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Automation



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Panel Accessories



Fan



ETR-Series



ETR-New Series (17.5mm)



Features

- Slim and Compact design.
- Suitable for Din Rail Mounting.
- Finger guard protection.
- LED indication for timing in progress.

Applications

- Automation Panels, HT / LT Panels, MCC Panels, C & R Panels, RTCC Panels, Transformer Panels and many more.

Ordering Information

Model	Function	Source Voltage	Time Selection	Output	Dimensions	Price
ETR1-X	On Delay	X-Version*	0.3Min to 30Min	1 C/o Relay	Over-All 17.5 x 89 x 62 mm (W X H X D)	610
ETRC-S-X	Cyclic Equal Off-On		3Min to 30Min			610
ETRE-X	Interval		20m Sec			610
ETRN-X	Auxiliary		6Sec to 60Sec ##TD 100ms			570
ETR-S ¹	Star Delta	240V AC	1 C/o (C-NO)Star 1 C/o (C-NO)Delta	610		

*: X-Version - 24V AC to 240V AC, 24V DC to 220V DC | ##: TD - Transfer delay time to change from star to delta |

1: Transfer Delay time is the time between closure of star function and start of delta.

A-Series (22.5mm)

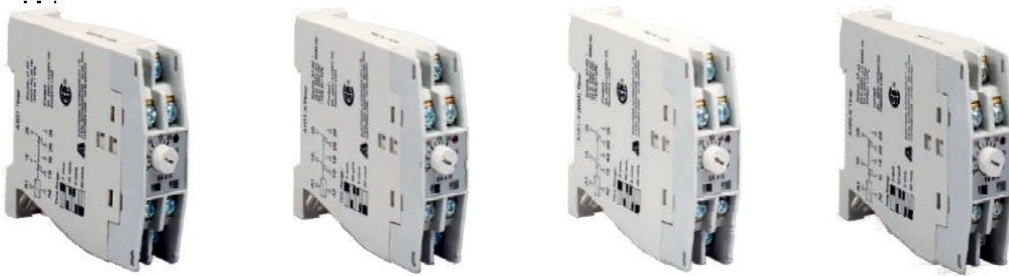


Features

- Suitable for Din Rail / Screw Mounting.
- LED indication for timing in progress.
- Terminal Block safety Protective cover.

Applications

- AMF Panels, Automation Panels, HT / LT Panels, MCC Panels, C & R Panels, RTCC Panels, Transformer Panels and many more.



Ordering Information Regular

Model	Function	Source Voltage	Time Selection	Output	CSA Appd	Dimensions	Price
A1D1(CSA)*	On Delay	240V AC	0.3Secs to 30Mins	2 C/o Relay	✓	Over-All 22.5 mm W 75mm H 102mm D	1060
A1D1-X(CSA)*	On Delay	X-Version *	0.3Secs to 30Mins	2 C/o Relay	✓		1070
A1D1-X(60M)*	On Delay	X-Version *	0.6Secs to 60Mins	2 C/o Relay	✓		1100
A1DE-X(CSA)*	Interval	X-Version *	0.3Secs to 30Mins	2 C/o Relay	✓		1100
A1DCS-X(CSA)*	Cyclic Equal Off- On	X-Version *	0.6Secs to 60Mins	2 C/o Relay	✓		1100
A1DN-X(CSA)*	Auxiliary Relay	X-Version *	20m Sec	2 C/o Relay	✓		730
A1D1(8-30V DC)	On Delay	8V to 30V DC	0.3Secs to 30Mins	2 C/o Relay	—		1070
A1DA ¹	Signal-Off Delay	110V AC / 240V AC	0.3Secs to 30Mins	1 C/o Relay	—		1100
A1D-S ²	Star Delta	110V AC / 240V AC / 415V AC	0.6Secs to 60Secs ##TD 40ms / 100ms	1 C/o (C-NO)Star 1 C/o (C-NO)Delta	—		890
A1D1(WB)	On Delay (Wide band)	266V AC to 456V AC	3Secs to 30Secs	1 C/o Relay	—		1020
A1DH-1	Power-Off Delay	240V AC**	18Secs to 180Secs	2 C/o Relay ***	—		1060
APD-100	Anti Pumping Device	X-Version*	80m Sec	1 C/o Relay	—		600
APD-300	Anti Pumping Device	X-Version*	80m Sec	2 C/o Relay	—		680
A1D-Tx	On Delay	X-Version*	0.3Secs to 30Mins	1 C/o Relay	—		800

Optional[§]

A1DE(8V-30V DC)	Interval	8V to 30V DC	0.3Secs to 30Mins	2 C/o Relay	—	Over-All 22.5 mm W 75mm H 102mm D	1080
A1DN-X(80mS)	Auxiliary Relay	X-Version *	80mS	2 C/o Relay	—		920
A1DA ¹	Signal-Off Delay	24V DC	0.3Secs to 30Mins	1 C/o Relay	—		1080
A1D-S ²	Star Delta	250-415V AC	0.6Secs to 60Secs ##TD 40ms / 100ms	1 C/o (C-NO)Star 1 C/o (C-NO)Delta	—		900
A1D-S ²	Star Delta	24V DC	0.6Secs to 60Secs ##TD 40ms / 100ms	1 C/o (C-NO)Star 1 C/o (C-NO)Delta	—		1020
A1DH-1	Power-Off Delay	24V DC / 240V AC	0.6Secs to 6Secs	2 C/o Relay	—		1020

X-Version - 24V AC to 240V AC, 24V DC to 220V DC | **:Minimum 2secs of aux. supply has to be applied for each cycle, else timer may malfunction |

***:Contact Rating: 0.5 A @ 250 V AC / 28V DC Resistive | ##: TD – Transfer Delay time to change from star to delta, |

: These models are also available with UL standard | §: Availability will be for bulk quantity. |

1: Energizes the timer relay with a free from potential signal Command and on removal starts the timing. |

2. Transfer Delay time is the time between closure of star function and start of delta.



Electronic Timers

Features

- Timer with base(Refer Note 3)
- Large transparent knob.
- Knob lock ring is provided

Applications

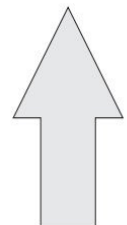
- Textile Machine, Vending machine and many more.



Ordering Information

Model	Function	Source Voltage	Time Selection	Output	CSA Approved	Over-All Dimensions	Cut-Out Dimensions	Price
H3D1 ^{1,3}	Multifunction (8 terminals) screw type	X-Version*	0.3Secs to 60Mins	2 C/o Relay	—	48 x 48 x 94 mm (W X H X D)	46 x 46 mm (W X H)	1180
H1D1-X(CSA)	Multifunction (11 Pin) plug-in type		0.3Secs to 60Mins		✓			1250
H1DA-X ² (CSA)	Signal Off-Delay (11 Pin) plug-in type		0.6Secs to 60Mins		—			1250
H1DT-10(CSA)	On-Delay (11 Pin) plug in type.		1Secs to 10Secs		✓			1120
H1DT-30(CSA)			3Secs to 30Secs		✓			1180
H1DT-60(CSA)			6Secs to 60Secs		✓			1180
H4DT-10	On-Delay (8 Pin) plug-in type.		1Secs to 10Secs		—			1180
H4DT-30			3Secs to 30Secs		—			1180
H4DT-60			6Secs to 60Secs		—			1180

*X-Version - 24V AC to 240V AC, 24V DC to 220V DC | 1: Multifunction - On-Delay / Interval / Equal Cyclic On / Equal Cyclic Off - programmable | 2: Energizes the timer relay with potential Signal Command and on removal starts the timings | 3: Timer without base.



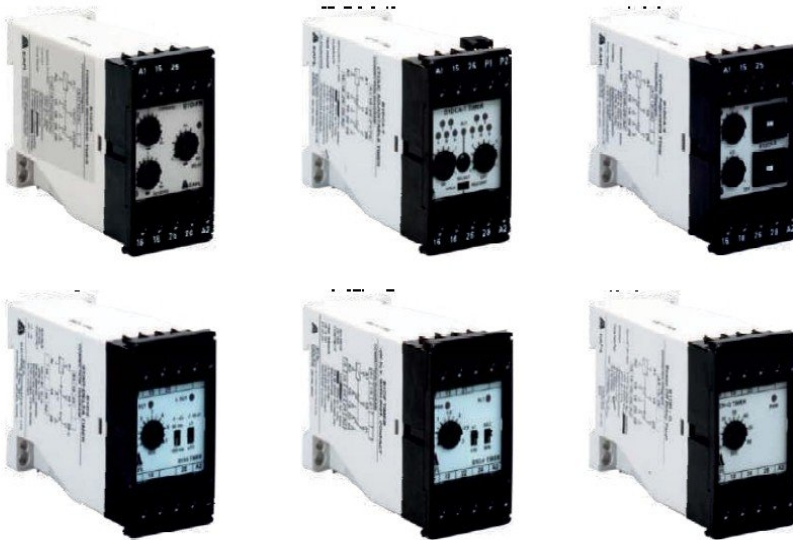
Electronic Timers

Features

- Din sized enclosure.

Applications

- Lubricating systems, Hot air tumblers, Washing Machines, DG Sets, MCC panels, Pump panels and many more..



Ordering Information Regular

Model	Function	Source Voltage	Time Selection	Output	Dimensions	Price
B1DCA-X	Cyclic Adjustable On-Off	X-Version*	0.6Secs to 60Mins	2 C/o Relay	45 x 75 x 116 mm (W X H X D)	1420
B1DCA-T ¹	Cyclic Adjustable On-Off	110V AC / 240V AC	0.1Secs to 10Hrs	2 C/o Relay		1420
B1DS ³	Star Delta	440V AC	0.6Secs to 60Secs ##TD 40ms / 100ms	1 C/o (C-NO)Star 1 C/o (C-NO)Delta		1570
B1DH-Q	Power-Off Delay	110V AC to 240V AC 110V DC to 220V DC**	6Secs to 60Secs	2 C/o Relay		1680
B1DF	On Delay with instant contact	110V AC / 240V AC	0.3Secs to 30Mins	1 C/o On Delay 1 C/o Instant		1570

Optional[§]

B1DF-R ²	Forward/Reverse with Pause Time	240V AC	Forward & Reverse - 0.6Min to 6Mins Pause- 0.1Min to 1Min	1c/o relay forward and 1c/o reverse	45 x 75 x 116 mm (W X H X D)	1580
B1DCA-T ¹	Cyclic Adjustable On-Off	110V AC / 240V AC/ 12V DC	0.24Secs to 24Hrs	2 C/o Relay		1680
B1DCA-T ¹	Cyclic Adjustable On-Off	24V DC	0.1Secs to 10 Hrs	2 C/o Relay		1680
B1DH-Q	Power-Off Delay	110V AC to 240V AC 110V DC to 220V DC**	0.6Secs to 6Secs	2 C/o Relay		1770
B1DH-Q	Power-Off Delay	24V DC**	6Secs to 60Secs	2 C/o Relay		1770
B1DF	On Delay with instant contact	24V DC	0.3Secs to 30Mins	1 C/o On Delay 1 C/o Instant		1580
B1DC-A	Cyclic Adjustable On-Off	12V DC	0.6secs to 60Mins	2 C/o Relay		1460

*: X-Version - 24V AC to 240V AC, 24V DC to 220V DC | **: Minimum 1Sec of auxiliary supply has to be applied for each cycle, else timer may malfunction

##: TD - Transfer delay time to change from star to delta. | \$: Availability will be for bulk quantity

1: Hold/Restart – User Selectable, Program enabling / disabling – Field selectable | 2: Pause time between Forward and Reverse functions and vice versa is programmable |

3: Transfer Delay time is the time between closure of star function and start of delta



Sequential Timers



Sequential Timers are multi-channel control devices which operate loads in sequence without overlapping for a pre-defined time and pre-defined load between two gaps.

Sequential Timers are available in graded UL flame retardant plastic enclosures. They are sturdy and compact with less-depth. To make the programming and operation user-friendly, they come with a host of features - copying the 1 relay's program to all the remaining relays, cascading of units to achieve more outputs, retention of last instant value displayed during power-failure and letting the user opt for single or multiple cycles.

Digital Timers

Features

- Function (programmable): ON DELAY / INTERVAL / CYCLIC.
- Type of start signal (programmable): No START SIGNAL / PULSE²/ CONTINUOUS.
- 1 c/o can be configured by the user to function as INSTANT or DELAYED.
- Program lock facility is available.
- Hold/Restart – User Selectable.

Applications

- Injection molding machine Granite processing machines, Packaging / Printing machines Hot stamping machines and many more.



Ordering Information

Regular

Model	Function	Source Voltage	Time Selection	Output	Over-All Dimensions	Cut-Out Dimensions	Price
H3PT-MU ¹	Multifunction Up-counting	85V to 270V AC / DC	0.1Secs to 99Hrs 59Mins	1 C/o Instant ² , 1 C/o Delayed or 2c/o Delayed	48 x 48 x 95.5mm (W X H X D)	46 x 46mm (W X H)	1610
C3PT-MU					72 x 72 x 128.5mm (W X H X D)	69 x 69mm (W X H)	2170
E3PT-MU				1 C/o Instant ² , 2 C/o Delayed or 3 C/o Delayed	96 x 96 x 117mm (W X H X D)	92 x 92mm (W X H)	2290

Optional³

H3PT-MU ¹	Multifunction Up-counting	12V DC /24V DC	0.1Secs to 99Hrs 59Mins	1 C/o Instant ² , 1 C/o Delayed or 2 C/o Delayed	48 x 48 x 95.5mm (W X H X D)	46 x 46mm (W X H)	1950
C3PT-MU		24V DC			72 x 72 x 128.5mm (W X H X D)		

\$: Availability will be for bulk quantity | 1: Now available in reduced depth with redesigned cabinet for better aesthetics and eliminating protective cover yet retaining the IP class.

2: When pulse signal is initiated the timer resets and immediately the new cycle begins. | 3: Instant feature is not available when cyclic function is programmed.

Digital Timers



EAPL's programmable Digital Timers feature digital displays for precise settings and higher accuracies. These timers are panel / flush mounted and are endowed with eye-catching aesthetics. These timers come in a sturdy plastic enclosure and is user friendly programming as it has dual windows to display instantaneous process values and set values separately. These multi-function devices afford a wide user selection of features.

Combination Timers operate multiple loads in a predefined program sequentially or non-sequentially with or without overlapping. They are capable of using the same load in a given cycle more than once.

Micro controller designed, these instruments are compact and short depth with tact switches in the front to help user friendly programming with a maximum of 64 programs. Comprising of multifarious features, they enable a multiple range of applications.

Combination Timers

Features

- Hold /Restart –User Selectable.
- Non potential pulse start signal for initiation.
- User Selection for single/repeat cycle.
- Time inhibit / Pause.

Applications

- Air dryers, Nitrogen and other gas plants, Process industries and many more.



Ordering Information

Regular

Model	Function	Source Voltage	Time Selection	Output	Dimensions	Price
S1DC8-M3 ¹	Combination Switching 8 channels, 8 Combinations	85V to 270V AC / DC	0.1Secs to 99Hrs 59Mins	1C/o NO Relay for each Channel	200 x 130 x 45mm (W X H X D)	9250

Optional^s

S1DC8-M3 ¹	Combination Switching 8 channels, 8 Combinations	12V DC	0.1Secs to 99Hrs 59Mins	1C/o NO Relay for each Channel	200 x 130 x 45mm (W X H X D)	9300
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^s: Availability will be for bulk quantity. 1: Erasing of entire programs to default values is possible by shorting reset terminals.

Sequential Timers

Features

- Hold /Restart - User Selectable.
- Program of the first relay can be copied to all remaining relays or individually programmed for each relay.
- Non potential pulse start signal for initiation. (Refer Note 3)
- User Selection for single/repeat cycle (Refer Note 1)
- Time inhibit / Pause. (Refer Note 5)
- Cascading of units to achieve higher outputs. (Refer Note 5)

Applications

- Bag Filter systems, Dust pollution systems, Air handling systems, MCC panels, Pneumatic Conveyors, Process Industries and many more.



Ordering Information

Regular

Model	Function	Source Voltage	Time Selection	Output	Dimensions	Price
ST4-M1 ^{1,2,5}	Sequential Switching 4 channels	240V AC	0.1S/M/H to 1S/M/H	1 C/o NO Relay for each channel	110 x 86 x 68mm (W X H X D)	2190
ST6-M1	Sequential Switching 6 channels	85V to 270V AC / DC	0.1Secs to 99Hrs 59Mins	1 C/o NO Relay for each channel	200 x 130 x 45mm (W X H X D)	5650
ST10-M1	Sequential Switching 10 channels		0.01Secs to 99Hrs 59Mins	Triac O/p for each channel**		6930
ST10-M2			0.1Secs to 99Hrs 59Mins	1 C/o NO Relay for each channel	291 x 214 x 68mm (W X H X D)	7250
ST6-M1(IP)	Sequential Switching 6 channels with IP Enclosure		0.01Secs to 99Hrs 59Mins	Triac O/p for each channel**		6440
ST10-M1(IP)	Sequential Switching 10 channels with IP Enclosure	85V to 270V AC	0.1Secs to 99Hrs 59Mins	1 C/o NO Relay for each channel	291 x 214 x 68mm (W X H X D)	7880
ST10-M2(IP)			0.01Secs to 99Hrs 59Mins	Triac O/p for each channel**		7880
ST15-M2 ^{1,3,4,5}	Sequential Switching 15 channels	85V to 270V AC	0.01Secs to 99Hrs 59Mins	Triac O/p for each channel**	200 x 130 x 45mm (W X H X D)	5720
ST15-M2(IP) ^{1,3,4,5}	Sequential Switching 15 channels with IP Enclosure				291 x 214 x 68mm (W X H X D)	6630

Optional[§]

ST6-M1	Sequential Switching 6 channels	24V DC	0.1Secs to 99Hrs 59Mins	1c/o NO Relay for each channel	200 x 130 x 45mm (W X H X D)	5790
ST6-M1(IP)	Sequential Switching 6 channels with IP Enclosure				291 x 214 x 68mm (W X H X D)	6580
ST10-M1	Sequential Switching 10 channels				200 x 130 x 45mm (W X H X D)	7080
ST10-M1(IP)	Sequential Switching 10channels with IP Enclosure				291 x 214 x 68mm (W X H X D)	8060
ST6-M2	Sequential Switching 6 channels	85V to 270V AC / DC		1c/o NO Relay for each channel. 1c/o NO Relay each for timer ready, time in progress and timer On	200 x 130 x 45mm (W X H X D)	8510
ST6-M2(IP)	Sequential Switching 6 channels with IP Enclosure				291 x 214 x 68mm (W X H X D)	9540

** : Suitable for 240V AC / 110V AC loads only. | § : Availability will be for bulk quantity

1: Repeat Cycles only | 2: On/Off Time selection is common for all relays | 3: Healthy continuous non potential start signal for operation | 4: Healthy Continuous non potential differential pressure signal to operate timer | 5: Time inhibit, cascading of units not applicable.



Digital Tachometers also known as RPM meters, are designed to measure revolutions per minute (RPM) of any rotating surface. EAPL offers digital hand-held non-contact type tachometers that are manufactured using world class technology. The input sensing is through reflective beam falling on reflective sticker.

Digital Non Contact Tachometer

Features

- Portable, Light weight, strong and elegant ABS enclosure
- Last reading memory retention
- High Accuracy and resolution

Applications

- Motors, Pumps, Generators, Engine and many more

Ordering Information

Model	Function	Source Voltage	Range	Over-All Dimensions	Price
DT-2001B	Digital Hand Held Non Contact Tachometer	6V DC (4 x 1.5V, AA size battery)	1 to 99,999RPM (with one reflecting mark)	72 x 170 x 38mm (W X H X D)	2540

Note: Calibration certificate with NABL standard traceability.



Preset counters are used for counting components produced or counting the number of strokes in a given process. EAPL range of preset counters that come with attractive UL rated fire retardant, compact plastic enclosure are available in various sizes. With provision to program the required counts, they operate in ascending order from 0 to set value. On achieving the set counts, the inbuilt relay change its status allowing the user to accomplish logics as required by the system.

Preset Counters



Features

- Hold / Restart user selectable.
- Input sensing-proximity, potential free signals.

Applications

- Injection molding machine Granite processing machines, Packaging / Printing machines Hot stamping machines and many more.

Ordering Information

Model	Function	Source Voltage	Range	Output	Over-All Dimensions	Cut-Out Dimensions	Price
CT-5	Preset counter (LED Display), 5 digits	85V AC to 270V AC / DC	1 to 99,999 counts	1 C/o, 5A resistive	72 x 72 x 128mm (W X H X D)	69 x 69mm (W X H)	3160
H3CT-5U ¹			1 to 9,99,999 counts		48 x 48 x 95.5mm (W X H X D)	46 x 46mm (W X H)	2210
H3CT-6U	Preset counter (LED Display), 6 digits				98 x 50 x 79mm (W X H X D)	92 x 46mm (W X H)	???? ←

1. Frequency of counts programmable

Time switches are control devices that switch ON loads with reference to real time and then operate for a predefined duration irrespective of power failure operation.

Digital Time Switches



Features

- Allows user to activate clock buttons during programming.
- Manual over riding possible.

Applications

- Street lighting, Advertising boards, DG sets, Pumps, Compressors, Exhaust fans, ATM air conditioners and many more.

Ordering Information

Regular

Model	Function	Source Voltage	Output	Over-All Dimensions	Cut-Out Dimensions	Price
TS-203 ¹	Digital Daily Time Switch with 4 Program	240V AC	1 C/o, 16A resistive	72 X 72 X 84mm (W X H X D)	69 X 69mm (W X H)	1760
TS-203R ²						1760
TS-203B ^{1,2}				110 X 86 X 68mm (W X H X D)	NA	1760

Optional⁵

TS-203A ^{1,4}	Digital Daily Time Switch with 4 Program	240V AC	1 C/o, 20A resistive	195 X 96 X 155mm (W X H X D)	NA	4450
TS-203B ^{1,2}		12V DC / 24V DC / 110V AC	1 C/o, 16A resistive	110 X 86 X 68mm (W X H X D)		2040
TS-203 ¹		24V DC		72 X 72 X 84mm (W X H X D)	69 X 69mm (W X H)	2040

5: Availability will be for bulk quantity 1: Real time clock operates on external batteries | 2: Inbuilt rechargeable battery | 3: Allows user to activate program buttons during programming | 4: Provision to connect 2 loads separately.

Universal Temperature Controller

Features

- Program lock is available to lock all programs except temperature setting.
- Temperature offset is available in most of the models (Refer Note 1).
- Dual set point models available in heater/alarm type.
- Multifunction temperature controller models have all features rolled into one

Applications

- Furnace, Heat Treatment Equipment Oven, Boilers, Plastic and Rubber Machinery and many more.



Ordering Information

Regular

Model	Function	Source Voltage	Sensor	Range	Output	Over-All Dimensions (W x H x D)	Cut-Out Dimen.(WxH)	Price						
H3TX-Ua ^{3,4}	On-Off / Self-Tune Function (Single Set Point)	85V to 270V AC / DC	J K PT-100 (Self-Tune)*	0°C - 600°C 0°C - 1200°C 0°C - 400°C -100°C - 400°C	1 relay 1c/o, 5A resistive	48 x 48 x 95.5mm	46 x 46mm	1620						
TX7-Ua ^{3,4}						72 x 72 x 128mm	69 X 69mm	1690						
EX9-Ua ^{3,4,5}						96 x 96 x 95.5mm	92 x 92mm	1780						
H3TX-2U ³						48 x 48 x 95.5mm	46 x 46mm	2150						
TX7-2U						72 x 72 x 128mm	69 X 69mm	2150						
EX9-2U ^{5,6}	96 x 96 x 95.5mm		92 x 92mm	2400										
H3TX-2H-U ¹	On-Off - Heater type Function (Dual Set Point)		85V to 270V AC / DC	J K PT-100 (On-Off)	0°C - 600°C 0°C - 1200°C 0°C - 300°C	2 relay 1c/o, 5A resistive	48 x 48 x 95.5mm	46 x 46mm	2310					
TX7-2H-U ¹							72 x 72 x 128mm	69 X 69mm	2310					
EX9-2H-U ¹							96 x 96 x 95.5mm	92 x 92mm	2620					
H3TX-2A-U ¹	On-Off - Alarm type Function (Dual Set Point)				85V to 270V AC / DC	J K PT-100 (On-Off)	0°C - 600°C 0°C - 1200°C 0°C - 300°C	2 relay 1c/o, 5A resistive	48 x 48 x 95.5mm	46 x 46mm	2310			
TX7-2A-U ¹		72 x 72 x 128mm							69 X 69mm	2310				
EX9-2A-U ¹		96 x 96 x 95.5mm							92 x 92mm	2620				
H3TX-MU ^{3,5}	Multi function Temperature Controller On-Off- Forward and Reverse Type (Dual Set Point)	85V to 270V AC / DC					J K PT-100 (On-Off)	0°C - 600°C 0°C - 1200°C 0°C - 400°C	relay 1 - 1c/o, 5A relay 2 - 1c/o, 3A	48 x 48 x 95.5mm	46 x 46mm	1730		
EX9-MU ^{3,5}										96 x 96 x 95.5mm	92 x 92mm	2270		
H3TX-MU-RS ^{2,3,5}	Multi function Temperature Controller On-Off - Forward and Reverse Type (Single/ Dual Set Point) with SSR and Relay output							85V to 270V AC / DC	J K PT-100 (Self-Tune)*	0°C - 600°C 0°C - 1200°C 0°C - 300°C -100°C - 400°C	2 relay 1C/o, 5A resistive 12V DC to drive SSR	48 x 48 x 95.5mm	46 x 46mm	1790
EX9-MU-RS ^{2,3,5}												96 x 96 x 95.5mm	92 x 92mm	2340
H3TX-U-RS ^{2,3,4}	On-Off / Self-Tune Function (Single Set Point) with SSR and Relay output		85V to 270V AC / DC	PT-100 (On-Off)					0°C - 600°C 0°C - 1200°C 0°C - 400°C -100°C - 400°C	1 relay 1c/o, 5A resistive, 12V DC to drive SSR	48 x 48 x 95.5mm	46 x 46mm	1730	
EX9-U-RS ^{2,3,4}											96 x 96 x 95.5mm	92 x 92mm	2340	
H3TX-2U-RS ^{2,3}											48 x 48 x 95.5mm	46 x 46mm	1730	
EX9-2U-RS ^{2,3}					96 x 96 x 95.5mm	92 x 92mm					2410			

* : Hysteresis not applicable | 1: Temperature offset is not available | 2: Both relay and SSR drive outputs available | 3: Now available in reduced depth with redesigned cabinet for better aesthetics and eliminating protective cover yet retaining the IP Class | 4: Single display window height has been increased for longer visibility | 5: Minimum and Maximum temperature user settable for ease of setting set values. Heater / Reverse: Both relays change over to NO at room temperature. Relay1 reverts back to NC at 1st set point. It once again changes over to NO when temperature falls by 1st Set point minus hysteresis1. Relay2 reverts back to NC at 2nd set point. It once again changes over to NO when temperature falls by 2nd Set point minus hysteresis2. Alarm / Forward: First relay changes over to NO at room temperature and reverts back to NC at 1st set point. It once again changes over to NO when temperature falls by the respective Set point minus hysteresis1. The 2nd relay switches ON at 2nd set point and will switch OFF when temperature falls below the 2nd set point - hysteresis2.

Temperature Series



Temperature controllers measure the temperature of a given object / system by means of thermocouple / sensor and controls the same within specified limits through in-built relays switching ON and OFF the heating / cooling devices.

EAPL's range of temperature controllers are characterized by accuracy. They come with attractive UL graded flame retardant sturdy plastic enclosure of different sizes to monitor the process value against the set value.

A new range with sleek designs has already been rolled out.

Switch Mode Power Supplies

Switch mode power supplies incorporate a switching regulator for efficient conversion of electric power. EAPL offers SMPS from a wide -band single phase AC to low ripple and low harmonics DC supply.



Features

- Regulated Voltage.
- Output Voltage fine tuning in select models.
- Protection against over voltage, over load and short circuit.

Applications

- PLC, DC panels, DC solenoids, DC relay boards, Battery charging panels and many more.

Ordering Information Regular

Model	Function	Input Voltage	Output	Over-All Dimensions (W X H X D)	Price
MS-01 ¹	Switch Mode Power Supply	192V - 264V AC	24V DC, 1A, 24W / 12V DC, 1A, 12W	45.5 x 77.4 x 116mm	1700
MS-02		170V - 300V AC	24V DC, 2.1A, 50W / 24V DC, 1.46A, 35W / 24V DC, 1.04A, 25W / 24V DC, 0.63A, 15W / 15V DC, 2.1A, 31.5W	110 x 86 x 71mm	2560
			12V DC, 4.2A, 50W / 12V DC, 2.9A, 35W / 12V DC, 2.08A, 25W / 12V DC, 1.25A, 15W / 5V DC, 6A, 30W / 5V DC, 5A, 25W / 5V DC, 3A, 15W		
MS-03				24V DC, 5A, 120W	155 x 88 x 79mm
MS-05 ¹			5V DC, 1A, 5W	22.5 x 75 x 96.5mm	940

1: Output Voltage fine tuning not applicable for MS-01, MS-05.

Annunciators

Features

- Consists of 1 master unit and expandable slave units. (max 2 Slaves).
- Master and Slave units are available in 4, 6, 8 windows.
- Manual / Auto reset / Manual reset with ring back / FIFO - user selectable. (Refer Note 1)
- RS 485 Mod-bus communication available in select models. (Refer Note 2)
- In- built buzzers for audible output in addition to alarm relay.



Applications

- C & R panels, Transformer panels, DG set panels, Fire annunciation panels, Instrumentation panels and many more.

Ordering Information

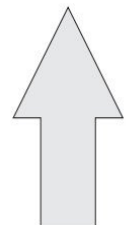
Regular Basic Model

Model	No of Windows	Source Voltage	Stand By Voltage	Product Size	Output	Over-All Dimensions	Cut-Out Dimensions	Price
M3-4(C) ¹	4 Windows	85V - 270V AC / DC	NA	1D	2 Relays Trip Relay (C-NC-NO), Alarm Relay (C-NC-NO).	72 x 144 x 121mm (W x H x D)	66 x 139mm (W x H)	3990
M3-6 ¹	6 Windows							4100
M3-8(C) ¹	8 Windows							4970
M3-8(C) ¹	8 Windows			2D		7600		
M3-16(C) ¹	16 Windows					8850		
M3-12(C) ¹	12 Windows					8340		
M3-24(C) ¹	24 Windows					12510		

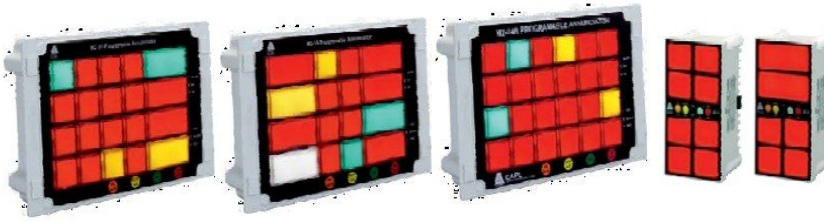
Advanced Model

M3-4R ²	4 Windows	85V - 270V AC / DC	12V DC / 85V - 270V AC / DC	1D	2 Relays Trip Relay (C-NC-NO), Alarm Relay (C-NC-NO). 2 Relays AC Fail (C, NO)/DC Fail (C, NO)	72 x 144 x 121mm (W x H x D)	66 x 139mm (W x H)	????
M3-6R ²	6 Windows							4540
M3-8R ²	8 Windows							5400
M3-16R ²	16 Windows			2D		9730		
M3-20R ²	20 Windows					3D	10400	
M3-24R ²	24 Windows						12510	

1: Manual / Auto reset available in basic Models. | 2: RS 485 Mod-bus communication is available in advanced models.



Annunciators



Features

- Sequence of operation - Manual /Auto Reset / Manual Reset with ring back/FIFO - User Selectable (Refer Note 2).
- RS-485 Mod-bus communication available in select models. (Refer Note 1).
- Additional 2 relays available in windows 12 to 24 for AC Fail/Hooter/DC Fail based on model selected.

Applications

- C&R panels, Transformer panels, DG set panels, Fire annunciation panels, Instrumentation panels and many more

Ordering Information

Regular

Model	No of Windows	Source Voltage	Stand By Voltage	Output	Input	Window Size	Over-All Dimensions	Cut-Out Dimensions	Price
M2-4 ²	4 Windows	85V to 270V AC/DC (or) 18V to 90V AC/DC	N A	2 relays 1c/o (C-NO), (trip / Alarm)	4 potential free fault inputs	66 x 27.5mm	73.5 x 142.5 x 78 mm (W x H x D)	69 x 141 mm (W x H)	2450
M2-6 ²	6 Windows				6 potential free fault inputs	2 windows:- 66 x 27.5mm, 4 windows:- 31.5 x 27.5mm			3050
M2-8 ²	8 Windows				8 potential free fault inputs	31.5 x 27.5mm			3700
M2-12	12 Windows	85V to 270 V AC/DC	12V DC	2 relays 1c/o (NC-C-NO), (trip/Alarm), 2 relays 1c/o (C-NO) (Hooter, AC Fail)	12 potential free fault inputs	63 x 28mm	291 x 187 x 79mm (W x H x D)	285 x 181mm (W x H)	7970
M2-16/16a	16 Windows				16 potential free fault inputs	28 x 28mm & 63 x 28mm			9290
M2-20	20 Windows				20 potential free fault inputs	63 x 28mm			9950
M2-24	24 Windows				24 potential free fault inputs	28 x 28mm			11610

Optional[§]

M2-2	2 Windows	85V to 270V AC/DC 18V to 90V AC/DC	NA	2 relays 1c/o (C-NO), (trip / Alarm)	2 potential free fault inputs	66 x 58mm	73.5 x 142.5 x 78mm (W x H x D)	69 x 141 mm (W x H)	2100
M2-12 M2-16a M2-20 M2-24	12/16/20/24 Windows	24-48V DC	12V DC	2 relays 1c/o (NC-C-NO), (trip/Alarm), 2 relays 1c/o (C-NO) (Hooter, AC/DC Fail)	12/16/20/24 potential free fault inputs	M2-12/ M2-12R: 63 x 28mm	73.5 x 142.5 x 78mm (W x H x D)	285 x 181mm (W x H)	8390 9460 10290 12390
M2-12 M2-16 M2-24	12/16/24 Windows	24-48V DC	85-270V AC/DC			M2-16/ M2-16R: 63 x 28mm, 28 x 28mm			8390 9460 10290
M2-12 M2-16 M2-24	12/16/24 Windows	85-270V AC/DC	85-270V AC/DC			M2-16/ M2-24/M2-24R: 28 x 28mm			9250 10210 12600
M2-12 R/ M2-16 R/ M2-24 R/	12/16/24 Windows	85-270V AC/DC	12V DC	2 relays 1 c/o (NC-C-NO), (trip / Alarm) 2 relays 1c/o (C-NO) (Hooter, AC Fail) RS 485 Port	12/16/24 potential free fault inputs				

§: Availability will be for bulk quantity. 1 : Annunciators with RS485 mod-bus RTU protocol communication for current statuses of each specified fault parameter | 2 : Only Manual / Auto reset available in basic Models

Annunciators

Programmable fault annunciator distinguishes the fault and announces the specified faults visually and audibly. Based on the Annunciation, you can take steps against intricate faults to secure the system.

EAPL annunciators are sleek, compact and light. They come in UL rated flame retardant sturdy ABS plastic cabinets. They hold a cluster of SMD LED bulbs for each window. The outer caps can be replaceable at site based on colour requirement. For programming fault input configuration and required relay output, tact switches are used with corresponding terminals as alternate. The same tact buttons and corresponding terminals are used to change the status of fault – mute, acknowledge, reset and test during operation



Maximum Demand Meters



Features

- High brightness alpha numeric LED display for parameters and numeric for corresponding values.
- Automatic CT reverse correction for energy and demand.
- Programmable demand techniques block / sliding window.
- Programmable demand parameters Apparent / Active power.
- Programmable demand range Kilo / Mega.
- Programmable Alarm / hysteresis settings.
- Programmable RTC setting to match EB meter's clock.
- EMS-15C Max. Demand Controller = Max. Demand Indicator + Relay module (4 relay) (RR-4).
- 4 control outputs (C-NO) for alarm and trip settings.
- Class of Accuracy – Cl. 1.0 for KWh Cl. 2.0 for KVARh

Applications

- In-comer distribution panels.

Ordering Information

Regular

Model	Function	Source Voltage	Display Parameters		Over-All Dimensions (W X H X D)	Cut-Out Dimensions (W X H)	Price
EMS-15	Maximum Demand Controller	85V to 270V AC / DC	Basic	V(R, Y, B), V(RY, YB, BR), A(R,Y, B), Hz, RTC Time	96 x 96 x 95.5mm	92 x 92 mm	6490
EMS-15C	Maximum Demand Indicator		Power	PF(R, Y, B, T), W(R, Y, B, T), VAr(R, Y, B, T), VA(R, Y, B, T)			8110
			Integral	KWh, KVARh-C, KVARh-I, KVAh, LH			
			Demand	Md (Fixed / Sliding), Md Time (Fixed / Sliding), Wd (Fixed / Sliding), Rd (Fixed), Elapsed Time (Fixed / Sliding)			

Multifunction Energy Meters



Features

- CT primary and secondary user selectable
- PT primary and secondary user selectable
- Program is password protected.
- Accuracy Class: 1.0 / 0.5.
- High brightness alpha numeric LED display for parameters and numeric for corresponding values.

Applications

- Sub metering panels, Distribution panels, HT / LT panels and DG panels and many more.

Ordering Information Regular

Model	Function	Source Voltage	Display Parameters		Over-All Dimensions	Cut-Out Dimensions	Model
EMS-01	3 Phase Multi Function Meter with RS 485	85V to 270 V AC/DC	Basic	V(R,Y,B), V(R,Y,B,BR), A(R,Y,B), Hz, PF(R,Y,B,T), Phase Angle(R,Y,B), RPM, W(R,Y,B,T), VAR(R,Y,B,T), VA(R,Y,B,T), Device ID (Communication Status)	96 x 96 x 95.5mm (W x H x D)	92 x 92 mm (W x H)	5870
EMS-01x ²	3 Phase Multi Function Meter with wifi	240 V AC/DC	Total	KWhT, KWhCT, KWhIT, KVAhT, LT (Load Hours Total)			5950
			Import	KWhI, KWhCI, KWhII, KVAhI, LI (Load Hours Import)			
			Export	KWhE, KWhCE, KWhIE, KVAhE, LE (Load Hours Export)			
			Old-Total	KWhT, KWhCT, KWhIT, KVAhT, LT (Load Hours Total)			
			Old-Import	KWhI, KWhCI, KWhII, KVAhI, LI (Load Hours Import)			
Old-Export	KWhE, KWhCE, KWhIE, KVAhE, LE (Load Hours Export).						
EMS-01T ³	3 Phase Multi Function Meter with THD	85V to 270 V AC/DC	THD (available in EMS-01T)	Voltage (%) (R, Y, B), Ampere (%) (R, Y, B)	5870		
EMS-03	KWH Meter		W(T), PF(T), KWh, MWh, Device ID (Communication Status)	4000			
EMS-09	Basic / Energy Meter		V(R,Y,B), V(R,Y,B,BR), A(R,Y,B), Hz, PF(R,Y,B,T), W(R,Y,B,T), KWh, MWh, LH, OKWh, OMWh, OL, Device ID (Communication Status)	4590			
EMS-09m	Basic /Energy Meter with 2 Event Counter		V(R,Y,B), V(R,Y,B,BR), A(R,Y,B), Hz, PF (R,Y,B,T), W(R,Y,B,T), V A, KVAh, KWh, MWh, LH, Device ID (Communication Status)	4590			
EMS-17 ¹	Dual Source Energy Meter		V(R, Y, B), V(R,Y,B, BR), A(R,Y,B), Hz, PF(R, Y, B, T), RPM*, Phase angle(R, Y, B), W(R, Y, B, T), KWh(M), MWh(M), KVAh(M), LH(M), KWh(G), MWh(G), LH(G) All energy parameters are available in-Mains(M) and generator mode(G), KVA, KVAh(G&M)	5180			

1: Separate Mains and Generator registers are available for energy load on hour's parameters. | 2: RS 485 communication is not available, instead it will be through Wi-Fi, device id display also will not be available | 3: THD applicable only for EMS-01T.

Basic Meters



Features

- Program enable-User Selectable.

Applications

- Distribution panels, HT / LT panels, DG panels and many more.

Ordering Information

Regular

Model	Function	Source Voltage	Display Parameters	Over-All Dimensions (W X H X D)	Cut-Out Dimensions (W X H)	Price
EMS-11 ^{1,3}	Ammeter	240V AC/ 110V AC	A(R, Y, B)	96 x 96 x 95.5mm (W x H x D)	92 x 92 mm (W x H)	1490
EMS-12 ^{2,3}	Voltmeter		V(R, Y, B), V(RY, YB, BR)			1240
EMS-13 ⁴	Frequency Meter		Hz. (Avg)			1190
EMS-18 ^{1,2,4}	VAF Meter	85V - 270V AC / DC	V(R, Y, B), V(RY, YB, BR), A(R,Y, B), Hz			2820

1: CT primary & secondary programmable | 2: PT primary & secondary programmable | 3: Accuracy class - 1.0, 0.5 | 4: Accuracy class -1.0

EMS Series



Energy Meters

EAPL Energy meters measure either individual electric parameter or many parameters in the same instrument and communicates through RS 485 Mod-bus RTU protocol. They can also be connected in specified models through Wi-Fi, digital internet clouds etc to the utility operator.

They are designed to monitor continuous usage for maximum power-efficiency. EAPL offers 3 phase, 4 phase basic, multifunction and demand meters which come in glass filled plastic enclosures having IP51 rating.



Under Voltage Relay

Features

- Slim and Compact design.
- Suitable for Din Rail Mounting.
- Finger guards for Safety.
- Delay time can be set for resuming auxiliary power to the load on its achieving healthiness.
- Whenever unhealthiness (under voltage) occurs, the relay will immediately trip the output circuit.



Applications

- For Air Conditioning, Elevator and many more.

Ordering Information

Model	Function	Input Voltage	Time Selection	Output	Over-All Dimensions	Price
ETR-01	Under Voltage Time Relay (ON Delay)	415V AC 3P/4W Self powered	5Min to 15 Min	1C/O Relay	17.8 X 90 X 65mm (W x H x D)	700
ETR-02		230V AC				650

• These units trip instantaneously on becoming unhealthiness and resumes after the set delay time on achieving healthiness.

113.617 mm



G-Series

Reverse Power Device

Features

- Din Rail mounting.
- Auto / Manual mode.
- Front button resetting facility is available in manual mode.
- LED indication for relay status.
- Window displays the type of fault that has occurred during unhealthy condition.
- Trip delay time and limits for each parameter can be set digitally.
- Unwanted parameters can be by-passed as per User's choice.
- Relay can be configured to have NO or NC status during healthy condition.
- Terminals to connect the 1 phase CT are provided.
- Monitors and trips the circuit after the set trip delay time whenever any power unhealthiness (under voltage, over voltage & reverse current) occurs.
- Displays the 1 phase voltage (Line to neutral) 1 phase current during healthy condition.
- CT primary can be programmed up to 500 in steps of 5. CT secondary will be factory set for 5.
- Unit will retain fault till accepted in manual mode.
- Factory set hysteresis to recover from Reverse Power.

Applications

- Solar Panel applications, Generator Panel and etc.

Ordering Information

Model	Function	Input Voltage	Output	Over-All Dimensions	Price
RPD-01	Reverse Power Device	85V - 270V AC, self powered	1 c/o 5A	76 x 78 x 115mm	2980

Monitoring Devices



Also known as protection relays and single phase preventers, they help the user to monitor the functionality of given power parameters and control the same by taking appropriate action through relay output. Both analog and digital versions are available. While analog versions come with few parameters and factory set values, digital versions are more versatile helping the user to select the parameters and limits. These units display functional faults and help user to monitor the instant values while functioning faultlessly.

Single Phase Preventer



Features

- Resetting possible in manual mode from front button / rear terminals.

Applications

- Motors, pumps, generators and Compressor panels and many more.

Ordering Information

Regular

Model	Function	Input Voltage	Output	Over-All Dimensions (W X H X D)	Price
PMD-01	Phase Unbalance, Phase Failure, Phase Sequence, Under Voltage, Monitor & Control	440V AC 3phase, 3 wire, Self powered	1 c/o, 5A resistive	45 x 75 x 116mm	1060
PMD-02	Phase Sequence, Phase Failure, under voltage Monitor and Control	415V AC 3phase, 3 wire, Self powered		22.5 x 75 x 96mm	810
PMD-03				17.5 x 89 x 62mm	740
SPP-T ¹	Phase Unbalance, Phase Failure, Phase Sequence, Monitor & Control	415V AC 3phase, 3 wire, Self powered		45 x 75 x 116mm	970

1: Auto/Manual switch provided

Converter



Features

- Aux. supply - wide voltage and frequency range.
- Compactable baud rate - 2400, 4800, 9600, 19200 bps.
- Max. no of nodes - 32.
- Max. cable length (RS-232 side) - 15mtrs typical.
- Max. cable length (RS-485 side) - 1000mtrs typical.
- Mounting - Din-rail.
- LED indication for power, R and T inputs.

Applications

- Converting RS485 into RS232 and vice versa.

Ordering Information

Regular

Model	Function	Source Voltage	Over-All Dimensions (W X H X D)	Price
EA232/485	Converter	85V to 270V AC / DC	117 x 86 x 61mm	3090

DC Multifunction Meters



Features

- Micro Controller based 3 Channel DC Energy Meter. (Refer Note 1)
- Programmable Shunt ratios.
- Alphanumeric display for Parameter & numeric display values.
- RS-485 serial port with Mod-bus RTU output.

Applications

- DC rectifier systems, Battery panels, DC distribution solar panels, DC loads, DC motors and many more.

Ordering Information

Regular

Model	Function	Source Voltage	Display Parameters		Input Voltage	Over-All Dimensions (W X H X D)	Cut-Out Dimensions (W X H)	Price
SNM-01	DC Multi Function meter	85V-270V AC / DC	load 1	V, A, KW, KWh, MWh, LH	80V DC to 220V DC	96 x 96 x 95.5mm	92 x 92 mm	4230
SNM-02		24V-48V DC	load 2	V, A, KW, KWh, MWh, LH	21V DC to 50V DC			4230
			load 3	V, A, KW, KWh, MWh, LH				4230
			Old	KWh, MWh, LH (load1, Load2, load 3)				4230
			communi-cation	Communication status, Dev Id				4230
SNM-03 ¹			V, A, KW, KWh, MWh, LH, OLd KWh, OLd MWh, OL, DEV Id	5V DC to 1000V DC		4230		
DCM-01 ¹	Bi-Directional Solar Energy Meter	85V-270V AC / DC	Main	V, ±A, ±KW, F-KWh, F-MWh, F-Load on Hours, RA, R-KW, R-KWh, R-MWh, R-Load on Hours, Device ID & Communication Status	5V DC to 1000V DC	96 x 96 x 95.5mm	92 x 92 mm	4540
			Old Energy	F-KWh, F-MWh, F-Load on Hours, R-KWh, R-MWh, R-Load on Hours				4540

1: Only Single Channel Available

Photo Sensing Relay

Features

- Design for industrial environment.
- High intensity pulse infra red emitter.
- Time Delay up to 20 Sec.
- Highly immune to Ambient light.
- Din rail mounting



Applications

- Textile industries.

Ordering Information

Model	Function	Source Voltage	Time Selection	Output	Over-All Dimensions	Price
EALS-1003	Photo sensing & Control relay	240V AC	2Sec to 20Sec	1 C/O rated for 5A@ 250V AC/28VDC	145 x 75 x 116mm (W x H x D)	1620
EAPRE-01	Photo sensing & Control relay - Emitter Probe	NA	NA	NA	19.2 x 35.5 x 1257.5mm (W x H x D)	1080
EAPR R-01	Photo sensing & Control relay - Receiver Probe	NA	NA	NA		1080

Light Switch



Features

- This is a light switch working on direct or reflective transmission principle.
- It consists of high intensity emitter source and high sensitive receiver.
- The signal received from the receiver will operate a relay with ON delay or OFF delay depending on mode selected.
- The time range can be 0.3 sec / 30 sec.

Applications

- Textile industries.

Ordering Information

Model	Function	Source Voltage	Time Selection	Output	Over-All Dimensions	Price
EALS-4505	Electronic Stop Motion Light Switch	240V AC	2Sec to 20Sec	1 C/O rated for 5A@ 250V AC/28VDC	145 x 75 x 116mm (W x H x D)	1700
EALSE-01	Photo sensing & Control relay - Receiver Probe	NA	NA	NA		1130
EALSR-01	Electronic Stop Motion Light Switch - Receiver Probe	NA	NA	NA		1130

Digital Monitoring Devices



Features

- Manual /auto reset on achieving healthiness-user selectable.
- LED indication for power, relay status and fault condition.
- Displays type of fault whenever unhealthiness occurs.
- Continues to display latest fault even after healthiness is attained in manual mode till unit is manually reset.
- Trip delay time and limits of each parameter can be set digitally.
- Program Enabling- User Selectable.
- Relays NO/NC status during healthy condition – User Selectable.
- Required parameters can be user selected.

Applications

- Any 3 phase 4wire systems like motors, pumps, generators / distribution / MCC panels, air conditioners, elevators, cranes, escalators and many more.

Ordering Information

Regular

Model	Function	Input Voltage	Output	Over-All Dimensions (W X H X D)	Cut-Out Dimensions (W X H)	Price
PVMD ^{1,4,5A}	Phase Voltage Monitoring Device	415V AC 3 phase, 4 wire, Self powered	1 c/o, 10A resistive	96 x 96 x 95.5mm	92 x 92mm	2440
PVMD-G ^{2,4,5A}				76 x 78 x 115mm	NA	2470
PVMD ^{1,3,4,5,5c}	Phase Voltage Current Monitoring Device			96 x 96 x 95.5mm	92 x 92mm	2900
PVMD-G ^{2,1,4,5,5c}				76 x 78 x 115mm	NA	2900
PVMD-R ^{1,3,4,5,5c}	Phase Voltage Current & Energy Monitoring Device 415V AC 3 phase, 4 wire with RS485	415V AC 3 phase, 4 wire & auxiliary supply 85-270 V AC/DC	2 c/o, 5A resistive	96 x 96 x 95.5mm	92 x 92mm	4410
PMR-01 ^{1,3,4,5,5c}	Power Monitoring Relay	415V AC 3phase, 4 wire, self powered	1 c/o 10A resistive	96 x 96 x 95.5mm		4420

1: Panel Mounting | 2: Din rail mounting | 3: Nominal current and inrush time user programmable. CT primary user selectable secondary default is 5 |

4: Displays the following parameters during healthiness by the following models:

- a) PVMD/PVMD-G: 3-phase voltage L-L, L-N
- b) PVMD/PVMD-G: 3-phase voltage L-L, L-N, Current L-N
- c) PVMD-R: 3-phase voltage L-L, L-N, Current L-N, frequency, PF, active power, active energy
- d) PMR-01: 3-phase voltage L-L, L-N, Current L-N, frequency |

5: Monitors and displays the following parameters during unhealthiness by the following models.

- a) PVMD, PVMD-G : Monitors and trips the circuit after the set trip delay time when ever power unhealthiness (phase failure, phase sequence, phase unbalance under voltage or over voltage) occurs.
- b) PVMD, PVMD-G, PVMD-R: Monitors and controls any 3 phase 4 wire circuit after the set trip delay time when ever power unhealthiness (phase failure, phase sequence, phase unbalance under voltage, over voltage, under current or over current) occurs.
- c) PMR-01: Monitors and trips the circuit after the set trip delay time when ever power unhealthiness (phase failure, phase sequence, phase unbalance under voltage, over voltage, under frequency, over frequency or earth leakage current, under current, over current) occurs.