

# PRODUCT SELECTION GUIDE

**selec**<sup>®</sup>  
Creating Best Value



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

[www.selec.com](http://www.selec.com)

<b>METERS</b>	<b>3</b>
Multifunction Meters	
Energy Meters	
Digital Panel Meters (VAF Meter, Volt Amp meter, Voltmeter, Ammeter)	
Analog Meters	
Current Transformers	
Power Factor Controllers	
Ordering Information	
<b>MONITORING / PROTECTION RELAYS</b>	<b>14</b>
Line Monitoring Relay	
Auto Switch	
Voltage Monitoring Relay	
Current Monitoring Relay	
Earth Leakage Relay	
Core Balance Current Transformer	
Earth Fault Relay	
Earth Fault Current Transformer	
Water Level Controllers	
Water Level Sensor	
Motor Protection Relay	
Pump Protection Relay	
Motor Protection Current Transformer	
Thermistor Protection Relay	
Ordering Information	
<b>DIGITAL TIME SWITCHES</b>	<b>21</b>
Astronomical	
Daily / Weekly	
<b>TIMERS</b>	<b>21</b>
Analog Timers	
Digital Timers	
Time Interval Meter / Hour Meters	
Ordering Information	
<b>COUNTERS &amp; RATE INDICATORS</b>	<b>25</b>
Digital Counters	
LCD / LED Counters	
Digital Timer-Counter	
Rate Indicator	
Speed Monitoring Relay	
Ordering Information	
<b>TEMPERATURE &amp; PROCESS</b>	<b>28</b>
Temperature Controllers	
Profile Controller & Analog Temperature Controller	
Cooling Controllers	
Process Indicators	
Ordering Information	
<b>PLCs &amp; HMI</b>	<b>34</b>
PLC - Flexible I/O Solution	
PLC - Flexible Expansion Module	
Compact Series - UNIX & TWIX	
Compact Series - DIGIX	
PLC - Fixed I/O Configuration	
Human Machine Interface	
Annunciator	
Accessories	
- SMPS-Din Rail	
- SMPS-Open frame	
- Relay Modules	
- Data Converters	
- Communication Adapters & Cables	
Ordering Information	
<b>Variable Frequency Drives (VFD)</b>	<b>42</b>
Atsel Range of VFDs	
Selec Range of VFDs	
<b>Aluminium Enclosures</b>	<b>44</b>
<b>Panel Cutout Dimension</b>	<b>45</b>



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



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



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

<b>FEATURES</b>	<ul style="list-style-type: none"> <li>• Bar graph representation for current</li> <li>• Single pulse output</li> <li>• %THD up to 31<sup>st</sup> level</li> <li>• Demand measurement</li> </ul>	<ul style="list-style-type: none"> <li>• Compact size</li> <li>• Single pulse output</li> <li>• %THD up to 31<sup>st</sup> level</li> <li>• Demand measurement</li> </ul>	<ul style="list-style-type: none"> <li>• Single pulse output</li> <li>• Energy (Active / Reactive / Apparent)</li> </ul>
<b>DISPLAY</b>	LCD with backlight		
<b>DIGITS</b>	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	
<b>ELECTRICAL CONNECTION</b>	1Ø - 2W, 2Ø - 3W, 3Ø - 3W, 3Ø - 4W		
<b>ACCURACY CLASS</b>	Class 0.5s / Class 1	Class 1	
<b>RATED INPUT VOLTAGE</b>	11 to 300V AC (L - N), 19 to 519V AC (L - L)		
<b>RATED INPUT CURRENT</b>	Nominal 5A AC (Min - 11mA ; Max - 6A)		
<b>RESOLUTION</b>	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
<b>CT PRIMARY</b>	1 / 5A to 10kA (Programmable for any value)		
<b>CT SECONDARY</b>	1 / 5A (Programmable)		
<b>PT PRIMARY</b>	100V to 500kV (Programmable for any value)	100V to 10kV (Programmable for any value)	
<b>PT SECONDARY</b>	100 to 500V AC (L - L) (Programmable for any value)		
<b>COMMUNICATION</b>	RS485 MODBUS RTU protocol (Optional)		
<b>MEASURING PARAMETER</b>	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)		
<b>ADDITIONAL FUNCTIONS</b>	Phase sequence detection, Neutral current measurement		---
<b>SUPPLY VOLTAGE</b> (AC : 50 / 60 Hz)	85 to 300V AC, (±5%) (Power consumption : <8VA)	100 to 240V AC, -15% to +12% (Power consumption : <8VA)	



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



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

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

## Din Rail Multifunction Meter



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

## Plug-n-Wire Multifunction Meter



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

<b>FEATURES</b>	<ul style="list-style-type: none"> <li>Energy (Active, Reactive, Apparent)</li> <li>RS485 MODBUS RTU protocol</li> <li>Import / Export energy</li> <li>Demand measurement</li> </ul>	<ul style="list-style-type: none"> <li>Energy (Active, Reactive)</li> <li>RJ45 connector current input</li> <li>Single pulse output</li> <li>Max demand of power</li> <li>Self powered</li> </ul>
<b>DISPLAY</b>	LCD with backlight	
<b>DIGITS</b>	1 row of 4 digits, 2 rows of 7 digits	Row 1 of 4 digits and Row 2, 3 of 7 digits per line to show electrical parameters
<b>ELECTRICAL CONNECTION</b>	1Ø - 2W, 2Ø - 3W, 3Ø - 3W, 3Ø - 4W	1Ø - 2W, 3Ø - 4W
<b>RATED INPUT VOLTAGE</b>	11 to 300V AC (L - N), 19 to 519V AC (L - L)	60 to 300V AC (L - N), 104 to 520V AC (L - L)
<b>RATED INPUT CURRENT</b>	Nominal 5A AC (Min - 11mA; Max - 6A)	---
<b>FREQUENCY</b>	45Hz to 65Hz	
<b>RESOLUTION</b>	For Energy : 0.01k, 0.1k, 1k, 0.01M, 0.1M, 1M (Depending upon CT ratio x PT ratio), For Power, Voltage, Current : Auto resolution, For Power factor : 0.01, Frequency : 0.1Hz	0.01k, 0.1k, 1k, 0.01M, 0.1M, 1M (depending upon CT ratio x PT ratio), For Power, Voltage : Auto resolution, For Power factor : 0.01
<b>ACCURACY CLASS</b>	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.	
<b>CT PRIMARY</b>	1 / 5A to 10kA (Programmable for any value)	5A to 1kA (Programmable for any value), Plug-n-Wire CTs to be used
<b>CT SECONDARY</b>	1 / 5A (Programmable)	330mV through Plug-n-Wire CT output
<b>PT PRIMARY</b>	100V to 500kV (Programmable for any value)	100V to 10kV (Programmable for any value)
<b>PT SECONDARY</b>	100V to 500V AC (L - L) (Programmable for any value)	
<b>MEMORY RETENTION FOR ENERGY</b>	10 years	
<b>COMMUNICATION</b>	RS485 MODBUS RTU protocol	
<b>INDICATIONS</b>	LCD : Max demand of power, Communication in progress; LED : Integration of energy	
<b>MEASURING PARAMETERS</b>	Voltage (L - L / L - N) (Individual / Average), Current (Individual / Average), Frequency, Power factor (Individual / Total), Active, Reactive & Apparent power (Individual / Total), Active, Reactive & Apparent energy (Import / Export), Demand (Min / Max Active & Reactive Power, Max apparent power)	Voltage (L - L / L - N) (Individual / Average) of 4 Channels, Current (Individual / Average) of 4 Channels, Power (Active, Reactive & Apparent) (Individual) of 4 Channels, Power factor & Frequency of 4 Channels, Energy (Active, Reactive & Apparent) (Individual / Total) of 4 Channels
<b>SUPPLY VOLTAGE</b> (AC : 50 / 60 Hz)	85 to 270V AC	60 to 300V AC, Self powered (V1, N)

## Plug-n-Wire Multifunction Meter



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



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



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

<b>FEATURES</b>	<ul style="list-style-type: none"> <li>Energy (Active, Reactive)</li> <li>RJ45 connector current input</li> <li>Single pulse output</li> <li>Max demand of power</li> <li>Self powered</li> </ul>	<ul style="list-style-type: none"> <li>Energy (Active, Reactive)</li> <li>Split load, RJ45 connector current input</li> <li>2 pulse outputs</li> <li>Max demand of power</li> <li>Self powered</li> </ul>	<ul style="list-style-type: none"> <li>Energy (Active, Reactive, Apparent)</li> <li>RJ45 connector current input</li> <li>Single pulse output</li> <li>Demand measurement</li> <li>Self powered</li> <li>%THD up to 31<sup>st</sup> level</li> </ul>
<b>DISPLAY</b>	LCD with backlight		
<b>DIGITS</b>	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	
<b>ELECTRICAL CONNECTION</b>	1Ø - 2W, 3Ø - 4W		
<b>RATED INPUT VOLTAGE</b>	60 to 300V AC (L - N), 104 to 520V AC (L - L)	100 to 240V AC (L - N), 173 to 415V AC (L - L)	
<b>RESOLUTION</b>	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		
<b>CT PRIMARY</b>	5A to 10kA (Programmable for any value), Plug-N-Wire CTs to be used		
<b>CT SECONDARY</b>	330mV through Plug-n-Wire CT output		
<b>PT PRIMARY</b>	100V to 10kV (Programmable for any value)	100V to 500kV (Programmable for any value)	
<b>PT SECONDARY</b>	100 to 500V AC (L - L) (Programmable for any value)	173 to 415V AC (L - L) (Programmable for any value)	
<b>COMMUNICATION</b>	RS485 MODBUS RTU protocol		
<b>INDICATIONS</b>	LCD : Max / Min demand of power, communication in progress ; LED : Integration of energy		LCD : Max / Min demand of power, communication in progress ; Integration of energy, Unit in configuration menu

## Plug-n-Wire Multifunction Meters

	MRJ4M	MRJ4M-SL	MRJ385
<b>MEASURING PARAMETER</b>	Voltage (L - L / L - N) (Individual / Average), Current (Individual / Average), Frequency, Power factor (Individual / Average), Active, Reactive & Apparent power (Individual / Total), Active & Reactive energy, Demand (Max active power, Max apparent power)	Voltage (L - L / L - N) (Individual / Average), Current (Individual), Frequency, Power factor (Individual / Average), Active, Reactive, Apparent power (Individual / Total), Active & Reactive energy, Total, Active & Reactive energy (Current input-1 plus current Input-2), Demand (Max active power, Max apparent power)	Voltage (L - L / L - N) (Individual / Average), Current (Individual / Average), Frequency, Power factor (Individual / Average), Active, Reactive, Apparent power (Individual / Total), Active, Reactive, Apparent energy (Phase wise (Import / Export) & Total (Import / Export)), Demand (Min / Max active power, Min / Max reactive power, Max apparent power), Harmonics individual for voltage & Current upto 31st level.
<b>SUPPLY VOLTAGE</b> (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

<b>DESCRIPTION</b>	RJ45 Connector to carry 330mV	Both Side RJ25 Type Connector	Power Cable	Daisy Chain Cable	Voltage connector Male / Female

## Energy Meters



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

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



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

<b>FEATURES</b>	<ul style="list-style-type: none"> <li>• 3Ø Active energy</li> <li>• Single pulse output</li> </ul>	<ul style="list-style-type: none"> <li>• Dual Input Meter (Mains / D.G)</li> <li>• 3Ø Power (Active / Reactive)</li> <li>• 3Ø Energy (Active / Reactive)</li> <li>• Power factor (Phase / Average)</li> </ul>	<ul style="list-style-type: none"> <li>• Pulse output for energy</li> <li>• Power (Active / Reactive)</li> <li>• Energy (Active / Reactive / Apparent)</li> </ul>
<b>DISPLAY</b>	7 segment LED		LCD with backlight
<b>DIGITS</b>	1 row of 6 digits		1 row of 8 digits
<b>ELECTRICAL CONNECTION</b>	1Ø - 2W, 2Ø - 3W, 3Ø - 3W, 3Ø - 4W		
<b>RATED INPUT VOLTAGE</b>	11 to 300V AC (L - N), 19 to 519V AC (L - L)		
<b>RATED INPUT CURRENT</b>	Nominal 5A AC (Min - 15mA ; Max - 6A)		Nominal 5A AC (Min - 11mA ; Max - 6A)
<b>RESOLUTION</b>	For Energy : 0.01k, 0.1k, 1k, 0.01M, 0.1M, 1M For Power, Voltage, Current : Auto resolution, For Power factor : 0.001		For energy : 0.01k, 0.1k, 1k, 0.01M, 0.1M, 1M, 10M (Depending upon CT ratio x PT ratio) For Power : Auto resolution, For Power factor : 0.01
<b>ACCURACY</b>	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		Active Energy : Class 1, Reactive / Apparent Energy : ±1% Active / Reactive power : ±1%, PF & Avg. PF : ±1%
<b>POWER CONSUMPTION</b>	8VA max		
<b>CT PRIMARY</b>	1 / 5A to 10kA (Programmable for any value)		
<b>CT SECONDARY</b>	1 / 5A (Programmable)		
<b>PT PRIMARY</b>	100V to 500kV (Programmable for any value)		
<b>PT SECONDARY</b>	100V to 500V AC (L - L) (Programmable for any value)		
<b>COMMUNICATION</b>	---	RS485 MODBUS RTU protocol	
<b>MEASURING PARAMETERS</b>	Active energy	Power (Active / Reactive), Energy (Active / Reactive), Power factor(Phase/Average)	Power (Total Active / Reactive), Energy (Total Active / Reactive / Apparent), Power factor (Individual & Average)
<b>LED INDICATIONS</b>	CT rev, Kilo, Mega	CT rev, Kilo, Mega, Communication, DG	Integration of energy, Resolution is 10, Reverse connected CT warning, Communication in progress, pulse output (All Indications on LCD)
<b>SUPPLY VOLTAGE</b> (AC : 50 / 60 Hz)	85 to 276 V AC	Mains :85 to 276 V AC DG Sensing: 85 to 276 V AC	100 to 240V AC, -15% to +12%



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



**EM4M-3P-C-100A**  
90(H) x 70(W) x 66.3(D)mm



**EM4M-3P-W-100A**  
90(H) x 70(W) x 66.3(D)mm

<b>FEATURES</b>	<ul style="list-style-type: none"> <li>• 1Ø, 100A direct connection</li> <li>• Multifunction parameter monitoring</li> <li>• Import / Export energy</li> <li>• 2 Pulse outputs</li> </ul>	<ul style="list-style-type: none"> <li>• 3Ø, 100A direct connection</li> <li>• Dual input meter (Mains / D.G)</li> <li>• Multifunction parameter monitoring</li> <li>• Import / Export energy</li> <li>• 2 Pulse outputs</li> <li>• Secured in-built WiFi, MQTT protocol based (Variant available)</li> </ul>
<b>DISPLAY</b>	LCD with backlight	
<b>DIGITS</b>	1 row of 7 digits	1 Row of 4 Digits & 2 Rows of 7 Digits
<b>ELECTRICAL CONNECTION</b>	1Ø - 2W	1Ø - 2W, 2Ø - 3W, 3Ø - 3W, 3Ø - 4W
<b>RATED INPUT VOLTAGE</b>	176 to 276V AC (L - N)	85 to 285V AC (L - N) ; 148-494V AC (L - L)
<b>RATED INPUT CURRENT</b>	Ib 5AAC (IMin - 10mA, IMax - 100A)	Ib 10AAC (IMin - 500mA, IMax - 100A)
<b>RESOLUTION</b>	For Energy : 0.01k, For Power, Voltage, Current : Auto resolution, For Power factor : 0.01	
<b>ACCURACY</b>	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	
<b>POWER CONSUMPTION</b>	8VA max	
<b>COMMUNICATION</b>	RS485 MODBUS RTU protocol	Secured in-built WiFi, MQTT protocol based
<b>MEASURING PARAMETERS</b>	Voltage, Current, Frequency, Power factor, Import / Export, Max demand for power	Mains/DG Voltage, Current, Frequency, Power factor, Power, Energy, Active, Reactive (Import/Export) Energy, Max demand power
<b>LED INDICATIONS</b>	LCD Indication-communication in progress, Max demand of power, Import & export energy, LED-2 for Pulse output 1, Pulse output 2.	LED- Power ON, Wi-Fi, Pulse output 1, Pulse output 2.
<b>SUPPLY VOLTAGE</b> (AC : 50 / 60 Hz)	176 to 276V AC (L-N), Self powered	Self - Powered, 85 to 285V AC (L - N), 120 to 494V AC (L - L) DG Sensing: 85 to 285 AC

## Single Phase Multifunction Meter



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



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



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

<b>FEATURES</b>	<ul style="list-style-type: none"> <li>• True RMS measurement</li> <li>• Universal measuring meter - Voltage, Current, Power, Power factor, Frequency*</li> <li>• Programmable CT &amp; PT</li> <li>• Communication and Relay output (applicable only for MX300-1-C-CE)</li> </ul>	<ul style="list-style-type: none"> <li>• 3Ø (True RMS) Voltage</li> <li>• 3Ø (True RMS) Current</li> <li>• Frequency</li> <li>• RUN hour / RPM measurement</li> <li>• Bar graph for current representation</li> </ul>	<ul style="list-style-type: none"> <li>• 3Ø (True RMS) Voltage</li> <li>• 3Ø (True RMS) Current</li> <li>• Frequency</li> <li>• RUN hour / RPM measurement</li> </ul>
<b>DISPLAY</b>	Bright LED display with parameters integrated within display	LCD with backlight	7 segment LED
<b>DIGITS</b>	4 digit 7 segment	3 rows of 3 digits	
<b>ELECTRICAL CONNECTION</b>	1Ø - 2W	1Ø - 2W, 2Ø - 3W, 3Ø - 3W, 3Ø - 4W	
<b>RATED INPUT VOLTAGE</b>	20 - 300V AC (L - N), 34 - 519V AC (L - L)	11 to 300V AC (L - N), 19 to 519V AC (L - L)	
<b>RATED INPUT CURRENT</b>	Nominal 5A AC (Min- 40mA, Max- 6A)	Nominal 5A (Min - 20mA ; Max - 6A)	Nominal 5A (Min - 30mA ; Max - 6A)
<b>RESOLUTION</b>	Voltage, Current & Power resolution is automatically adjusted, For power factor : 0.001	Current & Voltage : Depending on CT & PT primary setting, RPM : 0.1, Run hour : 0.1hr	
<b>ACCURACY</b>	Voltage & Current : ±0.5% of Full scale, Frequency ± 1%, Active power ± 1%, Reactive power ± 2%	Voltage (L - N / L - L / Average) : ± 0.5% of F.S. ± 2 digits, Current & Average Current : ± 1% of F.S. ± 2 digits, Run hour : ± 1%, RPM : ± 0.5%, Frequency : ± 0.1 Hz ± 1 digit	
<b>CT PRIMARY</b>	5A - 9999A (Programmable for any value)	5A to 10kA (Programmable for any value)	
<b>CT SECONDARY</b>	5A fixed		
<b>PT PRIMARY</b>	100V to 500kV (Programmable for any value)		
<b>PT SECONDARY</b>	100V to 500V AC (Programmable for any value)	100 to 500V AC (L - L) (Programmable for any value)	
<b>COMMUNICATION</b>	RS485 MODBUS RTU protocol (applicable only for MX300-1-C-CE)	---	
<b>MEASURING PARAMETERS</b>	Voltage, Current, Power factor, Frequency* (Selectable via DIP switch), Power (Active, Reactive Apparent) (kW, W)	3Ø Voltage (L-N, L-L, avg.), 3Ø Current (I1, I2, I3, avg.), Frequency, RPM, RUN hour	
<b>SUPPLY VOLTAGE</b> (AC : 50 / 60 Hz)	85 - 300V AC / DC	230V AC ±20%	

## Voltage Ampere Meters



**MVA591-30A**  
48(H) x 48(W) x 68.5(D)mm



**MVA591-80A**  
48(H) x 48(W) x 68.5(D)mm



**MVA593**  
48(H) x 48(W) x 79(D)mm

<b>FEATURES</b>	<ul style="list-style-type: none"> <li>• True RMS measurement</li> <li>• 3 Digit 7 segment dual line display</li> <li>• Direct 30A &amp; 80A measurement with Hanging CT</li> </ul>	<ul style="list-style-type: none"> <li>• True RMS measurement</li> <li>• Measure 1Ø &amp; 3Ø voltage and current</li> <li>• 3 digit 7 segment dual line display</li> <li>• Works with 1 phase and 3 phase CT</li> </ul>
<b>DISPLAY PARAMETERS</b>	Voltage & Current	
<b>DISPLAY</b>	3 digit 7 segment LED display with dual rows	
<b>COLOUR</b>	Red and Green	
<b>ELECTRICAL CONNECTION</b>	1Ø - 2W	1Ø - 2W, 3Ø - 3W, 3Ø - 4W
<b>RESOLUTION</b>	Voltage : 1V; Current : 0.1A	For Current <10A : 0.01A, <100A : 0.1A, >100A : 1A For Voltage <100V : 0.1V, >100V : 1V
<b>RATED INPUT VOLTAGE</b>	230V AC (± 20%)	
<b>RATED INPUT CURRENT</b>	1 to 30A	4 to 80A
<b>OPERATING FREQUENCY</b>	50Hz (±5%)	
<b>CURRENT OVERLOAD</b>	36A	96A
<b>ACCURACY</b>	(±1%) full scale	
<b>SUPPLY VOLTAGE</b>	230V AC	

## MVA593 Accessories



**CT 3PH-D13MM-80A-G**



**CT 3PH-21X25MM-250A-G**



**CT 1PH-D13MM-80A-G**



**CT 1PH-30X10MM-250A-G**



**3PH 5A CONVERTER-G**

<b>RATED INPUT CURRENT</b>	Nominal 80A AC (Min 4A - Max 96A)	Nominal 250A AC (Min 10A - Max 300A)	Nominal 80A AC (Min 4A - Max 96A)	Nominal 250A AC (Min 10A - Max 300A)	Nominal 5A AC (Min 50mA - Max 6A)
<b>NO. OF PHASES</b>	3			1	
<b>INNER DIA</b>	13mm	21x 25mm	12mm	30x10mm	4.85mm
<b>MOUNTING</b>	Din rail & Wall mount				

## Digital Voltmeters



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



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



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



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

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

## Digital Ammeters



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

## Digital Ammeters

## Digital Voltmeters



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



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



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



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

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



## Analog Meters



**AM - V**

72(H) x 72(W) x 60(D)mm /  
96(H) x 96(W) x 60(D)mm



**AM - I**

72(H) x 72(W) x 60(D)mm /  
96(H) x 96(W) x 60(D)mm



**AM - Direct Type Ammeter**

72(H) x 72(W) x 60(D)mm /  
96(H) x 96(W) x 60(D)mm



**AM - Power Factor**

72(H) x 72(W) x 60(D)mm /  
96(H) x 96(W) x 60(D)mm



**AM - Frequency**

72(H) x 72(W) x 60(D)mm /  
96(H) x 96(W) x 60(D)mm

FEATURES	<ul style="list-style-type: none"> <li>• True RMS (Voltage) measurement</li> <li>• Scale inter changeability</li> <li>• Non linear scale</li> <li>• Easy installation / termination</li> </ul>	<ul style="list-style-type: none"> <li>• True RMS (Current) measurement</li> <li>• Scale inter changeability</li> <li>• Non linear scale</li> <li>• Easy installation / termination</li> </ul>	<ul style="list-style-type: none"> <li>• True RMS (Current) measurement</li> <li>• Non linear scale</li> <li>• Easy installation / termination</li> </ul>	<ul style="list-style-type: none"> <li>• Non linear scale</li> <li>• Easy installation / termination</li> </ul>	<ul style="list-style-type: none"> <li>• Linear scale</li> <li>• Easy installation / termination</li> </ul>
MEASURING PARAMETER	AC Voltage	AC Current	Direct meter	Power factor	Frequency
POINTER DEFLECTION	0 to 90°			45° - 0° - 45°	0 to 90°
SCALE CHARACTERISTICS	Non linear				Linear
SCALE LENGTH	72 x 72mm: 63 mm / 96 x 96mm: 97 mm				
MEASURING RANGE	0 to 300V / 500V	0 to 5A (CT Secondary), Suppress scale :0 to 5 / 30A (CT Secondary)	10A to 100A	0.5CAP - 1 - 0.5IND	45 - 65Hz
ACCURACY	Class 1.5				Class 1.0
FREQUENCY	50 / 60Hz				---

## Current Transformers



**Square**



**Split Core**



**Cable**



**Tape Wound**

FEATURES	<ul style="list-style-type: none"> <li>• Use with different bus bar size</li> <li>• Panel/DIN rail mount (Require optional accessory)</li> <li>• Accuracy : Class 0.5 to 5</li> </ul>	<ul style="list-style-type: none"> <li>• Nominal rating ranges from 100A to 6000A</li> <li>• Snap closing / opening feature</li> <li>• Mounting types : Base, Busbar &amp; Wall mount</li> </ul>	<ul style="list-style-type: none"> <li>• Sealable terminal / Wire type output</li> <li>• Panel mount</li> <li>• Accuracy : Class 1 to 5</li> </ul>	<ul style="list-style-type: none"> <li>• Terminal output</li> <li>• Accuracy : Class 0.5 to 5</li> </ul>
RATED PRIMARY RATING	30 to 4000A	100A to 6000A	30 to 600A	30 to 1600A
RATED SECONDARY OUTPUT	5A			
RATED BURDEN (VA)	1,1.25, 1.5, 2.5, 3, 3.75, 5, 7.5, 10, 15	1,1.5, 2.5, 3, 5, 7.5, 10, 15	1.5, 5	1.5, 5, 10
ACCURACY	0.5,1,3,5	0.5, 1, 3	1, 5	0.5, 1, 5
OPERATING FREQUENCY	AC 50 / 60Hz			
SYSTEM VOLTAGE	720V max	0.72kV	720V max	
APPLICABLE STANDARD	IEC 61869-2	---		

## Power Factor Controllers



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



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



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



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




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

FEATURES	<ul style="list-style-type: none"> <li>• 3 CT sensing with VAF metering function built in</li> <li>• Configurable up to 12/14* stages</li> <li>• Configurable alarm settings</li> <li>• Dual Colour Backlight for indicating Normal &amp; Alarm function</li> <li>• RS485 MODBUS RTU protocol</li> </ul>	<ul style="list-style-type: none"> <li>• 1 CT sensing</li> <li>• Intelligent switching sequence</li> <li>• Configurable up to 12 stages</li> <li>• Alarm for No current, Phase current error &amp; over temperature</li> <li>• Automatic sensing of capacitor bank values</li> </ul>	<ul style="list-style-type: none"> <li>• 1 CT sensing</li> <li>• Intelligent switching sequence</li> <li>• Configurable up to 8 stages</li> <li>• Alarm for No voltage, Phase current error</li> <li>• Automatic sensing of capacitor bank values</li> </ul>	<ul style="list-style-type: none"> <li>• 1 CT sensing</li> <li>• Intelligent switching sequence</li> <li>• Configurable up to 8 &amp; 12 stages</li> <li>• Automatic sensing of capacitor bank values</li> </ul>	<ul style="list-style-type: none"> <li>• 1 CT sensing</li> <li>• Intelligent switching sequence</li> <li>• Configurable up to 8</li> <li>• Automatic sensing of capacitor bank values</li> </ul>
DISPLAY	LCD with dual colour backlight	Liquid crystal display with backlight		7 segment LED	
DIGITS	3 rows, 4 digits to show electrical parameters	4 digit to show electrical parameter		1 row, 4 digits to show power factor	
ELECTRICAL CONNECTION	1Ø - 2W, 2Ø - 2W, 3Ø - 3W, 3Ø - 4W	2Ø - 2W (L2-L3)		1Ø - 2W, 2Ø - 2W	

<b>RATED INPUT VOLTAGE</b>	100 to 300V AC(L - N), 50 to 520V AC(L - L)	50 to 520V AC(L-L)	40 to 300V AC (L - N), 50 to 520V AC (L - L)
<b>RATED INPUT CURRENT</b>	Nominal 5A AC (Min - 11mA; Max - 6A)	Nominal 5AAC (Min 50mA, Max 6A)	
<b>POWER CONSUMPTION</b>	15VA max	7VA max	15VA max 7VA max
<b>FREQUENCY</b>	45 to 65Hz		
<b>MEASUREMENT RANGE</b>	Power Factor : 0.8 lag to 0.8 lead		
<b>ALARM SETTINGS</b>	Over / Under voltage, Over / Under-compensation, CT polarity error, Over-temperature, Fan setting, No voltage, THDI.	Over Temperature Error, CURR : Phase current error	No Voltage Alarm, CURR : Phase current error Over / Under voltage, Over / Under compensation, CT polarity error, CURR : Phase current error, No volt
<b>PHASE COMPENSATION</b>	0°, 90°, 120°, 210°, 240°, 330°	---	0°, 90°, 120°, 210°, 240°, 330°
<b>ACCURACY</b>	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, Temperature : ±3° of full scale	Power factor : ±0.01
<b>CT PRIMARY</b>	5A to 9999A (Programmable for any value)	---	5A fixed
<b>CT SECONDARY</b>	5A fixed	---	5A fixed
<b>PT PRIMARY</b>	100V to 500kV (Programmable for any value)	---	---
<b>PT SECONDARY</b>	100 to 500V (Programmable for any value)	---	---
<b>STEPS</b>	1 to 12 / 14* *(FAN & ALARM output can be used as 13° & 14° step)	1 to 12	1 to 8
<b>RELAY CONTACT</b>	5A @ 250V AC		
<b>SWITCHING PROGRAM</b>	Automatic		
<b>STEP TIME</b>	1 to 999s		
<b>DISCHARGE TIME</b>	1 to 999s		
<b>CONTROL MODE</b>	Automatic / Manual		
<b>CONTROL SENSITIVITY</b>	60%	---	60%
<b>AUTO INITIALIZATION</b>	Yes / No	Yes	Yes / No
<b>COMMUNICATION</b>	RS485 MODBUS RTU protocol* *(Only for 12 stage variant)	---	---
<b>SUPPLY VOLTAGE (AC : 50 / 60 Hz)</b>	90 to 550V AC	85 to 270V AC	90 to 550V AC 85 to 270V AC

## Ordering information

### Multifunction Meters

PRODUCT CODE	SUPPLY VOLTAGE	OUTPUT		CERTIFICATION
		PULSE OUTPUT	COMM. (RS485)	
MFM384-C-CU	85 to 300V AC, ±5%	YES	YES	CE 
MFM384-C-CE	85 to 300V AC, ±5%	YES	YES	CE
MFM384-C-CE-CL05	85 to 300V AC, ±5%	YES	YES	CE
MFM284-C-CE	85 to 270V AC	YES	YES	CE
MFM383A	100 to 240V AC, -15% to ±12%	YES	---	---
MFM383A-C-CE	100 to 240V AC, -15% to ±12%	YES	YES	CE
MFM376-230VAC	240V AC ± 20%	YES	---	---
MFM376-C-CE	85 to 270V AC, 40 to 270V DC	YES	YES	CE
MFM391	85 to 276V AC	YES	---	---
MFM384-R-C-CE	85 to 270V AC	YES	---	CE

### Plug-n-Wire Multifunction Meters

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

## Ordering information

### Energy Meters

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

### Voltage Ampere Frequency Meters

PRODUCT CODE	SUPPLY VOLTAGE	CERTIFICATION
MX300	85 to 300V AC	CE
MX300-1-C-CE	85 to 300V AC	CE
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 DC	---

### Voltage Ampere Meters

PRODUCT CODE	SUPPLY VOLTAGE	CERTIFICATION
MVA591-30A-230V	230V AC, ±20%, 50/60Hz	---
MVA591-80A-230V	230V AC, ±20%, 50/60Hz	---
MVA593-CE	85 - 276V AC, 50/60Hz	CE

### MVA593 Accessories

PRODUCT CODE	CURRENT RANGE	CERTIFICATION
CT 1PH-D13MM-80A-G	80A	CE
CT 1PH-30X10MM-250A-G	250A	CE
CT 3PH-D13MM-80A-G	80A	CE
CT 3PH-21X25MM-250A-G	250A	CE
3PH 5A CONVERTER-G	800A	CE

### 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
APFC146-112-90/550V-CE	90 to 550V AC, 50 / 60Hz	12	---	CE
APFC346-108-230V-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	---

(Input voltage)  
N : 300V; L : 500V  
(Size) 2 : 72 x 72mm,  
3 : 96 x 96mm  
(Series) Voltmeter  
(Category) Analog meter

### Analog Ammeters

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

Without dial plate  
6 times suppress  
Secondary current  
(Size) 2 : 72 x 72mm,  
3 : 96 x 96mm  
(Series) Ammeter  
(Category) Analog meter

### Analog Ammeters

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

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

## Ordering information

### Analog Direct Type Ammeters

PRODUCT CODE	CERTIFICATION	AM - I - D - 2 - X
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	---	

### 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	---

### RCT

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

### Analog Frequency Meters

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



































  

### TWCT

PRODUCT CODE	WIRE APERTURE In mm	CURRENT RATIO	BURDEN IN VA	ACCURACY CLASS
TWCT-T-D35 30/5 A VA 1.5 CL 5	DIA 35	30/5	1.5	5
TWCT-T-D35 50/5 A VA 5 CL 5	DIA 35	50/5	5	5
TWCT-T-D35 75/5 A VA 5 CL 5	DIA 35	75/5	5	5
TWCT-T-D35 100/5 A VA 5 CL 1	DIA 35	100/5	5	1
TWCT-T-D35 150/5 A VA 5 CL 1	DIA 35	150/5	5	1
TWCT-T-D55 150/5 A VA 5 CL 1	DIA 55	150/5	5	1
TWCT-T-D55 200/5 A VA 5 CL 1	DIA 55	200/5	5	1
TWCT-T-D55 250/5 A VA 5 CL 1	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

## Ordering information

### SPCT

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

### SCCT

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

## Line Monitoring Relays



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



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



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



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



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

<b>FEATURES</b>	<ul style="list-style-type: none"> <li>Monitor Phase failure, Phase sequence &amp; Phase asymmetry</li> <li>LED indication : Relay ON</li> <li>Slim space saving design</li> </ul>	<ul style="list-style-type: none"> <li>Monitor Phase failure, Phase sequence &amp; Phase asymmetry</li> <li>LED indication : Relay ON</li> </ul>	<ul style="list-style-type: none"> <li>Monitor Phase failure, Phase sequence &amp; Phase asymmetry</li> <li>LED indication : Power ON &amp; Trip</li> <li>DIN rail &amp; Wall mount</li> </ul>	<ul style="list-style-type: none"> <li>Monitor Phase failure, Phase asymmetry, Over voltage &amp; Under voltage</li> <li>LED indication : Power ON &amp; Trip</li> </ul>	<ul style="list-style-type: none"> <li>Monitor Phase failure &amp; Phase asymmetry</li> <li>LED indication : Relay ON</li> <li>Slim space saving design</li> </ul>
<b>MODES</b>	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
<b>TIME RANGES</b>	Power ON delay : 200msec		Power ON delay : <500msec	Power ON delay : 3sec	
<b>ACCURACY</b>	±3% of F.S.		±1% of F.S.		
<b>OUTPUT CONTACT</b>	1 C/O (SPDT)			2 C/O (DPDT)	1 C/O (SPDT)
<b>OUTPUT RATING</b>	NC : 3A@250V AC, NO : 5A@250V AC				
<b>ELECTRICAL CONNECTION</b>	3Ø - 3W				
<b>OPERATING VOLTAGE</b>	154 to 500V AC (L - L)		280 to 520V AC (L - L)		154 to 520V AC (L - L)

## Auto Switch



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

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

<b>FEATURES</b>	<ul style="list-style-type: none"> <li>Phase sequence, Phase failure, Phase asymmetry, Under voltage, Over voltage</li> <li>Modes : Auto, Manual, Bypass</li> <li>Pre-wired terminals</li> </ul>	
<b>MODES</b>	Phase loss : Yes, Phase sequence : Yes, Phase reversal : Yes Under voltage (UV) : Healthy to trip ≤195V, Trip to healthy ≥205V Over voltage (OV) : Healthy to trip ≥400V, Trip to healthy ≤390V	Phase loss : Yes, Phase sequence : Yes, Phase reversal : Yes Under voltage (UV) : Healthy to trip ≤313V, Trip to healthy ≥323V Over voltage (OV) : Healthy to trip ≥457V, Trip to healthy ≤447V
<b>MEASUREMENTS</b>	Phase sequence, Phase failure, Phase asymmetry, Under voltage, Over voltage	
<b>OPERATING VOLTAGE RANGE</b>	195V AC-400V AC (L-L) 50 - 60Hz	313V AC-457V AC(L-L) 50 - 60Hz
<b>TIME SETTING</b>	Over voltage , Under voltage & Voltage unbalance : 3.5sec ±1.5sec Phase reversal, Phase loss : Instantaneous (<400msec) Power ON delay (min) , Recovery time (min) : 0-10min Knob setting : (0, 0.5, 1, 3, 5 & 10)	
<b>OUTPUT RATING</b>	1 NO relay	
<b>RELAY RATING</b>	Contacts @ AC 15, 250V AC : 2A , Contacts @ AC 12, 250V AC : 5A	
<b>RELAY MODE</b>	Fail safe mode only	
<b>ACCURACY</b>	Timing accuracy ±5% of reading, Voltage accuracy ±1% of full scale (as per rated voltage)	

## Voltage Monitoring Relays



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



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



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

<b>FEATURES</b>	<ul style="list-style-type: none"> <li>• Monitors Under &amp; Over voltage</li> <li>• Monitors Phase sequence &amp; failure</li> <li>• LED indication : Power ON, Fault condition</li> <li>• Space saving design</li> </ul>		<ul style="list-style-type: none"> <li>• Monitor Under &amp; Over voltage</li> <li>• Monitor Phase sequence &amp; failure</li> <li>• LED indication : Power ON, Fault condition</li> </ul>
<b>MODES</b>	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
<b>TIME RANGES</b>	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)
<b>ACCURACY</b>	Trip Voltage : ±0.5% of F.S, Trip Time : ±5% of F.S		
<b>OUTPUT CONTACT</b>	1 C/O (SPDT)		
<b>OUTPUT RATING</b>	NC : 3A@250V AC, NO : 5A@250V AC		
<b>ELECTRICAL CONNECTION</b>	3Ø - 3W		
<b>OPERATING VOLTAGE</b>	310 to 520V AC (L - L)	170 to 290V AC (L - L)	310 to 520V AC (L - L)

## Voltage Monitoring Relays



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

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



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

<b>FEATURES</b>	<ul style="list-style-type: none"> <li>• Monitors Under voltage, Over voltage, Under frequency, Over frequency, Phase asymmetry, Phase failure and Phase sequence</li> <li>• Two separate alarm relays</li> <li>• LED indication : Power ON, Fault condition</li> </ul>		<ul style="list-style-type: none"> <li>• Monitors Under voltage, Over voltage, Under frequency, Over frequency, Phase asymmetry, Phase failure, Phase sequence and Neutral loss</li> <li>• Two alarm relays with NO or NC operation selectable</li> <li>• LED indication : Fault condition</li> </ul>
<b>MEASUREMENTS</b>	Under / Over voltage, Under / Over frequency, Phase asymmetry, Phase failure, Phase sequence, (Neutral failure applicable only for 900VPR-BL-U)		
<b>DISPLAY</b>	3 digit LCD		3 digit LCD with backlight
<b>ALARM INDICATIONS</b>	Trip		
<b>ELECTRICAL CONNECTION</b>	3Ø - 3W, 3Ø - 4W		
<b>TRIP SETTING</b>	Under / Over voltage : 280 to 520V AC L-L (for 3Ø-3W), 160 to 300V AC L-N (for 3Ø - 4W), Under / Over frequency : 45 / 65Hz, Voltage asymmetry : 5.0 to 99.9%	Under / Over voltage : 280 to 600V AC L-L (for 3Ø-3W), 160 to 300V AC L-N (for 3Ø-4W), Under / Over frequency : 45 / 65Hz, Voltage asymmetry : 5.0 to 99.9%	Under / Over voltage : 85 to 500V AC L - L (for 3Ø - 3W), 50 to 288V AC L - N (for 3Ø - 4W), Under / Over frequency : 45 / 65Hz, Phase asymmetry : 5.0 to 30.0%
<b>TRIP TIME SETTING</b>	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
<b>HYSTERESIS</b>	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%
<b>RESOLUTION</b>	Voltage : 1V, Frequency : 0.1Hz		
<b>ACCURACY</b>	Voltage : ±1% of set value, Frequency : ±0.3Hz, Time (Recovery time, Trip delay, Power on delay) : ±5% of setting +200ms		Voltage : ±1% of set value ±2 digits, Frequency : ±0.5% ±1 digits, Time (Recovery Time, Trip delay, Power on delay) : ±5% of setting ±120ms
<b>OUTPUT CONTACT</b>	2 x 1 C/O (SPDT)		
<b>OUTPUT RATING</b>	NO : 5A@240V AC / 30V DC, NC : 3A@240V AC / 30V DC		NO : 5A@250V AC, NC : 3A@250V AC
<b>SUPPLY VOLTAGE (AC : 50 / 60 Hz)</b>	Self powered, Operating voltage : 280 to 520V AC (L-L), 160 to 300V AC (L-N)	Self powered, Operating voltage : 280 to 600V AC (L-L), 160 to 300V AC (L-N)	85 to 270V AC / DC

## Voltage Monitoring Relays



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



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

<b>FEATURES</b>	<ul style="list-style-type: none"> <li>Monitors Under voltage, Over voltage</li> <li>Monitors Phase asymmetry, Phase failure, Phase sequence</li> <li>Adjustable over and under voltage trip level</li> <li>Adjustable trip time delay</li> </ul>	<ul style="list-style-type: none"> <li>Monitors Under voltage, Over voltage</li> <li>Monitors Phase asymmetry, Phase failure, Phase sequence</li> <li>Adjustable switching hysteresis</li> <li>One relay with two change over alarm relay operation</li> </ul>
<b>MEASUREMENT</b>	Under voltage, Over voltage, Phase failure, Phase sequence, Phase asymmetry	
<b>DISPLAY</b>	Separate LED indications for Power ON, Phase failure, Under voltage, Over voltage, Phase sequence, Phase asymmetry	3 digits LCD
<b>ELECTRICAL CONNECTION</b>	1Ø - 2W, 3Ø - 4W	
<b>TRIP SETTING</b>	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 %
<b>TRIP TIME SETTING</b>	Power ON delay : 0 to 15sec, Trip time delay : 0 to 15sec Recovery time delay : 5sec ± 200ms, Phase sequence trip delay <250msec	Power ON delay : 0.5 to 300sec, Trip time delay : 0 to 300sec Recovery time delay : 0 to 300sec, Phase sequence trip delay <150msec
<b>HYSTERESIS</b>	Voltage : 7V (±2V) of trip voltage	Voltage : 1.0V - 99.9V, Asymmetry : 2 to 20%
<b>ACCURACY</b>	Trip setting : ±5% of F. S., Time setting : ±10% of F. S.	Voltage : ±1% ±2 digits, Time setting : ±5% of settings ± 150ms
<b>OUTPUT CONTACT</b>	2 C/O (DPDT)	
<b>OUTPUT RATING</b>	NC : 5A@250V AC, NO : 5A@250V AC	
<b>SUPPLY VOLTAGE</b> (AC : 50 / 60 Hz)	Self powered, Nominal input voltage (Un) : 230V AC (L - N), Operating voltage : 127 to 288V AC (L - N)	

## Current Monitoring Relays



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



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



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



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

<b>FEATURES</b>	<ul style="list-style-type: none"> <li>Monitors Under current &amp; Over current</li> <li>Two alarm relay with NC or NO operation selectable</li> <li>LED indication : Fault condition</li> </ul>	<ul style="list-style-type: none"> <li>Monitors Under current, Over current &amp; current asymmetry</li> <li>One alarm relay with NC or NO operation selectable</li> <li>LED indication : Fault condition</li> </ul>	<ul style="list-style-type: none"> <li>Under current &amp; Over current protection for 1Ø system</li> <li>True RMS measurement</li> <li>One alarm relay with NC or NO operation</li> </ul>	<ul style="list-style-type: none"> <li>Under current &amp; Over current protection for 1Ø system &amp; 3Ø system</li> <li>True RMS measurement</li> <li>One alarm relay with NC or NO operation</li> </ul>
<b>MEASUREMENTS</b>	Under current, Over current (Current asymmetry applicable only for 900CPR-3)			
<b>DISPLAY</b>	3 digit LCD with backlight		3 digits LCD	
<b>ELECTRICAL CONNECTION</b>	1Ø - 2W	1Ø - 2W, 3Ø - 3W, 3Ø - 4W	1Ø - 2W	1Ø - 2W, 3Ø - 3W, 3Ø - 4W
<b>CT SETTING</b>	CT Primary : 1A / 5A - 999A, CT Secondary : 1A / 5A (Selectable)			
<b>TRIP SETTING</b>	Under current : 0-999A, Over current : 0.5 - 1.19kA, (Current asymmetry : 5.0 - 99.9% applicable only for 900CPR-3)			
<b>TRIP TIME SETTING</b>	Power ON delay : 0.5 - 99.9sec, Trip time delay : 0 - 99.9sec, Recovery time delay : 0 - 99.9sec, Response time : < 200ms			
<b>HYSTERESIS</b>	Current : 0.1 to 99.9A			
<b>ACCURACY</b>	Current : ±1% of setting ± 2 digits, Time (Recovery time, Trip delay, Power ON delay) : ±5% of setting ±200ms			
<b>OUTPUT CONTACT</b>	2 x 1 C/O (SPDT)		1C/O SPDT	
<b>OUTPUT RATING</b>	NO : 5A @ 250V AC; NC : 3A @ 250V AC			
<b>SUPPLY VOLTAGE</b> (AC : 50 / 60 Hz)	85 to 270V AC / DC		230V AC (±15%)	



## Earth Leakage Relays



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



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



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

<b>FEATURES</b>	<ul style="list-style-type: none"> <li>Monitors true RMS earth leakage current (Upto 500mA) in 1Ø - 2Wire, 3Ø - 3Wire &amp; 3Ø - 4Wire</li> <li>Leakage current (In) &amp; Time delay (ΔT) adjustable</li> <li>LED indication for power ON and relay status</li> <li>Test and reset function via front key</li> </ul>	<ul style="list-style-type: none"> <li>Monitor true RMS earth leakage current up to 30A in 1Ø &amp; 3Ø system</li> <li>CBCT connection monitoring</li> <li>Test and reset via Front / Remote</li> <li>Sensitivity and time delay adjustable</li> </ul>	<ul style="list-style-type: none"> <li>Monitor true RMS earth leakage current up to 30A in 1Ø &amp; 3Ø system</li> <li>CBCT connection monitoring</li> <li>Test and reset via Front / Remote</li> <li>Two separate alarms relays with NO or NC operation selectable</li> </ul>
<b>MEASUREMENT</b>	Earth leakage current (Via external CBCT)		
<b>DISPLAY</b>	2 LED Indications (Pwer On and Relay Status)	5 LED indication	3 digit LCD with backlight, 2 LED for trip indication
<b>ELECTRICAL CONNECTION</b>	1Ø - 2W, 3Ø - 3W, 3Ø - 4W		
<b>TRIP SETTING</b>	30mA, 100mA, 300mA, 500mA	30mA to 30A	
<b>TIME RANGES</b>	Variable time settings (0, 2, 4, 6, 8, 10 sec) for 100mA, 300mA & 500mA current setting (For 1x1n) and <30ms for 5x1n.	Trip time delay : 0 to 9 sec (NA when In=0.03A)	Power ON delay : 0.5 to 99.9 sec, Trip time delay : 0 to 99.9 sec, Delay On release : 0 to 99.9 sec
<b>ACCURACY</b>	Current : 5% of In , Time : 5% of Set time	Current : ± 5% of Set Trip current Time : ± 5% of set Time + Response time	Current : ±5% of setting, Time (Recovery time, Trip delay, Power on delay) : ±5% of setting ±200ms
<b>OUTPUT CONTACT</b>	1 SPDT relay		2 x 1 C/O (SPDT)
<b>OUTPUT RATING</b>	NO : 5A @ 250VAC , NC: 3A @ 250VAC , 5A @ 24V DC	NO : 10A@277V AC / 28DC	NC : 3A@250V AC, NO : 5A@250V AC
<b>SUPPLY VOLTAGE (AC : 50 / 60 Hz)</b>	230V AC (± 15%)		



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



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

<b>FEATURES</b>	<ul style="list-style-type: none"> <li>Monitor true RMS earth leakage current up to 30A in 1Ø &amp; 3Ø system</li> <li>CBCT connection monitoring</li> <li>Test and reset via Front / Remote</li> <li>Pre-alarm indication selectable</li> </ul>	<ul style="list-style-type: none"> <li>Monitors True RMS earth leakage current in 1Ø &amp; 3Ø system</li> <li>Inbuilt CBCT</li> <li>Test and reset function</li> </ul>
<b>MEASUREMENT</b>	Earth leakage current (Via external CBCT)	Earth leakage current (Internal CBCT)
<b>DISPLAY</b>	3 digits, 7 segments LED display	2 LED indication
<b>ELECTRICAL CONNECTION</b>	1Ø - 2W, 3Ø - 3W, 3Ø - 4W	
<b>TRIP SETTING</b>	30mA to 30A	75% of 30mA or 300mA
<b>TIME RANGES</b>	Power ON delay : 1 to 999 sec, Trip time delay : 0 to 9999 sec, Recovery time : 1 to 99 min	Reset time : Instantaneous
<b>ACCURACY</b>	Current : ± 5% of Set Trip current Time : ± 5% of set Time + Response time	Current : ± 5% of Input current Time : ± 5% of Response time
<b>OUTPUT CONTACT</b>	1 C/O SPDT	
<b>OUTPUT RATING</b>	NC, NO : 5A@250V AC / 28V DC	NC : 5A@250V AC, NO : 5A@30V AC
<b>SUPPLY VOLTAGE (AC : 50 / 60 Hz)</b>	90 to 270V AC / DC	230V AC (± 15%)



## Core Balance Current Transformers

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

## Motor Protection Relays



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



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

<b>FEATURES</b>	<ul style="list-style-type: none"> <li>• Single phasing, Phase asymmetry, Phase sequence</li> <li>• Under current, Overload trip current</li> <li>• Test and reset function via Front / Remote</li> </ul>	<ul style="list-style-type: none"> <li>• Monitors Overload (As per NEMA Curve), Over current, Under current, Current asymmetry</li> <li>• Lock current, Earth fault,</li> <li>• Phase loss, Phase sequence.</li> <li>• LED indication : Power ON, Trip relay</li> <li>• Test &amp; reset function via Front / Remote</li> </ul>
<b>DISPLAY</b>	3 LED indication	7 segment, 4 digits LED
<b>AUXILLARY SUPPLY</b>	230 / 415V AC $\pm$ 15%	90V to 270V AC / DC
<b>ELECTRICAL CONNECTION</b>	3 $\emptyset$ - 3W	
<b>TRIP SETTING</b>	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 I <sub>max</sub> : 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
<b>TIME SETTINGS</b>	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
<b>MODE</b>	Auto / Manual / Remote	
<b>ACCURACY</b>	Time : $\pm$ 5% of setting $\pm$ 100ms, Current : $\pm$ 5% of set value	Current : $\pm$ 5% of I <sub>r</sub> $\pm$ 1 digit, Timing : $\pm$ 5% + 100msec
<b>OUTPUT CONTACT</b>	2 C/O (DPDT)	2 x1 C/O (SPDT)
<b>OUTPUT RATING</b>	NC : 5A@ 240V AC, NO : 5A@240V AC	5A@250V AC/28VDC

## Pump Protection Relays



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



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

<b>FEATURES</b>	<ul style="list-style-type: none"> <li>• Monitors Overload (As per NEMA Curve), Over current, Under current, Current asymmetry, Lock current</li> <li>• Over voltage, Under voltage</li> <li>• Phase loss, Phase sequence, Phase asymmetry</li> <li>• LED indication : Power ON, Trip relay</li> <li>• Test &amp; reset function via Front / Remote</li> </ul>	<ul style="list-style-type: none"> <li>• Monitors Overload (As per NEMA Curve), Over current, Under current, Current asymmetry, Lock current,</li> <li>• Over voltage, Under voltage</li> <li>• Phase loss, Phase sequence, Phase asymmetry</li> <li>• LED indication : Power ON, Trip relay</li> <li>• Test &amp; reset function via Front / Remote</li> </ul>
<b>DISPLAY</b>	7 segment, 3 digits LED	4 LED & 4 knob for variable setting
<b>AUXILLARY SUPPLY</b>	280V-500V (L-L)	
<b>ELECTRICAL CONNECTION</b>	3 $\emptyset$ - 3W	
<b>CT SETTING</b>	10A, 40A, 80A	
<b>TRIP SETTING</b>	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 I <sub>r</sub> (Rated current) Under current : 20%-80% of I <sub>r</sub> (Rated current), Current asymmetry : Fixed: 50% of I <sub>r</sub> (Rated current) Lock current : Fixed 300% of I <sub>r</sub> (Rated current), Over voltage : Fixed (480V), Under voltage : Fixed (350V), Voltage asymmetry : Fixed (30V)
<b>TIME SETTINGS</b>	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)
<b>HYSTERESIS</b>	Voltage : 0 to 10 V	Voltage : 6V (fixed)
<b>ACCURACY</b>	Current : $\pm$ 5% of I <sub>r</sub> $\pm$ 1 digit, Timing : $\pm$ 5% $\pm$ 100msec, Voltage : $\pm$ 1% of 500V $\pm$ 1 digit	
<b>OUTPUT CONTACT</b>	1 C/O (SPDT)	
<b>OUTPUT RATING</b>	5A@250V AC/28VDC	

## Motor Protection Current Transformer



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

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

## Pump Protection Relays



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



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



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

<b>FEATURES</b>	<ul style="list-style-type: none"> <li>Monitors Over load (As per NEMA curve), Over current, Under current,</li> <li>Locked current, Over voltage, Under voltage</li> <li>Direct current measuring up to 32A</li> <li>LED indication : Power ON, Trip relay</li> <li>Test &amp; Reset function via key &amp; terminal</li> </ul>	<ul style="list-style-type: none"> <li>Automatic pump on &amp; off as per water level detection</li> <li>Monitors Over load (As per NEMA curve), Over current, Under current, Locked current, Over voltage, Under voltage</li> <li>Direct current measuring up to 32A</li> <li>Capacitor cut off features</li> </ul>	<ul style="list-style-type: none"> <li>Monitors Over load (As per NEMA curve), Over current, Under current, Locked current, Over voltage, Under voltage,</li> <li>4 Knob for variable setting</li> <li>Direct current measuring up to 32A</li> <li>LED indication : Power ON, Trip relay</li> </ul>
<b>DISPLAY</b>	3 Digits, 7 Segment LED display	3 Digits, 7 Segment LED display	3 LED & 4 Knob for variable Setting
<b>ELECTRICAL CONNECTION</b>	1Ø - 2W		
<b>MEASURING RANGE</b>	A) Motor rated current Measuring : 1A to 30 A B) Voltage measuring range : 180 to 300VAC (L - N)		
<b>TRIP SETTING</b>	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)
<b>TIME SETTINGS</b>	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
<b>ACCURACY</b>	Current accuracy : ±5% of rated current ±1 digit, Voltage accuracy : ±1% of 300V ±1 digit, Time accuracy : ±5% ±100msec		
<b>OUTPUT CONTACT</b>	1 NO relay	2 NO relay	1 NO relay
<b>OUTPUT RATING</b>	30A@277V AC		
<b>SUPPLY VOLTAGE (AC : 50 / 60 Hz)</b>	180 to 300V AC (L - N)		

## Water Level Controllers



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



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

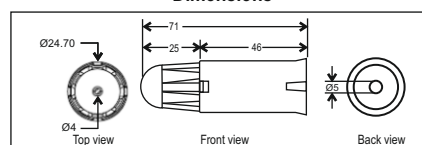
<b>FEATURES</b>	<ul style="list-style-type: none"> <li>Used for drain &amp; fill control</li> <li>3 No's stainless steel prods</li> <li>10A SPDT output (Resistive)</li> </ul>	<ul style="list-style-type: none"> <li>Selectable suction and delivery mode in single tank operation</li> <li>Used for two tank monitoring, Single tank water level monitoring</li> <li>Manual start switch facility</li> <li>Trip relay &amp; alarm relay indication</li> </ul>
<b>DISPLAY</b>	2 LED indication	4 LED indication
<b>AUXILLARY SUPPLY</b>	85 to 270V AC / DC	
<b>TRIP SETTING</b>	According to the levels of sensor placed in the water tank	
<b>SENSITIVITY</b>	1 Kohms to 200Kohms	Auto
<b>TRIP TIME</b>	0.5sec (approx)	2sec
<b>MODE</b>	Auto	Auto / Manual
<b>ACCURACY</b>	NA	±5% + 100msec
<b>OUTPUT CONTACT</b>	1 C/O (SPDT)	1 N /O (Resistive )
<b>OUTPUT RATING</b>	10A@250V AC / 28V DC	5A@ 250 V AC /28V DC

## Water Level Sensor



- Stainless steel
- Suitable for conductive liquids

### Dimensions



## Earth Fault Relays



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

FEATURES	<ul style="list-style-type: none"> <li>• Earth fault current monitoring</li> <li>• Two alarm relays with NO and NC operation selectable</li> <li>• Test and reset via Front / Remote</li> </ul>
MEASUREMENT	Earth fault monitoring
DISPLAY	3 Digit liquid crystal display with backlight
ELECTRICAL CONNECTION	1Ø - 2W, 3Ø - 3W, 3Ø - 4W
FRAME RATING (CT PRIMARY)	160A, 250A, 630A
TRIP SETTING	10% to 80% of selectable MCCB frame rating
TIME RANGES	Response time : <100ms, Trip time delay : 0 to 99.9sec, Recovery time : 0 to 99.9sec, Power ON delay : 0.5 to 99.9sec
OUTPUT CONTACT & RATING	2 x 1 C/O (SPDT) NC : 3A@250V AC, NO : 5A@250V AC

## Thermistor Protection Relay



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

FEATURES	<ul style="list-style-type: none"> <li>• PTC input</li> <li>• LED indication : Power ON, Trip, Open, Short</li> <li>• DPDT relay output</li> </ul>
LED INDICATION	Green : Power ON indication, Yellow : Sensor Indication, Red : Relay status
INPUT TYPE	PTC sensor
SENSOR	Sensor short : <40 (±1Ω), Sensor healthy : 44Ω (±3Ω) to <3.8KΩ (±150Ω) Sensor trip : ≥3.8KΩ (±150Ω) to <5.5KΩ (±150Ω) Sensor open : ≥5.5KΩ (±150Ω) & above, Sensor cut-in : ≤1.5KΩ (±60Ω)
FUNCTIONAL	Relay operating mode : Failsafe & Non-failsafe mode, Reset : Auto / Manual
OUTPUT CONTACT	2 C/O (DPDT)
OUTPUT RATING	8A@250V AC



### Earth Fault Current Transformer

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

## Ordering information

### Line Monitoring Relay

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

### Auto Switch

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

### Voltage Monitoring Relay

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

### Current Monitoring Relay

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

### Earth Leakage Relay

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

### Motor / Pump Protection Relay

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

### Core Balance Current Transformer

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

### Motor Protection Current Transformer

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

### Water Level Controller & Accessories

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

### Earth Fault Relay

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

### Earth Fault Current Transformer

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

### Thermistor Protection Relay

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

## Astronomical Time Switch

## Daily / Weekly Time Switches



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



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



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



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

<b>FEATURES</b>	<ul style="list-style-type: none"> <li>Latitude / Longitude precise to the minute with time zone</li> <li>Automatic calculation of sunrise &amp; sunset times</li> <li>DST offset / power saving mode</li> <li>1 channel</li> <li>10 years power reserve (replaceable battery)</li> </ul>	<ul style="list-style-type: none"> <li>1 sec least count</li> <li>30 ON - 30 OFF steps per day</li> <li>2 channel</li> <li>Auto / Permanent override ON / Permanent Override OFF</li> <li>10 years power reserve (replaceable battery)</li> </ul>	<ul style="list-style-type: none"> <li>1 sec least count</li> <li>50 ON - 50 OFF steps per day</li> <li>1 channel</li> <li>Auto / Permanent override ON / Permanent Override OFF</li> <li>10 years power reserve (replaceable battery)</li> </ul>	
<b>DISPLAY</b>	Text LCD (Without backlight)			
<b>RTC SHIFT</b>	15 minutes a year @ 25°C			
<b>OUTPUT CONTACT</b>	1 C/O SPDT	2 x 1 C/O SPDT	1 C/O SPDT	1 NO & Neutral
<b>CONTACT RATING</b>	16A @ 250V AC	16A @ 250V AC		20A @ 250V AC
<b>WEEKLY PROGRAM</b>	---	For Relay 1 - Total 30 ON steps and 30 OFF steps 1 program 30 steps, 2 programs 15 steps, 3 programs 10 steps, 4 programs 07 steps, 5 programs 06 steps. ( Same for Relay 2)	Total 50 ON steps and 50 OFF steps - 2 program 25 steps, 3 programs 16 steps, 4 programs 12 steps, 5 programs 10 steps, 6 programs 08 steps, 7 programs 07 steps, 8 programs 06 steps	
<b>MINIMUM SETTING UNIT</b>	---	1 second		
<b>HOLIDAY SETTINGS</b>	---	16 dates		
<b>CLOCK</b>	12hr (AM / PM) and 24hr selection			
<b>RELAY OPERATING MODE</b>	Auto / Permanent override ON / Permanent override OFF			
<b>SUPPLY VOLTAGE (AC : 50 / 60 Hz)</b>	230V AC ±10%			

## Analog Timers



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



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



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



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



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

<b>FEATURES</b>	<ul style="list-style-type: none"> <li>Single function - ON delay</li> <li>10 Time ranges</li> </ul>	<ul style="list-style-type: none"> <li>Multi function (13 Functions)</li> <li>Precise analog time setting</li> <li>Universal supply voltage</li> </ul>	<ul style="list-style-type: none"> <li>Star Delta</li> <li>1 C/O Relay each for Star &amp; Delta</li> </ul>	<ul style="list-style-type: none"> <li>2 Functions</li> <li>8 Time ranges</li> </ul>		
<b>MODES</b>	ON delay	A, B, C, Ci, D, E, F, H, I, J, K, Ai, Bi	Star - Delta	ON delay / Interval		
<b>TIME RANGES</b>	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		
<b>RESOLUTION</b>	0.1sec	0.1sec	---	0.3sec		
<b>ACCURACY</b>	Setting : ±5% of F.S Repeat : ±0.5% F.S. Pause time accuracy : ±5% ±5ms					
<b>OUTPUT CONTACT</b>	1 C/O SPDT	1 C/O SPDT	1 C/O Relay each for Star & Delta	1 C/O SPDT		
<b>CONTACT RATING</b>	5A @ 250V AC or 24V DC					
<b>SUPPLY VOLTAGE (AC : 50 / 60 Hz)</b>	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	
<b>Modes</b>	<table border="1"> <tr> <td>600XU</td> <td>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</td> </tr> </table>				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
600XU	A - ON delay, B - Interval, C - Repeat cycle equal OFF first, Ci - Repeat cycle equal ON first, D - Pulse output 500ms fixed, E - Delay on break, F - Delay on make / Delay on break, H - Interval after break, I - Single shot, J - Retriggerable single shot, K - Latching relay, Ai - Delay on break with Totalise, Bi - Interval with Totalise					



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



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



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



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

<b>FEATURES</b>	<ul style="list-style-type: none"> <li>• 2 Functions</li> <li>• 12 Time ranges</li> <li>• Universal supply voltage</li> </ul>	<ul style="list-style-type: none"> <li>• 2 Functions</li> <li>• 8 Time ranges</li> <li>• Universal supply voltage</li> </ul>	<ul style="list-style-type: none"> <li>• 2 Functions</li> <li>• 8 Time ranges</li> </ul>	<ul style="list-style-type: none"> <li>• Single function</li> <li>• Fixed time range (60sec)</li> </ul>
<b>MODES</b>	ON delay / Interval			ON delay
<b>TIME RANGES</b>	1 / 3 / 10 / 30sec / min / hr	3 / 10 / 30 / 60sec / min	3 / 10 / 30 / 60sec / min	60sec
<b>RESOLUTION</b>	0.1sec	0.3sec	0.3sec	6sec
<b>ACCURACY</b>	Setting : ±5% of F.S. Repeat : ±0.5% or 50ms (Whichever is greater)			
<b>OUTPUT CONTACT</b>	2 C/O SPDT	2 C/O SPDT	1 C/O SPDT	1 C/O SPDT
<b>CONTACT RATING</b>	5A @ 250V AC or 24V DC			
<b>SUPPLY VOLTAGE (AC : 50 / 60 Hz)</b>	20 to 240V AC, 12 to 240V DC		230V AC & 24V AC / DC	230V AC, 415V AC



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



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



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



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

<b>FEATURES</b>	<ul style="list-style-type: none"> <li>• Star delta</li> <li>• 1 C/O Relay each for Star &amp; Delta</li> </ul>	<ul style="list-style-type: none"> <li>• Asymmetrical cyclic</li> <li>• 6 Time ranges</li> </ul>	<ul style="list-style-type: none"> <li>• Forward pause reverse</li> <li>• 1 C/O Relay each for Forward &amp; Reverse</li> </ul>	<ul style="list-style-type: none"> <li>• True power OFF delay</li> <li>• Fixed time range (180sec)</li> </ul>
<b>MODES</b>	Star - Delta	Asymmetrical Cyclic ON first or OFF first	Forward - Pause - Reverse	True Power OFF Delay
<b>TIME RANGES</b>	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
<b>RESOLUTION</b>	---	0.1sec	ON time : 6s Pause time : 0.1s	7.5sec
<b>ACCURACY</b>	Setting : ±5%, Repeat : ±0.5% of F.S or 50ms			Setting : ±10% of F.S. Repeat : ±2% or 100ms
<b>OUTPUT CONTACT</b>	1 C/O Relay each for Star & Delta	2 C/O SPDT	1 C/O Relay each for Forward & Reverse	2 C/O SPDT
<b>CONTACT RATING</b>	5A @ 250V AC or 24V DC			
<b>SUPPLY VOLTAGE (AC : 50 / 60 Hz)</b>	110V AC, 230V AC 230 to 415V AC	20 to 240V AC, 12 to 240V DC		110 to 240V AC / DC



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



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



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

<b>FEATURES</b>	<ul style="list-style-type: none"> <li>• Plug / Panel mount</li> <li>• ON delay / Interval</li> <li>• 12 Time ranges</li> </ul>	<ul style="list-style-type: none"> <li>• Plug / Panel mount</li> <li>• Asymmetrical Cyclic ON - OFF</li> <li>• 6 Time ranges</li> </ul>	<ul style="list-style-type: none"> <li>• Plug / Panel mount</li> <li>• ON delay / Interval</li> <li>• 8 Time ranges</li> </ul>
<b>BASE TYPE</b>	P8 - 8 Pin plug, T8 - Screw terminal		
<b>MODES</b>	ON delay / Interval	Asymmetrical Cyclic ON first or OFF first	ON delay / Interval
<b>TIME RANGE</b>	1 / 3 / 10 / 30sec / min / hr	1 / 10sec / min / hr for both ON & OFF time	3 / 10 / 30 / 60sec / min
<b>RESOLUTION</b>	0.1sec		0.3sec
<b>ACCURACY</b>	Setting : ± 5% of F.S., Repeat : ± 0.5% or 50 ms		
<b>OUTPUT CONTACT</b>	2 C/O SPDT		1 C/O SPDT
<b>CONTACT RATING</b>	5A @ 250V AC or 24V DC		
<b>SUPPLY VOLTAGE (AC : 50 / 60 Hz)</b>	20 to 240V AC, 12 to 240V DC		230V AC, 24V AC / DC



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



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



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



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



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

<b>FEATURES</b>	<ul style="list-style-type: none"> <li>Multi function (15 Functions)</li> <li>Wide time range (0.1sec to 999hr)</li> <li>Universal supply voltage</li> </ul>	<ul style="list-style-type: none"> <li>Multi function (4 Functions)</li> <li>9 Time ranges</li> <li>Single set point</li> </ul>	<ul style="list-style-type: none"> <li>Thumbwheel setting</li> <li>6 Time ranges</li> <li>Single set point</li> </ul>
<b>DISPLAY</b>	3 + 3 digits		3 digits
<b>SET POINT</b>	Single set point		
<b>MODES</b>	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
<b>TIME RANGES</b>	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
<b>RESOLUTION</b>	0.01sec		
<b>TIME SETTING</b>	Front keypad		Thumbwheel
<b>RESET / START INPUT</b>	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	
<b>ACCURACY</b>	Setting : ± 0.1% of F.S. or ±50ms For Y contact operation : +100ms, Repeat : ± 0.1%		±0.5% of F.S. or 50ms
<b>OUTPUT CONTACT</b>	1 C/O SPDT		2 C/O SPDT
<b>CONTACT RATING</b>	8A @ 250V AC		5A @ 250V AC or 24V AC / DC
<b>SUPPLY VOLTAGE (AC : 50 / 60 Hz)</b>	20 to 240V AC / DC		90 to 270V AC / DC

<b>Modes</b>	<p><b>600DT</b></p> <p>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</p>
--------------	---



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



**XT546** 48(H) x 48(W) x 94(D)mm  
**XT246** 72(H) x 72(W) x 83.7(D)mm  
**XT346** 96(H) x 96(W) x 73(D)mm



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



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

<b>FEATURES</b>	<ul style="list-style-type: none"> <li>Short depth</li> <li>Multi function (4 Functions)</li> <li>9 Time ranges</li> <li>Single set point</li> </ul>	<ul style="list-style-type: none"> <li>Multi function (4 Functions)</li> <li>9 Time ranges</li> <li>Single set point</li> </ul>	<ul style="list-style-type: none"> <li>Multi function (7 Functions)</li> <li>Pulse start (Input through PNP / NPN sensor)</li> <li>Dual set point</li> <li>Individual time setting for relays</li> </ul>	<ul style="list-style-type: none"> <li>8 Channels</li> <li>4 Functions</li> <li>Parallel / Sequential operation</li> <li>Cascade output for channel expansion</li> </ul>
<b>DISPLAY</b>	3 + 3 digits		4 + 4 digits	2 + 4 digits
<b>SET POINT</b>	Single set point		Dual set point	Single set point
<b>MODES</b>	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)
<b>TIME RANGES</b>	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
<b>RESOLUTION</b>	0.01sec			
<b>DIRECTION</b>	Up / Down	Down	Up / Down	Up
<b>TIME SETTING</b>	Front keypad			
<b>NO. OF CHANNELS</b>	—			8 Channels
<b>RESET/START INPUT</b>	Start : Gate / Pulse start (Programmable) Reset : Front panel, Remote reset, On power interruption			
<b>ACCURACY</b>	±0.05% of F.S. or 50ms			±0.5% of F.S. or 50ms
<b>OUTPUT CONTACT</b>	2 C/O SPDT		2 C/O SPST	8 NOs with 1 Com
<b>CONTACT RATING</b>	5A @ 250V AC or 24V DC			
<b>MEMORY RETENTION</b>	10 years (User selectable)			
<b>SUPPLY VOLTAGE (AC : 50 / 60 Hz)</b>	85 to 270V AC		90 to 270V AC / DC	85 to 270V AC / DC

## Time Interval Meter / Hours Meters



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



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



**TT412B**  
36(H) x 72(W) x 74.5(D)mm



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



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

FEATURES	<ul style="list-style-type: none"> <li>Time Interval Meter</li> <li>Range : Auto ranging, Fixed ranges</li> </ul>	<ul style="list-style-type: none"> <li>LED Hour Meter</li> <li>Selectable least count</li> </ul>	<ul style="list-style-type: none"> <li>Time totaliser</li> <li>Selectable least count</li> <li>Terminal Reset</li> <li>Universal power supply</li> </ul>	<ul style="list-style-type: none"> <li>LCD Hour Meters</li> <li>Battery powered</li> <li>Contact / Voltage input</li> </ul>
DISPLAY	4 digits	6 digits	6 digit 7 segment LED Display	7½ 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) 99999.9 sec, b) 999999 sec c) 99999.9 min, d) 999999 min e) 99999.9 hrs, f) 999999 hrs	a) 1999.59.59hr:min:sec b) 199999.99hr
ACCURACY	±0.05% + 1 count		±0.05%	
INPUT	Potential free contact & 3 to 30V DC from solid state devices	Mains, Potential free contact, PNP sensor	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)	Terminal	Front, Remote      Remote
MEMORY	---	10 years		5 years
SUPPLY VOLTAGE (AC : 50 / 60 Hz)	90 to 270V AC / DC			Battery powered

### Ordering information

#### Digital Time Switches

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

#### Digital Timers

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

#### Time Interval Meter / Hour Meters

PRODUCT CODE	SUPPLY VOLTAGE		CERTIFICATION
TI103C	90 to 270V AC / DC		---
TT412	90 to 270V AC / DC		---
TT412B	90 to 270V AC / DC		---
PRODUCT CODE	INPUT TYPE		CERTIFICATION
	CONTACT	VOLTAGE	
LT920A-C	YES	---	---
LT920A-V	---	YES	---
LT945A-C	YES	---	---
LT945A-V	---	YES	---
LT920A-C-CE	YES	---	CE
LT920A-V-CE	---	YES	CE
LT945A-C-CE	YES	---	CE
LT945A-V-CE	---	YES	CE

#### Analog Timers

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





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



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



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

FEATURES	<ul style="list-style-type: none"> <li>• Thumbwheel setting</li> <li>• Auto reset</li> <li>• Battery backup</li> </ul>	<ul style="list-style-type: none"> <li>• Counter with rate indicators</li> <li>• Programmable input scaling</li> <li>• Up, Down, Quadrature &amp; Bi-directional modes</li> <li>• Dual set point</li> </ul>	<ul style="list-style-type: none"> <li>• Counter with rate indicator</li> <li>• Programmable input scaling</li> <li>• Unidirectional, Bi-directional &amp; Quadrature modes</li> <li>• Batch counter</li> </ul>
DISPLAY	4 digits	6 digits	6 + 4 digits
MODES	ON delay / Interval / Auto reset	ON delay / Interval / Auto reset / Time pulse repeat	
RANGES	9999 counts	Selectable least count : 0.0001, 0.001, 0.01, 0.1 & 1 Rate : 4.00 to 99999 RPM / RPH	-999 to 999999 counts
RESET	Front, Remote, Auto (Optional)	Front (user selectable), Remote	Front, Remote, Power interruption
MEMORY	Yes (Optional)	Yes	
DIRECTION	Up	Up, Down, Bi-directional, Quadrature	
SET POINT	Single set point	Dual set point	
INPUT SPEED	30Hz, 5kHz (Selectable via dip switch)	30Hz, 2.5kHz, 5kHz (Programmable)	30Hz, 5kHz (Programmable)
SCALE FACTOR	---	0.00001 to 9.99999 x 10 <sup>n</sup> , n = -5, -4, -3, -2, -1, 0, 1, 2	
OUTPUT CONTACT	2 C/O SPDT	2 C/O SPDT	
CONTACT RATING	5A @ 250V AC or 24V DC	5A @ 250V AC or 24V DC	
INPUT	NPN, PNP sensor, Potential free contacts	NPN / PNP sensor, Potential free contacts, Encoder	
SUPPLY VOLTAGE (AC : 50 / 60 Hz)	230V AC	90 to 270V AC / DC	

## LCD Counters



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



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



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



**XC410B**  
36(H) x 72(W) x 74.5(D)mm



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

FEATURES	<ul style="list-style-type: none"> <li>• Time / Count totaliser</li> <li>• Battery powered</li> <li>• Contact / Voltage input selectable</li> </ul>	<ul style="list-style-type: none"> <li>• LCD counter</li> <li>• Battery powered</li> <li>• Contact / Voltage input</li> </ul>	<ul style="list-style-type: none"> <li>• LED counter</li> <li>• Inbuilt sensor supply</li> <li>• Compact size</li> </ul>	<ul style="list-style-type: none"> <li>• Count Totaliser</li> <li>• Compact size</li> <li>• Inbuilt sensor supply</li> <li>• Universal power supply</li> </ul>	<ul style="list-style-type: none"> <li>• LED counter</li> <li>• Inbuilt sensor supply</li> <li>• Compact size</li> </ul>
DISPLAY	7 <sup>1/2</sup> digits		6 digits	6 digit 7 segment LED Display	6 digits
MODES	Timer / Counter	---	---	---	---
RANGES	Hour meter : a) 1999.59.99 hr:min:sec ; b) 199999.99hr Counter : 19999999 counts	19999999 counts	999999 counts	999999 counts	999999 counts
RESET	Front, Remote		Front, Remote	Front, Terminal	Front, Remote
MEMORY	5 years		Yes	Yes, 10 Years	Yes
DIRECTION	Up				
SET POINT	---				
INPUT SPEED	14Hz, 100Hz (Selectable via jumper)		20Hz & 1, 2.5kHz (Selectable via jumper)	1.20Hz & 2, 5kHz	3Hz, 30Hz, 1kHz (Selectable via jumper)
SENSOR SUPPLY	---		12VDC@30mA		---
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	90 to 270V AC / DC	



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

<b>FEATURES</b>	<ul style="list-style-type: none"> <li>Multi function - Timer / Counter (programmable)</li> <li>Batch counter</li> <li>Up / Down counting for counter</li> <li>Dual set point</li> </ul>
<b>DISPLAY</b>	4 + 4 digits
<b>MODES</b>	Timer : ON delay / Interval / Cyclic ON first / Cyclic OFF first / Batch. Counter : ON delay / Interval / Auto reset / Time pulse repeat / Batch
<b>RANGES</b>	Timer : 99.99/999.9/9999sec, 99:59min:sec, 999.9/9999min, 99:59hr:min, 999.9/9999hr, Counter : -999 to 9999 counts
<b>RESET</b>	Front, Remote, Power interruption
<b>MEMORY</b>	Yes
<b>DIRECTION</b>	Timer : Down, Counter : Up / Down
<b>SET POINT</b>	Dual set point
<b>INPUT SPEED</b>	3Hz, 30Hz, 5kHz (Programmable)
<b>SCALE FACTOR</b>	0.001 to 9.999 x 10 <sup>n</sup> n = -3, -2, -1, 0, 1, 2
<b>OUTPUT CONTACT</b>	2 C/O SPST
<b>CONTACT RATING</b>	5A @ 250V AC or 24V DC
<b>INPUT</b>	NPN, PNP sensor, Potential free contacts
<b>SUPPLY VOLTAGE (AC : 50 / 60 Hz)</b>	90 to 270V AC / DC

**Rate Indicator**

**Speed Monitoring Relay**



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



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

<b>FEATURES</b>	<ul style="list-style-type: none"> <li>Measures up to 9999 RPM</li> <li>Inbuilt sensor supply</li> <li>Under, Over, Dual speed modes</li> <li>Dual set point</li> <li>RPH, RPM, RPS ranges</li> <li>Scalable input, Auto ranging</li> </ul>
<b>DISPLAY</b>	4 digits
<b>RANGE</b>	4.00 to 9999 RPM
<b>INPUT SPEED</b>	4 to 9999 pulses per minute
<b>SCALE FACTOR</b>	---
<b>SENSOR SUPPLY</b>	Inbuilt, 12V DC, ±10%, 30mA
<b>COUNTING DIRECTION</b>	Up
<b>INPUT</b>	PNP sensors, Encoders, Potential free contact
<b>SUPPLY VOLTAGE (AC : 50 / 60Hz)</b>	90 to 270V AC / DC

**Ordering information**

**Digital Counters**

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

**Digital Timer-Counter**

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

**LCD / LED Counters**

PRODUCT CODE	INPUT TYPE		CERTIFICATION
	CONTACT	VOLTAGE	
LTC9A	YES	YES	---
LXC900A-C	YES	---	---
LXC900A-V	---	YES	---
LXC900A-C-CE	YES	---	CE
LXC900A-V-CE	---	YES	CE
PRODUCT CODE	SUPPLY VOLTAGE		CERTIFICATION
XC410A-1-230	230V AC		---
XC410B	90 to 270V AC / DC		---
XC10D	90 to 270V AC / DC		---

**Rate Indicators**

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



**RSS-TD1A125ZP**  
45(W) x 58(H) x 27.3(H)mm



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



**RSS-TD1A225ZP**  
45(W) x 58(H) x 27.3(H)mm



**RSS-TD1A240ZP**  
45(W) x 58(H) x 27.3(H)mm

<b>FEATURES</b>	<ul style="list-style-type: none"> <li>Load output voltage : 24 to 330V AC</li> <li>Control input voltage : 4 to 32V DC</li> <li>Max load current : 25A</li> </ul>	<ul style="list-style-type: none"> <li>Load output voltage : 24 to 330V AC</li> <li>Control input voltage : 4 to 32V DC</li> <li>Max load current : 40A</li> </ul>	<ul style="list-style-type: none"> <li>Load output voltage : 48 to 480V AC</li> <li>Control input voltage : 4 to 32V DC</li> <li>Max load current : 25A</li> </ul>	<ul style="list-style-type: none"> <li>Load output voltage : 48 to 480V AC</li> <li>Control input voltage : 4 to 32V DC</li> <li>Max load current : 40A</li> </ul>
<b>CONTROL INPUT VOLTAGE</b>	4 to 32V DC			
<b>LOAD OUTPUT VOLTAGE</b>	24 to 330V AC		48 to 480V AC	
<b>MAX LOAD CURRENT</b>	25A	40A	25A	40A
<b>CONTACT CONFIGURATION</b>	1 NO			
<b>OUTPUT DEVICE</b>	Triac			



**RSS-TA1A125ZP**  
45(W) x 58(H) x 27.3(H)mm



**RSS-TA1A140ZP**  
45(W) x 58(H) x 27.3(H)mm



**RSS-TA1A225ZP**  
45(W) x 58(H) x 27.3(H)mm



**RSS-TA1A240ZP**  
45(W) x 58(H) x 27.3(H)mm

<b>FEATURES</b>	<ul style="list-style-type: none"> <li>Load output voltage : 24 to 330V AC</li> <li>Control input voltage : 90 to 280V AC</li> <li>Max load current : 25A</li> </ul>	<ul style="list-style-type: none"> <li>Load output voltage : 24 to 330V AC</li> <li>Control input voltage : 90 to 280V AC</li> <li>Max load current : 40A</li> </ul>	<ul style="list-style-type: none"> <li>Load output voltage : 48 to 480V AC</li> <li>Control input voltage : 90 to 280V AC</li> <li>Max load current : 25A</li> </ul>	<ul style="list-style-type: none"> <li>Load output voltage : 48 to 480V AC</li> <li>Control input voltage : 90 to 280V AC</li> <li>Max load current : 40A</li> </ul>
<b>CONTROL INPUT VOLTAGE</b>	90 to 280V AC			
<b>LOAD OUTPUT VOLTAGE</b>	24 to 330V AC		48 to 480V AC	
<b>MAX LOAD CURRENT</b>	25A	40A	25A	40A
<b>CONTACT CONFIGURATION</b>	1 NO			
<b>OUTPUT DEVICE</b>	Triac			

## Ordering information

### Solid State Relay

PRODUCT CODE	CURRENT RATINGS	CONTROL INPUT VOLTAGE	LOAD OUTPUT VOLTAGE	CERTIFICATION
RSS-TD1A125ZP	25	4 to 32V DC	24 to 330V AC	---
RSS-TD1A140ZP	40	4 to 32V DC	24 to 330V AC	---
RSS-TD1A225ZP	25	4 to 32V DC	48 to 480V AC	---
RSS-TD1A240ZP	40	4 to 32V DC	48 to 480V AC	---
RSS-TA1A125ZP	25	90 to 280V AC	24 to 330V AC	---
RSS-TA1A140ZP	40	90 to 280V AC	24 to 330V AC	---
RSS-TA1A225ZP	25	90 to 280V AC	48 to 480V AC	---
RSS-TA1A240ZP	40	90 to 280V AC	48 to 480V AC	---

## Temperature Controllers



**TC544C**  
48(H) x 48(W)  
x 76(D)mm

**TC244CX**  
72(H) x 72(W)  
x 83.7(D)mm

**TC344CX**  
96(H) x 96(W)  
x 73(D)mm



**TC513CX**  
48(H) x 48(W)  
x 76(D)mm

**TC203CX**  
72(H) x 72(W)  
x 83.7(D)mm

**TC303CX**  
96(H) x 96(W)  
x 73(D)mm



**TC538CX**  
96(H) x 96(W)  
x 76(D)mm

<b>FEATURES</b>	<ul style="list-style-type: none"> <li>• Dual bright display, Dual set point</li> <li>• TC / RTD input</li> <li>• Control output : Relay or SSR</li> <li>• Auxiliary output : Relay</li> <li>• Dwell timer, Heat cool PID</li> <li>• IDM applicable</li> </ul>	<ul style="list-style-type: none"> <li>• Single White display, Single set point</li> <li>• Control output : Relay or SSR</li> <li>• High power Relay</li> <li>• TC / RTD input</li> <li>• IDM applicable</li> </ul>	<ul style="list-style-type: none"> <li>• Dual display, Single set point</li> <li>• Short depth TC</li> <li>• TC / RTD input</li> <li>• Control output : Relay or SSR</li> </ul>
<b>DISPLAY</b>	4 + 4 digits, 7 segment LED dual (White+Green) display	3 digits, 7 segment LED single White display	4 + 4 digits, 7 segment LED dual display
<b>INPUT TYPE</b>	Thermocouple (J, K, T, R, S) / RTD (PT100)		
<b>RESOLUTION</b>	0.1/ 1° for TC / RTD (fixed 1° for R & S TC)	Fixed 1° resolution	
<b>ACCURACY</b>	For TC inputs : 0.25% of F.S. ±1° ; For R & S inputs : 0.5% of F.S. ±1° (20 min of warm up time); For RTD input : 0.1% of F.S. ±1°		
<b>SETPOINT</b>	Dual set point	Single Set point	
<b>CONTROL MODE</b>	Auto/Self tune PID or ON - OFF		
<b>CONTROL OUTPUT</b>	Relay : SPDT 5A (SPST for TC544C) resistive @ 250V AC / 30V DC or SSR (Field Selectable) : 12V DC, 50mA	Relay : SPDT 10A resistive @ 250V AC / 30V DC or SSR : 12V DC, 50mA	
<b>AUXILIARY OUTPUT</b>	Relay : SPDT 5A (SPST for TC544C) resistive @ 250V AC / 30V DC	---	
<b>SPECIAL FUNCTIONS</b>	Heat cool PID, Dwell timer, IDM applicable	IDM applicable	---
<b>SUPPLY VOLTAGE (AC : 50 / 60 Hz)</b>	90 to 270V AC / DC		



**TC544B**  
48(H) x 48(W) x 76(D)mm



**TC513BX**  
48(H) x 48(W) x 76(D)mm



**TC533BX**  
48(H) x 48(W) x 76(D)mm



**TC538BX**  
48(H) x 48(W) x 76(D)mm



**TC544-CT**  
48(H) x 48(W) x 76(D)mm

<b>FEATURES</b>	<ul style="list-style-type: none"> <li>• TC / RTD input</li> <li>• ON-OFF / PID control (Auto tune / self tune)</li> <li>• Dual set point</li> <li>• Selectable control output : Relay / SSR</li> <li>• Auxiliary output : Relay</li> </ul>	<ul style="list-style-type: none"> <li>• Single display, Single set point</li> <li>• Short depth TC</li> <li>• TC / RTD input</li> <li>• Control output : Relay or SSR</li> </ul>	<ul style="list-style-type: none"> <li>• Dual display, Single set point</li> <li>• Short depth TC</li> <li>• TC / RTD input</li> <li>• Control output : Relay or SSR</li> </ul>	<ul style="list-style-type: none"> <li>• Dual display, Single set point</li> <li>• Short depth TC</li> <li>• TC / RTD input</li> <li>• Control output : Relay or SSR</li> </ul>	<ul style="list-style-type: none"> <li>• Dual display, Dual set point</li> <li>• TC / RTD &amp; CT input</li> <li>• Control output : Relay or SSR</li> <li>• Auxiliary output : Relay</li> <li>• 0-100A AC input CT range</li> </ul>
<b>DISPLAY</b>	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	
<b>INPUT TYPE</b>	Thermocouple (J, K, T, R, S) / RTD (PT100)			Thermocouple (J, K, T, R, S) / RTD (PT100)/ CT	
<b>RESOLUTION</b>	0.1/ 1° for TC/ RTD inputs (fixed 1° for R & S type TC input)	Fixed 1° resolution			0.1/ 1° for TC / RTD (fixed 1° for R & S TC)
<b>ACCURACY</b>	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°				
<b>SETPOINT</b>	Dual set point	Single set point			Dual set point
<b>CONTROL MODE</b>	Auto tune / Self tune PID or ON-OFF				Autotune PID or ON - OFF or Heat-Cool
<b>CONTROL OUTPUT</b>	Relay : SPST : 5A resistive @ 250V AC / 30V DC or SSR : 12V DC, 30mA	Relay : SPDT : 10A resistive @ 250V AC / 30V DC or SSR : 12V DC, 50mA			Relay : SPDT 5A resistive @ 250V AC / 30V DC or SSR (Field Selectable) : 12V DC, 50mA
<b>AUXILIARY OUTPUT</b>	Relay : 5A resistive @ 230V AC / 30V DC	---			Relay : SPDT 5A resistive @ 250V AC / 30V DC
<b>SPECIAL FUNCTIONS</b>	Heat cool PID, Dwell timer	---			Single phase, full wave monitoring of load currents controlled by auxiliary output LA/HA/BAND Alarm
<b>SUPPLY VOLTAGE (AC : 50 / 60 Hz)</b>	90 to 270V AC / DC				

## Temperature Controllers



**TC544A**  
48(H) x 48(W)  
x 94(D)mm

**TC244AX**  
72(H) x 72(W)  
x 83.7(D)mm

**TC344AX**  
96(H) x 96(W)  
x 73(D)mm



**TC513AX**  
48(H) x 48(W)  
x 94(D)mm

**TC203AX**  
72(H) x 72(W)  
x 83.7(D)mm

**TC303AX**  
96(H) x 96(W)  
x 73(D)mm



**TC533AX**  
48(H) x 48(W)  
x 94(D)mm

**TC233AX**  
72(H) x 72(W)  
x 83.7(D)mm

**TC333AX**  
96(H) x 96(W)  
x 73(D)mm

<b>FEATURES</b>	<ul style="list-style-type: none"> <li>• Dual display, Dual set point</li> <li>• TC / RTD input</li> <li>• Control output : Relay or SSR</li> <li>• Auxiliary output : Relay</li> <li>• Dwell timer, Heat cool PID</li> </ul>	<ul style="list-style-type: none"> <li>• Single display, Single set point</li> <li>• TC / RTD input</li> <li>• Control output : Relay or SSR</li> </ul>	<ul style="list-style-type: none"> <li>• Dual display, Single set point</li> <li>• TC / RTD input</li> <li>• Control output : Relay or SSR</li> </ul>
<b>DISPLAY</b>	4 + 4 digits, 7 segment LED dual display	3 digits, 7 segment LED single display	3 + 3 digits, 7 segment LED dual display
<b>INPUT TYPE</b>	Thermocouple (J, K, T, R, S) / RTD (PT100)		
<b>RESOLUTION</b>	0.1/1° for TC / RTD (fixed 1° for R & S TC)	Fixed 1° resolution	
<b>ACCURACY</b>	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°		
<b>SETPOINT</b>	Dual set point	Single set point	
<b>CONTROL MODE</b>	Autotune PID or ON - OFF		
<b>CONTROL OUTPUT</b>	Relay : SPDT (SPST for TC544A) : 5A resistive @ 250V AC / 30V DC or SSR (Field Selectable) : 12V DC, 50mA	Relay : SPDT (SPST for TC303A) : 10A resistive @ 250V AC / 30V DC or SSR : 12V DC, 50mA (except TC303A)	
<b>AUXILIARY OUTPUT</b>	Relay : SPDT (SPST for TC544A) : 5A resistive @ 250V AC / 30V DC	---	
<b>SPECIAL FUNCTIONS</b>	Heat cool PID, Dwell timer	---	
<b>SUPPLY VOLTAGE (AC : 50 / 60 Hz)</b>	90 to 270V AC / DC, 24V DC (Optional for TC544 Only)	90 to 270V AC / DC & 24VDC (Optional for TC513AX only)	



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



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



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



**DTC204-2**  
72(H) x 72(W) x 83.7(D)mm



**DTC324-2**  
96(H) x 96(W) x 73(D)mm

<b>FEATURES</b>	<ul style="list-style-type: none"> <li>• 3 Digit single display</li> <li>• J, K TC input</li> <li>• ON-OFF / PID control</li> </ul>	<ul style="list-style-type: none"> <li>• 3 Digit single display</li> <li>• J, K TC input</li> <li>• ON-OFF mode</li> </ul>	<ul style="list-style-type: none"> <li>• Single display, Dual set point</li> <li>• TC / RTD input</li> <li>• Control output : Relay or SSR</li> <li>• Auxiliary output : Relay</li> </ul>
<b>DISPLAY</b>	3 digits, 7 segment LED single display		4 digits, 7 segment LED single display
<b>INPUT TYPE</b>	Thermocouple (J, K)		Thermocouple (J, K, T, R, S) / RTD (PT100)
<b>RESOLUTION</b>	Fixed 1° resolution		0.1 / 1° for TC / RTD inputs (Fixed 1° for R & S type TC input)
<b>ACCURACY</b>	For J, K inputs : 0.25% of F.S. ±1°C	0.25% of F.S. ±1° (20 min warm up time)	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°
<b>SETPOINT</b>	Single set point		Dual set point
<b>CONTROL MODE</b>	ON-OFF / PID	ON-OFF	Autotune PID or ON - OFF
<b>CONTROL OUTPUT</b>	Relay : SPDT : 10A resistive @ 250V AC / 30V DC	Relay : SPST : 10A resistive @ 250V AC / 30V DC	Relay : SPDT : 10A resistive @ 250V AC / 30V DC or SSR : 12V DC, 30mA
<b>AUXILIARY OUTPUT</b>	---		Relay : SPDT : 5A resistive @ 250V AC / 30V DC
<b>SUPPLY VOLTAGE (AC : 50 / 60 Hz)</b>	90 to 270V AC / DC		

## Temperature Controllers



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



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



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



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



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

<b>FEATURES</b>	<ul style="list-style-type: none"> <li>TC / RTD input</li> <li>Single step ramp soak</li> <li>Max 3 outputs</li> <li>Retransmission (Optional)</li> </ul>	<ul style="list-style-type: none"> <li>Advanced PID control</li> <li>Universal input</li> <li>Single step ramp soak</li> <li>Max 3 outputs</li> <li>Retransmission (Optional)</li> <li>RS485 MODBUS RTU protocol (Optional)</li> </ul>	<ul style="list-style-type: none"> <li>Dual display, Dual set point</li> <li>TC / RTD input</li> <li>Control output : Relay</li> <li>Auxiliary output : Relay</li> </ul>
<b>DISPLAY</b>	4 + 4 digits, 7 segment LED dual display		
<b>INPUT TYPE</b>	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)
<b>RESOLUTION</b>	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)
<b>ACCURACY</b>	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°
<b>SET POINT</b>	Maximum 3		Dual set point
<b>CONTROL MODE</b>	Autotune PID or ON - OFF		
<b>CONTROL OUTPUT</b>	Relay : SPST : 5A @ 250V AC / 30V DC or SSR : 12V DC, 20mA or Current : 4 to 20 mA DC (Max load 500E) or Voltage : 0 to 10V DC (Min load 10K) (Depends on product code selection)		Relay : SPST : 5A resistive @ 250V AC / 30V DC
<b>AUXILIARY OUTPUT</b>	(Maximum 2) Relay or SSR (Mode : Set point or alarm mode) Relay : SPST : 5A @ 250V AC / 30V DC; SSR : 12V DC, 20mA		Relay : SPST : 5A resistive @ 250V AC / 30V DC
<b>OPTIONAL FEATURES</b>	---	Extra alarm output, Retransmission analog output, RS485 MODBUS RTU protocol	---
<b>SUPPLY VOLTAGE</b> (AC : 50 / 60 Hz)	90 to 270V AC / DC		

## Universal PID



**PID500-U**  
48(H) x 48(W) x 100(D)mm

<b>FEATURES</b>	<ul style="list-style-type: none"> <li>White + Green Dual Display</li> <li>Capacitive Touch Keypad</li> <li>Compact Size with Short Depth</li> <li>Universal input, Universal output</li> <li>Adaptive Tune PID control</li> <li>Profile controller up to 128 steps</li> <li>RS485 MODBUS RTU protocol (Optional)</li> <li>IDM applicable</li> </ul>
<b>DISPLAY</b>	4 + 4 digits, 7 segment LED dual display
<b>INPUT TYPE</b>	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 5/10 V DC, 0/4 to 20 mA DC
<b>RESOLUTION</b>	TC / RTD : 1 / 0.1° Analog input : 1 / 0.1 / 0.01 / 0.001
<b>ACCURACY</b>	For TC input : 0.25% of F.S. ±10; For R & S inputs : 0.5% of F.S. ±20 (20 min of warm up time); For RTD input : 0.1% of F.S. ±10; Signal input : ±0.5%, ± 1 digit
<b>SET POINT</b>	3 Set Point
<b>CONTROL MODE</b>	Autotune PID or ON - OFF
<b>CONTROL OUTPUT</b>	Relay : SPST : 5A @ 250V AC / 30V DC SSR : 12V DC, 20mA Current : 4 to 20 mA DC (Max load 500E) Voltage : 0 to 10V DC (Min load 10K)
<b>AUXILIARY OUTPUT</b>	2 X Relay : SPST : 5A @ 250V AC / 30V DC
<b>OPTIONAL FEATURES</b>	Extra alarm output, Retransmission analog output, RS485 MODBUS RTU protocol, IDM applicable
<b>SUPPLY VOLTAGE</b> (AC : 50 / 60 Hz)	90 to 270V AC / DC

## Independent Downloader Module



- Easy programming
- Compact size
- LED indication

<b>RATED SUPPLY VOLTAGE</b>	1.8V DC to 5.5V DC
<b>UPLOADING TIME</b>	1 Sec
<b>DOWNLOADING TIME</b>	1 Sec

## Profile Controller

## Analog Temperature Controller



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



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

<b>FEATURES</b>	<ul style="list-style-type: none"> <li>Ramp soak control</li> <li>10 programs, 16 steps each</li> <li>Alarm at each stage</li> <li>Memory retention</li> </ul>	<ul style="list-style-type: none"> <li>Dial setting</li> <li>TC input</li> <li>Single relay output</li> <li>Easy to use</li> </ul>
<b>DISPLAY</b>	4 + 4 digits, 7 segment LED dual display	Dial setting
<b>INPUT TYPE</b>	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)
<b>RESOLUTION</b>	TC / RTD : 1 / 0.1 <sup>o</sup> ; Analog input : 1 / 0.1 / 0.01 / 0.001	Fixed 1 <sup>o</sup> resolution
<b>ACCURACY</b>	For TC input : 0.25% of F.S. ±1 <sup>o</sup> ; For R & S inputs : 0.5% of F.S. ±2 <sup>o</sup> (20 min of warm up time); For RTD input : 0.1% of F.S. ±1 <sup>o</sup> ; Signal input : ±0.5%, ± 1 digit (Except PID500-T)	Setting : ± 3% of F.S., ±0.5% of F.S.
<b>SETPOINT</b>	Maximum 3	Single set point
<b>CONTROL MODE</b>	Autotune PID or ON - OFF	Time proportional & ON-OFF
<b>CONTROL OUTPUT</b>	Relay : SPST : 5A @ 250V AC / 30V DC or Current : 4 to 20 mA DC (Max load 500E)	SPST : 7A resistive @ 230V AC
<b>AUXILIARY OUTPUT</b>	(Mode : Set point or alarm mode) Relay : SPST : 5A @ 250V AC / 30V DC	---
<b>OPTIONAL FEATURES</b>	No. of profiles : 10 (16 steps each), Ramp / soak Time range : 0.01 to 99.99 Hrs, Other profile parameters : Link profiles, Programmable repeat cycle, Reset option, Power down resume, Deviation hold, Alarm at each step with settable alarm duration, Retransmission analog output, RS485 MODBUS RTU protocol	---
<b>SUPPLY VOLTAGE</b> (AC: 50 / 60 Hz)	90 to 270V AC / DC	230V AC

## Cooling Controllers



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



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

<b>FEATURES</b>	<ul style="list-style-type: none"> <li>2½ Digits single display</li> <li>NTC input type</li> <li>Restart time delay</li> <li>Auto / Manual defrost selection</li> <li>Door open mode</li> <li>Cyclic timer (Optional)</li> </ul>	<ul style="list-style-type: none"> <li>3 Digits single display</li> <li>Capacitive touch keypad</li> <li>Defrost management</li> <li>IDM applicable</li> <li>Compact size</li> </ul>
<b>DISPLAY</b>	2½ digits, 7 segment display	3 digits, 7 segment display
<b>INPUT TYPE</b>	NTC type sensor	
<b>RESOLUTION</b>	1 / 0.1 <sup>o</sup>	
<b>ACCURACY</b>	±1% of F.S.	
<b>SETPOINT</b>	Single set point	
<b>CONTROL MODE</b>	ON - OFF	
<b>CONTROL OUTPUT</b>	SPDT: 10A @ 250V AC / 30V DC or SPST/ LUG Type : 20A @ 250V AC / 30V DC (Depends on product code selection)	SPDT : 10A @ 250V AC
<b>AUXILIARY OUTPUT</b>	SSR: 12V DC, 10mA or Relay: SPST: 5A @ 230V AC / 30V DC (Depends on product code selection)	---
<b>HYSTERESIS</b>	0.1 to 9.9 <sup>o</sup>	
<b>DISPLAY OFFSET</b>	-19.9 <sup>o</sup> to 19.9 <sup>o</sup>	-19.9 <sup>o</sup> to 20.0 <sup>o</sup>
<b>RESTART TIME DELAY</b>	Adjustable from 0 to 19.9 min	Adjustable from 0 to 99 min
<b>RELAY ACTION</b>	Heat & Cool mode	
<b>DEFROST TIME</b>	Programmable from 0 to 99 min	
<b>DEFROST FREQUENCY</b>	Programmable from 0 to 99 (hr / min / sec)	
<b>SUPPLY VOLTAGE</b> (AC : 50 / 60 Hz)	230V AC	



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



**PIC101N**  
48(H) x 96(W) x 76(D)mm



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



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

FEATURES	<ul style="list-style-type: none"> <li>• User programmable universal input</li> <li>• Retransmission output</li> <li>• LED status indicator : Alarm ON</li> <li>• 2 Alarm indication</li> <li>• Inbuilt 24V DC sensor supply</li> </ul>	<ul style="list-style-type: none"> <li>• 4 digits, Single display</li> <li>• User programmable universal input</li> <li>• Scalable voltage / current input</li> </ul>	<ul style="list-style-type: none"> <li>• Simple temperature indicator</li> <li>• TC / RTD input type</li> </ul>	<ul style="list-style-type: none"> <li>• 4 Digits single display</li> <li>• User programmable voltage &amp; current input</li> </ul>
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 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 @ 250V AC / 24V DC  Alarm modes : High, Low, Band, Fail output & fault diagnosis. Hysteresis, Annunciator : Programmable, Reset action : Automatic or latched	---		
SPECIAL FEATURES	Retransmission output : 0 / 4 to 20mA DC, 0 to 5V DC, 0 to 5 / 10V DC, (Software selectable) RS485 MODBUS RTU protocol (Optional)	---		
SENSOR SUPPLY	24V DC, 30mA (Output to power the sensor)	---		
SUPPLY VOLTAGE (AC : 50 / 60 Hz)	90 to 270V AC / DC, 24V DC (Optional)	230V AC, ±20%		

**Ordering information**  
Temperature Controllers

PRODUCT CODE	OUTPUT 1		OUTPUT 2	SUPPLY VOLTAGE	CERTIFICATION
	RELAY	SSR			
TC544C	RELAY (5A)	SSR (12V DC)	RELAY (5A)	90 to 270V AC / DC	CE
TC244CX	RELAY (5A)	SSR (12V DC)	RELAY (5A)	90 to 270V AC / DC	---
TC344CX	RELAY (5A)	SSR (12V DC)	RELAY (5A)	90 to 270V AC / DC	---
TC513CX	RELAY (10A)	SSR (12V DC)	---	90 to 270V AC / DC	---
TC203CX	RELAY (5A)	SSR (12V DC)	RELAY (5A)	90 to 270V AC / DC	---
TC303CX	RELAY (5A)	SSR (12V DC)	RELAY (5A)	90 to 270V AC / DC	---
TC538CX	RELAY (10A)	SSR (12V DC)	---	90 to 270V AC / DC	---
TC544B	RELAY (5A)	SSR (12V DC)	RELAY (5A)	90 to 270V AC / DC	---
TC544B-CE	RELAY (5A)	SSR (12V DC)	RELAY (5A)	90 to 270V AC / DC	CE
TC513BX	RELAY (10A)	SSR (12V DC)	---	90 to 270V AC / DC	---
TC513BX-CE	RELAY (10A)	SSR (12V DC)	---	90 to 270V AC / DC	CE
TC533BX	RELAY (10A)	SSR (12V DC)	---	90 to 270V AC / DC	---
TC533BX-CE	RELAY (10A)	SSR (12V DC)	---	90 to 270V AC / DC	CE
TC538BX	RELAY (10A)	SSR (12V DC)	---	90 to 270V AC / DC	---
TC544-CT	RELAY (10A)	---	RELAY (5A)	90 to 270V AC / DC	---
TC544A	RELAY (10A)	SSR (12V DC)	RELAY (5A)	90 to 270V AC / DC	---
TC544A-24V	RELAY (10A)	SSR (12V DC)	RELAY (5A)	24V DC	CE
TC544A-CU	RELAY (5A)	SSR (12V DC)	RELAY (5A)	90 to 270V AC / DC	CE, RoHS
TC244AX	RELAY (5A)	SSR (12V DC)	RELAY (5A)	90 to 270V AC / DC	---
TC344AX	RELAY (5A)	SSR (12V DC)	RELAY (5A)	90 to 270V AC / DC	---
TC513AX	RELAY (10A)	SSR (12V DC)	---	90 to 270V AC / DC	---
TC513AX-CU	RELAY (10A)	SSR (12V DC)	---	90 to 270V AC / DC	CE, RoHS
TC513AX-24V	RELAY (10A)	SSR (12V DC)	---	24V DC	CE
TC533AX	RELAY (10A)	SSR (12V DC)	---	90 to 270V AC / DC	---
TC233AX	RELAY (10A)	SSR (12V DC)	---	90 to 270V AC / DC	---
TC333AX	RELAY (10A)	SSR (12V DC)	---	90 to 270V AC / DC	---
TC203AX	RELAY (10A)	SSR (12V DC)	---	90 to 270V AC / DC	---
TC303AX	RELAY (10A)	SSR (12V DC)	---	90 to 270V AC / DC	---
TC303A	RELAY (10A)	---	---	90 to 270V AC / DC	---
IDM	---	---	---	---	---



## Ordering information

### Temperature Controllers

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

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

### Cooling Controllers

PRODUCT CODE	OUTPUT		SUPPLY VOLTAGE	CERTIFICATION
	CONTROL OUTPUT	ALARM OUTPUT		
CH403B-1-NTC	RELAY (10A)	---	90 to 270V AC / DC	---
CH403B-2-NTC	RELAY (20A LUG Type)	---	90 to 270V AC / DC	---
CH403B-3-NTC	RELAY (20A)	RELAY (5A)	90 to 270V AC / DC	---
CH403C-1-NTC	RELAY (10A)	---	90 to 270V AC / DC	CE

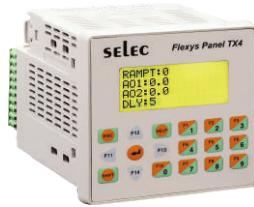
### Process Indicators

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

## PLC - Flexible IO Solution



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



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



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



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

FEATURES	<ul style="list-style-type: none"> <li>• 3.5" LCD with touch screen</li> <li>• Flexible I/O card selection</li> <li>• Real time clock</li> <li>• Expandable</li> </ul>	<ul style="list-style-type: none"> <li>• PLC with built in HMI</li> <li>• Flexible I/O card selection</li> <li>• Real time clock</li> <li>• Expandable</li> </ul>	<ul style="list-style-type: none"> <li>• PLC with flexible I/O card selection</li> <li>• Real time clock</li> <li>• Expandable</li> </ul>	<ul style="list-style-type: none"> <li>• Any flexys card can be configured</li> <li>• Selectable baudrate and slave ID</li> </ul>
DISPLAY	TFT 3.5" diagonal touch screen, Resolution 320x240	LCD with backlight, 4x16 character display, Font size 5x7mm	7 segment display for slot number & card status. Multipurpose LED bank	LED indication for power ON & communication status
NO. OF KEYS	5 function keys +1 system key	18 keys (14 user configurable)	One key to scroll through different slots	---
I/Os	3 I/O slots (Please refer I/O card for flexys series)	4 I/O slots (Please refer I/O card for flexys series)		---
DIGITAL INPUTS	4 / 10 /14 per card, PNP (6 - 30V DC)			
MAXIMUM COUNTING FREQUENCY	FC0 (I0 & I1) & FC1 (I2 & I3) - 5KHz (on power supply card only), Normal digital inputs - 30Hz			---
ANALOG INPUTS	3 / 4 / 6 Channels per card (TC, RTD, 0-10V, 0 - 20mA, NTC)			
RESOLUTION	12 Bits			
RELAY OUTPUTS	4 / 8 per card, NO type 5A @ 230V AC / 30V DC (Resistive)			
TRANSISTOR OUTPUTS	8 per card, Source type 100mA @ 24V DC			
ANALOG OUTPUTS	2 / 4 Channels per card (0 - 10V, 0 - 20mA)			
RESOLUTION	14 Bits (0.0 to 100.0% = 0 to 10.000V, 0.0 to 100.0% = 0 to 20.000mA)			
PROGRAM MEMORY	221KB	351KB		---
EXPANSION	Yes			
COMMUNICATION INTERFACE	RS485 MODBUS RTU protocol	RS485 MODBUS RTU, Proprietary protocol		RS485 MODBUS RTU, Proprietary protocol (Selec master PLC)      RS485 MODBUS RTU (Third party master PLC)
RTC	Yes			---
BAUDRATE	---			19200 / 115200 bps (Selectable)
RESPONSE TIME	---			100msec to 2sec + IO card Response
SUPPLY VOLTAGE (AC : 50 / 60 Hz)	18 - 30V DC, 100 - 240V AC			18 - 30V DC

## Compact Series - UNIX & TWIX



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



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



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

FEATURES	<ul style="list-style-type: none"> <li>• Compact PLC with built in HMI</li> <li>• RS485 MODBUS RTU protocol</li> </ul>	<ul style="list-style-type: none"> <li>• Compact PLC with built in HMI</li> <li>• Configurable LED display</li> <li>• RS485 MODBUS RTU protocol</li> </ul>			<ul style="list-style-type: none"> <li>• Compact PLC with built in HMI</li> <li>• RS485 MODBUS RTU protocol</li> </ul>
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)			
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**  
94(H) x 70(W) x 67(D)mm



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



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



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

FEATURES	<ul style="list-style-type: none"> <li>Compact PLC with built in HMI</li> <li>2 Line 8 character LCD</li> <li>Real time clock**</li> <li>RS485 MODBUS RTU protocol</li> </ul>		<ul style="list-style-type: none"> <li>LED indications for input &amp; output</li> <li>RS485 MODBUS RTU protocol</li> </ul>		<ul style="list-style-type: none"> <li>Compact PLC with built in HMI</li> <li>2 Line 8 character LCD</li> <li>Real time clock**</li> <li>RS485 MODBUS RTU protocol</li> </ul>	
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*	
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	
TYPE & RATING	5A NO type @230V AC / 30V DC (Resistive)					
ANALOG OUTPUTS	---	Through expansion	Through expansion			
RESOLUTION	---	As per expansion modules	---	As per expansion modules		
RTC	NO	YES	NO	NO		YES
EXPANSION	NO	YES	NO	YES		YES
PROGRAM MEMORY	112KB			240KB		
COMMUNICATION INTERFACE	RS485 Modbus RTU Protocol					
SUPPLY VOLTAGE (AC : 50 / 60 Hz)	18 - 30V DC**, 100 - 270V AC/DC	100 - 270V AC	18 - 30V DC			

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

## PLC - Fixed IO Configuration



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

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



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

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

FEATURES	<ul style="list-style-type: none"> <li>Low cost</li> <li>Panel / DIN rail mounting</li> <li>Fast inputs / outputs</li> <li>Windows based user friendly software for ladder programming and HMI configuration</li> </ul>		<ul style="list-style-type: none"> <li>Compact PLC with built-in HMI</li> <li>Panel / DIN rail mounting</li> <li>Windows based user friendly software for ladder programming and HMI configuration</li> </ul>	
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	



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



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



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



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

## FEATURES

- 10 Password levels
- Serial printing
- Data logging
- Built in buzzer
- Recipe management

- 4.3", 7" & 10" Touch screen
- Ethernet / Serial communication
- User management
- Recipe management

- Data logging functionality
- Update program by USB flash
- In-Built third party PLC protocols
- In-Built symbol library
- In-Built buzzer for alarm condition

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

# Annunciator



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

## FEATURES

- 8 Programmable windows
- 6 Colour selection
- RS485 MODBUS RTU protocol

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



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



**RPS60**  
109.8(H) X 43(W) x 102.7(D)mm



**RPS120**  
109.8(H) X 43(W) x 102.7(D)mm



**RPS240**  
136(H) X 50(W) x 135(D)mm



**RPS480**  
154(H) X 60(W) x 158(D)mm

FEATURES	<ul style="list-style-type: none"> <li>• IEC 61010-1 safety standards</li> <li>• Protection: Overload / Over voltage</li> <li>• Power OK indication</li> <li>• Cooling by free air convection</li> </ul>	<ul style="list-style-type: none"> <li>• Designed to meet UL 62368-1</li> <li>• IEC 61010-1 safety standard</li> <li>• Protection : Overload, Over voltage, Output Short Circuit, Over Temperature</li> <li>• Power OK Indication</li> <li>• Cooling by free air convection</li> </ul>	<ul style="list-style-type: none"> <li>• Designed to meet UL 62368-1</li> <li>• Active PFC</li> <li>• Protection : Overload, Over voltage, Output Short Circuit, Over Temperature</li> <li>• Power OK indication</li> <li>• DC OK relay contact</li> <li>• Cooling by free air convection</li> </ul>		
DISPLAY	LED indication for DC OK	LED indication for DC OK			
VOLTAGE RANGE	100 - 270 V AC, 100 - 300 V DC	100 - 240 V AC ±10%, 127 - 370 V DC			
FREQUENCY RANGE	50 / 60 Hz	50 / 60 Hz			
AC CURRENT	100V - 0.6A, 270V - 0.3A	115V - 1.2A, 230V - 0.8A	115V - 2.2A, 230V - 1.5A	115V - 2.4A, 230V - 1.2A	115V - 4.8A, 230V - 2.4A
EFFICIENCY	75% to 85%	>87% @ 230V AC	>89% @ 230V AC	93% @ 230V AC	93.5% @ 230V AC
INRUSH CURRENT	30A	<48A @ 264V AC		<60A @ 264V AC	<60A @ 264V AC
AVAILABLE RANGE DC VOLTAGE/CURRENT	24V / 1.1A	05V / 10A, 12V / 5A, 15V / 4A, 24V / 2.5A, 48V / 1.25A	12V / 8A, 15V / 8A, 24V / 5A, 48V / 2.5A	12V / 18A, 24V / 10A, 48V / 5A	24V / 20A, 48V / 10A
RATED POWER	26.4W	60W	120W	240W	480W
RIPPLE & NOISE MAX (mVp.p)	200mV	<1% of Vout			
WEIGHT	140 g	285 g	350 g	645 g	1050 g



**OPS2x3-40**  
90(H) X 35(W) x 60(D)mm



**OPS2x4-60**  
109.8(H) X 43(W) x 102.7(D)mm



**OPS2x4-150**  
109.8(H) X 43(W) x 102.7(D)mm

FEATURES	<ul style="list-style-type: none"> <li>• 3 x 2 x 1.16 Inches Form factor</li> <li>• 40 Watts convection</li> <li>• No Load power &lt;0.5W</li> <li>• -40°C to +70°C Operating temperature</li> <li>• Designed to meet IEC/ UL 62368-1 and IEC/ EN 60601-1</li> </ul>	<ul style="list-style-type: none"> <li>• 4 x 2 x 1.16 Inches Form factor</li> <li>• 60 Watts Convection</li> <li>• No Load Power &lt;0.5W</li> <li>• -40°C to +70°C Operating Temperature</li> <li>• Designed to meet IEC/ UL 62368-1 and IEC/ EN 60601-1</li> </ul>	<ul style="list-style-type: none"> <li>• 4 x 2 x 1.16 Inches Form factor</li> <li>• 150 Watts with Forced Air Cooling &amp; 100 Watts Convection Cooling</li> <li>• No Load Power &lt;0.5W</li> <li>• 40°C to +70°C Operating Temperature</li> <li>• 12V/0.5A Fan Output, Thermal Shut-Down feature</li> <li>• Designed to meet IEC/ UL 62368-1 and IEC/ EN 60601-1</li> </ul>
Voltage range	90 - 264V AC (127 - 370V DC)		
Available Range (Convection) DC Voltage/Current	5V / 5A, 12V / 3.33A, 15V / 2.67A, 24V / 1.67A, 48V / 0.83A	5V / 10A, 12V / 5A, 15V / 4A, 24V / 2.5A, 48V / 1.25A	12V / 8.33A, 15V / 6.67, 24V / 4.17A, 48V / 2.1A
Available Range (Forced Air) DC Voltage/Current	---	---	12V / 12.5A, 15V / 10A, 24V / 6.25A, 48V / 3.13A
FREQUENCY RANGE	50/60 Hz		
AC CURRENT	0.85A @ 115V AC; 0.45A @ 230V AC	1.2A @ 115V AC; 0.8A @ 230V AC	1.5A @ 115V AC; 0.74A @ 230V AC
EFFICIENCY @230V	>86 %	>87 %	>90 %
INRUSH CURRENT	<60 Amps; Measured at 264V AC, 25°C Ambient, Cold start		
RATED POWER	40W	60W	150W
RIPPLE & NOISE (max)	<1% of Vout		
DIMENSION	Overall : 3" x 2" x 1.16" (LxWxH) ; Height above PCB : 1"	Overall : 4" x 2" x 1.16" (LxWxH) ; Height above PCB : 1"	Overall : 4" x 2" x 1.16" (LxWxH) ; Height above PCB : 1"
WEIGHT	<100gms	<150 gms	<200 gms



**OPS2x4-200**  
90(H) X 35(W) x 60(D)mm



**OPS3x5-350**  
109.8(H) X 43(W) x 102.7(D)mm

<b>FEATURES</b>	<ul style="list-style-type: none"> <li>• 4 x 2 x 1.16 Inches Form factor</li> <li>• 200 Watts with Forced Air Cooling &amp; 130 Watts Convection Cooling</li> <li>• No Load Power &lt; 0.5W</li> <li>• -40°C to +70°C Operating Temperature</li> <li>• 12V/0.5A Fan Output, Thermal Shut-Down feature</li> <li>• Designed to meet IEC/ UL 62368-1 and IEC/ EN 60601-1</li> </ul>	<ul style="list-style-type: none"> <li>• 5 x 3 x 1.16 Inches Form factor</li> <li>• 12V/0.5A Fan Output, Thermal Shut-Down feature</li> <li>• Designed to meet IEC/ UL 62368-1 and IEC/ EN 60601-1</li> <li>• 350 Watts with Forced Air Cooling &amp; 200 Watts Convection Cooling</li> <li>• No Load Power &lt; 0.5W</li> <li>• -40°C to +70°C Operating Temperature</li> <li>• Remote Inhibit available</li> </ul>
<b>Voltage range</b>	90 - 264V AC (127 - 370V DC)	
<b>Available Range (Convection)</b> DC Voltage/Current	12V/10.83A, 15V/8.67A, 24V/5.42A, 48V/2.71A	12V/16.67A, 15V/13.33A, 24V/8.33A, 48V/4.17A
<b>Available Range (Forced Air)</b> DC Voltage/Current	12V/16.67A, 15V/13.33A, 24V/8.33A, 48V/4.17A	12V/16.67A, 15V/13.33A, 24V/8.33A, 48V/4.17A
<b>FREQUENCY RANGE</b>	50/60 Hz	
<b>AC CURRENT</b>	2.0A @ 115V AC; 1.1A @ 230V AC	3.6A @ 115V AC; 1.8A @ 230V AC
<b>EFFICIENCY @230V</b>	>93 %	>93 %
<b>INRUSH CURRENT</b>	<60 Amps; Measured at 264V AC, 25°C Ambient, Cold start	
<b>RATED POWER</b>	200W	350W
<b>RIPPLE &amp; NOISE (max)</b>	<1% of Vout	
<b>DIMENSION</b>	Overall : 4" x 2" x 1.16" (LxWxH) ; Height above PCB : 1"	Overall : 5" x 3" x 1.16" (LxWxH) ; Height above PCB : 1"
<b>WEIGHT</b>	<180 gms	<300 gms



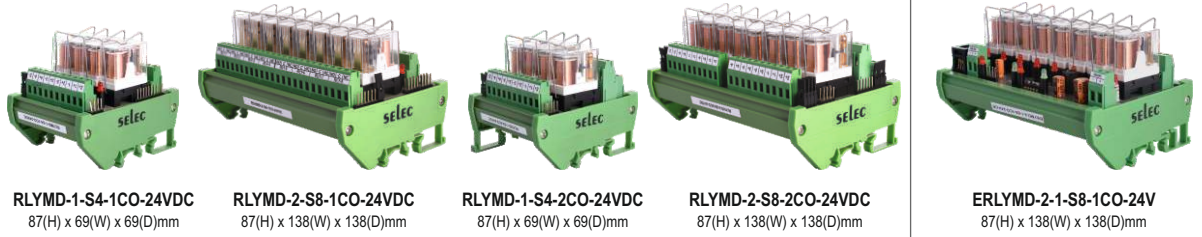
**BC1-1210**  
190(H) X 60(W) x 140.75(D)mm



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

<b>FEATURES</b>	<ul style="list-style-type: none"> <li>• CVCC Charging profile</li> <li>• Charging indication with LED</li> <li>• Prevents over charging of battery</li> <li>• Full power between -0°C &amp; +50°C</li> <li>• Compact size, Cost optimized</li> <li>• Wide-range input 150-270VAC</li> </ul>	
<b>DISPLAY</b>	LED indication for battery charging	
<b>VOLTAGE RANGE</b>	150 - 270 V AC	
<b>FREQUENCY RANGE</b>	50 / 60 Hz	
<b>AC CURRENT</b>	150V - 2.4A, 230V - 1.7A	150V - 4.1A, 230V - 3.1A
<b>EFFICIENCY</b>	>80% @ 230V AC	>85% @ 230V AC
<b>INRUSH CURRENT</b>	<70A @ 270V AC	<80A @ 270V AC
<b>DC VOLTAGE</b>	12V DC	24V DC
<b>RATED CURRENT</b>	10A	
<b>RATED POWER</b>	120W	240W
<b>RIPPLE &amp; NOISE MAX (mVp,p)</b>	<1% of Vout	
<b>WEIGHT</b>	1050 g	1280 g

## Accessories - Relay Modules



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

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

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

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

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

FEATURES	<ul style="list-style-type: none"> <li>• LED and freewheeling diode across coils</li> <li>• Reverse polarity protection</li> <li>• Jumpers for coil looping</li> <li>• Pluggable relays</li> </ul>				<ul style="list-style-type: none"> <li>• RS485 Comm. over MODBUS-RTU</li> <li>• Selectable baudrate and slave ID</li> <li>• Pluggable relays</li> </ul>
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-02**



**AC-S2W-01**

FEATURES	<ul style="list-style-type: none"> <li>• LED indication for communication status</li> <li>• Interface converter</li> </ul>	<ul style="list-style-type: none"> <li>• Port powered</li> <li>• Communication status available on LED Indication</li> </ul>	<ul style="list-style-type: none"> <li>• Web configuration telnet protocol</li> <li>• TCP / IP protocol</li> </ul>	<ul style="list-style-type: none"> <li>• Web based configuration utility</li> <li>• MQTT protocol</li> </ul>
DISPLAY	LED indication for power on, Tx & Rx	LED indication for Tx & Rx	LED indication for power ON, Tx, Rx, & Reset switch	LED indication for power ON, Tx, Rx, & Network
INTERFACE 1	Serial (RS485 MODBUS RTU protocol)	USB 2.0 compliance	Serial (RS485 MODBUS RTU protocol)	
CONNECTOR	2 wire	USB type A	2 wire (Data+, Data-)	
INTERFACE 2	Serial (RS232 MODBUS RTU protocol)	Serial (RS485 MODBUS RTU protocol)	Ethernet (TCP / IP, Telnet)	Wi-Fi, MQTT protocol
CONNECTOR	DB9	2 wire open	RJ 45 (8 Pin)	Wireless
TRANSMISSION SPEED	2400 to 115200 bps	2400 to 115200 bps	RS485 : 300 to 115000 bps Ethernet : 10 / 100 Mbps	801.1 a/g : 65, 54, 48, 36, 24, 18, 12, 9, 6 Mbps. Auto rate 802.11b : 11, 5.5, 2, 1 Mbps. Auto rate 802.11n 2.4GHz : HT20 : HT420 & HT40 MCS 0-7
CABLE LENGTH	---	1 meter	---	
POWER CONSUMPTION	0.5 W	75mA @ 5V	0.5 W	
SUPPLY VOLTAGE	90 - 270V AC	Port powered	12 - 30V DC	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
-------------	-----------------------------------	--	-------------------	-------------------------------	-------------------------------

## Ordering information

### Flexible IO Solution

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

### Compact Series

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

### Fixed IO Configuration

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

### Human Machine Interface

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

### Add ons - PLC IO's

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

### Annunciator

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

### Battery Chargers

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

### Relay Module

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




















## Ordering information

### Power Supply

PRODUCT CODE	CERTIFICATION
RP2M-1.1A-24VDC	---
RP2M-1.1A-24VDC-CE	CE
RPS60-05	---
RPS60-05-CE	CE
RPS60-12-CE	---
RPS60-15	CE
RPS60-15-CE	CE
RPS60-24	---
RPS60-24-CE	CE
RPS60-48	---
RPS60-48-CE	CE
RPS120-12	---
RPS120-12-CE	CE
RPS120-15	---
RPS120-15-CE	CE
RPS120-24	---
RPS120-24-CE	CE
RPS120-48	---
RPS120-48-CE	CE
RPS240-12-CE	CE
RPS240-24-CE	CE
RPS240-48-CE	CE
RPS480-24-CE	CE
RPS480-48-CE	CE

### Power Supply

PRODUCT CODE	CERTIFICATION
OPS2x3-40-05-A-1-CU	 in process
OPS2x3-40-12-A-1-CU	 in process
OPS2x3-40-24-A-1-CU	 in process
OPS2x3-40-48-A-1-CU	 in process
OPS2x4-60-05-A-1-CU	 in process
OPS2x4-60-12-A-1-CU	 in process
OPS2x4-60-24-A-1-CU	 in process
OPS2x4-60-48-A-1-CU	 in process
OPS2x4-150-12-A-1-CU	 in process
OPS2x4-150-24-A-1-CU	 in process
OPS2x4-150-48-A-1-CU	 in process
OPS2x4-200-12-A-1-CU	 in process
OPS2x4-200-24-A-1-CU	 in process
OPS2x4-200-48-A-1-CU	 in process
OPS3x5-350-12-A-1-CU	 in process
OPS3x5-350-24-A-1-CU	 in process
OPS3x5-350-48-A-1-CU	 in process

### Data Converters / Accessories

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



FD100



FD200

FEATURES	<ul style="list-style-type: none"> <li>• Compact &amp; powerful AC drives</li> <li>• 1HP 0.75KW to 5HP 3.7KW</li> </ul>	<ul style="list-style-type: none"> <li>• Compact &amp; powerful AC drives</li> <li>• 2HP 1.5KW to 650HP 500KW</li> </ul>
RATED INPUT VOLTAGE / FREQUENCY	Single Phase 220V 50Hz / 60Hz, 3 Phase 415V 50Hz / 60Hz	
PERMISSIBLE VOLTAGE FLUCTUATION	187V to 253V for 1 phase & 320 to 460V for 3 Phase	
PERMISSIBLE FREQUENCY FLUCTUATION	±5%	
CONTROL MODE	V/F control	V/F Control, flux vector control V/F Control, flux vector control
FREQUENCY CONTROL RANGE	0.1 ~ 400 Hz	
FREQUENCY ACCURACY	Digital setting 0.01%, Analog instruction 0.1% (Max frequency)	
FREQUENCY RESOLUTION	Digital instruction 0.1Hz, Analog instruction 0.1 Hz	
ACCELERATED / DECELERATED TIME	0.0 ~ 3600 Sec. Four accelerate / decelerate time settings available	
MULTI SPEED RUNNING	Built-in program	
BUILT-IN PI	Easy to set up a simple automatic control system	
BUILT-IN COUNTER	Automatically controlled production line can be achieved	
OVERLOAD CAPACITY	G Type - 150% rated current for 1 min, P type - 120% rated current for 1 min	
BRAKING TORQUE	About 20% (with brake resistor is about 150%)	
V/F MODE	3 preset V/F mode and V/F program	
AUTOMATIC ENERGY SAVING OPERATION	Changes the V/F curve according to the load to save energy	
AUTOMATIC VOLTAGE REGULATION	Regulates the voltage automatically whenever there is a change in grid voltage	
OPERATION COMMANDS	Keypad and external terminals	
FREQUENCY SETTING	Digital setting, Analog voltage setting, Analog current setting	
INPUT SIGNAL	Forward / Reverse, Jogging selection, Multi speed control, Regular stopping	
OUTPUT SIGNAL	Fault alarm output (250V/2A Contact), Open collector output	
PROTECTION FUNCTIONS	Over current, Over voltage, Under voltage, Over heat, Overload, Phase loss	
DISPLAY	Parameters setting, Running status and fault display	
OPERATING ENVIRONMENT	Temperature : -10 ~ +50°C, Humidity : < 90%, No condensation, IP20	
OPERATIONS AREA	Indoor, <1000m altitude above sea level	
STORAGE TEMPERATURE	-20 ~ +60°C	
VIBRATION	<5.9 m/s <sup>2</sup> (0.6g)	
RATED INPUT VOLTAGE / FREQUENCY	Single Phase 220V 50Hz / 60Hz, 3 Phase 415V 50Hz / 60Hz	3 Phase 415V 50Hz / 60Hz
SWITCH SIGNAL INPUT	5 ways input, Max. frequency 1KHz, internal impedance:3.3kΩ	6 ways input, max. frequency 1KHz, internal impedance:3.3kΩ
SWITCH SIGNAL OUTPUT	Y1 terminal open collector output	1 Y1 terminal open collector output ; 1 Y2 pulse output
APPLICATIONS	Suitable for fans, pumps, Conveyor, Food & drink packaging machinery, Industrial washing machine and most general industries etc.	Suitable for fans, Pumps, Conveyor, Mixer, Textile machine, Dyeing machine, Lithographic printing machine Metal workin

## Ordering information

### Variable Frequency Drive (FD100)

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

### Variable Frequency Drive (FD200)

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



VFD-L



VFD-S

FEATURES	<ul style="list-style-type: none"> <li>• Compact &amp; powerful AC drives</li> <li>• 0.5HP 0.4KW &amp; 1HP 0.75KW</li> </ul>	<ul style="list-style-type: none"> <li>• Standard General Purpose drives</li> <li>• 0.5HP 0.4KW to 20HP 15KW</li> </ul>
RATED INPUT VOLTAGE / FREQUENCY	Single Phase 230V 50Hz/60Hz	Single Phase 220V 50Hz / 60Hz, 3 Phase 415V 50Hz / 60Hz
PERMISSIBLE VOLTAGE FLUCTUATION	185V to 275V	187V to 253V for 1 phase & 320 to 460V for 3 Phase
PERMISSIBLE FREQUENCY FLUCTUATION	±5%	
CONTROL MODE	V/F 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	
ACCELERATION/DECELERATION TIME	0.0 ~ 3600 Sec. Four acceleration/deceleration time settings available	
MULTI SPEED RUNNING	Built-in program using Simple PLC feature	
BUILT-IN PI	Easy to set up a simple automatic control system	
BUILT-IN COUNTER	Automatically controlled production line can be achieved	
OVERLOAD CAPACITY	150% for 1min, 180% for 10s, 200% for 1s	
V/F MODE	4 pre-set V/F mode and 1 User Defined V/F program	
AUTOMATIC ENERGY SAVING OPERATION	Changes the V/F curve according to the load to reduce energy consumption	
AUTOMATIC VOLTAGE REGULATION	Regulates the voltage automatically whenever there is a change in grid voltage	
OPERATION COMMANDS	Keypad, External terminals, External communication using MODBUS	
FREQUENCY SETTING	Keypad Up/Down keys, Keypad potentiometer, External potentiometer, Analog inputs (4-20mA/0-10V), MODBUS communication	
INPUT SIGNAL	4 User Selectable (PNP/NPN) Multifunction Inputs	5 User Selectable (PNP/NPN) Multifunction Inputs
OUTPUT SIGNAL	1 User Selectable Multifunction Relay Output (250V/5A Contact),	1 User Selectable Multifunction Relay Output (250V/5A Contact), 1 User Selectable Multifunction Open Collector Output
PROTECTION FUNCTIONS	Over Current, Over Voltage, Under Voltage, Overheat, Overload, Under Current, System Error	
DISPLAY	Non-removable HMI with 5 keys, 4x7 segment LED display and 5 status LEDs setting, Running status and fault display	Removable HMI with 7 keys, 1 switch enabled encoder, 5x7segment LED display and 7 status LEDs
OPERATING ENVIRONMENT	Temperature : -10 ~ +50°C, Humidity : < 90%, No condensation, IP20	
STORAGE TEMPERATURE	-20 ~ +60°C	
VIBRATION	<5.9 m/s <sup>2</sup> (0.6g)	
APPLICATIONS	Suitable for fans, pumps, Conveyor, Food & drink packaging machinery, Industrial washing machine and most general industries etc.	

## Ordering information

### Variable Frequency Drive (VFD-L)

PRODUCT CODE	DESCRIPTION	CERTIFICATION
VFD-L-1-005-230V	1 Phase 230V, 0.5HP/0.4KW Economic Series (4DI, 1AI, POT, RS485, 1RO SPST, Built in display)	CE
VFD-L-1-010-230V	1 Phase 230V, 1HP/0.75KW Economic Series (4DI, 1AI, POT, RS485, 1RO SPST, Built in display)	CE

### Variable Frequency Drive (VFD-S)

PRODUCT CODE	DESCRIPTION	CERTIFICATION
VFD-S-1-005-230V-CE	1 Phase 230V, 0.5HP/0.4KW	CE
VFD-S-1-010-230V-CE	1 Phase 230V, 1HP/0.75KW	CE
VFD-S-1-020-230V-CE	1 Phase 230V, 2HP/1.5KW	CE
VFD-S-3-010-415V-CE	3 Phase 415V, 1HP/0.75KW	CE
VFD-S-3-020-415V-CE	3 Phase 415V, 2HP/1.5KW	CE
VFD-S-3-030-415V-CE	3 Phase 415V, 3HP/2.2KW	CE
VFD-S-3-050-415V-CE	3 Phase 415V, 5HP/3.75KW	CE
VFD-S-3-075-415V-CE	3 Phase 415V, 7.5HP/5.5KW	CE
VFD-S-3-100-415V-CE	3 Phase 415V, 10HP/7.5KW	CE
VFD-S-3-150-415V-CE	3 Phase 415V, 15HP/11KW	CE
VFD-S-3-200-415V-CE	3 Phase 415V, 20HP/15KW	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.

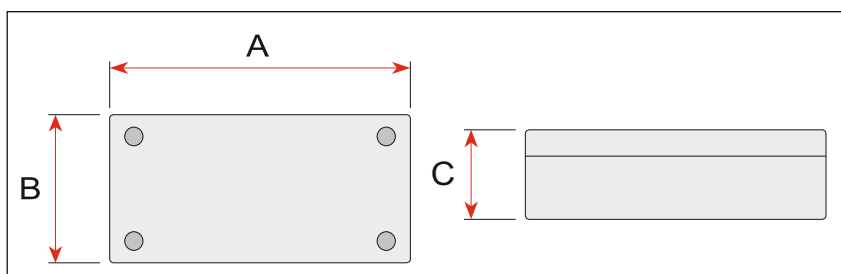
**Standard unit includes:** Base, Cover, Neoprene gasket and Fasteners temperature resistance up to 260 °C (natural finish enclosure).

## 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

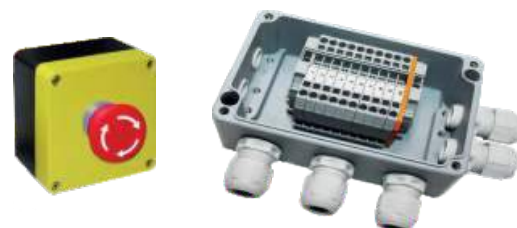
Note:  
External hinges, din rails and wall mount brackets available on special request.

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

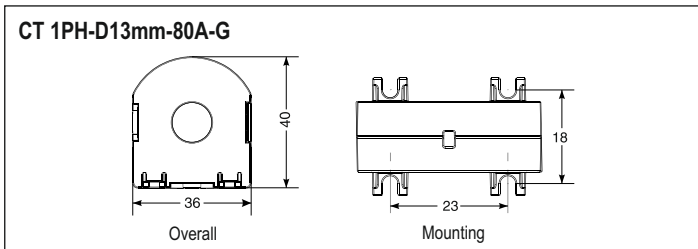
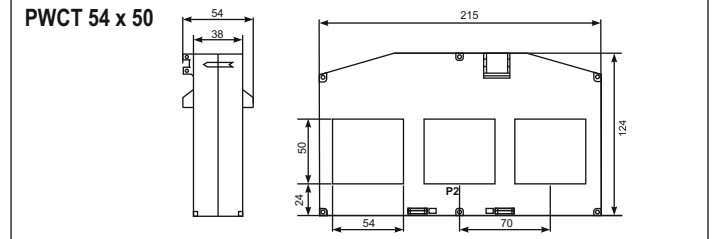
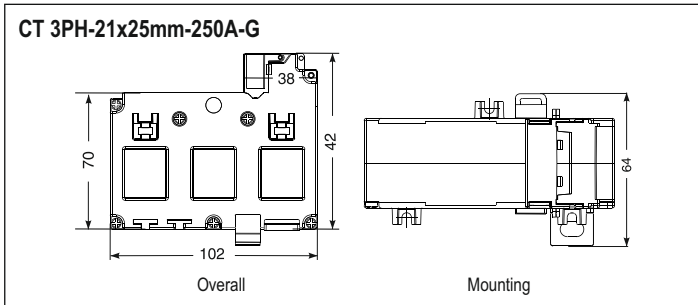
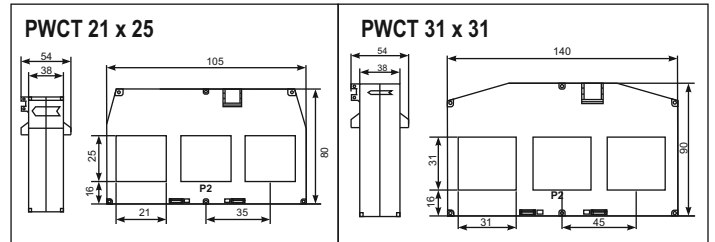
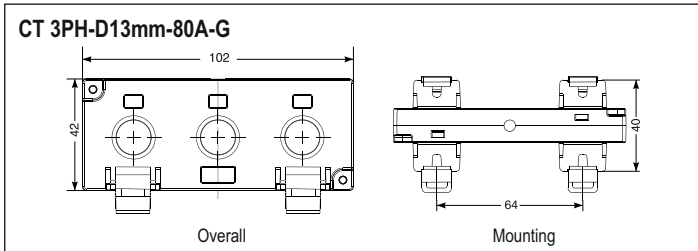
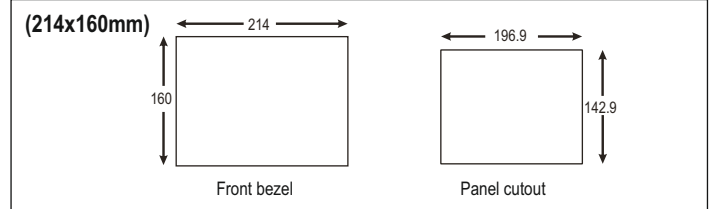
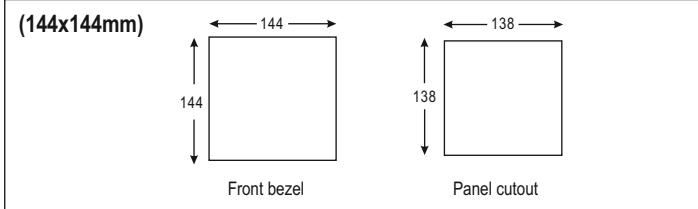
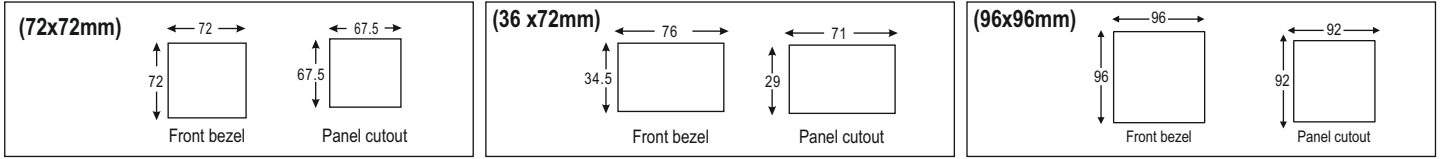
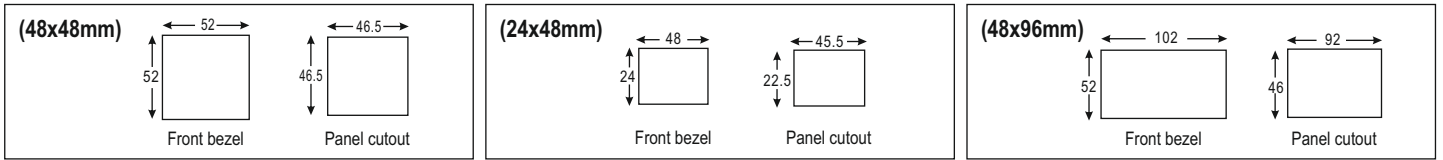


## Applications:

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



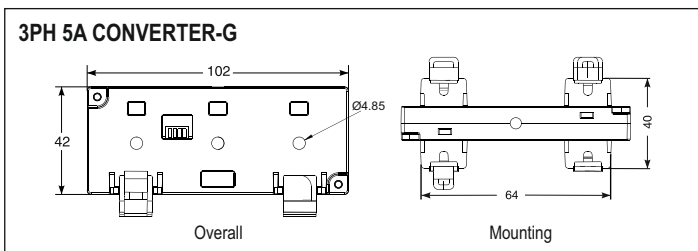
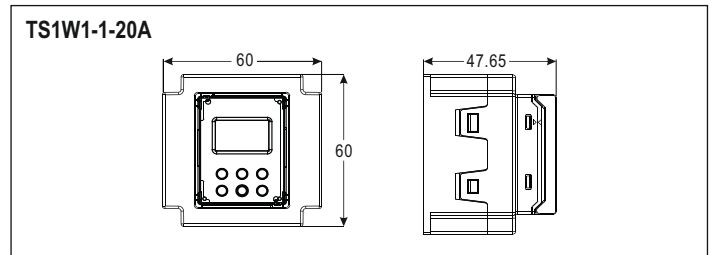
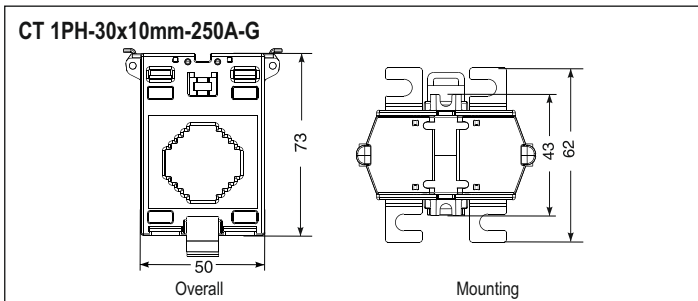
## Panel Cutout Dimensions (All are in mm)



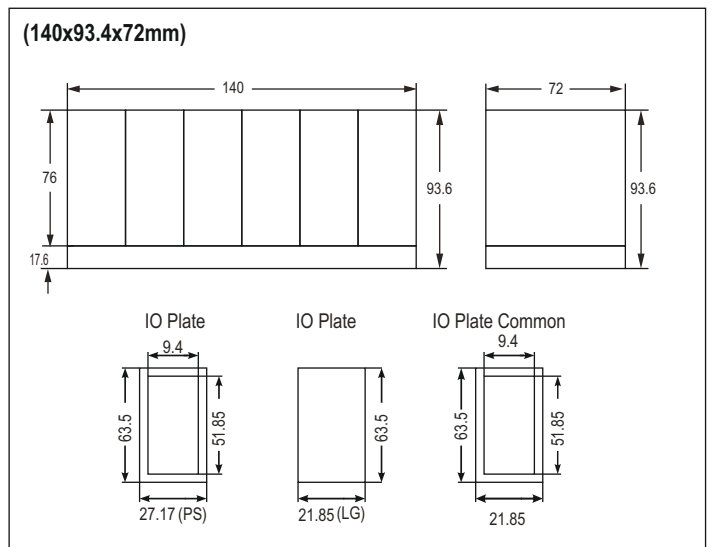
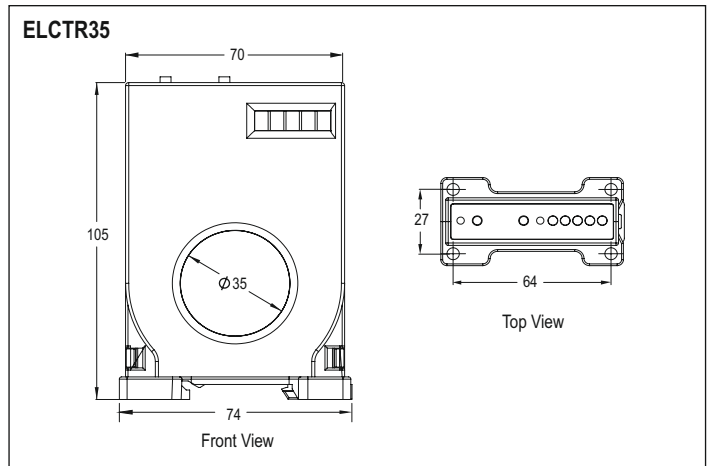
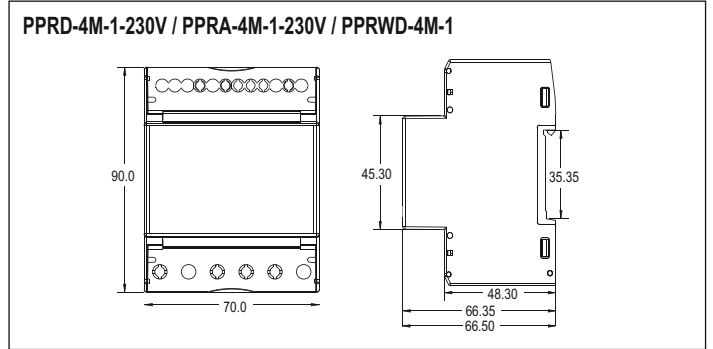
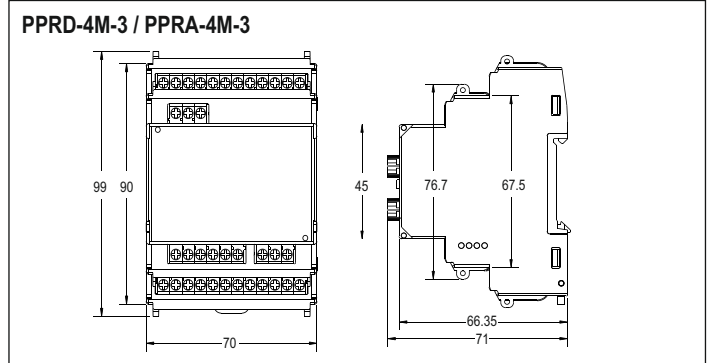
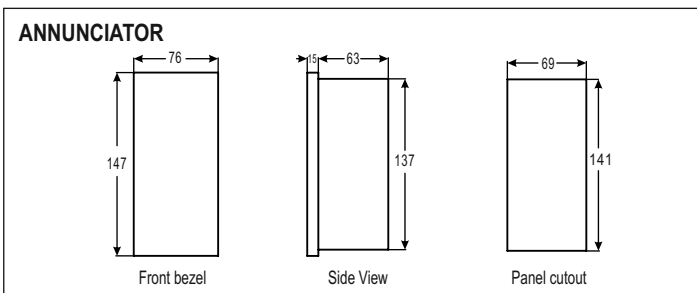
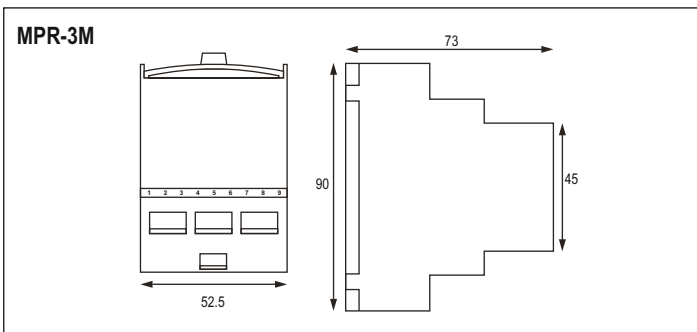
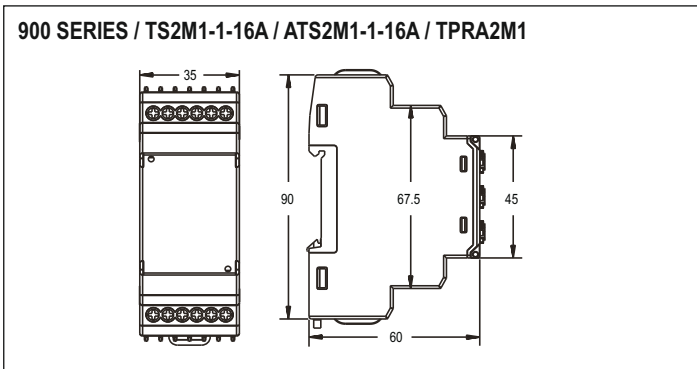
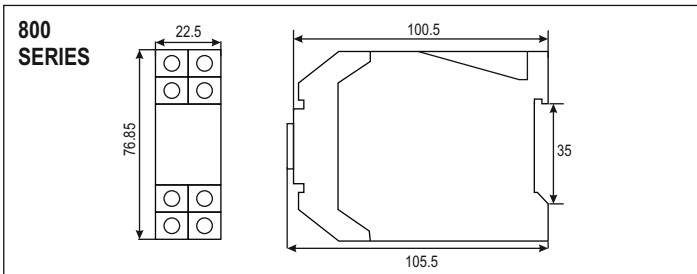
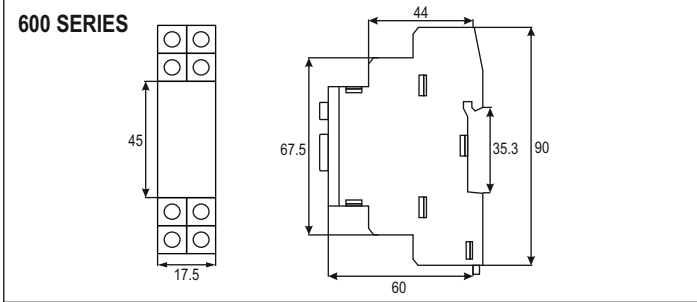
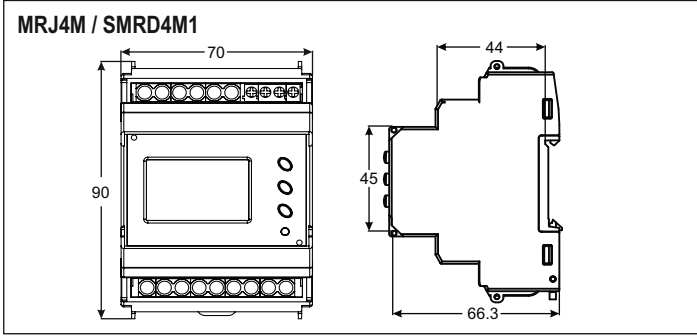
**ANALOG METERS**  
 (AM - I / AM - V / AM - DIRECT TYPE AMMETER / AM - PF / AM - HZ)  
 (72x72mm, 96x96mm)

Optional parts : 1. Back cover		
Product	72x72	96x96
Dimensions (in mm)		
a	72	96
b	74.50	98.50
c	67	90.50
d	50	50

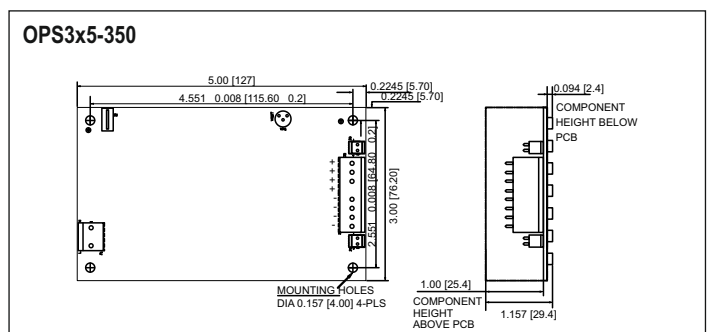
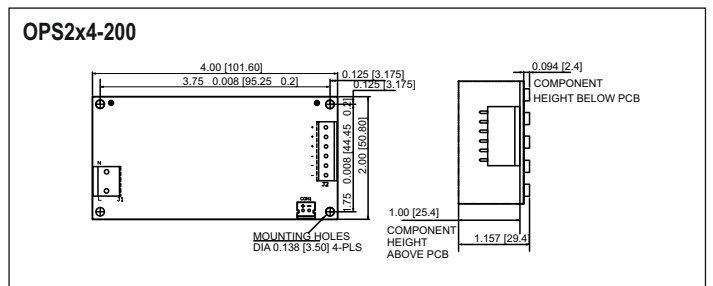
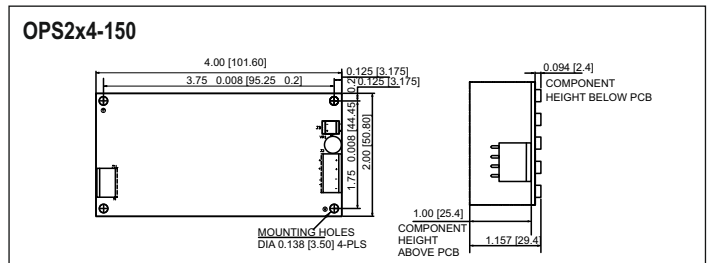
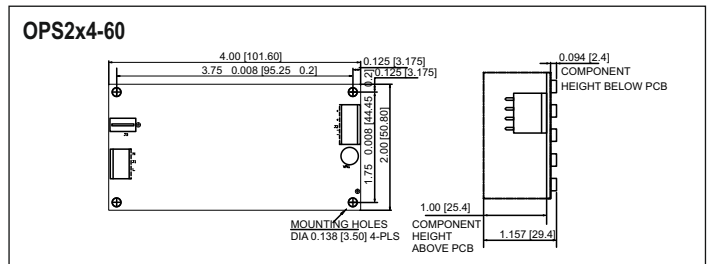
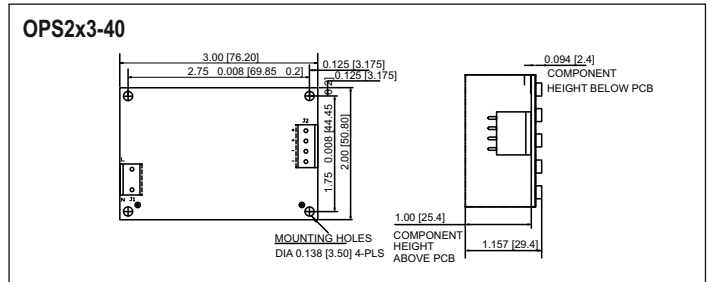
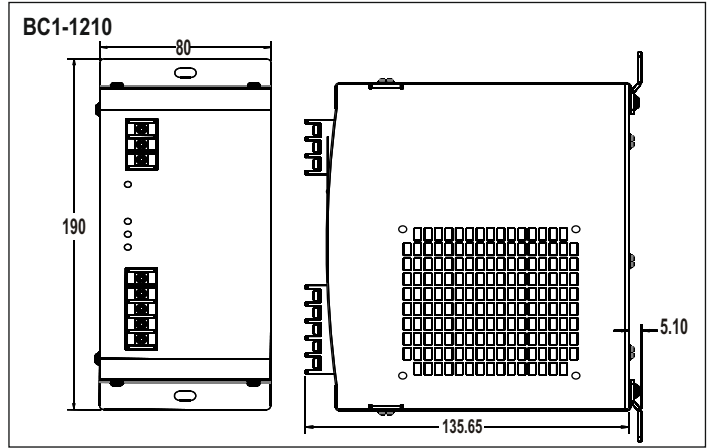
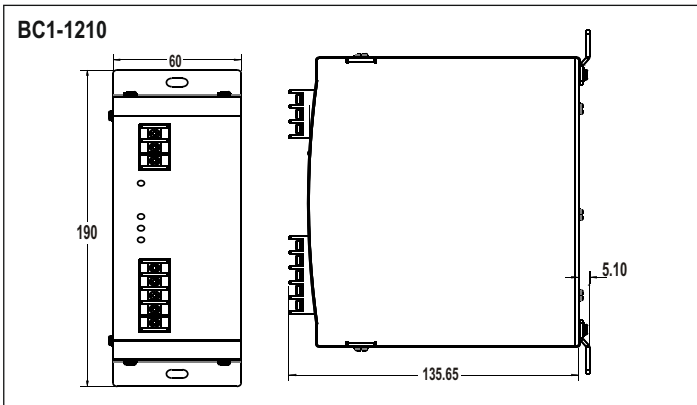
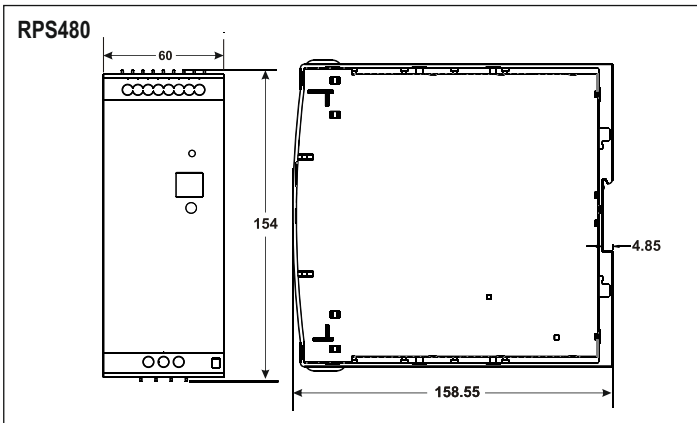
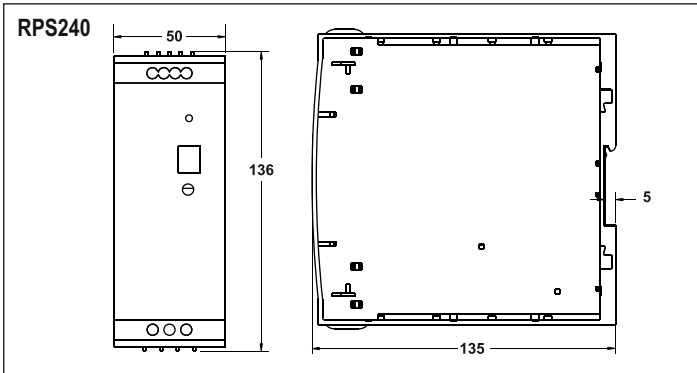
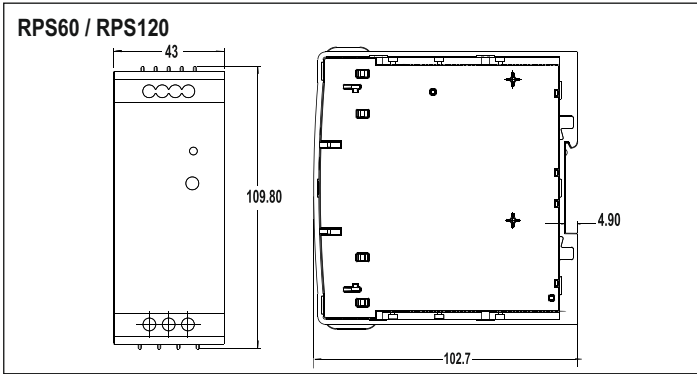
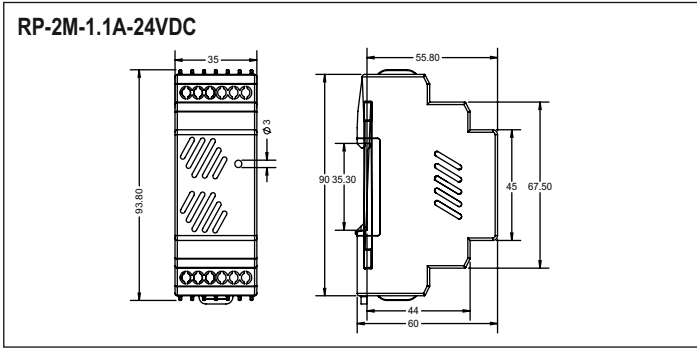
Optional parts : 1. Back cover		
Product	72x72	96x96
Dimensions (in mm)		
e	60	60
f	5.50	5.50
g	8	8
h	68	92



**Panel Cutout Dimensions** (All are in mm)

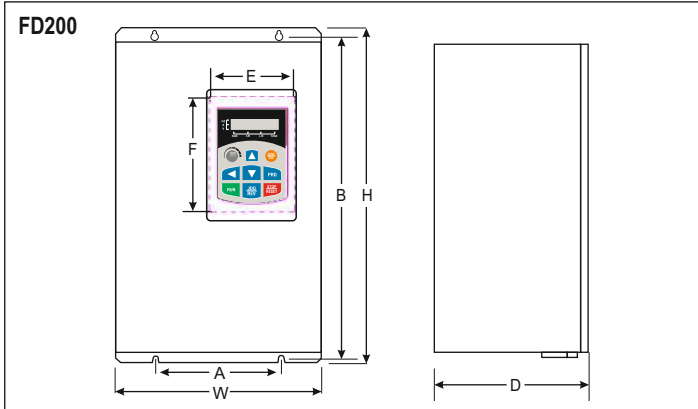
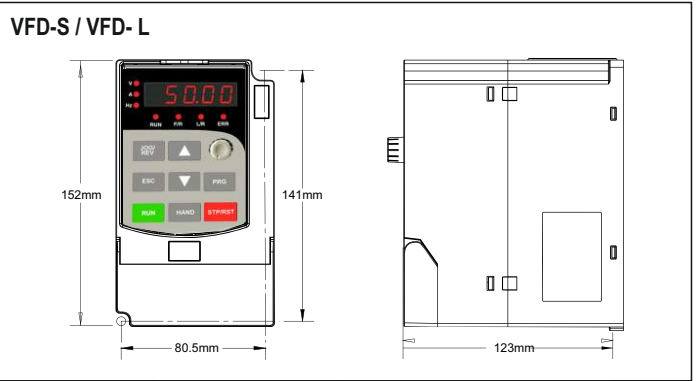
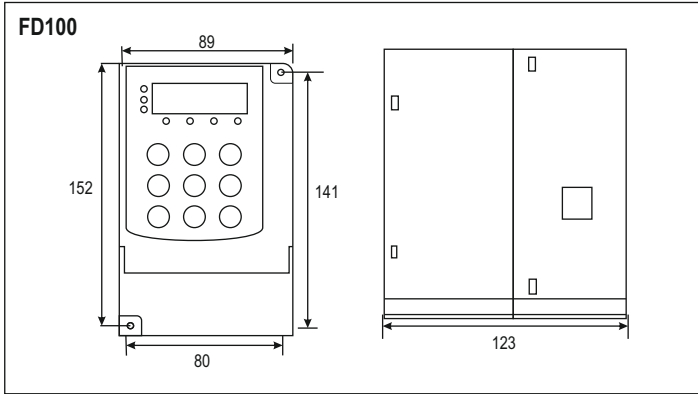


## Panel Cutout Dimensions ( All are in mm )



**Note :** This open frame power supply should preferably be mounted horizontally on 4 metal stand-offs having diameter not more than 6mm and height not less than 5mm

## Panel Cutout Dimensions ( All are in mm )



Product code	Mounting dimension		Dimension			Pore diameter (mm)
	length (mm)	wide (mm)	length (mm)	wide (mm)	depth (mm)	
VFD-S-1-005-230V	141	80.5	152	90	123	φ5.2
VFD-S-1-010-230V						
VFD-S-1-020-230V						
VFD-S-3-010-415V						
VFD-S-3-020-415V						
VFD-S-3-030-415V	107	175	185	118	167	4.5
VFD-S-3-050-415V	148	235	247	160	190	5.5
VFD-S-3-075-415V						
VFD-S-3-100-415V						
VFD-L-1-005-230V	141	80.5	152	90	123	φ5.2
VFD-L-1-010-230V						

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**

**Head Office :**

**Selec Controls Pvt. Ltd.**

EL-27/1, Electronic Zone, TTC Industrial Area, MIDC, Mahape, Navi Mumbai 400710, INDIA.

Tel.: +91-22-4141 8468 / 452. Fax: +91-22-41418 408. Email: sales@selec.com | [www.selec.com](http://www.selec.com)

**Selec USA :** [www.selecusa.com](http://www.selecusa.com) | **Selec GmbH :** [www.selec-europe.com](http://www.selec-europe.com) | **Selec Australia :** [www.selecaustralia.com](http://www.selecaustralia.com)