

## Measurement & Control with optimum performance

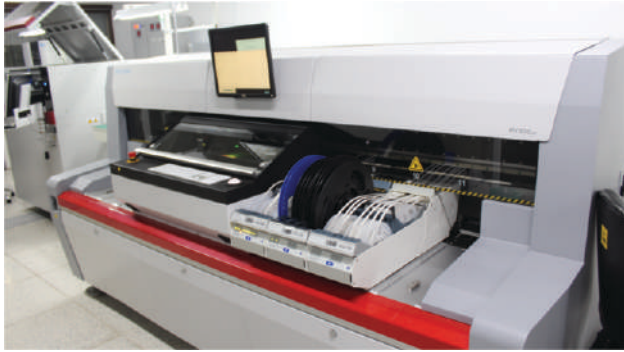
Since 1986



Temperature Controllers  
Process Instruments  
Timers & Counters  
Power & Energy Meters  
Protection Relays

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2022

# MULTISPAN



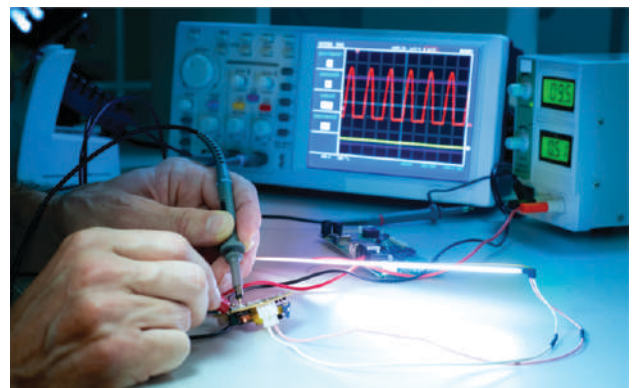
**Electronic Assembly**  
Fully Integrated SMT Line



**Plastic Enclosure Manufacturing**  
In-house Injection Moulding



**Testing & Quality Control**



**Reliability Laboratory**





# Applications



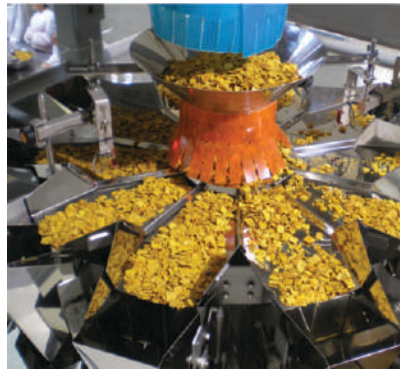
PHARMACEUTICAL APPLICATIONS



ELECTRICAL PANELS



PLASTIC INDUSTRIES



FOOD PROCESSING



TEXTILE INDUSTRY

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# Process Control Instruments

## 8 Channel Scanner with RS-485 Modbus Connectivity

### 8 Channel Indicator



|                            |  |   |
|----------------------------|--|---|
| <b>Model</b>               | <b>MS-1208</b>                         | <b>MS-1208A</b>   |
| <b>Dimension (HxWxD)mm</b> | 96 x 96 x 54                           | 96 x 96 x 50  |
| <b>Panel Cutout (mm)</b>   | 92 x 92                                | 92 x 92   |
| <b>INPUT</b>               | <b>Inputs</b>                          | J / K / PT-100 2 Wire or 3 Wire (Configurable)  |
|                            | <b>Range</b>                           | J (0 °C - 400 °C) , K (0 °C - 1200 °C), PT-100 2 Wire or 3 Wire (-99.9 °C - 400.0 °C) |
| <b>OUTPUT</b>              | RS-485 Modbus Communication (Optional) |   |
| <b>Accuracy</b>            | ±1% of FSD                             |   |
| <b>Supply</b>              | 100 - 270V AC (SMPS), 50/60Hz          |   |

## 8 Channel Scanner with RS-485 Modbus Connectivity

Upto 4 Channel Outputs, [Data Logging with Pen Drive Compatibility \(USB\)](#)




|                            |                               |   |
|----------------------------|-------------------------------|---|
| <b>Model</b>               | <b>MS-1248U</b>               | <b>MSU-1248U</b>  |
| <b>Dimension (HxWxD)mm</b> | 96 x 96 x 66                  | 96 x 96 x 66  |
| <b>Panel Cutout (mm)</b>   | 92 x 92                       | 92 x 92   |
| <b>INPUT</b>               | <b>Input</b>                  | J / K / PT-100 2 Wire or 3 Wire (Configurable)  |
|                            | <b>Range</b>                  | J (0 °C - 600 °C), K (0 °C - 1200 °C), PT-100 2 Wire or 3 Wire (-99 °C - 400 °C, -99.9 °C - 400.0 °C) |
| <b>OUTPUT</b>              | <b>Output 1</b>               | 4 Relay with Grouping Facility  |
|                            | <b>Output 2</b>               | RS-485 Modbus Communication (Optional)  |
|                            | <b>Output 3</b>               | USB Port with Data Logging Facility (Optional)  |
| <b>Control Action</b>      | ON / OFF                      |   |
| <b>Accuracy</b>            | ±1% of FSD                    |   |
| <b>Supply</b>              | 100 - 250V AC (SMPS), 50/60Hz |   |



# Process Control Instruments

## 16 Channel Scanner with RS-485 Modbus & USB Connectivity

Upto 8 Relay Outputs, **Data Logging with Pen Drive compatibility (USB)**

|                            |                               |   |
|----------------------------|-------------------------------|---|
| <b>Model</b>               | <b>MS-5716RU-M1</b>           |    |
| <b>Dimension (HxWxD)mm</b> | 192 x 96 x 168                |   |
| <b>Panel Cutout (mm)</b>   | 188 x 92                      |   |
| <b>INPUT</b>               | <b>Sensor</b>                 | J / K / PT-100 2 Wire or 3 Wire   |
|                            | <b>Analog</b>                 | 0-10V DC / 4-20mA DC / 0-20mA DC (Configurable)   |
|                            | <b>Range</b>                  | J (0°C - 400°C) , K (0°C - 1200°C) , PT-100 2 Wire or 3 Wire (-99.9°C to 400.0°C For Temperature I/P) (-999 to 9999 For analog I/P) |
| <b>OUTPUT</b>              | <b>Output 1</b>               | RS-485 Modbus Communication (Optional)  |
|                            | <b>Output 2</b>               | 8 Relay with Grouping Facility (Optional)   |
|                            | <b>Output 3</b>               | USB Port with Data Logging Facility (Optional)  |
| <b>Accuracy</b>            | ±1% of FSD                    |   |
| <b>Supply</b>              | 100 - 250V AC (SMPS), 50/60Hz |   |



### Scanner Model Selection Guide

| Sr.No. | Model        | Channel | Input - 1<br>J/K/PT-100 | Input - 2<br>4-20mA/0-20mA/0-10V DC | Output<br>Relay | Output<br>RS-485 | Output<br>USB Port |
|--------|--------------|---------|-------------------------|-------------------------------------|-----------------|------------------|--------------------|
| 1      | MS-1208      | 8       | ✓                       |                                     |                 |                  |                    |
| 2      | MS-1208-M1   | 8       | ✓                       |                                     |                 | ✓                |                    |
| 3      | MS-1208A     | 8       |                         | ✓                                   |                 |                  |                    |
| 4      | MS-1208A-M1  | 8       |                         | ✓                                   |                 | ✓                |                    |
| 5      | MS-1248      | 8       | ✓                       |                                     | 4               |                  |                    |
| 6      | MS-1248-M1   | 8       | ✓                       |                                     | 4               | ✓                |                    |
| 7      | MS-1248U     | 8       | ✓                       |                                     | 4               |                  | ✓                  |
| 8      | MSU-1248     | 8       | ✓                       | ✓                                   | 4               |                  |                    |
| 9      | MSU-1248-M1  | 8       | ✓                       | ✓                                   | 4               | ✓                |                    |
| 10     | MSU-1248U    | 8       | ✓                       | ✓                                   | 4               |                  | ✓                  |
| 11     | MSU-1248U-M1 | 8       | ✓                       | ✓                                   | 4               | ✓                | ✓                  |
| 12     | MS-5716      | 16      | ✓                       | ✓                                   |                 |                  |                    |
| 13     | MS-5716R     | 16      | ✓                       | ✓                                   | 8               |                  |                    |
| 14     | MS-5716-M1   | 16      | ✓                       | ✓                                   |                 | ✓                |                    |
| 15     | MS-5716U     | 16      | ✓                       | ✓                                   |                 |                  | ✓                  |
| 16     | MS-5716R-M1  | 16      | ✓                       | ✓                                   | 8               | ✓                |                    |
| 17     | MS-5716RU    | 16      | ✓                       | ✓                                   | 8               |                  | ✓                  |
| 18     | MS-5716U-M1  | 16      | ✓                       | ✓                                   |                 | ✓                | ✓                  |
| 19     | MS-5716U-M1  | 16      | ✓                       | ✓                                   | 8               | ✓                | ✓                  |

# Process Control Instruments

## Flow Rate Cum Totalizer



|                            |   |  |
|----------------------------|---|--|
| <b>Model</b>               | <b>MFC-1048 / MFC-1048P</b>   | <b>MFC-3016D / MFC-3016A</b>                                 |
| <b>Dimension (HxWxD)mm</b> | 96 x 96 x 50  | 48 x 96 x 65   |
| <b>Panel Cutout (mm)</b>   | 92 x 92   | 46 x 92  |
| <b>INPUT</b>               | <b>Input</b> 4 to 20mA DC / 0 to 10V DC / Pulse (Factory Set)                       |  |
|                            | <b>Range</b> 0 to 99999999 For Total Flow<br>0 to 9999 For Flow Rate                |  |
| <b>OUTPUT</b>              | <b>Output 1</b> 4-20mA DC / 0-10V DC Retransmission (Factory Set) (Optional)        | 4-20mA DC / 0-10V DC Retransmission (Factory Set) (Optional) |
|                            | <b>Output 2</b> 24V DC Transmitter Supply@30mA (by default)                         | 24V DC Transmitter Supply@30mA (For Analog Input)            |
|                            | <b>Output 3</b> 1 Relay / 2 Relay 5A, 230V AC (Resistive Load) (1 Relay by default) |  |
|                            | <b>Output 4</b> RS-485 Modbus Communication (Optional)                              | RS-485 Modbus Communication (Optional)                       |
| <b>Accuracy</b>            | ±1% of FSD  |  |
| <b>Supply</b>              | 100 - 270V AC (SMPS), 50/60Hz or 24V DC (Factory Set)                               |  |

## Load Cell Indicator / Controller



|                            |   |
|----------------------------|---|
| <b>Model</b>               | <b>LD-1006</b>  |
| <b>Dimension (HxWxD)mm</b> | 96 x 96 x 110   |
| <b>Panel Cutout (mm)</b>   | 92 x 92   |
| <b>INPUT</b>               | <b>Input</b> 0 - 20mV DC / 0 - 30mV DC from load cell (Factory Set)   |
|                            | <b>Range</b> 0 to 9999  |
| <b>OUTPUT</b>              | 1 Relay & 2 Relay ( 1 Relay by default)<br>10V DC@20mA DC Load cell supply (by default)<br>0 - 10V DC / 4 - 20mA DC Retransmission (Any One Factory Set) (Optional)<br>RS-485 Modbus (Optional) |
| <b>Accuracy</b>            | ±1% of FSD  |
| <b>Supply</b>              | 230V AC ±20%, 50Hz  |

# Process Control Instruments

## Signal Isolators



| Model               | MI-431   | MI-532   | MI-631 / MI-632  |
|---------------------|--|--|--|
| Dimension (HxWxD)mm | 100 x 12.5 x 115   | 100 x 17.5 x 115   | 76 x 27 x 85   |
| Panel Cutout (mm)   | Din Rail Mounting  | Din Rail Mounting  | Din Rail Mounting  |
| INPUT               | Analog :<br>0 - 20mA DC / 4 - 20mA DC / 0 - 10V DC (Factory set)                                 |  | 0 - 20mA DC / 4 - 20mA DC / 0 - 10V DC / -5 to 5V DC / 0 - 300V DC (Factory Reset)<br>Resistance 2 Wire or 3 Wire port |
| OUTPUT              | 0 - 20mA DC / 4 - 20mA DC / 0 - 10V DC, Single Output (Factory Set)<br>24V DC Transmitter Supply | 0 - 20mA DC / 4 - 20mA DC / 0 - 10V DC, Dual Output (Factory Set)<br>24V DC Transmitter Supply | 0 - 20mA DC / 4 - 20mA DC / 0 - 10V DC, (Single Output or Dual Output) (Factory Set)                                   |
| Accuracy            | ±0.5% of FSD   |  |  |
| Supply              | 100 - 270V AC (SMPS), 50/60Hz or 24V DC (Factory Set)  |  |  |

**NEW LAUNCH**



| Model               | MI-631T / MI-632T  | MI-631P / MI-532P               |
|---------------------|--|---------------------------------|
| Dimension (HxWxD)mm | 76 x 27 x 85 / 76 x 27 x 85  | 76 x 27 x 85 / 100 x 17.5 x 115 |
| Panel Cutout (mm)   | Din Rail Mounting  | Din Rail Mounting               |
| INPUT               | Sensor<br>J / K Type   | PT-100 2 Wire or 3 Wire         |
| OUTPUT              | 0 - 20mA DC / 4 - 20mA DC / 0 - 10V DC (Single or Dual Output) (Factory set) |                                 |
| Accuracy            | ±1% of FSD   | ±0.5% of FSD                    |
| Supply              | 100 - 270V AC (SMPS), 50/60Hz or 24V DC (Factory set)                        |                                 |



# Process Control Instruments

## Voltage & Current Transducers



|                            |  |  |
|----------------------------|--|--|
| <b>Model</b>               | <b>CTR-63 / CTR-632</b>  | <b>VTR-63 / VTR-632</b>  |
| <b>Dimension (HxWxD)mm</b> | 76 x 27 x 85   | 76 x 27 x 85   |
| <b>Mounting</b>            | Din Rail Mounting  | Din Rail Mounting  |
| <b>INPUT</b>               | 0 to 5A AC, 0 to 1A AC (Factory Set)   | AC Voltage   |
| <b>OUTPUT</b>              | 0 - 20mA DC / 4 - 20mA DC / 0 - 10V DC (Single or Dual Output) (Factory Set) | 0 - 20mA DC / 4 - 20mA DC / 0 - 10V DC (Single or Dual Output) (Factory Set) |
| <b>Accuracy</b>            | ±1% of FSD   |  |
| <b>Supply</b>              | 100 - 270V AC (SMPS), 50/60Hz / 24V DC (Factory Set)                         |  |

## Loop Powered Transmitter



|                            |  |                   |
|----------------------------|--|-------------------|
| <b>Model</b>               | <b>LPT-45</b>  | <b>LPT-63</b>     |
| <b>Dimension (HxWxD)mm</b> | Diameter : 45mm  | 76 x 27 x 85      |
| <b>Panel Cutout (mm)</b>   | Head Mounting  | Din Rail Mounting |
| <b>INPUT</b>               | <b>Input</b> PT-100 3 Wire / J / K (Factory Set)   | Fix Range         |
|                            | <b>Range</b> PT-100 : 0 to 100 / 0 to 200 / 0 to 300 / 0 to 400 (Configurable) / Fix Range |                   |
| <b>OUTPUT</b>              | 4 - 20mA DC Signal (2 Wire System)   |                   |
| <b>Supply</b>              | 24V DC Loop Powered  |                   |

# Process Control Instruments

## Fault Annunciator

Upto 10 Fault Inputs & 3 Outputs



### PC INTERFACE SOFTWARE

|                            |   |
|----------------------------|---|
| <b>Model</b>               | <b>FA-11</b> <b>16 X 2 LCD Display</b>  |
| <b>Dimension (HxWxD)mm</b> | 96 x 96 x 66  |
| <b>Panel Cutout (mm)</b>   | 92 x 92   |
| <b>DISPLAY</b>             | 16 Character by 2 line with Blue back light LCD Display   |
| <b>INPUT</b>               | 10 Input potential free contact   |
| <b>OUTPUT</b>              | 3 Relay 1C/O for Audio alarm , Visual alarm & Machine Trip  |
| <b>Supply</b>              | 100 - 270V AC (SMPS), 50/60Hz (Factory Set)   |
| <b>Indication</b>          | 1) Audio Alarm      2) Visual Alarm      3) Machine Output  |
| <b>Features</b>            | Fault Type NO or NC Configurable, Last 10 fault history saved in memory                             |
| <b>Note</b>                | RS-232 Serial PC Interfacing to define soft / hard fault, RS-485 Modbus is available as per request |

### Dual Process Indicator



|                            |  |  |
|----------------------------|--|--|
| <b>Model</b>               | <b>DPI-122</b>   | <b>DPI-1824</b>  |
| <b>Dimension (HxWxD)mm</b> | 96 x 96 x 54   | 96 x 96 x 54   |
| <b>Panel Cutout (mm)</b>   | 92 x 92  | 92 x 92  |
| <b>INPUT</b>               | <b>Input 1 &amp; 2</b><br>PT-100 3 Wire / 4 - 20mA DC / 0 - 20mA DC / 0 - 10V DC (Any two factory set) | J / K / PT-100 2 Wire or 3 Wire<br>0 - 10V DC / 4 - 20mA DC / 0 - 20mA DC (Configurable)   |
| <b>Range</b>               | -999 to 9999 For Analog I/P,<br>PT-100 (0.0°C - 400.0°C)   | -999 to 9999 for Analog Input<br>J (0°C to 600°C) , K (0°C to 1200°C), PT-100 2 Wire or 3 Wire (-99°C to 400°C, -99.9°C to 400.0°C) For Temperature Sensor |
| <b>OUTPUT</b>              | 1 Relay / 2 Relay (Optional)<br>24V DC Transmitter Supply@30mA (Optional)<br>RS-485 Modbus (Optional)  | 4 Relay + 2 Retransmission + 24V DC Transmitter@30mA DC  |
| <b>Control Action</b>      | ON - OFF   |  |
| <b>Accuracy</b>            | ±1% of FSD   |  |
| <b>Supply</b>              | 100 - 270V AC (SMPS), 50/60Hz  |  |

# Process Control Instruments

## Process Indicators



|                     | Model | PI-38  | PI-54        | PI-41        |
|---------------------|-------|--|--------------|--------------|
| Dimension (HxWxD)mm |       | 48 x 96 x 26   | 38 x 62 x 63 | 48 x 48 x 46 |
| Panel Cutout (mm)   |       | 46 x 92  | 31 x 54      | 45 x 45      |
| INPUT               | Input | 0 - 10V DC / 0 - 20mA DC / 4 - 20mA DC (Configurable)  |              |              |
|                     | Range | J (0°C to 600°C), K (0°C to 1200°C), PT-100 2 Wire or 3 Wire (-99°C to 400°C, -99.9°C to 400.0°C)<br>For Temperature Sensor, -999 to 9999 for Analog Input |              |              |
| Display Resolution  |       | 0.000 / 00.00 / 000.0 / 0000 (Configurable, For Analog Input)  |              |              |
| Features            |       | Correction Factor, Offset, Filtration Rate, Reverse Scaling  |              |              |
| Supply              |       | 100 - 270V AC (SMPS), 50/60Hz  |              |              |

## Process Controllers



|                     | Model    | PIC-1101   | PIC-38       | PIC-4202                       |
|---------------------|----------|--|--------------|--------------------------------|
| Dimension (HxWxD)mm |          | 96 x 96 x 54   | 48 x 96 x 71 | 48 x 48 x 95                   |
| Panel Cutout (mm)   |          | 92 x 92  | 46 x 92      | 45 x 45                        |
| INPUT               | Input    | 0 to 10V DC / 4 to 20mA DC / 0 to 20mA DC (Configurable)                             |              |                                |
|                     | Range    | -999 to 9999 (Configurable)  |              |                                |
| OUTPUT              | Output 1 | 1 Relay (By Default)   |              | 2 Relay (By Default)           |
|                     | Output 2 | 2 Relay (Optional)   |              |                                |
|                     | Output 3 | 24V DC Transmitter Supply@30mA (By Default)  |              | 24V DC Transmitter Supply@30mA |
|                     | Output 4 | 4 to 20mA / 0 to 20mA DC Retransmission Output (Factory Set) (Optional)              |              | NA                             |
| Operating Mode      |          | High / Low / Inband / Outband / Absolute Low / Absolute Outband Alarm (configurable) |              |                                |
| Accuracy            |          | ±1% of FSD   |              |                                |
| Supply              |          | 100 - 270V AC (SMPS), 50/60Hz  |              |                                |



# Temperature Controllers

## PID Temperature Controller with Built in Ampere Indication



|                     | Model | PID-2303-1C/3C (With CT Module)   | PID-4203-1C (With CT Module)   |
|---------------------|-------|---|--|
| Dimension (HxWxD)mm |       | 72 x 72 x 85  | 48 x 48 x 111  |
| Panel Cutout (mm)   |       | 68 x 68   | 45 x 45  |
| INPUT               | Input | J / K (Configurable) + CT Input   | J / K / PT-100 (Configurable)  |
|                     | Range | J (0°C to 400°C), K(0°C to 500°C)   | J (0°C to 600°C), K(0°C to 1200°C)<br>PT-100 2 Wire or 3 Wire (-99°C to 400°C , -99.9°C to 400.0°C)                              |
| CT INPUT            |       | 1 CT (30A or 60A Rail Mounting)<br>3 CT (30A or 60A Rail Mounting)  |  |
| OUTPUT              |       | 3 Relay 1st Relay Parallel SSR + 2nd O/P Relay or SSR<br>+ 3rd O/P Relay or SSR (3 Relay 1C/O 5A 230V AC<br>Resistive Load) SSR Drive O/P 24V DC 20mA | 3 Relay 1C/O 5A, 230V AC (Resistive Load) or 3SSR Drive<br>O/P 12V DC, 20mA (Factory Set) (3 Set Point)<br>(Heat + Cool + Alarm) |
| Control Action      |       | PID / ON-OFF (Configurable)   |  |
| Accuracy            |       | ±1% of FSD  |  |
| Supply              |       | 100 - 250V AC (SMPS), 50/60Hz   |  |
| Note                |       | RS-485 Output available in PID-2303-1C-M1/3C-M1 & Input PT-100 3Wire available in PID-2303-1C/3C  |  |

## Motor Synchronizer



|                     | Model | SN-126-4   |
|---------------------|-------|--|
| Dimension (HxWxD)mm |       | 75 x 45 x 110  |
| Panel Cutout (mm)   |       | Din Rail Mounting  |
| INPUT               |       | 3 Wire / POT Resistance                                  |
| OUTPUT              |       | 1 Relay For Zeroing Facility, 0 - 10V DC (4/5/6) Channel |
| Supply              |       | 230V AC, ±20%, 50Hz                                      |

# Temperature Controllers

## Universal Programmable Controller

### Auto Tune PID, RS-485 Modbus Facility



|                            |  |   |  |
|----------------------------|--|---|--|
| <b>Model</b>               | <b>PTC-L12A-M1</b>                     |   | <b>UTC-4201A</b>   |
| <b>Dimension (HxWxD)mm</b> | 96 x 96 x 54                           |   | 48 x 48 x 95   |
| <b>Panel Cutout (mm)</b>   | 92 x 92                                |   | 45 x 45  |
| <b>INPUT</b>               | <b>Input</b>                           | J / K / PT-100 2 Wire or 3 Wire, 0 - 10V DC / 4 - 20mA / 0 - 20mA (Configurable)  | J / K / PT-100 2 Wire or 3 Wire  |
|                            | <b>Range</b>                           | J (0°C to 600°C) , K (0°C to 1200°C), <b>PT-100 2 Wire or 3 Wire</b> (-99°C to 400°C, -99.9°C to 400.0°C) for Temperature Sensor, (-999 to 9999 for Analog Input) | J (0°C to 600°C) , K (0°C to 1200°C), <b>PT-100</b> (-99°C to 400°C, -99.9°C to 400.0°C) |
| <b>OUTPUT</b>              | <b>Output 1</b>                        | 0 - 10V DC / 4 - 20mA DC / 0 - 20mA DC (Factory Set) (Controlling / Retransmission Selection)   |  |
|                            | <b>Output 2</b>                        | 1 Relay 1C/O 5A,230V AC (Resistive Load) or SSR Drive O/P 12V DC, 20mA (Factory Set)  |  |
|                            | <b>Output 3</b>                        | 1 Relay 1C/O 5A,230V AC (Resistive Load) or SSR Drive O/P 12V DC, 20mA (Factory Set)  | NA   |
| <b>Communication</b>       | RS-485 Modbus Communication (Optional) |   | NA   |
| <b>Control Action</b>      | PID / ON-OFF (Configurable)            |   |  |
| <b>Accuracy</b>            | ±1% of FSD                             |   |  |
| <b>Supply</b>              | 100 - 250V AC (SMPS), 50/60Hz          |   |  |



|                            |  |   |                     |
|----------------------------|--|---|---------------------|
| <b>Model</b>               | <b>PTC-1202A-M1</b>                    |   | <b>PTC-4202A-M1</b> |
| <b>Dimension (HxWxD)mm</b> | 96 x 96 x 54                           |   | 48 x 48 x 111       |
| <b>Panel Cutout (mm)</b>   | 92 x 92                                |   | 45 x 45             |
| <b>INPUT</b>               | <b>Input</b>                           | J / K / PT-100 2 Wire or 3 Wire, 0 - 10V DC / 4 - 20mA / 0 - 20mA (Configurable)  |                     |
|                            | <b>Range</b>                           | J (0°C to 600°C) , K (0°C to 1200°C), <b>PT-100 2 Wire or 3 Wire</b> (-99°C to 400°C, -99.9°C to 400.0°C) for Temperature Sensor, (-999 to 9999 for Analog Input) |                     |
| <b>OUTPUT</b>              | <b>Output 1</b>                        | 1 Relay 1C/O 5A,230V AC (Resistive Load) or SSR Drive O/P 12V DC, 20mA (Factory Set)  |                     |
|                            | <b>Output 2</b>                        | 1 Relay 1C/O 5A,230V AC (Resistive Load) or SSR Drive O/P 12V DC, 20mA (Factory Set)  |                     |
|                            | <b>Output 3</b>                        | 0 - 10V DC / 4 - 20mA DC (Factory Set) (Controlling / Retransmission Selection)   |                     |
| <b>Communication</b>       | RS-485 Modbus Communication (Optional) |   |                     |
| <b>Control Action</b>      | PID / ON-OFF (Configurable)            |   |                     |
| <b>Accuracy</b>            | ±1% of FSD                             |   |                     |
| <b>Supply</b>              | 100 - 250V AC (SMPS), 50/60Hz          |   |                     |

## PTC Model Selection Guide

| Sr. No. | Model        | Display       | Size (HxWxD)mm | Output 1        | Output 2 | Output 3 | Output RS-485 |
|---------|--------------|---------------|----------------|-----------------|----------|----------|---------------|
| 1       | PTC-L12      | Graphical LCD | 96 x 96 x 54   | Relay           | Relay    | -        | -             |
| 2       | PTC-L12A     | Graphical LCD | 96 x 96 x 54   | 4-20mA/0-10V DC | Relay    | Relay    | -             |
| 3       | PTC-L12-M1   | Graphical LCD | 96 x 96 x 54   | Relay           | Relay    | -        | ✓             |
| 4       | PTC-L12A-M1  | Graphical LCD | 96 x 96 x 54   | 4-20mA/0-10V DC | Relay    | Relay    | ✓             |
| 5       | PTC-1202     | LED           | 96 x 96 x 54   | Relay           | Relay    | -        | -             |
| 6       | PTC-1202A    | LED           | 96 x 96 x 54   | 4-20mA/0-10V DC | Relay    | Relay    | -             |
| 7       | PTC-1202-M1  | LED           | 96 x 96 x 54   | Relay           | Relay    | -        | ✓             |
| 8       | PTC-1202A-M1 | LED           | 96 x 96 x 54   | 4-20mA/0-10V DC | Relay    | Relay    | ✓             |
| 9       | PTC-4202     | LED           | 48 x 48 x 95   | Relay           | Relay    | -        | -             |
| 10      | PTC-4202A    | LED           | 48 x 48 x 111  | 4-20mA/0-10V DC | Relay    | Relay    | -             |
| 11      | PTC-4201-M1  | LED           | 48 x 48 x 95   | Relay           | -        | -        | ✓             |
| 12      | PTC-4202-M1  | LED           | 48 x 48 x 111  | Relay           | Relay    | -        | ✓             |
| 13      | PTC-4202A-M1 | LED           | 48 x 48 x 111  | 4-20mA/0-10V DC | Relay    | Relay    | ✓             |

**Note :** Analog Output 0 - 10V DC or 4 - 20mA DC, any one fixed. Please confirm while order is placed.



# Temperature Controllers

## Humidity + Temperature Controller



|                            |   |  |
|----------------------------|---|--|
| <b>Model</b>               | <b>MHC-1101 (Humidity Controller)</b>       | <b>MHT-1202 (Humidity + Temperature Controller)</b>  |
| <b>Dimension (HxWxD)mm</b> | 96 x 96 x 54                                | 96 x 96 x 54   |
| <b>Panel Cutout (mm)</b>   | 92 x 92                                     | 92 x 92  |
| <b>INPUT</b>               | <b>Input</b>                                | S-1 : PT-100 2 Wire or 3 Wire (RTD) S-2 : Humidity Sensor  |
|                            | <b>Range</b>                                | PT-100 2 Wire or 3 Wire (-50 °C to 199.9 °C)<br>Humidity Sensor (0.0 to 100.0% RH)                       |
| <b>OUTPUT</b>              | 1 Relay 1C/O, 5A@230V AC (Resistive Load)   | 1 <sup>st</sup> Relay for Temperature and 2 <sup>nd</sup> Relay for Humidity<br>RS-485 Modbus (Optional) |
| <b>Control Action</b>      | ON - OFF                                    |  |
| <b>Accuracy</b>            | ±1% of FSD                                  |  |
| <b>Supply</b>              | 100 - 270V AC (SMPS), 50/60Hz               |  |
| <b>Note</b>                | RS-485 Modbus Available on request MHT-1202 |  |

## 9 Stage Profile Controller



|                            |   |  |
|----------------------------|---|--|
| <b>Model</b>               | <b>PRC-1202</b>   |  |
| <b>Dimension (HxWxD)mm</b> | 96 x 96 x 110   |  |
| <b>Panel Cutout (mm)</b>   | 92 x 92   |  |
| <b>INPUT</b>               | <b>Input</b>  | J / K / PT-100 2 Wire or 3 Wire (Factory Set)  |
|                            | <b>Range</b>  | J (0 °C to 600 °C), K (0 °C to 1200 °C), PT-100 2 Wire or 3 Wire (-99 °C to 400 °C , 0.0 °C to 400.0 °C) |
| <b>OUTPUT</b>              | 2 Relay 1C/O (set point), 2 <sup>nd</sup> Relay for Alarm |  |
| <b>Control Action</b>      | ON - OFF  |  |
| <b>Accuracy</b>            | ±1% of FSD  |  |
| <b>Supply</b>              | 100 - 250V AC (SMPS), 50/60Hz                             |  |

# Temperature Controllers

## Temperature Controller - Universal

### Double Display PID Controller - 3 Relay



|                            |   |  |
|----------------------------|---|--|
| <b>Model</b>               | <b>UTC-4203</b>   | <b>UTC-3203</b>  |
| <b>Dimension (HxWxD)mm</b> | 48 x 48 x 95  | 96 x 48 x 85   |
| <b>Panel Cutout (mm)</b>   | 45 x 45   | 92 x 45  |
| <b>INPUT</b>               | <b>Input</b>  | J / K / PT-100 2 Wire or 3 Wire (Configurable)   |
|                            | <b>Range</b>  | J (0°C to 600°C), K(0°C to 1200°C)<br>PT-100 2 Wire or 3 Wire (-99.9°C to 400.0°C, -99.9°C to 400.0°C) |
| <b>OUTPUT</b>              | 3 Relay 1C/O 5A, 230V AC (Resistive Load) or SSR Drive O/P 12V DC, 20mA (3 Set Point) (Factory Set) |  |
| <b>Control Action</b>      | PID / TP / ON-OFF (Configurable)  |  |
| <b>Accuracy</b>            | ±1% of FSD  |  |
| <b>Supply</b>              | 100 - 270V AC (SMPS), 50/60Hz   |  |

## Temperature Controllers

### Single Display PID - Economy Range



|                            |  |  |  |
|----------------------------|--|--|--|
| <b>Model</b>               | <b>UTC-114</b>   | <b>UTC-214</b>   | <b>UTC-413P</b>  |
| <b>Dimension (HxWxD)mm</b> | 96 x 96 x 43   | 72 x 72 x 45   | 48 x 48 x 70   |
| <b>Panel Cutout (mm)</b>   | 92 x 92  | 68 x 68  | 45 x 45  |
| <b>INPUT</b>               | <b>Input</b>   | J / K / PT-100 2 Wire or 3 Wire (Configurable)   |  |
|                            | <b>Range</b>   | J (0°C to 400°C or 0 to 600°C) , K (0°C to 1200°C) ,<br>PT-100 2 Wire or 3 Wire (-99.9 to 400.0°C) | J (0°C to 600°C) , K (0°C to 999°C) ,<br>PT-100 (-99 to 400°C), PT.1 (-19.9 to 99.9°C) |
| <b>OUTPUT</b>              | 1 Relay 1C/O 5A, 230V AC (Resistive Load) & SSR Drive O/P 12V DC, 30mA (Parallel to Relay) (1 set Point) |  |  |
| <b>Control Action</b>      | PID / ON-OFF   |  |  |
| <b>Accuracy</b>            | ±1% of FSD   |  |  |
| <b>Supply</b>              | 100 - 270V AC (SMPS), 50/60Hz  |  |  |

# Temperature Controllers

## Dual Output & Autotune PID Controller - Full Featured



| Model               | UTC-1202G   | UTC-2202G    | UTC-4202G    | UTC-3202     |
|---------------------|---|--------------|--------------|--------------|
| Dimension (HxWxD)mm | 96 x 96 x 54  | 72 x 72 x 85 | 48 x 48 x 95 | 96 x 48 x 85 |
| Panel Cutout (mm)   | 92 x 92   | 68 x 68      | 45 x 45      | 92 x 45      |
| <b>INPUT</b>        | Input J / K / PT-100 2 Wire or 3 Wire (Configurable)<br>Range J (0°C to 600.0°C, 0.0°C to 400.0°C), K (0°C to 1200.0°C, 0.0°C to 500.0°C), PT-100 2 Wire or 3 Wire (-99.9°C to 400.0°C, -99.9°C to 400.0°C) |              |              |              |
| <b>OUTPUT</b>       | 2 Output : (SSR parallel to 1 <sup>st</sup> Relay) + 1 Relay or 1 SSR Drive O/P (2 Relay 1C/O 5A, 230V AC (Resistive Load) & SSR Drive O/P 24V DC, 20mA)  |              |              |              |
| Operating Mode      | Heat / Cool / Alarm   |              |              |              |
| Alarm               | High / Inband / Absolute Low / Absolute Outband / Outband / End Alarm / Low Alarm Outband + <a href="#">Soak Timer</a>  |              |              |              |
| Control Action      | PID / TP / ON-OFF (Configurable)  |              |              |              |
| Accuracy            | ±0.5% of FSD  |              |              |              |
| Supply              | 100 - 270V AC (SMPS), 50/60Hz   |              |              |              |

# Temperature Controllers

## Single Output + Autotune PID Controller



| Model               | UTC-121G  | UTC-221G     | UTC-421G     | UTC-321P     |
|---------------------|---|--------------|--------------|--------------|
| Dimension (HxWxD)mm | 96 x 96 x 54  | 72 x 72 x 85 | 48 x 48 x 95 | 96 x 48 x 85 |
| Panel Cutout (mm)   | 92 x 92   | 68 x 68      | 45 x 45      | 92 x 45      |
| <b>INPUT</b>        | Input J / K / PT-100 2 Wire or 3 Wire (Configurable)<br>Range J (0°C to 600.0°C, 0.0°C to 400.0°C), K (0°C to 1200.0°C, 0.0°C to 500.0°C), PT-100 2 Wire or 3 Wire (-99.9°C to 400.0°C, -99.9°C to 400.0°C) |              |              |              |
| <b>OUTPUT</b>       | 1 Relay 1C/O 5A, 230V AC (Resistive Load) & SSR Drive O/P 24V DC, 20mA (Parallel to Relay) (1 Set Point)  |              |              |              |
| Control Action      | PID / ON-OFF (Configurable)   |              |              |              |
| Accuracy            | ±0.5% of FSD  |              |              |              |
| Supply              | 100 - 270V AC (SMPS), 50/60Hz   |              |              |              |

# Temperature Controllers

## Double Display PID Controller



| Model               | UTC-121P  | UTC-221P   | UTC-421P     |
|---------------------|---|--|--------------|
| Dimension (HxWxD)mm | 96 x 96 x 43  | 72 x 72 x 45   | 48 x 48 x 70 |
| Panel Cutout (mm)   | 92 x 92   | 68 x 68  | 45 x 45      |
| INPUT               | Input   | J / K / PT-100 2 Wire or 3 Wire (Configurable)   |              |
|                     | Range   | J (0°C to 600°C), K (0°C to 999°C), PT-100 2 Wire or 3 Wire (-99°C to 400°C) (-19.9°C to 99.9°C) |              |
| OUTPUT              | 1 Relay 1C/O 5A, 230V AC (Resistive Load) or SSR Drive O/P 12V DC, 30mA (Parallel to Relay) (1 Set Point) |  |              |
| Control Action      | PID / TP / ON-OFF (Configurable)  |  |              |
| Accuracy            | ±1% of FSD  |  |              |
| Supply              | 100 - 270V AC (SMPS), 50/60Hz   |  |              |



| Model               | TC-421P   | TC-442   | TC-443   |
|---------------------|---|--|--|
| Dimension (HxWxD)mm | 48 x 48 x 70  | 48 x 48 x 70   | 48 x 48 x 70   |
| Panel Cutout (mm)   | 45 x 45   | 45 x 45  | 45 x 45  |
| INPUT               | Input   | J / K Type   |  |
|                     | Range   | J (0°C to 600°C), K (0°C to 900°C),  |  |
| OUTPUT              | 1 Relay 1C/O 5A, 230V AC (Resis. Load) & SSR Drive O/P 12V DC, 30mA (Parallel to Relay) (1 Set Point) | 2 Output : (SSR Parallel to 1 <sup>st</sup> Relay) + 1 Relay (2 Relay 1C/O 5A, 230V AC (Resis. Load) & SSR Drive O/P 12V DC, 20mA) | 3 Output : (SSR Parallel to 1 <sup>st</sup> Relay) + 2 Relay (3 Relay 1C/O 5A, 230V AC (Resis. Load) & SSR Drive O/P 12V DC, 20mA) |
| Control Action      | PID / ON-OFF (Configurable)   |  |  |
| Accuracy            | ±1% of FSD  |  |  |
| Supply              | 100 - 270V AC (SMPS), 50/60Hz   |  |  |



# Temperature Controllers

## Digital Temperature Controller

(Fixed Input)



|        | Model               | TC-19  | TC-29                         | TC-49   |
|--------|---------------------|--|-------------------------------|---|
|        | Dimension (HxWxD)mm | 96 x 96 x 43   | 72 x 72 x 45                  | 48 x 48 x 70  |
|        | Panel Cutout (mm)   | 92 x 92  | 68 x 68                       | 45 x 45   |
| INPUT  | Input               | J / K / R / S / PT-100 2 Wire or 3 Wire (Factory Set)  |                               | J / K (Configurable) or PT-100 2 Wire or 3 Wire (Factory set)                               |
|        | Range               | J (0°C to 400°C or 0°C to 600°C) , K (0°C to 1200°C), PT-100 2 Wire or 3 Wire (0°C to 400°C, -50.0°C to 200.0°C) |                               | J (0°C to 600°C) , K (0°C to 999°C), PT-100 (-50°C to 400°C)                                |
| OUTPUT |                     | 1 Relay 1C/O 5A, 230V AC (Resistive Load) or SSR (Factory Set)   |                               | 1 Relay 1C/O 5A, 230V AC (Resistive Load) or SSR Drive O/P 12V DC, 20mA (Parallel to Relay) |
|        | Control Action      | TP / ON-OFF (Configurable)   | TP / ON-OFF (Configurable)    |   |
|        | Accuracy            | ±1% of FSD   | ±1% of FSD                    |   |
|        | Supply              | 230V AC, ±20%, 50Hz  | 100 - 270V AC (SMPS), 50/60Hz |   |

## PID Temperature Controller

### Economy Range



|        | Model               | TC-29P  | TC-221P                            | TC-49P  |
|--------|---------------------|---|------------------------------------|---|
|        | Dimension (HxWxD)mm | 72 x 72 x 45  | 72 x 72 x 45                       | 48 x 48 x 70  |
|        | Panel Cutout (mm)   | 68 x 68   | 68 x 68                            | 45 x 45   |
| INPUT  | Input               | J / PT-100 2 Wire or 3 Wire (Factory Set)   | J / K Type                         | J / K (Configurable) or PT-100 2 Wire or 3 Wire (Factory set) |
|        | Range               | J (0°C to 400°C)<br>PT-100 2 Wire or 3 Wire (0°C to 400°C)  | J (0°C to 400°C), K (0°C to 500°C) | J (0°C to 600°C) , K (0°C to 999°C), PT-100 (0°C to 400°C)    |
| OUTPUT |                     | 1 Relay 1C/O 5A, 230V AC (Resistive Load) or SSR Drive O/P 12V DC, 20mA (Parallel to Relay) (1 Set Point) |                                    |   |
|        | Control Action      | PID / ON-OFF (Configurable)   |                                    |   |
|        | Accuracy            | ±1% of FSD  |                                    |   |
|        | Supply              | 100 to 270V AC (SMPS), 50/60Hz  |                                    |   |



# Temperature Controllers

## PID Temperature Controller Modules



**Master Module**

**Slave Module**

| Model               | DTC-1X (Master Module)  | DTC-1A (Slave Module)   |
|---------------------|---|---|
| Dimension (HxWxD)mm | 76 x 28 x 141   | 76 x 28 x 141   |
| Panel Cutout (mm)   | Din Rail Mounting   | Din Rail Mounting   |
| INPUT               | Input   | J / K / PT-100 (Configurable)   |
|                     | Range   | J (0°C to 600°C), K (0°C to 1200°C) PT-100 (-99°C to 400°C, -99.0°C to 400.0°C) |
| OUTPUT              | 2 Relay 1C/O 5A, 230V AC (Resistive Load) or SSR Drive O/P 24V DC, 20mA (2 Set Point) |   |
| Control Action      | PID / TP / ON-OFF (Configurable)  |   |
| Accuracy            | ±1% of FSD  |   |
| Supply              | 24V DC (For Master Module)  |   |

## Features

MODBUS RS-485 Communication for HMI Indication

Connection Upto 1 Master + 7 Slave Modules

## Note

For more than 8 modules, master module can be repeated with 7 slaves



# Cryo

A brand by **MULTISPAN**



|                            |   |                        |
|----------------------------|---|------------------------|
| <b>Model</b>               | <b>CC-5010N</b>   | <b>CC-5052</b>         |
| <b>Dimension (HxWxD)mm</b> | 40 x 80 x 67  | 40 x 80 x 67           |
| <b>Panel Cutout (mm)</b>   | 30 x 71   | 30 x 71                |
| <b>INPUT</b>               | <b>Input</b> NTC (Thermistor)<br><b>Range</b> -40 °C to 90.0 °C       |                        |
| <b>OUTPUT</b>              | 1 Relay 1C/O, 10A@230V AC (Resistive Load)<br>(With Defrost Facility) | 2 Relay for Compressor |
| <b>Control Action</b>      | ON - OFF (Cooling Mode)   |                        |
| <b>Supply</b>              | 230V AC ±20%, 50Hz / 24V DC / 12V DC (Factory Set)                    |                        |

## Humidity Controller



|                            |   |
|----------------------------|---|
| <b>Model</b>               | <b>MHC-5012</b>   |
| <b>Dimension (HxWxD)mm</b> | 40 x 80 x 67  |
| <b>Panel Cutout (mm)</b>   | 30 x 71   |
| <b>INPUT</b>               | <b>Input</b> Humidity Sensor<br><b>Range</b> 0.0 to 100.0% RH |
| <b>OUTPUT</b>              | 2Relay 1C/O, 10A @230V AC (Resistive Load)                    |
| <b>Control Action</b>      | ON - OFF (Cooling Mode)                                       |
| <b>Accuracy</b>            | ±1% of FSD  |
| <b>Supply</b>              | 230V AC ±20%, 50Hz / 24V DC / 12V DC (Factory Set)            |

## Cryo Model Selection Guide

| Sr.No. | Model   | Size (HxWxD)mm | Input            | Output 1                        | Output 2                  |
|--------|---------|----------------|------------------|---------------------------------|---------------------------|
| 1      | CC-5010 | 40 x 80 x 67   | NTC (Thermistor) | Relay 10A (1C/O)                | -                         |
| 2      | CC-5020 | 40 x 80 x 75   | NTC (Thermistor) | Relay 20A (1C/O)                | -                         |
| 3      | CC-5012 | 40 x 80 x 67   | NTC (Thermistor) | Relay for Compressor 1C/O 10A   | Relay for Alarm 1C/O 10A  |
| 4      | CC-5015 | 40 x 80 x 67   | NTC (Thermistor) | Relay for Compressor 1C/O 10A   | SSR for Buzzer            |
| 5      | CC-5052 | 40 x 80 x 67   | NTC (Thermistor) | Relay for Compressor 1C/O 10A   | Relay for Alarm 1C/O 10A  |
| 6      | CC-5021 | 40 x 80 x 67   | NTC (Thermistor) | Relay for Compressor 1C/O 10A   | Relay for Heater 1C/O 10A |
| 7      | CC-5022 | 40 x 80 x 75   | NTC (Thermistor) | Relay for Compressor (NO-C) 20A | Relay for Alarm NO-C 5A   |
| 8      | CC-5025 | 40 x 80 x 75   | NTC (Thermistor) | Relay for Compressor (NO-C) 20A | SSR for Buzzer            |

**Note :- All Cryo Models are also available in touch key operation.**



# Programmable Timers

## UP to 12 Channel Sequential Timer

With Cascading Facility For 8 + 8 Outputs

4,8 and 12 Channel Sequential Timer



|                     |   |                                   |
|---------------------|---|-----------------------------------|
| Model               | SQT-1044 / SQT-1244 / SQT-1022  | CMT-1022 / CMT-1044               |
| Dimension (HxWxD)mm | Sequential Timer<br>96 x 96 x 54  | Combination Timer<br>96 x 96 x 54 |
| Panel Cutout (mm)   | 92 x 92   | 92 x 92                           |
| INPUT Range         | 99.99 Sec / 999.9 Sec / 99.59 Min / 99.59 Hrs / 999.9 Hrs / 999.9 Min (Configurable)  |                                   |
| OUTPUT              | 4 Relay / 8 Relay / 12 Relay 1C/O 5A,230V AC (Resistive Load) or SSR Drive O/P 24V DC, 20mA Output (Any One Factory Set)  |                                   |
| Operating Mode      | Delayed ON / Delayed OFF / Cycle Mode (Configurable)  |                                   |
| Count Direction     | UP / Down (Configurable)  |                                   |
| Memory              | YES / NO (Configurable)   |                                   |
| Reset               | Front & Back Both Reset Available   |                                   |
| Supply              | 100 - 270V AC (SMPS), 50/60Hz   |                                   |
| Note                | Cascading facility available in SQT-1044 (8 Relay) Sequential timer up to 1 + 3 parallel<br>SSR output is available on request<br>Cascading facility available on request in SQT-1022 |                                   |



|                     |   |
|---------------------|---|
| Model               | <b>RTC-1048</b>                           |
| Dimension (HxWxD)mm | 96 x 96 x 50                              |
| Panel Cutout (mm)   | 92 x 92                                   |
| INPUT Range         | 23:59:59 Hrs / Min / Sec                  |
| OUTPUT              | 1 Relay 1C/O 5A, 230V AC (Resistive Load) |
| Parameter           | ON Time / OFF Time (16 Program)           |
| Supply              | 100 - 270V AC (SMPS), 50/60Hz             |

# Programmable Timers

## Universal Range - 1 Relay Output



| Model                  | UTR-1033  | UTR-2033     | UTR-433      | UTR-413      |
|------------------------|---|--------------|--------------|--------------|
| Dimension (HxWxD)mm    | 96 x 96 x 43  | 72 x 72 x 45 | 48 x 48 x 70 | 48 x 48 x 70 |
| Panel Cutout (mm)      | 92 x 92   | 68 x 68      | 45 x 45      | 45 x 45      |
| <b>INPUT</b>           | Start Pulse: Micro Switch / Limit Switch / Proximity (Configurable) |              |              |              |
|                        | Range: 999 / 99.9 / 9.99 Sec / Min / Hrs (Configurable)             |              |              |              |
| <b>OUTPUT</b>          | 1 Relay 2C/O 5A, 230V AC (Resistive Load)                           |              |              |              |
| <b>Program</b>         | Delayed ON / Delayed OFF / Cycle Mode (Configurable)                |              |              |              |
| <b>Count Direction</b> | UP / Down (Configurable)  |              |              |              |
| <b>Memory</b>          | YES / NO (Configurable)   |              |              |              |
| <b>Reset</b>           | Front & Back Both Reset Available                                   |              |              |              |
| <b>Supply</b>          | 100 - 270V AC (SMPS), 50/60Hz                                       |              |              |              |

## Programmable Timer

### Universal Timer - 2 Relay Output



| Model                  | UTR-1244  | UTR-2244     | UTR-4244     | CTU-4244<br>(Universal Timer + Counter)  |
|------------------------|---|--------------|--------------|--|
| Dimension (HxWxD)mm    | 96 x 96 x 54  | 72 x 72 x 45 | 48 x 48 x 70 | 48 x 48 x 70   |
| Panel Cutout (mm)      | 92 x 92   | 68 x 68      | 45 x 45      | 45 x 45  |
| <b>INPUT</b>           | Start Pulse: Micro Switch / Limit Switch / Proximity (Configurable)                   |              |              |  |
|                        | Range: 9999 / 999.9 / 99.99 Sec / Min / Hrs (Configurable)                            |              |              |  |
| <b>OUTPUT</b>          | 2 Relay 1C/O 5A, 230V AC (Resistive Load)   |              |              |  |
| <b>Program</b>         | Forward - Reverse Mode, Cyclic Mode, Sequential Mode, Combination Mode (Configurable) |              |              | Timer: ON Delay, Interval, Cyclic On first, Batch<br>Counter: ON Delay, Interval, Cyclic On first, Batch<br>Batch Available in 2nd Relay |
| <b>Count Direction</b> | UP / Down (Configurable)  |              |              |  |
| <b>Memory</b>          | YES / NO (Configurable)   |              |              |  |
| <b>Reset</b>           | Front & Back Terminal Reset Available   |              |              |  |
| <b>Supply</b>          | 100 - 270V AC (SMPS), 50/60Hz   |              |              |  |

# Programmable Timers

## Time Totalizer



| Model               | DTT-1000                | DTT-2000   | DTT-5000     | DTT-3000     | DTT-56G      |
|---------------------|-------------------------|--|--------------|--------------|--------------|
| Dimension (HxWxD)mm | 96 x 96 x 43            | 72 x 72 x 36   | 36 x 72 x 93 | 48 x 96 x 26 | 38 x 62 x 63 |
| Panel Cutout (mm)   | 92 x 92                 | 68 x 68  | 32 x 68      | 46 x 92      | 31 x 54      |
| INPUT               | Input                   | Micro Switch / Limit Switch / Proximity Switch / 230V AC (Factory Set)   |              |              |              |
|                     | Range                   | 1) 9999.59 hr/min. 2) 9999.59 min/sec. 3) 99999.9 sec. 4) 999999 sec. 5) 9999.99 sec. 6) 99999.9 min. 7) 999999 min. 99999.9 hr. 9) 999999 hr (Configurable) |              |              |              |
| Supply              | 230V AC $\pm$ 20%, 50Hz |  |              |              |              |

## Digital Presetable Timer

### Multi Range - Thumbwheel Setting



| Model               | MDT-1310F  | MDT-2312F                     | MDT-4310N                               | DIN-63                                    | DIN-63C                 |
|---------------------|--|-------------------------------|---|---|-------------------------|
| Dimension (HxWxD)mm | 96 x 96 x 50   | 72 x 72 x 45                  | 48 x 48 x 70                            | 76 x 28 x 85                              | 76 x 28 x 85            |
| Panel Cutout (mm)   | 92 x 92  | 68 x 68                       | 45 x 45                                 | Din Rail Mounting                         | Din Rail Mounting       |
| INPUT               | Range: 999, 99.9, 9.99 Hour / Min / Sec (Configurable) |                               |   |   |                         |
| OUTPUT              | 1 Relay 2C/O 5A, 230V AC (Resistive Load)              |                               | 1 Relay 1C/O 5A, 230V AC (Resist. Load) | 1 Relay 2C/O 5A, 230V AC (Resistive Load) |                         |
| Operating Mode      | Delayed ON / Delayed OFF (Configurable)                |                               |   |   | Cycle ON / Cycle OFF    |
| Counting Direction  | UP / Down (Configurable)                               |                               |   |   |                         |
| Memory              | YES / NO (Configurable)                                |                               |   |   | YES / NO (Configurable) |
| Supply              | 230V AC $\pm$ 20%, 50Hz                                | 100 - 270V AC (SMPS), 50/60Hz |   |   |                         |

# Programmable Counters

## Photo Electric Controllers

For Fully Pneumatic Packaging Machine

|                            |                       |                                       |
|----------------------------|-----------------------|---------------------------------------|
| <b>Model</b>               | <b>PFLC-68</b>        |                                       |
| <b>Dimension (HxWxD)mm</b> | 96 x 96 x 54          |                                       |
| <b>Panel Cutout (mm)</b>   | 92 x 92               |                                       |
| <b>INPUT</b>               | <b>Input 1</b>        | Start Pulse                           |
|                            | <b>Input 2</b>        | Color Mark Sensor (NPN/PNP Selection) |
|                            | <b>Input 3</b>        | Unwinding Start                       |
|                            | <b>Input 4</b>        | Unwinding Stop                        |
| <b>OUTPUT</b>              | <b>Output 1</b>       | Clutch & Brake, 24V DC 2A             |
|                            | <b>Output 2</b>       | H - Sealer Relay                      |
|                            | <b>Output 3</b>       | V - Sealer Relay                      |
|                            | <b>Output 4</b>       | Nitrogen Filling Relay                |
|                            | <b>Output 5</b>       | Batch Cutter Relay                    |
|                            | <b>Output 6</b>       | Batch Coding Relay                    |
|                            | <b>Output 7</b>       | Auger Relay                           |
|                            | <b>Output 8</b>       | Unwinding Relay                       |
| <b>Memory</b>              | Non - Volatile Memory |                                       |
| <b>Reset</b>               | Manual Reset          |                                       |
| <b>Supply</b>              | 24V DC                |                                       |



**Touch Screen**



|                            |                       |  |
|----------------------------|-----------------------|--|
| <b>Model</b>               | <b>MPC-1065</b>       |  |
| <b>Dimension (HxWxD)mm</b> | 96 x 96 x 50          |  |
| <b>Panel Cutout (mm)</b>   | 92 x 92               |  |
| <b>INPUT</b>               | <b>Input 1</b>        | 2 NPN/PNP Proximity Switch (Factory Set) |
|                            | <b>Input 2</b>        | Color Mark Sensor (NPN/PNP Selection)    |
| <b>OUTPUT</b>              | <b>Output 1</b>       | Clutch & Brake                           |
|                            | <b>Output 2</b>       | H - Sealer Relay                         |
|                            | <b>Output 3</b>       | Nitrogen Filling Relay                   |
|                            | <b>Output 4</b>       | Batch Cutter Relay                       |
|                            | <b>Output 5</b>       | Unwinding Relay                          |
| <b>Memory</b>              | Non - Volatile Memory |  |
| <b>Reset</b>               | Manual Reset          |  |
| <b>Supply</b>              | 24V DC                |  |



# Programmable Counters

## Photo Electric Controllers



| Model               | MPC-1061L / MPC-1062L  | MVC-72N   | MVC-7210   |
|---------------------|--|---|--|
| Dimension (HxWxD)mm | 96 x 96 x 50   | 72 x 72 x 45  | 72 x 72 x 97   |
| Panel Cutout (mm)   | 92 x 92  | 68 x 68   | 68 x 68  |
| DISPLAY             | Graphical LCD  |   |  |
| INPUT               | Input 1: 1 or 2 NPN Proximity Switch (Factory Set)<br>Input 2: Color Mark Sensor | NPN / PNP Proximity Switch  | NPN / PNP Proximity Switch   |
| OUTPUT              | 2 Output (Forward & Reverse Winding),<br>2A, 110V AC / 230V AC + Buzzer Output   | 0 - 110V AC Corresponding<br>to percentage input                                    | 0 - 110V AC Corresponding<br>to percentage input                                     |
| Memory              | Non - Volatile Memory  |   |  |
| Reset               | Manual Reset   |   |  |
| Supply              | For MPC-1061L 110V AC, ±20%, 50Hz<br>For MPC-1021L 230V AC, ±20%, 50Hz           | 230V AC ±20%, 50Hz  | 230V AC ±20%, 50Hz   |
| Note                |  | Vibrator load should not be more<br>than 5Amps (Resistive Load)<br>Range : 1 to 99% | Vibrator load should not be more<br>than 10Amps (Resistive Load)<br>Range : 1 to 99% |

## Clutch Brake Controller For Packaging Machine Application



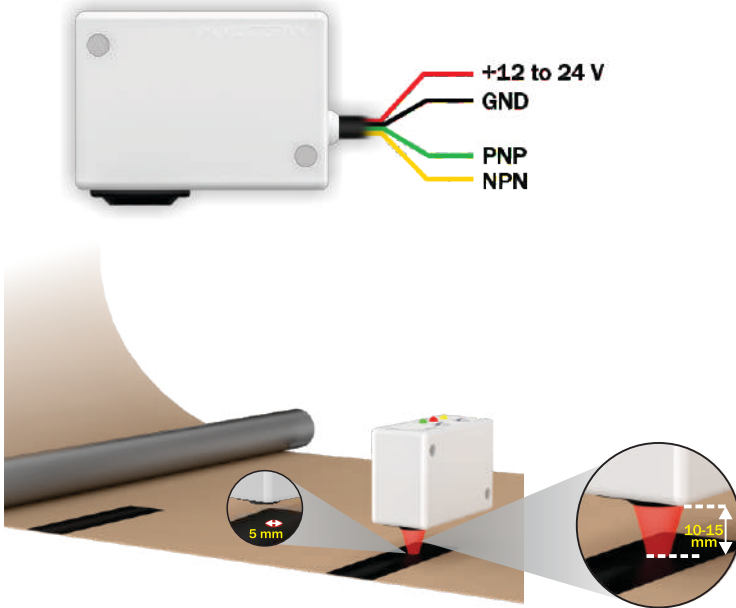
| Model               | MC-1003   | MMC-1046T      |
|---------------------|---|----------------|
| Dimension (HxWxD)mm | 96 x 96 x 50  | 96 x 96 x 54   |
| Panel Cutout (mm)   | 92 x 92   | 92 x 92        |
| INPUT               | Input 1: NPN Proxy for Clutch<br>Input 2: NPN Color mark Sensor (CMS)<br>Input 3: Micro Switch<br>Range: Clutch ON Time : 0 - 99.99 Sec.<br>Batch Time : 0 - 99.99 Sec. | 0 - 99.99 Sec. |
| OUTPUT              | Output 1: For Clutch<br>Output 2: For Inching<br>Output 3: For Batch Counter  | For Clutch     |
| Reset               | Front Reset   |                |
| Supply              | 100 - 270V AC (SMPS), 50/60Hz   |                |

16 X 2 LCD Display

# Programmable Counters

## Color Mark Sensor

For Packaging Machine & Printing Industries



|                                  |   |
|----------------------------------|---|
| <b>Model</b>                     | CMS-5X  |
| <b>Power Supply</b>              | 12 - 24V DC   |
| <b>Current Consumption</b>       | 35mA max.@ 24V DC   |
| <b>Output</b>                    | NPN / PNP Output  |
| <b>Output Current</b>            | 25mA max  |
| <b>Response Time</b>             | 2 Millisecond   |
| <b>Indications</b>               | LED 1 : Mark LED (Green)    LED 2 : Output LED (Red)<br>LED 3 : Background LED (Yellow) |
| <b>Push Buttons</b>              | Button 1 : Mark Button<br>Button 2 : Background Button                                  |
| <b>Minimum Mark Output Relay</b> | 20ms  |
| <b>Operating Temperature</b>     | -10 to 50C  |
| <b>Storage Temperature</b>       | -20 to 70C  |
| <b>Operating Distance</b>        | 10mm - 15mm   |
| <b>Minimum Spot Diameter</b>     | 5mm   |
| <b>Emission type</b>             | RED (630nm) GREEN (520nm) BLUE (465nm)  |
| <b>Ambient Light Rejection</b>   | Yes   |
| <b>Vibration</b>                 | 0.5mm Amplitude, 10 to 55 Hz Frequency  |
| <b>Housing Material</b>          | ABS   |
| <b>Lens Material</b>             | Glass   |
| <b>Connection</b>                | Shielded 4 Wire Cable   |

# Programmable Counters

## Digital Batch Counter



| Model               | BC-1046D  | BC-2046                       | BC-445       |
|---------------------|---|-------------------------------|--------------|
| Dimension (HxWxD)mm | 96 x 96 x 43  | 72 x 72 x 45                  | 48 x 48 x 95 |
| Panel Cutout (mm)   | 92 x 92   | 68 x 68                       | 45 x 45      |
| <b>INPUT</b>        | NPN/PNP Proximity Switch / Micro Switch (Configurable) or 230V AC Pulse (Factory Set) |                               |              |
| Range               | Upper Display Range : 0-999999 Count<br>Lower Display Range : 0-9999                  |                               |              |
| <b>OUTPUT</b>       | 1 Relay + Buzzer  |                               |              |
| Memory              | Non - Volatile Memory   |                               |              |
| Reset               | Auto Reset / Manual Reset / Back Reset  |                               |              |
| Supply              | 230V AC $\pm$ 20%, 50Hz   | 100 - 270V AC (SMPS), 50/60Hz |              |

## Digital Length Counter

With Proximity / Single & Dual Channel Encoder Input



| Model               | LC-1046D  | LC-2046                       | LC-3006                 | LC-445   |
|---------------------|---|-------------------------------|-------------------------|--|
| Dimension (HxWxD)mm | 96 x 96 x 43  | 72 x 72 x 45                  | 48 x 96 x 120           | 48 x 48 x 95   |
| Panel Cutout (mm)   | 92 x 92   | 68 x 68                       | 46 x 92                 | 45 x 45  |
| <b>INPUT</b>        | NPN/PNP Proximity Switch (Configurable) or Encoder (Factory Set)  |                               |                         |  |
| Range               | 0-99999.9 / 0-999999 / 0-9999.99 / 0-999.999 Meter (Configurable)   |                               |                         | 0-9999.9 / 0-999999 / 0-9999.99 Meter (Configurable) |
| <b>OUTPUT</b>       | 1 Relay 1C/O, 5A @230V AC (Resistive Load)  |                               |                         |  |
| MPM Range           | 999.9 MPM   |                               |                         |  |
| Diameter            | 0-9999.99 MM  |                               |                         |  |
| Memory              | Non - Volatile Memory   |                               |                         |  |
| Reset               | Auto Reset / Manual reset facility & front and back reset   |                               |                         |  |
| Supply              | 230V AC, $\pm$ 20% 50Hz   | 100 - 270V AC (SMPS), 50/60Hz | 230V AC, $\pm$ 20% 50Hz | 100 - 270V AC (SMPS), 50/60Hz                        |
| Note                | In LC-445 if back reset option is required, then input would be proximity sensor (NPN or PNP) (Factory Set)<br>RS-485 Modbus Communication is available as per request in 96x96 Size (LC-1048-M1)<br>2 Relay Output available as per request in 72x72 size (MMC-2046) , 96x96 size MMC-1000 |                               |                         |  |

# Programmable Counters

## Digital Programmable Counter



| Model               | PC-1044  | PC-3006  | PC-1006D         | PC-2006      | PC-2044                       | PC-444       |
|---------------------|--|--|------------------|--------------|-------------------------------|--------------|
| Dimension (HxWxD)mm | 96 x 96 x 54   | 48 x 96 x 120  | 96 x 96 x 43     | 72 x 72 x 60 | 72 x 72 x 45                  | 48 x 48 x 70 |
| Panel Cutout (mm)   | 92 x 92  | 46 x 92  | 92 x 92          | 68 x 68      | 68 x 68                       | 45 x 45      |
| INPUT               | Input  | NPN/PNP Proximity Switch / Micro Switch (Configurable) or 230V AC Pulse or Encoder (Factory Set) |                  |              |                               |              |
|                     | Range  | 0 - 9999 /<br>0 - 999.9 Count  | 0 - 999999 Count |              | 0 - 9999 Count                |              |
| OUTPUT              | 1 Relay 1C/O 5A,230V AC (Resistive Load)   |  |                  |              |                               |              |
| Count Direction     | UP / Down (Configurable)   |  |                  |              |                               |              |
| Memory              | YES / NO (Configurable)  |  |                  |              |                               |              |
| Reset               | Auto Reset / Manual Reset / Reset at back  |  |                  |              |                               |              |
| Supply              | 230V AC $\pm$ 20%,50Hz   |  |                  |              | 100 - 270V AC (SMPS), 50/60Hz |              |
| Note                | Dual Set Point , Scale factor & 2 Relay Option Available on customer request in PC-1044,2044 |  |                  |              |                               |              |

## Digital Presetable Counter With Thumbwheel Setting



| Model               | TWS-1400F   | TWS-2500F  |  |
|---------------------|---|--|--|
| Dimension (HxWxD)mm | 96 x 96 x 50  | 72 x 72 x 45   |  |
| Panel Cutout (mm)   | 92 x 92   | 68 x 68  |  |
| INPUT               | Input   | NPN/PNP Proximity Switch / Micro Switch (Configurable) or 230V AC Pulse or Encoder (Factory Set) |  |
|                     | Range   | 0 to 9999  |  |
| OUTPUT              | 1 Relay 2C/O 5A,230V AC (Resistive Load)                        |  |  |
| Operating Mode      | Delayed ON / Delayed OFF (Configurable)                         |  |  |
| Count Direction     | UP / Down (Configurable)  |  |  |
| Memory              | YES / NO (Configurable)   |  |  |
| Speed Selection     | Medium (UP to 5000 rpm) , Fast (UP to 15000 rpm) (Configurable) |  |  |
| Supply              | 100 - 270V AC (SMPS), 50/60Hz                                   |  |  |



# Programmable Counters

## Digital RPM Indicator



|                     | Model  | RPM-1201                                | RPM-2201                      | RPM-3201     | RPM-4201     |
|---------------------|--------|---|-------------------------------|--------------|--------------|
| Dimension (HxWxD)mm |        | 96 x 96 x 40                            | 72 x 72 x 36                  | 48 x 96 x 26 | 48 x 48 x 70 |
| Panel Cutout (mm)   |        | 92 x 92                                 | 68 x 68                       | 46 x 92      | 45 x 45      |
| INPUT               | Input  | NPN/PNP Proximity Switch (Configurable) |                               |              |              |
|                     | Range  | 4 - 5000 RPM                            |                               |              |              |
|                     | Supply | 230V AC ±20%, 50Hz                      | 100 - 270V AC (SMPS), 50/60Hz |              |              |

## Digital Count Totaliser



|                     | Model  | CT-1000  | CT-2000                       | CT-3000      | CT-5000            | CT-56G       |
|---------------------|--------|--|-------------------------------|--------------|--------------------|--------------|
| Dimension (HxWxD)mm |        | 96 x 96 x 40   | 72 x 72 x 36                  | 48 x 96 x 26 | 36 x 72 x 93       | 38 x 62 x 63 |
| Panel Cutout (mm)   |        | 92 x 92  | 68 x 68                       | 46 x 92      | 32 x 68            | 31 x 54      |
| INPUT               | Input  | NPN/PNP Proximity Switch / Micro Switch (Configurable) or 230V AC Pulse or Encoder (Any one factory set) |                               |              |                    |              |
|                     | Range  | 0 to 999999 Count  |                               |              |                    |              |
|                     | Memory | Non - Volatile Memory  |                               |              |                    |              |
|                     | Reset  | Manual reset, Back reset (Optional)  |                               |              |                    |              |
|                     | Supply | 230V AC ±20%, 50Hz   | 100 - 270V AC (SMPS), 50/60Hz |              | 230V AC ±20%, 50Hz |              |

# Programmable Counters

## Speed / Ratio Indicator



|                            |  |                             |
|----------------------------|--|-----------------------------|
| <b>Model</b>               | <b>MPM-1044 / MPM-2044</b>   | <b>RPM-1044 / RPM-2044</b>  |
| <b>Dimension (HxWxD)mm</b> | 96 x 96 x 54 / 72 x 72 x 85  | 96 x 96 x 54 / 72 x 72 x 85 |
| <b>Panel Cutout (mm)</b>   | 92 x 92 / 68 x 68  | 92 x 92 / 68 x 68           |
| <b>INPUT</b>               | <b>Input</b> NPN/PNP Proximity Switch (Configurable), Proximity Input (Stretch Ratio Indicator)          |                             |
|                            | <b>Range</b> 0 to 9999 or 0 to 999.9 MPM (Factory set), 0 to 9999 RPM                                    |                             |
| <b>OUTPUT</b>              | 1 Relay on RPM/MPM (Factory Set) & Retransmission Output (4-20mA DC / 0-10V DC) (Factory Set) (Optional) |                             |
| <b>Diameter Range</b>      | 0 to 999.9 MM (Only for MPM / Stretch Ratio MPM)   |                             |
| <b>Accuracy</b>            | ±1% of FSD   |                             |
| <b>Supply</b>              | 100 - 270V AC (SMPS), 50/60Hz  |                             |

# Programmable Timer

## Counter + RPM



|                            |   |                               |
|----------------------------|---|-------------------------------|
| <b>Model</b>               | <b>MMC-1046RD</b>   | <b>MMC-2046R</b>              |
| <b>Dimension (HxWxD)mm</b> | 96 x 96 x 43  | 72 x 72 x 45                  |
| <b>Panel Cutout (mm)</b>   | 92 x 92   | 68 x 68                       |
| <b>INPUT</b>               | <b>Input</b> NPN/PNP Proximity Switch / Micro Switch (Configurable) / 230V AC Pulse (Factory Set) |                               |
|                            | <b>Range</b> Upper Display Range : 0 - 999999 Count, Lower Display Range : 0 - 9999 RPM           |                               |
| <b>OUTPUT</b>              | 1 Relay 1C/O 5A, 230V AC (Resistive Load)   |                               |
| <b>Memory</b>              | Non - Volatile Memory   |                               |
| <b>Reset</b>               | Auto Reset / Manual Reset / Back Reset  |                               |
| <b>Supply</b>              | 230V AC ±20%, 50Hz  | 100 - 270V AC (SMPS), 50/60Hz |

# Protection Relays

## Automatic Power Factor Controller

### Intelligent PF Correction Relay



## Graphical LCD Display

6 / 8 / 12 / 14 / 16 Steps

| Model                           | APFC 96-L6   | APFC 9606    | APFC 108   | APFC 112  |
|---------------------------------|--|--------------|--|---|
| Dimension (HxWxD)mm             | 96 x 96 x 54   | 96 x 96 x 54 | 144 x 144 x 70   | 144 x 144 x 70  |
| Panel Cutout mm                 | 92 x 92  | 92 x 92      | 137 x 137  | 137 x 137   |
| <b>INPUT</b>                    |  |              |  |   |
| Current                         | 50mA to 5Amp AC (Without CT) (CT Ratio Selectable 5/5A to 9995/5A) For Main CT & Capacitor CT  |              | 0.01 to 5Amp AC (Without CT) (CT Ratio Selectable 5/5A AC to 9999/5A) For Main CT & Capacitor CT                                     |   |
| Controlling PF Range            | +0.80 (Lag) To -0.80 (Lead)  |              | +1.000 (Lag) To -1.000 (Lead)  |   |
| Min. Operation Current          | 1% to 10% of Primary CT in PF & KVAR Mode (User Select.)<br>Factory Set 3% of Primary CT in all Controlling Mode   |              | Selectable Range 1mA to 500mA (By Default 30mA)  |   |
| Input Voltage                   | 30 to 290V AC (P-N) CAT III  |              | 300 to 520V AC (P-P) CAT III   |   |
| <b>SENSING</b>                  | Single CT Based Sensing True RMS,<br>Scan Time 1Sec. to 999 Sec.   |              | Scan Time 1 Sec. to 999.9 Sec.   |   |
| <b>OUTPUT</b>                   | NO-C<br>6 Relay for Capacitor Bank   |              | NO-C<br>8 Relay for capacitor bank + 1 Alarm or 1 Fan Relay  | NO-C 12<br>Relay for capacitor bank + 1 Alarm Relay 1 Fan Relay |
| <b>USER PROGRAMM. FUNCTIONS</b> | Set PF, Relay Switch ON Time, Control Modes, Mains Primary CT Ratio, Relay Steps to be used, Capacitor Primary CT Ratio (To be used if actual capacitor value is to be measured at any given time) |              | Main CT Ratio, Capacitor CT Ratio, Minimum Operating Current, Scan Time, Programmable KVAR Hysteresis, Capacitor bank sensing method |   |
| Control Mode                    | Auto Manual, KVAR (Set capacitor bank value), Rotational   |              | KVAR/ Intel/ Manual  |   |
| Accuracy                        | Class 1.0 as per IEC 62053-22  |              | Class 0.5  |   |
| Supply                          | 230V AC ±20% Supply, 50Hz  |              | 300 to 520V AC (P-P) CAT III   |   |

# Protection Relays

## Earth Leakage Relay & Earth To Neutral Voltage



|                            | Model               | ELR-19N   | ELR-63                                    | EFR-63   |
|----------------------------|---------------------|---|---|--|
| <b>Dimension (HxWxD)mm</b> |                     | 96 x 96 x 54  | 76 x 28 x 85                              | 76 x 28 x 85   |
| <b>Panel Cutout mm</b>     |                     | 92 x 92   | Din Rail Mounting                         | Din Rail Mounting  |
| <b>INPUT</b>               | <b>Input Signal</b> | 30mA to 3Amp AC Thru. External CBCT   | 30mA to 3.00A AC Thru. External CBCT      | Current : 5Amp From CBCT                                 |
|                            | <b>Range</b>        | 30mA to 3.00A AC  | 30mA to 3.00A AC                          |  |
| <b>OUTPUT</b>              |                     | 1 Relay (NO-C-NC) 5A, 230V AC Resistive Load  | 1 Relay (NO-C) 5A, 230V AC Resistive Load | 1 Relay (5A, 230V AC Resistive Load) Earth Fault Current |
|                            | <b>Accuracy</b>     | Class 0.5   | Class 0.5                                 | Class 0.5  |
|                            | <b>Supply</b>       | 100 to 270V AC (SMPS), 50/60Hz  | 100 to 270V AC (SMPS), 50/60Hz            | 100 to 270V AC (SMPS), 50/60Hz                           |
|                            | <b>Note</b>         | RS-485 Modbus is available in ELR-19N as per request, CBCT available as per required inner diameter |   |  |



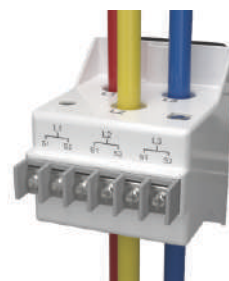
|                            | Model                    | CC-12  |
|----------------------------|--------------------------|--|
| <b>Dimension (HxWxD)mm</b> |                          | 96 x 96 x 43   |
| <b>Panel Cutout mm</b>     |                          | 92 x 92  |
| <b>INPUT</b>               | <b>Current</b>           | 5A AC Direct (CT Ratio Selectable 5/5A to 1600/5A)                                 |
| <b>OUTPUT</b>              |                          | 1 Relay (NO-C-NC) 5A, 230V AC (Resistive Load)                                     |
|                            | <b>Tripping Facility</b> | High/ Low/ Inband/ Absolute Low/ Absolute Outband Alarm (Configurable)             |
|                            | <b>Accuracy</b>          | Class 0.5  |
|                            | <b>Power Supply</b>      | 100 to 270V AC (SMPS), 50/60Hz, Approx 4VA   |
|                            | <b>Note</b>              | RS-485 Modbus is available on request<br>2 Relay is available on request in CC-122 |

# Protection Relays

## Protection Device - 3 Phase



DINRAIL MOUNT



|                            |   |   |
|----------------------------|---|---|
| <b>Model</b>               | <b>MPD-192</b>  | <b>MPD-152</b>                                  |
| <b>Dimension (HxWxD)mm</b> | 96 x 96 x 54  | 75 x 55 x 110                                   |
| <b>Panel Cutout mm</b>     | 92 x 92   | Din Rail Mounting                               |
| <b>INPUT</b>               | <b>Signal</b> 3Ø4 Wire / 3Ø3 Wire   |   |
| <b>Voltage</b>             | 50 - 520V AC (L-L), 30 - 300V AC (L-N)  |   |
| <b>Current</b>             | 60mA to 5A (CT Selection 5A - 6000A AC) (Additional Leakage Current Measurement thru CBCT in MPD-19EL)  |   |
| <b>OUTPUT</b>              | 1st Relay (NO-C-NC) 10A, 230V AC (Resistive Load)<br>2nd Relay (NO-C) 5A (With Simultaneous Actuation)  | 1 Relay (NO-C-NC) 10A, 230V AC (Resistive Load) |
| <b>PARAMETER</b>           | Over Current    Under Current    Short Circuit    Lock Rotor Point    Earth Leakage (in MPD-19EL)<br>Over Voltage    Under Voltage    Phase Sequence    Unbalance<br>Over Frequency    Under Frequency    Phase Loss    Neutral Loss  |   |
| <b>Accuracy</b>            | Class 0.5   |   |
| <b>Supply</b>              | 100 to 270V AC (SMPS), 50/60Hz  |   |
| <b>Note</b>                | MPD-192 is also available in 415V AC ±10%, 50Hz Power Supply (ON Request), RS-485 Modbus Communication (Optional) in MPD-19EL-M1 Earth Leakage Features are Available (Optional) in MPD-19EL, CBCT Available As per Required inner Diameter External CT 30A, 60A, 100A Available As per Request |   |

## Voltage Monitoring Relay



|                            |   |   |   |
|----------------------------|---|---|---|
| <b>Model</b>               | <b>VMR-13</b>   | <b>VMR-232</b>                          | <b>EN-19N</b> Earth to Neutral Voltage Protection Relay |
| <b>Dimension (HxWxD)mm</b> | 96 x 96 x 43  | 72 x 72 x 45                            | 96 x 96 x 54  |
| <b>Panel Cutout mm</b>     | 92 x 92   | 68 x 68                                 | 92 x 92   |
| <b>INPUT</b>               | <b>Voltage</b> 50 to 520V AC (L-L), 30 to 300V AC (L-N)   |   | 0 to 10 Voltage AC                                      |
| <b>OUTPUT</b>              | 1st Relay 5A, 230V AC (Resistive Load) 2nd Relay (Optional)   | 1st Relay 10A, 230V AC (Resistive Load) | 1 Relay (NO-C-NC) 5A, 230V AC (Resistive Load)          |
| <b>PARAMETER</b>           | Over Voltage    Over Frequency    Phase Loss    Asymmetry<br>Under Voltage    Under Frequency    Phase Sequence    Neutral Loss |   | Earth to Neutral Voltage Protection Relay               |
| <b>Supply</b>              | 230V AC ±20%, 50Hz  | 50 to 520V AC, 50/60Hz                  | 100 to 270V AC (SMPS), 50/60Hz                          |
| <b>Note</b>                | RS-485 Modbus Available in EN-19N As per request  |   |   |



# Protection Relays

## Three Phase Voltage & Current Protection Relay

DINRAIL MOUNT



| Model               | VPR-126  | VPR-3P  | CPR-126 (3 Phase)  | CPR-126-1C (1 Phase)                         |
|---------------------|--|---|--|--|
| Dimension (HxWxD)mm | 75 x 75 x 110  | 75 x 75 x 110   | 75 x 75 x 110  | 75 x 75 x 110                                |
| Mounting            | Din Rail Mounting  |   |  |  |
| INPUT               | Signal   | 3Ø4 Wire / 3Ø3 Wire / 1Ø2 Wire  | 3Ø4 Wire / 3Ø3 Wire  | 1Ø2 Wire                                     |
|                     | Voltage  | 30 to 300V AC (L-N),<br>50 to 520V AC (L-L)   | 160 to 300V AC (L-N),<br>280 to 520V AC (L-L)                              |  |
|                     | Current  |   |  | 0.1 to 5Amp (CT Selection 5/5 To 999/5 A AC) |
| OUTPUT              | 1st Relay (NO-C-NC)<br>2nd Relay (NO-C-NC) (Optional)  | 1st Relay (NO-C-NC)<br>2nd Relay (NO-C-NC)  | 1 Relay (NO-C-NC)  |  |
| PARAMETER           | Over Voltage<br>Under Voltage<br>Over Frequency<br>Under Frequency<br>Phase Loss<br>Phase Sequence<br>Asymmetry & Neutral Loss | Over Voltage<br>Under Voltage<br>Over Frequency<br>Under Frequency<br>Phase Loss<br>Phase Sequence<br>Asymmetry | Over Current<br>Under Current<br>Asymmetry<br>Single Phase Preventer (SPP) | Over Current<br>Under Current                |
| Accuracy            | Class 1.0  | Class 1.0   | Class 1.0  | Class 1.0                                    |
| Supply              | 100 to 270V AC (SMPS)  | No Power Supply to be given Separately  | 100 to 270V AC (SMPS)  | 100 to 270V AC (SMPS)                        |
| Note                | External CT 30A,60A,100A Available with CPR-126 & CPR-126-1C As per Request  |   |  |  |

## Multi Channel Current Transducer

### CT upto 100A

DINRAIL MOUNT

3CT

4CT

6CT

8CT



| Model               | MCS-63   |
|---------------------|--|
| Dimension (HxWxD)mm | 76 x 28 x 116                                      |
| Mounting            | Din Rail Mounting                                  |
| INPUT               | Current : 2A to 60A Direct UP to 6 Current Scanner |
| OUTPUT              | RS-485 Modbus                                      |
| POWER SUPPLY        | 24V DC   |
| Note                | 100 Amp 3 CT Also Available                        |

# Din Rail Protection Relays

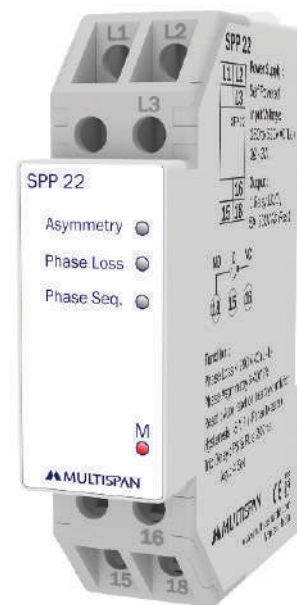
## Voltage & Current

DINRAIL MOUNT

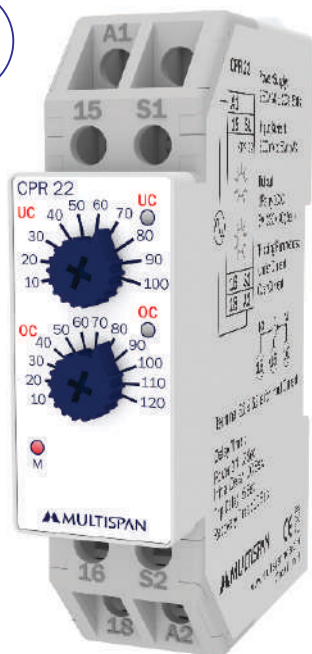


|                            |  |
|----------------------------|--|
| <b>Model</b>               | <b>VPR-22U</b><br>Voltage Protection Relay                                       |
| <b>Dimension (HxWxD)mm</b> | 90 x 22.5 x 72   |
| <b>Mounting</b>            | Din Rail Mounting  |
| <b>INPUT</b>               | Input Voltage : 280 to 520V AC (L-L), 3Ø3 Wire                                   |
| <b>OUTPUT</b>              | 1 Relay, 5A, 230V AC (Resistive Load)  |
| <b>TRIPPING PARAMETER</b>  | Under Voltage<br>Over Voltage<br>Phase Asymmetry<br>Phase Sequence<br>Phase Loss |
| <b>POWER SUPPLY</b>        | NO Power Supply to be given separately   |
| <b>Note</b>                | Power ON Delay Time & Trip Delay Time by using DIP switch                        |

|                            |   |
|----------------------------|---|
| <b>Model</b>               | <b>SPP-22</b><br>Single Phase Preventor         |
| <b>Dimension (HxWxD)mm</b> | 90 x 22.5 x 66.5                                |
| <b>Mounting</b>            | Din Rail Mounting                               |
| <b>INPUT</b>               | Input Voltage : 280 to 520V AC (L-L), 3Ø3 Wire  |
| <b>OUTPUT</b>              | 1 Relay 5A, 230V AC (Resistive Load)            |
| <b>TRIPPING PARAMETER</b>  | Phase Asymmetry<br>Phase Sequence<br>Phase Loss |
| <b>POWER SUPPLY</b>        | NO Power Supply to be given separately          |



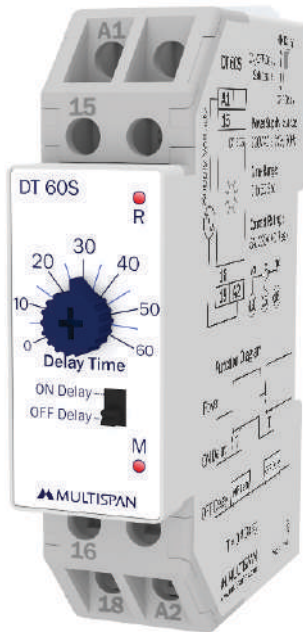
1CT



|                            |   |
|----------------------------|---|
| <b>Model</b>               | <b>CPR-22</b><br>Current Protection Relay |
| <b>Dimension (HxWxD)mm</b> | 90 x 22.5 x 72                            |
| <b>Mounting</b>            | Din Rail Mounting                         |
| <b>INPUT</b>               | Input Current : 300mA to 5A AC            |
| <b>OUTPUT</b>              | 1 Relay 5A, 230V AC (Resistive Load)      |
| <b>TRIPPING PARAMETER</b>  | Under Current<br>Over Current             |
| <b>POWER SUPPLY</b>        | 230V AC ±20%, 50Hz                        |

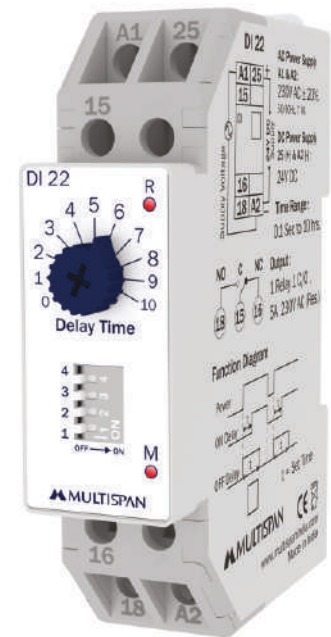
# Din Rail Analog Timers

## 22 Timer Series

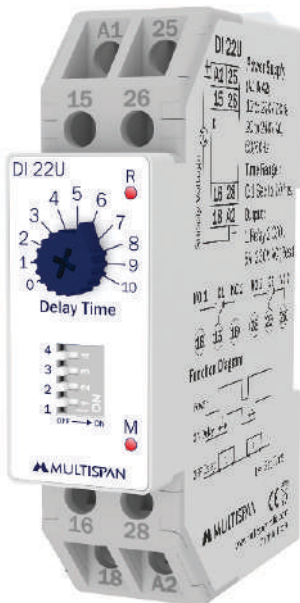


|                            |  |
|----------------------------|--|
| <b>Model</b>               | <b>DT Series</b>   |
| <b>Dimension (HxWxD)mm</b> | 90 x 22.5 x 72   |
| <b>Mounting</b>            | Din Rail Mounting  |
| <b>INPUT Range</b>         | 0 to 10 Sec (For DT-10S)<br>0 to 30 Sec (For DT-30S)<br>0 to 60 Sec (For DT-60S)<br>0 to 30 Min (For DT-30M) |
| <b>OUTPUT</b>              | 1 Relay 1C/O, 5A 230V AC (Resistive Load)  |
| <b>POWER SUPPLY</b>        | 230V AC $\pm$ 20%, 50Hz / 24V DC / 415V AC (Factory Set)   |

|                            |   |
|----------------------------|---|
| <b>Model</b>               | <b>DI-22</b>                              |
| <b>Dimension (HxWxD)mm</b> | 90 x 22.5 x 72                            |
| <b>Mounting</b>            | Din Rail Mounting                         |
| <b>INPUT Range</b>         | 0.1 Sec to 10 Sec / Min / Hour            |
| <b>OUTPUT</b>              | 1 Relay 1C/O 5A, 230V AC (Resistive Load) |
| <b>POWER SUPPLY</b>        | 230V AC $\pm$ 20%, 50Hz & 24V AC/DC       |

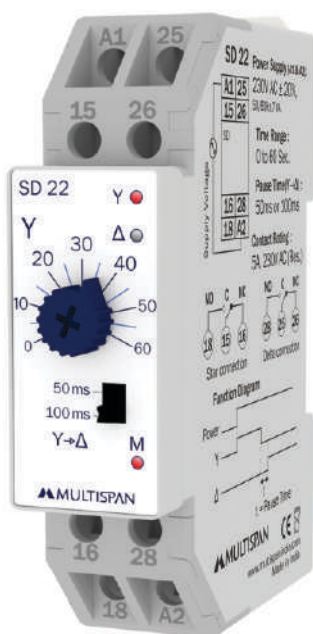


|                            |   |
|----------------------------|---|
| <b>Model</b>               | <b>DI-22U</b>                             |
| <b>Dimension (HxWxD)mm</b> | 90 x 22.5 x 72                            |
| <b>Mounting</b>            | Din Rail Mounting                         |
| <b>INPUT Range</b>         | 0.1 Sec to 10 Sec / Min / Hour            |
| <b>OUTPUT</b>              | 1 Relay 2C/O 5A, 230V AC (Resistive Load) |
| <b>POWER SUPPLY</b>        | 12V to 240V DC & 20V to 240V AC, 50/60Hz  |



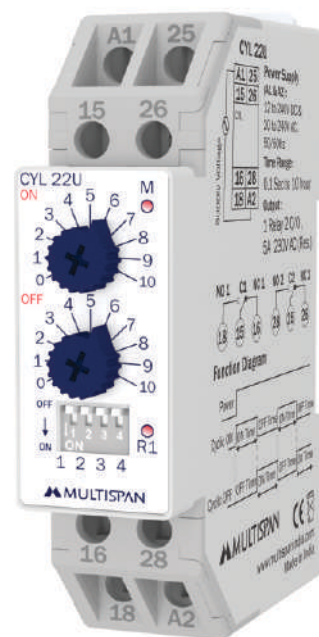
# Din Rail Analog Timers

## 22 Timer Series

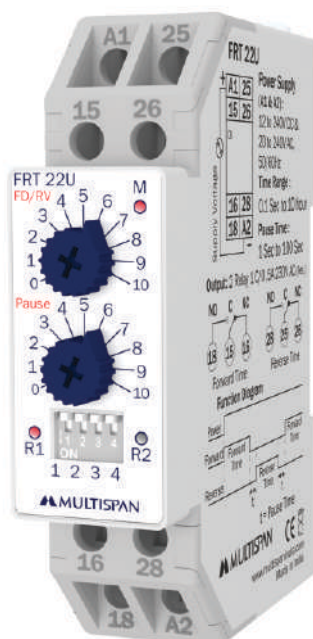


|                            |   |
|----------------------------|---|
| <b>Model</b>               | <b>SD-22</b>  |
| <b>Dimension (HxWxD)mm</b> | 90 x 22.5 x 72  |
| <b>Mounting</b>            | Din Rail Mounting   |
| <b>INPUT</b>               | <b>Range</b> Time Range : 0 to 60 Sec<br>Pause Time : 50ms or 100ms Selection by front key                          |
| <b>OUTPUT</b>              | 2 Relay O/P (1C/O, 5A 230V AC (Resistive Load)<br>1st Relay for star connection &<br>2nd Relay for delta connection |
| <b>POWER SUPPLY</b>        | 230V AC $\pm$ 20%, 50Hz   |
| <b>Note</b>                | 415V AC Supply Available on request (SD-224)  |

|                            |  |
|----------------------------|--|
| <b>Model</b>               | <b>CYL-22U</b>                                   |
| <b>Dimension (HxWxD)mm</b> | Cycle Timer (Universal Supply)<br>90 x 22.5 x 72 |
| <b>Mounting</b>            | Din Rail Mounting                                |
| <b>INPUT</b>               | <b>Range</b> 0.1 Sec to 10 Sec / Min / Hour      |
| <b>OUTPUT</b>              | 1 Relay 2C/O 5A, 230V AC (Resistive Load)        |
| <b>POWER SUPPLY</b>        | 12V to 240V DC & 20V to 240V AC, 50/60Hz         |



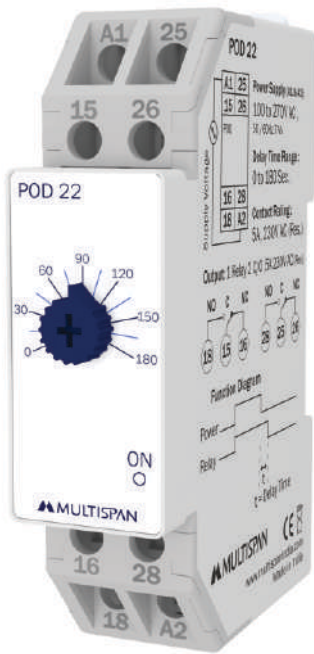
|                            |  |
|----------------------------|--|
| <b>Model</b>               | <b>FRT-22U</b>   |
| <b>Dimension (HxWxD)mm</b> | Forward Reverse Timer (Universal Supply)<br>90 x 22.5 x 72   |
| <b>Mounting</b>            | Din Rail Mounting  |
| <b>INPUT</b>               | <b>Range</b> Forward & Reverse Time Range : 0.1 Sec to 10 Hour<br>Pause Time : 1 Sec to 100 Sec          |
| <b>OUTPUT</b>              | 2 Relay 1 C/O, 5A 230V AC (Resistive Load)<br>1st Relay For Forward Time &<br>2nd Relay For Reverse Time |
| <b>POWER SUPPLY</b>        | 12V to 240V DC & 20V to 240V AC, 50/60Hz   |





# Din Rail Relays

## 22 Series

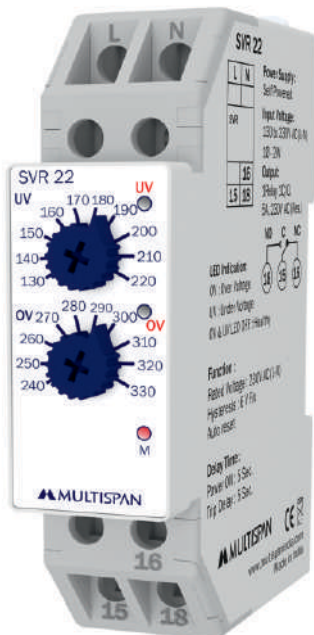


|                            |   |
|----------------------------|---|
| <b>Model</b>               | <b>POD-22</b>                             |
| <b>Dimension (HxWxD)mm</b> | Power OFF Delay Timer<br>90 x 22.5 x 72   |
| <b>Mounting</b>            | Din Rail Mounting                         |
| <b>INPUT Range</b>         | 0 to 180 Sec                              |
| <b>OUTPUT</b>              | 1 Relay 2C/O, 5a 230V AC (Resistive Load) |
| <b>POWER SUPPLY</b>        | 100 to 270V AC, ±20%, 50/60Hz             |

|                            |   |
|----------------------------|---|
| <b>Model</b>               | <b>WLC-22</b>                                     |
| <b>Dimension (HxWxD)mm</b> | Water Level Controller<br>90 x 22.5 x 72          |
| <b>Mounting</b>            | Din Rail Mounting                                 |
| <b>INPUT</b>               | 3 Nos. Probs, S-1 : Common, S-2 : Low, S-3 : High |
| <b>OUTPUT</b>              | 1 Relay 1C/O 5A, 230V AC (Resistive Load)         |
| <b>SENSITIVITY</b>         | 1 to 200 KΩ                                       |
| <b>TRIP DELAY</b>          | 0.5 Sec (Approx)                                  |
| <b>POWER SUPPLY</b>        | 100 to 270V AC ±20%, 50/60Hz                      |



|                            |  |
|----------------------------|--|
| <b>Model</b>               | <b>SVR-22</b>                                |
| <b>Dimension (HxWxD)mm</b> | Single Phase Voltage Relay<br>90 x 22.5 x 72 |
| <b>Mounting</b>            | Din Rail Mounting                            |
| <b>INPUT Voltage</b>       | 130 to 330V AC (L-N), 1Ø-2W                  |
| <b>Rated Voltage</b>       | 230V AC (L-N)                                |
| <b>OUTPUT</b>              | 1 Relay 1C/O, 5A 230V AC Resistive Load      |
| <b>TRIPPING PARAMETER</b>  | Under Voltage<br>Over Voltage                |
| <b>POWER SUPPLY</b>        | Self Powered                                 |





# Power & Energy Meters

## Multifunction Meter



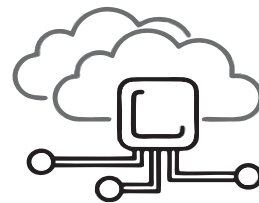
|                     | Model  | AVH-14  | MFM-13                   |
|---------------------|--|---|--------------------------|
| Dimension (HxWxD)mm |  | 96 x 96 x 54  | 96 x 96 x 64             |
| Panel Cutout mm     |  | 92 x 92   | 92 x 92                  |
| INPUT               | Signal   | 3Ø4 Wire / 3Ø3 Wire / 1Ø2 Wire  |                          |
|                     | Voltage  | Primary : 100V to 520kv (Programmable), Secondary : 100V to 520V (L-L) (Programmable) |                          |
|                     | Current  | Current : 5A to 6000A (Programmable), Secondary : 5A/1A (Programmable)                |                          |
| PARAMETER           | KW Total   | 0.000 - 9999 KW   |                          |
|                     | KW Per Phase   | 0.000 - 9999 KW   |                          |
|                     | WH Total   | 000.000 - 999999 MWH  |                          |
|                     | Power Factor Average (PF)                                      | 0.100 - 1.000   |                          |
|                     | Power Factor Per Phase (PF)                                    | 0.100 - 1.000   |                          |
|                     | KVA Total  | 0.000 - 9999 KVA  |                          |
|                     | VAH Total  | 000.000 - 999999 MVAH   |                          |
|                     | Frequency (Hz)   | 45 - 60Hz   |                          |
|                     | KVAh Total   | 0.000 - 9999 KVAh   |                          |
|                     | Varh Total   | 000.000 - 999999 MVAh   |                          |
|                     | Load Hours   | 9999.59 Hrs/Min.  |                          |
|                     | NO Load Hours  | 9999.59 Hrs/Min.  |                          |
|                     | RPM  | 3600 RPM @ 60Hz & 2 Pole  |                          |
|                     | COMMUNICATION  |   | RS-485 Modbus (Optional) |
|                     |  | Pulse Output  |                          |
| Accuracy            | For Voltage & Current Class 0.5 / For Power & Energy Class 1.0 |   |                          |
| Supply              | 100 to 270V AC (SMPS) , 50/60Hz, Approx 4VA                    |   |                          |

# IIoT Solutions



RS-485 MODBUS RTU

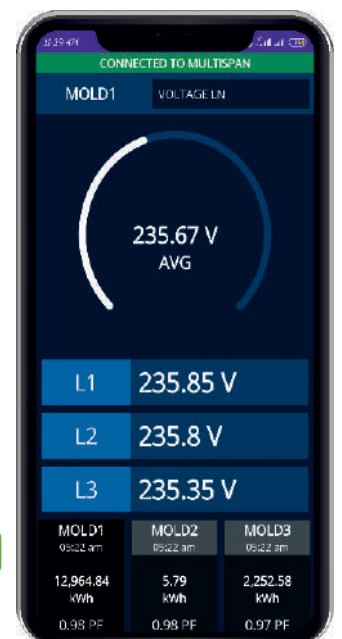
## Energy Monitoring System Data Logging on Cloud



Cloud Storage

Gateway

Web application



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# Power & Energy Meters

## 3 Phase Energy & Power Meter



|                     | Model  | EPM-14   | EM-10                           | EM-1P                            |
|---------------------|--|--|---------------------------------|----------------------------------|
| Dimension (HxWxD)mm |  | 96 x 96 x 54   | 96 x 96 x 43                    | 96 x 96 x 43                     |
| Panel Cutout mm     |  | 92 x 92  | 92 x 92                         | 92 x 92                          |
| INPUT               | Signal   | 3Ø4Wire  |                                 | 1Ø2 Wire                         |
|                     | Voltage  | 30 to 300V AC (L-N) / 50 to 520V AC (L-L)                            |                                 | 30 to 300V AC (L-N)              |
|                     | Current  | 5/5 to 6000/5A AC CT Ratio Selectable                                |                                 | 5/5 to 4000/5A AC                |
| Measuring Range     | Reset  | KWH Reset by front key   | By front keypad                 | Reset by front key               |
|                     | Measuring Range  | 0.000 to 9999 KW (Active Power)<br>0 to 99999999 KWH (Active Energy) | 0 to 999999 KWH (Active Energy) | 0 to 99999.9 KWH (Active Energy) |
| Accuracy            |  | Class 1.0  | Class 0.5                       | Class 0.5                        |
| Supply              |  | 100 to 270V AC (SMPS),50/60Hz  | 230V AC ±20%,50Hz               | 230V AC ±20%,50Hz                |
| Note                | RS-485 Modbus & 2 Relay Available in EPM-14 As per request |  |                                 |                                  |

## 3 Phase and 1 Phase Panel Meter

### VAF METER



|                     | Model     | AVF-29T   | AVF-19D  | AVF-133   |
|---------------------|-----------|---|--|---|
| Dimension (HxWxD)mm |           | 72 x 72 x 45  | 96 x 96 x 43   | 96 x 96 x 54  |
| Panel Cutout mm     |           | 68 x 68   | 92 x 92  | 92 x 92   |
| INPUT               | Signal    | 3Ø4Wire / 3Ø3 Wire / 1Ø2 Wire   |  | 3Ø4Wire / 3Ø3 Wire / 1Ø2 Wire   |
|                     | Voltage   | Primary PT : 100V to 520KV<br>Secondary PT : 50 to 520V AC (L-L)  | 30 to 300V AC (L-N)<br>50 to 520V AC (L-L)   | 30 to 300V AC (L-N)<br>50 to 520V AC (L-L)  |
|                     | Current   | Primary CT : 9999A<br>Secondary CT : 5A/1A  | Primary CT : 9999A<br>Secondary CT : 5A  | Primary CT : 9999A<br>Secondary CT : 5A   |
| PARAMETER           | PARAMETER | Voltage (L-L)<br>Voltage (L-N)<br>Average Current (L1,L2 & L3)<br>Line Current (L1,L2 & L3)<br>Phase Sequence | Average Voltage (L-N)<br>Average Voltage (L-L)<br>Frequency<br>Load Hour / No Load Hour<br>RPM | Voltage (L-L)<br>Voltage (L-N)<br>Average Current (L1,L2 & L3)<br>Line Current (L1,L2 & L3)<br>Phase Sequence |
|                     | Accuracy  | Class 0.5   | Class 0.5  | Class 0.5   |
| Supply              |           | 100 to 270V AC (SMPS),50/60Hz   | 230V AC ±20%,50Hz  | 100 to 270V AC (SMPS), 50/60Hz  |

# Power & Energy Meters

## 3 Phase Ampere Meter



| Model               | AMP-19  | AMP-13   | AMP-23  |
|---------------------|---|--|---|
| Dimension (HxWxD)mm | 96 x 96 x 43  | 96 x 96 x 43   | 72 x 72 x 45  |
| Panel Cutout mm     | 92 x 92   | 92 x 92  | 68 x 68   |
| <b>INPUT</b>        | <b>Current</b>  | <b>Current</b>   | <b>Current</b>  |
|                     | 0.5A to 5A<br>Primary : 5A to 6000A AC CT Selection<br>Secondary : 5A | 0.5A to 5A<br>Primary : 5 to 10K Ampere (Selectable)<br>Secondary : 1A/5A (Selectable) | 0.5A to 5A<br>Primary : 5A to 6000A AC CT Selection<br>Secondary : 5A |
| <b>Accuracy</b>     | Class 0.5   | Class 0.5  | Class 0.5   |
| <b>Supply</b>       | 230V AC $\pm 20\%$ , 50Hz   | 100 to 270V AC (SMPS), 50/60Hz   | 100 to 270V AC (SMPS), 50/60Hz  |
| <b>Note</b>         | RS-485 Modbus is available in AMP-13                                  |  |   |

## 3 PHASE VOLT METER



| Model               | VOLT-19                        | VOLT-13  | VOLT-23                        |
|---------------------|--------------------------------|--|--------------------------------|
| Dimension (HxWxD)mm | 96 x 96 x 43                   | 96 x 96 x 43   | 72 x 72 x 36                   |
| Panel Cutout mm     | 92 x 92                        | 92 x 92  | 68 x 68                        |
| <b>INPUT</b>        | <b>Voltage</b>                 | <b>Voltage</b>   | <b>Voltage</b>                 |
|                     | 50 to 520V AC (L-L)            | 50 to 520V AC (L-L), 30 to 300V AC (L-N)<br>Primary : 100 to 999KV (L-L) (Selectable)<br>Secondary : 100 to 520V AC (L-L) (Selectable) | 50 to 520V AC (L-L)            |
| <b>Accuracy</b>     | Class 0.5                      | Class 0.5  | Class 0.5                      |
| <b>Supply</b>       | 100 to 270V AC (SMPS), 50/60Hz | 230V AC $\pm 20\%$ , 50Hz  | 100 to 270V AC (SMPS), 50/60Hz |

# Power & Energy Meters

## Single Phase AC Panel Meter

### VOLT / AMP METER



| Model               | AV-14/11V   | AV-24/21V                    | AV-34/31V    | AV-41CT/41A/41V              |
|---------------------|---|------------------------------|--------------|------------------------------|
| Dimension (HxWxD)mm | 96 x 96 x 40  | 72 x 72 x 36                 | 48 x 96 x 26 | 48 x 48 x 46                 |
| Panel Cutout mm     | 92 x 92   | 68 x 68                      | 46 x 92      | 45 x 45                      |
| INPUT               | Ampere (AC)   | 5A AC Direct                 |              | Primary : 5/5A to 2000/5A AC |
|                     | CT Ratio  | Primary : 5/5A to 4000/5A AC |              |                              |
|                     | Voltage (AC)  | 10 to 500V AC                |              |                              |
| Accuracy            | Class 0.5   |                              |              |                              |
| Supply              | 230V AC ±20%,50Hz   |                              |              |                              |
| Note                | 30A Direct CT Available at back side (AV-11A, AV-21A, AV-31A, AV-41A) |                              |              |                              |

## Single Phase AC Panel Meter

### VOLT + AMP METER



| Model               | AV-12                                | AV-22                        | AV-33        | AV-44                   |
|---------------------|--------------------------------------|------------------------------|--------------|-------------------------|
| Dimension (HxWxD)mm | 96 x 96 x 43                         | 72 x 72 x 60                 | 48 x 96 x 66 | 48 x 48 x 66            |
| Panel Cutout mm     | 92 x 92                              | 68 x 68                      | 46 x 92      | 45 x 45                 |
| INPUT               | Current                              | Primary : 5/5A to 2000/5A AC |              | 30.0A AC Direct         |
|                     | Voltage                              | 10 to 500V AC                |              | 30 to 500V AC           |
| Accuracy            | Class 0.5                            |                              |              | Class 0.5               |
| Supply              | 230V AC ±20%,50Hz                    |                              |              | 100 to 270V AC, 50/60Hz |
| Note                | 30A Direct CT Available at back side |                              |              |                         |



# Power & Energy Meters

## DC Panel Meter

### VOLT / AMP METER



| Model               | AV-14DA/14DV  | AV-24DA/24DV  | AV-34DA/34DV | AV-41DV      |  |
|---------------------|---|---|--------------|--------------|--|
| Dimension (HxWxD)mm | 96 x 96 x 40  | 72 x 72 x 60  | 48 x 96 x 66 | 48 x 48 x 70 |  |
| Panel Cutout mm     | 92 x 92   | 68 x 68   | 46 x 92      | 45 x 45      |  |
| INPUT               | Ampere (DC)   | 0 to 9999 Ampere DC Through 75mV DC External Shunt                    |              |              |  |
|                     | Voltage (DC)  | 19.99V DC / 49.99V DC / 99.99V DC / 199.9V DC / 750V DC (Factory Set) |              |              |  |
| Accuracy            | ±1% of Full Range 1± Count  |   |              |              |  |
| Supply              | 230V AC ±20%,50Hz   |   |              |              |  |
| Note                | 0 to 5A DC / 10A DC / 20A DC Direct Through Shunt is Available in Model AV-14DZ,24DZ,34DZ |   |              |              |  |

## SINGLE PHASE AC PANEL METER



| Model               | PF-11/PF-13                    | WM-11   | FRQ-11             |
|---------------------|--------------------------------|---|--------------------|
| Dimension (HxWxD)mm | 96 x 96 x 54                   | 96 x 96 x 43  | 96 x 96 x 40       |
| Panel Cutout mm     | 92 x 92                        | 92 x 92   | 92 x 92            |
| INPUT               | Signal                         | 1Ø2 Wire / 3Ø4 Wire   | 1Ø2 Wire           |
|                     | Voltage                        | 20 to 300V / 50 to 520V   | 300V AC (L-N)      |
| Current             | 5A AC                          | 0.5 to 5Amp (CT Selection 5 - 50A)  |                    |
| CT Selection        |                                | 5A  |                    |
| Secondary Function  |                                |   |                    |
| Measuring Range     |                                | 0 to 15 Kilo Watt   | 50.0Hz             |
| Accuracy            | Class 0.5                      | Class 0.5   | Class 0.5          |
| Supply              | 100 to 270V AC (SMPS), 50/60Hz | 230V AC ±20%, 50Hz  | 230V AC ±20%, 50Hz |
| Note                |                                | Also Available in 199.9 Watt Range<br>1 Relay on KW is Available in WM-11 |                    |

# Power & Energy Meters

## DC Panel Meter

### VOLT / AMP METER



|                            |   |                 |
|----------------------------|---|-----------------|
| <b>Model</b>               | <b>MFM-14DC</b>   | <b>VAW-34DC</b> |
| <b>Dimension (HxWxD)mm</b> | 96 x 96 x 54  | 48 x 96 x 26    |
| <b>Panel Cutout mm</b>     | 92 x 92   | 46 x 92         |
| <b>INPUT</b>               |   |                 |
| <b>Ampere (DC)</b>         | 0 to 9999A DC Through 75mV DC External Shunt                  |                 |
| <b>Voltage (DC)</b>        | 0 to 1000V DC   |                 |
| <b>Watt (DC)</b>           | 0000 to 9999 KW DC  |                 |
| <b>Accuracy</b>            | ±1% of Full Range ±1 Count                                    |                 |
| <b>Power Supply</b>        | 100 to 270V AC (SMPS), 50/60Hz                                |                 |
| <b>Note</b>                | RS-485 Modbus & 2 Relay available on request (In MFM-14DC-M1) |                 |

25A

40A

50A

70A

# Solid State Relay

|                     |  |
|---------------------|--|
| Model               | <b>RS-40A</b>  |
| Dimension (HxWxD)mm | 62 x 45 x 25   |
| INPUT               | 4 - 32V DC / 4 - 16mA  |
| OUTPUT              | 24 - 480V AC   |
| FEATURES            | Input LED Indication<br>Zero Cross over SSR Design<br>PIV : 800V |



# Switched Mode Power Supply



|                     |  |
|---------------------|--|
| Model               | <b>PS24-5A</b>   |
| Dimension (HxWxD)mm | 105 x 45 x 110   |
| INPUT               | 100V - 240V AC   |
| OUTPUT              | 24V DC, 5A   |
| RATED POWER         | 120W   |
| PROTECTION          | Over Load,<br>Over Voltage,<br>Output Short Circuit,<br>Over Temperature |

# Jumbo Displays

## Jumbo Display Indicators

Single & Double Side



8" Display



4" Display

|                     |  |  |   |
|---------------------|--|--|---|
| Model               | <b>PTC-8004 (Single Side)</b>  |  | <b>PIC-6004A / UTI-6004 / MPM-6004</b>                  |
| Dimension (HxWxD)mm | 325 x 650 x 50   |  | Dual Side : 165 x 392 x 75, Single Side: 165 x 392 x 55 |
| INPUT               | Input  | 0 - 10V DC / 4 - 20mA DC / 0 - 20mA DC (Configurable), Pulse through encoder / Proximity (Factory set)<br>J / K / PT-100 2 Wire 3 Wire (Configurable), Rs-485 Modbus (Master Slave Selectable) |   |
|                     | Range  | J (0° to 400°C), K (0° to 1200°C), <b>PT-100 2Wire or 3 Wire</b> (-99.9° to 400.0°C)<br>(-999 to 9999, 0 to 9999 Count For Analog Input)   |   |
| OUTPUT              | Output1  | 2 Relay For Alarm Output (Optional)  |   |
|                     | Output2  | 24@30mA DC Transmitter Supply For analog Input (Optional)  |   |
| Accuracy            | ±1% of FSD   |  |   |
| Power Supply        | 100 to 270V AC (SMPS), 50/60Hz / 24V DC (Factory Set)  |  |   |
| Note                | 1) For Analog Input Model : PIC-6004A / PIC-3004A / PTC-8004<br>2) For Proximity Input Model : PC-6004 / MPM-6004 / RPM-6004 / MSI-3004 / UTR-6004<br>3) For Temperature Input Model : UTI-3004 / UTI-6004 |  |   |

## PROGRAMMABLE JUMBO DISPLAY COUNTER

4" Display

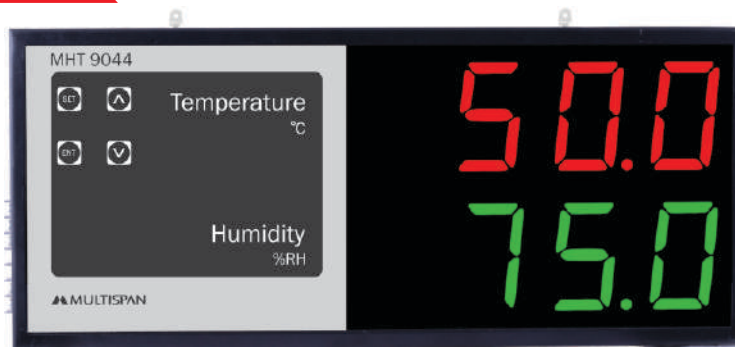


|                     |  |  |  |
|---------------------|--|--|--|
| Model               | <b>PC-6006 (Single Side)</b>   |  |  |
| Dimension (HxWxD)mm | 165 x 577 x 55   |  |  |
| DISPLAY             | Single Display : 7 Segment, 6 Digit, 4" Red Led Display                            |  |  |
| INPUT               | Start Pulse  | NPN / PNP Proximity Switch & Micro Switch (Configurable) |  |
|                     | Range  | 0 - 999999 Count   |  |
| OUTPUT              | 1 Relay 1C/O 5A, 230V AC (Resistive Load) or SSR Drive O/P 12V DC, 20mA (Optional) |  |  |
| Memory              | Non - Volatile Memory  |  |  |
| Reset               | Auto / Manual Reset / Back Reset   |  |  |
| Supply              | 100 to 270V AC (SMPS), 50/60Hz   |  |  |
| Note                | RS-485 Input Available as per request (Master Slave Selectable)                    |  |  |

# Jumbo Displays

## Humidity + Temperature Controller

**2.25" Display**



|                            |   |  |
|----------------------------|---|--|
| <b>Model</b>               | <b>MHT-9044 (Humidity + Temperature Controller)</b>   |  |
| <b>Dimension (HxWxD)mm</b> | 165 x 392 x 55  |  |
| <b>DISPLAY</b>             | Upper Display : 7 Segment, 4 Digit, 2.25" Red Led Display - Temperature<br>Lower Display : 7 Segment, 4 Digit, 2.25" Green Led Display - Humidity |  |
| <b>INPUT</b>               | <b>Sensor</b>   | S-1 : PT-100 2 Wire or 3 Wire (RTD) S-2 : Humidity Sensor                                    |
|                            | <b>Range</b>  | <b>PT-100 2 Wire or 3 Wire</b> (-99 °C to 400 °C), <b>Humidity Sensor</b> (0.0 to 100.0% RH) |
| <b>OUTPUT</b>              | 1 <sup>st</sup> Relay For Temperature and 2 <sup>nd</sup> Relay For Humidity  |  |
| <b>Control Action</b>      | ON-OFF  |  |
| <b>Accuracy</b>            | ±1% of FSD  |  |
| <b>Power Supply</b>        | 100 to 250V AC (SMPS), 50/60Hz  |  |

## PROGRAMMABLE JUMBO LENGTH COUNTER

**2.25" Display**



|                            |  |   |
|----------------------------|--|---|
| <b>Model</b>               | <b>LC-9004</b>   |   |
| <b>Dimension (HxWxD)mm</b> | 165 x 392 x 55   |   |
| <b>DISPLAY</b>             | Upper Display : 7 Segment, 6 Digit, 2.25" Red Led Display - Total Meters<br>Lower Display : 7 Segment, 4 Digit, 2.25" Green Led Display - Meter Per Minute |   |
| <b>INPUT</b>               | <b>Start Pulse</b>   | NPN / PNP Proximity Switch / Micro Switch (Configurable) or Encoder (Factory Set) |
|                            | <b>Range</b>   | 0 - 99999.9 / 0 - 999999 Meter (Configurable)                                     |
| <b>OUTPUT</b>              | 1 Relay 1C/0 5A,230V AC (Resistive Load) or SSR 12V max 20mA DC Output (Any One Factory Set)   |   |
| <b>MPM Range</b>           | 999.9 MPM  |   |
| <b>Diameter</b>            | 0 - 9999.99 MM   |   |
| <b>Memory</b>              | Non - Volatile Memory  |   |
| <b>Reset</b>               | Auto Reset / Manual Reset Facility & Front and Back Reset Facility   |   |
| <b>Supply</b>              | 100 to 270V AC (SMPS), 50/60Hz   |   |
| <b>Note</b>                | RS-485 Input / Output Available as per request   |   |



# Jumbo Displays

## Jumbo Display Model Selection Guide

| Sr. No | Product Model                | Display Digit | Input                                     | Display Parameter                            |
|--------|------------------------------|---------------|---|--|
| 1      | PIC-6004A                    | 4             | 4-20mA/0-10V/0-20mA DC                    | Process Value (-999 to 9999)                 |
| 2      | UTI-6004                     | 4             | J / K / PT-100                            | Temperature                                  |
| 3      | PTC-6004                     | 4             | 4-20mA/0-10V/0-20mA DC/<br>J / K / PT-100 | Process Value (-999 to 9999)/<br>Temperature |
| 4      | PC-6004                      | 4             | NPN / PNP Proximity                       | Count  |
| 5      | RPM-6004                     | 4             | NPN / PNP Proximity                       | RPM  |
| 6      | MPM-6004                     | 4             | NPN / PNP Proximity                       | MPM  |
| 7      | RS-6004                      | 4             | RS-485                                    | Numeric Value                                |
| 8      | LC-9004                      | 6 + 4         | NPN / PNP Proximity                       | Total Length & MPM                           |
| 9      | MHT-9044                     | 6 + 4         | PT-100 + RH Sensor                        | Temperature & Humidity                       |
| 10     | PC-6006                      | 6             | NPN / PNP Proximity                       | Count  |
| 11     | RS-6006                      | 6             | RS-485                                    | Numeric Value                                |
| 12     | PTC-8004<br>(8 inch Display) | 4             | 4-20mA/0-10V/0-20mA DC<br>J / K / PT-100  | Process Value (-999 to 9999)/<br>Temperature |

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Provide user-friendly accurate solutions in a way it makes a difference for every industry



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Multispan Control Instruments pvt ltd  
International Sales  
72B Vatva GIDC phase 1 Ahmedabad GJ 382445 INDIA  
Phone +91-79-40029250 , +91-7623001206  
marketing@multispanindia.com www.multispanindia.com

