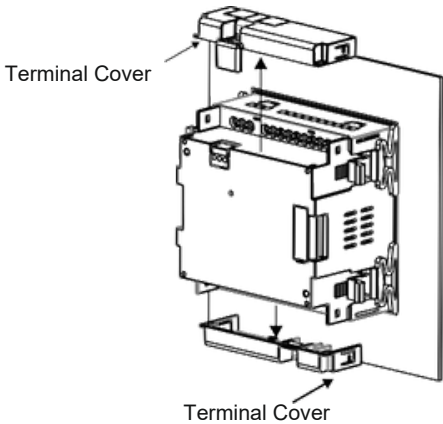
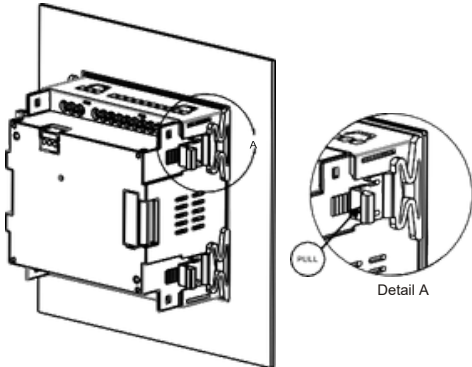
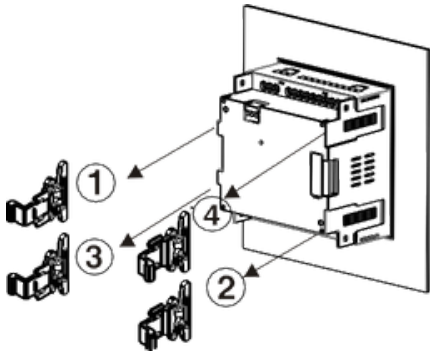
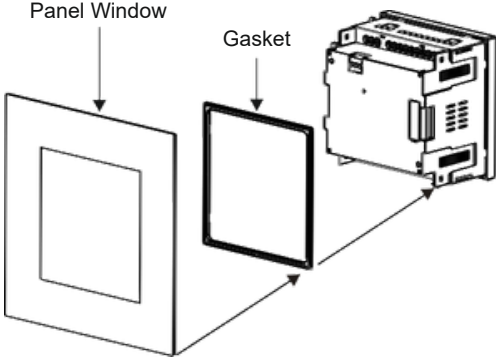


METER PANEL

Mounting

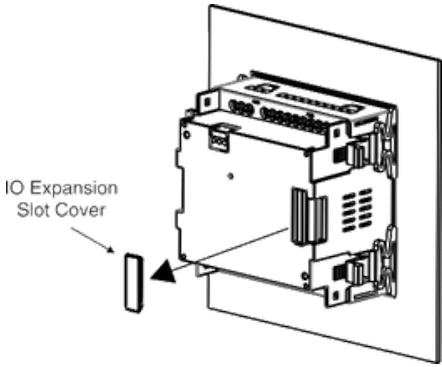
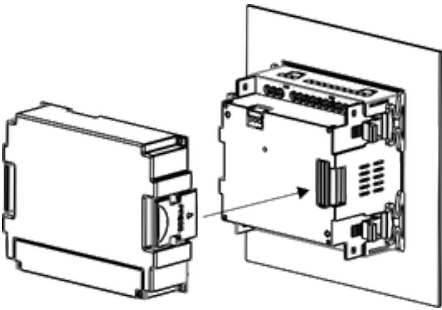
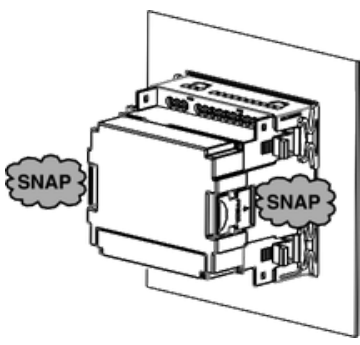
STEP	INSTRUCTION	
1	Prepare the panel cutout with proper dimension as shown below & Insert the meter with gasket into the panel cutout	 Panel Window Gasket 91.5mm 91.5mm Back side
2	Slide the 4 clamps on both sides of the meter through the clamp slots for optimum fitting, as shown	 1 2 3 4
3	Push the clamps evenly towards the panel until they reach the lowest possible tooth of the slots. Ensure the meter is properly fitted and ready for wiring	 Detail A Push
4	After wiring, place both the terminal covers on the meter	 Terminal Cover Terminal Cover

Demounting

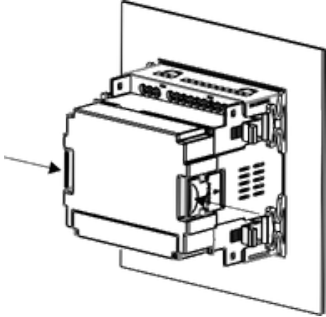
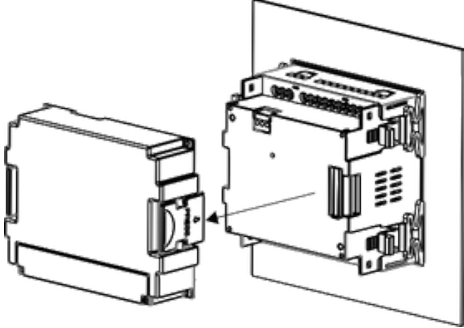
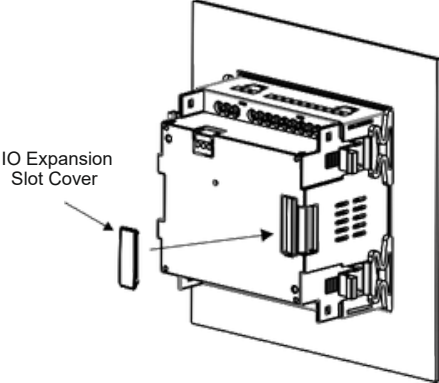
STEP	INSTRUCTION	
1	To demount the unit from panel first remove the terminal covers from the meter	
2	Pull the arm of the sliding clamp in outward direction (opposite to meter) and drag the sliding clamps away from the panel	
3	Remove all the 4 clamps from meter	
4	Push the meter from the back side of the panel window and remove it from the panel	

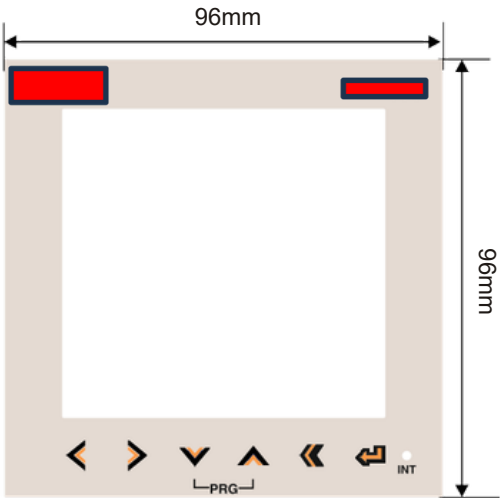
IO Module mounting

Note: Tobeinstalledin off condition only

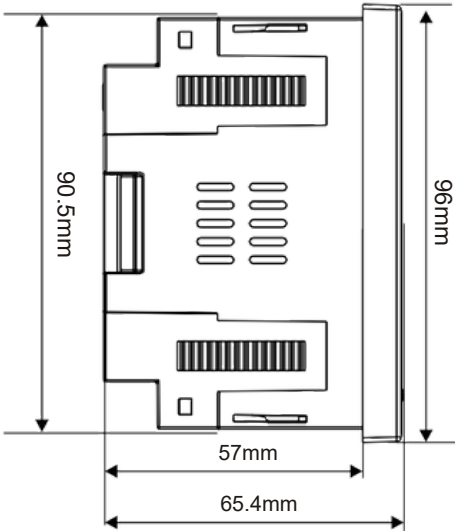
STEP	INSTRUCTION	
1	Remove the IO expansion slot cover from meter	
2	Plug the IO module into meter as shown	
3	The IO module is secured with the meter after snap sound is heard	

IO MODULE DEMOUNTING

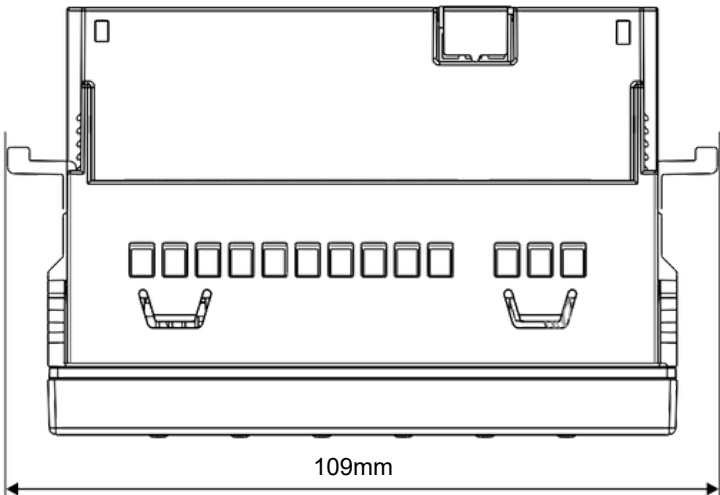
STEP	INSTRUCTION	
1	Pinch the clamps at the specified location to detach the IO expansion module from the meter	
2	Pull out the IO module	
3	Put the IO expansion slot cover to the meter	



FRONT VIEW

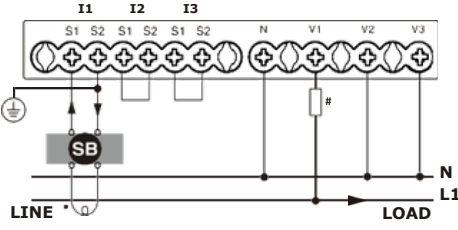
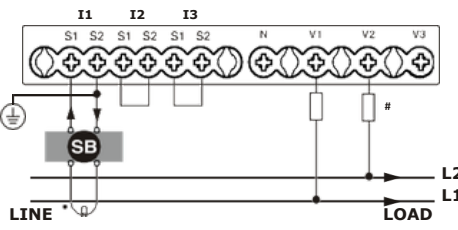
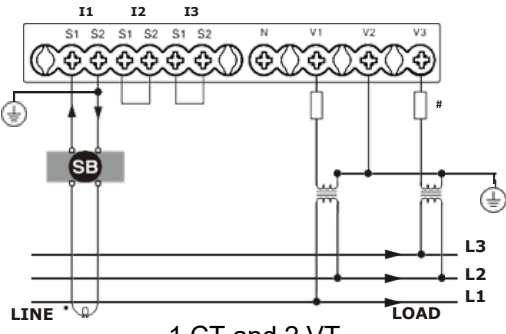
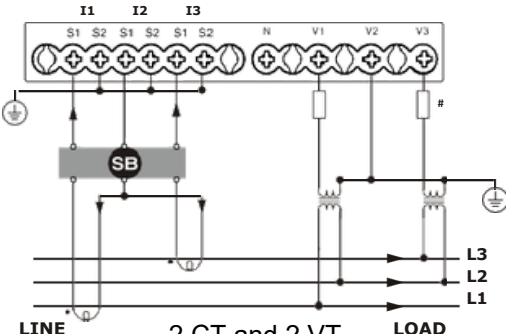
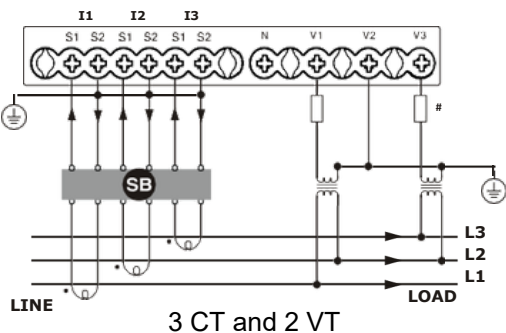
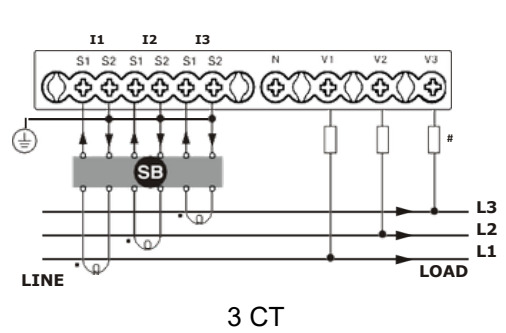
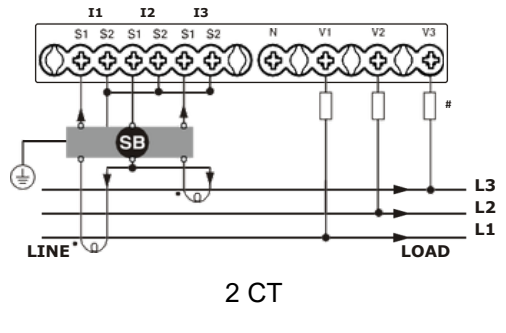


SIDE VIEW

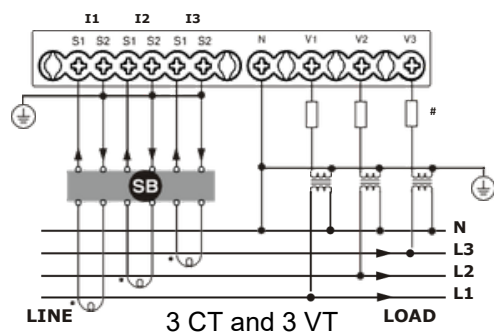
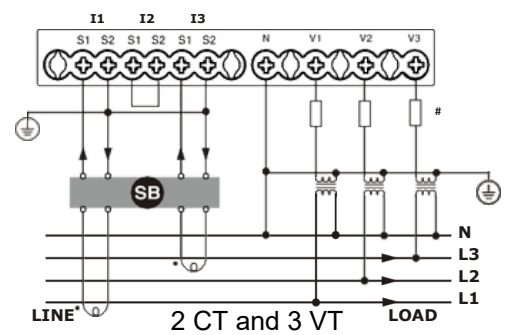
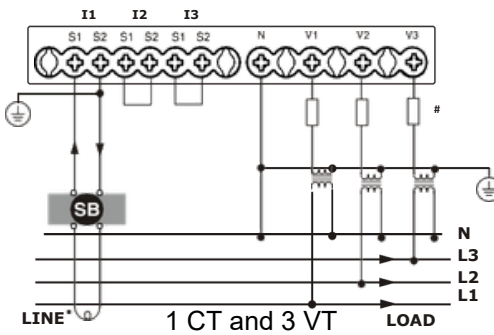
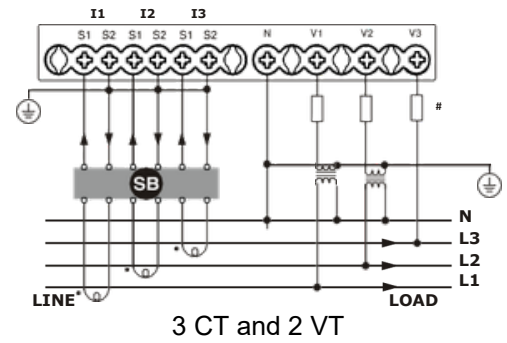
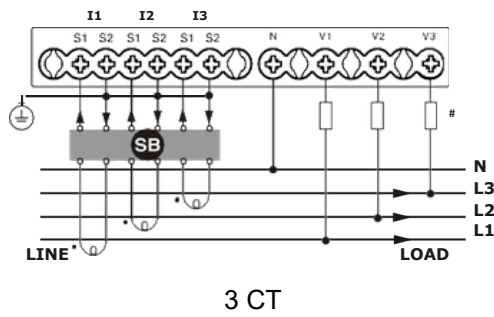
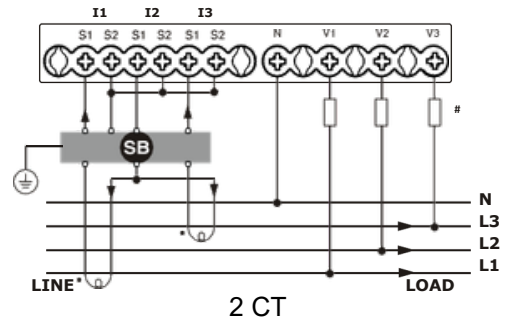
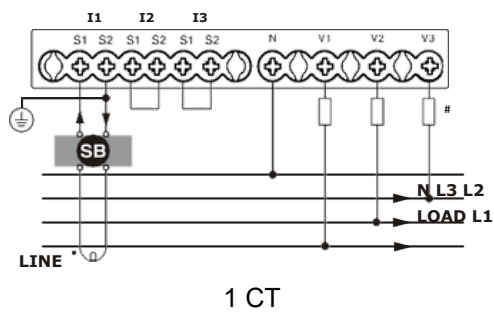


TOP VIEW

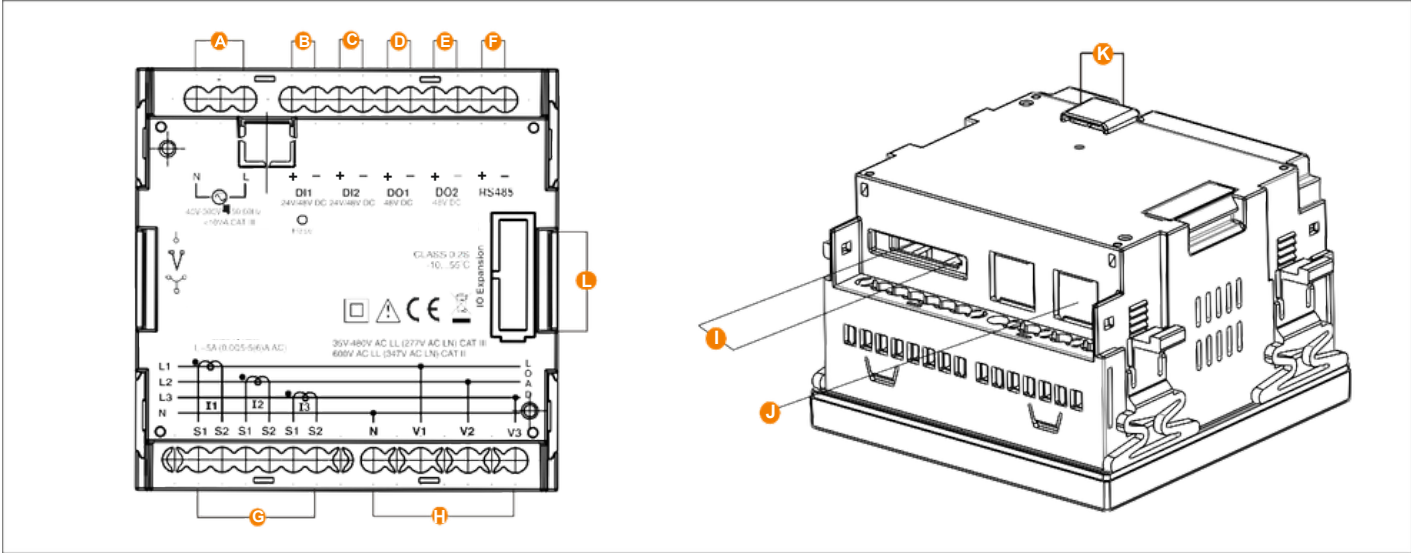
Wiring diagram

1 PHASE 2 WIRE (L-N)	1 PHASE 2 WIRE (L-L)
 1CT (L-N)	 1CT (L-L)
3 PHASE 3 WIRE	
 1 CT and 2 VT	 2 CT and 2 VT
 3 CT and 2 VT	 3 CT
 2 CT	

3 PHASE 4 WIRE



Description of terminals



Terminal	Description	
A	L (Line)	Auxiliary input
	N (Neutral)	
B	DI1+	Digital input 1
	DI1-	
C	DI2+	Digital input 2
	DI2-	
D	DO1+	Digital output 1
	DO1-	
E	DO2+	Digital output 2
	DO2-	
F	RS485+	Communication connection
	RS485-	
G	S1(I1)	3 phase current input
	S2(I1)	
	S1(I2)	
	S2(I2)	
	S1(I3)	
	S2(I3)	
H	N (Neutral for voltage input)	Three phase voltage input
	VR (Voltage R - Phase)	
	VY (Voltage Y - Phase)	
	VB (Voltage B - Phase)	
I	RTC BATTERY	RTC
J	ETHERNET	Ethernet
K	RTD1	RTD
	RTD2	
	RTD3	
L	IO expansion	External IO expansion module

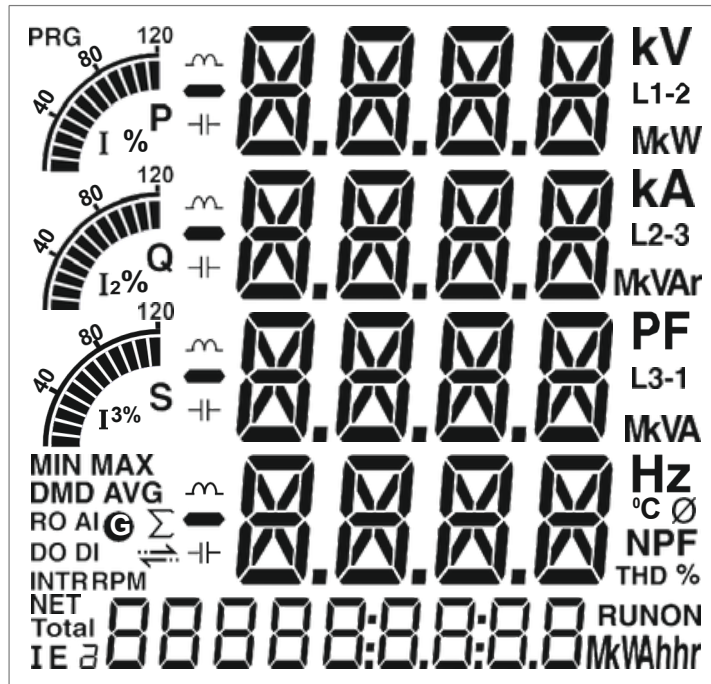
DISPLAY OVERVIEW

LCD description:

The front of the meter consists of LCD screen and six control keys. All the display segments are illustrated as below.

Function LCD symbols, LED description:

All display segments



Sr. No.	Display	Description
1	 Four lines of 4 digit	The numeric real time metering data will be displayed here
2	 Single line of 9 digit	Display energy data and real time clock (time)
3	kV, kA, PF, Hz, kW, kVAr, kVA, kWh, kVArh, kVAh, k, M	Symbols represents for units representation of parameter values Voltage: V, kV Current: A, kA Active power: kW, MW Reactive power: kVAr, MVar Apparent power: kVA, MVA Frequency: Hz Active energy: kWh, MWh, kWh ^m Reactive energy: kVArh, MVarh, kWh ^m ₍₁₎ Apparent energy: kVAh, MVAh, kWh ^m ⁽¹⁾ For Giga – k and M both symbols will be ON.
4	L ₁₋₂ , L ₂₋₃ , L ₃₋₁ , L _{AVG} , L _N	1, 2, 3: Represents 3 phases 1-2, 2-3, 3-1: Represents 3 phase VLL AVG: represents the average N: Stands for neutral
5	THD%, MIN, MAX, DMD, RPM, 	THD: Total harmonics distortion; MAX: Maximum; MIN: Minimum; DMD: Demand; RPM: Revolution per minute  : Secondary source (DG)

6	$\emptyset$	Angle symbol
7	$I_{1,2,3}, E^{1,2,3}, \Sigma$	I_{123} : Individual Import energy E^{123} : Individual Export energy Σ : Shows individual summation of powers
8	Total	It shows summation of all 3 import or export energy
9	NET Total	It is absolute summation of total import and total export energy
10	AVG	Used to show average of 3-phase measurable parameter
11		Communication symbol for RS485
12	  	Load type symbol: Inductive and Capacitive Indicates negative Power & Power factor
13		Bar graph represents percentage load to the rated current for each phase
14	INTR	Auxiliary interrupt
15	ON, RUN	ON hour and RUN hour indications
16	°C	Temperature
17	PRG	Configuration mode
18	P, Q, S	Symbol represent active power, Reactive power and Apparent power respectively

KEYBOARD

Keyboard description

There are 6 dedicated keys to read the meter parameters. Simply press these keys to read the parameters illustrations of keyboard operations with different modes

Key function to access measurement mode parameters

Mode	Key press	Key description
Measurement mode		Phase measurement
		System measurement
		Demand measurement
		Min/Max measurement
		Real time clock
		Energy measurement

Key function to access different features of meter

Mode	Key press	Key description
Measurement mode		Press and hold key for 3 seconds to check the phase voltage sequence detection
		Press and hold key for 3 seconds to check the CT polarity reversal detection
		Press and hold key for 3 seconds to enter or exit from the configuration mode
		Press and hold key for 3 seconds to enter or exit from active alarm list
		Press and hold key for 3 seconds to enter or exit from the self test mode
		Press and hold key for 3 seconds to toggle between automatic and manual (fixed) mode

Key function to access configuration mode parameters

Mode	Key press	Key description
Configuration mode		To move cursor left by one digit each time and to enter in edit mode for parameter value selection
		To move cursor right by one digit each time and to enter in edit mode for parameter value selection
		To decrement the parameter value and also for page change
		To increment the parameter value
		To go back to previous levels
		To save the setting & To enter in the next level

OPERATING MODES

- This meter comes with different types of mode to see the meter features and their functionality. For ease of meter operation, the operating modes are classified as below
- Measurement mode
- Configuration mode
- Self-Test Mode
- Scrolling mode

Measurement mode:

Measurement mode is the default mode when you power up the meter. In measurement mode, the types of measurement have been classified into six specified parameters measurement as mentioned in the table below.

Key press	Key description	Screens	Online page description (3P4W)
	Phase measurements	1	Display V_{LN} of 3 phase and Avg V_{LN} .
		2	Display V_{LL} of 3 phase and Avg V_{LL} .
		3	Display phase current of 3 phase and Avg current.
		4	Display power factor of 3 phase and Avg power factor.
		5	Display phase angle 3 of phase.
		6	Display all 3 phase active power and total active power of 3 phases
		7	Display all 3 phase reactive power and total reactive power of 3 phases.
		8	Display all 3 phase apparent power and total apparent power of 3 phases.
		9	Display V_{LN} THD% of 3 phase and Avg V_{LN} THD%.
		10	Display V_{LL} THD% of 3 phase and Avg V_{LL} THD%.
		11	Display current THD% of 3 phase and Avg current THD%.
	System measurements	1	Display Avg voltage, Current, Power factor and Frequency.
		2	Display 1 st phase voltage, Current, Power factor and Frequency.
		3	Display 2 nd phase voltage, Current, Power factor and Frequency.
		4	Display 3 rd phase voltage, Current power factor and Frequency
		5	Display unbalanced current.
		6	Display neutral current.
		7	Display Total active, Reactive and Apparent power.
	Demand measurements	1	Display peak MAX demand of Active, Reactive and Apparent power.
		2	Display peak MIN demand of Active and Reactive power.
		3	Display present MAX demand of Active, Reactive and Apparent power.
		4	Display present MIN demand of Active and Reactive power.
		5	Display last MAX demand of Active, Reactive and Apparent power.
		6	Display last MIN demand of Active and Reactive power
		7	Display predictive MAX demand of Active, Reactive and Apparent power.
		8	Display predictive MIN demand of Active and Reactive power.
		9	Display peak MAX demand of Avg current.
		10	Display present MAX demand of Avg current.
		11	Display last MAX demand of Avg current.
		12	Display predictive MAX demand of Avg current.
	Min / Max measurements	1	Display MAX Avg of Voltage, Current and Frequency
		2	Display MAX Avg V_{LL} .
		3	Display MAX Total of Active, Reactive and Apparent Power.
		4	Display MIN Avg of Voltage, Current and Frequency.
		5	Display MIN Avg V_{LL} .
		6	Display MIN Total of Active, Reactive and Apparent Power.
	RTC/ RTD	1	Display Time and Date in RTC
		2	Display RTD Temperature
		3	Display status DI1 and DI2
		4	Display status DO1 and DO2

	Energy measurement	1	Display 1 Phase Import Active Energy
		2	Display 2 Phase Import Active Energy.
		3	Display 3 Phase Import Active Energy.
		4	Display 1 Phase Export Active Energy
		5	Display 2 Phase Export Active Energy.
		6	Display 3 Phase Export Active Energy
		7	Display Total Import Active Energy.
		8	Display Total Export Active Energy
		9	Display NET Total Active Energy
		10	Display 1Phase Import Reactive Energy.
		11	Display 2Phase Import Reactive Energy.
		12	Display 3Phase Import Reactive Energy.
		13	Display 1Phase Export Reactive Energy.
		14	Display 2 Phase Export Reactive Energy.
		15	Display 3Phase Export Reactive Energy.
		16	Display Total Import Reactive Energy.
		17	Display Total Export Reactive Energy.
		18	Display NET Total Reactive Energy
		19	Display 1Phase Import Apparent Energy.
		20	Display 2Phase Import Apparent Energy.
		21	Display 3Phase Import Apparent Energy
		22	Display 1st Phase Export Apparent Energy.
		23	Display 2 Phase Export Apparent Energy.
		24	Display 3phase Export Apparent Energy.
		25	Display Total Import Apparent Energy.
		26	Display Total Export Apparent Energy.
		27	Display NET Total Apparent Energy.
		28	Display RPM

Key Press	Key Description	Screens	Online page description (3P3W)
	Phase measurements	1	Display V_{LL} of 3 phase and Avg V_{LL} .
		2	Display phase current of 3 phase and Avg current.
		3	Display Avg Power Factor.
		4	Display Avg Phase Angle.
		5	Display V_{LL} THD% of 3 phase and Avg V_{LL} THD%.
		6	Display current THD% of 3 phase and Avg current THD%.
	System measurements	1	Display Avg LL VAF and Power Factor.
		2	Display Unbalanced current.
		3	Display Total Active, Reactive and Apparent Power
	Demand measurements	1	Display Peak MAX Demand of Active, Reactive and Apparent Power.
		2	Display Peak MIN Demand of Active and Reactive Power.
		3	Display Present MAX Demand of Active, Reactive and Apparent Power.
		4	Display Present MIN Demand of Active and Reactive Power.
		5	Display Last MAX Demand of Active, Reactive and Apparent Power.
		6	Display Last MIN Demand of Active and Reactive Power.
		7	Display Predictive MAX Demand of Active, Reactive and Apparent Power.
		8	Display Predictive MIN Demand of Active and Reactive Power.
		9	Display Peak MAX Demand of Avg Current.
		10	Display Present MAX Demand of Avg Current.
		11	Display Last MAX Demand of Avg Current.
		12	Display Predictive MAX Demand of Avg Current.
	Min / Max measurements	1	Display MAX Avg LL of VAF .
		2	Display MAX Total of Active, Reactive and Apparent Power.
		3	Display MIN Avg LL of VAF.
		4	Display MIN Total of Active, Reactive and Apparent Power.

	RTC/ RTD	1	Display Time and Date in RTC.
		2	Display RTD Temperature.
		3	Display DI1 and D12
		4	Display DO1 and DO2
	Energy measurement	1	Display Total Import Active Energy
		2	Display Total Export Active Energy.
		3	Display NET Total Active Energy.
		4	Display Total Import Reactive Energy
		5	Display Total Export Reactive Energy
		6	Display NET Total Reactive Energy
		7	Display Total Import Apparent Energy
		8	Display Total Export Apparent Energy
		9	Display NET Total Apparent Energy
		10	Display RPM.

Key Press	Key Description	Screens	Online Page Description (1P2W)
	Phase measurements	1	Display Phase wise Voltage.
		2	Display Phase wise Current.
		3	Display Phase wise Power Factor.
		4	Display Phase wise Phase Angle.
		5	Display Phase wise Voltage THD %.
		6	Display Phase wise Current THD %.
	System measurements	1	Display Phase wise Voltage, Current, Power Factor and Frequency.
		2	Display Active, Reactive and Apparent Power.
	Demand measurements	1	Display Peak MAX Demand of Active, Reactive and Apparent Power.
		2	Display Peak MIN Demand of Active and Reactive Power.
		3	Display Present MAX Demand of Active, Reactive and Apparent Power.
		4	Display Present MIN Demand of Active and Reactive Power.
		5	Display Last MAX Demand of Active, Reactive and Apparent Power.
		6	Display Last MIN Demand of Active and Reactive Power.
		7	Display Predective MAX Demand of Active, Reactive and Apparent Power.
		8	Display Predective MIN Demand of Active and Reactive Power.
		9	Display Peak MAX Demand of Current.
		10	Display Present MAX Demand of Current.
		11	Display Last MAX Demand of Current.
		12	Display Predective MAX Demand of Current.
	Min / Max measurements	1	Display MAX VAF of phase
		2	Display MAX of Active, Reactive and Apparent Power.
		3	Display MIN VAF of phase.
		4	Display MIN of Active, Reactive and Apparent Power.
	RTC/ RTD	1	Display Time and Date in RTC.
		2	.Display RTD Temperature
		3	Display DI1 and D12.
		4	Display DO1 and DO2.
	Energy measurement	1	Display Total Import Active Energy
		2	Display Total Export Active Energy.
		3	Display NET Total Active Energy.
		4	Display Total Import Reactive Energy
		5	Display Total Export Reactive Energy
		6	Display NET Total Reactive Energy
		7	Display Total Import Apparent Energy
		8	Display Total Export Apparent Energy
		9	Display NET Total Apparent Energy
		10	Display RPM.

Key Press	Key Description	Screens	Online Page Description (1P2W-LL)
	Phase measurements	1	Display Phase wise LL Voltage
		2	Display Phase Wise Current
		3	Display Phase Wise Avg Power Angle
		4	Display Phase Wise Avg Power Angle.
		5	Display Phase wise Voltage THD %.
		6	Display Phase wise Current THD %.
	System measurements	1	Display Avg Phase wise Voltage, Current, Power Factor and Frequency.
		2	Display Total Active, Reactive and Apparent Power.
	Demand measurements	1	Display Peak MAX Demand of Active, Reactive and Apparent Power
		2	Display Peak MIN Demand of Active and Reactive Power.
		3	Display Present MAX Demand of Active, Reactive and Apparent Power.
		4	Display Present MIN Demand of Active and Reactive Power.
		5	Display Last MAX Demand of Active, Reactive and Apparent Power.
		6	Display Last MIN Demand of Active and Reactive Power.
		7	Display Predictive MAX Demand of Active, Reactive and Apparent Power.
		8	Display Predictive MIN Demand of Active and Reactive Power.
		9	Display Peak MAX Demand of Current.
		10	Display Present MAX Demand of Current.
		11	Display Last MAX Demand of Current.
		12	Display Predictive MAX Demand of Current.
	Min / Max measurements	1	Display MAX Average LL of VAF.
		2	Display MAX total of Active, Reactive and Apparent Power.
		3	Display MIN Average LL of VAF.
		4	Display MIN total of Active, Reactive and Apparent Power.
	RTC/ RTD	1	Display Time and Date in RTC.
		2	Display RTD Temperature.
		3	Display D11 and D12.
		4	Display DO1 and DO2.
	Energy measurement	1	Display Total Import Active Energy
		2	Display Total Export Active Energy.
		3	Display NET Total Active Energy.
		4	Display Total Import Reactive Energy
		5	Display Total Export Reactive Energy
		6	Display NET Total Reactive Energy
		7	Display Total Import Apparent Energy
		8	Display Total Export Apparent Energy
		9	Display NET Total Apparent Energy
		10	Display RPM.

Configuration mode:

The configuration mode allows the user to configure the functions. The functions are explained in the table below.

Note: The settings should be done by a professional, after going through this user's manual and after having understood the application situation.

Time out for configuration mode is 1 minute. After time out, meter exits configuration mode and goes measurement mode.

- Basic Setup
- Power Demand
- Current Demand
- Energy
- Serial Communication
- RTC
- Alarm
- Internal IO
- Factory Default
- Reset Parameters.

Configuration mode:

Level 1	Level 2	Level 3	Range or Selection	Default value	Remark
Change password	New password		0000 to 9998	1000	
Basic	Network Selection		3F4P, 3F3P, 1F2P L-N, 1F2P-L-L	3P4W	
	CT Terminal Selection		CT1 CT2 CT3 CT12 CT23 CT31 CT123 NONE	NONE	NOTE: The CT terminal parameters are enabled based on the selected network and VT connect configuration
	CT Secondary		1 or 5	5	
	CT Primary		1 or 5 to 32767	5	
	VT Connection Selection		NO VT 1 VT 2 VT 3 VT	NO VT	NOTE: The VT connect parameters are enabled based on selected network
	VT Secondary		100 110 115 120	100	NOTE: VT primary will not be enabled if VT selection is NO VT
	VT Primary		100 to 1000000	100	NOTE: VT secondary will not be enabled if VT connect is NO VT
	System Frequency Selection(Hz)		50/60	50	
	Minimum Suppression Current(mA)		2 to 99 mA	11 mA	
	LOAD I TIMER SET POINT		5 to 50000 mA	11 mA	
	CT Sequence		CT123 CT321 CT312 CT231 CT213 CT132	CT123	NOTE: The CT sequence is applicable for 3P3W and 3P4W configurations and CT123 CT terminal value. If you change the network or CT terminal value, then the CT sequence resets to the default value.
	CT POLARITY		CT1 CT2 CT3 CT12 CT23 CT31 CT123 NONE	NONE	NOTE: The CT polarity parameters are enabled based on selected network and CT terminal value. If you change the network or CT terminal value, then the CT polarity correction resets to the default value.
	NUMBER OF POLE SELECT (EVEN NUMBER)		02 to 98	2	
	PF CONVENTION SELECTION		IEC IEEE	IEC	

Power & Current	DMD method		Sliding, Fixed, Fixed-Sliding, Thermal	Sliding	
	DMD duration (min)		1 to 60	15	
	DMD length (min)		1 to 60	1	
	Demand sync type		None, Command, Clock-sync, Input	None	
	Demand clock sync time	Clock sync hour	0 to 23	0	NOTE: Demand Clock Sync time option is only available if in Demand sync type Clock-Sync is selected
		Clock sync minute	0 to 59	0	
		Clock sync second	0 to 59	0	
	Digital output selection		NONE, DO1, DO2	NONE	NOTE: The digital output selectio is only available if Demand Sync type is selected as input.
	Digital input selection		NONE & DI2	NONE	NOTE: The digital output selection is only available if Demand Sync type is selected as input.
Energy	POP 1 ENERGY		NONE IMPORT kWh EXPORT kWh TOTAL kWh IMPORT kVARh EXPORT kVARh TOTAL kVARh IMPORT kVAh EXPORT kVAh TOTAL kVAh	NONE	
	POP1 pulse width		1 to 9999999	1000	
	POP 2 energy		NONE IMPORT kWh EXPORT kWh TOTAL kWh IMPORT kVARh EXPORT kVARh TOTAL kVARh IMPORT kVAh EXPORT kVAh TOTAL kVAh	NONE	
	POP2 pulse width		1 to 9999999	1000	
	LED CTRL mode		NONE/ ALARM /ENERGY	NONE	
	LED energy		NONE IMPORT kWh EXPORT kWh TOTAL kWh IMPORT kVARh EXPORT kVARh TOTAL kVARh IMPORT kVAh EXPORT kVAh TOTAL kVAh	NONE	NOTE: These parameters are only visible if selected LED mode as energy & LED Pulse width is configured.
	LED pulse width		1 to 9999999	1000	
Serial Communication	Communication password		0 to 9999	1000	NOTE: Password same as configuration password
	Change communication password		NO, YES	NO	
	Communiation setting		ON, OFF	ON	
	Slave ID selection		1 to 247	1	
	Baudrate selection		9600/ 19200/ 38400/ 57600/ 115200	9600	

COMMUNICATION	Parity selection		NONE/ODD/EVEN	NONE	
	Stopbit selection		1 or 2	1	
	Endianness		MSRF/LSRF	MSRF	Note: This parameter will help you see values in LSRF (Mid-Little endian) or MSRF (Big endian)
HMI & CLOCK	Backlight off timer (secs)		0 to 7200	0	
	SET RTC Date	SET RTC YEAR	24 to 90	85	
		SET RTC MONTH	1 to 12	12	
		SET RTC DAY	1 to 31	1	
		SET RTC Week Day	SUNDAY MONDAY TUESDAY WEDNESDAY THURSDAY FRIDAY SATURDAY	MONDAY	
	SET RTC Time	SET RTC HOUR	0 to 23	0	
		SET RTC MIN	0 to 59	0	
		SET RTC SEC	0 to 59	0	
Alarms	Current alarms	Alarm selection	Over Current Phase, Under Current Phase, Over Current Neutral	OVER CURRENT PHASE	
		Enable	OFF, ON	OFF	
		Pickup set point	00.0000 to 10.0000	0.0000	
		Pickup time delay (s)	0 to 999999	0	
		Dropout setpoint	00.0000 to 10.0000	0.0000	
		Dropout time delay (sec)	0 to 999999	0	
		Priority	NONE, LOW, MEDIUM, HIGH	NONE	
		Digital output selection	NONE, DO1, DO2	NONE	NOTE: The digital output selection is available only if control mode is set to ALARM
		Relay output selection	NONE (EXTERNAL)RO1 (EXTERNAL)RO2 (EXTERNAL)RO3 (EXTERNAL)RO4	NONE	NOTE: The Relay output selection will be available only if control mode is set to ALARM. * It is only configurable through MODBUS.
	Voltage alarms	Alarm selection	Over Voltage L-L, Under Voltage L-L, Over Voltage L-N, Under Voltage L-N, Over Voltage Unbal, Over Voltage THD, Phase Loss	OVER VOLTAGE L-L	
		Enable	YES/NO	NO	
		Pickup set point	000.00 to 600.00(V-LL), 000.00 to 347.00(V-LN), 0.00 to 100.00 (V-unbal, THD)	000.00	
		Pickup time delay (s)	0 to 999999	0	

Alarms	Voltage Alarms	Dropout setpoint	000.00 to 600.00(V-L _L), 000.00 to 347.00(V-L _N), 0.00 to 100.00 (V-unbal, THD)	000.000	
		Dropout time delay (sec)	0 to 999999	0	
		Priority	NONE, LOW, MEDIUM, HIGH	NONE	
		Digital output selection	NONE, DO1, DO2	NONE	NOTE: The digital output selection is available only if control mode is set to ALARM
		Relay output selection	NONE (EXTERNAL)RO1 (EXTERNAL)RO2 (EXTERNAL)RO3 (EXTERNAL)RO4	NONE	NOTE: The Relay output selection will be available only if control mode is set to ALARM. * It is only configurable through MODBUS.
	Power Alarms	Alarm selection	OVER ACTIVE, OVER REACTIVE, OVER APPARANT	OVER ACTIVE	
		Enable	OFF & ON	OFF	
		Pickup set point	00000.000 to 10410.000	00000.000	
		Pickup time delay (s)	0 to 999999	0	
		Dropout setpoint	00000.000 to 10410.000	0	
		Dropout time delay (s)	0 to 999999	0	
		Priority	NONE, LOW, MEDIUM, HIGH	NONE	
		Digital output selection	NONE, DO1, DO2	NONE	NOTE: The digital output selection is available only if control mode is set to ALARM
		Relay output selection	NONE (EXTERNAL)RO1 (EXTERNAL)RO2 (EXTERNAL)RO3 (EXTERNAL)RO4	NONE	NOTE: The Relay output selection will be available only if control mode is set to ALARM. * It is only configurable through MODBUS.
	Demand Alarms	Alarms selection	OVER ACTIVE PRESENT, OVER ACTIVE LAST, OVER ACTIVE PREDICTIVE, OVER REACTIVE PRESENT, OVER REACTIVE LAST, OVER REACTIVE PREDICTIVE, OVER APPARANT PRESENT, OVER APPARANT LAST, OVER APPARANT PREDICTIVE	OVER ACTIVE PRESENT	

	Demand Alarms	Enable	YES/NO	NO	
		Pickup set point	00000.000 to 10410.000	00000.000	
		Pickup time delay (s)	0 to 999999	0	
		Dropout setpoint	00000.000 to 10410.000	00000.000	
		Dropout time delay (s)	0 to 999999	0	
		Priority	NONE, LOW, MEDIUM, HIGH	NONE	
		Digital output selection	NONE, DO1, DO2	NONE	NOTE: The digital output selection is available only if control mode is set to ALARM
		Relay output selection	NONE (EXTERNAL)RO1 (EXTERNAL)RO2 (EXTERNAL)RO3 (EXTERNAL)RO4	NONE	NOTE: The Relay output selection will be available only if control mode is set to ALARM. * It is only configurable through MODBUS.
	Frequency Alarms	Alarm selection	OVER FREQUENCY, UNDER FREQUENCY	OVER FREQUENCY	
		Enable	OFF & ON	OFF	
		Pickup set Point	45.000 to 65.000	0	
		Pickup time delay (s)	0 to 999999	0	
		Dropout setpoint	45.000 to 65.000	0	
		Dropout time delay (s)	0 to 999999	0	
		Priority	NONE, LOW, MEDIUM, HIGH	NONE	
		Digital output selection	NONE, DO1, DO2	NONE	NOTE: The digital output selection is available only if control mode is set to ALARM
		Relay output selection	NONE (EXTERNAL)RO1 (EXTERNAL)RO2 (EXTERNAL)RO3 (EXTERNAL)RO4	NONE	NOTE: The Relay output selection will be available only if control mode is set to ALARM. * It is only configurable through MODBUS.
	RTD * Alarms	Alarm selection	OVER RTD, UNDER RTD	OVER RTD	
		Enable	OFF & ON	OFF	
		Pickup (celsius)	-170.0 to 850.0	0	
		Pickup time delay (s)	0 to 999999	0	
		Dropout (celsius)	-170.0 to 850.0	0	
		Dropout time delay (s)	0 to 999999	0	
		Priority	NONE, LOW, MEDIUM, HIGH	NONE	
		Digital output selection	NONE, DO1, DO2	NONE	NOTE: The digital output selection is available only if control mode is set to ALARM

	RTD Alarms	Relay output selection	NONE (EXTERNAL)RO1 (EXTERNAL)RO2 (EXTERNAL)RO3 (EXTERNAL)RO4	NONE	NOTE: The Relay output selection will be available only if control mode is set to ALARM. * It is only configurable through MODBUS.
	PF * Alarms	Alarm selection	TRUE PF, DISPLACEMENT PF	-	
		Enable	OFF & ON	OFF	
		Pickup setpoint	-1.0000 to 1.0000	0	
		Pickup time delay (s)	0 to 999999	0	
		Dropout setpoint	-1.0000 to 1.0000	0	
		Dropout time delay (s)	0 to 999999	0	
		Priority	NONE, LOW, MEDIUM, HIGH	NONE	
		Digital output selection	NONE, DO1, DO2	NONE	NOTE: The digital output selection is available only if control mode is set to ALARM
		Relay output selection	NONE (EXTERNAL)RO1 (EXTERNAL)RO2 (EXTERNAL)RO3 (EXTERNAL)RO4	NONE	NOTE: The Relay output selection will be available only if control mode is set to ALARM. * It is only configurable through MODBUS.
		PICKUP PF TYPE	NONE INDUCTIVE CAPACITIVE	NONE	
		DROPOUT PF TYPE	NONE INDUCTIVE CAPACITIVE	NONE	
Internal IO		DI2 Control Mode	NONE, NORMAL, DEMAND SYNC	NONE	
		DI2 Debounce Time	10 to 9999ms	10	
		DO1 Control Mode	NONE, ENERGY PULSES, EXTERNAL, DEMAND, ALARM	NONE	
		DO2 Control Mode	NONE, ENERGY PULSES, EXTERNAL, DEMAND, ALARM	NONE	
FACTORY DEFAULT			YES/NO	NO	

Reset Parameter	Reset Password	0 to 9999	0	
	Reset meter Parameter	Yes/No	No	
	Reset Active Energy	None, Mains, DG, Both	None	
	Reset Reactive Energy	None, Mains, DG, Both	None	
	Reset Apparent Energy	None, Mains, DG, Both	None	
	Reset Max Demand	None, Power Demand, Current Demand, Both	None	
	Reset Run Hour	Yes/No	No	
	Reset On Hour	Yes/No	No	
	Reset Load Timer	Yes/No	No	
	Reset Auxiliary Interrupt	Yes/No	No	
	Reset Min/Max	Yes/No	No	
	Reset Alarm Counter	Yes/No	No	
	Reset IO Counter	Yes/No	No	
	Reset Tariff	Yes/No	No	

*Note: Configurable only through Utility. Fixed tariff will not be reset in any of the case.

Configuration mode password

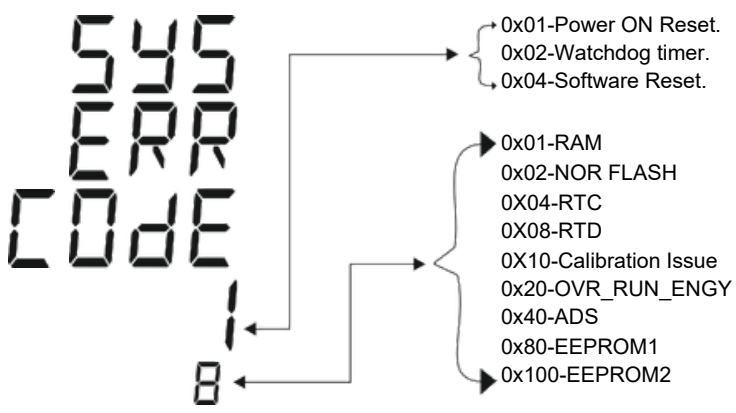
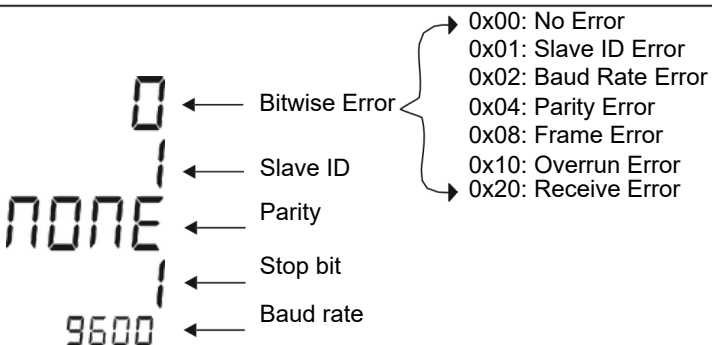
For setting the configuration mode parameters user will be prompted for the password. If correct password is entered, user will be able to access the all programming parameters.

Description	Range	
Configuration mode	0000-9997	Default: 1000
Communication	0001-9998	This password will be greater than the configuration password by 1 i.e. (1001)

Self-Test mode:

The meter offers in built self-test mode feature to identify the meter's measurement failure and communication failure error with meter's system information given in table below.

Sr. No.	Function	Description
1	All segment and LED ON	On entering self-test mode, all LCD segments will be ON
2	Serial number	Displays the meter serial number, for example 50220001
3	Hardware version	Displays the meter hardware version number
4	Software version	Displays the meter software version number
5	Boot loader version	Displays the meter boot loader version number

6	System error code	Displays the system error codes of the meter and are mentioned in hex code.  Note: If more than one error occur, then the display will show summation of those errors.
7	ON hour	Indicates the period for which the power meter's auxiliary supply is ON, regardless of the voltage and current inputs.
8	Run hour	Indicates the period when the average current is present.
9	Import run hours - mains	Indicates the period the load has been delivered. This counter accumulates as long as the load is ON.
10	Export run hours - mains	Indicates the period the load has been received. This counter accumulates as long as the load is ON
11	Import run hours - DG	Indicates the period the load has been delivered. This counter accumulates as long as the generator load is ON.
12	Export run hours - DG	Indicates the period the load has been received. This counter accumulates as long as the generator load is ON.
13	Load run hr	The system allows the configuration of a threshold value for the current. When the measured current is equal to or exceeds this configured threshold, the associated time duration will increase. Indicates number of times meter was turned OFF & ON.
14	Auxiliary interruption	
15	Communication error	
16	External IO	Indicates type of IO card connected to the meter. 2400 represents 2DI-4RO card is connected

Scrolling mode:

The user can set the display screen in auto scrolling mode or manual screen mode via the front panel keys.

Long press  for 3 seconds to toggle between manual and automatic mode.

- Automatic mode: In automatic mode, Online pages scroll automatically at a rate of 5 seconds per page. In automatic mode, when any key is pressed, the unit temporarily switches to manual mode and the appropriate page is displayed. Also, if any key is not pressed for 5 seconds, unit resumes automatic mode. The RTC page will not be visible while scrolling but can be viewed if the key is pressed.
- Manual mode: In manual mode, selected online page will remain static.

MEASUREMENTS

Display measured parameter

Function	Description		Parameters
Real time measuring	VL-N phase voltage per phase and 3 phase average		V1, V2, V3, VLNAVG
	VL-L line voltage per phase and 3 phase average		V12, V23, V31, VLLAVG
	Current - per phase and 3 phase average		I1, I2, I3, IAVG
	Calculated neutral current		IN
	Unbalanced voltage *		V1, V2, V3, V12, V23, V31, VLN _{VG} , VLL _{AVG} VLN _{WORST} , VLL _{WORST}
	Unbalanced current *		I1, I2, I3, IAVG, IWORST
	Worst Current		IWORST
	Active power		kW1, kW2, kW3, kWTOTAL
	Reactive power		kVAR1, kVAR2, kVAR3, kVAR _{TOTAL}
	Apparent power		kVA1, kVA2, kVA3, kVATOTAL
	Phase angle		PA1, PA2, PA3
	True power factor - per phase and 3 phase average		PF1, PF2, PF3, PFAVG
	Displacement power factor - per phase and 3 phase average *		PF1, PF2, PF3, PFAVG
	Distortion power factor - per phase and 3 phase average*		PF1, PF2, PF3, PFAVG
	Frequency		Hz
	THD VL-N %		V1, V2, V3, VLNAVG
	THD VL-L %		V12, V23, V31, VLLAVG
	THD current %		I1, I2, I3, IN, IAVG
	thd VL-N%		V1, V2, V3, VLNAVG
	thd VL-L%		V12, V23, V31, VLLAVG
	thd current		I1, I2, I3, IAVG
Min and Max values with time stamping*	Average voltage L-N		VLNMIN, VLNMAX ,
	Average voltage L-L		VLLMAX, VLLMIN
	Current		IMIN, IMAX
	Neutral current *		INMAX, INMIN
	PF *		PF1MIN, PF1MAX PF2MIN, PF2MAX PF3MIN, PF3MAX
	Total power		KWMIN, KWMAX KVAMIN, KVAMAX KVARMIN, KVARMAX
	Frequency		HzMIN, HzMAX
Demand	Power demand	Max(KW,KVA,KVAR)	Last demand Present demand Predictive demand Peak demand
		Min(KW,KVAR)	
	Current demand (I1,I2,I3,I ^{VG})		Last demand Present demand Predictive demand Peak demand

Energy (mains)	Active energy Apparent energy Reactive energy (4 quadrant based VARh *)	Accumulated energy Import - per phase and total Export - per phase and total Total NET (Import + Export) Total NET (Import - Export) *
		Last cleared energy * Import - per phase and total Export - per phase and total Total NET (Import + Export) Total NET (Import - Export)
Energy (DG)	Active energy Apparent energy Reactive energy	Accumulated energy Import - Per phase and total Export - Per phase and total Total NET (Import + Export) Total NET (Import-Export) *
		Last cleared energy * Import - per phase and total Export - per phase and total Total NET (Import + Export) Total NET (Import - Export)
RTC	Date and Time	DD:MM:YY HH:MM:SS
RPM	Revolution per minute	RPM
ON HR	ON Hour	Hour
Run hours	Run hour: Import/Export - Mains	Import run Hours - Mains
		Export run Hours - Mains
	Run hour: Import/Export - DG	Import run Hours - DG
		Export run Hours - DG
Load Run Hour	Load Run Hour	Hour
AUX Interruption	Auxiliary interrupts	

Note: DG (RMM's meter) Energy are only displayed when DG is connect to DI 1.

All features can be accessed via communication or from the meter front, however * indicating features that can only be accessed via communication.

Phase and system measurement:

The meter provides highly accurate 1-second measurements, Average values, Including true RMS, Per phase and total.

- Per phase and average voltage (line-to-line, line-to-neutral)
- Per phase and average current, and neutral current (neutral current is calculated)
- Per phase and total power (VA, W, Var)
- Per phase and average for true and displacement power factor
- System frequency
- Per phase and maximum of all three for voltage unbalance and current unbalance

Harmonics overview:

Harmonics, integer multiples of the fundamental frequency, are a common power quality issue that can significantly impact the performance and reliability of electrical systems. They arise from non-linear loads, such as electronic devices, variable speed drives, and arc furnaces, which draw non-sinusoidal current. The presence of harmonics can lead to a variety of problems, including increased power losses, equipment overheating, voltage distortion, and interference with communication systems. To mitigate these issues, it's crucial to monitor and analyze harmonic levels in power systems. By understanding the sources and impacts of harmonics, engineers can implement appropriate mitigation strategies, such as harmonic filters, to ensure the overall quality and efficiency of the power system.

Total harmonics distortion %:

Meter can measure and analyze several power quality parameters which is useful for further analyzing the voltage and current signals measured by the meter. Total Harmonic Distortion: A ratio of the sum of powers in all harmonic components to power of the fundamental frequency. Meter also supports even and odd order THD, where even order harmonics are the 2nd, 4th, 6th, and so on and odd order harmonics are 3rd, 5th, 7th, etc. %THD of voltage and current per phase and average value data can be accessed via communication or from the meter front, however individual harmonics can only be accessed via communication.

Total demand distortion:

Total demand distortion (TDD) is a crucial metric in power systems that quantifies the impact of harmonic currents on the system's capacity. It's a more accurate measure of harmonic distortion than Total Harmonic Distortion (THD) because it considers the system's full load current.

Harmonic content calculations:

Harmonic content (HC) is equal to the RMS value of all the non-fundamental harmonic components in one phase of the power system. The meter uses the following equation to calculate HC:

$$HC = \sqrt{(H_2)^2 + (H_3)^2 + (H_4)^2 + \dots}$$

THD% calculations:

THD% is a quick measure of the total distortion present in a waveform and is the ratio of harmonic content (HC) to the fundamental harmonic (H1). By default, the meter uses the following equation to calculate THD%:

$$THD = (HC/H_1) \times 100\%$$

thd% calculations:

thd% is an alternate method for calculating total harmonic distortion that uses the RMS value for the total harmonic content rather than the fundamental content. The meter uses the following equation to calculate thd:

$$thd = (HC / \sqrt{(H_1)^2 + (HC)^2}) \times 100\%$$

TDD calculations:

TDD (total demand distortion) evaluates the harmonic currents between an end user and a power source. The harmonic values are based on a point of common coupling (PCC), which is a common point where each user receives power from the power source. The meter uses the following equation to calculate TDD:

$$TDD = (\sqrt{(HC)_a^2 + (HC)_b^2 + (HC)_c^2}) / (I_{Load}) \times 100\%$$

Where I_{Load} is equal to the maximum demand load on the power system.

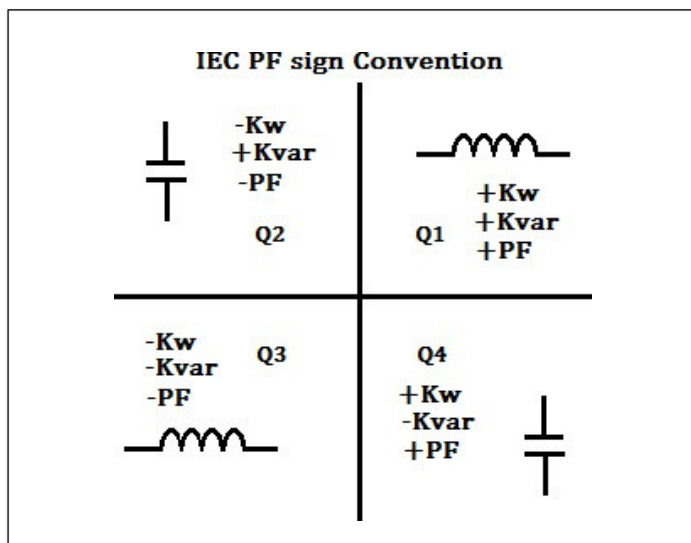
Min/Max values:

The meter logs maximum and minimum value for real time as well as the time when they occurred. All data is stored in non-volatile memory so that statistic information can be preserved even when the meter loses power or gets shut off. All maximum and minimum data of V_{LN} , V_{LL} , Current, Total power and Frequency can be accessed via communication or from the meter front. However only power factor's Min/Max value can only be accessed via communication.

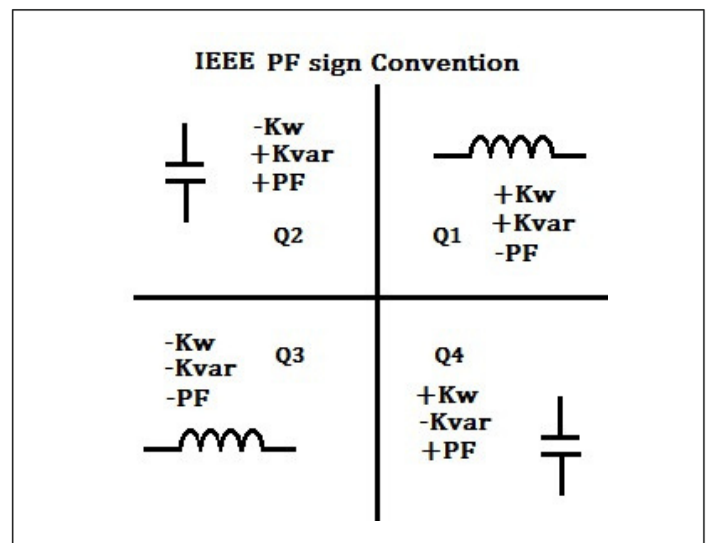
Power factor & sign convention

Power factor sign (PF sign) can be positive or negative, and is defined by the conventions used by the IEEE or IEC standards. You can set the power factor sign (PF sign) convention that is used on the display to either IEC or IEEE.

• PF sign convention: IEC



• PF sign convention: IEEE



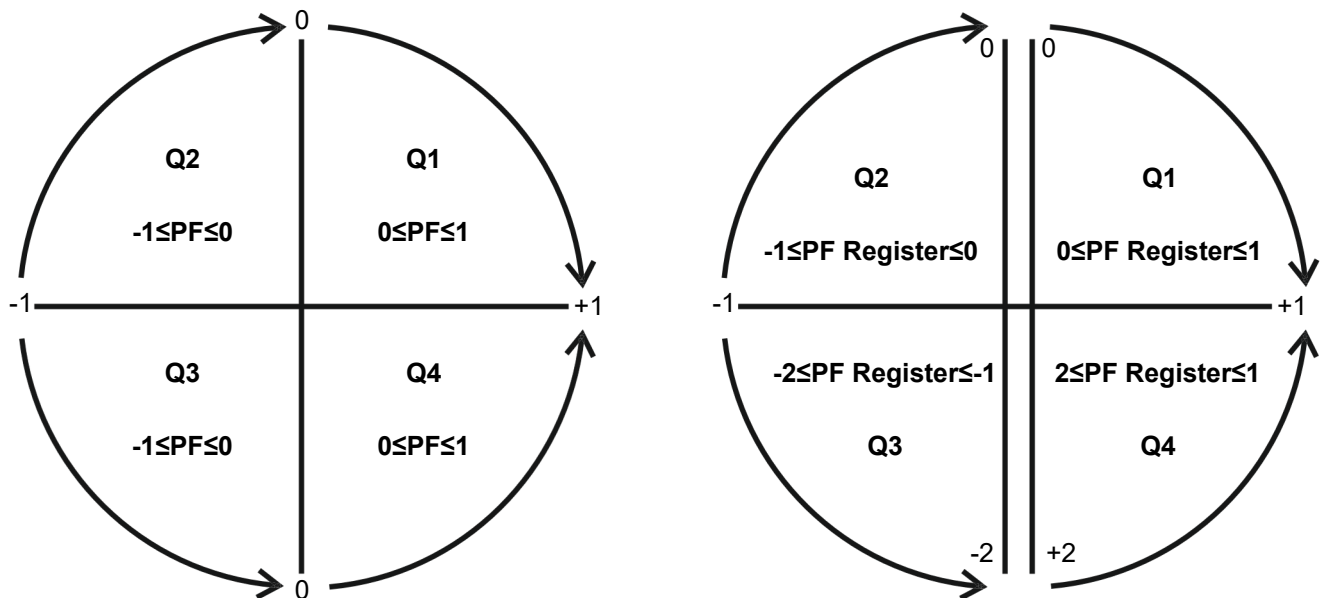
True PF and displacement PF:

- True power factor includes harmonic content. True PF is the ratio of the active power to the apparent power at the power outlet.
- Displacement power factor only considers the fundamental frequency. Displacement power factor can be defined as the cosine of the angle between the current and voltage.

Power factor Min/Max convention

The meter use specific convention for determining the power factor minimum and maximum values.

- For **negative** PF readings, the **minimum PF value** is the measurement closest to -0 for PF readings between -0 to -1, the **maximum PF value** is the measurement closest to -1 for PF readings between -0 to -1.
 - For **positive** PF readings, the **minimum PF value** is the measurement closest to +1 for PF readings between +1 to +0, the **maximum PF value** is the measurement closest to +0 for PF readings between +1 to +0.
- For communication, the power factor is displayed in the form of a PF register value as below.



The power factor value is calculated from the PF register value using the following formula:

Quadrant	Power factor range	PF register range	PF formula
Quadrant 1	0 to +1	0 to +1	PF Value = PF register value
Quadrant 2	-1 to 0	-2 to -1	PF Value = (-2) - PF register value
Quadrant 3	0 to -1	-1 to 0	PF Value = PF register value
Quadrant 4	+1 to 0	+1 to +2	PF Value = (+2) - PF register value

Type of power factor	Range of power factor	Minimum power factor	Maximum power factor
Negative power factor reading	PF readings between -0 to -1.	Closest to -0	Closest to -1.
Positive power factor reading	PF readings between +1 to +0	Closest to +1.	Closest to +0

Demand measurement:

The meter can support demand measurements consisting of power and current demand readings as the cosine of the angle between the current and voltage.

The demand will be calculated using the demand calculation method configured in the meter.

There are four standard types of demand calculation methods, that meter supports: Fixed, Sliding, Fixed-Sliding, Thermal method.

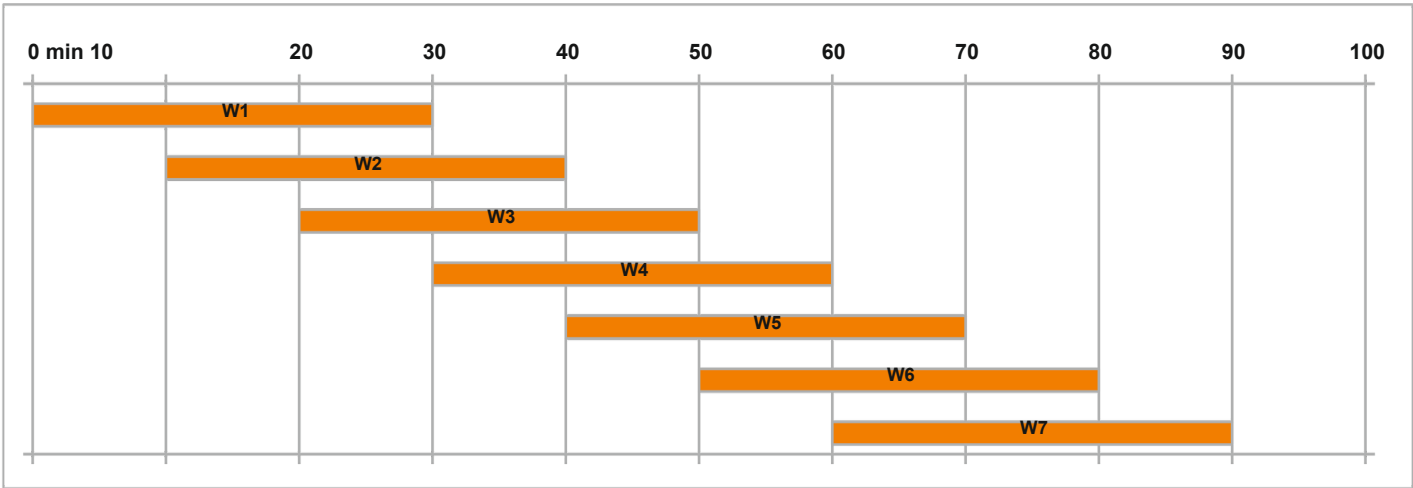
The meter provides last, present, predicted, and peak demand values and a time stamp when the peak demand occurred.

- **Power demand (Total W, VAR, VA)**
- **Current demand (Average Amps)**

All demand values data can be accessed and reset via communication or from the meter front.

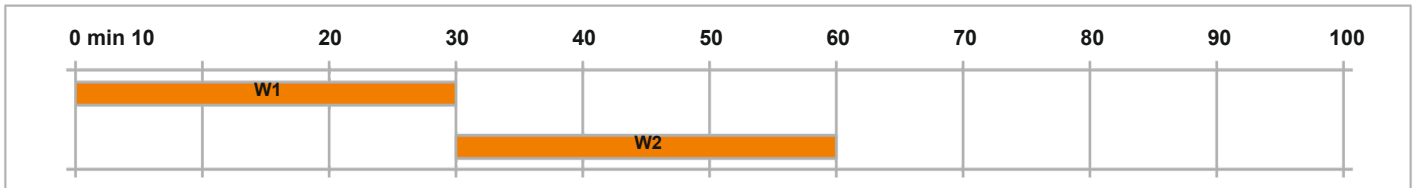
1. Sliding Demand:

Present and peak demand updates at the end of each sub-interval. Last demand lags one sub-interval. If demand duration selected is 3 and demand length selected is 2, then demand is updated at the end of 2 minutes. Here, interval is of 6 minutes and update time is 2 minutes.



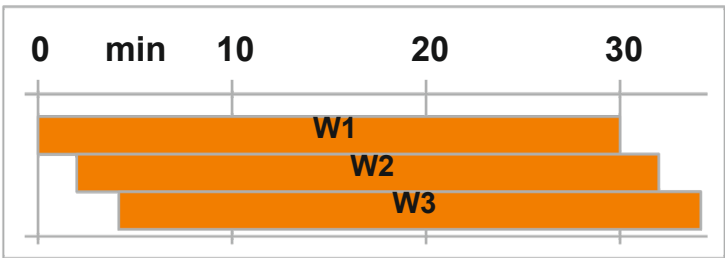
2. Fixed demand:

Present demand updates at the end of every 1 minute (fixed) and the peak and last demand values are updated at the end of interval.



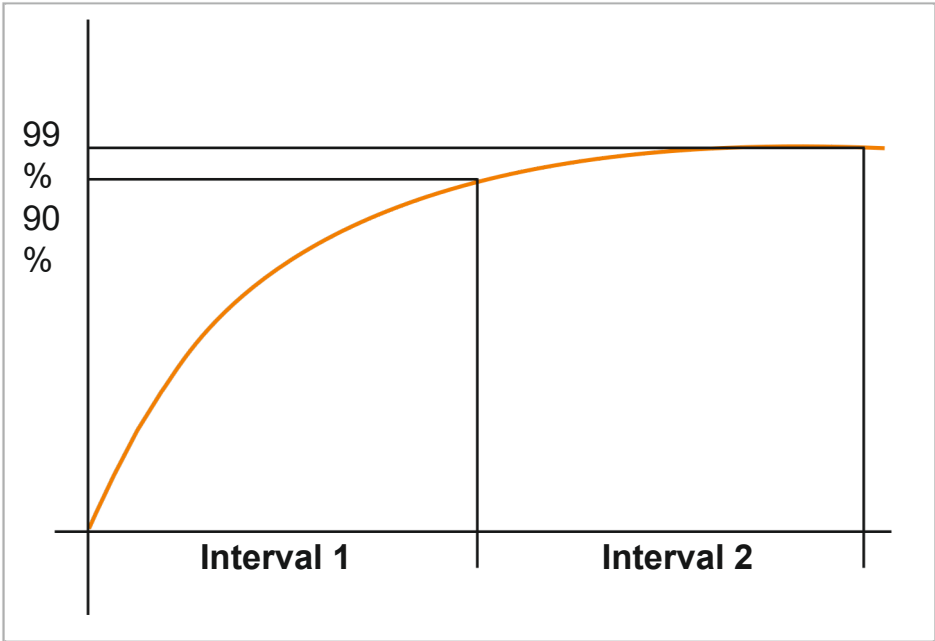
3. Fixed-sliding demand:

Present and peak demand updates every 15 seconds (if demand duration is between 1 and 15 minutes) or 60 seconds (if demand duration is between 16 and 60 minutes) and last demand is updated at the end of interval.



4. Thermal demand:

Athermal response is the one which is used to calculate thermal demand. By setting the DMD duration (1 to 60min) the thermal response curve can be derived.



Energy - Mains / DG (Import / Export):

Accumulated energy (mains and DG both)

- Active, Apparent, Reactive energy
- Import - Per phase and Total
- Export - Per phase and Total
- Total NET (Import + Export)
- Total NET (Import – Export)

Last cleared energy (mains and DG both)

- Active, Apparent, Reactive energy
- Import - Per phase and Total
- Export - Per phase and Total
- Total NET (Import + Export)
- Total NET (Import – Export)

Energy Roll-over:

When any energy value exceeds the maximum value 999999.999 GWh, GVArh, GVAh, then that particular energy rolls over and stores the count at modscan address and starts accumulating fresh from 0. To response in increase in energy, the energy rollover automatically on display from WATT to KWATT then to MWATT and GWATT. Energy unit symbol will change to k/M/G depending on the value.

Case	Displayed Energy	Displayed Energy Unit	Updated Displayed Energy	Updated Displayed Energy Unit
1	999.999	kWh	0	MWh
2	999.999	GWh	0	Wh

Note : In Case 2 after energy roll-over, count gets updated at particular address. Displayed Energy & unit get updated as shown

Energy pulsing detailed method:

Within specific limits, the meter's energy pulsing LED and pulse outputs are capable of performing energy pulsing.

Energy pulsing at	Maximum pulse frequency	Max. No of Pulses / Sec
LED OUTPUT	40 Hz	36
PULSE OUTPUT	20 Hz	18

Configurable pulse width: 1 to 9999000 (per k_h)

Note: Pulse duration is fixed for LED output is 25ms and for POP output is 50ms

Calculation to allow the energy pulsing at LED output

LED Output will increment only if the total number of pulses is more than configured pulse width otherwise the LED pulsing count will be 0.

$$\begin{aligned}\text{Total No of pulses / Hr are calculated as} &= \frac{\text{Max. No of Pulses / Sec}}{\text{Total power}} \\ &= \frac{36 \times 3600}{3.6 \text{ (kW}_{\text{Total}})} \\ &= 36000/\text{Hr}\end{aligned}$$

Configured pulse width	Condition	LED output
10	Total No of pulses > Pulse width	LED pulsing will start incrementing as per observed energy
10000	Total No of pulses > Pulse width	LED pulsing will start incrementing as per observed energy
37000	Total No of pulses < Pulse width	LED pulsing will not start incrementing. Remains OFF.

The LED pulse count is dependent on the configured pulse width in relation to the incrementing energy as below table.

Sr No.	Configured LED pulse Width	Energy in kWh	LED pulse count
1	1	1.000	1
2	10	0.100	1
3	100	0.010	1
4	1000	0.001	1
5	10000	0.001	10
6	100000	0.001	100
7	1000000	0.001	1000
8	9999000	0.001	10000

Calculation to allow the energy pulsing at POP output

Pulse output will increment only if the total number of pulses is more than configured pulse width otherwise the POP count will be 0.

$$\begin{aligned}\text{Total No of pulses / Hr are calculated as} &= \frac{\text{Max. No of Pulses / Sec} \times 3600}{\text{Total power}} \\ &= \frac{18 \times 3600}{3.6 \text{ (kW}_{\text{Total}})} \\ &= 18000/\text{Hr}\end{aligned}$$

Configured pulse width	Condition	LED output
10	Total No of pulses > Pulse width	POP will start incrementing as per observed energy
10000	Total No of pulses > Pulse width	POP will start incrementing as per observed energy
19000	Total No of pulses < Pulse width	POP will not start incrementing.

The POP count is dependent on the configured pulsewidth in relation to the incrementing energy as below table.

Sr No.	Configured POP pulse width	Energy in kWh	POP count
1	1	1.000	1
2	10	0.100	1
3	100	0.010	1
4	1000	0.001	1
5	10000	0.001	10
6	100000	0.001	100
7	1000000	0.001	1000
8	9999000	0.001	10000

Terminology

RPM:

Meter provides the measurement of rotational speed of motor. usually displays value in terms of RPM. The speed a synchronous motor will run can be determined by the electrical service using. No of poles are set table through communication or from the meter front.

ON hour:

ON hour shows how long the meter has been powered up. ON hour data can be accessed via communication or from the meter front under self-test mode.

Import run hour-Mains:

Import run hours-Mains show how much time a load has been running, based on accumulated energy – Import (delivered) of mains supply. run hour import mains data can be accessed via communication or from the meter front under self- test mode. It can be reset via communication or meter front.

Export run hour-Mains:

Export Run hours-Mains show how much time a load has been running, based on accumulated energy – Export (received) of mains supply. run hour export mains data can be accessed via communication or from the meter front under self-test mode. It can be reset via communication or meter front.

Import run hour- DG:

Import run hours-DG show how much time a load has been running, based on accumulated energy – Import (delivered) of DG supply. run hour import DG data can be accessed via communication or from the meter front under self-test mode. It can be reset via communication or meter front.

Export run hour- DG:

Export run hours-DG show how much time a load has been running, based on accumulated energy – Export (received) of DG supply. run hour export DG data can be accessed via communication or from the meter front under self-test mode. It can be reset via communication or meter front.

Load Run Hour:

Load Run hour shows how long a load has been running, based upon the load timer set point set in communication. (minimum current). active load timer data can be accessed via communication or from the meter front under self-test mode. It can be reset via communication or meter front.

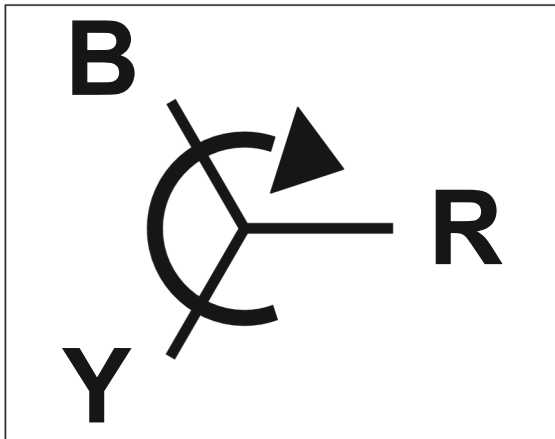
Auxiliary interrupts:

Auxiliary interrupts shows number of auxiliary supply interruptions. Auxiliary interrupts data can be accessed via communication or from the meter front under self-test mode. It can be reset via communication or meter front.

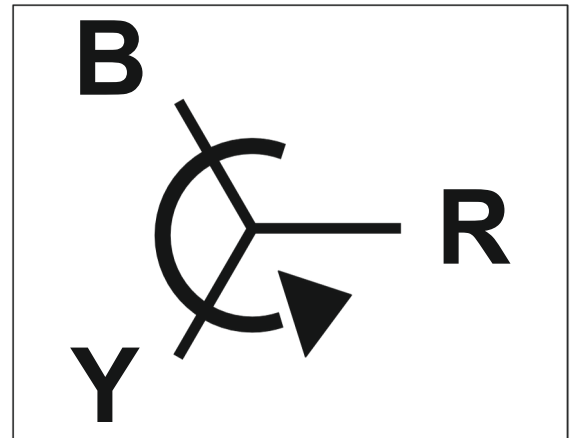
Voltage sequence detection:

Meter performs the analysis of the input voltage signals. It detects the wrong phase sequence or failure of one of the input voltage and displays the result upon pressing  key for 3 seconds.

1. OK phase sequence - **"Clockwise"**
2. Wrong phase sequence - **"Anticlockwise"**
3. Failure of one of the input voltage - **"Invalid"**



CLOCKWISE



ANTI-CLOCKWISE

Current polarity (CT reversal detection and Correction)

The meter supports a setting that allows the user to change the current polarity in the meter via communication and from the panel in configuration mode. This is beneficial if the CT's have been installed in the reverse direction polarity.

Configure the CT through the front panel according to the CT polarity shown on the current reversal detection page. Changing the current polarity to negative is basically changing the phase angle of the current by 180 degrees, making it possible to correct any installation errors. There is no need to change the physical wiring.

By default the current direction is configured to positive for CT1, CT2 and CT3 i.e., NONE.

Upon pressing the key  for 3 seconds, the current reversal detection page will appear with the CT number of the input current that is reversed in polarity.

1. 1st phase CT polarity has reverse connection - **"1"**
2. 1st and 2nd phase CT polarity has reverse connection - **"12"**
3. 1st, 2nd, 3rd phase CT polarity has reverse connection - **"123"**

Note: CT polarity correction should be referred when input active power is positive.

CT correction changes can be done through meter configuration.

Real-time clock:

The meter supports with real-time clock. The RTC parameters are date and time shown in the form of DD:MM:YY and HH:MM:SS respectively. The RTC parameters data can be accessed via communication or from the meter front.

Battery specifications: Cr2032

Diameter: 20mm

Height: 3.2mm

Nominal capacity: 220mAh

Battery voltage: 3V

Operating voltage: -30 °C to 70 °C

COMMUNICATION

The meter is equipped with both Serial and Ethernet communication with MODBUS TCP and MODBUS RTU protocols.

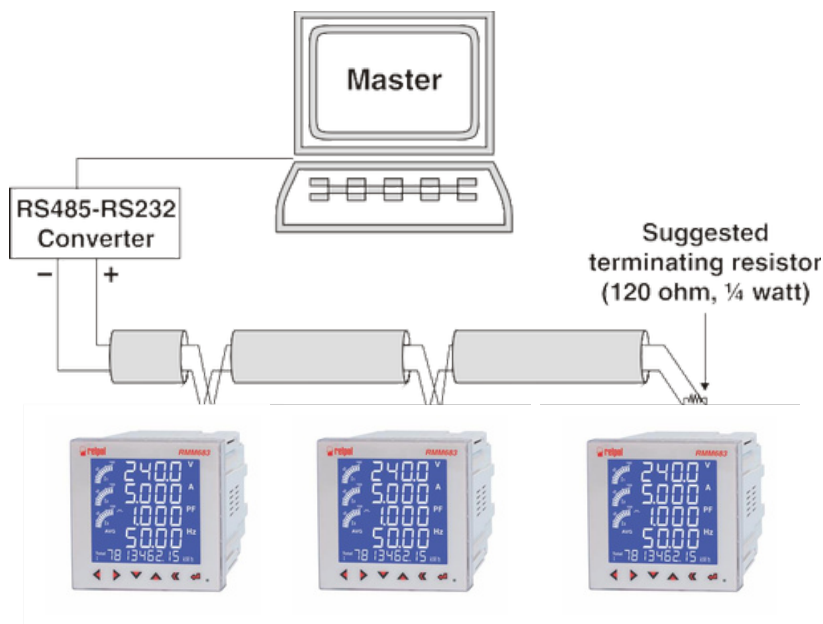
Serial Communication(RS 485):

The meter has RS485 port for the purpose of Serial communication, the RS485 bus can support up to 32 devices connected to it.

In RS485 bus the devices are connected in point-to-point configuration. With (+) and (-) terminals of devices connected in series.

Note: Use a shielded twisted pair RS485 cable

The total distance for devices connected on an RS-485 bus should not exceed 500 m (1640 ft)



Contact sales for PC based monitoring software to communicate with the meters.

Wiring diagram

Configuration of RS485 network need to be performed after wiring the RS485 port in order to communicate with the network.

Each device on the same Rs485 communications bus must have a unique slave id and all connected devices must be set to the same protocol, baud rate, and parity (data format).

Serial interface:

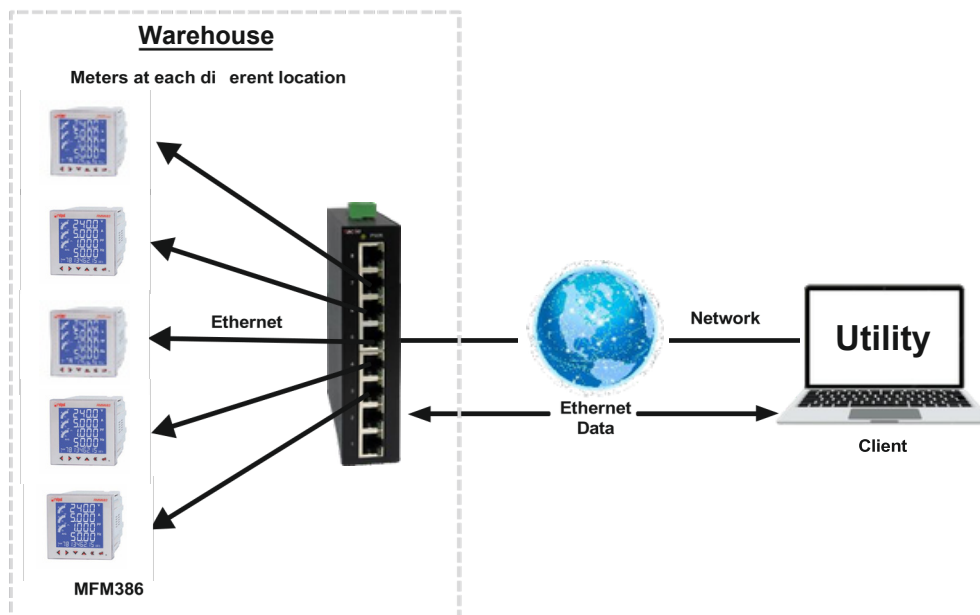
Serial standard	RS485
No. of ports	1
Protocol	Modbus RTU
Baudrate	9600, 19200, 38400, 57600, 115200 bps
Data bits	8
Stop bits	1, 2
Parity	None, Odd, Even
RS485 data direction control	Auto

Note - Serial communication configuration process on page xx

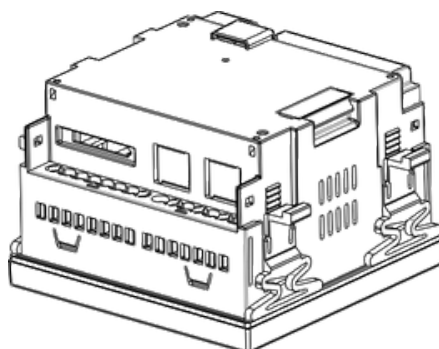
- **Ethernet:**

Overview:

A serial to ethernet converter is a small electronic device which can convert ethernet IP/TCP packets to either RS232, RS485 serial data signals and vice versa. Most commonly it is used for connecting a serial RS232, RS485 device such as a serial printer, Energy meter, Bar code scanner, Scale, GPS, Sensor or any other consumer or industrial device with a serial interface, to a computer over a standard LAN network. The advantage of this is obvious; you will be able to control, monitor and communicate with your serial device remotely from a central computer. No need to walk all the way down to the other end of the factory to check your serial device. A picture showing basic architectural overview is as shown below.



The meter has a ethernet communication port which uses MODBUS TCP protocol and MODBUS TCP over RTU to communicate at data speed up to 100Mbps. Cat 5 cable to be used for the connection of meter's ethernet port. The ethernet connection between client and server should be positioned in a location that minimizes the overall length of ethernet cable routing, a router can be used if the transmission distance is less than 100m.



The ethernet port setup allows you to assign a unique IP address to the meter so you can to access the meter's data or configure the meter remotely through the ethernet port. All devices must have a unique IP address and be set to the same subnet mask and gateway, to communicate with meter through ethernet.

Ethernet interface:

Connector	8 pin RJ45
No. of ports	1
Speed	10/100 Mbps
Transmission distance	Max upto 100 m
Protocol	MODBUS TCP over RTU, Modbus TCP
Standards	IEEE802.3, IEEE802.3u
Magnetic isolation protection	1.5KV
IP configuration	DHCP, Static IP
Signal	Tx+, Tx-, Rx+, Rx-

Ethernet port:

PIN	Signal
1	TXP
2	TXM
3	RXP
4	-
5	-
6	RXM
7	-
8	-

LED indication & Reset key

Indicator	Function	Description
ACT	Power on	Converter has power
Link	Network link	ON when network is connected
Reset switch	Factory reset	Reset switch for factory reset of ethernet

Device default settings:

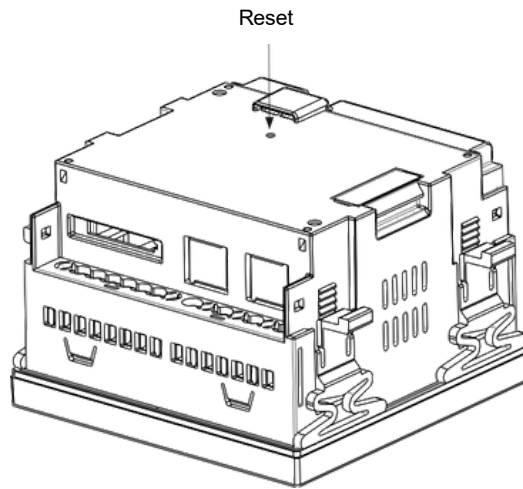
Network setting: Dynamic IP, TCP protocol

Serial setting: 115200, 8, N, 1

Mode setting: Transparent mode, TCP server, MODBUS TCP

Device factory reset settings:

In order to factory reset the meter ethernet to default setting press and hold the reset button on the back of the meter for more than 5 seconds



Before communicating with ethernet, make sure you obtain your meter's IP address information from your network administrator or IT department.

Configuration requirements can include:

Windows utility: Used for Ip finding, network configuration, serial configuration configuration OS support for utility: 32 bit/64-bit Windows XP/Vista/7/8/8.1/10, windows server 2003/2008/2008 R2/2012 R2

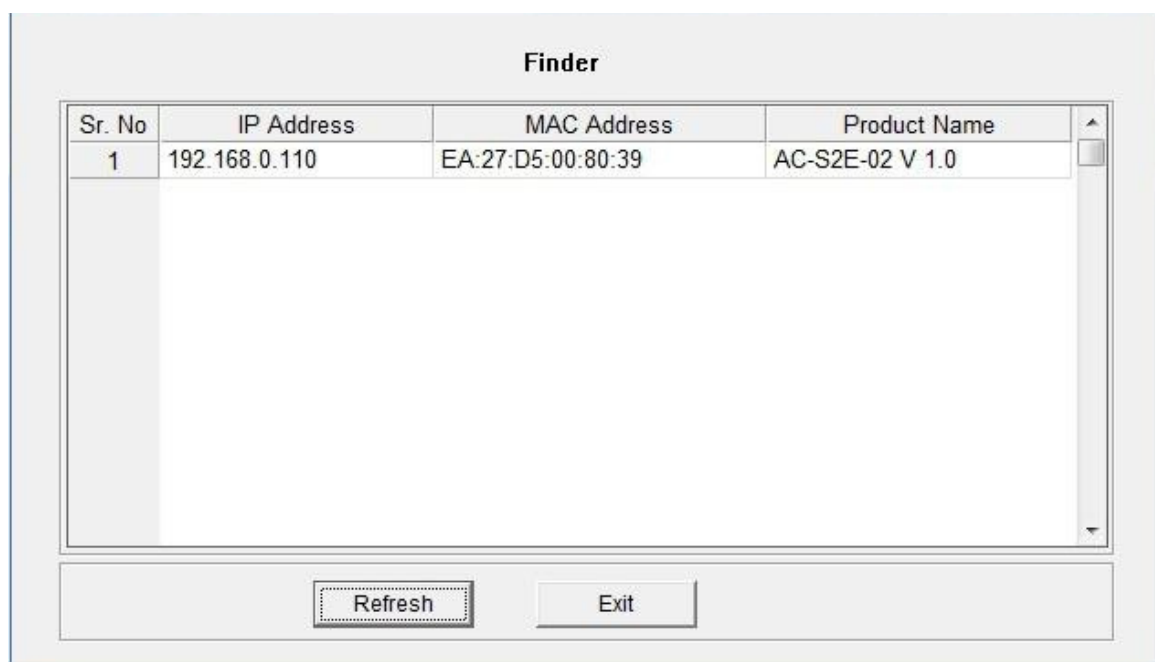
Configuring the device:

The device configuration is managed by a windows utility called RELPOL finder. The details regarding how to use the utility are as given below.

Relpol finder utility overview:

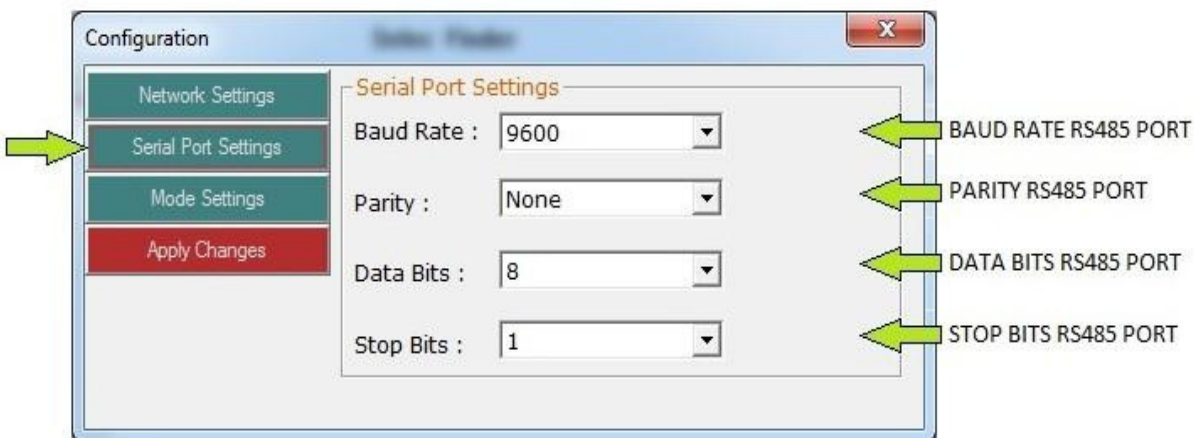
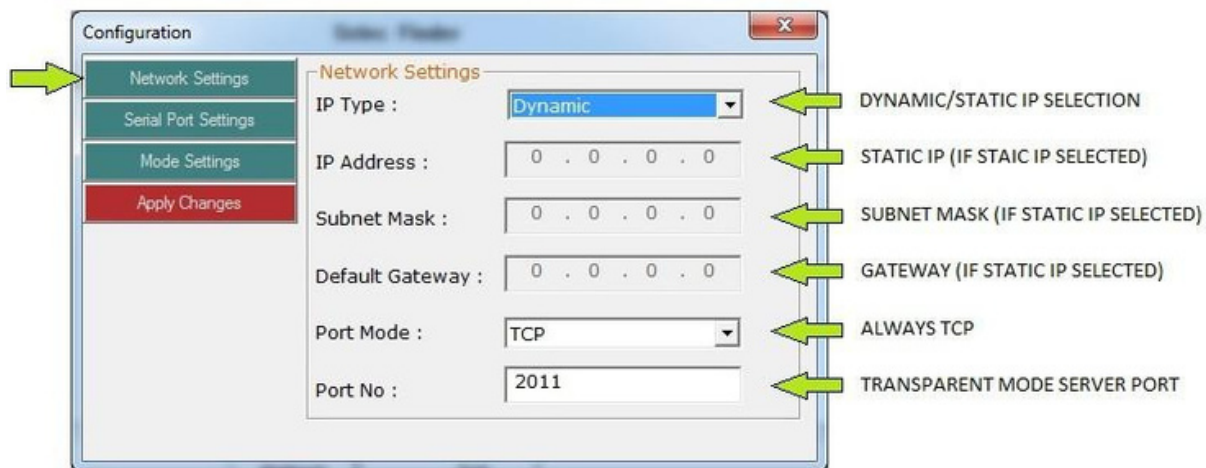
The RELPOL finder utility is used to find out and configure Relpol ethernet devices on the network. The utility will list all the RELPOL devices on the ethernet network and the information will contain IP address, MAC Address and Device description string. This utility can be further used to configure various Network settings, Serial settings and Mode settings of the S2E device.

- **Step 1:** Run the RELPOL finder utility and it should look something like this when the screen pops up

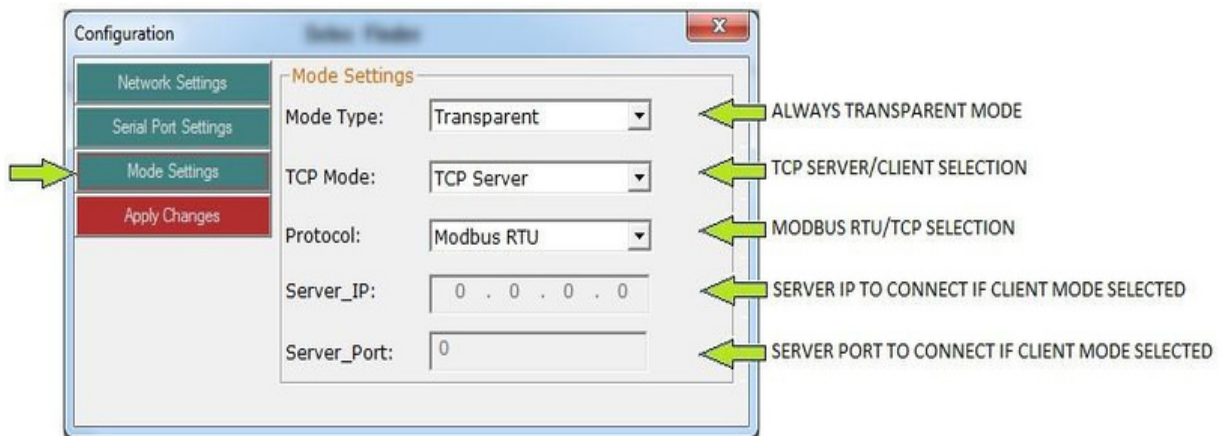


As shown above the screen display the RELPOL devices in the network using IP ADDRESS, MAC ADDRESS and PRODUCT NAME. The device to be configured should be seen in this list. If not then you can refreshing the screen by pressing the refresh button.

- **Step 2 :** Double click on the IP ADDRESS of the device you want to configure. The screen pops up showing existing configuration settings in various settings tabs which are Network, Serial and Mode. The screen displayed is as shown below. You can go to any tab just to view the existing settings. Just click on the tab and existing settings will be displayed. All 3 images showing existing settings are shown below. This is just an example and actual value in different settings tab will vary as per existing config in the device.



Note : If you are using the RMM-683 device, select a baud rate of 115200.



Note :-

- If you are using the Modscan utility, select **MODBUS TCP** as the protocol in the "Select Finder" option.
- If you are using the RMMS utility with Modbus RTU over TCP/IP, choose **MODBUS RTU** as the protocol in the "Select Finder" option
- If you are using **MODBUS TCP** in the RMMS utility, Select MODBUS TCP as the protocol in the "RELPOL Finder" option
- **Step 3:** Make any relevant changes in the config. and then click on **Apply changes** button which should display the following screen on successful communication. Click ok and close the window.



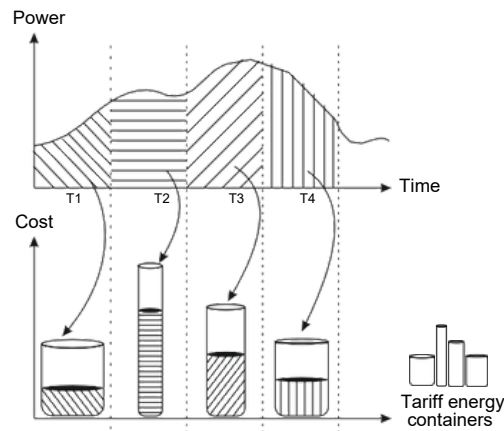
In case of error click ok on error message window and Restart the procedure from Step 1.

MULTI-TARIFF

Multi - Tariff:

The meter supports multiple tariffs for the measurement and monitoring of energy used for the purpose of costing and billing.

Meter allows you to use 4 different tariff containers to store the accumulated energy data. 4 tariff with each having 4 time slots settings. You can configure different tariff condition using tariff setup.



In the provided example, the energy consumed corresponds to the area beneath the power curve. Usually, utility companies establish tariff schedules such that energy costs are elevated during periods of high demand or consumption. The configuration of these "tariff energy containers" dictates the rate at which they fill, directly impacting rising energy expenses. Tariff T1 offers the lowest price per kWh, while tariff T2 imposes the highest cost.

There are different tariff modes you can use to determine what tariff is applied and when: Command mode, Time of day mode, and Input mode.

Based on the conditions different tariff modes can be used:

Command mode overview:

In this mode you can send a MODBUS command to the device for the activation of certain tariff. This tariff measure energy until different tariff MODBUS command is sent

Time of use mode overview:

In this mode to store energy or input metered data, based on the time of year (Day, Month), the type of day (every day, weekend, weekday or a specific day of the week), or time of use a tariff schedule can be created

Date & Time format table:

Parameter	Values	Description
Year	24-90	The calendar year
Month	1 to 12	The calendar month, where 1 = January, 2 = February, 3 = March, 4 = April, 5 = May, 6 = June, 7 = July, 8 = August, 9 = September, 10 = October, 11 = November, 12 = December.
Day	1 to 31	The calendar day of the month.
Weekday	Monday to Sunday	The calendar day of a week.
Hour	0 - 23	Real time clock hour in 24 hr format
Minute	0 - 59	Real time clock minutes
Seconds	0 - 59	Real time clock seconds

Valid tariffs:

A valid must follow tariffs conditions:

- Tariffs cannot overlap, each tariff must have unique time period
- Time of use tariffs do not adjust for daylight savings time
- February 29th in a leap year can be a time of use tariff, but it is not recommended to have February 29th as a start or end date, as that tariff would be invalid for non-leap years
- Except for leap years, tariff dates are not year-specific; if you wanted to create a tariff that starts on the first Monday in June, you need to enter the date for that year, then manually update the tariff information for the subsequent years

Methods for creating a tariff:

The device validates as you enter tariff information, it allows you to change the entered information or disables the tariff in the information is invalid:

- Start time can only be earlier than end time for tariffs that are applied every day. You can create a daily tariff that starts at 06:00 and ends at 11:00, but these times are only valid for the everyday tariff and invalid for the other tariff types
- Start day must be earlier than end day if the days are in the same month. You cannot create a tariff that starts June 15 and ends June 12
- The tariff setting starts from selecting the DAY TYPE from every day, weekend, weekday or a specific day of the week and can specify the time of use. For example, a four tariff configuration could have every day in the year divided into six-hour tariff periods or could have two tariffs for weekends and two tariffs for weekdays

Tariff configurations examples:

		Tari			
		1	2	3	4
Timeslot 1	Type	Everyday	Weekdays	Weekdays	Weekdays
	Start date	01/01/23	01/05/23	01/01/23	01/09/23
	End date	23:30:00	05:00:00	07:00:00	19:30:00
	Start time	31/12/23	30/09/23	30/04/23	31/12/23
	End time	00:29:59	10:00:00	10:00:00	20:15:00
Timeslot 2	Type	Everyday	Weekdays	Weekdays	Weekdays
	Start date	01/01/23	01/05/23	01/01/23	01/09/23
	End date	01:00:00	11:00:00	13:00:00	20:30:00
	Start time	31/12/23	30/09/23	30/04/23	31/12/23
	End time	02:29:59	13:00:00	14:00:00	21:15:00
Timeslot 3	Type	Everyday	Weekdays	Weekdays	Weekdays
	Start date	01/01/23	01/05/23	01/01/23	01/09/23
	End date	03:00:00	15:30:00	15:30:00	21:30:00
	Start time	31/12/23	30/09/23	30/04/23	31/12/22
	End time	03:49:59	17:00:00	16:00:00	22:15:00
Timeslot 4	Type	Everyday	Weekdays	Weekdays	Weekdays
	Start date	01/01/23	01/05/23	01/01/23	01/09/23
	End date	04:15:00	20:00:00	16:15:00	22:30:00
	Start time	31/12/23	30/09/23	30/04/23	31/12/23
	End time	04:59:59	23:29:59	17:30:00	21:15:00

As seen in the above table the **Tariff 1** stores the energy of whole year 2022 of each day from 12:00:00 AM to 11:59:59 PM
Tariff 2 stores energy of Midnight to 9:00 AM also from 5:00 to Midnight for months February to June of weekdays only
Tariff 4 will store complete energy of month April, May, June, October, November, December as the day types and timeslot aligns for these months. Rest Every day, weekdays, weekend energies will be stored in tariff 4 according to time limit applied

Configuring time of day mode tariffs:

A valid must follow tariffs conditions:

- Tariffs cannot overlap; each tariff must have a unique time period
- Time of use tariffs do not adjust for daylight savings time
- February 29th in a leap year can be a time of use tariff, but it is not recommended to have February 29th as a start or end date, as that tariff would be invalid for non-leap years
- Except for leap years, tariff dates are not year-specific; if you wanted to create a tariff that starts on the first Monday in June, you need to enter the date for that year, then manually update the tariff information for the subsequent years

• Input mode overview:

In Input type tariff there are 3 different modes which takes No. Of Digital input as 2, 3 or 4

The input mode the energy is stored in the specified tariff based on the respective configured DI in the meter
 If a digital input is used for tariff, it cannot be used for an exclusive association (such as Demand sync or Input metering), but digital inputs can be shared with a non-exclusive association (such as alarms)

The DI are used as binary counters to identify tariff, where ON = 1 and OFF = 0, and digital input 2 as most significant bit(MSB) and digital input 1 as least significant bit(LSB)

Tariff configurations with different input modes:

Using 2 digital inputs

DI1 Status	DI2 Status	Stored in
0	1	Tariff 1
1	0	Tariff 2

Using 3 digital inputs

DI1 Status	DI2 Status	Stored in
0	1	Tariff 1
1	0	Tariff 2
1	1	Tariff 3

Using 4 digital inputs

DI1 Status	DI2 Status	Stored in
0	0	Tariff 1
0	1	Tariff 2
1	0	Tariff 3
1	1	Tariff 4

- **Fixed Tariff :**

The fixed tariff feature in meter enables users to accurately measure and monitor energy consumption for billing purposes. It initiates this process by recording energy usage starting from the user specified date onwards

- Configure fixed Tariff-Billing parameters

Parameter	Holding register	Range	Description
Hour	40348	0-23	Set the hour for tariff calculation
Minutes	40349	0-59	Set the minutes for tariff calculation
Seconds	40350	0-59	Set the seconds for tariff calculation
Day	40351	1-31	Set the day of the month for tariff calculation
Month	40352	1-12	Set the month for tariff calculation

Note :- All five parameters must be set simultaneously. If any parameter is left unconfigured, all parameters will default to zero

- **Retrieve energy data**

After configuration, stored energy data can be read from the input registers as follows:

Time period	Stored energy registers	Beginning of period registers	Description
Current day	30726-30746	30750-30770	Access daily energy consumption and generation data for the current year
Previous day	30774-30794	30798-30818	Access yesterday's energy consumption and generation data for the current year
Current month	30822-30842	30846-30866	Access daily energy consumption and generation data for the current year
Previous months (1-12)	30870-31418	30894-31442	Access yesterday's energy consumption and generation data for the current year
Current year	31446-31466	31470-31490	Access daily energy consumption and generation data for the current year
Previous year	31494-31514	31518-31538	Access yesterday's energy consumption and generation data for the current year

- **Energy categories**

The energy data covers the following parameters:

Category	Description
Total import KWH	Total import active energy
Total export KWH	Total export active energy
Total import KVAH	Total import apparent energy
Total export KVAH	Total export apparent energy
Total import KVARH	Total import reactive energy
Total export KVARH	Total export reactive energy

ALARMS

Alarms overview: Meters are equipped with a robust alarm system designed to alert users when abnormal conditions are detected. These

conditions could include errors, unexpected events, or measurements that deviate from standard operating ranges. The alarms are flexible and can be configured based on specific set points to monitor critical parameters, events, or potential issues in your electrical system. Depending on the nature of the detected event, the meter supports high, medium, and low-priority alarms, ensuring that users can address concerns promptly and appropriately.

- **Key features include:**

Customizable alerts: Users can modify alarm settings, such as priorities, to align with specific operational needs.

- **Alarm creation:**

The meter's advanced features allow users to define custom alarms tailored to unique system requirements.

- **Event logging:**

All alarm events are logged in the meter for easy tracking and analysis. Meters offer a powerful and user-friendly alarm management system, enabling users to maintain optimal system performance and reliability.

- **Available Alarms:**

Meters supports a number of different alarm types.

Type	Number
Unary	4
Digital	1
Standard	28

- **Unary alarms:**

Unary alarms are specific alerts designed to monitor and signal individual events or conditions. They insure efficient detection of issues like power-up, reset, diagnostics, and phase reversal.

Available unary alarms:

The power meter has four unary alarms

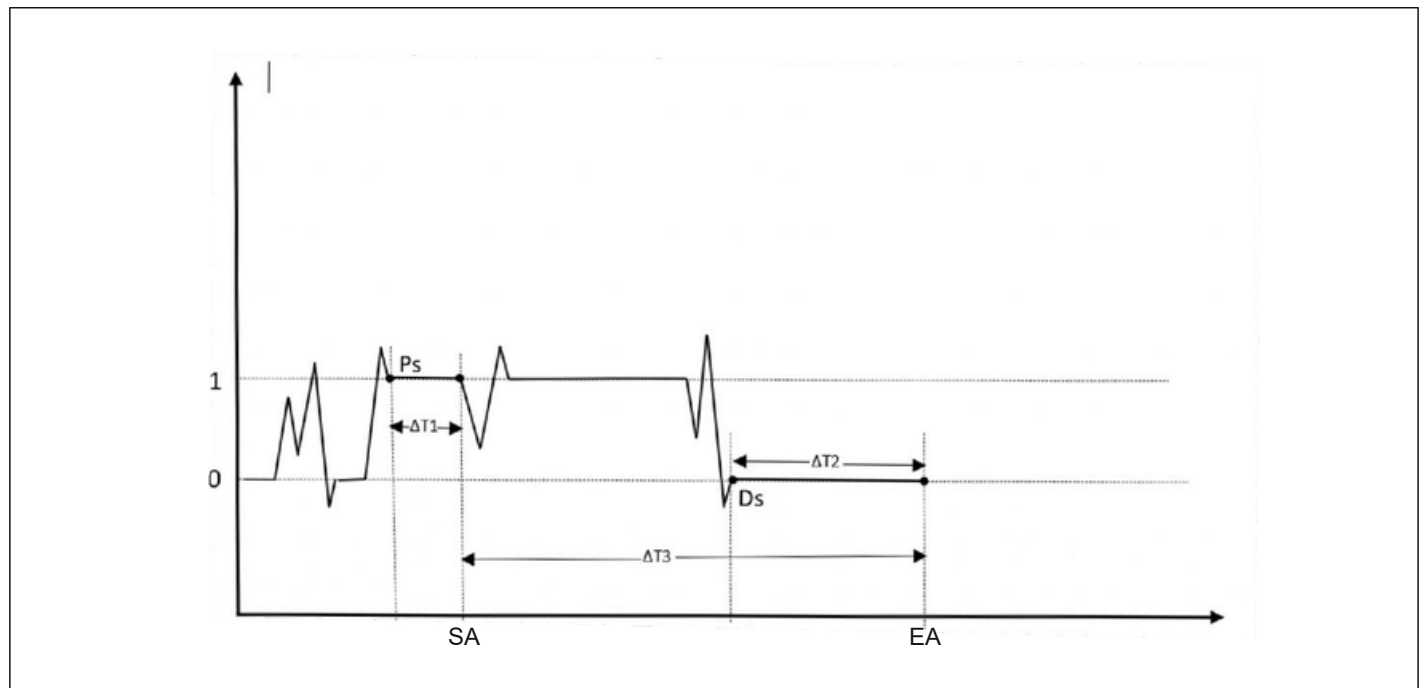
Alarm label	Description
Meter powerup	Meter powers on after losing control power.
Meter reset	Meter resets for any reason.
Meter diagnostic	Alert about issues or irregularities identified during self-diagnostic checks.
Phase reversal	Detects incorrect phase sequencing in three-phase power system.

Digital alarms

The meter has one digital alarm for alarming on status input status. The digital alarm is active when the associated enable input is ON. The pickup and dropout time delays are configured in seconds.

- **Digital Alarms:**

To prevent false triggers from erratic signals, you can set up pickup and dropout time delays for the digital alarm.



PS	Pickup setpoint (1 = ON)
DS	Dropout setpoint (0 = OFF)
$\Delta T1$	Pickup time delay (in seconds)
SA	Start of alarm condition
$\Delta T2$	Dropout time delay (in seconds)
EA	End of alarm condition
$\Delta T3$	Alarm duration (in seconds)

NOTE: To prevent filling the alarm log with nuisance alarm trips, the digital alarm is automatically disabled if the digital input changes state more than 4 times in one second or more than 10 times in ten seconds. In this case, you must re-enable the alarm using the display or utility

Standard alarms:

TheMeter has 28 standard over / under alarms. Majority of standard alarms are three-phase, but reported as single phase alarms. Alarms can be used for controlling Relay and Digital output. Standard Alarms are configured by following values:

- Enable-disable (default) or enable
- Pickup setpoint (magnitude)
- Pickup time delay (in seconds)
- Dropout setpoint (magnitude)
- Dropout time delay (in seconds)
- Priority (High / Medium / Low / None)
- DO
- RO - Alarm on the relay output

Note:

- RO Can be configured only through Utility if External RO is connected and in Control Mode of RO ALARM is selected
Current, Voltage, Power, Demand and Frequency related alarms are configurable through meter front rest are configured using utility

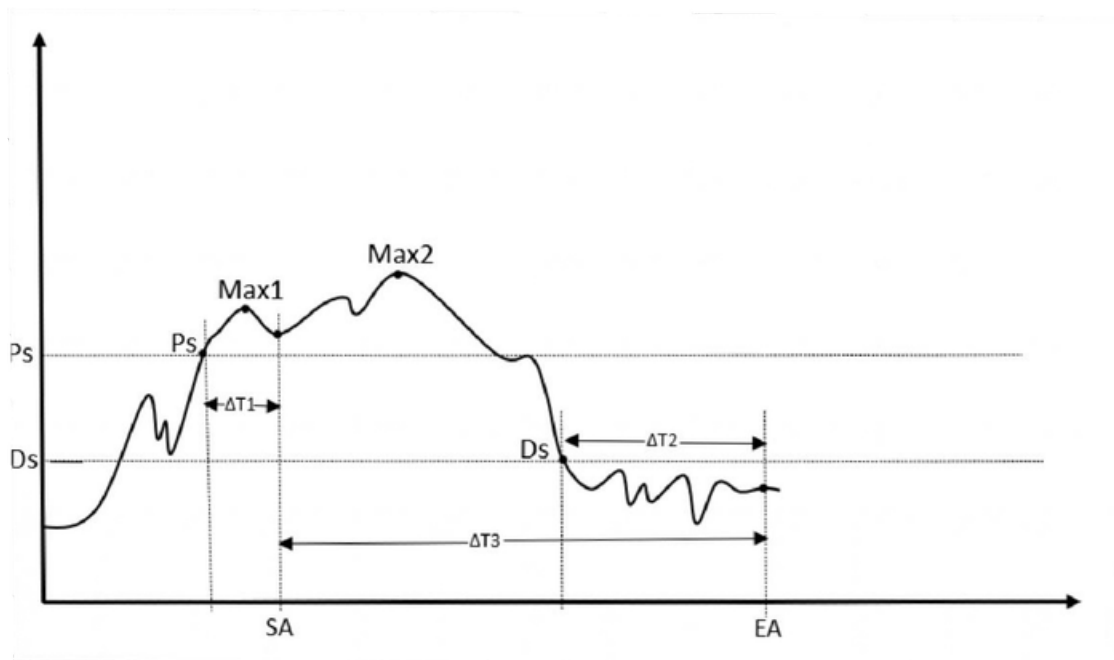
- **Example of over and under setpoint (standard) alarm operation**

The meter supports over and under setpoint conditions on standard alarms. A setpoint condition occurs when the magnitude of the signal being monitored crosses the limit specified by the pickup setpoint setting and stays within that limit for a minimum time period specified by the pickup time delay setting.

The setpoint condition ends when the magnitude of the signal being monitored crosses the limit specified by dropout setpoint setting and stays within that limit for a minimum time period specified by dropout time delay setting

Over setpoint When the value rises above the pickup setpoint setting and remains there long enough to satisfy the pickup time delay period ($\Delta T1$), the alarm condition is set to ON. When the value falls below the dropout setpoint setting and remains there long enough to satisfy the dropout time delay period ($\Delta T2$), the alarm condition is set to OFF

The meter records the date and time when the alarm event starts (SA) and when it ends (EA). The meter also performs any task assigned to the event, such as operating a digital output. The meter also records maximum values (Max1, Max2) before, during or after the alarm period

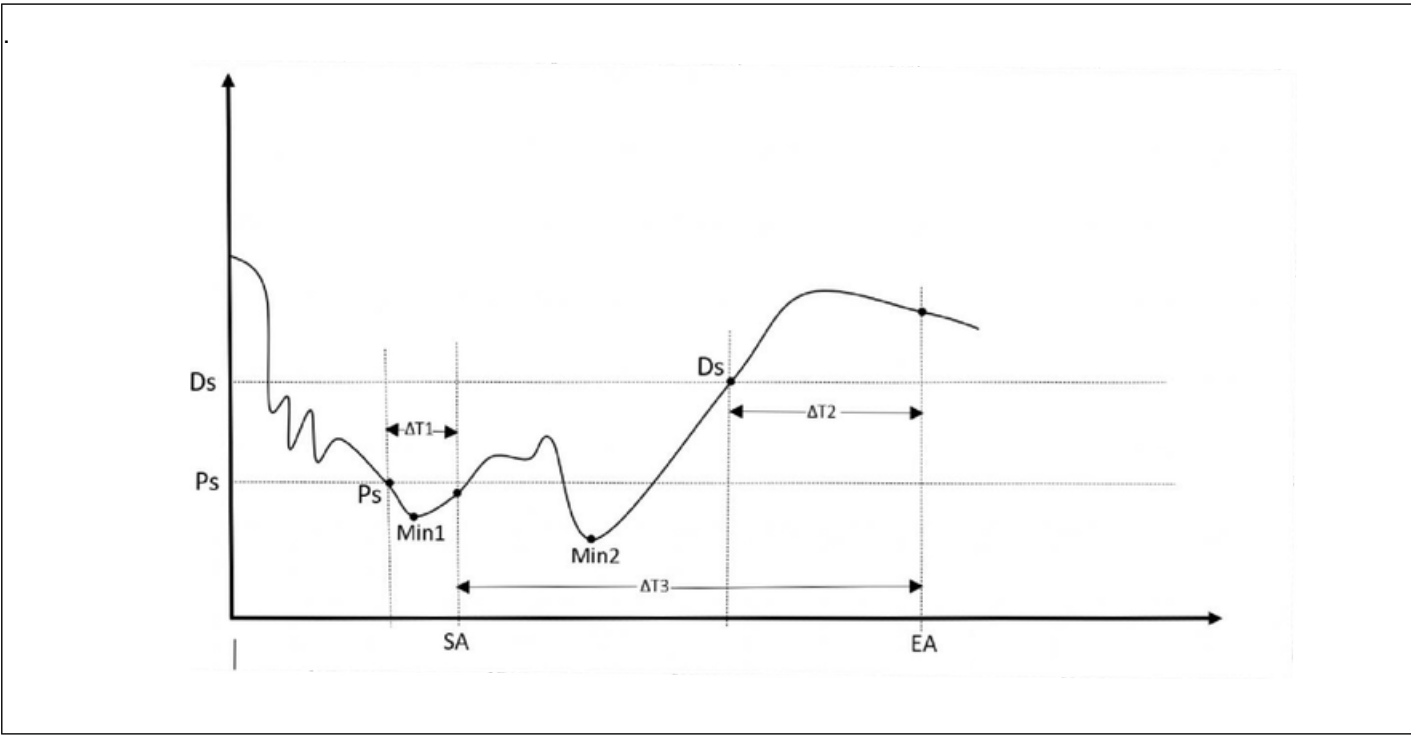


PS	Pickup setpoint (1 = ON)
DS	Dropout setpoint (0 = OFF)
$\Delta T1$	Pickup time delay (in seconds)
SA	Start of alarm condition
$\Delta T2$	Dropout time delay (in seconds)
EA	End of alarm condition
$\Delta T3$	Alarm duration (in seconds)
MAX1	Maximum value recorded during pickup period
MAX2	Maximum value recorded during alarm period

Under setpoint

When the value falls below the pickup setpoint setting and remains there long enough to satisfy the pickup time delay period ($\Delta T1$), the alarm condition is set to ON. When the value rises above the dropout setpoint setting and remains there long enough to satisfy the dropout time delay period ($\Delta T2$), the alarm condition is set to OFF.

The meter records the date and time when the alarm event starts (SA) and when it ends (EA). The meter also performs any task assigned to the event, such as operating a digital output. The meter also records minimum values (Min1, Min2) before, during or after the alarm period.



PS	Pickup setpoint (1 = ON)
DS	Dropout setpoint (0 = OFF)
$\Delta T1$	Pickup time delay (in seconds)
SA	Start of alarm condition
$\Delta T2$	Dropout time delay (in seconds)
EA	End of alarm condition
$\Delta T3$	Alarm duration (in seconds)
MIN1	Maximum value recorded during pickup period
MIN2	Maximum value recorded during alarm period

Available standard alarms:**Table of list of standard Over / Under alarms**

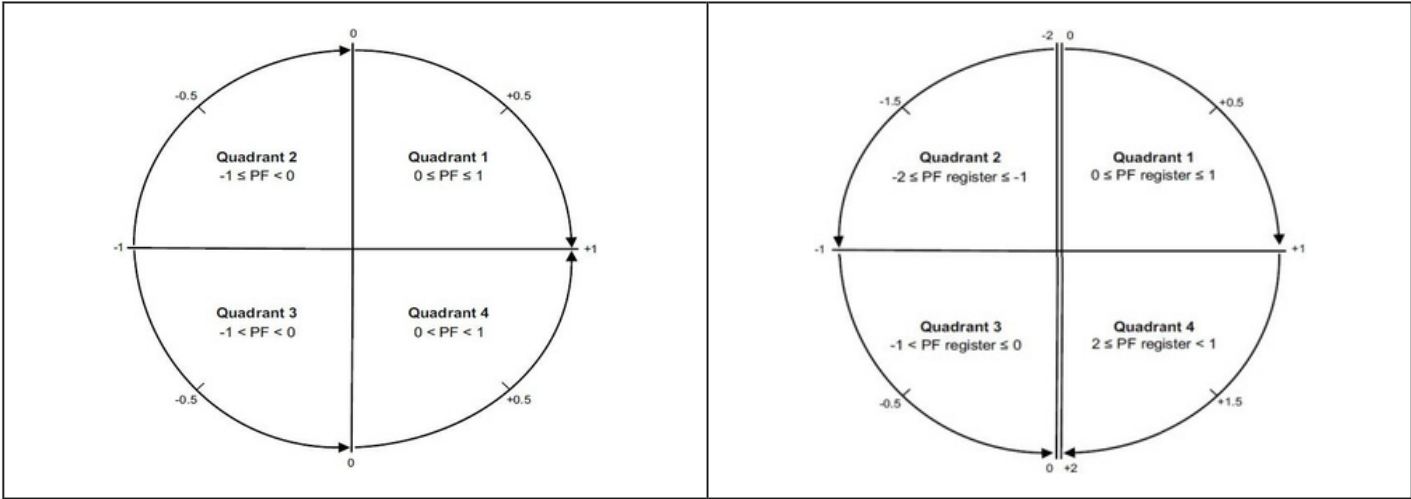
Alarm number	Alarm name
1	Over Current, Phase
2	Under Current, Phase
3	Over Current, Neutral
4	Over Voltage, L-L
5	Under Voltage, L-L
6	Over Voltage, L-N
7	Under Voltage L-N
8	Over Voltage Unbal
9	Over Voltage THD
10	Phase Loss
11	Over kW
12	Over kVAR
13	Over kVA
14	Over kW Dmd, Pres
15	Over kW Dmd, Last
16	Over kW Dmd, Pred
17	Over kVAR Dmd, Pres
18	Over kVAR Dmd, Last
19	Over kVAR Dmd, Pred
20	Over kVA Dmd, Pres
21	Over kVA Dmd, Last
22	Over kVA Dmd, Pred
23	Over Frequency
24	Under Frequency
25	Lead-Lag PF, True
26	Lead-Lag PF, Disp
27	Over RTD
28	Under RTD

Power factor alarm: An alarm can be configured for either Leading Power Factor or Lagging Power Factor, allowing for the monitoring of the circuit's power factor when it exceeds or falls short of the threshold you have established. The Leading PF and Lagging PF alarms use the power factor quadrants

Four quadrant power factor information: Floating point registers

The meter also provides PF information (including sign and quadrant) in single floating point registers for each of the PF values (for example, per-phase and total values for true and displacement PF, and associated minimums and maximums). The meter performs a simple algorithm to the PF value then stores it in the appropriate PF register.

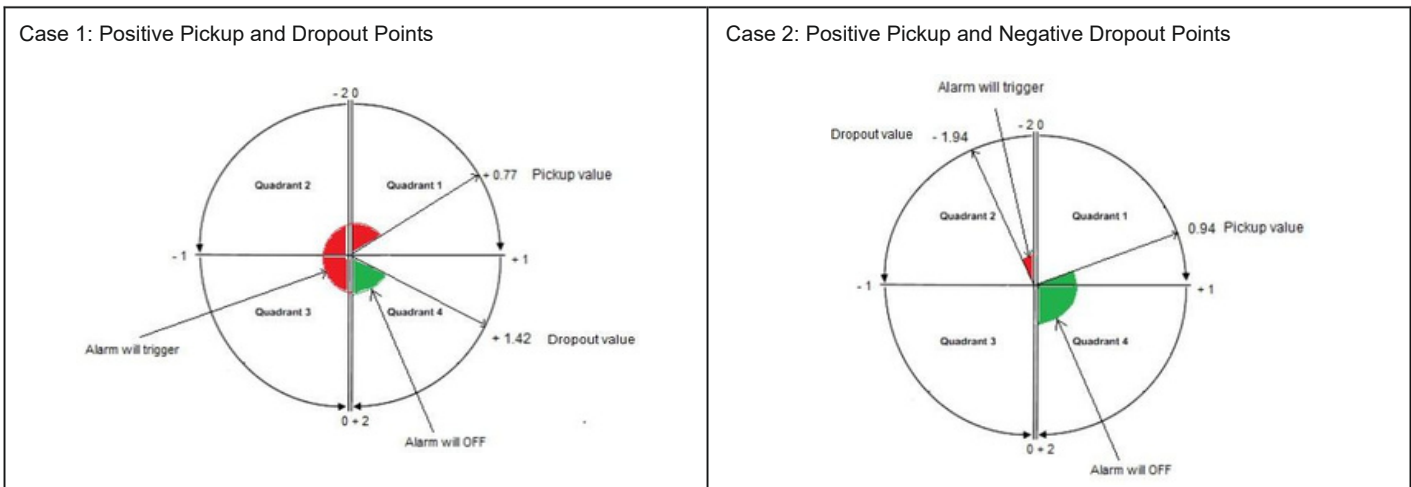
The meter and software interpret these PF registers for reporting or data entry fields according to the following diagram:

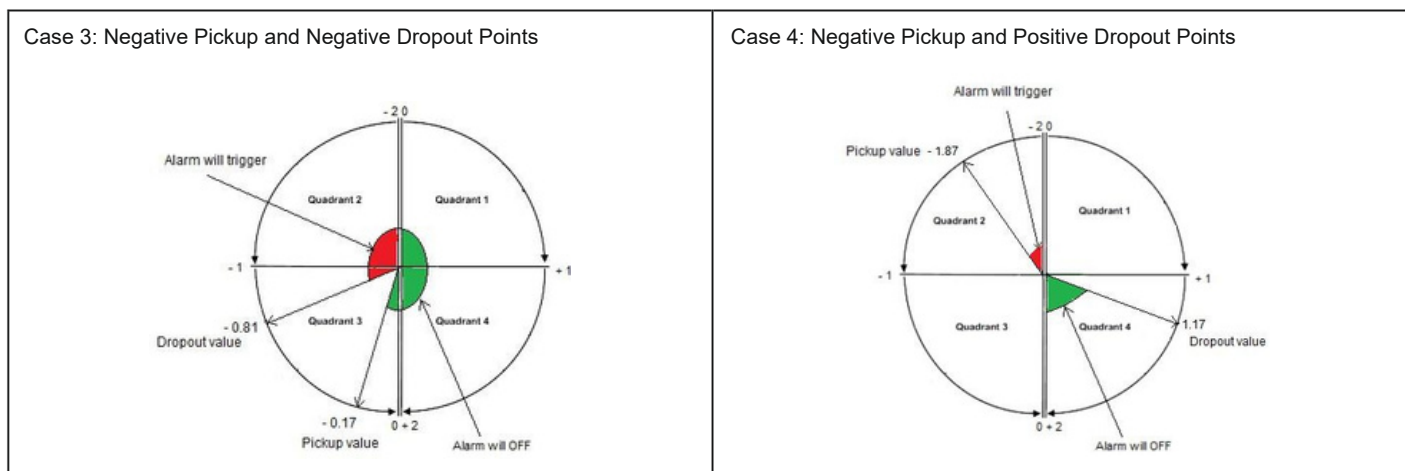


The PF value is calculated from the PF register value using the following formulas:

Quadrant	PF range	PF register range	PF formula
Quadrant 1	0 to +1	0 to +1	PF value = PF register value
Quadrant 2	-1 to 0	-2 to -1	PF value = (-2) - (PF register value)
Quadrant 3	0 to -1	-1 to 0	PF value = PF register value
Quadrant 4	+1 to 0	+1 to +2	PF value = (+2) - (PF register value)

For the configuration of PF Alarm there are four cases outline below





Alarm trigger condition:

- **Lagging power factor:** The alarm will trigger when the power factor (PF) value is less than both the pickup and dropout values. This indicates a significantly lagging power factor
- $PF \text{ value} < \text{Pickup value AND } PF \text{ value} < \text{Dropout value}$

Alarm deactivation condition:

- **Leading or Improved lagging power factor:** The alarm will deactivate when the power factor value is greater than both the pickup and dropout values. This indicates a leading or improved lagging power factor.
- $PF \text{ value} > \text{Pickup value AND } PF \text{ value} > \text{Dropout value}$

This means that both conditions must be true for the alarm to be off. If either condition is not met, the alarm will remain active

Note:

- **Red area:** This area signifies the region where the alarm will trigger. If the measured value falls within this red zone, the alarm system will activate.
- **Green area:** This area represents the region where the alarm will be off. If the measured value is within this green zone, the alarm system will remain inactive.

Phase loss alarm The phase loss alarm functions as an under setpoint alarm, designed to monitor the voltages within a three-phase system. It activates when one or two phases drop below the designated pickup setpoint and persist at that level for a duration sufficient to meet the pickup time delay requirement. Conversely, when all phases exceed the dropout setpoint and maintain that status long enough to fulfill the dropout time delay, the alarm condition is reset to OFF.

Alarm priorities:

Each alarm has a configurable priority level. Which are used distinguish between events that require immediate action and those that do not require action

Alarm priority	Alarm display notification and recording method				
	Alarm LED	Alarm display	Active Alarm with ACK	UNACK Alarm	Alarm history
High	Blinks while the alarm is active	Blinks while the alarm is active. "Alarm" remains displayed until Alarm is not off	All active alarm is display on active alarm page with ACK the alarm	UNACK alarm is display on UNACK ALARM page	Recorded in alarm history
Medium	Blinks while the alarm is active	Blinks while the alarm is active. "Alarm" remains displayed until Alarm is not off	All active alarm is display on active alarm page	UNACK alarm is display on UNACK ALARM page	Recorded in alarm history

Alarm priority	Alarm display notification and recording method				
	Alarm LED	Alarm display	Active Alarm with ACK	UNACK Alarm	Alarm history
Low	Blinks while the alarm is active	None	All active alarm is display on active alarm page	None	Recorded in alarm history
None	No activity	None	All active alarm is display on active alarm page	None	None

Note:

- The alarm LED notification only occurs if the alarm LED is configured for alarming
- If multiple alarms with different priorities are active at the same time, the display shows the alarms in the order they occurred

To acknowledge a high-priority alarm, follow these steps:

1. Long press (5 seconds) the 4th  key on the display to open the Active Alarms page
2. Press the 1st  key (ACK key) to acknowledge the alarm

If a dropout condition occurs before you can acknowledge the alarms:

1. Press the 4th  key (no long press required) to open the Unacknowledged Alarms page
2. Press the 1st  key (ACK button) to acknowledge each specific unacknowledged alarm listed on the page

Alarm setup overview

User can use the meter display or utility to configure unary, digital or standard alarms.

Binary alarm setup parameters

Parameters	Option or range	Description
ENABLE	0 – No (OFF) 1 – Yes (ON)	This enables or disables the alarm
PRIORITY	0 – NONE 1 – LOW 2 – MEDIUM 3 – HIGH	This sets the alarm priority and notification options
DIGITAL OUTPUT SELECTION	0-NONE 1-(INTERNAL) DO1 2-(INTERNAL) DO2	Select the outputs you want to control when the alarm is triggered
RELAY OUTPUT SELECTION	0-NONE 1-(EXTERNAL)RO1 2-(EXTERNAL)RO2 3-(EXTERNAL)RO3 4-(EXTERNAL)RO4	

Note: relay output selection is enable when connect external RO card and select RO CONTROL MODE as alarm

Digital alarm setup parameters

Configure the digital alarm setup parameters as required

Parameters	Option or range	Description
ENABLE	0 – No (OFF) 1 – Yes (ON)	This enables or disables the alarm
PICKUP_DELAY	0 to 999999	This specifies the number of seconds the digital input must be in the alarm pickup state before the alarm is tripped

Parameters	Option or range	Description
DROPOUT_DELAY	0 to 999999	This specifies the number of seconds the digital input must be out of the alarm pickup state before the alarm turns off
PRIORITY	0 – NONE 1 – LOW 2 – MEDIUM 3 – HIGH	This sets the alarm priority and notification options
DIGITAL OUTPUT SELECTION	0-NONE 1-(INTERNAL)DO1 2-(INTERNAL)DO2	Select the outputs you want to control when the alarm is triggered
RELAY OUTPUT SELECTION	0-NONE 1-(EXTERNAL)RO1 2-(EXTERNAL)RO2 3-(EXTERNAL)RO3 4-(EXTERNAL)RO4	

Standard alarm setup parameters

Configure the standard alarm setup parameters as required

Parameters	Option or range	Description
ENABLE	0 – No (OFF) 1 – Yes (ON)	This enables or disables the alarm
PICKUP	Varies depending on the standard alarm you are setting up	This is the value (magnitude) you define as the setpoint limit for triggering the alarm. For “over” conditions, this means the value has gone above the Pickup. For “under” conditions, this means the value has gone below the Pickup
PICKUP_DELAY	0 to 999999	This specifies the number of seconds the signal must stay above the pickup setpoint (for “over” conditions), or below the pickup setpoint (for “under” conditions) before the alarm is tripped
DROPOUT	Varies depending on the standard alarm you are setting up	This is the value (magnitude) you define as the limit for dropping out of the alarm condition. For “over” conditions, this means the value has gone below the Dropout. For “under” conditions, this means the value has gone above the Dropout
DROPOUT_DELAY	0 to 999999	This specifies the number of seconds the signal must stay below the dropout setpoint (for “over” conditions), or above the dropout setpoint (for “under” conditions) before the alarm condition is ended
PRIORITY	0 – NONE 1 – LOW 2 – MEDIUM 3 – HIGH	This sets the alarm priority and notification options
DIGITAL OUTPUT SELECTION	0-NONE 1-(INTERNAL) DO1 2-(INTERNAL) DO2	Select the outputs you want to control when the alarm is triggered.
RELAY OUTPUT SELECTION	0-NONE 1-(EXTERNAL)RO1 2-(EXTERNAL)RO2 3-(EXTERNAL)RO3 4-(EXTERNAL)RO4	

Parameters	Option or range	Description
PICKUP PF TYPE	0 – NONE 1 – INDUCTIVE 2 – CAPACITIVE	*Applies to PF (power factor) alarms only. Use this to set the PF value and quadrant to set the pickup setpoint for an over PF condition (PF Leading) or under PF condition (PF Lagging)
DROPOUT PF TYPE	0 – NONE 1 – INDUCTIVE 2 – CAPACITIVE	*Applies to PF (power factor) alarms only. Use this to set the PF value and quadrant to set the dropout setpoint for an over PF condition (PF Leading) or under PF condition (PF Lagging)

LED alarm indicator

When the LED CTRL MODE is set to "alarm," the LED blinks to signal an active alarm condition

Alarm history:

Meter stores the alarm history each time an alarm occurs Each alarm is equipped with status, timer and counter function and the alarm history is stored in utility through Ethernet / RS485.

The alarm list holds upto 40 enteries at a time. The history also works as a circular buffer,the list replaces old entries as the new entries arrive over 40 enters in the alarm event queue.

The alarm log shows the alarm history on modbus in following format:

- ALARM NAME
- EVENT TYPE
- DAY
- MONTH
- YEAR
- HOURS
- MINUTES
- SECONDS
- PHASE NO
- PHASE VALUE 0
- PHASE VALUE 1
- PHASE VALUE 2

DATA-LOGGING

• Data logs

Total 105 parameters are available for datalogging, of which up to 30 parameters can be data-logged at a time.

Data logging time can be configured from 1 to 1440 minutes(24hrs) using Relpol Utility

Meter provides 105 days of retention of the data-logs for 5 minute interval.

The data logging functionality of the meter offers users flexibility and efficiency in monitoring various parameters.

With a total of 105 parameters available for logging, users can tailor their monitoring needs by configuring up to 30 parameters at a time. Using Relpol Utility, users can easily adjust the logging time, spanning from a minimum of 1 minute to a maximum of 1440 minutes (equivalent to 24 hours). This granular control ensures that users can capture data at intervals that best suit their monitoring requirements, whether they need frequent updates or more long-term trend analysis. The meter ensures robust data retention, storing logs for up to 105 days at a 5-minute interval. This extensive retention period allows users to access historical data for extended periods, facilitating comprehensive analysis and troubleshooting.

Table of data retention time and time interval

Time interval (time scan) (minutes)	Data retention period (days)
1	21
5	105
10	213
30	640
60	1280
1440	30720

Memory allocations for data logs:

- Max. Records stored: 30720
- Max. register values recorded: 30
- Storage: 8 MB
- Parameter selection: All 105 parameters

INPUT REGISTER

Parameter	Address	Hex Address	Hex Address	Data Type
VOLTAGE				
Voltage V1N	30000	0x0	0	Float
Voltage V2N	30002	0x2	2	Float
Voltage V3N	30004	0x4	4	Float
Average Voltage LN	30008	0x8	8	Float
Voltage V12	30010	0xA	A	Float
Voltage V23	30012	0xC	C	Float
Voltage V31	30014	0xE	E	Float
Average Voltage LL	30016	0x10	10	Float
Voltage Unbalance V1N	30018	0x12	12	Float
Voltage Unbalance V2N	30020	0x14	14	Float
Voltage Unbalance V3N	30022	0x16	16	Float
Unbalance Average Voltage LN	30024	0x18	18	Float
Unbalance Worst Voltage LN	30026	0x1A	1A	Float
Voltage Unbalance V12	30028	0x1C	1C	Float
Voltage Unbalance V23	30030	0x1E	1E	Float
Voltage Unbalance V31	30032	0x20	20	Float
Unbalance Average Voltage LL	30034	0x22	22	Float
CURRENT				
Current I1	30038	0x26	26	Float
Current I2	30040	0x28	28	Float
Current I3	30042	0x2A	2A	Float
Current N (Neutral)	30044	0x2C	2C	Float
Average Current	30048	0x30	30	Float
Current Unbalance I1	30050	0x32	32	Float
Current Unbalance I2	30052	0x34	34	Float
Current Unbalance I3	30054	0x36	36	Float
Unbalance Average Current	30056	0x38	38	Float
Worst Unbalance Current	30058	0x3A	3A	Float
POWER				
Active Power KW1	30060	0x3C	3C	Float
Active Power KW2	30062	0x3E	3E	Float
Active Power KW3	30064	0x40	40	Float
Apparent Power KVA1	30066	0x42	42	Float
Apparent Power KVA2	30068	0x44	44	Float
Apparent Power KVA3	30070	0x46	46	Float
Reactive Power KVAR1	30072	0x48	48	Float
Reactive Power KVAR2	30074	0x4A	4A	Float
Reactive Power KVAR3	30076	0x4C	4C	Float

INPUT REGISTER

Parameter	Address	Hex Address	Hex Address	Data Type
Reactive Power KVAR3	30076	0x4C	4C	Float
Total Active KW	30078	0x4E	4E	Float
Total Apparent KVA	30080	0x50	50	Float
Total Reactive KVAR	30082	0x52	52	Float
POWER FACTOR				
True Power Factor PH1	30084	0x54	54	Float
True Power Factor PH2	30086	0x56	56	Float
True Power Factor PH3	30088	0x58	58	Float
True Average Power Factor	30090	0x5A	5A	Float
Displacement Power Factor A	30092	0x5C	5C	Float
Displacement Power Factor B	30094	0x5E	5E	Float
Displacement Power Factor C	30096	0x60	60	Float
Displacement Average Power Factor	30098	0x62	62	Float
Distortion Power Factor A	30100	0x64	64	Float
Distortion Power Factor B	30102	0x66	66	Float
Distortion Power Factor C	30104	0x68	68	Float
Distortion Average Power Factor	30106	0x6A	6A	Float
PHASE ANGLE AND FREQUENCY				
Phase angle between Voltage A and Current A	30108	0x6C	6C	Float
Phase angle between Voltage B and Current B	30110	0x6E	6E	Float
Phase angle between Voltage C and Current C	30112	0x70	70	Float
Average Phase Angle	30114	0x72	72	Float
Frequency	30116	0x74	74	Float
MAINS ENERGY				
Import KWh 1	30150	0x96	96	Float
Import KWh 2	30154	0x9A	9A	Float
Import KWh 3	30158	0x9E	9E	Float
Export KWh 1	30162	0xA2	A2	Float
Export KWh 2	30166	0xA6	A6	Float
Export KWh 3	30170	0xAA	AA	Float
Total Import KWh	30174	0xAE	AE	Float
Total Export KWh	30178	0xB2	B2	Float
Total NET KWh (Import + Export)	30182	0xB6	B6	Float

INPUT REGISTER

Parameter	Address	Hex Address	Hex Address	Data Type
Total Import – Export KWh	30186	0xBA	BA	Float
Import KVAh 1	30190	0xBE	BE	Float
Import KVAh 2	30194	0xC2	C2	Float
Import KVAh 3	30198	0xC6	C6	Float
Export KVAh 1	30202	0xCA	CA	Float
Export KVAh 2	30206	0xCE	CE	Float
Export KVAh 3	30210	0xD2	D2	Float
Total Import KVAh	30214	0xD6	D6	Float
Total Export KVAh	30218	0xDA	DA	Float
Total NET KVAh (Import + Export)	30222	0xDE	DE	Float
Total Import – Export kVAh	30226	0xE2	E2	Float
Import KVArh 1	30230	0xE6	E6	Float
Import KVArh 2	30234	0xEA	EA	Float
Import KVArh 3	30238	0xEE	EE	Float
Export KVArh 1	30242	0xF2	F2	Float
Export KVArh 2	30246	0xF6	F6	Float
Export KVArh 3	30250	0xFA	FA	Float
Total Import KVArh	30254	0xFE	FE	Float
Total Export KVArh	30258	0x102	102	Float
Total NET KVArh (Import + Export)	30262	0x106	106	Float
Total Import – Export kVARh	30266	0x10A	10A	Float
DG ENERGY				
Import KWh 1	30270	0x10E	10E	Float
Import KWh 2	30274	0x112	112	Float
Import KWh 3	30278	0x116	116	Float
Export KWh 1	30282	0x11A	11A	Float
Export KWh 2	30286	0x11E	11E	Float
Export KWh 3	30290	0x122	122	Float
Total Import KWh	30294	0x126	126	Float
Total Export KWh	30298	0x12A	12A	Float
Total NET KWh (Import + Export)	30302	0x12E	12E	Float
Total Import – Export KWh	30306	0x132	132	Float

INPUT REGISTER

Parameter	Address	Hex Address	Hex Address	Data Type
Import KVAh 1	30310	0x136	136	Float
Import KVAh 2	30314	0x13A	13A	Float
Import KVAh 3	30318	0x13E	13E	Float
Export KVAh 1	30322	0x142	142	Float
Export KVAh 2	30326	0x146	146	Float
Export KVAh 3	30330	0x14A	14A	Float
Total Import KVAh	30334	0x14E	14E	Float
Total Export KVAh	30338	0x152	152	Float
Total NET KVAh (Import + Export)	30342	0x156	156	Float
Total Import – Export KVAh	30346	0x15A	15A	Float
Import KVArh 1	30350	0x15E	15E	Float
Import KVArh 2	30354	0x162	162	Float
Import KVArh 3	30358	0x166	166	Float
Export KVArh 1	30362	0x16A	16A	Float
Export KVArh 2	30366	0x16E	16E	Float
Export KVArh 3	30370	0x172	172	Float
Total Import KVArh	30374	0x176	176	Float
Total Export KVArh	30378	0x17A	17A	Float
Total NET KVArh (Import + Export)	30382	0x17E	17E	Float
Total Import – Export KVArh	30386	0x182	182	Float
LAST CLEARED MAINS				
Import KWh 1	30390	0x186	186	Float
Import KWh 2	30394	0x18A	18A	Float
Import KWh 3	30398	0x18E	18E	Float
Export KWh 1	30402	0x192	192	Float
Export KWh 2	30406	0x196	196	Float
Export KWh 3	30410	0x19A	19A	Float
Total Import KWh	30414	0x19E	19E	Float
Total Export KWh	30418	0x1A2	1A2	Float
Total NET KWh (Import + Export)	30422	0x1A6	1A6	Float
Total Import – Export KWh	30426	0x1AA	1AA	Float
Import KVAh 1	30430	0x1AE	1AE	Float
Import KVAh 2	30434	0x1B2	1B2	Float
Import KVAh 3	30438	0x1B6	1B6	Float
Export KVAh 1	30442	0x1BA	1BA	Float
Export KVAh 2	30446	0x1BE	1BE	Float
Export KVAh 3	30450	0x1C2	1C2	Float
Total Import KVAh	30454	0x1C6	1C6	Float
Total Export KVAh	30458	0x1CA	1CA	Float
Total NET KVAh (Import + Export)	30462	0x1CE	1CE	Float
Total Import – Export KVAh	30466	0x1D2	1D2	Float
Import KVArh 1	30470	0x1D6	1D6	Float
Import KVArh 2	30474	0x1DA	1DA	Float
Import KVArh 3	30478	0x1DE	1DE	Float

INPUT REGISTER

Parameter	Address	Hex Address	Hex Address	Data Type
Export KVArh 1	30482	0x1E2	1E2	Float
Export KVArh 2	30486	0x1E6	1E6	Float
Export KVArh 3	30490	0x1EA	1EA	Float
Total Import KVArh	30494	0x1EE	1EE	Float
Total Export KVArh	30498	0x1F2	1F2	Float
Total NET KVArh (Import + Export)	30502	0x1F6	1F6	Float
Total Import – Export KVArh	30506	0x1FA	1FA	Float
LAST CLEARED DG				
Import KWh 1	30510	0x1FE	1FE	Float
Import KWh 2	30514	0x202	202	Float
Import KWh 3	30518	0x206	206	Float
Export KWh 1	30522	0x20A	20A	Float
Export KWh 2	30526	0x20E	20E	Float
Export KWh 3	30530	0x212	212	Float
Total Import KWh	30534	0x216	216	Float
Total Export KWh	30538	0x21A	21A	Float
Total NET KWh (Import + Export)	30542	0x21E	21E	Float
Total Import – Export KWh	30546	0x222	222	Float
Import KVAh 1	30550	0x226	226	Float
Import KVAh 2	30554	0x22A	22A	Float
Import KVAh 3	30558	0x22E	22E	Float
Export KVAh 1	30562	0x232	232	Float
Export KVAh 2	30566	0x236	236	Float
Export KVAh 3	30570	0x23A	23A	Float
Total Import KVAh	30574	0x23E	23E	Float
Total Export KVAh	30578	0x242	242	Float
Total NET KVAh (Import + Export)	30582	0x246	246	Float
Total Import – Export KVAh	30586	0x24A	24A	Float
Import KVArh 1	30590	0x24E	24E	Float
Import KVArh 2	30594	0x252	252	Float
Import KVArh 3	30598	0x256	256	Float
Export KVArh 1	30602	0x25A	25A	Float
Export KVArh 2	30606	0x25E	25E	Float
Export KVArh 3	30610	0x262	262	Float
Total Import KVArh	30614	0x266	266	Float
Total Export KVArh	30618	0x26A	26A	Float
Total NET KVArh (Import + Export)	30622	0x26E	26E	Float
Total Import – Export KVArh	30626	0x272	272	Float
MULTI TARIFF				
Tariff 1				
Total Import KWh	30630	0x276	276	Float
Total Export KWh	30634	0x27A	27A	Float
Total Import kVAh	30638	0x27E	27E	Float
Total Export KVAh	30642	0x282	282	Float
Total Import KVArh	30646	0x286	286	Float
Total Export KVArh	30650	0x28A	28A	Float

INPUT REGISTER

Parameter	Address	Hex Address	Hex Address	Data Type
Tariff 2				
Total Import KWh	30654	0x276	28E	Float
Total Export KWh	30658	0x27A	292	Float
Total Import kVAh	30662	0x27E	296	Float
Total Export KVAh	30666	0x282	29A	Float
Total Import KVARh	30670	0x286	29E	Float
Total Export KVARh	30674	0x28A	2A2	Float
Tariff 3				
Total Import KWh	30678	0x28E	2A6	Float
Total Export KWh	30682	0x292	2AA	Float
Total Import kVAh	30686	0x296	2AE	Float
Total Export KVAh	30690	0x29A	2B2	Float
Total Import KVARh	30694	0x29E	2B6	Float
Total Export KVARh	30698	0x2A2	2BA	Float
Tariff 4				
Total Import KWh	30702	0x2A6	2BE	Float
Total Export KWh	30706	0x2AA	2C2	Float
Total Import kVAh	30710	0x2AE	2C6	Float
Total Export KVAh	30714	0x2B2	2CA	Float
Total Import KVARh	30718	0x2B6	2CE	Float
Total Export KVARh	30722	0x2BA	2D2	Float
Current Day				
Total Import KWh	30726	0x2BE	2D6	Float
Total Export KWh	30730	0x2C2	2DA	Float
Total Import kVAh	30734	0x2C6	2DE	Float
Total Export KVAh	30738	0x2CA	2E2	Float
Total Import KVARh	30742	0x2CE	2E6	Float
Total Export KVARh	30746	0x2D2	2EA	Float
Beginning Of Current Day				
Total Import KWh	30750	0x2D6	2EE	Float
Total Export KWh	30754	0x2DA	2F2	Float
Total Import kVAh	30758	0x2DE	2F6	Float
Total Export KVAh	30762	0x2E2	2FA	Float
Total Import KVARh	30766	0x2E6	2FE	Float
Total Export KVARh	30770	0x2EA	302	Float
Previous Day				
Total Import KWh	30774	0x2EE	306	Float
Total Export KWh	30778	0x2F2	30A	Float
Total Import kVAh	30782	0x2F6	30E	Float
Total Export KVAh	30786	0x2FA	312	Float
Total Import KVARh	30790	0x2FE	316	Float
Total Export KVARh	30794	0x302	31A	Float

INPUT REGISTER

Parameter	Address	Hex Address	Hex Address	Data Type
Beginning Of Previous Day				
Total Import KWh	30798	0x306	31E	Float
Total Export KWh	30802	0x30A	322	Float
Total Import kVAh	30806	0x30E	326	Float
Total Export kVAh	30810	0x312	32A	Float
Total Import KVARh	30814	0x316	32E	Float
Total Export KVARh	30818	0x31A	332	Float
Current Month				
Total Import KWh	30822	0x31E	336	Float
Total Export KWh	30826	0x322	33A	Float
Total Import kVAh	30830	0x326	33E	Float
Total Export kVAh	30834	0x32A	342	Float
Total Import KVARh	30838	0x32E	346	Float
Total Export KVARh	30842	0x332	34A	Float
Beginning Of Current Month				
Total Import KWh	30846	0x336	34E	Float
Total Export KWh	30850	0x33A	352	Float
Total Import kVAh	30854	0x33E	356	Float
Total Export kVAh	30858	0x342	35A	Float
Total Import KVARh	30862	0x346	35E	Float
Total Export KVARh	30866	0x34A	362	Float
Current Month – 1				
Total Import KWh	30870	0x34E	366	Float
Total Export KWh	30874	0x352	36A	Float
Total Import kVAh	30878	0x356	36E	Float
Total Export kVAh	30882	0x35A	372	Float
Total Import KVARh	30886	0x35E	376	Float
Total Export KVARh	30890	0x362	37A	Float
Beginning Of Current Month – 1				
Total Import KWh	30894	0x366	37E	Float
Total Export KWh	30898	0x36A	382	Float
Total Import kVAh	30902	0x36E	386	Float
Total Export kVAh	30906	0x372	38A	Float
Total Import KVARh	30910	0x376	38E	Float
Total Export KVARh	30914	0x37A	392	Float
Current Month – 2				
Total Import KWh	30918	0x37E	396	Float
Total Export KWh	30922	0x382	39A	Float
Total Import kVAh	30926	0x386	39E	Float
Total Export kVAh	30930	0x38A	3A2	Float
Total Import KVARh	30934	0x38E	3A6	Float
Total Export KVARh	30938	0x392	3AA	Float
Beginning Of Current Month – 2				
Total Import KWh	30942	0x396	3AE	Float
Total Export KWh	30946	0x39A	3B2	Float
Total Import kVAh	30950	0x39E	3B6	Float
Total Export kVAh	30954	0x3A2	3BA	Float
Total Import KVARh	30958	0x3A6	3BE	Float
Total Export KVARh	30962	0x3AA	3C2	Float

INPUT REGISTER

Parameter	Address	Hex Address	Hex Address	Data Type
Current Month – 3				
Total Import KWh	30966	0x3C6	3C6	Float
Total Export KWh	30970	0x3CA	3CA	Float
Total Import kVAh	30974	0x3CE	3CE	Float
Total Export KVAh	30978	0x3D2	3D2	Float
Total Import KVARh	30982	0x3D6	3D6	Float
Total Export KVARh	30986	0x3DA	3DA	Float
Beginning Of Current Month – 3				
Total Import KWh	30990	0x3DE	3DE	Float
Total Export KWh	30994	0x3E2	3E2	Float
Total Import kVAh	30998	0x3E6	3E6	Float
Total Export KVAh	31002	0x3EA	3EA	Float
Total Import KVARh	31006	0x3EE	3EE	Float
Total Export KVARh	31010	0x3F2	3F2	Float
Current Month – 4				
Total Import KWh	31014	0x3F6	3F6	Float
Total Export KWh	31018	0x3FA	3FA	Float
Total Import kVAh	31022	0x3FE	3FE	Float
Total Export KVAh	31026	0x402	402	Float
Total Import KVARh	31030	0x406	406	Float
Total Export KVARh	31034	0x40A	40A	Float
Beginning Of Current Month – 4				
Total Import KWh	31038	0x40E	40E	Float
Total Export KWh	31042	0x412	412	Float
Total Import kVAh	31046	0x416	416	Float
Total Export KVAh	31050	0x41A	41A	Float
Total Import KVARh	31054	0x41E	41E	Float
Total Export KVARh	31058	0x422	422	Float
Current Month – 5				
Total Import KWh	31062	0x426	426	Float
Total Export KWh	31066	0x42A	42A	Float
Total Import kVAh	31070	0x42E	42E	Float
Total Export KVAh	31074	0x432	432	Float
Total Import KVARh	31078	0x436	436	Float
Total Export KVARh	31082	0x43A	43A	Float
Beginning Of Current Month – 5				
Total Import KWh	31086	0x43E	43E	Float
Total Export KWh	31090	0x442	442	Float
Total Import kVAh	31094	0x446	446	Float
Total Export KVAh	31098	0x44A	44A	Float
Total Import KVARh	31102	0x44E	44E	Float
Total Export KVARh	31106	0x452	452	Float

INPUT REGISTER

Parameter	Address	Hex Address	Hex Address	Data Type
Current Month – 6				
Total Import KWh	31110	0x456	456	Float
Total Export KWh	31114	0x45A	45A	Float
Total Import kVAh	31118	0x45E	45E	Float
Total Export KVAh	31122	0x462	462	Float
Total Import KVARh	31126	0x466	466	Float
Total Export KVARh	31130	0x46A	46A	Float
Beginning Of Current Month – 6				
Total Import KWh	31134	0x46E	46E	Float
Total Export KWh	31138	0x472	472	Float
Total Import kVAh	31142	0x476	476	Float
Total Export KVAh	31146	0x47A	47A	Float
Total Import KVARh	31150	0x47E	47E	Float
Total Export KVARh	31154	0x482	482	Float
Current Month – 7				
Total Import KWh	31158	0x486	486	Float
Total Export KWh	31162	0x48A	48A	Float
Total Import kVAh	31166	0x48E	48E	Float
Total Export KVAh	31170	0x492	492	Float
Total Import KVARh	31174	0x496	496	Float
Total Export KVARh	31178	0x49A	49A	Float
Beginning Of Current Month – 7				
Total Import KWh	31182	0x49E	49E	Float
Total Export KWh	31186	0x4A2	4A2	Float
Total Import kVAh	31190	0x4A6	4A6	Float
Total Export KVAh	31194	0x4AA	4AA	Float
Total Import KVARh	31198	0x4AE	4AE	Float
Total Export KVARh	31202	0x4B2	4B2	Float
Current Month – 8				
Total Import KWh	31206	0x4B6	4B6	Float
Total Export KWh	31210	0x4BA	4BA	Float
Total Import kVAh	31214	0x4BE	4BE	Float
Total Export KVAh	31218	0x4C2	4C2	Float
Total Import KVARh	31222	0x4C6	4C6	Float
Total Export KVARh	31226	0x4CA	4CA	Float
Beginning Of Current Month – 8				
Total Import KWh	31230	0x4CE	4CE	Float
Total Export KWh	31234	0x4D2	4D2	Float
Total Import kVAh	31238	0x4D6	4D6	Float
Total Export KVAh	31242	0x4DA	4DA	Float
Total Import KVARh	31246	0x4DE	4DE	Float
Total Export KVARh	31250	0x4E2	4E2	Float
Current Month – 9				
Total Import KWh	31254	0x4E6	4E6	Float
Total Export KWh	31258	0x4EA	4EA	Float
Total Import kVAh	31262	0x4EE	4EE	Float
Total Export KVAh	31266	0x4F2	4F2	Float
Total Import KVARh	31270	0x4F6	4F6	Float
Total Export KVARh	31274	0x4FA	4FA	Float

INPUT REGISTER

Parameter	Address	Hex Address	Hex Address	Data Type
Beginning Of Current Month – 8				
Total Import KWh	31230	0x4CE	4CE	Float
Total Export KWh	31234	0x4D2	4D2	Float
Total Import kVAh	31238	0x4D6	4D6	Float
Total Export KVAh	31242	0x4DA	4DA	Float
Total Import KVARh	31246	0x4DE	4DE	Float
Total Export KVARh	31250	0x4E2	4E2	Float
Current Month – 9				
Total Import KWh	31254	0x4E6	4E6	Float
Total Export KWh	31258	0x4EA	4EA	Float
Total Import kVAh	31262	0x4EE	4EE	Float
Total Export KVAh	31266	0x4F2	4F2	Float
Total Import KVARh	31270	0x4F6	4F6	Float
Total Export KVARh	31274	0x4FA	4FA	Float
Beginning Of Current Month – 9				
Total Import KWh	31278	0x4FE	4FE	Float
Total Export KWh	31282	0x502	502	Float
Total Import kVAh	31286	0x506	506	Float
Total Export KVAh	31290	0x50A	50A	Float
Total Import KVARh	31294	0x50E	50E	Float
Total Export KVARh	31298	0x512	512	Float
Current Month – 10				
Total Import KWh	31302	0x516	516	Float
Total Export KWh	31306	0x51A	51A	Float
Total Import kVAh	31310	0x51E	51E	Float
Total Export KVAh	31314	0x522	522	Float
Total Import KVARh	31318	0x526	526	Float
Total Export KVARh	31322	0x52A	52A	Float
Beginning Of Current Month –10				
Total Import KWh	31326	0x52E	52E	Float
Total Export KWh	31330	0x532	532	Float
Total Import kVAh	31334	0x536	536	Float
Total Export KVAh	31338	0x53A	53A	Float
Total Import KVARh	31342	0x53E	53E	Float
Total Export KVARh	31346	0x542	542	Float
Current Month – 11				
Total Import KWh	31350	0x546	546	Float
Total Export KWh	31354	0x54A	54A	Float
Total Import kVAh	31358	0x54E	54E	Float
Total Export KVAh	31362	0x552	552	Float
Total Import KVARh	31366	0x556	556	Float
Total Export KVARh	31370	0x55A	55A	Float
Beginning Of Current Month –11				
Total Import KWh	31374	0x55E	55E	Float
Total Export KWh	31378	0x562	562	Float
Total Import kVAh	31382	0x566	566	Float
Total Export KVAh	31386	0x56A	56A	Float
Total Import KVARh	31390	0x56E	56E	Float
Total Export KVARh	31394	0x572	572	Float

INPUT REGISTER

Parameter	Address	Hex Address	Hex Address	Data Type
Current Month – 12				
Total Import KWh	31398	0x576	576	Float
Total Export KWh	31402	0x57A	57A	Float
Total Import kVAh	31406	0x57E	57E	Float
Total Export KVAh	31410	0x582	582	Float
Total Import KVARh	31414	0x586	586	Float
Total Export KVARh	31418	0x58A	58A	Float
Beginning Of Current Month –12				
Total Import KWh	31422	0x58E	58E	Float
Total Export KWh	31426	0x592	592	Float
Total Import kVAh	31430	0x596	596	Float
Total Export KVAh	31434	0x59A	59A	Float
Total Import KVARh	31438	0x59E	59E	Float
Total Export KVARh	31442	0x5A2	5A2	Float
Current Year				
Total Import KWh	31446	0x5A6	5A6	Float
Total Export KWh	31450	0x5AA	5AA	Float
Total Import kVAh	31454	0x5AE	5AE	Float
Total Export KVAh	31458	0x5B2	5B2	Float
Total Import KVARh	31462	0x5B6	5B6	Float
Total Export KVARh	31466	0x5BA	5BA	Float
Beginning Current Year				
Total Import KWh	31470	0x5BE	5BE	Float
Total Export KWh	31474	0x5C2	5C2	Float
Total Import kVAh	31478	0x5C6	5C6	Float
Total Export KVAh	31482	0x5CA	5CA	Float
Total Import KVARh	31486	0x5CE	5CE	Float
Total Export KVARh	31490	0x5D2	5D2	Float
Previous Year				
Total Import KWh	31494	0x5D6	5D6	Float
Total Export KWh	31498	0x5DA	5DA	Float
Total Import kVAh	31502	0x5DE	5DE	Float
Total Export KVAh	31506	0x5E2	5E2	Float
Total Import KVARh	31510	0x5E6	5E6	Float
Total Export KVARh	31514	0x5EA	5EA	Float
Beginning Previous Year				
Total Import KWh	31518	0x5EE	5EE	Float
Total Export KWh	31522	0x5F2	5F2	Float
Total Import kVAh	31526	0x5F6	5F6	Float
Total Export KVAh	31530	0x5FA	5FA	Float
Total Import KVARh	31534	0x5FE	5FE	Float
Total Export KVARh	31538	0x602	602	Float
THD				
THD Voltage V1N	31560	0x618	618	Float
THD Voltage V2N	31562	0x61A	61A	Float
THD Voltage V3N	31564	0x61C	61C	Float
Average THD Voltage L-N	31568	0x620	620	Float
THD Voltage V12	31570	0x622	622	Float

INPUT REGISTER

Parameter	Address	Hex Address	Hex Address	Data Type
THD Voltage V23	31572	0x624	624	Float
THD Voltage V31	31574	0x626	626	Float
Average THD Voltage L-L	31576	0x628	628	Float
THD Current I1	31578	0x62A	62A	Float
THD Current I2	31580	0x62C	62C	Float
THD Current I3	31582	0x62E	62E	Float
THD CURRENT N (NEUTRAL)	31584	0x630	630	Float
Average THD Current	31588	0x634	634	Float
Small thd				
thd Voltage V1N	31590	0x636	636	Float
thd Voltage V2N	31592	0x638	638	Float
thd Voltage V3N	31594	0x63A	63A	Float
Average thd Voltage L-N	31598	0x63E	63E	Float
thd Voltage V12	31600	0x640	640	Float
thd Voltage V23	31602	0x642	642	Float
thd Voltage V31	31604	0x644	644	Float
Average thd Voltage L-L	31606	0x646	646	Float
thd Current I1	31608	0x648	648	Float
thd current i2	31610	0x64A	64A	Float
thd Current I3	31612	0x64C	64C	Float
thd CURRENT N (NEUTRAL)	31614	0x64E	64E	Float
Average thd Current	31618	0x652	652	Float
TDD (Total Demand Distortion)	31620	0x654	654	Float
DEMAND PARAMETERS				
Max Last DMD KW Total	31622	0x656	656	Float
Max Last DMD KVA Total	31624	0x658	658	Float
Max Last DMD KVAr Total	31626	0x65A	65A	Float
Min Last DMD KW Total	31628	0x65C	65C	Float
Min Last DMD KVAr Total	31630	0x65E	65E	Float
Max Present DMD KW Total	31632	0x660	660	Float
Max Present DMD KVA Total	31634	0x662	662	Float
Max Present DMD KVAr Total	31636	0x664	664	Float
Min Present DMD KW Total	31638	0x666	666	Float
Min Present DMD KVAr Total	31640	0x668	668	Float
Max Predictive DMD KW Total	31642	0x66A	66A	Float
Max Predictive DMD KVA Total	31644	0x66C	66C	Float
Max Predictive DMD KVAr Total	31646	0x66E	66E	Float
Min Predictive DMD KW Total	31648	0x670	670	Float
Min Predictive DMD KVAr Total	31650	0x672	672	Float
Max Peak DMD KW Total	31652	0x674	674	Float
Max Peak DMD KVA Total	31654	0x676	676	Float
Max Peak DMD KVAr Total	31656	0x678	678	Float
Min Peak DMD KW Total	31658	0x67A	67A	Float
Min Peak DMD KVAr Total	31660	0x67C	67C	Float
Max Last DMD Current I1	31662	0x67E	67E	Float
Max Last DMD Current I2	31664	0x680	680	Float
Max Last DMD Current I3	31666	0x682	682	Float
Max Last DMD Current Average	31668	0x684	684	Float

INPUT REGISTER

Parameter	Address	Hex Address	Hex Address	Data Type
Max Last DMD Current I1	31662	0x67E	67E	Float
Max Last DMD Current I2	31664	0x680	680	Float
Max Last DMD Current I3	31666	0x682	682	Float
Max Last DMD Current Average	31668	0x684	684	Float
Max Present DMD Current I1	31670	0x686	686	Float
Max Present DMD Current I2	31672	0x688	688	Float
Max Present DMD Current I3	31674	0x68A	68A	Float
Max Present DMD Current Average	31676	0x68C	68C	Float
Max Predictive DMD Current I1	31678	0x68E	68E	Float
Max Predictive DMD Current I2	31680	0x690	690	Float
Max Predictive DMD Current I3	31682	0x692	692	Float
Max Predictive DMD Current Average	31684	0x694	694	Float
Max Peak DMD Current I1	31686	0x696	696	Float
Max Peak DMD Current I2	31688	0x698	698	Float
Max Peak DMD Current I3	31690	0x69A	69A	Float
Max Peak DMD Current Average	31692	0x69C	69C	Float
LAST CLEARED-POWER PEAK DEMAND				
Max Peak Active Total Power Demand	31694	0x69E	69E	Float
Max Peak Apparent Total Power Demand	31696	0x6A0	6A0	Float
Max Peak Reactive Total Power Demand	31698	0x6A2	6A2	Float
Min Peak Active Total Power Demand	31700	0x6A4	6A4	Float
Min Peak Reactive Total Power Demand	31702	0x6A6	6A6	Float
LAST CLEARED-CURRENT PEAK DEMAND				
Max Peak Current Demand PH1	31704	0x6A8	6A8	Float
Max Peak Current Demand PH2	31706	0x6AA	6AA	Float
Max Peak Current Demand PH3	31708	0x6AC	6AC	Float
Max Peak Current Demand Average	31710	0x6AE	6AE	Float
MAX PARAMETERS				
Max Voltage V1N	31720	0x6B8	6B8	Float
Max Voltage V2N	31722	0x6BA	6BA	Float
Max Voltage V3N	31724	0x6BC	6BC	Float
Max Average Voltage VL-N	31728	0x6C0	6C0	Float
Max Voltage V12	31730	0x6C2	6C2	Float
Max Voltage V23	31732	0x6C4	6C4	Float
Max Voltage V31	31734	0x6C6	6C6	Float
Max Average Voltage VL-L	31736	0x6C8	6C8	Float
Max Voltage L-N Unbalanced PH1	31738	0x6CA	6CA	Float
Max Voltage L-N Unbalanced PH2	31740	0x6CC	6CC	Float
Max Voltage L-N Unbalanced PH3	31742	0x6CE	6CE	Float
Max Voltage L-N Unbalanced Worst Case	31744	0x6D0	6D0	Float
Max Voltage L-L Unbalanced PH12	31746	0x6D2	6D2	Float
Max Voltage L-L Unbalanced PH23	31748	0x6D4	6D4	Float
Max Voltage L-L Unbalanced PH31	31750	0x6D6	6D6	Float
Max Voltage L-L Unbalanced Worst Case	31752	0x6D8	6D8	Float
Max Current I1	31754	0x6DA	6DA	Float
Max Current I2	31756	0x6DC	6DC	Float
Max Current I3	31758	0x6DE	6DE	Float
Max Neutral Current	31760	0x6E0	6E0	Float
Max Average Current	31764	0x6E4	6E4	Float

INPUT REGISTER

Parameter	Address	Hex Address	Hex Address	Data Type
Max Current Unbalance I1	31766	0x6E6	6E6	Float
Max Current Unbalance I2	31768	0x6E8	6E8	Float
Max Current Unbalance I3	31770	0x6EA	6EA	Float
Max Current Unbalance Worst Case	31772	0x6EC	6EC	Float
Max Active Power KW1	31774	0x6EE	6EE	Float
Max Active Power KW2	31776	0x6F0	6F0	Float
Max Active Power KW3	31778	0x6F2	6F2	Float
Max Total Active KW	31780	0x6F4	6F4	Float
Max Reactive Power KVAR1	31782	0x6F6	6F6	Float
Max Reactive Power KVAR2	31784	0x6F8	6F8	Float
Max Reactive Power KVAR3	31786	0x6FA	6FA	Float
Max Total Reactive KVAR	31788	0x6FC	6FC	Float
Max Apparent Power KVA1	31790	0x6FE	6FE	Float
Max Apparent Power KVA2	31792	0x700	700	Float
Max Apparent Power KVA3	31794	0x702	702	Float
Max Total Apparent KVA	31796	0x704	704	Float
Max True PF1	31798	0x706	706	Float
Max True PF2	31800	0x708	708	Float
Max True PF3	31802	0x70A	70A	Float
Max True Average PF	31804	0x70C	70C	Float
Max Displacement PF1	31806	0x70E	70E	Float
Max Displacement PF2	31808	0x710	710	Float
Max Displacement PF3	31810	0x712	712	Float
Max Displacement Average PF	31812	0x714	714	Float
Max Distortion PF1	31814	0x716	716	Float
Max Distortion PF2	31816	0x718	718	Float
Max Distortion PF3	31818	0x71A	71A	Float
Max Distortion Average PF	31820	0x71C	71C	Float
Max Frequency	31822	0x71E	71E	Float
Max THD Voltage V1N	31824	0x720	720	Float
Max THD Voltage V2N	31826	0x722	722	Float
Max THD Voltage V3N	31828	0x724	724	Float
Max Average THD Voltage L-N	31830	0x726	726	Float
Max THD Voltage V12	31832	0x728	728	Float
Max THD Voltage V23	31834	0x72A	72A	Float
Max THD Voltage V31	31836	0x72C	72C	Float
Max Average THD Voltage L-L	31838	0x72E	72E	Float
Max thd Voltage V1N	31840	0x730	730	Float
Max thd Voltage V2N	31842	0x732	732	Float
Max thd Voltage V3N	31844	0x734	734	Float
Max Average thd Voltage L-N	31846	0x736	736	Float
Max thd Voltage V12	31848	0x738	738	Float
Max thd Voltage V23	31850	0x73A	73A	Float
Max thd Voltage V31	31852	0x73C	73C	Float
Max Average thd Voltage L-L	31854	0x73E	73E	Float
Max thd Current I1	31856	0x740	740	Float
Max thd Current I2	31858	0x742	742	Float
Max thd Current I3	31860	0x744	744	Float
Max Average thd Current	31866	0x74A	74A	Float

INPUT REGISTER

Parameter	Address	Hex Address	Hex Address	Data Type
Max thd Current I1	31868	0x74C	74C	Float
Max thd Current I2	31870	0x74E	74E	Float
Max thd Current I3	31872	0x750	750	Float
Max Average thd Current	31878	0x756	756	Float
Max TDD (Total Demand Distortion)	31880	0x758	758	Float
MIN PARAMETERS				
Min Voltage V1N	31900	0x76C	76C	Float
Min Voltage V1N	31902	0x76E	76E	Float
Min Voltage V3N	31904	0x770	770	Float
Min Average Voltage VL-N	31908	0x774	774	Float
Min Voltage V12	31910	0x776	776	Float
Min Voltage V23	31912	0x778	778	Float
Min Voltage V31	31914	0x77A	77A	Float
Min Average Voltage VL-L	31916	0x77C	77C	Float
Min Voltage L-N Unbalanced PH1	31918	0x77E	77E	Float
Min Voltage L-N Unbalanced PH2	31920	0x780	780	Float
Min Voltage L-N Unbalanced PH3	31922	0x782	782	Float
Min Voltage L-N Unbalanced Worst Case	31924	0x784	784	Float
Min Voltage L-L Unbalanced PH12	31926	0x786	786	Float
Min Voltage L-L Unbalanced PH23	31928	0x788	788	Float
Min Voltage L-L Unbalanced PH31	31930	0x78A	78A	Float
Min Voltage L-L Unbalanced Worst Case	31932	0x78C	78C	Float
Min Current I1	31934	0x78E	78E	Float
Min Current I2	31936	0x790	790	Float
Min Current I3	31938	0x792	792	Float
Min Neutral Current	31940	0x794	794	Float
Min Average Current	31944	0x798	798	Float
Min Current Unbalance I1	31946	0x79A	79A	Float
Min Current Unbalance I2	31948	0x79C	79C	Float
Min Current Unbalance I3	31950	0x79E	79E	Float
Min Current Unbalanced Worst Case	31952	0x7A0	7A0	Float
Min Active Power KW1	31954	0x7A2	7A2	Float
Min Active Power KW2	31956	0x7A4	7A4	Float
Min Active Power KW3	31958	0x7A6	7A6	Float
Min Total Active KW	31960	0x7A8	7A8	Float
Min Reactive Power KVAR1	31962	0x7AA	7AA	Float
Min Reactive Power KVAR2	31964	0x7AC	7AC	Float
Min Reactive Power KVAR3	31966	0x7AE	7AE	Float
Min Total Reactive KVAR	31968	0x7B0	7B0	Float
Min Apparent Power KVA1	31970	0x7B2	7B2	Float
Min Apparent Power KVA2	31972	0x7B4	7B4	Float
Min Apparent Power KVA3	31974	0x7B6	7B6	Float
Min Total Apparent KVA	31976	0x7B8	7B8	Float

INPUT REGISTER

Parameter	Address	Hex Address	Hex Address	Data Type
Min True PF1	31978	0x7BA	7BA	Float
Min True PF2	31980	0x7BC	7BC	Float
Min True PF3	31982	0x7BE	7BE	Float
Min Average PF	31984	0x7C0	7C0	Float
Min Displacement PF1	31986	0x7C2	7C2	Float
Min Displacement PF2	31988	0x7C4	7C4	Float
Min Displacement PF3	31990	0x7C6	7C6	Float
Min Displacement Average PF	31992	0x7C8	7C8	Float
Min Distortion PF1	31994	0x7CA	7CA	Float
Min Distortion PF2	31996	0x7CC	7CC	Float
Min Distortion PF3	31998	0x7CE	7CE	Float
Min Distortion Average PF	32000	0x7D0	7D0	Float
Min Frequency	32002	0x7D2	7D2	Float
Min THD Voltage V1N	32004	0x7D4	7D4	Float
Min THD Voltage V2N	32006	0x7D6	7D6	Float
Min THD Voltage V3N	32008	0x7D8	7D8	Float
Min Average THD Voltage L-N	32010	0x7DA	7DA	Float
Min THD Voltage V12	32012	0x7DC	7DC	Float
Min THD Voltage V23	32014	0x7DE	7DE	Float
MinTHD Voltage V31	32016	0x7E0	7E0	Float
Min Average THD Voltage L-L	32018	0x7E2	7E2	Float
Min thd Voltage V1N	32020	0x7E4	7E4	Float
Min thd Voltage V2N	32022	0x7E6	7E6	Float
Min thd Voltage V3N	32024	0x7E8	7E8	Float
Min Average thd Voltage L-N	32026	0x7EA	7EA	Float
Min thd Voltage V12	32028	0x7EC	7EC	Float
Min thd Voltage V23	32030	0x7EE	7EE	Float
Min thd Voltage V31	32032	0x7F0	7F0	Float
Min Average thd Voltage L-L	32034	0x7F2	7F2	Float
Min thd Current I1	32036	0x7F4	7F4	Float
Min thd Current I2	32038	0x7F6	7F6	Float
Min thd Current I3	32040	0x7F8	7F8	Float
Min Average thd Current	32046	0x7FE	7FE	Float
Min thd Current I1	32048	0x800	800	Float
Min thd Current I2	32050	0x802	802	Float
Min thd Current I3	32052	0x804	804	Float
Min Average thd Current	32058	0x80A	80A	Float
Min TDD (Total Demand Distortion)	32060	0x80C	80C	Float
ROLLOVER COUNTER-QUADRANT ENERGY				
Total kWh Quadrant 1	32062	0x80E	80E	INT
Total kWh Quadrant 2	32063	0x80F	80F	INT
Total kWh Quadrant 3	32064	0x810	810	INT
Total kWh Quadrant 4	32065	0x811	811	INT
Total kVARh Quadrant 1	32066	0x812	812	INT
Total kVARh Quadrant 2	32067	0x813	813	INT
Total kVARh Quadrant 3	32068	0x814	814	INT
Total kVARh Quadrant 4	32069	0x815	815	INT
Total kVAh Quadrant 1	32070	0x816	816	INT
Total kVAh Quadrant 2	32071	0x817	817	INT
Total kVAh Quadrant 3	32072	0x818	818	INT
Total kVAh Quadrant 4	32073	0x819	819	INT

INPUT REGISTER

Parameter	Address	Hex Address	Hex Address	Data Type
ROLLOVER COUNTER-INDUCTIVE & CAPACITIVE ENERGY				
Total Inductive Kwh	32074	0x81A	81A	INT
Total Capacitive Kwh	32075	0x81B	81B	INT
Total Inductive KVARh	32076	0x81C	81C	INT
Total Capacitive KVARh	32077	0x81D	81D	INT
Total Inductive KVAh	32078	0x81E	81E	INT
Total Capacitive KVAh	32079	0x81F	81F	INT
ROLLOVER COUNTER-MAINS ENERGY				
Import KWh 1	32080	0x820	820	INT
Import KWh 2	32081	0x821	821	INT
Import KWh 3	32082	0x822	822	INT
Export KWh 1	32083	0x823	823	INT
Export KWh 2	32084	0x824	824	INT
Export KWh 3	32085	0x825	825	INT
Total Import KWh	32086	0x826	826	INT
Total Export KWh	32087	0x827	827	INT
Total NET KWh (Import + Export)	32088	0x828	828	INT
Total Import – Export KWh	32089	0x829	829	INT
Import KVAh 1	32090	0x82A	82A	INT
Import KVAh 2	32091	0x82B	82B	INT
Import KVAh 3	32092	0x82C	82C	INT
Export KVAh 1	32093	0x82D	82D	INT
Export KVAh 2	32094	0x82E	82E	INT
Export KVAh 3	32095	0x82F	82F	INT
Total Import KVAh	32096	0x830	830	INT
Total Export KVAh	32097	0x831	831	INT
Total NET KVAh (Import + Export)	32098	0x832	832	INT
Total Import – Export KVAh	32099	0x833	833	INT
Import KVARh 1	32100	0x834	834	INT
Import KVARh 2	32101	0x835	835	INT
Import KVARh 3	32102	0x836	836	INT
Export KVARh 1	32103	0x837	837	INT
Export KVARh 2	32104	0x838	838	INT
Export KVARh 3	32105	0x839	839	INT
Total Import KVARh	32106	0x83A	83A	INT
Total Export KVARh	32107	0x83B	83B	INT
Total NET KVARh (Import + Export)	32108	0x83C	83C	INT
Total Import-Export KVARh	32109	0x83D	83D	INT
ROLLOVER COUNTER-DG ENERGY				
Import KWh 1	32110	0x83E	83E	INT
Import KWh 2	32111	0x83F	83F	INT
Import KWh 3	32112	0x840	840	INT
Export KWh 1	32113	0x841	841	INT
Export KWh 2	32114	0x842	842	INT
Export KWh 3	32115	0x843	843	INT
Total Import KWh	32116	0x844	844	INT
Total Export KWh	32117	0x845	845	INT
Total NET KWh (Import + Export)	32118	0x846	846	INT
Total Import – Export KWh	32119	0x847	847	INT

INPUT REGISTER

Parameter	Address	Hex Address	Hex Address	Data Type
Import KVAh 1	32120	0x848	848	INT
Import KVAh 2	32121	0x849	849	INT
Import KVAh 3	32122	0x84A	84A	INT
Export KVAh 1	32123	0x84B	84B	INT
Export KVAh 2	32124	0x84C	84C	INT
Export KVAh 3	32125	0x84D	84D	INT
Total Import KVAh	32126	0x84E	84E	INT
Total Export KVAh	32127	0x84F	84F	INT
Total NET KVAh (Import + Export)	32128	0x850	850	INT
Total Import – Export KVAh	32129	0x851	851	INT
Import KVARh 1	32130	0x852	852	INT
Import KVARh 2	32131	0x853	853	INT
Import KVARh 3	32132	0x854	854	INT
Export KVARh 1	32133	0x855	855	INT
Export KVARh 2	32134	0x856	856	INT
Export KVARh 3	32135	0x857	857	INT
Total Import KVARh	32136	0x858	858	INT
Total Export KVARh	32137	0x859	859	INT
Total NET KVARh (Import + Export)	32138	0x85A	85A	INT
Total Import – Export KVARh	32139	0x85B	85B	INT
Crest Factor				
Voltage V1N	32144	0x860	860	Float
Voltage V2N	32146	0x862	862	Float
Voltage V3N	32148	0x864	864	Float
Voltage V12	32150	0x866	866	Float
Voltage V23	32152	0x868	868	Float
Voltage V31	32154	0x86A	86A	Float
Current I1	32156	0x86C	86C	Float
Current I2	32158	0x86E	86E	Float
Current I3	32160	0x870	870	Float
K Factor				
Voltage V1N	32162	0x872	872	Float
Voltage V2N	32164	0x874	874	Float
Voltage V3N	32166	0x876	876	Float
Current I1	32168	0x878	878	Float
Current I2	32170	0x87A	87A	Float
Current I3	32172	0x87C	87C	Float
CO2	32174	0x87E	87E	Float
HARMONICS				
Voltage Phase 1 H2	32180	0x884	884	Float
Voltage Phase 1 H3	32182	0x886	886	Float
Voltage Phase 1 H4	32184	0x888	888	Float
Voltage Phase 1 H5	32186	0x88A	88A	Float
Voltage Phase 1 H6	32188	0x88C	88C	Float
Voltage Phase 1 H7	32190	0x88E	88E	Float
Voltage Phase 1 H8	32192	0x890	890	Float
Voltage Phase 1 H9	32194	0x892	892	Float
Voltage Phase 1 H10	32196	0x894	894	Float

INPUT REGISTER

Parameter	Address	Hex Address	Hex Address	Data Type
Voltage Phase 1 H11	32198	0x896	896	Float
Voltage Phase 1 H12	32200	0x898	898	Float
Voltage Phase 1 H13	32202	0x89A	89A	Float
Voltage Phase 1 H14	32204	0x89C	89C	Float
Voltage Phase 1 H15	32206	0x89E	89E	Float
Voltage Phase 1 H16	32208	0x8A0	8A0	Float
Voltage Phase 1 H17	32210	0x8A2	8A2	Float
Voltage Phase 1 H18	32212	0x8A4	8A4	Float
Voltage Phase 1 H19	32214	0x8A6	8A6	Float
Voltage Phase 1 H20	32216	0x8A8	8A8	Float
Voltage Phase 1 H21	32218	0x8AA	8AA	Float
Voltage Phase 1 H22	32220	0x8AC	8AC	Float
Voltage Phase 1 H23	32222	0x8AE	8AE	Float
Voltage Phase 1 H24	32224	0x8B0	8B0	Float
Voltage Phase 1 H25	32226	0x8B2	8B2	Float
Voltage Phase 1 H26	32228	0x8B4	8B4	Float
Voltage Phase 1 H27	32230	0x8B6	8B6	Float
Voltage Phase 1 H28	32232	0x8B8	8B8	Float
Voltage Phase 1 H29	32234	0x8BA	8BA	Float
Voltage Phase 1 H30	32236	0x8BC	8BC	Float
Voltage Phase 1 H31	32238	0x8BE	8BE	Float
Voltage Phase 1 H32	32240	0x8C0	8C0	Float
Voltage Phase 1 H33	32242	0x8C2	8C2	Float
Voltage Phase 1 H34	32244	0x8C4	8C4	Float
Voltage Phase 1 H35	32246	0x8C6	8C6	Float
Voltage Phase 1 H36	32248	0x8C8	8C8	Float
Voltage Phase 1 H37	32250	0x8CA	8CA	Float
Voltage Phase 1 H38	32252	0x8CC	8CC	Float
Voltage Phase 1 H39	32254	0x8CE	8CE	Float
Voltage Phase 1 H40	32256	0x8D0	8D0	Float
Voltage Phase 2 H2	32306	0x902	902	Float
Voltage Phase 2 H3	32308	0x904	904	Float
Voltage Phase 2 H4	32310	0x906	906	Float
Voltage Phase 2 H5	32312	0x908	908	Float
Voltage Phase 2 H6	32314	0x90A	90A	Float
Voltage Phase 2 H7	32316	0x90C	90C	Float
Voltage Phase 2 H8	32318	0x90E	90E	Float
Voltage Phase 2 H9	32320	0x910	910	Float
Voltage Phase 2 H10	32322	0x912	912	Float
Voltage Phase 2 H11	32324	0x914	914	Float
Voltage Phase 2 H12	32326	0x916	916	Float
Voltage Phase 2 H13	32328	0x918	918	Float
Voltage Phase 2 H14	32330	0x91A	91A	Float
Voltage Phase 2 H15	32332	0x91C	91C	Float
Voltage Phase 2 H16	32334	0x91E	91E	Float
Voltage Phase 2 H17	32336	0x920	920	Float
Voltage Phase 2 H18	32338	0x922	922	Float
Voltage Phase 2 H19	32340	0x924	924	Float
Voltage Phase 2 H20	32342	0x926	926	Float

INPUT REGISTER

Parameter	Address	Hex Address	Hex Address	Data Type
Voltage Phase 2 H21	32344	0x928	928	Float
Voltage Phase 2 H22	32346	0x92A	92A	Float
Voltage Phase 2 H23	32348	0x92C	92C	Float
Voltage Phase 2 H24	32350	0x92E	92E	Float
Voltage Phase 2 H25	32352	0x930	930	Float
Voltage Phase 2 H26	32354	0x932	932	Float
Voltage Phase 2 H27	32356	0x934	934	Float
Voltage Phase 2 H28	32358	0x936	936	Float
Voltage Phase 2 H29	32360	0x938	938	Float
Voltage Phase 2 H30	32362	0x93A	93A	Float
Voltage Phase 2 H31	32364	0x93C	93C	Float
Voltage Phase 2 H32	32366	0x93E	93E	Float
Voltage Phase 2 H33	32368	0x940	940	Float
Voltage Phase 2 H34	32370	0x942	942	Float
Voltage Phase 2 H35	32372	0x944	944	Float
Voltage Phase 2 H36	32374	0x946	946	Float
Voltage Phase 2 H37	32376	0x948	948	Float
Voltage Phase 2 H38	32378	0x94A	94A	Float
Voltage Phase 2 H39	32380	0x94C	94C	Float
Voltage Phase 2 H40	32382	0x94E	94E	Float
Voltage Phase 3 H2	32432	0x980	980	Float
Voltage Phase 3 H3	32434	0x982	982	Float
Voltage Phase 3 H4	32436	0x984	984	Float
Voltage Phase 3 H5	32438	0x986	986	Float
Voltage Phase 3 H6	32440	0x988	988	Float
Voltage Phase 3 H7	32442	0x98A	98A	Float
Voltage Phase 3 H8	32444	0x98C	98C	Float
Voltage Phase 3 H9	32446	0x98E	98E	Float
Voltage Phase 3 H10	32448	0x990	990	Float
Voltage Phase 3 H11	32450	0x992	992	Float
Voltage Phase 3 H12	32452	0x994	994	Float
Voltage Phase 3 H13	32454	0x996	996	Float
Voltage Phase3 H14	32456	0x998	998	Float
Voltage Phase 3 H15	32458	0x99A	99A	Float
Voltage Phase 3 H16	32460	0x99C	99C	Float
Voltage Phase 3 H17	32462	0x99E	99E	Float
Voltage Phase 3 H18	32464	0x9A0	9A0	Float
Voltage Phase 3 H19	32466	0x9A2	9A2	Float
Voltage Phas 3 H20	32468	0x9A4	9A4	Float
Voltage Phase 3 H21	32470	0x9A6	9A6	Float
Voltage Phase 3 H22	32472	0x9A8	9A8	Float
Voltage Phase 3 H23	32474	0x9AA	9AA	Float
Voltage Phase 3 H24	32476	0x9AC	9AC	Float
Voltage Phase 3 H25	32478	0x9AE	9AE	Float
Voltage Phase 3 H26	32480	0x9B0	9B0	Float
Voltage Phase 3 H27	32482	0x9B2	9B2	Float
Voltage Phase 3 H28	32484	0x9B4	9B4	Float
Voltage Phase 3 H29	32486	0x9B6	9B6	Float
Voltage Phase 3 H30	32488	0x9B8	9B8	Float
Voltage Phase 3 H31	32490	0x9BA	9BA	Float

INPUT REGISTER

Parameter	Address	Hex Address	Hex Address	Data Type
Voltage Phase 3 H32	32492	0x9BC	9BC	Float
Voltage Phase 3 H33	32494	0x9BE	9BE	Float
Voltage Phase 3 H34	32496	0x9C0	9C0	Float
Voltage Phase 3 H35	32498	0x9C2	9C2	Float
Voltage Phase 3 H36	32500	0x9C4	9C4	Float
Voltage Phase 3 H37	32502	0x9C6	9C6	Float
Voltage Phase 3 H38	32504	0x9C8	9C8	Float
Voltage Phase 3 H39	32506	0x9CA	9CA	Float
Voltage Phase 3 H40	32508	0x9CC	9CC	Float
Voltage L-L V12 H2	32558	0x9FE	9FE	Float
Voltage L-L V12 H3	32560	0xA00	A00	Float
Voltage L-L V12 H4	32562	0xA02	A02	Float
Voltage L-L V12 H5	32564	0xA04	A04	Float
Voltage L-L V12 H6	32566	0xA06	A06	Float
Voltage L-L V12 H7	32568	0xA08	A08	Float
Voltage L-L V12 H8	32570	0xA0A	A0A	Float
Voltage L-L V12 H9	32572	0xA0C	A0C	Float
Voltage L-L V12 H10	32574	0xA0E	A0E	Float
Voltage L-L V12 H11	32576	0xA10	A10	Float
Voltage L-L V12 H12	32578	0xA12	A12	Float
Voltage L-L V12 H13	32580	0xA14	A14	Float
Voltage L-L V12 H14	32582	0xA16	A16	Float
Voltage L-L V12 H15	32584	0xA18	A18	Float
Voltage L-L V12 H16	32586	0xA1A	A1A	Float
Voltage L-L V12 H17	32588	0xA1C	A1C	Float
Voltage L-L V12 H18	32590	0xA1E	A1E	Float
Voltage L-L V12 H19	32592	0xA20	A20	Float
Voltage L-L V12 H20	32594	0xA22	A22	Float
Voltage L-L V12 H21	32596	0xA24	A24	Float
Voltage L-L V12 H22	32598	0xA26	A26	Float
Voltage L-L V12 H23	32600	0xA28	A28	Float
Voltage L-L V12 H24	32602	0xA2A	A2A	Float
Voltage L-L V12 H25	32604	0xA2C	A2C	Float
Voltage L-L V12 H26	32606	0xA2E	A2E	Float
Voltage L-L V12 H27	32608	0xA30	A30	Float
Voltage L-L V12 H28	32610	0xA32	A32	Float
Voltage L-L V12 H29	32612	0xA34	A34	Float
Voltage L-L V12 H30	32614	0xA36	A36	Float
Voltage L-L V12 H31	32616	0xA38	A38	Float
Voltage L-L V12 H32	32618	0xA3A	A3A	Float
Voltage L-L V12 H33	32620	0xA3C	A3C	Float
Voltage L-L V12 H34	32622	0xA3E	A3E	Float
Voltage L-L V12 H35	32624	0xA40	A40	Float
Voltage L-L V12 H36	32626	0xA42	A42	Float
Voltage L-L V12 H37	32628	0xA44	A44	Float
Voltage L-L V12 H38	32630	0xA46	A46	Float
Voltage L-L V12 H39	32632	0xA48	A48	Float
Voltage L-L V12 H40	32634	0xA4A	A4A	Float

INPUT REGISTER

Parameter	Address	Hex Address	Hex Address	Data Type
Voltage L-L V23 H2	32684	0xA7C	A7C	Float
Voltage L-L V23 H3	32686	0xA7E	A7E	Float
Voltage L-L V23 H4	32688	0xA80	A80	Float
Voltage L-L V23 H5	32690	0xA82	A82	Float
Voltage L-L V23 H6	32692	0xA84	A84	Float
Voltage L-L V23 H7	32694	0xA86	A86	Float
Voltage L-L V23 H8	32696	0xA88	A88	Float
Voltage L-L V23 H9	32698	0xA8A	A8A	Float
Voltage L-L V23 H10	32700	0xA8C	A8C	Float
Voltage L-L V23 H11	32702	0xA8E	A8E	Float
Voltage L-L V23 H12	32704	0xA90	A90	Float
Voltage L-L V23 H13	32706	0xA92	A92	Float
Voltage L-L V23 H14	32708	0xA94	A94	Float
Voltage L-L V23 H15	32710	0xA96	A96	Float
Voltage L-L V23 H16	32712	0xA98	A98	Float
Voltage L-L V23 H17	32714	0xA9A	A9A	Float
Voltage L-L V23 H18	32716	0xA9C	A9C	Float
Voltage L-L V23 H19	32718	0xA9E	A9E	Float
Voltage L-L V23 H20	32720	0xAA0	AA0	Float
Voltage L-L V23 H21	32722	0xAA2	AA2	Float
Voltage L-L V23 H22	32724	0xAA4	AA4	Float
Voltage L-L V23 H23	32726	0xAA6	AA6	Float
Voltage L-L V23 H24	32728	0xAA8	AA8	Float
Voltage L-L V23 H25	32730	0xAAA	AAA	Float
Voltage L-L V23 H26	32732	0xAAC	AAC	Float
Voltage L-L V23 H27	32734	0xAAE	AAE	Float
Voltage L-L V23 H28	32736	0xAB0	AB0	Float
Voltage L-L V23 H29	32738	0xAB2	AB2	Float
Voltage L-L V23 H30	32740	0xAB4	AB4	Float
Voltage L-L V23 H31	32742	0xAB6	AB6	Float
Voltage L-L V23 H32	32744	0xAB8	AB8	Float
Voltage L-L V23 H33	32746	0xABA	ABA	Float
Voltage L-L V23 H34	32748	0xABC	ABC	Float
Voltage L-L V23 H35	32750	0xABE	ABE	Float
Voltage L-L V23 H36	32752	0xAC0	AC0	Float
Voltage L-L V23 H37	32754	0xAC2	AC2	Float
Voltage L-L V23 H38	32756	0xAC4	AC4	Float
Voltage L-L V23 H39	32758	0xAC6	AC6	Float
Voltage L-L V23 H40	32760	0xAC8	AC8	Float
Voltage L-L V31 H2	32810	0xAFA	AFA	Float
Voltage L-L V31 H3	32812	0xAFC	AFC	Float
Voltage L-L V31 H4	32814	0xAFE	AFE	Float
Voltage L-L V31 H5	32816	0xB00	B00	Float
Voltage L-L V31 H6	32818	0xB02	B02	Float
Voltage L-L V31 H7	32820	0xB04	B04	Float
Voltage L-L V31 H8	32822	0xB06	B06	Float
Voltage L-L V31 H9	32824	0xB08	B08	Float
Voltage L-L V31 H10	32826	0xB0A	B0A	Float
Voltage L-L V31 H11	32828	0xB0C	B0C	Float
Voltage L-L V31 H12	32830	0xB0E	B0E	Float
Voltage L-L V31 H13	32832	0xB10	B10	Float

INPUT REGISTER

Parameter	Address	Hex Address	Hex Address	Data Type
Voltage L-L V31 H14	32834	0xB12	B12	Float
Voltage L-L V31 H15	32836	0xB14	B14	Float
Voltage L-L V31 H16	32838	0xB16	B16	Float
Voltage L-L V31 H17	32840	0xB18	B18	Float
Voltage L- V31 H18	32842	0xB1A	B1A	Float
Voltage L-L V31 H19	32844	0xB1C	B1C	Float
Voltage L-L V31 H20	32846	0xB1E	B1E	Float
Voltage L-L V31 H21	32848	0xB20	B20	Float
Voltage L-L V31 H22	32850	0xB22	B22	Float
Voltage L-L V31 H23	32852	0xB24	B24	Float
Voltage L-L V31 H24	32854	0xB26	B26	Float
Voltage L-L V31 H25	32856	0xB28	B28	Float
Voltage L-L V31 H26	32858	0xB2A	B2A	Float
Voltage L-L V31 H27	32860	0xB2C	B2C	Float
Voltage L-L V31 H28	32862	0xB2E	B2E	Float
Voltage L-L V31 H29	32864	0xB30	B30	Float
Voltage L-L V31 H30	32866	0xB32	B32	Float
Voltage L-L V31 H31	32868	0xB34	B34	Float
Voltage L-L V31 H32	32870	0xB36	B36	Float
Voltage L-L V31 H33	32872	0xB38	B38	Float
Voltage L-L V31 H34	32874	0xB3A	B3A	Float
Voltage L-L V31 H35	32876	0xB3C	B3C	Float
Voltage L-L V31 H36	32878	0xB3E	B3E	Float
Voltage L-L V31 H37	32880	0xB40	B40	Float
Voltage L-L V31 H38	32882	0xB42	B42	Float
Voltage L-L V31 H39	32884	0xB44	B44	Float
Voltage L-L V31 H40	32886	0xB46	B46	Float
Current Phase 1 H2	32936	0xB78	B78	Float
Current Phase 1 H3	32938	0xB7A	B7A	Float
Current Phase 1 H4	32940	0xB7C	B7C	Float
Current Phase 1 H5	32942	0xB7E	B7E	Float
Current Phase 1 H6	32944	0xB80	B80	Float
Current Phase 1 H7	32946	0xB82	B82	Float
Current Phase1 H8	32948	0xB84	B84	Float
Current Phase 1 H9	32950	0xB86	B86	Float
Current Phase 1 H10	32952	0xB88	B88	Float
Current Phase 1 H11	32954	0xB8A	B8A	Float
Current Phase 1 H12	32956	0xB8C	B8C	Float
Current Phase 1 H13	32958	0xB8E	B8E	Float
Current Phase 1 H14	32960	0xB90	B90	Float
Current Phase 1 H15	32962	0xB92	B92	Float
Current Phase 1 H16	32964	0xB94	B94	Float
Current Phase 1 H17	32966	0xB96	B96	Float
Current Phase 1 H18	32968	0xB98	B98	Float
Current Phase 1 H19	32970	0xB9A	B9A	Float
Current Phase 1 H20	32972	0xB9C	B9C	Float

INPUT REGISTER

Parameter	Address	Hex Address	Hex Address	Data Type
Current Phase 1 H21	32974	0xB9E	B9E	Float
Current Phase 1 H22	32976	0xBA0	BA0	Float
Current Phase 1 H23	32978	0xBA2	BA2	Float
Current Phase 1 H24	32980	0xBA4	BA4	Float
Current Phase 1 H25	32982	0xBA6	BA6	Float
Current Phase 1 H26	32984	0xBA8	BA8	Float
Current Phase 1 H27	32986	0xBAA	BAA	Float
Current Phase 1 H28	32988	0xBAC	BAC	Float
Current Phase 1 H29	32990	0xBAE	BAE	Float
Current Phase 1 H30	32992	0xBB0	BB0	Float
Current Phase 1 H31	32994	0xBB2	BB2	Float
Current Phase 1 H32	32996	0xBB4	BB4	Float
Current Phase 1 H33	32998	0xBB6	BB6	Float
Current Phase 1 H34	33000	0xBB8	BB8	Float
Current Phase 1 H35	33002	0xBBA	BBA	Float
Current Phase 1 H36	33004	0BBC	BBC	Float
Current Phase 1 H37	33006	0BBE	BBE	Float
Current Phase 1 H38	33008	0xBC0	BC0	Float
Current Phase 1 H39	33010	0xBC2	BC2	Float
Current Phase 1 H40	33012	0xBC4	BC4	Float
Current Phase 2 H2	33062	0xBF6	BF6	Float
Current Phase 2 H3	33064	0xBF8	BF8	Float
Current Phase 2 H4	33066	0xBFA	BFA	Float
Current Phase 2 H5	33068	0xBFC	BFC	Float
Current Phase 2 H6	33070	0xBFE	BFE	Float
Current Phase 2 H7	33072	0xC00	C00	Float
Current Phase 2 H8	33074	0xC02	C02	Float
Current Phase 2 H9	33076	0xC04	C04	Float
Current Phase 2 H10	33078	0xC06	C06	Float
Current Phase 2 H11	33080	0xC08	C08	Float
Current Phase 2 H12	33082	0xC0A	C0A	Float
Current Phase 2 H13	33084	0xC0C	C0C	Float
Current Phase 2 H14	33086	0xC0E	C0E	Float
Current Phase 2 H15	33088	0xC10	C10	Float
Current Phase 2 H16	33090	0xC12	C12	Float
Current Phase 2 H17	33092	0xC14	C14	Float
Current Phase 2 H18	33094	0xC16	C16	Float
Current Phase 2 H19	33096	0xC18	C18	Float
Current Phase 2 H20	33098	0xC1A	C1A	Float
Current Phase 2 H21	33100	0xC1C	C1C	Float
Current Phase 2 H22	33102	0xC1E	C1E	Float
Current Phase 2 H23	33104	0xC20	C20	Float
Current Phase 2 H24	33106	0xC22	C22	Float
Current Phase 2 H25	33108	0xC24	C24	Float
Current Phase 2 H26	33110	0xC26	C26	Float
Current Phase 2 H27	33112	0xC28	C28	Float
Current Phase 2 H28	33114	0xC2A	C2A	Float
Current Phase 2 H29	33116	0xC2C	C2C	Float
Current Phase 2 H30	33118	0xC2E	C2E	Float
Current Phase 2 H31	33120	0xC30	C30	Float

INPUT REGISTER

Parameter	Address	Hex Address	Hex Address	Data Type
Current Phase 2 H32	33122	0xC32	C32	Float
Current Phase 2 H33	33124	0xC34	C34	Float
Current Phase 2 H34	33126	0xC36	C36	Float
Current Phase 2 H35	33128	0xC38	C38	Float
Current Phase 2 H36	33130	0xC3A	C3A	Float
Current Phase 2 H37	33132	0xC3C	C3C	Float
Current Phase 2 H38	33134	0xC3E	C3E	Float
Current Phase 2 H39	33136	0xC40	C40	Float
Current Phase 2 H40	33138	0xC42	C42	Float
Current Phase 3 H2	33188	0xC74	C74	Float
Current Phase 3 H3	33190	0xC76	C76	Float
Current Phase 3 H4	33192	0xC78	C78	Float
Current Phase 3 H5	33194	0xC7A	C7A	Float
Current Phase 3 H6	33196	0xC7C	C7C	Float
Current Phase 3 H7	33198	0xC7E	C7E	Float
Current Phase 3 H8	33200	0xC80	C80	Float
Current Phase 3 H9	33202	0xC82	C82	Float
Current Phase 3 H10	33204	0xC84	C84	Float
Current Phase 3 H11	33206	0xC86	C86	Float
Current Phase 3 H12	33208	0xC88	C88	Float
Current Phase 3 H13	33210	0xC8A	C8A	Float
Current Phase 3 H14	33212	0xC8C	C8C	Float
Current Phase 3 H15	33214	0xC8E	C8E	Float
Current Phase 3 H16	33216	0xC90	C90	Float
Current Phase 3 H17	33218	0xC92	C92	Float
Current Phase 3 H18	33220	0xC94	C94	Float
Current Phase 3 H19	33222	0xC96	C96	Float
Current Phase 3 H20	33224	0xC98	C98	Float
Current Phase 3 H21	33226	0xC9A	C9A	Float
Current Phase 3 H22	33228	0xC9C	C9C	Float
Current Phase 3 H23	33230	0xC9E	C9E	Float
Current Phase 3 H24	33232	0xCA0	CA0	Float
Current Phase 3 H25	33234	0xCA2	CA2	Float
Current Phase 3 H26	33236	0xCA4	CA4	Float
Current Phase 3 H27	33238	0xCA6	CA6	Float
Current Phase 3 H28	33240	0xCA8	CA8	Float
Current Phase 3 H29	33242	0CAA	CAA	Float
Current Phase 3 H30	33244	0xCAC	CAC	Float
Current Phase 3 H31	33246	0xCAE	CAE	Float
Current Phase 3 H32	33248	0xCB0	CB0	Float
Current Phase 3 H33	33250	0xCB2	CB2	Float
Current Phase 3 H34	33252	0xCB4	CB4	Float
Current Phase 3 H35	33254	0xCB6	CB6	Float
Current Phase 3 H36	33256	0xCB8	CB8	Float
Current Phase 3 H37	33258	0xCBA	CBA	Float
Current Phase 3 H38	33260	0CBC	CBC	Float
Current Phase 3 H39	33262	0xCBE	CBE	Float
Current Phase 3 H40	33264	0xCC0	CC0	Float

INPUT REGISTER

Parameter	Address	Hex Address	Hex Address	Data Type
RTC PARAMETER – 7 REGISTER FORMAT				
Year	33359	0xD1F	D1F	INT
Month	33360	0xD20	D20	INT
Date	33361	0xD21	D21	INT
Hour	33362	0xD22	D22	INT
Minute	33363	0xD23	D23	INT
Second	33364	0xD24	D24	INT
Day Of Week	33365	0xD25	D25	INT
RTC PARAMETER – 4 REGISTER FORMAT				
Year	33366	0xD26	D26	INT
Month_Date	33367	0xD27	D27	INT
Hour_Minute	33368	0xD28	D28	INT
Seconds	33369	0xD29	D29	INT
SEQUENCE DETECTION				
Phase Sequence Detection	33370	0xD2A	D2A	INT
Current Sequence Detection	33371	0xD2B	D2B	INT
Frequency Error	33372	0xD2C	D2C	INT
RPM	33373	0xD2D	D2D	INT
DIAGNOSTIC MODE PARAMETERS				
System Error Code	33393	0xD41	D41	INT
Serial Number	33394	0xD42	D42	INT
Hardware Version number	33396	0xD44	D44	Float
Software Version number	33398	0xD46	D46	Float
On hour	33400	0xD48	D48	Float
Run hour	33402	0xD4A	D4A	Float
Import run hour mains	33404	0xD4C	D4C	Float
Export run hour mains	33406	0xD4E	D4E	Float
Import run hour DG	33408	0xD50	D50	Float
Export run hour DG	33410	0xD52	D52	Float
Load run hour	33412	0xD54	D54	Float
Auxiliary Interrupt	33414	0xD56	D56	INT
Reset Ethernet	33416	0xD58	D58	INT
RTD				
Temperature In Celsius	33428	0xD64	D64	Float
Temperature In Fahrenheit	33430	0xD66	D66	Float
IMPORT EXPORT MAINS POWER				
Active Power PH 1	33432	0xD68	D68	Float
Active Power PH 2	33434	0xD6A	D6A	Float
Active Power PH 3	33436	0xD6C	D6C	Float
Total Active Power	33438	0xD6E	D6E	Float
Reactive Power PH 1	33440	0xD70	D70	Float
Reactive Power PH 2	33442	0xD72	D72	Float
Reactive Power PH 3	33444	0xD74	D74	Float
Total Reactive Power	33446	0xD76	D76	Float
Apparent Power PH 1	33448	0xD78	D78	Float
Apparent Power PH 2	33450	0xD7A	D7A	Float
Apparent Power PH 3	33452	0xD7C	D7C	Float
Total Apparent Power	33454	0xD7E	D7E	Float

INPUT REGISTER

Parameter	Address	Hex Address	Hex Address	Data Type
IMPORT EXPORT DG POWER				
Active Power PH 1	33456	0xD80	D80	Float
Active Power PH 2	33458	0xD82	D82	Float
Active Power PH 3	33460	0xD84	D84	Float
Total Active Power	33462	0xD86	D86	Float
Reactive Power PH 1	33464	0xD88	D88	Float
Reactive Power PH 2	33466	0xD8A	D8A	Float
Reactive Power PH 3	33468	0xD8C	D8C	Float
Total Reactive Power	33470	0xD8E	D8E	Float
Apparent Power PH 1	33472	0xD90	D90	Float
Apparent Power PH 2	33474	0xD92	D92	Float
Apparent Power PH 3	33476	0xD94	D94	Float
Total Apparent Power	33478	0xD96	D96	Float
TIME STAMPING				
TIME STAMP-VOLTAGE LN				
Max Voltage Year	33505	0xDB1	DB1	INT
Max Voltage Month_Date	33506	0xDB2	DB2	INT
Max Voltage Hour_Minute	33507	0xDB3	DB3	INT
Max Voltage Second	33508	0xDB4	DB4	INT
Min Voltage Year	33509	0xDB5	DB5	INT
Min Voltage Month_Date	33510	0xDB6	DB6	INT
Min Voltage Hour_Minute	33511	0xDB7	DB7	INT
Min Voltage Second	33512	0xDB8	DB8	INT
TIME STAMP-VOLTAGE LL				
Max Voltage Year	33513	0xDB9	DB9	INT
Max Voltage Month_Date	33514	0xDBA	DBA	INT
Max Voltage Hour_Minute	33515	0xDBB	DBB	INT
Max Voltage Second	33516	0xDBC	DBC	INT
Min Voltage Year	33517	0xDBD	DBD	INT
Min Voltage Month_Date	33518	0xDBE	DBE	INT
Min Voltage Hour_Minute	33519	0xDBF	DBF	INT
Min Voltage Second	33520	0xDC0	DC0	INT
TIME STAMP-CURRENT AVERAGE				
Max Current Year	33521	0xDC1	DC1	INT
Max Current Month_Date	33522	0xDC2	DC2	INT
Max Current Hour_Minute	33523	0xDC3	DC3	INT
Max Current Second	33524	0xDC4	DC4	INT
Min Current Year	33525	0xDC5	DC5	INT
Min Current Month_Date	33526	0xDC6	DC6	INT
Min Current Hour_Minute	33527	0xDC7	DC7	INT
Min Current Second	33528	0xDC8	DC8	INT
TIME STAMP-CURRENT NEUTRAL				
Max Current Year	33529	0xDC9	DC9	INT
Max Current Month_Date	33530	0xDCA	DCA	INT
Max Current Hour_Minute	33531	0xDCB	DCB	INT
Max Current Second	33532	0xDCC	DCC	INT
Min Current Year	33533	0xDCD	DCD	INT
Min Current Month_Date	33534	0xDCE	DCE	INT
Min Current Hour_Minute	33535	0xDCF	DCF	INT
Min Current Second	33536	0xDD0	DD0	INT

INPUT REGISTER

Parameter	Address	Hex Address	Hex Address	Data Type
TIME STAMP-FREQUENCY				
Max Frequency Year	33537	0xDD1	DD1	INT
Max Frequency Month_Date	33538	0xDD2	DD2	INT
Max Frequency Hour Minute	33539	0xDD3	DD3	INT
Max Frequency Second	33540	0xDD4	DD4	INT
Min Frequency Year	33541	0xDD5	DD5	INT
Min Frequency Month_Date	33542	0xDD6	DD6	INT
Min Frequency Hour Minute	33543	0xDD7	DD7	INT
Min Frequency Second	33544	0xDD8	DD8	INT
TIME STAMP-TOTAL ACTIVE POWER				
Max Active Power Year	33545	0xDD9	DD9	INT
Max Active Power Month_Date	33546	0xDDA	DDA	INT
Max Active Power Hour Minute	33547	0xDDB	DDB	INT
Max Active Power Second	33548	0xDDC	DDC	INT
Min Active Power Year	33549	0xDDD	DDD	INT
Min Active Power Month_Date	33550	0xDDE	DDE	INT
Min Active Power Hour Minute	33551	0xDDF	DDF	INT
Min Active Power Second	33552	0xDE0	DE0	INT
TIME STAMP-TOTAL REACTIVE POWER				
Max Reactive Power Year	33553	0xDE1	DE1	INT
Max Reactive Power Month_Date	33554	0xDE2	DE2	INT
Max Reactive Power Hour Minute	33555	0xDE3	DE3	INT
Max Reactive Power Second	33556	0xDE4	DE4	INT
Min Reactive Power Year	33557	0xDE5	DE5	INT
Min Reactive Power Month_Date	33558	0xDE6	DE6	INT
Min Reactive Power Hour Minute	33559	0xDE7	DE7	INT
Min Reactive Power Second	33560	0xDE8	DE8	INT
TIME STAMP-TOTAL APPARENT POWER				
Max Apparent Power Year	33561	0xDE9	DE9	INT
Max Apparent Power Month_Date	33562	0xDEA	DEA	INT
Max Apparent Power Hour Minute	33563	0xDEB	DEB	INT
Max Apparent Power Second	33564	0xDEC	DEC	INT
Min Apparent Power Year	33565	0xDED	DED	INT
Min Apparent Power Month_Date	33566	0xDEE	DEE	INT
Min Apparent Power Hour Minute	33567	0xDE F	DEF	INT
Min Apparent Power Second	33568	0xDF0	DF0	INT
TIME STAMP-AVERAGE POWER FACTOR				
Max Power Factor Year	33569	0xDF1	DF1	INT
Max Power Factor Month_Date	33570	0xDF2	DF2	INT
Max Power Factor Hour Minute	33571	0xDF3	DF3	INT
Max Power Factor Second	33572	0xDF4	DF4	INT
Min Power Factor Year	33573	0xDF5	DF5	INT
Min Power Factor Month_Date	33574	0xDF6	DF6	INT
Min Power Factor Hour Minute	33575	0xDF7	DF7	INT
Min Power Factor Second	33576	0xDF8	DF8	INT

INPUT REGISTER

Parameter	Address	Hex Address	Hex Address	Data Type
TIME STAMP-PEAK DEMAND-POWER				
Max Active Power Year	33577	0xDF9	DF9	INT
Max Active Power Month_Date	33578	0xDFA	DFA	INT
Max Active Power Hour Minute	33579	0xDFB	DFB	INT
Max Active Power Second	33580	0xDFC	DFC	INT
Max Reactive Power Year	33581	0xDFD	DFD	INT
Max Reactive Power Month_Date	33582	0xDFE	DFE	INT
Max Reactive Power Hour Minute	33583	0xDFF	DFF	INT
Max Reactive Power Second	33584	0xE00	E00	INT
Max Apparent Power Year	33585	0xE01	E01	INT
Max Apparent Power Month_Date	33586	0xE02	E02	INT
Max Apparent Power Hour Minute	33587	0xE03	E03	INT
Max Apparent Power Second	33588	0xE04	E04	INT
TIME STAMP-PEAK DEMAND-CURRENT				
Max Current Year	33589	0xE05	E05	INT
Max Current Month_Date	33590	0xE06	E06	INT
Max Current Hour Minute	33591	0xE07	E07	INT
Max Current Second	33592	0xE08	E08	INT
TIME STAMP-MAX MIN RESET				
Year	33593	0xE09	E09	INT
Month_Date	33594	0xE0A	E0A	INT
Hours Minute	33595	0xE0B	E0B	INT
Seconds	33596	0xE0C	E0C	INT
TIME STAMP-RESET-PEAK DEMAND				
Year	33597	0xE0D	E0D	INT
Month_Date	33598	0xE0E	E0E	INT
Hours Minute	33599	0xE0F	E0F	INT
Seconds	33600	0xE10	E10	INT
TIME STAMP-RESET-CURRENT DEMAND				
Year	33601	0xE11	E11	INT
Month_Date	33602	0xE12	E12	INT
Hours Minute	33603	0xE13	E13	INT
Seconds	33604	0xE14	E14	INT
TIME STAMP-RESET-ENERGY MAINS				
Active Energy Year	33605	0xE15	E15	INT
Active Energy Month_Date	33606	0xE16	E16	INT
Active Energy Hours Minute	33607	0xE17	E17	INT
Active Energy Seconds	33608	0xE18	E18	INT
Reactive Energy Year	33609	0xE19	E19	INT
Reactive Energy Month_Date	33610	0xE1A	E1A	INT
Reactive Energy Hours Minute	33611	0xE1B	E1B	INT
Reactive Energy Seconds	33612	0xE1C	E1C	INT
Apparent Energy Year	33613	0xE1D	E1D	INT
Apparent Energy Month_Date	33614	0xE1E	E1E	INT
Apparent Energy Hours Minute	33615	0xE1F	E1F	INT
Apparent Energy Seconds	33616	0xE20	E20	INT

INPUT REGISTER

Parameter	Address	Hex Address	Hex Address	Data Type
TIME STAMP-RESET-DG MAINS				
Active Energy Year	33617	0xE21	E21	INT
Active Energy Month_Date	33618	0xE22	E22	INT
Active Energy Hours Minute	33619	0xE23	E23	INT
Active Energy Seconds	33620	0xE24	E24	INT
Reactive Energy Year	33621	0xE25	E25	INT
Reactive Energy Month_Date	33622	0xE26	E26	INT
Reactive Energy Hours Minute	33623	0xE27	E27	INT
Reactive Energy Seconds	33624	0xE28	E28	INT
Apparent Energy Year	33625	0xE29	E29	INT
Apparent Energy Month_Date	33626	0xE2A	E2A	INT
Apparent Energy Hours Minute	33627	0xE2B	E2B	INT
Apparent Energy Seconds	33628	0xE2C	E2C	INT
TIME STAMP-RESET-TARIFF ENERGY				
Year	33629	0xE2D	E2D	INT
Month_Date	33630	0xE2E	E2E	INT
Hours Minute	33631	0xE2F	E2F	INT
Seconds	33632	0xE30	E30	INT
TIME STAMP-RESET-RUN & ON HOUR				
Run Hour Year	33633	0xE31	E31	INT
Run Hour Month_Date	33634	0xE32	E32	INT
Run Hour Hour_Minute	33635	0xE33	E33	INT
Run Hour Second	33636	0xE34	E34	INT
On Hour Year	33637	0xE35	E35	INT
On Hour Month_Date	33638	0xE36	E36	INT
On Hour Hour_Minute	33639	0xE37	E37	INT
On Hour Second	33640	0xE38	E38	INT
TIME STAMP-RESET-AUXILLIARY INTERRUPT				
Year	33641	0xE39	E39	INT
Month_Date	33642	0xE3A	E3A	INT
Hours Minute	33643	0xE3B	E3B	INT
Seconds	33644	0xE3C	E3C	INT
TIME STAMP-RESET-ACTIVE LOAD				
Year	33645	0xE3D	E3D	INT
Month_Date	33646	0xE3E	E3E	INT
Hours Minute	33647	0xE3F	E3F	INT
Seconds	33648	0xE40	E40	INT
TIME STAMP- LAST POWER ON				
Year	33649	0xE41	E41	INT
Month_Date	33650	0xE42	E42	INT
Hours Minute	33651	0xE43	E43	INT
Seconds	33652	0xE44	E44	INT
TIME STAMP- UNBALANCED VOLTAGE LN				
Max Unbalanced Voltage LN Year	33653	0xE45	E45	INT
Max Unbalanced Voltage LN Month_Date	33654	0xE46	E46	INT
Max Unbalanced Voltage LN Hours Minute	33655	0xE47	E47	INT
Max Unbalanced Voltage LN Voltage Seconds	33656	0xE48	E48	INT
Min Unbalanced Voltage LN Year	33657	0xE49	E49	INT

INPUT REGISTER

Parameter	Address	Hex Address	Hex Address	Data Type
Min Unbalanced Voltage LN Month_Date	33658	0xE4A	E4A	INT
Min Unbalanced Voltage LN Hours Minute	33659	0xE4B	E4B	INT
Min Unbalanced Voltage LN Seconds	33660	0xE4C	E4C	INT
TIME STAMP- UNBALANCED VOLTAGE LL				
Max Unbalanced Voltage LL Year	33661	0xE4D	E4D	INT
Max Unbalanced Voltage LL Month_Date	33662	0xE4E	E4E	INT
Max Unbalanced Voltage LL Hours Minute	33663	0xE4F	E4F	INT
Max Unbalanced Voltage LL Seconds	33664	0xE50	E50	INT
Min Unbalanced Voltage LL Year	33665	0xE51	E51	INT
Min Unbalanced Voltage LL Month_Date	33666	0xE52	E52	INT
Min Unbalanced Voltage LL Hour_Minute	33667	0xE53	E53	INT
Min Unbalanced Voltage LL Seconds	33668	0xE54	E54	INT
TIME STAMP- UNBALANCED CURRENT				
Max Unbalanced Current Year	33669	0xE55	E55	INT
Max Unbalanced Current Month_Date	33670	0xE56	E56	INT
Max Unbalanced Current Hours Minute	33671	0xE57	E57	INT
Max Unbalanced Current Seconds	33672	0xE58	E58	INT
Min Unbalanced Current Year	33673	0xE59	E59	INT
Min Unbalanced Current Month_Date	33674	0xE5A	E5A	INT
Min Unbalanced Current Hours Minute	33675	0xE5B	E5B	INT
Min Unbalanced Current Seconds	33676	0xE5C	E5C	INT
TIME STAMP- DISTORTION PF				
Max Distortion PF Year	33677	0xE5D	E5D	INT
Max Distortion PF Month_Date	33678	0xE5E	E5E	INT
Max Distortion PF Hours Minute	33679	0xE5F	E5F	INT
Max Distortion PF Current Seconds	33680	0xE60	E60	INT
Min Distortion PF Year	33681	0xE61	E61	INT
Min Distortion PF Current Month_Date	33682	0xE62	E62	INT
Min Distortion PF Hours Minute	33683	0xE63	E63	INT
Min Distortion PF Seconds	33684	0xE64	E64	INT
TIME STAMP-DISPLACEMENT PF				
Max Displacement PF Year	33685	0xE65	E65	INT
Max Displacement PF Month_Date	33686	0xE66	E66	INT
Max Displacement PF Hours Minute	33687	0xE67	E67	INT
Max Displacement PF Current Seconds	33688	0xE68	E68	INT
Min Displacement PF Year	33689	0xE69	E69	INT
Min Displacement PF Month_Date	33690	0xE6A	E6A	INT
Min Displacement PF Hours_Minute	33691	0xE6B	E6B	INT
Min Displacement PF Seconds	33692	0xE6C	E6C	INT
TIME STAMP-THD LN				
Max THD LN Year	33693	0xE6D	E6D	INT
Max THD LN Month_Date	33694	0xE6E	E6E	INT
Max THD LN Hours Minute	33695	0xE6F	E6F	INT
Max THD LN Seconds	33696	0xE70	E70	INT
Min THD LN Year	33697	0xE71	E71	INT
Min THD LN Month_Date	33698	0xE72	E72	INT
Min THD LN Hours Minute	33699	0xE73	E73	INT
Min THD LN Seconds	33700	0xE74	E74	INT

INPUT REGISTER

Parameter	Address	Hex Address	Hex Address	Data Type
TIME STAMP-THD LL				
Max THD LL Year	33701	0xE75	E75	INT
Max THD LL Month_Date	33702	0xE76	E76	INT
Max THD L Hours Minute	33703	0xE77	E77	INT
Max THD LL Seconds	33704	0xE78	E78	INT
Min THD LL Year	33705	0xE79	E79	INT
Min THD LL Month_Date	33706	0xE7A	E7A	INT
Min THD LL Hours Minute	33707	0xE7B	E7B	INT
Min THD LL Seconds	33708	0xE7C	E7C	INT
TIME STAMP-THD CURRENT				
Max THD Current Year	33709	0xE7D	E7D	INT
Max THD Current Month_Date	33710	0xE7E	E7E	INT
Max THD Current Hours Minute	33711	0xE7F	E7F	INT
Max THD Current Seconds	33712	0xE80	E80	INT
Min THD Current Year	33713	0xE81	E81	INT
Min THD Current Month_Date	33714	0xE82	E82	INT
Min THD Current Hours Minute	33715	0xE83	E83	INT
Min THD Current Seconds	33716	0xE84	E84	INT
TIME STAMP thd LN				
Max thd LN Year	33717	0xE85	E85	INT
Max thd LN Month_Date	33718	0xE86	E86	INT
Max thd LN Hours Minute	33719	0xE87	E87	INT
Max thd LN Seconds	33720	0xE88	E88	INT
Min thd LN Year	33721	0xE89	E89	INT
Min thd LN Month_Date	33722	0xE8A	E8A	INT
Min thd LN Hours Minute	33723	0xE8B	E8B	INT
Min thd LN Seconds	33724	0xE8C	E8C	INT
TIME STAMP thd LL				
Max thd LL Year	33725	0xE8D	E8D	INT
Max thd LL Month_Date	33726	0xE8E	E8E	INT
Max thd LL Hours Minute	33727	0xE8F	E8F	INT
Max thd LL Seconds	33728	0xE90	E90	INT
Min thd LL Year	33729	0xE91	E91	INT
Min thd LL Month_Date	33730	0xE92	E92	INT
Min thd LL Hours Minute	33731	0xE93	E93	INT
Min thd LL Seconds	33732	0xE94	E94	INT
TIME STAMP thd CURRENT				
Max thd Current Year	33733	0xE95	E95	INT
Max thd Current Month_Date	33734	0xE96	E96	INT
Max thd Current Hours Minute	33735	0xE97	E97	INT
Max thd Current Seconds	33736	0xE98	E98	INT
Min thd Current Year	33737	0xE99	E99	INT
Min thd Current Month_Date	33738	0xE9A	E9A	INT
Min thd Current Hours Minute	33739	0xE9B	E9B	INT
Min thd Current Seconds	33740	0xE9C	E9C	INT

INPUT REGISTER

Parameter	Address	Hex Address	Hex Address	Data Type
External DI/DO				
Status				
DI1	34020	0xFB4	FB4	INT
DI2	34021	0xFB5	FB5	INT
DI3	34022	0xFB6	FB6	INT
DI4	34023	0xFB7	FB7	INT
DI5	34024	0xFB8	FB8	INT
DI6	34025	0xFB9	FB9	INT
DI7	34026	0xFBA	FBA	INT
DI8	34027	0xFBB	FBB	INT
RO1	34028	0xFBC	FBC	INT
RO2	34029	0xFBD	FBD	INT
RO3	34030	0xFBE	FBE	INT
RO4	34031	0xFBF	FBF	INT
Counter				
DI1	34032	0xFC0	FC0	INT
DI2	34034	0xFC2	FC2	INT
DI3	34036	0xFC4	FC4	INT
DI4	34038	0xFC6	FC6	INT
DI5	34040	0xFC8	FC8	INT
DI6	34042	0xFCA	FCA	INT
DI7	34044	0xFCC	FCC	INT
DI8	34046	0xFCE	FCE	INT
RO1	34048	0xFD0	FD0	INT
RO2	34050	0xFD2	FD2	INT
RO3	34052	0xFD4	FD4	INT
RO4	34054	0xFD6	FD6	INT
Timer				
DI1	34056	0xFD8	FD8	INT
DI2	34058	0xFDA	FDA	INT
DI3	34060	0xFDC	FDC	INT
DI4	34062	0xFDE	FDE	INT
DI5	34064	0xFE0	FE0	INT
DI6	34066	0xFE2	FE2	INT
DI7	34068	0xFE4	FE4	INT
DI8	34070	0xFE6	FE6	INT
RO1	34072	0xFE8	FE8	INT
RO2	34074	0xFE9	FEA	INT
RO3	34076	0xFEC	FEC	INT
RO4	34078	0xFEE	FEE	INT
ALARMS-STATUS				
Over Current Phase	34400	0x1130	1130	INT
Under Current Phase	34401	0x1131	1131	INT
Over Current Neutral	34402	0x1132	1132	INT
Over Current Ground	34403	0x1133	1133	INT
Over Voltage L-L	34404	0x1134	1134	INT
Under Voltage L-L	34405	0x1135	1135	INT
Over Voltage L-N	34406	0x1136	1136	INT
Under Voltage L-N	34407	0x1137	1137	INT

INPUT REGISTER

Parameter	Address	Hex Address	Hex Address	Data Type
Over Apparent Power	34456	0x1168	1168	INT
Over Demand Active Power Present	34457	0x1169	1169	INT
Over Demand Active Power Last	34458	0x116A	116A	INT
Over Demand Active Power Predicted	34459	0x116B	116B	INT
Over Demand Reactive Power Present	34460	0x116C	116C	INT
Over Demand Reactive Power Last	34461	0x116D	116D	INT
Over Demand Reactive Power Predicted	34462	0x116E	116E	INT
Over Demand Apparent Power Present	34463	0x116F	116F	INT
Over Demand Apparent Power Last	34464	0x1170	1170	INT
Over Demand Apparent Power Predicted	34465	0x1171	1171	INT
Over Frequency	34466	0x1172	1172	INT
Under Frequency	34467	0x1173	1173	INT
Over RTD	34468	0x1174	1174	INT
Under RTD	34469	0x1175	1175	INT
PF True	34470	0x1176	1176	INT
PF Displacement	34471	0x1177	1177	INT
Meter Power Up	34472	0x1178	1178	INT
Meter Reset	34473	0x1179	1179	INT
Meter Diagnostic	34474	0x117A	117A	INT
Phase Reversal	34475	0x117B	117B	INT
Digital Alarm DI 2	34477	0x117D	117D	INT
External Digital Alarm DI 1	34478	0x117E	117E	INT
External Digital Alarm DI 2	34479	0x117F	117F	INT
External Digital Alarm DI 3	34480	0x1180	1180	INT
External Digital Alarm DI 4	34481	0x1181	1181	INT
External Digital Alarm DI 5	34482	0x1182	1182	INT
External Digital Alarm DI 6	34483	0x1183	1183	INT
External Digital Alarm DI 7	34484	0x1184	1184	INT
External Digital Alarm DI 8	34485	0x1185	1185	INT
PRIORITY ALARMS ACKNOWLEDGEMENT STATUS				
Over Current Phase	34486	0x1186	1186	INT
Under Current Phase	34487	0x1187	1187	INT
Over Current Neutral	34488	0x1188	1188	INT
Over Current Ground	34489	0x1189	1189	INT
Over Voltage L-L	34490	0x118A	118A	INT
Under Voltage L-L	34491	0x118B	118B	INT
Over Voltage L-N	34492	0x118C	118C	INT
Under Voltage L-N	34493	0x118D	118D	INT
Over Voltage Unbalance	34494	0x118E	118E	INT
Over Voltage THD	34495	0x118F	118F	INT
Phase Loss	34496	0x1190	1190	INT
Over Active Power	34497	0x1191	1191	INT
Over Reactive Power	34498	0x1192	1192	INT
Over Apparent Power	34499	0x1193	1193	INT
Over Demand Active Power Present	34500	0x1194	1194	INT
Over Demand Active Power Last	34501	0x1195	1195	INT
Over Demand Active Power Predicted	34502	0x1196	1196	INT
Over Demand Reactive Power Present	34503	0x1197	1197	INT
Over Demand Reactive Power Last	34504	0x1198	1198	INT
Over Frequency	34509	0x119D	119D	INT

INPUT REGISTER

Parameter	Address	Hex Address	Hex Address	Data Type
Over Voltage Unbalance	34408	0x1138	1138	INT
Over Voltage THD	34409	0x1139	1139	INT
Phase Loss	34410	0x113A	113A	INT
Over Active Power	34411	0x113B	113B	INT
Over Reactive Power	34412	0x113C	113C	INT
Over Apparent Power	34413	0x113D	113D	INT
Over Demand Active Power Present	34414	0x113E	113E	INT
Over Demand Active Power Last	34415	0x113F	113F	INT
Over Demand Active Power Predicted	34416	0x1140	1140	INT
Over Demand Reactive Power Present	34417	0x1141	1141	INT
Over Demand Reactive Power Last	34418	0x1142	1142	INT
Over Demand Reactive Power Predicted	34419	0x1143	1143	INT
Over Demand Apparent Power Present	34420	0x1144	1144	INT
Over Demand Apparent Power Last	34421	0x1145	1145	INT
Over Demand Apparent Power Predicted	34422	0x1146	1146	INT
Over Frequency	34423	0x1147	1147	INT
Under Frequency	34424	0x1148	1148	INT
Over RTD	34425	0x1149	1149	INT
Under RTD	34426	0x114A	114A	INT
PF True	34427	0x114B	114B	INT
PF Displacement	34428	0x114C	114C	INT
Meter Power Up	34429	0x114D	114D	INT
Meter Reset	34430	0x114E	114E	INT
Meter Diagnostic	34431	0x114F	114F	INT
Phase Reversal	34432	0x1150	1150	INT
Digital Alarm DI 2	34434	0x1152	1152	INT
External Digital Alarm DI 1	34435	0x1153	1153	INT
External Digital Alarm DI 2	34436	0x1154	1154	INT
External Digital Alarm DI 3	34437	0x1155	1155	INT
External Digital Alarm DI 4	34438	0x1156	1156	INT
External Digital Alarm DI 5	34439	0x1157	1157	INT
External Digital Alarm DI 6	34440	0x1158	1158	INT
External Digital Alarm DI 7	34441	0x1159	1159	INT
External Digital Alarm DI 8	34442	0x115A	115A	INT
ALARMS-COUNTER				
Over Current Phase	34443	0x115B	115B	INT
Under Current Phase	34444	0x115C	115C	INT
Over Current Neutral	34445	0x115D	115D	INT
Over Current Ground	34446	0x115E	115E	INT
Over Voltage L-L	34447	0x115F	115F	INT
Under Voltage L-L	34448	0x1160	1160	INT
Over Voltage L-N	34449	0x1161	1161	INT
Under Voltage L-N	34450	0x1162	1162	INT
Over Voltage Unbalance	34451	0x1163	1163	INT
Over Voltage THD	34452	0x1164	1164	INT
Phase Loss	34453	0x1165	1165	INT
Over Active Power	34454	0x1166	1166	INT
Over Reactive Power	34455	0x1167	1167	INT

INPUT REGISTER

Parameter	Address	Hex Address	Hex Address	Data Type
Under Frequency	34510	0x119E	119E	INT
Over RTD	34511	0x119F	119F	INT
Under RTD	34512	0x11A0	11A0	INT
PF True	34513	0x11A1	11A1	INT
PF Displacement	34514	0x11A2	11A2	INT
Meter Power Up	34515	0x11A3	11A3	INT
Meter Reset	34516	0x11A4	11A4	INT
Meter Diagnostic	34517	0x11A5	11A5	INT
Phase Reversal	34518	0x11A6	11A6	INT
Internal Alarm S2	34520	0x11A8	11A8	INT
External Digital Alarm DI 1	34521	0x11A9	11A9	INT
External Digital Alarm DI 2	34522	0x11AA	11AA	INT
External Digital Alarm DI 3	34523	0x11AB	11AB	INT
External Digital Alarm DI 4	34524	0x11AC	11AC	INT
External Digital Alarm DI 5	34525	0x11AD	11AD	INT
External Digital Alarm DI 6	34526	0x11AE	11AE	INT
External Digital Alarm DI 7	34527	0x11AF	11AF	INT
External Digital Alarm DI 8	34528	0x11B0	11B0	INT

Holding Register

Sr. No.	Parameter	Address	Modbus Addr.	Range / Selection	Factory Settings	Min	Max	Length (Reg.)	Data Type	R/W
1	NEW PASSWORD	0	40000	0000 to 9998	1000	0	9998	1	INT	R/W
2	NETWORK SELECTION	1	40001	0- 3P4W 1- 3P3W 2 – 1P2W 3 – 2P2W	0	0	3	1	INT	R/W
3	CT TERMINAL SELECT	2	40002	0 - CT1 1 - CT2 2 - CT3 3 - CT12 4 - CT23 5 - CT31 6 – CT123 7 – NONE	7	0	7	1	INT	R/W
4	CT SECONDARY	3	40003	1 or 5	5	1 or 5		1	INT	R/W
5	CT PRIMARY	4	40004	1 or 5 to 32767	5	1 or 5	32767	1	INT	R/W
6	VT CONNECT	5	40005	0 – NO VT 1 – 1VT 2 – 2VT 3 – 3VT	0	0	3	1	INT	R/W
7	PT SECONDARY	6	40006	0 - 100 1 - 110 2 - 115 3 – 120	100	0	3	1	INT	R/W
8	PT PRIMARY	7	40007	100 to 1000000	100	100	1000000	2	INT	R/W
9	SYSTEM FREQUENCY SELECT	9	40009	0 – 50 1 – 60	50	0	1	1	INT	R/W
10	SUPPRESSION CURRENT (mA)	10	40010	5 to 99 mA	11 mA	5mA	99mA	1	INT	R/W
11	CT SEQUENCE	11	40011	0 - CT123 1 - CT321 2 - CT312 3 - CT231 4 - CT213 5 - CT132	0	0	5	1	INT	R/W
12	CT POLARITY	12	40012	0 - CT1 1 - CT2 2 - CT3 3- CT12 4- CT23 5- CT31 6– CT123 7- NONE	7	0	7	1	INT	R/W
13	NUMBER OF POLE SELECT (EVEN NUMBER)	13	40013	02 to 98	2	2	98	1	INT	R/W
14	LOAD I TIMER SET POINT	14	40014	5 to 50000	Minimum Suppression Current	5	50000	2	INT	R/W
15	PF CONVENTION SELECTION	49	40049	0 – IEC 1 – IEEE	0	1	60	1	INT	R/W
DEMAND PARAMETERS										
16	MAX DEMAND METHOD	16	40016	0 - SLIDING 1 - FIXED 2 – FIXE-SLIDING 3 – Thermal	0	0	3	1	INT	R/W

Holding Register

Sr. No.	Parameter	Address	Modbus Addr.	Range / Selection	Factory Settings	Min	Max	Length (Reg.)	Data Type	R/W
16.1	MAX DEMAND DURATION (MINUTES)	17	40017	1 to 60	15	1	60	1	INT	R/W
16.2	MAX DEMAND LENGTH (MINUTES)	18	40018	1 to 60	1	1	60	1	INT	R/W
16.3	DEMAND SYNC TYPE	19	40019	0 - NONE 1 - COMMAND 2 - CLOCK-SYNC 3-INPUT	0	0	3	1	INT	R/W
16.4	MAX DEMAND CLOCK SYNC HOUR	20	40020	0 to 23	0	0	23	1	INT	R/W
16.5	MAX DEMAND CLOCK SYNC MINUTE	21	40021	0 to 59	0	0	59	1	INT	R/W
16.6	MAX DEMAND CLOCK SYNC SECOND	22	40022	0 to 59	0	0	59	1	INT	R/W
16.7	DO SELECTION	23	40023	0 - NONE 1 - DO1 2 - DO2	0	0	2	1	INT	R/W
16.8	DI SELECTION	24	40024	0 - NONE 1 - DI2	0	0	1	1	INT	R/W
17	CURRENT DEMAND METHOD	25	40025	0 - SLIDING 1 - FIXED 2 - FIXE-SLIDING 3 - Thermal	0	0	3	1	INT	R/W
17.1	CURRENT DEMAND DURATION (MINUTES)	26	40026	1 to 60	15	1	60	1	INT	R/W
17.2	CURRENT DEMAND LENGTH (MINUTES)	27	40027	1 to 60	1	1	60	1	INT	R/W
17.3	CURRENT DEMAND SYNC TYPE	28	40028	0 - NONE 1 - COMMAND 2 - CLOCK-SYNC 3-INPUT	0	0	3	1	INT	R/W
17.4	CURRENT DEMAND CLOCK SYNC HOURS	29	40029	0 to 23	0	0	23	1	INT	R/W
17.5	CURRENT DEMAND CLOCK SYNC MINUTES	30	40030	0 to 59	0	0	59	1	INT	R/W
17.6	CURRENT DEMAND CLOCK SYNC SECONDS	31	40031	0 to 59	0	0	59	1	INT	R/W
17.7	DO SELECTION	32	40032	0 - NONE 1 - DO1 2 - DO2	0	0	2	1	INT	R/W
17.8	DI SELECTION	33	40033	0 - NONE 1 - DI 2	0	0	1	1	INT	R/W

Holding Register

Sr. No.	Parameter	Address	Modbus Addr.	Range / Selection	Factory Settings	Min	Max	Length (Reg.)	Data Type	R/W
ENERGY PARAMETERS										
18.1	POP 1 ENERGY	34	40034	0 – NONE 1 - IMPORT-KWH 2 - EXPORT KWH 3 - TOTAL KWH 4 - IMPORT KVARH 5 - EXPORT KVARH 6 - TOTAL KVARH 7 - IMPORT KVAH 8 - EXPORT KVAH 9 - TOTAL KVAH	0	0	9	1	INT	R/W
18.2	POP 1 PULSE WEIGHT	35	40035	1 to 9999999	1000	1	9999999	2	INT	R/W
18.3	POP 2 ENERGY	37	40037	0 – NONE 1 - IMPORT-KWH 2 - EXPORT KWH 3 - TOTAL KWH 4 - IMPORT KVARH 5 - EXPORT KVARH 6 - TOTAL KVARH 7 - IMPORT KVAH 8 - EXPORT KVAH 9 - TOTAL KVAH	0	0	9	1	INT	R/W
18.4	POP 2 PULSE WEIGHT	38	40038	1 to 9999999	1000	1	9999999	2	INT	R/W
18.5	LED CTRL MODE	40	40040	0 – NONE 1 – ENERGY 2 – ALARM	0	0	2	1	INT	R/W
18.6	LED ENERGY	41	40041	0 – NONE 1 - IMPORT-KWH 2 - EXPORT KWH 3 - TOTAL KWH 4 - IMPORT KVARH 5 - EXPORT KVARH 6 - TOTAL KVARH 7 - IMPORT KVAH 8 - EXPORT KVAH 9 - TOTAL KVAH	0	0	9	1	INT	R/W
18.7	LED PULSE WEIGHT	42	40042	1 to 9999999	1000	1	9999999	2	INT	R/W
COMMUNICATION PARAMETERS										
19.1	SLAVE ID	44	40044	1 to 247	1	1	247	1	INT	R/W

Holding Register

Sr. No.	Parameter	Address	Modbus Addr.	Range / Selection	Factory Settings	Min	Max	Length (Reg.)	Data Type	R/W
19.2	BAUD RATE	45	40045	0 - 9600 1 - 19200 2 - 38400 3 - 57600 4 - 115200	0	0	4	1	INT	R/W
19.3	PARITY	46	40046	0 - NONE 1 - ODD 2 - EVEN	None	0	2	1	INT	R/W
19.4	STOP BIT	47	40047	0 - 1 1 - 2	0	0	1	1	INT	R/W
19.5	ENDIANNE SS	48	40048	0 - LSRF 1 - MSRF	0	0	1	1	INT	R/W
HMI & CLOCK PARAMETERS										
20.1	BACKLIGHT OFF TIMER (SECS)	50	40050	0 to 7200	0	0	7200	1	INT	R/W
20.2	RTC SET YEAR	51	40051	24 to 90	-	24	90	1	INT	R/W
20.3	RTC SET MONTH	52	40052	1 to 12	-	1	12	1	INT	R/W
20.4	RTC SET DATE	53	40053	1 to 31	-	1	31	1	INT	R/W
20.5	RTC SET HOUR	54	40054	0 to 23	0	0	23	1	INT	R/W
20.6	RTC SET MINUTE	55	40055	0 to 59	0	0	59	1	INT	R/W
20.7	RTC SET SECOND	56	40056	0 to 59	0	0	59	1	INT	R/W
20.8	RTC SET DAY OF WEEK	57	40057	1-SUNDAY 2-MONDAY 3-TUESDAY 4-WEDNESDAY 5-THURSDAY 6-FRIDAY 7-SATURDAY				1	INT	R/W
INTERNAL(2 DI : 2 DO) IO PARAMETERS										
21.1	DI 2 CONTROL MODE	59	40059	0 - NONE 1 - NORMAL 2 - DEMAND	0	0	2	1	INT	R/W
21.2	DI 2 DEBOUNCE TIME (ms)	60	40060	1 to 9999	0	0	9999	1	INT	R/W
21.3	DO 1 CONTROL MODE	61	40061	0 - NONE 1 - ENERGY PULSES 2 - EXTERNAL 3 - DEMAND 4 - ALARM	0	0	4	1	INT	R/W
21.4	DO 1 BEHAVIOUR MODE	62	40062	0 - NORMAL 1 - TIMED 2 - COIL HOLD	0	0	2	1	INT	R/W
21.5	DO 1 ON TIME (secs)	63	40063	1 to 9999	1	1	9999	1	INT	R/W
21.6	DO 1 INTERNAL COMMAND	1064	41064	0 - LOW 1 - HIGH	0	0	1	1	INT	R/W

Holding Register

Sr. No.	Parameter	Address	Modbus Addr.	Range / Selection	Factory Settings	Min	Max	Length (Reg.)	Data Type	R/W
21.7	DO 2 CONTROL MODE	64	40064	0 – NONE 1 – ENERGY PULSES 2 – EXTERNAL 3 – DEMAND 4 – ALARM	0	0	4	1	INT	R/W
21.8	DO 2 BEHAVIOUR MODE	65	40065	0 – NORMAL 1 – TIMED 2 – COIL HOLD	0	0	2	1	INT	R/W
21.9	DO 2 ON TIME (secs)	66	40066	1 to 9999	1	1	9999	1	INT	R/W
21.1	DO 2 INTERNAL COMMAND	1065	41065	0 – LOW 1 – HIGH	0	0	1	1	INT	R/W
22	FACTORY DEFAULT	67	40067	0 – NO 1 – YES	0	0	1	1	INT	R/W
RESET PARAMETERS										
23.1	RESET ENERGY	68	40068	0 – NO 1 – YES	0	0	1	1	INT	R/W
23.2	RESET ENERGY PASSWORD	69	40069	0 – NO 1 – YES	0	0	1	1	INT	R/W
23.3	RESET ACTIVE ENERGY	70	40070	0 – NONE 1 – MAINS 2 – DG 3 – BOTH	0	0	3	1	INT	R/W
23.4	RESET REACTIVE ENERGY	71	40071	0 – NONE 1 – MAINS 2 – DG 3 – BOTH	0	0	3	1	INT	R/W
23.5	RESET APPARENT ENERGY	72	40072	0 – NONE 1 – MAINS 2 – DG 3 – BOTH	0	0	3	1	INT	R/W
23.6	RESET MAX DEMAND	73	40073	0 – NONE 1 – POWER DMD 2 – CURRENT DMD 3 – BOTH	0	0	3	1	INT	R/W
23.7	RESET RUN HOUR	74	40074	0 – NO 1 – YES	0	0	1	1	INT	R/W
23.8	RESET ON HOUR	75	40075	0 – NO 1 – YES	0	0	1	1	INT	R/W
23.9	RESET ACTIVE LOAD TIMER	76	40076	0 – NO 1 – YES	0	0	1	1	INT	R/W
23.1	RESET AUXILLARY INTERRUPT	77	40077	0 – NO 1 – YES	0	0	1	1	INT	R/W
23.11	RESET MIN AND MAX VALUES	78	40078	0 – NO 1 – YES	0	0	1	1	INT	R/W
23.12	RESET ALARM HISTORY AND ALARM COUNTER	79	40079	0 – NO 1 – YES	0	0	1	1	INT	R/W
23.13	RESET IO COUNTER & TIMERS	80	40080	0 – NO 1 – YES	0	0	1	1	INT	R/W

Holding Register

Sr. No.	Parameter	Address	Modbus Addr.	Range / Selection	Factory Settings	Min	Max	Length (Reg.)	Data Type	R/W
23.14	RESET ALARM HISTORY	81	40081	0 – NO 1 – YES	0	0	1	1	INT	R/W
23.15	RESET ALARM COUNTER	82	40082	0 – NO 1 – YES	0	0	1	1	INT	R/W
23.16	RESET DI 1 TIMER	83	40083	0 – NO 1 – YES	0	0	1	1	INT	R/W
23.17	RESET DI 1 COUNTER	84	40084	0 – NO 1 – YES	0	0	1	1	INT	R/W
23.18	RESET DI 2 TIMER	85	40085	0 – NO 1 – YES	0	0	1	1	INT	R/W
23.19	RESET DI 2 COUNTER	86	40086	0 – NO 1 – YES	0	0	1	1	INT	R/W
23.2	RESET DO 1 TIMER	87	40087	0 – NO 1 – YES	0	0	1	1	INT	R/W
23.21	RESET DO 1 COUNTER	88	40088	0 – NO 1 – YES	0	0	1	1	INT	R/W
23.22	RESET DO 2 TIMER	89	40089	0 – NO 1 – YES	0	0	1	1	INT	R/W
23.23	RESET DO 2 COUNTER	90	40090	0 – NO 1 – YES	0	0	1	1	INT	R/W
23.24	RESET EXTERNAL DI 1 TIMER	91	40091	0 – NO 1 – YES	0	0	1	1	INT	R/W
23.25	RESET EXTERNAL DI 1 COUNTER	92	40092	0 – NO 1 – YES	0	0	1	1	INT	R/W
23.25	RESET EXTERNAL DI 2 TIMER	93	40093	0 – NO 1 – YES	0	0	1	1	INT	R/W
23.26	RESET EXTERNAL DI 2 COUNTER	94	40094	0 – NO 1 – YES	0	0	1	1	INT	R/W
23.27	RESET EXTERNAL DI 3 TIMER	95	40095	0 – NO 1 – YES	0	0	1	1	INT	R/W
23.28	RESET EXTERNAL DI 3 COUNTER	96	40096	0 – NO 1 – YES	0	0	1	1	INT	R/W
23.29	RESET EXTERNAL DI 4 TIMER	97	40097	0 – NO 1 – YES	0	0	1	1	INT	R/W
23.3	RESET EXTERNAL DI 4 COUNTER	98	40098	0 – NO 1 – YES	0	0	1	1	INT	R/W
23.31	RESET EXTERNAL DI 5 TIMER	99	40099	0 – NO 1 – YES	0	0	1	1	INT	R/W
23.32	RESET EXTERNAL DI 5 COUNTER	100	40100	0 – NO 1 – YES	0	0	1	1	INT	R/W
23.33	RESET EXTERNAL DI 6 TIMER	101	40101	0 – NO 1 – YES	0	0	1	1	INT	R/W
23.34	RESET EXTERNAL DI 6 COUNTER	102	40102	0 – NO 1 – YES	0	0	1	1	INT	R/W
23.35	RESET EXTERNAL DI 7 TIMER	103	40103	0 – NO 1 – YES	0	0	1	1	INT	R/W

Holding Register

Sr. No.	Parameter	Address	Modbus Addr.	Range / Selection	Factory Settings	Min	Max	Length (Reg.)	Data Type	R/W
23.36	RESET EXTERNAL DI 7 COUNTER	104	40104	0 – NO 1 – YES	0	0	1	1	INT	R/W
23.37	RESET EXTERNAL DI 8 TIMER	105	40105	0 – NO 1 – YES	0	0	1	1	INT	R/W
23.38	RESET EXTERNAL DI 8 COUNTER	106	40106	0 – NO 1 – YES	0	0	1	1	INT	R/W
23.39	RESET EXTERNAL RO 1 TIMER	107	40107	0 – NO 1 – YES	0	0	1	1	INT	R/W
23.4	RESET EXTERNAL RO 1 COUNTER	108	40108	0 – NO 1 – YES	0	0	1	1	INT	R/W
23.41	RESET EXTERNAL RO 2 TIMER	109	40109	0 – NO 1 – YES	0	0	1	1	INT	R/W
23.42	RESET EXTERNAL RO 2 COUNTER	110	40110	0 – NO 1 – YES	0	0	1	1	INT	R/W
23.43	RESET EXTERNAL RO 3 TIMER	111	40111	0 – NO 1 – YES	0	0	1	1	INT	R/W
23.44	RESET EXTERNAL RO 3 COUNTER	112	40112	0 – NO 1 – YES	0	0	1	1	INT	R/W
23.45	RESET EXTERNAL RO 4 TIMER	113	40113	0 – NO 1 – YES	0	0	1	1	INT	R/W
23.46	RESET EXTERNAL RO 4 COUNTER	114	40114	0 – NO 1 – YES	0	0	1	1	INT	R/W
23.47	RESET TARIFF	115	40115	0 – NO 1 – YES	0	0	1	1	INT	R/W
23.48	RESET METER PARAMETER	116	40116	0 – NO 1 – YES	0	0	1	1	INT	R/W
24	PEAK CURRENT FOR TDD	117	40117	0 to 294903	0	0	294903	2	INT	R/W
TARIFF										
25	TARIFF MODE	121	40121	0 – NO 1 – TARIFF DIGITAL INPUTS (DI) 2 – TARIFF TIME OF USE 3 – TARIFF COMMAND	0	0	3	1	INT	R/W
26	NO OF DIGITAL INPUTS (DI)	122	40122	NONE,2,3,4	0	0	4	1	INT	R/W

Holding Register

Sr. No.	Parameter	Address	Modbus Addr.	Range / Selection	Factory Settings	Min	Max	Length (Reg.)	Data Type	R/W
27	TARIFF SELECTION	123	40123	0 – NO TARIFF 1 – TARIFF 1 2 – TARIFF 2 3 – TARIFF 3 4 – TARIFF 4	0	0	4	1	INT	R/W
TARIFF 1-TIME SLOT 1										
28.1	ENABLE	124	40124	0 – NO 1 – YES	0	0	1	1	INT	R/W
28.2	DAYTYPE	125	40125	0 – EVERYDAY 1 – SUNDAY 2 – MONDAY 3 – TUESDAY 4 – WEDNESD AY 5 – THURSDAY 6 – FRIDAY 7 – SATURDAY 8 – WEEKDAYS 9 – WEEKEND	0	0	9	1	INT	R/W
28.3	START HOUR	126	40126	0 to 23	0	0	23	1	INT	R/W
	START MINUTE	127	40127	0 to 59	0	0	59	1	INT	R/W
	START SECOND	128	40128	0 to 59	0	0	59	1	INT	R/W
28.4	START DATE	129	40126	1 to 31	-	1	31	1	INT	R/W
	START MONTH	130	40127	1 to 12	-	1	12	1	INT	R/W
	START YEAR	131	40128	24 to 90	-	24	90	1	INT	R/W
28.5	END HOUR	132	40132	0 to 23	0	0	23	1	INT	R/W
	END MINUTE	133	40133	0 to 59	0	0	59	1	INT	R/W
	END SECOND	134	40134	0 to 59	0	0	59	1	INT	R/W
28.6	END DATE	135	40135	1 to 31	-	1	31	1	INT	R/W
	END MONTH	136	40136	1 to 12	-	1	12	1	INT	R/W
	END YEAR	137	40137	24 to 90	-	24	90	1	INT	R/W
28.7	YEAR DEPENDEN CY	353	40353	0 – NO 1 – YES	1	0	1	1	INT	R/W
TARIFF 1-TIME SLOT 2										
29.1	ENABLE	138	40138	0 – NO 1 – YES	0	0	1	1	INT	R/W

Holding Register

Sr. No.	Parameter	Address	Modbus Addr.	Range / Selection	Factory Settings	Min	Max	Length (Reg.)	Data Type	R/W
29.2	DAYTYPE	139	40139	0 – EVERYDAY 1 – SUNDAY 2 – MONDAY 3 – TUESDAY 4 – WEDNESDAY 5 – THURSDAY 6 – FRIDAY 7 – SATURDAY 8 – WEEKDAYS 9 – WEEKEND	0	0	9	1	INT	R/W
29.3	START HOUR	140	40140	0 to 23	0	0	23	1	INT	R/W
	START MINUTE	141	40141	0 to 59	0	0	59	1	INT	R/W
	START SECOND	142	40142	0 to 59	0	0	59	1	INT	R/W
29.4	START DATE	143	40143	1 to 31	-	1	31	1	INT	R/W
	START MONTH	144	40144	1 to 12	-	1	12	1	INT	R/W
	START YEAR	145	40145	24 to 90	-	24	90	1	INT	R/W
29.5	END HOUR	146	40146	0 to 23	0	0	23	1	INT	R/W
	END MINUTE	147	40147	0 to 59	0	0	59	1	INT	R/W
	END SECOND	148	40148	0 to 59	0	0	59	1	INT	R/W
29.6	END DATE	149	40149	1 to 31	-	1	31	1	INT	R/W
	END MONTH	150	40150	1 to 12	-	1	12	1	INT	R/W
	END YEAR	151	40151	24 to 90	-	24	90	1	INT	R/W
29.7	YEAR DEPENDENCY	354	40354	0 – NO 1 – YES	1	0	1	1	INT	R/W
TARIFF 1-TIME SLOT 3										
30.1	ENABLE	152	40152	0 – NO 1 – YES	0	0		1	INT	R/W
30.2	DAYTYPE	153	40153	0 – EVERYDAY 1 – SUNDAY 2 – MONDAY 3 – TUESDAY 4 – WEDNESDAY 5 – THURSDAY 6 – FRIDAY 7 – SATURDAY 8 – WEEKDAYS 9 – WEEKEND	0	0	9	1	INT	R/W
30.3	START HOUR	154	40154	0 to 23	0	0	23	1	INT	R/W
	START MINUTE	155	40155	0 to 59	0	0	59	1	INT	R/W

Holding Register

Sr. No.	Parameter	Address	Modbus Addr.	Range / Selection	Factory Settings	Min	Max	Length (Reg.)	Data Type	R/W
	START SECOND	156	40156	0 to 59	0	0	59	1	INT	R/W
30.4	START DATE	157	40157	1 to 31	-	1	31	1	INT	R/W
	START MONTH	158	40158	1 to 12	-	1	12	1	INT	R/W
	START YEAR	159	40159	24 to 90	-	24	90	1	INT	R/W
30.5	END HOUR	160	40160	0 to 23	0	0	23	1	INT	R/W
	END MINUTE	161	40161	0 to 59	0	0	59	1	INT	R/W
	END SECOND	162	40162	0 to 59	0	0	59	1	INT	R/W
30.6	END DATE	163	40163	1 to 31	-	1	31	1	INT	R/W
	END MONTH	164	40164	1 to 12	-	1	12	1	INT	R/W
	END YEAR	165	40165	24 to 90	-	24	90	1	INT	R/W
30.7	YEAR DEPENDEN CY	355	40355	0 – NO 1 – YES	1	0	1	1	INT	R/W
TARIFF 1-TIME SLOT 4										
31.1	ENABLE	166	40166	0 – NO 1 – YES	0	0		1	INT	R/W
31.2	DAYTYPE	167	40167	0 – EVERYDAY 1 – SUNDAY 2 – MONDAY 3 – TUESDAY 4 – WEDNESD AY 5 – THURSDAY 6 – FRIDAY 7 – SATURDAY 8 – WEEKDAYS 9 – WEEKEND	0	0	9	1	INT	R/W
31.3	START HOUR	168	40168	0 to 23	0	0	23	1	INT	R/W
	START MINUTE	169	40169	0 to 59	0	0	59	1	INT	R/W
	START SECOND	170	40170	0 to 59	0	0	59	1	INT	R/W
31.4	START DATE	171	40171	1 to 31	-	1	31	1	INT	R/W
	START MONTH	172	40172	1 to 12	-	1	12	1	INT	R/W
	START YEAR	173	40173	24 to 90	-	24	90	1	INT	R/W
31.5	END HOUR	174	40174	0 to 23	0	0	23	1	INT	R/W
	END MINUTE	175	40175	0 to 59	0	0	59	1	INT	R/W
	END SECOND	176	40176	0 to 59	0	0	59	1	INT	R/W
31.6	END DATE	177	40177	1 to 31	-	1	31	1	INT	R/W
	END MONTH	178	40178	1 to 12	-	1	12	1	INT	R/W
	END YEAR	179	40179	24 to 90	-	24	90	1	INT	R/W
31.7	YEAR DEPENDEN CY	356	40356	0 – NO 1 – YES	1	0	1	1	INT	R/W

Holding Register

Sr. No.	Parameter	Address	Modbus Addr.	Range / Selection	Factory Settings	Min	Max	Length (Reg.)	Data Type	R/W
TARIFF 2-TIME SLOT 1										
32.1	ENABLE	180	40180	0 – NO 1 – YES	0	0		1	INT	R/W
32.2	DAYTYPE	181	40181	0 – EVERYDAY 1 – SUNDAY 2 – MONDAY 3 – TUESDAY 4 – WEDNESDAY 5 – THURSDAY 6 – FRIDAY 7 – SATURDAY 8 – WEEKDAYS 9 – WEEKEND	0	0	9	1	INT	R/W
32.3	START HOUR	182	40182	0 to 23	0	0	23	1	INT	R/W
	START MINUTE	183	40183	0 to 59	0	0	59	1	INT	R/W
	START SECOND	184	40184	0 to 59	0	0	59	1	INT	R/W
32.4	START DATE	185	40185	1 to 31	-	1	31	1	INT	R/W
	START MONTH	186	40186	1 to 12	-	1	12	1	INT	R/W
	START YEAR	187	40187	24 to 90	-	24	90	1	INT	R/W
32.5	END HOUR	188	40188	0 to 23	0	0	23	1	INT	R/W
	END MINUTE	189	40189	0 to 59	0	0	59	1	INT	R/W
	END SECOND	190	40190	0 to 59	0	0	59	1	INT	R/W
32.6	END DATE	191	40191	1 to 31	-	1	31	1	INT	R/W
	END MONTH	192	40192	1 to 12	-	1	12	1	INT	R/W
	END YEAR	193	40193	24 to 90	-	24	90	1	INT	R/W
32.7	YEAR DEPENDENCY	357	40357	0 – NO 1 – YES	1	0	1	1	INT	R/W
TARIFF 2-TIME SLOT 2										
33.1	ENABLE	194	40194	0 – NO 1 – YES	0	0		1	INT	R/W
33.2	DAYTYPE	195	40195	0 – EVERYDAY 1 – SUNDAY 2 – MONDAY 3 – TUESDAY 4 – WEDNESDAY 5 – THURSDAY 6 – FRIDAY 7 – SATURDAY 8 – WEEKDAYS 9 – WEEKEND	0	0	9	1	INT	R/W

Holding Register

Sr. No.	Parameter	Address	Modbus Addr.	Range / Selection	Factory Settings	Min	Max	Length (Reg.)	Data Type	R/W
33.3	START HOUR	196	40196	0 to 23	0	0	23	1	INT	R/W
	START MINUTE	197	40197	0 to 59	0	0	59	1	INT	R/W
	START SECOND	198	40198	0 to 59	0	0	59	1	INT	R/W
33.4	START DATE	199	40199	1 to 31	-	1	31	1	INT	R/W
	START MONTH	200	40200	1 to 12	-	1	12	1	INT	R/W
	START YEAR	201	40201	24 to 90	-	24	90	1	INT	R/W
33.5	END HOUR	202	40202	0 to 23	0	0	23	1	INT	R/W
	END MINUTE	203	40203	0 to 59	0	0	59	1	INT	R/W
	END SECOND	204	40204	0 to 59	0	0	59	1	INT	R/W
33.6	END DATE	205	40205	1 to 31	-	1	31	1	INT	R/W
	END MONTH	206	40206	1 to 12	-	1	12	1	INT	R/W
	END YEAR	207	40207	24 to 90	-	24	90	1	INT	R/W
33.7	YEAR DEPENDENCY	358	40358	0 – NO 1 – YES	1	0	1	1	INT	R/W
TARIFF 2-TIME SLOT 3										
34.1	ENABLE	208	40208	0 – NO 1 – YES	0	0		1	INT	R/W
34.2	DAYTYPE	209	40209	0 – EVERYDAY 1 – SUNDAY 2 – MONDAY 3 – TUESDAY 4 – WEDNESDAY 5 – THURSDAY 6 – FRIDAY 7 – SATURDAY 8 – WEEKDAYS 9 – WEEKEND	0	0	9	1	INT	R/W
34.3	START HOUR	210	40210	0 to 23	0	0	23	1	INT	R/W
	START MINUTE	211	40211	0 to 59	0	0	59	1	INT	R/W
	START SECOND	212	40212	0 to 59	0	0	59	1	INT	R/W
34.4	START DATE	213	40213	1 to 31	-	1	31	1	INT	R/W
	START MONTH	214	40214	1 to 12	-	1	12	1	INT	R/W
	START YEAR	215	40215	24 to 90	-	24	90	1	INT	R/W
34.5	END HOUR	216	40216	0 to 23	0	0	23	1	INT	R/W
	END MINUTE	217	40217	0 to 59	0	0	59	1	INT	R/W
	END SECOND	218	40218	0 to 59	0	0	59	1	INT	R/W
34.6	END DATE	219	40219	1 to 31	-	1	31	1	INT	R/W
	END MONTH	220	40220	1 to 12	-	1	12	1	INT	R/W

Holding Register

Sr. No.	Parameter	Address	Modbus Addr.	Range / Selection	Factory Settings	Min	Max	Length (Reg.)	Data Type	R/W
34.7	END YEAR	221	40221	24 to 90	-	24	90	1	INT	R/W
	YEAR DEPENDEN CY	359	40359	0 – NO 1 – YES	1	0	1	1	INT	R/W
TARIFF 2-TIME SLOT 4										
35.1	ENABLE	222	40222	0 – NO 1 – YES	0	0		1	INT	R/W
35.2	DAYTYPE	223	40223	0 – EVERYDAY 1 – SUNDAY 2 – MONDAY 3 – TUESDAY 4 – WEDNESDAY 5 – THURSDAY 6 – FRIDAY 7 – SATURDAY 8 – WEEKDAYS 9 – WEEKEND	0	0	9	1	INT	R/W
35.3	START HOUR	224	40224	0 to 23	0	0	23	1	INT	R/W
	START MINUTE	225	40225	0 to 59	0	0	59	1	INT	R/W
	START SECOND	226	40226	0 to 59	0	0	59	1	INT	R/W
35.4	START DATE	227	40227	1 to 31	-	1	31	1	INT	R/W
	START MONTH	228	40228	1 to 12	-	1	12	1	INT	R/W
	START YEAR	229	40229	24 to 90	-	24	90	1	INT	R/W
35.5	END HOUR	230	40230	0 to 23	0	0	23	1	INT	R/W
	END MINUTE	231	40231	0 to 59	0	0	59	1	INT	R/W
	END SECOND	232	40232	0 to 59	0	0	59	1	INT	R/W
35.6	END DATE	233	40233	1 to 31	-	1	31	1	INT	R/W
	END MONTH	234	40234	1 to 12	-	1	12	1	INT	R/W
	END YEAR	235	40235	24 to 90	-	24	90	1	INT	R/W
35.7	YEAR DEPENDEN CY	360	40360	0 – NO 1 – YES	1	0	1	1	INT	R/W
TARIFF 3-TIME SLOT 1										
36.1	ENABLE	236	40236	0 – NO 1 – YES	0	0		1	INT	R/W

Holding Register

Sr. No.	Parameter	Address	Modbus Addr.	Range / Selection	Factory Settings	Min	Max	Length (Reg.)	Data Type	R/W
36.2	DAYTYPE	237	40237	0 – EVERYDAY 1 – SUNDAY 2 – MONDAY 3 – TUESDAY 4 – WEDNESDAY 5 – THURSDAY 6 – FRIDAY 7 – SATURDAY 8 – WEEKDAYS 9 – WEEKEND	0	0	9	1	INT	R/W
36.3	START HOUR	238	40238	0 to 23	0	0	23	1	INT	R/W
	START MINUTE	239	40239	0 to 59	0	0	59	1	INT	R/W
	START SECOND	240	40240	0 to 59	0	0	59	1	INT	R/W
36.4	START DATE	241	40241	1 to 31	-	1	31	1	INT	R/W
	START MONTH	242	40242	1 to 12	-	1	12	1	INT	R/W
	START YEAR	243	40243	24 to 90	-	24	90	1	INT	R/W
36.5	END HOUR	244	40244	0 to 23	0	0	23	1	INT	R/W
	END MINUTE	245	40245	0 to 59	0	0	59	1	INT	R/W
	END SECOND	246	40246	0 to 59	0	0	59	1	INT	R/W
36.6	END DATE	247	40247	1 to 31	-	1	31	1	INT	R/W
	END MONTH	248	40248	1 to 12	-	1	12	1	INT	R/W
	END YEAR	249	40249	24 to 90	-	24	90	1	INT	R/W
36.7	YEAR DEPENDENCY	361	40361	0 – NO 1 – YES	1	0	1	1	INT	R/W
TARIFF 3-TIME SLOT 2										
37.1	ENABLE	250	40250	0 – NO 1 – YES	0	0	1	1	INT	R/W
37.2	DAYTYPE	251	40251	0 – EVERYDAY 1 – SUNDAY 2 – MONDAY 3 – TUESDAY 4 – WEDNESDAY 5 – THURSDAY 6 – FRIDAY 7 – SATURDAY 8 – WEEKDAYS 9 – WEEKEND	0	0	9	1	INT	R/W
37.3	START HOUR	252	40252	0 to 23	0	0	23	1	INT	R/W
	START MINUTE	253	40253	0 to 59	0	0	59	1	INT	R/W

Holding Register

Sr. No.	Parameter	Address	Modbus Addr.	Range / Selection	Factory Settings	Min	Max	Length (Reg.)	Data Type	R/W
	START SECOND	254	40254	0 to 59	0	0	59	1	INT	R/W
37.4	START DATE	255	40255	1 to 31	-	1	31	1	INT	R/W
	START MONTH	256	40256	1 to 12	-	1	12	1	INT	R/W
	START YEAR	257	40257	24 to 90	-	24	90	1	INT	R/W
37.5	END HOUR	258	40258	0 to 23	0	0	23	1	INT	R/W
	END MINUTE	259	40259	0 to 59	0	0	59	1	INT	R/W
	END SECOND	260	40260	0 to 59	0	0	59	1	INT	R/W
37.6	END DATE	261	40261	1 to 31	-	1	31	1	INT	R/W
	END MONTH	262	40262	1 to 12	-	1	12	1	INT	R/W
	END YEAR	263	40263	24 to 90	-	24	90	1	INT	R/W
37.7	YEAR DEPENDEN CY	362	40362	0 – NO 1 – YES	1	0	1	1	INT	R/W
TARIFF 3-TIME SLOT 3										
38.1	ENABLE	264	40264	0 – NO 1 – YES	0	0		1	INT	R/W
38.2	DAYTYPE	265	40265	0 – EVERYDAY 1 – SUNDAY 2 – MONDAY 3 – TUESDAY 4 – WEDNESDAY 5 – THURSDAY 6 – FRIDAY 7 – SATURDAY 8 – WEEKDAYS 9 – WEEKEND	0	0	9	1	INT	R/W
38.3	START HOUR	266	40266	0 to 23	0	0	23	1	INT	R/W
	START MINUTE	267	40267	0 to 59	0	0	59	1	INT	R/W
	START SECOND	268	40268	0 to 59	0	0	59	1	INT	R/W
38.4	START DATE	269	40269	1 to 31	-	1	31	1	INT	R/W
	START MONTH	270	40270	1 to 12	-	1	12	1	INT	R/W
	START YEAR	271	40271	24 to 90	-	24	90	1	INT	R/W
38.5	END HOUR	272	40272	0 to 23	0	0	23	1	INT	R/W
	END MINUTE	273	40273	0 to 59	0	0	59	1	INT	R/W
	END SECOND	274	40274	0 to 59	0	0	59	1	INT	R/W
38.6	END DATE	275	40275	1 to 31	-	1	31	1	INT	R/W
	END MONTH	276	40276	1 to 12	-	1	12	1	INT	R/W
	END YEAR	277	40277	24 to 90	-	24	90	1	INT	R/W
38.7	YEAR DEPENDEN CY	363	40363	0 – NO 1 – YES	1	0	1	1	INT	R/W

Holding Register

Sr. No.	Parameter	Address	Modbus Addr.	Range / Selection	Factory Settings	Min	Max	Length (Reg.)	Data Type	R/W
TARIFF 3-TIME SLOT 4										
39.1	ENABLE	278	40278	0 – NO 1 – YES	0	0	1	1	INT	R/W
39.2	DAYTYPE	279	40279	0 – EVERYDAY 1 – SUNDAY 2 – MONDAY 3 – TUESDAY 4 – WEDNESDAY 5 – THURSDAY 6 – FRIDAY 7 – SATURDAY 8 – WEEKDAYS 9 – WEEKEND	0	0	9	1	INT	R/W
39.3	START HOUR	280	40280	0 to 23	0	0	23	1	INT	R/W
	START MINUTE	281	40281	0 to 59	0	0	59	1	INT	R/W
	START SECOND	282	40282	0 to 59	0	0	59	1	INT	R/W
39.4	START DATE	283	40283	1 to 31	-	1	31	1	INT	R/W
	START MONTH	284	40284	1 to 12	-	1	12	1	INT	R/W
	START YEAR	285	40285	24 to 90	-	24	90	1	INT	R/W
39.5	END HOUR	286	40286	0 to 23	0	0	23	1	INT	R/W
	END MINUTE	287	40287	0 to 59	0	0	59	1	INT	R/W
	END SECOND	288	40288	0 to 59	0	0	59	1	INT	R/W
39.6	END DATE	289	40289	1 to 31	-	1	31	1	INT	R/W
	END MONTH	290	40290	1 to 12	-	1	12	1	INT	R/W
	END YEAR	291	40291	24 to 90	-	24	90	1	INT	R/W
39.7	YEAR DEPENDENCY	364	40364	0 – NO 1 – YES	1	0	1	1	INT	R/W
TARIFF 4-TIME SLOT 1										
40.1	ENABLE	292	40292	0 – NO 1 – YES	0	0	1	1	INT	R/W
40.2	DAYTYPE	293	40293	0 – EVERYDAY 1 – SUNDAY 2 – MONDAY 3 – TUESDAY 4 – WEDNESDAY 5 – THURSDAY 6 – FRIDAY 7 – SATURDAY 8 – WEEKDAYS 9 – WEEKEND	0	0	9	1	INT	R/W

Holding Register

Sr. No.	Parameter	Address	Modbus Addr.	Range / Selection	Factory Settings	Min	Max	Length (Reg.)	Data Type	R/W
40.3	START HOUR	294	40294	0 to 23	0	0	23	1	INT	R/W
	START MINUTE	295	40295	0 to 59	0	0	59	1	INT	R/W
	START SECOND	296	40296	0 to 59	0	0	59	1	INT	R/W
40.4	START DATE	297	40297	1 to 31	-	1	31	1	INT	R/W
	START MONTH	298	40298	1 to 12	-	1	12	1	INT	R/W
	START YEAR	299	40299	24 to 90	-	24	90	1	INT	R/W
40.5	END HOUR	300	40300	0 to 23	0	0	23	1	INT	R/W
	END MINUTE	301	40301	0 to 59	0	0	59	1	INT	R/W
	END SECOND	302	40302	0 to 59	0	0	59	1	INT	R/W
40.6	END DATE	303	40303	1 to 31	-	1	31	1	INT	R/W
	END MONTH	304	40304	1 to 12	-	1	12	1	INT	R/W
	END YEAR	305	40305	24 to 90	-	24	90	1	INT	R/W
40.7	YEAR DEPENDENCY	365	40365	0 – NO 1 – YES	1	0	1	1	INT	R/W
TARIFF 4-TIME SLOT 2										
41.1	ENABLE	306	40306	0 – NO 1 – YES	0	0	1	1	INT	R/W
41.2	DAYTYPE	307	40307	0 – EVERYDAY 1 – SUNDAY 2 – MONDAY 3 – TUESDAY 4 – WEDNESDAY 5 – THURSDAY 6 – FRIDAY 7 – SATURDAY 8 – WEEKDAYS 9 – WEEKEND	0	0	9	1	INT	R/W
41.3	START HOUR	308	40308	0 to 23	0	0	23	1	INT	R/W
	START MINUTE	309	40309	0 to 59	0	0	59	1	INT	R/W
	START SECOND	310	40310	0 to 59	0	0	59	1	INT	R/W
41.4	START DATE	311	40311	1 to 31	-	1	31	1	INT	R/W
	START MONTH	312	40312	1 to 12	-	1	12	1	INT	R/W
	START YEAR	313	40313	24 to 90	-	24	90	1	INT	R/W
41.5	END HOUR	314	40314	0 to 23	0	0	23	1	INT	R/W
	END MINUTE	315	40315	0 to 59	0	0	59	1	INT	R/W
	END SECOND	316	40316	0 to 59	0	0	59	1	INT	R/W
41.6	END DATE	317	40317	1 to 31	-	1	31	1	INT	R/W
	END MONTH	318	40318	1 to 12	-	1	12	1	INT	R/W

Holding Register

Sr. No.	Parameter	Address	Modbus Addr.	Range / Selection	Factory Settings	Min	Max	Length (Reg.)	Data Type	R/W
41.7	END YEAR	319	40319	24 to 90	-	24	90	1	INT	R/W
	YEAR DEPENDEN CY	366	40366	0 – NO 1 – YES	1	0	1	1	INT	R/W
TARIFF 4-TIME SLOT 3										
42.1	ENABLE	320	40320	0 – NO 1 – YES	0	0	1	1	INT	R/W
42.2	DAYTYPE	321	40321	0 – EVERYDAY 1 – SUNDAY 2 – MONDAY 3 – TUESDAY 4 – WEDNESDAY 5 – THURSDAY 6 – FRIDAY 7 – SATURDAY 8 – WEEKDAYS 9 – WEEKEND	0	0	9	1	INT	R/W
42.3	START HOUR	322	40322	0 to 23	0	0	23	1	INT	R/W
	START MINUTE	323	40323	0 to 59	0	0	59	1	INT	R/W
	START SECOND	324	40324	0 to 59	0	0	59	1	INT	R/W
42.4	START DATE	325	40325	1 to 31	-	1	31	1	INT	R/W
	START MONTH	326	40326	1 to 12	-	1	12	1	INT	R/W
	START YEAR	327	40327	24 to 90	-	24	90	1	INT	R/W
42.5	END HOUR	328	40328	0 to 23	0	0	23	1	INT	R/W
	END MINUTE	329	40329	0 to 59	0	0	59	1	INT	R/W
	END SECOND	330	40330	0 to 59	0	0	59	1	INT	R/W
42.6	END DATE	331	40331	1 to 31	-	1	31	1	INT	R/W
	END MONTH	332	40332	1 to 12	-	1	12	1	INT	R/W
	END YEAR	333	40333	24 to 90	-	24	90	1	INT	R/W
42.7	YEAR DEPENDEN CY	367	40367	0 – NO 1 – YES	1	0	1	1	INT	R/W
TARIFF 4-TIME SLOT 4										
43.1	ENABLE	334	40334	0 – NO 1 – YES	0	0	1	1	INT	R/W

Holding Register

Sr. No.	Parameter	Address	Modbus Addr.	Range / Selection	Factory Settings	Min	Max	Length (Reg.)	Data Type	R/W
43.2	DAYTYPE	335	40335	0 – EVERYDAY 1 – SUNDAY 2 – MONDAY 3 – TUESDAY 4 – WEDNESDAY 5 – THURSDAY 6 – FRIDAY 7 – SATURDAY 8 – WEEKDAYS 9 – WEEKEND	0	0	9	1	INT	R/W
43.3	START HOUR	336	40336	0 to 23	0	0	23	1	INT	R/W
	START MINUTE	337	40337	0 to 59	0	0	59	1	INT	R/W
	START SECOND	338	40338	0 to 59	0	0	59	1	INT	R/W
43.4	START DATE	339	40339	1 to 31	-	1	31	1	INT	R/W
	START MONTH	340	40340	1 to 12	-	1	12	1	INT	R/W
	START YEAR	341	40341	24 to 90	-	24	90	1	INT	R/W
43.5	END HOUR	342	40342	0 to 23	0	0	23	1	INT	R/W
	END MINUTE	343	40343	0 to 59	0	0	59	1	INT	R/W
	END SECOND	344	40344	0 to 59	0	0	59	1	INT	R/W
43.6	END DATE	345	40345	1 to 31	-	1	31	1	INT	R/W
	END MONTH	346	40346	1 to 12	-	1	12	1	INT	R/W
	END YEAR	347	40347	24 to 90	-	24	90	1	INT	R/W
43.7	YEAR DEPENDENCY	368	40368	0 – NO 1 – YES	1	0	1	1	INT	R/W
44	ACTIVE TARIFF	369	40369	0-NONE 1-TARIFF 1 2-TARIFF 2 3-TARIFF 3 4-TARIFF 4	0	0	4	1	INT	R

FIXED TARIFF-BILLING DATE

45.1	HOUR	348	40348	0 to 23	0	0	23	1	INT	R/W
45.2	MINUTES	349	40349	0 to 59	0	0	59	1	INT	R/W
45.3	SECONDS	350	40350	0 to 59	0	0	59	1	INT	R/W
45.4	DAY	351	40351	1 to 31	-	1	31	1	INT	R/W
45.5	MONTH	352	40352	1 to 12	-	1	12	1	INT	R/W

EXTERNAL(2 DI : 4 RO) IO PARAMETERS

46.1	DI 1 CONTROL MODE	1001	41001	0 – NONE 1 – NORMAL 3 – TARIFF	0	0	3	1	INT	R/W
46.2	DI 1 DEBOUNCE TIME	1002	41002	10 to 9999	10	10	9999	1	INT	R/W
46.3	DI 2 CONTROL MODE	1005	41005	0 – NONE 1 – NORMAL 3 – TARIFF	0	0	3	1	INT	R/W

Holding Register

Sr. No.	Parameter	Address	Modbus Addr.	Range / Selection	Factory Settings	Min	Max	Length (Reg.)	Data Type	R/W
46.4	DI 2 DEBOUNCE TIME	1006	41006	10 to 9999	10	10	9999	1	INT	R/W
46.5	RO 1 CONTROL MODE	1041	41041	0 – NONE 1 – ALARM 2 – EXTERNAL	0	0	2	1	INT	R/W
46.6	RO 1 BEHAVIOUR MODE	1042	41042	0 – NORMAL 1 – TIMED 2 – COIL HOLD	0	0	2	1	INT	R/W
46.7	RO 1 ON TIME (secs)	1043	41043	1 to 9999	1	1	9999	1	INT	R/W
46.8	RO 1 COMMAND	1045	41045	0 – LOW 1 – HIGH	0	0	1	1	INT	R/W
46.9	RO 2 CONTROL MODE	1047	41047	0 – NONE 1 – ALARM 2 – EXTERNAL	0	0	2	1	INT	R/W
46.1	RO 2 BEHAVIOUR MODE	1048	41048	0 – NORMAL 1 – TIMED 2 – COIL HOLD	0	0	2	1	INT	R/W
46.11	RO 2 ON TIME (secs)	1049	41049	1 to 9999	1	1	9999	1	INT	R/W
46.12	RO 2 COMMAND	1051	41051	0 – LOW 1 – HIGH	0	0	1	1	INT	R/W
46.13	RO 3 CONTROL MODE	1053	41053	0 – NONE 1 – ALARM 2 – EXTERNAL	0	0	2	1	INT	R/W
46.14	RO 3 BEHAVIOUR MODE	1054	41054	0 – NORMAL 1 – TIMED 2 – COIL HOLD	0	0	2	1	INT	R/W
46.15	RO 3 COMMAND	1057	41057	0 – LOW 1 – HIGH	0	0	1	1	INT	R/W
46.16	RO 4 LEVEL DETECT	1058	41058	0 – LOW 1 – HIGH	0	0	1	1	INT	R/W
46.17	RO 4 CONTROL MODE	1059	41059	0 – NONE 1 – ALARM 2 – EXTERNAL	0	0	2	1	INT	R/W
46.18	RO 4 BEHAVIOUR MODE	1060	41060	0 – NORMAL 1 – TIMED 2 – COIL HOLD	0	0	2	1	INT	R/W
46.19	RO 4 ON TIME (secs)	1061	41061	1 to 9999	1	1	9999	1	INT	R/W
46.2	RO 4 COMMAND	1063	41063	0 – LOW 1 – HIGH	0	0	1	1	INT	R/W
46.21	EXTERNAL CARD STATUS	1069	41069	0-NO EXTERNAL CARD 2400-2 DI : 4 RO	0	0	2400	2	INT	R
OVER CURRENT PHASE										
47.1	ENABLE	2000	42000	0 – OFF 1 – ON	0	0	1	1	INT	R/W
47.2	PICKUP (A)	2001	42001	0.0000 to 10.0000	0	0	10	2	FLOAT	R/W
47.3	PICKUP_DELAY (secs)	2003	42003	0 to 999999	0	0	999999	2	INT	R/W
47.4	DROPOUT (A)	2005	42005	0.0000 to 10.0000	0	0	10	2	FLOAT	R/W

Holding Register

Sr. No.	Parameter	Address	Modbus Addr.	Range / Selection	Factory Settings	Min	Max	Length (Reg.)	Data Type	R/W
47.5	DROPOUT_ DELAY (secs)	2007	42007	0 to 999999	0	0	999999	2	INT	R/W
47.6	PRIORITY	2009	42009	0 – NONE 1 – LOW 2 – MEDIUM 3 – HIGH	0	0	3	1	INT	R/W
47.7	DIGITAL OUTPUT SELECTION	2010	42010	0-NONE 1- (INTERNAL) DO1 2- (INTERNAL) DO2	0	0	2	1	INT	R/W
47.8	RELAY OUTPUT SELECTION	2011	42011	0-NONE 1- (EXTERNAL) RO1 2- (EXTERNAL) RO2 3- (EXTERNAL) RO3 4- (EXTERNAL) RO4	0	0	4	1	INT	R/W
UNDER CURRENT PHASE										
48.1	ENABLE	2012	42012	0 – OFF 1 – ON	0	0	1	1	INT	R/W
48.2	PICKUP (A)	2013	42013	0.0000 to 10.0000	0	0	10	2	FLOAT	R/W
48.3	PICKUP_ DE LAY (secs)	2015	42015	0 to 999999	0	0	999999	2	INT	R/W
48.4	DROPOUT (A)	2017	42017	0.0000 to 10.0000	0	0	10	2	FLOAT	R/W
48.5	DROPOUT_ DELAY (secs)	2019	42019	0 to 999999	0	0	999999	2	INT	R/W
48.6	PRIORITY	2021	42021	0 – NONE 1 – LOW 2 – MEDIUM 3 – HIGH	0	0	3	1	INT	R/W
48.7	DIGITAL OUTPUT SELECTION	2022	42022	0-NONE 1- (INTERNAL) DO1 2- (INTERNAL) DO2	0	0	2	1	INT	R/W
48.8	RELAY OUTPUT SELECTION	2023	42023	0-NONE 1- (EXTERNAL) RO1 2- (EXTERNAL) RO2 3- (EXTERNAL) RO3 4- (EXTERNAL) RO4	0	0	4	1	INT	R/W
OVER CURRENT NEUTRAL										
49.1	ENABLE	2024	42024	0 – OFF 1 – ON	0	0	1	1	INT	R/W
49.2	PICKUP (A)	2025	42025	0.0000 to 10.0000	0	0	10	2	FLOAT	R/W
49.3	PICKUP_ DE LAY (secs)	2027	42027	0 to 999999	0	0	999999	2	INT	R/W

Holding Register

Sr. No.	Parameter	Address	Modbus Addr.	Range / Selection	Factory Settings	Min	Max	Length (Reg.)	Data Type	R/W
49.4	DROPOUT (A)	2029	42029	0.0000 to 10.0000	0	0	10	2	FLOAT	R/W
49.5	DROPOUT_DELAY (secs)	2031	42031	0 to 999999	0	0	999999	2	INT	R/W
49.6	PRIORITY	2033	42033	0 – NONE 1 – LOW 2 – MEDIUM 3 – HIGH	0	0	3	1	INT	R/W
49.7	DIGITAL OUTPUT SELECTION	2034	42034	0-NONE 1- (INTERNAL) DO1 2- (INTERNAL) DO2	0	0	2	1	INT	R/W
49.8	RELAY OUTPUT SELECTION	2035	42035	0-NONE 1- (EXTERNAL) RO1 2- (EXTERNAL) RO2 3- (EXTERNAL) RO3 4- (EXTERNAL) RO4	0	0	4	1	INT	R/W

OVER VOLTAGE LL

50.1	ENABLE	2048	42048	0 – OFF 1 – ON	0	0	1	1	INT	R/W
50.2	PICKUP (V)	2049	42049	0.00 to 600.00	0	0	600	2	FLOAT	R/W
50.3	PICKUP_DELAY (secs)	2051	42051	0 to 999999	0	0	999999	2	INT	R/W
50.4	DROPOUT (V)	2053	42053	0.00 to 600.00	0	0	600	2	FLOAT	R/W
50.5	DROPOUT_DELAY (secs)	2055	42055	0 to 999999	0	0	999999	2	INT	R/W
50.6	PRIORITY	2057	42057	0 – NONE 1 – LOW 2 – MEDIUM 3 – HIGH	0	0	3	1	INT	R/W
50.7	DIGITAL OUTPUT SELECTION	2058	42058	0-NONE 1- (INTERNAL) DO1 2- (INTERNAL) DO2	0	0	2	1	INT	R/W
50.8	RELAY OUTPUT SELECTION	2059	42059	0-NONE 1- (EXTERNAL) RO1 2- (EXTERNAL) RO2 3- (EXTERNAL) RO3 4- (EXTERNAL) RO4	0	0	4	1	INT	R/W

UNDER VOLTAGE LL

51.1	ENABLE	2060	42060	0 – OFF 1 – ON	0	0	1	1	INT	R/W
51.2	PICKUP (V)	2061	42061	0.00 to 600.00	0	0	600	2	FLOAT	R/W

Holding Register

Sr. No.	Parameter	Address	Modbus Addr.	Range / Selection	Factory Settings	Min	Max	Length (Reg.)	Data Type	R/W
51.3	PICKUP_DELAY (secs)	2063	42063	0 to 999999	0	0	999999	2	INT	R/W
51.4	DROPOUT (V)	2065	42065	0.00 to 600.00	0	0	600	2	FLOAT	R/W
51.5	DROPOUT_DELAY (secs)	2067	42067	0 to 999999	0	0	999999	2	INT	R/W
51.6	PRIORITY	2069	42069	0 – NONE 1 – LOW 2 – MEDIUM 3 – HIGH	0	0	3	1	INT	R/W
51.7	DIGITAL OUTPUT SELECTION	2070	42070	0-NONE 1- (INTERNAL) DO1 2- (INTERNAL) DO2	0	0	2	1	INT	R/W
51.8	RELAY OUTPUT SELECTION	2071	42071	0-NONE 1- (EXTERNAL) RO1 2- (EXTERNAL) RO2 3- (EXTERNAL) RO3 4- (EXTERNAL) RO4	0	0	4	1	INT	R/W
OVER VOLTAGE LN										
52.1	ENABLE	2072	42072	0 – OFF 1 – ON	0	0	1	1	INT	R/W
52.2	PICKUP (V)	2073	42073	0.00 to 347.00	0	0	347	2	FLOAT	R/W
52.3	PICKUP_DELAY (secs)	2075	42075	0 to 999999	0	0	999999	2	INT	R/W
52.4	DROPOUT (V)	2077	42077	0.00 to 347.00	0	0	347	2	FLOAT	R/W
52.5	DROPOUT_DELAY (secs)	2079	42079	0 to 999999	0	0	999999	2	INT	R/W
52.6	PRIORITY	2081	42081	0 – NONE 1 – LOW 2 – MEDIUM 3 – HIGH	0	0	3	1	INT	R/W
52.7	DIGITAL OUTPUT SELECTION	2082	42082	0-NONE 1- (INTERNAL) DO1 2- (INTERNAL) DO2	0	0	2	1	INT	R/W
52.8	RELAY OUTPUT SELECTION	2083	42083	0-NONE 1- (EXTERNAL) RO1 2- (EXTERNAL) RO2 3- (EXTERNAL) RO3 4- (EXTERNAL) RO4	0	0	4	1	INT	R/W
UNDER VOLTAGE LN										
53.1	ENABLE	2084	42084	0 – OFF 1 – ON	0	0	1	1	INT	R/W

Holding Register

Sr. No.	Parameter	Address	Modbus Addr.	Range / Selection	Factory Settings	Min	Max	Length (Reg.)	Data Type	R/W
53.2	PICKUP (V)	2085	42085	0.00 to 347.00	0	0	347	2	FLOAT	R/W
53.3	PICKUP_DELAY (secs)	2087	42087	0 to 999999	0	0	999999	2	INT	R/W
53.4	DROPOUT (V)	2089	42089	0.00 to 347.00	0	0	347	2	FLOAT	R/W
53.5	DROPOUT_DELAY (secs)	2091	42091	0 to 999999	0	0	999999	2	INT	R/W
53.6	PRIORITY	2093	42093	0 – NONE 1 – LOW 2 – MEDIUM 3 – HIGH	0	0	3	1	INT	R/W
53.7	DIGITAL OUTPUT SELECTION	2094	42094	0-NONE 1- (INTERNAL) DO1 2- (INTERNAL) DO2	0	0	2	1	INT	R/W
53.8	RELAY OUTPUT SELECTION	2095	42095	0-NONE 1- (EXTERNAL) RO1 2- (EXTERNAL) RO2 3- (EXTERNAL) RO3 4- (EXTERNAL) RO4	0	0	4	1	INT	R/W

OVER VOLTAGE UNBALANCED

54.1	ENABLE	2096	42096	0 – OFF 1 – ON	0	0	1	1	INT	R/W
54.2	PICKUP (%)	2097	42097	0.00 to 100.00	0	0	100	2	FLOAT	R/W
54.3	PICKUP_DELAY (secs)	2099	42099	0 to 999999	0	0	999999	2	INT	R/W
54.4	DROPOUT (%)	2101	42101	0.00 to 100.00	0	0	100	2	FLOAT	R/W
54.5	DROPOUT_DELAY (secs)	2103	42103	0 to 999999	0	0	999999	2	INT	R/W
54.6	PRIORITY	2105	42105	0 – NONE 1 – LOW 2 – MEDIUM 3 – HIGH	0	0	3	1	INT	R/W
54.7	DIGITAL OUTPUT SELECTION	2106	42106	0-NONE 1- (INTERNAL) DO1 2- (INTERNAL) DO2	0	0	2	1	INT	R/W
54.8	RELAY OUTPUT SELECTION	2107	42107	0-NONE 1- (EXTERNAL) RO1 2- (EXTERNAL) RO2 3- (EXTERNAL) RO3 4- (EXTERNAL) RO4	0	0	4	1	INT	R/W

OVER VOLTAGE THD

Holding Register

Sr. No.	Parameter	Address	Modbus Addr.	Range / Selection	Factory Settings	Min	Max	Length (Reg.)	Data Type	R/W
55.1	ENABLE	2108	42108	0 – OFF 1 – ON	0	0	1	1	INT	R/W
55.2	PICKUP (%)	2109	42109	0.00 to 100.00	0	0	100	2	FLOAT	R/W
55.3	PICKUP_DELAY (secs)	2111	42111	0 to 999999	0	0	999999	2	INT	R/W
55.4	DROPOUT (%)	2113	42113	0.00 to 100.00	0	0	100	2	FLOAT	R/W
55.5	DROPOUT_DELAY (secs)	2115	42115	0 to 999999	0	0	999999	2	INT	R/W
55.6	PRIORITY	2117	42117	0 – NONE 1 – LOW 2 – MEDIUM 3 – HIGH	0	0	3	1	INT	R/W
55.7	DIGITAL OUTPUT SELECTION	2118	42118	0-NONE 1- (INTERNAL) DO1 2- (INTERNAL) DO2	0	0	2	1	INT	R/W
55.8	RELAY OUTPUT SELECTION	2119	42119	0-NONE 1- (EXTERNAL) RO1 2- (EXTERNAL) RO2 3- (EXTERNAL) RO3 4- (EXTERNAL) RO4	0	0	4	1	INT	R/W
PHASE LOSS										
56.1	ENABLE	2120	42120	0 – OFF 1 – ON	0	0	1	1	INT	R/W
56.2	PICKUP (V)	2121	42121	0.00 to 347.00	0	0	347	2	FLOAT	R/W
56.3	PICKUP_DELAY (secs)	2123	42123	0 to 999999	0	0	999999	2	INT	R/W
56.4	DROPOUT (V)	2125	42125	0.00 to 100.00	0	0	100	2	FLOAT	R/W
56.5	DROPOUT_DELAY (secs)	2127	42127	0 to 999999	0	0	999999	2	INT	R/W
56.6	PRIORITY	2129	42129	0 – NONE 1 – LOW 2 – MEDIUM 3 – HIGH	0	0	3	1	INT	R/W
56.7	DIGITAL OUTPUT SELECTION	2130	42130	0-NONE 1- (INTERNAL) DO1 2- (INTERNAL) DO2	0	0	2	1	INT	R/W

Holding Register

Sr. No.	Parameter	Address	Modbus Addr.	Range / Selection	Factory Settings	Min	Max	Length (Reg.)	Data Type	R/W
56.8	RELAY OUTPUT SELECTION	2131	42131	0-NONE 1- (EXTERNAL)RO1 2- (EXTERNAL)RO2 3- (EXTERNAL)RO3 4- (EXTERNAL)RO4	0	0	4	1	INT	R/W
OVER ACTIVE POWER										
57.1	ENABLE	2132	42132	0 – OFF 1 – ON	0	0	1	1	INT	R/W
57.2	PICKUP (W)	2133	42133	0.000 to 10410.000	0	0	10410	2	FLOAT	R/W
57.3	PICKUP_DELAY (secs)	2135	42135	0 to 999999	0	0	999999	2	INT	R/W
57.4	DROPOUT (W)	2137	42137	0.000 to 10410.000	0	0	10410	2	FLOAT	R/W
57.5	DROPOUT_DELAY (secs)	2139	42139	0 to 999999	0	0	999999	2	INT	R/W
57.6	PRIORITY	2141	42141	0 – NONE 1 – LOW 2 – MEDIUM 3 – HIGH	0	0	3	1	INT	R/W
57.7	DIGITAL OUTPUT SELECTION	2142	42142	0-NONE 1- (INTERNAL)DO1 2- (INTERNAL)DO2	0	0	2	1	INT	R/W
57.8	RELAY OUTPUT SELECTION	2143	42143	0-NONE 1- (EXTERNAL)RO1 2- (EXTERNAL)RO2 3- (EXTERNAL)RO3 4- (EXTERNAL)RO4	0	0	4	1	INT	R/W
OVER REACTIVE POWER										
58.1	ENABLE	2144	42144	0 – OFF 1 – ON	0	0	1	1	INT	R/W
58.2	PICKUP (VAR)	2145	42145	0.000 to 10410.000	0	0	10410	2	FLOAT	R/W
58.3	PICKUP_DELAY (secs)	2147	42147	0 to 999999	0	0	999999	2	INT	R/W
58.4	DROPOUT (VAR)	2149	42149	0.000 to 10410.000	0	0	10410	2	FLOAT	R/W
58.5	DROPOUT_DELAY (secs)	2151	42151	0 to 999999	0	0	999999	2	INT	R/W
58.6	PRIORITY	2153	42153	0 – NONE 1 – LOW 2 – MEDIUM 3 – HIGH	0	0	3	1	INT	R/W

Holding Register

Sr. No.	Parameter	Address	Modbus Addr.	Range / Selection	Factory Settings	Min	Max	Length (Reg.)	Data Type	R/W
58.7	DIGITAL OUTPUT SELECTION	2154	42154	0-NONE 1- (INTERNAL) DO1 2- (INTERNAL) DO2	0	0	2	1	INT	R/W
58.8	RELAY OUTPUT SELECTION	2155	42155	0-NONE 1- (EXTERNAL) RO1 2- (EXTERNAL) RO2 3- (EXTERNAL) RO3 4- (EXTERNAL) RO4	0	0	4	1	INT	R/W
OVER APPARENT POWER										
59.1	ENABLE	2156	42156	0 – OFF 1 – ON	0	0	1	1	INT	R/W
59.2	PICKUP (VA)	2157	42157	0.000 to 10410.000	0	0	10410	2	FLOAT	R/W
59.3	PICKUP_DELAY (secs)	2159	42159	0 to 999999	0	0	999999	2	INT	R/W
59.4	DROPOUT (VA)	2161	42161	0.000 to 10410.000	0	0	10410	2	FLOAT	R/W
59.5	DROPOUT_DELAY	2163	42163	0 to 999999	0	0	999999	2	INT	R/W
59.6	PRIORITY (secs)	2165	42165	0 – NONE 1 – LOW 2 – MEDIUM 3 – HIGH	0	0	3	1	INT	R/W
59.7	DIGITAL OUTPUT SELECTION	2166	42166	0-NONE 1- (INTERNAL) DO1 2- (INTERNAL) DO2	0	0	2	1	INT	R/W
59.8	RELAY OUTPUT SELECTION	2167	42167	0-NONE 1- (EXTERNAL) RO1 2- (EXTERNAL) RO2 3- (EXTERNAL) RO3 4- (EXTERNAL) RO4	0	0	4	1	INT	R/W
PRESENT OVER ACTIVE POWER DEMAND										
60.1	ENABLE	2168	42168	0 – OFF 1 – ON	0	0	1	1	INT	R/W
60.2	PICKUP (W)	2169	42169	0.000 to 10410.000	0	0	10410	2	FLOAT	R/W
60.3	PICKUP_DELAY (secs)	2171	42171	0 to 999999	0	0	999999	2	INT	R/W
60.4	DROPOUT (W)	2173	42173	0.000 to 10410.000	0	0	10410	2	FLOAT	R/W
60.5	DROPOUT_DELAY (secs)	2175	42175	0 to 999999	0	0	999999	2	INT	R/W

Holding Register

Sr. No.	Parameter	Address	Modbus Addr.	Range / Selection	Factory Settings	Min	Max	Length (Reg.)	Data Type	R/W
60.6	PRIORITY	2177	42177	0 – NONE 1 – LOW 2 – MEDIUM 3 – HIGH	0	0	3	1	INT	R/W
60.7	DIGITAL OUTPUT SELECTION	2178	42178	0-NONE 1- (INTERNAL) DO1 2- (INTERNAL) DO2	0	0	2	1	INT	R/W
60.8	RELAY OUTPUT SELECTION	2179	42179	0-NONE 1- (EXTERNAL) RO1 2- (EXTERNAL) RO2 3- (EXTERNAL) RO3 4- (EXTERNAL) RO4	0	0	4	1	INT	R/W
LAST OVER ACTIVE POWER DEMAND										
61.1	ENABLE	2180	42180	0 – OFF 1 – ON	0	0	1	1	INT	R/W
61.2	PICKUP (W)	2181	42181	0.000 to 10410.000	0	0	10410	2	FLOAT	R/W
61.3	PICKUP_DELAY (secs)	2183	42183	0 to 999999	0	0	999999	2	INT	R/W
61.4	DROPOUT (W)	2185	42185	0.000 to 10410.000	0	0	10410	2	FLOAT	R/W
61.5	DROPOUT_DELAY (secs)	2187	42187	0 to 999999	0	0	999999	2	INT	R/W
61.6	PRIORITY	2189	42189	0 – NONE 1 – LOW 2 – MEDIUM 3 – HIGH	0	0	3	1	INT	R/W
61.7	DIGITAL OUTPUT SELECTION	2190	42190	0-NONE 1- (INTERNAL) DO1 2- (INTERNAL) DO2	0	0	2	1	INT	R/W
61.8	RELAY OUTPUT SELECTION	2191	42191	0-NONE 1- (EXTERNAL) RO1 2- (EXTERNAL) RO2 3- (EXTERNAL) RO3 4- (EXTERNAL) RO4	0	0	4	1	INT	R/W
PREDICTED OVER ACTIVE POWER DEMAND										
62.1	ENABLE	2192	42192	0 – OFF 1 – ON	0	0	1	1	INT	R/W
62.2	PICKUP (W)	2193	42193	0.000 to 10410.000	0	0	10410	2	FLOAT	R/W
62.3	PICKUP_DELAY (secs)	2195	42195	0 to 999999	0	0	999999	2	INT	R/W
62.4	DROPOUT (W)	2197	42197	0.000 to 10410.000	0	0	10410	2	FLOAT	R/W

Holding Register

Sr. No.	Parameter	Address	Modbus Addr.	Range / Selection	Factory Settings	Min	Max	Length (Reg.)	Data Type	R/W
62.5	DROPOUT_ DELAY (secs)	2199	42199	0 to 999999	0	0	999999	2	INT	R/W
62.6	PRIORITY	2201	42201	0 – NONE 1 – LOW 2 – MEDIUM 3 – HIGH	0	0	3	1	INT	R/W
62.7	DIGITAL OUTPUT SELECTION	2202	42202	0-NONE 1- (INTERNAL) DO1 2- (INTERNAL) DO2	0	0	2	1	INT	R/W
62.8	RELAY OUTPUT SELECTION	2203	42203	0-NONE 1- (EXTERNAL) RO1 2- (EXTERNAL) RO2 3- (EXTERNAL) RO3 4- (EXTERNAL) RO4	0	0	4	1	INT	R/W
PRESENT OVER REACTIVE POWER DEMAND										
63.1	ENABLE	2204	42204	0 – OFF 1 – ON	0	0	1	1	INT	R/W
63.2	PICKUP (W)	2205	42205	0.000 to 10410.000	0	0	10410	2	FLOAT	R/W
63.3	PICKUP_ DE LAY (secs)	2207	42207	0 to 999999	0	0	999999	2	INT	R/W
63.4	DROPOUT (W)	2209	42209	0.000 to 10410.000	0	0	10410	2	FLOAT	R/W
63.5	DROPOUT_ DELAY (secs)	2211	42211	0 to 999999	0	0	999999	2	INT	R/W
63.6	PRIORITY	2213	42213	0 – NONE 1 – LOW 2 – MEDIUM 3 – HIGH	0	0	3	1	INT	R/W
63.7	DIGITAL OUTPUT SELECTION	2214	42214	0-NONE 1- (INTERNAL) DO1 2- (INTERNAL) DO2	0	0	2	1	INT	R/W
63.8	RELAY OUTPUT SELECTION	2215	42215	0-NONE 1- (EXTERNAL) RO1 2- (EXTERNAL) RO2 3- (EXTERNAL) RO3 4- (EXTERNAL) RO4	0	0	4	1	INT	R/W
LAST OVER REACTIVE POWER DEMAND										
64.1	ENABLE	2216	42216	0 – OFF 1 – ON	0	0	1	1	INT	R/W
64.2	PICKUP (VAR)	2217	42217	0.000 to 10410.000	0	0	10410	2	FLOAT	R/W
64.3	PICKUP_ DE LAY (secs)	2219	42219	0 to 999999	0	0	999999	2	INT	R/W

Holding Register

Sr. No.	Parameter	Address	Modbus Addr.	Range / Selection	Factory Settings	Min	Max	Length (Reg.)	Data Type	R/W
64.4	DROPOUT (VAR)	2221	42221	0.000 to 10410.000	0	0	10410	2	FLOAT	R/W
64.5	DROPOUT_DELAY (secs)	2223	42223	0 to 999999	0	0	999999	2	INT	R/W
64.6	PRIORITY	2225	42225	0 – NONE 1 – LOW 2 – MEDIUM 3 – HIGH	0	0	3	1	INT	R/W
64.7	DIGITAL OUTPUT SELECTION	2226	42226	0-NONE 1- (INTERNAL) DO1 2- (INTERNAL) DO2	0	0	2	1	INT	R/W
64.8	RELAY OUTPUT SELECTION	2227	42227	0-NONE 1- (EXTERNAL) RO1 2- (EXTERNAL) RO2 3- (EXTERNAL) RO3 4- (EXTERNAL) RO4	0	0	4	1	INT	R/W
PREDICTED OVER REACTIVE POWER DEMAND										
65.1	ENABLE	2228	42228	0 – OFF 1 – ON	0	0	1	1	INT	R/W
65.2	PICKUP (VAR)	2229	42229	0.000 to 10410.000	0	0	10410	2	FLOAT	R/W
65.3	PICKUP_DELAY (secs)	2231	42231	0 to 999999	0	0	999999	2	INT	R/W
65.4	DROPOUT (VAR)	2233	42233	0.000 to 10410.000	0	0	10410	2	FLOAT	R/W
65.5	DROPOUT_DELAY (secs)	2235	42235	0 to 999999	0	0	999999	2	INT	R/W
65.6	PRIORITY	2237	42237	0 – NONE 1 – LOW 2 – MEDIUM 3 – HIGH	0	0	3	1	INT	R/W
65.7	DIGITAL OUTPUT SELECTION	2238	42238	0-NONE 1- (INTERNAL) DO1 2- (INTERNAL) DO2	0	0	2	1	INT	R/W
65.8	RELAY OUTPUT SELECTION	2239	42239	0-NONE 1- (EXTERNAL) RO1 2- (EXTERNAL) RO2 3- (EXTERNAL) RO3 4- (EXTERNAL) RO4	0	0	4	1	INT	R/W
PRESENT OVER APPARENT POWER DEMAND										
66.1	ENABLE	2240	42240	0 – OFF 1 – ON	0	0	1	1	INT	R/W
66.2	PICKUP (VA)	2241	42241	0.000 to 10410.000	0	0	10410	2	FLOAT	R/W

Holding Register

Sr. No.	Parameter	Address	Modbus Addr.	Range / Selection	Factory Settings	Min	Max	Length (Reg.)	Data Type	R/W
66.3	PICKUP_DELAY (secs)	2243	42243	0 to 999999	0	0	999999	2	INT	R/W
66.4	DROPOUT (VA)	2245	42245	0.000 to 10410.000	0	0	10410	2	FLOAT	R/W
66.5	DROPOUT_DELAY (secs)	2247	42247	0 to 999999	0	0	999999	2	INT	R/W
66.6	PRIORITY	2249	42249	0 – NONE 1 – LOW 2 – MEDIUM 3 – HIGH	0	0	3	1	INT	R/W
66.7	DIGITAL OUTPUT SELECTION	2250	42250	0-NONE 1- (INTERNAL) DO1 2- (INTERNAL) DO2	0	0	2	1	INT	R/W
66.8	RELAY OUTPUT SELECTION	2251	42251	0-NONE 1- (EXTERNAL) RO1 2- (EXTERNAL) RO2 3- (EXTERNAL) RO3 4- (EXTERNAL) RO4	0	0	4	1	INT	R/W
LAST OVER APPARENT POWER DEMAND										
67.1	ENABLE	2252	42252	0 – OFF 1 – ON	0	0	1	1	INT	R/W
67.2	PICKUP (VA)	2253	42253	0.000 to 10410.000	0	0	10410	2	FLOAT	R/W
67.3	PICKUP_DELAY (secs)	2255	42255	0 to 999999	0	0	999999	2	INT	R/W
67.4	DROPOUT (VA)	2257	42257	0.000 to 10410.000	0	0	10410	2	FLOAT	R/W
67.5	DROPOUT_DELAY (secs)	2259	42259	0 to 999999	0	0	999999	2	INT	R/W
67.6	PRIORITY	2261	42261	0 – NONE 1 – LOW 2 – MEDIUM 3 – HIGH	0	0	3	1	INT	R/W
67.7	DIGITAL OUTPUT SELECTION	2262	42262	0-NONE 1- (INTERNAL) DO1 2- (INTERNAL) DO2	0	0	2	1	INT	R/W
67.8	RELAY OUTPUT SELECTION	2263	42263	0-NONE 1- (EXTERNAL) RO1 2- (EXTERNAL) RO2 3- (EXTERNAL) RO3 4- (EXTERNAL) RO4	0	0	4	1	INT	R/W
PREDICTED OVER APPARENT POWER DEMAND										
68.1	ENABLE	2264	42264	0 – OFF 1 – ON	0	0	1	1	INT	R/W

Holding Register

Sr. No.	Parameter	Address	Modbus Addr.	Range / Selection	Factory Settings	Min	Max	Length (Reg.)	Data Type	R/W
68.2	PICKUP (VA)	2265	42265	0.000 to 10410.000	0	0	10410	2	FLOAT	R/W
68.3	PICKUP_DELAY (secs)	2267	42267	0 to 999999	0	0	999999	2	INT	R/W
68.4	DROPOUT (VA)	2269	42269	0.000 to 10410.000	0	0	10410	2	FLOAT	R/W
68.5	DROPOUT_DELAY (secs)	2271	42271	0 to 999999	0	0	999999	2	INT	R/W
68.6	PRIORITY	2273	42273	0 – NONE 1 – LOW 2 – MEDIUM 3 – HIGH	0	0	3	1	INT	R/W
68.7	DIGITAL OUTPUT SELECTION	2274	42274	0-NONE 1- (INTERNAL) DO1 2- (INTERNAL) DO2	0	0	2	1	INT	R/W
68.8	RELAY OUTPUT SELECTION	2275	42275	0-NONE 1- (EXTERNAL) RO1 2- (EXTERNAL) RO2 3- (EXTERNAL) RO3 4- (EXTERNAL) RO4	0	0	4	1	INT	R/W

OVER FREQUENCY

69.1	ENABLE	2276	42276	0 – OFF 1 – ON	0	0	1	1	INT	R/W
69.2	PICKUP (Hz)	2277	42277	0.000 to 65.000	0	0	65	2	FLOAT	R/W
69.3	PICKUP_DELAY (secs)	2279	42279	0 to 999999	0	0	999999	2	INT	R/W
69.4	DROPOUT (Hz)	2281	42281	0.000 to 65.000	0	0	65	2	FLOAT	R/W
69.5	DROPOUT_DELAY (secs)	2283	42283	0 to 999999	0	0	999999	2	INT	R/W
69.6	PRIORITY	2285	42285	0 – NONE 1 – LOW 2 – MEDIUM 3 – HIGH	0	0	3	1	INT	R/W
69.7	DIGITAL OUTPUT SELECTION	2286	42286	0-NONE 1- (INTERNAL) DO1 2- (INTERNAL) DO2	0	0	2	1	INT	R/W
69.8	RELAY OUTPUT SELECTION	2287	42287	0-NONE 1- (EXTERNAL) RO1 2- (EXTERNAL) RO2 3- (EXTERNAL) RO3 4- (EXTERNAL) RO4	0	0	4	1	INT	R/W

UNDER FREQUENCY

Holding Register

Sr. No.	Parameter	Address	Modbus Addr.	Range / Selection	Factory Settings	Min	Max	Length (Reg.)	Data Type	R/W
70.1	ENABLE	2288	42288	0 – OFF 1 – ON	0	0	1	1	INT	R/W
70.2	PICKUP (Hz)	2289	42289	0.000 to 65.000	0	0	65	2	FLOAT	R/W
70.3	PICKUP_DELAY (secs)	2291	42291	0 to 999999	0	0	999999	2	INT	R/W
70.4	DROPOUT (Hz)	2293	42293	0.000 to 65.000	0	0	65	2	FLOAT	R/W
70.5	DROPOUT_DELAY (secs)	2295	42295	0 to 999999	0	0	999999	2	INT	R/W
70.6	PRIORITY	2297	42297	0 – NONE 1 – LOW 2 – MEDIUM 3 – HIGH	0	0	3	1	INT	R/W
70.7	DIGITAL OUTPUT SELECTION	2298	42298	0-NONE 1- (INTERNAL) DO1 2- (INTERNAL) DO2	0	0	2	1	INT	R/W
70.8	RELAY OUTPUT SELECTION	2299	42299	0-NONE 1- (EXTERNAL) RO1 2- (EXTERNAL) RO2 3- (EXTERNAL) RO3 4- (EXTERNAL) RO4	0	0	4	1	INT	R/W
OVER RTD										
71.1	ENABLE	2300	42300	0 – OFF 1 – ON	0	0	1	1	INT	R/W
71.2	PICKUP (CELSIUS)	2301	42301	-170.0 TO 850.0		-170	850	2	FLOAT_NEG	R/W
71.3	PICKUP_DELAY (secs)	2303	42303	0 to 999999	0	0	999999	2	INT	R/W
71.4	DROPOUT (CELSIUS)	2305	42305	-170.0 TO 850.0		-170	850	2	FLOAT_NEG	R/W
71.5	DROPOUT_DELAY (secs)	2307	42307	0 to 999999	0	0	999999	2	INT	R/W
71.6	PRIORITY	2309	42309	0 – NONE 1 – LOW 2 – MEDIUM 3 – HIGH	0	0	3	1	INT	R/W
71.7	DIGITAL OUTPUT SELECTION	2310	42310	0-NONE 1- (INTERNAL) DO1 2- (INTERNAL) DO2	0	0	2	1	INT	R/W

Holding Register

Sr. No.	Parameter	Address	Modbus Addr.	Range / Selection	Factory Settings	Min	Max	Length (Reg.)	Data Type	R/W
71.8	RELAY OUTPUT SELECTION	2311	42311	0-NONE 1- (EXTERNAL)RO1 2- (EXTERNAL)RO2 3- (EXTERNAL)RO3 4- (EXTERNAL)RO4	0	0	4	1	INT	R/W
UNDER RTD										
72.1	ENABLE	2312	42312	0 – OFF 1 – ON	0	0	1	1	INT	R/W
72.2	PICKUP (CELSIUS)	2313	42313	-170.0 TO 850.0		-170	850	2	FLOAT_NG	R/W
72.3	PICKUP_DELAY (secs)	2315	42315	0 to 999999	0	0	999999	2	INT	R/W
72.4	DROPOUT (CELSIUS)	2317	42317	-170.0 TO 850.0		-170	850	2	FLOAT_NG	R/W
72.5	DROPOUT_DELAY (secs)	2319	42319	0 to 999999	0	0	999999	2	INT	R/W
72.6	PRIORITY	2321	42321	0 – NONE 1 – LOW 2 – MEDIUM 3 – HIGH	0	0	3	1	INT	R/W
72.7	DIGITAL OUTPUT SELECTION	2322	42322	0-NONE 1- (INTERNAL)DO1 2- (INTERNAL)DO2	0	0	2	1	INT	R/W
72.8	RELAY OUTPUT SELECTION	2323	42323	0-NONE 1- (EXTERNAL)RO1 2- (EXTERNAL)RO2 3- (EXTERNAL)RO3 4- (EXTERNAL)RO4	0	0	4	1	INT	R/W
TRUE PF										
73.1	ENABLE	2324	42324	0 – OFF 1 – ON	0	0	1	1	INT	R/W
73.2	PICKUP	2325	42325	-1.0000 TO 1.0000		-1	1	2	FLOAT_NG	R/W
73.3	PICKUP_DELAY	2327	42327	0 to 999999	0	0	999999	2	INT	R/W
73.4	DROPOUT	2329	42329	-1.0000 TO 1.0000		-1	1	2	FLOAT_NG	R/W
73.5	DROPOUT_DELAY	2331	42331	0 to 999999	0	0	999999	2	INT	R/W
73.6	PRIORITY	2333	42333	0 – NONE 1 – LOW 2 – MEDIUM 3 – HIGH	0	0	3	1	INT	R/W

Holding Register

Sr. No.	Parameter	Address	Modbus Addr.	Range / Selection	Factory Settings	Min	Max	Length (Reg.)	Data Type	R/W
73.7	DIGITAL OUTPUT SELECTION	2334	42334	0-NONE 1- (INTERNAL) DO1 2- (INTERNAL) DO2	0	0	2	1	INT	R/W
73.8	RELAY OUTPUT SELECTION	2335	42335	0-NONE 1- (EXTERNAL) RO1 2- (EXTERNAL) RO2 3- (EXTERNAL) RO3 4- (EXTERNAL) RO4	0	0	4	1	INT	R/W
73.9	PICKUP PF TYPE	2336	42336	0 – NONE 1 – INDUCTIVE 2 – CAPACITIVE	0	0	2	1	INT	R/W
73.1	DROPOUT PF TYPE	2337	42337	0 – NONE 1 – INDUCTIVE 2 – CAPACITIVE	0	0	2	1	INT	R/W
Displacement PF										
74.1	ENABLE	2338	42338	0 – OFF 1 – ON	0	0	1	1	INT	R/W
74.2	PICKUP	2339	42339	-1.0000 TO 1.0000		-1	1	2	FLOAT_NEG	R/W
74.3	PICKUP_DELAY	2341	42341	0 to 999999	0	0	999999	2	INT	R/W
74.4	DROPOUT	2343	42343	-1.0000 TO 1.0000		-1	1	2	FLOAT_NEG	R/W
74.5	DROPOUT_DELAY	2345	42345	0 to 999999	0	0	999999	2	INT	R/W
74.6	PRIORITY	2347	42347	0 – NONE 1 – LOW 2 – MEDIUM 3 – HIGH	0	0	3	1	INT	R/W
74.7	DIGITAL OUTPUT SELECTION	2348	42348	0-NONE 1- (INTERNAL) DO1 2- (INTERNAL) DO2	0	0	2	1	INT	R/W
74.8	RELAY OUTPUT SELECTION	2349	42349	0-NONE 1- (EXTERNAL) RO1 2- (EXTERNAL) RO2 3- (EXTERNAL) RO3 4- (EXTERNAL) RO4	0	0	4	1	INT	R/W
74.9	PICKUP PF TYPE	2350	42350	0 – NONE 1 – INDUCTIVE 2 – CAPACITIVE	0	0	2	1	INT	R/W

Holding Register

Sr. No.	Parameter	Address	Modbus Addr.	Range / Selection	Factory Settings	Min	Max	Length (Reg.)	Data Type	R/W
74.1	DROPOUT PF TYPE	2351	42351	0 – NONE 1 – INDUCTIVE 2 – CAPACITIVE	0	0	2	1	INT	R/W
METER POWERUP										
75.1	ENABLE	2352	42352	0 – OFF 1 – ON	0	0	1	1	INT	R/W
75.2	PRIORITY	2353	42353	0 – NONE 1 – LOW 2 – MEDIUM 3 – HIGH	0	0	3	1	INT	R/W
75.3	DIGITAL OUTPUT SELECTION	2354	42354	0-NONE 1- (INTERNAL) DO1 2- (INTERNAL) DO2	0	0	2	1	INT	R/W
75.4	RELAY OUTPUT SELECTION	2355	42355	0-NONE 1- (EXTERNAL) RO1 2- (EXTERNAL) RO2 3- (EXTERNAL) RO3 4- (EXTERNAL) RO4	0	0	4	1	INT	R/W
METER RESET										
76.1	ENABLE	2356	42356	0 – OFF 1 – ON	0	0	1	1	INT	R/W
76.2	PRIORITY	2357	42357	0 – NONE 1 – LOW 2 – MEDIUM 3 – HIGH	0	0	3	1	INT	R/W
76.3	DIGITAL OUTPUT SELECTION	2358	42358	0-NONE 1- (INTERNAL) DO1 2- (INTERNAL) DO2	0	0	2	1	INT	R/W
76.4	RELAY OUTPUT SELECTION	2359	42359	0-NONE 1- (EXTERNAL) RO1 2- (EXTERNAL) RO2 3- (EXTERNAL) RO3 4- (EXTERNAL) RO4	0	0	4	1	INT	R/W
METER DIAGNOSTIC										
77.1	ENABLE	2360		0 – OFF 1 – ON	0	0	1	1	INT	R/W
77.2	PRIORITY	2361	42361	0 – NONE 1 – LOW 2 – MEDIUM 3 – HIGH	0	0	3	1	INT	R/W

Holding Register

Sr. No.	Parameter	Address	Modbus Addr.	Range / Selection	Factory Settings	Min	Max	Length (Reg.)	Data Type	R/W
77.3	DIGITAL OUTPUT SELECTION	2362	42362	0-NONE 1- (INTERNAL) DO1 2- (INTERNAL) DO2	0	0	2	1	INT	R/W
77.4	RELAY OUTPUT SELECTION	2363	42363	0-NONE 1- (EXTERNAL) RO1 2- (EXTERNAL) RO2 3- (EXTERNAL) RO3 4- (EXTERNAL) RO4	0	0	4	1	INT	R/W
PHASE SEQUENCE										
78.1	ENABLE	2364	42364	0 – NO 1 – YES	0	0	1	1	INT	R/W
78.2	PRIORITY	2365	42365	0 – NONE 1 – LOW 2 – MEDIUM 3 – HIGH	0	0	3	1	INT	R/W
78.3	DIGITAL OUTPUT SELECTION	2366	42366	0-NONE 1- (INTERNAL) DO1 2- (INTERNAL) DO2	0	0	2	1	INT	R/W
78.4	RELAY OUTPUT SELECTION	2367	42367	0-NONE 1- (EXTERNAL) RO1 2- (EXTERNAL) RO2 3- (EXTERNAL) RO3 4- (EXTERNAL) RO4	0	0	4	1	INT	R/W
INTERNAL ALARM S2										
79.1	ENABLE	2376	42376	0 – NO 1 – YES	0	0	1	1	INT	R/W
79.2	PICKUP_DELAY	2377	42377	0 to 999999	0	0	999999	2	INT	R/W
79.3	DROPOUT_DELAY	2379	42379	0 to 999999	0	0	999999	2	INT	R/W
79.4	PRIORITY	2381	42381	0 – NONE 1 – LOW 2 – MEDIUM 3 – HIGH	0	0	3	1	INT	R/W
79.5	DIGITAL OUTPUT SELECTION	2382	42382	0-NONE 1- (INTERNAL) DO1 2- (INTERNAL) DO2	0	0	2	1	INT	R/W

Holding Register

Sr. No.	Parameter	Address	Modbus Addr.	Range / Selection	Factory Settings	Min	Max	Length (Reg.)	Data Type	R/W
79.6	RELAY OUTPUT SELECTION	2383	42383	0-NONE 1- (EXTERNAL)RO1 2- (EXTERNAL)RO2 3- (EXTERNAL)RO3 4- (EXTERNAL)RO4	0	0	4	1	INT	R/W
EXTERNAL ALARM S1										
80.1	ENABLE	2384	42384	0 – OFF 1 – ON	0	0	1	1	INT	R/W
80.2	PICKUP_DELAY	2385	42385	0 to 999999	0	0	999999	2	INT	R/W
80.3	DROPOUT_DELAY	2387	42387	0 to 999999	0	0	999999	2	INT	R/W
80.4	PRIORITY	2389	42389	0 – NONE 1 – LOW 2 – MEDIUM 3 – HIGH	0	0	3	1	INT	R/W
80.5	DIGITAL OUTPUT SELECTION	2390	42390	0-NONE 1- (INTERNAL)DO1 2- (INTERNAL)DO2	0	0	2	1	INT	R/W
80.6	RELAY OUTPUT SELECTION	2391	42391	0-NONE 1- (EXTERNAL)RO1 2- (EXTERNAL)RO2 3- (EXTERNAL)RO3 4- (EXTERNAL)RO4	0	0	4	1	INT	R/W
EXTERNAL ALARM S2										
81.1	ENABLE	2392	42392	0 – OFF 1 – ON	0	0	1	1	INT	R/W
81.2	PICKUP_DELAY	2393	42393	0 to 999999	0	0	999999	2	INT	R/W
81.3	DROPOUT_DELAY	2395	42395	0 to 999999	0	0	999999	2	INT	R/W
81.4	PRIORITY	2397	42397	0 – NONE 1 – LOW 2 – MEDIUM 3 – HIGH	0	0	3	1	INT	R/W
81.5	DIGITAL OUTPUT SELECTION	2398	42398	0-NONE 1- (INTERNAL)DO1 2- (INTERNAL)DO2	0	0	2	1	INT	R/W

Holding Register

Sr. No.	Parameter	Address	Modbus Addr.	Range / Selection	Factory Settings	Min	Max	Length (Reg.)	Data Type	R/W
81.6	RELAY OUTPUT SELECTION	2399	42399	0-NONE 1- (EXTERNAL)RO1 2- (EXTERNAL)RO2 3- (EXTERNAL)RO3 4- (EXTERNAL)RO4	0	0	4	1	INT	R/W
EXTERNAL ALARM S3										
82.1	ENABLE	2400	42400	0 – OFF 1 – ON	0	0	1	1	INT	R/W
82.2	PICKUP_DELAY	2401	42401	0 to 999999	0	0	999999	2	INT	R/W
82.3	DROPOUT_DELAY	2403	42403	0 to 999999	0	0	999999	2	INT	R/W
82.4	PRIORITY	2405	42405	0 – NONE 1 – LOW 2 – MEDIUM 3 – HIGH	0	0	3	1	INT	R/W
82.5	DIGITAL OUTPUT SELECTION	2406	42406	0-NONE 1- (INTERNAL)DO1 2- (INTERNAL)DO2	0	0	2	1	INT	R/W
82.6	RELAY OUTPUT SELECTION	2407	42407	0-NONE 1- (EXTERNAL)RO1 2- (EXTERNAL)RO2 3- (EXTERNAL)RO3 4- (EXTERNAL)RO4	0	0	4	1	INT	R/W
EXTERNAL ALARM S4										
83.1	ENABLE	2408	42408	0 – OFF 1 – ON	0	0	1	1	INT	R/W
83.2	PICKUP_DELAY	2409	42409	0 to 999999	0	0	999999	2	INT	R/W
83.3	DROPOUT_DELAY	2411	42411	0 to 999999	0	0	999999	2	INT	R/W
83.4	PRIORITY	2413	42413	0 – NONE 1 – LOW 2 – MEDIUM 3 – HIGH	0	0	3	1	INT	R/W
83.5	DIGITAL OUTPUT SELECTION	2414	42414	0-NONE 1- (INTERNAL)DO1 2- (INTERNAL)DO2	0	0	2	1	INT	R/W

Holding Register

Sr. No.	Parameter	Address	Modbus Addr.	Range / Selection	Factory Settings	Min	Max	Length (Reg.)	Data Type	R/W
83.6	RELAY OUTPUT SELECTION	2415	42415	0-NONE 1- (EXTERNAL)RO1 2- (EXTERNAL)RO2 3- (EXTERNAL)RO3 4- (EXTERNAL)RO4	0	0	4	1	INT	R/W
EXTERNAL ALARM S5										
84.1	ENABLE	2416	42416	0 – OFF 1 – ON	0	0	1	1	INT	R/W
84.2	PICKUP_DELAY	2417	42417	0 to 999999	0	0	999999	2	INT	R/W
84.3	DROPOUT_DELAY	2419	42419	0 to 999999	0	0	999999	2	INT	R/W
84.4	PRIORITY	2421	42421	0 – NONE 1 – LOW 2 – MEDIUM 3 – HIGH	0	0	3	1	INT	R/W
84.5	DIGITAL OUTPUT SELECTION	2422	42422	0-NONE 1- (INTERNAL)DO1 2- (INTERNAL)DO2	0	0	2	1	INT	R/W
84.6	RELAY OUTPUT SELECTION	2423	42423	0-NONE 1- (EXTERNAL)RO1 2- (EXTERNAL)RO2 3- (EXTERNAL)RO3 4- (EXTERNAL)RO4	0	0	4	1	INT	R/W
EXTERNAL ALARM S6										
85.1	ENABLE	2424	42424	0 – OFF 1 – ON	0	0	1	1	INT	R/W
85.2	PICKUP_DELAY	2425	42425	0 to 999999	0	0	999999	2	INT	R/W
85.3	DROPOUT_DELAY	2427	42427	0 to 999999	0	0	999999	2	INT	R/W
85.4	PRIORITY	2429	42429	0 – NONE 1 – LOW 2 – MEDIUM 3 – HIGH	0	0	3	1	INT	R/W
85.5	DIGITAL OUTPUT SELECTION	2430	42430	0-NONE 1- (INTERNAL)DO1 2- (INTERNAL)DO2	0	0	2	1	INT	R/W

Holding Register

Sr. No.	Parameter	Address	Modbus Addr.	Range / Selection	Factory Settings	Min	Max	Length (Reg.)	Data Type	R/W
85.6	RELAY OUTPUT SELECTION	2431	42431	0-NONE 1- (EXTERNAL)RO1 2- (EXTERNAL)RO2 3- (EXTERNAL)RO3 4- (EXTERNAL)RO4	0	0	4	1	INT	R/W
EXTERNAL ALARM S7										
86.1	ENABLE	2432	42432	0 – OFF 1 – ON	0	0	1	1	INT	R/W
86.2	PICKUP_DELAY	2433	42433	0 to 999999	0	0	999999	2	INT	R/W
86.3	DROPOUT_DELAY	2435	42435	0 to 999999	0	0	999999	2	INT	R/W
86.4	PRIORITY	2437	42437	0 – NONE 1 – LOW 2 – MEDIUM 3 – HIGH	0	0	3	1	INT	R/W
86.5	DIGITAL OUTPUT SELECTION	2438	42438	0-NONE 1- (INTERNAL)DO1 2- (INTERNAL)DO2	0	0	2	1	INT	R/W
86.6	RELAY OUTPUT SELECTION	2439	42439	0-NONE 1- (EXTERNAL)RO1 2- (EXTERNAL)RO2 3- (EXTERNAL)RO3 4- (EXTERNAL)RO4	0	0	4	1	INT	R/W
EXTERNAL ALARM S8										
87.1	ENABLE	2440	42440	0 – OFF 1 – ON	0	0	1	1	INT	R/W
87.2	PICKUP_DELAY	2441	42441	0 to 999999	0	0	999999	2	INT	R/W
87.3	DROPOUT_DELAY	2443	42443	0 to 999999	0	0	999999	2	INT	R/W
87.4	PRIORITY	2445	42445	0 – NONE 1 – LOW 2 – MEDIUM 3 – HIGH	0	0	3	1	INT	R/W
87.5	DIGITAL OUTPUT SELECTION	2446	42446	0-NONE 1- (INTERNAL)DO1 2- (INTERNAL)DO2	0	0	2	1	INT	R/W

Holding Register

Sr. No.	Parameter	Address	Modbus Addr.	Range / Selection	Factory Settings	Min	Max	Length (Reg.)	Data Type	R/W
87.6	RELAY OUTPUT SELECTION	2447	42447	0-NONE 1- (EXTERNAL)RO1 2- (EXTERNAL)RO2 3- (EXTERNAL)RO3 4- (EXTERNAL)RO4	0	0	4	1	INT	R/W

ALARM RECORD 1

88.1	ALARM NAME	3000	43000	0 to 34	-	0	34	1	INT	R
88.2	EVENT TYPE	3001	43001	0-NO EVENT RECORDED 1-ALARM UNARY EVENT 2-ALARM PICKUP EVENT 3- ALARM DROPOUT EVENT	-	0	3	1	INT	R
88.3	DAY	3002	43002	1 to 31	-	1	31	1	INT	R
88.4	MONTH	3003	43003	1 to 12	-	1	12	1	INT	R
88.5	YEAR	3004	43004	24 to 90	-	24	90	1	INT	R
88.6	HOURS	3005	43005	0 to 23	0	0	23	1	INT	R
88.7	MINUTES	3006	43006	0 to 59	0	0	59	1	INT	R
88.8	SECONDS	3007	43007	0 to 59	0	0	59	1	INT	R
88.9	PHASE NO	3009	43009	0 – PHASE 1 1 – PHASE 2 2 – PHASE 3	-	0	2	1	INT	R
88.1	PHASE VALUE 0	3010	43010	-	-	-	-	2	FLOAT	R
88.11	PHASE VALUE 1	3012	43012	-	-	-	-	2	FLOAT	R
88.12	PHASE VALUE 2	3014	43014	-	-	-	-	2	FLOAT	R

Record 2

89.1	ALARM NAME	3016	43016	0 to 34	-	0	34	1	INT	R
89.2	EVENT TYPE	3017	43017	0-NO EVENT RECORDED 1-ALARM UNARY EVENT 2-ALARM PICKUP EVENT 3- ALARM DROPOUT EVENT	-	0	3	1	INT	R
89.3	DAY	3018	43018	1 to 31	-	1	31	1	INT	R
89.4	MONTH	3019	43019	1 to 12	-	1	12	1	INT	R
89.5	YEAR	3020	43020	24 to 90	-	24	90	1	INT	R
89.6	HOURS	3021	43021	0 to 23	0	0	23	1	INT	R
89.7	MINUTES	3022	43022	0 to 59	0	0	59	1	INT	R

Holding Register

Sr. No.	Parameter	Address	Modbus Addr.	Range / Selection	Factory Settings	Min	Max	Length (Reg.)	Data Type	R/W
89.8	SECONDS	3023	43023	0 to 59	0	0	59	1	INT	R
89.9	PHASE NO	3025	43025	0 – PHASE 1 1 – PHASE 2 2 – PHASE 3	-	0	2	1	INT	R
89.1	PHASE VALUE 0	3026	43026	-	-	-	-	2	FLOAT	R
89.11	PHASE VALUE 1	3028	43028	-	-	-	-	2	FLOAT	R
89.12	PHASE VALUE 2	3030	43030	-	-	-	-	2	FLOAT	R
Record 3										
90.1	ALARM NAME	3032	43032	0 to 34	-	0	34	1	INT	R
90.2	EVENT TYPE	3033	43033	0-NO EVENT RECORDED 1-ALARM UNARY EVENT 2-ALARM PICKUP EVENT 3- ALARM DROPOUT EVENT	-	0	3	1	INT	R
90.3	DAY	3034	43034	1 to 31	-	1	31	1	INT	R
90.4	MONTH	3035	43035	1 to 12	-	1	12	1	INT	R
90.5	YEAR	3036	43036	24 to 90	-	24	90	1	INT	R
90.6	HOURS	3037	43037	0 to 23	0	0	23	1	INT	R
90.7	MINUTES	3038	43038	0 to 59	0	0	59	1	INT	R
90.8	SECONDS	3039	43039	0 to 59	0	0	59	1	INT	R
90.9	PHASE NO	3041	43041	0 – PHASE 1 1 – PHASE 2 2 – PHASE 3	-	0	2	1	INT	R
90.1	PHASE VALUE 0	3042	43042	-	-	-	-	2	FLOAT	R
90.11	PHASE VALUE 1	3044	43044	-	-	-	-	2	FLOAT	R
90.12	PHASE VALUE 2	3046	43046	-	-	-	-	2	FLOAT	R
Record 4										
91.1	ALARM NAME	3048	43048	0 to 34	-	0	34	1	INT	R
91.2	EVENT TYPE	3049	43049	0-NO EVENT RECORDED 1-ALARM UNARY EVENT 2-ALARM PICKUP EVENT 3- ALARM DROPOUT EVENT	-	0	3	1	INT	R
91.3	DAY	3050	43050	1 to 31	-	1	31	1	INT	R
91.4	MONTH	3051	43051	1 to 12	-	1	12	1	INT	R
91.5	YEAR	3052	43052	24 to 90	-	24	90	1	INT	R
91.6	HOURS	3053	43053	0 to 23	0	0	23	1	INT	R
91.7	MINUTES	3054	43054	0 to 59	0	0	59	1	INT	R

Holding Register

Sr. No.	Parameter	Address	Modbus Addr.	Range / Selection	Factory Settings	Min	Max	Length (Reg.)	Data Type	R/W
91.8	SECONDS	3055	43055	0 to 59	0	0	59	1	INT	R
91.9	PHASE NO	3057	43057	0 – PHASE 1 1 – PHASE 2 2 – PHASE 3	-	0	2	1	INT	R
91.1	PHASE VALUE 0	3058	43058	-	-	-	-	2	FLOAT	R
91.11	PHASE VALUE 1	3060	43060	-	-	-	-	2	FLOAT	R
91.12	PHASE VALUE 2	3062	43062	-	-	-	-	2	FLOAT	R
Record 5										
92.1	ALARM NAME	3064	43064							R
92.2	EVENT TYPE	3065	43065	0-NO EVENT RECORDED 1-ALARM UNARY EVENT 2-ALARM PICKUP EVENT 3- ALARM DROPOUT EVENT	-	0	3	1	INT	R
92.3	DAY	3066	43066	1 to 31	-	1	31	1	INT	R
92.4	MONTH	3067	43067	1 to 12	-	1	12	1	INT	R
92.5	YEAR	3068	43068	24 to 90	-	24	90	1	INT	R
92.6	HOURS	3069	43069	0 to 23	0	0	23	1	INT	R
92.7	MINUTES	3070	43070	0 to 59	0	0	59	1	INT	R
92.8	SECONDS	3071	43071	0 to 59	0	0	59	1	INT	R
92.9	PHASE NO	3073	43073	0 – PHASE 1 1 – PHASE 2 2 – PHASE 3	-	0	2	1	INT	R
92.1	PHASE VALUE 0	3074	43074	-	-	-	-	2	FLOAT	R
92.11	PHASE VALUE 1	3076	43076	-	-	-	-	2	FLOAT	R
92.13	PHASE VALUE 2	3078	43078	-	-	-	-	2	FLOAT	R
Record 6										
93.1	ALARM NAME	3080	43080	0 to 34	-	0	34	1	INT	R
93.2	EVENT TYPE	3081	43081	0-NO EVENT RECORDED 1-ALARM UNARY EVENT 2-ALARM PICKUP EVENT 3- ALARM DROPOUT EVENT	-	0	3	1	INT	R
93.3	DAY	3082	43082	1 to 31	-	1	31	1	INT	R
93.4	MONTH	3083	43083	1 to 12	-	1	12	1	INT	R
93.5	YEAR	3084	43084	24 to 90	-	24	90	1	INT	R
93.6	HOURS	3085	43085	0 to 23	0	0	23	1	INT	R
93.7	MINUTES	3086	43086	0 to 59	0	0	59	1	INT	R

Holding Register

Sr. No.	Parameter	Address	Modbus Addr.	Range / Selection	Factory Settings	Min	Max	Length (Reg.)	Data Type	R/W
93.8	SECONDS	3087	43087	0 to 59	0	0	59	1	INT	R
93.9	PHASE NO	3089	43089	0 – PHASE 1 1 – PHASE 2 2 – PHASE 3	-	0	2	1	INT	R
93.1	PHASE VALUE 0	3090	43090	-	-	-	-	2	FLOAT	R
93.11	PHASE VALUE 1	3092	43092	-	-	-	-	2	FLOAT	R
93.12	PHASE VALUE 2	3094	43094	-	-	-	-	2	FLOAT	R
Record 7										
94.1	ALARM NAME	3096	43096	0 to 34	-	0	34	1	INT	R
94.2	EVENT TYPE	3097	43097	0-NO EVENT RECORDED 1-ALARM UNARY EVENT 2-ALARM PICKUP EVENT 3- ALARM DROPOUT EVENT	-	0	3	1	INT	R
94.3	DAY	3098	43098	1 to 31	-	1	31	1	INT	R
94.4	MONTH	3099	43099	1 to 12	-	1	12	1	INT	R
94.5	YEAR	3100	43100	24 to 90	-	24	90	1	INT	R
94.6	HOURS	3101	43101	0 to 23	0	0	23	1	INT	R
94.7	MINUTES	3102	43102	0 to 59	0	0	59	1	INT	R
94.8	SECONDS	3103	43103	0 to 59	0	0	59	1	INT	R
94.9	PHASE NO	3105	43105	0 – PHASE 1 1 – PHASE 2 2 – PHASE 3	-	0	2	1	INT	R
94.1	PHASE VALUE 0	3106	43106	-	-	-	-	2	FLOAT	R
94.11	PHASE VALUE 1	3108	43108	-	-	-	-	2	FLOAT	R
94.12	PHASE VALUE 2	3110	43110	-	-	-	-	2	FLOAT	R
Record 8										
95.1	ALARM NAME	3112	43112	0 to 34	-	0	34	1	INT	R
95.2	EVENT TYPE	3113	43113	0-NO EVENT RECORDED 1-ALARM UNARY EVENT 2-ALARM PICKUP EVENT 3- ALARM DROPOUT EVENT	-	0	3	1	INT	R
95.3	DAY	3114	43114	1 to 31	-	1	31	1	INT	R
95.4	MONTH	3115	43115	1 to 12	-	1	12	1	INT	R
95.5	YEAR	3116	43116	24 to 90	-	24	90	1	INT	R
95.6	HOURS	3117	43117	0 to 23	0	0	23	1	INT	R
95.7	MINUTES	3118	43118	0 to 59	0	0	59	1	INT	R

Holding Register

Sr. No.	Parameter	Address	Modbus Addr.	Range / Selection	Factory Settings	Min	Max	Length (Reg.)	Data Type	R/W
95.8	SECONDS	3119	43119	0 to 59	0	0	59	1	INT	R
95.9	PHASE NO	3121	43121	0 – PHASE 1 1 – PHASE 2 2 – PHASE 3	-	0	2	1	INT	R
95.1	PHASE VALUE 0	3122	43122	-	-	-	-	2	FLOAT	R
95.11	PHASE VALUE 1	3124	43124	-	-	-	-	2	FLOAT	R
95.12	PHASE VALUE 2	3126	43126	-	-	-	-	2	FLOAT	R
Record 9										
96.1	ALARM NAME	3128	43128	0 to 34	-	0	34	1	INT	R
96.2	EVENT TYPE	3129	43129	0-NO EVENT RECORDED 1-ALARM UNARY EVENT 2-ALARM PICKUP EVENT 3- ALARM DROPOUT EVENT	-	0	3	1	INT	R
96.3	DAY	3130	43130	1 to 31	-	1	31	1	INT	R
96.4	MONTH	3131	43131	1 to 12	-	1	12	1	INT	R
96.5	YEAR	3132	43132	24 to 90	-	24	90	1	INT	R
96.6	HOURS	3133	43133	0 to 23	0	0	23	1	INT	R
96.7	MINUTES	3134	43134	0 to 59	0	0	59	1	INT	R
96.8	SECONDS	3135	43135	0 to 59	0	0	59	1	INT	R
96.9	PHASE NO	3137	43137	0 – PHASE 1 1 – PHASE 2 2 – PHASE 3	-	0	2	1	INT	R
96.1	PHASE VALUE 0	3138	43138	-	-	-	-	2	FLOAT	R
96.11	PHASE VALUE 1	3140	43140	-	-	-	-	2	FLOAT	R
96.12	PHASE VALUE 2	3142	43142	-	-	-	-	2	FLOAT	R
Record 10										
97.1	ALARM NAME	3144	43144	0 to 34	-	0	34	1	INT	R
97.2	EVENT TYPE	3145	43145	0-NO EVENT RECORDED 1-ALARM UNARY EVENT 2-ALARM PICKUP EVENT 3- ALARM DROPOUT EVENT	-	0	3	1	INT	R
97.3	DAY	3146	43146	1 to 31	-	1	31	1	INT	R
97.4	MONTH	3147	43147	1 to 12	-	1	12	1	INT	R
97.5	YEAR	3148	43148	24 to 90	-	24	90	1	INT	R
97.6	HOURS	3149	43149	0 to 23	0	0	23	1	INT	R
97.7	MINUTES	3150	43150	0 to 59	0	0	59	1	INT	R

Holding Register

Sr. No.	Parameter	Address	Modbus Addr.	Range / Selection	Factory Settings	Min	Max	Length (Reg.)	Data Type	R/W
97.8	SECONDS	3151	43151	0 to 59	0	0	59	1	INT	R
97.9	PHASE NO	3153	43153	0 – PHASE 1 1 – PHASE 2 2 – PHASE 3	-	0	2	1	INT	R
97.1	PHASE VALUE 0	3154	43154	-	-	-	-	2	FLOAT	R
97.11	PHASE VALUE 1	3156	43156	-	-	-	-	2	FLOAT	R
97.12	PHASE VALUE 2	3158	43158	-	-	-	-	2	FLOAT	R
Record 11										
98.1	ALARM NAME	3160	43160	0 to 34	-	0	34	1	INT	R
98.2	EVENT TYPE	3161	43161	0-NO EVENT RECORDED 1-ALARM UNARY EVENT 2-ALARM PICKUP EVENT 3- ALARM DROPOUT EVENT	-	0	3	1	INT	R
98.3	DAY	3162	43162	1 to 31	-	1	31	1	INT	R
98.4	MONTH	3163	43163	1 to 12	-	1	12	1	INT	R
98.5	YEAR	3164	43164	24 to 90	-	24	90	1	INT	R
98.6	HOURS	3165	43165	0 to 23	0	0	23	1	INT	R
98.7	MINUTES	3166	43166	0 to 59	0	0	59	1	INT	R
98.8	SECONDS	3167	43167	0 to 59	0	0	59	1	INT	R
98.9	PHASE NO	3169	43169	0 – PHASE 1 1 – PHASE 2 2 – PHASE 3	-	0	2	1	INT	R
98.1	PHASE VALUE 0	3170	43170	-	-	-	-	2	FLOAT	R
98.11	PHASE VALUE 1	3172	43172	-	-	-	-	2	FLOAT	R
98.12	PHASE VALUE 2	3174	43174	-	-	-	-	2	FLOAT	R
Record 12										
99.1	ALARM NAME	3176	43176	0 to 34	-	0	34	1	INT	R
99.2	EVENT TYPE	3177	43177	0-NO EVENT RECORDED 1-ALARM UNARY EVENT 2-ALARM PICKUP EVENT 3- ALARM DROPOUT EVENT	-	0	3	1	INT	R
99.3	DAY	3178	43178	1 to 31	-	1	31	1	INT	R
99.4	MONTH	3179	43179	1 to 12	-	1	12	1	INT	R
99.5	YEAR	3180	43180	24 to 90	-	24	90	1	INT	R
99.6	HOURS	3181	43181	0 to 23	0	0	23	1	INT	R
99.7	MINUTES	3182	43182	0 to 59	0	0	59	1	INT	R

Holding Register

Sr. No.	Parameter	Address	Modbus Addr.	Range / Selection	Factory Settings	Min	Max	Length (Reg.)	Data Type	R/W
99.8	SECONDS	3183	43183	0 to 59	0	0	59	1	INT	R
99.9	PHASE NO	3185	43185	0 – PHASE 1 1 – PHASE 2 2 – PHASE 3	-	0	2	1	INT	R
99.1	PHASE VALUE 0	3186	43186	-	-	-	-	2	FLOAT	R
99.11	PHASE VALUE 1	3188	43188	-	-	-	-	2	FLOAT	R
99.12	PHASE VALUE 2	3190	43190	-	-	-	-	2	FLOAT	R
Record 13										
100.1	ALARM NAME	3192	43192	0 to 34	-	0	34	1	INT	R
100.2	EVENT TYPE	3193	43193	0-NO EVENT RECORDED 1-ALARM UNARY EVENT 2-ALARM PICKUP EVENT 3- ALARM DROPOUT EVENT	-	0	3	1	INT	R
100.3	DAY	3194	43194	1 to 31	-	1	31	1	INT	R
100.4	MONTH	3195	43195	1 to 12	-	1	12	1	INT	R
100.5	YEAR	3196	43196	24 to 90	-	24	90	1	INT	R
100.6	HOURS	3197	43197	0 to 23	0	0	23	1	INT	R
100.7	MINUTES	3198	43198	0 to 59	0	0	59	1	INT	R
100.8	SECONDS	3199	43199	0 to 59	0	0	59	1	INT	R
100.9	PHASE NO	3201	43201	0 – PHASE 1 1 – PHASE 2 2 – PHASE 3	-	0	2	1	INT	R
100.1	PHASE VALUE 0	3202	43202	-	-	-	-	2	FLOAT	R
100.11	PHASE VALUE 1	3204	43204	-	-	-	-	2	FLOAT	R
100.12	PHASE VALUE 2	3206	43206	-	-	-	-	2	FLOAT	R
Record 14										
101.1	ALARM NAME	3208	43208							R
101.2	EVENT TYPE	3209	43209	0-NO EVENT RECORDED 1-ALARM UNARY EVENT 2-ALARM PICKUP EVENT 3- ALARM DROPOUT EVENT	-	0	3	1	INT	R
101.3	DAY	3210	43210	1 to 31	-	1	31	1	INT	R
101.4	MONTH	3211	43211	1 to 12	-	1	12	1	INT	R
101.5	YEAR	3212	43212	24 to 90	-	24	90	1	INT	R
101.6	HOURS	3213	43213	0 to 23	0	0	23	1	INT	R
101.7	MINUTES	3214	43214	0 to 59	0	0	59	1	INT	R

Holding Register

Sr. No.	Parameter	Address	Modbus Addr.	Range / Selection	Factory Settings	Min	Max	Length (Reg.)	Data Type	R/W
101.8	SECONDS	3215	43215	0 to 59	0	0	59	1	INT	R
101.9	PHASE NO	3217	43217	0 – PHASE 1 1 – PHASE 2 2 – PHASE 3	-	0	2	1	INT	R
101.1	PHASE VALUE 0	3218	43218	-	-	-	-	2	FLOAT	R
101.11	PHASE VALUE 1	3220	43220	-	-	-	-	2	FLOAT	R
101.12	PHASE VALUE 2	3222	43222	-	-	-	-	2	FLOAT	R
Record 15										
102.1	ALARM NAME	3224	43224	0 to 34	-	0	34	1	INT	R
102.2	EVENT TYPE	3225	43225	0-NO EVENT RECORDED 1-ALARM UNARY EVENT 2-ALARM PICKUP EVENT 3- ALARM DROPOUT EVENT	-	0	3	1	INT	R
102.3	DAY	3226	43226	1 to 31	-	1	31	1	INT	R
102.4	MONTH	3227	43227	1 to 12	-	1	12	1	INT	R
102.5	YEAR	3228	43228	24 to 90	-	24	90	1	INT	R
102.6	HOURS	3229	43229	0 to 23	0	0	23	1	INT	R
102.7	MINUTES	3230	43230	0 to 59	0	0	59	1	INT	R
102.8	SECONDS	3231	43231	0 to 59	0	0	59	1	INT	R
102.9	PHASE NO	3233	43233	0 – PHASE 1 1 – PHASE 2 2 – PHASE 3	-	0	2	1	INT	R
102.1	PHASE VALUE 0	3234	43234	-	-	-	-	2	FLOAT	R
102.11	PHASE VALUE 1	3236	43236	-	-	-	-	2	FLOAT	R
102.12	PHASE VALUE 2	3238	43238	-	-	-	-	2	FLOAT	R
Record 16										
103.1	ALARM NAME	3240	43240	0 to 34	-	0	34	1	INT	R
103.2	EVENT TYPE	3241	43241	0-NO EVENT RECORDED 1-ALARM UNARY EVENT 2-ALARM PICKUP EVENT 3- ALARM DROPOUT EVENT	-	0	3	1	INT	R
103.3	DAY	3242	43242	1 to 31	-	1	31	1	INT	R
103.4	MONTH	3243	43243	1 to 12	-	1	12	1	INT	R
103.5	YEAR	3244	43244	24 to 90	-	24	90	1	INT	R
103.6	HOURS	3245	43245	0 to 23	0	0	23	1	INT	R
103.7	MINUTES	3246	43246	0 to 59	0	0	59	1	INT	R

Holding Register

Sr. No.	Parameter	Address	Modbus Addr.	Range / Selection	Factory Settings	Min	Max	Length (Reg.)	Data Type	R/W
103.8	SECONDS	3247	43247	0 to 59	0	0	59	1	INT	R
103.9	PHASE NO	3249	43249	0 – PHASE 1 1 – PHASE 2 2 – PHASE 3	-	0	2	1	INT	R
103.1	PHASE VALUE 0	3250	43250	-	-	-	-	2	FLOAT	R
103.11	PHASE VALUE 1	3252	43252	-	-	-	-	2	FLOAT	R
103.12	PHASE VALUE 2	3254	43254	-	-	-	-	2	FLOAT	R
Record 17										
104.1	ALARM NAME	3256	43256	0 to 34	-	0	34	1	INT	R
104.2	EVENT TYPE	3257	43257	0-NO EVENT RECORDED 1-ALARM UNARY EVENT 2-ALARM PICKUP EVENT 3- ALARM DROPOUT EVENT	-	0	3	1	INT	R
104.3	DAY	3258	43258	1 to 31	-	1	31	1	INT	R
104.4	MONTH	3259	43259	1 to 12	-	1	12	1	INT	R
104.5	YEAR	3260	43260	24 to 90	-	24	90	1	INT	R
104.6	HOURS	3261	43261	0 to 23	0	0	23	1	INT	R
104.7	MINUTES	3262	43262	0 to 59	0	0	59	1	INT	R
104.8	SECONDS	3263	43263	0 to 59	0	0	59	1	INT	R
104.9	PHASE NO	3265	43265	0 – PHASE 1 1 – PHASE 2 2 – PHASE 3	-	0	2	1	INT	R
104.1	PHASE VALUE 0	3266	43266	-	-	-	-	2	FLOAT	R
104.11	PHASE VALUE 1	3268	43268	-	-	-	-	2	FLOAT	R
104.12	PHASE VALUE 2	3270	43270	-	-	-	-	2	FLOAT	R
Record 18										
105.1	ALARM NAME	3272	43272	0 to 34	-	0	34	1	INT	R
105.2	EVENT TYPE	3273	43273	0-NO EVENT RECORDED 1-ALARM UNARY EVENT 2-ALARM PICKUP EVENT 3- ALARM DROPOUT EVENT	-	0	3	1	INT	R
105.3	DAY	3274	43274	1 to 31	-	1	31	1	INT	R
105.4	MONTH	3275	43275	1 to 12	-	1	12	1	INT	R
105.5	YEAR	3276	43276	24 to 90	-	24	90	1	INT	R
105.6	HOURS	3277	43277	0 to 23	0	0	23	1	INT	R
105.7	MINUTES	3278	43278	0 to 59	0	0	59	1	INT	R

Holding Register

Sr. No.	Parameter	Address	Modbus Addr.	Range / Selection	Factory Settings	Min	Max	Length (Reg.)	Data Type	R/W
105.8	SECONDS	3279	43279	0 to 59	0	0	59	1	INT	R
105.9	PHASE NO	3281	43281	0 – PHASE 1 1 – PHASE 2 2 – PHASE 3	-	0	2	1	INT	R
105.1	PHASE VALUE 0	3282	43282	-	-	-	-	2	FLOAT	R
105.11	PHASE VALUE 1	3284	43284	-	-	-	-	2	FLOAT	R
105.12	PHASE VALUE 2	3286	43286	-	-	-	-	2	FLOAT	R
Record 19										
106.1	ALARM NAME	3288	43288	0 to 34	-	0	34	1	INT	R
106.2	EVENT TYPE	3289	43289	0-NO EVENT RECORDED 1-ALARM UNARY EVENT 2-ALARM PICKUP EVENT 3- ALARM DROPOUT EVENT	-	0	3	1	INT	R
106.3	DAY	3290	43290	1 to 31	-	1	31	1	INT	R
106.4	MONTH	3291	43291	1 to 12	-	1	12	1	INT	R
106.5	YEAR	3292	43292	24 to 90	-	24	90	1	INT	R
106.6	HOURS	3293	43293	0 to 23	0	0	23	1	INT	R
106.7	MINUTES	3294	43294	0 to 59	0	0	59	1	INT	R
106.8	SECONDS	3295	43295	0 to 59	0	0	59	1	INT	R
106.9	PHASE NO	3297	43297	0 – PHASE 1 1 – PHASE 2 2 – PHASE 3	-	0	2	1	INT	R
106.1	PHASE VALUE 0	3298	43298	-	-	-	-	2	FLOAT	R
106.11	PHASE VALUE 1	3300	43300	-	-	-	-	2	FLOAT	R
106.12	PHASE VALUE 2	3302	43302	-	-	-	-	2	FLOAT	R
Record 20										
107.1	ALARM NAME	3304	43304	0 to 34	-	0	34	1	INT	R
107.2	EVENT TYPE	3305	43305	0-NO EVENT RECORDED 1-ALARM UNARY EVENT 2-ALARM PICKUP EVENT 3- ALARM DROPOUT EVENT	-	0	3	1	INT	R
107.3	DAY	3306	43306	1 to 31	-	1	31	1	INT	R
107.4	MONTH	3307	43307	1 to 12	-	1	12	1	INT	R
107.5	YEAR	3308	43308	24 to 90	-	24	90	1	INT	R
107.6	HOURS	3309	43309	0 to 23	0	0	23	1	INT	R
107.7	MINUTES	3310	43310	0 to 59	0	0	59	1	INT	R

Holding Register

Sr. No.	Parameter	Address	Modbus Addr.	Range / Selection	Factory Settings	Min	Max	Length (Reg.)	Data Type	R/W
107.8	SECONDS	3311	43311	0 to 59	0	0	59	1	INT	R
107.9	PHASE NO	3313	43313	0 – PHASE 1 1 – PHASE 2 2 – PHASE 3	-	0	2	1	INT	R
107.1	PHASE VALUE 0	3314	43314	-	-	-	-	2	FLOAT	R
107.11	PHASE VALUE 1	3316	43316	-	-	-	-	2	FLOAT	R
107.12	PHASE VALUE 2	3318	43318	-	-	-	-	2	FLOAT	R
Record 21										
108.1	ALARM NAME	3320	43320	0 to 34	-	0	34	1	INT	R
108.2	EVENT TYPE	3321	43321	0-NO EVENT RECORDED 1-ALARM UNARY EVENT 2-ALARM PICKUP EVENT 3- ALARM DROPOUT EVENT	-	0	3	1	INT	R
108.3	DAY	3322	43322	1 to 31	-	1	31	1	INT	R
108.4	MONTH	3323	43323	1 to 12	-	1	12	1	INT	R
108.5	YEAR	3324	43324	24 to 90	-	24	90	1	INT	R
108.6	HOURS	3325	43325	0 to 23	0	0	23	1	INT	R
108.7	MINUTES	3326	43326	0 to 59	0	0	59	1	INT	R
108.8	SECONDS	3327	43327	0 to 59	0	0	59	1	INT	R
108.9	PHASE NO	3329	43329	0 – PHASE 1 1 – PHASE 2 2 – PHASE 3	-	0	2	1	INT	R
108.1	PHASE VALUE 0	3330	43330	-	-	-	-	2	FLOAT	R
108.11	PHASE VALUE 1	3332	43332	-	-	-	-	2	FLOAT	R
108.12	PHASE VALUE 2	3334	43334	-	-	-	-	2	FLOAT	R
Record 22										
109.1	ALARM NAME	3336	43336	0 to 34	-	0	34	1	INT	R
109.2	EVENT TYPE	3337	43337	0-NO EVENT RECORDED 1-ALARM UNARY EVENT 2-ALARM PICKUP EVENT 3- ALARM DROPOUT EVENT	-	0	3	1	INT	R
109.3	DAY	3338	43338	1 to 31	-	1	31	1	INT	R
109.4	MONTH	3339	43339	1 to 12	-	1	12	1	INT	R
109.5	YEAR	3340	43340	24 to 90	-	24	90	1	INT	R
109.6	HOURS	3341	43341	0 to 23	0	0	23	1	INT	R
109.7	MINUTES	3342	43342	0 to 59	0	0	59	1	INT	R

Holding Register

Sr. No.	Parameter	Address	Modbus Addr.	Range / Selection	Factory Settings	Min	Max	Length (Reg.)	Data Type	R/W
109.8	SECONDS	3343	43343	0 to 59	0	0	59	1	INT	R
109.9	PHASE NO	3345	43345	0 – PHASE 1 1 – PHASE 2 2 – PHASE 3	-	0	2	1	INT	R
109.1	PHASE VALUE 0	3346	43346	-	-	-	-	2	FLOAT	R
109.11	PHASE VALUE 1	3348	43348	-	-	-	-	2	FLOAT	R
109.12	PHASE VALUE 2	3350	43350	-	-	-	-	2	FLOAT	R
Record 23										
110.1	ALARM NAME	3352	43352							R
110.2	EVENT TYPE	3353	43353	0-NO EVENT RECORDED 1-ALARM UNARY EVENT 2-ALARM PICKUP EVENT 3- ALARM DROPOUT EVENT	-	0	3	1	INT	R
110.3	DAY	3354	43354	1 to 31	-	1	31	1	INT	R
110.4	MONTH	3355	43355	1 to 12	-	1	12	1	INT	R
110.5	YEAR	3356	43356	24 to 90	-	24	90	1	INT	R
110.6	HOURS	3357	43357	0 to 23	0	0	23	1	INT	R
110.7	MINUTES	3358	43358	0 to 59	0	0	59	1	INT	R
110.8	SECONDS	3359	43359	0 to 59	0	0	59	1	INT	R
110.9	PHASE NO	3361	43361	0 – PHASE 1 1 – PHASE 2 2 – PHASE 3	-	0	2	1	INT	R
110.1	PHASE VALUE 0	3362	43362	-	-	-	-	2	FLOAT	R
110.11	PHASE VALUE 1	3364	43364	-	-	-	-	2	FLOAT	R
110.12	PHASE VALUE 2	3366	43366	-	-	-	-	2	FLOAT	R
Record 24										
111.1	ALARM NAME	3368	43368	0 to 34	-	0	34	1	INT	R
111.2	EVENT TYPE	3369	43369	0-NO EVENT RECORDED 1-ALARM UNARY EVENT 2-ALARM PICKUP EVENT 3- ALARM DROPOUT EVENT	-	0	3	1	INT	R
111.3	DAY	3370	43370	1 to 31	-	1	31	1	INT	R
111.4	MONTH	3371	43371	1 to 12	-	1	12	1	INT	R
111.5	YEAR	3372	43372	24 to 90	-	24	90	1	INT	R
111.6	HOURS	3373	43373	0 to 23	0	0	23	1	INT	R
111.7	MINUTES	3374	43374	0 to 59	0	0	59	1	INT	R

Holding Register

Sr. No.	Parameter	Address	Modbus Addr.	Range / Selection	Factory Settings	Min	Max	Length (Reg.)	Data Type	R/W
111.8	SECONDS	3375	43375	0 to 59	0	0	59	1	INT	R
111.9	PHASE NO	3377	43377	0 – PHASE 1 1 – PHASE 2 2 – PHASE 3	-	0	2	1	INT	R
111.1	PHASE VALUE 0	3378	43378	-	-	-	-	2	FLOAT	R
111.11	PHASE VALUE 1	3380	43380	-	-	-	-	2	FLOAT	R
111.12	PHASE VALUE 2	3382	43382	-	-	-	-	2	FLOAT	R
Record 25										
112.1	ALARM NAME	3384	43384	0 to 34	-	0	34	1	INT	R
112.2	EVENT TYPE	3385	43385	0-NO EVENT RECORDED 1-ALARM UNARY EVENT 2-ALARM PICKUP EVENT 3- ALARM DROPOUT EVENT	-	0	3	1	INT	R
112.3	DAY	3386	43386	1 to 31	-	1	31	1	INT	R
112.4	MONTH	3387	43387	1 to 12	-	1	12	1	INT	R
112.5	YEAR	3388	43388	24 to 90	-	24	90	1	INT	R
112.6	HOURS	3389	43389	0 to 23	0	0	23	1	INT	R
112.7	MINUTES	3390	43390	0 to 59	0	0	59	1	INT	R
112.8	SECONDS	3391	43391	0 to 59	0	0	59	1	INT	R
112.9	PHASE NO	3393	43393	0 – PHASE 1 1 – PHASE 2 2 – PHASE 3	-	0	2	1	INT	R
112.1	PHASE VALUE 0	3394	43394	-	-	-	-	2	FLOAT	R
112.11	PHASE VALUE 1	3396	43396	-	-	-	-	2	FLOAT	R
112.12	PHASE VALUE 2	3398	43398	-	-	-	-	2	FLOAT	R
Record 26										
113.1	ALARM NAME	3400	43400	0 to 34	-	0	34	1	INT	R
113.2	EVENT TYPE	3401	43401	0-NO EVENT RECORDED 1-ALARM UNARY EVENT 2-ALARM PICKUP EVENT 3- ALARM DROPOUT EVENT	-	0	3	1	INT	R
113.3	DAY	3402	43402	1 to 31	-	1	31	1	INT	R
113.4	MONTH	3403	43403	1 to 12	-	1	12	1	INT	R
113.5	YEAR	3404	43404	24 to 90	-	24	90	1	INT	R
113.6	HOURS	3405	43405	0 to 23	0	0	23	1	INT	R
113.7	MINUTES	3406	43406	0 to 59	0	0	59	1	INT	R

Holding Register

Sr. No.	Parameter	Address	Modbus Addr.	Range / Selection	Factory Settings	Min	Max	Length (Reg.)	Data Type	R/W
113.8	SECONDS	3407	43407	0 to 59	0	0	59	1	INT	R
113.9	PHASE NO	3409	43409	0 – PHASE 1 1 – PHASE 2 2 – PHASE 3	-	0	2	1	INT	R
113.1	PHASE VALUE 0	3410	43410	-	-	-	-	2	FLOAT	R
113.11	PHASE VALUE 1	3412	43412	-	-	-	-	2	FLOAT	R
113.12	PHASE VALUE 2	3414	43414	-	-	-	-	2	FLOAT	R
Record 27										
114.1	ALARM NAME	3416	43416	0 to 34	-	0	34	1	INT	R
114.2	EVENT TYPE	3417	43417	0-NO EVENT RECORDED 1-ALARM UNARY EVENT 2-ALARM PICKUP EVENT 3- ALARM DROPOUT EVENT	-	0	3	1	INT	R
114.3	DAY	3418	43418	1 to 31	-	1	31	1	INT	R
114.4	MONTH	3419	43419	1 to 12	-	1	12	1	INT	R
114.5	YEAR	3420	43420	24 to 90	-	24	90	1	INT	R
114.6	HOURS	3421	43421	0 to 23	0	0	23	1	INT	R
114.7	MINUTES	3422	43422	0 to 59	0	0	59	1	INT	R
114.8	SECONDS	3423	43423	0 to 59	0	0	59	1	INT	R
114.9	PHASE NO	3425	43425	0 – PHASE 1 1 – PHASE 2 2 – PHASE 3	-	0	2	1	INT	R
114.1	PHASE VALUE 0	3426	43426	-	-	-	-	2	FLOAT	R
114.11	PHASE VALUE 1	3428	43428	-	-	-	-	2	FLOAT	R
114.12	PHASE VALUE 2	3430	43430	-	-	-	-	2	FLOAT	R
Record 28										
115.1	ALARM NAME	3432	43432	0 to 34	-	0	34	1	INT	R
115.2	EVENT TYPE	3433	43433	0-NO EVENT RECORDED 1-ALARM UNARY EVENT 2-ALARM PICKUP EVENT 3- ALARM DROPOUT EVENT	-	0	3	1	INT	R
115.3	DAY	3434	43434	1 to 31	-	1	31	1	INT	R
115.4	MONTH	3435	43435	1 to 12	-	1	12	1	INT	R
115.5	YEAR	3436	43436	24 to 90	-	24	90	1	INT	R
115.6	HOURS	3437	43437	0 to 23	0	0	23	1	INT	R
115.7	MINUTES	3438	43438	0 to 59	0	0	59	1	INT	R

Holding Register

Sr. No.	Parameter	Address	Modbus Addr.	Range / Selection	Factory Settings	Min	Max	Length (Reg.)	Data Type	R/W
115.8	SECONDS	3439	43439	0 to 59	0	0	59	1	INT	R
115.9	PHASE NO	3441	43441	0 – PHASE 1 1 – PHASE 2 2 – PHASE 3	-	0	2	1	INT	R
115.1	PHASE VALUE 0	3442	43442	-	-	-	-	2	FLOAT	R
115.11	PHASE VALUE 1	3444	43444	-	-	-	-	2	FLOAT	R
115.12	PHASE VALUE 2	3446	43446	-	-	-	-	2	FLOAT	R
Record 29										
116.1	ALARM NAME	3448	43448	0 to 34	-	0	34	1	INT	R
116.2	EVENT TYPE	3449	43449	0-NO EVENT RECORDED 1-ALARM UNARY EVENT 2-ALARM PICKUP EVENT 3- ALARM DROPOUT EVENT	-	0	3	1	INT	R
116.3	DAY	3450	43450	1 to 31	-	1	31	1	INT	R
116.4	MONTH	3451	43451	1 to 12	-	1	12	1	INT	R
116.5	YEAR	3452	43452	24 to 90	-	24	90	1	INT	R
116.6	HOURS	3453	43453	0 to 23	0	0	23	1	INT	R
116.7	MINUTES	3454	43454	0 to 59	0	0	59	1	INT	R
116.8	SECONDS	3455	43455	0 to 59	0	0	59	1	INT	R
116.9	PHASE NO	3457	43457	0 – PHASE 1 1 – PHASE 2 2 – PHASE 3	-	0	2	1	INT	R
116.1	PHASE VALUE 0	3458	43458	-	-	-	-	2	FLOAT	R
116.11	PHASE VALUE 1	3460	43460	-	-	-	-	2	FLOAT	R
116.12	PHASE VALUE 2	3462	43462	-	-	-	-	2	FLOAT	R
Record 30										
117.1	ALARM NAME	3464	43464	0 to 34	-	0	34	1	INT	R
117.2	EVENT TYPE	3465	43465	0-NO EVENT RECORDED 1-ALARM UNARY EVENT 2-ALARM PICKUP EVENT 3- ALARM DROPOUT EVENT	-	0	3	1	INT	R
117.3	DAY	3466	43466	1 to 31	-	1	31	1	INT	R
117.4	MONTH	3467	43467	1 to 12	-	1	12	1	INT	R
117.5	YEAR	3468	43468	24 to 90	-	24	90	1	INT	R
117.6	HOURS	3469	43469	0 to 23	0	0	23	1	INT	R
117.7	MINUTES	3470	43470	0 to 59	0	0	59	1	INT	R

Holding Register

Sr. No.	Parameter	Address	Modbus Addr.	Range / Selection	Factory Settings	Min	Max	Length (Reg.)	Data Type	R/W
117.8	SECONDS	3471	43471	0 to 59	0	0	59	1	INT	R
117.9	PHASE NO	3473	43473	0 – PHASE 1 1 – PHASE 2 2 – PHASE 3	-	0	2	1	INT	R
117.1	PHASE VALUE 0	3474	43474	-	-	-	-	2	FLOAT	R
117.11	PHASE VALUE 1	3476	43476	-	-	-	-	2	FLOAT	R
117.12	PHASE VALUE 2	3478	43478	-	-	-	-	2	FLOAT	R
Record 31										
118.1	ALARM NAME	3480	43480	0 to 34	-	0	34	1	INT	R
118.2	EVENT TYPE	3481	43481	0-NO EVENT RECORDED 1-ALARM UNARY EVENT 2-ALARM PICKUP EVENT 3- ALARM DROPOUT EVENT	-	0	3	1	INT	R
118.3	DAY	3482	43482	1 to 31	-	1	31	1	INT	R
118.4	MONTH	3483	43483	1 to 12	-	1	12	1	INT	R
118.5	YEAR	3484	43484	24 to 90	-	24	90	1	INT	R
118.6	HOURS	3485	43485	0 to 23	0	0	23	1	INT	R
118.7	MINUTES	3486	43486	0 to 59	0	0	59	1	INT	R
118.8	SECONDS	3487	43487	0 to 59	0	0	59	1	INT	R
118.9	PHASE NO	3489	43489	0 – PHASE 1 1 – PHASE 2 2 – PHASE 3	-	0	2	1	INT	R
118.1	PHASE VALUE 0	3490	43490	-	-	-	-	2	FLOAT	R
118.11	PHASE VALUE 1	3492	43492	-	-	-	-	2	FLOAT	R
118.12	PHASE VALUE 2	3494	43494	-	-	-	-	2	FLOAT	R
Record 32										
119.1	ALARM NAME	3496	43496							R
119.2	EVENT TYPE	3497	43497	0-NO EVENT RECORDED 1-ALARM UNARY EVENT 2-ALARM PICKUP EVENT 3- ALARM DROPOUT EVENT	-	0	3	1	INT	R
119.3	DAY	3498	43498	1 to 31	-	1	31	1	INT	R
119.4	MONTH	3499	43499	1 to 12	-	1	12	1	INT	R
119.5	YEAR	3500	43500	24 to 90	-	24	90	1	INT	R
119.6	HOURS	3501	43501	0 to 23	0	0	23	1	INT	R
119.7	MINUTES	3502	43502	0 to 59	0	0	59	1	INT	R

Holding Register

Sr. No.	Parameter	Address	Modbus Addr.	Range / Selection	Factory Settings	Min	Max	Length (Reg.)	Data Type	R/W
119.8	SECONDS	3503	43503	0 to 59	0	0	59	1	INT	R
119.9	PHASE NO	3505	43505	0 – PHASE 1 1 – PHASE 2 2 – PHASE 3	-	0	2	1	INT	R
119.1	PHASE VALUE 0	3506	43506	-	-	-	-	2	FLOAT	R
119.11	PHASE VALUE 1	3508	43508	-	-	-	-	2	FLOAT	R
119.12	PHASE VALUE 2	3510	43510	-	-	-	-	2	FLOAT	R
Record 33										
120.1	ALARM NAME	3512	43512	0 to 34	-	0	34	1	INT	R
120.2	EVENT TYPE	3513	43513	0-NO EVENT RECORDED 1-ALARM UNARY EVENT 2-ALARM PICKUP EVENT 3- ALARM DROPOUT EVENT	-	0	3	1	INT	R
120.3	DAY	3514	43514	1 to 31	-	1	31	1	INT	R
120.4	MONTH	3515	43515	1 to 12	-	1	12	1	INT	R
120.5	YEAR	3516	43516	24 to 90	-	24	90	1	INT	R
120.6	HOURS	3517	43517	0 to 23	0	0	23	1	INT	R
120.7	MINUTES	3518	43518	0 to 59	0	0	59	1	INT	R
120.8	SECONDS	3519	43519	0 to 59	0	0	59	1	INT	R
120.9	PHASE NO	3521	43521	0 – PHASE 1 1 – PHASE 2 2 – PHASE 3	-	0	2	1	INT	R
120.1	PHASE VALUE 0	3522	43522	-	-	-	-	2	FLOAT	R
120.11	PHASE VALUE 1	3524	43524	-	-	-	-	2	FLOAT	R
120.12	PHASE VALUE 2	3526	43526	-	-	-	-	2	FLOAT	R
Record 34										
121.1	ALARM NAME	3528	43528	0 to 34	-	0	34	1	INT	R
121.2	EVENT TYPE	3529	43529	0-NO EVENT RECORDED 1-ALARM UNARY EVENT 2-ALARM PICKUP EVENT 3- ALARM DROPOUT EVENT	-	0	3	1	INT	R
121.3	DAY	3530	43530	1 to 31	-	1	31	1	INT	R
121.4	MONTH	3531	43531	1 to 12	-	1	12	1	INT	R
121.5	YEAR	3532	43532	24 to 90	-	24	90	1	INT	R
121.6	HOURS	3533	43533	0 to 23	0	0	23	1	INT	R
121.7	MINUTES	3534	43534	0 to 59	0	0	59	1	INT	R

Holding Register

Sr. No.	Parameter	Address	Modbus Addr.	Range / Selection	Factory Settings	Min	Max	Length (Reg.)	Data Type	R/W
121.8	SECONDS	3535	43535	0 to 59	0	0	59	1	INT	R
121.9	PHASE NO	3537	43537	0 – PHASE 1 1 – PHASE 2 2 – PHASE 3	-	0	2	1	INT	R
121.1	PHASE VALUE 0	3538	43538	-	-	-	-	2	FLOAT	R
121.11	PHASE VALUE 1	3540	43540	-	-	-	-	2	FLOAT	R
121.12	PHASE VALUE 2	3542	43542	-	-	-	-	2	FLOAT	R
Record 35										
122.1	ALARM NAME	3544	43544	0 to 34	-	0	34	1	INT	R
122.2	EVENT TYPE	3545	43545	0-NO EVENT RECORDED 1-ALARM UNARY EVENT 2-ALARM PICKUP EVENT 3- ALARM DROPOUT EVENT	-	0	3	1	INT	R
122.3	DAY	3546	43546	1 to 31	-	1	31	1	INT	R
122.4	MONTH	3547	43547	1 to 12	-	1	12	1	INT	R
122.5	YEAR	3548	43548	24 to 90	-	24	90	1	INT	R
122.6	HOURS	3549	43549	0 to 23	0	0	23	1	INT	R
122.7	MINUTES	3550	43550	0 to 59	0	0	59	1	INT	R
122.8	SECONDS	3551	43551	0 to 59	0	0	59	1	INT	R
122.9	PHASE NO	3553	43553	0 – PHASE 1 1 – PHASE 2 2 – PHASE 3	-	0	2	1	INT	R
122.1	PHASE VALUE 0	3554	43554	-	-	-	-	2	FLOAT	R
122.11	PHASE VALUE 1	3556	43556	-	-	-	-	2	FLOAT	R
122.12	PHASE VALUE 2	3558	43558	-	-	-	-	2	FLOAT	R
Record 36										
123.1	ALARM NAME	3560	43560	0 to 34	-	0	34	1	INT	R
123.2	EVENT TYPE	3561	43561	0-NO EVENT RECORDED 1-ALARM UNARY EVENT 2-ALARM PICKUP EVENT 3- ALARM DROPOUT EVENT	-	0	3	1	INT	R
123.3	DAY	3562	43562	1 to 31	-	1	31	1	INT	R
123.4	MONTH	3563	43563	1 to 12	-	1	12	1	INT	R
123.5	YEAR	3564	43564	24 to 90	-	24	90	1	INT	R
123.6	HOURS	3565	43565	0 to 23	0	0	23	1	INT	R
123.7	MINUTES	3566	43566	0 to 59	0	0	59	1	INT	R

Holding Register

Sr. No.	Parameter	Address	Modbus Addr.	Range / Selection	Factory Settings	Min	Max	Length (Reg.)	Data Type	R/W
123.8	SECONDS	3567	43567	0 to 59	0	0	59	1	INT	R
123.9	PHASE NO	3569	43569	0 – PHASE 1 1 – PHASE 2 2 – PHASE 3	-	0	2	1	INT	R
123.1	PHASE VALUE 0	3570	43570	-	-	-	-	2	FLOAT	R
123.11	PHASE VALUE 1	3572	43572	-	-	-	-	2	FLOAT	R
123.12	PHASE VALUE 2	3574	43574	-	-	-	-	2	FLOAT	R
Record 37										
124.1	ALARM NAME	3576	43576	0 to 34	-	0	34	1	INT	R
124.2	EVENT TYPE	3577	43577	0-NO EVENT RECORDED 1-ALARM UNARY EVENT 2-ALARM PICKUP EVENT 3- ALARM DROPOUT EVENT	-	0	3	1	INT	R
124.3	DAY	3578	43578	1 to 31	-	1	31	1	INT	R
124.4	MONTH	3579	43579	1 to 12	-	1	12	1	INT	R
124.5	YEAR	3580	43580	24 to 90	-	24	90	1	INT	R
124.6	HOURS	3581	43581	0 to 23	0	0	23	1	INT	R
124.7	MINUTES	3582	43582	0 to 59	0	0	59	1	INT	R
124.8	SECONDS	3583	43583	0 to 59	0	0	59	1	INT	R
124.9	PHASE NO	3585	43585	0 – PHASE 1 1 – PHASE 2 2 – PHASE 3	-	0	2	1	INT	R
124.1	PHASE VALUE 0	3586	43586	-	-	-	-	2	FLOAT	R
124.11	PHASE VALUE 1	3588	43588	-	-	-	-	2	FLOAT	R
124.12	PHASE VALUE 2	3590	43590	-	-	-	-	2	FLOAT	R
Record 38										
125.1	ALARM NAME	3592	43592	0 to 34	-	0	34	1	INT	R
125.2	EVENT TYPE	3593	43593	0-NO EVENT RECORDED 1-ALARM UNARY EVENT 2-ALARM PICKUP EVENT 3- ALARM DROPOUT EVENT	-	0	3	1	INT	R
125.3	DAY	3594	43594	1 to 31	-	1	31	1	INT	R
125.4	MONTH	3595	43595	1 to 12	-	1	12	1	INT	R
125.5	YEAR	3596	43596	24 to 90	-	24	90	1	INT	R
125.6	HOURS	3597	43597	0 to 23	0	0	23	1	INT	R
125.7	MINUTES	3598	43598	0 to 59	0	0	59	1	INT	R

Holding Register

Sr. No.	Parameter	Address	Modbus Addr.	Range / Selection	Factory Settings	Min	Max	Length (Reg.)	Data Type	R/W
125.8	SECONDS	3599	43599	0 to 59	0	0	59	1	INT	R
125.9	PHASE NO	3601	43601	0 – PHASE 1 1 – PHASE 2 2 – PHASE 3	-	0	2	1	INT	R
125.1	PHASE VALUE 0	3602	43602	-	-	-	-	2	FLOAT	R
125.11	PHASE VALUE 1	3604	43604	-	-	-	-	2	FLOAT	R
125.12	PHASE VALUE 2	3606	43606	-	-	-	-	2	FLOAT	R
Record 39										
126.1	ALARM NAME	3608	43608	0 to 34	-	0	34	1	INT	R
126.2	EVENT TYPE	3609	43609	0-NO EVENT RECORDED 1-ALARM UNARY EVENT 2-ALARM PICKUP EVENT 3- ALARM DROPOUT EVENT	-	0	3	1	INT	R
126.3	DAY	3610	43610	1 to 31	-	1	31	1	INT	R
126.4	MONTH	3611	43611	1 to 12	-	1	12	1	INT	R
126.5	YEAR	3612	43612	24 to 90	-	24	90	1	INT	R
126.6	HOURS	3613	43613	0 to 23	0	0	23	1	INT	R
126.7	MINUTES	3614	43614	0 to 59	0	0	59	1	INT	R
126.8	SECONDS	3615	43615	0 to 59	0	0	59	1	INT	R
126.9	PHASE NO	3617	43617	0 – PHASE 1 1 – PHASE 2 2 – PHASE 3	-	0	2	1	INT	R
126.1	PHASE VALUE 0	3618	43618	-	-	-	-	2	FLOAT	R
126.11	PHASE VALUE 1	3620	43620	-	-	-	-	2	FLOAT	R
126.12	PHASE VALUE 2	3622	43622	-	-	-	-	2	FLOAT	R
Record 40										
127.1	ALARM NAME	3624	43624	0 to 34	-	0	34	1	INT	R
127.2	EVENT TYPE	3625	43625	0-NO EVENT RECORDED 1-ALARM UNARY EVENT 2-ALARM PICKUP EVENT 3- ALARM DROPOUT EVENT	-	0	3	1	INT	R
127.3	DAY	3626	43626	1 to 31	-	1	31	1	INT	R
127.4	MONTH	3627	43627	1 to 12	-	1	12	1	INT	R
127.5	YEAR	3628	43628	24 to 90	-	24	90	1	INT	R
127.6	HOURS	3629	43629	0 to 23	0	0	23	1	INT	R
127.7	MINUTES	3630	43630	0 to 59	0	0	59	1	INT	R

Holding Register

Sr. No.	Parameter	Address	Modbus Addr.	Range / Selection	Factory Settings	Min	Max	Length (Reg.)	Data Type	R/W
127.8	SECONDS	3631	43631	0 to 59	0	0	59	1	INT	R
127.9	PHASE NO	3633	43633	0 – PHASE 1 1 – PHASE 2 2 – PHASE 3	-	0	2	1	INT	R
127.1	PHASE VALUE 0	3634	43634	-	-	-	-	2	FLOAT	R
127.11	PHASE VALUE 1	3636	43636	-	-	-	-	2	FLOAT	R
127.12	PHASE VALUE 2	3638	43638	-	-	-	-	2	FLOAT	R
PARAMETERS SELECTION										
128.1	VOLTAGE V1N	4051	44051	0/1	0	0	1	1	INT	R/W
128.2	VOLTAGE V2N	4052	44052	0/1	0	0	1	1	INT	R/W
128.3	VOLTAGE V3N	4053	44053	0/1	0	0	1	1	INT	R/W
128.4	AVERAGE VOLTAGE LN	4055	44055	0/1	0	0	1	1	INT	R/W
128.5	VOLTAGE V12	4056	44056	0/1	0	0	1	1	INT	R/W
128.6	VOLTAGE V23	4057	44057	0/1	0	0	1	1	INT	R/W
128.7	VOLTAGE V31	4058	44058	0/1	0	0	1	1	INT	R/W
128.8	AVERAGE VOLTAGE LL	4059	44059	0/1	0	0	1	1	INT	R/W
128.9	CURRENT L1	4060	44060	0/1	0	0	1	1	INT	R/W
128.1	CURRENT L2	4061	44061	0/1	0	0	1	1	INT	R/W
128.11	CURRENT L3	4062	44062	0/1	0	0	1	1	INT	R/W
128.12	CURRENT N	4063	44063	0/1	0	0	1	1	INT	R/W
128.13	AVERAGE CURRENT	4065	44065	0/1	0	0	1	1	INT	R/W
128.14	ACTIVE POWER KW1	4066	44066	0/1	0	0	1	1	INT	R/W
128.15	ACTIVE POWER KW2	4067	44067	0/1	0	0	1	1	INT	R/W
128.16	ACTIVE POWER KW3	4068	44068	0/1	0	0	1	1	INT	R/W
128.17	TOTAL ACTIVE KW	4069	44069	0/1	0	0	1	1	INT	R/W
128.18	APPARENT POWER KVA1	4070	44070	0/1	0	0	1	1	INT	R/W
128.19	APPARENT POWER KVA2	4071	44071	0/1	0	0	1	1	INT	R/W
128.2	APPARENT POWER KVA3	4072	44072	0/1	0	0	1	1	INT	R/W
128.21	TOTAL APPARENT KVA	4073	44073	0/1	0	0	1	1	INT	R/W

Holding Register

Sr. No.	Parameter	Address	Modbus Addr.	Range / Selection	Factory Settings	Min	Max	Length (Reg.)	Data Type	R/W
128.22	REACTIVE POWER KVAR1	4074	44074	0/1	0	0	1	1	INT	R/W
128.23	REACTIVE POWER KVAR2	4075	44075	0/1	0	0	1	1	INT	R/W
128.24	REACTIVE POWER KVAR3	4076	44076	0/1	0	0	1	1	INT	R/W
128.25	TOTAL REACTIVE KVAR	4077	44077	0/1	0	0	1	1	INT	R/W
128.26	TRUE POWER FACTOR PH1	4078	44078	0/1	0	0	1	1	INT	R/W
128.27	TRUE POWER FACTOR PH2	4079	44079	0/1	0	0	1	1	INT	R/W
128.28	TRUE POWER FACTOR PH3	4080	44080	0/1	0	0	1	1	INT	R/W
128.29	TRUE POWER FACTOR TOTAL	4081	44081	0/1	0	0	1	1	INT	R/W
128.3	FREQUENCY	4082	44082	0/1	0	0	1	1	INT	R/W
128.31	MAINS EGY ACTIVE TOT IMP	4083	44083	0/1	0	0	1	1	INT	R/W
128.32	MAINS EGY ACTIVE TOT EXP	4084	44084	0/1	0	0	1	1	INT	R/W
128.33	MAINS EGY ACTIVE TOT NET	4085	44085	0/1	0	0	1	1	INT	R/W
128.34	MAINS EGY ACTIVE TOT ABS	4086	44086	0/1	0	0	1	1	INT	R/W
128.35	MAINS EGY APP TOT IMP	4087	44087	0/1	0	0	1	1	INT	R/W
128.36	MAINS EGY APP TOT EXP	4088	44088	0/1	0	0	1	1	INT	R/W
128.37	MAINS EGY APP TOT NET	4089	44089	0/1	0	0	1	1	INT	R/W
128.38	MAINS EGY APP TOT ABS	4090	44090	0/1	0	0	1	1	INT	R/W
128.39	MAINS EGY REAC TOT IMP	4091	44091	0/1	0	0	1	1	INT	R/W
128.4	MAINS EGY REAC TOT EXP	4092	44092	0/1	0	0	1	1	INT	R/W
128.41	MAINS EGY REAC TOT NET	4093	44093	0/1	0	0	1	1	INT	R/W
128.42	MAINS EGY REAC TOT ABS	4094	44094	0/1	0	0	1	1	INT	R/W
128.43	DG EGY ACTIVE TOT IMP	4095	44095	0/1	0	0	1	1	INT	R/W

Holding Register

Sr. No.	Parameter	Address	Modbus Addr.	Range / Selection	Factory Settings	Min	Max	Length (Reg.)	Data Type	R/W
128.44	DG EGY ACTIVE TOT EXP	4096	44096	0/1	0	0	1	1	INT	R/W
128.45	DG EGY ACTIVE TOT NET	4097	44097	0/1	0	0	1	1	INT	R/W
128.46	DG EGY ACTIVE TOT ABS	4098	44098	0/1	0	0	1	1	INT	R/W
128.47	DG EGY APP TOT IMP	4099	44099	0/1	0	0	1	1	INT	R/W
128.48	DG EGY APP TOT EXP	4100	44100	0/1	0	0	1	1	INT	R/W
128.49	DG EGY APP TOT NET	4101	44101	0/1	0	0	1	1	INT	R/W
128.5	DG EGY APP TOT ABS	4102	44102	0/1	0	0	1	1	INT	R/W
128.51	DG EGY REAC TOT IMP	4103	44103	0/1	0	0	1	1	INT	R/W
128.52	DG EGY REAC TOT EXP	4104	44104	0/1	0	0	1	1	INT	R/W
128.53	DG EGY REAC TOT NET	4105	44105	0/1	0	0	1	1	INT	R/W
128.54	DG EGY REAC TOT ABS	4106	44106	0/1	0	0	1	1	INT	R/W
128.55	MAX DMD KW TOTAL	4107	44107	0/1	0	0	1	1	INT	R/W
128.56	MAX DMD KVA TOTAL	4108	44108	0/1	0	0	1	1	INT	R/W
128.57	MAX DMD KVAR TOTAL	4109	44109	0/1	0	0	1	1	INT	R/W
128.58	MIN DMD KW TOTAL	4110	44110	0/1	0	0	1	1	INT	R/W
128.59	MIN DMD KVAR TOTAL	4111	44111	0/1	0	0	1	1	INT	R/W
128.6	PRESENT MAX DMD KW TOTAL	4112	44112	0/1	0	0	1	1	INT	R/W
128.61	PRESENT MAX DMD KVA TOTAL	4113	44113	0/1	0	0	1	1	INT	R/W
128.62	PRESENT MAX DMD KVAR TOTAL	4114	44114	0/1	0	0	1	1	INT	R/W
128.63	PRESENT MIN DMD KW TOTAL	4115	44115	0/1	0	0	1	1	INT	R/W
128.64	PRESENT MIN DMD KVAR TOTAL	4116	44116	0/1	0	0	1	1	INT	R/W
128.65	PREDICTIV E MAX DMD KW TOTAL	4117	44117	0/1	0	0	1	1	INT	R/W
128.66	PREDICTIV E MAX DMD KVA TOTAL	4118	44118	0/1	0	0	1	1	INT	R/W

Holding Register

Sr. No.	Parameter	Address	Modbus Addr.	Range / Selection	Factory Settings	Min	Max	Length (Reg.)	Data Type	R/W
128.67	PREDICTIV E MAX DMD KVAR TOTAL	4119	44119	0/1	0	0	1	1	INT	R/W
128.68	PREDICTIV E MIN DMD KW TOTAL	4120	44120	0/1	0	0	1	1	INT	R/W
128.69	PREDICTIV E MIN DMD KVAR TOTAL	4121	44121	0/1	0	0	1	1	INT	R/W
128.7	LAST CURRENT DMD PH1	4122	44122	0/1	0	0	1	1	INT	R/W
128.71	LAST CURRENT DMD PH2	4123	44123	0/1	0	0	1	1	INT	R/W
128.72	LAST CURRENT DMD PH3	4124	44124	0/1	0	0	1	1	INT	R/W
128.73	LAST CURRENT DMD AVG	4125	44125	0/1	0	0	1	1	INT	R/W
128.74	PRESENT CURRENT DMD PH1	4126	44126	0/1	0	0	1	1	INT	R/W
128.75	PRESENT CURRENT DMD PH2	4127	44127	0/1	0	0	1	1	INT	R/W
128.76	PRESENT CURRENT DMD PH3	4128	44128	0/1	0	0	1	1	INT	R/W
128.77	PRESENT CURRENT DMD AVG	4129	44129	0/1	0	0	1	1	INT	R/W
128.78	PREDICTIV E CURRENT DMD PH1	4130	44130	0/1	0	0	1	1	INT	R/W
128.79	PREDICTIV E CURRENT DMD PH2	4131	44131	0/1	0	0	1	1	INT	R/W
128.8	PREDICTIV E CURRENT DMD PH3	4132	44132	0/1	0	0	1	1	INT	R/W
128.81	PREDICTIV E CURRENT DMD AVG	4133	44133	0/1	0	0	1	1	INT	R/W
128.82	MAX CURRENT DMD PH1	4134	44134	0/1	0	0	1	1	INT	R/W
128.83	MAX CURRENT DMD PH2	4135	44135	0/1	0	0	1	1	INT	R/W
128.84	MAX CURRENT DMD PH3	4136	44136	0/1	0	0	1	1	INT	R/W
128.85	MAX CURRENT DMD AVG	4137	44137	0/1	0	0	1	1	INT	R/W
128.86	DI 1	4138	44138	0/1	0	0	1	1	INT	R/W
128.87	DI 2	4139	44139	0/1	0	0	1	1	INT	R/W
128.88	DO 1	4140	44140	0/1	0	0	1	1	INT	R/W
128.89	DO 2	4141	44141	0/1	0	0	1	1	INT	R/W
128.9	EXTERNAL DI 1 COUNT	4142	44142	0/1	0	0	1	1	INT	R/W

Holding Register

Sr. No.	Parameter	Address	Modbus Addr.	Range / Selection	Factory Settings	Min	Max	Length (Reg.)	Data Type	R/W
128.91	EXTERNAL DI 2 COUNT	4143	44143	0/1	0	0	1	1	INT	R/W
128.92	QUADRANT 1 KWH	4144	44144	0/1	0	0	1	1	INT	R/W
128.93	QUADRANT 2 KWH	4145	44145	0/1	0	0	1	1	INT	R/W
128.94	QUADRANT 3 KWH	4146	44146	0/1	0	0	1	1	INT	R/W
128.95	QUADRANT 4 KWH	4147	44147	0/1	0	0	1	1	INT	R/W
128.96	QUADRANT 1 KVAH	4148	44148	0/1	0	0	1	1	INT	R/W
128.97	QUADRANT 2 KVAH	4149	44149	0/1	0	0	1	1	INT	R/W
128.98	QUADRANT 3 KVAH	4150	44150	0/1	0	0	1	1	INT	R/W
128.99	QUADRANT 4 KVAH	4151	44151	0/1	0	0	1	1	INT	R/W
129	QUADRANT 1 KVARH	4152	44152	0/1	0	0	1	1	INT	R/W
129.01	QUADRANT 2 KVARH	4153	44153	0/1	0	0	1	1	INT	R/W
129.02	QUADRANT 3 KVARH	4154	44154	0/1	0	0	1	1	INT	R/W
129.03	QUADRANT 4 KVARH	4155	44155	0/1	0	0	1	1	INT	R/W
129.04	AVERAGE THD VOLTAGE LN	4156	44156	0/1	0	0	1	1	INT	R/W
129.05	AVERAGE THD CURRENT	4157	44157	0/1	0	0	1	1	INT	R/W

SETTINGS

130.1	SET RECORD NUMBER	4179	44179	1 to 30720	1	1	30720	1	INT	R/W
130.2	RECORD NUMBER	4302	44302	0 to 30720	0	0	30720	1	INT	R
130.3	OVERWRITE COUNTER	4303	44303	0 to 65535	0	0	65535	1	INT	R
130.4	LOGGING	4305	44305	0-STOP 1-START	0	0	1	1	INT	R/W
130.5	TIME INTERVAL IN MIN	4306	44306	1 to 1440	1	1	1440	1	INT	R/W
130.6	ERROR STATUS	4307	44307	NO ERROR(128) NOR CRC ERROR(1) READ ERROR(2) WRITE ERROR(4) ERASE ERROR(8)	-	-	-	1	INT	R

LOGS

131.1	TIMESTAMP	4180	44180	-	-	-	-	2	INT	R
131.2	SELECTED PARAMETER 1	4182	44182	-	-	-	-	4	FLOAT	R
131.3	SELECTED PARAMETER 2	4186	44186	-	-	-	-	4	FLOAT	R

Holding Register

Sr. No.	Parameter	Address	Modbus Addr.	Range / Selection	Factory Settings	Min	Max	Length (Reg.)	Data Type	R/W
131.4	SELECTED PARAMETE RS 3	4190	44190	-	-	-	-	4	FLOAT	R
131.5	SELECTED PARAMETE RS 4	4194	44194	-	-	-	-	4	FLOAT	R
131.6	SELECTED PARAMETE RS 5	4198	44198	-	-	-	-	4	FLOAT	R
131.7	SELECTED PARAMETE RS 6	4202	44202	-	-	-	-	4	FLOAT	R
131.8	SELECTED PARAMETE RS 7	4206	44206	-	-	-	-	4	FLOAT	R
131.9	SELECTED PARAMETE RS 8	4210	44210	-	-	-	-	4	FLOAT	R
131.1	SELECTED PARAMETE RS 9	4214	44214	-	-	-	-	4	FLOAT	R
131.11	SELECTED PARAMETE RS 10	4218	44218	-	-	-	-	4	FLOAT	R
131.12	SELECTED PARAMETE RS 11	4222	44222	-	-	-	-	4	FLOAT	R
131.13	SELECTED PARAMETE RS 12	4226	44226	-	-	-	-	4	FLOAT	R
131.14	SELECTED PARAMETE RS 13	4230	44230	-	-	-	-	4	FLOAT	R
131.15	SELECTED PARAMETE RS 14	4234	44234	-	-	-	-	4	FLOAT	R
131.16	SELECTED PARAMETE RS 15	4238	44238	-	-	-	-	4	FLOAT	R
131.17	SELECTED PARAMETE RS 16	4242	44242	-	-	-	-	4	FLOAT	R
131.18	SELECTED PARAMETE RS 17	4246	44246	-	-	-	-	4	FLOAT	R
131.19	SELECTED PARAMETE RS 18	4250	44250	-	-	-	-	4	FLOAT	R
131.2	SELECTED PARAMETE RS 19	4254	44254	-	-	-	-	4	FLOAT	R
131.21	SELECTED PARAMETE RS 20	4258	44258	-	-	-	-	4	FLOAT	R
131.22	SELECTED PARAMETE RS 21	4262	44262	-	-	-	-	4	FLOAT	R
131.23	SELECTED PARAMETE RS 22	4266	44266	-	-	-	-	4	FLOAT	R
131.24	SELECTED PARAMETE RS 23	4270	44270	-	-	-	-	4	FLOAT	R
131.25	SELECTED PARAMETE RS 24	4274	44274	-	-	-	-	4	FLOAT	R
131.26	SELECTED PARAMETE RS 25	4278	44278	-	-	-	-	4	FLOAT	R

Holding Register

Sr. No.	Parameter	Address	Modbus Addr.	Range / Selection	Factory Settings	Min	Max	Length (Reg.)	Data Type	R/W
131.27	SELECTED PARAMETE RS 26	4282	44282	-	-	-	-	4	FLOAT	R
131.28	SELECTED PARAMETE RS 27	4286	44286	-	-	-	-	4	FLOAT	R
131.29	SELECTED PARAMETE RS 28	4290	44290	-	-	-	-	4	FLOAT	R
131.3	SELECTED PARAMETE RS 29	4294	44294	-	-	-	-	4	FLOAT	R
131.31	SELECTED PARAMETE RS 30	4298	44298	-	-	-	-	4	FLOAT	R
BASIC METERING										
132.1	YEAR	4316	44316	-	-	-	-	1	INT	R
132.2	MONTH_DATE	4317	44317	-	-	-	-	1	INT	R
132.3	HOURL_MINUTE	4318	44318	-	-	-	-	1	INT	R
132.4	SECOND	4319	44319	-	-	-	-	1	INT	R
POWER DEMAND METERING										
133.1	YEAR	4320	44320	-	-	-	-	1	INT	R
133.2	MONTH_DATE	4321	44321	-	-	-	-	1	INT	R
133.3	HOURL_MINUTE	4322	44322	-	-	-	-	1	INT	R
133.4	SECOND	4323	44323	-	-	-	-	1	INT	R
CURRENT DEMAND METERING										
134.1	YEAR	4324	44324	-	-	-	-	1	INT	R
134.2	MONTH_DATE	4325	44325	-	-	-	-	1	INT	R
134.3	HOURL_MINUTE	4326	44326	-	-	-	-	1	INT	R
134.4	SECOND	4327	44327	-	-	-	-	1	INT	R
ENERGY METERING										
135.1	YEAR	4328	44328	-	-	-	-	1	INT	R
135.2	MONTH_DATE	4329	44329	-	-	-	-	1	INT	R
135.3	HOURL_MINUTE	4330	44330	-	-	-	-	1	INT	R
135.4	SECOND	4331	44331	-	-	-	-	1	INT	R
TARIFF METERING										
136.1	YEAR	4332	44332	-	-	-	-	1	INT	R
136.2	MONTH_DATE	4333	44333	-	-	-	-	1	INT	R
136.3	HOURL_MINUTE	4334	44334	-	-	-	-	1	INT	R
136.4	SECOND	4335	44335	-	-	-	-	1	INT	R
HMI PARAMETER										
137.1	YEAR	4336	44336	-	-	-	-	1	INT	R
137.2	MONTH_DATE	4337	44337	-	-	-	-	1	INT	R
137.3	HOURL_MINUTE	4338	44338	-	-	-	-	1	INT	R
137.4	SECOND	4339	44339	-	-	-	-	1	INT	R
SERIAL COMMUNICATION										
138.1	YEAR	4340	44340	-	-	-	-	1	INT	R

Holding Register

Sr. No.	Parameter	Address	Modbus Addr.	Range / Selection	Factory Settings	Min	Max	Length (Reg.)	Data Type	R/W
138.2	MONTH_DATE	4341	44341	-	-	-	-	1	INT	R
138.3	HOUR_MINUTE	4342	44342	-	-	-	-	1	INT	R
138.4	SECOND	4343	44343	-	-	-	-	1	INT	R
IO PARAMETER										
139.1	YEAR	4344	44344	-	-	-	-	1	INT	R
139.2	MONTH_DATE	4345	44345	-	-	-	-	1	INT	R
139.3	HOUR_MINUTE	4346	44346	-	-	-	-	1	INT	R
139.4	SECOND	4347	44347	-	-	-	-	1	INT	R
ALARM PARAMETER										
140.1	YEAR	4348	44348	-	-	-	-	1	INT	R
140.2	MONTH_DATE	4349	44349	-	-	-	-	1	INT	R
140.3	HOUR_MINUTE	4350	44350	-	-	-	-	1	INT	R
140.4	SECOND	4351	44351	-	-	-	-	1	INT	R

INPUTS / OUTPUTS

Inputs / Outputs

Available I/O ports

The meter is equipped with digital inputs, digital outputs and relay outputs.

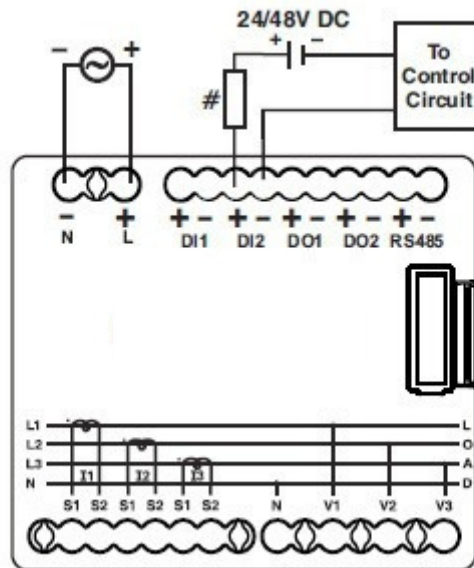
- The meter has 2 digital inputs and 2 digital output, after wiring the I/O ports they can be configured using communication

Digital inputs:

- The meter is equipped with 2 digital input ports (DI1, DI2). The digital inputs can be configured based on the application required.
- The DI requires external voltage to detect on/off state, if the external voltage appearing on the DI is within the operating range
- (24-48V DC) the meter detects ON state.

***Note:** DI1 is fixed for DG

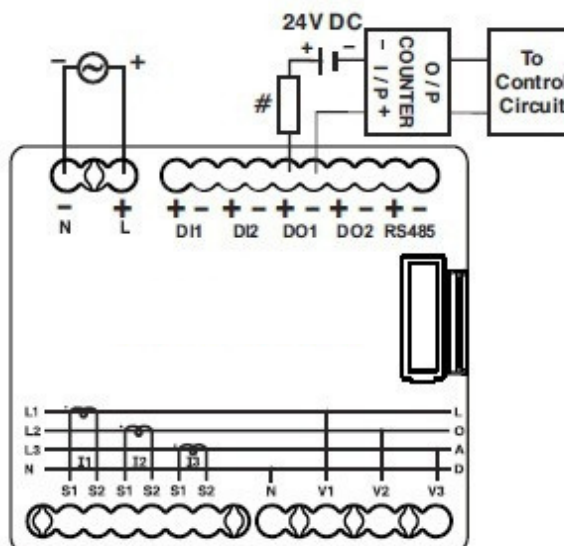
Digital input connection



Digital outputs:

- The meter is equipped with 2 digital output ports, which are configurable based on the application. Example energy Pulsing, Demand synchronization, Switching application etc.

Digital output connection



Configure the INTERNAL (2 DI: 2 DO) IO setup parameters as required

Parameters	Option or range	Description
DI CONTROL MODE	0 – NONE 1 – NORMAL 2 – DEMAND	This field displays how the status input functions. None: "None: The digital input is not associated with another meter function. The meter does not count or record incoming pulses." Normal: the digital input is not associated with another meter function. The meter counts and records the number of incoming pulses normally. Demand: the status input is associated with one of the input demand functions. The meter uses the incoming pulse to synchronize its demand period with the external source.
DI DEBOUNCE TIME (ms)	1 to 9999	Debounce is the time delay that compensates for mechanical contact bounce. Use this field to set how long (in milliseconds) the external signal must remain in a certain state to be considered a valid state change.
DO CONTROL MODE	0 – NONE 1 – ENERGY PULSES 2 – EXTERNAL 3 – DEMAND 4 – ALARM	This field displays how the digital output functions. • None: The digital output is not associated with any system. • Energy pulses: The digital output is associated with energy pulsing. When this mode is selected, you can select the energy parameter and set pulse rate (p/k_h). • External: The digital output is controlled remotely either through software or by a PLC using commands sent through communications. • Demand: the digital output is associated with one of the demand systems. The meter sends a pulse to the digital output port at the end of every demand interval. • Alarm: The digital output is associated with the alarm system. The meter sends a pulse to the digital output port when the alarm is triggered.
DO BEHAVIOUR MODE	0 – NORMAL 1 – TIMED 2 – COIL HOLD	• Normal: This mode applies when control mode is set to External or Alarm. In the event of trigger for external mode, the digital output remains in the ON state until an OFF command is sent by the computer or PLC. In the event of trigger for alarm mode, the digital output remains in the ON state until the drop out point is crossed. • Timed: The digital output remains ON for the period defined by the On time setup register. • Coil hold: This mode applies when control mode is set to External or Alarm. For a unary alarm that is associated with a digital output, you must set behavior mode to coil hold. The output turns on when the "energize" command is received and turns off when the "coil hold release" command is received. In the event of a control power loss, the output remembers and returns to the state it was in when control power was lost.
DO ON TIME (secs)	1 to 9999	This setting defines the pulse width (ON time) in seconds
DO INTERNAL COMMAND	0 – LOW 1 – HIGH	Low: a low signal on the input de-asserts the digital output, leading to device deactivation. High: A high signal, on the other hand, asserts the digital output, resulting in device activation. Note: DO internal command option is selectable when DO control mode type is external.

The meter consist of an I/O expansion module for the purpose of increasing Digital inputs, and Relay output. The available external I/O can be configured for 2DI+4RO.

The extended I/O is configured using meter front panel or communication

- **Digital inputs(DI):**

The meter external I/O can be set to digital input ports(DI). Those digital Inputs can be configured based on the application required

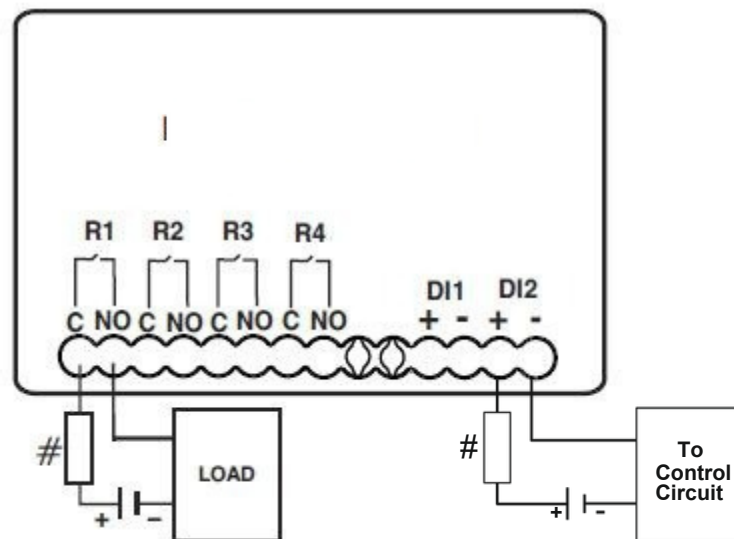
The DI requires external voltage to detect ON/OFF state, if the external voltage appearing on the DI is within the operating range(24 - 48V DC) the meter detects ON state

- **Relay output (RO):**

- The meter external IO can be set to form a mechanical relay output. Those relay outputs can be configured to used

switching applications, for example, to provide ON/OFF control signals for switching capacitor banks, generators, and other external devices and equipment

DI & RO connection



NOTE: Unexpected change of state of the relay outputs may result when the supply power to the meter is interrupted or after a meter firmware upgrade.

Configure the EXTERNAL(DI,DO,RO) IO setup parameters as required

Parameters	Option or range	Description
DI CONTROL MODE	0 – NONE 1 – NORMAL 3 – TARIFF	This field displays how the digital input functions. None: The input is not associated with another meter function. The meter does not count or record incoming pulses." Normal: the digital input is not associated with another meter function. The meter counts and records the number of incoming pulses normally. Tariff: The digital input is associated with one of the Tariff. The meter counts and records the number of incoming pulses and related consumption data associated with the pulses
DI DEBOUNCE TIME (ms)	10 to 9999	Debounce is the time delay that compensates for mechanical contact bounce. Use this field to set how long (in milliseconds) the external signal must remain in a certain state to be considered a valid state change
RO CONTROL MODE	0 – NONE 1 – ALARM 2 – EXTERNAL	This field displays how the relay output functions. • None: The relay output is not associated with any system. • Alarm: the relay output is associated with the alarm system. The meter sends a pulse to the relay output port when the alarm is triggered. • External: the relay output is controlled remotely either through software or by a PLC using commands sent through communications
RO BEHAVIOUR MODE	0 – NORMAL 1 – TIMED 2 – COIL HOLD	• Normal: This mode applies when control mode is set to External or Alarm. In the event of trigger for external mode, the relay output remains in the closed state until an open command is sent by the computer or PLC. In the event of trigger for Alarm mode, the relay output remains in the closed state until the drop out point is crossed. • Timed: The relay output remains ON for the period defined by the On time setup register • Coil hold: This mode applies when control mode is set to External or Alarm. For a unary alarm that is associated with a relay output, you must set Behavior mode to coil Hold. The output turns on when the "energize" command is received and turns off when the "coil hold release" command is received. In the event of a control power loss, the output remembers and returns to the state it was in when control power was lost
RO ON TIME (secs)	1 to 9999	This setting defines the pulse width (ON time) in seconds

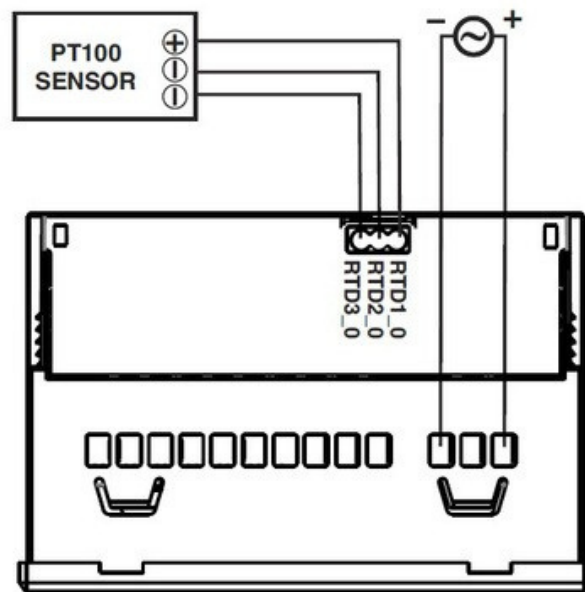
RTD

- **RTD** The meter is equipped with a RTD module for the purpose of measurement of surrounding temperature. The meter seamlessly accepts standard RTD inputs and accurately linearizes them into temperature readings, ensuring precise monitoring of various temperature ranges. Its full 4-digit display provides ample space to showcase a broad spectrum of temperature inputs with clarity and accuracy. Users can view between Fahrenheit and Celsius on Utility and MODBUS for their preferred unit of measurement.

RTD sensor:

- **SENSOR TYPE:** PT100
- **TYPE OF INPUT:** DIFFERENTIAL
- **RESOLUTION:** 0.1 °C

- **DIGITAL RESOLUTION:** 12-bit
- **ANALOG INPUT ERROR AT 25°C:** $\pm 0.25\%$ of full scale,
- **NON-LINEARITY:** $\pm 0.25\%$ OF full scale
- **CONVERSION TIME:** <100mS
- **CHANNEL ISOLATION:** NO
- **INPUT ISOLATION FROM UNIT MAIN MODULE:** YES
- **UNDER RANGE VALUE:** >-150°C
- **OVER RANGE VALUE:** <850 °C
- **PROTECTION AGAINST POLARITY INVERSION:** YES



RTD connections:

FIRMWARE UPGRADE

The meter supports on-site firmware upgrades for adding new functionality to the meter using separate downloader software.

Procedure for firmware upgradation.

1. Go to www.relpol.com.pl to download the separate downloader-software for RMM-683.
2. Download the newly uploaded firmware file (extension is XYZ.bin) from www.relpol.com.pl
3. Connect the meter to PC through RS485 communication.
4. Open separate downloader.
5. Check the communication setting of meter has properly select in downloader utility.
6. Select the COM port of PC
7. Browse the firmware saved location path from your PC.
8. Select bin file and then click - open
9. Press  +  key of meter then powered UP the meter and then release the key.
10. Meter will enter in boot loader mode, on display it will shows "BOOT"
11. Click on download to download the upgraded firmware into; meter.
12. Downloading will start and meter will show the current downloading progress (in percent complete up to 100%) on display panel;
13. When the firmware upgrade is complete, separate downloader will shows "download of bin file is successful".
14. After downloading the firmware, the meter will restart automatically.
15. Check the upgraded firmware version number under self-test mode

Note: One meter can be upgrade at a one time from same PC.

Separate downloader is a program by the software third party company.

Entry of boot loader mode can be accessed via communication or from the meter front.

INPUTS / OUTPUTS

Inputs / Outputs

Available I/O ports

The meter is equipped with digital inputs, digital outputs and relay outputs.

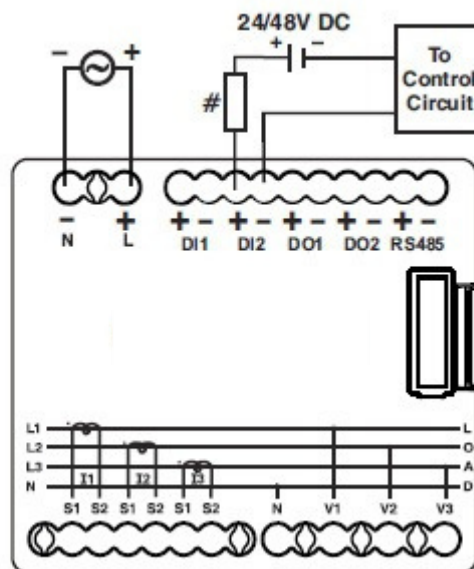
- The meter has 2 digital inputs and 2 digital output, after wiring the I/O ports they can be configured using communication

Digital inputs:

- The meter is equipped with 2 digital input ports (DI1, DI2). The digital inputs can be configured based on the application required.
- The DI requires external voltage to detect on/off state, if the external voltage appearing on the DI is within the operating range
- (24-48V DC) the meter detects ON state.

***Note:** DI1 is fixed for DG

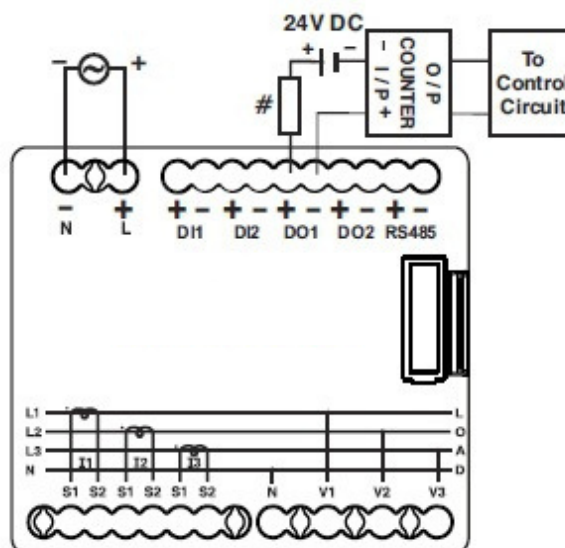
Digital input connection



Digital outputs:

- The meter is equipped with 2 digital output ports, which are configurable based on the application. Example energy Pulsing, Demand synchronization, Switching application etc.

Digital output connection



Configure the INTERNAL (2 DI: 2 DO) IO setup parameters as required

Parameters	Option or range	Description
DI CONTROL MODE	0 – NONE 1 – NORMAL 2 – DEMAND	This field displays how the status input functions. None: "None: The digital input is not associated with another meter function. The meter does not count or record incoming pulses." Normal: the digital input is not associated with another meter function. The meter counts and records the number of incoming pulses normally. Demand: the status input is associated with one of the input demand functions. The meter uses the incoming pulse to synchronize its demand period with the external source.
DI DEBOUNCE TIME (ms)	1 to 9999	Debounce is the time delay that compensates for mechanical contact bounce. Use this field to set how long (in milliseconds) the external signal must remain in a certain state to be considered a valid state change.
DO CONTROL MODE	0 – NONE 1 – ENERGY PULSES 2 – EXTERNAL 3 – DEMAND 4 – ALARM	This field displays how the digital output functions. • None: The digital output is not associated with any system. • Energy pulses: The digital output is associated with energy pulsing. When this mode is selected, you can select the energy parameter and set pulse rate (p/k_h). • External: The digital output is controlled remotely either through software or by a PLC using commands sent through communications. • Demand: the digital output is associated with one of the demand systems. The meter sends a pulse to the digital output port at the end of every demand interval. • Alarm: The digital output is associated with the alarm system. The meter sends a pulse to the digital output port when the alarm is triggered.
DO BEHAVIOUR MODE	0 – NORMAL 1 – TIMED 2 – COIL HOLD	• Normal: This mode applies when control mode is set to External or Alarm. In the event of trigger for external mode, the digital output remains in the ON state until an OFF command is sent by the computer or PLC. In the event of trigger for alarm mode, the digital output remains in the ON state until the drop out point is crossed. • Timed: The digital output remains ON for the period defined by the On time setup register. • Coil hold: This mode applies when control mode is set to External or Alarm. For a unary alarm that is associated with a digital output, you must set behavior mode to coil hold. The output turns on when the "energize" command is received and turns off when the "coil hold release" command is received. In the event of a control power loss, the output remembers and returns to the state it was in when control power was lost.
DO ON TIME (secs)	1 to 9999	This setting defines the pulse width (ON time) in seconds
DO INTERNAL COMMAND	0 – LOW 1 – HIGH	Low: a low signal on the input de-asserts the digital output, leading to device deactivation. High: A high signal, on the other hand, asserts the digital output, resulting in device activation. Note: DO internal command option is selectable when DO control mode type is external.

The meter consist of an I/O expansion module for the purpose of increasing Digital inputs, and Relay output. The available external I/O can be configured for 2DI+4RO.

The extended I/O is configured using meter front panel or communication

- **Digital inputs(DI):**

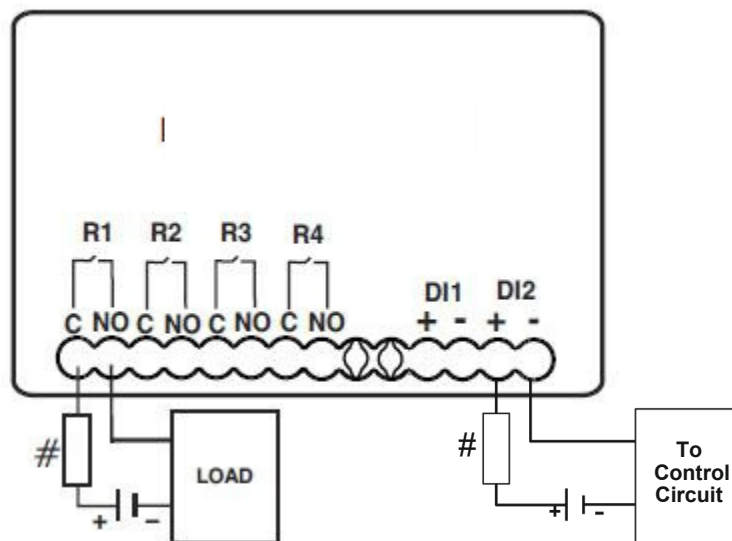
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DI & RO connection



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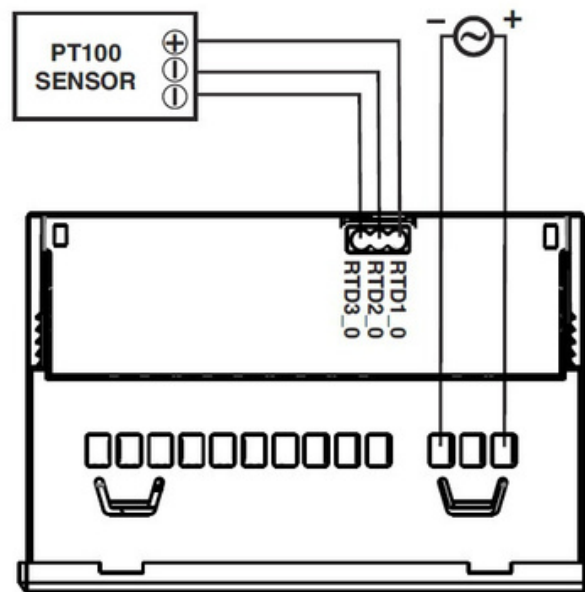
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