

PRODUCT SELECTION GUIDE

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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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METERS	3
Multifunction Meters	
Energy Meters	
Digital Panel Meters (VAF Meter, Voltmeter, Ammeter, Frequency Meter)	
Analog Meters	
Current Transformers	
Power Factor Controllers	
Ordering Information	
MONITORING / PROTECTION RELAYS	13
Line Monitoring Relay	
Auto Switch	
Voltage Monitoring Relay	
Current Monitoring Relay	
Earth Leakage Relay	
Core Balance Current Transformer	
Earth Fault Relay	
Earth Fault Current Transformer	
Water Level Controllers	
Water Level Sensor	
Motor Protection Relay	
Pump Protection Relay	
Motor Protection Current Transformer	
Thermistor Protection Relay	
Ordering Information	
DIGITAL TIME SWITCHES	20
Astronomical	
Daily / Weekly	
TIMERS	20
Analog Timers	
Digital Timers	
Time Interval Meter / Hour Meters	
Ordering Information	
COUNTERS & RATE INDICATORS	24
Digital Counters	
LCD / LED Counters	
Digital Timer-Counter	
Rate Indicator	
Speed Monitoring Relay	
Ordering Information	
TEMPERATURE & PROCESS	26
Temperature Controllers	
Profile Controller & Analog Temperature Controller	
Cooling Controllers	
Process Indicators	
Ordering Information	
PLCs & HMI	31
PLC - Flexible I/O Solution	
PLC - Flexible Expansion Module	
Compact Series - UNIX & TWIX	
Compact Series - DIGIX	
PLC - Fixed I/O Configuration	
Human Machine Interface	
Annunciator	
Accessories	
- SMPS	
- Relay Modules	
- Data Converters	
- Communication Adapters & Cables	
Ordering Information	
Variable Frequency Drive (VFD)	37
Aluminium Enclosures	38
Panel Cutout Dimension	39



MFM384
96(H) x 96(W) x 50(D)mm



MFM284
72(H) x 72(W) x 90.15(D)mm



MFM383A
96(H) x 96(W) x 50(D)mm

FEATURES	• Bar graph representation for current • Single pulse output • %THD up to 31st level • Demand measurement	• Compact size • Single pulse output • %THD up to 31st level • Demand measurement	• Single pulse output • Energy (Active / Reactive / Apparent)
DISPLAY	LCD with backlight		
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	
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	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
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)
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		---
SUPPLY VOLTAGE (AC : 50 / 60 Hz)	100 to 240V AC, -15% to +12% (Power consumption : Less than 8VA)		



MFM376
96(H) x 96(W) x 49(D)mm



MFM391
96(H) x 96(W) x 49(D)mm

FEATURES	- Single pulse output - Run hour - Auxiliary interrupts - Phase angle detection - Demand measurement	3Ø (Voltage, Current, PF, Frequency) 3Ø Power (Active, Reactive, Apparent) - RPM - Run Hour
DISPLAY	7 segment LED	
DIGITS	3 rows of 4 digits	3 rows of 3 digits
ELECTRICAL CONNECTION	1Ø - 2W, 2Ø - 3W, 3Ø - 3W, 3Ø - 4W	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 - 14mA ; Max - 6A) (Isolation CTs mandatory)	Nominal 5AAC (Min - 20mA, Max - 6A)
RESOLUTION	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	For Power, Voltage, Current : Auto Resolution For Power Factor : 0.01
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	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	Max instantaneous (Current / Voltage), (Import / Export) Energy, %THD up to 31 st level (For MFM376-C)	Run Hour, RPM
SUPPLY VOLTAGE (AC : 50 / 60 Hz)	240V AC, ±20% (For MFM376-230VAC), 85V to 270V AC & 40 to 270V DC, (For MFM376-C)	85V to 270V AC, 50 / 60Hz

Din Rail Multifunction Meter



MFM384-R-C
90(H) x 70(W) x 66.3(D)mm

Plug-n-Wire Multifunction Meter



MRJ4M-QUAD
90(H) x 70(W) x 66.3(D)mm

FEATURES	- Energy (Active, Reactive, Apparent) - RS485 MODBUS RTU protocol - Import / Export energy - Demand measurement	- Energy (Active, Reactive) - RJ45 connector current input - Single pulse output - Max demand of power - Self powered
DISPLAY	LCD with backlight	
DIGITS	1 row of 4 digits, 2 rows of 7 digits	Row 1 of 4 digits and Row 2, 3 of 7 digits per line to show electrical parameters
ELECTRICAL CONNECTION	1Ø - 2W, 2Ø - 3W, 3Ø - 3W, 3Ø - 4W	1Ø - 2W, 3Ø - 4W
RATED INPUT VOLTAGE	11 to 300V AC (L - N), 19 to 519V AC (L - L)	60 to 300V AC (L - N), 104 to 520V 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	0.01k, 0.1k, 1k, 0.01M, 0.1M, 1M (depending upon CT ratio x PT ratio), For Power, Voltage : Auto resolution, For Power factor : 0.01
ACCURACY CLASS	Voltage (L - L / L - N), Current : $\pm 0.5\%$ of F.S., Power factor : ± 0.01 , Frequency : $\pm 0.1\%$ of F.S., Power (kW, kVA, kVAR) : 1% of F.S., Energy (Active, Reactive, Apparent) : 1% of F.S.	
CT PRIMARY	1 / 5A to 10kA (Programmable for any value)	5A to 1kA (Programmable for any value), Plug-n-Wire CTs to be used
CT SECONDARY	1 / 5A (Programmable)	330mV through Plug-n-Wire CT output
PT PRIMARY	100V to 500kV (Programmable for any value)	100V to 10kV (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	
MEASURING PARAMETERS	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 (L - L / L - N) (Individual / Average) of 4 Channels, Current (Individual / Average) of 4 Channels, Power (Active, Reactive & Apparent) (Individual) of 4 Channels, Power factor & Frequency of 4 Channels, Energy (Active, Reactive & Apparent) (Individual / Total) of 4 Channels
SUPPLY VOLTAGE (AC : 50 / 60 Hz)	85 to 270V AC	60 to 300V AC, Self powered (V1, N)

Plug-n-Wire Multifunction Meter



MRJ4M
90(H) x 70(W) x 62(D)mm



MRJ4M-SL
90(H) x 70(W) x 62(D)mm



MRJ385
96(H) x 96(W) x 50(D)mm

FEATURES	- Energy (Active, Reactive) - RJ45 connector current input - Single pulse output - Max demand of power - Self powered	- Energy (Active, Reactive) - Split load, RJ45 connector current input 2 pulse outputs - Max demand of power - Self powered	- 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

Plug-n-Wire Multifunction Meters

	MRJ4M	MRJ4M-SL	MRJ385
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 31st 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

Energy Meters



EM306
96(H) x 96(W) x 50(D)mm

EM306-C-D
96(H) x 96(W) x 50(D)mm



EM368
96(H) x 96(W) x 50(D)mm

FEATURES	• 3Ø Active energy • Single pulse output	• Dual Input Meter (Mains / D.G) • 3Ø Power (Active / Reactive) • 3Ø Energy (Active / Reactive) • Power factor (Phase / Average)	• Pulse output for energy • Power (Active / Reactive) • Energy (Active / Reactive / Apparent)
DISPLAY	7 segment LED		LCD with backlight
DIGITS	1 row of 6 digits		1 row of 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 - 15mA ; Max - 6A)		Nominal 5A AC (Min - 11mA ; Max - 6A)
RESOLUTION	For Energy : 0.01k, 0.1k, 1k, 0.01M, 0.1M, 1M For Power, Voltage, Current : Auto resolution, For Power factor : 0.001		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	Voltage (L - N), Current : $\pm 0.5\%$ of F.S. Power factor : ± 0.01 , Frequency : $\pm 0.1\%$ of F.S. Power (kW, kVA, kVAR) : 1% of F.S., Active energy : Class 1, Reactive energy : Class 2		Active Energy : Class 1, Reactive / Apparent Energy : $\pm 1\%$ Active / Reactive power : $\pm 1\%$, PF & Avg. PF : $\pm 1\%$
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	
MEASURING PARAMETERS	Active energy	Power (Active / Reactive), Energy (Active / Reactive), Power factor(Phase/Average)	Power (Total Active / Reactive), Energy (Total Active / Reactive / Apparent), Power factor (Individual & Average)
LED INDICATIONS	CT rev, Kilo, Mega	CT rev, Kilo, Mega, Communication, DG	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)	85 TO 276 V AC	Mains : 85 to 276 V AC DG Sensing: 85 to 276 V AC	100 to 240V AC, -15% to +12%



EM2M
90(H) x 35(W) x 66.3(D)mm



EM4M
90(H) x 70(W) x 66.3(D)mm

FEATURES	1Ø, 100A direct connection - Multifunction parameter monitoring - Import / Export energy 2 Pulse outputs	3Ø, 100A direct connection - Dual input meter (Mains / D.G) - Multifunction parameter monitoring - Import / Export energy 2 Pulse outputs
DISPLAY	LCD with backlight	
DIGITS	1 row of 7 digits	1 Row of 4 Digits & 2 Rows of 7 Digits
ELECTRICAL CONNECTION	1Ø - 2W	1Ø - 2W, 2Ø - 3W, 3Ø - 3W, 3Ø - 4W
RATED INPUT VOLTAGE	176 to 276V AC (L - N)	85 to 285V AC (L - N) ; 148-494V AC (L - L)
RATED INPUT CURRENT	1b 5A AC (I _{Min} - 10mA, I _{Max} - 100A)	1b 10A AC (I _{Min} - 500mA, I _{Max} - 100A)
RESOLUTION	For Energy : 0.01k, For Power, Voltage, Current : Auto resolution, For Power factor : 0.01	
ACCURACY	Voltage (L - N), Current : $\pm 0.5\%$ of F.S., Power factor : ± 0.01 , Frequency : $\pm 0.1\%$ of F.S. Power (kW, kVA, kVAR) : 1% of F.S., Active energy : Class 1, Reactive energy : Class 2	
POWER CONSUMPTION	8VA max	
COMMUNICATION	RS485 MODBUS RTU protocol	
MEASURING PARAMETERS	Voltage, Current, Frequency, Power factor, Import / Export, Max demand for power	Voltage, Current, Frequency, Power factor, Power, Energy, Active, Reactive (Import/Export) Energy, Max demand power
LED INDICATIONS	LCD Indication-communication in progress, Max demand of power, Import & export energy, LED-integration of energy	
SUPPLY VOLTAGE (AC : 50 / 60 Hz)	176 to 276V AC (L-N), Self powered	Self - Powered, 85 to 285V AC (L - N), 120 to 494V AC (L - L) DG Sensing: 85 to 285 AC

Digital VAF Meters



MX300
96(H) x 96(W) x 50(D)mm



VAF36A
96(H) x 96(W) x 50(D)mm



VAF39A-1
96(H) x 96(W) x 50(D)mm

FEATURES	• True RMS measurement • Universal measuring meter - Voltage, Current, Power, Power factor, Frequency* • Programmable CT & PT • Communication and Relay output (applicable only for MX300-1-C-CE)	• 3Ø (True RMS) Voltage • 3Ø (True RMS) Current • Frequency • RUN hour / RPM measurement • Bar graph for current representation	• 3Ø (True RMS) Voltage • 3Ø (True RMS) Current • Frequency • RUN hour / RPM measurement
DISPLAY	Bright LED display with parameters integrated within display	LCD with backlight	7 segment LED
DIGITS	4 digit 7 segment	3 rows of 3 digits	
ELECTRICAL CONNECTION	1Ø - 2W	1Ø - 2W, 2Ø - 3W, 3Ø - 3W, 3Ø - 4W	
RATED INPUT VOLTAGE	20 - 300V AC (L - N), 34 - 519V AC (L - L)	11 to 300V AC (L - N), 19 to 519V AC (L - L)	
RATED INPUT CURRENT	Nominal 5AAC (Min- 40mA, Max- 6A)	Nominal 5A (Min - 20mA ; Max - 6A)	Nominal 5A (Min - 30mA ; Max - 6A)
RESOLUTION	Voltage, Current & Power resolution is automatically adjusted, For power factor : 0.001	Current & Voltage : Depending on CT & PT primary setting, RPM : 0.1, Run hour : 0.1hr	
ACCURACY	Voltage & Current : ±0.5% of Full scale, Frequency ± 1%, Active power ± 1%, Reactive power ± 2%	Voltage (L - N / L - L / Average) : ± 0.5% of F.S. ± 2 digits, Current & Average Current : ± 1% of F.S. ± 2 digits, Run hour : ± 1%, RPM : ± 0.5%, Frequency : ± 0.1 Hz ± 1 digit	
CT PRIMARY	5A - 9999A (Programmable for any value)	5A to 10kA (Programmable for any value)	
CT SECONDARY	5A fixed		
PT PRIMARY	100V to 500kV (Programmable for any value)		
PT SECONDARY	100V to 500V AC (Programmable for any value)	100 to 500V AC (L - L) (Programmable for any value)	
COMMUNICATION	RS485 MODBUS RTU protocol (applicable only for MX300-1-C-CE)	---	
MEASURING PARAMETERS	Voltage, Current, Power factor, Frequency* (Selectable via DIP switch), Power (Active, Reactive Apparent) (kW, W)	3Ø Voltage (L-N, L-L, avg.), 3Ø Current (I1, I2, I3, avg.), Frequency, RPM, RUN hour	
SUPPLY VOLTAGE (AC : 50 / 60 Hz)	85 - 300V AC / DC	230V AC ±20%	

Digital Voltmeters



MV15
48(H) x 96(W) x 50(D)mm



MV205
72(H) x 72(W) x 50(D)mm



MV305
96(H) x 96(W) x 46(D)mm



MV334-230V
96(H) x 96(W) x 50(D)mm

FEATURES	• True RMS measurement • For 1Ø - 2 wire electrical network	• True RMS measurement • For 1Ø - 2 wire, 3Ø - 3 wire, 3Ø - 4 wire electrical network • Programmable PT primary & secondary
DISPLAY	7 segment LED	
DIGITS	3 digits	4 digits
ELECTRICAL CONNECTION	1Ø - 2W	1Ø - 2W, 3Ø - 3W, 3Ø - 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	± 0.5% of F.S.	± 0.5% of F. S.
PT PRIMARY	---	100V - 999kV
PT SECONDARY	---	100V - 500V
SUPPLY VOLTAGE (AC : 50 / 60 Hz)	240V AC ±20%	230V AC ±20%

Digital Ammeters



MA12 48(H) x 96(W) x 50(D)mm
MA202 72(H) x 72(W) x 50(D)mm
MA302 96(H) x 96(W) x 46(D)mm



MA12-75mV-DC 48(H) x 96(W) x 50(D)mm
MA12-20A-AC 48(H) x 96(W) x 50(D)mm



MA335-230V AC
96(H) x 96(W) x 50(D)mm

FEATURES	• True RMS measurement • For 1Ø - 2 wire electrical network • CT primary programmable up to 4000A	• True RMS measurement • For 1Ø - 2 wire electrical network		• True RMS measurement • For 1Ø - 2 wire, 3Ø - 3 wire, 3Ø - 4 wire electrical network • Programmable CT primary & secondary
DISPLAY	7 segment LED			
DIGITS	4 digits			
ELECTRICAL CONNECTION	1Ø - 2W			1Ø - 2W, 3Ø - 3W, 3Ø - 4W
INPUT TYPE	CT	Shunt	Direct	CT
RATED INPUT CURRENT	5AAC (Min - 50mA ; Max - 6.2A)	0 to 75mV DC	20A Direct	5A AC (Min - 50mA ; Max - 6.2A)
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	Auto resolution depend upon CT ratio
ACCURACY	± 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 ±20%			230V AC ±20%

Digital Ammeters

Digital Voltmeters



MA501
48(H) x 48(W) x 68.5(D)mm



MA2301
72(H) x 72(W) x 50(D)mm



MV507
48(H) x 48(W) x 68.5(D)mm



MV2307
72(H) x 72(W) x 50(D)mm

FEATURES	• True RMS measurement • Bar graph for current representation • CT primary programmable up to 5000A	• True RMS measurement • Bar graph for current representation • CT primary programmable up to 5000A • Selector switch for page selection	• True RMS measurement • Bar graph for voltage representation	• 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	5AAC (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%			

Analog Meters



AM - V
72(H) x 72(W) x 60(D)mm /
96(H) x 96(W) x 60(D)mm



AM - I
72(H) x 72(W) x 60(D)mm /
96(H) x 96(W) x 60(D)mm



AM - Direct Type Ammeter
72(H) x 72(W) x 60(D)mm /
96(H) x 96(W) x 60(D)mm



AM - Power Factor
72(H) x 72(W) x 60(D)mm /
96(H) x 96(W) x 60(D)mm



AM - Frequency
72(H) x 72(W) x 60(D)mm /
96(H) x 96(W) x 60(D)mm

FEATURES	• True RMS (Voltage) measurement • Scale inter changeability • Non linear scale • Easy installation / termination	• True RMS (Current) measurement • Scale inter changeability • Non linear scale • Easy installation / termination	• True RMS (Current) measurement • Non linear scale • Easy installation / termination	• Non linear scale • Easy installation / termination	• Linear scale • Easy installation / termination
MEASURING PARAMETER	AC Voltage	AC Current	Direct meter	Power factor	Frequency
POINTER DEFLECTION	0 to 90°			45° - 0° - 45°	0 to 90°
SCALE CHARACTERISTICS	Non linear				Linear
SCALE LENGTH	72 x 72mm: 63 mm / 96 x 96mm: 97 mm				
MEASURING RANGE	0 to 300V / 500V	0 to 5A (CT Secondary), Suppress scale :0 to 5 / 30A (CT Secondary)	10A to 100A	0.5CAP - 1 - 0.5IND	45 - 65Hz
ACCURACY	Class 1.5				Class 1.0
FREQUENCY	50 / 60Hz				---

Current Transformers



Square



Split Core



Cable



Tape Wound

FEATURES	• Use with different bus bar size • Panel / DIN rail mount (Require optional accessory) • Accuracy : Class 0.5 to 5	• Nominal rating ranges from 100A to 6000A • Snap closing / opening feature • Mounting types : Base, Busbar & Wall mount	• Sealable terminal / Wire type output • Panel mount • Accuracy : Class 1 to 5	• Terminal output • Accuracy : Class 0.5 to 5
RATED PRIMARY RATING	30 to 4000A	100A to 6000A	30 to 600A	30 to 1600A
RATED SECONDARY OUTPUT	5A			
RATED BURDEN (VA)	1,1.25, 1.5, 2.5, 3, 3.75, 5, 7.5, 10, 15	1,1.5, 2.5, 3, 5, 7.5, 10, 15	1.5, 5	1.5, 5, 10
ACCURACY	0.5,1, 3, 5	0.5, 1, 3	1, 5	0.5, 1, 5
OPERATING FREQUENCY	AC 50 / 60Hz			
SYSTEM VOLTAGE	720V max	0.72kV	720V max	
APPLICABLE STANDARD	IEC 61869-2	---		

Power Factor Controllers



APFC148 : With 3 CT sensing
144(H) x 144(W) x 50(D)mm



APFC146 : With 1 CT sensing
144(H) x 144(W) x 50(D)mm



APFC346 : With 1 CT sensing
96(H) x 96(W) x 55(D)mm



APFC147 : With 1 CT sensing
144(H) x 144(W) x 50(D)mm



APFC347 : With 1 CT sensing
96(H) x 96(W) x 55(D)mm

FEATURES	• 3 CT sensing with VAF metering function built in • Configurable up to 12/14* stages • Configurable alarm settings • Dual Colour Backlight for indicating Normal & Alarm function • RS485 MODBUS RTU protocol	• 1 CT sensing • Intelligent switching sequence • Configurable up to 12 stages • Alarm for No current, Phase current error & over temperature • Automatic sensing of capacitor bank values	• 1 CT sensing • Intelligent switching sequence • Configurable up to 8 stages • Alarm for No voltage, Phase current error • Automatic sensing of capacitor bank values	• 1 CT sensing • Intelligent switching sequence • Configurable up to 8 & 12 stages • Automatic sensing of capacitor bank values	• 1 CT sensing • Intelligent switching sequence • Configurable up to 8 • Automatic sensing of capacitor bank values
DISPLAY	LCD with dual colour backlight	Liquid crystal display with backlight		7 segment LED	
DIGITS	3 rows, 4 digits to show electrical parameters	4 digit to show electrical parameter		1 row, 4 digits to show power factor	
ELECTRICAL CONNECTION	1Ø - 2W, 2Ø - 2W, 3Ø - 3W, 3Ø - 4W	2Ø - 2W (L2-L3)		1Ø - 2W, 2Ø - 2W	
RATED INPUT VOLTAGE	100 to 300V AC(L - N), 50 to 520V AC(L - L)	50 to 520V AC(L-L)		40 to 300V AC (L - N), 50 to 520V AC (L - L)	
RATED INPUT CURRENT	Nominal 5A AC (Min - 11mA; Max - 6A)	Nominal 5A AC (Min 50mA, Max 6A)			
POWER CONSUMPTION	15VA max		7VA max	15VA max	7VA max
FREQUENCY	45 to 65Hz				
MEASUREMENT RANGE	Power Factor : 0.8 lag to 0.8 lead				
ALARM SETTINGS	Over / Under voltage, Over / Under-compensation, CT polarity error, Over-temperature, Fan setting, No voltage, THDI.	Over Temperature Error, CURR : Phase current error	No Voltage Alarm, CURR : Phase current error	Over / Under voltage, Over / Under compensation, CT polarity error, CURR : Phase current error, No volt	
PHASE COMPENSATION	0°, 90°, 120°, 210°, 240°, 330°	---		0°, 90°, 120°, 210°, 240°, 330°	
ACCURACY	Power factor : ± 0.01, Voltage (L-N/L-L), Current : ±0.5% of F.S., Frequency : For L-N > 20V For L-L >35V : ±0.1% of F.S., Power (kW, kVA, kVA _r) : 1%, Energy (kWh, kVAh, kVA _r h) : Class 1, Temperature : ±3°C of F.S.	Power factor : ±0.01, Temperature : ±3° of full scale	Power factor : ±0.01		
CT PRIMARY	5A to 9999A (Programmable for any value)	---		5A fixed	
CT SECONDARY	5A fixed	---		5A fixed	
PT PRIMARY	100V to 500kV (Programmable for any value)	---			
PT SECONDARY	100 to 500V (Programmable for any value)	---			
STEPS	1 to 12 / 14* *(FAN & ALARM output can be used as 13° & 14° step)	1 to 12	1 to 8	1 to 12	1 to 8
RELAY CONTACT	5A @ 250V AC				
SWITCHING PROGRAM	Automatic				
STEP TIME	1 to 999s				
DISCHARGE TIME	1 to 999s				
CONTROL MODE	Automatic / Manual				
CONTROL SENSITIVITY	60%	---		60%	
AUTO INITIALIZATION	Yes / No	Yes		Yes / No	
COMMUNICATION	RS485 MODBUS RTU protocol* *(Only for 12 stage variant)	---			
SUPPLY VOLTAGE (AC : 50 / 60 Hz)	90 to 550V AC		85 to 270V AC	90 to 550V AC	85 to 270V AC

Ordering information

Multifunction Meters

PRODUCT CODE	SUPPLY VOLTAGE	OUTPUT		CERTIFICATION
		PULSE OUTPUT	COMM. (RS485)	
MFM384-C-CU	100 to 240V AC, -15% to $\pm 12\%$	YES	YES	
MFM384-C-CE	100 to 240V AC, -15% to $\pm 12\%$	YES	YES	
MFM284-C-CE	85 to 270V AC	YES	YES	
MFM383A	100 to 240V AC, -15% to $\pm 12\%$	YES	---	---
MFM383A-C-CE	100 to 240V AC, -15% to $\pm 12\%$	YES	YES	
MFM376-230VAC	240V AC $\pm 20\%$	YES	---	---
MFM376-C-CE	85 to 270V AC, 40 to 270V DC	YES	YES	
MFM391	85 to 276V AC	YES	---	---
MFM384-R-C-CE	85 to 270V AC	YES	---	

Plug-n-Wire Multifunction Meters

PRODUCT CODE	SUPPLY VOLTAGE	OUTPUT		CERTIFICATION
		PULSE OUTPUT	COMM. (RS485)	
MRJ4M	Self supplied (V1, N), 60 to 300V AC	YES	YES	
MRJ4M-SL	Self supplied (V1, N), 60 to 300V AC	YES	YES	
MRJ385-G-PNW	Self supplied (V1, N), 60 to 300V AC	YES	YES	
MRJ4M-QUAD	Self supplied (V1, N), 60 to 300V AC	---	YES	

Plug-n-Wire Accessories

PRODUCT CODE	DESCRIPTION	CERTIFICATION
ACH-003	RJ45 Connector to carry 330mV	---
PWCBL_CON-F-1	Power Cable, Length 1 meter	---
PWCBL_CON-F-3	Power Cable, Length 3 meter	---
PWCBL_CON-M/F-1	Daisy chain cable, Length 1 meter	---
PWCBL_CON-M/F-3	Daisy chain cable, Length 3 meter	---
PWCON-M	Voltage connector Male	---
PWCON-F	Voltage connector Female	---

Plug-n-Wire Current Transformers

PRODUCT CODE	PRIMARY	OUTPUT	CERTIFICATION
PWCT-21/25-60A/330mV	60A	330mV	
PWCT-21/25-100A/330mV	100A	330mV	
PWCT-21/25-125A/330mV	125A	330mV	
PWCT-21/25-150A/330mV	150A	330mV	
PWCT-21/25-160A/330mV	160A	330mV	
PWCT-21/25-200A/330mV	200A	330mV	
PWCT-21/25-250A/330mV	250A	330mV	
PWCT-31/31-250A/330mV	250A	330mV	
PWCT-31/31-300A/330mV	300A	330mV	
PWCT-31/31-400A/330mV	400A	330mV	
PWCT-31/31-500A/330mV	500A	330mV	
PWCT-31/31-600A/330mV	600A	330mV	
PWCT-31/31-630A/330mV	630A	330mV	
PWCT-54/50-800A/330mV	800A	330mV	
PWCT-54/50-1000A/330mV	1000A	330mV	
PWCT-54/50-1250A/330mV	1250A	330mV	
PWCT-54/50-1600A/330mV	1600A	330mV	

Energy Meters

PRODUCT CODE	SUPPLY VOLTAGE	OUTPUT		CERTIFICATION
		PULSE OUTPUT	COMM. (RS485)	
EM306	100 to 240V AC, -15% to $\pm 12\%$	YES	---	---
EM306-C-D	100 to 240V AC, -15% to $\pm 12\%$	---	YES	---
EM368-C-CU	100 to 240V AC, -15% to $\pm 12\%$	YES	YES	
EM2M-1P-C-100A	176 to 276V AC (Self powered)	YES	YES	
EM4M-3P-C-100A	85 to 285V AC (L-N), 150 to 494V AC (L-L)	YES	YES	

Voltage Ampere Frequency Meters

PRODUCT CODE	SUPPLY VOLTAGE	CERTIFICATION
MX300	85 to 300V AC	
MX300-1-C-CE	85 to 300V AC	
VAF36A-230-CE	230V AC	
VAF39A-1-230V	230V AC	---
VAF39A-1-230V-CE	230V AC	
VAF39A-1-60V DC	20 to 60V DC	---

LED (Voltmeters)

PRODUCT CODE	SUPPLY VOLTAGE	CERTIFICATION
MV15	230V AC	---
MV15-CE	230V AC	
MV205	230V AC	---
MV205-CE	230V AC	
MV305	230V AC	---
MV305-CE	230V AC	
MV334-230V	230V AC	---
MV334-230V-CE	230V AC	

LCD (Ammeters / Voltmeters)

PRODUCT CODE	SUPPLY VOLTAGE	CERTIFICATION
MA501-230V-CE	230V AC	
MA501-CU	230V AC	
MA2301-230V-CE	230V AC	
MV507-230V-CE	230V AC	
MV2307-230V-CE	230V AC	

LED (Ammeters)

PRODUCT CODE	SUPPLY VOLTAGE	CERTIFICATION
MA12	230V AC	---
MA12-CE	230V AC	
MA12-20A-AC	230V AC	---
MA12-75mV-DC	230V AC	---
MA202	230V AC	---
MA202-CE	230V AC	
MA302	230V AC	---
MA302-CE	230V AC	
MA335-230VAC	230V AC	---
MA335-230VAC-CE	230V AC	

Power Factor Controllers

PRODUCT CODE	SUPPLY VOLTAGE	OUTPUT		CERTIFICATION
		STEPS	COMM. (RS485)	
APFC148-312-90/550V	90 to 550V AC, 50 / 60Hz	12	YES	---
APFC147-108-90/550V	90 to 550V AC, 50 / 60Hz	8	---	---
APFC347-108-230V	85 to 270V AC, 50 / 60Hz	8	---	---
APFC148-312-90/550V-CE	90 to 550V AC, 50 / 60Hz	12	YES	
APFC147-108-90/550V-CE	90 to 550V AC, 50 / 60Hz	8	---	
APFC347-108-230V-CE	85 to 270V AC, 50 / 60Hz	8	---	
APFC146-112-90/550V-CE	90 to 550V AC, 50 / 60Hz	12	---	
APFC346-108-230V-CE	85 to 270V AC, 50 / 60Hz	8	---	

Ordering information

Analog Voltmeters

PRODUCT CODE	CERTIFICATION	
AM-V-2-N-CE-RoHS	CE	
AM-V-3-N-CE-RoHS	CE	
AM-V-2-L-CE-RoHS	CE	
AM-V-3-L-CE-RoHS	CE	
AM-V-2-N	---	
AM-V-3-N	---	
AM-V-2-L	---	
AM-V-3-L	---	(Category) Analog meter

Analog Ammeters

PRODUCT CODE (Meters without dial plates)	CERTIFICATION	
AM-I-2-5A-WD-CE-RoHS	CE	
AM-I-2-5A-6S-WD-CE-RoHS	CE	
AM-I-3-5A-WD-CE-RoHS	CE	
AM-I-3-5A-6S-WD-CE-RoHS	CE	
AM-I-2-5A-WD	---	
AM-I-2-5A-6S-WD	---	
AM-I-3-5A-WD	---	
AM-I-3-5A-6S-WD	---	(Category) Analog meter

Analog Ammeters

PRODUCT CODE (Meters without dial plates)	CERTIFICATION	
SCL-AM-I-2-X/5A	---	
SCL-AM-I-3-X/5A	---	
SCL-AM-I-2-X/5A-6S	---	
SCL-AM-I-3-X/5A-6S	---	

RCT

PRODUCT CODE	WIRE APERTURE In mm	CURRENT RATIO	BURDEN IN VA	ACCURACY CLASS	NO. OF PRIMARY TURNS
RCT-T-D30-30/5 A VA 1.5 CL5	DIA 30	30/5	1.5	5	---
RCT-T-D30-30/5 A VA 5 (2T) CL5	DIA 30	30/5	5	5	2
RCT-T-D30-50/5 A VA 5 CL5	DIA 30	50/5	5	5	---
RCT-T-D30-75/5 A VA 5 CL5	DIA 30	75/5	5	5	---
RCT-T-D30-100/5 A VA 5 CL1	DIA 30	100/5	5	1	---
RCT-T-D30-150/5 A VA 5 CL1	DIA 30	150/5	5	1	---
RCT-T-D50-200/5 A VA 5 CL1	DIA 50	200/5	5	1	---
RCT-T-D50-250/5 A VA 5 CL1	DIA 50	250/5	5	1	---
RCT-T-D50-300/5 A VA 5 CL1	DIA 50	300/5	5	1	---
RCT-T-D50-400/5 A VA 5 CL1	DIA 50	400/5	5	1	---
RCT-T-D50-500/5 A VA 5 CL1	DIA 50	500/5	5	1	---
RCT-T-D50-600/5 A VA 5 CL1	DIA 50	600/5	5	1	---
RCT-W-D30-30/5 A VA 1.5 CL5	DIA 30	30/5	1.5	5	---
RCT-W-D30-30/5 A VA 5 (2T) CL5	DIA 30	30/5	5	5	2
RCT-W-D30-50/5 A VA 5 CL5	DIA 30	50/5	5	5	---
RCT-W-D30-75/5 A VA 5 CL5	DIA 30	75/5	5	5	---
RCT-W-D30-100/5 A VA 5 CL1	DIA 30	100/5	5	1	---
RCT-W-D30-150/5 A VA 5 CL1	DIA 30	150/5	5	1	---
RCT-W-D50-200/5 A VA 5 CL1	DIA 50	200/5	5	1	---
RCT-W-D50-250/5 A VA 5 CL1	DIA 50	250/5	5	1	---
RCT-W-D50-300/5 A VA 5 CL1	DIA 50	300/5	5	1	---
RCT-W-D50-400/5 A VA 5 CL1	DIA 50	400/5	5	1	---
RCT-W-D50-500/5 A VA 5 CL1	DIA 50	500/5	5	1	---
RCT-W-D50-600/5 A VA 5 CL1	DIA 50	600/5	5	1	---

Analog Direct Type Ammeters

PRODUCT CODE	CERTIFICATION	
AM-I-D-2-X-CE-RoHS	CE	
AM-I-D-3-X-CE-RoHS	CE	
AM-I-D-2-X	---	
AM-I-D-3-X	---	
AM-I-D-3-X	---	

Analog Power Factor Meters

PRODUCT CODE	CERTIFICATION
AM-PF-3-3P1E-0.5CAP-1-0.5IND-X-5A-CE-RoHS	CE
AM-PF-2-3P1E-0.5CAP-1-0.5IND-X-5A-CE-RoHS	CE
AM-PF-3-3P1E-0.5CAP-1-0.5IND-X-5A	---
AM-PF-2-3P1E-0.5CAP-1-0.5IND-X-5A	---

Analog Frequency Meters

PRODUCT CODE	CERTIFICATION
AM-Hz-3-A-B-CE-RoHS	CE
AM-Hz-2-A-B-CE-RoHS	CE
AM-Hz-3-A-B	---
AM-Hz-2-A-B	---

TWCT

PRODUCT CODE	WIRE APERTURE In mm	CURRENT RATIO	BURDEN IN VA	ACCURACY CLASS
TWCT-T-D35 30/5 A VA 1.5 CL 5	DIA 35	30/5	1.5	5
TWCT-T-D35 50/5 A VA 5 CL 5	DIA 35	50/5	5	5
TWCT-T-D35 75/5 A VA 5 CL 5	DIA 35	75/5	5	5
TWCT-T-D35 100/5 A VA 5 CL 1	DIA 35	100/5	5	1
TWCT-T-D35 150/5 A VA 5 CL 1	DIA 35	150/5	5	1
TWCT-T-D55 150/5 A VA 5 CL 1	DIA 55	150/5	5	1
TWCT-T-D55 200/5 A VA 5 CL 1	DIA 55	200/5	5	1
TWCT-T-D55 250/5 A VA 5 CL 1	DIA55	250/5	5	1
TWCT-T-D55 300/5 A VA 5 CL 1	DIA 55	300/5	5	1
TWCT-T-D55 400/5 A VA 5 CL 1	DIA 55	400/5	5	1
TWCT-T-D65 500/5 A VA 5 CL 1	DIA 65	500/5	5	1
TWCT-T-D65 600/5 A VA 5 CL 1	DIA 65	600/5	5	1
TWCT-T-D110 800/5 A VA 10 CL 0.5	DIA 110	800/5	10	0.5
TWCT-T-D110 1000/5 A VA 10 CL 0.5	DIA 110	1000/5	10	0.5
TWCT-T-D120 1000/5 A VA 10 CL 0.5	DIA 120	1000/5	10	0.5
TWCT-T-D120 1200/5 A VA 10 CL 0.5	DIA 120	1200/5	10	0.5
TWCT-T-D120 1600/5 A VA 10 CL 0.5	DIA 120	1600/5	10	0.5

Ordering information

SPCT

PRODUCT CODE	WIRE APERTURE In mm	CURRENT RATIO	BURDEN IN VA	ACCURACY CLASS	CERTIFICA- TION
SPCT 50/30 60/5 A VA 1 CL 5	30x10	60 / 5	1	5	CE 
SPCT 50/30 75/5 A VA 1 CL 1	30x10	75 / 5	1	1	CE 
SPCT 50/30 80/5 A VA 1 CL 1	30x10	80 / 5	1	1	CE 
SPCT 50/30 100/5 A VA 1 CL 1	30x10	100 / 5	1	1	CE 
SPCT 50/30 125/5 A VA 1.25 CL 1	30x10	125 / 5	1.25	1	CE 
SPCT 50/30 160/5 A VA 1.5 CL 1	30x10	160 / 5	1.5	1	CE 
SPCT 50/30 200/5 A VA 3 CL 1	30x10	200 / 5	3	1	CE 
SPCT 50/30 250/5 A VA 3 CL 1	30x10	250 / 5	3	1	CE 
SPCT 50/30 400/5 A VA 5 CL 1	30x10	400 / 5	5	1	CE 
SPCT 62/22 30/5 A VA 1 CL 5	DIA 22	30/5	1	5	CE 
SPCT 62/30 50/5 A VA 1 CL 3	30x10	50/5	1	3	CE 
SPCT 62/30 50/5 A VA 1.5 CL 3	30x10	50/5	1.5	3	CE 
SPCT 62/30 75/5 A VA 1 CL 3	30x10	75/5	1	3	CE 
SPCT 62/30 75/5 A VA 3 CL 3	30x10	75/5	3	3	CE 
SPCT 62/30 100/5 A VA 1 CL 1	30x10	100/5	1	1	CE 
SPCT 62/30 100/5 A VA 3 CL 1	30x10	100/5	3	1	CE 
SPCT 62/40 100/5 A VA 1 CL 1	40x10	100/5	1	1	CE 
SPCT 62/40 125/5 A VA 1 CL 1	40x10	125/5	1	1	CE 
SPCT 62/40 150/5 A VA 1.5 CL 1	40x10	150/5	1.5	1	CE 
SPCT 62/40 150/5 A VA 3 CL 1	40x10	150/5	3	1	CE 
SPCT 62/40 160/5 A VA 1.5 CL 1	40x10	160/5	1.5	1	CE 
SPCT 62/40 200/5 A VA 2.5 CL 0.5	40x10	200/5	2.5	0.5	CE 
SPCT 62/40 200/5 A VA 3 CL 1	40x10	200/5	3	1	CE 
SPCT 62/40 250/5 A VA 2.5 CL 0.5	40x10	250/5	2.5	0.5	CE 
SPCT 62/40 250/5 A VA 3 CL 1	40x10	250/5	3	1	CE 
SPCT 62/40 300/5 A VA 3 CL 0.5	40x10	300/5	3	0.5	CE 
SPCT 62/40 400/5 A VA 3.75 CL 0.5	40x10	400/5	3.75	0.5	CE 
SPCT 62/40 400/5 A VA 5 CL 1	40x10	400/5	5	1	CE 
SPCT 100/60 500/5 A VA 5 CL 1	60x12	500/5	5	1	CE 
SPCT 100/60 600/5 A VA 5 CL 0.5	60x12	600/5	5	0.5	CE 
SPCT 100/60 600/5 A VA 7.5 CL 1	60x12	600/5	7.5	1	CE 
SPCT 100/60 800/5 A VA 10 CL 0.5	60x12	800/5	10	0.5	CE 
SPCT 100/60 1000/5 A VA 15 CL 0.5	60x12	1000/5	15	0.5	CE 
SPCT 100/60 1200/5 A VA 15 CL 0.5	60x12	1200/5	15	0.5	CE 
SPCT 140/100 800/5 A VA 15 CL 0.5	100x30	800/5	15	0.5	CE 
SPCT 140/100 1000/5 A VA 15 CL 0.5	100x30	1000/5	15	0.5	CE 
SPCT 140/100 1200/5 A VA 15 CL 0.5	100x30	1200/5	15	0.5	CE 
SPCT 140/100 1250/5 A VA 15 CL 0.5	100x30	1250/5	15	0.5	CE 
SPCT 140/100 1500/5 A VA 15 CL 0.5	100x30	1500/5	15	0.5	CE 
SPCT 140/100 1600/5 A VA 15 CL 0.5	100x30	1600/5	15	0.5	CE 
SPCT 140/100 2000/5 A VA 15 CL 0.5	100x30	2000/5	15	0.5	CE 
SPCT 140/100 2500/5 A VA 15 CL 0.5	100x30	2500/5	15	0.5	CE 
SPCT 140/100 3000/5 A VA 15 CL 0.5	100x30	3000/5	15	0.5	CE 
SPCT 140/100 3500/5 A VA 15 CL 0.5	100x30	3500/5	15	0.5	CE 
SPCT 140/100 4000/5 A VA 15 CL 0.5	100x30	4000/5	15	0.5	CE 

SCCT

PRODUCT CODE	APERTURE In mm	CURRENT RATIO	BURDEN IN VA	ACCURACY CLASS	CERTIFICA- TION
SCCT 30/20 100/5A VA 1 CL 1	20x30	100/5A	1	1	CE 
SCCT 30/20 100/5A VA 1.5 CL 3	20x30	100/5A	1.5	3	CE 
SCCT 30/20 150/5A VA 1 CL 0.5	20x30	150/5A	1	0.5	CE 
SCCT 30/20 150/5A VA 1.5 CL 3	20x30	150/5A	1.5	3	CE 
SCCT 30/20 200/5A VA 1 CL 0.5	20x30	200/5A	1	0.5	CE 
SCCT 30/20 200/5A VA 1.5 CL 1	20x30	200/5A	1.5	1	CE 
SCCT 30/20 250/5A VA 1.5 CL 0.5	20x30	250/5A	1.5	0.5	CE 
SCCT 30/20 300/5A VA 2.5 CL 0.5	20x30	300/5A	2.5	0.5	CE 
SCCT 30/20 400/5A VA 2.5 CL 0.5	20x30	400/5A	2.5	0.5	CE 
SCCT 80/50 250/5A VA 1.5 CL 1	50x80	250/5A	1.5	1	CE 
SCCT 80/50 300/5A VA 1.5 CL 1	50x80	300/5A	1.5	1	CE 
SCCT 80/50 400/5A VA 1.5 CL 0.5	50x80	400/5A	1.5	0.5	CE 
SCCT 80/50 500/5A VA 2.5 CL 0.5	50x80	500/5A	2.5	0.5	CE 
SCCT 80/50 600/5A VA 2.5 CL 0.5	50x80	600/5A	2.5	0.5	CE 
SCCT 80/50 750/5A VA 2.5 CL 0.5	50x80	750/5A	2.5	0.5	CE 
SCCT 80/50 800/5A VA 2.5 CL 0.5	50x80	800/5A	2.5	0.5	CE 
SCCT 80/50 1000/5A VA 5 CL 0.5	50x80	1000/5A	5	0.5	CE 
SCCT 120/80 500/5A VA 2.5 CL 0.5	80x120	500/5A	2.5	0.5	CE 
SCCT 120/80 600/5A VA 2.5 CL 0.5	80x120	600/5A	2.5	0.5	CE 
SCCT 120/80 750/5A VA 2.5 CL 0.5	80x120	750/5A	2.5	0.5	CE 
SCCT 120/80 800/5A VA 2.5 CL 0.5	80x120	800/5A	2.5	0.5	CE 
SCCT 120/80 1000/5A VA 5 CL 0.5	80x120	1000/5A	5	0.5	CE 
SCCT 120/80 1200/5A VA 7.5 CL 0.5	80x120	1200/5A	7.5	0.5	CE 
SCCT 120/80 1250/5A VA 7.5 CL 0.5	80x120	1250/5A	7.5	0.5	CE 
SCCT 120/80 1500/5A VA 7.5 CL 0.5	80x120	1500/5A	7.5	0.5	CE 
SCCT 120/80 1500/5A VA 10 CL 1	80x120	1500/5A	10	1	CE 
SCCT 120/80 1600/5A VA 10 CL 0.5	80x120	1600/5A	10	0.5	CE 
SCCT 160/80 1000/5A VA 10 CL 0.5	80x160	1000/5A	10	0.5	CE 
SCCT 160/80 1200/5A VA 10 CL 0.5	80x160	1200/5A	10	0.5	CE 
SCCT 160/80 1250/5A VA 10 CL 0.5	80x160	1200/5A	10	0.5	CE 
SCCT 160/80 1500/5A VA 15 CL 0.5	80x160	1500/5A	15	0.5	CE 
SCCT 160/80 2000/5A VA 15 CL 0.5	80x160	2000/5A	15	0.5	CE 
SCCT 160/80 2500/5A VA 15 CL 0.5	80x160	2500/5A	15	0.5	CE 
SCCT 160/80 3000/5A VA 15 CL 0.5	80x160	3000/5A	15	0.5	CE 
SCCT 160/80 4000/5A VA 15 CL 0.5	80x160	4000/5A	15	0.5	CE 
SCCT 160/80 5000/5A VA 15 CL 0.5	80x160	5000/5A	15	0.5	CE 
SCCT 160/80 6000/5A VA 15 CL 0.5	80x160	6000/5A	15	0.5	CE 

Line Monitoring Relays



600PSR
90(H) x 17.5(W) x 60(D)mm



800PSR
76.85(H) x 22.5(W) x 105.5(D)mm



642PSR
90(H) x 17.5(W) x 60(D)mm



SPPA2M2
90(H) x 35(W) x 60(D)mm



600SPP
90(H) x 17.5(W) x 60(D)mm

FEATURES	• Monitor Phase failure, Phase sequence & Phase asymmetry • LED indication : Relay ON • Slim space saving design	• Monitor Phase failure, Phase sequence & Phase asymmetry • LED indication : Relay ON	• Monitor Phase failure, Phase sequence & Phase asymmetry • LED indication : Power ON & Trip • DIN rail & Wall mount	• Monitor Phase failure, Phase asymmetry, Over voltage & Under voltage • LED indication : Power ON & Trip	• Monitor Phase failure & Phase asymmetry • LED indication : Relay ON • Slim space saving design
MODES	Phase sequence : Yes Phase failure trip : 3 Phase voltage <154V AC (L - L) Phase asymmetry : 30V fixed Reset : Auto reset on removal of fault condition		Phase sequence : Yes Phase failure trip : 3 Phase voltage <280V AC (L - L) Phase asymmetry : 30V fixed Reset : Auto reset on removal of fault condition		Phase sequence : Yes Phase failure trip : 3 Phase voltage <154V AC (L - L) Phase asymmetry : 30V fixed Reset : Auto reset on removal of fault condition
TIME RANGES	Power ON delay : 200msec		Power ON delay : <500msec	Power ON delay : 3sec	
ACCURACY	±3% of F.S.		±1% of F.S.		
OUTPUT CONTACT	1 C/O (SPDT)			2 C/O (DPDT)	1 C/O (SPDT)
OUTPUT RATING	NC : 3A@250V AC, NO : 5A@250V AC				
ELECTRICAL CONNECTION	3Ø - 3W				
OPERATING VOLTAGE	154 to 500V AC (L - L)		280 to 520V AC (L - L)		154 to 520V AC (L - L)

Auto Switch



Auto switch-195/400V
76(H) x 20.5(W) x 85(D)mm

Auto switch-313/457V
76(H) x 20.5(W) x 85(D)mm

FEATURES	- Phase sequence, Phase failure, Phase asymmetry, Under voltage, Over voltage - Modes : Auto, Manual, Bypass - Pre-wired terminals	
MODES	Phase loss : Yes, Phase sequence : Yes, Phase reversal : Yes Under voltage (UV) : Healthy to trip ≤195V, Trip to healthy ≥205V Over voltage (OV) : Healthy to trip ≥400V, Trip to healthy ≤390V	Phase loss : Yes, Phase sequence : Yes, Phase reversal : Yes Under voltage (UV) : Healthy to trip ≤313V, Trip to healthy ≥323V Over voltage (OV) : Healthy to trip ≥457V, Trip to healthy ≤447V
MEASUREMENTS	Phase sequence, Phase failure, Phase asymmetry, Under voltage, Over voltage	
OPERATING VOLTAGE RANGE	195V AC-400V AC (L-L) 50 - 60Hz	313V AC-457V AC (L-L) 50 - 60Hz
TIME SETTING	Over voltage , Under voltage & Voltage unbalance : 3.5sec ±1.5sec Phase reversal, Phase loss : Instantaneous (<400msec) Power ON delay (min) , Recovery time (min) : 0-10min Knob setting : (0, 0.5, 1, 3, 5 & 10)	
OUTPUT RATING	1 NO relay	
RELAY RATING	Contacts @ AC 15, 250V AC : 2A , Contacts @ AC 12, 250V AC : 5A	
RELAY MODE	Fail safe mode only	
ACCURACY	Timing accuracy ±5% of reading, Voltage accuracy ±1% of full scale (as per rated voltage)	

Voltage Monitoring Relays



600VPR-310/520V
90(H) x 17.5(W) x 60(D)mm



600VPR-170/290V
90(H) x 17.5(W) x 60(D)mm



800VPR-3
76.85(H) x 22.5(W) x 105.5(D)mm

FEATURES	- Monitors Under & Over voltage - Monitors Phase sequence & failure - LED indication : Power ON, Fault condition - Space saving design		- Monitor Under & Over voltage - Monitor Phase sequence & failure - LED indication : Power ON, Fault condition
MODES	Under voltage : 310 to 405V AC Over voltage : 425 to 520V AC Phase sequence : YES Phase failure : YES Reset : Auto reset on removal of fault condition	Under voltage : 170 to 224V AC Over voltage : 236 to 290V AC Phase sequence : YES Phase failure : YES Reset : Auto reset on removal of fault condition	Under voltage : 310 to 405V AC Over voltage : 425 to 520V AC Phase sequence : YES Phase failure : YES Reset : Auto reset on removal of fault condition
TIME RANGES	Trip time delay : 0.2 to 10sec, Power On delay : 400msec		Trip Delay : 0 to 10s (For under voltage and over voltage) : Instantaneous (For phase failure & phase sequence)
ACCURACY	Trip Voltage : $\pm 0.5\%$ of F.S, Trip Time : $\pm 5\%$ of F.S		
OUTPUT CONTACT	1 C/O (SPDT)		
OUTPUT RATING	NC : 3A@250V AC, NO : 5A@250V AC		
ELECTRICAL CONNECTION	3Ø - 3W		
OPERATING VOLTAGE	310 to 520V AC (L - L)	170 to 290V AC (L - L)	310 to 520V AC (L - L)

Voltage Monitoring Relays



900VPR-2
90(H) x 35(W) x 70.5(D)mm

900VPR-2-300/600V
90(H) x 35(W) x 70.5(D)mm



900VPR-BL-U
90(H) x 35(W) x 70.5(D)mm

FEATURES	- Monitors Under voltage, Over voltage, Under frequency, Over frequency, Phase asymmetry, Phase failure and Phase sequence - Two separate alarm relays - LED indication : Power ON, Fault condition		- Monitors Under voltage, Over voltage, Under frequency, Over frequency, Phase asymmetry, Phase failure, Phase sequence and Neutral loss - Two alarm relays with NO or NC operation selectable - LED indication : Fault condition
MEASUREMENTS	Under / Over voltage, Under / Over frequency, Phase asymmetry, Phase failure, Phase sequence, (Neutral failure applicable only for 900VPR-BL-U)		
DISPLAY	3 digit LCD		3 digit LCD with backlight
ALARM INDICATIONS	Trip		
ELECTRICAL CONNECTION	3Ø - 3W, 3Ø - 4W		
TRIP SETTING	Under / Over voltage : 280 to 520V AC L-L (for 3Ø-3W), 160 to 300V AC L-N (for 3Ø - 4W), Under / Over frequency : 45 / 65Hz, Voltage asymmetry : 5.0 to 99.9%	Under / Over voltage : 280 to 600V AC L-L (for 3Ø-3W), 160 to 300V AC L-N (for 3Ø-4W), Under / Over frequency : 45 / 65Hz, Voltage asymmetry : 5.0 to 99.9%	Under / Over voltage : 85 to 500V AC L - L (for 3Ø - 3W), 50 to 288V AC L - N (for 3Ø - 4W), Under / Over frequency : 45 / 65Hz, Phase asymmetry : 5.0 to 30.0%
TRIP TIME SETTING	Power ON delay : 2 to 99.9sec, Trip time delay : 0 to 99.9sec Recovery time delay : 0 to 99.9sec, Response time : <200ms		Power ON delay : 0.5 to 300sec, Trip time delay : 0 to 300sec Recovery time delay : 0 to 300sec (In Auto Reset Mode), Response time : <120ms
HYSTERESIS	Voltage : 1.0 to 99.9V, Frequency : 0.2 to 2Hz, Asymmetry : 2 to 20%		Voltage : 1.0 to 40V, Frequency : 0.1 to 2Hz, Asymmetry : 2 to 20%
RESOLUTION	Voltage : 1V, Frequency : 0.1Hz		
ACCURACY	Voltage : $\pm 1\%$ of set value, Frequency : $\pm 0.3\%$, Time (Recovery time, Trip delay, Power on delay) : $\pm 5\%$ of setting +200ms		Voltage : $\pm 1\%$ of set value ± 2 digits, Frequency : $\pm 0.5\%$ ± 1 digits, Time (Recovery Time, Trip delay, Power on delay) : $\pm 5\%$ of setting ± 120 ms
OUTPUT CONTACT	2 x 1 C/O (SPDT)		
OUTPUT RATING	NO : 5A@240V AC / 30V DC, NC : 3A@240V AC / 30V DC		NO : 5A@250V AC, NC : 3A@250V AC
SUPPLY VOLTAGE (AC : 50 / 60 Hz)	Self powered, Operating voltage : 280 to 520V AC (L-L), 160 to 300V AC (L-N)	Self powered, Operating voltage : 280 to 600V AC (L-L), 160 to 300V AC (L-N)	85 to 270V AC / DC

Voltage Monitoring Relays



VPRA2M
90(H) x 35(W) x 70.5(D)mm



VPRD2M
90(H) x 35(W) x 70.5(D)mm

FEATURES	• Monitors Under voltage, Over voltage • Monitors Phase asymmetry, Phase failure, Phase sequence • Adjustable over and under voltage trip level • Adjustable trip time delay	• Monitors Under voltage, Over voltage • Monitors Phase asymmetry, Phase failure, Phase sequence • Adjustable switching hysteresis • One relay with two change over alarm relay operation
MEASUREMENT	Under voltage, Over voltage, Phase failure, Phase sequence, Phase asymmetry	
DISPLAY	Separate LED indications for Power ON, Phase failure, Under voltage, Over voltage, Phase sequence, Phase asymmetry	3 digits LCD
ELECTRICAL CONNECTION	1Ø - 2W, 3Ø - 4W	
TRIP SETTING	Under voltage : 55 to 95% of Un [127 to 219V AC (L - N)] Over voltage : 105 to 125% of Un [242 to 288V AC (L - N)], Phase asymmetry : >10%	Under voltage : 127 to 219V AC (L - N) Over voltage : 242 to 288V AC (L - N), Phase asymmetry : 5 - 30 %
TRIP TIME SETTING	Power ON delay : 0 to 15sec, Trip time delay : 0 to 15sec Recovery time delay : 5sec ± 200ms, Phase sequence trip delay <250msec	Power ON delay : 0.5 to 300sec, Trip time delay : 0 to 300sec Recovery time delay : 0 to 300sec, Phase sequence trip delay <150msec
HYSTERESIS	Voltage : 7V (±2V) of trip voltage	Voltage : 1.0V - 99.9V, Asymmetry : 2 to 20%
ACCURACY	Trip setting : ±5% of F. S., Time setting : ±10% of F. S.	Voltage : ±1% ±2 digits, Time setting : ±5% of settings ± 150ms
OUTPUT CONTACT	2 C/O (DPDT)	
OUTPUT RATING	NC : 5A@250V AC, NO : 5A@250V AC	
SUPPLY VOLTAGE (AC : 50 / 60 Hz)	Self powered, Nominal input voltage (Un) : 230V AC (L - N), Operating voltage : 127 to 288V AC (L - N)	

Current Monitoring Relays



900CPR-1-BL-U
90(H) x 35(W) x 70.5(D)mm



900CPR-3-1-BL
90(H) x 35(W) x 70.5(D)mm



900CPR-1
90(H) x 35(W) x 70.5(D)mm



900CPR-3
90(H) x 35(W) x 70.5(D)mm

FEATURES	- Monitors Under current & Over current - Two alarm relay with NC or NO operation selectable - LED indication : Fault condition	- Monitors Under current, Over current & current asymmetry - One alarm relay with NC or NO operation selectable - LED indication : Fault condition	- Under current & Over current protection for 1Ø system - True RMS measurement - One alarm relay with NC or NO operation	- Under current & Over current protection for 1Ø system & 3Ø system - True RMS measurement - One alarm relay with NC or NO operation
MEASUREMENTS	Under current, Over current (Current asymmetry applicable only for 900CPR-3)			
DISPLAY	3 digit LCD with backlight		3 digits LCD	
ELECTRICAL CONNECTION	1Ø - 2W	1Ø - 2W, 3Ø - 3W, 3Ø - 4W	1Ø - 2W	1Ø - 2W, 3Ø - 3W, 3Ø - 4W
CT SETTING	CT Primary : 1A / 5A - 999A, CT Secondary : 1A / 5A (Selectable)			
TRIP SETTING	Under current : 0-999A, Over current : 0.5 - 1.19kA, (Current asymmetry : 5.0 – 99.9% applicable only for 900CPR-3)			
TRIP TIME SETTING	Power ON delay : 0.5 – 99.9sec, Trip time delay : 0 - 99.9sec, Recovery time delay : 0 - 99.9sec, Response time : < 200ms			
HYSTERESIS	Current : 0.1 to 99.9A			
ACCURACY	Current : ±1% of setting ± 2 digits, Time (Recovery time, Trip delay, Power ON delay) : ±5% of setting ±200ms			
OUTPUT CONTACT	2 x 1 C/O (SPDT)	1C/O SPDT		
OUTPUT RATING	NO : 5A @ 250V AC; NC : 3A @ 250V AC			
SUPPLY VOLTAGE (AC : 50 / 60 Hz)	85 to 270V AC / DC	230V AC (±15%)		

Earth Leakage Relays



600ELR
90(H) x 17.5(W) x 60(D)mm



ELRA2M
90(H) x 35(W) x 60(D)mm



900ELR-2
90(H) x 35(W) x 70.5(D)mm

FEATURES	- Monitors true RMS earth leakage current (Upto 500mA) in 1Ø - 2Wire, 3Ø - 3Wire & 3Ø - 4Wire - Leakage current (In) & Time delay (ΔT) adjustable - LED indication for power ON and relay status - Test and reset function via front key		
MEASUREMENT	Earth leakage current (Via external CBCT)		
DISPLAY	2 LED Indications (Power On and Relay Status)	5 LED indication	3 digit LCD with backlight, 2 LED for trip indication
ELECTRICAL CONNECTION	1Ø - 2W, 3Ø - 3W, 3Ø - 4W		
TRIP SETTING	30mA, 100mA, 300mA, 500mA	30mA to 30A	
TIME RANGES	Variable time settings (0, 2, 4, 6, 8, 10 sec) for 100mA, 300mA & 500mA current setting (For 1x1n) and <30ms for 5xIn.	Trip time delay : 0 to 9 sec (NA when In=0.03A)	Power ON delay : 0.5 to 99.9 sec, Trip time delay : 0 to 99.9 sec, Delay On release : 0 to 99.9 sec
ACCURACY	Current : 5% of In, Time : 5% of Set time	Current : ± 5% of Set Trip current Time : ± 5% of set Time + Response time	Current : ±5% of setting, Time (Recovery time, Trip delay, Power on delay) : ±5% of setting ±200ms
OUTPUT CONTACT	1 SPDT relay		2 x 1 C/O (SPDT)
OUTPUT RATING	NO : 5A @ 250VAC, NC: 3A @ 250VAC, 5A @ 24V DC	NO : 10A@277V AC / 28DC	NC : 3A@250V AC, NO : 5A@250V AC
SUPPLY VOLTAGE (AC : 50 / 60 Hz)	230V AC (± 15%)		



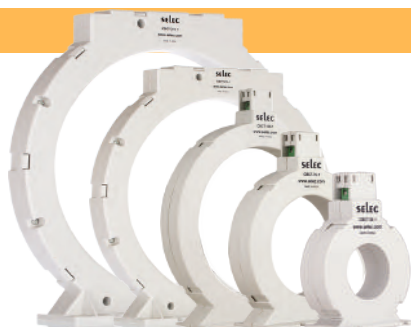
ELR-341
96(H) x 96(W) x 50(D)mm



ELCTR35
105(H) x 74(W) x 27(D)mm

FEATURES	- Monitor true RMS earth leakage current up to 30A in 1Ø & 3Ø system - CBCT connection monitoring - Test and reset via Front / Remote - Pre-alarm indication selectable	
MEASUREMENT	Earth leakage current (Via external CBCT)	Earth leakage current (Internal CBCT)
DISPLAY	3 digits, 7 segments LED display	2 LED indication
ELECTRICAL CONNECTION	1Ø - 2W, 3Ø - 3W, 3Ø - 4W	
TRIP SETTING	30mA to 30A	75% of 30mA or 300mA
TIME RANGES	Power ON delay : 1 to 999 sec, Trip time delay : 0 to 9999 sec, Recovery time : 1 to 99 min	Reset time : Instantaneous
ACCURACY	Current : ± 5% of Set Trip current Time : ± 5% of set Time + Response time	Current : ± 5% of Input current Time : ± 5% of Response time
OUTPUT CONTACT	1 C/O SPDT	
OUTPUT RATING	NC, NO : 5A@250V AC / 28V DC	NC : 5A@250V AC, NO : 5A@30V AC
SUPPLY VOLTAGE (AC : 50 / 60 Hz)	90 to 270V AC / DC	230V AC (± 15%)

Core Balance Current Transformers



Description	Common Accessory for ELR
Operating current range	30mA - 30A
Sizes (inner diameter)	35 mm, 70 mm, 120 mm, 210mm, 310mm

Motor Protection Relays



MPR-3M
90(H) x 52.5(W) x 73(D)mm



MPR-341-2
96(H) x 96(W) x 50(D)mm

FEATURES	- Single phasing, Phase asymmetry, Phase sequence - Under current, Overload trip current - Test and reset function via Front / Remote	- Monitors Overload (As per NEMA Curve), Over current, Under current, Current asymmetry - Lock current, Earth fault, - Phase loss, Phase sequence. - LED indication : Power ON, Trip relay - Test & reset function via Front / Remote
DISPLAY	3 LED indication	7 segment, 4 digits LED
AUXILIARY SUPPLY	230 / 415V AC $\pm 15\%$	90V to 270V AC / DC
ELECTRICAL CONNECTION	3Ø - 3W	
TRIP SETTING	Phase asymmetry : 50% of motor current (Fixed) T(sec) setting : To select 2, 4, 6, 8, 10 sec trip time curve in overload trip curve graph. Under current : 50% of Motor current, X Imax : To select motor current rating	Over load : Class 5,10,15,20,30, Over current : 4A to 480A, Under Current : 1A to 79A, Current asymmetry : 1A to 79A, Lock current : 4A to 480A, Earth fault : 1A to 160A
TIME SETTINGS	Single phase trip : 5 sec, Phase asymmetry : 5 sec, Phase sequence : 5 sec Over load trip : As per (IDMT Curve), Under current trip : 5 Sec	Power On delay : 1-999 sec, Trip time : 0-999 sec, Recovery time : 1-999 sec, Response time : <120ms, 3 Reset attempt time : 0-999 min
MODE	Auto / Manual / Remote	
ACCURACY	Time : $\pm 5\%$ of setting $\pm 100\text{ms}$, Current : $\pm 5\%$ of set value	Current : $\pm 5\%$ of Ir ± 1 digit, Timing : $\pm 5\% + 100\text{msec}$
OUTPUT CONTACT	2 C/O (DPDT)	2 x1 C/O (SPDT)
OUTPUT RATING	NC : 5A@ 240V AC, NO : 5A@240V AC	5A@250V AC/28VDC

Pump Protection Relays



PPRD-4M-3-415V
90(H) x 70(W) x 60(D)mm



PPRA-4M-3-415V
90(H) x 70(W) x 60(D)mm

FEATURES	- Monitors Overload (As per NEMA Curve), Over current, Under current, Current asymmetry, Lock current - Over voltage, Under voltage - Phase loss, Phase sequence, Phase asymmetry - LED indication : Power ON, Trip relay - Test & reset function via Front / Remote	- Monitors Overload (As per NEMA Curve), Over current, Under current, Current asymmetry, Lock current, - Over voltage, Under voltage - Phase loss, Phase sequence, Phase asymmetry - LED indication : Power ON, Trip relay - Test & reset function via Front / Remote
DISPLAY	7 segment, 3 digits LED	4 LED & 4 knob for variable setting
AUXILIARY SUPPLY	280V-500V (L-L)	
ELECTRICAL CONNECTION	3Ø - 3W	
CT SETTING	10A, 40A, 80A	
TRIP SETTING	Over load : Class 5,10,15,20,30, Over current : 4A to 480A, Under current : 1A to 79A, Current asymmetry : 1A to 79A, Lock current : 4A to 480A, Over voltage : 280V-500V Under voltage : 280V-500V, Voltage asymmetry : 5V TO 50V	Over load : Class 5,10,15,20,30, Over current : 10%-70% of Ir (Rated current) Under current : 20%-80% of Ir (Rated current), Current asymmetry : Fixed: 50% of Ir (Rated current) Lock current : Fixed 300% of Ir (Rated current), Over voltage : Fixed (480V), Under voltage : Fixed (350V), Voltage asymmetry : Fixed (30V)
TIME SETTINGS	Power On delay : 1 sec, Trip time : 0-999 sec, Recovery time : 1-999 sec , Response time : <120ms, 3 Reset attempt time : 0-999 min	Power ON delay : 1 sec (Fixed), Trip Time (sec) : 0,2,4,6,8 & 10, Recovery time : 15min, Response time : <240ms, 3 Reset attempt time : 60min (Fixed)
HYSTERESIS	Voltage : 0 to 10 V	Voltage : 6V (fixed)
ACCURACY	Current : $\pm 5\%$ of Ir ± 1 digit, Timing : $\pm 5\% \pm 100\text{msec}$, Voltage : $\pm 1\%$ of 500V ± 1 digit	
OUTPUT CONTACT	1 C/O (SPDT)	
OUTPUT RATING	5A@250V AC/28VDC	

Motor Protection Current Transformer



MPCT
73(H) x 100(W) x 60(D)mm

Description	Common Accessory for MPR & PPR
Current range	10A, 40A, 80A

Pump Protection Relays



PPRD-4M-1-230V
90(H) x 70(W) x 60(D)mm



PPRWD-4M-1-230V
90(H) x 70(W) x 60(D)mm



PPRA-4M-1-230V
90(H) x 70(W) x 60(D)mm

FEATURES	- Monitors Over load (As per NEMA curve), Over current, Under current, - Locked current, Over voltage, Under voltage - Direct current measuring up to 32A - LED indication : Power ON, Trip relay - Test & Reset function via key & terminal	- Automatic pump on & off as per water level detection - Monitors Over load (As per NEMA curve), Over current, Under current, Locked current, Over voltage, Under voltage - Direct current measuring up to 32A - Capacitor cut off features	- Monitors Over load (As per NEMA curve), Over current, Under current, Locked current, Over voltage, Under voltage, 4 Knob for variable setting - Direct current measuring up to 32A - LED indication : Power ON, Trip relay
DISPLAY	3 Digits, 7 Segment LED display	3 Digits, 7 Segment LED display	3 LED & 4 Knob for variable Setting
ELECTRICAL CONNECTION	1Ø - 2W		
MEASURING RANGE	A) Motor rated current Measuring : 1A to 30 A B) Voltage measuring range : 180 to 300VAC (L - N)		
TRIP SETTING	Over load : NEMA class curve 5, 10, 15, 20, 30 , Over current : 2A to 32A, Under current : 0.2 to 29A, Locked current : 2A to 32A Over voltage : 180V - 300V (L - N), Under voltage : 180V - 300V (L - N)		Over load : NEMA class curve 5, 10, 15, 20, 30 , Over current : 10% to 70%, Under current : 20% to 80% Locked current : 300% of Ir, Over voltage : 280V (fixed) Under voltage : 180V (fixed)
TIME SETTINGS	Power ON delay : 1 sec (Fixed), Trip time delay : 0 - 999 sec Recovery time : 1 - 999 sec, Reset attempts 3 (fixed) : 1 - 999 min		Power ON delay : 1 sec (fixed), Trip time delay : 0 - 10 sec Auto Reset Time : 15 min, Reset attempts 3 (fixed) : 60 min
ACCURACY	Current accuracy : $\pm 5\%$ of rated current ± 1 digit, Voltage accuracy : $\pm 1\%$ of 300V ± 1 digit, Time accuracy : $\pm 5\% \pm 100$ msec		
OUTPUT CONTACT	1 NO relay	2 NO relay	1 NO relay
OUTPUT RATING	30A@277V AC		
SUPPLY VOLTAGE (AC : 50 / 60 Hz)	180 to 300V AC (L - N)		

Water Level Controllers



WLCA2M1
90(H) x 35(W) x 60(D)mm



WLCA-2M-U-CE
90(H) x 35(W) x 60(D)mm

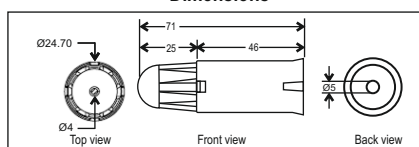
FEATURES	- Used for drain & fill control 3 No's stainless steel prods 10A SPDT output (Resistive)	- Selectable suction and delivery mode in single tank operation - Used for two tank monitoring, Single tank water level monitoring - Manual start switch facility - Trip relay & alarm relay indication
DISPLAY	2 LED indication	4 LED indication
AUXILIARY SUPPLY	85 to 270V AC / DC	
TRIP SETTING	According to the levels of sensor placed in the water tank	
SENSITIVITY	1 Kohms to 200Kohms	Auto
TRIP TIME	0.5sec (approx)	2sec
MODE	Auto	Auto / Manual
ACCURACY	NA	$\pm 5\% + 100$ msec
OUTPUT CONTACT	1 C/O (SPDT)	1 N/O (Resistive)
OUTPUT RATING	10A@250V AC / 28V DC	5A@ 250 V AC /28V DC

Water Level Sensor



- Stainless steel
- Suitable for conductive liquids

Dimensions



Earth Fault Relays



900EFR-BL-U
90(H) x 35(W) x 70.5(D)mm

FEATURES	- Earth fault current monitoring - Two alarm relays with NO and NC operation selectable - Test and reset via Front / Remote
MEASUREMENT	Earth fault monitoring
DISPLAY	3 Digit liquid crystal display with backlight
ELECTRICAL CONNECTION	1Ø - 2W, 3Ø - 3W, 3Ø - 4W
FRAME RATING (CT PRIMARY)	160A, 250A, 630A
TRIP SETTING	10% to 80% of selectable MCCB frame rating
TIME RANGES	Response time : <100ms, Trip time delay : 0 to 99.9sec, Recovery time : 0 to 99.9sec, Power ON delay : 0.5 to 99.9sec
OUTPUT CONTACT & RATING	2 x 1 C/O (SPDT) NC : 3A@250V AC, NO : 5A@250V AC

Thermistor Protection Relay



TPRA2M1-1-U-CE
90(H) x 35(W) x 60(D)mm

FEATURES	- PTC input - LED indication : Power ON, Trip, Open, Short - DPDT relay output
LED INDICATION	Green : Power ON indication, Yellow : Sensor Indication, Red : Relay status
INPUT TYPE	PTC sensor
SENSOR	Sensor short : <40 (±1Ω), Sensor healthy : 44Ω (±3Ω) to <3.8KΩ (±150Ω) Sensor trip : ≥3.8KΩ (±150Ω) to <5.5KΩ (±150Ω) Sensor open : ≥5.5KΩ (±150Ω) & above, Sensor cut-in : ≤1.5KΩ (±60Ω)
FUNCTIONAL	Relay operating mode : Failsafe & Non-failsafe mode, Reset : Auto / Manual
OUTPUT CONTACT	2 C/O (DPDT)
OUTPUT RATING	8A@250V AC



Earth Fault Current Transformer

Description	Common Accessory for Earth Fault Relay
Current ratio	160/1A, 250/1A, 630/1A
Rated burden	1 VA
Sizes (mm)	100 x 25, 140 x 35, 180 x 35, 220 x 50

Ordering information

Line Monitoring Relay

PRODUCT CODE	SUPPLY VOLTAGE	CERTIFICATION
600PSR-CE	154 to 500V AC	CE
800PSR	154 to 500V AC	---
642PSR	280 to 520V AC	---
600SPP	154 to 500V AC	---
SPPA2M2	280 to 520V AC	---

Auto Switch

PRODUCT CODE	SUPPLY VOLTAGE	CERTIFICATION
Auto switch-195/400V	195 to 400V AC	---
Auto switch-313/457V	313 to 457V AC	---

Voltage Monitoring Relay

PRODUCT CODE	SUPPLY VOLTAGE	CERTIFICATION
600VPR-170/290-CU	170 to 290V AC	CE & UL
600VPR-310/520-CE	310 to 520V AC	CE
800VPR-3	310 to 520V AC	---
900VPR-2-280/520V-CE	280 to 520V AC	CE
900VPR-2-280/520V-CU-RoHS	280 to 520V AC	CE & UL
900VPR-2-300/600V-CU-RoHS	280 to 600V AC	CE & UL
900VPR-BL-U-CE	85 to 270V AC / DC	CE
VPRA2M-CE	127 to 288V AC	CE
VPRD2M	127 to 288V AC	---
VPRD2M-BL-CE	127 to 288V AC	CE

Current Monitoring Relay

PRODUCT CODE	SUPPLY VOLTAGE	CERTIFICATION
900CPR-1-BL-U-CE	85 to 270V AC / DC	CE
900CPR-3-1-BL-230V-CE	230V AC (±15%)	CE
900CPR-1-230V	230V AC (±15%)	---
900CPR-3-230V	230V AC (±15%)	---

Earth Leakage Relay

PRODUCT CODE	SUPPLY VOLTAGE	CERTIFICATION
600ELR-1-30/500mA-230V	230V AC (±15%)	---
900ELR-2-230V-CE	230V AC (±15%)	CE
ELRA2M2-1-230V-CE	230V AC (±15%)	CE
ELR-341-1	90 to 270V AC / DC	---
ELCTR35-1-30mA-230V-CE	230V AC (±15%)	CE
ELCTR35-1A-30mA-230V	230V AC (±15%)	---
ELCTR35-1-300mA-230V-CE	230V AC (±15%)	CE
ELCTR35-1A-300mA-230V	230V AC (±15%)	---

Motor / Pump Protection Relay

PRODUCT CODE	SUPPLY VOLTAGE	CERTIFICATION
MPR-3M-2-230V	230V AC (±15%)	---
MPR-3M-2-415V	415V AC (±15%)	---
MPR-341-2	90 to 270V AC / DC	---
PPRD-4M-3-415V	415V AC (±15%)	---
PPRA-4M-3-415V	415V AC (±15%)	---
PPRD-4M-1-230V	180 to 300V AC	---
PPRWD-4M-1	180 to 300V AC	---
PPRA-4M-1-230V	180 to 300V AC	---

Core Balance Current Transformer

PRODUCT CODE	INNER DIAMETER (IN MM)	CERTIFICATION
CBCT-35-1-CE	35	CE
CBCT-70-1-CE	70	CE
CBCT-120-1-CE	120	CE
CBCT-210-1-CE	210	CE
CBCT-310-1-CE	310	CE

Motor Protection Current Transformer

PRODUCT CODE	INPUT CURRENT	CERTIFICATION
MPCT D15 10 A	10 A	---
MPCT D15 40 A	40 A	---
MPCT D15 80 A	80 A	---

Water Level Controller & Accessories

PRODUCT CODE	SUPPLY VOLTAGE	CERTIFICATION
WLCA2M1-CE-RoHS	85 to 270V AC / DC	CE
WLCA-2M-U-CE	85 to 270V AC / DC	CE
PRODUCT CODE	DESCRIPTION	
WLC SENSOR	Set of 3 Numbers	

Earth Fault Relay

PRODUCT CODE	SUPPLY VOLTAGE	CERTIFICATION
900EFR-BL-U-CE	85 to 270V AC / DC	CE

Earth Fault Current Transformer

PRODUCT CODE	DIMENSION IN MM	CURRENT TRANSFORMER RATIO
EFCT 100/25 160/1A VA CL1	100x25	160/1A
EFCT 140/35 160/1A VA CL1	140x35	160/1A
EFCT 140/35 250/1A VA CL1	140x35	250/1A
EFCT 180/35 250/1A VA CL1	180x35	250/1A
EFCT 180/35 630/1A VA CL1	180x35	630/1A
EFCT 220/50 630/1A VA CL1	220x50	630/1A

Thermistor Protection Relay

PRODUCT CODE	OUTPUT	SUPPLY VOLTAGE	CERTIFICATION
TPRA2M1-1-U-CE	RELAY	90 to 270V AC / DC	CE

Astronomical Time Switch

Daily / Weekly Time Switches



ATS2M1-1-16A
90(H) x 35(W) x 60(D)mm



TS2M1-2-16A
90(H) x 35(W) x 60(D)mm



TS2M1-1-16A
90(H) x 35(W) x 60(D)mm



TS1W1-1-20A
60(H) x 60(W) x 47.65(D)mm

FEATURES	- Latitude / Longitude precise to the minute with time zone - Automatic calculation of sunrise & sunset times - DST offset / power saving mode 1 channel 10 years power reserve (replaceable battery)	1 sec least count 30 ON - 30 OFF steps per day 2 channel - Auto / Permanent override ON / Permanent Override OFF 10 years power reserve (replaceable battery)	1 sec least count 50 ON - 50 OFF steps per day 1 channel - Auto / Permanent override ON / Permanent Override OFF 10 years power reserve (replaceable battery)		
DISPLAY	Text LCD (Without backlight)				
RTC SHIFT	15 minutes a year @ 25°C				
OUTPUT CONTACT	1 C/O SPDT	2 x 1 C/O SPDT	1 C/O SPDT	1 NO & Neutral	
CONTACT RATING	16A @ 250V AC	16A @ 250V AC			20A @ 250V AC
WEEKLY PROGRAM	---	For Relay 1 - Total 30 ON steps and 30 OFF steps 1 program 30 steps, 2 programs 15 steps, 3 programs 10 steps, 4 programs 07 steps, 5 programs 06 steps. (Same for Relay 2)	Total 50 ON steps and 50 OFF steps - 2 program 25 steps, 3 programs 16 steps, 4 programs 12 steps, 5 programs 10 steps, 6 programs 08 steps, 7 programs 07 steps, 8 programs 06 steps		
MINIMUM SETTING UNIT	---	1 second			
HOLIDAY SETTINGS	---	16 dates			
CLOCK	12hr (AM / PM) and 24hr selection				
RELAY OPERATING MODE	Auto / Permanent override ON / Permanent override OFF				
SUPPLY VOLTAGE (AC : 50 / 60 Hz)	230V AC ±10%				

Analog Timers



600ST
90(H) x 17.5(W) x 60(D)mm



600XU
90(H) x 17.5(W) x 60(D)mm



600SD
90(H) x 17.5(W) x 60(D)mm



642SQ-A
90(H) x 17.5(W) x 63.5(D)mm



642XA
90(H) x 17.5(W) x 63.5(D)mm

FEATURES	• Single function - ON delay • 10 Time ranges		• Multi function (13 Functions) • Precise analog time setting • Universal supply voltage		• Star Delta • 1 NO for Star & 1 NO for Delta		• 2 Functions • 8 Time ranges				
MODES	ON delay		A, B, C, Ci, D, E, F, H, I, J, K, Ai, Bi		Star - Delta		ON delay / Interval				
TIME RANGES	0.1 - 1sec, 0.3 - 3sec, 1 - 10sec, 3 - 30sec, 0.1 - 1min, 0.3 - 3min, 1 - 10min, 3 - 30min, 0.1 - 1hr, 0.3 - 3hr				Run up time : 3 - 30sec, 6 - 60sec Change over : 50/100ms		0 - 3sec / min, 0 - 10sec / min, 0 - 30sec / min, 0 - 60sec / min				
RESOLUTION	0.1sec		0.1sec		---		0.3sec				
ACCURACY	Setting : ±5% of F.S Repeat : ±0.5% F.S. Pause time accuracy : ±5% ±5ms										
OUTPUT CONTACT	1 C/O SPDT		1 C/O SPDT		1 C/O Relay each for Star & Delta		1 C/O SPDT				
CONTACT RATING	5A @ 250V AC or 24V DC										
SUPPLY VOLTAGE (AC : 50 / 60 Hz)	240V AC		20 to 240V AC, 12 to 240V DC		230V AC		230V AC, 24V AC / DC		20 to 240V AC, 12 to 240V DC		
Modes	600XU A - ON delay, B - Interval, C - Repeat cycle equal OFF first, Ci - Repeat cycle equal ON first, D - Pulse output 500ms fixed, E - Delay on break, F - Delay on make / Delay on break, H - Interval after break, I - Single shot, J - Retriggerable single shot, K - Latching relay, Ai - Delay on break with Totalise, Bi - Interval with Totalise										



800XU
75(H) x 22.5(W) x 105.5(D)mm



800XA
75(H) x 22.5(W) x 105.5(D)mm



800SQ-A
75(H) x 22.5(W) x 105.5(D)mm



800S
75(H) x 22.5(W) x 105.5(D)mm

FEATURES	• 2 Functions • 12 Time ranges • Universal supply voltage	• 2 Functions • 8 Time ranges • Universal supply voltage	• 2 Functions • 8 Time ranges	• Single function • Fixed time range (60sec)
MODES	ON delay / Interval			ON delay
TIME RANGES	1 / 3 / 10 / 30sec / min / hr	3 / 10 / 30 / 60sec / min	3 / 10 / 30 / 60sec / min	60sec
RESOLUTION	0.1sec	0.3sec	0.3sec	6sec
ACCURACY	Setting : ±5% of F.S: Repeat : ±0.5% or 50ms (Whichever is greater)			
OUTPUT CONTACT	2 C/O SPDT	2 C/O SPDT	1 C/O SPDT	1 C/O SPDT
CONTACT RATING	5A @ 250V AC or 24V DC			
SUPPLY VOLTAGE (AC : 50 / 60 Hz)	20 to 240V AC, 12 to 240V DC		230V AC & 24V AC / DC	230V AC, 415V AC



800SD-2
75(H) x 22.5(W) x 105.5(D)mm



800XC
75(H) x 22.5(W) x 105.5(D)mm



800XMR
75(H) x 22.5(W) x 105.5(D)mm



800POD
75(H) x 22.5(W) x 105.5(D)mm

FEATURES	• Star delta • 1 C/O Relay each for Star & Delta	• Asymmetrical cyclic • 6 Time ranges	• Forward pause reverse • 1 C/O Relay each for Forward & Reverse	• True power OFF delay • Fixed time range (180sec)
MODES	Star - Delta	Asymmetrical Cyclic ON first or OFF first	Forward - Pause - Reverse	True Power OFF Delay
TIME RANGES	Run up time : 30 / 60sec Change over : 50 / 100msec	1 / 10sec / min / hr for both ON & OFF time	ON time : 1 / 2 / 4 / 8min Pause time : 10 / 20 / 40 / 80s	180sec
RESOLUTION	---	0.1sec	ON time : 6s Pause time : 0.1s	7.5sec
ACCURACY	Setting: ±5%, Repeat: ±0.5% of F.S or 50ms			Setting: ±10% of F.S. Repeat: ±2% or 100ms
OUTPUT CONTACT	1 C/O Relay each for Star & Delta	2 C/O SPDT	1 C/O Relay each for Forward & Reverse	2 C/O SPDT
CONTACT RATING	5A @ 250V AC or 24V DC			
SUPPLY VOLTAGE (AC : 50 / 60 Hz)	110V AC, 230V AC 230 to 415V AC	20 to 240V AC, 12 to 240V DC		110 to 240V AC / DC



55XU
48(H) x 48(W) x 70.5(D)mm



55XC
48(H) x 48(W) x 70.5(D)mm



55ES
48(H) x 48(W) x 70.5(D)mm

FEATURES	• Plug / Panel mount • ON delay / Interval • 12 Time ranges	• Plug / Panel mount • Asymmetrical Cyclic ON - OFF • 6 Time ranges	• Plug / Panel mount • ON delay / Interval • 8 Time ranges
BASE TYPE	P8 - 8 Pin plug, T8 - Screw terminal		
MODES	ON delay / Interval	Asymmetrical Cyclic ON first or OFF first	ON delay / Interval
TIME RANGE	1 / 3 / 10 / 30sec / min / hr	1 / 10sec / min / hr for both ON & OFF time	3 / 10 / 30 / 60sec / min
RESOLUTION	0.1sec		0.3sec
ACCURACY	Setting : ± 5% of F.S., Repeat : ± 0.5% or 50 ms		
OUTPUT CONTACT	2 C/O SPDT		1 C/O SPDT
CONTACT RATING	5A @ 250V AC or 24V DC		
SUPPLY VOLTAGE (AC : 50 / 60 Hz)	20 to 240V AC, 12 to 240V DC		230V AC, 24V AC / DC



600DT
90(H) x 17.5(W) x 62(D)mm



XT543
48(H) x 48(W) x 100(D)mm



XT56
48(H) x 48(W) x 94(D)mm



XT264
72(H) x 72(W) x 115(D)mm



XT364
96(H) x 96(W) x 90(D)mm

FEATURES	• Multi function (15 Functions) • Wide time range (0.1sec to 999hr) • Universal supply voltage		• Multi function (4 Functions) • 9 Time ranges • Single set point		• Thumbwheel setting • 6 Time ranges • Single set point	
DISPLAY	3 + 3 digits			3 digits		
SET POINT	Single set point					
MODES	A, B, C, D, E, F, H, J, K, L, P, Q, R, T, U			ON delay / Interval / Cyclic ON first / Cyclic OFF first		ON delay / Interval
TIME RANGES	9.99 / 99.9 / 999sec, 9 : 59min : sec, 99.9 / 999min, 9 : 59hr : min, 99.9 / 999hr				9.99 / 99.9 / 999sec, 99.9 / 999min, 99.9hr	
RESOLUTION						0.01sec
TIME SETTING	Front keypad				Thumbwheel	
RESET / START INPUT	Start : Gate/Pulse start (Depending on modes)			Start : Gate / Pulse start (Programmable)		Start : Pulse start
	Reset : Front panel, On power interruption			Reset : Front panel, Remote reset, On power interruption		
ACCURACY	Setting : ± 0.1% of F.S. or ±50ms For Y contact operation : +100ms, Repeat : ± 0.1%				±0.5% of F.S. or 50ms	
OUTPUT CONTACT	1 C/O SPDT			2 C/O SPDT		
CONTACT RATING	8A @ 250V AC			5A @ 250V AC or 24V AC / DC		
SUPPLY VOLTAGE (AC : 50 / 60 Hz)	20 to 240V AC / DC			90 to 270V AC / DC		
Modes	600DT	A - ON delay, B - Interval, C - Asymmetrical cyclic OFF first, D - Asymmetrical cyclic ON first, E - Repeat cycle equal OFF first, F - Repeat cycle equal ON first, H - Pulse output, J - Delay on break, K - Delay on make/Delay on break, L - Interval after break, P - single shot,Q - Retriggerable single shot, R - Latching relay, T - Delay on break with Totalise, U - Interval with Totalise				



XT546BX
48(H) x 48(W) x 76(D)mm



XT546
48(H) x 48(W) x 94(D)mm



XT246
72(H) x 72(W) x 83.7(D)mm

XT346
96(H) x 96(W) x 73(D)mm



XT5042
48(H) x 48(W) x 100(D)mm



PT380
96(H) x 96(W) x 100(D)mm

FEATURES	• Short depth • Multi function (4 Functions) • 9 Time ranges • Single set point	• Multi function (4 Functions) • 9 Time ranges • Single set point	• Multi function (7 Functions) • Pulse start (Input through PNP / NPN sensor) • Dual set point • Individual time setting for relays	• 8 Channels • 4 Functions • Parallel / Sequential operation • Cascade output for channel expansion
DISPLAY	3 + 3 digits		4 + 4 digits	2 + 4 digits
SET POINT	Single set point		Dual set point	Single set point
MODES	ON delay / Interval / Cyclic ON first / Cyclic OFF first		ON delay / Interval / Cyclic ON first / Cyclic OFF first / Forward-Pause-Reverse / Instantaneous + Delayed / Timer / Batch	ON delay / Interval / Cyclic ON first / Cyclic OFF first (Start up delay & no. of cycles programmable for cyclic mode)
TIME RANGES	9.99 / 99.9 / 999sec, 9.59min : sec, 99.9 / 999min, 9.59hr : min, 99.9 / 999hr		99.99 / 999.9 / 9999sec, 99.59min : sec, 999.9 / 9999min, 99.59hr : min, 999.9 / 9999hr	99.99sec, 999.9sec, 99.59min : sec, 99.59hr : min, 999.9hr
RESOLUTION	0.01sec			
DIRECTION	Up / Down	Down	Up / Down	Up
TIME SETTING	Front keypad			
NO. OF CHANNELS	—			8 Channels
RESET/START INPUT	Start : Gate / Pulse start (Programmable) Reset : Front panel, Remote reset, On power interruption			
ACCURACY	±0.05% of F.S. or 50ms			±0.5% of F.S. or 50ms
OUTPUT CONTACT	2 C/O SPDT		2 C/O SPST	8 NOs with 1 Com
CONTACT RATING	5A @ 250V AC or 24V DC			
MEMORY RETENTION	10 years (User selectable)			
SUPPLY VOLTAGE (AC : 50 / 60 Hz)	85 to 270V AC		90 to 270V AC / DC	85 to 270V AC / DC

Time Interval Meter / Hours Meters



TI103
48(H) x 96(W) x 88(D)mm



TT412
36(H) x 72(W) x 74.5(D)mm



LT920A
24(H) x 48(W) x 48(D)mm



LT945A
24(H) x 48(W) x 48(D)mm

FEATURES	- Time Interval Meter - Range : Auto ranging, Fixed ranges	- LED Hour Meter - Selectable least count	- LCD Hour Meters - Battery powered - Contact / Voltage input
DISPLAY	4 digits	6 digits	7 1/2 digits
TIME RANGES	a) Auto ranging : .0001 to 9999sec b) Fixed ranges : .9999, 9.999, 99.99, 999.9, 9999sec	99999.9 / 999999sec / min / hr	a) 1999.59.59hr:min:sec b) 199999.99hr
ACCURACY	±0.05% + 1 count		
INPUT	Potential free contact & 3 to 30V DC from solid state devices	Mains, Potential free contact, PNP sensor	a) 24 to 260V AC / DC b) Contact input
RESET	Front, Remote (Reset time : 20ms), Auto	Remote (Reset time : 20ms)	Front, Remote Remote
MEMORY	---	10 years	5 years
SUPPLY VOLTAGE (AC : 50 / 60 Hz)	90 to 270V AC / DC		Battery powered

Ordering information

Digital Time Switches

PRODUCT CODE	SUPPLY VOLTAGE	CERTIFICATION
ATS2M1-1-16A-230V-CE	230V AC	CE
TS2M1-2-16A-230V-CE	230V AC	CE
TS2M1-1-16A-230V V2	230V AC	---
TS2M1-1-16A-230V-CE	230V AC	CE
TS1W1-1-20A-230V	230V AC	---
TS1W1-1-20A-230V-CE	230V AC	CE

Digital Timers

PRODUCT CODE	SUPPLY VOLTAGE	CERTIFICATION
600DT	20 to 240V AC / DC	CE
600DT-CU	20 to 240V AC / DC	CE
XT543-N	90 to 270V AC / DC	---
XT56-N	90 to 270V AC / DC	---
XT56-N-CE	90 to 270V AC / DC	CE
XT264-3	90 to 270V AC / DC	---
XT364-3	90 to 270V AC / DC	---
XT546BX	85 to 270V AC	---
XT546	85 to 270V AC	---
XT546-CE	85 to 270V AC	CE
XT246	85 to 270V AC	---
XT346	85 to 270V AC	---
XT5042	90 to 270V AC / DC	---
XT5042-CU	90 to 270V AC / DC	CE
PT380	85 to 270V AC / DC	---

Time Interval Meter / Hour Meters

PRODUCT CODE	SUPPLY VOLTAGE		CERTIFICATION
TI103C	90 to 270V AC / DC		---
TT412	90 to 270V AC / DC		---
PRODUCT CODE	INPUT TYPE		CERTIFICATION
	CONTACT	VOLTAGE	
LT920A-C	YES	---	---
LT920A-V	---	YES	---
LT945A-C	YES	---	---
LT945A-V	---	YES	---
LT920A-C-CE	YES	---	CE
LT920A-V-CE	---	YES	CE
LT945A-C-CE	YES	---	CE
LT945A-V-CE	---	YES	CE

Analog Timers

PRODUCT CODE	SUPPLY VOLTAGE	CERTIFICATION
600XU-A-1-CU	20 to 240V AC, 12 to 240V DC	CE
600SD-2-230	230V AC	CE
600ST	240V AC	CE
600ST-CU	240V AC	CE
642SQ-A	230VAC, 24V AC / DC	---
642XA	20 to 240V AC, 12 to 240V DC	---
800XU-CU	20 to 240V AC, 12 to 240V DC	CE
800XA	20 to 240V AC, 12 to 240V DC	---
800XA-CE	20 to 240V AC, 12 to 240V DC	CE
800SQ-A	230V AC, 24V AC/DC	---
800S-1-ON-60S-230	230V AC	---
800S-1-ON-60S-415	415V AC	---
800SD-2-230	230V AC	---
800SD-2-230-CE	230V AC	CE
800SD-2-110	110V AC	---
800SD-2-415	230 to 415V AC	---
800XC	20 to 240V AC, 12 to 240V DC	---
800XC-CE	20 to 240V AC, 12 to 240V DC	CE
800XMR	20 to 240V AC, 12 to 240V DC	---
800POD-180S	110 to 240V AC / DC	---
55XU-P	20 to 240V AC, 12 to 240V DC	---
55XU-T	20 to 240V AC, 12 to 240V DC	---
55XC-P8	20 to 240V AC, 12 to 240V DC	---
55XC-P8-CU	20 to 240V AC, 12 to 240V DC	CE
55XC-T8	20 to 240V AC, 12 to 240V DC	---
55XC-T8-CU	20 to 240V AC, 12 to 240V DC	CE
55ES-P8-230	230V AC, 24V AC / DC	---
55ES-T-230	230V AC, 24V AC / DC	---



XC22B
72(H) x 72(W) x 115(D)mm



XC1200
48(H) x 96(W) x 88(D)mm



XC2200
72(H) x 72(W) x 91(D)mm

FEATURES	- Thumbwheel setting - Auto reset - Battery backup	- Counter with rate indicators - Programmable input scaling - Up, Down, Quadrature & Bi-directional modes - Dual set point	- Counter with rate indicator - Programmable input scaling - Unidirectional, Bi-directional & Quadrature modes - Batch counter
DISPLAY	4 digits	6 digits	6 + 4 digits
MODES	ON delay / Interval / Auto reset	ON delay / Interval / Auto reset / Time pulse repeat	
RANGES	9999 counts	Selectable least count : 0.0001, 0.001, 0.01, 0.1 & 1 Rate : 4.00 to 99999 RPM / RPH	-999 to 999999 counts
RESET	Front, Remote, Auto (Optional)	Front (user selectable), Remote	Front, Remote, Power interruption
MEMORY	Yes (Optional)	Yes	
DIRECTION	Up	Up, Down, Bi-directional, Quadrature	
SET POINT	Single set point	Dual set point	
INPUT SPEED	30Hz, 5kHz (Selectable via dip switch)	30Hz, 2.5kHz, 5kHz (Programmable)	30Hz, 5kHz (Programmable)
SCALE FACTOR	---	0.00001 to 9.99999 x 10 ⁿ , n = -5, -4, -3, -2, -1, 0, 1, 2	
OUTPUT CONTACT	2 C/O SPDT	2 C/O SPDT	
CONTACT RATING	5A @ 250V AC or 24V DC	5A @ 250V AC or 24V DC	
INPUT	NPN, PNP sensor, Potential free contacts	NPN / PNP sensor, Potential free contacts, Encoder	
SUPPLY VOLTAGE (AC : 50 / 60 Hz)	230V AC	90 to 270V AC / DC	

LCD Counters
LED Counters
Digital Timer - Counter


LTC9A
24(H) x 48(W) x 48(D)mm



LXC900A
24(H) x 48(W) x 48(D)mm



XC410A
36(H) x 72(W) x 74.5(D)mm



XC10D
48(H) x 96(W) x 88(D)mm



XTC5400
48(H) x 48(W) x 100(D)mm

FEATURES	- Time / Count totaliser - Battery powered - Contact / Voltage input selectable	- LCD counter - Battery powered - Contact / Voltage input	- LED counter - Inbuilt sensor supply - Compact size	- Multi function - Timer / Counter (programmable) - Batch counter - Up / Down counting for counter - Dual set point
DISPLAY	7 ^{1/2} digits		6 digits	4 + 4 digits
MODES	Timer / Counter	---	---	Timer : ON delay / Interval / Cyclic ON first / Cyclic OFF first / Batch. Counter : ON delay / Interval / Auto reset / Time pulse repeat / Batch
RANGES	Hour meter : a) 1999.59.99 hr:min:sec ; b) 199999.99hr Counter : 19999999 counts	19999999 counts	999999 counts	Timer : 99.99/999.9/9999sec, 99:59min:sec, 999.9/9999min, 99:59hr:min, 999.9/9999hr, Counter : -999 to 9999 counts
RESET	Front, Remote		Front, Remote	Front, Remote, Power interruption
MEMORY	5 years		Yes	
DIRECTION	Up			Timer : Down, Counter : Up / Down
SET POINT	---			Dual set point
INPUT SPEED	14Hz, 100Hz (Selectable via jumper)	20Hz, 1kHz (Selectable via jumper)	3Hz, 30Hz, 1kHz (Selectable via jumper)	3Hz, 30Hz, 5kHz (Programmable)
SCALE FACTOR	---			0.001 to 9.999 x 10 ⁿ n = -3, -2, -1, 0, 1, 2
OUTPUT CONTACT	---			2 C/O SPST
CONTACT RATING	---			5A @ 250V AC or 24V DC
INPUT	a) 24 to 260V AC / DC b) Contact input	NPN, PNP sensor, Potential free contacts		NPN, PNP sensor, Potential free contacts
SUPPLY VOLTAGE (AC : 50 / 60 Hz)	Battery powered		230V AC (Only for XC410A), 90 to 270V AC / DC	90 to 270V AC / DC

Rate Indicator



RC5100
48(H) x 48(W) x 100(D)mm

Speed Monitoring Relay



SMRD4M1
90(H) x 70(W) x 62(D)mm

FEATURES

- Measures up to 9999 RPM
- Inbuilt sensor supply

- Under, Over, Dual speed modes
- Dual set point
- RPH, RPM, RPS ranges
- Scalable input, Auto ranging

DISPLAY	4 digits	
RANGE	4.00 to 9999 RPM	Auto ranging, RPH, RPM or RPS
INPUT SPEED	4 to 9999 pulses per minute	
SCALE FACTOR	---	0.001 to 9.999 x 10 ⁰ (n= -3, -2, -1, 0, 1, 2)
SENSOR SUPPLY	Inbuilt, 12V DC, ±10%, 30mA	
COUNTING DIRECTION	Up	
INPUT	PNP sensors, Encoders, Potential free contact	
SUPPLY VOLTAGE (AC : 50 / 60Hz)	90 to 270V AC / DC	

Ordering information

Digital Counters

PRODUCT CODE	SUPPLY VOLTAGE	CERTIFICATION
XC22B-4-230	230V AC	---
XC22B-4-AR-M1-230 (With Memory & Auto Reset)	230V AC	---
XC1200	90 to 270V AC / DC	CE
XC2200	90 to 270V AC / DC	---
XC2200-CE	90 to 270V AC / DC	CE

Digital Timer-Counter

PRODUCT CODE	SUPPLY VOLTAGE	CERTIFICATION
XTC5400	90 to 270V AC / DC	CE
XTC5400-CU	90 to 270V AC / DC	CE & RoHS

LCD / LED Counters

PRODUCT CODE	INPUT TYPE		CERTIFICATION
	CONTACT	VOLTAGE	
LTC9A	YES	YES	---
LXC900A-C	YES	---	---
LXC900A-V	---	YES	---
LXC900A-C-CE	YES	---	CE
LXC900A-V-CE	---	YES	CE
PRODUCT CODE	SUPPLY VOLTAGE		CERTIFICATION
XC410A-1-230	230V AC		---
XC10D	90 to 270V AC / DC		---

Rate Indicators

PRODUCT CODE	SUPPLY VOLTAGE	CERTIFICATION
RC5100A	90 to 270V AC / DC	---

Solid State Relay



RSS-TD1A140ZP
45(W) x 58(H) x 27.3(H)mm

FEATURES

- Control input voltage : 4 to 32V DC
- Load output voltage : 24 to 330V AC
- Max load current : 40A

CONTROL INPUT VOLTAGE	4 to 32V DC
LOAD OUTPUT VOLTAGE	24 to 330V AC
MAX LOAD CURRENT	40A
CONTACT CONFIGURATION	1 NO
OUTPUT DEVICE	Triac

Ordering information

PRODUCT CODE	INPUT	OUTPUT	CERTIFICATION
RSS-TD1A140ZP	4 to 32V DC	24 to 330V AC	---

Temperature Controllers



TC544C



TC544B

48(H) x 48(W) x 76(D)mm



TC513CX



TC513BX

48(H) x 48(W) x 76(D)mm



TC533BX

48(H) x 48(W) x 76(D)mm



TC538CX



TC538BX

48(H) x 48(W) x 76(D)mm

FEATURES	• TC / RTD input • ON-OFF / PID control (Auto tune / self tune) • Dual set point • Selectable control output: Relay / SSR • Auxiliary output : Relay	• Single display, Single set point • Short depth TC • TC / RTD input • Control output : Relay or SSR	• Dual display, Single set point • Short depth TC • TC / RTD input • Control output : Relay or SSR	• Dual display, Single set point • Short depth TC • TC / RTD input • Control output : Relay or SSR
DISPLAY	4 + 4 digits, 7 segment LED dual display	3 digits, 7 segment LED single display	3 + 3 digits, 7 segment LED dual display	4 + 4 digits, 7 segment LED dual display
INPUT TYPE	Thermocouple (J, K, T, R, S) / RTD (PT100)			
RESOLUTION	0.1/1° for TC / RTD inputs (fixed 1° for R & S type TC input)	Fixed 1° resolution		
ACCURACY	For TC input : 0.25% of F.S $\pm 1^{\circ}$; For R & S inputs : 0.5% of F.S. $\pm 2^{\circ}$ (20 min of warm up time for TC inputs); For RTD input : 0.1% of F.S $\pm 1^{\circ}$			
SETPOINT	Dual set point	Single set point		
CONTROL MODE	Auto tune / Self tune PID or ON-OFF			
CONTROL OUTPUT	Relay : SPST : 5A resistive @ 250V AC / 30V DC or SSR : 12V DC, 30mA	Relay : SPDT : 10A resistive @ 250V AC / 30V DC or SSR : 12V DC, 50mA		
AUXILIARY OUTPUT	Relay : 5A resistive @ 250V AC / 30V DC	---		
SPECIAL FUNCTIONS	Heat cool PID, Dwell timer	---		
SUPPLY VOLTAGE (AC : 50 / 60 Hz)	90 to 270V AC / DC			



TC544A

TC244AX

TC344AX

48(H) x 48(W)
x 94(D)mm

72(H) x 72(W)
x 83.7(D)mm

96(H) x 96(W)
x 73(D)mm



TC513AX

TC203AX

TC303AX

48(H) x 48(W)
x 94(D)mm

72(H) x 72(W)
x 83.7(D)mm

96(H) x 96(W)
x 73(D)mm



TC533AX

TC233AX

TC333AX

48(H) x 48(W)
x 94(D)mm

72(H) x 72(W)
x 83.7(D)mm

96(H) x 96(W)
x 73(D)mm

FEATURES	• Dual display, Dual set point • TC / RTD input • Control output : Relay or SSR • Auxiliary output : Relay • Dwell timer, Heat cool PID	• Single display, Single set point • TC / RTD input • Control output : Relay or SSR	• Dual display, Single set point • TC / RTD input • Control output : Relay or SSR
DISPLAY	4 + 4 digits, 7 segment LED dual display	3 digits, 7 segment LED single display	3 + 3 digits, 7 segment LED dual display
INPUT TYPE	Thermocouple (J, K, T, R, S) / RTD (PT100)		
RESOLUTION	0.1/1° for TC / RTD (fixed 1° for R & S TC)	Fixed 1° resolution	
ACCURACY	For TC inputs : 0.25% of F.S. ±1° ; For R & S inputs : 0.5% of F.S. ±2° (20 min of warm up time); For RTD input : 0.1% of F.S. ±1°		
SETPOINT	Dual set point	Single set point	
CONTROL MODE	Autotune PID or ON - OFF		
CONTROL OUTPUT	Relay : SPDT (SPST for TC544A) : 5A resistive @ 250V AC / 30V DC or SSR (Field Selectable) : 12V DC, 50mA	Relay : SPDT (SPST for TC303A) : 10A resistive @ 250V AC / 30V DC or SSR : 12V DC, 50mA (except TC303A)	
AUXILIARY OUTPUT	Relay : SPDT (SPST for TC544A) : 5A resistive @ 250V AC / 30V DC	---	
SPECIAL FUNCTIONS	Heat cool PID, Dwell timer	---	
SUPPLY VOLTAGE (AC : 50 / 60 Hz)	90 to 270V AC / DC, 24V DC (Optional for TC544 Only)	90 to 270V AC / DC & 24VDC (Optional for TC513AX only)	

Temperature Controllers



DTC503
48(H) x 48(W) x 76(D)mm



DTC231
72(H) x 72(W) x 83.7(D)mm



DTC331
96(H) x 96(W) x 38.8(D)mm



DTC204A-2
72(H) x 72(W) x 83.7(D)mm



DTC324A-2
96(H) x 96(W) x 73(D)mm

FEATURES	• 3 Digit single display • J, K TC input • ON-OFF / PID control	• 3 Digit single display • J, K TC input • ON-OFF mode	• Single display, Dual set point • TC / RTD input • Control output : Relay or SSR • Auxiliary output : Relay
DISPLAY	3 digits, 7 segment LED single display		4 digits, 7 segment LED single display
INPUT TYPE	Thermocouple (J, K)		Thermocouple (J, K, T, R, S) / RTD (PT100)
RESOLUTION	Fixed 1° resolution		0.1 / 1° for TC / RTD inputs (Fixed 1° for R & S type TC input)
ACCURACY	For J, K inputs : 0.25% of F.S. $\pm 1^\circ\text{C}$	0.25% of F.S. $\pm 1^\circ$ (20 min warm up time)	For TC Inputs : 0.25% of F.S. $\pm 1^\circ$; For R & S Inputs : 0.5% of F.S. $\pm 2^\circ$ (20 min of warm up time); For RTD Input : 0.1% of F.S. $\pm 1^\circ$
SETPOINT	Single set point		Dual set point
CONTROL MODE	ON-OFF / PID	ON-OFF	Autotune PID or ON - OFF
CONTROL OUTPUT	Relay : SPDT : 10A resistive @ 250V AC / 30V DC	Relay : SPST : 10A resistive @ 250V AC / 30V DC	Relay : SPDT : 10A resistive @ 250V AC / 30V DC or SSR: 12V DC, 30mA
AUXILIARY OUTPUT	---		Relay : SPDT : 5A resistive @ 250V AC / 30V DC
SUPPLY VOLTAGE (AC : 50 / 60 Hz)	90 to 270V AC / DC		



PID500-T
48(H) x 48(W) x 100(D)mm



PID500
48(H) x 48(W) x 100(D)mm



PID110
96(H) x 48(W) x 74.5(D)mm



PID330
96(H) x 96(W) x 74.5(D)mm



PID528
48(H) x 48(W) x 100(D)mm

FEATURES	• TC / RTD input • Single step ramp soak • Max 3 outputs • Retransmission (Optional)	• Advanced PID control • Universal input • Single step ramp soak • Max 3 outputs • Retransmission (Optional) • RS485 MODBUS RTU protocol (Optional)	• Dual display, Dual set point • TC / RTD input • Control output : Relay • Auxiliary output : Relay
DISPLAY	4 + 4 digits, 7 segment LED dual display		
INPUT TYPE	Thermocouple : J, K, T, R, S, C, E, B, N, L, U, W, Platinel II RTD : PT100	Thermocouple : J, K, T, R, S, C, E, B, N, L, U, W, Platinel II RTD : PT100 Signal inputs (DC) : -5 to 56 mV, 0 to 10 V DC, 0 to 20 mA DC	Thermocouple (J, K, T, R, S) / RTD (PT100)
RESOLUTION	TC / RTD : 1 / 0.1°	TC / RTD : 1 / 0.1°; Analog input : 1 / 0.1 / 0.01 / 0.001	0.1 / 1° for TC / RTD inputs (Fixed 1° for R & S type TC input)
ACCURACY	For TC input : 0.25% of F.S. $\pm 1^\circ$; For R & S inputs : 0.5% of F.S. $\pm 2^\circ$ (20 min of warm up time); For RTD input : 0.1% of F.S. $\pm 1^\circ$; Signal input : $\pm 0.5\%$, ± 1 digit (Except PID500-T)		For TC Inputs : 0.25% of F.S. $\pm 1^\circ$; For R & S Inputs : 0.5% of F.S. $\pm 2^\circ$ (20 min of warm up time); For RTD Input : 0.1% of F.S. $\pm 1^\circ$
SET POINT	Maximum 3		Dual set point
CONTROL MODE	Autotune PID or ON - OFF		
CONTROL OUTPUT	Relay : SPST : 5A @ 250V AC / 30V DC or SSR : 12V DC, 20mA or Current : 4 to 20 mA DC (Max load 500E) or Voltage : 0 to 10V DC (Min load 10K) (Depends on product code selection)		Relay : SPST : 5A resistive @ 250V AC / 30V DC
AUXILIARY OUTPUT	(Maximum 2) Relay or SSR (Mode : Set point or alarm mode) Relay : SPST : 5A @ 250V AC / 30V DC; SSR : 12V DC, 20mA		Relay : SPST : 5A resistive @ 250V AC / 30V DC
OPTIONAL FEATURES	---	Extra alarm output, Retransmission analog output, RS485 MODBUS RTU protocol	---
SUPPLY VOLTAGE (AC : 50 / 60 Hz)	90 to 270V AC / DC		

Profile Controller



PR502
48(W) x 48(H) x 100(D)mm

Analog Temperature Controller



TC52
48(W) x 48(H) x 100(D)mm

FEATURES	- Ramp soak control 10 programs, 16 steps each - Alarm at each stage - Memory retention	- Dial setting - TC input - Single relay output - Easy to use
DISPLAY	4 + 4 digits, 7 segment LED dual display	Dial setting
INPUT TYPE	Thermocouple : J, K, T, R, S, C, E, B, N, L, U, W, Platinel II RTD : PT100, Signal inputs (DC) : -5 to 56 mV, 0 to 10 V DC, 0 to 20 mA DC	Thermocouple (J)
RESOLUTION	TC / RTD : 1 / 0.1°; Analog input : 1 / 0.1 / 0.01 / 0.001	Fixed 1° resolution
ACCURACY	For TC input : 0.25% of F.S. ±1°; For R & S inputs : 0.5% of F.S. ±2° (20 min of warm up time); For RTD input : 0.1% of F.S. ±1°; Signal input : ±0.5%, ± 1 digit (Except PID500-T)	Setting : ± 3% of F.S., ±0.5% of F.S.
SETPOINT	Maximum 3	Single set point
CONTROL MODE	Autotune PID or ON - OFF	Time proportional & ON-OFF
CONTROL OUTPUT	Relay : SPST : 5A @ 250V AC / 30V DC or Current : 4 to 20 mA DC (Max load 500E)	SPST : 7A resistive @ 230V AC
AUXILIARY OUTPUT	(Mode : Set point or alarm mode) Relay : SPST : 5A @ 250V AC / 30V DC	---
OPTIONAL FEATURES	No. of profiles : 10 (16 steps each), Ramp / soak Time range : 0.01 to 99.99 Hrs, Other profile parameters : Link profiles, Programmable repeat cycle, Reset option, Power down resume, Deviation hold, Alarm at each step with settable alarm duration, Retransmission analog output, RS485 MODBUS RTU protocol	---
SUPPLY VOLTAGE (AC: 50 / 60 Hz)	90 to 270V AC / DC	230V AC

Cooling Controllers



CH403
36(H) x 72(W) x 74.5(D)mm



CH403A
36(H) x 72(W) x 65.3(D)mm



CH403B
36(H) x 72(W) x 65.3(D)mm



CH403C
36(H) x 72(W) x 74.5(D)mm

FEATURES	3 Digits single display - Auto / Manual defrost management - High / Low temperature alarms - Control output: Relay - Auxiliary output: Relay & SSR	2½ Digits single display - NTC input type - Restart time delay - Auto / Manual defrost selection - Door open mode - Cyclic timer (Optional)	3 Digits single display - Capacitive touch keypad - Defrost management - IDM applicable - Compact size
DISPLAY	3 digits, 7 segment display	2½ digits, 7 segment display	3 digits, 7 segment display
INPUT TYPE	NTC type sensor		
RESOLUTION	1 / 0.1°		
ACCURACY	±1% of F.S.	0.25% of F. S., ±1°	±1% of F.S.
SETPOINT	Single set point		
CONTROL MODE	ON - OFF		
CONTROL OUTPUT	SPDT: 10A @ 250V AC / 30V DC or SPST: 20A @ 250V AC / 30V DC (Depends on product code selection)		SPDT : 10A @ 250V AC
AUXILIARY OUTPUT	SSR: 12V DC, 10mA or Relay: SPST: 5A @ 230V AC / 30V DC (Depends on product code selection)		---
HYSTERESIS	0.1 to 9.9°		
DISPLAY OFFSET	-19.9° to 20.0°	-19.9° to 19.9°	-19.9° to 20.0°
RESTART TIME DELAY	Adjustable from 0 to 19.9 min		Adjustable from 0 to 99 min
RELAY ACTION	Heat & Cool mode		
DEFROST TIME	Programmable from 0 to 99 min		
DEFROST FREQUENCY	Programmable from 0 to 99 (hr / min / sec)		
SUPPLY VOLTAGE (AC : 50 / 60 Hz)	90 to 270V AC / DC	230V AC or 90 to 270 V AC / DC	230V AC



PIC152A-VI
48(H) x 96(W) x 76(D)mm



PIC101N
48(H) x 96(W) x 88(D)mm

FEATURES	• User programmable universal input • Retransmission output • LED status indicator : Alarm ON • 2 Alarm indication • Inbuilt 24V DC sensor supply	• 4 digits, Single display • User programmable universal input • Scalable voltage / current input
DISPLAY	4 digits, 7 segment LED single display	
INPUT TYPE	Thermocouple : J, K, T, R, S, RTD : PT100, Signal inputs (DC) : -5 to 56mV, 0 to 10V, 0/4 to 20mA	Thermocouple : J, K, T, R, S, RTD : PT100, Signal inputs (DC) : 0 to 56mV, 0 to 10V, 0/4 to 20mA
RESOLUTION	TC / RTD : 1 / 0.1, Analog input : 1 / 0.1 / 0.01 / 0.001	
ACCURACY	For TC inputs : 0.25% of F.S. $\pm 1^{\circ}$; For R & S inputs : 0.5% of F.S. $\pm 2^{\circ}$ (20 min of warm up time); For RTD input : 0.1% of F.S. $\pm 1^{\circ}$; Cold junction accuracy $\pm 5^{\circ}\text{C}$; Signal input : $\pm 0.5\%$ of F.S, ± 1 digit	
OUTPUT	2 Alarms : SPDT : 5A @ 250V AC / 24V DC	---
	Alarm modes : High, Low, Band, Fail output & fault diagnosis. Hysteresis, Annunciator : Programmable, Reset action : Automatic or latched	
SPECIAL FEATURES	Retransmission output : 0 / 4 to 20mA DC, 0 to 5V DC, 0 to 5 / 10V DC, (Software selectable) RS485 MODBUS RTU protocol (Optional)	---
SENSOR SUPPLY	24V DC, 30mA (Output to power the sensor)	
SUPPLY VOLTAGE (AC : 50 / 60 Hz)	90 to 270V AC / DC, 24V DC (Optional)	



PIC101A-T-230
48(H) x 96(W) x 76(D)mm



PIC101A-VI-230
48(H) x 96(W) x 76(D)mm

FEATURES	• Simple temperature indicator • TC / RTD input type	• 4 Digits single display • User programmable voltage & current input
DISPLAY	4 digits, 7 segment LED single display	
INPUT TYPE	Thermocouple : J, K, T, R, S RTD : PT100	Signal inputs (DC) : 0 to 10V, 0/4 to 20mA
RESOLUTION	1 / 0.1° (Fix 1° resolution for R & S type TC)	Decimal point position selectable : 1 / 0.1 / 0.01 / 0.001
ACCURACY	For TC inputs : 0.25% of F.S. ±1°; For R & S input : 0.5% of F.S. ±2° (20 min of warm up time); RTD input : 0.1% of F.S. ±1°	Signal input : ±0.5% of F.S. ± 1 digit
SUPPLY VOLTAGE (AC : 50 / 60 Hz)	230V AC, ±20%	

Ordering information

Temperature Controllers

PRODUCT CODE	OUTPUT 1		OUTPUT 2	SUPPLY VOLTAGE	CERTIFICATION
	RELAY	SSR			
TC544C	RELAY (5A)	SSR (12V DC)	RELAY (5A)	90 to 270V AC / DC	CE
TC544B	RELAY (5A)	SSR (12V DC)	RELAY (5A)	90 to 270V AC / DC	---
TC544B-CE	RELAY (5A)	SSR (12V DC)	RELAY (5A)	90 to 270V AC / DC	CE
TC513BX	RELAY (10A)	SSR (12V DC)	---	90 to 270V AC / DC	---
TC513BX-CE	RELAY (10A)	SSR (12V DC)	---	90 to 270V AC / DC	CE
TC513CX	RELAY (10A)	SSR (12V DC)	---	90 to 270V AC / DC	---
TC533BX	RELAY (10A)	SSR (12V DC)	---	90 to 270V AC / DC	---
TC533BX-CE	RELAY (10A)	SSR (12V DC)	---	90 to 270V AC / DC	CE
TC538BX	RELAY (10A)	SSR (12V DC)	---	90 to 270V AC / DC	---
TC538CX	RELAY (10A)	SSR (12V DC)	---	90 to 270V AC / DC	---
TC544A	RELAY (10A)	SSR (12V DC)	RELAY (5A)	90 to 270V AC / DC	---
TC544A-24V	RELAY (10A)	SSR (12V DC)	RELAY (5A)	24V DC	CE

Ordering information

Temperature Controllers

PRODUCT CODE	OUTPUT 1		OUTPUT 2	SUPPLY VOLTAGE	CERTIFICATION
	RELAY	SSR			
TC544A-CU	RELAY (5A)	SSR (12V DC)	RELAY (5A)	90 to 270V AC / DC	CE, RoHS
TC244AX	RELAY (5A)	SSR (12V DC)	RELAY (5A)	90 to 270V AC / DC	---
TC344AX	RELAY (5A)	SSR (12V DC)	RELAY (5A)	90 to 270V AC / DC	---
TC513AX	RELAY (10A)	SSR (12V DC)	---	90 to 270V AC / DC	---
TC513AX-CU	RELAY (10A)	SSR (12V DC)	---	90 to 270V AC / DC	CE, RoHS
TC513AX-24V	RELAY (10A)	SSR (12V DC)	---	24V DC	CE
TC533AX	RELAY (10A)	SSR (12V DC)	---	90 to 270V AC / DC	---
TC233AX	RELAY (10A)	SSR (12V DC)	---	90 to 270V AC / DC	---
TC333AX	RELAY (10A)	SSR (12V DC)	---	90 to 270V AC / DC	---
TC203AX	RELAY (10A)	SSR (12V DC)	---	90 to 270V AC / DC	---
TC303AX	RELAY (10A)	SSR (12V DC)	---	90 to 270V AC / DC	---
TC303A	RELAY (10A)	---	---	90 to 270V AC / DC	---

PRODUCT CODE	OUTPUT 1	OUTPUT 2	OUTPUT 3	COMM. (RS485)	SUPPLY VOLTAGE	CERTIFICATION
PID500-T-0-0-01	RELAY (5A)	RELAY (5A)	RELAY (5A)	---	90 to 270V AC / DC	---
PID500-T-1-0-01	SSR (12V DC)	RELAY (5A)	RELAY (5A)	---	90 to 270V AC / DC	---
PID500-T-2-0-01	4-20mA	RELAY (5A)	RELAY (5A)	---	90 to 270V AC / DC	---
PID500-2-0-04	4-20mA	RELAY (5A)	RELAY (5A)	YES	90 to 270V AC / DC	---
PID500-2-0-04 V2-CE	4-20mA	RELAY (5A)	RELAY (5A)	YES	90 to 270V AC / DC	CE
PID500-3-0-00	0 - 10V	RELAY (5A)	---	---	90 to 270V AC / DC	---
PID500-3-0-00 V2-CE	0 - 10V	RELAY (5A)	---	---	90 to 270V AC / DC	CE
PID500-0-0-01 V2-CE	RELAY (5A)	RELAY (5A)	RELAY (5A)	---	90 to 270V AC / DC	CE
PID500-0-0-01	RELAY (5A)	RELAY (5A)	RELAY (5A)	---	90 to 270V AC / DC	---
PID500-0-0-04	RELAY (5A)	RELAY (5A)	RELAY (5A)	YES	90 to 270V AC / DC	---
PID500-0-0-04 V2-CE	RELAY (5A)	RELAY (5A)	RELAY (5A)	YES	90 to 270V AC / DC	CE
PID500-2-0-01	4-20mA	RELAY (5A)	RELAY (5A)	---	90 to 270V AC / DC	---
PID500-2-0-01 V2-CE	4-20mA	RELAY (5A)	RELAY (5A)	---	90 to 270V AC / DC	CE
PID500-1-0-01	SSR (12V DC)	RELAY (5A)	RELAY (5A)	---	90 to 270V AC / DC	---
PID500-1-0-01 V2-CE	SSR (12V DC)	RELAY (5A)	RELAY (5A)	---	90 to 270V AC / DC	CE
PID500-1-0-00	SSR (12V DC)	RELAY (5A)	---	---	90 to 270V AC / DC	---
PID500-1-0-00 V2-CE	SSR (12V DC)	RELAY (5A)	---	---	90 to 270V AC / DC	CE
PID330-2-0-04	4-20mA	RELAY (5A)	RELAY (5A)	YES	90 to 270V AC / DC	---
PID330-0-0-01	RELAY (5A)	RELAY (5A)	RELAY (5A)	---	90 to 270V AC / DC	---
PID110-2-0-04	4-20mA	RELAY (5A)	RELAY (5A)	YES	90 to 270V AC / DC	---
PID110-0-0-01	RELAY (5A)	RELAY (5A)	RELAY (5A)	---	90 to 270V AC / DC	---
PR502-0-0-1	RELAY (5A)	RELAY (5A)	---	YES	90 to 270V AC / DC	---
PR502-2-0-0	4-20mA	RELAY (5A)	---	---	90 to 270V AC / DC	---

PRODUCT CODE	OUTPUT 1		OUTPUT 2	SUPPLY VOLTAGE	CERTIFICATION
	RELAY	SSR			
DTC503	RELAY (10A)	---	---	90 to 270V AC / DC	---
DTC231	RELAY (10A)	---	---	90 to 270V AC / DC	---
DTC331	RELAY (10A)	---	---	90 to 270V AC / DC	---
PID528-1	RELAY (5A)	---	RELAY (5A)	90 to 270V AC / DC	---
PID528-1 V2-CE	RELAY (5A)	---	RELAY (5A)	90 to 270V AC / DC	CE
DTC204A-2	RELAY (10A)	SSR (12V DC)	RELAY (5A)	90 to 270V AC / DC	---
DTC324A-2	RELAY (10A)	SSR (12V DC)	RELAY (5A)	90 to 270V AC / DC	---
TC52-400-J-230	RELAY (7A)	---	---	230V AC	---

Cooling Controllers

PRODUCT CODE	OUTPUT		SUPPLY VOLTAGE	CERTIFICATION
	CONTROL OUTPUT	ALARM OUTPUT		
CH403A-1-NTC-CE	RELAY (10A)	SSR (12V DC)	230V AC	CE
CH403A-2-NTC-CE	RELAY (20A)	---	90 to 270V AC / DC	CE
CH403A-3-NTC-CE	RELAY (10A)	RELAY (5A)	230V AC	CE
CH403-1-NTC	RELAY (10A)	SSR (12V DC)	90 to 270V AC / DC	---
CH403-1-NTC-CU	RELAY (10A)	SSR (12V DC)	90 to 270V AC / DC	CE, RoHS
CH403-2-NTC	RELAY (20A)	---	90 to 270V AC / DC	---
CH403-3-NTC	RELAY (10A)	RELAY (5A)	90 to 270V AC / DC	---
CH403B-1-NTC	RELAY (10A)	---	90 to 270V AC / DC	---
CH403B-2-NTC	RELAY (20A)	---	90 to 270V AC / DC	---
CH403B-3-NTC	RELAY (20A)	RELAY (5A)	90 to 270V AC / DC	---
CH403C-1-NTC	RELAY (10A)	---	90 to 270V AC / DC	CE

Process Indicators

PRODUCT CODE	RETRANSMISSION	COMM. (RS485)	SUPPLY VOLTAGE	CERTIFICATION
PIC152A-VI	YES	---	90 to 270V AC / DC	---
PIC152A-VI-CE	YES	---	90 to 270V AC / DC	CE
PIC152A-VI-C-24V	YES	YES	24V DC	---
PIC101-N	---	---	90 to 270V AC / DC	CE
PIC101N-24V	---	---	24V DC	CE
PIC101N-CU	---	---	90 to 270V AC / DC	CE, RoHS
PIC101A-T-230	---	---	230V AC	---
PIC101A-VI-230	---	---	230V AC	---

PLC - Flexible IO Solution



FLEXYS GT35
99(H) x 99(W) x 110(D)mm



FLEXYS PANEL TX4
99(H) x 99(W) x 110(D)mm



FLEXYS RAIL
67(H) x 140(W) x 107(D)mm



EXP FLEX 2M **EXP FLEX 2M V3**
94(H) x 35(W) x 103(D)mm

FEATURES	• 3.5" LCD with touch screen • Flexible I/O card selection • Real time clock • Expandable	• PLC with built in HMI • Flexible I/O card selection • Real time clock • Expandable	• PLC with flexible I/O card selection • Real time clock • Expandable	• Any flexys card can be configured • Selectable baudrate and slave ID
DISPLAY	TFT 3.5" diagonal touch screen, Resolution 320x240	LCD with backlight, 4x16 character display, Font size 5x7mm	7 segment display for slot number & card status. Multipurpose LED bank	LED indication for power ON & communication status
NO. OF KEYS	5 function keys +1 system key	18 keys (14 user configurable)	One key to scroll through different slots	---
I/Os	3 I/O slots (Please refer I/O card for flexys series)	4 I/O slots (Please refer I/O card for flexys series)		---
DIGITAL INPUTS	4 / 10 /14 per card, PNP (6 - 30V DC)			
MAXIMUM COUNTING FREQUENCY	FC0 (I0 & I1) & FC1 (I2 & I3) - 5KHz (on power supply card only), Normal digital inputs - 30Hz			---
ANALOG INPUTS	3 / 4 / 6 Channels per card (TC, RTD, 0-10V, 0 - 20mA, NTC)			
RESOLUTION	12 Bits			
RELAY OUTPUTS	4 / 8 per card, NO type 5A @ 230V AC / 30V DC (Resistive)			
TRANSISTOR OUTPUTS	8 per card, Source type 100mA @ 24V DC			
ANALOG OUTPUTS	2 / 4 Channels per card (0 - 10V, 0 - 20mA)			
RESOLUTION	14 Bits (0.0 to 100.0% = 0 to 10.000V, 0.0 to 100.0% = 0 to 20.000mA)			
PROGRAM MEMORY	221KB	351KB		---
EXPANSION	Yes			
COMMUNICATION INTERFACE	RS485 MODBUS RTU protocol	RS485 MODBUS RTU, Proprietary protocol		RS485 MODBUS RTU, Proprietary protocol (Selec master PLC) RS485 MODBUS RTU (Third party master PLC)
RTC	Yes			---
BAUDRATE	---			19200 / 115200 bps (Selectable)
RESPONSE TIME	---			100msec to 2sec + IO card Response
SUPPLY VOLTAGE (AC : 50 / 60 Hz)	18 - 30V DC, 100 - 240V AC			18 - 30V DC

Compact Series - UNIX & TWIX



UNIX-1
75.5(H) x 75.5(W) x 91(D)mm



TWIX-1 **TWIX-2** **TWIX-3**
50(H) x 98(W) x 78(D)mm 50(H) x 98(W) x 78(D)mm 50(H) x 98(W) x 78(D)mm



MM1015
50(H) x 96(W) x 88(D)mm

FEATURES	• Compact PLC with built in HMI • RS485 MODBUS RTU protocol	• Compact PLC with built in HMI • Configurable LED display • RS485 MODBUS RTU protocol			• Compact PLC with built in HMI • RS485 MODBUS RTU protocol
DISPLAY	6 digits red & 4 green digits 7 segment LED	4 + 4 digits red & 6 green digits 7 segment LED			3 + 4 digits red & 4 green digits 7 segment LED
NO. OF KEYS	3 keys (2 - User configurable)		5 keys (4 - User configurable)		
DIGITAL INPUTS	3 + 1*	6	6 + 2*	8	10
INPUT TYPE	PNP (5 - 30V DC)	PNP (6 - 30V DC)			PNP (11 - 30V DC)
MAXIMUM COUNTING FREQUENCY	FC0 (I0 & I1) - 5KHz, Normal digital input: 30Hz				Normal digital input: 30Hz
ANALOG INPUTS	3 Channels, 1 (TC / RTD), 1 (0-10V), 1(0-20mA)	1 Channel (TC / RTD)	6 Channels, 2 (TC / RTD), 2 (0-10V), 2(0-20mA)	1 Channel (TC / RTD)	---
ANALOG OUTPUTS	---		1 Channel (0-10V/0-20mA)	---	---
RESOLUTION	12 Bits				---
DIGITAL OUTPUTS	2 Relay, 2 Transistor	4 Relay	5 Relay	6 Transistor	6 Relay
TYPE & RATING	For Relay O/P : 5A NO type @230V AC / 30V DC (Resistive), For Transistor O/P : Source type 100mA@24V DC				
PROGRAM MEMORY	240KB	112KB	240KB	112KB	224KB
COMMUNICATION INTERFACE	RS485 MODBUS RTU Protocol				
SUPPLY VOLTAGE (AC : 50 / 60Hz)	90 - 270V AC	90- 270V AC, 18-28 V DC		18 - 30V DC	100 - 270V AC (without retention) 180 - 270V AC (with retention)

Compact Series - DIGIX



DIGIX-1
94(H) x 70(W) x 67(D)mm



DIGIX-1-B
90(H) x 70(W) x 67(D)mm



DIGIX-2
90(H) x 70(W) x 67(D)mm



DIGIX-4
90(H) x 70(W) x 67(D)mm

FEATURES	• Compact PLC with built in HMI • 2 Line 8 character LCD • Real time clock** • RS485 MODBUS RTU protocol		• LED indications for input & output • RS485 MODBUS RTU protocol		• Compact PLC with built in HMI • 2 Line 8 character LCD • Real time clock** • RS485 MODBUS RTU protocol	
DISPLAY	2 X 8 Character LCD		LED indication for input, Output & communication status		2 X 8 Character LCD	
NO. OF KEYS	5 keys (4 - User configurable)		---		5 keys (4 - User configurable)	
DIGITAL INPUTS	8			10 + 2*		10
INPUT TYPE	PNP (6 - 30V DC)					
MAXIMUM COUNTING FREQUENCY	FC0 (I0 & I1) - 5KHz, Normal digital input: 30Hz					
ANALOG INPUTS	---	Through expansion	---	2 Channels (0-10V)		Through expansion
RESOLUTION				12 Bits		
DIGITAL OUTPUTS	5 Relay			8 Relay		6 Transistor
TYPE & RATING	5A NO type @230V AC / 30V DC (Resistive)					100 mA each @24V DC
ANALOG OUTPUTS	---	Through expansion	---	Through expansion		
RESOLUTION		As per expansion modules		As per expansion modules		
RTC	NO	YES	NO	NO		YES
EXPANSION	NO	YES	NO	YES		YES
PROGRAM MEMORY	112KB			240KB		
COMMUNICATION INTERFACE	RS485 Modbus RTU Protocol					
SUPPLY VOLTAGE (AC : 50 / 60 Hz)	18 - 30V DC** 100 - 270V AC/DC	100 - 270V AC	18 - 30V DC			

*Voltage Analog Inputs can be configured as Digital Inputs **Please refer Datasheet for exact Order code

PLC - Fixed IO Configuration



MM3030-2
110(H) x 99(W) x 62(D)mm

MM3030-4
110(H) x 99(W) x 62(D)mm



MM3032-2-0-0-230V V2
110(H) x 99(W) x 62(D)mm

MM3032-2-0-0-24V V2
110(H) x 99(W) x 62(D)mm

FEATURES	• Low cost • Panel / DIN rail mounting • Fast inputs / outputs • Windows based user friendly software for ladder programming and HMI configuration		• Compact PLC with built-in HMI • Panel / DIN rail mounting • Windows based user friendly software for ladder programming and HMI configuration	
DISPLAY	4x16 Character LCD		2x16 Character LCD	
NO. OF KEYS	15 keys (12 User configurable)		8 keys (6 User configurable)	
DIGITAL INPUTS	10 PNP (11 - 30V DC)		8 PNP (6 - 30V DC)	
COUNTING FREQUENCY	FC0 (I0 & I1) – 12KHz, FC1 (I2 & I3) & FC2 (I4 & I5) – 7.5KHz Normal input – 30Hz.		FC0 (I0 & I1) – 5KHz, Normal input – 30Hz.	
ANALOG INPUTS	2 Channel (0 - 10V or 0 to 20mA) selectable via jumpers		2 Channels (0 - 20mA) / (0-10V)	2 Channels (0 - 20mA / (0-10V) + 1 NTC Channel
RESOLUTION	10 Bits		12 Bits	
DIGITAL OUTPUTS	8 Transistor		6 Relay	
TYPE AND RATING	O0-O1 Sink 50mA @ 24V DC (Fast Outputs 50KHz), O2-O7- Source 100mA @ 24V DC		5A NO type @ 230V AC / 30V DC (Resistive)	
ANALOG OUTPUTS	Through expansion		1 Channel, (0 - 10V)	
RESOLUTION	As per expansion modules		14 Bits (0.0% to 100.0% = 0 – 10.000V)	
RTC	YES		NO	
EXPANSION	YES		NO	
PROGRAM MEMORY	351KB		240KB	
COMMUNICATION INTERFACE SLAVE	RS485 MODBUS RTU protocol			
COMMUNICATION INTERFACE MASTER	Proprietary protocol & RS485 MODBUS RTU protocol	RS485 MODBUS RTU protocol	---	
SUPPLY VOLTAGE (AC : 50 / 60 Hz)	18 - 30V DC		100-270V AC without retention 180-270V AC with retention	18 – 30V DC



SP3-GT35
98(H) x 98(W) x 54(D)mm



SP112-GT40
102(H) x 138(W) x 32(D)mm



SP112-GT70
149(H) x 203(W) x 32(D)mm



SP112-GT100
193(H) x 273(W) x 32(D)mm

FEATURES	• 10 Password levels • Serial printing • Data logging • Built in buzzer • Recipe management	• 4.3", 7" & 10" Touch screen • Ethernet / Serial communication • User management • Recipe management	• Data logging functionality • Update program by USB flash • In-Built third party PLC protocols • In-Built symbol library • In-Built buzzer for alarm condition	
DISPLAY	3.5" Diagonal resistive touch screen	4.3" Diagonal resistive touch screen	7" Diagonal resistive touch screen	10" Diagonal resistive touch screen
RESOLUTION	320 x 240 pixels	480 x 272 pixels	800 x 480 pixels	1024 x 600 pixels
USER MEMORY	16 MB	256MB Flash + 256MB DDR3	128M Flash + 64M DRAM	
DATA LOGGING	2 GB (External SD card)	Yes		
COMM. PORT 1	Master port - RS485 MODBUS RTU protocol	RS485 MODBUS RTU protocol		
COMM. PORT 2	Slave port - RS232 MODBUS RTU protocol	RS232 MODBUS RTU protocol, Multiple communication protocols		
COMM. PORT 3	Serial printer ESC / PAUSE protocol	Ethernet - 10M / 100M Self adaptation		
USB HOST	---	USB2.0 x 1, Support USB flash disk to update firmware, Configure and store data		
USB SLAVE	---	Type C, Support power supply & program download / upload	Type B, program download / upload	
KEYS	5 Function keys + 1 System key	---		
RTC	Yes	Yes		
BACKUP BATTERY	3V CR2032	---		
OPERATING TEMPERATURE	0° - 55° C	0° - 50° C		
SUPPLY VOLTAGE	18 - 30V DC	24V DC		

Annunciator



AN-8-0-0-230V
147(H) x 76(W) x 63(D)mm

FEATURES	• 8 Programmable windows • 6 Colour selection • RS485 MODBUS RTU protocol
DISPLAY	Multicolour LED's - Fault annunciation
NO. OF KEYS	4
DIGITAL INPUTS	13
OPERATING RANGE	5 - 30V DC
INPUT CURRENT	3mA @ 12V
DIGITAL OUTPUTS	2
OUTPUTS TYPE	NO contact type - Relay
OUTPUT CURRENT	7A @ 30VDC (Resistive), 7A @ 250VAC (Resistive)
COMMUNICATION PROTOCOL	RS485 MODBUS RTU protocol
MOUNTING	Panel mount
SUPPLY VOLTAGE	90 - 270V AC
SENSOR SUPPLY	12V, 50mA (for looping)



RP-2M-1.1A-24VDC-CE
90(H) X 35(W) x 60(D)mm



RPS60-24-CE
109.8(H) X 43(W) x 102.7(D)mm



RPS120-24-CE
109.8(H) X 43(W) x 102.7(D)mm



RPS240-24-CE
136(H) X 50(W) x 135(D)mm



RPS480-24-CE
154(H) X 60(W) x 158(D)mm

FEATURES	• IEC 61010-1 safety standards • Protection: Overload / Over voltage • Power OK indication • Cooling by free air convection	• Designed to meet UL 62368-1 • IEC 61010-1 safety standard • Protection : Overload, Over voltage, Output Short Circuit, Over Temperature • Power OK Indication • Cooling by free air convection		• Designed to meet UL 62368-1 • Active PFC • Protection : Overload, Over voltage, Output Short Circuit, Over Temperature • Power OK indication • DC OK relay contact • Cooling by free air convection	
	DISPLAY	LED indication for DC OK	LED indication for DC OK		
VOLTAGE RANGE	100 - 270 V AC, 100 - 300 V DC	100 - 240 V AC ±10%, 127 - 370 V DC			
FREQUENCY RANGE	50 / 60 Hz	50 / 60 Hz			
AC CURRENT	100V - 0.6A, 270V - 0.3A	115V - 1.2A, 230V - 0.8A	115V - 2.2A, 230V - 1.5A	115V - 2.4A, 230V - 1.2A	115V - 4.8A, 230V - 2.4A
EFFICIENCY	75% to 85%	>87% @ 230V AC	>89% @ 230V AC	93% @ 230V AC	93.5% @ 230V AC
INRUSH CURRENT	30A	<48A @ 264V AC		<60A @ 264V AC	<60A @ 264V AC
DC VOLTAGE	24V DC	24-28V DC			
RATED CURRENT	1.1A	2.5A @ 24V	5A @ 24V	10A @ 24V	20A @ 24V
		2.14A @ 28V	4.29A @ 28V	8.6A @ 28V	14A @ 28V
RATED POWER	26.4W	60W	120W	240W	480W
RIPPLE & NOISE MAX (mVp.p)	200mV	<1% of Vout			
WEIGHT	140 g	285 g	350 g	645 g	1050 g

Accessories - Battery Charger



BC1-1210
190(H) X 60(W) x 140.75(D)mm



BC2-2410
190(H) X 80(W) x 140.75(D)mm

FEATURES	• CVCC Charging profile • Charging indication with LED • Prevents over charging of battery • Full power between -0°C & +50°C • Compact size, Cost optimized • Wide-range input 150-270VAC	
DISPLAY	LED indication for battery charging	
VOLTAGE RANGE	150 - 270 V AC	
FREQUENCY RANGE	50 / 60 Hz	
AC CURRENT	150V - 2.4A, 230V - 1.7A	150V - 4.1A, 230V - 3.1A
EFFICIENCY	>80% @ 230V AC	>85% @ 230V AC
INRUSH CURRENT	<70A @ 270V AC	<80A @ 270V AC
DC VOLTAGE	12V DC	24V DC
RATED CURRENT	10A	
RATED POWER	120W	240W
RIPPLE & NOISE MAX (mVp.p)	<1% of Vout	
WEIGHT	1050 g	1280 g

Accessories - Relay Modules



RLYMD-1-S4-1CO-24VDC
87(H) x 69(W) x 69(D)mm



RLYMD-2-S8-1CO-24VDC
87(H) x 138(W) x 138(D)mm



RLYMD-1-S4-2CO-24VDC
87(H) x 69(W) x 69(D)mm



RLYMD-2-S8-2CO-24VDC
87(H) x 138(W) x 138(D)mm



ERLYMD-2-1-S8-1CO-24V
87(H) x 138(W) x 138(D)mm

FEATURES	• LED and freewheeling diode across coils • Reverse polarity protection • Jumpers for coil looping • Pluggable relays				• RS485 Comm. over MODBUS-RTU • Selectable baudrate and slave ID • Pluggable relays
NO. OF CHANNELS	4	8	4	8	8
CONTACTS	1 C / O		2 C / O		
CONTACT RATING	10A @ 277V AC / 30V DC (Resistive)				
NOMINAL VOLTAGE	24V DC				
MUST VOLTAGE	18V DC				
MAX VOLTAGE	33V DC				
OPERATE TIME	15 msec				
RESET TIME	5 msec				
COMMUNICATION PROTOCOL	---				RS485 MODBUS RTU protocol
STATUS DISPLAY	LED indication for relay ON status				LED indication for relay ON status, Power ON & communication status
SUPPLY VOLTAGE	---				24V DC

Accessories - Data Converters



AC-RS485-RS232-ISO



AC-USB-RS232-01



AC-USB-RS485-02



AC-USB-RS485-03



AC-S2E-02

FEATURES	- LED indication for communication status - Interface converter	- Port powered - Communication status available on LED Indication	- Web configuration telnet protocol - TCP / IP protocol
DISPLAY	LED indication for power on, Tx & Rx	LED indication for Tx & Rx	LED indication for power ON, Tx and Rx, & Reset switch
INTERFACE 1	Serial (RS485 MODBUS RTU protocol)	USB 2.0 compliance	Serial (RS485 MODBUS RTU protocol)
CONNECTOR	2 wire	USB type A	2 wire (Data+, Data-)
INTERFACE 2	Serial (RS232 MODBUS RTU protocol)	Serial (RS485 MODBUS RTU protocol)	Ethernet (TCP / IP, Telnet)
CONNECTOR	DB9	2 wire open	RJ 45 (8 Pin)
TRANSMISSION SPEED	2400 to 115200 bps	2400 to 115200 bps	RS485 : 300 to 115000 bps Ethernet : 10 / 100 Mbps
CABLE LENGTH	---	1 meter	---
POWER CONSUMPTION	0.5 W	75mA @ 5V	0.5 W
SUPPLY VOLTAGE	90 - 270V AC	Port powered	12 - 30V DC

Accessories - Communication Adapters & Cables



AC-IOEXP-01



AC-IOEXP-03



ACH-002



ACH-003



ACH-004

DESCRIPTION	Expansion adapter for MM303X PLCs	Adapter for directing RJ25 to open terminal and also for network looping	DB9 to RJ25 cable	Both Side RJ45 type connector	Both Side RJ25 Type Connector
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Ordering information

Flexible IO Solution

PRODUCT CODE	CERTIFICATION
FL-GT35-DI04-PS-230V	CE
FL-GT35-DI04-PS-24V	CE
FL-GT35-DSP	CE
FL-GT35-LG-1-0-1	CE
FL-TX4-DI04-PS-230V	CE
FL-TX4-DI04-PS-24V	CE
FL-TX4-LG-1-1-1	CE
FL-RL-DI04-PS-24V	CE
FL-RL-BS-6	CE
FL-RL-LG-1-1-1	CE
FL-RL-PS-230V	---

Fixed IO Configuration

PRODUCT CODE	CERTIFICATION
MM3030-2	CE in process
MM3030-4	CE in process
MM3032-2-0-0-230V-V2	CE
MM3032-2-0-0-24V	CE in process

Compact Series

PRODUCT CODE	CERTIFICATION
DIGIX-1-0-0-24VDC-B	CE in process
DIGIX-1-230V	CE
DIGIX-1-0-0-24VDC	CE in process
DIGIX-1-1-1-230V	CE
DIGIX-2-1-0-24VDC	CE
DIGIX-4-1-1-24VDC	CE
UNIX-1-230V	CE in process
TWIX-1-230V	CE in process
TWIX-1-24VDC	CE in process
TWIX-2-230V	CE in process
TWIX-2-24V	CE in process
TWIX-3-24VDC	CE in process
MM1015-230V	CE in process

Human Machine Interface

PRODUCT CODE	CERTIFICATION
SP3-GT35	CE in process
SP112-GT70-ET-CE	CE
SP112-GT70-S-CE	CE
SP112-GT100-ET-CE	CE
SP112-GT40-ET-CE	CE in process
SP112-GT40-S-CE	CE in process

Add ons - PLC IO's

PRODUCT CODE	DESCRIPTION	CERTIFICATION
EXP-FLEX 2M	Expansion slot - Flexys IO cards	CE
EXP-FLEX 2M V3	Expansion slot - Flexys IO cards	CE in process
FL-SC-DI10	10 Digital inputs card	CE
FL-SC-DI14	14 Digital inputs card	CE
FL-SC-RO08	8 Channel relay output card	CE
FL-SC-TO08	8 Channel transistor output card	CE
FL-SC-TO08-1A	8 Channel transistor output card - 1A	CE in process
FL-SC-DI04-RO04	4 Digital input, 4 Relay output card	CE
FL-SC-AI04-U	4 Channel analog input card - Universal	CE in process
FL-SC-AI04-RTD	4 Channel analog input card - RTD (PT-100)	CE
FL-SC-AI04-TC	4 Channel analog input card - Thermocouple	CE in process
FL-SC-AIDF04-TC	4 Channel differential analog input card - Thermocouple	CE
FL-SC-AI06-V	6 Channel analog input card - Voltage	CE
FL-SC-AI06-I	6 Channel analog input card - Current	CE
FL-SC-AI03-NTC-AI03-I	3 Channel analog input - NTC, 3 channel analog input - Current card	CE in process
FL-SC-AO04-V	4 Channel analog output card - Voltage	CE
FL-SC-AO04-I	4 Channel analog output card - Current	CE
FL-SC-AI03-U-AO02-U	3 Channel analog input - Universal, 2 Channel analog output - Universal card	CE in process
FL-SC-LC04	4 Channel loadcell input card	CE in process

Annunciator

PRODUCT CODE	CERTIFICATION
AN-8-0-0-230V	---

Power Supply

PRODUCT CODE	CERTIFICATION
RP-2M-1.1A-24VDC	---
RPS60-24	---
RPS120-24	---
RP-2M-1.1A-24VDC	CE
RPS60-24-CE	CE
RPS120-24-CE	CE
RPS240-24-CE	CE
RPS480-24-CE	CE

Battery Chargers

PRODUCT CODE	CERTIFICATION
BC1-1210	---
BC2-2410	---

Data Converters / Accessories

PRODUCT CODE	CERTIFICATION
AC-USB-RS232-01	CE in process
AC-USB-RS485-02	CE
AC-USB-RS485-03	CE
AC-S2E-02	CE in process
AC-IOEXP-01	CE
AC-IOEXP-03	CE
ACH-001	CE
ACH-002	CE
ACH-003	CE
ACH-004	CE
AC-RS485-RS232-ISO	CE in process

Relay Module

PRODUCT CODE	CERTIFICATION
RLYMD-1-S4-1CO-24VDC	CE
RLYMD-1-S4-2CO-24VDC	CE
RLYMD-2-S8-1CO-24VDC	CE
RLYMD-2-S8-2CO-24VDC	CE
ERLYMD-2-1-S8-1CO-24V	CE in process



FD100



FD200

FEATURES	• Compact & powerful AC drives • 1HP 0.75KW to 5HP 3.7KW	• Compact & powerful AC drives • 2HP 1.5KW to 650HP 500KW
RATED INPUT VOLTAGE / FREQUENCY	Single Phase 220V 50Hz / 60Hz, 3 Phase 415V 50Hz / 60Hz	
PERMISSIBLE VOLTAGE FLUCTUATION	187V to 253V for 1 phase & 320 to 460V for 3 Phase	
PERMISSIBLE FREQUENCY FLUCTUATION	±5%	
CONTROL MODE	V/F control	V/F Control, flux vector control V/F Control, flux vector control
FREQUENCY CONTROL RANGE	0.1 ~ 400 Hz	
FREQUENCY ACCURACY	Digital setting 0.01%, Analog instruction 0.1% (Max frequency)	
FREQUENCY RESOLUTION	Digital instruction 0.1Hz, Analog instruction 0.1 Hz	
ACCELERATED / DECELERATED TIME	0.0 ~ 3600 Sec. Four accelerate / decelerate time settings available	
MULTI SPEED RUNNING	Built-in program	
BUILT-IN PI	Easy to set up a simple automatic control system	
BUILT-IN COUNTER	Automatically controlled production line can be achieved	
OVERLOAD CAPACITY	G Type - 150% rated current for 1 min, P type - 120% rated current for 1 min	
BRAKING TORQUE	About 20% (with brake resistor is about 150%)	
V/F MODE	3 preset V/F mode and V/F program	
AUTOMATIC ENERGY SAVING OPERATION	Changes the V/F curve according to the load to save energy	
AUTOMATIC VOLTAGE REGULATION	Regulates the voltage automatically whenever there is a change in grid voltage	
OPERATION COMMANDS	Keypad and external terminals	
FREQUENCY SETTING	Digital setting, Analog voltage setting, Analog current setting	
INPUT SIGNAL	Forward / Reverse, Jogging selection, Multi speed control, Regular stopping	
OUTPUT SIGNAL	Fault alarm output (250V/2A Contact), Open collector output	
PROTECTION FUNCTIONS	Over current, Over voltage, Under voltage, Over heat, Overload, Phase loss	
DISPLAY	Parameters setting, Running status and fault display	
OPERATING ENVIRONMENT	Temperature : -10 ~ +50°C, Humidity : < 90%, No condensation, IP20	
OPERATIONS AREA	Indoor, <1000m altitude above sea level	
STORAGE TEMPERATURE	-20 ~ +60°C	
VIBRATION	<5.9 m/s ² (0.6g)	
RATED INPUT VOLTAGE / FREQUENCY	Single Phase 220V 50Hz / 60Hz, 3 Phase 415V 50Hz / 60Hz	3 Phase 415V 50Hz / 60Hz
SWITCH SIGNAL INPUT	5 ways input, Max. frequency 1KHz, internal impedance:3.3kΩ	6 ways input, max. frequency 1KHz, internal impedance:3.3kΩ
SWITCH SIGNAL OUTPUT	Y1 terminal open collector output	1 Y1 terminal open collector output ; 1 Y2 pulse output
APPLICATIONS	Suitable for fans, pumps, Conveyor, Food & drink packaging machinery, Industrial washing machine and most general industries etc.	Suitable for fans, Pumps, Conveyor, Mixer, Textile machine, Dyeing machine, Lithographic printing machine Metal workin

Ordering information

Variable Frequency Drive (FD100)

PRODUCT CODE	DESCRIPTION	CERTIFICATION
FD100-1-010-C-CE	1 Phase 220V, 1HP 0.75 KW	CE
FD100-1-020-C-CE	1 Phase 220V, 2HP 1.5 KW	CE
FD100-1-030-C-CE	1 Phase 220V, 3HP 2.2 KW	CE
FD100-3-010-C-CE	3 Phase 415V, 1HP 0.75 KW	CE
FD100-3-020-C-CE	3 Phase 415V, 2HP 1.5 KW	CE
FD100-3-030-C-CE	3 Phase 415V, 3HP 2.2 KW	CE
FD100-3-050-C-CE	3 Phase 415V, 5HP 3.7 KW	CE

Variable Frequency Drive (FD200)

PRODUCT CODE	DESCRIPTION	CERTIFICATION
FD200-3-020-C-CE	3 Phase 415V, 2HP 1.5 KW	CE
FD200-3-030-C-CE	3 Phase 415V, 3HP 2.2 KW	CE
FD200-3-050-C-CE	3 Phase 415V, 5HP 3.75 KW	CE
FD200-3-075-C-CE	3 Phase 415V, 7.5HP 5.5 KW	CE
FD200-3-100-C-CE	3 Phase 415V, 10HP 7.5 KW	CE
FD200-3-150-C-CE	3 Phase 415V, 15HP 11.2 KW	CE
FD200-3-200-C-CE	3 Phase 415V, 20HP 15 KW	CE
FD200-3-250-C-CE	3 Phase 415V, 25HP 18.8 KW	CE
FD200-3-300-C-CE	3 Phase 415V, 30HP 22.4 KW	CE
FD200-3-400-C-CE	3 Phase 415V, 40HP 30 KW	CE
FD200-3-500-C-CE	3 Phase 415V, 50HP 37.5 KW	CE
FD200-3-1000-C-CE	3 Phase 415V, 100HP 75 KW	CE

Features:

- Compared to conventional enclosures, these enclosures offer special characteristics for highest demands under extreme conditions
- **Ingress Protection class:** IP68 BIS/IEC 60529:2001 – DIN & EN 6059
- **Shock Resistance:** 7 joule according to EN 60079 without impairment of ingress protection
- **Application:** Indoor and outdoor
- **Wall thickness:** 4-5 mm
- Easy wall mount installation inner design. External wall mount kit available
- High level of anti-corrosion, water and water-salt protection

Ordering information - Enclosures

Code	A / mm	B / mm	C / mm	Finish
ENC1-455030-CE	45	50	30	RAL7001
ENC1-645834-CE	64	58	34	RAL7001
ENC1-758057-CE	75	80	57	RAL7001
ENC1-1258057-CE	125	80	57	RAL7001
ENC1-1758057-CE	175	80	57	RAL7001
ENC1-2508057-CE	250	80	57	RAL7001
ENC1-10010081-CE	100	100	81	RAL7001
ENC1-12012281-CE	120	122	81	RAL7001
ENC1-12012291-CE	120	122	91	RAL7001
ENC1-14014091-CE	140	140	91	RAL7001
ENC1-22012081-CE	220	120	81	RAL7001
ENC1-22012091-CE	220	120	91	RAL7001
ENC1-26016091-CE	260	160	91	RAL7001
ENC1-400230180-CE	400	230	180	RAL7001
ENC1-758057-1-CE	75	80	57	RAL 1 Way
ENC1-758057-1-YB-CE	75	80	57	Yel. Blk. 1 Way
ENC1-1258057-2-CE	125	80	57	RAL 2 Way
ENC1-1758057-3-CE	175	80	57	RAL 3 Way
ENC1-2508057-4-CE	250	80	57	RAL 4 Way

Enclosure Material: Aluminium alloy ENAC-GdAlSi12(Fe) DIN1706 High quality corrosion resistant aluminium die cast alloy for high stability and long life.

Gasket Material: Compression moulded neoprene (-40°C up to 130°C) for high degree of protection. Also, silicon rubber gasket (-60°C up to 200°C) on request.

Surface finish: Powder coated Grey RAL7001 as standard.

Optional finish: Natural aluminium, Black RAL9005, Silver grey RAL7032 and other colours, Hybrid powder (epoxy & polyester) and CMD-KTL black coatings on request.

Fasteners: Stainless steel.

Standard unit includes: Base, Cover, Neoprene gasket and Fasteners temperature resistance up to 260 °C (natural finish enclosure).

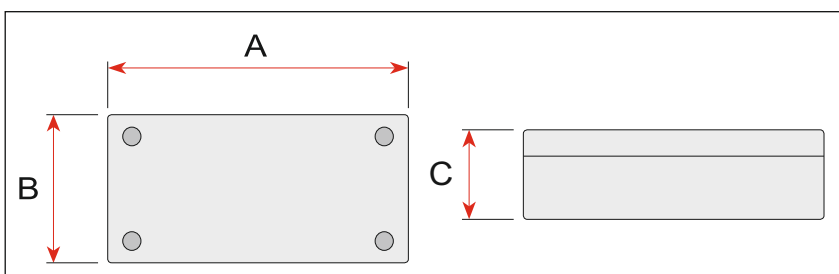
Accessories Mounting Plate

- Manufactured in galvanized steel
- Allows the assembly hardware & components without drilling the enclosure ensuring the IP68 rating
- Direct and easy assembly inside the Base of enclosure
- Mounting hardware included
- Not available for enclosure dimensions 45x30x30

Note:
External hinges, din rails and wall mount brackets available on special request.

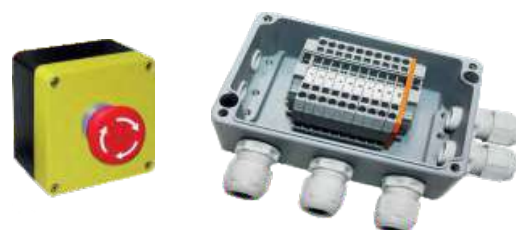
Mounting Plates (Galvanized Steel)

ENMP-645834	64	58	34
ENMP-758057	75	80	57
ENMP-1258057	125	80	57
ENMP-10010081	100	100	81
ENMP-2508057	250	80	57
ENMP-12012281	120	122	81
ENMP-12012291	120	122	91
ENMP-14014091	140	140	91
ENMP-22012081	220	120	81
ENMP-22012091	220	120	91
ENMP-26016091	260	160	91

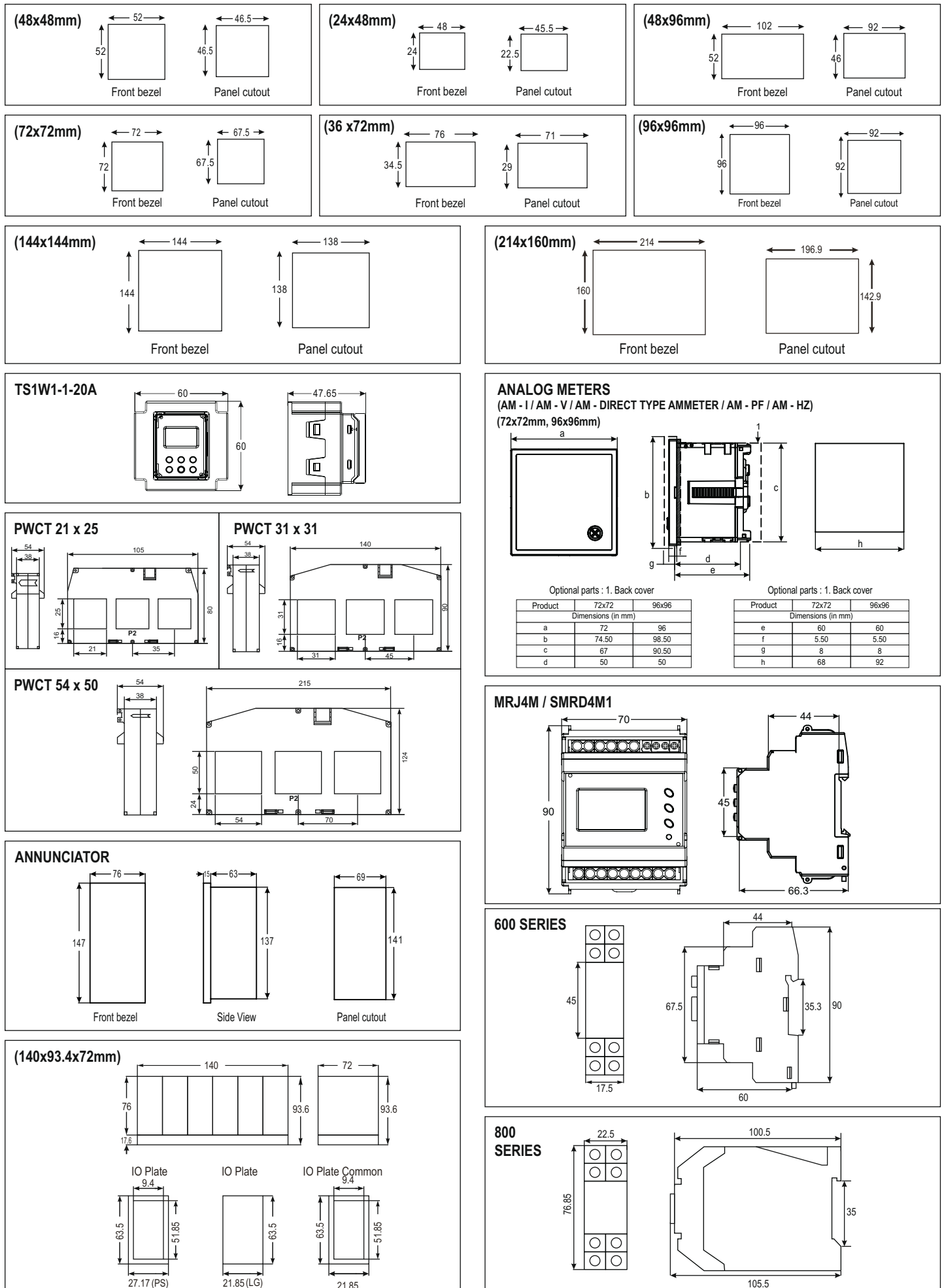


Applications:

CCTV, Solar, Control Stations, Street Lights, Junction Box, Electrical Connection Box and PCB Enclosures etc.

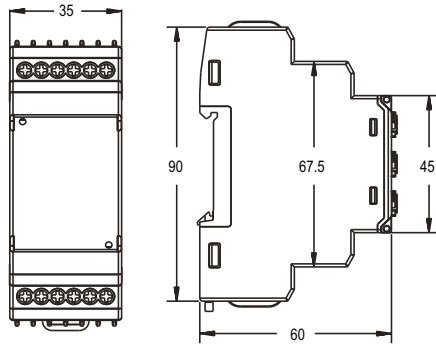


Panel Cutout Dimensions (All are in mm)

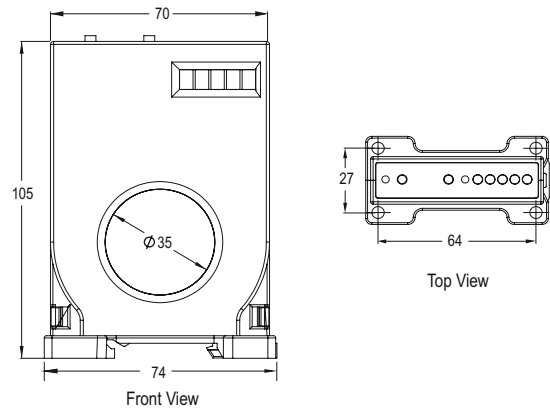


Panel Cutout Dimensions (All are in mm)

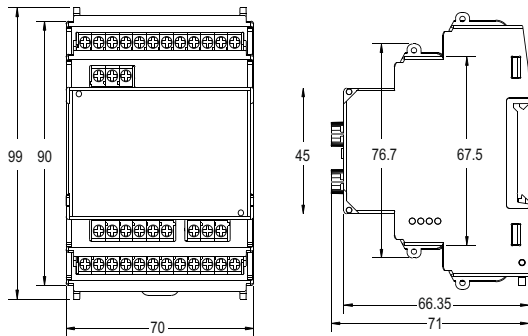
900 SERIES / TS2M1-1-16A / ATS2M1-1-16A / TPRA2M1



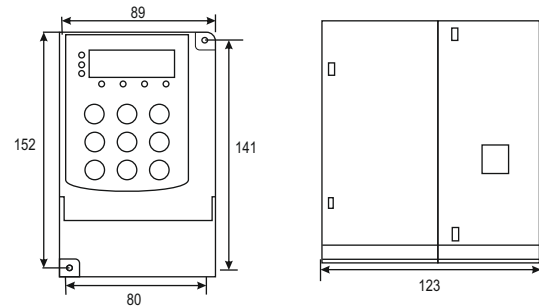
ELCTR35



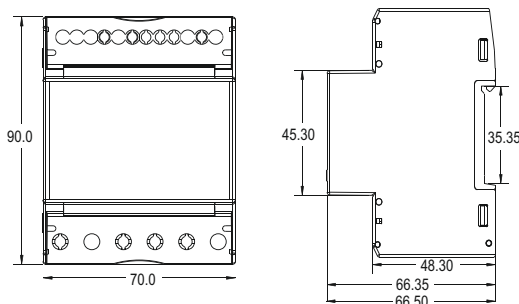
PPRD-4M-3 / PPRA-4M-3



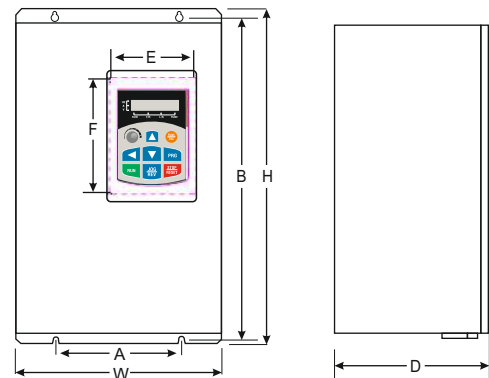
FD100



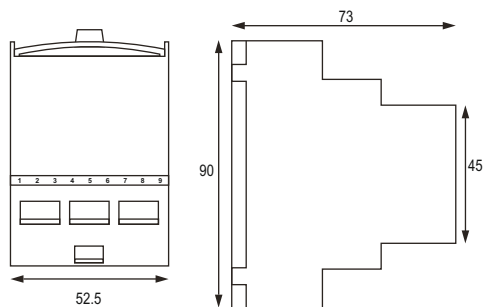
PPRD-4M-1-230V / PPRA-4M-1-230V / PPRWD-4M-1



FD200



MPR-3M



Product code	Mounting dimension		Dimension			Pore diameter
	A	B	H	W	D	
FD200-3-020-C-CE	148	235	247	160	190	φ5.5
FD200-3-030-C-CE						
FD200-3-050-C-CE						
FD200-3-075-C-CE	148	235	247	160	190	φ5.5
FD200-3-100-C-CE						
FD200-3-150-C-CE	205	305	320	220	205	φ5.5
FD200-3-200-C-CE						
FD200-3-300-C-CE	180	416	432	255	234.5	φ7.5
FD200-3-400-C-CE						
FD200-3-500-C-CE	244	537	550	300	264	φ7

FD200 - 7.5HP-100HP Keyboard tap installation hole size : E=85mm ; F=115mm long.

Subsidiaries : **Selec GmbH** | **Selec USA** | **Selec Australia**

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