

PRODUCT SELECTION GUIDE

selec[®]
Creating Best Value



- Meters
- Power Factor Controllers
- CTs
- Protection Relays
- Time Switches
- Timers
- Counters
- Temperature Controllers
- Process Indicators
- PLCs
- HMI
- VFDs
- Aluminium Enclosures

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Multifunction Meters



MFM384
96(H) x 96(W)mm



MFM284
72(H) x 72(W)mm



MFM383A
96(H) x 96(W)mm



MFM376
96(H) x 96(W)mm

FEATURES	<ul style="list-style-type: none"> Bar graph representation for current Single pulse output %THD up to 31st level Demand measurement 	<ul style="list-style-type: none"> Compact size Single pulse output %THD up to 31st level Demand measurement 	<ul style="list-style-type: none"> Single pulse output Energy (Active / Reactive / Apparent) 	<ul style="list-style-type: none"> Single pulse output Run hour Auxiliary interrupts Phase angle detection Demand measurement
DISPLAY	LCD with backlight			7 segment LED
DIGITS	4 rows of 4 digits, Bargraph representation for current, 1 row of 8 digits for energy display	3 rows of 4 digits, 7½ digits for energy display		3 rows of 4 digits
ELECTRICAL CONNECTION	1Ø - 2W, 2Ø - 3W, 3Ø - 3W, 3Ø - 4W			
RATED INPUT VOLTAGE	11 to 300V AC (L - N), 19 to 519V AC (L - L)			
RATED INPUT CURRENT	Nominal 5A AC (Min - 11mA; Max - 6A)			Nominal 5A AC (Min - 14mA; Max - 6A) (Isolation CTs mandatory)
RESOLUTION	For energy : 0.01k, 0.1k, 1k, 0.01M, 0.1M, 1M (Depending upon CT ratio x PT ratio), For Power, Voltage & Current : Auto resolution, For Power factor : 0.001		For energy : 0.1k, 1k (Depending upon CT ratio x PT ratio) For Power, Voltage & Current : Auto resolution, For Power factor : 0.001	For energy : 0.01k, 0.1k, 1k, 0.01M, 0.1M, 1M (Depending upon CT ratio x PT ratio), For Current, Voltage, Power : Auto resolution, For Power factor : 0.001
CT PRIMARY	1 / 5A to 10kA (Programmable for any value)			
CT SECONDARY	1 / 5A (Programmable)			
PT PRIMARY	100V to 500kV (Programmable for any value)	100V to 10kV (Programmable for any value)	100V to 500kV (Programmable for any value)	
PT SECONDARY	100 to 500V AC (L - L) (Programmable for any value)			
COMMUNICATION	RS485 MODBUS RTU protocol (Optional)			
MEASURING PARAMETER	Voltage (L - L / L - N) (Individual / Average), Current (Individual / Average), Frequency, Power factor (Individual / Total), Active, Reactive & Apparent Power (Individual / Total), Active, Reactive & Apparent Energy (Total)			
ADDITIONAL FUNCTIONS	Phase sequence detection, Neutral current measurement	---		Max instantaneous (Current / Voltage), (Import / Export) Energy, %THD up to 31 st level (For MFM376-C)
SUPPLY VOLTAGE (AC : 50 / 60 Hz)	100 to 240V AC, -15% to +12% (Power consumption : Less than 8VA)			240V AC, ±20% (For MFM376-230VAC), 85V to 270V AC & 40 to 270V DC, (For MFM376-C)

Din Rail Multifunction Meter



MFM384-R-C
90(H) x 70(W)mm



EM2M
90(H) x 35(W)mm

FEATURES	<ul style="list-style-type: none"> Energy (Active, Reactive, Apparent) RS485 MODBUS RTU protocol Import / Export energy Demand measurement 	<ul style="list-style-type: none"> Self powered, 100A direct connection 1Ø - 2 wire network Bi-directional import & export Demand measurement
DISPLAY	LCD with backlight	
DIGITS	1 row of 4 digits, 2 rows of 7 digits	1 row of 7 digits
ELECTRICAL CONNECTION	1Ø - 2W, 2Ø - 3W, 3Ø - 3W, 3Ø - 4W	
RATED INPUT VOLTAGE	11 to 300V AC (L - N), 19 to 519V AC (L - L)	
RATED INPUT CURRENT	Nominal 5A AC (Min - 11mA; Max - 6A)	
FREQUENCY	45Hz to 65Hz	
RESOLUTION	For Energy : 0.01k, 0.1k, 1k, 0.01M, 0.1M, 1M (Depending upon CT ratio x PT ratio), For Power, Voltage, Current : Auto resolution, For Power factor : 0.01, Frequency : 0.1Hz	For Energy : 0.01k, For Power, Voltage, Current : Auto resolution, For Power factor : 0.01
ACCURACY CLASS	Voltage (L - L / L - N), Current : ±0.5% of F.S., Power factor : ±0.01, Frequency : ±0.1% of F.S., Power (kW, kVA, kVAr) : 1% of F.S. Energy (Active, Reactive, Apparent) : 1% of F.S.	Voltage (L - N), Current : ±0.5% of F.S. Power factor : ±0.01, Frequency : ±0.1% of F.S. Power (kW, kVA, kVAr) : 1% of F.S. Active energy : Class 1, Reactive energy : Class 2
CT PRIMARY	1 / 5A to 10kA (Programmable for any value)	
CT SECONDARY	1 / 5A (Programmable)	

Din Rail Multifunction Meter

Din Rail Energy Meter

PT PRIMARY	100V to 500kV (Programmable for any value)	---
PT SECONDARY	100V to 500V AC (L - L) (Programmable for any value)	---
MEMORY RETENTION FOR ENERGY	10 years	
COMMUNICATION	RS485 MODBUS RTU protocol	
INDICATIONS	LCD : Max demand of power, Communication in progress; LED : Integration of energy	LCD : Integration of energy; LED : 2 Pulse outputs
MEASURING PARAMETER	Voltage (L - L / L - N) (Individual / Average), Current (Individual / Average), Frequency, Power factor (Individual / Total), Active, Reactive & Apparent power (Individual / Total), Active, Reactive & Apparent energy (Import / Export), Demand (Min / Max Active & Reactive Power, Max apparent power)	Voltage, Current, Frequency, Power factor, Import / Export, Max demand for power
SUPPLY VOLTAGE (AC : 50 / 60 Hz)	85 to 270V AC	176 to 276V AC (L-N), Self powered

Plug-n-Wire Multifunction Meters



MRJ4M
90(H) x 70(W)mm



MRJ4M-SL
90(H) x 70(W)mm



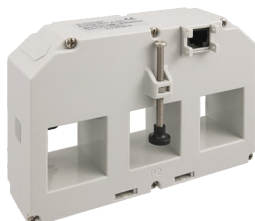
MRJ385
96(H) x 96(W)mm

FEATURES	<ul style="list-style-type: none"> • Energy (Active, Reactive) • RJ45 connector current input • Single pulse output • Max demand of power • Self powered 	<ul style="list-style-type: none"> • Energy (Active, Reactive) • Split load, RJ45 connector current input • 2 pulse outputs • Max demand of power • Self powered 	<ul style="list-style-type: none"> • Energy (Active, Reactive, Apparent) • RJ45 connector current input • Single pulse output • Demand measurement • Self powered • %THD up to 31st level
DISPLAY	LCD with backlight		
DIGITS	2 rows of 4 digits, 1 row of 7 digits to show electrical parameters		4 rows of 4 digits, Bar graph representation for current, 1 row of 8 digits for energy display
ELECTRICAL CONNECTION	1Ø - 2W, 3Ø - 4W		
RATED INPUT VOLTAGE	60 to 300V AC (L - N), 104 to 520V AC (L - L)		100 to 240V AC (L - N), 173 to 415V AC (L - L)
RESOLUTION	For Energy : 0.01K, 0.1K, 1K, 0.01M, 0.1M, 1M (Depending upon CT ratio x PT ratio), For Power, Voltage, Current : Auto resolution For Power factor : 0.01		
CT PRIMARY	5A to 10kA (Programmable for any value), Plug-N-Wire CTs to be used		
CT SECONDARY	330mV through Plug-N-Wire CT output		
PT PRIMARY	100V to 10kV (Programmable for any value)		100V to 500kV (Programmable for any value)
PT SECONDARY	100 to 500V AC (L - L) (Programmable for any value)		173 to 415V AC (L - L) (Programmable for any value)
COMMUNICATION	RS485 MODBUS RTU protocol		
INDICATIONS	LCD : Max demand of power, communication in progress ; LED : Integration of energy		LCD : Max / Min demand of power, communication in progress ; Integration of energy, Unit in configuration menu
MEASURING PARAMETER	Voltage (L - L / L - N) (Individual / Average), Current (Individual / Average), Frequency, Power factor (Individual / Average), Active, Reactive & Apparent power (Individual / Total), Active & Reactive energy, Demand (Max active power, Max apparent power)	Voltage (L - L / L - N) (Individual / Average), Current (Individual), Frequency, Power factor (Individual / Average), Active, Reactive, Apparent power (Individual / Total), Active & Reactive energy, Total, Active & Reactive energy (Current input-1 plus current Input-2), Demand (Max active power, Max apparent power)	Voltage (L - L / L - N) (Individual / Average), Current (Individual / Average), Frequency, Power factor (Individual / Average), Active, Reactive, Apparent power (Individual / Total), Active, Reactive, Apparent energy (Phase wise (Import / Export) & Total (Import / Export)), Demand (Min / Max active power, Min / Max reactive power, Max apparent power), Harmonics individual for voltage & Current upto 31 st level.
SUPPLY VOLTAGE (AC : 50 / 60 Hz)	60 to 300V AC, Self powered (V1, N)		

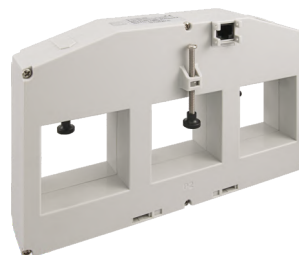
Plug-n-Wire Current Transformer



PWCT - 21 / 25
Primary current : 60A to 250A



PWCT - 31 / 31
Primary current : 150A to 630A



PWCT - 54 / 50
Primary current : 800A to 1600A

- RJ45 connector, 330mV output
- Safe to leave transformers on load with output disconnected
- Foot, busbar or DIN rail mounting
- Fits standard moulded circuit breaker frame sizes
- Available in 21 x 25mm, 31 x 31mm, 54 x 50mm apertures

* Also available in 15.5 x 25mm & 16 x 20mm aperture sizes on special request

PLUG-N-WIRE Accessories



RJ45 Connector to carry 330mv



Power Cable



Daisy Chain Cable



Voltage connector Male / Female

DESCRIPTION

Energy Meters



EM306A
96(H) x 96(W)mm



EM368
96(H) x 96(W)mm

FEATURES	<ul style="list-style-type: none"> Pulse output for energy Active energy 	<ul style="list-style-type: none"> Pulse output for energy Power (Active / Reactive) Energy (Active / Reactive / Apparent)
DISPLAY	7 segment LED	LCD with backlight
DIGITS	6 digits	8 digits
ELECTRICAL CONNECTION	1Ø - 2W, 2Ø - 3W, 3Ø - 3W, 3Ø - 4W	
RATED INPUT VOLTAGE	11 to 300V AC (L - N), 19 to 519V AC (L - L)	
RATED INPUT CURRENT	Nominal 5A AC (Min - 11mA ; Max - 6A)	
RESOLUTION	0.01K, 0.1K, 1K & 10K (Depending on CT ratio)	For energy : 0.01k, 0.1k, 1k, 0.01M, 0.1M, 1M, 10M (Depending upon CT ratio x PT ratio) For Power : Auto resolution, For Power factor : 0.01
ACCURACY	Class 1	Active Energy : Class 1, Reactive / Apparent Energy : ±1% Active / Reactive power : ±1%, PF & Avg. PF : ±1%
POWER CONSUMPTION	8VA max	
CT PRIMARY	1 / 5A to 10kA (Programmable for any value)	
CT SECONDARY	1 / 5A (Programmable)	
PT PRIMARY	---	100V to 500kV (Programmable for any value)
PT SECONDARY	---	100V to 500V AC (L - L) (Programmable for any value)
COMMUNICATION	RS485 MODBUS RTU protocol (For EM306A-C)	RS485 MODBUS RTU protocol (For EM368-C)
MEASURING PARAMETER	Active energy (kWh) resettable	Power (Total Active / Reactive), Energy (Total Active / Reactive / Apparent), Power factor (Individual & Average)
LED INDICATIONS	Integration of energy, Resolution is 10, Reverse connected CT warning	Integration of energy, Resolution is 10, Reverse connected CT warning, Communication in progress, pulse output (All Indications on LCD)
SUPPLY VOLTAGE (AC : 50 / 60 Hz)	230V AC ±20% For EM306A, 100V to 240V AC, -15% to +12% For EM306A-C	100 to 240V AC, -15% to +12%

Digital VAF Meters



VAF36A
96(H) x 96(W)mm



VAF39A-1
96(H) x 96(W)mm

FEATURES	<ul style="list-style-type: none"> 3Ø (True RMS) Voltage 3Ø (True RMS) Current Frequency RUN hour / RPM measurement Bar graph for current representation 	<ul style="list-style-type: none"> 3Ø (True RMS) Voltage 3Ø (True RMS) Current Frequency RUN hour / RPM measurement
DISPLAY	LCD with backlight	7 segment LED
DIGITS	3 rows of 3 digits	
ELECTRICAL CONNECTION	1Ø - 2W, 2Ø - 3W, 3Ø - 3W, 3Ø - 4W	
RATED INPUT VOLTAGE	11 to 300V AC (L - N), 19 to 519V AC (L - L)	
RATED INPUT CURRENT	Nominal 5A (Min - 20mA ; Max - 6A)	Nominal 5A (Min - 30mA ; Max - 6A)

Digital VAF Meters

RESOLUTION	Current & Voltage : Depending on CT & PT primary setting, RPM : 0.1, Run hour : 0.1hr
ACCURACY	Voltage (L - N / L - L / Average) : $\pm 0.5\%$ of F.S. ± 2 digits, Current & Average Current : $\pm 1\%$ of F.S. ± 2 digits, Run hour : $\pm 1\%$, RPM : $\pm 0.5\%$, Frequency : ± 0.1 Hz ± 1 digit
CT PRIMARY	5A to 10kA (Programmable for any value)
CT SECONDARY	5A fixed
PT PRIMARY	100V to 500kV (Programmable for any value)
PT SECONDARY	100 to 500V AC (L - L) (Programmable for any value)
MEASURING PARAMETER	3 \emptyset Voltage (L-N, L-L, avg.), 3 \emptyset Current (I1, I2, I3, avg.), Frequency, RPM, RUN hour
SUPPLY VOLTAGE (AC : 50 / 60 Hz)	230V AC $\pm 20\%$

Digital Voltmeters



MV15
48(H) x 96(W)mm



MV205
72(H) x 72(W)mm



MV305
96(H) x 96(W)mm



MV334-230V
96(H) x 96(W)mm

FEATURES	<ul style="list-style-type: none"> • True RMS measurement • For 1\emptyset - 2 wire electrical network 	<ul style="list-style-type: none"> • True RMS measurement • For 1\emptyset - 2 wire, 3\emptyset - 3 wire, 3\emptyset - 4 wire electrical network • Programmable PT primary & secondary
DISPLAY	7 segment LED	
DIGITS	3 digits	4 digits
ELECTRICAL CONNECTION	1 \emptyset - 2W	1 \emptyset - 2W, 3 \emptyset - 3W, 3 \emptyset - 4W
RATED INPUT VOLTAGE	50 to 480V AC (516V max)	11 to 300V AC (L - N), 19 to 516V AC (L - L)
RESOLUTION	1V	Auto resolution
ACCURACY	$\pm 0.5\%$ of F.S.	$\pm 0.5\%$ of F.S.
PT PRIMARY	---	100V - 999kV
PT SECONDARY	---	100V - 500V
SUPPLY VOLTAGE (AC : 50 / 60 Hz)	240V AC $\pm 20\%$	230V AC $\pm 20\%$

Digital Ammeters



MA12
48(H) x 96(W)mm



MA202
72(H) x 72(W)mm



MA302
96(H) x 96(W)mm



MA12-75mV-DC
48(H) x 96(W)mm



MA12-20A-AC
48(H) x 96(W)mm



MA335-230V AC
96(H) x 96(W)mm

FEATURES	<ul style="list-style-type: none"> • True RMS measurement • For 1\emptyset - 2 wire electrical network • CT primary programmable up to 4000A 	<ul style="list-style-type: none"> • True RMS measurement • For 1\emptyset - 2 wire electrical network 	<ul style="list-style-type: none"> • True RMS measurement • For 1\emptyset - 2 wire, 3\emptyset - 3 wire, 3\emptyset - 4 wire electrical network • Programmable CT primary & secondary
DISPLAY	7 segment LED		
DIGITS	4 digits		
ELECTRICAL CONNECTION	1 \emptyset - 2W		1 \emptyset - 2W, 3 \emptyset - 3W, 3 \emptyset - 4W
INPUT TYPE	CT	Shunt	Direct
RATED INPUT CURRENT	5A AC (Min - 50mA ; Max - 6.2A)	0 to 75mV DC	20A Direct
RESOLUTION	0.001, 0.01, 0.1, 1A (Depending upon CT primary settings)	0.001, 0.01, 0.1, 1A (Depending upon shunt settings)	0.001, 0.01, 0.1, 1A
ACCURACY	$\pm 0.5\%$ of F.S.		
CT PRIMARY / SHUNT SETTING	5 to 4000A (Programmable in steps)	---	1 to 999.0kA (Programmable for any value)
CT SECONDARY	5A fixed	---	1 / 5A (Programmable)
SUPPLY VOLTAGE (AC : 50 / 60 Hz)	240V AC $\pm 20\%$		230V AC $\pm 20\%$

Digital Ammeters

Digital Voltmeters



MA501
48(H) x 48(W)mm



MA2301
72(H) x 72(W)mm



MV507
48(H) x 48(W)mm



MV2307
72(H) x 72(W)mm

FEATURES	<ul style="list-style-type: none"> • True RMS measurement • Bar graph for current representation • CT primary programmable up to 5000A 		<ul style="list-style-type: none"> • True RMS measurement • Bar graph for current representation • CT primary programmable up to 5000A • Selector switch for page selection 		<ul style="list-style-type: none"> • True RMS measurement • Bar graph for voltage representation 		<ul style="list-style-type: none"> • True RMS measurement • Bar graph for voltage representation • Selector switch for page selection 	
	DISPLAY		LCD with backlight					
DIGITS	4 digits				3 digits			
ELECTRICAL CONNECTION	1Ø - 2W		3Ø - 4W		1Ø - 2W		3Ø - 3W, 3Ø - 4W	
RATED INPUT VOLTAGE	---				50 to 480V AC (Max : 516V)			
RATED INPUT CURRENT	5A AC (Min - 50mA; Max - 6.2A)				---			
RESOLUTION	0.001, 0.01, 0.1, 1A (Depending on CT primary settings)				1V			
ACCURACY	± 0.5% of F.S.							
CT PRIMARY	5 to 5000A (Programmable in steps)				---			
CT SECONDARY	5A fixed				---			
SUPPLY VOLTAGE (AC : 50 / 60 Hz)	240V AC ±20%							