

# PRODUCT SELECTION GUIDE



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- VFD
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- Temperature / PID
- Humidity
- Process
- Timers & Counters
- Solid State Relays

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- Digital Panel Meters
- Analog Meters
- Current Transformers
- Line Monitoring
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- Pump Protection
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**MFM384+**  
96(H) x 96(W) x 50(D)mm



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



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

|                              |   |  |  |
|------------------------------|---|--|--|
| <b>FEATURES</b>              | <ul style="list-style-type: none"> <li>Accuracy Class 0.5S</li> <li>RTC (Year / Date / Hour)</li> <li>Suppression current</li> <li>%THD up to 31<sup>st</sup> level</li> <li>%Unbalance for voltage and current</li> <li>Demand measurement</li> <li>RS485 MODBUS RTU protocol</li> </ul> | <ul style="list-style-type: none"> <li>Accuracy Class 0.5S / Class 1</li> <li>Import / Export energy</li> <li>%THD up to 31<sup>st</sup> level</li> <li>Demand measurement</li> <li>RS485 MODBUS RTU protocol</li> </ul> | <ul style="list-style-type: none"> <li>Accuracy Class 1</li> <li>Import / Export energy</li> <li>Demand measurement</li> <li>RS485 MODBUS RTU protocol</li> </ul>                                    |
| <b>DISPLAY</b>               | LCD with backlight  |  |  |
| <b>DIGITS</b>                | 4 rows of 4 digits, Bar graph representation for current, 1 row of 9 digits for energy display  | 4 rows of 4 digits, Bar graph representation for current, 1 row of 8 digits for energy display   | 1 row of 4 digits, 2 rows of 7 digits  |
| <b>ELECTRICAL CONNECTION</b> | 1Ø - 2W, 2Ø - 3W, 3Ø - 3W, 3Ø - 4W  |  |  |
| <b>ACCURACY CLASS</b>        | Class 0.5S  | Class 0.5S / Class 1   | Voltage (L - L / L - N), Current : ±0.5% of F.S., Power factor : ±0.01, Frequency : ±0.1% of F.S., Power (kW, kVA, kVA <sub>r</sub> ) : 1% of F.S., Energy (Active, Reactive, Apparent) : 1% of F.S. |
| <b>RATED INPUT VOLTAGE</b>   | 35 to 347V AC (L - N), 35 to 600V AC (L - L)  | 11 to 300V AC (L - N), 19 to 519V AC (L - L)   |  |
| <b>RATED INPUT CURRENT</b>   | Nominal 5AAC (Min - 5mA; Max - 6A)  | Nominal 5A AC (Min - 11mA; Max - 6A)   |  |
| <b>RESOLUTION</b>            | For Energy : 0.001k (Auto resolution)<br>For Power, Voltage, Current : Auto resolution<br>For Power factor : 0.001, Frequency : 0.1Hz   | For Energy : 0.01k, 0.1k, 1k, 0.01M, 0.1M, 1M (Depending upon CT ratio x PT ratio),<br>For Power, Voltage, Current : Auto resolution,<br>For Power factor : 0.01, Frequency : 0.1Hz                                      |  |
| <b>CT PRIMARY</b>            | 1 / 5A to 32.76kA (Programmable for any value)  | 1 / 5A to 10kA (Programmable for any value)  |  |
| <b>CT SECONDARY</b>          | 1 / 5A (Programmable)   |  |  |
| <b>PT PRIMARY</b>            | 100V to 999kV (Programmable for any value)  | 100V to 500kV (Programmable for any value)   |  |
| <b>PT SECONDARY</b>          | 100, 110, 115, 120V AC (Programmable)   | 100 to 500V AC (L - L) (Programmable for any value)  |  |
| <b>COMMUNICATION</b>         | RS485 MODBUS RTU protocol   |  |  |
| <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 (Total)  |  |  |
| <b>ADDITIONAL FUNCTIONS</b>  | Cybersecurity, Neutral current, RTC (Year / Date / Hour), RPM (monitors generator speed), DG sensing, Displacement PF, Demand measurement, Import / Export energy, Phase sequence indication, Run hour, Load hour   | Current connection indication, Phase sequence indication, Run hour, Auxiliary interrupts, Import / Export energy, Demand measurement   | Demand measurement, Import / Export energy   |
| <b>SUPPLY VOLTAGE</b>        | 40 to 300V AC / DC  | 85 to 300V AC  | 85 to 270V AC  |



**MFM376+ (Dual Source)**  
96(H) x 96(W) x 49(D)mm



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



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

|                              |  |  |  |
|------------------------------|--|--|--|
| <b>FEATURES</b>              | <ul style="list-style-type: none"> <li>Accuracy Class 0.5S</li> <li>DG sensing</li> <li>%THD up to 31<sup>st</sup> level</li> <li>%Unbalance for voltage and current</li> <li>Demand measurement</li> <li>RS485 MODBUS RTU protocol</li> </ul> | <ul style="list-style-type: none"> <li>Accuracy Class 1</li> <li>Single pulse output</li> <li>%THD up to 31<sup>st</sup> level</li> <li>%Unbalance for voltage and current</li> <li>Demand measurement</li> <li>RS485 MODBUS RTU protocol</li> </ul> | <ul style="list-style-type: none"> <li>Accuracy Class 1</li> <li>Single pulse output</li> <li>%THD up to 31<sup>st</sup> level</li> <li>Demand measurement</li> <li>RS485 MODBUS RTU protocol (MFM376-C-CE)</li> </ul> |
| <b>DISPLAY</b>               | 7 segment LED  |  |  |
| <b>DIGITS</b>                | 3 rows of 4 digits, 2 rows of 8 digits for energy display  |  | 3 rows of 4 digits, 2 rows of 8 digits for energy display  |
| <b>ELECTRICAL CONNECTION</b> | 1Ø - 2W, 2Ø - 3W, 3Ø - 3W, 3Ø - 4W   |  |  |
| <b>RATED INPUT VOLTAGE</b>   | 11 to 350V AC (L - N), 19 to 600V AC (L - L)   |  | 11 to 300V AC (L - N), 19 to 519V AC (L - L)   |
| <b>RATED INPUT CURRENT</b>   | Nominal 5AAC (Min - 10mA; Max - 6A)  |  | Nominal 5A AC (Min - 14mA; Max - 6A)   |

|                      | MFM376+ (Dual Source)   | MFM376+  | MFM376   |
|----------------------|---|--|--|
| RESOLUTION           | For energy : 0.001k (Auto resolution),<br>For Current, Voltage, Power : Auto resolution, For Power factor : 0.001   |  | For energy : 0.01k, 0.1k, 1k, 0.01M, 0.1M,<br>1M (Depending upon CT ratio x PT ratio),<br>For Current, Voltage, Power : Auto resolution,<br>For Power factor : 0.001 |
| ACCURACY             | Voltage (L - N / L - L) : ±0.5% of F.S.,<br>Current : ±0.5% of F.S., Power Factor : ±0.01<br>Frequency : ±0.1% For L - N Voltage >20V,<br>For L - L Voltage >35V,<br>Power (Active, Reactive, Apparent) : 1%,<br>Energy (Active, Reactive, Apparent) : Class 0.5S | Voltage (L - N / L - L) : ±0.5% of F.S., Current : ±0.5% of F.S., Power Factor : ±0.01<br>Frequency : ±0.1% For L - N Voltage >20V, For L - L Voltage >35V,<br>Power (Active, Reactive, Apparent) : 1%,<br>Energy (Active, Reactive, Apparent) : Class 1 |  |
| CT PRIMARY           | 1 / 5A to 32.76kA (Programmable for any value)  |  | 1 / 5A to 10kA (Programmable for any value)  |
| CT SECONDARY         | 1 / 5A (Programmable)   |  |  |
| PT PRIMARY           | 100V to 999kV (Programmable for any value)  |  | 100V to 500kV (Programmable for any value)   |
| PT SECONDARY         | 100 to 500V AC (Programmable for any value)   |  |  |
| COMMUNICATION        | RS485 MODBUS RTU protocol   |  | RS485 MODBUS RTU protocol (applicable for MFM376-C-CE)   |
| MEASURING PARAMETERS | Voltage (L - L / L - N) (Individual / Average), Current (Individual / Average), Frequency, Power factor (Individual / Total),<br>Active, Reactive & Apparent Power (Individual / Total), Active, Reactive & Apparent Energy (Total)                               |  |  |
| ADDITIONAL FUNCTIONS | Neutral current, RPM (Monitors generator speed),<br>Displacement PF, DG sensing, % unbalance for<br>voltage and current, %THD up to 31 <sup>st</sup> level,<br>Run Hour, Auxiliary Interrupts,Phase angle   | Neutral current, RPM (Monitors generator speed),<br>Displacement PF, Pulse output, % unbalance for<br>voltage and current, %THD up to 31 <sup>st</sup> level,<br>Run Hour, Auxiliary Interrupts,Phase angle  | Run Hour, Auxiliary Interrupts,Phase angle   |
| SUPPLY VOLTAGE       | 40 to 300V AC / DC  |  |  |



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



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



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

|                                     |  |   |  |
|-------------------------------------|--|---|--|
| FEATURES                            | <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>                  | <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>                               |
| DISPLAY                             | LCD with backlight   |   | 7 segment LED  |
| DIGITS                              | 3 rows of 4 digits, 7½ digits for energy display   |   | 3 rows of 3 digits   |
| ELECTRICAL CONNECTION               | 1Ø - 2W, 2Ø - 3W, 3Ø - 3W, 3Ø - 4W   |   | 3Ø - 3W, 3Ø - 4W   |
| ACCURACY CLASS                      | Voltage (L - N / L - L) : ±0.5% of F.S., Current : ±0.5% of F.S., Power Factor : ±0.01<br>Frequency : ±0.1% For L - N Voltage >20V, For L - L Voltage >35V,<br>Power (Active, Reactive, Apparent) : 1%,<br>Energy (Active, Reactive, Apparent) : Class 1 |   | Voltage (L - N / L - L) : ±0.5% of F.S.,<br>Current : ±0.5% of F.S., Power Factor : ±0.01<br>Frequency : ±0.1% For L - N Voltage >11V, For L - L<br>Voltage >35V, Power (Active, Reactive, Apparent) : 1%, |
| RATED INPUT VOLTAGE                 | 11 to 300V AC (L - N), 19 to 519V AC (L - L)   |   |  |
| RATED INPUT CURRENT                 | Nominal 5A AC (Min - 11mA ; Max - 6A)  |   | Nominal 5A AC (Min - 20mA ; Max - 6A)  |
| RESOLUTION                          | For energy : 0.01k, 0.1k, 1k, 0.01M, 0.1M, 1M<br>(Depending upon CT ratio x PT ratio),<br>For Power, Voltage & Current : Auto resolution,<br>For Power factor : 0.001  | For energy : 0.1k, 1k (Depending upon CT ratio x PT ratio)<br>For Power, Voltage & Current : Auto resolution,<br>For Power factor : 0.001 | For Power, Voltage, Current : Auto Resolution,<br>For Power Factor : 0.01  |
| CT PRIMARY                          | 1 / 5A to 10kA (Programmable for any value)  |   |  |
| CT SECONDARY                        | 1 / 5A (Programmable)  |   |  |
| PT PRIMARY                          | 100V to 500kV (Programmable for any value)   | 100V to 10kV (Programmable for any value)   | 100V to 500kV (Programmable for any value)   |
| PT SECONDARY                        | 100 to 500V AC (L - L) (Programmable for any value)  |   |  |
| COMMUNICATION                       | RS485 MODBUS RTU protocol (Optional)   |   | ---  |
| MEASURING PARAMETERS                | Voltage (L - L / L - N) (Individual / Average), Current (Individual / Average),<br>Frequency, Power factor (Individual / Total),<br>Active, Reactive & Apparent Power (Individual / Total), Active, Reactive & Apparent Energy (Total)                   |   | Voltage (L - L / L - N) (Individual / Average),<br>Current (Individual / Average), Frequency,<br>Powerfactor (Individual / Average), Active,<br>Reactive & Apparent Power (Individual / Average)           |
| ADDITIONAL FUNCTIONS                | Current connection indication, Run hour,<br>Auxiliary interrupts, Import / Export energy   | ---   | RPM, Run hour  |
| SUPPLY VOLTAGE<br>(AC : 50 / 60 Hz) | 85 to 270V AC  |   |  |

## Plug-N-Wire Multifunction Meters



**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)</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   |
| <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)   |
| <b>FREQUENCY</b>                           | 45 to 65Hz  |
| <b>RESOLUTION</b>                          | 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 : $\pm 0.5\%$ of F.S., Power factor : $\pm 0.01$ , Frequency : $\pm 0.1\%$ of F.S., Power (kW, kVA, kVAr) : 1% of F.S., Energy (Active, Reactive, Apparent) : 1% of F.S.   |
| <b>CT PRIMARY</b>                          | 1A to 1kA (Programmable for any value), <b>Plug-N-Wire CTs to be used</b>   |
| <b>CT SECONDARY</b>                        | 330mV through Plug-N-Wire CT output   |
| <b>PT PRIMARY</b>                          | 100V to 10kV (Programmable for any value)   |
| <b>PT SECONDARY</b>                        | 100 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) 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><br>(AC : 50 / 60 Hz) | 60 to 300V AC, Self powered (V1, N)   |

## Plug-N-Wire Multifunction Meters



**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), <b>Plug-N-Wire CTs to be used</b>  |   |  |
| <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 demand of power, communication in progress ; LED : Integration of energy  | LCD : Max / Min demand of power, communication in progress ; Integration of energy, Unit in configuration menu  |  |

## Plug-N-Wire Multifunction Meters

|                                  | MRJ4M   | MRJ4M-SL  | MRJ385   |
|----------------------------------|---|---|--|
| MEASURING PARAMETERS             | Voltage (L - L / L - N) (Individual / Average), Current (Individual / Average), Frequency, Power factor (Individual / Average), Active, Reactive & Apparent power (Individual / Total), 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), 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 & Total (Import / Export)], Demand (Min / Max active power, Min / Max reactive power, Max apparent power), Harmonics individual for voltage & Current up to 31 <sup>st</sup> level. |
| SUPPLY VOLTAGE (AC : 50 / 60 Hz) | 60 to 300V AC, Self powered (V1, N)   |   | 100 to 240V AC, Self powered (V1, N)   |

## Plug-N-Wire Current Transformers



**PWCT - 15 / 30** Primary current : 60A to 160A    
**PWCT - 16 / 20** Primary current : 60A to 160A    
**PWCT - 21 / 25** Primary current : 60A to 250A    
**PWCT - 31 / 31** Primary current : 150A to 630A    
**PWCT - 54 / 50** Primary current : 800A to 1600A

| FEATURES |  |
|----------|--|
|          | <ul style="list-style-type: none"> <li>• RJ45 connector, 330mV output</li> <li>• Safe to leave transformers on load with output disconnected</li> <li>• Foot, busbar or DIN rail mounting</li> <li>• Fits standard moulded circuit breaker frame sizes</li> <li>• Available in 21 x 25mm, 31 x 31mm, 54 x 50mm apertures</li> <li>• 15 x 30mm &amp; 16 x 20mm aperture sizes available on special request</li> </ul> |

## Plug-N-Wire Accessories

|             | <p>PWCBL_CON-F-3<br/>PWCBL_CON-F-1</p>                       | <p>PWCBL_CON-M/F-3<br/>PWCBL_CON-M/F-1</p>  | <p>PWCON-Male<br/>PWCON-Female</p>                          |
|-------------|--|---|---|
| DESCRIPTION | Power cable with Female type connector, 1 & 3 Meter length   | Daisy chain cable to loop MRJ meters with Male & Female type connectors, 1 & 3 Meter length | Voltage connector Male / Female                             |
|             | <p>CTV Converter 1A/330mV</p>                                | <p>PWADP-5A</p>   | <p>PWADP-1A</p>   |
| DESCRIPTION | Converter used with PLCTs for MRJ multifunction meter series | 5A adapter to use with conventional CT for MRJ4M, MRJ4M-SL & MRJ385-G-PNW                   | 1A adapter to use with conventional CT for MRJ4M-QUAD meter |

**Additional accessories :** ACH-003, ACH-004, AC-IOEXP-03, AC-USB-RS485-02, AC-USB-RS485-03 (On page no. 51)



**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 5AAC (Min - 50mA ; Max - 6A)  |   | Nominal 5AAC (Min - 11mA ; Max - 6A)  |
| <b>RESOLUTION</b>                          | For Energy : 0.01k, 0.1k, 1k, 0.01M, 0.1M, 1M   | For energy : 0.01k, 0.1k, 1k, 0.01M, 0.1M, 1M (Depending upon CT ratio x PT ratio)<br>For Power : 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>                            | Active energy : Class 1   | Active / Apparent power : ±1%, Reactive power : ±2%, Power factor : 0.01, Active energy : Class 1, Reactive energy : Class 2  | Active Energy : Class 1, Reactive / Apparent Energy : ±1%<br>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>                        | 100 to 500V AC (L - L) (Programmable for any value)   |   |   |
| <b>COMMUNICATION</b>                       | ---   | RS485 MODBUS RTU protocol   |   |
| <b>MEASURING PARAMETERS</b>                | Active Energy   | Power & Energy (Total Active / Reactive), Power factor (Individual & Average)   | Power (Total Active / Reactive), Energy (Total Active / Reactive / Apparent), Power factor (Individual & Average)   |
| <b>LED INDICATIONS</b>                     | CT Reverse detection, Kilo, Mega  | CT Reverse detection, Kilo, Mega, Communication, DG   | Integration of energy, Resolution is 10, CT Reverse detection, Communication in progress, Pulse output (All Indications on LCD)                                   |
| <b>SUPPLY VOLTAGE</b><br>(AC : 50 / 60 Hz) | 85 to 276 V AC  |   |   |



**EM2M-1CH-DC**  
90(H) x 35(W) x 60(D)mm



**EM2M-1P-C-100A**   **EM2M-1P-W-100A**  
90(H) x 35(W) x 66.3(D)mm



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

|                              |  |   |   |
|------------------------------|--|---|---|
| <b>FEATURES</b>              | <ul style="list-style-type: none"> <li>• Single channel DC meter</li> <li>• Voltage input up to 1000V DC</li> <li>• Current input using DC shunt (50 to 100mV)</li> <li>• Options available (Relay output / Data Logging feature up to 2MB</li> <li>• RS485 Modbus RTU protocol</li> </ul> | <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> <li>• Secured in-built WiFi, MQTT protocol based (Applicable for EM2M-1P-W-100A)</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 (Applicable for EM4M-3P-W-100A)</li> </ul> |
| <b>DISPLAY</b>               | 7 segment LED  | LCD with backlight / Blind display  | LCD with backlight  |
| <b>DIGITS</b>                | 1 row of 4 digits  | 1 row of 7 digits / No digits   | 1 row of 4 digits & 2 rows of 7 digits  |
| <b>ELECTRICAL CONNECTION</b> | 1Ø - 2W  |   |   |
| <b>RATED INPUT VOLTAGE</b>   | 0 to 1000V DC  | 176 to 276V AC (L - N)  | 85 to 285V AC (L - N) ; 148-494V AC (L - L)   |
| <b>RATED INPUT CURRENT</b>   | -999A to 999A DC   | Ib : 10A (Imin - 500mA, IMax - 100A)  | Ib : 10A (Imin - 40mA, IMax - 100A)   |
| <b>RESOLUTION</b>            | For Voltage : 0.1V, Current : 0.1A, Power & Energy : 0.1k  | For Energy : 0.01k, For Power, Voltage, Current : Auto resolution, For Power factor : 0.01  |   |
| <b>ACCURACY</b>              | Voltage, Current & Power : ±0.5%, Energy : Class 0.5   | Voltage (L - N), Current : ±0.5% of F.S., Power factor : ±0.01, Frequency : ±0.1% of F.S.<br>Power (kW, kVA, kVAR) : 1% of F.S., Active energy : Class 1, Reactive energy : Class 2   |   |
| <b>COMMUNICATION</b>         | RS485 MODBUS RTU protocol  | RS485 MODBUS RTU protocol / Wi-Fi, MQTT protocol  | RS485 MODBUS RTU protocol / Wi-Fi, MQTT protocol  |
| <b>MEASURING PARAMETERS</b>  | Voltage, Current, Power, Import / Export Energy  | 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>       | V, I, P, IM, EX, MF  | LED-2 for Pulse output 1, Pulse output 2      Power LED, Network LED  | LED-2 for Pulse output 1, Pulse output 2      Pulse indication, Network indication  |
| <b>SUPPLY VOLTAGE</b>        | 18 to 30V DC   | 176 to 276V AC (L-N), Self powered  | 85 to 285V AC (L - N), 120 to 494V AC (L - L)<br>DG Sensing : 85 to 285V AC, Self - Powered   |



**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>• 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>                             | LCD with backlight  | 7 segment LED   |
| <b>DIGITS</b>                              | 3 rows of 3 digits, Bar graph representation of current   | 3 rows of 3 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 (Min - 20mA, Max - 6A)   | Nominal 5A (Min - 30mA ; Max - 6A)  |
| <b>RESOLUTION</b>                          | Current & Voltage : Depending on CT & PT primary setting, RPM : 0.1, Run hour : 0.1hr   |   |
| <b>ACCURACY</b>                            | 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 to 10kA (Programmable for any value)   |   |
| <b>CT SECONDARY</b>                        | 5A fix  |   |
| <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>MEASURING PARAMETERS</b>                | Voltage (L - L / L - N) (Individual / Average), Current (Individual / Average), Frequency   |   |
| <b>ADDITIONAL FUNCTIONS</b>                | Run Hour, RPM   |   |
| <b>SUPPLY VOLTAGE</b><br>(AC : 50 / 60 Hz) | 230V AC ±20%  |   |

## Digital Voltmeter

## Digital Ammeter

## Multifunction DPM



**MV35**  
96(H) x 96(W) x 50(D)mm



**MA32**  
96(H) x 96(W) x 50(D)mm



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

|                              |   |   |   |
|------------------------------|---|---|---|
| <b>FEATURES</b>              | <ul style="list-style-type: none"> <li>• 1Ø &amp; 3Ø True RMS measurement</li> <li>• Wide auxiliary supply from 40 to 300V AC/DC</li> <li>• PT Primary programmable up to 999.0kV</li> <li>• K LED for kilo indication</li> </ul> | <ul style="list-style-type: none"> <li>• 1Ø &amp; 3Ø True RMS measurement</li> <li>• Wide auxiliary supply from 40 to 300V AC/DC</li> <li>• CT Primary programmable up to 999.0kA</li> <li>• K LED for kilo indication</li> </ul> | <ul style="list-style-type: none"> <li>• True RMS measurement</li> <li>• 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> |
| <b>DISPLAY</b>               | 7 segment LED   |   |   |
| <b>DIGITS</b>                | 1 row of 4 digits   |   |   |
| <b>ELECTRICAL CONNECTION</b> | 1Ø - 2W, 3Ø - 3W, 3Ø - 4W   |   | 1Ø - 2W   |
| <b>RATED INPUT VOLTAGE</b>   | 11 to 300V AC (L - N), 19 to 516V AC (L - L)  | ---   | 20 - 300V AC (L - N), 34 - 519V AC (L - L)  |
| <b>RATED INPUT CURRENT</b>   | ---   | 5A AC (Min - 50mA ; Max - 6.2A)   | Nominal 5A AC (Min- 40mA, Max- 6A)  |
| <b>RESOLUTION</b>            | Auto resolution depend upon PT ratio  | Auto resolution depend upon CT ratio  |   |
| <b>ACCURACY</b>              | ± 0.5% of F.S.  |   |   |
| <b>CT PRIMARY</b>            | ---   | 1 / 5A to 999.0kA (Programmable for any value)  | 5A - 9999A (Programmable for any value)   |
| <b>CT SECONDARY</b>          | ---   | 1 / 5A (Programmable)   | 5A fix  |
| <b>PT PRIMARY</b>            | 100 to 999kV (Programmable for any value)   | ---   | 100V to 500kV (Programmable for any value)  |
| <b>PT SECONDARY</b>          | 100 to 500V (Programmable for any value)  | ---   | 100V to 500V AC (Programmable for any value)  |
| <b>SUPPLY VOLTAGE</b>        | 40 to 300V AC / DC  |   | 85 to 300V AC / DC  |



## 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>                              | 1 row of 3 digits  | 1 row of 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><br>(AC : 50 / 60 Hz) | 240V AC ±20%   | 230V AC ±20%  |

## Digital Ammeters



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



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



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

|  |   |  |   |
|--|---|--|---|
| <b>FEATURES</b>                            | <ul style="list-style-type: none"> <li>• True RMS measurement</li> <li>• For 1Ø - 2 wire electrical network</li> <li>• Programmable CT primary 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>                              | 1 row of 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>                 | 5A AC (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)  | ---  | 1 to 999.0kA (Programmable for any value)   |
| <b>CT SECONDARY</b>                        | 5A fix  | ---  | 1 / 5A (Programmable)   |
| <b>SUPPLY VOLTAGE</b><br>(AC : 50 / 60 Hz) | 240V AC ±20%  |  | 230V AC ±20%  |

## Digital Ammeters

## Digital Voltmeters



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



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



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



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

|  |   |   |  |  |
|--|---|---|--|--|
| <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>                              | 1 row of 4 digits   |   | 1 row of 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 fix  |   | ---  |  |
| <b>SUPPLY VOLTAGE</b><br>(AC : 50 / 60 Hz) | 240V 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 digits 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<br>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, ±20%   |   |

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



**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 PARAMETERS  | 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)  | 10 to 100A  | 0.5CAP - 1 - 0.5IND   | 45 - 65Hz   |
| ACCURACY              | Class 1.5  |  |   |   | Class 1.0   |
| FREQUENCY             | 50 / 60Hz  |  |   |   | ---   |



Square



Split Core



Round



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   | 10 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  |  |  |  |
| APPLICABLE STANDARD    | IEC 61869-2   |  |  |  |

## Ordering information

### Multifunction Meters

| PRODUCT CODE            | SUPPLY VOLTAGE     | OUTPUT       |               | CERTIFICATION |
|-------------------------|--------------------|--------------|---------------|---------------|
|                         |                    | PULSE OUTPUT | COMM. (RS485) |               |
| MFM384-C-CU             | 85 to 300V AC      | YES          | YES           | CE            |
| MFM384-C-CE *           | 85 to 300V AC / DC | YES          | YES           | CE            |
| MFM384-C-CE-CL05        | 85 to 300V AC / DC | YES          | YES           | CE            |
| MFM384-C-D-CE-CL05-PLUS | 40 to 300V AC / DC | YES          | YES           | CE            |
| MFM384-R-C-CE *         | 85 to 270V AC      | YES          | YES           | CE            |
| MFM284-C-CE             | 85 to 270V AC      | YES          | YES           | CE            |
| MFM383A                 | 85 to 270V AC      | YES          | ---           | ---           |
| MFM383A-C-CE            | 85 to 270V AC      | YES          | YES           | CE            |

### Multifunction Meters

| PRODUCT CODE            | SUPPLY VOLTAGE     | OUTPUT       |               | CERTIFICATION |
|-------------------------|--------------------|--------------|---------------|---------------|
|                         |                    | PULSE OUTPUT | COMM. (RS485) |               |
| MFM376-CE               | 40 to 300V AC / DC | YES          | ---           | CE            |
| MFM376-C-CE             | 40 to 300V AC / DC | YES          | YES           | CE            |
| MFM376-C-D-CE-CL05-PLUS | 40 to 300V AC / DC | ---          | YES           | CE            |
| MFM376-C-CE-PLUS        | 40 to 300V AC / DC | YES          | YES           | CE            |
| MFM391                  | 85 to 270V AC      | ---          | ---           | CE Optional   |

NOTE : \* MID variants available

## Ordering information

### Multifunction Meters

| PRODUCT CODE   | SUPPLY VOLTAGE                        | OUTPUT       |                | CERTIFICATION |
|----------------|---------------------------------------|--------------|----------------|---------------|
|                |                                       | PULSE OUTPUT | COMMN. (RS485) |               |
| MRJ4M *        | Self powered (V1, N), 60 to 300V AC   | YES          | YES            | CE            |
| MRJ4M-SL *     | Self powered (V1, N), 60 to 300V AC   | YES          | YES            | CE            |
| MRJ385-G-PNW * | Self powered (V1, N), 100V to 240V AC | YES          | YES            | CE            |
| MRJ4M-QUAD     | Self powered (V1, N), 60 to 300V AC   | ---          | YES            | CE            |

### Current Transformers

| PRODUCT CODE           | PRIMARY | OUTPUT | CERTIFICATION |
|------------------------|---------|--------|---------------|
| PWCT-15/30-60A/330mV   | 60A     | 330mV  | CE            |
| PWCT-15/30-100A/330mV  | 100A    | 330mV  | CE            |
| PWCT-15/30-125A/330mV  | 125A    | 330mV  | CE            |
| PWCT-15/30-160A/330mV  | 160A    | 330mV  | CE            |
| PWCT-16/20-60A/330mV   | 60A     | 330mV  | CE            |
| PWCT-16/20-100A/330mV  | 100A    | 330mV  | CE            |
| PWCT-16/20-125A/330mV  | 125A    | 330mV  | CE            |
| PWCT-16/20-160A/330mV  | 160A    | 330mV  | CE            |
| PWCT-16/20-200A/330mV  | 200A    | 330mV  | CE            |
| 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-21/25-160A/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            |

### Plug-N-Wire Accessories

| PRODUCT CODE           | DESCRIPTION   |
|------------------------|---|
| PWCBL_CON-F-1          | Power cable with Female type connector, 1 Meter length                                  |
| PWCBL_CON-F-3          | Power cable with Female type connector, 3 Meter length                                  |
| PWCBL_CON-M/F-1        | Daisy chain cable to loop MRJ meters with Male & Female type connectors, 1 Meter length |
| PWCBL_CON-M/F-3        | Daisy chain cable to loop MRJ meters with Male & Female type connectors, 3 Meter length |
| PWCON-M                | Voltage connector Male  |
| PWCON-F                | Voltage connector Female  |
| CTV Converter 1A/330mV | Converter used with PLCTs for MRJ multifunction meter series                            |
| PWADP-5A               | 5A adapter to use with conventional CT for MRJ4M, MRJ4M-SL & MRJ385-G-PNW               |
| PWADP-1A               | 1A adapter to use with conventional CT for MRJ4M-QUAD meter                             |

### Energy Meter - DC

| PRODUCT CODE         | SUPPLY VOLTAGE | OUTPUT       | CERTIFICATION |
|----------------------|----------------|--------------|---------------|
| EM2M-1CH-C-DC-1RO-CE | 18 to 30V DC   | Relay Output | CE            |
| EM2M-1CH-C-DC-DL-CE  | 18 to 30V DC   | Data Logging | CE            |

### Energy Meters

| PRODUCT CODE     | SUPPLY VOLTAGE                            | OUTPUT       |        | CERTIFICATION |
|------------------|---|--------------|--------|---------------|
|                  |   | PULSE OUTPUT | COMMN. |               |
| EM306            | 85 to 276V AC                             | YES          | RS485  | ---           |
| EM306-C-D        | 85 to 276V AC                             | ---          | RS485  | ---           |
| EM368-C-CU       | 85 to 276V AC                             | YES          | RS485  | CE            |
| EM2M-1P-C-100A * | 176 to 276V AC (Self powered)             | YES          | RS485  | CE            |
| EM2M-1P-W-100A   | 176 to 276V AC (Self powered)             | ---          | Wi-Fi  | CE            |
| EM4M-3P-C-100A   | 85 to 285V AC (L-N), 150 to 494V AC (L-L) | YES          | RS485  | 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 |
|------------------|----------------|---------------|
| VAF36A-230-CE    | 230V AC, ±20%  | CE            |
| VAF39A-1-230V    | 230V AC, ±20%  | ---           |
| VAF39A-1-230V-CE | 230V AC, ±20%  | CE            |
| VAF39A-1-60V DC  | 20 to 60V DC   | ---           |

### Voltage Ampere Meters

| PRODUCT CODE    | SUPPLY VOLTAGE | CERTIFICATION |
|-----------------|----------------|---------------|
| MVA591-30A-230V | 230V AC, ±20%  | ---           |
| MVA591-80A-230V | 230V AC, ±20%  | ---           |
| MVA593-CE       | 85 to 276V AC  | CE            |

### LCD (Ammeters / Voltmeters)

| PRODUCT CODE        | SUPPLY VOLTAGE     | CERTIFICATION |
|---------------------|--------------------|---------------|
| MV35-3-G-40/300V-CE | 40 to 300V AC / DC | CE            |
| MV35-1-G-40/300V-CE | 40 to 300V AC / DC | CE            |
| MA32-3-G-40/300V-CE | 40 to 300V AC / DC | CE            |
| MA32-1-G-40/300V-CE | 40 to 300V AC / DC | CE            |
| MX300-CE            | 85 to 300V AC      | CE            |
| MX300-1-C-CE        | 85 to 300V AC      | CE            |

### LED (Voltmeters)

| PRODUCT CODE  | SUPPLY VOLTAGE | CERTIFICATION |
|---------------|----------------|---------------|
| MV15          | 240V AC, ±20%  | ---           |
| MV15-CE       | 240V AC, ±20%  | CE            |
| MV205         | 240V AC, ±20%  | ---           |
| MV205-CE      | 240V AC, ±20%  | CE            |
| MV305         | 240V AC, ±20%  | ---           |
| MV305-CE      | 240V AC, ±20%  | CE            |
| MV334-230V    | 230V AC, ±20%  | ---           |
| MV334-230V-CE | 230V AC, ±20%  | CE            |

### LED (Ammeters)

| PRODUCT CODE    | SUPPLY VOLTAGE | CERTIFICATION |
|-----------------|----------------|---------------|
| MA12            | 240V AC, ±20%  | ---           |
| MA12-CE         | 240V AC, ±20%  | CE            |
| MA12-20A-AC     | 240V AC, ±20%  | ---           |
| MA202           | 240V AC, ±20%  | ---           |
| MA202-CE        | 240V AC, ±20%  | CE            |
| MA302           | 240V AC, ±20%  | ---           |
| MA302-CE        | 240V AC, ±20%  | CE            |
| MA335-230VAC    | 230V AC, ±20%  | ---           |
| MA335-230VAC-CE | 230V AC, ±20%  | CE            |
| MA12-75mV-DC    | 230V AC, ±20%  | ---           |

NOTE : \* MID variants available, Additional Accessories on page 53

## Ordering information

### LCD (Ammeters / Voltmeters)

| PRODUCT CODE   | SUPPLY VOLTAGE | CERTIFICATION |
|----------------|----------------|---------------|
| MA501-230V-CE  | 240V AC, ±20%  | CE            |
| MA501-CU       | 240V AC, ±20%  | CE            |
| MA2301-230V-CE | 240V AC, ±20%  | CE            |
| MV507-230V-CE  | 240V AC, ±20%  | CE            |
| MV2307-230V-CE | 240V AC, ±20%  | 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            |

### Analog Voltmeters

| PRODUCT CODE     | CERTIFICATION | AM - V - 2 - N  |
|------------------|---------------|---|
| AM-V-2-N-CE-RoHS | CE            | <p>(Input voltage)<br/>N : 300V; L : 500V</p> <p>(Size) 2 : 72 x 72mm,<br/>3 : 96 x 96mm</p> <p>(Series) Voltmeter</p> <p>(Category) Analog meter</p> |
| 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         | ---           |   |

### Analog Ammeters

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

### Analog Ammeters

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

### Analog Direct Type Ammeters

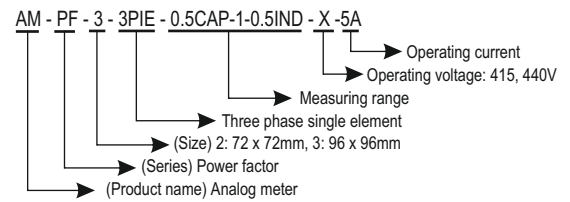
| PRODUCT CODE       | CERTIFICATION | AM - I - D - 2 - X  |
|--------------------|---------------|---|
| AM-I-D-2-X-CE-RoHS | CE            | <p>Display scale X: 10A to 100A</p> <p>(Size) 2 : 72x72mm, 3: 96 x 96mm</p> <p>Direct type</p> <p>(Series) Ammeter</p> <p>(Category) Analog meter</p> |
| AM-I-D-3-X-CE-RoHS | CE            |   |
| AM-I-D-2-X         | ---           |   |
| AM-I-D-3-X         | ---           |   |

### Analog Frequency Meters

| PRODUCT CODE        | CERTIFICATION | AM - Hz - 3 - A - B   |
|---------------------|---------------|---|
| AM-Hz-3-A-B-CE-RoHS | CE            | <p>(Voltage range) B: 220V, 440V</p> <p>(Frequency range) A: 45 - 65Hz</p> <p>(Size) 2 : 72 x 72mm, 3: 96 x 96mm</p> <p>(Series) Frequency</p> <p>(Product name) Analog meter</p> |
| AM-Hz-2-A-B-CE-RoHS | CE            |   |
| AM-Hz-3-A-B         | ---           |   |
| AM-Hz-2-A-B         | ---           |   |

### 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<br>In mm | CURRENT RATIO | BURDEN<br>IN VA | ACCURACY CLASS | NO. OF PRIMARY TURNS |
|------------------------------|------------------------|---------------|-----------------|----------------|----------------------|
| RCT-T-D30-30/5A-VA1.5-CL5    | DIA 30                 | 30/5          | 1.5             | 5              | ---                  |
| RCT-T-D30-30/5A-VA5-(2T)-CL5 | DIA 30                 | 30/5          | 5               | 5              | 2                    |
| RCT-T-D30-50/5A-VA5-CL5      | DIA 30                 | 50/5          | 5               | 5              | ---                  |
| RCT-T-D30-75/5A-VA5-CL5      | DIA 30                 | 75/5          | 5               | 5              | ---                  |
| RCT-T-D30-100/5A-VA5-CL1     | DIA 30                 | 100/5         | 5               | 1              | ---                  |
| RCT-T-D30-150/5A-VA5-CL1     | DIA 30                 | 150/5         | 5               | 1              | ---                  |
| RCT-T-D50-200/5A-VA5-CL1     | DIA 50                 | 200/5         | 5               | 1              | ---                  |
| RCT-T-D50-250/5A-VA5-CL1     | DIA 50                 | 250/5         | 5               | 1              | ---                  |
| RCT-T-D50-300/5A-VA5-CL1     | DIA 50                 | 300/5         | 5               | 1              | ---                  |
| RCT-T-D50-400/5A-VA5-CL1     | DIA 50                 | 400/5         | 5               | 1              | ---                  |
| RCT-T-D50-500/5A-VA5-CL1     | DIA 50                 | 500/5         | 5               | 1              | ---                  |
| RCT-T-D50-600/5A-VA5-CL1     | DIA 50                 | 600/5         | 5               | 1              | ---                  |

### TWCT

| PRODUCT CODE                   | WIRE APERTURE<br>In mm | CURRENT RATIO | BURDEN<br>IN VA | ACCURACY CLASS |
|--------------------------------|------------------------|---------------|-----------------|----------------|
| TWCT-T-D35-30/5A-VA1.5-CL5     | DIA 35                 | 30/5          | 1.5             | 5              |
| TWCT-T-D35-50/5A-VA5-CL5       | DIA 35                 | 50/5          | 5               | 5              |
| TWCT-T-D35-75/5A-VA5-CL5       | DIA 35                 | 75/5          | 5               | 5              |
| TWCT-T-D35-100/5A-VA5-CL1      | DIA 35                 | 100/5         | 5               | 1              |
| TWCT-T-D35-150/5A-VA5-CL1      | DIA 35                 | 150/5         | 5               | 1              |
| TWCT-T-D55-150/5A-VA5-CL1      | DIA 55                 | 150/5         | 5               | 1              |
| TWCT-T-D55-200/5A-VA5-CL1      | DIA 55                 | 200/5         | 5               | 1              |
| TWCT-T-D55-250/5A-VA5-CL1      | DIA55                  | 250/5         | 5               | 1              |
| TWCT-T-D55-300/5A-VA5-CL1      | DIA 55                 | 300/5         | 5               | 1              |
| TWCT-T-D55-400/5A-VA5-CL1      | DIA 55                 | 400/5         | 5               | 1              |
| TWCT-T-D65-500/5A-VA5-CL1      | DIA 65                 | 500/5         | 5               | 1              |
| TWCT-T-D65-600/5A-VA5-CL1      | DIA 65                 | 600/5         | 5               | 1              |
| TWCT-T-D110-800/5A-VA10-CL0.5  | DIA 110                | 800/5         | 10              | 0.5            |
| TWCT-T-D110-1000/5A-VA10-CL0.5 | DIA 110                | 1000/5        | 10              | 0.5            |
| TWCT-T-D120-1000/5A-VA10-CL0.5 | DIA 120                | 1000/5        | 10              | 0.5            |
| TWCT-T-D120-1200/5A-VA10-CL0.5 | DIA 120                | 1200/5        | 10              | 0.5            |
| TWCT-T-D120-1600/5A-VA10-CL0.5 | 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-50/30-60/5A-VA1-CL5        | 30x10               | 60 / 5        | 1            | 5              | CE    |
| SPCT-50/30-75/5A-VA1-CL1        | 30x10               | 75 / 5        | 1            | 1              | CE    |
| SPCT-50/30-80/5A-VA1-CL1        | 30x10               | 80 / 5        | 1            | 1              | CE    |
| SPCT-50/30-100/5A-VA1-CL1       | 30x10               | 100 / 5       | 1            | 1              | CE    |
| SPCT-50/30-125/5A-VA1.25-CL1    | 30x10               | 125 / 5       | 1.25         | 1              | CE    |
| SPCT-50/30-160/5A-VA1.5-CL1     | 30x10               | 160 / 5       | 1.5          | 1              | CE    |
| SPCT-50/30-200/5A-VA3-CL1       | 30x10               | 200 / 5       | 3            | 1              | CE    |
| SPCT-50/30-250/5A-VA3-CL1       | 30x10               | 250 / 5       | 3            | 1              | CE    |
| SPCT-50/30-400/5A-VA5-CL1       | 30x10               | 400 / 5       | 5            | 1              | CE    |
| SPCT-62/22-30/5A-VA1-CL5        | DIA 22              | 30/5          | 1            | 5              | CE    |
| SPCT-62/30-50/5A-VA1-CL3        | 30x10               | 50/5          | 1            | 3              | CE    |
| SPCT-62/30-50/5A-VA1.5-CL3      | 30x10               | 50/5          | 1.5          | 3              | CE    |
| SPCT-62/30-75/5A-VA1-CL3        | 30x10               | 75/5          | 1            | 3              | CE    |
| SPCT-62/30-75/5A-VA3-CL3        | 30x10               | 75/5          | 3            | 3              | CE    |
| SPCT-62/30-100/5A-VA1-CL1       | 30x10               | 100/5         | 1            | 1              | CE    |
| SPCT-62/30-100/5A-VA3-CL1       | 30x10               | 100/5         | 3            | 1              | CE    |
| SPCT-62/40-100/5A-VA1-CL1       | 40x10               | 100/5         | 1            | 1              | CE    |
| SPCT-62/40-125/5A-VA1-CL1       | 40x10               | 125/5         | 1            | 1              | CE    |
| SPCT-62/40-150/5A-VA1.5-CL1     | 40x10               | 150/5         | 1.5          | 1              | CE    |
| SPCT-62/40-150/5A-VA3-CL1       | 40x10               | 150/5         | 3            | 1              | CE    |
| SPCT-62/40-160/5A-VA1.5-CL1     | 40x10               | 160/5         | 1.5          | 1              | CE    |
| SPCT-62/40-200/5A-VA2.5-CL0.5   | 40x10               | 200/5         | 2.5          | 0.5            | CE    |
| SPCT-62/40-200/5A-VA3-CL1       | 40x10               | 200/5         | 3            | 1              | CE    |
| SPCT-62/40-250/5A-VA2.5-CL0.5   | 40x10               | 250/5         | 2.5          | 0.5            | CE   |
| SPCT-62/40-250/5A-VA3-CL1       | 40x10               | 250/5         | 3            | 1              | CE  |
| SPCT-62/40-300/5A-VA3-CL0.5     | 40x10               | 300/5         | 3            | 0.5            | CE  |
| SPCT-62/40-400/5A-VA3.75-CL0.5  | 40x10               | 400/5         | 3.75         | 0.5            | CE  |
| SPCT-62/40-400/5A-VA5-CL1       | 40x10               | 400/5         | 5            | 1              | CE  |
| SPCT-100/60-500/5A-VA5-CL1      | 60x12               | 500/5         | 5            | 1              | CE  |
| SPCT-100/60-600/5A-VA5-CL0.5    | 60x12               | 600/5         | 5            | 0.5            | CE  |
| SPCT-100/60-600/5A-VA7.5-CL1    | 60x12               | 600/5         | 7.5          | 1              | CE  |
| SPCT-100/60-800/5A-VA10-CL0.5   | 60x12               | 800/5         | 10           | 0.5            | CE  |
| SPCT-100/60-1000/5A-VA15-CL0.5  | 60x12               | 1000/5        | 15           | 0.5            | CE  |
| SPCT-100/60-1200/5A-VA15-CL0.5  | 60x12               | 1200/5        | 15           | 0.5            | CE  |
| SPCT-140/100-800/5A-VA15-CL0.5  | 100x30              | 800/5         | 15           | 0.5            | CE   |
| SPCT-140/100-1000/5A-VA15-CL0.5 | 100x30              | 1000/5        | 15           | 0.5            | CE   |
| SPCT-140/100-1200/5A-VA15-CL0.5 | 100x30              | 1200/5        | 15           | 0.5            | CE   |
| SPCT-140/100-1250/5A-VA15-CL0.5 | 100x30              | 1250/5        | 15           | 0.5            | CE   |
| SPCT-140/100-1500/5A-VA15-CL0.5 | 100x30              | 1500/5        | 15           | 0.5            | CE   |
| SPCT-140/100-1600/5A-VA15-CL0.5 | 100x30              | 1600/5        | 15           | 0.5            | CE   |
| SPCT-140/100-2000/5A-VA15-CL0.5 | 100x30              | 2000/5        | 15           | 0.5            | CE   |
| SPCT-140/100-2500/5A-VA15-CL0.5 | 100x30              | 2500/5        | 15           | 0.5            | CE   |
| SPCT-140/100-3000/5A-VA15-CL0.5 | 100x30              | 3000/5        | 15           | 0.5            | CE   |
| SPCT-140/100-3500/5A-VA15-CL0.5 | 100x30              | 3500/5        | 15           | 0.5            | CE   |
| SPCT-140/100-4000/5A-VA15-CL0.5 | 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-VA1-CL1-CE       | 20x30          | 100/5A        | 1            | 1              | CE            |
| SCCT-30/20-100/5A-VA1.5-CL3-CE     | 20x30          | 100/5A        | 1.5          | 3              | CE            |
| SCCT-30/20-150/5A-VA1-CL0.5-CE     | 20x30          | 150/5A        | 1            | 0.5            | CE            |
| SCCT-30/20-150/5A-VA1.5-CL3-CE     | 20x30          | 150/5A        | 1.5          | 3              | CE            |
| SCCT-30/20-200/5A-VA1-CL0.5-CE     | 20x30          | 200/5A        | 1            | 0.5            | CE            |
| SCCT-30/20-200/5A-VA1.5-CL1-CE     | 20x30          | 200/5A        | 1.5          | 1              | CE            |
| SCCT-30/20-250/5A-VA1.5-CL0.5-CE   | 20x30          | 250/5A        | 1.5          | 0.5            | CE            |
| SCCT-30/20-300/5A-VA2.5-CL0.5-CE   | 20x30          | 300/5A        | 2.5          | 0.5            | CE            |
| SCCT-30/20-400/5A-VA2.5-CL0.5-CE   | 20x30          | 400/5A        | 2.5          | 0.5            | CE            |
| SCCT-80/50-250/5A-VA1.5-CL1-CE     | 50x80          | 250/5A        | 1.5          | 1              | CE            |
| SCCT-80/50-300/5A-VA1.5-CL1-CE     | 50x80          | 300/5A        | 1.5          | 1              | CE            |
| SCCT-80/50-400/5A-VA1.5-CL0.5-CE   | 50x80          | 400/5A        | 1.5          | 0.5            | CE            |
| SCCT-80/50-500/5A-VA2.5-CL0.5-CE   | 50x80          | 500/5A        | 2.5          | 0.5            | CE            |
| SCCT-80/50-600/5A-VA2.5-CL0.5-CE   | 50x80          | 600/5A        | 2.5          | 0.5            | CE            |
| SCCT-80/50-750/5A-VA2.5-CL0.5-CE   | 50x80          | 750/5A        | 2.5          | 0.5            | CE            |
| SCCT-80/50-800/5A-VA2.5-CL0.5-CE   | 50x80          | 800/5A        | 2.5          | 0.5            | CE            |
| SCCT-80/50-1000/5A-VA5-CL0.5-CE    | 50x80          | 1000/5A       | 5            | 0.5            | CE            |
| SCCT-120/80-500/5A-VA2.5-CL0.5-CE  | 80x120         | 500/5A        | 2.5          | 0.5            | CE            |
| SCCT-120/80-600/5A-VA2.5-CL0.5-CE  | 80x120         | 600/5A        | 2.5          | 0.5            | CE            |
| SCCT-120/80-750/5A-VA2.5-CL0.5-CE  | 80x120         | 750/5A        | 2.5          | 0.5            | CE            |
| SCCT-120/80-800/5A-VA2.5-CL0.5-CE  | 80x120         | 800/5A        | 2.5          | 0.5            | CE            |
| SCCT-120/80-1000/5A-VA5-CL0.5-CE   | 80x120         | 1000/5A       | 5            | 0.5            | CE            |
| SCCT-120/80-1200/5A-VA7.5-CL0.5-CE | 80x120         | 1200/5A       | 7.5          | 0.5            | CE            |
| SCCT-120/80-1250/5A-VA7.5-CL0.5-CE | 80x120         | 1250/5A       | 7.5          | 0.5            | CE            |
| SCCT-120/80-1500/5A-VA7.5-CL0.5-CE | 80x120         | 1500/5A       | 7.5          | 0.5            | CE            |
| SCCT-120/80-1500/5A-VA10-CL1-CE    | 80x120         | 1500/5A       | 10           | 1              | CE            |
| SCCT-120/80-1600/5A-VA10-CL0.5-CE  | 80x120         | 1600/5A       | 10           | 0.5            | CE            |
| SCCT-160/80-1000/5A-VA10-CL0.5-CE  | 80x160         | 1000/5A       | 10           | 0.5            | CE            |
| SCCT-160/80-1200/5A-VA10-CL0.5-CE  | 80x160         | 1200/5A       | 10           | 0.5            | CE            |
| SCCT-160/80-1250/5A-VA10-CL0.5-CE  | 80x160         | 1200/5A       | 10           | 0.5            | CE            |
| SCCT-160/80-1500/5A-VA15-CL0.5-CE  | 80x160         | 1500/5A       | 15           | 0.5            | CE            |
| SCCT-160/80-2000/5A-VA15-CL0.5-CE  | 80x160         | 2000/5A       | 15           | 0.5            | CE            |
| SCCT-160/80-2500/5A-VA15-CL0.5-CE  | 80x160         | 2500/5A       | 15           | 0.5            | CE            |
| SCCT-160/80-3000/5A-VA15-CL0.5-CE  | 80x160         | 3000/5A       | 15           | 0.5            | CE            |
| SCCT-160/80-4000/5A-VA15-CL0.5-CE  | 80x160         | 4000/5A       | 15           | 0.5            | CE            |
| SCCT-160/80-5000/5A-VA15-CL0.5-CE  | 80x160         | 5000/5A       | 15           | 0.5            | CE            |
| SCCT-160/80-6000/5A-VA15-CL0.5-CE  | 80x160         | 6000/5A       | 15           | 0.5            | CE            |

### SPCT Accessories

| PRODUCT CODE           | DESCRIPTION  |
|------------------------|--|
| AC-SPCT-DRAIL-01       | Accessory - Din Rail Mounting plate for Basbar CT, Qty. 10 Nos       |
| AC-SPCT-50/30-DRAIL-01 | Accessory - Din Rail Mounting plate for 50/30 Basbar CT, Qty. 10 Nos |



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

|   |  |  |  |  |  |
|---|--|--|--|--|--|
| <b>FEATURES</b>                             | <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> |
| <b>DISPLAY</b>                              | LCD with dual colour backlight   | LCD with backlight   |  | 7 segment LED  |  |
| <b>DIGITS</b>                               | 3 rows,<br>4 digits to show electrical parameters  | 1 row, 4 digits to show power factor   |  |  |  |
| <b>ELECTRICAL CONNECTION</b>                | 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),<br>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 5AAC (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   | CT polarity error, CURR : Phase current error, No volt   |  |
| <b>PHASE COMPENSATION</b>                   | 0°, 90°, 120°, 210°, 240°, 330°  | ---  |  |  |  |
| <b>ACCURACY</b>                             | Power factor : ± 0.01,<br>Voltage (L-N/L-L),<br>Current : ±0.5% of F.S.,<br>Frequency : For L-N > 20V<br>For L-L > 35V : ±0.1% of F.S.,<br>Power (kW, kVA, kVAh) : 1%,<br>Energy (kWh, kVAh, kVAh) : Class 1,<br>Temperature : ±3°C of F.S.  | Power factor : ±0.01,<br>Temperature : ±3° of full scale   | Power factor : ±0.01   |  |  |
| <b>CT PRIMARY</b>                           | 5A to 9999A<br>(Programmable for any value)  | ---  | 5A fix   |  |  |
| <b>CT SECONDARY</b>                         | 5A fix   | ---  | 5A fix   |  |  |
| <b>PT PRIMARY</b>                           | 100V to 500kV<br>(Programmable for any value)  | ---  |  |  |  |
| <b>PT SECONDARY</b>                         | 100 to 500V<br>(Programmable for any value)  | ---  |  |  |  |
| <b>STEPS</b>                                | 1 to 12 / 14*<br>*(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*<br>*(Only for 12 stage variant)   | ---  |  |  |  |
| <b>SUPPLY VOLTAGE<br/>(AC : 50 / 60 Hz)</b> | 90 to 550V AC  |  | 85 to 270V AC  | 90 to 550V AC  | 85 to 270V AC  |



Standard Duty Capacitor

Heavy Duty Capacitor

|                                      |  |
|--------------------------------------|--|
| FEATURES                             | <ul style="list-style-type: none"> <li>• Protection - Over pressure disconnection system</li> <li>• Over current : HD - 1.5 times, SD - 1.3 times capacity</li> <li>• Internal fuse for protection</li> <li>• Dry type</li> <li>• Polyurethane self - extinguishing resin V0 developed under standard UL 94</li> <li>• Fire proof</li> </ul> |
| VOLTAGE                              | 440, 480, 525 V  |
| OVER VOLTAGE (HD)                    | 1.10 x Un (8 h/day) ; 1.15 x Un (30 min/day) ; 1.20 x Un (5 min/day) ; 1.30 x Un (1 min/day) ; 1.10 x Un (8 h/day) ; 1.15 x Un (30 min/day) ; 1.20 x Un (5 min/day) ; 1.30 x Un (1 min/day)  |
| OVER CURRENT                         | 1.3 x In   |
| DISCHARGE RESISTANCE                 | Incorporated   |
| FREQUENCY                            | 50 Hz  |
| MAX %THD IN CURRENT                  | 25   |
| CAPACITOR TOLERANCE                  | -5% +10%   |
| TYPE                                 | Delta  |
| DISCHARGE RESISTANCE                 | MOR  |
| VOLTAGE TEST BETWEEN TERMINAL        | 2.15 x Un 10s  |
| VOLTAGE TEST BETWEEN TERMINAL & CASE | 3kV AC for 1 min   |
| INRUSH CURRENT                       | up to 200 x In (HD)  |
| INTERNAL FUSES                       | Yes  |
| IP PROTECTION CLASS                  | IP 2x  |
| DIELECTRIC LOSSES                    | ≤ 0.2 W / kVAr   |
| TOTAL LOSSES                         | ≤ 0.45 W / kVAr  |
| HUMIDITY                             | Max. 95%   |
| TEMPERATURE                          | 0 to +55°C   |
| ALTITUDE                             | Max 2000 m.a.s.l   |
| MOUNTING POSITION                    | Vertical   |





Wall Mount



Wall Mount



Rack Type

|                                       |  |   |                            |
|---------------------------------------|--|---|----------------------------|
| FEATURES                              | <ul style="list-style-type: none"> <li>• Available in 15kVAr, 50kVAr &amp; 100kVAr</li> <li>• Real time, dynamic step-less compensation</li> <li>• Instant response time of 50 μsec &amp; full response in less than 1 cycle</li> <li>• Capacitive (Leading) &amp; Inductive (Lagging) reactive power mitigation</li> <li>• Advance feature- Harmonic correction up to 15<sup>th</sup> order</li> <li>• Compensates current unbalance created by the load</li> </ul> |   |                            |
| SINGLE - MODULE COMPENSATION CAPACITY | 15kVAr   | 50kVAr  | 100 kVAr                   |
| RATED VOLTAGE                         | 228~456V AC  | 308V to 480V ±15%                               |                            |
| FREQUENCY                             | 50 / 60 Hz (±2.5 Hz)   |   |                            |
| PARALLEL OPERATION                    | 8  |   |                            |
| OVERALL EFFICIENCY                    | > 97%  |   |                            |
| POWER GRID STRUCTURE                  | 3P3W / 3P4W  |   |                            |
| CT RATIO                              | Selectable through HMI up to 10000/5A  |   |                            |
| CT LOCATION                           | Grid side / Load side  |   |                            |
| CIRCUIT TOPOLOGY                      | 3 level inverters (I type)   |   |                            |
| RESPONSE TIME                         | 50 μsec and full response less than 1 cycle  |   |                            |
| TARGET POWER FACTOR                   | Adjustable from -1 to +1   |   |                            |
| COOLING MODE                          | Forced air cooling   |   |                            |
| NOISE LEVEL                           | < 65 dB  |   |                            |
| NORMAL SPECTRUM OF COMPENSATION       | Up to 15 <sup>th</sup> harmonics   |   |                            |
| PROTECTION                            | Over current, Over voltage, Over temperature, IGBT saturation protection, Grid fault   |   |                            |
| RELAY FOR CAPACITOR                   | 8  | 0   |                            |
| COMMUNICATION PORTS                   | MODBUS-RTU over RS485, Possible using LAN, WiFi (Paid basis)   |   |                            |
| COMMUNICATION PROTOCOLS               | MODBUS-RTU over RS485, Possible using LAN, WiFi (Paid basis)   |   |                            |
| COMMUNICATION INTERFACE               | Monochrome display   | 4.3" Touch screen HMI (7" available on request) |                            |
| SOFTWARE UPDATES                      | Possible through Wi-Fi or Laptop   |   |                            |
| MOUNTING                              | Rack type, Wall Mount  |   |                            |
| DIMENSIONS                            | 485(H) x 280(W) x 228(D)mm   | 645(H) x 472(W) x 205(D)mm                      | 795(H) x 472(W) x 204(D)mm |
| WEIGHT                                | 25kg approx  | 45 kg approx                                    | 75 kg approx               |
| COLOR                                 | Black  |   |                            |
| ALTITUDE                              | Less than 2000m (Higher altitudes on special request)  |   |                            |
| OPERATING TEMPERATURE                 | -10°C ~ +40°C, 0...50°C maximum with current derating of 2 % per °C  |   |                            |
| RELATIVE HUMIDITY                     | 95%, no condensation   |   |                            |
| IP PROTECTION CLASS                   | IP 2x  |   |                            |

*New*



- Hybrid Solution - Combination of Step based and stepless compensation
- Improved capacitor life due to minimum switching
- Instant response time of 50  $\mu$ sec & full response in less than 1 cycle for ASVG
- Capacitive (Leading) & Inductive (Lagging) reactive power mitigation
- Detuned reactor with every capacitor
- Advance feature- Harmonic correction up to 15<sup>th</sup> order
- Reputed make switchgear
- Easy to expand using common controller
- 18 step relay output

**ORDERING INFORMATION**

Eg : HYPNL-ASVG-100-50-R

| Product Series | Product Type | Power (kVAr)  | ASVG Rating | Output Type        |
|----------------|--------------|---|-------------|--------------------|
| HYPNL          | ASVG         | 100 / 125 / 150 / 200 / 250 / 300 / 350 / 400 / 450 / 500 | 50 / 100    | Relay / Transistor |

**ACCESSORIES - COMMON CONTROLLER**

Eg : HYHMI-7-18-S

| Product Name      | Product Series | Display Screen | Relay Output | Communication |
|-------------------|----------------|----------------|--------------|---------------|
| Common Controller | HYHMI          | 7"             | 18           | S             |



- Mitigates voltage sags & swell
- Voltage spike & noise control
- Real-time voltage compensation
- Fault correction within 20msec

## FEATURES

|   |   |   |
|---|---|---|
| <b>RATINGS</b>  | Single Phase - 2.5kVA to 10kVA  | Three Phase - 7.5kVA to 30kVA   |
| <b>NOMINAL INPUT VOLTAGE</b>  | 230V AC   | 400V AC   |
| <b>NORMAL OPERATING VOLTAGE</b><br>(Typical output regulation within 1% of nominal) | 180 - 280V AC for full regulation   | 320 - 480V AC for full regulation   |
| <b>OPERATING FREQUENCY</b>  | 47 - 65 Hz  |   |
| <b>MAXIMUM RATED INPUT CURRENT</b>  | For 2.5kVA - 14A, For 5kVA - 27A<br>For 7.5kVA - 42A, For 10kVA - 55A   | For 7.5kVA - 14A per phase, For 15kVA - 27A per phase<br>For 22.5kVA - 42A per phase, For 30kVA - 55A per phase             |
| <b>INPUT MCB RATING</b>   | For 2.5kVA - 20A, For 5kVA - 32A<br>For 7.5kVA - 50A, For 10kVA - 63A   | For 7.5kVA - 20A, For 15kVA - 32A<br>For 22.5kVA - 50A, For 30kVA - 63A   |
| <b>INPUT CONNECTION</b>   | Terminal block (R, N and E)   | Terminal block (R, Y, B, N and E)   |
| <b>INPUT WIRE SIZE</b>  | For 2.5kVA 4 sq.mm (AWG 12) ; For 5kVA - 6 sq.mm (AWG 10)<br>For 7.5kVA - 6 sq.mm (AWG 10) ; For 10kVA - 10 sq.mm (AWG 8) | For 7.5kVA - 4 sq.mm (AWG 12) ; For 15kVA - 6 sq.mm (AWG 10)<br>For 22.5kVA 6 sq.mm (AWG 10) ; For 30kVA - 10 sq.mm (AWG 8) |
| <b>ELIMINATES VOLTAGE SAGS</b>  | Up to 50V (22 % considering 230V nominal)   |   |
| <b>SWELL COMPENSATION</b>   | Up to 50V (20% considering 230V nominal)  |   |
| <b>COMPENSATION IRRESPECTIVE OF PHASE</b>   | Yes   |   |
| <b>NOMINAL OUTPUT VOLTAGE</b>   | 230V AC   | 400V AC   |
| <b>OUTPUT VOLTAGE RANGE</b>   | 220-230-240V AC (Selectable)  | 400VAC Ph - Ph ( 220-230-240V Ph- Neutral Selectable)   |
| <b>POWER EFFICIENCY</b>   | Typically over 97% (with 20-100 % load conditions)  |   |
| <b>CORRECTION</b>   | Less than 20 msec   |   |
| <b>VOLTAGE COMPENSATION</b>   | Up to 50V   |   |
| <b>MAXIMUM RATED OUTPUT CURRENT</b>   | For 2.5kVA - 11A, For 5kVA - 22A<br>For 7.5kVA - 33A, For 10kVA - 44A   | For 7.5kVA - 11A/Ph, For 15kVA - 22A/Ph<br>For 22.5kVA - 33A/Ph, For 30kVA - 44A/Ph   |
| <b>VOLTAGE REGULATION</b>   | ±1%   |   |
| <b>RELAXED OPERATING VOLTAGE FOR ±10% COMPENSATION</b>                              | 160 - 300V AC   | 277 - 520V AC   |
| <b>OUTPUT CONNECTION</b>  | Terminal block (L, N and E)   | Terminal block (L1, L2, L3, N and E)  |
| <b>LOAD BYPASS</b>  | Auto (activated within 5 sec of fault detection) / Manual selectable  |   |
| <b>7 SEGMENT LED DISPLAY</b>  | Regular input and output  |   |
| <b>BAR GRAPH LED</b>  | Load indication with resolution of 10%  |   |
| <b>LED INDICATION</b>   | Overload, Overvoltage, Undervoltage, Overcurrent  |   |
| <b>BUZZER INDICATION</b>  | Power on, Overload, Overvoltage, Undervoltage, Overcurrent, Over temp   |   |
| <b>CAPACITY</b>   | 2.5kVA, 5kVA, 7.5kVA, 10kVA   | 7.5kVA, 15kVA, 22.5kVA, 30kVA   |
| <b>POWER CONSUMPTION</b>  | 100VA   | 100VA per phase   |
| <b>DIMENSIONS</b>   | For 2.5kVA & 5kVA - 353(H) x 282(W) x 282(D) mm<br>For 7.5kVA & 10kVA - 445(H) x 353(W) x 347(D) mm approx.               | For 7.5kVA & 15kVA - 617.3(H) x 368(W) x 530(D)mm<br>For 22.5kVA & 30kVA - 643 (H) x 470(W) x 780(D)mm approx.              |
| <b>WEIGHT</b>   | For 2.5kVA - 18 kg approx. , For 5kVA - 28 kg approx.<br>For 7.5kVA - 35 kg approx. , For 10kVA - 50 kg approx.           | For 7.5kVA - 60 kg approx. , For 15kVA - 85 kg approx.<br>For 22.5kVA - 100 kg approx. , For 30kVA - 120 kg approx.         |
| <b>MOUNTING</b>   | 4 High Quality Castor wheels  |   |
| <b>WARRANTY</b>   | 3 years   |   |
| <b>INPUT PROTECTION</b>   | Line overcurrent, overvoltage, undervoltage   |   |
| <b>OUTPUT PROTECTION</b>  | Overload, Over current trip   |   |
| <b>OVERLOAD &amp; SHORT-CIRCUIT</b>   | Through suitable input circuit breaker  |   |
| <b>SURGE TEST CONDITIONS</b>  | As per class 2 Surge (Combination wave)   |   |
| <b>SURGE LET-THROUGH VOLTAGES</b>   | 1.2 X 50µs, 6kV, 8 X 20µs, 3 kA waveform. L - N < 300V  |   |
| <b>AMBIENT TEMP.</b>  | 0 - 50°C, 10 to 90% RH non-condensing   |   |
| <b>IP PROTECTION CLASS</b>  | IP 2x   |   |

## Ordering information

### LED Power Factor Controllers

| PRODUCT CODE           | SUPPLY VOLTAGE           | OUTPUT |                | CERTIFICATION |
|------------------------|--------------------------|--------|----------------|---------------|
|                        |                          | STEPS  | COMMN. (RS485) |               |
| APFC147-108-90/550V    | 90 to 550V AC, 50 / 60Hz | 8      | ---            | ---           |
| APFC347-108-230V       | 85 to 270V AC, 50 / 60Hz | 8      | ---            | ---           |
| 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            |

### LCD Power Factor Controllers

| PRODUCT CODE           | SUPPLY VOLTAGE           | OUTPUT |                | CERTIFICATION |
|------------------------|--------------------------|--------|----------------|---------------|
|                        |                          | STEPS  | COMMN. (RS485) |               |
| APFC148-312-90/550V    | 90 to 550V AC, 50 / 60Hz | 12     | YES            | ---           |
| APFC148-312-90/550V-CE | 90 to 550V AC, 50 / 60Hz | 12     | YES            | 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            |

### Standard Duty Capacitor Banks

| PRODUCT CODE | POWER | VOLTAGE | FREQUENCY | CURRENT | CAPACITANCE | DIMENSIONS |
|--------------|-------|---------|-----------|---------|-------------|------------|
|              | kVAr  | V       | Hz        | A       | µF          | mm         |
| SDCAP01440   | 1     | 440     | 50        | 1.31    | 8.22        | 40 x 130   |
| SDCAP02440   | 2     | 440     | 50        | 2.62    | 16.44       | 45 x 130   |
| SDCAP03440   | 3     | 440     | 50        | 3.93    | 24.66       | 50 x 130   |
| SDCAP04440   | 4     | 440     | 50        | 5.24    | 32.88       | 57 x 130   |
| SDCAP05440   | 5     | 440     | 50        | 6.55    | 41.10       | 63 x 130   |
| SDCAP07440   | 7.5   | 440     | 50        | 9.825   | 61.65       | 68 x 190   |
| SDCAP10440   | 10    | 440     | 50        | 13.10   | 82.20       | 75 x 200   |
| SDCAP12440   | 12    | 440     | 50        | 15.72   | 98.64       | 85 x 200   |
| SDCAP15440   | 15    | 440     | 50        | 19.65   | 123.30      | 75 x 300   |
| SDCAP20440   | 20    | 440     | 50        | 20.26   | 164.40      | 85 x 300   |
| SDCAP25440   | 25    | 440     | 50        | 32.75   | 205.40      | 90 x 300   |

### Heavy Duty Capacitor Banks

| PRODUCT CODE             | POWER     | VOLTAGE | FREQUENCY | CURRENT | CAPACITANCE | DIMENSIONS |
|--------------------------|-----------|---------|-----------|---------|-------------|------------|
|                          | kVAr      | V       | Hz        | A       | µF          | mm         |
| <b>Heavy Duty - 440V</b> |           |         |           |         |             |            |
| HDCAP01440               | 1         | 440     | 50        | 1.31    | 8.22        | 40 x 130   |
| HDCAP02440               | 2         | 440     | 50        | 2.62    | 16.44       | 45 x 130   |
| HDCAP03440               | 3         | 440     | 50        | 3.93    | 24.66       | 50 x 130   |
| HDCAP04440               | 4         | 440     | 50        | 5.24    | 32.88       | 57 x 130   |
| HDCAP05440               | 5         | 440     | 50        | 6.55    | 41.10       | 63 x 130   |
| HDCAP07440               | 7.5       | 440     | 50        | 9.825   | 61.65       | 68 x 190   |
| HDCAP10440               | 10        | 440     | 50        | 13.10   | 82.20       | 75 x 200   |
| HDCAP12440               | 12 / 12.5 | 440     | 50        | 15.72   | 98.64       | 85 x 200   |
| HDCAP15440               | 15        | 440     | 50        | 19.65   | 123.30      | 75 x 300   |
| HDCAP20440               | 20        | 440     | 50        | 20.26   | 164.40      | 85 x 300   |
| HDCAP25440               | 25        | 440     | 50        | 32.75   | 205.40      | 90 x 300   |

### Heavy Duty Capacitor Banks

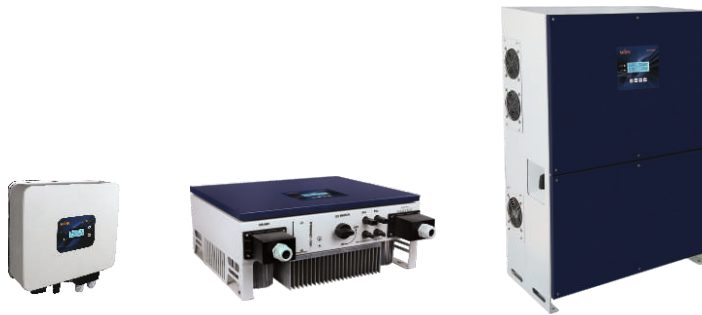
| PRODUCT CODE             | POWER | VOLTAGE | FREQUENCY | CURRENT | CAPACITANCE | DIMENSIONS |
|--------------------------|-------|---------|-----------|---------|-------------|------------|
|                          | kVAr  | V       | Hz        | A       | µF          | mm         |
| <b>Heavy Duty - 480V</b> |       |         |           |         |             |            |
| HDCAP05480               | 5     | 480     | 50        | 6.01    | 34.56       | 63 x 200   |
| HDCAP10480               | 10    | 480     | 50        | 12.02   | 69.11       | 85 x 200   |
| HDCAP15480               | 15    | 480     | 50        | 18.03   | 103.67      | 85 x 300   |
| HDCAP20480               | 20    | 480     | 50        | 24.04   | 138.22      | 90 x 300   |
| HDCAP25480               | 25    | 480     | 50        | 30.05   | 172.78      | 100 x 300  |
| <b>Heavy Duty - 525V</b> |       |         |           |         |             |            |
| HDCAP05525               | 5     | 525     | 50        | 5.49    | 28.85       | 63 x 200   |
| HDCAP10525               | 10    | 525     | 50        | 10.99   | 57.7        | 85 x 200   |
| HDCAP15525               | 15    | 525     | 50        | 16.48   | 86.55       | 85 x 300   |
| HDCAP20525               | 20    | 525     | 50        | 21.98   | 115.4       | 90 x 300   |
| HDCAP25525               | 25    | 525     | 50        | 27.47   | 144.25      | 100 x 300  |

### Advanced Static VAR Generators


| PRODUCT CODE       | DESCRIPTION  |
|--------------------|--|
| ASVG-050-WLL-4P-04 | Advanced Static VAR Generator, 50 kVAR, Wall mounting, 3P-4W, with HMI Display 4.3 inch  |
| ASVG-050-RCK-4P-04 | Advanced Static VAR Generator, 50 kVAR, Rack mounting, 3P-4W, with HMI Display 4.3 inch  |
| ASVG-050-WLL-4P-XX | Advanced Static VAR Generator, 50 kVAR, Wall mounting, 3P-4W, without display            |
| ASVG-050-RCK-4P-XX | Advanced Static VAR Generator, 50 kVAR, Rack mounting, 3P-4W, without display            |
| ASVG-050-WLL-3P-04 | Advanced Static VAR Generator, 50 kVAR, Wall mounting, 3P-3W, with HMI Display 4.3 inch  |
| ASVG-050-RCK-3P-04 | Advanced Static VAR Generator, 50 kVAR, Rack mounting, 3P-3W, with HMI Display 4.3 inch  |
| ASVG-050-WLL-3P-XX | Advanced Static VAR Generator, 50 kVAR, Wall mounting, 3P-3W, without display            |
| ASVG-050-RCK-3P-XX | Advanced Static VAR Generator, 50 kVAR, Rack mounting, 3P-3W, without display            |
| ASVG-100-WLL-4P-04 | Advanced Static VAR Generator, 100 kVAR, Wall mounting, 3P-4W, with HMI Display 4.3 inch |
| ASVG-100-RCK-4P-04 | Advanced Static VAR Generator, 100 kVAR, Rack mounting, 3P-4W, with HMI Display 4.3 inch |
| ASVG-100-WLL-4P-XX | Advanced Static VAR Generator, 100 kVAR, Wall mounting, 3P-4W, without display           |
| ASVG-100-RCK-4P-XX | Advanced Static VAR Generator, 100 kVAR, Rack mounting, 3P-4W, without display           |
| ASVG-100-WLL-3P-04 | Advanced Static VAR Generator, 100 kVAR, Wall mounting, 3P-3W, with HMI Display 4.3 inch |
| ASVG-100-RCK-3P-04 | Advanced Static VAR Generator, 100 kVAR, Rack mounting, 3P-3W, with HMI Display 4.3 inch |
| ASVG-100-WLL-3P-XX | Advanced Static VAR Generator, 100 kVAR, Wall mounting, 3P-3W, without display           |
| ASVG-100-RCK-3P-XX | Advanced Static VAR Generator, 100 kVAR, Rack mounting, 3P-3W, without display           |

### Static Voltage Regulators

| PRODUCT CODE          | DESCRIPTION   |
|-----------------------|---|
| SINE-1P-2.5-180/280V  | Static Voltage Regulator, 1 phase 2.5kVA, 180 / 280V  |
| SINE-1P-5-180/280V    | Static Voltage Regulator, 1 phase 5kVA, 180 / 280V    |
| SINE-1P-7.5-180/280V  | Static Voltage Regulator, 1 phase 7.5kVA, 180 / 280V  |
| SINE-1P-10-180/280V   | Static Voltage Regulator, 1 phase 10kVA, 180/280V     |
| SINE-3P-7.5-340/480V  | Static Voltage Regulator, 3 phase 7.5kVA, 340 / 480V  |
| SINE-3P-15-340/480V   | Static Voltage Regulator, 3 phase 15kVA, 340 / 480V   |
| SINE-3P-22.5-340/480V | Static Voltage Regulator, 3 phase 22.5kVA, 340 / 480V |
| SINE-3P-30-340/480V   | Static Voltage Regulator, 3 phase 30kVA, 340 / 480V   |



| FEATURES  | <ul style="list-style-type: none"> <li>• Anti-islanding protection</li> <li>• Wider MPPT range</li> <li>• Low start-up voltage</li> <li>• &gt;97% Efficiency</li> <li>• Ingress protection - IP65</li> <li>• Natural cooling convection</li> <li>• Remote monitoring</li> </ul>                                    |                 |                 |             |                 |                  |
|---|--|-----------------|-----------------|-------------|-----------------|------------------|
|   | MAX. DC INPUT POWER  | 3.3kW*          | 6kW             | 6kW*        | 10kW*           | 50kW*            |
| MAX. ALLOWABLE PV POWER                         | 4.2kW  |                 | 7.5kW           | 12.5kW      | 75kW            | 150kW            |
| NOMINAL PV VOLTAGE                              | 360V   |                 | 630V            |             | 600V            |                  |
| MAX. DC INPUT VOLTAGE                           | 550V   | 600             | 1000V           |             | 1000V           |                  |
| START-UP VOLTAGE                                | 80V  |                 | 180V            |             | 200V            |                  |
| OPERATING RANGE                                 | 65 - 550V  | 80-550          | 160 - 1000V     |             | 200 - 1000V     | 180 - 1000V      |
| MPPT VOLTAGE RANGE                              | 65 - 550V  | 80-550          | 160 - 1000V     |             | 200 - 1000V     | 180 - 1000V      |
| MAX INPUT CURRENT / MPPT                        | 13A  | 13.5A           | 11.6 / 11.6A    |             | 40A / 30A / 30A | 26A              |
| NUMBER OF MPPT                                  | 1  | 2               | 2               |             | 3               | 10               |
| MAX INPUT STRINGS NUMBER                        | 1  |                 | 2               |             | 10              | 20               |
| MAXIMUM PV SHORT CIRCUIT CURRENT PER MPPT (Isc) | 16   | 16.9            | 16              |             | 55.5            | 40               |
| RATED OUTPUT POWER                              | 3.3kW  | 6               | 6kW             | 10kW        | 50kW            | 100kW            |
| MAX. OUTPUT POWER                               | 3.3kW  | 6               | 6.6kW           | 11kW        | 55kW            | 110kW            |
| NOMINAL AC CURRENT, RMS                         | 13.75A   | 25A             | 8.33A           | 13.9A       | 69.44           | 138.88A          |
| MAX. OUTPUT CURRENT                             | 16A  | 27.2A           | 10A             | 16A         | 84A             | 152.68A          |
| GRID VOLTAGE RANGE                              | 180 - 280V   |                 | 320 - 480V      |             | 277 - 460V      |                  |
| GRID FREQUENCY RANGE                            | 50 / 60 Hz (45 - 55Hz / 55 - 65 Hz)  |                 |                 |             |                 |                  |
| POWER FACTOR (AT RATED OUTPUT POWER)            | ~ 1 (Adjustable from 0.8 leading to 0.8 lagging)   |                 |                 |             |                 |                  |
| TOTAL HARMONIC DISTORTION (THDi)                | <3% at rated load  |                 |                 |             |                 |                  |
| FEED-IN PHASE/CONNECTION PHASE                  | Single Phase   |                 |                 | Three Phase |                 |                  |
| MAX. EFFICIENCY                                 | 97.40%   | 98.40           | 98.3%           |             | 98.9%           | 98.7%            |
| MPPT EFFICIENCY                                 | >99.5%   | >99.9           | >99.5%          |             | >99.9%          |                  |
| EURO EFFICIENCY                                 | 97.1%  | 97.5            | 97.7%           | 97.9%       | 98.4%           | 98.3%            |
| PROTECTIONS                                     | DC Reverse Polarity, Short Circuit, Over Current, Over / Under Voltage, Over / Under Frequency, Insulation resistance monitoring, Residual current detection, Surge Protection, Islanding Protection, Temperature Protection, Integrated DC Switch, [Integrated AFCI (DC arc-fault circuit protection) (Optional)] |                 |                 |             |                 |                  |
| DC CONNECTION                                   | MC4 Connectors   |                 |                 |             |                 |                  |
| DISPLAY   | LCD with LED indications   |                 |                 |             |                 |                  |
| DATALOGGER & COMM.                              | RS485 / Wi-Fi / GSM* (Optional)  |                 |                 |             |                 |                  |
| TOPOLOGY  | Transformerless  |                 |                 |             |                 |                  |
| CONSUMPTION @ NIGHT                             | < 0.5W   | < 1W            |                 |             | < 1W            |                  |
| OPERATING TEMP. RANGE                           | -25°C to 60°C  |                 |                 |             |                 |                  |
| COOLING METHOD                                  | Natural convection   |                 |                 |             |                 |                  |
| RELATIVE HUMIDITY                               | 0 to 100% non-condensing   |                 |                 |             |                 |                  |
| MAX. OPERATIONAL ALTITUDE                       | 4000 m   |                 | 3000 m          |             | 4000 m          |                  |
| NOISE   | <25 dBA  |                 | <30 dBA         |             | <60 dBA         |                  |
| DESIGNED LIFETIME                               | > 20 years   |                 |                 |             |                 |                  |
| WARRANTY  | 7 years  |                 |                 |             |                 |                  |
| IP PROTECTION CLASS                             | IP65   |                 |                 |             |                 |                  |
| DIMENSIONS (H x W x D)mm                        | 313 x 275 x 131  | 375 x 310 x 157 | 500 x 500 x 200 |             | 580 x 830 x 295 | 680 x 1120 x 380 |
| WEIGHT  | 5.2 kg approx.   | 10.8 kg approx. | 26 kg approx.   |             | 86 kg approx.   | 100 kg approx.   |
| MOUNTING  | Wall mount   |                 |                 |             |                 |                  |

NOTE : \* BIS Certified 

## Ordering information

\* Other ratings of 1.5kW, 2.5kW, 4.2kW, 5.2kW also available

\* Other ratings of 30kW,33kW also available

| PRODUCT CODE | PHASE        | DESCRIPTION  |
|--------------|--------------|--|
| GTI003WLM1PW | SINGLE PHASE | Grid Tie Inverter - 1 Phase/ 3 kW, Wall mounted with Wifi Module |
| GTI006WLM1PW | SINGLE PHASE | Grid Tie Inverter - 1 Phase/ 6 kW, Wall mounted with Wifi Module |

| PRODUCT CODE | PHASE       | DESCRIPTION  |
|--------------|-------------|--|
| GTI006WLM3PW | THREE PHASE | Grid Tie Inverter - 3 Phase/ 06 kW, Wall mounted with Wifi Module  |
| GTI010WLM3PW | THREE PHASE | Grid Tie Inverter - 3 Phase/ 10 kW, Wall mounted with Wifi Module  |
| GTI050WLM3PW | THREE PHASE | Grid Tie Inverter - 3 Phase/ 50 kW, Wall mounted with Wifi Module  |
| GTI100WLM3PW | THREE PHASE | Grid Tie Inverter - 3 Phase/ 100 kW, Wall mounted with Wifi Module |



**640PSRV-CE**  
90(H) x 17.5(W) x 60(D)mm



**640PSR-CE**  
90(H) x 17.5(W) x 60(D)mm



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



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

|                              |   |   |  |  |
|------------------------------|---|---|--|--|
| <b>FEATURES</b>              | <ul style="list-style-type: none"> <li>• LED Indication : Healthy and Trip conditions</li> <li>• Monitors Phase Failure, Sequence</li> <li>• Selectable Asymmetry</li> <li>• SPP / PSR selectable</li> <li>• Variable trip time delay : 2 to 10 sec</li> <li>• Under/ Over voltage - ON / OFF selectable</li> </ul> | <ul style="list-style-type: none"> <li>• LED Indication : Healthy and Trip conditions</li> <li>• Monitors Phase Failure, Sequence, Asymmetry</li> </ul> | <ul style="list-style-type: none"> <li>• Monitor Phase Failure, Sequence &amp; 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, Sequence &amp; Asymmetry</li> <li>• LED indication : Relay ON</li> </ul> |
| <b>MODES</b>                 | Phase failure : Yes,<br>Phase sequence : Yes,<br>Phase asymmetry : 40V / 65V selectable,<br>Reset : Auto reset on removal of fault condition,<br>Under voltage : 310V fixed,<br>Over voltage : 500V fixed   | Phase failure : Yes,<br>Phase sequence : Yes,<br>Phase asymmetry : 40V fixed,<br>Reset : Auto reset on removal of fault condition                       | Phase failure : Yes,<br>Phase sequence : Yes,<br>Phase asymmetry : 30V fixed,<br>Reset : Auto reset on removal of fault condition  |  |
| <b>TIME RANGES</b>           | Power ON delay : <400msec   |   | Power ON delay : 200msec   |  |
| <b>ACCURACY</b>              | ±5% of F.S.   |   | ±3% of F.S.  |  |
| <b>OUTPUT CONTACT</b>        | 1 C/O (SPDT)  |   |  |  |
| <b>OUTPUT RATING</b>         | NC : 3A@250V AC / 30V DC , NO : 5A@250V AC / 30V DC   |   |  |  |
| <b>ELECTRICAL CONNECTION</b> | 3Ø - 3W   |   |  |  |
| <b>OPERATING VOLTAGE</b>     | 154 to 520V AC (L - L)  |   | 154 to 500V AC (L - L)   |  |



**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, 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; Asymmetry</li> <li>• LED indication : Relay ON</li> <li>• Slim space saving design</li> </ul> |
| <b>MODES</b>                 | Phase failure : Yes, Phase sequence : Yes,<br>Phase asymmetry : 30V fixed,<br>Reset : Auto reset on removal of fault condition   | Phase failure : Yes,<br>Phase sequence : Yes,<br>Phase asymmetry : 30V fixed,<br>Reset : Auto reset on removal of fault condition                                  |
| <b>TIME RANGES</b>           | Power ON delay : 3sec  |  |
| <b>ACCURACY</b>              | ±1% of F.S.  |  |
| <b>OUTPUT CONTACT</b>        | 2 C/O (DPDT)   | 1 C/O (SPDT)   |
| <b>OUTPUT RATING</b>         | NC : 3A@250V AC / 30V DC , NO : 5A@250V AC / 30V DC  |  |
| <b>ELECTRICAL CONNECTION</b> | 3Ø - 3W  |  |
| <b>OPERATING VOLTAGE</b>     | 280 to 520V AC (L - L)   | 154 to 500V AC (L - L)   |



**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 Failure, Sequence, Asymmetry ; Under Voltage, Over Voltage</li> <li>• Modes : Auto, Manual, Bypass</li> <li>• Pre-wired terminals</li> </ul>                              |   |
| <b>MODES</b>                   | Phase failure : Yes, Phase sequence : Yes,<br>Under voltage (UV) : Healthy to trip ≤195V, Trip to healthy ≥205V<br>Over voltage (OV) : Healthy to trip ≥400V, Trip to healthy ≤390V                                      | Phase failure : Yes, Phase sequence : Yes,<br>Under voltage (UV) : Healthy to trip ≤313V, Trip to healthy ≥323V<br>Over voltage (OV) : Healthy to trip ≥457V, Trip to healthy ≤447V |
| <b>MEASUREMENTS</b>            | Phase Failure, Sequence, Asymmetry, Under voltage, Over voltage  |   |
| <b>OPERATING VOLTAGE RANGE</b> | 195V AC - 400V AC (L - L)<br>50 - 60Hz   | 313V AC - 457V AC (L - L)<br>50 - 60Hz  |
| <b>TIME SETTING</b>            | Over voltage , Under voltage & Voltage unbalance : 3.5sec ±1.5sec<br>Phase loss : Instantaneous (<400msec), Phase sequence<br>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



**600DVR-CE**  
90(H) x 17.5(W) x 62(D)mm



**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>• Monitor Under &amp; Over Voltage</li> <li>• Monitor Phase Failure, Sequence &amp; Asymmetry</li> <li>• Monitor Under, Over Frequency &amp; Neutral loss</li> </ul>   | <ul style="list-style-type: none"> <li>• Monitors Under &amp; Over Voltage</li> <li>• Monitors Phase Failure &amp; Sequence</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 Failure &amp; Sequence</li> <li>• LED indication : Power ON, Fault condition</li> </ul> |  |
| <b>MODES</b>                 | Phase failure : Yes ; Phase sequence : Yes<br>Phase asymmetry : 5-99%<br>Over frequency : 45-65Hz<br>Under Frequency : 45-65Hz<br>Over Voltage : 280 to 600VAC (3Ø - 3W) (L-L)<br>: 160 to 300VAC (3Ø - 4W) (L-N)<br>Under Voltage : 280 to 600VAC (3Ø - 3W) (L-L)<br>: 160 to 300VAC (3Ø - 4W) (L-N)<br>Neutral Loss : Yes | Phase failure : Yes<br>Phase sequence : Yes<br>Under voltage : 310 to 405V AC<br>Over voltage : 425 to 520V AC<br>Reset : Auto reset on removal of fault condition  | Phase failure : Yes<br>Phase sequence : Yes<br>Under voltage : 170 to 224V AC<br>Over voltage : 236 to 290V AC<br>Reset : Auto reset on removal of fault condition                         | Phase failure : Yes<br>Phase sequence : Yes<br>Under voltage : 310 to 405V AC<br>Over voltage : 425 to 520V AC<br>Reset : Auto reset on removal of fault condition |
| <b>TIME RANGES</b>           | 0-999 sec (For Power ON, Trip time, Recovery time)<br>Response time < 120ms (For Under voltage, Over voltage, Phase asymmetry)<br>Response time < 250ms (For Phase asymmetry, Phase failure, Phase sequence , Neutral loss)   | Trip time delay : 0.2 to 10s, 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 : +1% of Full Range<br>Trip Time : +5% of setting + 250ms, Frequency : +0.3Hz  | Trip Voltage : ±0.5% of F.S, Trip Time : ±5% of F.S   |  |  |
| <b>OUTPUT CONTACT</b>        | 1 C/O SPDT  |   | 1 C/O (SPDT)   |  |
| <b>OUTPUT RATING</b>         | NO : 5A@250V AC / 30V DC, NC : 3A@250V AC / 30V DC  |   | NC : 3A@250V AC / 30V DC, NO : 5A@250V AC / 30V DC   |  |
| <b>ELECTRICAL CONNECTION</b> | (3Ø - 3W), (3Ø - 4W)  |   | 3Ø - 3W  |  |
| <b>OPERATING VOLTAGE</b>     | 280 to 600VAC ( 3 Ø - 3W) (L-L)<br>160 to 300VAC ( 3 Ø - 4W) (L-N)  | 310 to 520V AC (L - L)  | 170 to 290V AC (L - L)   | 310 to 520V AC (L - L)   |



**900VPR-2-280/600V-CE**  
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 Phase Failure, Sequence, Asymmetry, Under voltage, Over voltage, Under frequency and Over frequency</li> <li>Two separate alarm relays</li> <li>LED indication : Power ON, Fault condition</li> </ul> | <ul style="list-style-type: none"> <li>Monitors Phase Failure, Sequence, Asymmetry, Under voltage, Over voltage, Under frequency 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>                        | Phase Failure, Sequence, Asymmetry, Under / Over voltage, Under / Over frequency, (Neutral Loss not applicable for 900VPR-2-280/520V)   |   |
| <b>DISPLAY</b>                             | 3 digit LCD   | 3 digit LCD with backlight  |
| <b>ALARM INDICATIONS</b>                   | Trip  |   |
| <b>ELECTRICAL CONNECTION</b>               | 1Ø - 2W (Only applicable for 900VPR-2-280/600V-CE), 3Ø - 3W, 3Ø - 4W  |   |
| <b>TRIP SETTING</b>                        | Under / Over voltage : 280 to 600V AC L-L (for 3Ø-3W), 160 to 300V AC L-N (for 3Ø-4W),<br>Under / Over frequency : 45 / 65Hz,<br>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,<br>Phase asymmetry : 5.0 to 30.0%  |
| <b>TRIP TIME SETTING</b>                   | Power ON delay : 0 to 999sec,<br>Trip time delay : 0 to 999sec<br>Recovery time delay : 0 to 999sec,<br>Response time : <200ms  | Power ON delay : 0.5 to 300sec, Trip time delay : 0 to 300sec<br>Recovery time delay : 0 to 300sec (In Auto Reset Mode),<br>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 : 0.2 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,<br>Time (Recovery time, Trip delay, Power on delay) : ±5% of setting ±200ms   | Voltage : ±1% of set value ±2 digits, Frequency : ±0.5% ±1 digits,<br>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 / 30V DC, NC : 3A@250V AC / 30V DC  |
| <b>SUPPLY VOLTAGE</b><br>(AC : 50 / 60 Hz) | Self powered, Operating voltage :<br>280 to 600V AC (L-L), 160 to 300V AC (L-N)   | 85 to 270V AC / DC  |



**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 Failure, Sequence &amp; Asymmetry</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 Failure, Sequence &amp; Asymmetry</li> <li>Adjustable switching hysteresis</li> <li>One relay with two change over alarm relay operation</li> </ul> |
| <b>MEASUREMENT</b>                         | Phase Failure, Sequence, Asymmetry, Under voltage, Over voltage  |   |
| <b>DISPLAY</b>                             | Separate LED indications for Power ON, Phase failure, Phase sequence, Phase asymmetry, Under voltage, Over voltage,  | 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)]<br>Over voltage : 105 to 125% of Un [242 to 288V AC (L - N)], Phase asymmetry : >10%  | Under voltage : 127 to 219V AC (L - N)<br>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<br>Recovery time delay : 5sec ± 200ms, Phase sequence trip delay <250msec  | Power ON delay : 0.5 to 300sec, Trip time delay : 0 to 300sec<br>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 / 30V DC, NO : 5A@250V AC / 30V DC   |   |
| <b>SUPPLY VOLTAGE</b><br>(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, Over Current protection for 1Ø system</li> <li>True RMS measurement</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, Over Current &amp; Current Asymmetry protection for 1Ø &amp; 3Ø system</li> <li>True RMS measurement</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>Monitors Under, Over Current protection for 1Ø system</li> <li>True RMS measurement</li> <li>One alarm relay with NC or NO operation</li> <li>LED indication : Fault condition</li> </ul> | <ul style="list-style-type: none"> <li>Monitors Under, Over Current &amp; Current Asymmetry protection for 1Ø &amp; 3Ø system</li> <li>True RMS measurement</li> <li>One alarm relay with NC or NO operation</li> <li>LED indication : Fault condition</li> </ul> |
| <b>MEASUREMENTS</b>                        | Under current, Over current (Current asymmetry applicable only for 900CPR-3, 900CPR-3-1-BL)   |  |  |   |
| <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, 900CPR-3-1-BL)  |  |  |   |
| <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 / 30V DC; NC : 3A @ 250V AC / 30V DC  |  |  |   |
| <b>SUPPLY VOLTAGE</b><br>(AC : 50 / 60 Hz) | 85 to 270V AC / DC  | 230V AC (±15%)   |  |   |

## Earth Fault Relay



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



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

|                                    |   |   |
|------------------------------------|---|---|
| <b>FEATURES</b>                    | <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> | <ul style="list-style-type: none"> <li>Work with Normal CT and EFCT</li> <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> |
| <b>MEASUREMENT</b>                 | Earth fault monitoring  | Earth Fault Current monitoring  |
| <b>DISPLAY</b>                     | 3 digit liquid crystal display with backlight   | 3 digits, 7 Segments LED Display  |
| <b>ELECTRICAL CONNECTION</b>       | 1Ø - 2W, 3Ø - 3W, 3Ø - 4W   | (1Ø - 2W), (3Ø - 3W), (3Ø - 4W)   |
| <b>FRAME RATING (CT PRIMARY)</b>   | 160A, 250A, 630A  | ---   |
| <b>TRIP SETTING</b>                | 10% to 80% of selectable MCCB frame rating  | Low set Value (10 to 1000 % of Primary Current)<br>High set value 1A (10 to 1000% of primary current)<br>High set value 5A (10 to 300% of primary current)  |
| <b>TIME RANGES</b>                 | Response time : <100ms, Trip time delay : 0 to 99.9sec, Recovery time : 0 to 99.9sec, Power ON delay : 0.5 to 99.9sec   | 0.5-99.9 sec (For Power ON, Trip Time, Recovery Time)   |
| <b>OUTPUT CONTACT &amp; RATING</b> | 2 x 1 C/O (SPDT)<br>NC : 3A@250V AC / 30V DC, NO : 5A@250V AC / 30V DC  | 2 x 2 C/O (SPDT)<br>NO : 5A@250V AC / 30V DC, NC : 3A@250V AC / 30V DC  |

## 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 |

## 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 (Up to 500mA) in 1Ø &amp; 3Ø system</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 (Power 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 5xln.  | 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<br>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 / 24V DC , NC: 3A @ 250VAC / 24V DC  | NO : 10A@277V AC / 28V DC  | NC : 3A@250V AC / 24V DC, NO : 5A@250V AC / 24V DC   |
| <b>SUPPLY VOLTAGE</b><br>(AC : 50 / 60 Hz) | 230V AC (± 15%)   |  |  |



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



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

|  |  |  |
|--|--|--|
| <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<br>Time : ± 5% of set Time + Response time  | Current : ± 5% of Input current<br>Time : ± 5% of Response time  |
| <b>OUTPUT CONTACT</b>                      | 1 C/O SPDT   |  |
| <b>OUTPUT RATING</b>                       | NC : 3A@250V AC / 28V DC, NO : 5A@250V AC / 28V DC   |  |
| <b>SUPPLY VOLTAGE</b><br>(AC : 50 / 60 Hz) | 90 to 270V AC / DC   | 230V AC (± 15%)  |



## Core Balance Current Transformers

|                                |                                 |
|--------------------------------|---------------------------------|
| <b>Description</b>             | Common Accessory for ELR        |
| <b>Operating current range</b> | 30mA - 30A                      |
| <b>Sizes (inner diameter)</b>  | 35mm, 70mm, 120mm, 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 Sequence &amp; Asymmetry</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 class curve), Over, Under current, Current asymmetry, Lock current, Earth fault, Phase Failure, 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)<br>T(sec.) setting : To select 2, 4, 6, 8, 10 sec trip time curve in overload trip curve graph.<br>Under current : 50% of Motor current, X Imax : To select motor current rating | Over load : Class 5,10,15,20,30, Over current : 4A to 480A, Under Current : 1A to 79A,<br>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 sequence : 5 sec, Phase asymmetry : 5 sec<br>Over load trip : As per (IDMT Curve), Under current trip : 5 Sec  | Power On delay : 1-999 sec, Trip time : 0-999 sec,<br>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 $\pm 100$ ms, Current : $\pm 5\%$ of set value  | Current : $\pm 5\%$ of Ir $\pm 1$ digit, Timing : $\pm 5\% + 100$ msec   |
| <b>OUTPUT CONTACT</b>        | 2 C/O (DPDT)  | 2 x1 C/O (SPDT)  |
| <b>OUTPUT RATING</b>         | NC : 5A@240V AC / 28V DC, NO : 5A@240V AC / 28V DC  |  |

## 3 $\emptyset$ - 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 class curve), Over, Under current, Current asymmetry, Lock current</li> <li>• Phase Failure, Sequence, Asymmetry, Over voltage and Under voltage</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 : NEMA class curve 5,10,15,20,30, Over current : 4A to 480A,<br>Under current : 1A to 79A, Current asymmetry : 1A to 79A, Lock current : 4A to 480A,<br>Over voltage : 280V-500V, Under voltage : 280V-500V, Voltage asymmetry : 5V TO 50V   | Over load : NEMA class curve 5,10,15,20,30, Over current : 10%-70% of Ir (Rated current)<br>Under current : 20%-80% of Ir (Rated current), Current asymmetry : Fixed: 50% of Ir<br>(Rated current) Lock current : Fixed 300% of Ir (Rated current), Over voltage : Fixed (480V),<br>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 ,<br>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,<br>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 Ir $\pm 1$ digit, Timing : $\pm 5\% \pm 100$ msec, Voltage : $\pm 1\%$ of 500V $\pm 1$ digit  |   |
| <b>OUTPUT CONTACT</b>        | 1 C/O (SPDT)   |   |
| <b>OUTPUT RATING</b>         | 5A@250V AC / 28V DC  |   |

## Motor Protection Current Transformer



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

|                      |                                |
|----------------------|--------------------------------|
| <b>Description</b>   | Common Accessory for MPR & PPR |
| <b>Current range</b> | 10A, 40A, 80A                  |

## 1Ø - 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 class curve), Over, Under current, Locked current</li> <li>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>Monitors Over load (As per NEMA class curve), Over, Under current, Locked current</li> <li>Over voltage, Under voltage</li> <li>Automatic pump on &amp; off as per water level detection</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 class curve), Over, Under current, Locked current</li> <li>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<br>B) Voltage measuring range : 180 to 300VAC (L - N)   |  |   |
| <b>TRIP SETTING</b>                     | Over load : NEMA class curve 5, 10, 15, 20, 30 ,<br>Over current : 2A to 32A, Under current : 0.2 to 29A, Locked current : 2A to 32A<br>Over voltage : 180V - 300V (L - N), Under voltage : 180V - 300V (L - N)   |  | Over load : NEMA class curve 5, 10, 15, 20, 30 ,<br>Over current : 10% to 70%, Under current : 20% to 80%<br>Locked current : 300% of Ir, Over voltage : 280V (fixed)<br>Under voltage : 180V (fixed)   |
| <b>TIME SETTINGS</b>                    | Power ON delay : 1 sec (Fixed), Trip time delay : 0 - 999 sec<br>Recovery time : 1 - 999 sec, Reset attempts 3 (fixed) : 1 - 999 min  |  | Power ON delay : 1 sec (fixed), Trip time delay : 0 - 10 sec<br>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)  |  |   |

## Liquid Level Controllers



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



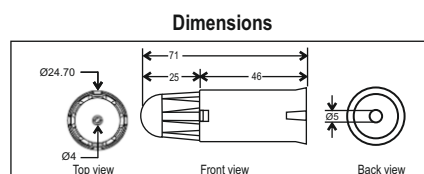
**LLCA-2M-U-CE**  
90(H) x 35(W) x 60(D)mm

|                         |  |  |
|-------------------------|--|--|
| <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 single and two tank liquid level monitoring</li> <li>Pump protection from dry run and overflow</li> <li>Adjustable trip &amp; recovery time delay</li> <li>Manual start facility</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 ohms to 200Kohms   | 0 ohms to 500Kohms   |
| <b>TRIP TIME</b>        | 0.5s   | 0.5s to 10s  |
| <b>MODE</b>             | Auto   | Auto / Manual  |
| <b>ACCURACY</b>         | ±5% + 100msec  |  |
| <b>OUTPUT CONTACT</b>   | 1 C/O (SPDT)   | 1 N/O & 1 N/C  |
| <b>OUTPUT RATING</b>    | 10A@250V AC / 28V DC   | 6A@ 277 V AC / 28V DC  |

## Liquid Level Sensor



- Stainless steel
- Suitable for conductive liquids



## Thermistor Protection Relay



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

## Annunciator



**AN-8-0-0-230V**  
147(H) x 76(W) x 63(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>  | FEATURES               | <ul style="list-style-type: none"> <li>• 8 Programmable windows</li> <li>• 6 Colour selection</li> <li>• RS485 MODBUS RTU protocol</li> </ul> |
|----------------|---|------------------------|---|
| LED INDICATION | Green : Power ON indication, Yellow : Sensor Indication, Red : Relay status   | DISPLAY                | Multicolour LED's - Fault annunciation  |
| INPUT TYPE     | PTC sensor  | NO. OF KEYS            | 4   |
| SENSOR         | Sensor short : <40 ( $\pm 1\Omega$ ),<br>Sensor healthy : 44 $\Omega$ ( $\pm 3\Omega$ ) to <3.8K $\Omega$ ( $\pm 150\Omega$ )<br>Sensor trip : $\geq 3.8K\Omega$ ( $\pm 150\Omega$ ) to <5.5K $\Omega$ ( $\pm 150\Omega$ )<br>Sensor open : $\geq 5.5K\Omega$ ( $\pm 150\Omega$ ) & above<br>Sensor cut-in : $\leq 1.5K\Omega$ ( $\pm 60\Omega$ ) | DIGITAL INPUTS         | 13  |
|                |   | OPERATING RANGE        | 5 - 30V DC  |
| FUNCTIONAL     | Relay operating mode : Fail-safe & Shunt-trip mode, Reset : Auto / Manual   | INPUT CURRENT          | 3mA @ 12V   |
| OUTPUT CONTACT | 2 C/O (DPDT)  | DIGITAL OUTPUTS        | 2   |
| OUTPUT RATING  | 8A@250V AC  | 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)   |

## Ordering information

### Line Monitoring Relay

| PRODUCT CODE | SUPPLY VOLTAGE | CERTIFICATION |
|--------------|----------------|---------------|
| 640PSR-CE    | 154 to 520V AC | CE            |
| 640PSR-V-CE  | 154 to 520V AC | CE            |
| 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 | ---           |

### Earth Fault Relay

| PRODUCT CODE   | SUPPLY VOLTAGE     | CERTIFICATION |
|----------------|--------------------|---------------|
| 900EFR-BL-U-CE | 85 to 270V AC / DC | CE            |
| EFR-341-2-CE   | 85 to 270V AC / DC | CE            |

### Earth Leakage Relay

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

### Core Balance Current Transformer




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

## Ordering information

### 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                    |

### Voltage Monitoring Relay

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

### Current Monitoring Relay

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

### Motor / Pump Protection Relay

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

### Motor Protection Current Transformer

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

### Liquid 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            |
| LLCA-2M-1-U-CE-RoHS | 85 to 270V AC / DC | CE            |
| PRODUCT CODE        | DESCRIPTION        |               |
| WLC SENSOR          | Set of 3 Numbers   |               |

### Thermistor Protection Relay

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

### Annunciator

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

## 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>                        | 6 minutes a year @ 25°C   |   |   |
| <b>OUTPUT CONTACT</b>                   | 1 C/O SPDT  | 2 x 1 C/O SPDT  | 1 C/O SPDT  |
| <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<br>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 -<br>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 :<br>3 - 30sec, 6 - 60sec<br>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<br>Repeat : ±0.5% F.S.<br>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 / 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   |       |  |
| <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 / 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<br>Change over : 50 / 100msec  | 1 / 10sec / min / hr<br>for both ON & OFF time   | ON time : 1 / 2 / 4 / 8min<br>Pause time : 10 / 20 / 40 / 80s   | 180sec  |
| <b>RESOLUTION</b>                       | ---   | 0.1sec   | ON time : 6s<br>Pause time : 0.1s   | 7.5sec  |
| <b>ACCURACY</b>                         | Setting : ±5%, Repeat : ±0.5% of F.S or 50ms  |  |   | Setting : ±10% of F.S.<br>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 / 24V DC   |  |   |   |
| <b>SUPPLY VOLTAGE (AC : 50 / 60 Hz)</b> | 110V AC, 230V AC<br>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 / 24V DC   |   |  |
| <b>SUPPLY VOLTAGE (AC : 50 / 60 Hz)</b> | 20 to 240V AC, 12 to 240V DC  |   | 230V AC, 24V AC / DC   |



## Analog Timers

## Digital Timers



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



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

| FEATURES                         | <ul style="list-style-type: none"> <li>Multi function (10 Functions)</li> <li>Wide time range (0.05sec to 300hr)</li> <li>Universal supply voltage</li> </ul> | <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> |
|----------------------------------|---|--|
| DISPLAY                          | ---   | 3 + 3 digits   |
| SET POINT                        | ---   | Single set point   |
| MODES                            | A, B, C, D, E, F, G, H, I, J  | A, B, C, D, E, F, H, J, K, L, P, Q, R, T, U  |
| TIME RANGES                      | 0.05sec to 300hr  | 9.99 / 99.9 / 999sec, 9 : 59min : sec, 99.9 / 999min, 9 : 59hr : min, 99.9 / 999hr   |
| RESOLUTION                       | 0.05sec   | 0.01sec  |
| TIME SETTING                     | Front knobs   | Front keypad   |
| RESET / START INPUT              | Start : Gate/Pulse start (Depending on modes)<br>Reset : Terminal / Remote  | Start : Gate/Pulse start (Depending on modes)<br>Reset : Front panel, On power interruption  |
| ACCURACY                         | Setting : ± 5% of F.S., Repeat : ± 0.5% or 50 ms  | Setting : ± 0.1% of F.S. or ±50ms, For Y contact operation : +100ms, Repeat : ± 0.1%   |
| OUTPUT CONTACT                   | 2 x 1 C/O SPDT  | 1 C/O SPDT   |
| CONTACT RATING                   | 6A @ 250V AC / 24V DC, resistive  | 8A @ 250V AC   |
| SUPPLY VOLTAGE (AC : 50 / 60 Hz) | 20 to 240V AC / DC  | 20 to 240V AC / DC   |

| Modes | 600DT  | 55MF-P11   | 55MF-P8   |
|-------|--|--|---|
|       | 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 | A - Signal ON delay, B - Interval, C - Cyclic Equal OFF first, D - Cyclic Equal ON first, E - Signal OFF delay, F - Signal ON / OFF delay, G - Interval after break H - Single shot, I - Retriggerable single shot, J - Delay on make/Delay on break | A - ON delay, B - Pulse output with instantaneous limit, C - ON delay instantaneous limit, D - Interval with instantaneous limit, E - Cyclic equal OFF first, F - Cyclic equal OFF first with instantaneous limit, G - Cyclic equal ON first, H - Cyclic equal ON first with instantaneous limit, I - Star delta with 50ms pause time, J - Star delta with 100ms pause time |

## 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            |

### Analog Timers

| PRODUCT CODE      | SUPPLY VOLTAGE               | CERTIFICATION |
|-------------------|------------------------------|---------------|
| 800XU-CU          | 20 to 240V AC, 12 to 240V DC | CE, UL        |
| 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          | ---           |

### Analog Timers

| PRODUCT CODE   | SUPPLY VOLTAGE               | CERTIFICATION |
|----------------|------------------------------|---------------|
| 600XU-A-1-CU   | 20 to 240V AC, 12 to 240V DC | CE, UL        |
| 600SD-2-230    | 230V AC                      | CE            |
| 600ST          | 240V AC                      | CE            |
| 600ST-CU       | 240V AC                      | CE, UL        |
| 642SQ-A        | 230VAC, 24V AC / DC          | ---           |
| 642XA          | 20 to 240V AC, 12 to 240V DC | ---           |
| 55XU-P8-230V-G | 20 to 240V AC, 12 to 240V DC | CE, UL        |
| 55XU-T-230V-G  | 20 to 240V AC, 12 to 240V DC | CE, UL        |
| 55XC-P8-230V-G | 20 to 240V AC, 12 to 240V DC | CE, UL        |
| 55XC-T-230V-G  | 20 to 240V AC, 12 to 240V DC | CE, UL        |
| 55ES-P8-230V-G | 230V AC, 24V AC / DC         | CE, UL        |
| 55ES-T-230V-G  | 230V AC, 24V AC / DC         | CE, UL        |
| 55MF-P11       | 20 to 240V AC / DC           | CE            |
| 55MF-P8        | 20 to 240V AC / DC           | CE            |

### Digital Timers

| PRODUCT CODE | SUPPLY VOLTAGE     | CERTIFICATION |
|--------------|--------------------|---------------|
| 600DT        | 20 to 240V AC / DC | CE            |
| 600DT-CU     | 20 to 240V AC / DC | CE, UL        |

## Programmable Timer

## Thumbwheel Timers



**XT543N**  
48(H) x 48(W) x 100(D)mm



**XT56-N**  
48(H) x 48(W) x 60(D)mm



**XT264-3**  
72(H) x 72(W) x 115(D)mm



**XT364-3**  
96(H) x 96(W) x 90(D)mm

|   |   |   |
|---|---|---|
| <b>FEATURES</b>                         | <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 digits  |   |
| <b>SET POINT</b>                        | Single set point  |   |
| <b>MODES</b>                            | 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 (Programmable)   | Start : Pulse start   |
|   | Reset : Front panel, Remote reset, On power interruption  |   |
| <b>ACCURACY</b>                         | ±0.5% of F.S. or 50ms   |   |
| <b>OUTPUT CONTACT</b>                   | 2 C/O SPDT  |   |
| <b>CONTACT RATING</b>                   | 5A @ 250V AC or 24V AC / DC   |   |
| <b>SUPPLY VOLTAGE (AC : 50 / 60 Hz)</b> | 90 to 270V AC / DC [24V DC (Optional) - For XT56-N]   |   |

## Programmable Timer

## Multifunction

## Sequential Timer



**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 / DC [24V DC (Optional) - For XT546 & XT246]   |   | 90 to 270V AC / DC or 24V DC   | 85 to 270V AC / DC   |

## Time Interval Meter / Hours Meters



**T1103C**  
48(H) x 96(W) x 88(D)mm



**T1412B**  
36(H) x 72(W) x 74.5(D)mm



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

|   |   |   |  |
|---|---|---|--|
| <b>FEATURES</b>                         | <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>• Time totaliser</li> <li>• Selectable least count</li> <li>• Inbuilt sensor supply</li> <li>• Universal power supply</li> </ul> | <ul style="list-style-type: none"> <li>• LCD Hour Meter</li> <li>• Battery powered</li> <li>• Contact / Voltage input</li> </ul> |
| <b>DISPLAY</b>                          | 4 digits  | 6 digit 7 segment LED Display   | 7½ digits  |
| <b>TIME RANGES</b>                      | a) Auto ranging : .0001 to 9999sec<br>b) Fixed ranges : .9999, 9.999, 99.99, 999.9, 9999sec                           | a) 99999.9 sec, b) 999999 sec<br>c) 99999.9 min, d) 999999 min<br>e) 99999.9 hrs, f) 999999 hrs   | a) 1999.59.59hr:min:sec<br>b) 199999.99hr  |
| <b>ACCURACY</b>                         | ±0.05% +1 count   | ±0.05%  |  |
| <b>INPUT</b>                            | Potential free contact & 3 to 30V DC from solid state devices   | Potential free contact, PNP Sensor  | a) 24 to 260V AC / DC<br>b) Contact input  |
| <b>RESET</b>                            | Front, Remote (Reset time : 20ms), Auto   | Terminal  | Remote   |
| <b>MEMORY</b>                           | ---   | 10 years  | 5 years  |
| <b>SUPPLY VOLTAGE (AC : 50 / 60 Hz)</b> | 90 to 270V AC / DC  |   | Battery powered  |

## Digital Counters



**XC22B V2**  
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 78(D)mm

|   |  |   |   |
|---|--|---|---|
| <b>FEATURES</b>                         | <ul style="list-style-type: none"> <li>• Thumbwheel setting</li> <li>• Auto reset</li> <li>• Battery backup</li> <li>• Memory retention</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> |
| <b>DISPLAY</b>                          | 4 digits   | 6 digits  | 6 + 4 digits  |
| <b>MODES</b>                            | ON delay / Interval / Auto reset   | ON delay / Interval / Auto reset / Time pulse repeat  |   |
| <b>RANGES</b>                           | 9999 counts  | Selectable least count : 0.0001, 0.001, 0.01, 0.1 & 1<br>Rate : 4.00 to 99999 RPM / RPH   | -999 to 999999 counts   |
| <b>RESET</b>                            | Front, Remote, Auto (Optional)   | Front (user selectable), Remote   | Front, Remote, Power interruption   |
| <b>MEMORY</b>                           | Yes (Optional)   | Yes   |   |
| <b>DIRECTION</b>                        | Up   | Up, Down, Bi-directional, Quadrature  |   |
| <b>SET POINT</b>                        | Single set point   | Dual set point  |   |
| <b>INPUT SPEED</b>                      | 30Hz, 5kHz (Selectable via dip switch)   | 30Hz, 2.5kHz, 5kHz (Programmable)   | 30Hz, 5kHz (Programmable)   |
| <b>SCALE FACTOR</b>                     | ---  | 0.00001 to 9.99999 x 10 <sup>n</sup> , n= -5, -4, -3, -2, -1, 0, 1, 2   |   |
| <b>SENSOR SUPPLY</b>                    | Inbuilt, 12V DC @30mA  |   |   |
| <b>OUTPUT CONTACT</b>                   | 2 C/O SPDT   | 2 C/O SPDT  |   |
| <b>CONTACT RATING</b>                   | 5A @ 250V AC or 24V DC   | 5A @ 250V AC or 24V DC  |   |
| <b>INPUT</b>                            | NPN, PNP sensor, Potential free contact  | NPN / PNP sensor, Potential free contact, Encoder   |   |
| <b>SUPPLY VOLTAGE (AC : 50 / 60 Hz)</b> | 90 to 270V AC / DC   |   |   |

## Speed Monitoring Relay

## Counters



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



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



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

|   |   |  |  |
|---|---|--|--|
| <b>FEATURES</b>                             | <ul style="list-style-type: none"> <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> | <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> |
| <b>DISPLAY</b>                              | 4 digits  | 6 digit 7 segment LED Display  | 6 digits   |
| <b>MODES</b>                                | ---   |  |  |
| <b>RANGES</b>                               | Auto ranging, RPH, RPM or RPS   | 999999 counts  |  |
| <b>RESET</b>                                | ---   | Front, Terminal  | Front, Remote  |
| <b>MEMORY</b>                               | ---   | Yes, 10 Years  | Yes  |
| <b>DIRECTION</b>                            | Up  |  |  |
| <b>SET POINT</b>                            | ---   |  |  |
| <b>INPUT SPEED</b>                          | 4 to 9999 pulses per minute   | 20Hz, 5kHz   | 3Hz, 30Hz, 1kHz<br>(Selectable via jumper)   |
| <b>SENSOR SUPPLY</b>                        | Inbuilt, 12V DC, ±10%, 30mA   | 12VDC@30mA   |  |
| <b>INPUT</b>                                | NPN, PNP sensor, Potential free contacts  |  |  |
| <b>SUPPLY VOLTAGE<br/>(AC : 50 / 60 Hz)</b> | 90 to 270V AC / DC  |  |  |

## Digital Timer - Counter

## Time / Count Totaliser



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



**XTC4102**  
36(H) x 72(W) x 74.5(D)mm




**LTC9A**  
24(H) x 48(W) x 48(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> | <ul style="list-style-type: none"> <li>• LED count/ time totalizer</li> <li>• Compact size</li> <li>• Inbuilt sensor supply</li> </ul> | <ul style="list-style-type: none"> <li>• Time / Count totaliser</li> <li>• Battery powered</li> <li>• Contact / Voltage input selectable</li> </ul> |
| <b>DISPLAY</b>                              | 4 + 4 digits   | 6 digits White LED display   | 7 <sup>1/2</sup> 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   | ---  | Timer / Counter   |
| <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   | Counter : 999999 counts<br>Timer : 99999.9 sec, 999999 sec, 99999.9 min, 999999 min, 99999.9 hrs, 999999 hrs                           | Hour meter :<br>a) 1999.59.99 hr:min:sec ;<br>b) 199999.99hr<br>Counter : 19999999 counts   |
| <b>RESET</b>                                | Front, Remote, Power interruption  | Counter - Front key, Timer - Terminal  | Front, Remote   |
| <b>MEMORY</b>                               | Yes  | 10 years retention   | 5 years   |
| <b>DIRECTION</b>                            | Timer : Down, Counter : Up / Down  | Up   |   |
| <b>SET POINT</b>                            | Dual set point   | ---  |   |
| <b>INPUT SPEED</b>                          | 3Hz, 30Hz, 5kHz (Programmable)   | 20Hz, 5kHz   | 14Hz, 100Hz (Selectable via jumper)   |
| <b>SENSOR SUPPLY</b>                        | Inbuilt, 12V DC @30mA  |  |   |
| <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   | Counter : 5 to 30V DC from Proximity switches, Encoders, Potential free contacts, Limit switches etc. Timer : Potential free contact   | a) 24 to 260V AC / DC<br>b) Contact input   |
| <b>SUPPLY VOLTAGE<br/>(AC : 50 / 60 Hz)</b> | 90 to 270V AC / DC   | 90 to 270V AC/DC or 12 to 24V DC (Non isolated)  | Battery powered   |

## Ordering information

### Digital Timers

| PRODUCT CODE | SUPPLY VOLTAGE     | CERTIFICATION  |
|--------------|--------------------|--|
| XT543-N      | 90 to 270V AC / DC | ---  |
| XT56-N       | 90 to 270V AC / DC | ---  |
| XT56-N-24    | 24V 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      | ---  |
| XT546-24V    | 24V DC             | ---  |
| XT546-CE     | 85 to 270V AC      | CE   |
| XT246        | 85 to 270V AC      | ---  |
| XT246-24V    | 24V DC             | ---  |
| XT346        | 85 to 270V AC      | ---  |
| XT5042       | 90 to 270V AC / DC | ---  |
| XT5042-24    | 24V 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 | ---           |               |
| TT412B       | 90 to 270V AC / DC | ---           |               |
| PRODUCT CODE | INPUT TYPE         |               | CERTIFICATION |
|              | CONTACT            | VOLTAGE       |               |
| LT945A-C     | YES                | ---           | ---           |
| LT945A-V     | ---                | YES           | ---           |
| LT945A-C-CE  | YES                | ---           | CE            |
| LT945A-V-CE  | ---                | YES           | CE            |

### Digital Counters

| PRODUCT CODE | SUPPLY VOLTAGE     | CERTIFICATION |
|--------------|--------------------|---------------|
| XC22B V2     | 90 to 270V AC / DC | ---           |
| 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 &  |
| XTC4102-CE   | 90 to 270V AC / DC | CE   |

### LCD / LED Counters

| PRODUCT CODE | INPUT TYPE         |         | CERTIFICATION |
|--------------|--------------------|---------|---------------|
|              | CONTACT            | VOLTAGE |               |
| LTC9A        | YES                | YES     | CE            |
| PRODUCT CODE | SUPPLY VOLTAGE     |         | CERTIFICATION |
| XC410B       | 90 to 270V AC / DC |         | ---           |
| XC10D        | 90 to 270V AC / DC |         | ---           |

### Speed Monitoring Relay

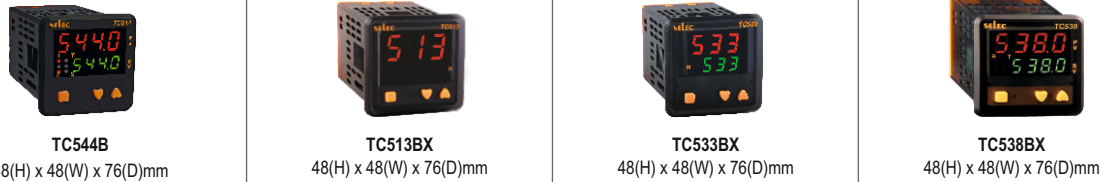
| PRODUCT CODE   | SUPPLY VOLTAGE     | CERTIFICATION |
|----------------|--------------------|---------------|
| SMRD4M1-2-U-CE | 90 to 270V AC / DC | CE            |

## Temperature Controllers (CX Series)



|  |  |   |
|--|--|---|
| <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> |
| <b>DISPLAY</b>                             | 4 + 4 digits, 7 segment LED dual (White+Green) 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</b><br>(AC : 50 / 60 Hz) | 90 to 270V AC / DC   |   |

## Temperature Controllers (BX Series)



|  |   |   |   |   |
|--|---|---|---|---|
| <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> |
| <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)  |   |   |   |
| <b>RESOLUTION</b>                          | 0.1/ 1° for TC/ RTD inputs (fixed 1° for R & S type TC input)   | Fixed 1° resolution   |   |   |
| <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  |   |   |
| <b>CONTROL MODE</b>                        | Auto tune / Self tune PID or ON-OFF   |   |   |   |
| <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   |   |   |
| <b>AUXILIARY OUTPUT</b>                    | Relay : 5A resistive @ 230V AC / 30V DC   | ---   |   |   |
| <b>SPECIAL FUNCTIONS</b>                   | Heat cool PID, Dwell timer  | ---   |   |   |
| <b>SUPPLY VOLTAGE</b><br>(AC : 50 / 60 Hz) | 90 to 270V AC / DC  |   |   |   |

## Temperature Controllers (AX Series)



**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

|   |   |   |   |
|---|---|---|---|
| <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 & 24V DC (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



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



**DTC324A-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  |  |   |



**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<br>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);<br>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);<br>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)<br>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;<br>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><br>(AC : 50 / 60 Hz) | 90 to 270V AC / DC   |  |  |

## Universal PID Controller



**PID500-U**  
48(H) x 48(W) x 84(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<br>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<br>Analog input : 1 / 0.1 / 0.01 / 0.001  |
| <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);<br>For RTD input : 0.1% of F.S. ±1°; 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)<br>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><br>(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              |



## Humidity Controllers



|  |   |   |
|--|---|---|
| <b>FEATURES</b>                            | <ul style="list-style-type: none"> <li>• Single display</li> <li>• RH sensor input</li> <li>• ON-OFF control</li> <li>• Compact size</li> <li>• Relay control output</li> <li>• Alarm relay output</li> </ul> | <ul style="list-style-type: none"> <li>• Dual display</li> <li>• RH sensor input</li> <li>• ON-OFF control</li> <li>• Relay control output</li> <li>• Alarm relay output</li> </ul> |
| <b>DISPLAY</b>                             | 3 Digit LED White Display   | 4 digit Dual LED (White+Green) Display  |
| <b>INPUT TYPE</b>                          | 5V RH sensor Input for Humidity   |   |
| <b>RESOLUTION</b>                          | 0 / 0.1   |   |
| <b>ACCURACY</b>                            | Humidity: $\pm 1\%$ of Full scale   |   |
| <b>SET POINT</b>                           | 1   |   |
| <b>CONTROL MODE</b>                        | ON-OFF control  |   |
| <b>CONTROL OUTPUT</b>                      | 10A@250V AC/ 30V DC SPDT relay Output   |   |
| <b>AUXILIARY OUTPUT</b>                    | 5A SPDT Relay output  | 10A@250V AC SPDT relay Output   |
| <b>OPTIONAL FEATURES</b>                   | Load protection protocol, Low / High Alarm, Free RH Sensor with unit  |   |
| <b>SUPPLY VOLTAGE</b><br>(AC : 50 / 60 Hz) | 90 to 270V AC/DC  |   |

## Humidity+Temperature Controllers



|  |   |  |
|--|---|--|
| <b>FEATURES</b>                            | <ul style="list-style-type: none"> <li>• Single display</li> <li>• RH + RTD sensor input</li> <li>• ON-OFF control for Humidity</li> <li>• PID control for Temperature</li> <li>• Compact Size</li> <li>• 2 relay control output</li> </ul> | <ul style="list-style-type: none"> <li>• Dual display</li> <li>• RH + RTD input</li> <li>• ON-OFF control for Humidity</li> <li>• PID control for Temperature</li> <li>• 2 relay control output</li> </ul> |
| <b>DISPLAY</b>                             | 3 Digit LED White Display   | 4 digit Dual LED (White+Green) Display   |
| <b>INPUT TYPE</b>                          | 5V RH sensor Input for Humidity, RTD: PT100 Sensor input for temperature  |  |
| <b>RESOLUTION</b>                          | 0 / 0.1   |  |
| <b>ACCURACY</b>                            | Humidity: $\pm 1\%$ of Full scale, RTD: 0.1% of full scale  |  |
| <b>SET POINT</b>                           | 2   |  |
| <b>CONTROL MODE</b>                        | For Humidity: ON-OFF control , For Temperature: Auto tune PID / ON-OFF control  |  |
| <b>CONTROL OUTPUT</b>                      | For Humidity: 7A@250V AC SPDT Relay, For Temperature: 7A@250V AC SPDT Relay   |  |
| <b>OPTIONAL FEATURES</b>                   | Load protection protocol, Low / High Alarm, Free RH Sensor with unit  |  |
| <b>SUPPLY VOLTAGE</b><br>(AC : 50 / 60 Hz) | 90 to 270V AC / DC  |  |

## Accessories



ADAPTER PLATES-72 x 48



ADAPTER PLATES-96 x 48



ADAPTER PLATES-96 x 72



SNUBBER

|                    |   |   |   |  |
|--------------------|---|---|---|--|
| <b>DESCRIPTION</b> | To assemble 48 x 48mm size product in to 72 x 72mm Panel cutout | To assemble 48 x 48mm size product in to 96 x 96mm Panel cutout | To assemble 72 x 72mm size product in to 96 x 96mm Panel cutout | To increase internal relay protection of the product |
|--------------------|---|---|---|--|

## Cooling Controllers



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



**CH403C**  
36(H) x 72(W) x 65.3(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   |  |
| <b>INPUT TYPE</b>                          | NTC type sensor  |  |
| <b>RESOLUTION</b>                          | 1 / 0.1°   |  |
| <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<br>(Depends on product code selection)   | SPDT: 10A @ 250V AC / 30V DC or SPST/ LUG Type : 20A @ 250V AC / 30V DC<br>(Depends on product code selection)   |
| <b>AUXILIARY OUTPUT</b>                    | SSR: 12V DC, 10mA or Relay: SPST: 5A @ 230V AC / 30V DC<br>(Depends on product code selection)   | ---  |
| <b>HYSTERESIS</b>                          | 0.1 to 9.9°  |  |
| <b>DISPLAY OFFSET</b>                      | -19.9° to 19.9°  | -19.9° to 20.0°  |
| <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><br>(AC : 50 / 60 Hz) | 230V AC  |  |

## Process Indicators



**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

|  |   |   |   |  |
|--|---|---|---|--|
| <b>FEATURES</b>                            | <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> |
| <b>DISPLAY</b>                             | 4 digits, 7 segment LED single display  |   |   |  |
| <b>INPUT TYPE</b>                          | 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<br>RTD : PT100   |  |
| <b>RESOLUTION</b>                          | 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)  |  |
| <b>ACCURACY</b>                            | For TC inputs : 0.25% of F.S. ±1°;<br>For R & S inputs : 0.5% of F.S. ±2° (20 min of warm up time);<br>For RTD input : 0.1% of F.S. ±1°;<br>Cold junction accuracy ± 5°C ; Signal input : ±0.5% of F.S. ± 1 digit                       |   | For TC inputs : 0.25% of F.S. ±1°;<br>For R & S input : 0.5% of F.S. ±2°<br>(20 min of warm up time);<br>RTD input : 0.1% of F.S. ±1° |  |
| <b>OUTPUT</b>                              | 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                             | ---   | ---  |
| <b>SPECIAL FEATURES</b>                    | Retransmission output : 0 / 4 to 20mA DC, 0 to 5V DC, 0 to 5 / 10V DC, (Software selectable)<br>RS485 MODBUS RTU protocol (Optional)  |   | ---   | ---  |
| <b>SENSOR SUPPLY</b>                       | 24V DC, 30mA (Output to power the sensor)   |   | ---   |  |
| <b>SUPPLY VOLTAGE</b><br>(AC : 50 / 60 Hz) | 90 to 270V AC / DC, 24V DC (Optional)   |   | 230V AC, ±20%   |  |

## DC to AC - Solid State Relay



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



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



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



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



**RSS-TD1A225ZPL**  
58(H) x 45(W)  
x 27.3(D)mm



**RSS-TD1A240ZPL**  
58(H) x 45(W)  
x 27.3(D)mm

|                              |  |     |     |   |     |     |
|------------------------------|--|-----|-----|---|-----|-----|
| <b>FEATURES</b>              | <ul style="list-style-type: none"> <li>Resistive Output Load</li> <li>Compact Size</li> <li>Zero Cross Switching</li> <li>For Resistive + Slightly Inductive load</li> </ul> |     |     | <ul style="list-style-type: none"> <li>Resistive + Inductive Output Load</li> <li>Compact Size</li> <li>Zero Cross Switching</li> <li>For Resistive + Inductive load</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   | 25A | 40A |
| <b>CONTACT CONFIGURATION</b> | 1 NO   |     |     |   |     |     |
| <b>OUTPUT DEVICE</b>         | TRIAC  |     |     |   |     |     |

## DC to AC - Solid State Relay



**RSS-SD1A290ZPL**  
58(H) x 46.75(W)  
x 41(D)mm



**RSS-SD1A2125ZPL**  
58(H) x 46.75(W)  
x 41(D)mm



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



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



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



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

|                              |   |      |     |  |     |               |
|------------------------------|---|------|-----|--|-----|---------------|
| <b>FEATURES</b>              | <ul style="list-style-type: none"> <li>Resistive + Inductive Output Load</li> <li>Compact Size</li> <li>Zero Cross Switching</li> <li>For Resistive + Inductive load</li> </ul> |      |     | <ul style="list-style-type: none"> <li>Resistive Output Load</li> <li>Compact Size</li> <li>Zero Cross Switching</li> <li>For Resistive + Slightly Inductive load</li> </ul> |     |               |
| <b>CONTROL INPUT VOLTAGE</b> | 4 to 32V DC   |      |     | 90 to 280V AC  |     |               |
| <b>LOAD OUTPUT VOLTAGE</b>   | 48 to 480V AC   |      |     | 24 to 330V AC  |     | 48 to 480V AC |
| <b>MAX LOAD CURRENT</b>      | 90A   | 125A | 25A | 40A  | 25A | 40A           |
| <b>CONTACT CONFIGURATION</b> | 1 NO  |      |     |  |     |               |
| <b>OUTPUT DEVICE</b>         | SCR's   |      |     | TRIAC  |     |               |

## AC to AC - Solid State Relay

### 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 (10A) | SSR (12V DC) | ---        | 90 to 270V AC / DC | ---           |
| TC303CX      | RELAY (10A) | SSR (12V DC) | ---        | 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 | ---           |

## Ordering information

### Temperature Controllers

| PRODUCT CODE | OUTPUT 1    |              | OUTPUT 2   | SUPPLY VOLTAGE     | CERTIFICATION          |
|--------------|-------------|--------------|------------|--------------------|------------------------|
|              | RELAY       | SSR          |            |                    |                        |
| TC544A       | RELAY (5A)  | SSR (12V DC) | RELAY (5A) | 90 to 270V AC / DC | ---                    |
| TC544A-24V   | RELAY (5A)  | SSR (12V DC) | RELAY (5A) | 24V DC             | CE                     |
| TC544A-CU    | RELAY (5A)  | SSR (12V DC) | RELAY (5A) | 90 to 270V AC / DC | CE <sup>EN 61010</sup> |
| 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 <sup>EN 61010</sup> |
| TC513AX-24V  | RELAY (10A) | SSR (12V DC) | ---        | 24V DC             | CE                     |
| TC533AX      | 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) | SSR (12V DC) | ---        | 90 to 270V AC / DC | ---                    |
| DTC503       | RELAY (10A) | ---          | ---        | 90 to 270V AC / DC | ---                    |
| DTC231       | RELAY (10A) | ---          | ---        | 90 to 270V AC / DC | ---                    |
| DTC331       | RELAY (10A) | ---          | ---        | 90 to 270V AC / DC | ---                    |
| 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 | ---                    |
| IDM          | ---         | ---          | ---        | ---                | ---                    |

### PID Controllers

| PRODUCT CODE        | OUTPUT 1     | OUTPUT 2   | OUTPUT 3    | COMM. (RS485) | SUPPLY VOLTAGE     | CERTIFICATION |
|---------------------|--------------|------------|-------------|---------------|--------------------|---------------|
| PID500-U-C-1        | UNIVERSAL    | RELAY (7A) | RELAY (10A) | YES           | 90 to 270V AC / DC | CE            |
| PID500-U-0-1        | UNIVERSAL    | RELAY (7A) | RELAY (10A) | ---           | 90 to 270V AC / DC | CE            |
| 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 | ---           |
| 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            |

### Humidity & Temperature Controllers

| PRODUCT CODE | INPUT    | CONTROL OUTPUT          |             | AUXILIARY OUTPUT | SUPPLY VOLTAGE     | CERTIFICATION |
|--------------|----------|-------------------------|-------------|------------------|--------------------|---------------|
|              |          | OUTPUT 1                | OUTPUT 2    |                  |                    |               |
| HC404        | RH       | RELAY (10A)             | ---         | RELAY (5A)       | 90 to 270V AC / DC | CE            |
| HC205        | RH       | RELAY (10A)             | ---         | RELAY (10A)      | 90 to 270V AC / DC | ---           |
| HTC405       | RH + RTD | RELAY (7A)              | RELAY (7A)  | ---              | 90 to 270V AC / DC | CE            |
| HTC206       | RH + RTD | RELAY (10A) / SSR (12V) | RELAY (10A) | ---              | 90 to 270V AC / DC | ---           |

## Ordering information

### Cooling Controllers

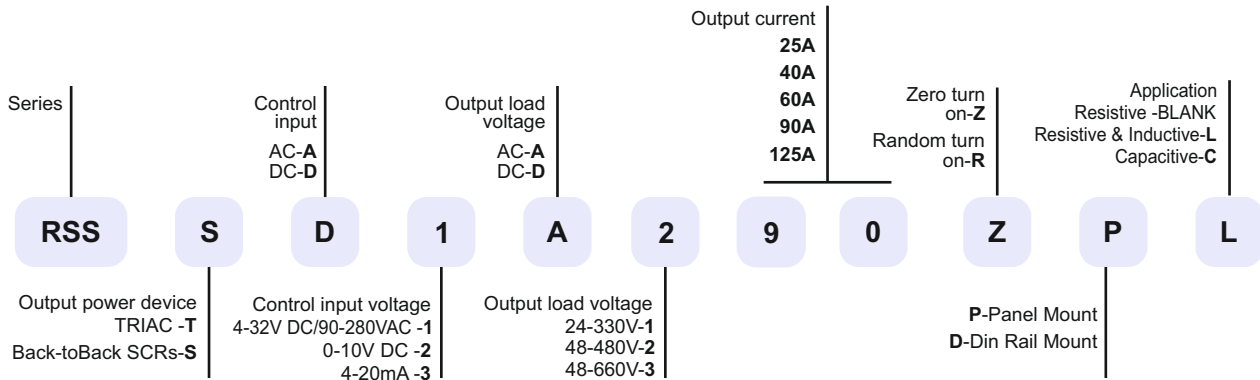
| PRODUCT CODE    | OUTPUT               |              | SUPPLY VOLTAGE     | CERTIFICATION |
|-----------------|----------------------|--------------|--------------------|---------------|
|                 | CONTROL OUTPUT       | ALARM OUTPUT |                    |               |
| CH403B-1-NTC    | 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 V2 | RELAY (10A)          | SSR (12V)    | 90 to 270V AC / DC | CE            |
| CH403C-2-NTC    | RELAY (20A LUG Type) | ---          | 90 to 270V AC / DC | CE            |
| CH403C-3-NTC    | RELAY (10A)          | RELAY (5A)   | 90 to 270V AC / DC | CE            |

### Process Indicators

| PRODUCT CODE     | RETRANSMISSION | COMMN. (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            | ---           |

### Solid State Relay

#### Nomenclature



| PRODUCT CODE    | CURRENT RATINGS | CONTROL INPUT VOLTAGE | LOAD OUTPUT VOLTAGE | CERTIFICATION |
|-----------------|-----------------|-----------------------|---------------------|---------------|
| RSS-TD1A125ZP   | 25              | 4 to 32V DC           | 24 to 330V AC       | CE            |
| RSS-TD1A140ZP   | 40              | 4 to 32V DC           | 24 to 330V AC       | CE            |
| RSS-TD1A225ZP   | 25              | 4 to 32V DC           | 48 to 480V AC       | CE            |
| RSS-TD1A240ZP   | 40              | 4 to 32V DC           | 48 to 480V AC       | CE            |
| RSS-TA1A125ZP   | 25              | 90 to 280V AC         | 24 to 330V AC       | CE            |
| RSS-TA1A140ZP   | 40              | 90 to 280V AC         | 24 to 330V AC       | CE            |
| RSS-TA1A225ZP   | 25              | 90 to 280V AC         | 48 to 480V AC       | CE            |
| RSS-TA1A240ZP   | 40              | 90 to 280V AC         | 48 to 480V AC       | CE            |
| RSS-TD1A225ZPL  | 25              | 4 to 32V DC           | 48 to 480V AC       | CE            |
| RSS-TD1A240ZPL  | 40              | 4 to 32V DC           | 48 to 480V AC       | CE            |
| RSS-SD1A290ZPL  | 90              | 4 to 32V DC           | 48 to 480V AC       | CE            |
| RSS-SD1A2125ZPL | 125             | 4 to 32V DC           | 48 to 480V AC       | CE            |

### Accessories

| PRODUCT CODE              | PRODUCT SIZE | INTERNAL CUTOUT SIZE |
|---------------------------|--------------|----------------------|
| ADAPTER PLATES 72x48 (FG) | 72 x 72mm    | 48 x 48mm            |
| ADAPTER PLATES 96x48 (FG) | 96 x 96mm    | 48 x 48mm            |
| ADAPTER PLATES 96x72 (FG) | 96 x 96mm    | 72 x 72mm            |
| SNUBBER                   | ---          | ---                  |



**2M**  
90(H) x 35(W) x 60(D)mm



**4M**  
90(H) x 70(W) x 66.4(D)mm



**6M**  
90(H) x 105(W) x 66.4(D)mm

|                                   |   |              |  |               |  |   |
|-----------------------------------|---|--------------|--|---------------|--|---|
| <b>FEATURES</b>                   | <ul style="list-style-type: none"> <li>• Modular PLC with pluggable display</li> <li>• RTC with time switch functions (Optional)</li> <li>• Flexible IO card selection</li> </ul> |              | <ul style="list-style-type: none"> <li>• Modular PLC with pluggable display</li> <li>• Flexible IO card selection</li> <li>• Expandable</li> <li>• RTC with time switch functions</li> </ul> |               | <ul style="list-style-type: none"> <li>• Modular PLC with pluggable display</li> <li>• Flexible IO card selection</li> <li>• Expandable</li> <li>• RTC with time switch functions</li> </ul> |   |
| <b>DISPLAY TYPE</b>               | 7 Segment LED   |              | LCD with green backlight & black font  | 7 Segment LED |  | LCD with green backlight & black font   |
| <b>DIGITS</b>                     | 4 Red   | 1 Red        | 2 lines x 8 characters<br>(Font size 5x7mm)  | 1 Red         | 2 lines x 8 characters (Font size 5x7mm)   |   |
| <b>LED BANKS</b>                  | 6 Red LED   |              | ---  | 6 Red LED     |  | ---   |
| <b>NO. OF KEYS</b>                | 3 Keys (2 User configurable)  |              | 5 keys (4 User configurable)   | 1 key         | 6 keys (5 User configurable)   |   |
| <b>NO. OF SLOTS</b>               | 2   |              | 4  |               | 6  |   |
| <b>SUPPLY VOLTAGE</b>             | 18 to 30V AC  | 18 to 30V DC | 100 to 270V AC   | 18 to 30V DC  | 100 to 270V AC   | 18 to 30V DC  |
| <b>DIGITAL INPUTS</b>             | 3   |              | 4 + 1*   |               | 10 + 1*  | 12  |
| <b>INPUT TYPE &amp; RANGE</b>     | PNP (5-30V)   |              |  |               |  |   |
| <b>FAST INPUT</b>                 | 1   |              |  |               |  | 2   |
| <b>MAXIMUM COUNTING FREQUENCY</b> | 5kHz (PNP)  |              |  |               |  |   |
| <b>ANALOG INPUT</b>               | As per Slot I/O card  |              | 1 ( Voltage 0-10V)   |               |  |   |
| <b>RESOLUTION</b>                 | As per Slot I/O card  |              | 12 BIT   |               |  |   |
| <b>DIGITAL OUTPUT</b>             | As per Slot I/O card  |              |  |               | 4 Relay  | As per Slot I/O card  |
| <b>TYPE AND RATING</b>            | As per Slot I/O card  |              |  |               | 5A NO Type@<br>250VAC/30VDC  | As per Slot I/O card  |
| <b>COMMUNICATION INTERFACE</b>    | RS485 Modbus RTU Protocol (Slave )  |              | RS485 Modbus RTU Protocol (Master - Slave )  |               |  | RS485 Modbus RTU-<br>Protocol (Master - Slave),<br>ETHERNET (Slave),<br>USB (Slave) |
| <b>PROGRAM MEMORY</b>             | 112 Kb  |              | 240 Kb   |               |  | 480 Kb  |
| <b>RTC</b>                        | Optional  |              | Yes  |               |  |   |

**PLUGGABLE DISPLAY MODULES**



MiBRX-DSP-2M-7-1-04-A



MiBRX-DSP-2M-0-1-06-A



MiBRX-DSP-4M-8-2-08-A



MiBRX-DSP-4M-0-1-06-A



MiBRX-DSP-6M-8-2-08-A

\*Digital input can be configured as analog input (0-10V)

## MiBRX Series - Panel Mount



48 x 96  
48(H) x 96(W) x 69(D)mm



72 x 72  
72(H) x 72(W) x 71.35(D)mm



96 x 96  
96(H) x 96(W) x 99.1(D)mm

|                                |   |   |  |                                       |  |   |   |
|--------------------------------|---|---|--|---------------------------------------|--|---|---|
| <b>FEATURES</b>                | <ul style="list-style-type: none"> <li>Modular PLC with pluggable display</li> <li>RTC with time switch functions (Optional)</li> <li>Flexible IO card selection</li> </ul> |   | <ul style="list-style-type: none"> <li>Modular PLC with pluggable display</li> <li>Flexible IO card selection</li> <li>RTC with time switch functions</li> </ul> |                                       | <ul style="list-style-type: none"> <li>Modular PLC with pluggable display</li> <li>Flexible card selections</li> <li>Expandable</li> <li>RTC with time switch functions</li> </ul> |   |   |
| <b>DISPLAY TYPE</b>            | 7 Segment LED   |   | LCD with blue backlight & black font   | 7 Segment LED-White+Green             |  | LCD with Green backlight                    | LCD with White backlight                  |
| <b>DIGITS</b>                  | (3 + 4) Red + 4 Green   | (4 + 4) Red + 6 Green                     | 2 lines x 8 characters (Font size 5x7mm)   | 6 White + 4 Green                     |  | 4 lines x 16 characters (Font side 5x7mm)   | Customized segments                       |
| <b>LED BANKS</b>               | LED banks 6 Red round LEDs + 10 Red LEDs (Bar graph)  | 4 Red + 4 Green LED                       | ---  | 4 Red                                 |  | ---   |   |
| <b>NO. OF KEYS</b>             | 5 Touch keys (4 User configurable)  |   | 4 Touch keys (3 User configurable)   |                                       | 8 Touch keys (7 User configurable)   |   | 5 Touch keys (4 User configurable)        |
| <b>NO. OF SLOTS</b>            | 2   |   | 2  |                                       | 6  |   |   |
| <b>SUPPLY VOLTAGE</b>          | 100 to 270V AC  | 18 to 30V DC                              | 100 to 270V AC   | 18 to 30V DC                          |  | 100 to 270V AC                              | 18 to 30V DC                              |
| <b>DIGITAL INPUTS</b>          | 5 + 1*  | 5 + 2*                                    | 3 + 1*   |                                       | 3 + 1*   |   | 5 + 1*                                    |
| <b>INPUT TYPE &amp; RANGE</b>  | PNP (5-30V)   |   |  |                                       |  |   |   |
| <b>FAST INPUT</b>              | 1   |   |  |                                       |  |   |   |
| <b>MAXIMUM FREQUENCY</b>       | 5kHz (PNP)  |   |  |                                       |  |   |   |
| <b>ANALOG INPUT</b>            | 1 ( Voltage 0-10V)  | 3 ( 2 Voltage & 1 current 0-10V & 0-20mA) | 1 ( Voltage 0-10V)   | 2 ( Voltage & Current 0-10V & 0-20mA) |  | 1 ( Voltage 0-10V)                          | 2 ( 1 Voltage & 1 Current 0-10V & 0-20mA) |
| <b>RESOLUTION</b>              | 12 BIT  |   |  |                                       |  |   |   |
| <b>DIGITAL OUTPUT</b>          | As per Slot I/O card  |   | 3 Relay  | 4 Relay                               |  | As per Slot I/O card                        |   |
| <b>TYPE AND RATING</b>         | As per Slot I/O card  |   | 5A NO Type@ 250VAC/30VDC   |                                       |  | As per Slot I/O card                        |   |
| <b>COMMUNICATION INTERFACE</b> | RS485 Modbus RTU Protocol (Slave )  |   |  |                                       |  | RS485 Modbus RTU Protocol (Master - Slave ) |   |
| <b>PROGRAM MEMORY</b>          | 240 Kb  |   |  |                                       |  |   |   |
| <b>RTC</b>                     | Optional  |   |  | Yes                                   |  |   |   |
| <b>SENSOR SOURCE</b>           | 24V, 50mA (230VAC Variant)  |   |  |                                       |  |   |   |

**PLUGGABLE DISPLAY MODULES**



MiBRX-DSP-48-7-2-11-A



MiBRX-DSP-48-7-2-14-B



MiBRX-DSP-72-8-2-08-B



MiBRX-DSP-72-7-2-10-B



MiBRX-DSP-96-8-4-16-B

\*Digital input can be configured as analog input (0-10V)

## MiBRX Series - Independent Display



MiBRX-DSP-IND-96-8-0-00-C  
96(H) x 96(W) x 40(D)mm



MiBRX-DSP-IND-96-8-0-00-B  
96(H) x 96(W) x 40(D)mm



MiBRX-DSP-IND-96-8-4-16-B  
96(H) x 96(W) x 40(D)mm



MiBRX-DSP-IND-96-8-2-16-B  
96(H) x 96(W) x 40(D)mm

|                       |  |   |  |  |
|-----------------------|--|---|--|--|
| <b>FEATURES</b>       | <ul style="list-style-type: none"> <li>3.5" LCD Resistive touch screen</li> <li>10 password level</li> <li>RS485 MODBUS RTU, (Master-slave)</li> <li>In-built alarm</li> </ul> | <ul style="list-style-type: none"> <li>3.5" segment LCD</li> <li>Positive Mode</li> <li>White back light</li> <li>Black segments</li> </ul> | <ul style="list-style-type: none"> <li>16 columns and 4 rows</li> <li>Positive mode</li> <li>64 characters</li> <li>Yellow green backlight</li> <li>Black character</li> </ul> | <ul style="list-style-type: none"> <li>16 columns and 2 rows</li> <li>Positive mode</li> <li>32 characters</li> <li>Yellow green backlight</li> <li>Black character</li> </ul> |
| <b>DISPLAY TYPE</b>   | 3.5" LCD Resistive touch screen  | 3.5" segment LCD with backlight   | 16 columns and 4 rows LCD  | 16 columns and 2 rows LCD  |
| <b>KEYS</b>           | Yes ( 5 nos)   |   | Yes ( 8 nos)   |  |
| <b>KEYS TYPE</b>      | Capacitive Touch Pad type with integrated yellow green LEDs  |   |  |  |
| <b>SUPPLY VOLTAGE</b> | 24 V DC (non-isolated)   |   |  |  |

Independent display can be used only with MiBRX rail mount series with respective adapter plate & ACH-004 (6 Pin cable)

## Digital I/O specifications

## Digital input

|                                  | Input voltage range | Response time                                    | Debounce time |
|----------------------------------|---------------------|--|---------------|
| MiBRX-SC-DI04*<br>MiBRX-SC-DI06* | 6-30V               | Depends on debounce time & ladder execution time | 10ms          |
| MiBRX-SC-DI06-AC                 | 6-30V AC            | Depends on debounce time & ladder execution time | 10ms          |

## Fast input

|               | Input type                    | Input frequency |
|---------------|-------------------------------|-----------------|
| MiBRX-SC-FI02 | PNP / NPN (Jumper selectable) | 10kHz           |

## Digital output

|  | Contact rating  | Response time | Contact-Isolation |
|--|-----------------|---------------|-------------------|
| MiBRX-SC-RO03<br>MiBRX-SC-RO04<br>MiBRX-SC-RO05<br>MiBRX-SC-RO04-12V | 5A 250VAC/30VDC | 10ms          | Yes               |

|               | Rated voltage            | Output current | Response time | Isolation between outputs |
|---------------|--------------------------|----------------|---------------|---------------------------|
| MiBRX-SC-TO04 | 18V to 30V DC (External) | 100mA          | 10ms          | 4kV                       |

## Fast output

|                    | Output type                     | Output frequency |
|--------------------|---------------------------------|------------------|
| MiBRX-SC-FO01-TO01 | PNP / NPN (Terminal selectable) | 10kHz            |

## Analog I/O specifications

## Analog inputs

|                      | Analog type   | Resolution | Conversion time | Accuracy |
|----------------------|---|------------|-----------------|----------|
| MiBRX-SC-AI02-I*     | CURRENT (0-20mA)  | 12BIT      | 100ms           | 0.25%    |
| MiBRX-SC-AI02-V*     | VOLTAGE (0-10V)   | 12BIT      | 100ms           | 0.25%    |
| MiBRX-SC-AI02-V-I    | VOLTAGE (0-10V) & CURRENT (0-20mA)  | 12BIT      | 100ms           | 0.25%    |
| MiBRX-SC-AI02-NTC    | NTC   | 12BIT      | 100ms           | 0.25%    |
| MiBRX-SC-AI02-PTC    | PTC   | 12BIT      | 100ms           | 0.25%    |
| MiBRX-SC-AI02-TC*    | J, K, T, R, S, C, E, B, N, L, U, W,<br>PLTNL, mVolt (-5 to 65mV), RTD (PT100) | 12BIT      | 100ms           | 0.25%    |
| MiBRX-SC-AI02-RTD*   | RTD (PT100)   | 12BIT      | 100ms           | 0.25%    |
| MiBRX-SC-AI02-PT1000 | RTD (PT1000)  | 12BIT      | 100ms           | 0.25%    |
| MiBRX-SC-LC02        | Loadcell  | 24BIT      | 50ms to 400ms   | ...      |

## Analog output

|                       | Output type                           | Resolution | Digital resolution                                      | Conversion time |
|-----------------------|---------------------------------------|------------|---|-----------------|
| MiBRX-SC-AO01-V/I     | VOLTAGE (0-10V) /<br>CURRENT (0-20mA) | 12BIT      | 0.0 to 100.0% = 0 to 10V /<br>0.0 to 100.0% = 0 to 20mA | 100ms           |
| MiBRX-SC-AO02-V-I-ISO | VOLTAGE (0-10V) &<br>CURRENT (0-20mA) | 12BIT      | 0.0 to 100.0% = 0 to 10V &<br>0.0 to 100.0% = 0 to 20mA | 100ms           |

## Mixed - Digital Input &amp; Output

|  | Input voltage range | Response time                                    | Debounce time | Contact rating  | Response time | Contact-Isolation |
|--|---------------------|--|---------------|-----------------|---------------|-------------------|
| MiBRX-SC-DI02-RO02<br>MiBRX-SC-DI02-RO03<br>MiBRX-SC-DI02-TO02 | 5-30V               | Depends on debounce time & ladder execution time | 10ms          | 5A 250VAC/30VDC | 10ms          | Yes               |

## Mixed - Digital &amp; Analog Input

|                      | Rated voltage               | Output current | Response time | Isolation between outputs | Analog type   | Resolution | Conversion time | Accuracy |
|----------------------|-----------------------------|----------------|---------------|---------------------------|---|------------|-----------------|----------|
| MiBRX-SC-DI02-AI01-T | 18V to 30V DC<br>(External) | 100mA          | 10ms          | 4kV                       | J, K, T, R, S, C, E, B, N, L, U,<br>W, PLTNL, mVolt (-5 to 65mV), RTD (PT100) | 12BIT      | 100ms           | 0.25%    |

## Special Function

|               | Description             |
|---------------|-------------------------|
| MiBRX-SC-DL   | Datalogging (2MB) & RTC |
| MiBRX-SC-WIFI | WIFI                    |
| MiBRX-SC-PD   | Portable Downloader     |

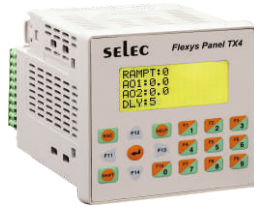
\* Also available in Isolated variant



## Flexys Series - Flexible IO PLC 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

|   |  |   |   |   |
|---|--|---|---|---|
| <b>FEATURES</b>                         | <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> |
| <b>DISPLAY</b>                          | 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  |
| <b>NO. OF KEYS</b>                      | 5 function keys +1 system key  | 18 keys (14 user configurable)  | One key to scroll through different slots   | ---   |
| <b>I/Os</b>                             | 3 I/O slots (Please refer I/O card for flexys series)  | 4 I/O slots (Please refer I/O card for flexys series)   |   | ---   |
| <b>DIGITAL INPUTS</b>                   | 4 / 10 /14 per card, PNP (6 - 30V DC)  |   |   |   |
| <b>MAXIMUM COUNTING FREQUENCY</b>       | FC0 (I0 & I1) & FC1 (I2 & I3) - 5KHz (on power supply card only), Normal digital inputs - 30Hz   |   |   | ---   |
| <b>ANALOG INPUTS</b>                    | 3 / 4 / 6 Channels per card (TC, RTD, 0-10V, 0 - 20mA, NTC)  |   |   |   |
| <b>RESOLUTION</b>                       | 12 Bits  |   |   |   |
| <b>RELAY OUTPUTS</b>                    | 4 / 8 per card, NO type 5A @ 230V AC / 30V DC (Resistive)  |   |   |   |
| <b>TRANSISTOR OUTPUTS</b>               | 8 per card, Source type 100mA @ 24V DC   |   |   |   |
| <b>ANALOG OUTPUTS</b>                   | 2 / 4 Channels per card (0 - 10V, 0 - 20mA)  |   |   |   |
| <b>RESOLUTION</b>                       | 14 Bits (0.0 to 100.0% = 0 to 10.000V, 0.0 to 100.0% = 0 to 20.000mA)  |   |   |   |
| <b>PROGRAM MEMORY</b>                   | 221KB  | 351KB   |   | ---   |
| <b>EXPANSION</b>                        | Yes  |   |   |   |
| <b>COMMUNICATION INTERFACE</b>          | RS485 MODBUS RTU protocol  | RS485 MODBUS RTU, Proprietary protocol  |   | RS485 MODBUS RTU, Proprietary protocol (Selec master PLC)      RS485 MODBUS RTU (Third party master PLC)                          |
| <b>RTC</b>                              | Yes  |   |   | ---   |
| <b>BAUDRATE</b>                         | ---  |   |   | 19200 / 115200 bps (Selectable)   |
| <b>RESPONSE TIME</b>                    | ---  |   |   | 100msec to 2sec + IO card Response  |
| <b>SUPPLY VOLTAGE (AC : 50 / 60 Hz)</b> | 18 - 30V DC, 100 - 240V AC   |   |   | 18 - 30V DC   |

## Compact Series - UNIX & TWIX



**UNIX-1**  
75.5(H) x 75.5(W) x 78(D)mm



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

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

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

|  |  |  |   |                      |
|--|--|--|---|----------------------|
| <b>FEATURES</b>                        | <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> |   |                      |
| <b>DISPLAY</b>                         | 6 digits red & 4 green digits 7 segment LED  | 4 + 4 digits red & 6 green digits 7 segment LED  |   |                      |
| <b>NO. OF KEYS</b>                     | 3 keys (2 - User configurable)   | 5 keys (4 - User configurable)   |   |                      |
| <b>DIGITAL INPUTS</b>                  | 3 + 1*   | 6  | 6 + 2*  | 8                    |
| <b>INPUT TYPE</b>                      | PNP (5 - 30V DC)   | PNP (6 - 30V DC)   |   |                      |
| <b>MAXIMUM COUNTING FREQUENCY</b>      | FC0 (I0 & I1) - 5KHz, Normal digital input: 30Hz   |  |   |                      |
| <b>ANALOG INPUTS</b>                   | 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) |
| <b>ANALOG OUTPUTS</b>                  | ---  | ---  | 1 Channel (0-10V/0-20mA)                        | ---                  |
| <b>RESOLUTION</b>                      | 12 Bits  |  |   |                      |
| <b>DIGITAL OUTPUTS</b>                 | 2 Relay, 2 Transistor  | 4 Relay  | 5 Relay   | 6 Transistor         |
| <b>TYPE &amp; RATING</b>               | For Relay O/P : 5A NO type @230V AC / 30V DC (Resistive), For Transistor O/P : Source type 100mA@24V DC                |  |   |                      |
| <b>PROGRAM MEMORY</b>                  | 240KB  | 112KB  | 240KB   | 112KB                |
| <b>COMMUNICATION INTERFACE</b>         | RS485 MODBUS RTU Protocol  |  |   |                      |
| <b>SUPPLY VOLTAGE (AC : 50 / 60Hz)</b> | 90 - 270V AC   | 90- 270V AC, 18-28 V DC  |   | 18 - 30V DC          |

## 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

|   |   |                          |   |                          |   |                   |
|---|---|--------------------------|---|--------------------------|---|-------------------|
| <b>FEATURES</b>                         | <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> |                   |
| <b>DISPLAY</b>                          | 2 X 8 Character LCD   |                          | LED indication for input, Output & communication status   |                          | 2 X 8 Character LCD   |                   |
| <b>NO. OF KEYS</b>                      | 5 keys (4 - User configurable)  |                          | ---   |                          | 5 keys (4 - User configurable)  |                   |
| <b>DIGITAL INPUTS</b>                   | 8   |                          |   |                          | 10 + 2*   |                   |
| <b>INPUT TYPE</b>                       | PNP (6 - 30V DC)  |                          |   |                          |   |                   |
| <b>MAXIMUM COUNTING FREQUENCY</b>       | FC0 (I0 & I1) - 5KHz, Normal digital input: 30Hz  |                          |   |                          |   |                   |
| <b>ANALOG INPUTS</b>                    | ---   | Through expansion        | ---   | 2 Channels (0-10V)       |   | Through expansion |
| <b>RESOLUTION</b>                       |   |                          |   |                          | 12 Bits   |                   |
| <b>DIGITAL OUTPUTS</b>                  | 5 Relay   |                          |   |                          | 8 Relay   |                   |
| <b>TYPE &amp; RATING</b>                | 5A NO type @230V AC / 30V DC (Resistive)  |                          |   |                          |   |                   |
| <b>ANALOG OUTPUTS</b>                   |   |                          |   |                          | Through expansion   |                   |
| <b>RESOLUTION</b>                       | ---   | As per expansion modules | ---   | As per expansion modules |   |                   |
| <b>RTC</b>                              | NO  | YES                      | NO  | NO                       | YES   |                   |
| <b>EXPANSION</b>                        | NO  | YES                      | NO  | YES                      | YES   |                   |
| <b>PROGRAM MEMORY</b>                   | 112KB   |                          |   | 240KB                    |   |                   |
| <b>COMMUNICATION INTERFACE</b>          | RS485 Modbus RTU Protocol   |                          |   |                          |   |                   |
| <b>SUPPLY VOLTAGE (AC : 50 / 60 Hz)</b> | 18 - 30V DC**,<br>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

## Compact Series - MM303X



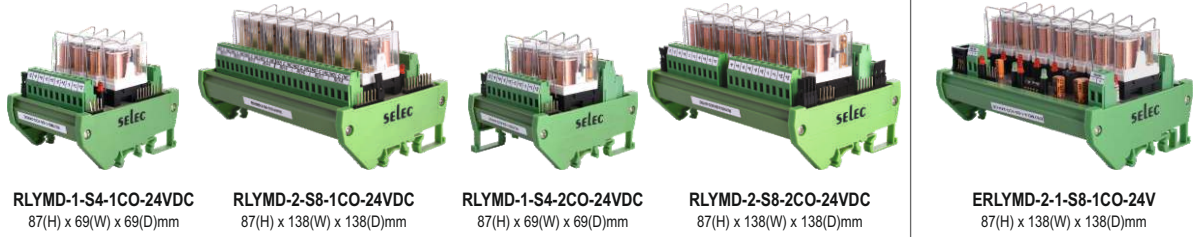
**MM3030-4**  
110(H) x 99(W) x 62(D)mm



**MM3032-2-0-0-230V V2**      **MM3032-2-0-0-24V V2**  
110(H) x 99(W) x 62(D)mm      110(H) x 99(W) x 62(D)mm

|   |   |  |   |  |
|---|---|--|---|--|
| <b>FEATURES</b>                         | <ul style="list-style-type: none"> <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> |  |
| <b>DISPLAY</b>                          | 4x16 Character LCD  |  | 2x16 Character LCD  |  |
| <b>NO. OF KEYS</b>                      | 15 keys (12 User configurable)  |  | 8 keys (6 User configurable)  |  |
| <b>DIGITAL INPUTS</b>                   | 10 PNP (11 - 30V DC)  |  | 8 PNP (6 - 30V DC)  |  |
| <b>COUNTING FREQUENCY</b>               | FC0 (I0 & I1) – 12KHz, FC1 (I2 & I3) & FC2 (I4 & I5) – 7.5KHz Normal input – 30Hz.  |  | FC0 (I0 & I1) – 5KHz, Normal input – 30Hz.  |  |
| <b>ANALOG INPUTS</b>                    | 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   |  |
| <b>RESOLUTION</b>                       | 10 Bits   |  | 12 Bits   |  |
| <b>DIGITAL OUTPUTS</b>                  | 8 Transistor  |  | 6 Relay   |  |
| <b>TYPE AND RATING</b>                  | O0-O1 Sink 50mA @ 24V DC (Fast Outputs 50KHz), O2-O7- Source 100mA @ 24V DC   |  | 5A NO type @ 230V AC / 30V DC (Resistive)   |  |
| <b>ANALOG OUTPUTS</b>                   | Through expansion   |  | 1 Channel, (0 - 10V)  |  |
| <b>RESOLUTION</b>                       | As per expansion modules  |  | 14 Bits (0.0% to 100.0% = 0 – 10.000V)  |  |
| <b>RTC</b>                              | YES   |  | NO  |  |
| <b>EXPANSION</b>                        | YES   |  | NO  |  |
| <b>PROGRAM MEMORY</b>                   | 351KB   |  | 240KB   |  |
| <b>COMMUNICATION INTERFACE SLAVE</b>    | RS485 MODBUS RTU protocol   |  |   |  |
| <b>COMMUNICATION INTERFACE MASTER</b>   | RS485 MODBUS RTU protocol   |  | ---   |  |
| <b>SUPPLY VOLTAGE (AC : 50 / 60 Hz)</b> | 18 - 30V DC   |  | 100-270V AC without retention<br>180-270V AC with retention   |  |
|   |   |  | 18 – 30V DC   |  |

## 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

|                               |  |   |         |   |   |
|-------------------------------|--|---|---------|---|---|
| <b>FEATURES</b>               | <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> |
| <b>NO. OF CHANNELS</b>        | 4  | 8 | 4       | 8 | 8   |
| <b>CONTACTS</b>               | 1 C / O  |   | 2 C / O |   | 1 C / O   |
| <b>CONTACT RATING</b>         | 10A @ 277V AC / 30V DC (Resistive)   |   |         |   |   |
| <b>NOMINAL VOLTAGE</b>        | 24V DC   |   |         |   |   |
| <b>MUST VOLTAGE</b>           | 18V DC   |   |         |   |   |
| <b>MAX VOLTAGE</b>            | 33V DC   |   |         |   |   |
| <b>OPERATE TIME</b>           | 15 msec  |   |         |   |   |
| <b>RESET TIME</b>             | 5 msec   |   |         |   |   |
| <b>COMMUNICATION PROTOCOL</b> | ---  |   |         |   | RS485 MODBUS RTU protocol   |
| <b>STATUS DISPLAY</b>         | LED indication for relay ON status   |   |         |   | LED indication for relay ON status, Power ON & communication status   |
| <b>SUPPLY VOLTAGE</b>         | ---  |   |         |   | 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**

|                           |  |  |  |   |
|---------------------------|--|--|--|---|
| <b>FEATURES</b>           | <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>                                      |
| <b>DISPLAY</b>            | LED indication for power on, Tx & Rx   | LED indication for Tx & Rx   |  | LED indication for power ON, Tx, Rx, & Reset switch   |
| <b>INTERFACE 1</b>        | Serial (RS485 MODBUS RTU protocol)   | USB 2.0 compliance   |  | Serial (RS485 MODBUS RTU protocol)  |
| <b>CONNECTOR</b>          | 2 wire   | USB type A   |  | 2 wire (Data+, Data-)   |
| <b>INTERFACE 2</b>        | Serial (RS232 MODBUS RTU protocol)   | Serial (RS485 MODBUS RTU protocol)   |  | Ethernet (TCP / IP, Telnet)   |
| <b>CONNECTOR</b>          | DB9  | 2 wire open  | RJ 25 (6 Pin)  | RJ 45 (8 Pin)   |
| <b>TRANSMISSION SPEED</b> | 2400 to 115200 bps   | 2400 to 115200 bps   |  | RS485 : 300 to 115000 bps<br>Ethernet : 10 / 100 Mbps   |
| <b>CABLE LENGTH</b>       | ---  | 1 meter  |  | ---   |
| <b>POWER CONSUMPTION</b>  | 0.5 W  | 75mA @ 5V  |  | 0.5 W   |
| <b>SUPPLY VOLTAGE</b>     | 90 - 270V AC   | Port powered   |  | 12 - 30V DC   |
|                           |  |  |  | 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 |

## Accessories - Communication Adapters & Cables



**AC-IOEXP-01**



**AC-IOEXP-03**



**ACH-002**



**ACH-003**



**ACH-004**

|                    |                                   |  |                   |                               |                               |
|--------------------|-----------------------------------|--|-------------------|-------------------------------|-------------------------------|
| <b>DESCRIPTION</b> | 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 |
|--------------------|-----------------------------------|--|-------------------|-------------------------------|-------------------------------|



**TC02-2M-7-RTDA02-RO04-24VDC**  
90(H) x 35(W) x 60(D)mm



**LC02-72-8-LC02-RO03-AO01-230V**  
72(H) x 72(W) x 71.35(D)mm



**TC08-96-8-RTDA08-RO08-230V**  
96(H) x 63(W) x 99.1(D)mm

| FEATURES                | <ul style="list-style-type: none"> <li>Rail mount</li> <li>RTD (PT100) input</li> <li>ON-OFF control</li> <li>PID with auto tuning</li> <li>Rampsoak</li> </ul> | <ul style="list-style-type: none"> <li>Loadcell Input (24 Bit)</li> <li>High accuracy load sensing</li> <li>Hysteresis / PIDT control</li> <li>Realtime loadcell calibration</li> <li>Selectable excitation voltage</li> <li>Retransmission</li> </ul> | <ul style="list-style-type: none"> <li>RTD Input (PT100)</li> <li>ON-OFF Control</li> <li>PID With auto tuning</li> <li>Heat cool PID</li> <li>RS485 Communication</li> </ul> |
|-------------------------|---|--|---|
| DISPLAY TYPE            | 4 Digit 7 segment LED   | LED Display (6 Digit white + 4 Digit green)  | 4 Line x 16 Characters  |
| NO. OF KEYS             | 3 Keys  | 4 Touch key (3 User configurable)  | 8 Touch Keys (6 User configuration)   |
| SUPPLY VOLTAGE          | 18-30VDC, 4W  | 90 to 270 VAC (50/60Hz), 6VA   | 90 to 270VAC (50/60Hz), 10VA  |
| ANALOG INPUTS           | 2 Channel RTD (PT100)   | 2 Channel load cell  | 8 Channel RTD (PT100)   |
| ANALOG RESOLUTION       | 12 Bit  | 24 Bit, Defferential   | 12 Bit  |
| ANALOG OUTPUT           | ---   | 1 Channel (4-20mA)   | ---   |
| DIGITAL O/P             | 4 Relay output  | 3 Relay output   | 8 Relay output  |
| COMMUNICATION INTERFACE | RS485 Modbus RTU-slave  |  |   |

Ordering information

MiBRX Series - Rail Mount

| PRODUCT CODE             | DESCRIPTION   | CERTIFICATION |
|--------------------------|---|---------------|
| MiBRX-2M-1-0-0-24VAC     | MiBRX 2M PS - 2 Slots, 3DI  | CE            |
| MiBRX-2M-1-0-0-24VDC     | MiBRX 2M PS - 2 Slots, 3DI (incl 1FI)   | CE            |
| MiBRX-4M-1-0-0-230V      | MiBRX 4M PS - 4 Slots, 5DI (incl 1FI, 1AI-V), NTC   | CE            |
| MiBRX-4M-1-1-1-230V      | MiBRX 4M PS - 4 Slots, 5DI (incl 1FI, 1AI-V), NTC, RTC, Master                                | CE            |
| MiBRX-4M-1-0-0-24VDC     | MiBRX 4M PS - 4 Slots, 5DI (incl 1FI, 1AI-V), NTC   | CE            |
| MiBRX-4M-1-1-1-24VDC     | MiBRX 4M PS - 4 Slots, 5DI (incl 1FI, 1AI-V), NTC, RTC, Master                                | CE            |
| MiBRX-6M-1-1-1-230V      | MiBRX 6M PS - 6 Slots, 11DI, (incl 1FI, 1AI-V) + 4RO, NTC, RTC, Master, 230VAC                | CE            |
| MiBRX-6M-2-1-1-0-1-24VDC | MiBRX 6M PS - 6 Slots, 12DI, (incl 2FI, 1AI-V), with Isolation, Master, ETHERNET & RTC, 24VDC | CE            |

MiBRX Series - Panel Mount

| PRODUCT CODE       | DESCRIPTION  | CERTIFICATION |
|--------------------|--|---------------|
| MiBRX-48-0-0-230V  | MiBRX 48x96 PS - 2 slots, 6DI (incl 1FI, 1AI-V), NTC                     | CE            |
| MiBRX-48-0-0-24VDC | MiBRX 48x96 PS - 2 slots, 7DI (incl 1FI, 2AI-V), 1AI-I, NTC              | CE            |
| MiBRX-72-0-0-230V  | MiBRX 72x72 PS - 2 slots, 4DI (incl 1FI, 1AI-V) + 3RO, NTC               | CE            |
| MiBRX-72-0-0-24VDC | MiBRX 72x72 PS - 2 slots, 4DI (incl 1FI, 1AI-V) + 4RO, 1AI-I, NTC        | CE            |
| MiBRX-72-0-1-230V  | MiBRX 72x72 PS - 2 slots, 4DI (incl 1FI, 1AI-V) + 3RO, NTC, RTC          | CE            |
| MiBRX-72-0-1-24VDC | MiBRX 72x72 PS - 2 slots, 4DI (incl 1FI, 1AI-V) + 4RO, 1AI-I, NTC, RTC   | CE            |
| MiBRX-96-1-0-24VDC | MiBRX 96x96 PS - 6 slots, 6DI (incl 1FI, 1AI-V), 1AI-I, NTC, Master      | CE            |
| MiBRX-96-1-1-24VDC | MiBRX 96x96 PS - 6 slots, 6DI (incl 1FI, 1AI-V), 1AI-I, NTC, RTC, Master | CE            |
| MiBRX-96-1-0-230V  | MiBRX 96x96 PS - 6 slots, 4DI (incl 1FI, 1AI-V), NTC, Master             | CE            |
| MiBRX-96-1-1-230V  | MiBRX 96x96 PS - 6 slots, 4DI (incl 1FI, 1AI-V), NTC, RTC, Master        | CE            |

MiBRX Series - Independent Display

| PRODUCT CODE              | DESCRIPTION   | CERTIFICATION |
|---------------------------|---|---------------|
| MiBRX-DSP-IND-96-8-0-00-B | MiBRX Independent Display 96x96 - Customized, 14 & 7 Seg, Bar Graphs, Speedometer | CE            |
| MiBRX-DSP-IND-96-8-2-16-B | MiBRX Independent Display 96x96 - LCD (16x2)                                      | CE            |
| MiBRX-DSP-IND-96-8-4-16-B | MiBRX Independent Display 96x96 - LCD (16x4)                                      | CE            |
| MiBRX-DSP-IND-96-8-0-00-C | MiBRX Independent Display - 3.5" Graphic touch                                    | CE            |

MiBRX - Adapter Plate

| PRODUCT CODE    | DESCRIPTION            | CERTIFICATION |
|-----------------|------------------------|---------------|
| MiBRX-DSP-AP-2M | MiBRX 2M Adapter Plate | CE            |
| MiBRX-DSP-AP-4M | MiBRX 4M Adapter Plate | CE            |
| MiBRX-DSP-AP-6M | MiBRX 6M Adapter Plate | CE            |

Supported I/O cards

| PRODUCT CODE         | DESCRIPTION  | CERTIFICATION |
|----------------------|--|---------------|
| MiBRX-SC-DI04        | MiBRX Slot Card - 4 Digital Inputs                           | CE            |
| MiBRX-SC-DI04-ISO    | MiBRX Slot Card - 4 Digital Inputs (Isolated)                | CE            |
| MiBRX-SC-DI06        | MiBRX Slot Card - 6 Digital Inputs                           | CE            |
| MiBRX-SC-DI06-AC     | MiBRX Slot Card - 6 Digital inputs (AC)                      | CE            |
| MiBRX-SC-DI06-ISO    | MiBRX Slot Card - 6 Digital Inputs (Isolated)                | CE            |
| MiBRX-SC-RO03        | MiBRX Slot Card - 3 Relay Outputs                            | CE            |
| MiBRX-SC-RO04        | MiBRX Slot Card - 4 Relay Outputs                            | CE            |
| MiBRX-SC-RO04-12V    | MiBRX Slot Card - 4 Relay Output (12V)                       | CE            |
| MiBRX-SC-RO05        | MiBRX Slot Card - 5 Relay Outputs (1.5 A)                    | CE            |
| MiBRX-SC-TO04        | MiBRX Slot Card - 4 Transistor Outputs                       | CE            |
| MiBRX-SC-DI02-RO02   | MiBRX Slot Card - 2 Digital Inputs & 2 Relay Outputs         | CE            |
| MiBRX-SC-DI02-RO03   | MiBRX Slot Card - 2 Digital Inputs & 3 Relay Outputs         | CE            |
| MiBRX-SC-DI02-TO02   | MiBRX Slot Card - 2 Digital Inputs & 2 Transistor Outputs    | CE            |
| MiBRX-SC-DI02-AI01-T | MiBRX Slot Card - 2 Digital Inputs & 1 Analog Input - TC/RTD | CE            |
| MiBRX-SC-AI02-V      | MiBRX Slot Card - 2 Analog Inputs - Voltage                  | CE            |
| MiBRX-SC-AI02-V-ISO  | MiBRX Slot Card - 2 Analog inputs - Voltage (Isolated)       | CE            |
| MiBRX-SC-AI02-I      | MiBRX Slot Card - 2 Analog Inputs - Current                  | CE            |

| PRODUCT CODE          | DESCRIPTION   | CERTIFICATION |
|-----------------------|---|---------------|
| MiBRX-SC-AI02-I-ISO   | MiBRX Slot Card - 2 Analog inputs - Current (Isolated)        | CE            |
| MiBRX-SC-AI02-V-I     | MiBRX Slot Card - 2 Analog Inputs - 1 Voltage & 1 Current     | CE            |
| MiBRX-SC-AI02-TC      | MiBRX Slot Card - 2 Analog Inputs - Thermocouple              | CE            |
| MiBRX-SC-AI02-TC-ISO  | MiBRX Slot Card - 2 Analog inputs - Thermocouple (Isolated)   | CE            |
| MiBRX-SC-AI02-RTD     | MiBRX Slot Card - 2 Analog Inputs - RTD                       | CE            |
| MiBRX-SC-AI02-RTD-ISO | MiBRX Slot Card - 2 Analog inputs - RTD (Isolated)            | CE            |
| MiBRX-SC-AI02-PT1000  | MiBRX Slot Card - 2 Analog Inputs - PT1000                    | CE            |
| MiBRX-SC-AI02-PTC     | MiBRX Slot Card - 2 Analog Inputs - PTC                       | CE            |
| MiBRX-SC-AI02-NTC     | MiBRX Slot Card - 2 Analog Inputs - NTC                       | CE            |
| MiBRX-SC-AO01-V/I     | MiBRX Slot Card - 1 Analog Output                             | CE            |
| MiBRX-SC-AO02-V-I-ISO | MiBRX Slot Card - 2 Analog Outputs (Isolated)                 | CE            |
| MiBRX-SC-FI02         | MiBRX Slot Card - 2 Fast Inputs (10KHz)                       | CE            |
| MiBRX-SC-F001-TO01    | MiBRX Slot Card - 1 Fast Output (10KHz) & 1 Transistor Output | CE            |
| MiBRX-SC-LC02         | MiBRX Slot Card - 2 Analog Inputs - Load Cell (24 Bit)        | CE            |
| MiBRX-SC-DL           | MiBRX Slot Card - Datalogging (2MB) & RTC                     | CE            |
| MiBRX-SC-WIFI         | MiBRX Slot Card - WIFI  | CE            |
| MiBRX-SC-PD           | MiBRX Portable Downloader                                     | CE            |

## Ordering information

### Flexible IO Solution

| PRODUCT CODE                 | DESCRIPTION   | CERTIFICATION |
|------------------------------|---|---------------|
| FL-GT35-DI04-PS-230V-CE-RoHS | Flexys Graphics -Power supply card-230VAC, 4 Digital Inputs         | CE            |
| FL-GT35-DI04-PS-24V-CE-RoHS  | Flexys Graphics -Power supply card-24VDC, 4 Digital Inputs          | CE            |
| FL-GT35-DSP-CE-RoHS          | Flexys Graphics- 3.5" Resistive Touch Screen                        | CE            |
| FL-GT35-LG-1-0-1-CE-RoHS     | Flexys Graphics- Logic card- RTC, MODBUS Expansion                  | CE            |
| FL-TX4-DI04-PS-230V-CE-RoHS  | Flexys Panel TX4-Power Supply Card- 230VAC, 4 Digital Inputs        | CE            |
| FL-TX4-DI04-PS-24V-CE-RoHS   | Flexys Panel TX4- Power Supply Card- 24VDC, 4 Digital Input         | CE            |
| FL-TX4-LG-1-0-1-V2-CE-RoHS   | Flexys Panel Tx4 - Logic Card - RTC, MODBUS & Proprietary Expansion | CE            |
| FL-RL-DI04-PS-24V-CE-RoHS    | Flexys Rail- Power supply card- 24VDC, 4 Digital Inputs             | CE            |
| FL-RL-BS-6-CE-RoHS           | Flexys Rail - Base Card   | CE            |
| FL-RL-LG-1-0-1-V2-CE-RoHS    | Flexys Rail - Logic Card - RTC, MODBUS & Proprietary Expansion      | CE            |
| FL-RL-PS-230V                | Flexys Rail - Power Supply Card- 230VAC                             | ---           |

### Compact Series

| PRODUCT CODE        | DESCRIPTION   | CERTIFICATION |
|---------------------|---|---------------|
| DIGIX-1-0-0-24VDC-B | PLC-8DI, 5RO& 230VAC- RTC & MODBUS Expansion                | CE in process |
| DIGIX-1-230V        | PLC- 8DI, 5RO & 230VAC                                      | CE            |
| DIGIX-1-0-0-24VDC   | PLC- 8DI, 5RO & 24VDC                                       | CE in process |
| DIGIX-1-1-1-230V    | PLC- 8DI, 5RO & 230AC- RTC & MODBUS Expansion               | CE            |
| DIGIX-2-1-0-24VDC   | PLC- 10DI, 8RO, 2AI-V/2DI & 24VDC- MODBUS Expansion         | CE            |
| DIGIX-4-1-1-24VDC   | PLC- 10DI, 6TO & 24VDC- RTC & MODBUS Expansion              | CE            |
| UNIX-1-230V         | PLC-3DI, 2RO, 2TO, 3AI (1TC/RTD, 1I, 1V/1DI) & 230VAC       | CE in process |
| TWIX-1-230V         | PLC- 6DI, 4RO, 1AI (TC/RTD) & 230VAC                        | CE in process |
| TWIX-1-24VDC        | PLC- 6DI, 4RO, 1AI (TC/RTD) & 24VDC                         | CE in process |
| TWIX-2-230V         | PLC- 6DI, 5RO, 6AI (2TC/RTD, 2I, 2V/2DI), 1AO(V/I) & 230VAC | CE in process |
| TWIX-2-24V          | PLC- 6DI, 5RO, 6AI (2TC/RTD, 2I, 2V/2DI), 1AO(V/I) & 24VDC  | CE in process |
| TWIX-3-24VDC        | PLC- 8DI, 6DO, 1AI (TC/RTD) & 24VDC                         | CE in process |

### Supported I/O cards

| 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-CE-RoHS      | 10 Digital inputs card   | CE            |
| FL-SC-DI14-CE-RoHS      | 14 Digital inputs card   | CE            |
| FL-SC-RO08-CE-RoHS      | 8 Channel relay output card  | CE            |
| FL-SC-TO08-CE-RoHS      | 8 Channel transistor output card   | CE            |
| FL-SC-DI04-RO04-CE-RoHS | 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-CE-RoHS  | 4 Channel analog input card - RTD (PT-100)                                   | CE            |
| FL-SC-AI04-TC-CE-RoHS   | 4 Channel analog input card - Thermocouple                                   | CE            |
| FL-SC-AIDF04-TC-CE-RoHS | 4 Channel differential analog input card - Thermocouple                      | CE            |
| FL-SC-AI06-V-CE-RoHS    | 6 Channel analog input card - Voltage  | CE            |
| FL-SC-AI06-I-CE-RoHS    | 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-CE-RoHS    | 4 Channel analog output card - Voltage                                       | CE            |
| FL-SC-AO04-I-CE-RoHS    | 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 |

### Fixed IO Configuration

| PRODUCT CODE         | DESCRIPTION                                      | CERTIFICATION |
|----------------------|--|---------------|
| MM3030-4             | PLC- 10DI, 8RO, 2AI (V/I), 24VDC                 | CE in process |
| MM3032-2-0-0-230V V2 | PLC- 8DI, 6RO, 2AI (V/I), 1AO (0-10V DC), 230VAC | CE in process |
| MM3032-2-0-0-24V V2  | PLC- 8DI, 6RO, 1AI (V/I), 1AI-NTC & 24VDC        | CE in process |

### Standard Function Products

| PRODUCT CODE                  | DESCRIPTION                                       | CERTIFICATION |
|-------------------------------|---|---------------|
| TC02-2M-7-RTDA02-RO04-24VDC   | 2 Channel Temperature Controller                  | CE            |
| LC02-72-8-LC02-RO03-A001-230V | 2 Channel Loadcell Controller With Retransmission | CE            |
| TC08-96-8-RTDA08-RO08-230V    | 2 Channel Temperature Scanner Cum Controller      | CE            |

### Relay Module

| PRODUCT CODE                  | PRODUCT CODE                                 | CERTIFICATION |
|-------------------------------|--|---------------|
| RLYMD-1-S4-1CO-24VDC-CE-RoHS  | 4 Channel 1 Change Over                      | CE            |
| RLYMD-1-S4-2CO-24VDC-CE-RoHS  | 4 Channel 2 Change Over                      | CE            |
| RLYMD-2-S8-1CO-24VDC-CE-RoHS  | 8 Channel 1 Change Over                      | CE            |
| RLYMD-2-S8-2CO-24VDC-CE-RoHS  | 8 Channel 2 Change Over                      | CE            |
| ERLYMD-2-1-S8-1CO-24V-CE-RoHS | 8 Channel 1 Change Over, Communication Based | CE            |

### Data Converters / Accessories

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



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



**SP112-GT70**  
146(H) x 200(W) x 32(D)mm



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

## FEATURES

- 4.3", 7" & 10" Touch screen
- Ethernet / Serial communication
- User management
- Recipe management
- Data logging
- Update program by USB flash
- In-Built third party PLC protocols
- Thermal printer support
- In-Built buzzer for alarm condition

|                       |   |                                    |                                     |
|-----------------------|---|------------------------------------|-------------------------------------|
| DISPLAY               | 4.3" Diagonal resistive touch screen  | 7" Diagonal resistive touch screen | 10" Diagonal resistive touch screen |
| RESOLUTION            | 480 x 272 pixels  | 800 x 480 pixels                   | 1024 x 600 pixels                   |
| USER MEMORY           | 256M Flash + 256M DRAM  |                                    | 256M Flash + 128M DRAM              |
| DATA LOGGING          | Yes   |                                    |                                     |
| COMM. PORT 1          | RS485/ RS422 MODBUS RTU protocol  |                                    | RS485 MODBUS RTU protocol           |
| COMM. PORT 2          | RS232 MODBUS RTU protocol, Multiple communication protocols                   |                                    |                                     |
| COMM. PORT 3          | ---   | RS485 MODBUS RTU protocol          | ---                                 |
| ETHERNET              | Ethernet - 10M/ 100M Self adaptation  |                                    |                                     |
| USB HOST              | USB2.0x1, 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                  | ---   |                                    |                                     |
| RTC                   | Yes   |                                    |                                     |
| BACKUP BATTERY        | 3 V CR2032  |                                    |                                     |
| OPERATING TEMPERATURE | 0° - 50° C  |                                    |                                     |
| SUPPLY VOLTAGE        | 24 V DC (20.4~28.8 V DC)  |                                    |                                     |

# Power Supply - Din Rail Series



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



**RPS15**  
90(H) X 17.50(W) x 65(D)mm



**RPS40**  
90(H) X 35(W) x 60(D)mm

## FEATURES

- IEC 61010-1 safety standards
- Protection: Overload, Over voltage, Short circuit
- Power OK indication
- Cooling by free air convection
- Ultra slim
- Support wide range of AC/DC auxiliary supply
- Efficiencies up to 82%
- Full power between -25°C to +50°C
- Protection against Short circuit, Overload, Over voltage
- Cooling by free air convection

|                                      |  |   |   |
|--------------------------------------|--|---|---|
| DISPLAY                              | LED indication for DC OK               |   |   |
| VOLTAGE RANGE                        | 100 - 270 VAC/ 100-300 VDC             | 90-264 VAC/ 127-370 VDC                 |   |
| FREQUENCY RANGE                      | 50/ 60 Hz                              |   |   |
| AC CURRENT                           | 100 V-0.6 A, 270 V-0.3 A               | 0.3 A @115 VAC; 0.15 A@230 VAC          | 0.80 A@115 VAC; 0.5 A@230 VAC                         |
| EFFICIENCY                           | Up to 75% to 85%                       | 82%                                     | 85%   |
| INRUSH CURRENT                       | < 40 Amps@115 VAC<br>< 75 Amps@230 VAC | < 30 Amps@264 VAC                       |   |
| AVAILABLE RANGE DC VOLTAGE / CURRENT | 24 V/ 1.1A                             | 05 V/ 2.4 A, 12 V/ 1.25 A, 24 V/ 0.63 A | 12 V/ 2.5 A, 15 V/ 2.67 A, 24 V/ 1.67 A, 48 V/ 0.83 A |
| RATED POWER                          | 26.4 W                                 | 15 W                                    | 40 W  |
| RIPPLE & NOISE MAX (mVp.p)           | 200 mV                                 | < 1 % of Vout                           |   |
| WEIGHT                               | 140 g                                  | < 100 g                                 | < 150 g   |

## Power Supply - Din Rail Series



**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



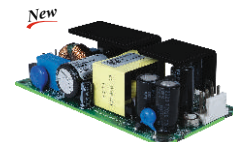
**RPS480**  
154(H) X 60(W) x 158(D)mm

|                                      |   |  |   |                              |
|--------------------------------------|---|--|---|------------------------------|
| FEATURES                             | <ul style="list-style-type: none"> <li>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> |                              |
|                                      | LED indication for DC OK  |  |   |                              |
| DISPLAY                              | LED indication for DC OK  |  |   |                              |
| VOLTAGE RANGE                        | 90 - 264 VAC/ 127 - 370 VDC   |  |   |                              |
| FREQUENCY RANGE                      | 50/ 60 Hz   |  |   |                              |
| AC CURRENT                           | 115 V - 1.2 A, 230 V - 0.8 A  | 115 V - 2.2 A, 230 V - 1.5 A                 | 115 V - 2.4 A, 230 V - 1.2 A  | 115 V - 4.8 A, 230 V - 2.4 A |
| EFFICIENCY                           | Up to 87 %  | Up to 89 %                                   | Up to 93 %  | Up to 94 %                   |
| INRUSH CURRENT                       | < 48 A@264 VAC  |  | < 60 A@264 VAC  |                              |
| AVAILABLE RANGE DC VOLTAGE / CURRENT | 05 V/ 10 A, 12 V/ 5 A, 15 V/ 4 A, 24 V/ 2.5 A, 48 V/ 1.25 A   | 12 V/ 8 A, 15 V/ 8 A, 24 V/ 5 A, 48 V/ 2.5 A | 12 V/ 18 A, 24 V/ 10 A, 48 V/ 5 A   | 24 V/ 20 A, 48 V/ 10 A       |
| RATED POWER                          | 60 W  | 120 W  | 240 W   | 480 W                        |
| RIPPLE & NOISE MAX (mVp.p)           | < 1% of Vout  |  |   |                              |
| WEIGHT                               | 285 g   | 350 g  | 645 g   | 1050 g                       |

## Power Supply - Open Frame Series



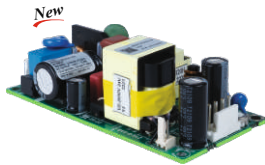
**OPS2x3-40**  
76.2(L) X 50.8(W) x 30(H)mm



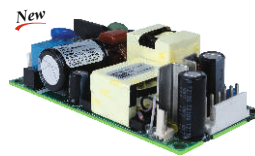
**OPS2x4-60**  
101.6(L) X 50.8(W) x 30(H)mm

|   |   |  |  |  |
|---|---|--|--|--|
| FEATURES  | <ul style="list-style-type: none"> <li>3 x 2 x 1.16 Inches Form factor</li> <li>40 Watts convection</li> </ul>  |  | <ul style="list-style-type: none"> <li>4 x 2 x 1.16 Inches Form factor</li> <li>60 Watts Convection</li> </ul> |  |
|   | <ul style="list-style-type: none"> <li>No Load power &lt; 0.5 W</li> <li>- 40°C to + 70°C Operating temperature</li> <li>Designed to meet IEC/ UL 62368-1 and IEC/ EN 60601-1</li> <li>Class II option available</li> <li>Medical (BF) safety approvals</li> <li>Approved to household, ITAV &amp; medical standards</li> </ul> |  |  |  |
| Voltage range                                     | 90 - 264 VAC (127 - 370 VDC)  |  |  |  |
| Available Range (Convection) DC Voltage / Current | 5 V/ 5 A, 12 V/ 3.33 A, 15 V/ 2.67 A, 24 V/ 1.67 A, 48 V/ 0.83 A  |  | 5 V/ 10 A, 12 V/ 5 A, 15 V/ 4 A, 24 V/ 2.5 A, 48 V/ 1.25 A   |  |
| FREQUENCY RANGE                                   | 50/ 60 Hz   |  |  |  |
| AC CURRENT  | 0.85 A@115 VAC; 0.45 A@230 VAC  |  | 1.2 A@115 VAC; 0.8 A@230 VAC   |  |
| EFFICIENCY @230V                                  | Up to 86 %  |  | Up to 87 %   |  |
| INRUSH CURRENT                                    | < 60 Amps; Measured at 264 VAC, 25°C Ambient, Cold start  |  |  |  |
| RATED POWER                                       | 40 W  |  | 60 W   |  |
| RIPPLE & NOISE (max)                              | < 1 % of Vout   |  |  |  |
| DIMENSION   | Overall: 3" x 2" x 1.16" (L x W x H);<br>Height above PCB : 1"  |  | Overall: 4" x 2" x 1.16" (L x W x H);<br>Height above PCB : 1"   |  |
| WEIGHT  | < 100 g   |  | < 150 g  |  |

## Power Supply - Open Frame Series



**OPS2x4-150**  
101.6(L) X 50.8(W) x 30(H)mm



**OPS2x4-200**  
101.6(L) X 50.8(W) x 30(H)mm



**OPS3x5-350**  
127(L) X 76.2(W) x 30(H)mm

|  |   |   |   |
|--|---|---|---|
| FEATURES   | <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> </ul>   | <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> </ul> | <ul style="list-style-type: none"> <li>• 5 x 3 x 1.16 Inches Form factor</li> <li>• 350 Watts with Forced Air Cooling &amp; 200 Watts Convection Cooling</li> <li>• Remote Inhibit available</li> </ul> |
|  | <ul style="list-style-type: none"> <li>• 12 V / 0.5 A Fan Output, Thermal Shut-Down feature</li> <li>• No Load power &lt; 0.5 W</li> <li>• - 40°C to + 70°C Operating temperature</li> <li>• Designed to meet IEC/ UL 62368-1 and IEC/ EN 60601-1</li> <li>• Class II option available</li> <li>• Medical (BF) safety approvals</li> <li>• Approved to household, ITAV &amp; medical standards</li> </ul> |   |   |
| Voltage range  | 90 - 264 VAC (127 - 370 VDC)  |   |   |
| Available Range (Convection)<br>DC Voltage / Current | 12 V/ 8.33 A, 15 V/ 6.67 A, 24 V/ 4.17 A, 48 V/ 2.1 A   | 12 V/ 10.84 A, 15 V/ 8.67A, 24 V/ 5.42 A, 48 V/ 2.71 A  | 12 V/ 16.67 A, 15 V/ 13.33 A, 24 V/ 8.33 A, 48 V/ 4.17 A  |
| Available Range (Forced Air)<br>DC Voltage / Current | 12 V/ 12.5 A, 15 V/ 10 A, 24 V/ 6.25 A, 48 V/ 3.13 A  | 12 V/ 16.67 A, 15 V/ 13.34 A, 24 V/ 8.34 A, 48 V/ 4.17 A  | 12 V/ 25.00 A, 15 V/ 23.34 A, 24 V/ 14.59 A, 48 V/ 7.30 A   |
| FREQUENCY RANGE                                      | 50/ 60 Hz   |   |   |
| AC CURRENT   | 1.5 A@115 VAC; 0.74 A@230 VAC   | 2.0 A @ 115 VAC; 1.1 A @ 230 VAC  | 3.6 A@115 VAC; 1.8 A@230 VAC  |
| EFFICIENCY@230 V                                     | Up to 90 %  |   | Up to 93 %  |
| INRUSH CURRENT                                       | < 60 Amps; Measured at 264 VAC, 25°C Ambient, Cold start  |   |   |
| RATED POWER  | 150 W   | 200 W   | 350 W   |
| RIPPLE & NOISE (max)                                 | < 1% of Vout  |   |   |
| DIMENSION  | Overall: 4" x 2" x 1.16" (L x W x H); Height above PCB : 1"   | Overall: 4" x 2" x 1.16" (L x W x H); Height above PCB : 1"   | Overall: 5" x 3" x 1.16" (L x W x H); Height above PCB : 1"   |
| WEIGHT   | < 200 g   | < 180 g   | < 300 g   |

## Power Supply - Din Rail



**LRPS240**  
154(H) X 60(W) x 158(D)mm



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



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

|                            |   |   |
|----------------------------|---|---|
| FEATURES                   | <ul style="list-style-type: none"> <li>• Low cost CVCC power supply</li> <li>• Cooling by built in fan</li> <li>• Designed to meet UI508 &amp; IEC 62358-1</li> </ul> | <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>• Wide-range input 150 - 270 VAC</li> </ul> |
|                            | LED induction for DC OK   |   |
| DISPLAY                    | LED indication for battery charging   |   |
| VOLTAGE RANGE              | 170 - 264 VAC   | 150 - 270 VAC   |
| FREQUENCY RANGE            | 50/ 60 Hz   |   |
| AC CURRENT                 | 2.8 A@150 VAC; 2.1 A@ 230 VAC   | 150 V - 2.4 A, 230 V - 1.7 A  |
| EFFICIENCY                 | Up to 87 %  | Up to 80 %@230 VAC  |
| INRUSH CURRENT             | < 60 Amps; Measured at 264 VAC  | < 70 A@270 VAC  |
| DC VOLTAGE                 | 24 V/ 10 A, 48 V/ 5 A   | 12 VDC  |
| RATED CURRENT              |   | 10 A  |
| RATED POWER                | 240 W   | 120 W   |
| RIPPLE & NOISE MAX (mVp.p) | < 1 % of Vout   |   |
| WEIGHT                     | 680 g   | 1050 g  |
|                            |   | 1280 g  |



## Ordering information

### Human Machine Interface

| PRODUCT CODE      | DESCRIPTION  | CERTIFICATION |
|-------------------|--|---------------|
| SP112-GT40-S-CE   | 4.3" Touch screen HMI with Serial ports            | CE in process |
| SP112-GT40-ET-CE  | 4.3" Touch screen HMI with Ethernet & Serial ports | CE in process |
| SP112-GT70-S1-CE  | 7" Touch screen HMI with Serial ports              | CE            |
| SP112-GT70-ET1-CE | 7" Touch screen HMI with Ethernet & Serial ports   | CE            |
| SP112-GT100-ET-CE | 10" Touch screen HMI with Ethernet & Serial ports  | CE            |

### DIN Rail Power Supply

| PRODUCT CODE | CERTIFICATION | Eg.: RPS15-24-CE<br>RPS15 - XX - YY |
|--------------|---------------|-------------------------------------|
| RPS15-05-CE  | CE            |                                     |
| RPS15-12-CE  | CE            |                                     |
| RPS15-24-CE  | CE            |                                     |

Certification : CE : CE  
 Output Voltage : 05 : 5V  
 12 : 12V  
 24 : 24V  
 Output Power : 15w

| PRODUCT CODE | CERTIFICATION | Eg.: RPS40-24-CE<br>RPS40 - XX - YY |
|--------------|---------------|-------------------------------------|
| RPS40-12-CE  | CE            |                                     |
| RPS40-15-CE  | CE            |                                     |
| RPS40-24-CE  | CE            |                                     |
| RPS40-48-CE  | CE            |                                     |

Certification : CE : CE  
 Output Voltage : 12 : 12V  
 15 : 15V  
 24 : 24V  
 48 : 48V  
 Output Power : 40W

| PRODUCT CODE | CERTIFICATION |
|--------------|---------------|
| RPS60-05     | ---           |
| RPS60-12     | ---           |
| RPS60-15     | ---           |
| RPS60-24     | ---           |
| RPS60-48     | ---           |
| RPS60-05-CU  | CE            |
| RPS60-12-CU  | CE            |
| RPS60-15-CU  | CE            |
| RPS60-24-CU  | CE            |
| RPS60-48-CU  | CE            |

| PRODUCT CODE | CERTIFICATION |
|--------------|---------------|
| RPS60-05     | ---           |
| RPS60-12     | ---           |
| RPS60-15     | ---           |
| RPS60-24     | ---           |
| RPS60-48     | ---           |
| RPS60-05-CU  | CE            |
| RPS60-12-CU  | CE            |
| RPS60-15-CU  | CE            |
| RPS60-24-CU  | CE            |
| RPS60-48-CU  | CE            |

Eg.: RPS60-24  
RPS60 - XX - YY

Certification : CU : CE   
 No fields indicates no certification  
 Output Voltage : 05 : 5V  
 12 : 12V  
 15 : 15V  
 24 : 24V  
 48 : 48V  
 Output Power : 60W

| PRODUCT CODE | CERTIFICATION |
|--------------|---------------|
| RPS120-12    | ---           |
| RPS120-15    | ---           |
| RPS120-24    | ---           |
| RPS120-48    | ---           |
| RPS120-12-CU | CE            |
| RPS120-15-CU | CE            |
| RPS120-24-CU | CE            |
| RPS120-48-CU | CE            |

| PRODUCT CODE | CERTIFICATION |
|--------------|---------------|
| RPS120-12    | ---           |
| RPS120-15    | ---           |
| RPS120-24    | ---           |
| RPS120-48    | ---           |
| RPS120-12-CU | CE            |
| RPS120-15-CU | CE            |
| RPS120-24-CU | CE            |
| RPS120-48-CU | CE            |

Eg.: RPS120-24-CU  
RPS120 - XX - YY

Certification : CU : CE   
 No fields indicates no certification  
 Output Voltage : 12 : 12V  
 15 : 15V  
 24 : 24V  
 48 : 48V  
 Output Power : 120W

### DIN Rail Power Supply

| PRODUCT CODE | CERTIFICATION |
|--------------|---------------|
| RPS240-12-CU | CE            |
| RPS240-24-CU | CE            |
| RPS240-48-CU | CE            |

| PRODUCT CODE | CERTIFICATION |
|--------------|---------------|
| RPS240-12-CU | CE            |
| RPS240-24-CU | CE            |
| RPS240-48-CU | CE            |

Eg.: RPS240-24-CU  
RPS240 - XX - YY

Certification : CU : CE   
 No fields indicates no certification  
 Output Voltage : 12 : 12V  
 24 : 24V  
 48 : 48V  
 Output Power : 240W

| PRODUCT CODE | CERTIFICATION |
|--------------|---------------|
| RPS480-24-CU | CE            |
| RPS480-48-CU | CE            |

| PRODUCT CODE | CERTIFICATION |
|--------------|---------------|
| RPS480-24-CU | CE            |
| RPS480-48-CU | CE            |

Eg.: RPS480-24-CU  
RPS480 - XX - YY

Certification : CU : CE   
 No fields indicates no certification  
 Output Voltage : 24 : 24V  
 48 : 48V  
 Output Power : 480W

| PRODUCT CODE | CERTIFICATION |
|--------------|---------------|
| LRPS240-24   | ---           |
| LRPS240-48   | ---           |

### Open Frame Power Supply

| PRODUCT CODE         | CERTIFICATION |
|----------------------|---------------|
| OPS2x3-40-05-A-1-CU  |               |
| OPS2x3-40-12-A-1-CU  |               |
| OPS2x3-40-15-A-1-CU  |               |
| OPS2x3-40-24-A-1-CU  |               |
| OPS2x3-40-48-A-1-CU  |               |
| OPS2x4-60-05-A-1-CU  |               |
| OPS2x4-60-12-A-1-CU  |               |
| OPS2x4-60-15-A-1-CU  |               |
| OPS2x4-60-24-A-1-CU  |               |
| OPS2x4-60-48-A-1-CU  |               |
| OPS2x4-150-12-A-1-CU |               |
| OPS2x4-150-15-A-1-CU |               |
| OPS2x4-150-24-A-1-CU |               |
| OPS2x4-150-48-A-1-CU |               |
| OPS2x4-200-12-A-1-CU |               |
| OPS2x4-200-15-A-1-CU |               |
| OPS2x4-200-24-A-1-CU |               |
| OPS2x4-200-48-A-1-CU |               |
| OPS3x5-350-12-A-1-CU |               |
| OPS3x5-350-15-A-1-CU |               |
| OPS3x5-350-24-A-1-CU |               |
| OPS3x5-350-48-A-1-CU |               |

### Battery Chargers

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



VFD-L



VFD-S

| FEATURES                          | <ul style="list-style-type: none"> <li>• Compact VFD</li> <li>• 0.5HP 0.4kW &amp; 1HP 0.75kW</li> </ul>                           | <ul style="list-style-type: none"> <li>• Standard General Purpose VFD</li> <li>• 0.5HP 0.4kW to 20HP 15kW</li> </ul>  |
|-----------------------------------|---|---|
| RATED INPUT VOLTAGE / FREQUENCY   | Single Phase 230 VAC 50Hz / 60 Hz   | Single Phase 230 VAC 50Hz / 60 Hz, Three Phase 415 VAC 50Hz / 60Hz  |
| PERMISSIBLE VOLTAGE FLUCTUATION   | 230 VAC ±15%  | 230 VAC ±15% for 1 phase & 415 VAC ±15% for 3 phase   |
| PERMISSIBLE FREQUENCY FLUCTUATION | ±5%   |   |
| CONTROL MODE                      | V/F control   |   |
| FREQUENCY CONTROL RANGE           | 0.1 ~ 400.0 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 ~ 999.9 Sec. Four acceleration / deceleration time settings available   | 0.0 ~ 3600.0 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<br>2 analog inputs (0-20mA, POT / 0-10V)   | 8 User Selectable (PNP/NPN) Multifunction Inputs<br>2 analog inputs (0-10V / 0-20mA)  |
| OUTPUT SIGNAL                     | 1 User Selectable Multifunction Relay Output (250V/5A Contact)  | 2 User Selectable Multifunction Relay Output (250V/5A Contact),<br>2 User Selectable Multifunction Open Collector Output,<br>1 Analog Output (0-10V/0-20mA) |
| PROTECTION FUNCTIONS              | Over Current, Over Voltage, Under Voltage, Over Temperature, Under Current, System Error  |   |
| DISPLAY                           | Non-removable HMI with 5 keys, 4x7 segment LED display and 4 status LED setting, Running status and fault display                 | Removable HMI with 8 keys, 1 switch enabled encoder, 5x7 segment LED display and 7 status LEDs  |
| OPERATING ENVIRONMENT             | Temperature : -10 ~ +55°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 input 230VAC, 3 phase output 0 to rated Input voltage, 0.5HP/0.4kW Economic Series (4DI, 2AI, 2AO, RS485, 1RO SPST, Built in display) | ---           |
| VFD-L-1-010-230V | 1 phase input 230VAC, 3 phase output 0 to rated Input voltage, 1HP/0.75kW Economic Series (4DI, 2AI, RS485, 1RO SPST, Built in display)       | ---           |

### Variable Frequency Drive (VFD-S)

| PRODUCT CODE     | DESCRIPTION   | CERTIFICATION |
|------------------|---|---------------|
| VFD-S-1-005-230V | 1 phase input 230VAC, 3 phase output 0 to rated Input voltage 0.5HP / 0.4kW, General Purpose series (5DI, 2AI, 1AO, RS485, 1RO SPDT, 1TO, Detachable display) | ---           |
| VFD-S-1-010-230V | 1 phase input 230VAC, 3 phase output 0 to rated Input voltage 1HP/0.75kW, General Purpose series (5DI, 2AI, 1AO, RS485, 1RO SPDT, 1TO, Detachable display)    | ---           |
| VFD-S-1-020-230V | 1 phase input 230VAC, 3 phase output 0 to rated Input voltage 2HP/1.5kW, General Purpose series (5DI, 2AI, 1AO, RS485, 1RO SPDT, 1TO, Detachable display)     | ---           |
| VFD-S-3-010-415V | 3 phase input 415VAC, 3 phase output 0 to rated Input voltage 1HP/0.75kW, General Purpose series (5DI, 2AI, 1AO, RS485, 1RO SPDT, 1TO, Detachable display)    | ---           |
| VFD-S-3-020-415V | 3 phase input 415VAC, 3 phase output 0 to rated Input voltage 2HP/1.5kW, General Purpose series (5DI, 2AI, 1AO, RS485, 1RO SPDT, 1TO, Detachable display)     | ---           |
| VFD-S-3-030-415V | 3 phase input 415VAC, 3 phase output 0 to rated Input voltage 3HP/2.2kW, General Purpose series (5DI, 2AI, 1AO, RS485, 1RO SPDT, 1TO, Detachable display)     | ---           |

### Variable Frequency Drive (VFD-S)

| PRODUCT CODE        | DESCRIPTION   | CERTIFICATION |
|---------------------|---|---------------|
| VFD-SH-3-050-B-415V | 3 PH 415VAC IN, 3 PH 0-415VAC OUT 5HP/3.7kW, Heavy Duty General Purpose series (8 DIs, 2 AI, RS485, 2 RO, 2 TO, 1AO, Detachable Display)    | ---           |
| VFD-SN-3-075-B-415V | 3 PH 415VAC IN, 3 PH 0-415VAC OUT 7.5HP/5.5kW, Normal duty General Purpose series (8 DIs, 2 AI, RS485, 2 RO, 2 TO, 1AO, Detachable Display) | ---           |
| VFD-SH-3-075-B-415V | 3 PH 415VAC IN, 3 PH 0-415VAC OUT 7.5HP/5.5kW, Heavy duty General Purpose series (8 DIs, 2 AI, RS485, 2 RO, 2 TO, 1AO, Detachable Display)  | ---           |
| VFD-SN-3-100-B-415V | 3 PH 415VAC IN, 3 PH 0-415VAC OUT 10HP/7.5kW, Normal Duty General Purpose series (8 DIs, 2 AI, RS485, 2 RO, 2 TO, 1AO, Detachable Display)  | ---           |
| VFD-SH-3-100-B-415V | 3 PH 415VAC IN, 3 PH 0-415VAC OUT 10HP/7.5kW, Heavy Duty General Purpose series (8 DIs, 2 AI, RS485, 2 RO, 2 TO, 1AO, Detachable Display)   | ---           |
| VFD-SH-3-150-B-415V | 3 PH 415VAC IN, 3 PH 0-415VAC OUT, 15HP/11kW, Heavy Duty General Purpose series (8 DIs, 2 AI, RS485, 2 RO, 2 TO, 1AO, Detachable Display)   | ---           |
| VFD-SN-3-200-B-415V | 3 PH 415VAC IN, 3 PH 0-415VAC OUT, 20HP/15kW, Normal duty General Purpose series (8 DIs, 2 AI, RS485, 2 RO, 2 TO, 1AO, Detachable Display)  | ---           |
| VFD-SH-3-200-B-415V | 3 PH 415VAC IN, 3 PH 0-415VAC OUT, 20HP/15kW, Heavy duty General Purpose series (8 DIs, 2 AI, RS485, 2 RO, 2 TO, 1AO, Detachable Display)   | ---           |



**FD100**



**FD300**

| 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>• High performance AC drives</li> <li>• 5HP 3.75kW to 200HP 160kW</li> </ul>     |
|-----------------------------------|---|---|
| RATED INPUT VOLTAGE / FREQUENCY   | Single Phase 230 VAC 50Hz / 60Hz, Three Phase 415 VAC 50Hz / 60Hz   |   |
| PERMISSIBLE VOLTAGE FLUCTUATION   | 187V to 253 VAC for 1 phase & 320 to 460 VAC for 3 Phase  |   |
| PERMISSIBLE FREQUENCY FLUCTUATION | ±5%   |   |
| CONTROL MODE                      | V/F control   | SFVC, CLVC (+PG Card), V/F Control  |
| FREQUENCY CONTROL RANGE           | 0.1 ~ 400.0 Hz  | Vector control : 0.0 ~ 3200.0Hz, V/F control : 0.0 ~ 500.0Hz  |
| 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 ~ 3600.0 Sec. Four acceleration / deceleration time settings available  | 0.0 ~ 6500.0 Sec. Four acceleration / deceleration time settings available  |
| MULTI SPEED RUNNING               | Built-in program  |   |
| BUILT-IN PI                       | Easy to set up a simple automatic control system  |   |
| OVERLOAD CAPACITY                 | G Type - 150% rated current for 1 min, P type - 120% rated current for 1 min  |   |
| TORQUE BOOST                      | Manual Boost : 0 - 15%  | Auto Boost , Manual Boost : 0 - 30%   |
| 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, External terminals and Communication  |   |
| FREQUENCY SETTING                 | Digital setting, Analog voltage setting, Analog current setting, Communication  |   |
| 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)  |   |
| INPUT CHANNEL                     | 5 DIs (Internal impedance : 3.3kΩ), 2AIs (0-10V, 0-10V/0-20mA)  | 6 DIs (Internal impedance : 3.3kΩ), 2AIs (0-10V, 0-10V/0-20mA)  |
| OUTPUT CHANNEL                    | 1 RO, 1 TO, 1AO (0-10V/0-20mA)  | 1 RO, 2 TO, 1AO (0-10V/0-20mA)  |
| 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 working |

### Ordering information

#### Variable Frequency Drive (FD100)

| PRODUCT CODE     | DESCRIPTION                                  | CERTIFICATION |
|------------------|--|---------------|
| FD100-1-010-C-CE | 1 PH 230VAC IN, 3 PH 0-230VAC OUT 1HP/0.75kW | CE            |
| FD100-1-020-C-CE | 1 PH 230VAC IN, 3 PH 0-230VAC OUT 2HP/1.5kW  | CE            |
| FD100-1-030-C-CE | 1 PH 230VAC IN, 3 PH 0-230VAC OUT 3HP/2.2kW  | CE            |
| FD100-3-010-C-CE | 3 PH 415VAC IN, 3 PH 0-415VAC OUT 1HP/0.75kW | CE            |
| FD100-3-020-C-CE | 3 PH 415VAC IN, 3 PH 0-415VAC OUT 2HP/1.5kW  | CE            |
| FD100-3-030-C-CE | 3 PH 415VAC IN, 3 PH 0-415VAC OUT 3HP/2.2kW  | CE            |
| FD100-3-050-C-CE | 3 PH 415VAC IN, 3 PH 0-415VAC OUT 5HP/3.75kW | CE            |

#### Variable Frequency Drive (FD300)

| PRODUCT CODE      | DESCRIPTION                                   | CERTIFICATION |
|-------------------|---|---------------|
| FD300-3-050-C-CE  | 3 PH 415VAC IN, 3 PH 0-415VAC OUT 5HP/3.75kW  | CE            |
| FD300-3-075-C-CE  | 3 PH 415VAC IN, 3 PH 0-415VAC OUT 7.5HP/5.5kW | CE            |
| FD300-3-100-C-CE  | 3 PH 415VAC IN, 3 PH 0-415VAC OUT 10HP/7.5kW  | CE            |
| FD300-3-150-C-CE  | 3 PH 415VAC IN, 3 PH 0-415VAC OUT 15HP/11kW   | CE            |
| FD300-3-200-C-CE  | 3 PH 415VAC IN, 3 PH 0-415VAC OUT 20HP/15kW   | CE            |
| FD300-3-250-C-CE  | 3 PH 415VAC IN, 3 PH 0-415VAC OUT 25HP/18.5kW | CE            |
| FD300-3-300-C-CE  | 3 PH 415VAC IN, 3 PH 0-415VAC OUT 30HP/22.4kW | CE            |
| FD300-3-400-C-CE  | 3 PH 415VAC IN, 3 PH 0-415VAC OUT 40HP/30kW   | CE            |
| FD300-3-500-C-CE  | 3 PH 415VAC IN, 3 PH 0-415VAC OUT 50HP/37.5kW | CE            |
| FD300-3-600-C-CE  | 3 PH 415VAC IN, 3 PH 0-415VAC OUT 60HP/45kW   | CE            |
| FD300-3-750-C-CE  | 3 PH 415VAC IN, 3 PH 0-415VAC OUT 75HP/55kW   | CE            |
| FD300-3-1000-C-CE | 3 PH 415VAC IN, 3 PH 0-415VAC OUT 100HP/75kW  | CE            |
| FD300-3-1200-C-CE | 3 PH 415VAC IN, 3 PH 0-415VAC OUT 120HP/90kW  | CE            |
| FD300-3-1500-C-CE | 3 PH 415VAC IN, 3 PH 0-415VAC OUT 150HP/110kW | CE            |
| FD300-3-1750-C-CE | 3 PH 415VAC IN, 3 PH 0-415VAC OUT 175HP/132kW | CE            |
| FD300-3-2100-C-CE | 3 PH 415VAC IN, 3 PH 0-415VAC OUT 210HP/160kW | CE            |



FD9

| FEATURES                          | <ul style="list-style-type: none"> <li>• High Performance AC drives</li> <li>• 1HP 0.75kW to 210HP 160kW</li> </ul>  |
|-----------------------------------|--|
| RATED INPUT VOLTAGE / FREQUENCY   | Single Phase 230 VAC 50Hz / 60Hz, Three Phase 415 VAC 50Hz / 60Hz  |
| PERMISSIBLE VOLTAGE FLUCTUATION   | -20 % ~ +15 %  |
| PERMISSIBLE FREQUENCY FLUCTUATION | ±5%  |
| CONTROL MODE                      | V/F, Sensorless vector control (SVC), Speed Sensor vector control (FVC)  |
| FREQUENCY CONTROL RANGE           | 0.0 ~ 5000.0 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 ~ 6000.0 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   |
| OVERLOAD CAPACITY                 | 150% rated current for 1minute, 180% rated current for 3 seconds   |
| TORQUE BOOST                      | 0-30%(Manual & Auto boost)   |
| V/F MODE                          | Five ways: constant torque V/F curve, 1 kind of user defined V/F curve, 3 kinds of down torque curve (2.0 / 1.7 / 1.2times the power)  |
| AUTOMATIC ENERGY SAVING OPERATION | Saving energy by auto optimizing V/F curve according to the load   |
| AUTOMATIC VOLTAGE REGULATION      | Regulates the voltage automatically whenever there is a change in grid voltage   |
| OPERATION COMMANDS                | Keypad, External terminals and Communication   |
| FREQUENCY SETTING                 | Digital setting, Analog voltage setting, Analog current setting, Communication   |
| 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)   |
| INPUT CHANNEL                     | 6 DIs (Internal impedance : 3.3kΩ), 2AIs (0-10V, 0-10V/0-20mA)   |
| OUTPUT CHANNEL                    | 1 RO, 2 TO, 1AO (0-10V/0-20mA)   |
| APPLICATIONS                      | Suitable for Fans, Pumps, Conveyor, Food & drink packaging machinery, Industrial washing machine, Winder application, Hoists, Paper Mills, Textile Applications and most general industries etc. |

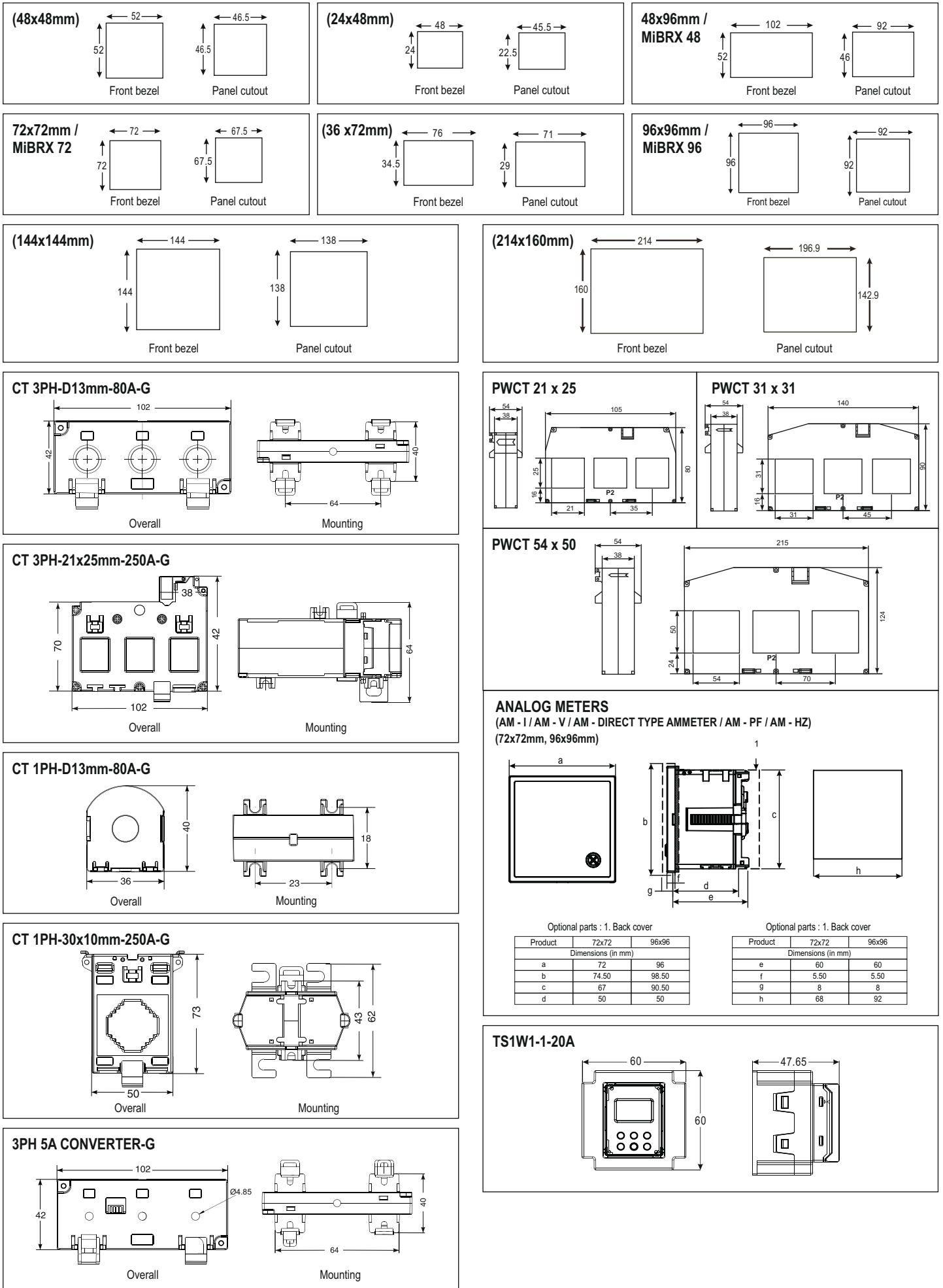
## Ordering information

### Variable Frequency Drive (FD9)

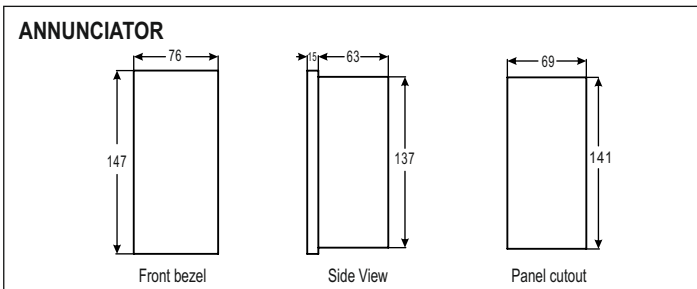
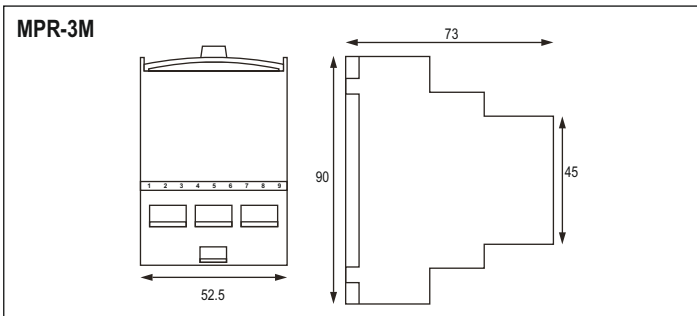
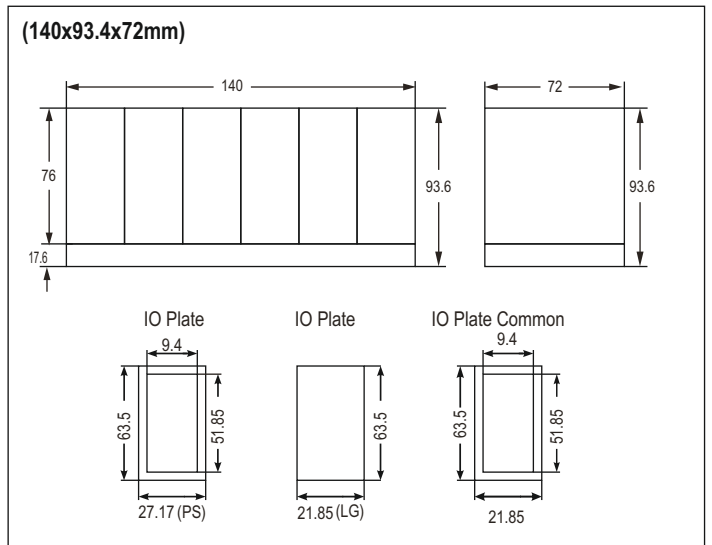
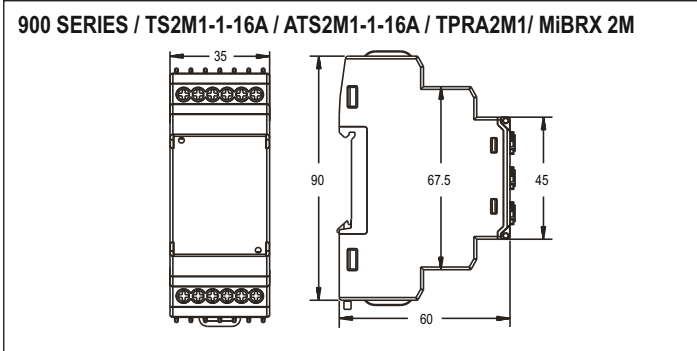
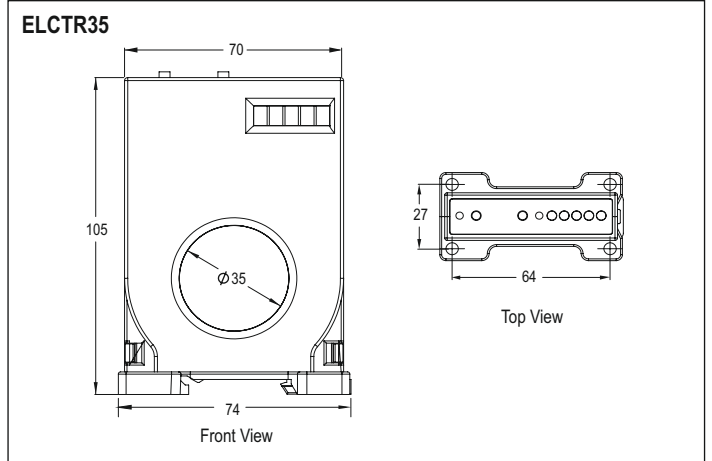
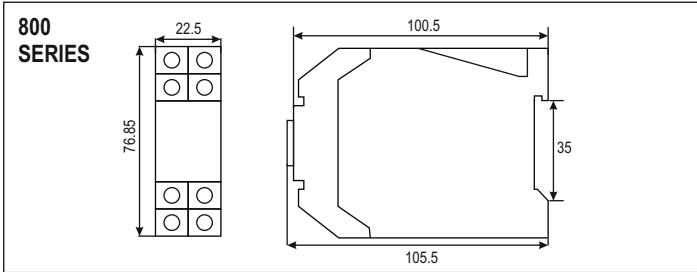
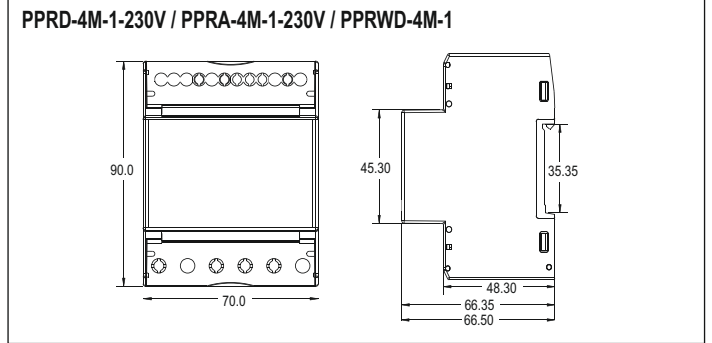
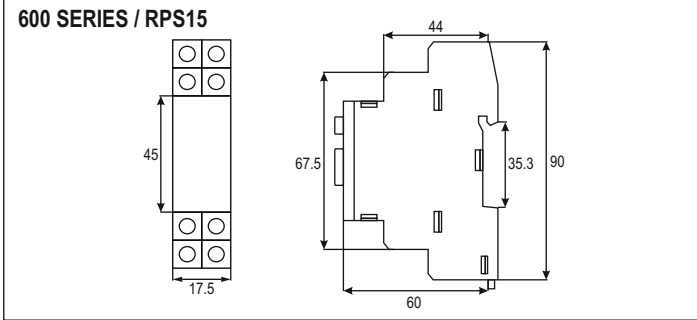
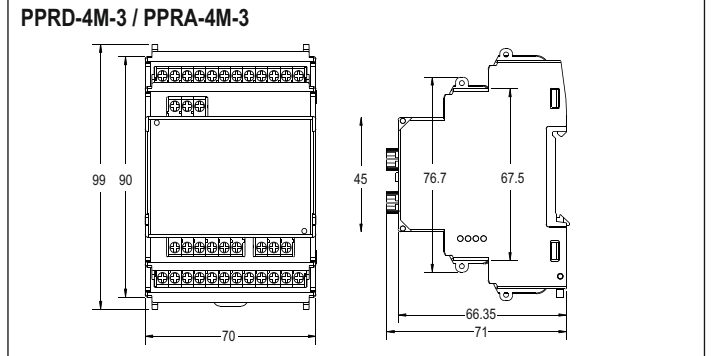
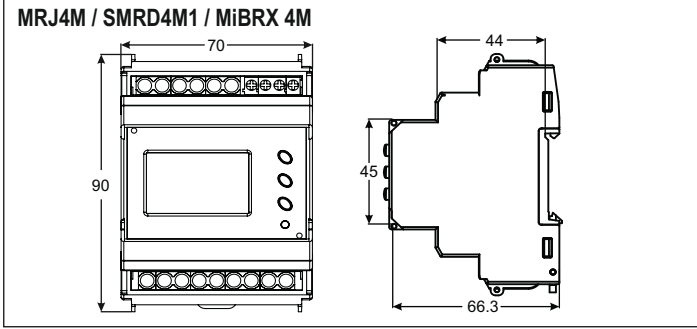
| PRODUCT CODE   | DESCRIPTION                                   | CERTIFICATION |
|----------------|---|---------------|
| FD9-1-002-C-CE | 1 PH 230VAC IN, 3 PH 0~230VAC 0.25HP/0.2kW    | CE            |
| FD9-1-005-C-CE | 1 PH 230VAC IN, 3 PH 0~230VAC 0.5HP/0.4kW     | CE            |
| FD9-1-010-C-CE | 1 PH 230VAC IN, 3 PH 0~230VAC 1HP/0.7kW       | CE            |
| FD9-1-020-C-CE | 1 PH 230VAC IN, 3 PH 0~230VAC 2HP/1.5kW       | CE            |
| FD9-3-005-C-CE | 3 PH 415VAC IN, 3 PH 0-415VAC OUT 0.5HP/0.4kW | CE            |
| FD9-3-010-C-CE | 3 PH 415VAC IN, 3 PH 0-415VAC OUT 1HP/0.7kW   | CE            |
| FD9-3-020-C-CE | 3 PH 415VAC IN, 3 PH 0-415VAC OUT 2HP/1.5kW   | CE            |
| FD9-3-030-C-CE | 3 PH 415VAC IN, 3 PH 0-415VAC OUT 3HP/2.2kW   | CE            |
| FD9-3-050-C-CE | 3 PH 415VAC IN, 3 PH 0-415VAC OUT 5HP/3.75kW  | CE            |
| FD9-3-075-C-CE | 3 PH 415VAC IN, 3 PH 0-415VAC OUT 7.5HP/5.5kW | CE            |
| FD9-3-100-C-CE | 3 PH 415VAC IN, 3 PH 0-415VAC OUT 10HP/7.5kW  | CE            |
| FD9-3-150-C-CE | 3 PH 415VAC IN, 3 PH 0-415VAC OUT 15HP/11kW   | CE            |

| PRODUCT CODE    | DESCRIPTION                                   | CERTIFICATION |
|-----------------|---|---------------|
| FD9-3-200-C-CE  | 3 PH 415VAC IN, 3 PH 0-415VAC OUT 20HP/15kW   | CE            |
| FD9-3-250-C-CE  | 3 PH 415VAC IN, 3 PH 0-415VAC OUT 25HP/18.5kW | CE            |
| FD9-3-300-C-CE  | 3 PH 415VAC IN, 3 PH 0-415VAC OUT 30HP/22.4kW | CE            |
| FD9-3-400-C-CE  | 3 PH 415VAC IN, 3 PH 0-415VAC OUT 40HP/30kW   | CE            |
| FD9-3-500-C-CE  | 3 PH 415VAC IN, 3 PH 0-415VAC OUT 50HP/37.5kW | CE            |
| FD9-3-600-C-CE  | 3 PH 415VAC IN, 3 PH 0-415VAC OUT 60HP/45kW   | CE            |
| FD9-3-750-C-CE  | 3 PH 415VAC IN, 3 PH 0-415VAC OUT 75HP/55kW   | CE            |
| FD9-3-1000-C-CE | 3 PH 415VAC IN, 3 PH 0-415VAC OUT 100HP/75kW  | CE            |
| FD9-3-1200-C-CE | 4 PH 415VAC IN, 3 PH 0-415VAC OUT 120HP/90kW  | CE            |
| FD9-3-1500-C-CE | 3 PH 415VAC IN, 3 PH 0-415VAC OUT 150HP/110kW | CE            |
| FD9-3-1750-C-CE | 3 PH 415VAC IN, 3 PH 0-415VAC OUT 175HP/132kW | CE            |
| FD9-3-2100-C-CE | 3 PH 415VAC IN, 3 PH 0-415VAC OUT 210HP/160kW | CE            |

## Panel Cutout Dimensions (All are in mm)

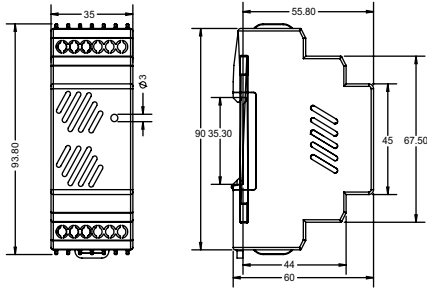


**Panel Cutout Dimensions** (All are in mm)

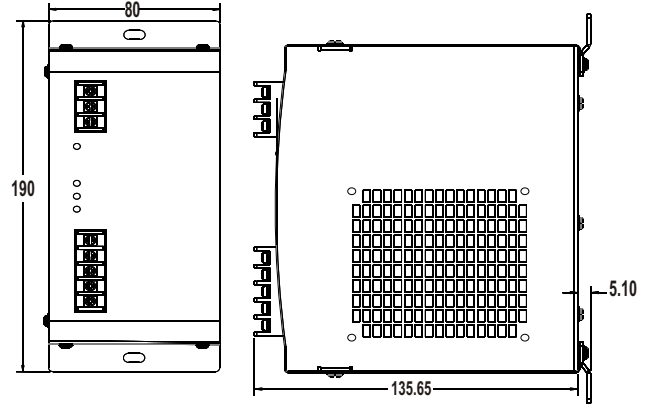


## Panel Cutout Dimensions ( All are in mm )

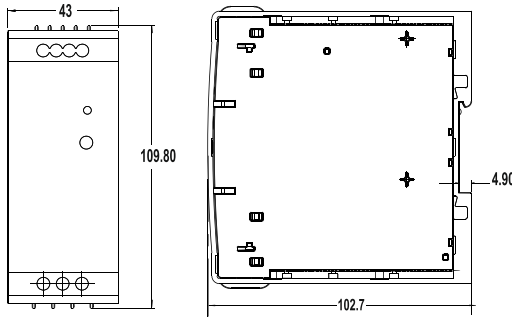
**RP-2M-1.1A-24VDC / RPS40**



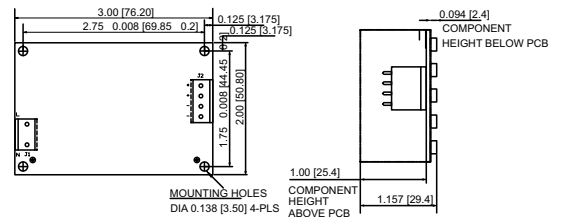
**BC2-2410**



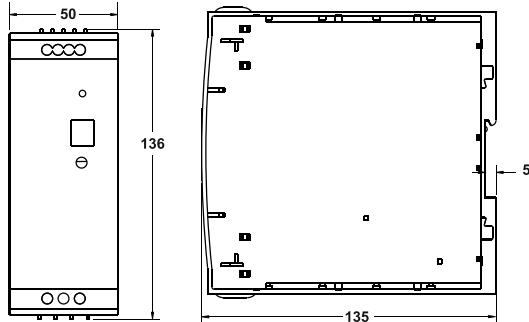
**RPS60 / RPS120**



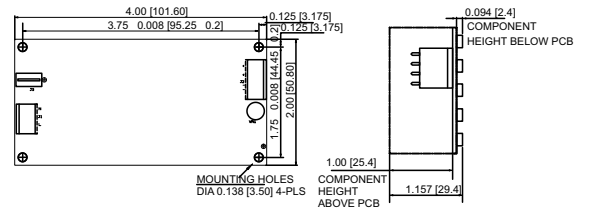
**OPS2x3-40**



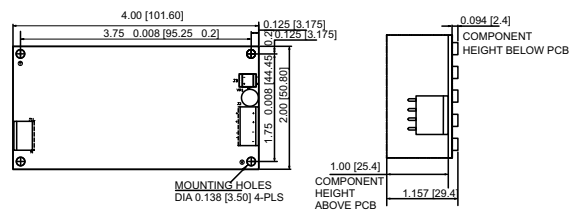
**RPS240**



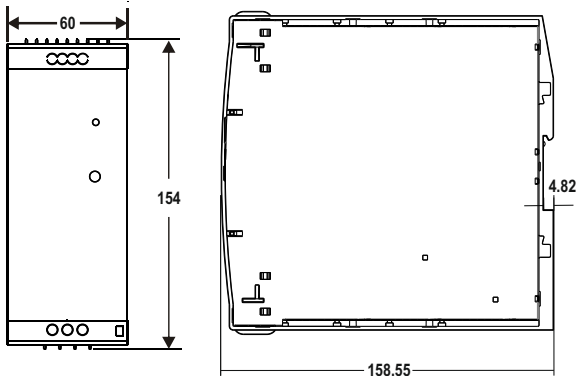
**OPS2x4-60**



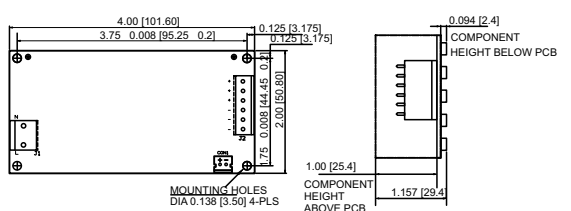
**OPS2x4-150**



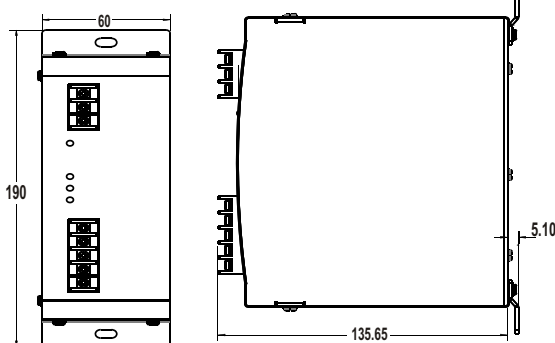
**RPS480 / LRPS240**



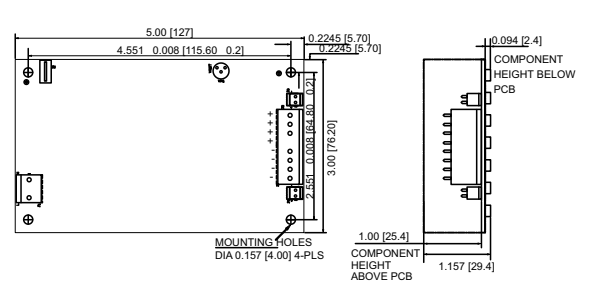
**OPS2x4-200**



**BC1-1210**

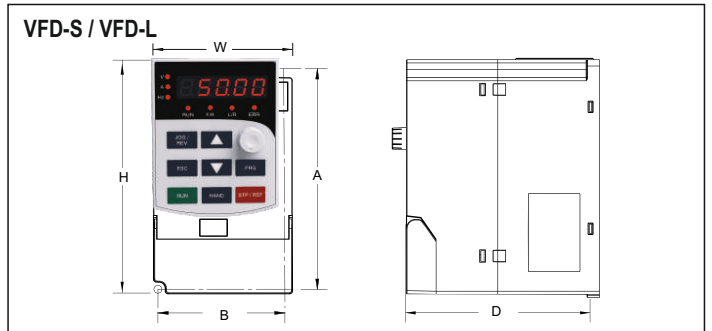
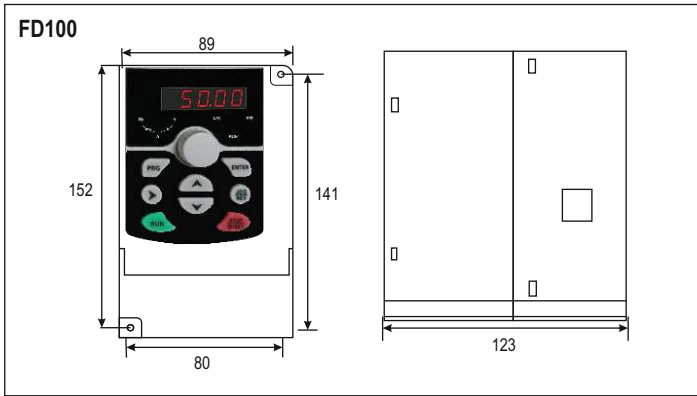


**OPS3x5-350**

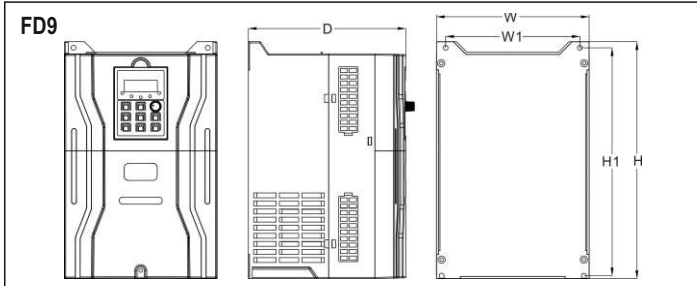


**Note :** This open frame power supply should preferably be mounted horizontally on 4 metal stand-offs having diameter not more than 6mm and height not less than 5mm

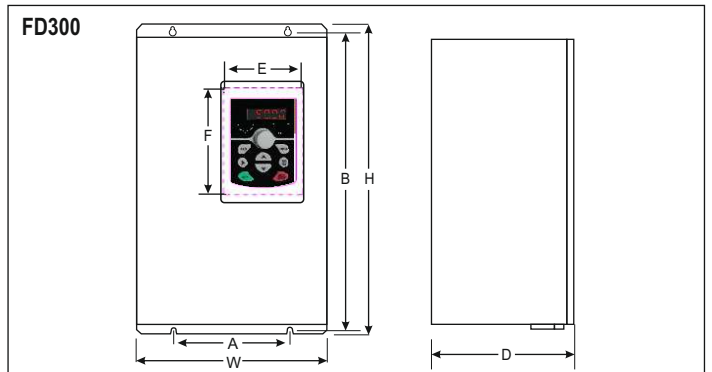
## Panel Cutout Dimensions (All are in mm)



| Product code        | Mounting dimension |      | Dimension |     |       | Pore diameter (mm) |
|---------------------|--------------------|------|-----------|-----|-------|--------------------|
|                     | A                  | B    | H         | W   | D     |                    |
| VFD-S-1-005-230V    | 141                | 80.5 | 150       | 89  | 123   | 5.2                |
| 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    | 240                | 148  | 247       | 160 | 173   | 10                 |
| VFD-SH-3-050-B-415V |                    |      |           |     |       |                    |
| VFD-SN-3-075-B-415V |                    |      |           |     |       |                    |
| VFD-SH-3-075-B-415V |                    |      |           |     |       |                    |
| VFD-SN-3-100-B-415V |                    |      |           |     |       |                    |
| VFD-SH-3-100-B-415V | 305                | 205  | 320       | 220 | 196.5 | 10                 |
| VFD-SH-3-150-B-415V |                    |      |           |     |       |                    |
| VFD-SN-3-200-B-415V |                    |      |           |     |       |                    |
| VFD-SH-3-200-B-415V |                    |      |           |     |       |                    |
| VFD-SN-3-250-B-415V |                    |      |           |     |       |                    |
| VFD-L-1-005-230V    | 141                | 80.5 | 152       | 90  | 123   | 5.2                |
| VFD-L-1-010-230V    |                    |      |           |     |       |                    |



| Product Code    | Dimension (mm) |     |     | Installation (mm) |       |     |            |
|-----------------|----------------|-----|-----|-------------------|-------|-----|------------|
|                 | H              | W   | D   | H2                | H1    | W1  | Mount hole |
| FD9-1-002-C-CE  | 174            | 76  | 131 | ---               | 162.5 | 58  | Φ5         |
| FD9-1-005-C-CE  |                |     |     |                   |       |     |            |
| FD9-1-010-C-CE  |                |     |     |                   |       |     |            |
| FD9-1-020-C-CE  |                |     |     |                   |       |     |            |
| FD9-3-005-C-CE  | 174            | 76  | 131 | ---               | 162.5 | 58  | Φ5         |
| FD9-3-010-C-CE  |                |     |     |                   |       |     |            |
| FD9-3-020-C-CE  |                |     |     |                   |       |     |            |
| FD9-3-030-C-CE  |                |     |     |                   |       |     |            |
| FD9-3-050-C-CE  | 184            | 98  | 156 | ---               | 178   | 88  | Φ5         |
| FD9-3-075-C-CE  | 230            | 118 | 173 | ---               | 220   | 108 | Φ5         |
| FD9-3-100-C-CE  |                |     |     |                   |       |     |            |
| FD9-3-150-C-CE  | 261            | 130 | 190 | ---               | 251   | 120 | Φ5         |
| FD9-3-200-C-CE  | 293            | 190 | 196 | ---               | 283   | 180 | Φ5         |
| FD9-3-250-C-CE  |                |     |     |                   |       |     |            |
| FD9-3-300-C-CE  |                |     |     |                   |       |     |            |
| FD9-3-400-C-CE  | 445            | 280 | 200 | ---               | 435   | 270 | Φ5         |
| FD9-3-500-C-CE  | 505            | 320 | 240 | ---               | 495   | 310 | Φ5         |
| FD9-3-600-C-CE  |                |     |     |                   |       |     |            |
| FD9-3-750-C-CE  | 555            | 310 | 260 | ---               | 545   | 300 | Φ5         |
| FD9-3-1000-C-CE | 650            | 400 | 300 | ---               | 640   | 390 | Φ5         |
| FD9-3-1200-C-CE |                |     |     |                   |       |     |            |
| FD9-3-1500-C-CE |                |     |     |                   |       |     |            |
| FD9-3-1750-C-CE |                |     |     |                   |       |     |            |
| FD9-3-2100-C-CE | 760            | 390 | 320 | ---               | 750   | 380 | Φ5         |



| Product code      | Mounting dimension |        | Dimension |        |        | Pore diameter |
|-------------------|--------------------|--------|-----------|--------|--------|---------------|
|                   | A (mm)             | B (mm) | H (mm)    | W (mm) | D (mm) |               |
| FD300-3-050-C-CE  | 107                | 175    | 185       | 118    | 167    | f4.5          |
| FD300-3-075-C-CE  |                    |        |           |        |        |               |
| FD300-3-100-C-CE  | 148                | 235    | 247       | 160    | 190    | Φ5.5          |
| FD300-3-150-C-CE  |                    |        |           |        |        |               |
| FD300-3-200-C-CE  |                    |        |           |        |        |               |
| FD300-3-250-C-CE  |                    |        |           |        |        |               |
| FD300-3-300-C-CE  | 205                | 305    | 320       | 220    | 205    | Φ5.5          |
| FD300-3-400-C-CE  |                    |        |           |        |        |               |
| FD300-3-500-C-CE  | 180                | 416    | 432       | 255    | 234.5  | Φ7            |
| FD300-3-600-C-CE  |                    |        |           |        |        |               |
| FD300-3-750-C-CE  |                    |        |           |        |        |               |
| FD300-3-1000-C-CE | 244                | 497    | 518       | 300    | 260    | Φ9            |
| FD300-3-1200-C-CE |                    |        |           |        |        |               |
| FD300-3-1500-C-CE | 300                | 598    | 620       | 390    | 300    | Φ11           |
| FD300-3-1750-C-CE |                    |        |           |        |        |               |
| FD300-3-2100-C-CE |                    |        |           |        |        |               |
| FD300-3-2100-C-CE | 350                | 745    | 780       | 480    | 360    | Φ12           |

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