

PRODUCT SELECTION GUIDE

selec[®]
Creating Best Value



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

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Multifunction Meters



MFM384
96(H) x 96(W)mm



MFM284
72(H) x 72(W)mm



MFM383A
96(H) x 96(W)mm



MFM376
96(H) x 96(W)mm

FEATURES	• 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)	• Single pulse output • Run hour • Auxiliary interrupts • Phase angle detection • Demand measurement
DISPLAY	LCD with backlight			7 segment LED
DIGITS	4 rows of 4 digits, Bargraph representation for current, 1 row of 8 digits for energy display	3 rows of 4 digits, 7½ digits for energy display		3 rows of 4 digits
ELECTRICAL CONNECTION	1Ø - 2W, 2Ø - 3W, 3Ø - 3W, 3Ø - 4W			
RATED INPUT VOLTAGE	11 to 300V AC (L - N), 19 to 519V AC (L - L)			
RATED INPUT CURRENT	Nominal 5A AC (Min - 11mA ; Max - 6A)			Nominal 5A AC (Min - 14mA ; Max - 6A) (Isolation CTs mandatory)
RESOLUTION	For energy : 0.01k, 0.1k, 1k, 0.01M, 0.1M, 1M (Depending upon CT ratio x PT ratio), For Power, Voltage & Current : Auto resolution, For Power factor : 0.001	For energy : 0.1k, 1k (Depending upon CT ratio x PT ratio) For Power, Voltage & Current : Auto resolution, For Power factor : 0.001	For energy : 0.01k, 0.1k, 1k, 0.01M, 0.1M, 1M (Depending upon CT ratio x PT ratio), For Current, Voltage, Power : Auto resolution, For Power factor : 0.001	
CT PRIMARY	1 / 5A to 10kA (Programmable for any value)			
CT SECONDARY	1 / 5A (Programmable)			
PT PRIMARY	100V to 500kV (Programmable for any value)	100V to 10kV (Programmable for any value)		100V to 500kV (Programmable for any value)
PT SECONDARY	100 to 500V AC (L - L) (Programmable for any value)			
COMMUNICATION	RS485 MODBUS RTU protocol (Optional)			
MEASURING PARAMETER	Voltage (L - L / L - N) (Individual / Average), Current (Individual / Average), Frequency, Power factor (Individual / Total), Active, Reactive & Apparent Power (Individual / Total), Active, Reactive & Apparent Energy (Total)			
ADDITIONAL FUNCTIONS	Phase sequence detection, Neutral current measurement		---	Max instantaneous (Current / Voltage), (Import / Export) Energy, %THD up to 31st level (For MFM376-C)
SUPPLY VOLTAGE (AC : 50 / 60 Hz)	100 to 240V AC, -15% to +12% (Power consumption : Less than 8VA)			240V AC, ±20% (For MFM376-230VAC), 85V to 270V AC & 40 to 270V DC, (For MFM376-C)

Din Rail Multifunction Meter



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

Din Rail Energy Meter



EM2M
90(H) x 35(W)mm

FEATURES	- Energy (Active, Reactive, Apparent) - RS485 MODBUS RTU protocol - Import / Export energy - Demand measurement	- Self powered, 100A direct connection 1Ø - 2 wire network - Bi-directional import & export - Demand measurement
DISPLAY	LCD with backlight	
DIGITS	1 row of 4 digits, 2 rows of 7 digits	1 row of 7 digits
ELECTRICAL CONNECTION	1Ø - 2W, 2Ø - 3W, 3Ø - 3W, 3Ø - 4W	1Ø - 2W
RATED INPUT VOLTAGE	11 to 300V AC (L - N), 19 to 519V AC (L - L)	176 to 276V AC (L - N)
RATED INPUT CURRENT	Nominal 5A AC (Min - 11mA ; Max - 6A)	Base current 10A (Min - 0.5A ; Max - 100A)
FREQUENCY	45Hz to 65Hz	
RESOLUTION	For Energy : 0.01k, 0.1k, 1k, 0.01M, 0.1M, 1M (Depending upon CT ratio x PT ratio), For Power, Voltage, Current : Auto resolution, For Power factor : 0.01, Frequency : 0.1Hz	For Energy : 0.01k, For Power, Voltage, Current : Auto resolution, For Power factor : 0.01
ACCURACY CLASS	Voltage (L - L / L - N), Current : ±0.5% of F.S., Power factor : ±0.01, Frequency : ±0.1% of F.S., Power (kW, kVA, kVAr) : 1% of F.S., Energy (Active, Reactive, Apparent) : 1% of F.S.	Voltage (L - N), Current : ±0.5% of F.S., Power factor : ±0.01, Frequency : ±0.1% of F.S., Power (kW, kVA, kVAr) : 1% of F.S., Active energy : Class 1, Reactive energy : Class 2
CT PRIMARY	1 / 5A to 10kA (Programmable for any value)	---
CT SECONDARY	1 / 5A (Programmable)	---

Din Rail Multifunction Meter

Din Rail Energy Meter

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

Plug-n-Wire Multifunction Meters



MRJ4M
90(H) x 70(W)mm



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



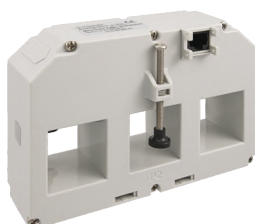
MRJ385
96(H) x 96(W)mm

FEATURES	• 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
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 / Average), Frequency, Power factor (Individual / Average), Active, Reactive, Apparent power (Individual / Total), Active & Reactive energy, Total, Active & Reactive energy (Current input-1 plus current Input-2), Demand (Max active power, Max apparent power)	Voltage (L - L / L - N) (Individual / Average), Current (Individual / Average), Frequency, Power factor (Individual / Average), Active, Reactive, Apparent power (Individual / Total), Active, Reactive, Apparent energy (Phase wise (Import / Export) & Total (Import / Export)), Demand (Min / Max active power, Min / Max reactive power, Max apparent power), Harmonics individual for voltage & Current upto 31 st level.
SUPPLY VOLTAGE (AC : 50 / 60 Hz)	60 to 300V AC, Self powered (V1, N)		

Plug-n-Wire Current Transformer



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



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



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

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

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

PLUG-N-WIRE Accessories



RJ45 Connector to carry 330mv



Power Cable



Daisy Chain Cable



Voltage connector Male / Female

Energy Meters



EM306A
96(H) x 96(W)mm



EM368
96(H) x 96(W)mm

FEATURES	- Pulse output for energy - Active energy	- Pulse output for energy - Power (Active / Reactive) - Energy (Active / Reactive / Apparent)
DISPLAY	7 segment LED	LCD with backlight
DIGITS	6 digits	8 digits
ELECTRICAL CONNECTION	1Ø - 2W, 2Ø - 3W, 3Ø - 3W, 3Ø - 4W	
RATED INPUT VOLTAGE	11 to 300V AC (L - N), 19 to 519V AC (L - L)	
RATED INPUT CURRENT	Nominal 5A AC (Min - 11mA ; Max - 6A)	
RESOLUTION	0.01K, 0.1K, 1K & 10K (Depending on CT ratio)	For energy : 0.01k, 0.1k, 1k, 0.01M, 0.1M, 1M, 10M (Depending upon CT ratio x PT ratio) For Power : Auto resolution, For Power factor : 0.01
ACCURACY	Class 1	Active Energy : Class 1, Reactive / Apparent Energy : ±1% Active / Reactive power : ±1%, PF & Avg. PF : ±1%
POWER CONSUMPTION	8VA max	
CT PRIMARY	1 / 5A to 10kA (Programmable for any value)	
CT SECONDARY	1 / 5A (Programmable)	
PT PRIMARY	---	100V to 500kV (Programmable for any value)
PT SECONDARY	---	100V to 500V AC (L - L) (Programmable for any value)
COMMUNICATION	RS485 MODBUS RTU protocol (For EM306A-C)	RS485 MODBUS RTU protocol (For EM368-C)
MEASURING PARAMETER	Active energy (kWh) resettable	Power (Total Active / Reactive), Energy (Total Active / Reactive / Apparent), Power factor (Individual & Average)
LED INDICATIONS	Integration of energy, Resolution is 10, Reverse connected CT warning	Integration of energy, Resolution is 10, Reverse connected CT warning, Communication in progress, pulse output (All Indications on LCD)
SUPPLY VOLTAGE (AC : 50 / 60 Hz)	230V AC ±20% For EM306A, 100V to 240V AC, -15% to +12% For EM306A-C	100 to 240V AC, -15% to +12%

Digital VAF Meters



VAF36A
96(H) x 96(W)mm



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

FEATURES	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	LCD with backlight	7 segment LED
DIGITS	3 rows of 3 digits	
ELECTRICAL CONNECTION	1Ø - 2W, 2Ø - 3W, 3Ø - 3W, 3Ø - 4W	
RATED INPUT VOLTAGE	11 to 300V AC (L - N), 19 to 519V AC (L - L)	
RATED INPUT CURRENT	Nominal 5A (Min - 20mA ; Max - 6A)	Nominal 5A (Min - 30mA ; Max - 6A)

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

Digital Voltmeters



MV15
48(H) x 96(W)mm



MV205
72(H) x 72(W)mm



MV305
96(H) x 96(W)mm



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

FEATURES	• 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	$\pm 0.5\%$ of F.S.	$\pm 0.5\%$ of F.S.
PT PRIMARY	---	100V - 999kV
PT SECONDARY	---	100V - 500V
SUPPLY VOLTAGE (AC : 50 / 60 Hz)	240V AC $\pm 20\%$	230V AC $\pm 20\%$

Digital Ammeters



MA12
48(H) x 96(W)mm



MA202
72(H) x 72(W)mm



MA302
96(H) x 96(W)mm



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



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



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

FEATURES	• 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
RATED INPUT CURRENT	5AAC (Min - 50mA ; Max - 6.2A)	0 to 75mV DC	20A Direct
RESOLUTION	0.001, 0.01, 0.1, 1A (Depending upon CT primary settings)	0.001, 0.01, 0.1, 1A (Depending upon shunt settings)	0.001, 0.01, 0.1, 1A
ACCURACY	$\pm 0.5\%$ of F.S.		
CT PRIMARY / SHUNT SETTING	5 to 4000A (Programmable in steps)	---	1 to 999.0kA (Programmable for any value)
CT SECONDARY	5A fixed	---	1 / 5A (Programmable)
SUPPLY VOLTAGE (AC : 50 / 60 Hz)	240V AC $\pm 20\%$		230V AC $\pm 20\%$

Digital Ammeters

Digital Voltmeters



MA501
48(H) x 48(W)mm



MA2301
72(H) x 72(W)mm



MV507
48(H) x 48(W)mm



MV2307
72(H) x 72(W)mm

FEATURES	• 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)mm /
96(H) x 96(W)mm



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



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



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



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



SPCT



RCT



TWCT

FEATURES	- Use with different bus bar size - Panel mount / DIN rail mount (Require optional accessory) - Accuracy : Class 0.5 to 5	- Selable 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	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	1.5, 5	1.5, 5, 10
ACCURACY	0.5, 1, 3, 5	1, 5	0.5, 1, 5
OPERATING FREQUENCY	AC 50 / 60Hz		
SYSTEM VOLTAGE	720V max		
APPLICABLE STANDARD	IEC 61869-2	---	

Power Factor Controllers



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



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



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

FEATURES	- Inbuilt VAF meter 3 CT sensing - Automatic sensing of capacitor bank values - Configurable up to 12/14* stages - Configurable alarm settings - RS485 MODBUS RTU protocol	- Single CT sensing - Automatic sensing of capacitor bank values
DISPLAY	LCD with dual colour backlight	7 segment LED
DIGITS	3 rows, 4 digits to show electrical parameters	1 row, 4 digits to show power factor
ELECTRICAL CONNECTION	1Ø - 2W, 2Ø - 2W, 3Ø - 3W, 3Ø - 4W	1Ø - 2W, 2Ø - 2W
RATED INPUT VOLTAGE	11 to 300V AC (L - N), 50 to 520V AC (L - L)	40 to 300V AC (L - N), 50 to 520V AC (L - L)
RATED INPUT CURRENT	Nominal 5AAC (Min - 11mA; Max - 6A)	Nominal 5AAC (Min - 50mA; Max - 6A)
POWER CONSUMPTION	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 / Under voltage, Over / Under compensation, CT polarity error, Current absent indication, No volt
PHASE COMPENSATION	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, kVAh) : 1%, Energy (kWh, kVAh, kVAh) : Class 1 Temperature : ±3°C of F.S.	Power factor : ±0.01
CT PRIMARY	5A to 9999A (Programmable for any value)	5A fixed
CT SECONDARY	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
RELAY CONTACT	5A @ 250V AC	
SWITCHING PROGRAM	Automatic	
STEP TIME	5 to 999s	
DISCHARGE TIME	5 to 9999s	
CONTROL MODE	Automatic / Manual	
CONTROL SENSITIVITY	60%	
AUTO INITIALIZATION	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

Ordering information

Multifunction Meters

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

Din Rail Multifunction Meters

PRODUCT CODE	SUPPLY VOLTAGE	COMM. (RS485)	CERTIFICATION
MFM384-R-C-CE	85 to 270V AC	YES	CE

Plug-N-Wire Multifunction Meters

PRODUCT CODE	OUTPUT		CERTIFICATION
	PULSE OUTPUT	COMM. (RS485)	
MRJ4M	YES	YES	CE
MRJ4M-SL	YES	YES	CE
MRJ385-G-PNW	YES	YES	CE

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	CE
PWCT-21/25-100A/330mV	100A	330mV	CE
PWCT-21/25-125A/330mV	125A	330mV	CE
PWCT-21/25-150A/330mV	150A	330mV	CE
PWCT-21/25-160A/330mV	160A	330mV	CE
PWCT-21/25-200A/330mV	200A	330mV	CE
PWCT-21/25-250A/330mV	250A	330mV	CE
PWCT-31/31-250A/330mV	250A	330mV	CE
PWCT-31/31-300A/330mV	300A	330mV	CE
PWCT-31/31-400A/330mV	400A	330mV	CE
PWCT-31/31-500A/330mV	500A	330mV	CE
PWCT-31/31-600A/330mV	600A	330mV	CE
PWCT-31/31-630A/330mV	630A	330mV	CE
PWCT-54/50-800A/330mV	800A	330mV	CE
PWCT-54/50-1000A/330mV	1000A	330mV	CE
PWCT-54/50-1250A/330mV	1250A	330mV	CE
PWCT-54/50-1600A/330mV	1600A	330mV	CE

Energy Meters

PRODUCT CODE	SUPPLY VOLTAGE	OUTPUT		CERTIFICATION
		PULSE OUTPUT	COMM. (RS485)	
EM368-C-CU	100V to 240V AC, -15% to $\pm 12\%$	YES	YES	CE 
EM306A	230V AC, $\pm 20\%$	YES	---	---
EM306A-C	100V to 240V AC, -15% to $\pm 12\%$	YES	YES	---
EM2M-1P-C-100A	176V to 276V AC (Self powered)	YES	YES	CE

Voltage Ampere Frequency Meters

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

LED (Voltmeters)

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

LCD (Ammeters / Voltmeters)

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

LED (Ammeters)

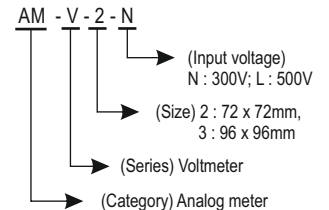
PRODUCT CODE	SUPPLY VOLTAGE	CERTIFICATION
MA12	230V AC	---
MA12-CE	230V AC	CE
MA12-20A-AC	230V AC	---
MA12-75mV-DC	230V AC	---
MA202	230V AC	---
MA202-CE	230V AC	CE
MA302	230V AC	---
MA302-CE	230V AC	CE
MA335-230VAC	230V AC	---
MA335-230VAC-CE	230V AC	CE

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	CE
APFC147-108-90/550V-CE	90 to 550V AC, 50 / 60Hz	8	---	CE
APFC347-108-230V-CE	85 to 270V AC, 50 / 60Hz	8	---	CE

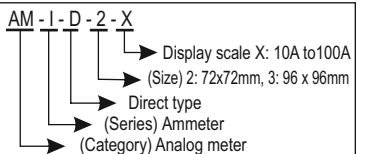
Analog Voltmeters

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	---



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	---



Ordering information

Analog Ammeters

PRODUCT CODE (Meters without dial plates)	CERTIFICATION	
AM-I-2-5A-WD-CE-RoHS	CE	AM - I - 2 - 5A - 6S - WD - Without dial plate 6 times suppress - Secondary current (Size) 2 : 72 x 72mm, 3 : 96 x 96mm (Series) Ammeter (Category) Analog meter
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	---	

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	---

Operating current
Operating voltage: 440V
Measuring range
Three phase single element
(Size) 2: 72 x 72mm, 3: 96 x 96mm
(Series) Power factor
(Product name) Analog meter

SPCT

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

Analog Ammeters

PRODUCT CODE (Meters without dial plates)	CERTIFICATION	
SCL-AM-I-2-X/5A	---	SCL - AM - I - 2 - X / 5A - 6S 6 times suppress - Secondary current - Primary current (30A to 4000A) (Size) 2 : 72 x 72mm, 3 : 96 x 96mm (Series) Ammeter (Category) Analog meter - Scale plate
SCL-AM-I-3-X/5A	---	
SCL-AM-I-2-X/5A-6S	---	
SCL-AM-I-3-X/5A-6S	---	

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	---

(Voltage range) B: 220V, 440V
(Frequency range) A: 45 - 65Hz
(Size) 2 : 72 x 72mm, 3: 96 x 96mm
(Series) Frequency
(Product name) Analog meter

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 CL 5	DIA 30	30/5	1.5	5	---
RCT-T-D30-30/5 A VA 5 (2T) CL 5	DIA 30	30/5	5	5	2
RCT-T-D30-50/5 A VA 5 CL 5	DIA 30	50/5	5	5	---
RCT-T-D30-75/5 A VA 5 CL 5	DIA 30	75/5	5	5	---
RCT-T-D30-100/5 A VA 5 CL 1	DIA 30	100/5	5	1	---
RCT-T-D30-150/5 A VA 5 CL 1	DIA 30	150/5	5	1	---
RCT-T-D50-200/5 A VA 5 CL 1	DIA 50	200/5	5	1	---
RCT-T-D50-250/5 A VA 5 CL 1	DIA 50	250/5	5	1	---
RCT-T-D50-300/5 A VA 5 CL 1	DIA 50	300/5	5	1	---
RCT-T-D50-400/5 A VA 5 CL 1	DIA 50	400/5	5	1	---
RCT-T-D50-500/5 A VA 5 CL 1	DIA 50	500/5	5	1	---
RCT-T-D50-600/5 A VA 5 CL 1	DIA 50	600/5	5	1	---
RCT-W-D30-30/5 A VA 1.5 CL 5	DIA 30	30/5	1.5	5	---
RCT-W-D30-30/5 A VA 5 (2T) CL 5	DIA 30	30/5	5	5	2
RCT-W-D30-50/5 A VA 5 CL 5	DIA 30	50/5	5	5	---
RCT-W-D30-75/5 A VA 5 CL 5	DIA 30	75/5	5	5	---
RCT-W-D30-100/5 A VA 5 CL 1	DIA 30	100/5	5	1	---
RCT-W-D30-150/5 A VA 5 CL 1	DIA 30	150/5	5	1	---
RCT-W-D50-200/5 A VA 5 CL 1	DIA 50	200/5	5	1	---
RCT-W-D50-250/5 A VA 5 CL 1	DIA 50	250/5	5	1	---
RCT-W-D50-300/5 A VA 5 CL 1	DIA 50	300/5	5	1	---
RCT-W-D50-400/5 A VA 5 CL 1	DIA 50	400/5	5	1	---
RCT-W-D50-500/5 A VA 5 CL 1	DIA 50	500/5	5	1	---
RCT-W-D50-600/5 A VA 5 CL 1	DIA 50	600/5	5	1	---

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	DIA 55	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

Line Monitoring Relays



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



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



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



SPPA2M2
90(H) x 35(W)mm



600SPP
90(H) x 17.5(W)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)

Voltage Monitoring Relays



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



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



800VPR-3
76.85(H) x 22.5(W)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 : ±0.5% of F.S, Trip Time : ±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)mm



900VPR-BL-U
90(H) x 35(W)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	
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 : 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 : $\pm 0.3\text{Hz}$, Time (Recovery time, Trip delay, Power on delay) : $\pm 5\%$ of setting +200ms	Voltage : $\pm 1\%$ of set value ± 2 digits, Frequency : $\pm 0.5\% \pm 1$ digits, Time (Recovery Time, Trip delay, Power on delay) : $\pm 5\%$ of setting $\pm 120\text{ms}$
OUTPUT CONTACT	2 x 1 C/O (SPDT)	
OUTPUT RATING	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)	85 to 270V AC / DC

Voltage Monitoring Relays



VPRA2M
90(H) x 35(W)mm



VPRD2M
90(H) x 35(W)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	
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 $\pm$ 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 ($\pm 2\text{V}$) of trip voltage	Voltage : 1.0V - 99.9V, Asymmetry : 2 to 20%
ACCURACY	Trip setting : $\pm 5\%$ of F. S., Time setting : $\pm 10\%$ of F. S.	Voltage : $\pm 1\% \pm 2$ digits, Time setting : $\pm 5\%$ of settings $\pm 150\text{ms}$
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)mm



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



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



900CPR-3
90(H) x 35(W)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



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



ELRA2M
90(H) x 35(W)mm



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



ELCTR35
105(H) x 74(W)mm

FEATURES	- Monitor true RMS earth leakage current up to 30A in 1Ø & 3Ø system - CBCT connection monitoring - Test and reset via Front / Remote			- Monitors True RMS earth leakage current in 1Ø & 3Ø system - Inbuilt CBCT - Test and reset function
	Two separate alarms relays with NO or NC operation selectable	Sensitivity and time delay adjustable	Pre-alarm indication selectable	
MEASUREMENT	Earth leakage current (Via external CBCT)			Earth leakage current (Internal CBCT)
DISPLAY	3 digit LCD with backlight, 2 LED for trip indication	5 LED indication	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 : 0.5 to 99.9 sec, Trip time delay : 0 to 99.9 sec, Delay On release : 0 to 99.9 sec	Trip time delay : 0 to 9 sec (NA when In=0.03A)	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 : $\pm 5\%$ of setting, Time (Recovery time, Trip delay, Power on delay) : $\pm 5\%$ of setting ± 200 ms			Current : $\pm 5\%$ of Input current Time : $\pm 5\%$ of Response time
OUTPUT CONTACT	2 x 1 C/O (SPDT)	1 C/O SPDT		
OUTPUT RATING	NC : 3A@250V AC, NO : 5A@250V AC	NO : 10A@277V AC / 28DC	NC, NO : 5A@250V AC / 28V DC	NC : 5A@250V AC, NO : 5A@30V AC
SUPPLY VOLTAGE (AC : 50 / 60 Hz)	230V AC ($\pm 15\%$)			230V AC ($\pm 15\%$)

Core Balance Current Transformers



Description	CBCT for ELRA2M	CBCT for 900ELR-2
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)mm



MPR-341-2
96(H) x 96(W)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 : $\pm 5\%$ + 100msec
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)mm



PPRA-4M-3-415V
90(H) x 70(W)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	MPCT
Current range	10A, 40A, 80A

Pump Protection Relays



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



PPRWD-4M-1
90(H) x 70(W)mm



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



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

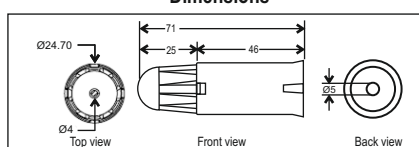
FEATURES	- Used for drain & fill control 3 No's stainless steel prods 10A SPDT output (Resistive)	- Selectable suction and delivery mode in single tank operation - Used for two tank monitoring, Single tank water level monitoring - Manual start switch facility - Trip relay & alarm relay indication
DISPLAY	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)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)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	EFCT
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	---

Voltage Monitoring Relay

PRODUCT CODE	SUPPLY VOLTAGE	CERTIFICATION
600VPR-170/290-CU	170 to 290V AC	CE
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
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
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%)	---

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 / 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	---

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

PRODUCT CODE	SUPPLY VOLTAGE	CERTIFICATION
WLCA2M1-CE-RoHS	85 to 270V AC / DC	CE
WLCA-2M-U-CE	85 to 270V AC / DC	CE

Accessories

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

Daily / Weekly Time Switches

Astronomical Time Switch



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



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



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

FEATURES	• 1 sec least count • 50 ON - 50 OFF steps per day • 1 channel • Permanent over ride mode • 10 years power reserve (replaceable battery)		• 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)
DISPLAY	Text LCD (Without backlight)		
RTC SHIFT	15 minutes a year @ 25°C		
OUTPUT CONTACT	1 C/O SPDT	1 NO & Neutral	1 C/O SPDT
CONTACT RATING	16A @ 250V AC	20A @ 250V AC	16A @ 250V AC
WEEKLY PROGRAM	Total 50 ON steps and 50 OFF steps 2 programs x 25 steps, 3 programs x 16 steps, 4 programs x 12 steps, 5 programs x 10 steps 6 programs x 08 steps, 7 programs x 07 steps, 8 programs x 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)mm



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



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



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



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



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



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



800S
75(H) x 22.5(W)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	3 / 10 / 30 / 60sec / min	60sec
RESOLUTION	0.1sec	0.3sec	0.3sec	0.3sec	6sec
ACCURACY	Setting : $\pm 5\%$ of F.S. Repeat : $\pm 0.5\%$ or 50ms (Whichever is greater)				
OUTPUT CONTACT	2 C/O DPDT	2 C/O DPDT	1 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)mm



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



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



800POD
75(H) x 22.5(W)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 : $\pm 0.5\%$ or 50ms, Repeat : $\pm 5\%$ of F.S.			
OUTPUT CONTACT	1 C/O Relay each for Star & Delta	2 C/O DPDT	1 C/O Relay each for Forward & Reverse	2 C/O DPDT
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)mm



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



55ES
48(H) x 48(W)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 : $\pm 5\%$ of F.S., Repeat : $\pm 0.5\%$ or 50 ms		
OUTPUT CONTACT	2 C/O DPDT		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)mm



XT543
48(H) x 48(W)mm



XT56
48(H) x 48(W)mm



XT264
72(H) x 72(W)mm



XT364
96(H) x 96(W)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 DPDT			
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)mm



XT546
48(H) x 48(W)mm



XT246
72(H) x 72(W)mm



XT346
96(H) x 96(W)mm



XT5042
48(H) x 48(W)mm



PT380
96(H) x 96(W)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			$\pm 0.05\%$ of F.S. or 50ms				$\pm 0.5\%$ of F.S. or 50ms	
OUTPUT CONTACT	2 C/O DPDT				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	



TI103
48(H) x 96(W)mm



TT412
36(H) x 72(W)mm



LT920A
24(H) x 48(W)mm



LT945A
24(H) x 48(W)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
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
ATS2M1-1-16A-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)mm



XC1200
48(H) x 96(W)mm



XC3200
96(H) x 96(W)mm



XC2200
72(H) x 72(W)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	Up / Down
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 DPDT	2 C/O DPDT	
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 / LED Counters
Digital Timer - Counter


LXC900A
24(H) x 48(W)mm



XC410A
36(H) x 72(W)mm



XC10D
48(H) x 96(W)mm



XTC5400
48(H) x 48(W)mm

FEATURES	- 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 : ON delay / Interval / Cyclic ON first / Cyclic OFF first / Batch Counter : ON delay / Interval / Auto reset / Time pulse repeat / Batch
RANGES	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	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)
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	
SUPPLY VOLTAGE (AC : 50 / 60 Hz)	Battery powered	230V AC (Only for XC410A), 90 to 270V AC / DC	

Rate Indicator



RC5100
48(H) x 48(W)mm

Speed Monitoring Relay



SMRD4M1
90(H) x 70(W)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 ⁿ (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
XC3200	90 to 270V AC / DC	---
XC3200-CE	90 to 270V AC / DC	CE
XC2200	90 to 270V AC / DC	---
XC2200-CE	90 to 270V AC / DC	CE

LCD / LED Counters

PRODUCT CODE	INPUT TYPE		CERTIFICATION
	CONTACT	VOLTAGE	
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		---

Digital Timer-Counter

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

Speed Monitoring Relay

PRODUCT CODE	SUPPLY VOLTAGE	CERTIFICATION
SMRD4M1-2-U-CE	90 to 270V AC / DC	CE

Rate Indicators

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

Temperature Controllers



TC544C

48(H) x 48(W)mm



TC544B



TC513BX

48(H) x 48(W)mm



TC533BX

48(H) x 48(W)mm



TC538BX

48(H) x 48(W)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. ±1° ; For R & S inputs : 0.5% of F.S. ±2° (20 min of warm up time for TC inputs); For RTD input : 0.1% of F.S. ±1°			
SETPOINT	Dual set point	Single set point		
CONTROL MODE	Auto tune / Self tune PID or ON-OFF			
CONTROL OUTPUT	Relay : SPST : 5A resistive @ 230V AC / 30V DC or SSR : 12V DC, 30mA	Relay : SPDT : 10A resistive @ 230V AC / 30V DC or SSR : 12V DC, 50mA		
AUXILIARY OUTPUT	Relay : 5A resistive @ 230V 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)mm

72(H) x 72(W)mm

96(H) x 96(W)mm



TC513AX

TC203AX

TC303AX

48(H) x 48(W)mm

72(H) x 72(W)mm

96(H) x 96(W)mm



TC533AX

TC233AX

TC333AX

48(H) x 48(W)mm

72(H) x 72(W)mm

96(H) x 96(W)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. $\pm 1^\circ$; 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	Dual set point	Single set point	
CONTROL MODE	Autotune PID or ON - OFF		
CONTROL OUTPUT	Relay : SPDT (SPST for TC544A) : 5A resistive @ 230V AC / 30V DC or SSR (Field Selectable) : 12V DC, 50mA	Relay : SPDT (SPST for TC303A) : 10A resistive @ 230V AC / 30V DC or SSR : 12V DC, 50mA (except TC303A)	
AUXILIARY OUTPUT	Relay : SPDT (SPST for TC544A) : 5A resistive @ 230V 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	

Temperature Controllers



DTC503
48(H) x 48(W)mm



DTC231
72(H) x 72(W)mm



DTC331
96(H) x 96(W)mm



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



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

FEATURES	3 Digit single display - J, K TC input - ON-OFF / PID control	3 Digit single display - J, K TC input - ON-OFF / Proportional control	- 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)	
SETPOINT	Single set point		Dual set point
CONTROL MODE	ON-OFF / PID	ON-OFF	
CONTROL OUTPUT	Relay : SPDT : 10A resistive @ 230V AC / 30V DC	Relay : SPST : 10A resistive @ 230V AC / 30V DC	
AUXILIARY OUTPUT	---		Relay : SPDT : 5A resistive @ 230V AC / 30V DC
SUPPLY VOLTAGE (AC : 50 / 60 Hz)	90 to 270V AC / DC		



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



PID500
48(H) x 48(W)mm



PID110
96(H) x 48(W)mm



PID330
96(H) x 96(W)mm



PID528
48(H) x 48(W)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. ±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)		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°
SET POINT	Maximum 3		Dual set point
CONTROL MODE	Autotune PID or ON - OFF		
CONTROL OUTPUT	Relay : SPST : 5A @ 230V 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 @ 230V AC / 30V DC
AUXILIARY OUTPUT	(Maximum 2) Relay or SSR (Mode : Set point or alarm mode) Relay : SPST : 5A @ 230V AC / 30V DC; SSR : 12V DC, 20mA		Relay : SPST : 5A resistive @ 230V AC / 30V DC
OPTIONAL FEATURES	Extra alarm output, Retransmission analog output, RS485 MODBUS RTU protocol (Except PID500-T)		---
SUPPLY VOLTAGE (AC : 50 / 60 Hz)	90 to 270V AC / DC		



PR502
48(W) x 48(H)mm

FEATURES	- Ramp soak control 10 programs, 16 steps each - Alarm at each stage - Memory retention
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, Signal inputs (DC) : -5 to 56 mV, 0 to 10 V DC, 0 to 20 mA DC
RESOLUTION	TC / RTD : 1 / 0.1°; Analog input : 1 / 0.1 / 0.01 / 0.001
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)

SETPOINT	Maximum 3
CONTROL MODE	Autotune PID or ON - OFF
CONTROL OUTPUT	Relay : SPST : 5A @ 230V AC / 30V DC or Current : 4 to 20 mA DC (Max load 500E)
AUXILIARY OUTPUT	(Mode : Set point or alarm mode) Relay : SPST : 5A @ 230V 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, Power down resume, Reset option, 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

Cooling Controllers



CH403A
36(H) x 72(W)mm



CH403
36(H) x 72(W)mm

FEATURES	• 2½ Digits single display • NTC input type • Restart time delay • Auto / Manual defrost selection • Door open mode • Cyclic timer applicable for auxiliary output	• 3 Digits single display • Auto / Manual defrost management • High / Low temperature alarms • Control output: Relay • Auxiliary output: Relay & SSR
DISPLAY	2½ digits, 7 segment display	
INPUT TYPE	NTC type sensor	
RESOLUTION	1 / 0.1°	
ACCURACY	0.25% of F. S., ±1°	±1% of F.S.
SETPOINT	Single set point	
CONTROL MODE	ON - OFF	
CONTROL OUTPUT	SPDT: 10A @ 230V AC / 30V DC or SPST: 20A @ 230V AC / 30V DC (Depends on product code selection)	
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 19.9°	-19.9° to 20.0°
RESTART TIME DELAY	Adjustable from 0 to 19.9 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)	230V AC or 90 to 270 V AC / DC	90 to 270V AC / DC

Process Indicators



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



PIC101N
48(H) x 96(W)mm



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



PIC101A-VI-230
48(H) x 96(W)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	• 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) : -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	Thermocouple : J, K, T, R, S RTD : PT100	Signal inputs (DC) : 0 to 10V, 0/4 to 20mA
RESOLUTION	TC / RTD : 1 / 0.1, Analog input : 1 / 0.1 / 0.01 / 0.001		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 inputs : 0.5% of F.S. ±2° (20 min of warm up time); For RTD input : 0.1% of F.S. ±1°; Cold junction accuracy ± 5°C ; Signal input : ±0.5% of F.S, ± 1 digit		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
OUTPUT	2 Alarms : SPDT : 5A @ 230V 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)		230V AC, ±20%	

Analog Temperature Controller



TC52
48(W) x 48(H)mm

FEATURES	• Dial setting • TC input • Single relay output • Easy to use
DISPLAY	Dial setting
INPUT TYPE	Thermocouple (J)
RESOLUTION	Fixed 1° resolution

ACCURACY	Setting : ± 3% of F.S., ±0.5% of F.S.
SETPOINT	Single set point
CONTROL MODE	Time proportional & ON-OFF
CONTROL OUTPUT	SPST : 7A resistive @ 230V AC
SUPPLY VOLTAGE (AC : 50 / 60 Hz)	230V AC

Ordering information

Temperature Controllers

PRODUCT CODE	OUTPUT 1		OUTPUT 2	SUPPLY VOLTAGE	CERTIFICATION
	RELAY	SSR			
TC544C	RELAY	SSR	RELAY	90 to 270V AC / DC	CE
TC513BX	RELAY	SSR	---	90 to 270V AC / DC	---
TC513BX-CE	RELAY	SSR	---	90 to 270V AC / DC	CE
TC533BX	RELAY	SSR	---	90 to 270V AC / DC	---
TC533BX-CE	RELAY	SSR	---	90 to 270V AC / DC	CE
TC544B	RELAY	SSR	RELAY	90 to 270V AC / DC	---
TC544B-CE	RELAY	SSR	RELAY	90 to 270V AC / DC	CE
TC538BX	RELAY	SSR	---	90 to 270V AC / DC	---
TC544A	RELAY	SSR	RELAY	90 to 270V AC / DC	CE
TC544A-24V	RELAY	SSR	RELAY	24V DC	CE
TC544A-CU	RELAY	SSR	RELAY	90 to 270V AC / DC	CE, RoHS
TC244AX	RELAY	SSR	RELAY	90 to 270V AC / DC	---
TC344AX	RELAY	SSR	RELAY	90 to 270V AC / DC	---
TC513AX	RELAY	SSR	---	90 to 270V AC / DC	CE
TC513AX-CU	RELAY	SSR	---	90 to 270V AC / DC	CE, RoHS
TC513AX-24V	RELAY	SSR	---	24V DC	CE
TC533AX	RELAY	SSR	---	90 to 270V AC / DC	CE
TC233AX	RELAY	SSR	---	90 to 270V AC / DC	---
TC333AX	RELAY	SSR	---	90 to 270V AC / DC	---
TC203AX	RELAY	SSR	---	90 to 270V AC / DC	---
TC303AX	RELAY	SSR	---	90 to 270V AC / DC	---
TC303A	RELAY	---	---	90 to 270V AC / DC	---

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

PRODUCT CODE	OUTPUT 1		OUTPUT 2	SUPPLY VOLTAGE	CERTIFICATION
	RELAY	SSR			
DTC503	RELAY	---	---	90 to 270V AC / DC	---
DTC231	RELAY	---	---	90 to 270V AC / DC	---
DTC331	RELAY	---	---	90 to 270V AC / DC	---
PID528-1	RELAY	---	RELAY	90 to 270V AC / DC	---
PID528-1 V2-CE	RELAY	---	RELAY	90 to 270V AC / DC	CE
DTC204A-2	RELAY	SSR	RELAY	90 to 270V AC / DC	---
DTC324A-2	RELAY	SSR	RELAY	90 to 270V AC / DC	---
TC52-400-J-230	RELAY	---	---	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	CE
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	CE
CH403-3-NTC	RELAY (10A)	RELAY (5A)	90 to 270V AC / DC	CE

Process Indicators

PRODUCT CODE	RETRANSMISSION	COMM. (RS485)	SUPPLY VOLTAGE	CERTIFICATION
PIC152A-VI	Universal	---	90 to 270V AC / DC	---
PIC152A-VI-CE	Universal	---	90 to 270V AC / DC	CE
PIC152A-VI-C-24V	Universal	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 95.6(W)mm



FLEXYS PANEL TX4
99(H) x 95.6(W)mm



FLEXYS RAIL
93.4(H) x 140(W)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
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
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	
RTC	Yes		
SUPPLY VOLTAGE (AC : 50 / 60 Hz)	18 - 30V DC, 100 - 240V AC		

PLC - Flexible Expansion Module



EXP FLEX 2M
90(H) x 35(W)mm

FEATURES	- Any flexys card can be configured - Selectable baudrate and slave ID
DISPLAY	LED indication for power ON & communication status
DIGITAL INPUTS	4 / 10 /14 per card, PNP (6 - 30V DC)
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)
COMMUNICATION INTERFACE	RS485 MODBUS RTU, Proprietary protocol
BAUDRATE	19200/115200 bps (Selectable)
RESPONSE TIME	100 msec to 2 sec + IO card Response
SUPPLY VOLTAGE	18 - 30V DC

Compact Series - UNIX & TWIX



UNIX-1
72(H) x 72(W)mm



TWIX-1
48(H) x 96(W)mm

TWIX-2
48(H) x 96(W)mm

TWIX-3
48(H) x 96(W)mm



MM1015
48(H) x 96(W)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 **DIGIX-1-1-1**
90(H) x 70(W)mm



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



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



DIGIX-4
90(H) x 70(W)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 - 30VDC		

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

PLC - Fixed IO Configuration



MM3030-2
96(H) x 96(W)mm

MM3030-4
96(H) x 96(W)mm



MM3032-2-0-0-230V V2
96(H) x 96(W)mm

MM3032-2-0-0-24V V2
96(H) x 96(W)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	00-01 Sink 50mA @ 24V DC (Fast Outputs 50KHz), 02-07- 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

Human Machine Interface



SP3-GT35
96(H) x 96(W)mm



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



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

FEATURES	• 10 Password levels • Serial printing • Data logging • Built in buzzer • Recipe management	• 7" Touch screen • Ethernet / Serial communication • User management • Recipe management	• Data logging functionality • Update program by USB flash • Multiple communication protocols • In-Built symbol library
DISPLAY	3.5" Diagonal resistive touch screen	7" Diagonal resistive touch screen	10" Diagonal resistive touch screen
RESOLUTION	320 x 240 pixels	800 x 480 pixels	1024 x 600 pixels
USER MEMORY	16 MB	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 SLAVE	---	USB 2.0	
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	



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

Accessories - SMPS



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



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



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



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

FEATURES	• Protection: Overload / Over voltage • IEC 61010-1 safety standards • DIN rail mount • Power OK indication • Cooling by free air convection	• AC 100-240V wide-range Input • IEC 61010-1 safety standard • DIN rail mount • Power OK Indication • Cooling by free air convection		• AC 100-240V wide-range Input • IEC 61010-1 safety standard • DIN rail mount • Power OK Indication • Cooling by free air convection • Active PFC • Full power between -25°C and +50°C
DISPLAY	LED indication for DC OK	LED indication for DC OK		
VOLTAGE RANGE	100 - 270VAC / VDC	100 - 240V AC		
FREQUENCY RANGE	50 / 60 Hz	50 / 60 Hz		
AC CURRENT	100V - 0.6 A, 270V - 0.3A	115V - 1.2A, 230V - 0.8A	115V - 2.2A, 230V - 1.5A	115V - 2.4A, 230V - 1.2A
EFFICIENCY	70% to 85%	>87% @ 230V AC	>89% @ 230V AC	93% @ 230V AC
INRUSH CURRENT	30A	<48A @ 264V AC		<60A @ 264V AC
DC VOLTAGE	24V DC	24-28V DC		
RATED CURRENT	1.1A	2.5A @ 24V	5A @ 24V	10A @ 24V
		2.14A @ 28V	4.29A @ 28V	8.6A @ 28V
RATED POWER	26.4W	60W	120W	240W
RIPPLE & NOISE MAX (mVp.p)	200mV	<1% of Vout		
WEIGHT	140 g	285 g	350 g	645 g
DEPTH	60mm	102.7mm		135mm

Accessories - Relay Modules



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



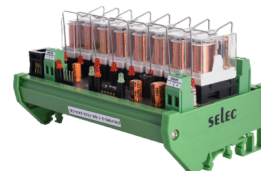
RLYMD-2-S8-1CO-24VDC
87(H) x 138(W)mm



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



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



ERLYMD-2-1-S8-1CO-24V
87(H) x 138(W)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 1 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-01

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, & Ethernet communication
INTERFACE 1	Serial (RS485 MODBUS RTU protocol)	USB 2.0 compliance		Serial (RS485 MODBUS RTU protocol)
CONNECTOR	2 wire	USB type A		DB9
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	NA	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 in process
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	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 in process
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

Fixed IO Configuration

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

Add ons - PLC IO's

PRODUCT CODE	DESCRIPTION	CERTIFICATION
EXP-FLEX 2M	Expansion slot - Flexys IO cards	CE
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

Power Supply

PRODUCT CODE	CERTIFICATION
RP-2M-1.1A-24VDC	CE
RP-3M-2.5A-24VDC	CE
RP-3M-5A-24VDC	CE
RPS60-24-CE	CE
RPS120-24-CE	CE
RPS240-24-CE	CE

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-01	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

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

Annunciator

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



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	Space Vector SVPWM and 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)	

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.

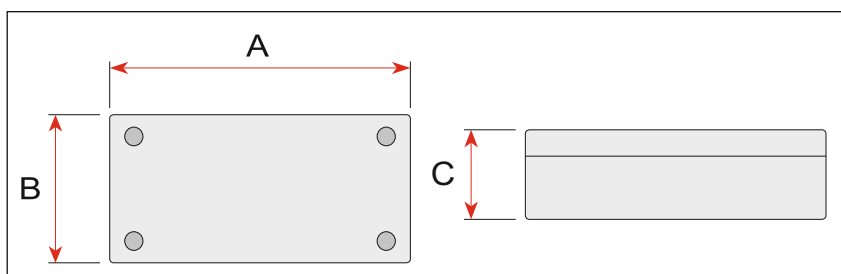
Standard unit includes: Base, Cover, Neoprene gasket and Fasteners temperature resistance up to 260 °C (natural finish enclosure).

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

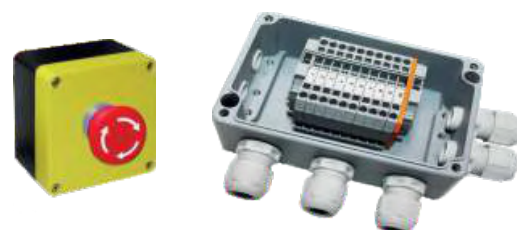
Note:
External hinges, din rails and wall mount brackets available on special request.

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

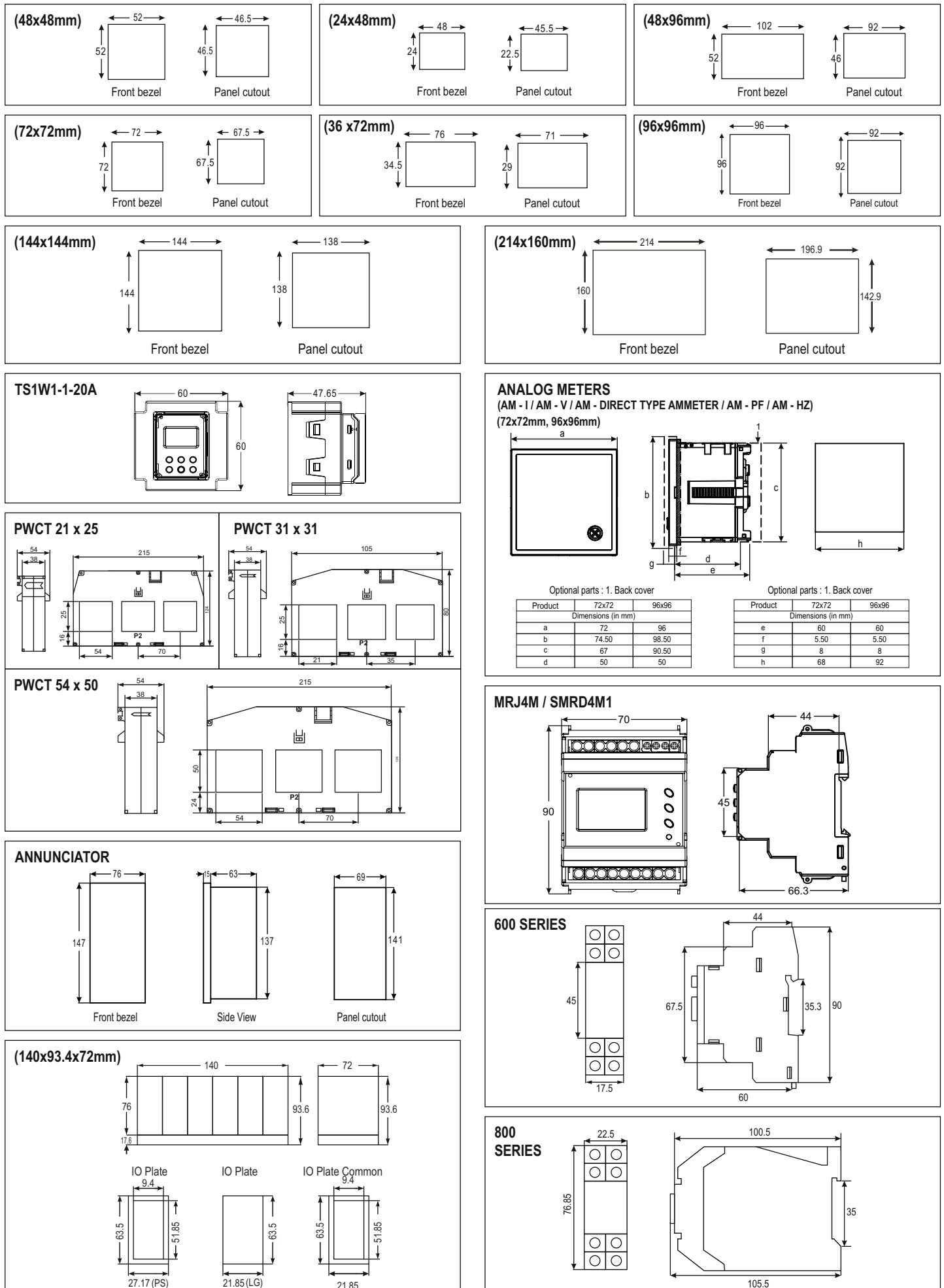


Applications:

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

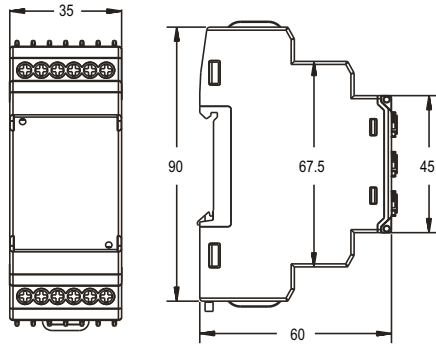


Panel Cutout Dimensions (All are in mm)

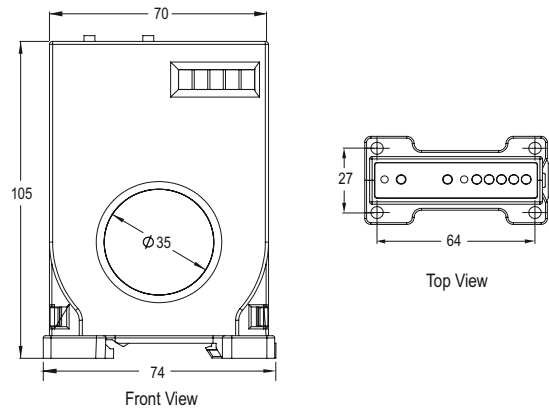


Panel Cutout Dimensions (All are in mm)

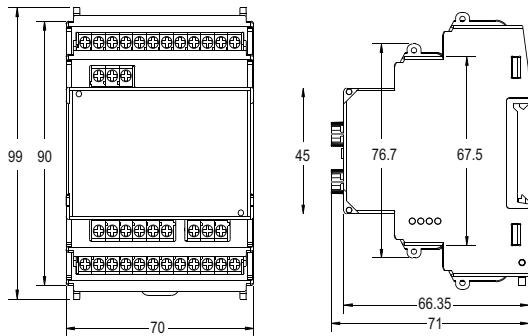
900 SERIES / TS2M1-1-16A / ATS2M1-1-16A / TPRA2M1



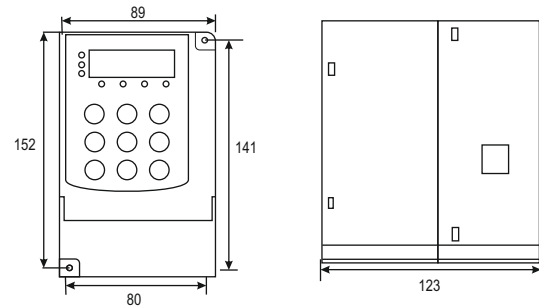
ELCTR35



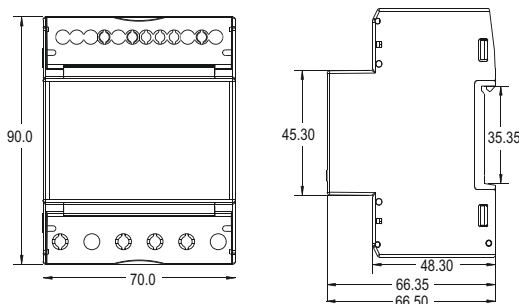
PPRD-4M-3 / PPRA-4M-3



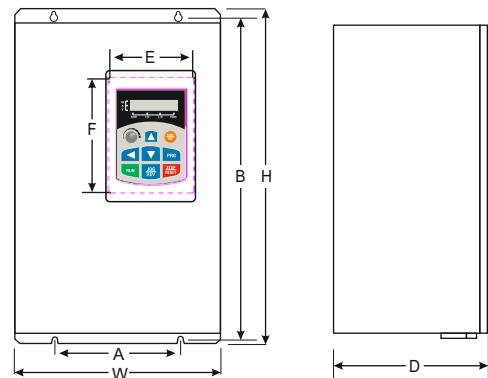
FD100



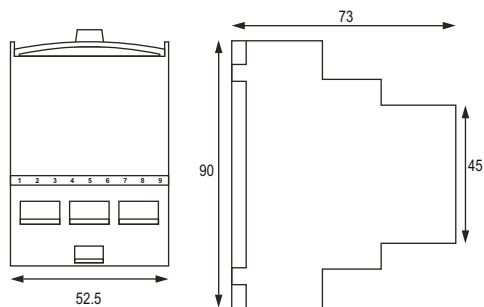
PPRD-4M-1-230V / PPRA-4M-1-230V / PPRWD-4M-1



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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