

TECHNICAL SPECIFICATIONS

Cat. No.:	11RDT4	12RDT4	15DDT4
Function	SIGNAL OFF Delay Timer		
Supply Characteristics :			
Supply Voltage (V)	110VAC /24VAC/DC	240VAC /24VAC/DC	12VDC
Supply Variation	-15 % to +10 % of V		
Supply Frequency	47 Hz to 63 Hz		
Power Consumption	0.75W@24VDC/3.50 VA@110VAC	0.75W@24VDC/7VA@240VAC	0.8W@12VDC
Signal Characteristics :			
Signal Sensing time	Guaranteed signal present 50 msec		
Signal Impedance (Approx.)	175K@110VAC; 95K@24VAC/DC	120K@240VAC;95K@24VAC/DC	51K@12VDC
Signal stabilization Delay at Power ON	150 msec (Initiate time + Signal sensing time)		
Feature Characteristics :			
Setting Accuracy	+/-5 % of full scale		
Repeat Accuracy	+/-1%		
Initiate Time	100 msec. (Max.)		
Reset Time	100 msec. (Max.)		
Timing Ranges (T)	3s, 30s, 3m, 30m, 3hr and 30hr		
Timing Adjustment Ranges (t)	0.1, 0.2, 0.3, 0.4, 0.5, 0.6, 0.7, 0.8, 0.9 and 1		
Timing adjustment knobs	Flush		
Storage Temperature	-20° C to+ 80° C		-20° C to+ 70° C
Operating Temperature	-15° C to+ 60° C		
Relative Humidity	95% (Rh)		
Housing	Flame Retardant UL 94-V0		
Dimensions in mm (W X H X L)	17.5 ^(+0.5/-0.0) X 65 X 90		
Weight (Packed)	85 g (Approx.)		79 g (Approx.)
Mounting	DIN Rail (35 mm Sym.)		
Status indication on front panel	Relay ON : Red LED ON, Power ON : Green LED ON		
Green LED Fast Blinking (50ms ON/OFF)	=<1 minute off delay time remaining		
Green LED Slow Blinking (1sec ON/OFF)	>1 minute off delay time remaining		
Relay O/P Characteristics :			
Contact Rating	5A (Res.) @ 240 VAC / 28 VDC		
Contact Material	AgSnO2		
Mechanical Life	1 X 10 ⁷ operations		
Electrical Life	1 X 10 ⁵ operations		
Contact Arrangement	1 C/O		
Certification :	CE, RoHS		
Product Reference Standard	IEC 61812-1 Ed. 2.0 (2011-5)		
EMI/EMC :			
Harmonic Current Emissions	IEC 61000-3-2 Class A	IEC61000-3-2 Class A	
ESD	IEC 61000-4-2 Level II	IEC61000-4-2 Level 2	
Radiated Susceptibility	IEC 61000-4-3 Level III	IEC61000-4-3 Level 3	
Electrical Fast Transient	IEC 61000-4-4 Level IV	IEC61000-4-4 Level 3	
Surge Test between supply Terminals	*IEC 61000-4-5 Level IV 110/240VAC and Level III 24VAC/DC	IEC61000-4-5 Level I	
Conducted Susceptibility	IEC 61000-4-6 Level III	IEC61000-4-6 Level 3	
Voltage Dips & Interruptions (AC)	IEC 61000-4-11 All Levels	NA	
Voltage Dips & Interruptions (DC)	IEC 61000-4-29 All Levels	IEC 61000-4-29 All Levels	
Conducted Emission	CISPR 14-1 Class A	CISPR-11 Class A	
Radiated Emission	CISPR 14-1 Class A	CISPR-11 Class A	
Safety :			
Test Voltage Between I/P & O/P	2 kV		
Test Voltage Between all terminal & Enclosure	2.5 kV		
Impulse Voltage Between I/P & O/P	IEC 6092004 47-5-1 2 kV		
Single Fault	IEC 61010-1		
Insulation Resistance	UL 508 > 50KΩ		
Leakage Current	UL 508 (1999-01) < 3.5 mA		
Degree of Protection	IP - 20 for Terminal; IP - 40 for Housing		
Pollution Degree	II		
Type of Insulation	Reinforced		
Environmental :			
Cold Heat	IEC 60068-2-1		
Dry Heat	IEC 60068-2-2		
Vibration	IEC 60068-2-6 10-55 Hz		
Repetitive Shock	IEC 60068-2-27 40 g, 6 ms		
Non-repetitive Shock	IEC 60068-2-27 30 g, 15 ms		

*Note: If supply is looped with relay pole, then surge level III will be applicable (For 11RDT4 & 12RDT4).

Terminal Details :

	0.5 N.m (4.4lb.in) to 0.7N.m (6.2lb.in)
Ø4.....5.0mm Combi Head Bit./Flat	
	2 x 2.5 mm ² Solid / Standard Wire
AWG	24 to 10

AWG	CURRENT (A)
10	5.00
12	4.38
14	3.75
16	3.13
18	2.50
20	1.88
22	1.25
24	0.63

NOTE: Use Cu Wire of 75°C Only.

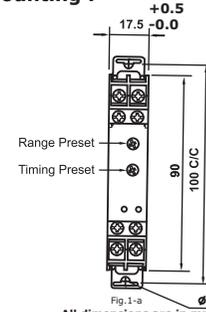
Installation :

DIN - Rail Mounting : The Timer should be mounted on 35 mm symmetrical DIN - Rail.

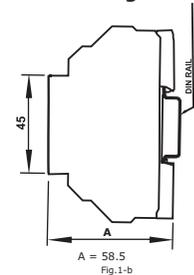
Screw Mounting: For screw mounting, pull out the DIN Rail clips half way. Use 2 no's of M4 screws to mount the product directly on back.

Overall Dimension :

Base Mounting :



Din Rail Mounting :



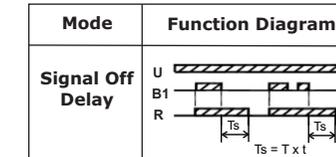
Signal Off Delay Timer

Cat. No.: 11RDT4, 12RDT4, 15DDT4

Mode Description :

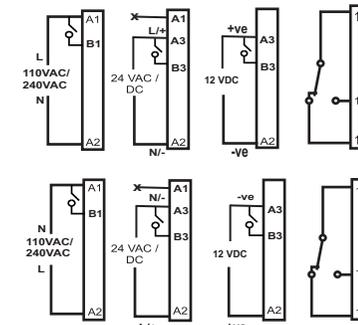
When the supply voltage is applied & the B1 input is energized the output relay energizes. When B1 is de-energized time 'Ts' commences. At the end of 'Ts' the output relay De-energizes. If B1 is energized again before the end of Ts, Ts resets to zero so that when B1 is de-energized the full set time of 'Ts' operates.

Timing Diagram :



Wiring Diagrams :

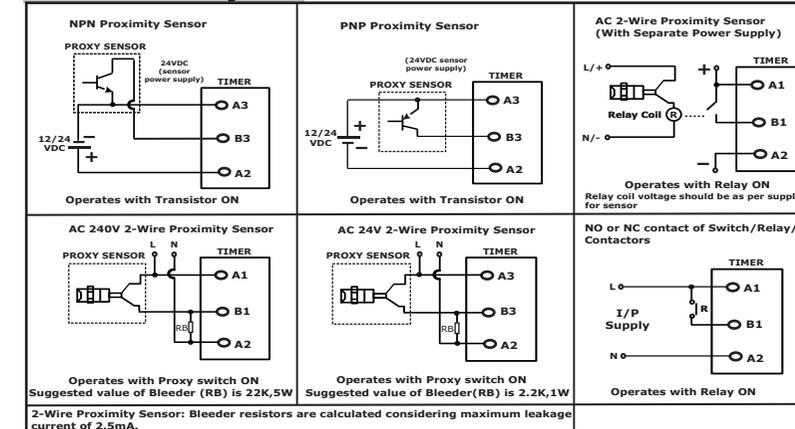
11RDT4/12RDT4/15DDT4:



⚠ Do not apply more than 27VAC/DC to A3 terminal of 11RDT4 & 12RDT4.

⚠ Do not apply more than 14.4VDC to A3 terminal of 15DDT4.

Sensor Connection Diagrams :



2-Wire Proximity Sensor: Bleeder resistors are calculated considering maximum leakage current of 2.5mA.

ELECTRONIC TIMER SERIES : MICON-175™

Cat. No. : 11RDT4
12RDT4
15DDT4



Features :

1. Wide Input Supply and Signal Range.
2. Wide Timing Range-300ms to 30hr.
3. Suitable for Din-Rail & Base Mounting.
4. Compact Size & Easy to install.
5. High Precision & Accuracy.
6. Sensor compatibility: PNP, NPN & 2-Wire 24VAC/240VAC proximity Sensors .

Caution :

1. Always follow instructions stated in this product leaflet.
2. Before installation, check that the specifications agree with the intended application.
3. Installation to be done by skilled electrician.
4. If user wants to reset timer, one way to do this is to switch off the timer & then set timing & range preset to required position. In this case, Timer will reset & will take new set time.
5. Setting of all the potentiometers should be in clockwise direction only.
6. Use 250 mA slow blow fuse in series with the above mentioned products.
7. The timers shall be placed in an enclosure that is minimum 200% of the size of the timer in the end use application. Use Cu wire of 75°C for connections.
8. Product innovation being a continuous process, we reserve the right to make any alteration without prior notice.

TECHNICAL SPECIFICATIONS:	
Cat. No.:	1CYDTE
SUPPLY CHARACTERISTIC:	
Supply Voltage \square	12 - 240 VAC / DC
Supply Variation	-15 % to +10 % of \square
Frequency	50 to 60 Hz, (\pm 3 Hz)
Power Consumption (Typical)	5 VA
SIGNAL CHARACTERISTICS:	
Signal sensing time	60 ms (For both High and Low Signal Detection)
Signal impedance	>6K Ω @10VAC/DC; >70K Ω @110VAC/DC; >150K Ω @240VAC/DC
Signal switch current requirement	Switching capacity of the switch or contact should be >10mA
RELAY O/P CHARACTERISTICS:	
Contact Arrangement	1 C/O Potential free contacts
Contact Rating (Resistive Load)	8A (Res.) @ 240 V AC, 5A at 24 VDC
Contact Material	AgNi
Electrical Life	50,000 Operations min.
Mechanical Life	10,000,000 Operations min.
FEATURE CHARACTERISTICS:	
Set Time (Ts)	0.1 seconds to 100 hrs
Setting Accuracy	+/- 5% of full scale
Repeat Accuracy	+/- 1%
Mode Adjustment	Refer "Timing diagrams of Functions"
Range Adjustment(T)	1s-10s; 10s-1m; 1m-10m; 10m-1h; 1h-10h; 10h-100h **
Multiplier Adjustment(t)	0.1-0.3; 0.3-0.5; 0.5-0.7; 0.7-0.9; 0.9-1 **
LED Indication on front panel	Green LED for Power, Yellow LED for Relay.
Mounting	Din-Rail
Dimensions (W X H X D)	18 x 60 x 85 (in mm)
Weight (Unpacked)	72 gms.
Humidity	95% Rh Non Condensing
Operating Temperature	-10° C to + 60° C
Storage Temperature	-15° C to + 70° C
Housing Color	Dark Gray
Max. Operating Altitude	2000 m
Housing	Flame retardant (UL 94-V0)
Degree & Protection	IP - 20 for Terminal, IP - 40 for Housing.
Pollution Degree	II
Isolation (I/P and O/P)	2 KV
Isolation (Terminal and Casing)	2.5 KV
Type of Insulation	Reinforced
Certifications	CE, RoHS
Initiate Time	Max. 100 ms
Reset Time	Max. 200 ms
EMI / EMC:	
Harmonic Current Emissions	IEC 61000-3-2 Class A
ESD	IEC 61000-4-2 Level II
Radiated Susceptibility	IEC 61000-4-3 Level III
Electrical Fast Transient	IEC 61000-4-4 Level IV
Surge	IEC 61000-4-5 Level III
Conducted Susceptibility	IEC 61000-4-6 Level III
Voltage Dips & Interruptions (AC)	IEC 61000-4-11 For >18 VAC/DC , Criteria A; For < 18 VAC/DC, Criteria B
Voltage Dips & Interruptions (DC)	IEC 61000-4-29 For >18 VAC/DC , Criteria A; For < 18 VAC/DC, Criteria B
Conducted Emission	CISPR 11 Class A
Radiated Emission	CISPR 11 Class A

** Timing (Ts) can be updated during run time, by changing Range(T) and Multiplier(t) values.

ELECTRONIC TIMER - SERIES MICON™ 175

MULTI-FUNCTION

Cat. No.: **1CYDTE**



CAUTION:

1. Always follow instructions stated in this product leaflet.
2. Before installation, check to ensure that the specifications agree with the intended application.
3. Installation to be done by skilled electrician.
4. Automation & Control devices must be properly installed so that they are protected against any risk of involuntary actuations.
5. Suitable dampers should be provided in case of excessive vibrations.
6. Use of 250 mA fuse in series with product supply is recommended.
7. The timers shall be placed in an enclosure that is minimum 200% of the size of the timer in the end use application.
8. Setting of all potentiometers must be in clockwise direction only.

NOTE:

Product innovation being a continuous process, we reserve the right to alter specifications without any prior notice.

TERMINAL DETAILS:

 Ø3.5...4.0 mm	0.68 N.m (6 Lb.in) Terminal screw - M3
	1 x 4.0 mm ² Solid / Stranded Wire
AWG	1 x 20 to 10

Use Cu wire of 75°C only.

AWG	CURRENT (A)
12	5.00
14	3.33
16	1.67

ELECTRONIC TIMER - SERIES MICON™ 175

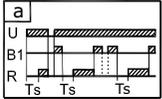
MULTI-FUNCTION

Series 175 1M MULTIMODE Timer is manufactured to a high degree of precision & accuracy. The time settings are stepless and can be set with the knob.

FUNCTION DIAGRAM :

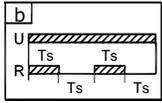
a) Signal On Delay:

Initially if signal S is opened at Power On, it will work as On Delay. If signal S is closed at Power On, delay T_s will not start. Delay T_s will start only when the signal is removed and after delay of T_s , Relay R will get ON. If before completion of delay T_s , closing the signal stops the timing and starts again when the signal gets opened.



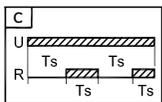
b) Cyclic On/Off: On start

Initially the relay (R) is On for period T_s after the power is applied. The relay (R) keeps on changing its status till power is removed with On and period = T_s .



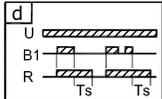
c) Cyclic Off/ On : Off start

Initially the relay (R) is Off for period T_s after the power is applied. The relay (R) keeps on changing its status till power is removed with On and Off period = T_s .



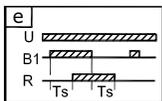
d) OFF Delay, Constant Supply (Signal Off Delay)

R energizes when Switch (S) is closed. Timing commences after Switch (S) is opened and then the relay de-energizes.



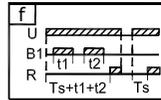
e) Signal Off/On

When Switch (S) is closed or opened for preset time T_s , the relay changes its state after time duration T_s .



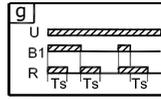
f) Accumulative Delay On Signal

Time commences as supply is present and Switch (S) is open. Closing Switch (S) pauses timing. Timing resumes when Switch (S) opened again R energizes at the end of timing.



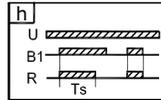
g) Impulse On/Off

R energizes for the period T_s when Switch (S) is opened or closed. When timing commences, changing state of Switch (S) does not affect R but resets timer.



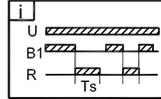
h) ON Impulse, Constant Supply

When switch (S) is closed and remains closed output relay energizes until timing is over. If Switch (S) is Opened during period T_s , R resets.



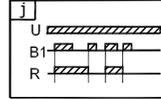
i) OFF Impulse, Constant Supply

When Switch (S) is opened, R energizes and de-energizes when timing is over. If Switch (S) is closed during period T_s R resets.



j) Leading Edge Bi-stable or Step relay

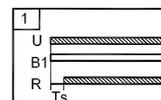
After every Signal, the output contact changes state, alternately switching from open to closed & vice versa.



Derived Modes :

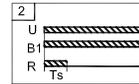
1) ON Delay

Select mode Accumulative On Delay (f) keeping signal open before power ON and during execution of time as well, it will work as ON Delay.

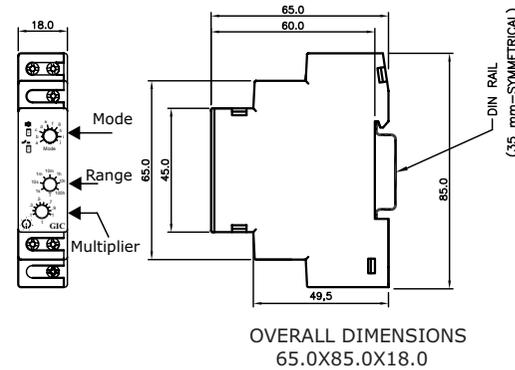


2) INTERVAL

Select mode (h) ON Impulse. If Switch (S) is closed between A1-B1 before making power supply ON and during execution of timing, it will work as Interval.

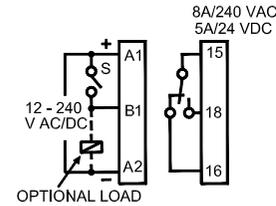


Overall product dimensions and mounting details :



OVERALL DIMENSIONS
65.0X85.0X18.0

WIRING DIAGRAM:

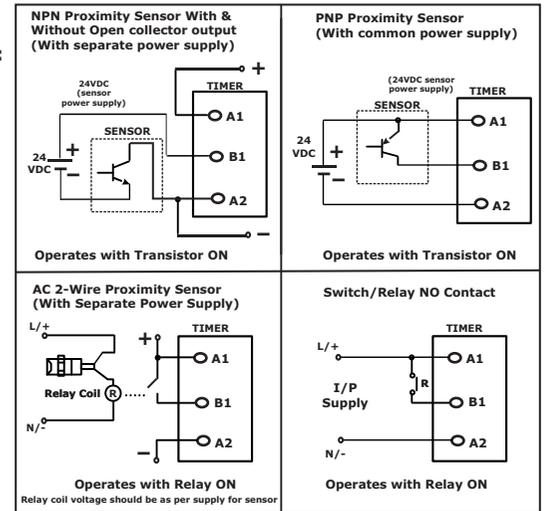


INSTALLATION:

a. DIN-Rail Mounting:

The Timer should be mounted on 35 mm symmetrical DIN Rail.

SENSOR CONNECTION DIAGRAM:



Product Standard	IEC 61812-1
Safety:	
Test Voltage between I/P and O/P	IEC 60947-5-1/UL 508 2 KV
Test Voltage between all terminals and enclosure	IEC 60947-5-1/UL 508 2.5 KV
Impulse Voltage between I/P and o/p	IEC 60947-5-1 4 KV
Single Fault	IEC 61010-1
Insulation Resistance	UL 508 > 50 kΩ
Leakage Current	UL 508 < 3.5 mA
Environmental:	
Cold Heat	IEC 60068-2-1
Dry Heat	IEC 60068-2-2

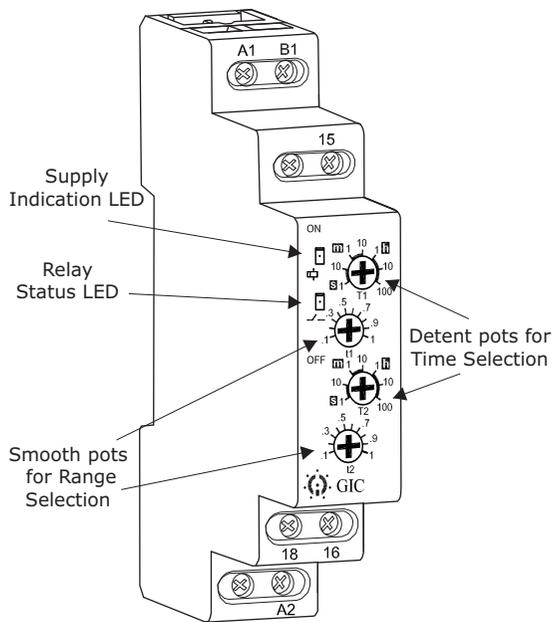
TECHNICAL SPECIFICATIONS:	
Cat. No.:	1CJDT0
SUPPLY CHARACTERISTICS:	
Supply Voltage	12 - 240 VAC / DC
Supply Variation	-15 % to +10 % of
Frequency	50 to 60 Hz, (± 3 Hz)
Power Consumption (Typical)	5 VA
RELAY O/P CHARACTERISTICS:	
Contact Arrangement	1 C/O Potential free contacts
Contact Rating (Resistive Load)	8A (Res.) @ 250 V AC, 5A at 24 VDC
Contact Material	AgNi
Electrical Life	50,000 Operations min.
Mechanical Life	10,000,000 Operations min.
FEATURE CHARACTERISTICS:	
Timing Ranges	0.1 s; 1 s; 10 s; 1 min.; 10 min.; 1 h; 10h; 100h
Setting Accuracy	+/- 5% of full scale
Repeat Accuracy	+/- 1%
Mode Adjustment	Flush (Refer "Functions diagram")
LED Indication on front panel	Green LED for Power, Yellow LED for Relay.
Mounting	Din-Rail
Dimensions (W X H X D)	18 x 60 x 85 (in mm)
Weight (Unpacked)	72 gms.
Humidity	95% Rh Non Condensing
Operating Temperature	-10° C to + 60° C
Storage Temperature	-15° C to + 70° C
Housing Color	Dark Gray
Max. Operating Altitude	2000 m
Housing	Flame retardant (UL 94-V0)
Degree & Protection	IP - 20 for Terminal, IP - 40 for Housing.
Pollution Degree	II
Isolation (I/P and O/P)	2 KV
Isolation (Terminal and Casing)	2.5 KV
Type of Insulation	Reinforced
Certifications	CE, RoHS, UL
Initiate Time	Max. 100 ms
Reset Time	Max. 200 ms
EMI / EMC:	
Harmonic Current Emissions	IEC 61000-3-2 Class A
ESD	IEC 61000-4-2 Level II
Radiated Susceptibility	IEC 61000-4-3 Level III
Electrical Fast Transient	IEC 61000-4-4 Level IV
Surge	IEC 61000-4-5 Level III
Conducted Susceptibility	IEC 61000-4-6 Level III
Voltage Dips & Interruptions (AC)	IEC 61000-4-11 For >18 VAC/DC, Criteria A, For <18 VAC/DC, Criteria B.
Voltage Dips & Interruptions (DC)	IEC 61000-4-29 For >18 VAC/DC, Criteria A, For <18 VAC/DC, Criteria B.
Conducted Emission	CISPR 11 Class A
Radiated Emission	CISPR 11 Class A

ELECTRONIC TIMER - SERIES MICON™ 175
ASYMMETRIC ON-OFF / OFF-ON TIMER

Cat. No.: 1CJDT0



LISTED
 IND. CONT. EQ.
 45 LC



TERMINAL DETAILS:

 Ø3.5...4.0 mm	Torque 0.6 N.m (6 Lb.in) Terminal screw - M3
	1 x 4.0 mm ² Solid / Stranded Wire
AWG	1 x 20 to 10

Use Cu wire of 75°C only.

AWG	CURRENT (A)
10	5.00
12	5.00
14	3.33
16	1.67
18	1.00
20	1.00

ELECTRONIC TIMER - SERIES MICON™ 175
ASYMMETRIC ON-OFF / OFF-ON TIMER

Series 175 Asymmetric On-Off / Off-On Timer is manufactured to a high degree of precision & accuracy. The time settings are stepless and can be set with the knob.

Feature:

Asymmetric On-Off / Off-On Timer:

- 17.5mm wide
- Time setting from:0.1 s; 1 s; 10 s; 1 min; 10 min; 1 h; 10 h; 100 h.
- LED status indicators: Power On (Green) and Relay status (Yellow).
- Cadmium free contact material.

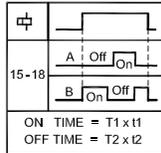
FUNCTION DIAGRAM :

A) ASYMMETRIC OFF - ON :

If the link is not connected at A1-B1 and Supply is turned ON. Timing starts and Output Relay remains OFF for set Time. After set OFF Time has elapsed, Output Relay turns ON and remains ON till the set ON time has elapsed and the cycle repeats.

B) ASYMMETRIC ON - OFF :

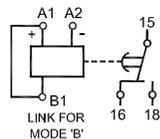
If the link is connected at A1-B1 and supply is turned ON, Output Relay turns On and Timing starts. Output Relay turns OFF after the Set ON time has elapsed and remains OFF till the Set OFF time has elapsed and the cycle repeats.



NOTE:

1. T1 and T2 are detent pots for Time selection
2. t1 and t2 are smooth pots for Range Selection

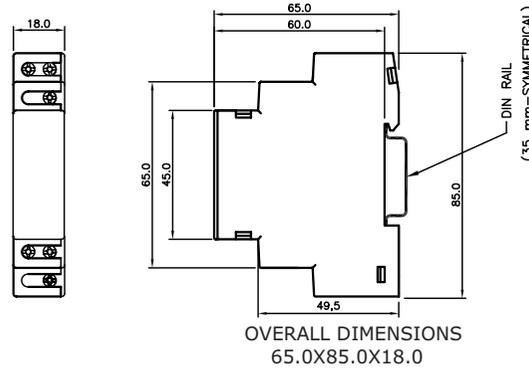
Connection Diagram:



MODE SELECTION:

MODE	SELECTION
ASYMMETRIC OFF - ON	Do not connect Link between A1 & B1
ASYMMETRIC ON - OFF	Connect Link between A1 & B1

Overall product dimensions and mounting details :



INSTALLATION:

- a. DIN-Rail Mounting:
The Timer should be mounted on 35 mm symmetrical DIN Rail.

CAUTION:

1. Always follow the instructions stated in this product leaflet.
2. Before installation, check to ensure that the specifications agree with the intended application.
3. Installation to be done by skilled electrician.
4. Automation & Control devices must be properly installed so that they are protected against any risk of involuntary actuations.
5. Suitable dampers should be provided in case of excessive vibrations.
6. Use of 250 mA fuse in series with product supply is recommended, for protection.
7. The timers shall be placed in an enclosure that is minimum 200% of the size of the timer in the end use application.
8. Setting of all potentiometers must be done in the clockwise direction only.
9. At power on to detect the proper mode, 100 ms (minimum) stable signal input should be present.
10. Keep at least 1 cm clearance from both side while using this product.

NOTE:

Product innovation being a continuous process, we reserve the right to alter specifications without any prior notice.

Product Standard	IEC 61812-1
Safety:	
Test Voltage between I/P and O/P	IEC 60947-5-1 2 KV
Test Voltage between all terminals and enclosure	IEC 60947-5-1 2.5 KV
Impulse Voltage between I/P and o/p	IEC 60947-5-1 4 KV
Single Fault	IEC 61010-1
Insulation Resistance	UL 508 > 50 kΩ
Leakage Current	UL 508 < 3.5 mA
Environmental:	
Cold Heat	IEC 60068-2-1
Dry Heat	IEC 60068-2-2

ELECTRONIC TIMER SERIES : MICON-175™

Cat. No.:
11ODT4 (R8)
12ODT4 (R8)
12ODTA (R1)
15ODT4 (R8)
11BDT4 (R8)
12BDT4 (R8)
15BDT4 (R8)
12SDT0
11SDT0



Features:

1. Wide Input Supply Range.
2. Wide Timing Range - 300ms to 30hr.
3. Compact Size & Easy to install.
4. Suitable for Din-Rail & Base Mounting.
5. High Precision & Accuracy.

Terminal Details:

	0.5 N.m (4.4lb.in) to 0.7N.m (6.2lb.in)
	2 x 2.5 mm ² Solid / Standard Wire
AWG	20 to 12

AWG	CURRENT (A)
12	4.38
14	3.75
16	3.13
18	2.50
20	1.88

NOTE: Use Cu Wire of 75 Dec. C Only..

Model

- On Delay Timer
- Star Delta Timer
- One Shot Timer

Installation:

DIN - Rail Mounting : The Timer should be mounted on 35 mm symmetrical DIN - Rail.

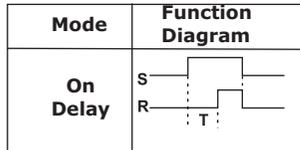
On Delay Timer

Cat. No.: 11ODT4 (R8), 12ODT4 (R8), 12ODTA (R1), 15ODT4 (R8)

Mode Description:

Timing starts as soon as the supply is applied and Green LED Blinks. During the last 1 minute of the remaining time the Green LED blinks with higher rate. The Output Relay turns On after the set time and is indicated by the Red LED and Green LED steady ON.

Timing Diagram:



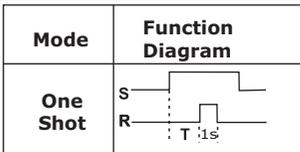
One Shot Timer

Cat No.: 11BDT4 (R8), 12BDT4 (R8), 15BDT4 (R8)

Mode Description:

The timing starts as soon as the supply is applied and Green LED Blinks. During the last 1 minute of the remaining time the Green LED blinks with higher rate. The Output Relay turns On for 1 sec. after the set time has elapsed and is indicated by the Red LED and Green LED steady ON.

Timing Diagram:



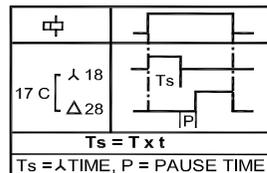
STAR - DELTA Timer

Cat No.: 11SDT0, 12SDT0

Mode Description:

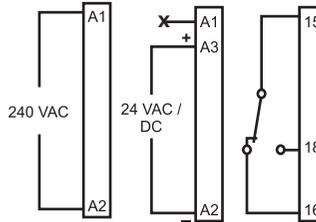
When the supply is applied, Output Star Relay turns ON. After completion of set Star ON time, Star Relay turns OFF and Delta Relay turns ON after 60 ms (Pause Time) and remains ON till the Supply is present. "Star ON" is indicated by Red LED 1. "Delta ON" is indicated by Red LED 2.

Timing Diagram:

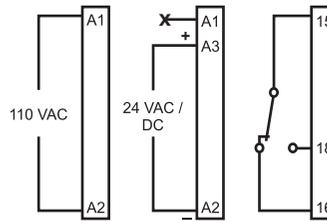


Connection Diagrams:

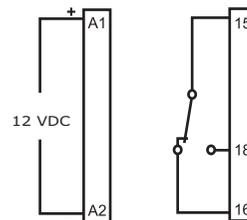
12ODTA (R1)/12ODT4 (R8)/12BDT4 (R8):



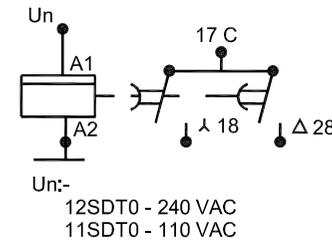
11ODT4 (R8)/11BDT4 (R8):



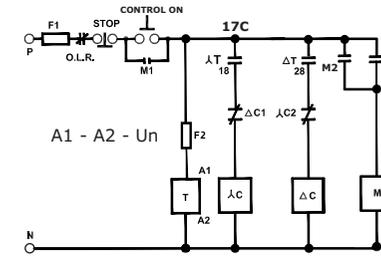
15ODT4 (R8)/15BDT4 (R8):



12SDT0/11SDT0:



Recommended Star - Delta Control Circuit:



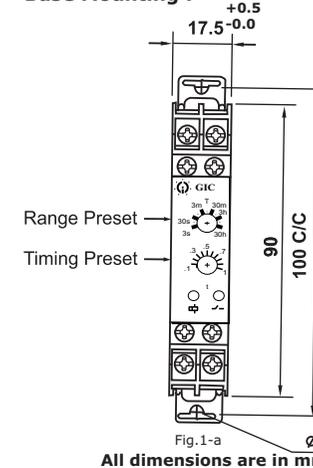
- 1) F1 - Mains Protection Fuse
- 2) F2 - Timer Protection Fuse
- 3) O.L.R - Over Load Relay
- 4) M1 - First 'NO' Contact of Main Contactor
- 5) M2 - Second 'NO' Contact of Main Contactor
- 6) M - Main Contactor for driving Motor
- 7) λ C - Star Contactor
- 8) λ C1 - 'NO' Contact of Star Contactor
- 9) λ C2 - 'NC' Contact of Star Contactor
- 10) Δ C - Delta Contactor
- 11) Δ C1 - 'NC' Contact of Delta Contactor
- 12) λ T - Star Contact of Timer (λ - Δ)
- 13) Δ T - Delta Contact of Timer (λ - Δ)
- 14) T - Star Delta Timer (λ - Δ)

Caution:

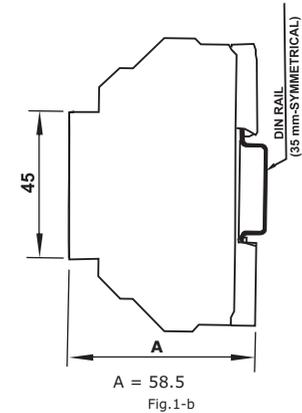
1. Always follow instructions stated in this product leaflet.
2. Before installation, check that the specifications agree with the intended application.
3. Installation to be done by skilled electrician.
4. Changing Range and Timing Presets in power ON condition when the On Delay period has already started, will have no effect. It has to be set before powering ON the timer.
5. If user wants to reset timer one way to do this is to switch off the timer & then set timing & range preset to required position. In this case, Timer will reset & will take new set time.
6. Setting of all the potentiometers should be in clockwise direction only.
7. Use 250 mA slow blow fuse (F2) in series with the above mentioned products.
8. The timers shall be placed in an enclosure that is minimum 200% of the size of the timer in the end use application. Use Cu wire of 75°C for connections.
9. The technical information provided in this document is correct at the time of going to the press. Product innovation being a continuous process, we reserve the right to make any alteration without prior notice.

Overall Dimension:

Base Mounting :



Din Rail Mounting :



TECHNICAL SPECIFICATIONS

Cat. No.:	11ODT4 (R8)	12ODT4 (R8)	12ODTA (R1)	11BDT4 (R8)	12BDT4 (R8)	15BDT4 (R8)	15ODT4 (R8)	12SDT0	11SDT0	
Functions	On Delay Timer	On Delay Timer	On Delay Timer	One Shot Timer	One Shot Timer	One Shot Timer	On Delay Timer	Star Delta Timer	Star Delta Timer	
Supply Characteristics :										
Supply Voltage (⚡)	110 VAC / 24VAC/DC	240 VAC / 24 VAC/DC		110 VAC / 24VAC/DC	240 VAC / 24 VAC/DC	12 VDC		240 VAC	110 VAC	
Supply Variation	-20 % to +10 % (of ⚡)									
Supply Frequency	50/60 Hz +/-3 %					Not Applicable		-20 % to +10 % (of ⚡)	-20 % to +10 % (of ⚡)	
Power Consumption (Max.)	5 VA for 110 VAC, 8 VA for 240 VAC, 0.5 W for 24 VDC/12 VDC							8 VA for 240 VAC	5 VA for 110 VAC	
Timing and Accuracy :										
Setting Accuracy	+/-5 % of full scale									
Repeat Accuracy	1%									
Initiate Time	100 msec. (Max.)									
Reset Time	100 msec. (Max.)									
Timing Ranges	3s, 30s, 3m, 30m, 3hr, 30hr		1 s to 10 s	3s, 30s, 3m, 30m, 3hr, 30hr			≈ 150 ms @ 240 VAC			
Pause Time	Not Applicable							60 ms (fixed)		
Switching Frequency (max.)	1000 operations / hr.							1200 operations / hr.		
Status Indication on front panel	Relay ON : Red LED, Power ON : Green LED							Star Δ - Red LED Delta Δ - Red LED		
Range of timing Operation	300 msec to 30hr		1 s to 10 s	300 msec to 30hr						
One Shot Pulse Duration	Not Applicable			1 s		Not Applicable				
Operating Temperature	-10° C to+ 55° C									
Housing	Flame Retardant UL 94-V0									
Dimensions in mm (W X H X L)	17.5 ^(+0.5/-0.0) X 58.5 X 90							17.5 ^(+0.5/-0.0) X 58.5 X 90		
Weight (Unpacked)	65 g (Approx).							65 g (Approx).		
Mounting	DIN Rail (35 mm Sym.)									
Relay O/P Characteristics :										
Contact Rating	5A (Res.) @ 240 VAC / 28 VDC							5A (Res.) @ 240 VAC / 3A (Res.) @ 30 VDC		
Utilization Category	AC-15 and DC -13 (3A @ 240 VAC at power factor 0.6)							AC-15 : 250 VAC, 5A, General purpose, 0.4 pf, 85°C, 50000 op.		
Contact Material	Ag Alloy									
Mechanical Life	5 X 10 ⁶ operations (At no load & max. Switching frequency)									
Electrical Life	1. 240 VAC. PF = 1.0 rated max load current. 1 x 10 ⁵ operations 2. 240 VAC. PF = 0.4 rated max load current. 4 x 10 ⁴ operations 3. 30 VAC.L / R = 7 ms. 6 x 10 ⁴ operations							1 x 10 ⁵ operations (5 A at 250 VAC), 2 x 10 ⁵ operations (3 A at 30 VDC)		
Contact Arrangement	1 C/O							1 NO + 1 NO		
Certification :										
Product Reference Standard	CE, RoHS IEC 61010-1									
EMI/EMC :										
Harmonic Current Emissions	IEC 61000-3-2 Class A					Not Applicable		IEC 61000-3-2 Class A		
ESD	IEC 61000-4-2 Level II									
Radiated Susceptibility	IEC 61000-4-3 Level III									
Electrical Fast Transient	IEC 61000-4-4 Level IV									
Surge	IEC 61000-4-5 Level IV					IEC 61000-4-5 Level I		IEC 61000-4-5 Level IV		IEC 61000-4-5 Level III
Conducted Susceptibility	IEC 61000-4-6 Level III									
Voltage Dips & Interruptions (AC)	IEC 61000-4-11 (Note: For 24 VAC, Performance Criteria B)					Not Applicable		IEC 61000-4-11 (Note: For 24 VAC, Performance Criteria B)		
Voltage Dips & Interruptions (DC)	IEC 61000-4-29 (Note: For 24 VDC, Performance Criteria B)					IEC 61000-4-29 (50% Un for 50ms)		IEC 61000-4-29 (Note: For 24 VDC, Performance Criteria B)		
Conducted Emission	CISPR 14-1 Class A									
Radiated Emission	CISPR 14-1 Class A									
Safety :										
Test Voltage Between I/P & O/P	1.5 kV							2 kV		
Test Voltage Between all terminal & Enclosure	2.5 kV									
Impulse Voltage Between I/P & O/P	IEC 60947-5-1 2 kV									
Single Fault	IEC 61010-1									
Insulation Resistance	UL 508 > 50KΩ									
Leakage Current	UL 508 < 3.5 mA									
Degree of Protection	IP - 20 for Terminal; IP - 40 for Housing									
Pollution Degree	II									
Type of Insulation	Reinforced									
Environmental :										
Cold Heat	IEC 60068-2-1									
Dry Heat	IEC 60068-2-2									
Vibration	IEC 60068-2-6 5 g									
Repetitive Shock	IEC 60068-2-27 40 g, 6 ms									
Non-repetitive Shock	IEC 60068-2-27 30 g, 15 ms									

TECHNICAL SPECIFICATIONS:

Cat. No.:	1CMDT0	1CMDTE	1CMDTB
SUPPLY CHARACTERISTIC:			
Supply Voltage \square	12 - 240 VAC / DC		
Supply Variation	-15 % to +10 % of \square		
Frequency	50 to 60 Hz, (\pm 3 Hz)		
Power Consumption (Typical)	5 VA		
SIGNAL CHARACTERISTICS:			
Signal sensing time	60 ms (For both High and Low Signal Detection)		
Signal impedance	>6K@10VAC/DC; >70K@110VAC/DC; >150K@240VAC/DC		
Signal switch current requirement	Switching capacity of the switch or contact should be >10mA		
RELAY O/P CHARACTERISTICS:			
Contact Arrangement	1 C/O Potential free contacts		
Contact Rating (Resistive Load)	8A (Res.) @ 240 V AC, 5A at 24 VDC		
Contact Material	AgNi		
Electrical Life	50,000 Operations min.		
Mechanical Life	10,000,000 Operations min.		
FEATURE CHARACTERISTICS:			
Set Time (Ts)	0.1 seconds to 100 hrs		
Setting Accuracy	+/- 5% of full scale		
Repeat Accuracy	+/- 1%		
Mode Adjustment	Refer "Timing diagrams of Functions"		
Range Adjustment(T)	1s-10s; 10s-1m; 1m-10m; 10m-1h; 1h-10h; 10h-100h **		
Multiplier Adjustment(t)	0.1-0.3; 0.3-0.5; 0.5-0.7; 0.7-0.9; 0.9-1 **		
LED Indication on front panel	Green LED for Power, Yellow LED for Relay.		
Mounting	Din-Rail		
Dimensions (W X H X D)	18 x 60 x 85 (in mm)		
Weight (Unpacked)	72 gms.		
Humidity	95% Rh Non Condensing		
Operating Temperature	-10° C to + 60° C		
Storage Temperature	-15° C to + 70° C		
Housing Color	Dark Gray	Light Gray	
Max. Operating Altitude	2000 m		
Housing	Flame retardant (UL 94-V0)		
Degree & Protection	IP - 20 for Terminal, IP - 40 for Housing.		
Pollution Degree	II		
Isolation (I/P and O/P)	2 KV		
Isolation (Terminal and Casing)	2.5 KV		
Type of Insulation	Reinforced		
Certifications	CE, RoHS, UL		
Initiate Time	Max. 100 ms		
Reset Time	Max. 200 ms		
EMI / EMC:			
Harmonic Current Emissions	IEC 61000-3-2 Class A		
ESD	IEC 61000-4-2 Level II		
Radiated Susceptibility	IEC 61000-4-3 Level III		
Electrical Fast Transient	IEC 61000-4-4 Level IV		
Surge	IEC 61000-4-5 Level III		
Conducted Susceptibility	IEC 61000-4-6 Level III		
Voltage Dips & Interruptions (AC)	IEC 61000-4-11 For >18 VAC/DC , Criteria A; For < 18 VAC/DC, Criteria B		
Voltage Dips & Interruptions (DC)	IEC 61000-4-29 For >18 VAC/DC , Criteria A; For < 18 VAC/DC, Criteria B		
Conducted Emission	CISPR 11 Class A		
Radiated Emission	CISPR 11 Class A		

** For 1CMDTE, timing(Ts) can be updated during run time, by changing Range(T) and Multiplier(t) values. For other Cat ID's, power should be reset to update the timing(Ts).

ELECTRONIC TIMER - SERIES MICON™ 175**MULTI-FUNCTION**

Cat. No.: **1CMDT0**
1CMDTB
1CMDTE



IND. CONT. EQ.
45 LC

CAUTION:

1. Always follow instructions stated in this product leaflet.
2. Before installation, check to ensure that the specifications agree with the intended application.
3. Installation to be done by skilled electrician.
4. Automation & Control devices must be properly installed so that they are protected against any risk of involuntary actuations.
5. Suitable dampers should be provided in case of excessive vibrations.
6. Use of 250 mA fuse in series with product supply is recommended.
7. The timers shall be placed in an enclosure that is minimum 200% of the size of the timer in the end use application.
8. Setting of all potentiometers must be in clockwise direction only.

NOTE:

Product innovation being a continuous process, we reserve the right to alter specifications without any prior notice.

TERMINAL DETAILS:

 Ø3.5...4.0 mm	0.68 N.m (6 Lb.in) Terminal screw - M3
	1 x 4.0 mm ² Solid / Stranded Wire
AWG	1 x 20 to 10

Use Cu wire of 75°C only.

AWG	CURRENT (A)
12	5.00
14	3.33
16	1.67

ELECTRONIC TIMER - SERIES MICON™ 175

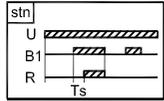
MULTI-FUNCTION

Series 175 1M MULTIMODE Timer is manufactured to a high degree of precision & accuracy. The time settings are stepless and can be set with the knob.

FUNCTION DIAGRAM :

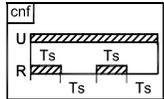
stn) Signal On Delay:

Timing starts when Switch (S) is closed. R energizes at end of period T_s and de-energizes when Switch (S) is opened.



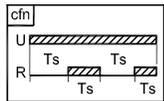
cnf) Cyclic On/Off: On start

Initially the relay (R) is On for period T_s after the power is applied. The relay (R) keeps on changing its status till power is removed with On and period = T_s .



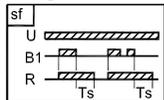
cnf) Cyclic Off/ On : Off start

Initially the relay (R) is Off for period T_s after the power is applied. The relay (R) keeps on changing its status till power is removed with On and Off period = T_s .



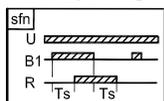
sf) OFF Delay, Constant Supply (Signal Off Delay)

R energizes when Switch (S) is closed. Timing commences after Switch (S) is opened and then the relay de-energizes.



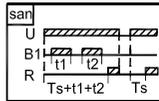
sfn) Signal Off/On

When Switch (S) is closed or opened for preset time T_s , the relay changes its state after time duration T_s .



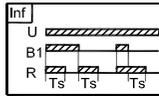
san) Accumulative Delay On Signal

Time commences as supply is present and Switch (S) is open. Closing Switch (S) pauses timing. Timing resumes when Switch (S) is opened again R energizes at the end of timing.



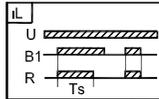
inf) Impulse On/Off

R energizes for the period T_s when Switch (S) is opened or closed. When timing commences, changing state of Switch (S) does not affect R but resets timer.



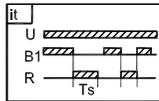
il) ON Impulse, Constant Supply

When switch (S) is closed and remains closed output relay energizes until timing is over. If Switch (S) is opened during period T_s , R resets.



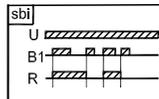
it) OFF Impulse, Constant Supply

When Switch (S) is opened, R energizes and de-energizes when timing is over. If Switch (S) is closed during period T_s R resets.



sbi) Leading Edge Bi-stable or Step relay

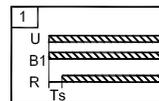
After every Signal, the output contact changes state, alternately switching from open to closed & vice versa.



Derived Modes :

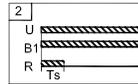
1) ON Delay

1. Select mode signal On Delay (stn) and close Switch (S) or short A1-B1 before power ON, it will work as ON Delay.
2. Select mode Accumulative On Delay (san) keeping signal open before power ON and during execution of time as well, it will work as ON Delay.

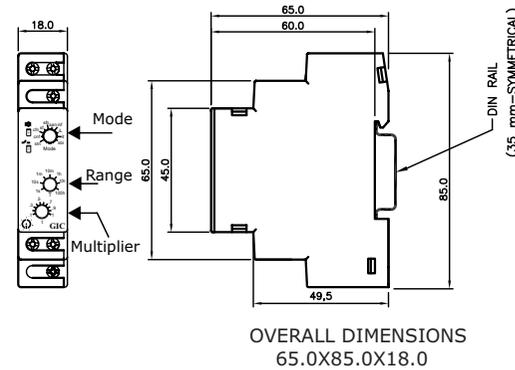


2) INTERVAL

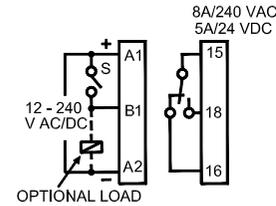
Select mode (il) ON Impulse. If Switch (S) is closed between A1-B1 before making power supply ON and during execution of timing, it will work as Interval.



Overall product dimensions and mounting details :



WIRING DIAGRAM:

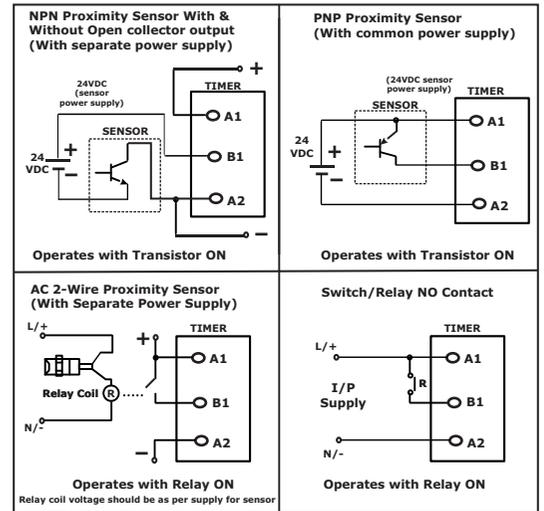


INSTALLATION:

a. DIN-Rail Mounting:

The Timer should be mounted on 35 mm symmetrical DIN Rail.

SENSOR CONNECTION DIAGRAM:



Product Standard	IEC 61812-1
Safety:	
Test Voltage between I/P and O/P	IEC 60947-5-1/UL 508 2 KV
Test Voltage between all terminals and enclosure	IEC 60947-5-1/UL 508 2.5 KV
Impulse Voltage between I/P and o/p	IEC 60947-5-1 4 KV
Single Fault	IEC 61010-1
Insulation Resistance	UL 508 > 50 kΩ
Leakage Current	UL 508 < 3.5 mA
Environmental:	
Cold Heat	IEC 60068-2-1
Dry Heat	IEC 60068-2-2