GIC

- Timers
- Time Switches
- Counters
- Logic Controllers
- Supply Monitoring Devices
- PID Regulators

General Industrial Controls Private Limited

General Industrial Controls Private Limited (GIC), is offering services as a well established manufacturer and exporter of Process Control and Automation products with unparalleled sophistication and expertise. We are an ISO 9001:2008, TS 16949 certified company with International approvals like cULus. Our products are Eco-friendly, RoHS compliant and CE certified. Brand **"GIC"** has been built on this strong foundation over the past three decades signifying reliability, quality and value for money.

Our product categories include **1)** Lighting Automation: Time Switches and Light Energy Management Systems, **2)** Process Control: Mini PLCs, Timers, PID Temperature Controllers **3)** Low Voltage Protection and Switchgear: Voltage Protection, Frequency, Thermistor & Earth Leakage Relays **4)** Instrumentation: Hour Meters, Impulse Counters and **5)** Injection Moulded Plastic Components for various applications.

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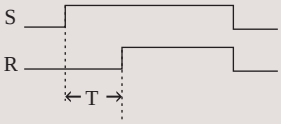
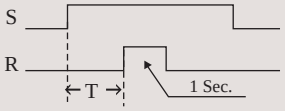
Electronic Timer - Series Micon™ 175

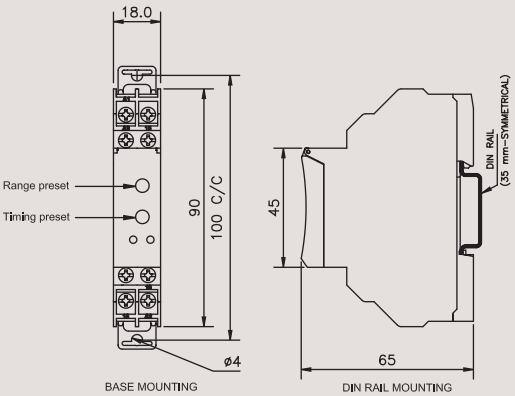
- Compact 17.5mm
- Time range: 0.3sec - 30 hrs
- Highly accurate
- Functions: On Delay, One Shot
- Integrated dual voltage selection
- Separate indication for power and relay status
- Low power consumption

Cat. No.	11ODT4	11BDT4
Parameters		
Mode	ON Delay	One Shot
Functional Diagram	 S = Supply R = Relay	
Supply Voltage	110 VAC / 24 VAC/DC (Selectable)	110 VAC / 24 VAC/DC (Selectable)
Supply Variation	- 20% to +10%	
Frequency	50/60 Hz	
Timing Ranges	0.3s to 30 h	
Reset Time	100 ms (Max.)	
Accuracy: Setting Accuracy Repeat Accuracy	 ± 5% of Full scale ± 1%	
Relay Output Contact Rating Contact Material Electrical Life Switching Frequency @ rated max load	1 C/O (SPDT) 5A (resistive) @ 240 VAC / 28 VDC Ag Alloy $1X10^5$ 1000 operations/h (Max.)	
Operating Temperature Storage Temperature	-10 to +55° C -20 to +70° C	
LED Indication	Green LED → Power ON, Red LED → Relay ON	
Housing Dimension (W x H x D) Weight (unpacked)	Flame Retardant UL94V0 18 X 65 X 90 (in mm) 75 g	
Mounting	Base / DIN rail	
Certification	CE	
EMI/ EMC Radio Interference Suppression ESD Electrical Fast Transients Surges Voltage Dips & Interruptions	 CISPR 14-1 Class B IEC 61000-4-2 Level III IEC 61000-4-4 Level IV IEC 61000-4-5 Level IV IEC 61000-4-11 All 7 Levels	

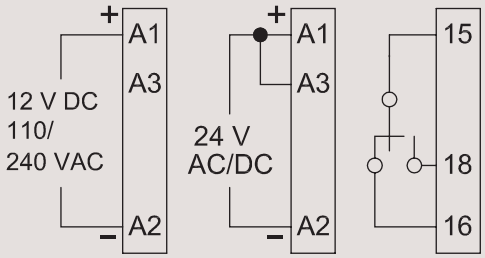
ORDERING INFORMATION

Cat. No.	Description
11ODT4	110 VAC, 24 VAC/DC, On Delay
12ODT4	240 VAC, 24 VAC/DC, On Delay
15ODT4	12 VDC, On Delay
11BDT4	110 VAC, 24 VAC/DC, One Shot
12BDT4	240 VAC, 24 VAC/DC, One Shot
15BDT4	12 VDC, One Shot

MOUNTING DIMENSION (mm)

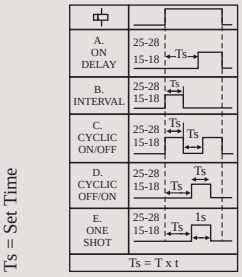
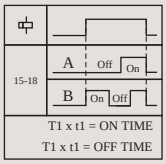
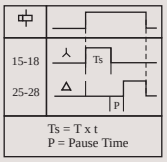


CONNECTION DIAGRAM



Electronic Timer - Series Micon™ 225

- World-Class design
- Compact 22.5mm
- Single and Multi-function (Non-Signal and Signal based) timers
- Multi-voltage: Single model suitable for both AC and DC applications
- Flush knobs for better security
- LED indications for runtime and relay status
- Finger protection on terminals (IP20)
- Excellent Noise Immunity to the latest IEC standards

Cat. No.	2A5DT5	2AJDT0	2ASDT0
Parameters			
Mode	Multi-function Multi range	Asymmetrical ON-OFF / OFF-ON	Star-Delta
Functional Diagram			
Supply Voltage	24 - 240 VAC/DC		
Supply Variation	- 20% to +10%		
Frequency	50/60 Hz		
Power Consumption (Max.)	4 VA		7 VA
Timing Ranges	0.1s to 10h		0.3s to 120s
Pause Time (P)	Not Applicable		60ms, 90ms, 120ms, 150ms
Reset Time	Max. 200 ms		
Accuracy Setting Accuracy Repeat Accuracy	 ± 5% of Full scale ± 1%		
Relay Output	2 C/O (DPDT)	1 C/O (SPDT)	Star - 1 'NO', Delta - 1 'NO'
Contact Rating Contact Material Electrical Life Mechanical Life Switching Frequency @ rated max load	5A @ 240 VAC / 28 VDC (Resistive) Ag Alloy $1x10^5$ $1x10^5$ Electrical : 1800 Operations / h		
Operating Temperature Storage Temperature	-15° C to +60° C -20° C to +80° C		
Humidity	95% (Rh)		
LED Indication	Green LED → Power ON, Red LED → Relay ON		Red 1- ⅄ ON, Red 2- Δ ON
Housing Dimension (W x H x D) Weight (unpacked)	Flame Retardant UL94-V0 22.5 X 75 X 100.5 (in mm) 130 g		
Mounting	Base / DIN rail		
Certification	CE		
Degree of Protection	IP 20 for Terminal, IP 40 for Housing		
EMI/ EMC Radio Interference Suppression ESD Electrical Fast Transients Surges Voltage Dips & Interruptions	 CISPR 14-1 Ed. 5.0 (2005-11) Class A IEC 61000-4-2 Ed. 1.2 (2001-04) Level III IEC 61000-4-4 Ed. 2.0 (2004-07) Level IV IEC 61000-4-5 Ed. 2.0 (2005-11) Level IV IEC 61000-4-11 (AC) Ed. 2.0 (2004-03), IEC 61000-4-29 (DC) Ed. 1.0 (2000-08)		

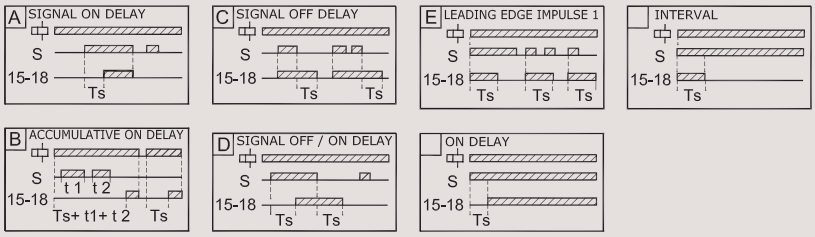
ORDERING INFORMATION

Cat. No.	Description
2A5DT5	24-240 VAC/DC, Multi-function, 2 C/O
2B5DT5	240-415 VAC, Multi-function, 2 C/O
273DT5	240 VAC, Multi-function (On Delay, Interval, Cyclic), 2 C/O
2AODT5	24-240 VAC/DC, On Delay, 2 C/O
29ODT5	9-32 VDC, On Delay, 2 C/O
2ASDT0*	24-240 VAC/DC, Star-Delta, 1 NO (Star) + 1 NO (Delta)
2ASDT1	24-240 VAC/DC, Star-Delta, 1 NO (Star) + 1 NO (Delta)
2BSDT0*	240-415 VAC, Star-Delta, 1 NO (Star) + 1 NO (Delta)
2BSDT1	240-415 VAC, Star-Delta, 1 NO (Star) + 1 NO (Delta)
2AJDT0*	24-240 VAC/DC, Asymmetric ON/OFF, OFF/ON, 1 C/O
2AJDT1	24-240 VAC/DC, Asymmetric ON/OFF, OFF/ON, 1 C/O
2AADT5	24-240 VAC/DC, Asymmetric ON/OFF, 2 C/O
25ADT5	12 VDC, Asymmetric ON/OFF, 2 C/O

*Note: Product with test voltage between input and output at 1.5 KV

Electronic Timer - Series Micon™ 225

• Solid state signal based Multi-function

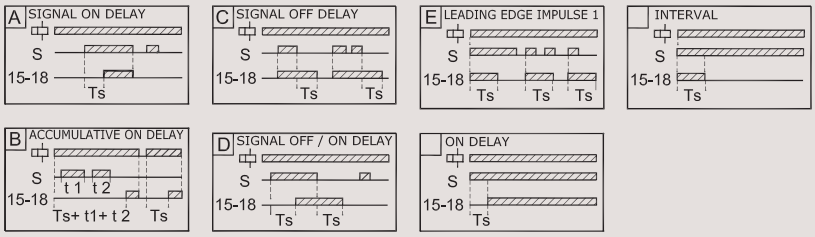
Cat. No.	20NDTT
Parameters	
Mode	Signal ON Delay, Accumulative ON Delay, Signal OFF Delay, Signal OFF/ON Delay, Leading Edge Impulse 1, ON Delay, Interval
Functional Diagram	
Supply Voltage	110 - 240 VAC
Supply Variation	- 20% to +10%
Frequency	50/60 Hz
Power Consumption (Max.)	3 VA
Timing Ranges	0.06s to 10h
Reset Time	Max. 100 ms
Accuracy Setting Accuracy Repeat Accuracy	 ± 5% of Full scale ± 1%
Solid State Output: Type Form Rated Current Max. Admissible Current Leakage Current Voltage Breaking Capacity Max. Voltage Drop at Terminals Minimum Load Current Electrical Life	 Optical Isolation SPST 1 A AC 20 A (10ms) <5 mA 110 - 240 VAC <= 8 V 10 mA 1 x 10^6
Operating Temperature Storage Temperature	-15° C to +60° C -20° C to +80° C
Humidity	95% (Rh)
LED Indication	Green LED → Power ON Red LED → Output ON
Housing Dimension (W x H x D) Weight (unpacked)	Flame Retardant UL94-V0 22.5 X 75 X 100.5 (in mm) 107 g
Mounting	Base / DIN rail
Certification	CE
Degree of Protection	IP 20 for Terminal, IP 40 for Housing
EMI/ EMC Radio Interference Suppression ESD Electrical Fast Transients Surges Voltage Dips & Interruptions	 CISPR 14-1 Ed. 5.0 (2005-11) Class B IEC 61000-4-2 Ed. 1.2 (2001-04) Level III IEC 61000-4-4 Ed. 2.0 (2004-07) Level IV IEC 61000-4-5 Ed. 2.0 (2005-11) Level IV IEC 61000-4-11 (AC) Ed. 2.0 (2004-03), IEC 61000-4-29 (DC) Ed. 1.0 (2000-08)

ORDERING INFORMATION

Cat. No.	Description
20NDTT	110-240 VAC, Solid State Signal Based Multi-function
20JDTT	110-240 VAC, Solid State Asymmetrical ON-OFF / OFF-ON

Electronic Timer - Series Micon™ 225

• Signal based Multi-function

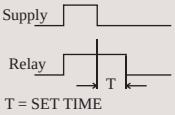
Cat. No.	2ANDT0
Parameters	
Mode	Signal ON Delay, Accumulative ON Delay, Signal OFF Delay, Signal OFF/ON Delay, Leading Edge Impulse 1, ON Delay, Interval
Functional Diagram	
Supply Voltage	24 - 240 VAC/DC
Supply Variation	- 20% to +10%
Frequency	50/60 Hz
Power Consumption (Max.)	4 VA
Timing Ranges	0.1s to 10h
Reset Time	Max. 200 ms
Accuracy Setting Accuracy Repeat Accuracy	 ± 5% of Full scale ± 1%
Relay Output	1 C/O (SPDT)
Contact Rating Contact Material Electrical Life Mechanical Life Switching Frequency @ rated max load	5A @ 240 VAC / 28 VDC (Resistive) Ag Alloy $1x10^{5}$ $1x10^{6}$ Electrical : 1800 Operations / h
Operating Temperature Storage Temperature	-15° C to +60° C -20° C to +80° C
Humidity	95% (Rh)
LED Indication	Green LED → Power ON Red LED → Relay ON
Housing Dimension (W x H x D) Weight (unpacked)	Flame Retardant UL94-V0 22.5 X 75 X 100.5 (in mm) 130 g
Mounting	Base / DIN rail
Certification	CE
Degree of Protection	IP 20 for Terminal, IP 40 for Housing
EMI/ EMC Radio Interference Suppression ESD Electrical Fast Transients Surges Voltage Dips & Interruptions	 CISPR 14-1 Ed. 5.0 (2005-11) Class B IEC 61000-4-2 Ed. 1.2 (2001-04) Level III IEC 61000-4-4 Ed. 2.0 (2004-07) Level IV IEC 61000-4-5 Ed. 2.0 (2005-11) Level IV IEC 61000-4-11 (AC) Ed. 2.0 (2004-03), IEC 61000-4-29 (DC) Ed. 1.0 (2000-08)

ORDERING INFORMATION

Cat. No.	Description
2ANDT0	24-240 VAC/DC, Signal Based Multi-function

Electronic Timer - Series Micon™ 225

• True off delay with 2 C/O upto 600 seconds

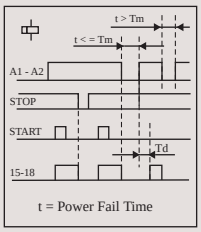
Cat. No.	23GDT0
Parameters	
Mode	True Off delay (Power Off delay)
Functional Diagram	 T = SET TIME
Supply Voltage	24 - 240 VAC/DC
Supply Variation	-10 to +20% of Ur
Power Consumption (Max.)	2.5 VA
Frequency	50-60 Hz
Energizing Time	1 s minimum
Timing Range	0.6s to 600s
Accuracy Setting Accuracy Repeat Accuracy	 ± 5% of Full scale ± 1%
Relay Output	2 C/O (DPDT)
Contact Rating Contact Material Electrical Life Mechanical Life Switching Frequency @ rated max load	5A @ 240 VAC / 28 VDC (Resistive) Ag Alloy $1x10^{5}$ $1x10^{6}$ Electrical : 1800 Operations / h
Operating Temperature Storage Temperature	-15° C to +60° C -20° C to +80° C
Humidity	95% (Rh)
LED Indication	Green LED → Power ON
Housing Dimension (W x H x D) Weight (unpacked)	Flame Retardant UL94-V0 22.5 X 75 X 100.5 (in mm) 130 g
Mounting	Base / DIN rail
Certification	CE
Degree of Protection	IP 20 for Terminal, IP 40 for Housing
EMI/ EMC Radio Interference Suppression ESD Electrical Fast Transients Surges Voltage Dips & Interruptions	 CISPR 14-1 Ed. 5.0 (2005-11) Class B IEC 61000-4-2 Ed. 1.2 (2001-04) Level III IEC 61000-4-4 Ed. 2.0 (2004-07) Level IV IEC 61000-4-5 Ed. 2.0 (2005-11) Level IV IEC 61000-4-11 (AC) Ed. 2.0 (2004-03), IEC 61000-4-29 (DC) Ed. 1.0 (2000-08)

ORDERING INFORMATION

Cat. No.	Description
23GDT0	24-240 VAC/DC, True-off Delay (Power Off Delay)

Electronic Timer - Series Micon™ 225

• Single phase motor restart control timer with memory time, under voltage trip and ON delay

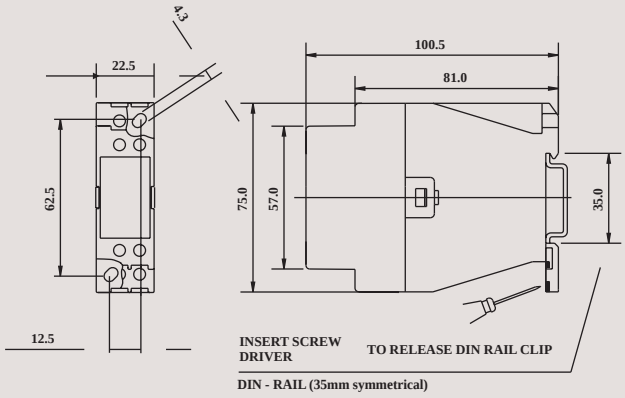
Cat. No.	22LDT0
Parameters	
Mode	Motor Restart
Functional Diagram	
Supply Voltage	240 VAC
Supply Variation	- 20% to +10%
Frequency	50/60 Hz
Power Consumption (Max.)	4 VA
Timing Ranges	Memory Time (Tm): 0.2 to 6s, Delay Time (Td): 0.2 to 60s Trip Volt: 176 VAC, +/- 6VAC, Hysterisis: 10 VAC max.
Reset Time	Max. 200 ms
Accuracy Setting Accuracy Repeat Accuracy	 ± 5% of Full scale ± 1%
Relay Output	1 C/O (SPDT)
Contact Rating Contact Material Electrical Life Mechanical Life Switching Frequency @ rated max load	5A @ 240 VAC / 28 VD C (Resistive) Ag Alloy $1x10^{5}$ $1x10^{6}$ Electrical : 1800 Operations / h
Operating Temperature Storage Temperature	-15° C to +60° C -20° C to +80° C
Humidity	95% (Rh)
LED Indication	Green LED → Power On, Red LED → Relay On
Housing Dimension (W x H x D) Weight (unpacked)	Flame Retardant UL94-V0 22.5 X 75 X 100.5 (in mm) 130 g
Mounting	Base / DIN rail
Certification	CE
Degree of Protection	IP 20 for Terminal, IP 40 for Housing
EMI/ EMC Radio Interference Suppression ESD Electrical Fast Transients Surges Voltage Dips & Interruptions	 CISPR 14-1 Ed. 5.0 (2005-11) Class A IEC 61000-4-2 Ed. 1.2 (2001-04) Level III IEC 61000-4-4 Ed. 2.0 (2004-07) Level IV IEC 61000-4-5 Ed. 2.0 (2005-11) Level IV IEC 61000-4-11 (AC) Ed. 2.0 (2004-03)

ORDERING INFORMATION

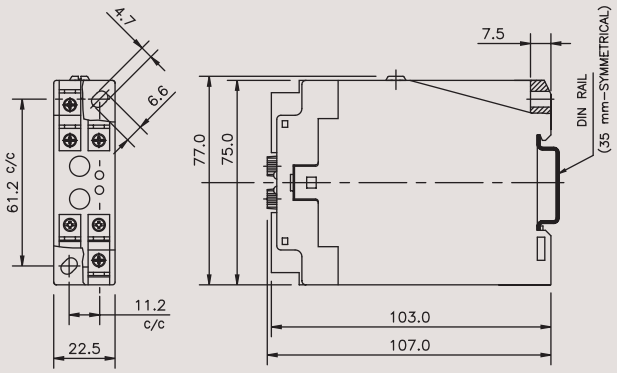
Cat. No.	Description
22LDT0	240 VAC, Motor Restart Control

Electronic Timer - Series Micon™ 225

MOUNTING DIMENSION (mm)



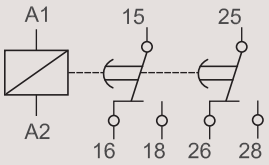
For -
2A5DT5, 2B5DT5, 2AODT5, 2ASDT0, 2ASDT1, 2BSDT0, 2BSDT1, 2AJDT0, 2AJDT1, 2AADT5, 20JDTT, 20NDTT, 2ANDT0, 23GDT0, 22LDT0



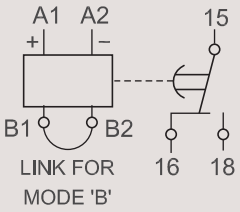
For -
273DT5, 29ODT5, 25ADT5

CONNECTION DIAGRAM

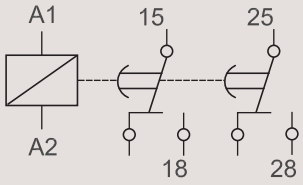
2A5DT5, 2B5DT5, 2AADT5, 23GDT0, 2AODT5, 273DT5, 29ODT5, 25ADT5



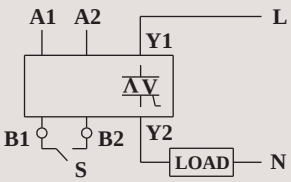
2AJDT0, 2AJDT1



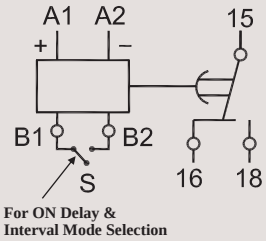
2ASDT0, 2BSDT0, 2ASDT1, 2BSDT1



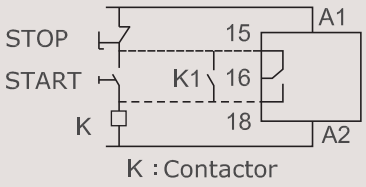
20JDTT, 20NDTT



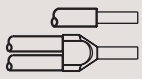
2ANDT0



22LDT0

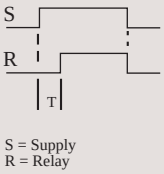
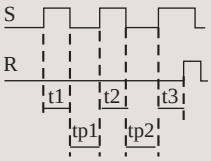


TERMINAL TORQUE & TERMINAL CAPACITY

 Ø 3.5 4.0mm	Torque 0.6 N.m (6 Lb. in) Terminal Screw - M3
	1 x 1 - 4 mm² Solid Wire / Single Wire Ferrule
	2 x 0.5 - 2.5 mm² insulated twin type Ferrule
AWG	1 x 17 to 11

Electronic Timer - Series Micon™ 350

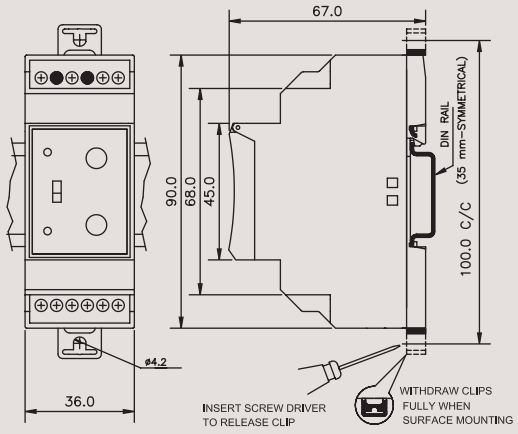
- Selectable ON delay/Retentive ON delay
- Inbuilt instant contact with 2C/O

Cat. No.	36EDT7	33EDT7	37EDT7
Parameters			
Mode	ON Delay/Retentive ON Delay (Selectable)		
Functional Diagram	 S = Supply R = Relay		T= SET TIME T=t1 + t2 + t3 tp1, tp2 = Power down region
Supply Voltage	24 VAC/DC	110 VAC	240 VAC
Supply Variation	- 20% to +10%		
Frequency	50/60 Hz		
Timing Ranges	0.3s to 30h		
Reset Time	100 ms (Max.)		
Accuracy Setting Accuracy Repeat Accuracy	 ± 5% of Full scale ± 1%		
Relay Output Contact Rating Contact Material Electrical Life Switching Frequency @ rated max load	1 Instant C/O + 2 Delayed C/O 5A (resistive) @ 240 VAC / 28 VDC AgCdO $1x10^5$ 1000 operations/h (Max.)		
Operating Temperature Storage Temperature	-10 to +55° C -20 to +70° C		
LED Indication	Green LED→ Power ON, Red LED → Relay ON		
Housing Dimension (W x H x D) Weight (unpacked)	Flame Retardant UL94V0 35 X 67 X 90 (in mm) 135 g		
Mounting	Base / DIN rail		
Certification	CE		
EMI/ EMC Radio Interference Suppression ESD Electrical Fast Transients Surges Voltage Dips & Interruptions	 CISPR 14-1 Class B IEC 61000-4-2 Level III IEC 61000-4-4 Level IV IEC 61000-4-5 Level IV IEC 61000-4-11 All 7 Levels		

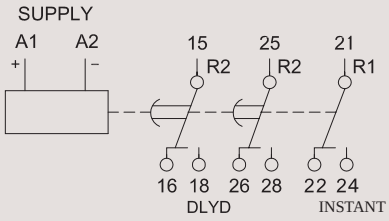
ORDERING INFORMATION

Cat. No.	Description
36EDT7	24 AC/DC, ON Delay/Retentive ON Delay
33EDT7	110V AC, ON Delay/Retentive ON Delay
37EDT7	240V AC, ON Delay/Retentive ON Delay

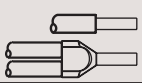
MOUNTING DIMENSION (mm)



CONNECTION DIAGRAM

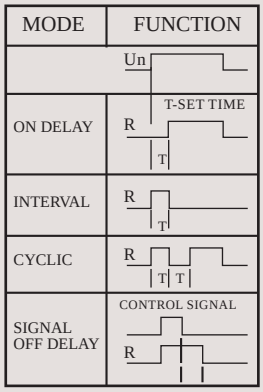
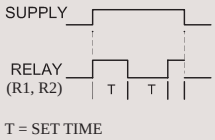
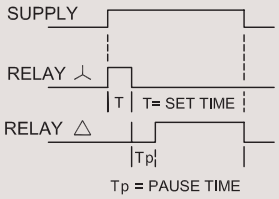


TERMINAL TORQUE & CAPACITY

 Ø 3.5 mm	Torque 0.54 N.m (5 Lb. in) Terminal Screw - M 2.5
	1 x 0.2 - 3.3 mm^2 Solid Wire / single wire ferrule 2 x 0.2 - 1 mm^2 Insulated with twin ferrule
AWG	1 x 24 to 12

Electronic Timer - Series Micon™ 480

- Multi-function, Asymmetrical ON/OFF, and Star-Delta timers
- Wide operating voltage range
- Front access for frequent change of parameters
- Universal mounting

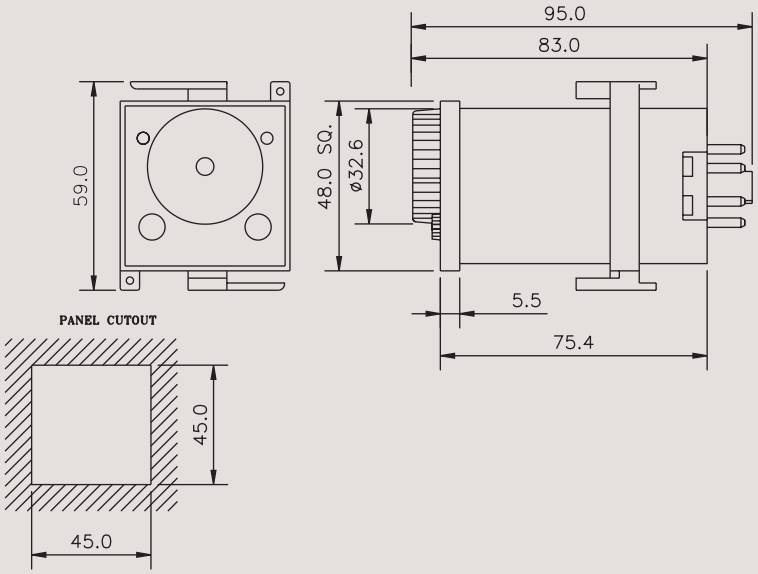
Cat. No.	40MFS0	40AFS0	40SFS0
Parameters			
Mode	Multi-function	Asymmetrical ON/OFF	Star-Delta
Functional Diagram		 T = SET TIME	 Tp = PAUSE TIME
Supply Voltage	24 - 240 VAC/DC		110/240 VAC
Supply Variation	- 20% to + 10%		
Frequency	50/60 Hz		
Timing Ranges	0.1s to 10h	0.1s to 10h (ON & OFF Both)	0.3s to 120s
Pause Time	N.A.		60ms, 90ms, 120ms, 150ms
Reset Time	100 ms (max.)		
Accuracy Setting Accuracy Repeat Accuracy	 ± 5% of Full scale ± 1%		
Relay Output Contact Rating Contact Material Electrical Life Switching Frequency @ rated max load	2 C/O 5A (resistive) @ 240 VAC / 28 VDC AgCdO $1x10^5$ 1000 operations/h (Max.)		Star - 1 'NO', Delta - 1 'NO'
Operating Temperature Storage Temperature	-10 to +55° C -20 to +70° C		
LED Indication	Green LED Power ON, Red LED Relay ON		Red 1 ⅄ ON, Red 2 △ON
Housing Dimension (W x H x D) Weight (unpacked)	Flame Retardant UL94V0 48 X 48 X 95 (in mm) 114 g		
Mounting	Base / DIN Rail, Flush with 11 or 8 pin Universal or Solderable socket		
Certification	CE		
EMI/ EMC Radio Interference Suppression ESD Electrical Fast Transients Surges Voltage Dips & Interruptions	 CISPR 14-1 Class B IEC 61000-4-2 Level III IEC 61000-4-4 Level IV IEC 61000-4-5 Level IV IEC 61000-4-11 All 7 Levels		

ORDERING INFORMATION

Cat. No.	Description
40MFS0	24-240 VAC/DC, Multi-function with Signal Off Delay, 2 C/O, 11 Pin
40MFE0	24-240 VAC/DC, Multi-function, 2 C/O, 8 Pin
40AFS0	24-240 VAC/DC, Asymmetrical ON/OFF, 2 C/O, 11 Pin
40SFS0	24-240 VAC, Star-Delta, 1 NO (Star) + 1 NO (Delta), 11 Pin
46OFE8	24 VAC/DC, On Delay, 1 instant + 1 delayed C/O, 8 Pin
43OFE8	110 VAC, On Delay, 1 instant + 1 delayed C/O, 8 Pin
47OFE8	240 VAC, On Delay, 1 instant + 1 delayed C/O, 8 Pin

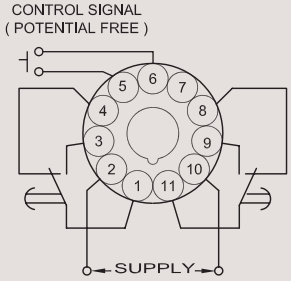
Electronic Timer - Series Micon™ 480

MOUNTING DIMENSION (mm)



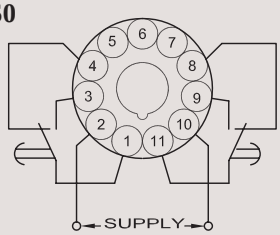
CONNECTION DIAGRAM

For : 40MFS0

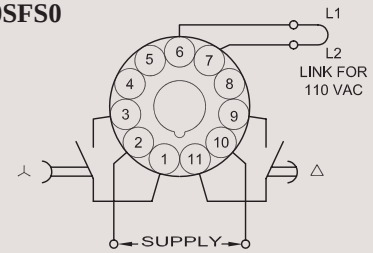


Coution : No external voltage should be applied between terminals 5 and 6. These are to be shorted only for giving Control signal

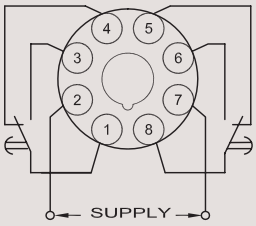
For : 40AFS0



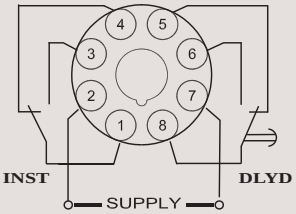
For : 40SFS0



For : 40MFE0

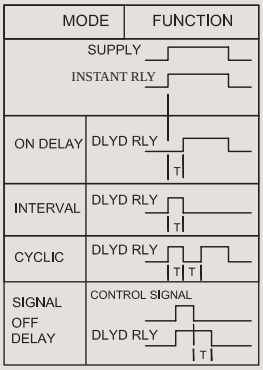
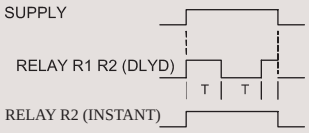
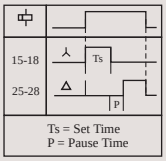


For : 47OFE8, 43OFE8, 46OFE8



Electronic Timer - Series Micon™ 780

- Selectable Dual-voltage:
  110/240V AC,240/415V AC and 24V AC/DC
- Multi-function, Asymmetrical ON/OFF, and Star-Delta timers
- Selectable Contacts:
  One instant and One delay/ Two delay
- Large knobs for ease of setting

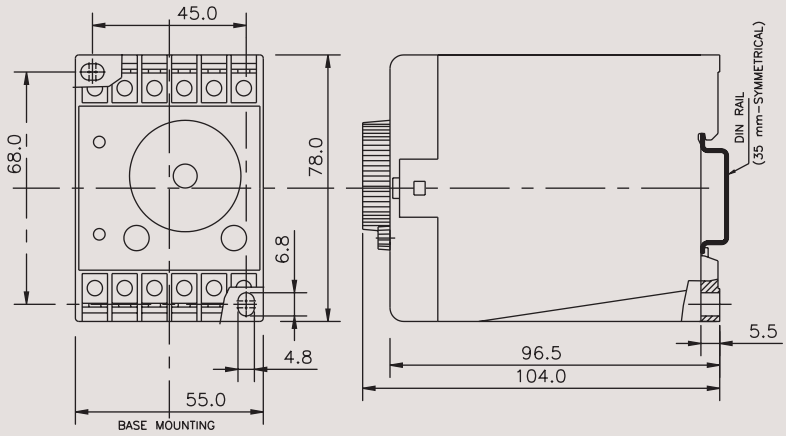
Cat. No.	70MDTO	70ADTO	70SDTO
Parameters			
Mode	Multi-function	Asymmetrical ON/OFF	Star- elta
Functional Diagram			
Supply Voltage	110 VAC / 240 VAC		
Supply Variation & Frequency	- 20% to +10% / 50/60 Hz		
Timing Ranges	0.1s to 10h	0.1s to 10h (ON & OFF Both)	0.3s to 120s
Pause Time	N.A.		60ms, 90ms, 120ms, 150ms
Reset Time	100 ms (max.)		
Accuracy Setting Accuracy Repeat Accuracy	 ± 5% of Full scale ± 1%		
Relay Output	1 Instant + 1 Delayed or 2 Delayed C/O (Selectable)		Star - 1 'NO', Delta - 1 'NO'
Contact Rating Contact Material Electrical Life Switching Frequency @ rated max load	For-110/240 V AC Model - 10A (resistive) @ 240 VAC & For-240/415 V AC Model - 5A (resistive) @ 415 VAC AgSnO $1x10^5$ 1000 operations/h (Max.)		
Operating Temperature Storage Temperature	-10 to +55° C -20 to +70° C		
LED Indication	Green LED → Power ON, Red LED → Relay ON		Red 1- ⅄ ON, Red 2- Δ ON
Housing Dimension (W x H x D) Weight (unpacked)	Flame Retardant UL94V0 55 X 78 X 104 (in mm) 210 g		
Mounting	Base / DIN Rail		
Certification	CE		
EMI/ EMC Radio Interference Suppression ESD Electrical Fast Transients Surges Voltage Dips & Interruptions	 CISPR 14-1 Class B IEC 61000-4-2 Level III IEC 61000-4-4 Level IV IEC 61000-4-5 Level IV IEC 61000-4-11 All 7 Levels		

ORDERING INFORMATION

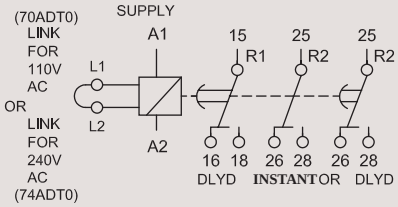
Cat. No.	Description
70MDT0	110/240 VAC, Multi-function
74MDT0	240/415 VAC, Multi-function
76MDT0	24 VAC/DC, Multi-function
70ADT0	110/240 VAC, Asymmetrical ON/OFF
74ADT0	240/415 VAC, Asymmetrical ON/OFF
76ADT0	24 VAC/DC, Asymmetrical ON/OFF
70SDT0	110/240 VAC, Star-Delta
74SDT0	240/415 VAC, Star-Delta

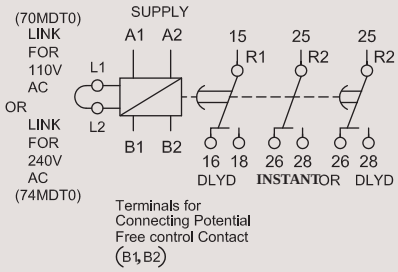
Electronic Timer - Series Micon™ 780

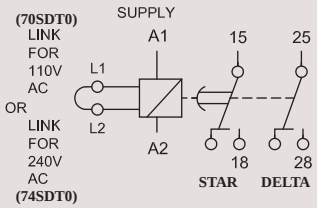
MOUNTING DIMENSION (mm)



CONNECTION DIAGRAM







TERMINAL TORQUE & CAPACITY

Ø3.5.....5.0mm	1.1 Nm(10 lb.in) Terminal screw - M3.5
	2 x 0.2...2.5 mm ^{2} solid wire/single wire ferrule
AWG	1 x 24 to 10

Digital Timer *Eliro*®

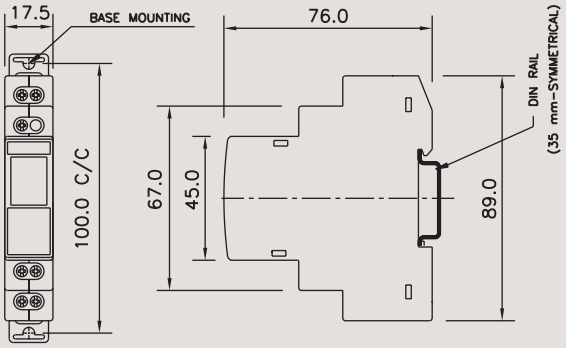
- Compact 17.5 mm
- Multi-voltage, Multi-function(8 or 17)
- 3 digit LCD for Preset time and Run time
- Option to select Up/Down counting
- Tamper proof with key lock function
- All settings accomplished with only two keys

Cat. No.		V0DDTS1, V0DDTS	V0DDTD1, V0DDTD
Parameters			
Supply Voltage (Un)		24 - 240 VAC/DC	
Operating Range		-15% to +10% of Un	
Frequency		50 - 60 Hz, + / - 2 Hz	
Power Consumption (Max.)		10 VA	
Timing Ranges		0.1s to 999h	
Repeat Accuracy		+/- 0.5% of selected range	
Relay Output		1 C/O (SPDT)	2 NO (DPST)
Contact Rating Contact Material Electrical Life Mechanical Life Switching Frequency @ rated max load		8A (resistive) @ 240 VAC / 24 VDC Ag alloy 1x10 ^{5} 2x10 ^{7} 1800 Operations / h	
Utilization Category	AC - 15	Rated Voltage (Ue): - 125/240 V, Rated Current (Ie) :- 3/1.5 A	
	DC - 13	Rated Voltage (Ue): - 125/250 V, Rated Current (Ie) :- 0.22/0.1 A	
Operating Temperature		-10° C to +55° C; Storage Temperature: -20° C to +65° C	
LED Indication		Red LED → Relay ON	
Housing Dimension (W x H x D) Weight (Unpacked)		Flame Retardant UL94V0 17.5 X 89 X 76 (in mm) 85 g	
Mounting		Base / DIN rail	
Certification		CE	
Degree of Protection		IP 30 (Enclosure), IP 20 (Terminals)	
Humidity (Non - Condensing)		93% Rh	
EMI/ EMC Radio Interference Suppression ESD Electrical Fast Transients Surges Voltage Dips, Interruptions Vibration		 CISPR 14-1 Class B IEC 61000-4-2 Level III (Air 4kV/Contact 6kV) IEC-61000-4-4 Level IV IEC-61000-4-5 Level IV IEC-61000-4-11 (AC), IEC-61000-4-29 (DC) IEC-60068-2-6	

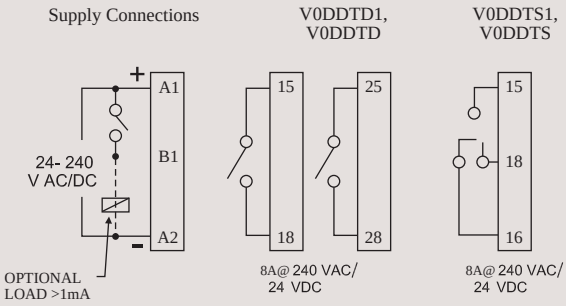
ORDERING INFORMATION

Cat. No.	Description
VODDTS	24-240 VAC/DC, 8 Functions, 1C/O
VODDTD	24-240 VAC/DC, 8 Functions, 2 NO
VODDTS1	24-240 VAC/DC, 17 Functions, 1C/O
VODDTD1	24-240 VAC/DC, 17 Functions, 2 NO

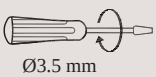
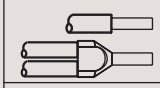
MOUNTING DIMENSION (mm)



CONNECTION DIAGRAM

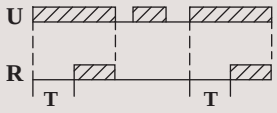


TERMINAL TORQUE & CAPACITY

 Ø3.5 mm	Torque 0.54 N.m (5 Lb. in) Terminal Screw M2.5
	1 x 0.2 - 2.5 mm^2 Solid Wire / single wire ferrule 2 x 0.2 - 0.5 mm^2 Insulated with twin ferrule
AWG	1 x 24 to 13

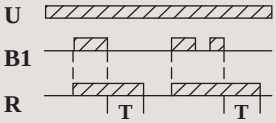
FUNCTIONAL DIAGRAMS FOR V0DDTS1 & V0DDTD1

ON DELAY [0]



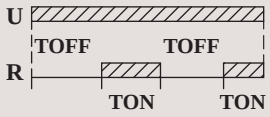
Timing commences when supply is present.R energizes at the end of the timing period.

SIGNAL OFF DELAY [9]



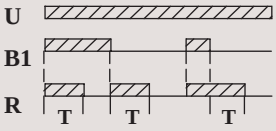
Permanent supply is required. R energizes when switch B1 is closed. Timing commences after S is opened and then the relay de-energizes.

CYCLIC OFF/ON {OFF Start, (Sym, Asym)} [1]



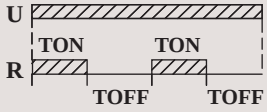
T-ON and T-OFF can be same or different. The relay(R) keeps on changing its status till power is removed.

IMPULSE ON/OFF [A]



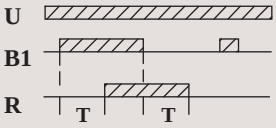
Permanent supply is required. R energizes for the timing period when B1 is opened or closed. When timing commences, changing state of B1 does not affect R but resets timer.

CYCLIC ON/OFF {ON start, (Sym, Asym)} [2]



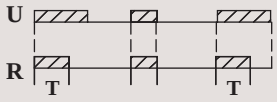
This function is quite similar to the function '1' but initially the relay(R) is ON for period T-ON after the power is applied.

SIGNAL OFF/ON [b]



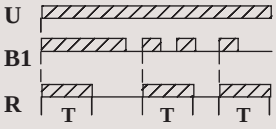
When switch B1 is closed or opened for preset time ,T, the relay changes its state after time duration T.

IMPULSE ON ENERGIZING [3]



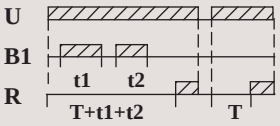
After power ON, R energizes and timing starts. R de-energizes after timing is over.

LEADING EDGE IMPULSE1 [C]



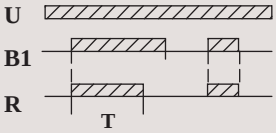
A permanent supply is needed. When B1 is closed, output relay energizes until timing irrespective of any further action of B1.

ACCUMULATIVE DELAY ON SIGNAL [4]



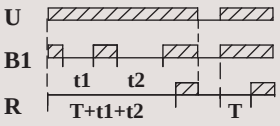
Time commences as supply is present and switch B1 is open. Closing switch B1 pauses timing. Timing resumes when switch B1 is opened again. R energizes at the end of timing.

LEADING EDGE IMPULSE2 [d]



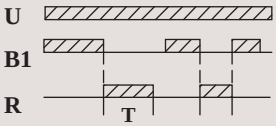
Permanent supply is required. when switch B1 is closed, and remains closed output relay energizes until timing is over. If B1 is opened during timing, R resets.

ACCUMULATIVE DELAY ON INVERTED SIGNAL [5]



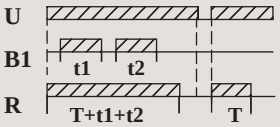
Time commences as supply is present and switch B1 is closed. Opening switch B1 pauses timing. Timing resumes when switch B1 is closed again. R energizes at end of timing.

TRAILING EDGE IMPULSE1 [E]



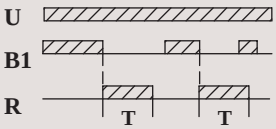
Permanent supply required. when B1 is opened, R energizes and de-energizes when timing is over. If B1 is closed during timing R resets.

ACCUMULATIVE IMPULSE ON SIGNAL [6]



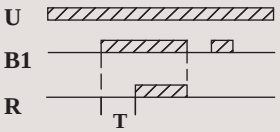
When supply is ON, R energizes. When switch B1 is closed timing is suspended and remains suspended till switch B1 is opened again. Interrupting supply resets timer.

TRAILING EDGE IMPULSE2 [F]



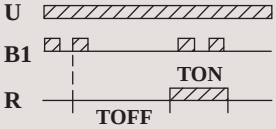
Permanent supply is required. When switch B1 is opened, R energizes and will de-energize when timing is over. If B1 is pulsed during timing period it will have no effect on R.

SIGNAL ON DELAY [7]



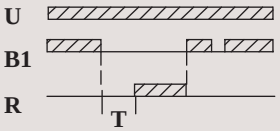
Permanent supply required. Timing starts when switch B1 is closed. R energizes at end of timing period and de-energizes when B1 is opened.

DELAYED IMPULSE [G]



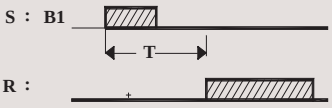
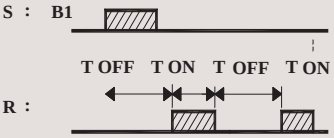
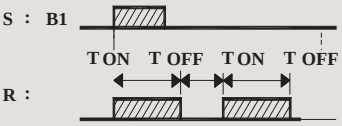
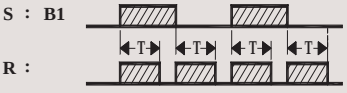
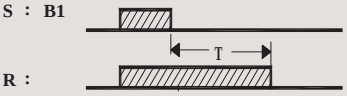
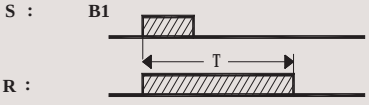
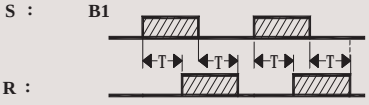
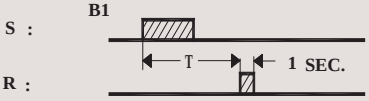
when switch B1 is closed, TOFF starts. Relay energizes at the end of TOFF period. Then, TON starts irrespective of signal level and relay de-energizes at the end of TON period.

INVERTED SIGNAL ON DELAY [8]



Timing will commence when supply is present and switch B1 is open. R energizes after timing .If B1 is closed during timing period, timing resets to the beginning of cycle.

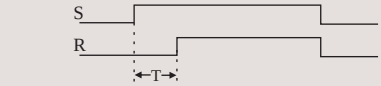
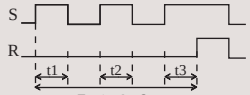
FUNCTIONAL DIAGRAMS FOR V0DDTS & V0DDTD

	P : A1- A2  P: Power-On operation
ON DELAY (A)	S : B1  R :
CYCLIC OFF/ON {OFF Start, (Sym, Asym)} (b)	S : B1  R :
CYCLIC ON/OFF {ON Start, (Sym, Asym)} (C)	S : B1  R :
SIGNAL ON/OFF (d)	S : B1  R :
SIGNAL OFF DELAY (E)	S : B1  R :
INTERVAL (F)	S : B1  R :
SIGNAL OFF / ON (G)	S : B1  R :
ONE SHOT OUTPUT (H)	S : B1  R :

Note: 1. For Power-On operation (P) connect the terminal B1 to A1 permanently.
2. If the Signal (S) changes during the Timer Duration (T), it does not change the output relay but re-triggering takes places and the Timer Duration is extended.

Synchronous Timer - Series EM 1000

- Time delay is independent of normal voltage and temperature fluctuations
- Black pointer gives clear indication of time set on a calibrated dial while the red one indicates the time left to complete the cycle
- Automatic reset on de-energisation of the clutch coil
- Base mounting or flush mounting versions
- No-volt feature is available

Mode	On - Delay	On - Delay (Retentive / No Volt)
Functional Diagram	 S = Supply, R = Relay, T = SET TIME	 T = t1 + t2 + t3
Supply Variation	- 20% to 10%	
Frequency	95% - 105%	
Nominal Consumption	10 VAC Max.	
Timing Range	0.15 s to 120 h	
Repeat Accuracy	± 0.5% of FSR at constant Frequency	
Contact Rating Switching Frequency	1 Inst + 1 delayed - AgCdO 1 Inst + 2 delayed - AgCdO (Optional) 6A (resistive) @ 250 VAC 3000 operations/hr. (Max.)	
Operating Temp.	-5°C to 45°C	
Housing Dimension (W x H x D)	Conforms to IP30 - IS 13947. 96 X 96 X 100 (in mm)	
Mounting	Flush & Base	
Terminal Connection	1– 2.5 mm² solid/ stranded	
Protection	IP20	

ORDERING INFORMATION

B □ □ □ □ □

Timing Ranges(SR)

B	0.15 - 3.0	SEC
C	1.5 - 30	SEC
D	0.15 - 3.0	MIN
E	1.5 - 30	MIN
F	0.15 - 3.0	HRS
G	1.5 - 30	HRS
H	0.3 - 6.0	SEC
J	3.0 - 60	SEC
K	0.3 - 6.0	MIN
L	3.0 - 60	MIN
M	0.3 - 6.0	HRS
N	3.0 - 60	HRS
P	0.6 - 12	SEC
Q	6.0 - 120	SEC
R	0.6 - 12	MIN
S	6.0 - 120	MIN
T	0.6 - 12	HRS
V	6 - 120	HRS

Timing Ranges(MR)

X	0.15 SEC.-3.0 HRS.
Y	0.3 SEC.- 6.0 HRS.
Z	0.6 SEC.-12.0 HRS.

Voltage

3	110V AC 50 Hz
4	240V AC 50 Hz
C	110V AC 60 Hz
D	240V AC 60 Hz

Contact

1	1 Inst + 1 Del C/O
2	1 Inst + 2 Del C/O

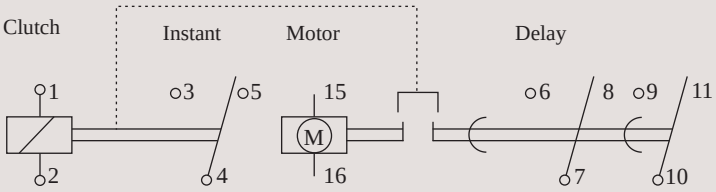
Mounting

B	Base Mounting
F	Flush (door) Mtg.

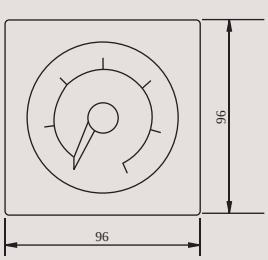
Delay

1	Standard ON delay
2	With 'NO VOLT'

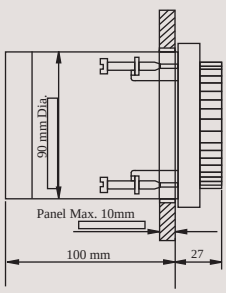
WIRING DIAGRAMS OF SERIES EM1000



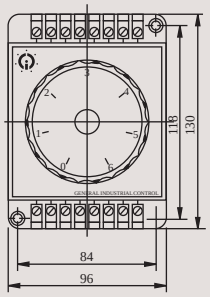
MOUNTING DIMENSION (mm)

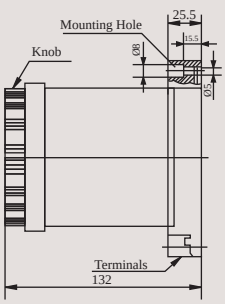


Note : Panel Cutout 91mm Dia.



BASE MOUNTING





Synchronous Timer - Series EM 2000

- Time delay is independent of normal voltage & temp fluctuations
- Large knob operating on a linear scale makes time setting easy
- Set time is indicated by a fixed pointer of the setting knob.
  Time left for completion of cycle is indicated by red pointer
- Wiring is quicker and easier as terminals are in the front of the unit
- All part subjected to wear & tear are made of 'Derlin'
  which has high resistance to wear & tear and thus ensures longer life.

Mode	**On - Delay**
Functional Diagram	 S = Supply, R = Relay, T = SET TIME
Supply Variation	- 20% to 10%
Frequency	95% - 105%
Timing Range	1 s to 120 s
Accuracy : Repeat Accuracy	 ± 2% of Full Scale Range at constant Frequency
Contact Rating Switching Frequency	1 delayed - AgCdO 2 delayed - AgCdO (Optional) 5A (resistive) @ 250 VAC 1000 operations / hr. (Max)
Operating Temp.	-5°C to 45°C
Housing Dimension (W x H x D)	Conforms to IP30 - IS 13947. 55 X 88 X 106 (in mm)
Mounting	Base/DIN Mounting & can be mounted on vertical plane with maximum inclination of 15° from vertical.
Terminal Connection	1– 2.5 mm² solid/stranded.
Protection	IP20

ORDERING INFORMATION

C □ □ □B 1

Timing Ranges

C	1.0 - 30 Sec
J	2.0 - 60 Sec
Q	4.0 - 120 Sec

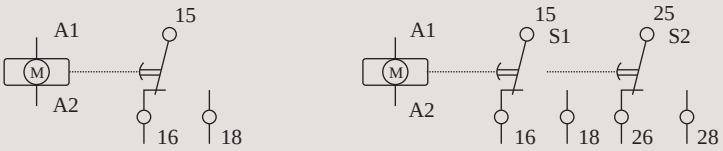
Voltage

3	110V AC 50 Hz
4	240V AC 50 Hz
5	415V AC 50 Hz

Contact

5	1 Del C/O
6	2 Del C/O

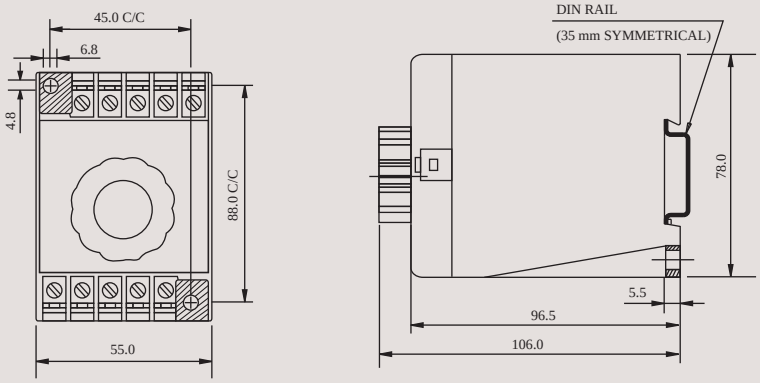
WIRING DIAGRAMS OF SERIES EM2000



Note : Switch 2 operates before switch 1

MOUNTING DIMENSION (mm)

BASE/DIN MOUNTING



Glossary

Operating Voltage:
Input Supply required for operation.

Supply Variation:
Allowable variation in input power supply for satisfactory operation.

Delayed Contacts:
A contact in a timer that changes state at the end of time you have set.

Instantaneous Contact:
A contact that changes state as soon as power is switched on to the timer.

Electrical Life:
The number of operations that the connect can be expected to make or break at the rated electrical load.

Reset Time:
Time taken by the timer to start a new cycle.

Repeat Accuracy:
It indicates how consistently the device will repeat the time. It is more important where uniform processing time cycles are required.

Rated Current:
A current that can flow continuously through the closed contact.

Contact Rating:
Voltage and current, which can switch under specified conditions.

Ambient Temperature:
Temperature surrounding the product.

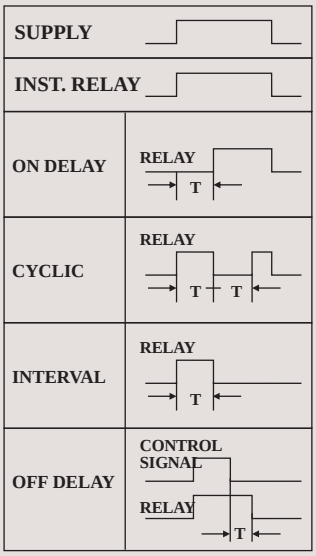
Power Consumption:
Power absorbed by the unit for its own satisfactory functioning.

Mounting:
The type of placement of the unit (Base/Din/Flush).

No-volt protection (Retentive Timer):
Timers are available with retention ensuring that elapsed time is not cancelled when the supply is interrupted during the timing cycle.

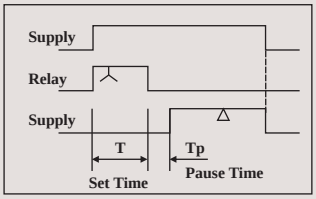
Operating Modes / Functions

MULTIFUNCTIONAL



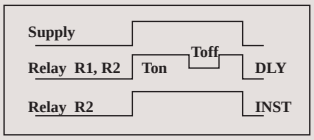
- Delay on Energisation (ON Delay): The set time (Delay) start when timer receives supply. The output relay energises at the end of the pre-set time
- Cyclic Instant (Equal ON/OFF): On energisation, relay output is on and off repeatedly for the set time. Cycle starts with relay in energised condition. By removing supply, the relay gets reset.
- Interval Timer: On energisation of Timer, Output relay changes the state for the time set. After completion of set time, output relay de-energises. By switching off supply, the Timer gets de-energised & is ready for the next cycle of the operation.
- (Signal)-Off delay: Timer is energised and relay is in Off condition. When control input is given through control contacts, relay is energised. Delay period commences when control input is removed. At the end of set time, relay is de-energised and load is desconnected.

STAR - DELTA



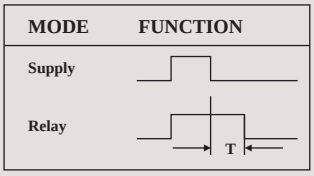
- Star - Delta: The timer has a fixed transition time from Star to Delta connections. On energisation, the output star relay energises instantly. After completion of preset delay time, output Delta relay energises after fixed pause time. This pause time (60, 90, 120, 150 ±20 ms) provides the shortest possible 'current off' pause and simultaneously ensures smooth change over.

ASYMMETRICAL ON/OFF



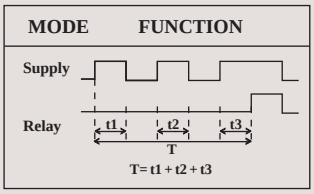
- Asymmetrical ON/OFF (Cyclic Instant): ON/OFF, can be independently selected from 0.1 Sec. to 10 Hrs. On energisation, relay output is on and off repeatedly for the respective set times. Cycle starts with relay is energised condition. By removing supply, the relay gets reset.

TRUE OFF DELAY



- True Off Delay: On energisation the Relay O/P is in ON Position. Timing delay period commences when supply to the true off delay Timer goes OFF. The O/P Relay de-energises at the end of pre-set time.

ON DELAY (RETENTIVE/NO VOLT)



- On Delay (Retentive): The set time (Delay) starts when timer receives supply. The output relay energises at the end of the pre-set time. If power fails during set time, the elapsed time will retained by timer. Upon resumption of power, remaining cycle will continue.

Time Switch FM Series

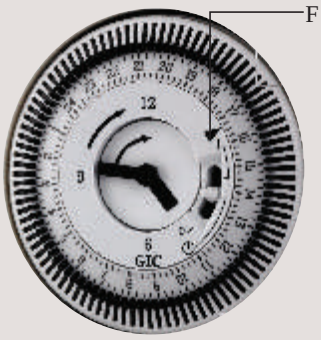
- Modular construction
- Inbuilt over-ride facility
- High switching capacity
- Tamper proof sealing
- Analog & Digital version
- Daily/Weekly programming
- Graphical Program LCD

Cat. No.	J648B1 (Analog Version)	D847B2 (Digital Version)
Parameters		
Supply Voltage & Frequency	240 VAC, 50/60 Hz	
Power Consumption	2 VA	4.4 VA
Accuracy	± 1.5 s/day at 20°C	± 1 s/day at 20°C
Switching contact	1 C/O contact - AgCdO	
Contact Rating - Resistive - Inductive (cosø = 0.6) - Incandescent Lamp	 16A @ 250 VAC, 0.25A @ 220VDC 8A @ 250 VAC, 0.1A @ 220 VDC 1350 W	 16A @ 250 VAC 4A @ 250 VAC
Shortest Switching Time - Daily - Weekly	 15 m 2 h	 1 m 1 m
Power reserve	150 h	10 years from Factory at 20°C
Memory locations	NA	20
Ambient Temperature	-20°C to 55°C	
Manual Over-ride	Provided	
Mounting	Flush, Base / DIN rail	
Weight	185 g	

ORDERING INFORMATION

Cat. No.	Description	
J648B1	FM/1 QT	Daily dial, 240 VAC, Base / DIN Mounting
J848B1	FM/1 QW	Weekly dial, 240 VAC, Base / DIN Mounting
J638B1	FM/1 QT	Daily dial, 110 VAC, Base / DIN Mounting
J838B1	FM/1 QW	Weekly dial, 110 VAC, Base / DIN Mounting
D847B2	FM/1 Digi20 Plus	Weekly / Daily, 240 VAC, Base / DIN Mounting

Note: For Flush Mounting model replace B by F in Cat. No.



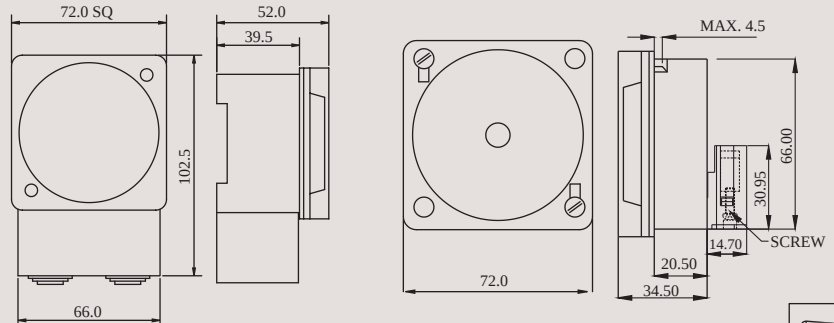
TIME SETTING:

Turn the switching Dial in clockwise direction until the current time (day / time incase of weekly model) and is almost opposite to the marking arrow F. For fine adjustment turn the minute hand in the clockwise direction until the clock shows the current time.

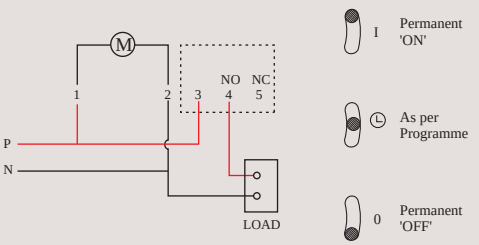
PROGRAMMING:

Required Switch ON time is set on the Switching Dial by radially pulling outwards the corresponding black segments. Each segment on daily dial corresponds to 15 mins. & on weekly Dial corresponds to 2 hours.

MOUNTING DIMENSION (mm)



CONNECTION DIAGRAM



TERMINAL TORQUE & CAPACITY

Ø 4.0 mm	Torque 1.1 N.m (10 Lb. in) Terminal Screw - M 3.5
	1 x 0.2 - 5 mm² Solid Wire / single wire ferrule 2 x 0.2 - 2.5 mm² Insulated with twin ferrule
AWG	1 x 24 to 10

Digital Time Switches *Crono*™ & *Pulse*

- Precise time programming for Daily/Weekly/Pulse switching
- Simple Reset
- Weekend and Weekly OFF programming
- LED indication of Relay status
- 12/24 h display formats
- 6 years battery reserve
- Manual override

Cat. No.	67DDT0 (*Crono*™)	67DDT9 (*Pulse*)
Parameters		
Supply Voltage & Frequency	110 - 240 VAC, -20 % +10%, 50 / 60 Hz	
Number of Modes & it's description	Five • AUTO - Program Run • ON AUTO - Instant ON up to next ON Program • AUTO OFF - Instant OFF up to next OFF Program • ON - Continuous ON • OFF - Continuous OFF	Three • AUTO - Program Run • ON - Continuous ON • OFF - Continuous OFF
Memory Locations	8 On / Off operations, 16 memory locations	16 Pulse operations (Ex - 0,1,2,3,4,5,6,7,8,9, a, b, c, d, e, f)
Minimum Switching Time	1 m	1 to 59 s Pulse Time (Same or Different)
Power Consumption	6 VA (Approx)	
Operating Temperature Storage Temperature	-10°C to + 55°C -10°C to + 60°C	
Clock Accuracy	± 1 s/day max. over the Operating Temperature range	
Power Reserve (Battery backup)	6 Years running reserve	
Switching Contact (Relay Output)	1 C/O (SPDT)	
Shortest Switching Time	1 m (For Crono) & 1 s (For Pulse)	
Contact Rating	Resistive: - 16A @ 240 VAC / 28 VDC Inductive (cos ø = 0.6) :- 6 A @ 250 VAC Incandescent Lamp: - 1000 W	
Electrical Life	$3x10^5$	
Contact Material Mechanical Life	Ag Alloy $50 X 10^3$	
LED Indication	Red → Relay ON	
Housing Dimension (W x H x D) Weight	Flame Retardant UL94V0 36 X 65 X 90 (in mm) 120 gms (unpacked)	
Mounting	Base / DIN rail	
Protection	IP20	
Certification	CE	
EMI/ EMC Radio Interference Suppression ESD Electrical Fast Transients Surges Voltage Dips & Interruptions	 CISPR 14-1 Class B IEC 61000-4-2 Level III IEC 61000-4-4 Level IV IEC 61000-4-5 Level IV IEC 61000-4-5 Level III, Conducted Emission- IEC 61000-4-11 Class B	
Applications	Ideal for Lightening applications like street lighting, advertising displays. Also can be used for Air conditioners / Coolers, Geysers, conveyors, pumps etc.	Ideal for Siren, School bell application

ORDERING INFORMATION

Cat. No.	Description
67DDT0	110 - 240 VAC (50/60 Hz), 1 C/O (SPDT)
67DDT9	110 - 240 VAC (50/60 Hz), 1 C/O (SPDT)

TIME & DAY SETTING:

Press RST key. Press ◷ key & keep it pressed. Then press D+ key to set running day. Press H+ key to set running hour & press M+key to set running Minute.
Mode - To set a mode press MAN key

PROGRAMMING:

To set a program - Press PRG key.
Set 1 ON time, day, then 1 OFF time, day with the help of D+, H+ & M+ keys.
Like this we can set another 8 ON & 8 OFF programs.

PROGRAMMING:

To set a program - Press PRG key.
(a) If pulse is common or the same, set pulse before the ON time (b) If pulse time is different for different programs, set the ON time first and then set different pulse values for each programme

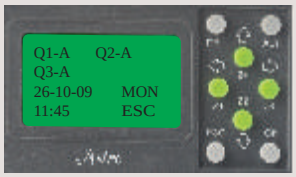
Astronomical Time Switches *Astro*™

- Dynamic and accurate control based on astronomical mathematics
- Yearly programming with season mode, DST, Offset, Off hours enabled
- Protection against under voltage and over voltage
- Active Phase selection & Auto load changeover feature
- Three independent channel outputs
- Manual override facility
- Single phase and three phase versions

Cat. No.	T2DDT0	T3DDT0
Parameters		
Supply Voltage	110-240 VAC, 50/60Hz	110-240 VAC 3 Phase 4 wire (P-N), 50/60Hz
Supply Variation	-20% to +15%	
Power Consumption	8VA @ 300 VAC	
Storage Temperature	-10°C to +60°C	
Operating Temperature	-10°C to + 50°C	
Switching contacts	2 NO, 8A (resistive load) @ 240 VAC and 5A (resistive load) @ 30 VDC	3 NO, 8A(resistive load) @ 240 VAC and 5A (resistive load) @ 30 VDC
Shortest switching time (daily)	1 m (1 s for pulse)	
Power reserve (for clock only)	1000 h	
Clock deviation	± 1 s per day over the operating temperature range	
DST	settable	
Mounting	Base / DIN rail	
Dimensions (W x H x D)	72 X 90 X 67 (in mm)	
EMI/ EMC Radio Interference Suppression ESD Electrical Fast Transients Surges Voltage Dips & Interruptions	 CISPR 14-1 Class B IEC 61000-4-2 Level III IEC 61000-4-4 Level IV IEC 61000-4-5 Level IV IEC 61000-4-11 All 7 Levels	
Certification	CE	
Weight	190 g	208 g

ORDERING INFORMATION

Cat. No.	Description
T2DDT0	110-240 VAC, 1 Phase, 2 NO (SPST)
T3DDT0	110-240 VAC, 3 Phase 4 wire (P-N), 3 NO (SPST)
TGDDT6	Windows based application software for Astro
TGDDT3	Memory card
GFDNN2S	Serial interface cable
GFDNN1	USB interface cable



Screen No. 1

Screen No. 2

Screen No. 3

Screen No. 4

TIME & DAY SETTING :

1) Power ON the Astro. The screen No.1 will appear.
2) Press ESC key.
3) Set the cursor on "SETTINGS" with help of Z keys and press OK.
4) Set the cursor on "CLOCK" with help of Z keys and press OK.
5) Set the cursor on "DATE / TIME" with help of Z keys and press OK. Then screen No.2 will appear.
6) Press Z1 or Z3 key to locate the cursor at "DAY" parameter position. Then press "ALT" key to edit the value of Day. When user presses this key, the upper digit of the Day parameter start blinking as to show it is selected. Press Z2 or Z4 key to increment or decrement the value of digit under edit. Press Z1 or Z3 key to select next digit of the parameter. Now again press Z2 or Z4 key to increment or decrement the value of digit. If required value of the Day has edited then press OK key to set it & come on the screen No. 1 by pressing the ESC key.
7) Similarly select other individual parameters and modify them as per your requirement & save it as per the above given process.

LATITUDE & LONGITUDE :

1) Go to menu by pressing "ESC" key
2) Set the cursor on "SETTINGS" with help of Z keys and press OK
3) Go to "LAT/LONG" using Z2 Key. Then screen No. 3 will appear.
   The cursor blinks at E. Press ALT Key to go into edit mode.
   Change the direction using Z2 or Z4 key once the required direction is set press ALT to set the direction. Jump to next character using either Z1 or Z3 key.
   Press ALT again to enter into edit mode When user presses this key, the digit starts blinking.
   Press Z2 ro Z4 key to increment or decrement the value of digit under edit.
   Press Z1or Z3 key to select next digit of the parameter.
   Now again press Z2 or Z4 key to increment or decrement the value of digit.
   If the required value of latitude longitude has been edited then press OK key to save it.

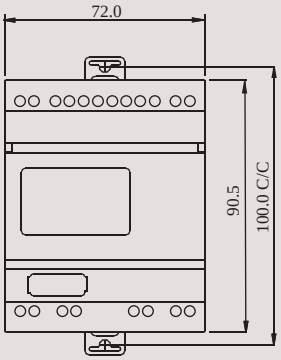
TIME ZONE

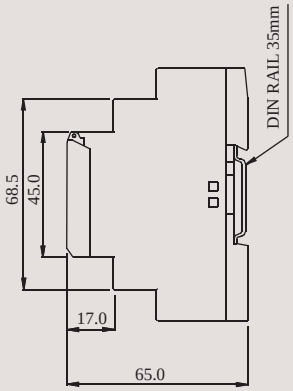
4) Go to "CLOCK" and Press OK.
5) Select "TIME ZONE" and Press OK. Then screen No.4 will appear.
6) In the screen No. 4, edit sign, hour & minute as per your requirement. Then press OK to save the changes & & come on the screen No. 1 by pressing the ESC key.

Astronomical Time Switches *Astro*™

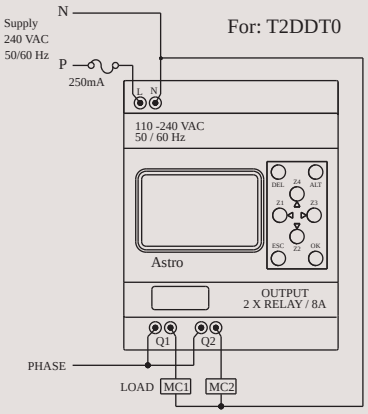
Digital Time Switches *Crono*™ & *Pulse*

MOUNTING DIMENSION (mm)
For: T2DDT0 & T3DDT0

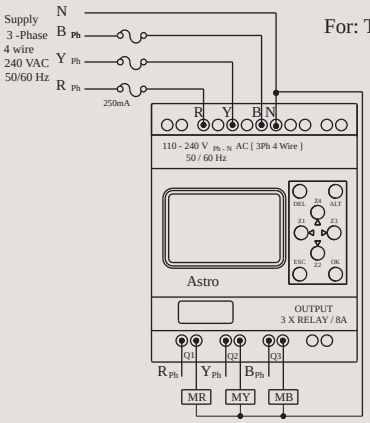




CONNECTION DIAGRAM



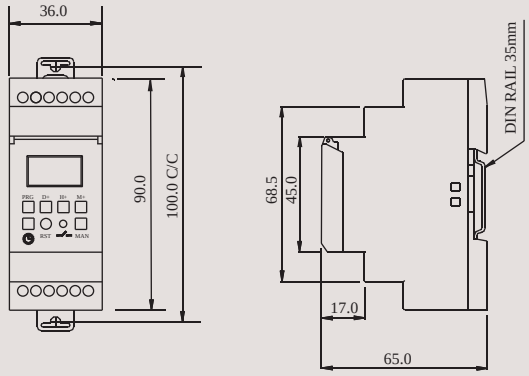
1. MC1 : - Coil of Contactor 1
2. MC2 : - Coil of Contactor 2



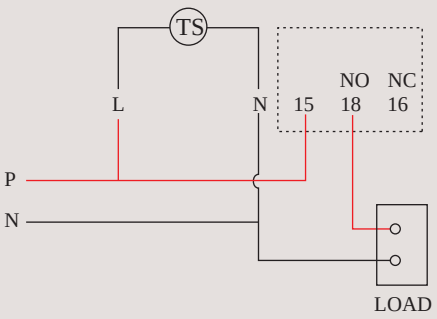
1. MR: - Coil of Contactor 1
2. MY: - Coil of Contactor 2
3. MB : - Coil of Contactor 3

Crono™ & *Pulse*

MOUNTING DIMENSION (mm)



CONNECTION DIAGRAM



TERMINAL TORQUE & CAPACITY

Ø 3.5 mm	Torque 0.54 N.m (5 Lb. in) Terminal Screw - M 2.5
	1 x 0.2 - 3.3 mm^2 Solid Wire / single wire ferrule 2 x 0.2 - 1 mm^2 Insulated with twin ferrule
AWG	1 x 24 to 12

Lighting Automation with *Astro*™ using GSM Technology

- Most of the "ASTRO" parameters can be set remotely using SMS queries. I.e. Output mode, Offset Hrs etc, UV, OV settings.
- Relay Output can be override remotely using SMS query.
- Energy Meter Functionality. Parameter like Load current, Supply voltage, Power, Energy can be known remotely.
- With the help of "Auto Error Code Update" following onsite error can be know remotely during output event.
  - Under Voltage
  - Over Voltage
  - Over Current
  - Output actuator short.
  - Load Open

Cat. No.	19D20B00	19D20A00	19C20C00
Parameters			
Supply voltage range	110-240 VAC 3 Phase 4 wire (P-N), 50/60Hz		110-240 VAC, 50/60 Hz
Supply variation	-30%, +25%		
Active phase selection	Yes		
Operating temperature range	-15 to + 60°C		
GSM Type	Dual band 900 / 1800 GSM		
GPRS packet data	Class 10 coding scheme		
AT command set Suitability	NA	NA	Yes GSM 7.05 & 7.07
SMS type functionality	Data Call through GSM, SMS		
SIM Holder	Text, Cell Broadcast		
Antenna	Connected with the product		
Antenna Impedance	50 O		
Energy Measurement	Yes		No
Energy Measurement Accuracy	Class 0.5		NA
Current sensing range	5A	1A	NA
CT ratio	Settable up to 40		NA
LED Indications	Tx, Rx, Network, Power, Pulse Out		Tx, Rx, Network, Power, SIM Status
Pulse Out rate	3200 pulses / kWh		NA
Auxiliary Output	12 V DC, 200 mA		NA
General Port Connectivity			TTL port for connecting Time-switch (Astro) USB through USB interface cable GFDNN1, RS232 through serial interface GFDNN2S, RS485 through TTL-RS485 converter G7XDTR4"
Mounting	DIN / Base		
Enclosure	4 Module		
Colour	RAL 7016		
Dimension (W x H x D)	72 X 90 X 67 (in mm)		
Weight	190 g		
Certification	CE		
EMI/ EMC Harmonic Current Emission ESD Radiated Susceptibility Electrical Fast Transients Surge Conducted Susceptibility Voltage Dips and Interruptions Radiated Emission	 IEC 61000-3-2 Ed. 3.0 (2005-11) Class A IEC 61000-4-2 Ed. 1.2 (2001-04) IEC 61000-4-3 Ed. 3.0 (2006-02) Level III IEC 61000-4-4 Ed. 2.0 (2004-07) IEC 61000-4-5 Ed. 2.0 Level IV IEC 61000-4-6 Ed. 2.2 (2006-05) Level III IEC 61000-4-11 Ed. 2.0 (2004-03)All seven levels CISPR 14-1 Ed. 5.0 (2005-11) Class A		

Note:
1. ERT5 & ERT1 can measure maximum 5A & 1A current respectively.
2. Maximum current measurement limit for ERT-5 is 200A & for ERT-1 it is 40A.

Ex: 1. For CT selection if current required to be measured upto 200A then CT of 200:5 A (CT ratio 40) need to be used.
2. For CT selection if current required to be measured upto 40A then CT of 40:1 A (CT ratio 40) need to be used.

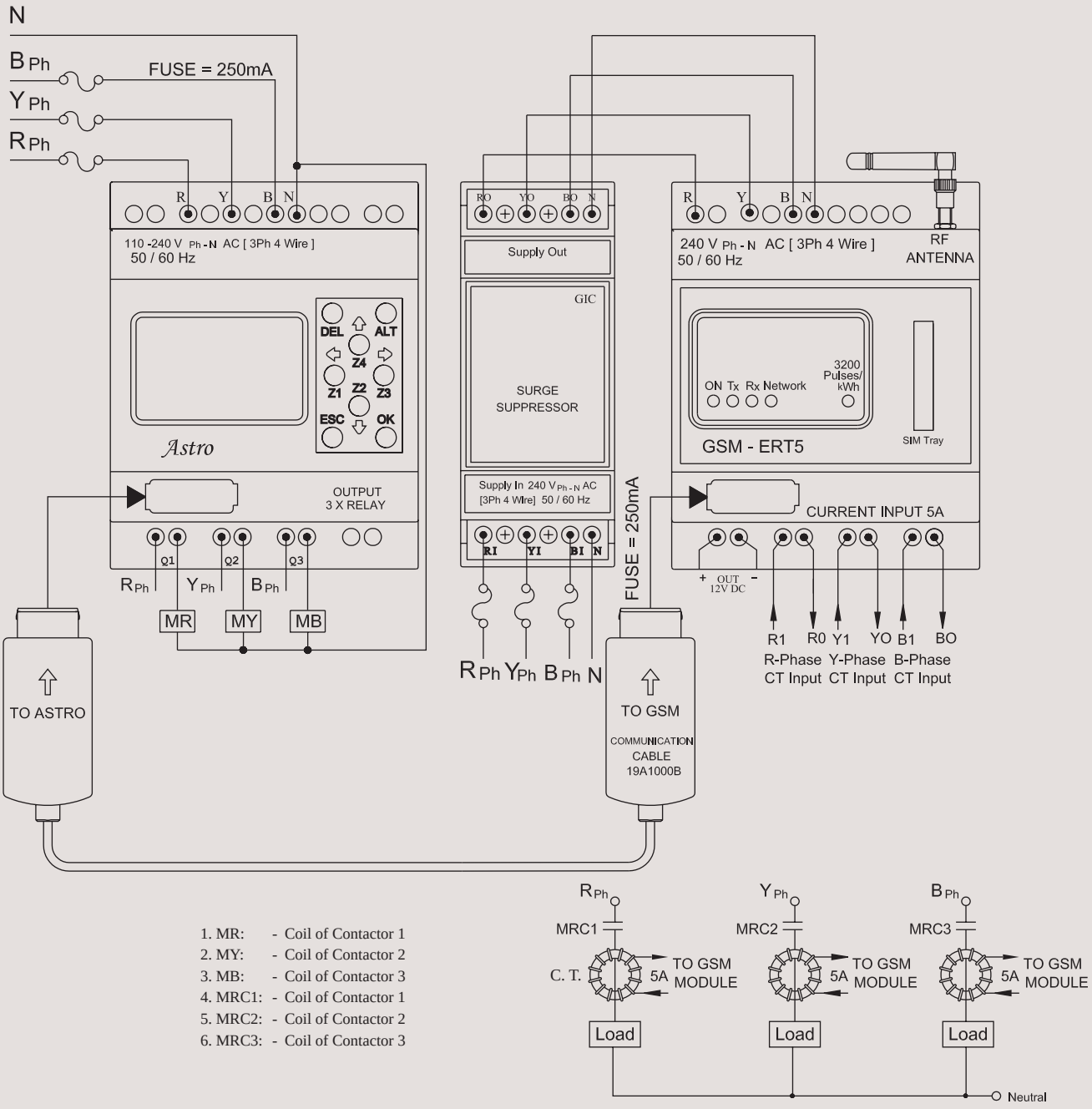
ORDERING INFORMATION

Cat. No.	Description
T3DDT0	Astro time switch, 110-240 VAC 3 Phase 4 wire (P-N), 50/60Hz, 3 NO (SPST)
19D2000C	Surge Suppressor
19D20B00	GSM Module (GSM-ERT5), Remote Side
19D20A00	GSM Module (GSM-ERT1), Remote Side
19C20C00	GSM Module (GSM-RT), PC side
19A1000B	Communication Cable (TTL-TTL) between Astro & GSM Module
TGDDT6	Windows based application software for Astro

Lighting Automation with *Astro*™ using GSM Technology

- Maximum 5 valid users can access the system remotely, using GSM functionality.
- To avoid Remote module's SIM theft, "SIM PIN" facility can be enabled remotely using SMS query.
- To avoid changes in system configuration by unauthorized user amongst valid users, important SMS queries are provided with "MODULE PIN" lock.
- Device supports for 12 to 14 digit mobile number. i.e. (10 Digit Mobile number + 2/3/4 digit country code).

CONNECTION DIAGRAM



1. MR: - Coil of Contactor 1
2. MY: - Coil of Contactor 2
3. MB: - Coil of Contactor 3
4. MRC1: - Coil of Contactor 1
5. MRC2: - Coil of Contactor 2
6. MRC3: - Coil of Contactor 3

TERMINAL TORQUE & CAPACITY

Ø 3.5 mm	Torque 0.54 N.m (5 Lb. in) Terminal Screw - M 2.5
	1 x 0.2 - 3.3 mm^2 Solid Wire / single wire ferrule 2 x 0.2 - 1 mm^2 Insulated with twin ferrule
AWG	1 x 24 to 12

Hour Meter Series HM36

- Robust design with high degree of accuracy and compact size
- Frequency independence for AC applications
- Indicates operating time in hours and tenths with running indicators
- Totally sealed from dust and moisture
- Panel mountable with 7 bezel options
- Non-resettable
- 6 digit version with automatic recycle to zero
- Wide supply voltage range: 4-30V AC/DC, 10-80V DC & 90-264V AC

Cat. No.	AC Model HM36	DC Model HM36	AC/DC Model HM36
Parameters			
Supply Voltage & Frequency	90-264 VAC, 50/60 Hz	10-80 VDC	4-30 VAC / DC, 50/60 Hz
Over Voltage & reverse polarity protection	----------	Protected for 2 times battery voltage and / or reverse polarity	Not applicable to AC and 48V for DC Application
Power Consumption	0.5 VA (Max)	0.25 VA (Max)	1 VA (Max)
Register	6 Digit (3.6mm)		
Read Out	99999.9		
Least Count	1/10 h		
Accuracy	± 0.02% over entire range		
Vibration	10-80Hz with 20g max(SAE 1378)		
Shock	55g @ 9-13ms (SAE 1378)		
Weight	47g (approx.)		
Temperature	-40° C to +85° C		
Humidity (Not condensive)	95%Rh (SAE J1378)		
Mounting	Panel		
Termination	¼" [6.3] spade terminal		
Approvals	cUL recognized, SAE & NEMA 4X (Equivalent to IP65)		SAE & NEMA 4X (Equivalent to IP65)
	CE		

ORDERING INFORMATION

Cat. No.	Description
LA21F1	90-264 VAC, Rectangular Bezel
LA22F1	90-264 VAC, Rectangular 2 holes Bezel
LA23F1	90-264 VAC, Round Bezel
LA24F1	90-264 VAC, Round 3 holes Bezel
LA25F1	90-264 VAC, Square Mount Bezel
LD11F1	10-80 VDC, Rectangular Bezel
LD12F1	10-80 VDC, Rectangular 2 holes Bezel
LD13F1	10-80 VDC, Round Bezel
LD14F1	10-80 VDC, Round 3 holes Bezel
LD15F1	10-80 VDC, Cup Mount Bezel
LD16F1	10-80 VDC, Stirrup Mount Bezel
LD17F1	10-80 VDC, Square Mount Bezel
LC31F1	4-30 VAC/DC, Rectangular Bezel
LC32F1	4-30 VAC/DC, Rectangular 2 holes Bezel
LC33F1	4-30 VAC/DC, Round Bezel
LC34F1	4-30 VAC/DC, Round 3 holes Bezel
LC35F1	4-30 VAC/DC, Cup Mount Bezel
LC36F1	4-30 VAC/DC, Stirrup Mount Bezel
LC37F1	4-30 VAC/DC, Square Mount Bezel

VIEWS OF DIFFERENT BEZELS

Rectangular Bezel

Rectangular 2 holes Bezel

Round Bezel

Round 3 holes Bezel

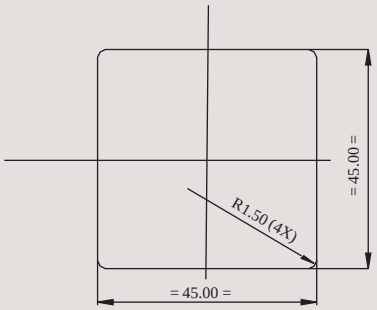
Cup Mount Bezel

Stirrup Mount Bezel

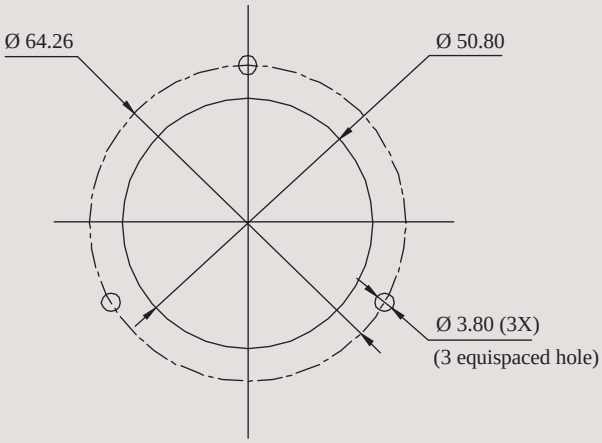
Hour Meter Series HM36

MOUNTING DIMENSION (mm)

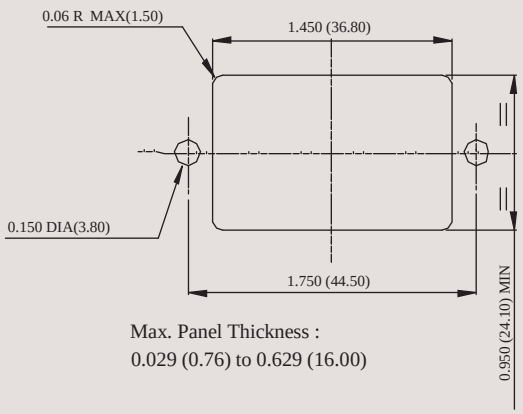
Square Mount Bezel (45 x 45 Panel Cutout)



Round Bezel & Round 3 holes Bezel



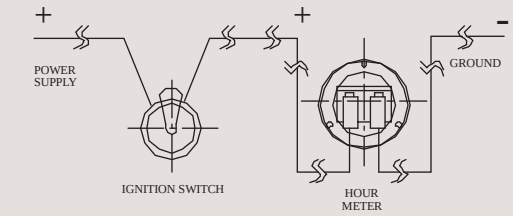
Rectangular Bezel

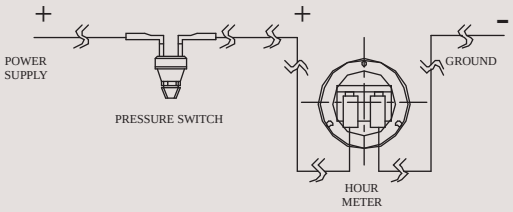


Max. Panel Thickness :
0.029 (0.76) to 0.629 (16.00)

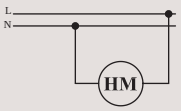
CONNECTION DIAGRAM

For : DC Series

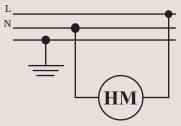




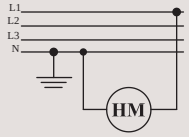
For : AC Series



Single phase, 2 wire, 120/240 V system: Connect power wire to one terminal and neutral wire to opposite terminal.



Single phase, 3 wire, 120/240 V system: Connect any one power wire to one terminal and neutral wire to opposite terminal.



Three phase, 4 wire, 120/240 V system: Connect any one power wire to one terminal and neutral wire to opposite terminal.

Caution
Tighten terminals with flat head screwdriver with tip size 4.3 x 0.6 mm.

Hour Meter Series HM48

- Synchronous motor based
- Compact
- 7 digits (with 2 decimal)
- Maintenance free
- Versatility in mounting
- International design

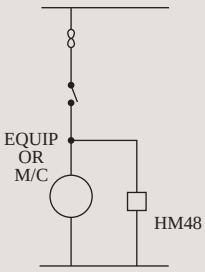
Cat. No.	K54SF1
Parameters	
Supply Voltage	240V AC, 50Hz
Supply Variation	-20% to +10%
Drive	Synchronous Motor
Consumption	~ 1VA
Register	7 Digital (2 Decimal)
Read out	99999.99
Least count	1/100 h
Accuracy	Directly proportional to supply frequency
Vibration	10 to 2000 Hz with 0.5 g
Protection	IP20
Net weight (unpacked)	70 g
Ambient Temperature	20°C to +55°C
Mounting	Flush / Base

ORDERING INFORMATION

K 5 □ S □1

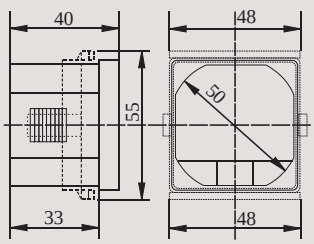
Voltage		Mounting	
1	24VAC 50Hz	B	Base Mounting
3	110VAC 50Hz	F	Flush Mounting
4	240VAC 50Hz		

WIRING DIAGRAM

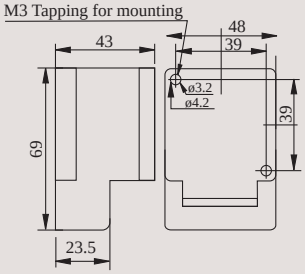


MOUNTING DIMENSION (mm)

HM48
FLUSH MOUNTING



BASE MOUNTING



Digital Hour Meters

- 6-digit LCD
- Exceptional reliability in-built nonvolatile memory (EEPROM)
- Wide range of supply voltage
- Remote reset
- Available in 3 different shaped Bezels

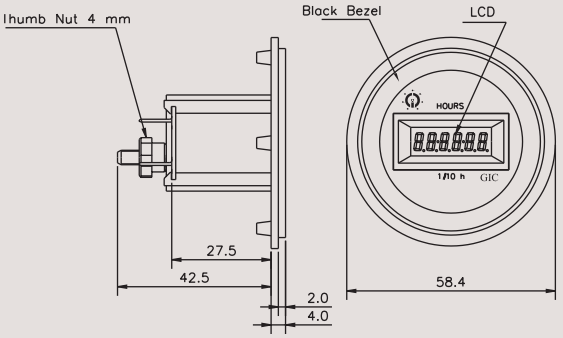
Cat. No.	Z71FBX	ZJ1FBX	ZH1FBX
Parameters			
Supply Voltage (Un)	85-265 VAC 50/60 Hz	12-48 VAC/DC 50/60 Hz	10-80 VDC
Power Consumption	0.8 VA	0.4 W	0.6 W
Range	99999.9 h		
Display	6-digit LCD 5mm Height		
Resolution	1/10 h		
Accuracy	± 0.02%		
Memory Retention	100 Years		
Operating Temperature Storage Temperature	-10 to +50° C -20 to +65° C		
Humidity	95% Rh		
Protection Class	IP54 (for front side only)		
Housing	UL94V0		
Terminals	1, 2: Input Supply, 3: Enable 4: Reset		
Panel cut outs	Round Bezel, 24 x 48 Bezel, Screw Mount Bezel		
Mounting	Flush/ Panel Mounting		
Certification	CE		
EMI/ EMC Radio Interference Suppression ESD Electrical Fast Transients Surges Voltage Dips & Interruptions	 CISPR 14-1 Class B IEC 61000-4-2 Level III IEC 61000-4-4 Level IV IEC 61000-4-5 Level IV IEC 61000-4-11 (AC), IEC 61000-4-29 (DC)		

ORDERING INFORMATION

Cat. No.	Description
Z71FBX	85-265 VAC model
ZJ1FBX	12-48 VAC/DC model
ZH1FBX	10-80 VDC model
X	A=Round Bezel, B=24x48 Bezel, C=Screw Mount Bezel

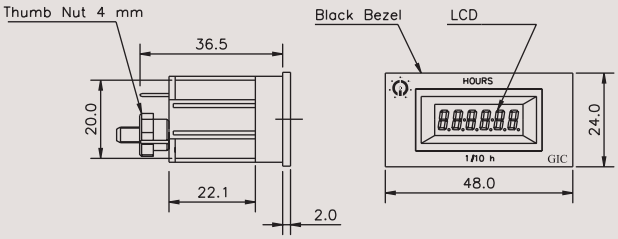
MOUNTING DIMENSION (mm)

Round bezel



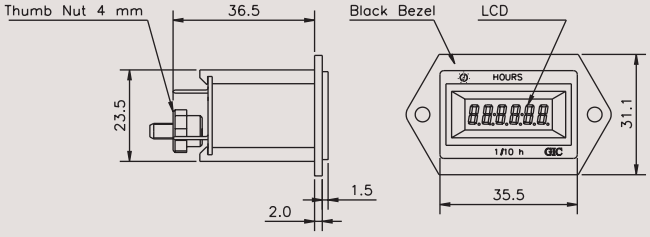
Recommended Panel Cutout :
37.0 (+0.5)mm x 24.6 (+0.5)mm

24x48 bezel



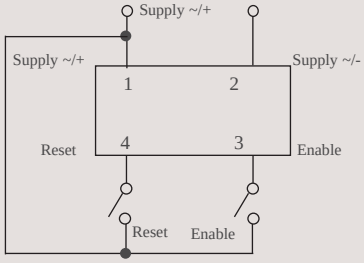
Recommended Panel Cutout :
45.5 (+0.5)mm x 23.0 (+0.5)mm

Screw mount bezel



Recommended Panel Cutout :
37.0 (+0.5)mm x 24.6 (+0.5)mm

CONNECTION DIAGRAM



TERMINAL DESCRIPTION

Pin 1: Supply (~ / +)
Pin 2: Supply (~ / -)
Pin 3: Enable
Pin 4: Reset

Impulse Counter Series CR 26

- 6-digit Compact and Robust Design
- Push-button quick reset
- High Accuracy and Reliability
- Requires no lubrication or maintenance
- Optional locking for reset button
- Ideal where space is limitation
- Three mounting options: Ball, Panel, Base

Cat. No.	SD23A	SD33A	SA43A	SA53A
Parameters				
Supply Voltage Un (+10% to -15%)	12 VDC	24 VDC	115 VAC	230 VAC
Power Consumption	3 Watts (Approx.)		2 Watts (Approx.)	
Figure	6 Digit, White on Black, (4.0 mm) Height			
Maximum Read Out	999999			
Operating Life	Beyond 100 million counts			
Speed	10 Hz Maximum			
Pulse Width	50 ms minimum			
Counting Method	One Pules - One count (energizing - 1/2 count, de-energized - 1/2 count)			
Continuous Energizing	Permissible			
Reset	Manual push button Reset (Reset button can be locked or sealed to avoid accidental reset.)			
Weight (Unpacked)	142 g (approx)			
Operating Temperature	- 26° C to + 60° C			
Termination	22 AWG, 105° C wire leads, 254 mm long			
Certification	CE			

Note: Do not reset push button during change over.

Applications	Ideal for use in - Machine tools, Business Machines, Test Instruments, Amusement Instruments and Measuring devices

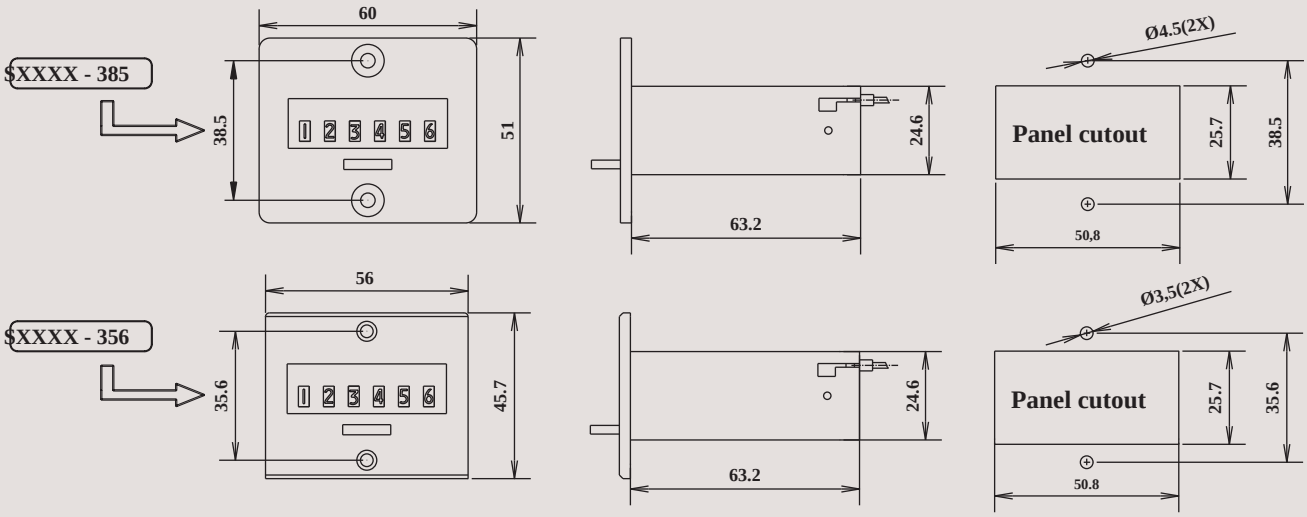
ORDERING INFORMATION

Cat. No.	Description
SD22A	12 VDC, Bail Mount
SD21A-385	12 VDC, Hole Panel Mount C.D. 38.5
SD21B-356	12 VDC, Hole Panel Mount C.D. 35.6
SD23A	12 VDC, Base Mount
SD32A	24 VDC, Bail Mount
SD31A-385	24 VDC, Hole Panel Mount C.D. 38.5
SD31B-356	24 VDC, Hole Panel Mount C.D. 35.6
SD33A	24 VDC, Base Mount
SA42A	115 VAC, Bail Mount
SA41A-385	115 VAC, Hole Panel Mount C.D. 38.5
SA41B-356	115 VAC, Hole Panel Mount C.D. 35.6
SA43A	115 VAC, Base Mount
SA52A	230 VAC, Bail Mount
SA51A-385	230 VAC, Hole Panel Mount C.D. 38.5
SA51B-356	230 VAC, Hole Panel Mount C.D. 35.6
SA53A	230 VAC, Base Mount

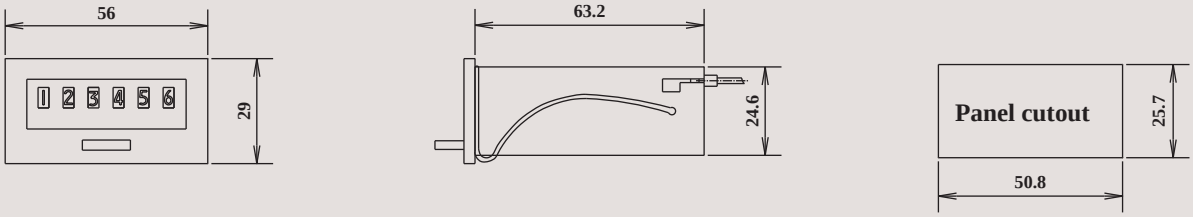
Impulse Counter Series CR 26

MOUNTING DIMENSION (mm)

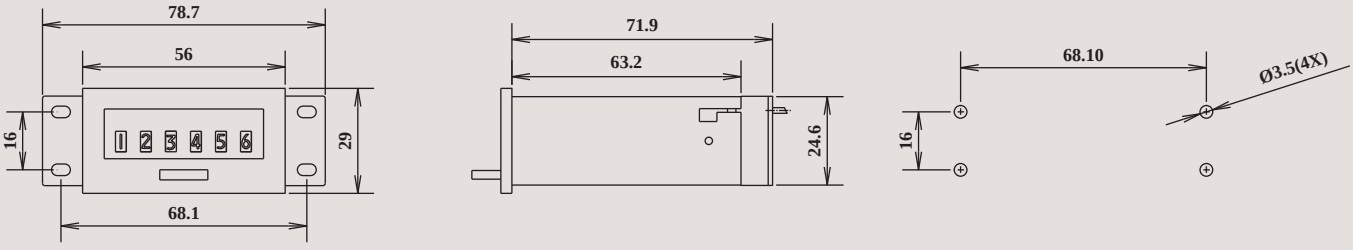
1. Panel Mount - 6 Figure



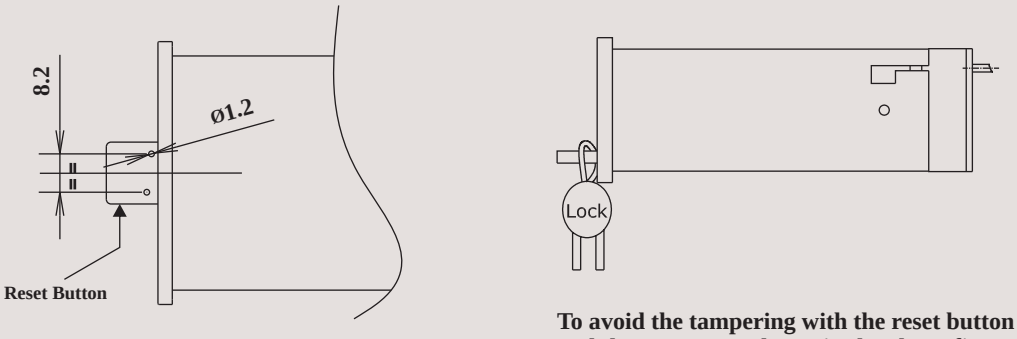
2. Bail Mount - 6 Figure



3. Base Mount - 6 Figure



4. Optional locking for reset button



To avoid the tampering with the reset button you can seal the counter as shown in the above figure

Digital Counters

- 6-digit LCD
- Exceptional reliability in-built nonvolatile memory (EEPROM)
- Wide range of supply voltage
- Remote reset
- Available in three different shaped bezels

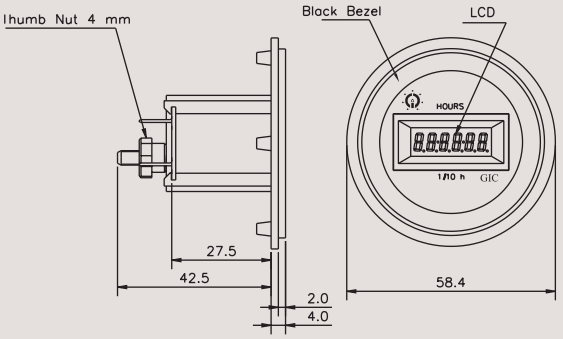
Cat. No.	Z72FBX	ZJ2FBX	ZH2FBX
Parameters			
Supply Voltage (Un)	85-265 VAC 50/60 Hz	12-48 VAC/DC 50/60 Hz	10-80 VDC
Power Consumption	0.8 VA	0.4 W	0.6 W
Counting frequency	10Hz	10Hz	30Hz
Range	999999		
Display	Large 6-Digit display, easy to read		
Resolution	1 Count		
Reset	Electrical		
Memory Retention	100 Years		
Operating Temperature Storage Temperature	- 10 to +50° C - 20 to +65° C		
Accuracy	± 1 Count		
Humidity	95% Rh		
Protection Class	IP54 (for front side only)		
Housing	UL94V0		
Terminals	1.2: Input Supply, 3: Count 4: Reset		
Panel cut outs	Round Bezel, 24 x 48 Bezel, Screw Mount Bezel		
Mounting	Flush/ Panel Mounting		
Certification	CE		
EMI/ EMC Radio Interference Suppression ESD Electrical Fast Transients Surges Voltage Dips & Interruptions	 CISPR 14-1 Class B IEC 61000-4-2 Level III IEC 61000-4-4 Level IV IEC 61000-4-5 Level IV IEC 61000-4-11 (AC), IEC 61000-4-29 (DC)		

ORDERING INFORMATION

Cat. No.	Description
Z72FBX	85-265 VAC model
ZJ2FBX	12-48V AC/DC model
ZH2FBX	10-80V DC model
X	A=Round Bezel, B=24x48 Bezel, C=Screw Mount Bezel

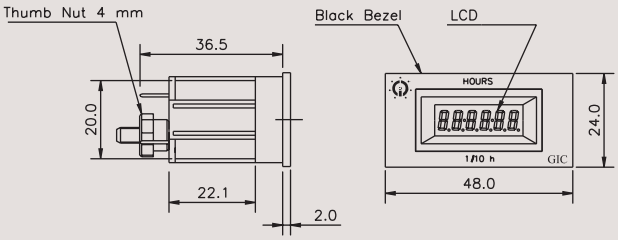
MOUNTING DIMENSION (mm)

Round bezel



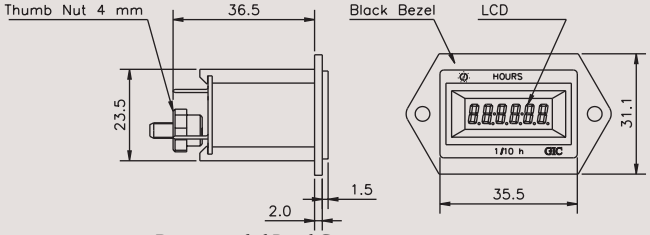
Recommended Panel Cutout :
37.0 (+0.5)mm x 24.6 (+0.5)mm

24x48 bezel



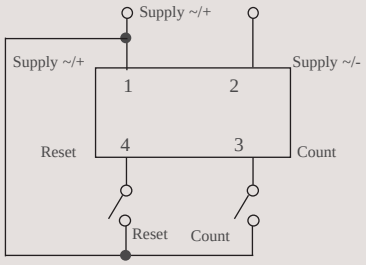
Recommended Panel Cutout :
45.5 (+0.5)mm x 23.0 (+0.5)mm

Screw mount bezel



Recommended Panel Cutout :
37.0 (+0.5)mm x 24.6 (+0.5)mm

CONNECTION DIAGRAM



TERMINAL DESCRIPTION

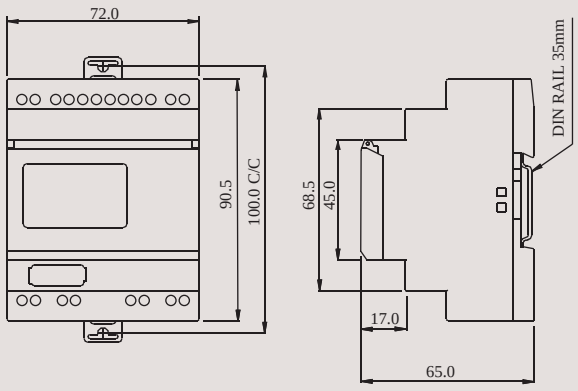
Pin 1: Supply (~ / +)
Pin 2: Supply (~ / -)
Pin 3: Enable
Pin 4: Reset

Programmable Logic Controller *Genie™-NX*

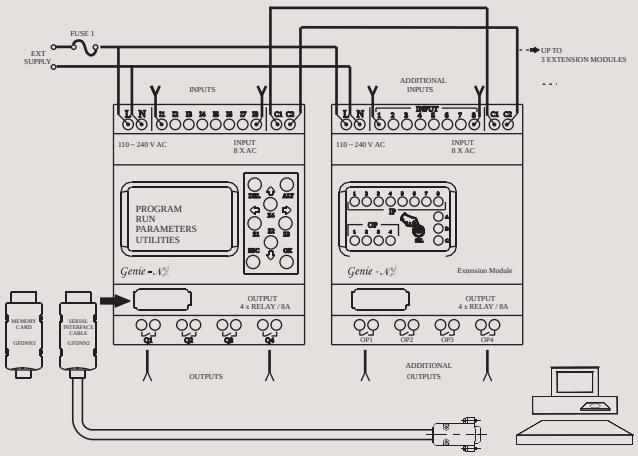
- Supports upto 48 I/Os
  (32 digital inputs & 16 digital outputs)
- 250 lines of ladder programming
- 16 soft text messages,
  Time Switches, Compare Counters
- Backlit LCD Screen for display & modification of pre-selected parameters of functional blocks, viewing I/O status and programming on the device
- PC software for programming, online & offline simulation, documentation & printing
- Design for use in automation for commercial & Industrial sectors

Cat. No.	G7DDT9	G8DDT9
Parameters		
Supply Voltage	110-240 VAC, 50-60Hz	12-24 VDC
Supply Variation	-20% to +10% of normal voltage	
Max. Supply current	36 mA	360 mA
Power Consumption	~5W	
Analog input range	N.A.	0 to 10 VDC
Digital input range	(0-40 VAC) OFF, (70-265 VAC) ON	(0-4 VDC) OFF, (7-26.4 VDC) ON
Digital inputs	8	6
Analog inputs	N.A.	2 (can be used digitally)
Modbus Communication	Yes (RTU) (Slave)	
Switching contacts	4 SPST Relays, 8A @ 240 VAC / 5A @ 30 VDC (resistive)	
Timers	16	
Counters	16 (up / down &retentive selectable)	
Analog Functions	N.A.	12
Time Switches	16 (weekly / daily)	
Compare Counters	16	
Soft Messages	16 Priority Driven	
Auxiliary Relays	32	
I/O Extension (Max)	Yes (3)	
Power reserve (for clock only)	150h (lithium Battery) at 0 to 55°C	
Lines for ladder program	250	
Protection	IP20 for front panel only (Conforming to IEC 60529)	
External Protection	Fuse 250 mA	Fuse 500 mA
Storage temperature Operating temperature	-20° C to +70°C 0° C to +55°C	
Maximum Relative Humidity	35 to 85 % no condensation	
Mounting	Base / DIN rail	
Dimensions (W x H x D)	72 X 65 X 90 (in mm)	
EMI/ EMC Radio Interference Suppression ESD Electrical Fast Transients Surges Voltage Dips	 CISPR 14-1 Class B IEC 61000-4-2 Level III IEC 61000-4-4 Level IV, Repeat Frequency 5 - 100 kHz IEC 61000-4-5 Level III, Common mode 4 kV, Differential Mode 2 kV IEC 61000-4-11, 30% reduction / 10ms, 60% reduction / 100ms	
Mechanical Resistance : Immunity to Vibrations	Vibration Tests as per IEC 68-2-6,	
Certification	CE cULus	
Weight	248 g	232 g

MOUNTING DIMENSION (mm)



CONNECTION DIAGRAM

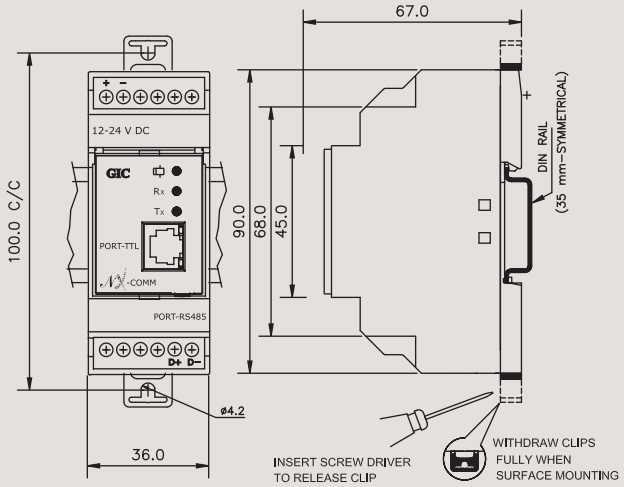


Programmable Logic Controller Genie™-NX

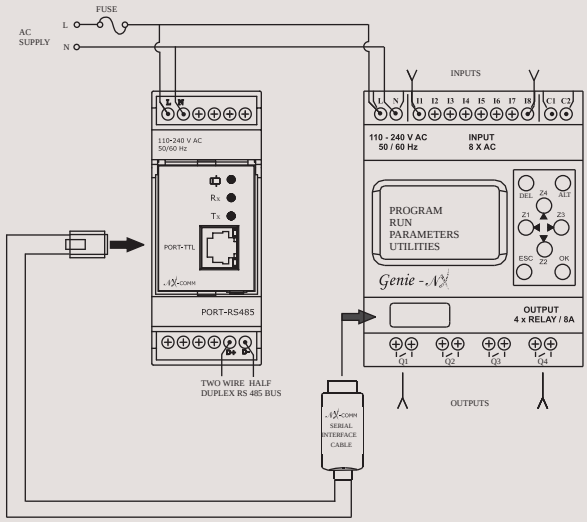
• Nx-Comm Rs 485 Module

Cat. No.	G7XDTR4	G8XDTR4
Parameters		
Supply Voltage	110-240 VAC	12-24 VDC
Input	TTL Level	
Output	RS- 485 protocol (two wires, D +, D -)	
Number of Nodes	32 standard unit loads	
Isolation voltage	2000 Vrms	
Baud Rate	300,600,1200,2400,4800,9600	
Operating temperature	0 - 55 °C	
Storage temperature	-20 - 70 °C	
Modbus Communication	Yes (RTU) (Slave)	
LED Indicators	Red LED's for Tx & Rx. Green LED for Supply.	
Certification	CE RoHS c UL us	
Weight	80 g	

MOUNTING DIMENSION (mm)



CONNECTION DIAGRAM



TERMINAL TORQUE & CAPACITY

Ø 3.5 mm	Torque 0.54 N.m (5 Lb. in) Terminal Screw - M 2.5
	1 x 0.2 - 3.3 mm^2 Solid Wire / single wire ferrule 2 x 0.2 - 1 mm^2 Insulated with twin ferrule
AWG	1 x 24 to 12

ORDERING INFORMATION

Cat. No.	Description
G7DDT9	110-240 VAC, Genie Nx Base Module
G8DDT9	12-24 VDC, Genie Nx Base Module
G7DDT6E	110-240 VAC, Genie Nx Extension Module
G8DDT6E	12-24 VDC, Genie Nx Extension Module
GFDNN3M	Memory Card
GFDNN2S	RS 232 Serial Communication Cable
GFDNN1	USB Cable
GNXNN1	Genie Nx Software supplied on CD-ROM compatible with Windows 98, 2000, XP & VISTA.
G7XDTR4	110-240 VAC, RS 485 Module
G8XDTR4	12-24 VDC, RS 485 Module
GNXNNRC	RS 485 Serial Cable

Programmable Logic Controller Genie™-NX

FEATURES

Programming:

Programming can be carried out independently using the keys on the Genie NX base module with the help of ladder diagram & on a PC, using "Genie NX Soft" software.
When using a PC, programming can be carried out either in Ladder Language.

LCD Backlighting:

Backlighting of the display will be there for minimum 15 seconds & by direct action of the keys on the base module or by using the "Device Utilities "option in Genie NX Soft application software.

Memory:

Genie NX has a back up memory, which allows programs to be transferred or copied into another Genie NX with the help of memory card. This feature enables quick copy of the programs without the use of a laptop or PC.

I/O Extensions:

User can connect maximum 3 Extension Modules to the Genie NX base module & each Extension Module has 8 inputs and 4 outputs, so we can expand up to 48 I/O extensions if necessary via the Genie NX. Expansions are made in daisy chain fashion.

Communication Module:

A module for communication on the Modbus network is available, which is called "NX-Comm. "to facilitate communication of the logic relay over a 2 wire half duplex RS 485 link. Modules are powered by 110- 240 VAC or 12- 24 VDC supplies. The base module can be connected to this communication interface by means of the cable supplied and the communication takes place via the NX-Comm. on the RS 485 link.

APPLICATIONS

For Industry:

- Printing and Packaging machines
- Ancillary equipments in textile, plastic.
- Material handling equipments or of conveyors.
- Interlocking units in distributed control systems.

For Commercial / Building Sector:

- Automation of barriers
- Automation of compressors and pumps for air conditioning requirements
- Automation of lights

Supply Monitoring Series SM 301

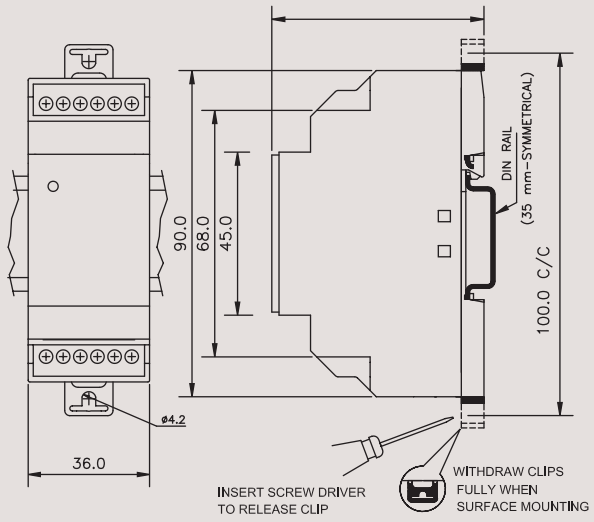
- Protects against Phase Loss, Phase Reversal and Phase-Phase Unbalance
- No auxillary supply needed
- Voltage sensing principle
- Designed to meet Industrial and Agricultural segment applications

Cat. No.		MA51BC	MA51BK
Parameters			
Supply Voltage Un		415 VAC	
Frequency		50-60 Hz	
Power Consumption		15 VA max (415 V)	
Mode of Operation		Auto	
Trip Settings: Phase - Phase Unbalance Unbalance Hysteresis		 65 VAC ± 10 (fixed) 10 - 18 VAC	 40 VAC ± 10 (fixed) 10 - 18 VAC
Time Delays: On Delay Trip Time (Off Delay) Setting Accuracy		 2 Sec (fixed) 7 Sec (fixed) ± 10 % of full scale	
Relay Output Contact Rating Electrical Life Mechanical Life		1 C/O (SPDT) 5A (resistive) @ 250 VAC / 28 VDC $1X10^5$ $3X10^6$	
Utilization Category	AC - 15	Rated Voltage (Ue): - 125/240 V, Rated Current (Ie) :- 3/1.5 A	
	DC - 13	Rated Voltage (Ue): - 125/250 V, Rated Current (Ie) :- 0.22/0.1 A	
LED Indication		Red → Relay ON (Healthy)	
Operating Temperature Storage Temperature		- 10 to +50° C - 20 to +65° C	
Enclosure Dimension (W x H x D) Weight		Flame Retardant UL 94V0 36 X 60 X 90 (in mm) 120 g	
Mounting		Base / DIN rail	
Degree of Protection		IP20 for Terminal, IP 40 for Enclosure	
Certification		CE , IEC 60255	
EMI/ EMC Radio Interference Suppression ESD Electrical Fast Transients Surges Voltage Dips, Interruptions Isolation		 CISPR 14-1 Class B IEC 61000-4-2 Level III IEC-61000-4-4 Level IV IEC-61000-4-5 Level IV IEC-61000-4-11 All 7 Levels Test Vtg. between input & output - IEC 60947- 5, 2KV	

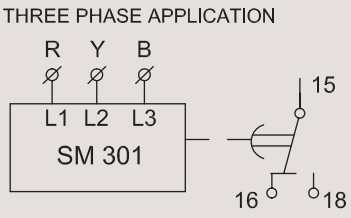
ORDERING INFORMATION

Cat. No.	Description
MA51BC	415 VAC, 50-60HZ with 65 VAC Asymmetry, 1 C/O
MA51BK	415 VAC, 50-60HZ with 40 VAC Asymmetry, 1 C/O

MOUNTING DIMENSION (mm)



CONNECTION DIAGRAM



TERMINAL TORQUE & CAPACITY

Ø 3.5 mm	Torque 0.54 N.m (5 Lb. in) Terminal Screw - M 2.5
	1 x 0.2 - 3.3 mm^2 Solid Wire / single wire ferrule 2 x 0.2 - 1 mm^2 Insulated with twin ferrule
AWG	1 x 24 to 12

Supply Monitoring Series SM 500

- Protects against Phase Loss, Phase Reversal and Phase-Phase Unbalance
- Can be configured for 3 phase 4 wire or 1 phase system
- Selectable Over/Under voltage trip level
- Adjustable time delay
- LED indications for power and fault conditions
- Voltage sensing principle
- 1 C/O or 2 C/O configuration

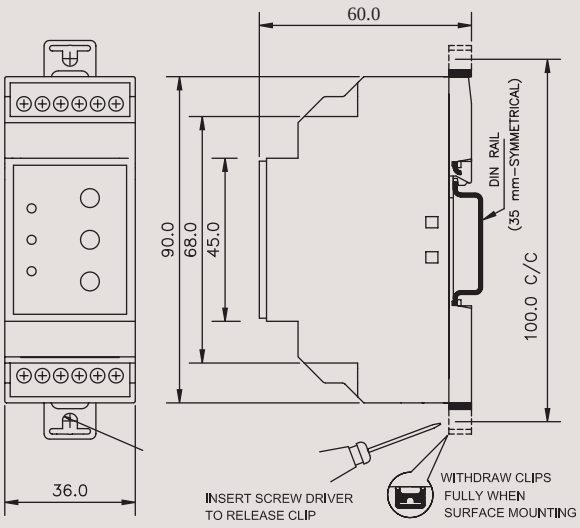
Cat. No.		MD71B9	MD71BH	MD71BF
Parameters				
Supply Voltage (Un):		3 Phase 4 Wire, 240 VAC 1 Phase - 240 VAC		
Frequency		48 - 63 Hz		
Power Consumption		5 VA		
Trip Levels: Under Voltage Over Voltage		55% - 95% of Un 105% - 125% of Un Setting Accuracy: ± 5 % of full scale Note: Voltage setting is with respect to neutral		
Time Delays: ON Delay OFF Delay		 0 to 15 m (Adjustable) 5 s (Fixed)	 0 to 15 s (Adjustable) 5 s (Fixed)	 5 s (Fixed) 0 to 15 s (Adjustable)
Setting Accuracy		± 10 % of full scale		
Relay Output Contact Rating Electrical Life Mechanical Life		1 C/O (SPDT) 5A (Resistive) @ 250 VAC / 28 VDC 1 x 10^5 Operations 3 x 10^6 Operations		
Utilization Category	AC - 15	Rated Voltage (Ue): - 120/240 V, Rated Current (Ie) :- 3/1.5 A		
	DC - 13	Rated Voltage (Ue): - 24/125/250 V, Rated Current (Ie) :- 2/0.22/0.1 A		
LED Indication		Separate indications for Power ON, UV and OV		
Operating Temperature Storage Temperature		-10° C To + 55° C -25° C To + 70° C		
Enclosure Dimension (W x H x D) Weight		Flame Retardant UL 94V0 36 X 60 X 90 (in mm) ~120 g		
Mounting		Base / DIN rail		
Degree of Protection		IP20 for Terminal, IP 40 for Enclosure		
Certification		CE , IEC 60255		
EMI/ EMC Radio Interference Suppression ESD Electrical Fast Transients Surges Voltage Dips, Interruptions Isolation		 CISPR 14-1 Class B IEC 61000-4-2 Level III IEC-61000-4-4 Level IV IEC-61000-4-5 Level IV IEC-61000-4-11 All 7 Levels Test Vtg. between input & output - IEC 60947- 5-1, 2KV		

Note: 1) In the event of Phase sequence or phase loss, OFF delay is 100 ms

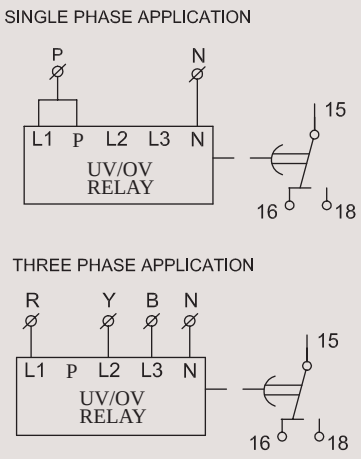
ORDERING INFORMATION

Cat. No.	Description
MD71B9	UV / OV with adjustable 0 to 15 m on delay time, 1C/O
MD71BH	UV / OV with adjustable 0 to 15 s on delay time, 1C/O
MD71BF	UV / OV with adjustable 0 to 15 s off delay time, 1C/O

MOUNTING DIMENSION (mm)



CONNECTION DIAGRAM



Supply Monitoring Series SM 500

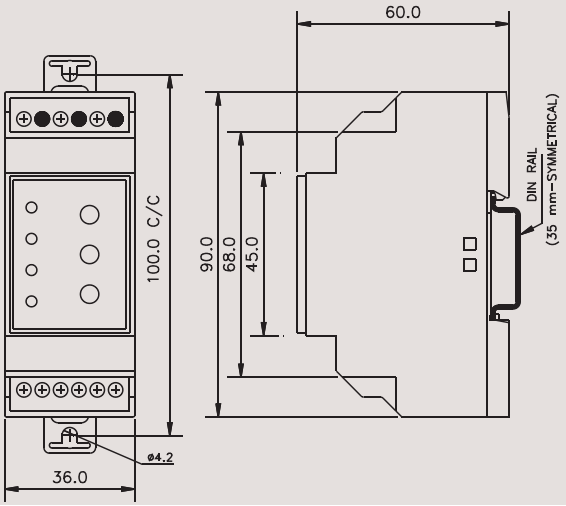
Cat. No.		MG73B9	MG73BH	MG73BF
Parameters				
Supply Voltage (Un):		3 Phase 4 Wire, 240 VAC 1 Phase, 240 VAC		
Frequency		48 - 63 Hz		
Power Consumption		5VA		
Trip Settings : Under Voltage Over Voltage Phase - Phase Unbalance (Asy.) Phase Reverse Detect Hysteresis		 55% - 95% of Un 105% - 125% of Un 10% Yes 7 V ± 2 V of trip voltage (factory set) Note: Voltage setting is with respect to neutral		
Time Delays: ON Delay OFF Delay		 0 to 15 m (Adjustable) 5 s (Fixed).	 0 to 15 s (Adjustable) 5 s (Fixed)	 5 s (Fixed) 0 to 15 s (Adjustable)
Setting Accuracy		± 10 % of full scale.		
Contact Rating Electrical Life Mechanical Life		2 C/O (DPDT) 5A (Resistive) @ 250 VAC / 28 VDC $1X10^5$ $3X10^6$		
Utilization Category	AC - 15	Rated Voltage (Ue): - 120/240 V, Rated Current (Ie) :- 3/1.5 A		
	DC - 13	Rated Voltage (Ue): - 24/125/250 V, Rated Current (Ie) :- 2/0.22/0.1 A		
Operating Temperature Storage Temperature		- 10 to +55° C - 25 to +70° C		
LED Indication		Separate indications for Power ON, UV, OV; ON: Phase Reverse, BLINK: Phase Unbalance (Asy.)		
Housing Dimension (W x H x D) Weight		UL 94VO 36 X 60 X 90 (in mm) 120 g		
Mounting		Base / DIN rail		
Degree of Protection		IP20 for Terminal, IP 40 for Enclosure		
Certification		CE , IEC 60255		
EMI/ EMC Radio Interference Suppression ESD Electrical Fast Transients Surges Voltage Dips, Interruptions Isolation		 CISPR 14-1 Class B IEC 61000-4-2 Level III IEC-61000-4-4 Level IV IEC-61000-4-5 Level IV IEC-61000-4-11 All 7 Levels Test Vtg. between input & output - IEC 60947- 5-1, 2KV		

Note: 1) In the event of Phase sequence or phase loss, OFF delay is 100 ms

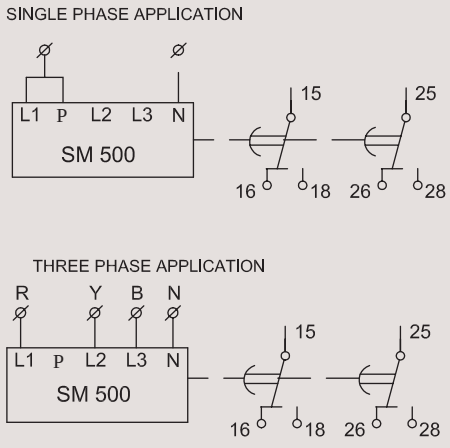
ORDERING INFORMATION

Cat. No.	Description
MG73B9	3 Phase 4 Wire, UV/OV & single phasing Protection with adjustable 0 to 15 m On delay time, 2 C/O
MG73BH	3 Phase 4 Wire, UV/OV & single phasing Protection with adjustable 0 to 15 s On delay time, 2 C/O
MG73BF	3 Phase 4 Wire, UV/OV & single phasing Protection with adjustable 0 to 15 s Off delay time, 2 C/O

MOUNTING DIMENSION (mm)



CONNECTION DIAGRAM



Supply Monitoring Series SM 501

- Protects against Phase Loss, Phase Reversal and Phase-Phase Unbalance
- Suitable for 3 phase 3 wire systems
- Selectable Over/Under voltage trip level
- Adjustable time delay
- Model for selectable Phase Asymmetry
- LED indications for power and fault conditions
- Voltage sensing principle
- 2 C/O configuration

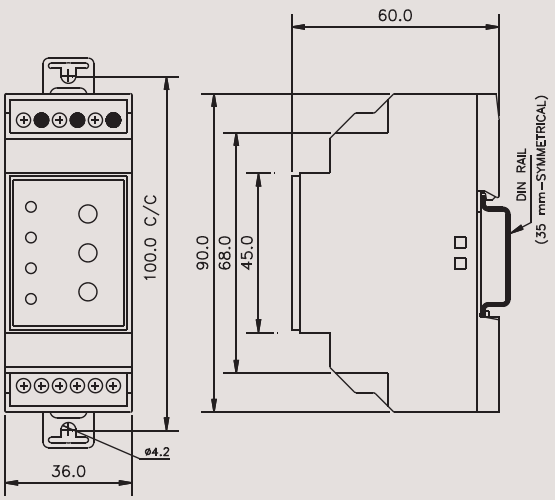
Cat. No.		MG53BH	MG53BF	MG53BI
Parameters				
Supply Voltage Un		415 VAC		
Frequency		48 - 63 Hz		
Power Consumption		10 VA		
Trip Settings : Under Voltage Over Voltage Phase Reverse Detect Hysteresis Phase - Phase Unbalance		 55% - 95% of Un 105% - 125% of Un Yes 7 V ± 2V of trip voltage 10%		 94 V
Time Delays ON Delay OFF Delay Setting Accuracy		 0.5 -15 s (adjustable) 5 s (fixed) ± 10 % of full scale	 5 s (fixed) 0.5 - 15 s (adjustable) ± 10 % of full scale	 5 s (fixed) 5 s (fixed) ± 10 % of full scale
Relay Output		2 C/O (DPDT)		
Contact Rating		5A (Resistive) @ 250 VAC / 28 VDC		
Electrical Life		1 x 10^5		
Mechanical Life		3 x 10^6		
Utilization Category	AC - 15	Rated Voltage (Ue): - 120/240 V, Rated Current (Ie) :- 3/1.5 A		
	DC - 13	Rated Voltage (Ue): - 24/125/250 V, Rated Current (Ie) :- 2/0.22/0.1 A		
Operating Temperature		- 10° C to +55° C Storage Temperature - 25° C to +70° C		
LED Indications		Separate indications for Power ON: UV, OV, ON: Phase Reverse, BLINK: Phase Unbalance		
Enclosure Dimension (W x H x D) Weight		UL 94V0 36 X 60 X 90 (in mm) 120 g		
Mounting		Base / DIN rail		
Degree of Protection		IP20 for Terminal, IP 40 for Enclosure		
Certification		CE, IEC 60255		
EMI/ EMC Radio Interference Suppression ESD Electrical Fast Transients Surges Voltage Dips, Interruptions Isolation		 CISPR 14-1 Class B IEC 61000-4-2 Level III IEC-61000-4-4 Level IV IEC-61000-4-5 Level IV IEC-61000-4-11 All 7 Levels Test Voltage between input & output - IEC 60255-5		

Note: 1) In the event of Phase sequence or phase loss, OFF delay is 100 ms

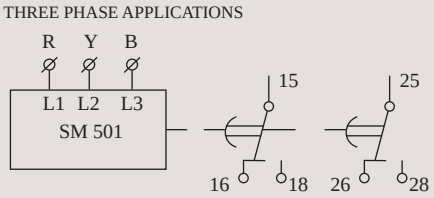
ORDERING INFORMATION

Cat. No.	Description
MG53BH	415 VAC, adjustable 0.5 - 15 s On & 5 s fixed Off Delay time, 2 C/O
MG53BF	415 VAC, adjustable 0.5 - 15 s Off & 5 s fixed On Delay time, 2 C/O
MG53BI	415 VAC, 94 volt fixed asymmetry, with 5 s fixed Off & On Delay time, 2 C/O
MG53BO	415 VAC, Under/Over Voltage, with fixed 3 m On / 5 s Off Delay time, 2 C/O
MG63BH	220 VAC, adjustable 0.5 - 15 s On & 5 s fixed Off Delay time, 2 C/O
MG63BF	220 VAC, adjustable 0.5 - 15 s Off & 5 s fixed On Delay time, 2 C/O

MOUNTING DIMENSION (mm)



CONNECTION DIAGRAM



TERMINAL TORQUE & CAPACITY

Ø 3.5 mm	Torque 0.54 N.m (5 Lb. in) Terminal Screw - M 2.5
	1 x 0.2 - 3.3 mm² Solid Wire / single wire ferrule 2 x 0.2 - 1 mm² Insulated with twin ferrule
AWG	1 x 24 to 12

Supply Monitoring Series SM 501

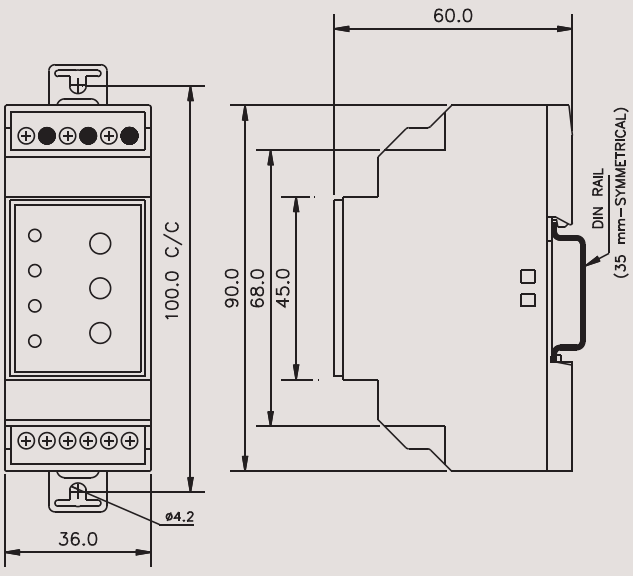
Cat. No.		MB53BM
Parameters		
Supply Voltage Un		415 VAC
Frequency		48 - 63 Hz
Power Consumption		10 VA
Trip Settings : Under Voltage Phase Reverse Detect Phase- Phase Unbalance		 80% of Un symmetrical, Hysteresis 7 V ± 2 V of input Voltage Yes 5% - 17 % adjustable, Hysteresis 2%
Time Delays ON Delay OFF Delay Setting Accuracy		 0.5-15 s (adjustable) 0.5-15 s (adjustable) ± 10 % of full scale
Electrical Life		1 x 10^5
Mechanical Life		3 x 10^6
Utilization Category	AC - 15	Rated Voltage (Ue): - 120/240 V, Rated Current (Ie) :- 3/1.5 A
	DC - 13	Rated Voltage (Ue): - 24/125/250 V, Rated Current (Ie) :- 2/0.22/0.1 A
Relay Output		2 C/O (DPDT)
Contact Rating		5A (Resistive) @ 250 VAC / 28 VDC
Operating Temperature Storage Temperature		- 10° C to + 55° C - 25° C to + 70° C
LED Indications		Indications for Power On, Symmetrical UV, Ph. Asymmetry, Reversal of phases.
Enclosure Dimension (W x H x D) Weight		UL 94V0 36 X 60 X 90 (in mm) 120 g
Mounting		Base / DIN rail
Degree of Protection		IP20 for Terminal, IP 40 for Enclosure
Certification		CE ,IEC 60255
EMI/ EMC Radio Interference Suppression ESD Electrical Fast Transients Surges Voltage Dips, Interruptions Isolation		 CISPR 14-1 Class B IEC 61000-4-2 Level III IEC-61000-4-4 Level IV IEC-61000-4-5 Level IV IEC-61000-4-11 All 7 Levels Test Vtg. between input & output - IEC 60947- 5-1, 2KV

Note: 1) In the event of Phase sequence or phase loss, OFF delay is 100 ms

ORDERING INFORMATION

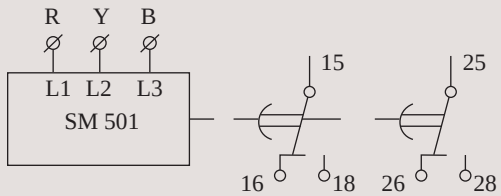
Cat. No.	Description
MB53BM	415 VAC, adjustable Asymmetry 5% - 17% , 2 C/O

MOUNTING DIMENSION (mm)

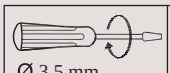
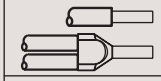


CONNECTION DIAGRAM

THREE PHASE APPLICATIONS



TERMINAL TORQUE & CAPACITY

 Ø 3.5 mm	Torque 0.54 N.m (5 Lb. in) Terminal Screw - M 2.5
	1 x 0.2 - 3.3 mm^2 Solid Wire / single wire ferrule 2 x 0.2 - 1 mm^2 Insulated with twin ferrule
AWG	1 x 24 to 12

Supply Monitoring Series SM 501

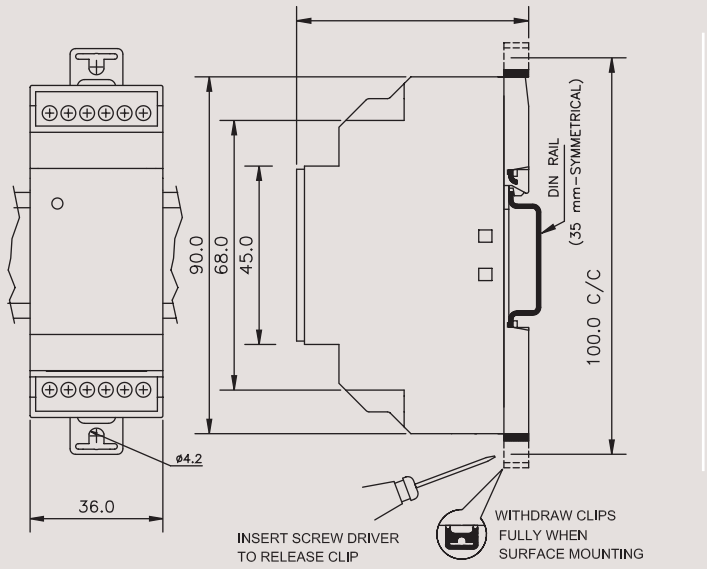
Cat. No.	MC21B5
Parameters	
Supply Voltage Un	415 VAC
Frequency	48-62 Hz
Power Consumption	15 VA max (415 V)
Isolation	2.5KV (supply to relay contacts)
Mode of Operation	Auto
Trip Settings: Phase - Phase Unbalance Unbalance Hysteresis	 65 VAC ± 5 (fixed) 10 - 18 VAC
Time Delays: ON Delay Trip Time (OFF Delay) Setting Accuracy	 500 ms 500 ms
Relay Output Contact Rating Electrical Life Mechanical Life	2 C/O (DPDT) 5A (resistive) @ 250 VAC / 24 VDC $1X10^5$ $3X10^6$
LED Indication	Red LED ON → Healthy, Red LED Flashing → Wrong Connection/Sequence Fault Red LED OFF → Phase loss
Operating Temp Storage Temp	- 10 to +50° C - 20 to +65° C
Enclosure Dimension (W x H x D) Weight	Flame Retardant UL 94V0 36 X 60 X 90 (in mm) 120 g
Mounting	Base / DIN rail
Degree of Protection	IP20 for Terminal, IP 40 for Enclosure
Certification	CE ,IEC 60255
EMI/ EMC Radio Interference Suppression ESD Electrical Fast Transients Surges	 CISPR 14-1 Class B IEC 61000-4-2 Level III IEC-61000-4-4 Level IV IEC-61000-4-5 Level IV

Note: 1) In the event of Phase sequence or phase loss, OFF delay is 100 ms

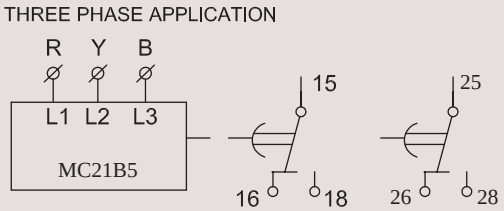
ORDERING INFORMATION

Cat. No.	Description
MC21B5	415VAC, 48-62HZ Phase fail / Phase Sequence 2 C/O

MOUNTING DIMENSION (mm)



CONNECTION DIAGRAM



TERMINAL TORQUE & CAPACITY

Ø 3.5 mm	Torque 0.54 N.m (5 Lb. in) Terminal Screw - M 2.5
	1 x 0.2 - 3.3 mm^2 Solid Wire / single wire ferrule 2 x 0.2 - 1 mm^2 Insulated with twin ferrule
AWG	1 x 24 to 12

Supply Monitoring Series SM 175

- Compact 17.5 mm wide
- Multi-voltage from 3 x 208 to 3 x 480 V
- Controls correct sequence of three phases & own supply voltage
- LED indication for all faults & for change in settings during run time for better security
- 1 C/O configuration

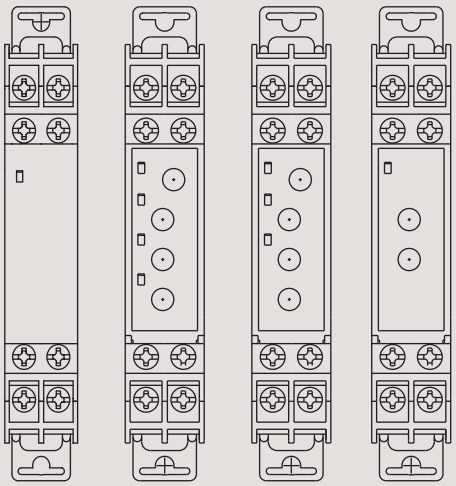
Cat. No.			MK21D5	MC21D5	MA21DN	MD21DF	MG21DH
Parameters							
Supply Voltage Un			3 Phase 3 Wire, 208 - 480 VAC, 45 - 65 Hz				
Supply Variation			-12% to + 10%				
Power Consumption			3 VA				
Settable Nominal Voltage (Un)			N.A.			208 - 220 - 380 - 400 - 415 - 440 - 480 VAC	
Trip Levels :	Under Voltage		N.A.			-2% to -20% (Un)	-5% to -25% (Un)
	Over Voltage		N.A.			+2% to +20% (Un)	+5% to +25% (Un)
	Asymmetry		N.A.	30% Fixed	5% to 15%	N.A.	10% Fixed
Setting Accuracy			+/- 5% of full scale				
Time Delay Setting Accuracy: +/- 10% of Full Scale	ON Delay		~ 500 ms		5 s (Fixed)	5 s (Fixed)	0.5 to 100 s
	OFF Delay		~ 100 ms		0.5 to 15 s	0.5 to 15 s	5 s (Fixed)
			In the event of phase sequence or phase loss fault, OFF delay is ~100ms				
Relay Output Contact Rating Mechanical Life Electrical Life			1 C/O (SPDT) 5A (Resistive) @ 250 VAC / 30 VDC 3 x 10^6 Operations 1 x 10^5 Operations				
Utilization Category	AC - 15		Rated Voltage (Ue): - 120/240 V, Rated Current (Ie) :- 3/1.5 A				
	DC - 13		Rated Voltage (Ue): - 24/125/250 V, Rated Current (Ie) :- 2/0.22/0.1 A				
Operating Temperature Storage Temperature Humidity (Non Condensing Limits)			- 15° C to +60° C - 20° C to +70° C Max. 95%				
LED Indications	Relay (R)	Healthy	Relay LED Continuous ON (Red Colour)			Power LED Continuous ON (Green Colour)	
		Phase Reverse	Relay LED Flashing (Red Colour)			Power LED Flashing (Green Colour)	
		Asymmetry	N.A.	Relay LED Off (Red Colour)		N.A.	
	OV		N.A.			OV - Red Colour LED ON	
	UV		N.A.			UV - Red Colour LED ON	
	AS		N.A.				AS-Red Colour LED ON
	All LEDs	OFF	Phase Fail				
		Flashing	N.A.			Un Pot changed in running conditions	
Degree of Protection			Terminals - IP 20, Housing - IP 30, Pollution Degree - 2				
Dimension (W x H x D)			18 X 59 X 90 (in mm)				
Weight			70 g				
Mounting			Base / DIN rail				
Certification			CE ,IEC 60255				
EMI/ EMC Radio Interference Suppression ESD Electrical Fast Transients Surges Voltage Dips, Interruptions Isolation			CISPR 14-1 Class B IEC 61000-4-2 Level III IEC-61000-4-4 Level IV IEC-61000-4-5 Level IV IEC-61000-4-11 All 7 Levels Test Vtg. between input & output - IEC 60947- 5, 2KV				

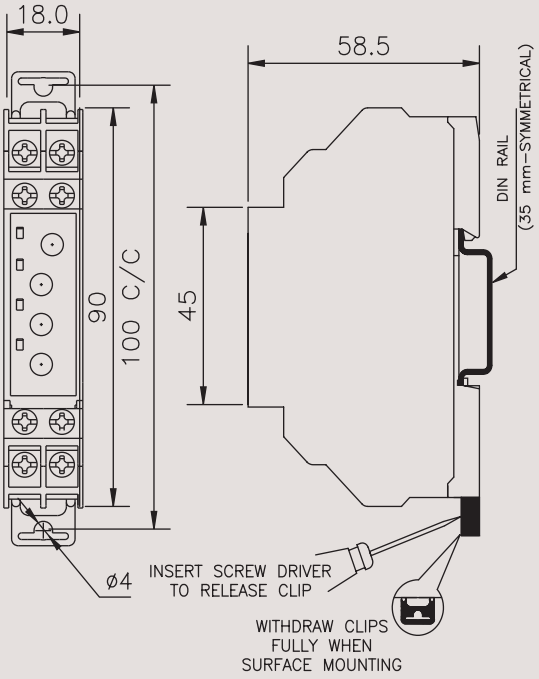
ORDERING INFORMATION

Cat. No.	Description
MC21D5	Phase Sequence, Asymmetry & Phase Loss Monitoring, 1 C/O
MK21D5	Phase Sequence, 1 C/O
MA21DN	Phase Sequence & Asymmetry Monitoring, 1 C/O
MD21DF	Phase Sequence, Under Voltage & Over Voltage Monitoring, 1 C/O
MG21DH	Phase Sequence, Asymmetry & Voltage Monitoring with Fixed OFF Delay (5 s), 1 C/O
MG21DF	Phase Sequence, Asymmetry & Voltage Monitoring with Fixed ON Delay (5 s), 1 C/O

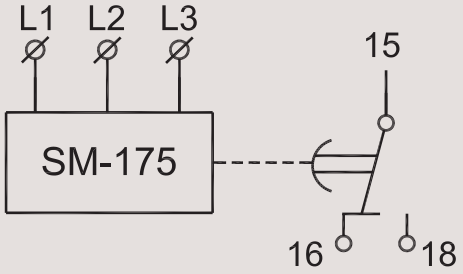
Supply Monitoring Series SM 175

MOUNTING DIMENSION (mm)





CONNECTION DIAGRAM



TERMINAL TORQUE & CAPACITY

Ø3.5.....5.0mm	1.1 Nm(10 lb.in) Terminal screw - M3.5
	2 x 0.2...2.5 mm ^{2} solid wire/single wire ferrule
AWG	1 x 24 to 10

Frequency Monitoring Series PD 225

- Operable in various auxiliary supply voltage conditions & frequency range by selecting proper model
- Models for Over Frequency and Under/Over Frequency Monitoring
- Monitors frequency of three signals - Sine, Square & Triangular
- Model for Frequency Limit Control: 5 Hz to 135 Hz
- Wide Signal Input Voltage: 15 to 500 VAC
- Adjustable Relay status in healthy or unhealthy condition using DIP switch "ET" (Energize to Trip) or "DT" (De-energize to trip.)
- Ease of Frequency setting with simple Addition & Subtraction
- LED indications for healthy, unhealthy & no signal conditions

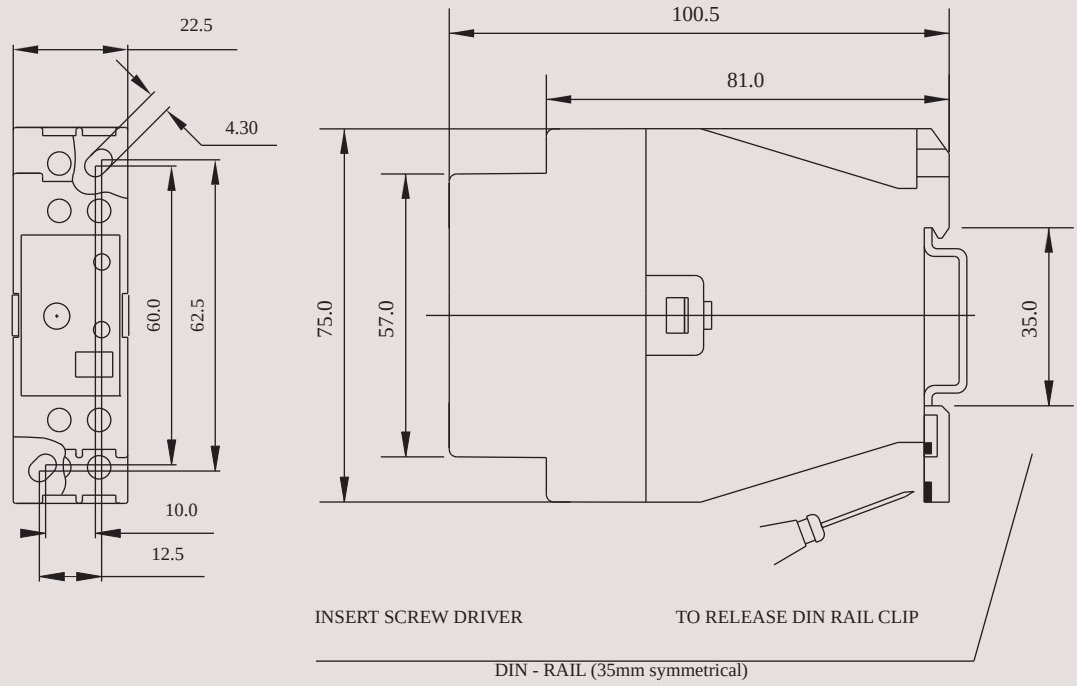
Cat. No.			MI81BJ	MI91BL
Parameters				
Supply Voltage (Un):			110-240 VAC, 48-62 Hz	220-440 VAC, 48-62 Hz
Supply Variation			-15% to + 15% of Un	
Power Consumption			3 VA	
Signal Type			Sinusoidal, Square, Triangular	
Signal Input Voltage Range			(15 to 500) V	
Overall Frequency Range			(5 to 135) Hz	(40 to 70) Hz
Frequency Range Selection			A B Frequency Range 0 0 (5 to 15) Hz 1 0 (15 to 45) Hz 0 1 (45 to 135) Hz 1 1 N. A.	50 Hz 60 Hz
Trip Level	Over Frequency		0.33 to 1 of Full Scale	(+ 1 to + 10) Hz
	Under Frequency		N. A.	(- 1 to - 10) Hz
Trip Levels For Signal Frequency (%)	Reset Hysteresis		1.5 % of Full Scale selected	
	Setting Accuracy		± 5%	
	Repeat Accuracy		± 0.02%	
Response Time	ON Delay		~ 500 ms	
	OFF Delay		~ 500 ms	500 ms - 5 s
	Reset Time		~ 150 ms	
Relay Ouput			1 C/O (SPDT)	
Contact Rating			6A (Resistive) @ 240 VAC / 28 VDC	
Mechanical Life			3 x 10^6 Operations	
Electrical Life			1 x 10^5 Operations	
Contact Material			Ag alloy	
Utilization Category	AC - 15		Rated Voltage (Ue): - 120/240 V, Rated Current (Ie) :- 3/1.5 A	
	DC - 13		Rated Voltage (Ue): - 125/250 V, Rated Current (Ie) :- 0.22/0.1 A	
Operating Temperature			- 20° C to + 80° C	
Storage Temperature			- 15° C to + 60° C	
Humidity (Non Condensing Limits)			Max. 95%	
LED Indications for Relay			Red LED Flashing if No Signal	N. A.
LED Indications for UF & OF			N. A.	Seperate Indications given for UF & OF Status
Degree of Protection			Terminals - IP 20, Housing - IP 40	
Dimension (W x H x D)			22.5 X 83 X 100.5 (in mm)	
Weight			120 g	
Mounting			Base / DIN rail	
Certification			CE	
EMI/ EMC Radio Interference Suppression ESD Electrical Fast Transients Surges Voltage Dips, Interruptions Isolation			CISPR 14-1 Class B IEC 61000-4-2 Level II IEC-61000-4-4 Level IV IEC-61000-4-5 Level IV IEC-61000-4-11 All 7 Levels Test Vtg. between input & output - IEC 60947- 5-1, 2KV	

ORDERING INFORMATION

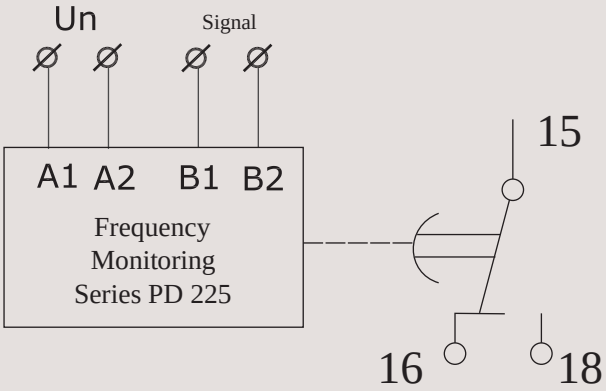
Cat. No.	Description
MI81BJ	110-240 V AC, Over Frequency Monitoring Series PD 225 with ON Delay of 500 ms (Fixed), & OFF Delay of 500 ms (Fixed), 1 C/O
MI91BJ	220-440 V AC, Over Frequency Monitoring Series PD 225 with ON Delay of 500 ms (Fixed), & OFF Delay of 500 ms (Fixed), 1 C/O
MI81BL	110-240 V AC, Under/Over Frequency Monitoring Series PD 225 with ON Delay of 500 ms (Fixed) & OFF Delay of 500 ms to 5 Sec. (Selectable), 1 C/O
MI91BL	220-440 V AC, Under/Over Frequency Monitoring Series PD 225 with ON Delay of 500 ms (Fixed) & OFF Delay of 500 ms to 5 Sec. (Selectable), 1 C/O

Frequency Monitoring Series PD 225

MOUNTING DIMENSION (mm)

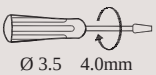
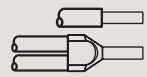


CONNECTION DIAGRAM



TERMINAL TORQUE & TERMINAL CAPACITY

Applicable for all Micon 225 Series, Frequency Monitoring Series PD 225 , Thermistor Series PD 225, Earth Leakage Series.

 Ø 3.5 4.0mm	Torque 0.6 N.m (6 Lb. in) Terminal Screw - M3
	1 x 1 - 4 mm^2 Solid Wire / Single Wire Ferrule
	2 x 0.5 - 2.5 mm^2 insulated twin type Ferrule
AWG	1 x 17 to 11

PTC Thermistor Relay Series PD 225

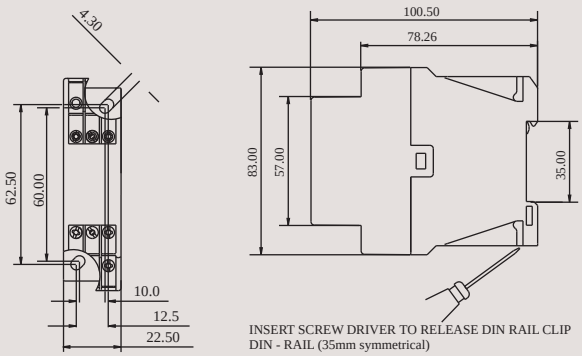
- Monitors and Protects motors with Integrated PTC resistor sensors
- Protection against over heating for Heavy Duty Load, High Switching Frequency, High operating temperature & Insufficient cooling conditions
- 24 VAC/DC & 110-240 VAC, 220-415 VAC Models with 2 C/O & 1 C/O respectively
- Reset Options: Manual, Automatic and Remote

Cat. No.			MJ81BK	MJ91BK	MJA3BK
Parameters					
Supply Voltage (Un):			110-240 VAC, 48-62 Hz	220-440 VAC, 48-62 Hz	24 VAC/DC, 48-62 Hz
Supply Variation			-20% to + 10% of Un		
Power Consumption			3 VA		2 VA
Trip Level			3.6 kO, ± 5%		
Reset Level			1.6 kO, ± 5%		
Sensor Short			< 20O, ± 4O		
Hysterisis			< 40O, ± 4O		
Sensor Open			> 10 kO, ± 5 %		
Max. Cold resistance of Sensor Chain			< 1.5 kO		
Mode of Reset			Manual Reset, Auto Reset, Remote Reset (Selectable)		
Repeat Accuracy			+/- 1%		
Response Time	Time Delay		ON Delay: ~500 ms OFF Delay: ~100 ms		
	Reset Time		~ 150 ms		~ 200 msec.
Relay Output			1 C/O (SPDT)		2 C/O (DPDT)
Contact Rating Mechanical Life Electrical Life Contact Material			6A (Resistive) @ 250 VAC / 28 VDC 3 x 10^6 Operations 1 x 10^5 Operations Ag alloy		
Utilization Category	AC - 15		Rated Voltage (Ue): - 120/240 V, Rated Current (Ie) :- 3/1.5 A		
	DC - 13		Rated Voltage (Ue): - 24/125/250 V, Rated Current (Ie) :- 2/0.22/0.1 A		
Operating Temperature Storage Temperature Humidity (Non Condensing Limits)			- 15° C to +60° C - 25° C to +80° C Max. 95%		
LED Indications	Power Supply	Healthy	Green LED Continuous ON		
		Sensor Open	Green LED Flashing		
	Relay	Relay ON	Red LED Continuous ON		
		Sensor Short	Red LED Flashing		
	All LEDs OFF		Power Supply Fail		
Degree of Protection			Terminals - IP 20, Housing - IP 40, Pollution Degree - 2		
Dimension (W x H x D)			22.5 X 83 X 100.5 (in mm)		
Weight			120 g		
Mounting			Base / DIN rail		
Certification			CE		
EMI/ EMC Radio Interference Suppression ESD Electrical Fast Transients Surges Voltage Dips, Interruptions Isolation			CISPR 14-1 Class B IEC 61000-4-2 Level II IEC-61000-4-4 Level IV IEC-61000-4-5 Level IV IEC-61000-4-11 All 7 Levels Test Vtg. between input & output - IEC 60947- 5-1, 2KV		

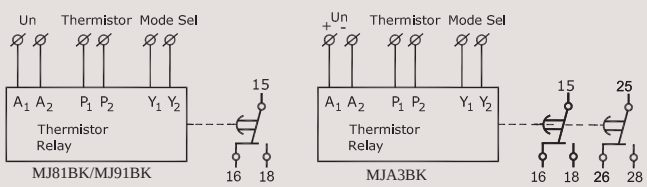
ORDERING INFORMATION

Cat. No.	Description
MJ81BK	110-240 V AC, Thermistor Series PD 225, 1 C/O
MJ91BK	220-440 V AC, Thermistor Series PD 225,1 C/O
MJA3BK	24 VAC/DC, Thermistor Series PD 225, 2 C/O

MOUNTING DIMENSION (mm)



CONNECTION DIAGRAM



PTC Thermistor Relay & Phase Sequence Series PD 225

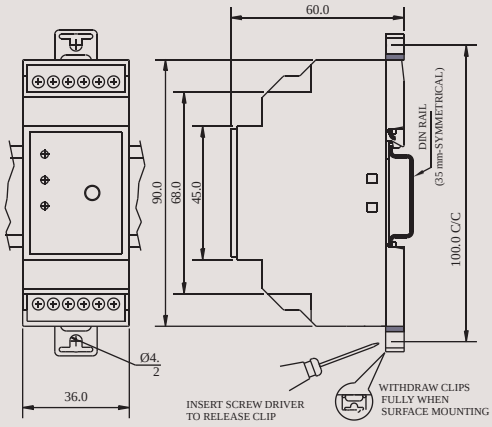
- Thermistor relay combined with protection against Phase sequence fault
- LED indications for Healthy, Unhealthy, Sensor Open/Short and Phase Sequence fault conditions
- Separate relays for PTC Thermistor and Phase Sequence fault
- Reset Options: Auto/Manual

Cat. No.	MLB4BC	MLC4B4
Parameters		
Supply Voltage (Un)	380-480 VAC (3 Phase - 3 Wire), 50 +/- 2 Hz	380-480 VAC (3 Phase - 3 Wire), 60 +/- 2 Hz
Supply Tolerance	-20% to +10% of Un	
Power Consumption	12 VA	
Relay O/P Characteristics		
Contact Arrangement	2 NO	
Contact Rating	6A @ 240 VAC / 28 VDC	
Utilization Category AC-15	Ue rated voltage V - 120/240; Ie rated current A - 3.0/1.5	
Utilization Category DC-13	Ue rated voltage V - 24/125/250; Ie rated current A - 2.0/0.22/0.1	
Contact Material	Ag alloy	
Mechanical Life	3 X 10^6 operations	
Electrical Life	1 X 10^5 operations	
Feature Characteristics		
Trip level	3.6 kO, +/- 5 %	
Reset Level	1.6 kO, +/- 5 %	
Sensor Short	< 20 O, +/- 4	
Hysterisis	< 40 , +/- 4 O	
Sensor Open	> 10 k Ω, +/- 5%	
Max. Cold resistance of sensor chain	<1.5 kΩ	
Reset mode	Auto/Manul	
Repeat Accuracy	+/- 1%	
Response Time — Operate Time (OT)	~ 500 ms	
Release Time (RT)	~ 100 ms	
Reset Time	~ 150 ms	
LED Indications	LED indications for Healthy, Unhealthy, Sensor Open / Short Conditions, SPPR fault Condition	
Mounting / Dimensions (W X H X D)	Base / DIN-rail / (36 X 60 X 50) mm	
Weight (Unpacked)	~ 120 g (approx.)	
Operating Temperature	-15°C to +60°C	
Storage Temperature	-25°C to +80°C	
Relative Humidity	95% (without condensation)	
Degree of Protection	IP 40 (Enclosure); IP 20 (Terminals); Pollution Degree - 2	
Certifications	CE IEC 60255 Ed. 1 (2005-12)	
EMI/ EMC Radiated Emission ESD Immunity Electrical Fast Transients Surge Immunity Voltage Dips & Interruptions Isolation	 CISPR 14-1 Class A IEC 61000-4-2 Level II, IEC 61000-4-4 Level IV IEC 61000-4-5, Level IV IEC 61000-4-11, All 7 Levels Test Voltage between Input & Output IEC 60947-5, 2KV	

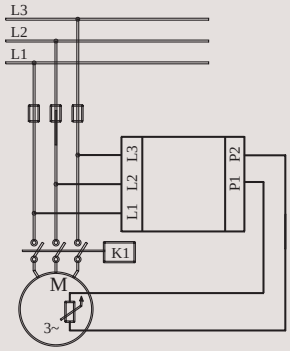
ORDERING INFORMATION

Cat. No.	Description
MLB4BK	380-415 VAC, 50 Hz, Thermistor + Phase Sequence series PD225, 2 NO
MLC4BK	380-415 VAC, 60 Hz, Thermistor + Phase Sequence series PD225, 2 NO

MOUNTING DIMENSION (mm)



CONNECTION DIAGRAM



TERMINAL TORQUE & CAPACITY

Ø 3.5 mm	Torque 0.54 N.m (5 Lb. in) Terminal Screw - M 2.5
	1 x 0.2 - 3.3 mm^2 Solid Wire / single wire ferrule 2 x 0.2 - 1 mm^2 Insulated with twin ferrule
AWG	1 x 24 to 12

Supply Monitoring Series CMR - Current Control

- Protection against Overload, Phase Loss, Phase Reverse, and Phase Unbalance faults
- Wide range of sensing current : 1A-45A
- Models for 1 Phase and 3 Phase systems
- Auto/Manual Reset selection
- Fail-safe protection
- Inverse time model with underload, locked rotor protection and selectable trip class
- Definite time model with underload and selectable start and trip time

Cat. No.	17A122CB0	17B122AA0	17C112FB0	17D112DA0
Parameters				
Supply Voltage	220-415 VAC, -20% to +15% 50 / 60 Hz		110-240 VAC, -20% to +10% 50 / 60 Hz	
Power Consumption	10 VA (Approx)		5 VA (Approx)	
Current Ranges	3 - 9 A			
Trip Type	Inverse Time	Definite Time	Inverse Time	Definite Time
Thermal Memory	Yes	-	Yes	-
Tripping Class	10A, 10, 20, 30	-	10A, 10, 20, 30	-
Start Time			0.2 - 30 s	
Delay Time			0.2 - 10 s	
Underload Protection	40% - 90% (Trip Time: < 5 s)	50% / (Trip Time: < 5 s)	40% - 90% (Trip Time: < 5 s)	50% / (Trip Time: < 5 s)
Phase Imbalance Protection	50% unbalance (Trip Time: < 5 s)		-	
Phase Loss Protection	70% of unbalance (Trip Time: < 3 s)		-	
Locked Rotor Protection	300% of the set value (Trip Time: < 3 s after starting)		300% of the set value (Trip Time: < 3 s after starting)	
Phase Reverse Protection	Yes / (0.2 s approx.)		-	
Reset Mode	Auto / Manual			
Test Function	Yes			
LED Indication ON OL UL REV/UNB	Power ON Overload Underload ON: Phase Reverse / BLINK: Phase Unbalance			
Output Relay Contact	1 NO (Fail Safe Protection)			
Contact Rating	5A @ 240VAC			
Tolerance	± 5 % of full scale			
Certification	CE			
EMI/EMC Conducted Emission Electrical Fast Transients Surge Test Voltage between Input & Output	CISPR 14-1 Ed. 5.0 (2005-11) CLASS B IEC 61000-4-4, Ed. 2.0 (2004-07) Level IV IEC 61000-4-5, Ed. 2.0 (2005-11) Level III IEC 60947-5-1 Ed. 3.0 (2003-11) 2 kV			
Mechanical Life Expectancy	1 x 10^6 Operations			
Electrical Life Expectancy	1 x 10^5 Operations			
Operating Temperature	- 10° C to + 60° C			
Storage Temperature	- 25° C to + 70° C			
Mounting / Dimensions	Base Mounting			
Weight	210 g			

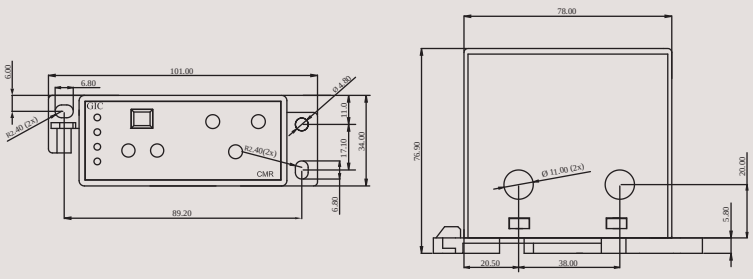
Note: In case of Phase loss protection all LED's remains off.

ORDERING INFORMATION

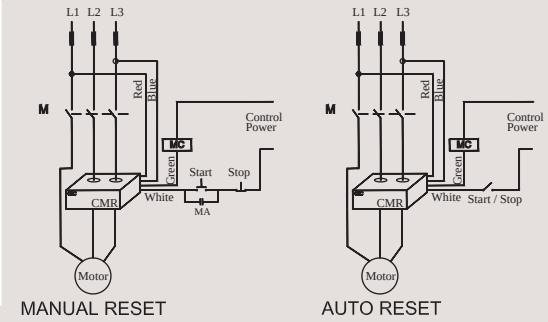
Cat. No.

3 Phase	1 Phase	Description
17A122CB0	17C112EB0	Inverse Time Current Monitoring, 3 - 9 A, 1 NO
17A222CB0	17C212EB0	Inverse Time Current Monitoring, 8 - 24 A, 1 NO
17A322CB0	17C312EB0	Inverse Time Current Monitoring, 15 - 45 A, 1 NO
17B122AA0	17D112DA0	Definite Time Current Monitoring, 3 - 9 A, 1 NO
17B222AA0	17D212DA0	Definite Time Current Monitoring, 8 - 24 A, 1 NO
17B322AA0	17D312DA0	Definite Time Current Monitoring, 15 - 45 A, 1 NO

MOUNTING DIMENSION (mm)



CONNECTION DIAGRAM



Earth Leakage Relay Series CMR

- Monitors, detects and protects power systems from Leakage faults
- Wide auxiliary supply range: 110 - 240 VAC, 220 - 415 VAC
- Wide range of selectable Earth Leakage Current: 30 mA - 300 mA, 0.2A - 1.2A
- Configurable Earth Leakage Trip time: 100 ms - 5 s
- Easily configurable operating modes
- Test feature to check complete product functionality
- Manual / Remote reset feature
- LED indication for relay status, CT open, earth leakage fault & test/reset switch short

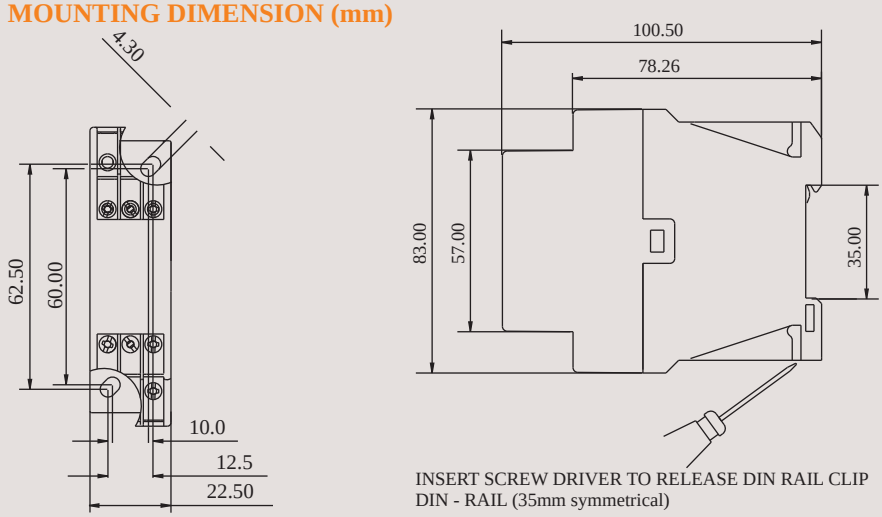
Cat. No.	17G544FF1	17G644FF1	17G514FF1	17G614FF1
Parameters				
Supply Voltage Un	220-415 VAC, -20 to +10%, 50/60Hz		110-240 VAC, -20 to +10%, 50/60Hz	
Power Consumption (Max)	10 VA		5 VA	
Relay Output Characteristics:				
Contact arrangement	1C/O (SPDT)			
Contact rating	5 A @ 240 VAC / 30 VDC			
Utilization Category AC-15				
Ue Rated Voltage V	120 / 240 V			
Ie Rated Current A	3.0 / 1.5 A			
Utilization Category DC-13				
Ue Rated Voltage V	125 / 250 V			
Ie Rated Current A	0.22 / 0.11 A			
Mechanical Life	10 million operations			
Electrical Life	0.1 million operations@ rated load			
LED Indications	Green LED - Power ON, Red LED 1 ON - Earth Leakage, Red LED 2 - a. Blink - Test Switch short, b. ON - CT Open			
ON Delay Time	50 +/- 20 ms			
Trip (OFF) Time	100ms to 5s (Adjustable)			
Accuracy	Setting Accuracy: -10% (85 ms to 100 ms trip time for 100 ms setting in NFSNL)			
	Repeat Accuracy: +/- 1%			
Storage Temperature	-20 to 80°C			
Operating Temperature	-15 to +60°C			
Relative Humidity	95% (without condensation)			
Certification	CE			
Degree of Protection	IP-40 (Enclosure); IP-20 (Terminal); Pollution Degree - 2			
EMI/ EMC Radio Interference Suppression ESD Electrical Fast Transients Surges	 CISPR 14-1 Class B IEC 61000-4-2 Level II IEC-61000-4-4 Level IV IEC-61000-4-5 Level IV			
Voltage Dips, Interruptions	IEC-61000-4-11 Levels I to V Class A, Levels III, VI to VII Class B,		IEC-61000-4-11 Levels I, II, IV & V Class A, Levels III, VI to VII Class B,	
Isolation	Test Vtg. between input & output - IEC 60947- 5-1, 2 KV			

ORDERING INFORMATION

Cat. No.	Description
17G514FF1	110-240V AC, Current Range 30 mA - 300 mA, 1 C/O
17G614FF1	110-240V AC, Current Range 0.2 A-1.2 A, 1 C/O
17G544FF1	220-415V AC, Current Range 30 mA - 300 mA, 1 C/O
17G644FF1	220-415V AC, Current Range 0.2 A-1.2 A, 1 C/O
17H5NNHL3	CBCT (tape wound), 35mm, 30mA-300mA
17H6NNHL3	CBCT (tape wound), 35mm, 0.2A-1.2A

Note: CBCT's of other sizes will be available as required.

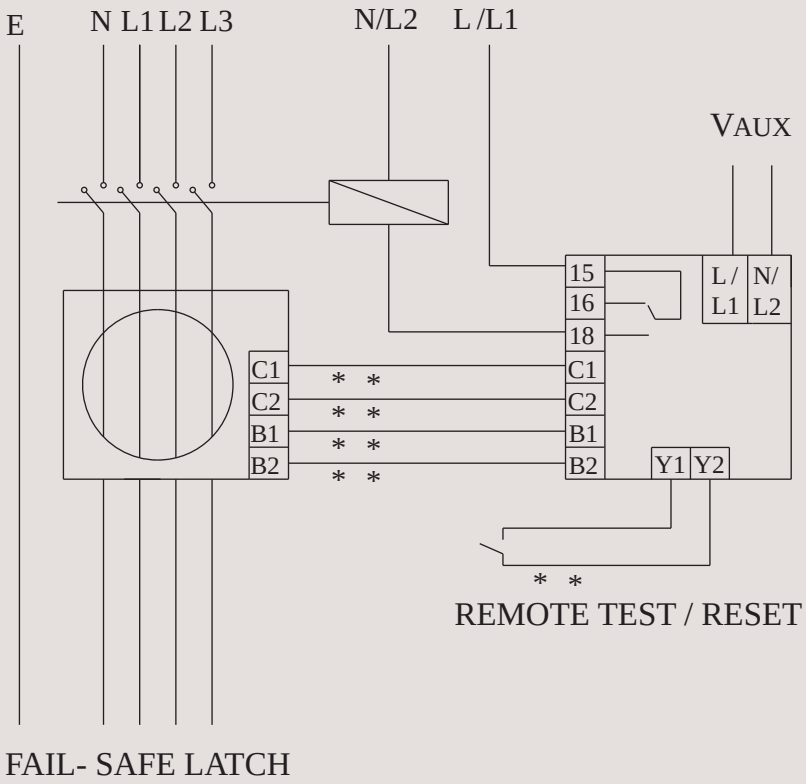
MOUNTING DIMENSION (mm)

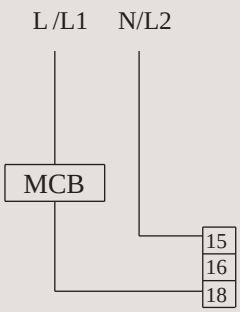


INSERT SCREW DRIVER TO RELEASE DIN RAIL CLIP
DIN - RAIL (35mm symmetrical)

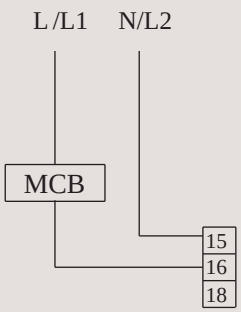
Earth Leakage Relay Series CMR

CONNECTION DIAGRAM

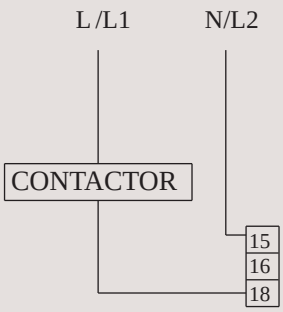




FAIL SAFE,
NON LATCH

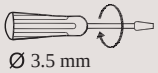
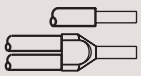


NON FAIL SAFE,
NON LATCH



FAIL SAFE, LATCH

TERMINAL TORQUE & CAPACITY

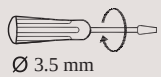
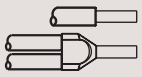
 Ø 3.5 mm	Torque 0.54 N.m (5 Lb. in) Terminal Screw - M3
	1 x 1 - 6 mm^2 Solid Wire / single wire ferrule 2 x 0.5 - 2.5 mm^2 Insulated with twin ferrule
AWG	1 x 20 to 10

PID Temperature Controller Series PR 69

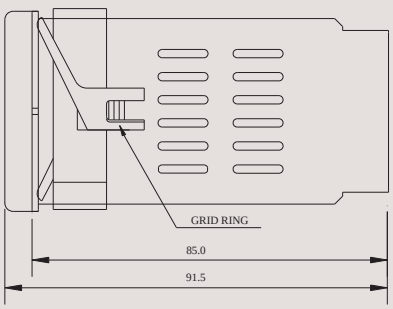
- Universal Input
- Configurable output combination
- Field configurable, band, deviation, sensor break & loop break alarms
- Single/Dual acting PID controllers with 5 control modes
- Auto-tuning PID with provision for soft- start
- RS 485 communication
- Bumpless auto-manual transfer
- Rapid set point change feature
- 6 segment ramp & soak profile with power failure resumption modes
- IP 65 protection

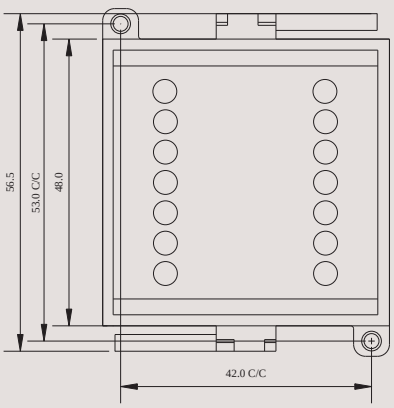
Cat. No.	151D12B	151A12B	151B12B	151C12B
Parameters				
Supply Voltage	110-230 VAC, 50-60 Hz			
Supply Variation	-20%/+10%			
Operating Temperature Range	0 to + 50°C			
Temperature sensors / inputs	J, K, E, S, B, R thermocouple, RTD(PT100-3 wire compensation), mV signals (0-50 mV, 0-60 mV,12-60 mV)			
Measurement Range	Sensor J: 0 to 700°C/32 to 1292°F, Sensor K: 0 to 1300°C/32 to 2372°F, Sensor E: 0 to 600°C/32 to 1112°F, Sensor R: 0 to 1750°C/32 to 3182°F, Sensor S: 0 to 1750°C/32 to 3182°F, Sensor B: 250 to 1820°C/482 to 3308°F, Sensor Pt100 3 wire: - 200 to 700°C/-328 to 1292°F			
Measurement Accuracy	+/-0.5% of full scale of PT100, +/-1% of full scale for TC			
Resolution	0.1°C for RTD, J,K,E & 1° for S,B & 0.001°C for mV signals			
Configurable Set Points	4			
Display	Dual 7 segment with LED indications, 4-digit process value, 4 digit set value			
Keypad	4-Keys; 1 - Enter, 2-Up, 3 - Down, 4 - Configurable			
SSR output	NA	12 VDC, 24mA, short circuit protection		NA
Linear DC Output	NA		0 - 10V or 4 - 20mA (user selectable through software)	
Linear DC Output Update rate	NA		150 msec - 5 sec Programmable	
Linear DC Output type	NA		Retransmission - PV, Control - Output Power.	
Contact rating	One SPST relay 8A, 240VAC OR 5A, 28VDC Two SPST relay 5A 240VAC or 28VDC		2 relays (SPST 8A & 5A, 240V AC / 28V DC) and a SSR driving output (12V DC, 24mA)	
Statutory Requiremnts: Pollution Degree	2			
IP Standard	IP54 (For Front Panel only)			
Dimensions (W x H x D)	48 x 48 x 91.5 (in mm)			
Certification	CE			
EMI/EMC				
Radio interference suppressions	IEC55011			
Fast transients	IEC61000-4-4 level 4			
Surges	IEC61000-4-5 level 4			
Weight	185g			

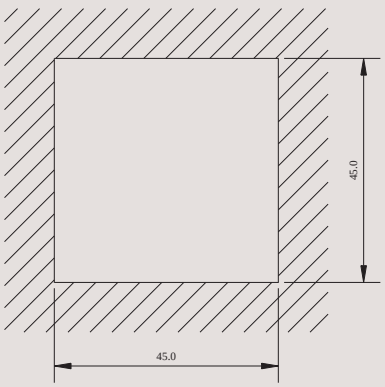
TERMINAL TORQUE & CAPACITY

 Ø 3.5 mm	Torque 0.5 N.m (5 Lb. in) Terminal Screw - M3
	1 x 0.12 - 2 mm^2 Solid Wire / single wire ferrule 2 x 0.2 - 1 mm^2 Insulated with twin ferrule
AWG	1 x 24 to 12

MOUNTING DIMENSION (mm)







PID Temperature Controller Series PR 69

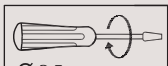
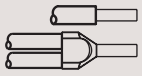
Cat. No.	151D13B1	151A13B1	151B13B1	151C13B1
Parameters				
Supply Voltage	110-240 VAC, 50-60 Hz			
Supply Variation	-20%/+10%			
Operating Temperature Range	0 to + 50°C			
Temperature sensors / inputs	J, K, E, S, B, R thermocouple, RTD(PT100-3 wire compensation), mV signals (0-50 mV, 0-60 mV,12-60 mV)			
Measurement Range	Sensor J: 0 to 700°C/32 to 1292°F, Sensor K: 0 to 1300°C/32 to 2372°F, Sensor E: 0 to 600°C/32 to 1112°F, Sensor R: 0 to 1750°C/32 to 3182°F, Sensor S: 0 to 1750°C/32 to 3182°F, Sensor B: 250 to 1820°C/482 to 3308°F, Sensor Pt100 3 wire: - 200 to 700°C/-328 to 1292°F			
Measurement Accuracy	+/-0.5% of full scale of PT100, +/-1% of full scale for TC			
Resolution	0.1°C for RTD, J,K,E & 1° for S,B & 0.001°C for mV signals			
Configurable Set Points	4			
Display	Dual 7 segment with LED indications, 4-digit process value, 4 digit set value			
Keypad	4-Keys; 1 - Enter, 2-Up, 3 - Down, 4 - Configurable			
SSR output	NA	12 VDC, 24mA, short circuit protection		NA
Linear DC Output	NA		0 - 10V or 4 - 20mA (user selectable through software)	
Linear DC Output Update rate	NA		150 msec - 5 sec Programmable	
Linear DC Output type	NA		Retransmission - PV or SP, Control - Output Power.	
Contact rating	One SPST relay 8A, 240 VAC / 28 VDC Two SPST relay 8A & 5A 240 VAC / 28 VDC		2 relays (SPST 5A, 240 VAC / 28 VDC) and a SSR driving output (12 VDC, 24mA)	
Transmission Speed / RS 485	300 to 19200 BPS			
Transmission Speed	Half Duplex			
Protocol	Modbus RTU			
Statutory Requiremnts: Pollution Degree	2			
IP Standard	IP65 (For Front Panel only)			
Dimensions (W x H x D)	48 x 48 x 91.5 (in mm)			
Certification	CE			
EMI/EMC Radio interference suppressions	IEC55011			
Fast transients	IEC61000-4-4 level 4			
Surges	IEC61000-4-5 level 4			
Weight	185g			

ORDERING INFORMATION

Cat. No.		Description
151A12B	Single Acting PID Controller	2 relays (SPST 8A & 5A, 240 VAC / 28 VDC), SSR driving output (12 VDC, 24mA)
151B12B		1 relay (SPST 5A, 240 VAC / 28 VDC), Analog output (0-10V, 4-20mA), SSR driving output (12 VDC, 24mA)
151C12B		2 relays (SPST 5A each,240V AC/28V DC), Analog output (0-10V, 4-20mA)
151D12B		3 relays (SPST One 8A & Two 5A, 240V AC / 28V DC)
151A13B1*	Dual Acting PID Controller	2 relays (SPST 8A & 5A, 240 VAC / 28 VDC), SSR driving Output (12 VDC, 24mA)
151B13B1*		1 relay (SPST 5A, 240 VAC / 28 VDC), Analog output (0-10V, 4-20mA), SSR driving Output (12V DC, 24mA)
151C13B1*		2 relays (SPST 5A each, 240 VAC/28V DC), Analog output (0-10V, 4-20mA)
151D13B1*		3 relays (SPST One 8A & Two 5A, 240 VAC / 28 VDC)

*Note: With RS485 Modbus Communication

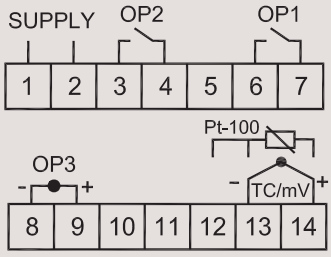
TERMINAL TORQUE & CAPACITY

 Ø 3.5 mm	Torque 0.5 N.m (5 Lb. in) Terminal Screw - M3
	1 x 0.12 - 2 mm^2 Solid Wire / single wire ferrule 2 x 0.2 - 1 mm^2 Insulated with twin ferrule
AWG	1 x 24 to 12

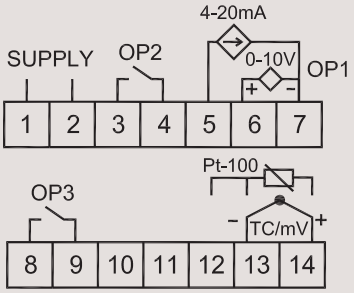
PID Temperature Controller Series PR 69

CONNECTION DIAGRAM

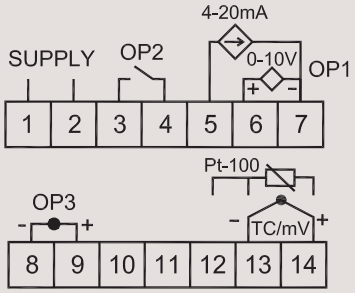
151A12B



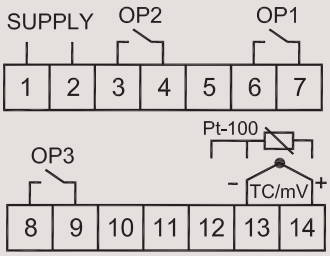
151C12B



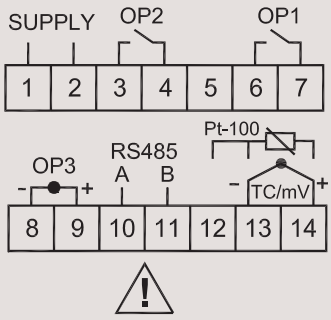
151B12B



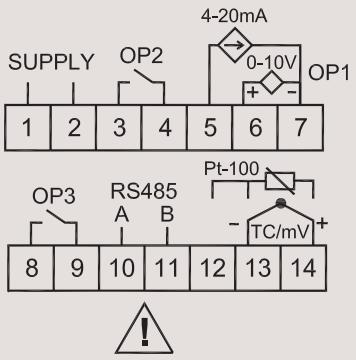
151D12B



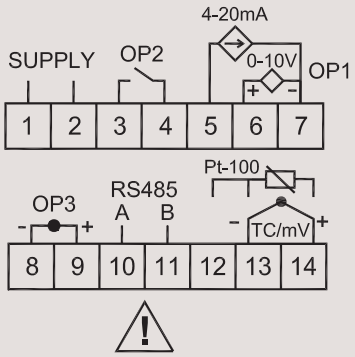
151A13B1



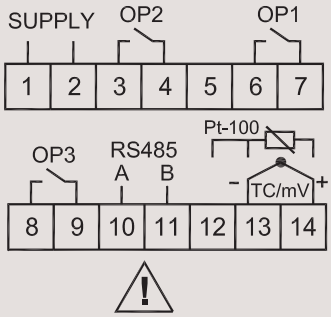
151C13B1



151B13B1



151D13B1



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Email: marketing@gicindia.com | www.gicindia.com