

Control & Protect Your Panels with **Precision & Reliability**



Earth Leakage Relay

Built on Trust. Designed for high performance.

LED Indications for power on, alarm and trip for easy identification

Ease of programming using dial and dip switches

MODBUS RS485 communication port available

Wide trip time setting from 0-10 sec

ULTIMATE DIGITAL VOLTAGE MONITORING RELAY WITH ADVANCED NEUTRAL LOSS FEATURE



SWITCH TO DIGITAL VOLTAGE MONITORING RELAY-SM800

- › Equipped to detect neutral loss, phase asymmetry, phase sequence, OV and UV
- › Best Suited for 3 Phase (3W/4W) system with voltage range of 145-500V AC
- › Configurable power on delay, off delay & on delay
- › Flexible to adapt to specific application needs.
- › Stores last five fault history and can also be enabled for password protection
- › Configurable output (1&2 C/O) contact for energizes to trip or de-energizes to trip

Timing Devices, Supply Monitors & ELR

Timers [9107]

 Micon 175	Type	Time	Voltage	Contact Arrangement	Cat. No.	M.R.P. (₹) Per Unit
	ON Delay	0.3 sec - 30 hrs	240 VAC/24 VAC/DC	1 C/O	120DT4	795
			110 VAC/24 VAC/DC		110DT4	1290
			12 VDC		150DT4	1055
	ON Delay & Interval	0.1 sec - 100 hrs	240 VAC/24 VAC/DC	1 C/O	12WDTC	1060
	Star Delta Timer	3 sec - 120 sec	240 VAC	1 NO (Star)+1 NO (Delta)	12SDT0	895
		3 sec - 30 sec	240 - 415 VAC	1 C/O (Star)+1 C/O (Delta)	14SDT1S	1360
	Signal OFF Delay	0.3 sec - 30 hrs	240 VAC/24 VAC/DC	1 C/O	12RDT4	1000
		0.3 sec - 30 hrs	12 VDC		15DDT4	1085
	Multifunction Timer	0.1 sec - 100 hrs	12 - 240 VAC/DC	1 C/O	1CMDT0	1700
				2 C/O	1CMDTF	1810
	Asymmetrical ON/OFF & OFF/ON	0.1 sec - 100 hrs	12 - 240 VAC/DC	1 C/O	1CJDT0	1700
	One Shot	0.3 sec - 30 hrs	110 VAC/24 VAC/DC	1 C/O	11BDT4	1265
			240 VAC/24 VAC/DC		12BDT4	1265
			12 VDC		15BDT4	1330
	Forward Pause Reverse Timer	ON time : 6 sec -60 min Pause time : 0.1 sec-200 sec	12 - 240 VAC / DC	2 C/O	1CZDTF	1810

Pause time for Micon 175 star delta timer is 60 msec

1CMDT0 contains ON Delay, Impulse, Signal ON delay, Cyclic ON/OFF, Cyclic OFF/ON, Signal OFF Delay, Signal OFF/ON, Accumulative Delay ON signal, Impulse ON/OFF, Leading edge impulse, Trailing edge impulse, Leading edge Bistable

On Delay and Star Delta Timer Precision in Every pulse. Reliability in Every Start



Micon 225 	Type	Timing Range	Voltage	Contact Arrangement	Cat. No.	M.R.P. (₹) Per Unit
	ON Delay	0.1 sec - 10 hrs	24 - 240 VAC/DC	2 C/O	2AODT5	1605
	Star Delta Timer	3 sec - 120 sec	24 - 240 VAC/DC	1 NO (Star)+1 NO (Delta)	2ASDT0	1685
			240 - 415 VAC		2BSDT0	1985
	Multifunction Timer	0.1s to 120 days	24 - 240 VAC/DC	2 C/O (1 Inst+1 Delayed)	2A8DT6	1805
	Multifunction Multirange	0.1 sec - 10 hrs	24 - 240 VAC/DC	2 C/O	2A5DT5	1785
			240 - 415 VAC		2B5DT5	2145
	Signal Base Multi function - Multirange	0.1 sec - 10 hrs	24 - 240 VAC/DC	1 C/O	2ANDT0	1895
	Multifunction Timer 6 Functions	0.1 sec - 10 hrs	24 - 240 VAC/DC	2 C/O (1 Inst+1 Delayed for 6th Mode)	2A6DT6	1910
			240 - 415 VAC		2B6DT6	1945
	True OFF Delay	0.6 sec - 600 sec	24 - 240 VAC/DC	2 C/O	23GDT0	2620
	Asymmetrical ON/OFF	0.1 sec - 10 hrs	24 - 240 VAC/DC	2 C/O	2AADT5	2020

Pause time for Micon 225 star delta timer is 60 msec, 90 msec, 120 msec, 150 msec

Major timing functions

2A5DT5, 2B5DT5, 2A6DT6* and 2B6DT6* contains ON Delay, Interval, Cyclic ON/OFF, Cyclic OFF/ON, One Shot, ON Delay, On Delay (1 Inst + 1 Delayed)*

2ANDT0 contains ON Delay, Interval, Signal ON Delay, Accumulative ON Delay, Signal OFF Delay, Signal OFF/ON Delay, Leading edge impulse

2A8DT6 contains ON Delay, Impulse, Signal ON delay, Signal OFF delay, Step mode, One shot, Interval, Cyclic ON/OFF, Cyclic OFF/ON, Signal OFF Delay, Accumulative Delay ON signal, Impulse ON/OFF.

Digital Timer DIGICON 	Functions	Timer	Voltage	Contact Arrangement	Cat. No.	M.R.P. (₹) Per Unit
	8 Functions	0.1 sec - 999 hrs	24 - 240 VAC/DC	1 C/O	V0DDTS	1905
			24 - 240 VAC/DC	2 NO	V0DDTD	1905
	18 Functions	0.1 sec - 999 hrs	24 - 240 VAC/DC	1 C/O	V0DDTS1	2155
			24 - 240 VAC/DC	2 NO	V0DDTD1	2155

V0DDTS and V0DDTD contains On Delay, Signal OFF Delay, Cyclic ON/OFF, Signal OFF/ON, Cyclic OFF/ON, Interval, Signal ON/OFF, One Shot output
V0DDTS1 and V0DDTD1 contains ON Delay, Cyclic OFF/ON, Cyclic ON/OFF, Impulse on energizing, Accumulative Delay ON Signal, Accumulative Delay on Inverted signal, Accumulative Impulse ON signal, Signal ON Delay, Inverted Signal On delay, Signal OFF Delay, Impulse ON/OFF, Signal OFF/ON, Leading edge impulse, Trailing edge impulse, Delayed impulse, Negative edge impulse.

Motor Restart Timer 	Functions	Timer	Voltage	Contact Arrangement	Cat. No.	M.R.P. (₹) Per Unit
	Motor Restart Timer	Memory time Tm: 0.2 to 6 sec	110 VAC	1 C/O	23LDT0	2110
		Delay time Td: 0.2 to 60 sec	240 VAC		22LDT0	2110

Time Switches [9107]

FM1 / Quartz  150 Hrs Battery Backup	Product Description		Cat. No.	M.R.P. (₹) Per Unit
	FM1 / Quartz Daily	110 VAC - 240 VAC Base/DIN Mounting	J648B1	2745

Digital Time Switch  Crono Pro Crono / Pulse	Product Description		Cat. No.	M.R.P. (₹) Per Unit
	Time Switch (Crono)	110 - 240 VAC 1 C/O Base/DIN 25 ON/OFF Each	67DDT0	2550
		24 VDC 1 C/O Base/DIN 25 ON/OFF Each	6GHDT0	3015
		12 VDC 1 C/O Base/DIN 25 ON/OFF Each	69HDT0	3175
	Time Switch (Crono Pro)	110 - 240 VAC 2 C/O Base/DIN 50 ON/OFF Each	WT2DCDS	3615
	Time Switch (Pulse) *	110 - 240 VAC 1 C/O Base/DIN 16 Pulse	67DDT9	2965
		24V DC 1 C/O Base /Din 16 Pulse	6GHDT9	3345
		12V DC 1 C/O Base /Din 16 Pulse	69HDT9	3515

* For bell and siren application

Astro  Astro Pro Astro Mini	Product Description		Cat. No.	M.R.P. (₹) Per Unit
	Astro Mini	110 - 240 VAC 1 Phase - 2W 1 C/O , Base/Din	T2DDT7	4960
	Astro Pro	110 - 240 VAC 1 Phase - 2W 2 C/O , Base/Din 50 ON/OFF Each	AS2DCDS	6070
	Astro	110 - 240 VAC 3 Phase - 4W 3 Channel 3 N/O , Base/Din	T3DDT0	12500

Note : Astro Mini / Astro Pro is used for lighting control based on sunrise / sunset timings by latitude / longitude settings.



Supply Monitoring Devices [9032]

- › SPP includes single phasing, phase sequence and phase unbalance monitoring with auto reset

Voltage Monitoring Relay Series		Type	Supply Monitoring Type	Time delay	Asymmetry	Voltage & Contact Arrangement	Cat. No.	M.R.P. (₹) Per Unit	
 SM 301  SM 500  SM 500 with Neutral Loss Protection  SM 501 Digital VMR Series  SM 800  SM 600 (MMR)	SM301 (3Ph, 3W)	Single Phasing Preventor (SPP*) Fail Safe	ON Delay 2 sec and OFF Delay 7 sec	65 VAC Asymmetry	415 VAC, 1 C/O	MA51BC	1120		
				40 VAC Asymmetry	415 VAC, 2 C/O	MC21B5	1635		
					415 VAC, 1 C/O	MA51BK	1110		
	SM301 (3Ph, 3W)	Phase loss monitoring Non Fail Safe Type	OFF Delay 500 msec and Recover Delay 2 Sec	30% Fixed	415 VAC, 1 C/O	MA59B5	1285		
	SM500 (3 Ph / 1 Ph, 4W)	Selectable Under Voltage + Selectable Over Voltage	Selectable ON Delay (0 to 15 min)	-	240 VAC, 1 C/O	MD71B9	1735		
			Selectable ON Delay (0 to 15 sec)	-		MD71BH	1735		
			Selectable OFF Delay (0 to 15 sec)	-		MD71BF	2030		
		Single Phasing Preventor + Selectable Under Voltage + Selectable Over Voltage	Selectable ON Delay (0 to 15 min) & OFF Delay 5 sec	Phase Asymmetry 10% fixed	240 VAC, 2 C/O	MG73B9	2120		
			Selectable ON Delay (0 to 15 sec) & OFF Delay 5 sec	Phase Asymmetry 10% fixed		MG73BH	2120		
			Selectable OFF Delay (0 to 15 sec) & ON Delay 5 sec	Phase Asymmetry 10% fixed		MG73BF	2120		
		SPP + UV/OV, with fixed UV (173 V) & OV (288 V)	Selectable ON (10 Sec) and OFF Delay (5 Sec)	Phase Asymmetry 20% fixed	415 VAC, 3 Ph 4W, 2 C/O	MG73BR	2120		
		SPP + Selectable UV + Selectable OV with Neutral Loss Protection	ON Delay 5 sec and OFF Delay 5 sec, 500ms-1s for Neutral fail	94 VAC Asymmetry		MAC04 D0100	2120		
		SM501 (3 Ph, 3W)	Single Phasing Preventor + Selectable Under Voltage + Selectable Over Voltage	SPP + Under Voltage (80% of 400V)		Selectable ON Delay and OFF Delay 15 sec	Selectable Asymmetry (5% to 17%)	415 VAC, 2 C/O	MB53BM
					Selectable ON Delay 15 sec & OFF Delay 5 sec	Phase Asymmetry 10%	MG53BH		2155
Selectable OFF Delay 15 sec & ON Delay 5 sec	Phase Asymmetry 10%				MG53BF	2155			
ON Delay 5 sec and OFF Delay 5 sec	65 VAC Asymmetry				MG53BI	2035			
ON Delay 3 min and OFF Delay 5 sec UV 85% of 400V OV 110% of 400V	Phase Asymmetry 10%				MG53BO	2035			
SM 800 (3PH/ 3W, 4W)	Single Phasing Preventor+ Selectable Under Voltage + Selectable Over Voltage + Neutral Loss (Applicable for 3P4W).	Power ON Delay (0 to 999 sec) , OFF Delay (0.1 to 999 sec) & ON delay (0.5 to 999 sec)	Voltage: 5 to 99 VAC (Default 60V) , Percentage : 2 to 50% (Default 10%)	145-500 VAC (Line Voltage), 1C/O	DMS110	2065			
				145-500 VAC (Line Voltage), 2C/O	DMS120	2185			
				85-300 VAC/DC (Auxiliary Supply) (P-N), 2 C/O	DMA220	2410			
SM 600 (3P, 3W)	Phase loss+ Phase Sequence +Phase Asymmetry + UV + OV+3 phase interruption	Power ON delay (5s Fixed),ON delay (1-30 sec or Fixed), OFF delay (0.1 - 30 sec or Fixed)	Voltage +_ 1% of set value	500V -1000V AC 2 C/O	SMB110	9435			

Note : 3 Ph 3W - 3 Phase 3 Wire system; 3 Ph 4W - 3 Phase 4 Wire system.

Voltage Monitoring Relay Series



SM175
3 Ph, 3W



SM175
3 Ph, 4W

Voltage Monitoring Relay Series		Type	Supply Monitoring Type	Time delay	Asymmetry	Voltage & Contact Arrangement	Cat. No.	M.R.P. (₹) Per Unit
 SM175 3 Ph, 3W	SM175 (3 Ph, 3W)	Phase loss + Phase Sequence Monitoring		ON Delay 500 msec & OFF Delay 100 msec	—	208 - 480 VAC, 1 C/O (Steps of 208 - 220 - 380 - 400 - 415 - 440 - 480 VAC)	MK21D5	1335
				ON Delay 500 msec & OFF Delay 100 msec	Phase Asymmetry (30% fixed)		MC21D5	1335
				ON Delay 5 sec & OFF Delay 100 msec (0 to 15s Selectable)	Phase Asymmetry (5% to 15% variable)		MA21DN	1745
		Phase Loss + Phase Sequence + Under Voltage + Over Voltage monitoring (UV: -2% to -20% of $\frac{U_n}{\sqrt{3}}$, OV: 2% to 20% of $\frac{U_n}{\sqrt{3}}$)	ON Delay 5 sec and Selectable OFF Delay (0 to 15 sec)	—	Phase Asymmetry (10% fixed)		MD21DF	1745
		Phase Loss + Phase Sequence + Under Voltage + Over Voltage (UV: -5% to -25% of $\frac{U_n}{\sqrt{3}}$, OV: 5% to 25% of $\frac{U_n}{\sqrt{3}}$)	Selectable ON Delay (0.5 to 15 sec) and OFF Delay 5 sec				MG21DH	1955
			ON Delay 5s and Selectable OFF Delay (0 to 15 sec)				MG21DF	1955
 SM175 3 Ph, 4W	SM175 (3 Ph, 4W)	Phase loss+ Phase Sequence+ Under Voltage + Over Voltage (UV:-2% to -22% of $\frac{U_n}{\sqrt{3}}$, OV: 2% to 22% of $\frac{U_n}{\sqrt{3}}$)	Selectable ON delay (0 to 15 Sec), Selectable OFF delay (0 to 15 sec)	Phase Asymmetry (10% fixed)	120 to 277 VAC (3P, 4W), 1 C/O	MAG03D0424	2115	
		Phase loss+ Phase Sequence+ Under Voltage + Over Voltage (UV:-5% to -25% of $\frac{U_n}{\sqrt{3}}$ / 60% of $\frac{U_n}{\sqrt{3}}$ (Fixed), OV: 5% to 25% of $\frac{U_n}{\sqrt{3}}$ / 110% of $\frac{U_n}{\sqrt{3}}$ (Fixed))			240 VAC (3P, 4W), 1 C/O	MAG03D0425	2115	
		Phase loss+ Phase sequence+ Under Voltage + Over Voltage (UV:-5% to -25% / 80% of $\frac{U_n}{\sqrt{3}}$ (Fixed), OV: 110% of $\frac{U_n}{\sqrt{3}}$ (Fixed))	Selectable ON delay (0 to 15 sec/min), Selectable OFF delay (0 to 15 sec/min)	Phase Asymmetry (10% fixed/ 5% to 25% Selectable)	MAG03D0426	2115		
	SM175 (3 Ph, 3W)	Phase loss Monitoring	ON delay 750 msec & OFF delay 500 msec	Phase Asymmetry (30% fixed)	415 VAC, 1 C/O	MAG03D0427	1420	

Monitoring voltage. Safeguarding system.



Current Monitoring relay (CMR)

- › Microprocessor based relay protects against Overload, Phase reverse, Phase loss, Phase unbalance faults
- › Auto/ Manual reset selection
- › Fail- safe protection with inbuilt CT upto 45A
- › Inverse time model with underload, locked rotor protection and selectable trip class (10A, 10, 20, 30)
- › Definite time model with underload and selectable start and trip time

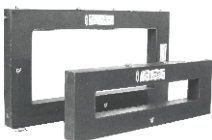
Current Monitoring relay 	Phase	Type	Current & Contact Arrangement	Cat. No.	M.R.P. (₹) Per Unit
	3 Phase	Inverse Time Current Monitoring Relay	2 - 5A 1 C/O	17A422CB0	2405
			3 - 9A, 1 C/O	17A122CB0	
			8 - 24A, 1 C/O	17A222CB0	
			15 - 45A, 1 C/O	17A322CB0	
		Definite Time Current Monitoring Relay	2 - 5A 1 C/O	17B422AA0	
			3 - 9A, 1 C/O	17B122AA0	
			8 - 24A, 1 C/O	17B222AA0	
			15 - 45A, 1 C/O	17B322AA0	
	1 Phase	Definite Type / Instant Trip	2 - 5A 1 C/O	17B422PA0	2355
		Inverse Time Current Monitoring Relay	2 - 5A 1 C/O	17C412EB0	
			3 - 9A, 1 C/O	17C112EB0	
			8 - 24A, 1 C/O	17C212EB0	
			15 - 45A, 1 C/O	17C312EB0	
		Definite Time Current Monitoring Relay	2 - 5A 1 C/O	17D412DA0	
			3 - 9A, 1 C/O	17D112DA0	
			8 - 24A, 1 C/O	17D212DA0	
			15 - 45A, 1 C/O	17D312DA0	

PTC Thermistor Relay Series 	Relay Type	Description	Cat. No.	M.R.P. (₹) Per Unit
	Thermistor Relay	110 - 240 VAC, 2 C/O	MJ83BK	2425
		220 - 440 VAC, 2 C/O	MJ93BK	2450
		24 VAC/DC, 2 C/O	MJA3BK	2840
		110 - 240 VAC, 1 C/O	MJ81BK	2245
		220 - 440 VAC, 1 C/O	MJ91BK	2275

Hour Meter & Counter [9029]

Hour Meters 	Product Description		Cat. No.	M.R.P. (₹) Per Unit
	HM36, 85 - 265 VAC Flush Mounting		LA25F1	925
	HM 36, 10 - 80 VDC Flush Mounting		LD17F1	1405
	HM36, 92 - 264 / 270 - 460 VAC Base - DIN Mounting		30A6B1	1010
	HM36, 10 - 80 VDC Base/DIN Mounting		30D1B1	1405
	Digital Hour Meter/Digital Counter (Resettable)		Z□□FB□	1685
	Hour Meter / Counter Z □ □ FB □ Voltage H 10 - 80 VDC 7 85 - 265 VAC J 12 - 48 VAC/DC Bezel A Round B 24 x 48 C Screw Mount 1 Hour Meter 2 Counter			

Earth Leakage Relay [9032]

Earth Leakage Relays		Current Range	Type	Voltage & Contact Arrangement	Cat. No.	M.R.P. (₹) Per Unit
 96 x 96 mm Earth Leakage Relay  DIN Mounted Earth Leakage Relay  CBCT  Rectangular CBCT	30mA - 30A	Panel mounted (96 x 96 mm) Earth Leakage Relay		110 - 240 VAC/DC, 1 C/O (Pre-alarm) + 1 C/O (Fault)	17K716QF4N	4335
				110 - 240 VAC/DC, 1 C/O (Pre-alarm) + 1 C/O (Fault) with RS 485	17K716QF4M	6235
				240 - 415 VAC/DC, 1 C/O (Pre-alarm) + 1 C/O (Fault)	17K726QF4N	4335
				240 - 415 VAC/DC, 1 C/O (Pre-alarm) + 1 C/O (Fault) with RS 485	17K726QF4M	6235
			DIN mounted Earth Leakage Relay	110 - 240 VAC, 110 VDC, Manual reset	17G715GF2	3890
				220 - 415 VAC, 220 VDC, Manual reset	17G745GF2	
				15 VDC, Manual reset	17G755GF2	
				110 - 240 VAC, 110 VDC, Auto reset	17G715KF2	
				220 - 415 VAC, 220 VDC, Auto reset	17G745KF2	
				15 VDC, Auto reset	17G755KF2	
		CBCT (moulded case) for Type A & AC Current		38 mm ID	17H7NNHN3	1335
				57 mm ID	17H7NNIN3	1805
				70 mm ID	17H7NNQN3	2050
				92 mm ID	17H7NNJN3	2245
				120 mm ID	17H7NNLN3	2340
				210 mm ID	17H7NNKN3	4415
		CBCT (moulded case) for Type AC Current		38 mm ID	17H7NNRN3	1000
				57 mm ID	17H7NNVN3	1120
				70 mm ID	17H7NNSN3	1185
				92 mm ID	17H7NNTN3	1585
				120 mm ID	17H7NNUN3	1840
		Rectangular CBCT (moulded case) for Type AC Current		300 x 50 mm ID	17H9NNWN0	8815
				350 x 150 mm ID	17H9NNXN0	10715

- › CBCT for Type AC : For applications with sinusoidal alternating current from 30mA to 30 A.
- › CBCT for Type A and AC : For applications with sinusoidal alternating current (from 30mA to 30A) & pulsating DC current (from 30mA to 3A).
- › Please contact nearest branch office for requirements of higher dimension CBCTs.

EM 1000	Product Description		Cat. No.	M.R.P. (₹) Per Unit
	EM 1000 ON Delay Auto Reset Synchronous Timer Single Range		B□□□□□	Table-1
	EM 1000 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 Delay 1 Standard ON delay 2 With 'NO VOLT' Mounting B Base Mounting F Flush (door) Mtg. Contact 1 1 Inst + 1 Del C/O 2 1 Inst + 2 Del C/O Voltage 3 110 VAC 50 Hz 4 240 VAC 50 Hz C 110 VAC 60 Hz D 240 VAC 60 Hz			

* Add to basic Price.
Contact : 240 VAC 6A (Resistive)

Table - 1			
Single Range (SR) (In sec/min/hrs)	M.R.P. (₹) Per Unit for Single Range (SR) (In sec/min/hrs)	Multi Range (MR) with 5 Ranges	M.R.P. (₹) Per Unit
0.15 - 3	5790	0.15 sec - 3 hrs	6870
0.3 - 6		0.3 sec - 6 hrs	
0.6 - 12		0.6 sec - 12 hrs	
1.5 - 30			
3.0 - 60			
6.0 - 120			

* - available till stock lasts

These products are manufactured by



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