

INDUSTRIAL CONTROLLERS



- Analog Timers
- Digital Timers
- Phase Sequence Relay



CE **RoHS** ✓

SIMPLY SOLUTIONS

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Organisation

Trinity Touch is a leading product manufacturer and solutions provider for Industrial Electrical applications. We supply our high quality products and solutions to various industries such as panel builders, machine builders, renewable energy & telecom to name a few.

Trinity Touch has two Business Areas, Cabinet Plus (for electrical & electronics components) and Solutions (Solar Solutions, Wind Solutions, Telecom Solutions etc.) that have become technology or market leading in their respective areas of application.

We have a national and global presence to service the needs and requirements of our customers and are exporting our products to over 20 countries.

Solutions

Trinity Touch provides market leading electrical solutions for various application. We have technology and market leading solutions for industries such as Solar, Wind, Railways & Telecom. In the Solar Industry, we have supplied over 22 GWp worth of solutions worldwide.

Products

Trinity Touch focuses on manufacturing various items used in control cabinet industry. Trinity Touch is one of the leading manufacturers of industrial grade Enclosures, Cable Glands, Wiring Ducts and DIN rails, Interface Modules, Timers to name just a few in the control cabinet industry. We have many prestigious clients for these products including leading System Integrators, Panel Builders, Machine Builders and Industrial Corporations globally.

Approvals |



Industrial Controllers - Analog Timers

Main Features

- Independent ON Delay and Interval (OFF Delay) mode configurable.
- 10 time ranges from 0.1s to 30h.
- 1 & 2 change over contact Product Design
- Width of 17.5mm and 22.5mm size variant
- Power supply voltage :- 12 to 240 VAC/DC,50/60Hz

ON DELAY / INTERVAL TIMER



TECHNICAL SPECIFICATION

RATING

Power supply voltage	12 to 240 VAC/DC,50/60Hz
Allowable voltage fluctuation Range	12 to 240 VAC/DC, 415 VAC : 85% to 110% of rated voltage
Power reset	Minimum Power-OFF time : 0.1 s
Reset voltage	10 % of rated voltage
Power consumption	At 240 VAC : 4 VA max.
Control output	Contact output: 10 A at 250 VAC with resistive load ($\cos\phi = 1$), 10 A at 30 VDC with resistive voltage
Accuracy of operating time	$\pm 1\%$ of FS max.($\pm 1\% \pm 10$ ms max. at 1 s range)
Protection Level	IP 20

TIME RANGES

Time range setting	0.1 s	1 s	3 s	10 s	1 min	3 min	10 min	30 min	1 h	3 h
Set time range	0.1-1 s	1-10 s	3-30 s	10-100 s	1-10 min	3-30 min	10-100 min	30-300 min	1-10 h	3-30 h
Number of scale	1-10									
Dip switch setting	For mode selection ON delay / Interval									

GENERAL DATA

Module width (w)	17.5 mm	22.5 mm
Module height (h)	60 mm	103 mm
Module depth (d)	88 mm	75.4 mm
Housing colour	Gray	Grey (base), Black(cover)
Relay	SPDT / DPDT	
Ambient operating temperature	(0 to 50)°C	
Storage temperature	(-20 to 75)°C	
Ambient operating humidity	25% to 85%	
Weight	Approx. 110 g	Approx. 110 g

CONNECTION DATA

Module width (w)	17.5 mm	22.5 mm
Type of connection	Screw Connection	
Nominal current carrying capacity	24 A	
Rated voltage capacity	400 V	
Connector cross section solid	Min./Max. 0.14/2.5 mm ²	Min./Max. 0.2/4.0 mm ²
Conductor cross section stranded	Min./Max. 0.14/2.5 mm ²	Min./Max. 0.2/2.5 mm ²
Tightening torque	0.5-0.6 Nm	

EMI/EMC COMPLIANCE

As per IEC 61000-4-2, 3, 4, 5, 6, 11.

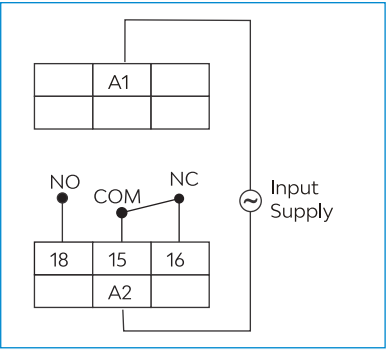
ORDERING INFORMATION OF TIMER

Product Series	Functional Mode	Operating Voltage	Timing Range	Contact Arrangement	Article No.	Article Description
22.5 mm	ON Delay / Interval (OFF Delay)	12 to 240 VAC/DC	0.1 sec to 30 Hrs.	2 CO (DPDT)	011707066	TT22-U240-2S-OI
22.5 mm		12 to 240 VAC/DC		1 CO (SPDT)	011707065	TT22-U240-1S-OI
22.5 mm		415 VAC		1 CO (SPDT)	011709067	TT22-A415-1S-OI
17.5 mm		12 to 240 VAC/DC		2 CO (DPDT)	011709070	TT17-U240-2S-OI
17.5 mm		12 to 240 VAC/DC		1 CO (SPDT)	011709057	TT17-U240-1S-OI

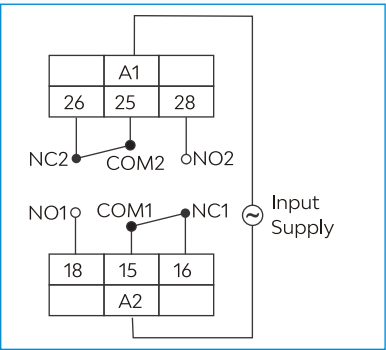
TERMINAL CONNECTIONS

17.5 MM

1 C/O

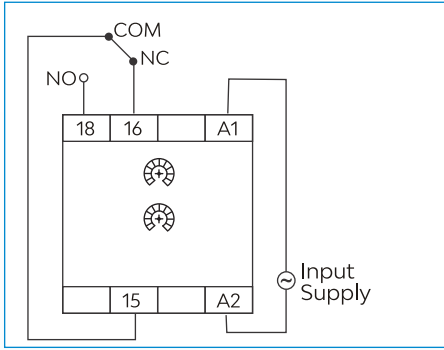


2 C/O

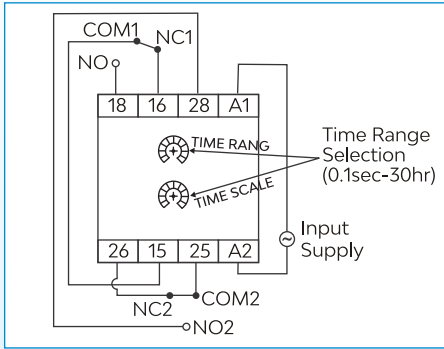


22.5 MM

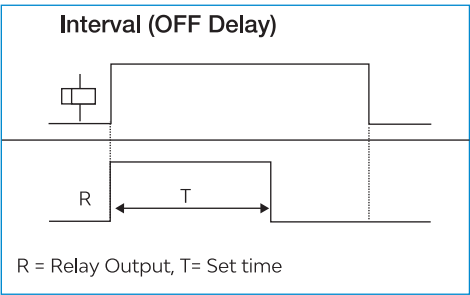
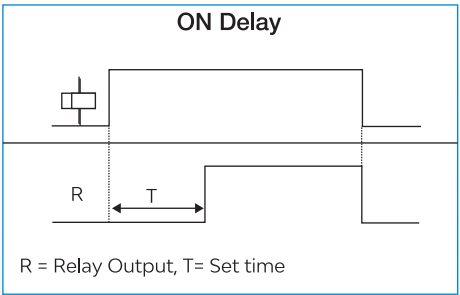
1 C/O



2 C/O



TIMING DIAGRAM



Main Features

- Selectable cyclic OFF or cyclic ON start mode.
- Independent ON time and OFF time setting.
- 10 time ranges from 0.1 s to 30 h.
- 1 & 2 change over contact
- Width 17.5mm and 22.5mm
- Power supply voltage:- 12 to 240 VAC/DC, 50/60Hz

CYCLIC ON-OFF TIMER



TECHNICAL SPECIFICATION

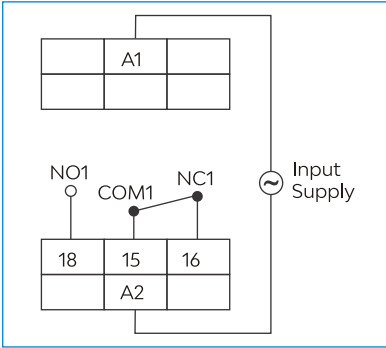
RATING	
Power supply voltage	12 to 240 VAC/DC, 50/60Hz
Allowable voltage fluctuation Range	12 to 240 VAC/DC: 85% to 110% of rated voltage
Power reset	Minimum Power-OFF time : 0.1 s
Reset voltage	10 % of rated voltage
Power consumption	At 240 VAC : 4 VA max.
Control output	Contact output: 5/8 A at 250 VAC with resistive load ($\cos\phi = 1$), 5/8 A at 30 VDC with resistive voltage
Accuracy of operating time	$\pm 1\%$ of FS max.($\pm 1\%$ ± 10 ms max. at 1 s range)
Protection Level	IP 20
TIME RANGES	
Time range setting	0.1 s 1 s 3 s 10 s 1 min 3 min 10 min 30 min 1 h 3 h
Set time range	0.1-1 s 1-10 s 3-30 s 10-100 s 1-10 min 3-30 min 10-100 min 30-300 min 1-10 h 3-30 h
Number of scale	1-10
Knob Setting	Knob 1st & 2 nd is for ON Time Setting Knob 3rd & 4th is for OFF Time Setting
GENERAL DATA	
Module width (w)	17.5 mm 22.5 mm
Module height (h)	60 mm 103 mm
Module depth (d)	88 mm 75.4 mm
Housing colour	Gray Grey (base), Black(cover)
Relay	SPDT / DPDT
Ambient operating temperature	(0 to 50)°C
Storage temperature	(-20 to 75)°C
Ambient operating humidity	25% to 85%
Weight	Approx. 110 g
CONNECTION DATA	
Module width (w)	17.5 mm 22.5 mm
Type of connection	Screw Connection
Nominal current carrying capacity	24 A
Rated voltage capacity	400 V
Connector cross section solid	Min./Max. 0.14/2.5 mm ² Min./Max. 0.2/4.0 mm ²
Conductor cross section stranded	Min./Max. 0.14/2.5 mm ² Min./Max. 0.2/2.5 mm ²
Tightening torque	0.5-0.6 Nm
EM/EMC COMPLIANCE	
As per IEC 61000-4-2, 3, 4, 5, 6, 11.	

ORDERING INFORMATION OF TIMER

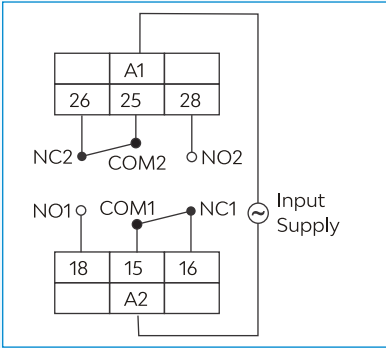
Product Series	Functional Mode	Operating Voltage	Timing Range	Contact Arrangement	Article No.	Article Description
22.5 mm	Cyclic On-Off Timer	12 to 240 VAC/DC	0.1 sec to 30 Hrs.	2 CO (DPDT)	011707064	TT22-U240-2S-OO
22.5 mm				1 CO (SPDT)	011707063	TT22-U240-1S-OO
17.5 mm				2 CO (DPDT)	011709069	TT17-U240-2S-OO
17.5 mm				1 CO (SPDT)	011709056	TT17-U240-1S-OO

TERMINAL CONNECTIONS

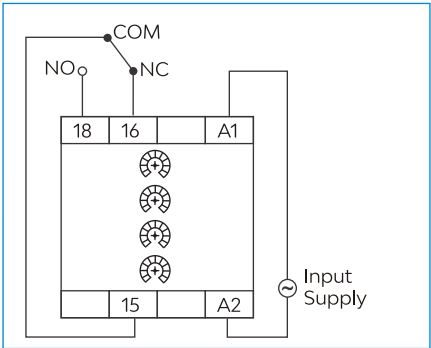
17.5 MM
1 C/O



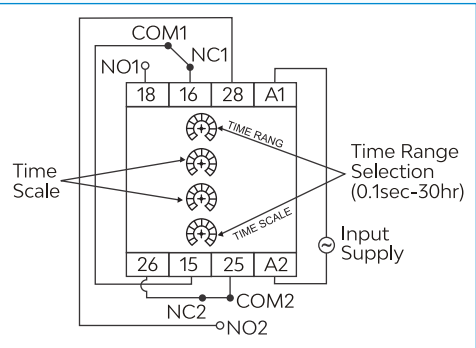
2 C/O



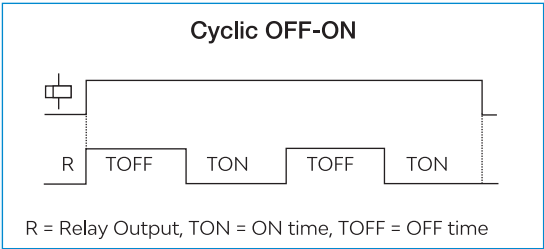
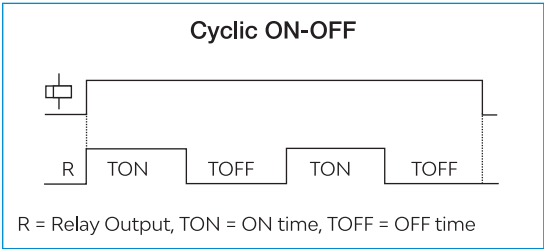
22.5 MM
1 C/O



2 C/O



TIMING DIAGRAM



Main Features

- Star delta timer with 3 to 300 sec. time range
- LED status indicator:
 - Star relay
 - Delta relay
- DIN Rail Mount
- Width 17.5mm and 22.5mm
- Power supply voltage - 12 to 240 VAC/DC,50/60Hz, 415 VAC 50/60 Hz, 240 to 415 AC, 50/60Hz

STAR-DELTA TIMER



TECHNICAL SPECIFICATION

RATING

Power supply voltage	12 to 240 VAC/DC,50/60Hz, 415 VAC 50/60 Hz, 240 to 415 AC, 50/60Hz	
Allowable voltage fluctuation Range	12 to 240 VAC/DC: 85% to 110% of rated voltage, 230 VAC to 415 VAC	
Power reset	Minimum Power-OFF time : 0.1 s/ 100 ms.	
Power consumption	4 VA max.	
Control output	Contact output: 5 A at 250 VAC with resistive load (cosφ = 1), 5 A at 30 VDC with resistive voltage	

FUNCTION

	17.5 mm	22.5 mm
Mode	Star- Delta	
Time range	Runup time range:	Change Over:
	3 - 30 sec, 6 - 60 sec, 3 - 300 sec	50 msec (fixed), 100 msec (fixed)
LED indication	Relay 1 ON	Relay 2 ON
Reset time	Less than 100 ms	
Accuracy	±1% of F.S. Max. (±1%, ±300ms max. at 3s range)	
Protection Level	IP 20	

GENERAL DATA

Module width (w)	17.5 mm	22.5 mm
Module height (h)	60 mm	103 mm
Module depth (d)	88 mm	75.4 mm
Housing colour	Gray	Grey (base), Black (cover)
Relay	SPDT (each for stars, delta)	
Ambient operating temperature	(0 to 50) oC	
Storage temperature	(-20 to 75)°C	
Ambient operating humidity	25% to 85 %	
Weight	Approx. 110 g	

CONNECTION DATA

Module width (w)	17.5 mm	22.5 mm
Type of connection	Screw Connection	
Nominal current carrying capacity	24 A	
Rated voltage capacity	400 V	
Connector cross section solid	Min./Max. 0.14/2.5 mm²	Min./Max. 0.2/4.0 mm²
Conductor cross section stranded	Min./Max. 0.14/2.5 mm²	Min./Max. 0.2/2.5 mm²
Tightening torque	0.5-0.6 Nm	

EM/EMC COMPLIANCE

As per IEC 61000-4-2, 3, 4, 5, 6, 11.

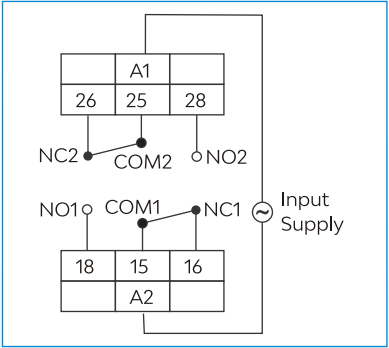
ORDERING INFORMATION OF TIMER

Product Series	Functional Mode	Operating Voltage	Timing Range	Contact Arrangement	Article No.	Article Description
22.5 mm	Star-Delta	12 to 240 VAC/DC	3-30 Sec., 6-60 Sec.	SPDT (Star) + SPDT (Delta)	011707067	TT22-U240-1S-SD
22.5 mm		415 VAC			011708403	TT22-A415-1S-SD
22.5 mm		240 to 415 VAC	3-300 Sec.		011709095	TT22-A415-SD-VT
17.5 mm		12 to 240 VAC/DC	3-120 Sec.		011709058	TT17-U240-1S-SD

TERMINAL CONNECTIONS

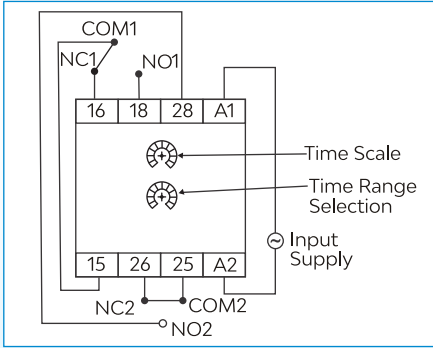
17.5 MM

1 C/O

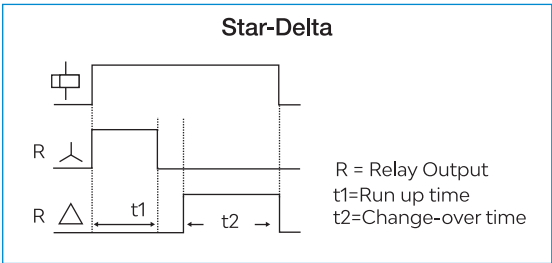


22.5 MM

1 C/O



TIMING DIAGRAM



Main Features

- True power- OFF delay.
- Power ON led indication.
- Din rail mount.
- Power supply voltage :-230 VAC/DC, 50/60Hz

TRUE POWER OFF DELAY TIMER



TECHNICAL SPECIFICATION

RATING

Power supply voltage	230 VAC/DC, 50/60Hz
Allowable voltage fluctuation Range	230 VAC/DC: 85% to 110% of rated voltage
Power reset	Minimum Power-OFF time : 0.1 s
Reset voltage	10 % of rated voltage
Power consumption	At 230 VAC : 4 VA max.
Control output	Contact output: 5 A at 250 VAC with resistive load ($\cos\phi = 1$), 5 A at 30 VDC with resistive voltage
Accuracy	Setting : $\pm 10\%$ of F.S (Full Scale) Repeat : $\pm 2\%$
Boot time	1.5 Sec $\pm$ 0.5 Sec
Protection Level	IP 20

TIME RANGES

Set time range	15 s	35 s	65 s	85 s	115 s	135 s	160 s
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GENERAL DATA

Module width (w)	22.5 mm
Module height (h)	103 mm
Module depth (d)	75.4 mm
Housing colour	Grey (base), Black (cover)
Relay	DPDT
Ambient operating temperature	(0 to 50)°C
Storage temperature	(-20 to 75)°C
Ambient operating humidity	25% to 85%
Weight	Approx. 110 g

CONNECTION DATA

Module width (w)	22.5 mm
Type of connection	Screw Connection
Nominal current carrying capacity	24 A
Rated voltage capacity	400 V
Connector cross section solid	Min./Max. 0.2/4.0 mm ²
Conductor cross section stranded	Min./Max. 0.2/2.5 mm ²
Tightening torque	0.5-0.6 Nm

EMI/EMC COMPLIANCE

As per IEC 61000-4-2, 3, 4, 5, 6, 11.

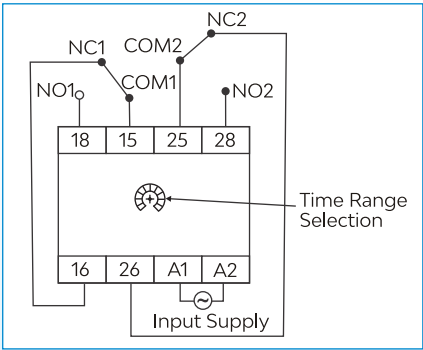
ORDERING INFORMATION OF TIMER

Product Series	Functional Mode	Operating Voltage	Timing Range	Contact Arrangement	Article No.	Article Description
22.5 mm	True Power off Delay Timer	230 VAC/DC	15 sec to 160 sec.	2 CO (DPDT)	011707308	TT22-A230-2S-OD

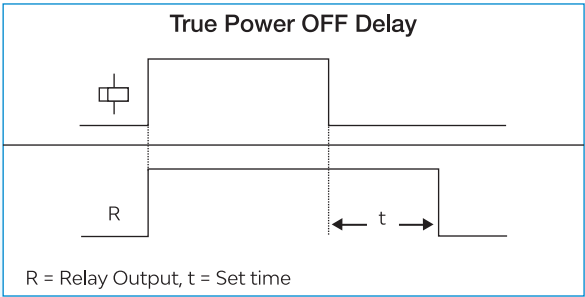
TERMINAL CONNECTIONS

22.5 MM

1 C/O



TIMING DIAGRAM



Main Features

- Reverse - Pause - Forward Timer.
- LED status indicator :
Relay 1 ON, Relay 2 ON
- DIN Rail Mount
- 1 & 2 change over contact
- Width 17.5mm and 22.5mm
- Power supply voltage:- 12 to 240 VAC/DC,50/60Hz

REVERSE PAUSE FORWARD TIMER



TECHNICAL SPECIFICATION

RATING

Power supply voltage	12 to 240 VAC/DC,50/60Hz
Allowable voltage fluctuation Range	12 to 240 VAC/DC: 85% to 110% of rated voltage
Reset voltage	10 % of rated voltage
Power consumption	4 VA max.
Control output	Contact output : 5 A at 250 VAC with resistive load ($\cos\phi = 1$), 5 A at 30 VDC with resistive voltage
Protection Level	IP 20

FUNCTION

Mode	Reverse - Pause - Forward	
Time range	1 / 2 / 3 ... 9 / 10 min (ON time)	10 / 20 / 30 ... 90 / 100 sec (Pause time)
LED indication	Relay 1 ON	Relay 2 ON
Reset time	Less than 100 ms	
Accuracy	Setting : $\pm 1\%$ of full scale.	

GENERAL DATA

Module width (w)	17.5 mm	22.5 mm
	60 mm	103 mm
Module depth (d)	88 mm	75.4 mm
Housing colour	Gray	Grey (base), Black(cover)
Relay	SPDT	
Ambient operating temperature	(0 to 50) °C	
Storage temperature	(-20 to 75)°C	
Ambient operating humidity	25% to 85%	
Weight	Approx. 110 g	

CONNECTION DATA

Module width (w)	17.5 mm	22.5 mm
Type of connection	Screw Connection	
Nominal current carrying capacity	24 A	
Rated voltage capacity	400 V	
Connector cross section solid	Min./Max. 0.14/2.5 mm ²	Min./Max. 0.2/4.0 mm ²
Conductor cross section stranded	Min./Max. 0.14/2.5 mm ²	Min./Max. 0.2/2.5 mm ²
Tightening torque	0.5-0.6 Nm	

EMI/EMC COMPLIANCE

As per IEC 61000-4-2, 3, 4, 5, 6, 11.

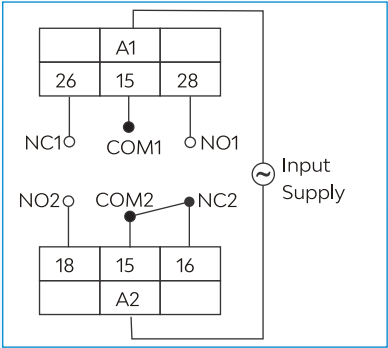
ORDERING INFORMATION OF TIMER

Product Series	Functional Mode	Operating Voltage	Timing Range	Contact Arrangement	Article No.	Article Description
22.5 mm	Reverse Pause Forward Timer	12 to 240 VAC/DC	1 to 10 sec (on time), 10 to 100 sec (pause time)	1 SPDT (Forward) + 1 SPDT (Reverse)	011707068	TT22-U240-1S-RF
22.5 mm		415 VAC			011709068	TT22-U415-1S-RF
17.5 mm		12 to 240 VAC/DC			011709059	TT17-U240-1S-RF

TERMINAL CONNECTIONS

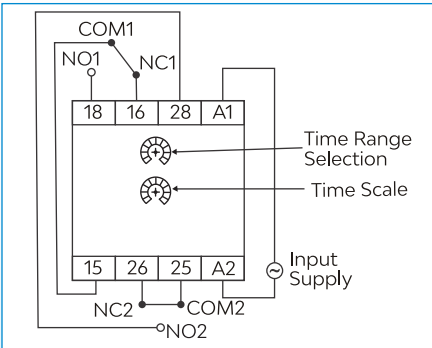
17.5 MM

1 C/O



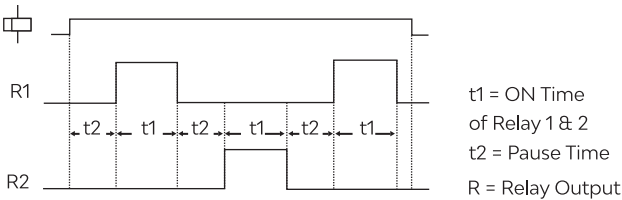
22.5 MM

1 C/O



TIMING DIAGRAM

Forward-Pause-Reverse



Main Features

- Independent 10 Functions
- 10 time ranges from 0.1 s to 30 h.
- Width 17.5mm and 22.5mm
- Power supply voltage:-12 to 240 VAC/DC,50/60Hz
- Signal based functions also Available

MULTI-FUNCTION TIMER



TECHNICAL SPECIFICATION

RATING

Power supply voltage	12 to 240 VAC/DC,50/60Hz
Allowable voltage fluctuation Range	12 to 240 VAC/DC: 85% to 110% of rated voltage
Power reset	Minimum Power-OFF time : 0.1 s
Reset voltage	10 % of rated voltage
Power consumption	At 240 VAC : 4 VA max.
Control output	Contact output: 5 A at 250 VAC with resistive load ($\cos\phi = 1$), 5 A at 30 VDC with resistive voltage
Accuracy of operating time	$\pm 1\%$ of FS max.($\pm 1\%$ ± 10 ms max. at 1 s range)
Protection Level	IP 20

TIME RANGES

Time range setting	0.1 s	1 s	3 s	10 s	1 min	3 min	10 min	30 min	1 h	3 h
Set time range	0.1-1 s	1-10 s	3-30 s	10-100 s	1-10 min	3-30 min	10-100 min	30-300 min	1-10 h	3-30 h
Number of scale	1-10									
Functional mode	ON Delay (A)		Interval (B)		Cyclic Equal OFF First (C)			Cyclic Equal ON First (D)		
	Delay On Break (E)		Delay On Make / Break (F)			Interval After Break (G)		Single Shot (H)		
	Triggerable Single Shot (I)					Latching Relay (J)				

GENERAL DATA

Module width (w)	17.5 mm	22.5 mm
Module height (h)	60 mm	103 mm
Module depth (d)	88 mm	75.4 mm
Housing colour	Gray	Grey (base), Black(cover)
Relay	SPDT	
Ambient operating temperature	(0 to 50)°C	
Storage temperature	(-20 to 75)°C	
Ambient operating humidity	25% to 85%	
Weight	Approx. 110 g	

CONNECTION DATA

Module width (w)	17.5 mm	22.5 mm
Type of connection	Screw Connection	
Nominal current carrying capacity	24 A	
Rated voltage capacity	400 V	
Connector cross section solid	Min./Max. 0.14/2.5 mm ²	Min./Max. 0.2/4.0 mm ²
Conductor cross section stranded	Min./Max. 0.14/2.5 mm ²	Min./Max. 0.2/2.5 mm ²
Tightening torque	0.5-0.6 Nm	

EMI/EMC COMPLIANCE

As per IEC 61000-4-2, 3, 4, 5, 6, 11.

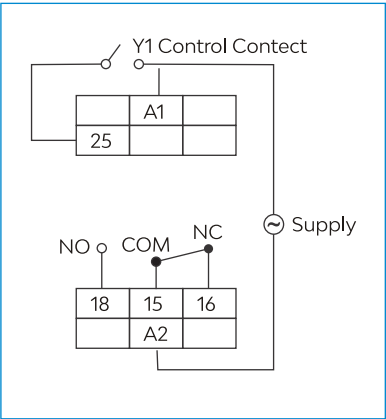
ORDERING INFORMATION OF TIMER

Product Series	Functional Mode	Operating Voltage	Timing Range	Contact Arrangement	Article No.	Article Description
22.5 mm	Multi-Function Timer	12 to 240 VAC/DC	0.1 sec to 30 Hrs.	1 CO (SPDT)	011707301	TT22-U240-1S-MF
17.5 mm					011709060	TT17-U240-1S-MF

TERMINAL CONNECTIONS

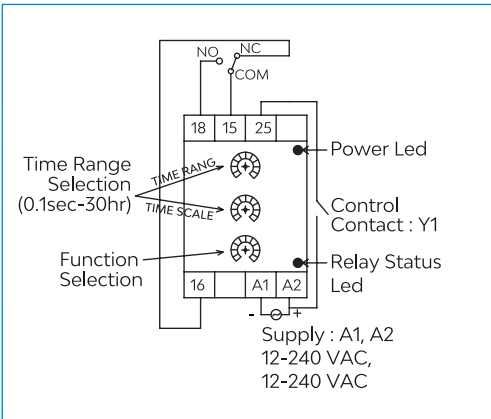
17.5 MM

1 C/O

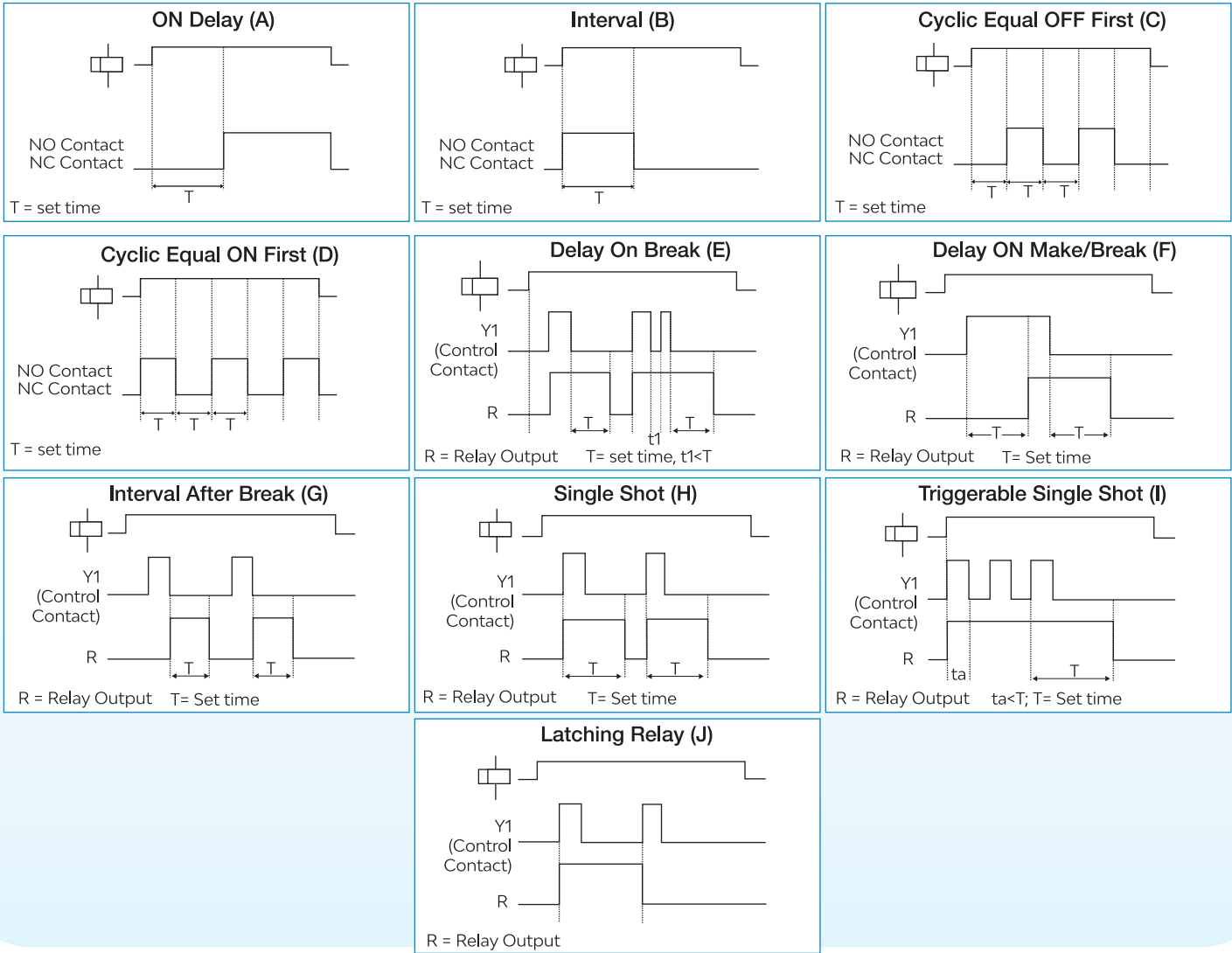


22.5 MM

1 C/O

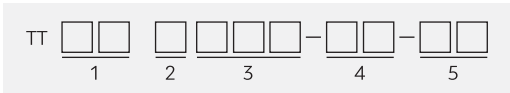


TIMING DIAGRAM



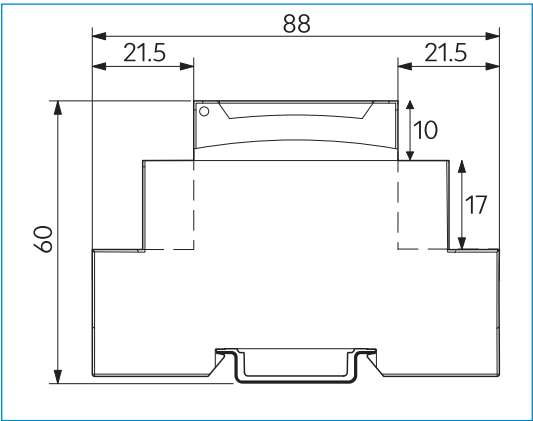
MODEL NUMBER LEGEND

for 17.5 and 22.5 mm Timer

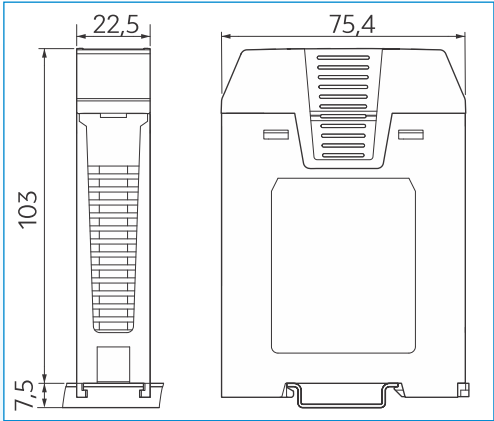


SN	DESCRIPTION	SYMBOL	MEANING
1	HOUSING SIZE	17	17.5 mm Housing Width
		22	22.5 mm Housing Width
2	INPUT SUPPLY TYPE	U	Universal Supply Voltage (AC/DC)
		A	Alternate current (AC)
3	SUPPLY VOLTAGE RANGE	230	230 V
		240	12-240 V
		415	415 V
4	CONTROL OUTPUT	1S	SPDT
		2S	DPDT
5	FUNCTION	MF	Multi Function
		OI	On Delay / Interval
		OO	Cyclic ON/OFF
		RF	Reverse Pause Forward
		SD	Star Delta
		OD	True Power OFF Delay
		IF	Interval Function 3.5 fixed

HOUSING DIMENSIONS 17.5 and 22.5 mm Timer



17.5 mm



22.5 mm

NOTE

Handwriting practice lines consisting of 20 horizontal dotted lines.

Industrial Controllers - Digital Timers

Digital Three Digit Single Display ON Delay, Interval (OFF Delay) Timer

TT-DT48-F2-3DSR

Main Features

- Independent ON delay and interval selectable.
- Display - 3 digits, Single Display + 3 Push Wheels (Thumb Wheel)
- Time Ranges - 0.1 sec to 99.9 (sec./min./hr.)
- Relay Output - DPDT (2 C/O)



TECHNICAL SPECIFICATION

SUPPLY VOLTAGE

Supply Voltage 85 to 270V AC @50 or 60 Hz

FUNCTIONAL SPECIFICATIONS

Operating Modes	ON delay / Interval delay
Time Ranges	0 - 9.99 sec, 0 - 99.9 sec, 0 - 999 sec, 0 - 99.9 min, 0 - 999 min, 0 - 99.9 hr
Time Range Setting	By Push wheel switch
Counting Direction	Down
Display	0.36" (H), 3- Digit, 7- Segment, Red

INPUT SPECIFICATION

Accuracy	99.80% of F.S. or 50 msec (Whichever is greater)
Reset	Front, Remote, On Power interruption.
Dip switch setting	For Time Range & Function Selection
Start Input	Pulse Start
Set Point	Single Set Point
LED Indications	Relay Status

OUTPUT SPECIFICATIONS

Output Contact	DPDT (2 C/O)
Contact Rating	5A @ 230V AC / 24 V DC

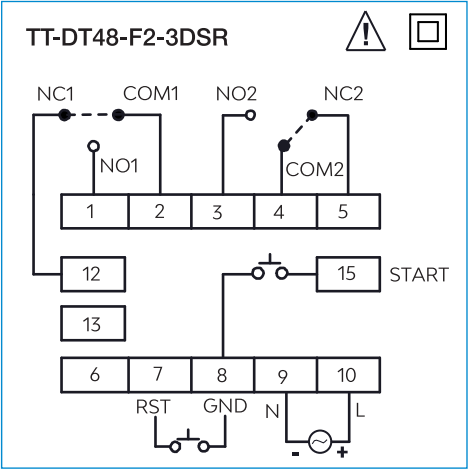
ENVIRONMENTAL SPECIFICATIONS

Temperature	Operating : 0 to 50°C Storage : -20 to 75°C
Humidity (non - condensing)	95% RH
Protection Level	IP50 for faceplate
Mounting	Panel Mount
Weight	140 gms

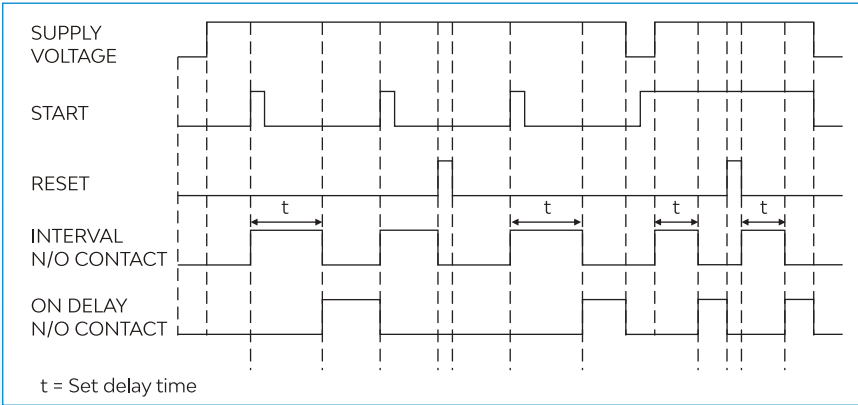
ORDERING INFORMATION OF TIMER

Product Series	Functional Mode	Operating Voltage	Timing Range	Contact Arrangement	Article No.	Article Description
48*48 mm	ON Delay / Interval (OFF Delay)	85 to 270 VAC	0.1 sec to 99.9 hr.	2 CO (DPDT)	011708390	TT-DT48-F2-3DSR

TERMINAL CONNECTIONS



TIMING DIAGRAM



Digital Three Digit Single Display Multifunction Timer

TT-DT48-F4-3DSR

Main Features

- Multifunction timer single set point, Front Keypad Setting
- 3 digits, 7 segment LED display
- Time Ranges - 0.1 sec to 999 (sec./min./hr.)
- Relay Output - DPDT (2 C/O)

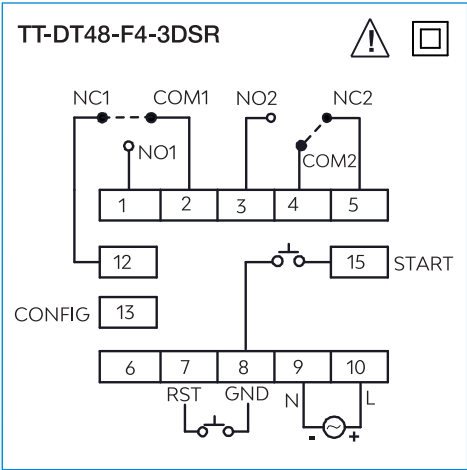


TECHNICAL SPECIFICATION	
SUPPLY VOLTAGE	
Supply Voltage	85 to 270V AC @50 or 60 Hz
FUNCTIONAL SPECIFICATIONS	
Modes	ON delay / Interval delay / Cyclic on first / Cyclic off first (configurable by keys)
Time Ranges	0 - 9.99 sec, 0 - 99.9 sec, 0 - 999 sec, 9:59 min:sec, 0 - 99.9 min, 0 - 999 min, 9:59 hr:min, 0 - 99.9 hr, 0 - 999 hr
Time Range Setting	Front Key Pad
Counting Direction	Down
LED Indication	Relay Status
Display	0.4" (H), 3- Digits, 7- Segment LED, Red
Configuration Lock	Via rear terminals
INPUT SPECIFICATION	
Accuracy	99.80% of F.S. or 50 msec (Whichever is greater)
Reset	Front, Remote On Power interruption.
Reset Time	Less than 100 msec
Start Input	Gate / Pulse Start (Programmable)
Set Point	Single Set Point
OUTPUT SPECIFICATIONS	
Output Contact	DPDT (2 C/O)
Contact Rating	8A @ 230V AC / 24 V DC
ENVIRONMENTAL SPECIFICATIONS	
Temperature	Operating : 0 to 50°C
	Storage : -20 to 75°C
Humidity (non - condensing)	95% RH
Protection Level	IP50 for faceplate
Mounting	Panel Mounting
Weight	140 gms

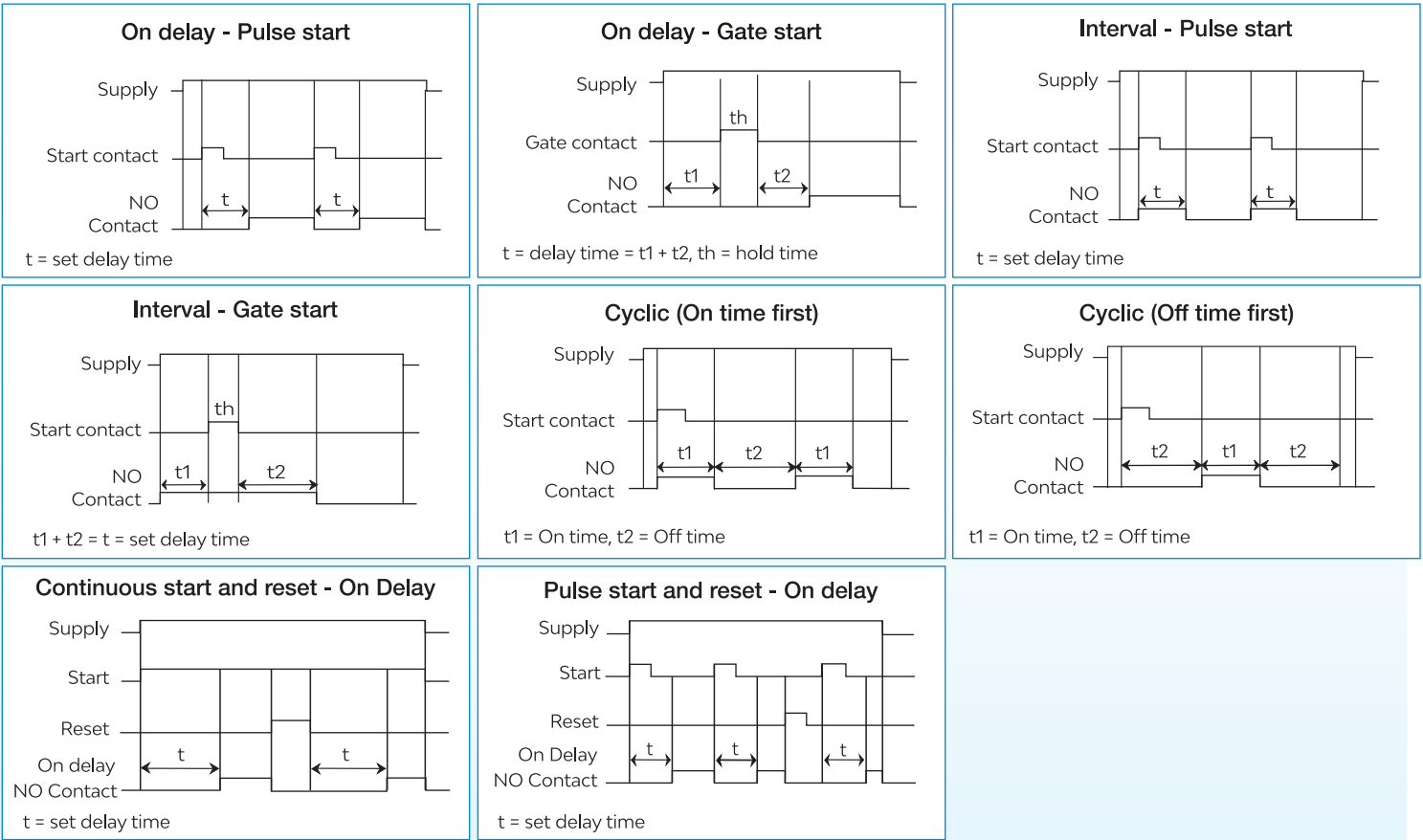
ORDERING INFORMATION OF TIMER

Product Series	Functional Mode	Operating Voltage	Timing Range	Contact Arrangement	Article No.	Article Description
48*48 mm	ON delay / Interval delay / Cyclic ON first / Cyclic OFF first	85 to 270 VAC	0.1 sec to 999 hr.	2 CO (DPDT)	011708391	TT-DT48-F4-3DSR

TERMINAL CONNECTIONS



TIMING DIAGRAM



Digital Three Digit Dual Display Multifunction Timer

TT-DT48-F4-3DDR

Main Features

- Multifunction dual set point
- LED Indications : Relay ON, Seconds, Minutes, Hours
- 3 digits, 7 segment LED, Dual Display
- Timing Range - 0.1 sec to 9999 (sec./min./hr.)
- Memory Retention
- Keypad lock configuration

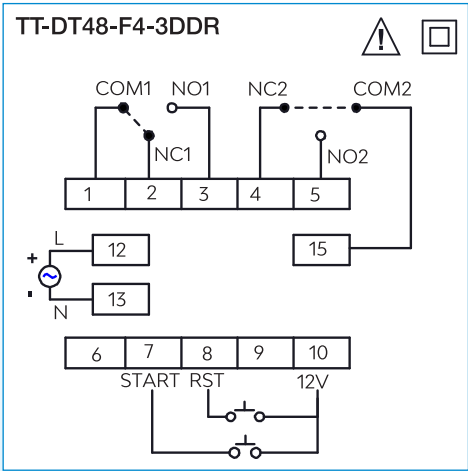


TECHNICAL SPECIFICATION					
SUPPLY VOLTAGE					
Supply Voltage	85 to 270V AC (50 / 60Hz)				
Protection Consumption	4VA max				
FUNCTIONAL SPECIFICATIONS					
Modes	ON delay, Interval, Cyclic ON first, Cyclic OFF first				
Time Ranges	0 - 9.99 sec	0 - 99.9 sec	0 - 999 sec	0 - 9:59 min:sec	0 - 99.9 min
	0 - 999 min	9:59 hr:min	0 - 99.9 hr	0 - 999 hr	
Resolution	0.01sec				
Counting Direction	Down				
Set Point	1				
Time Setting	By keys on front panel				
Reset	Front, Remote, On power interruption (programmable)				
Memory Retention	Yes (selectable)				
Configuration Lock	Yes				
DISPLAY SPECIFICATIONS					
Display	3 digits, 7 segment LED, Dual display				
	Height of Upper Display : 0.3785"		Height of Lower Display : 0.2720"		
LED Indications	Relay ON, Hr / Min /Sec				
INPUT SPECIFICATIONS					
Accuracy	99.80% of F.S. or 50 msec (Whichever is greater)				
Start Input	Gate / Pulse (Programmable)				
OUTPUT SPECIFICATIONS					
Relay Contact	2 SPDT (C/O)				
Contact Rating	5A @ 250V AC				
ENVIRONMENTAL SPECIFICATIONS					
Temperature	Operating : 0 to 50°C (32 to 122°F)				
	Storage : -20 to 75°C (-4 to 167°F)				
Protection Level	IP50 for face plate				
Humidity (non - condensing)	95% RH				
Mounting	Panel Mount				
Weight	142gms				

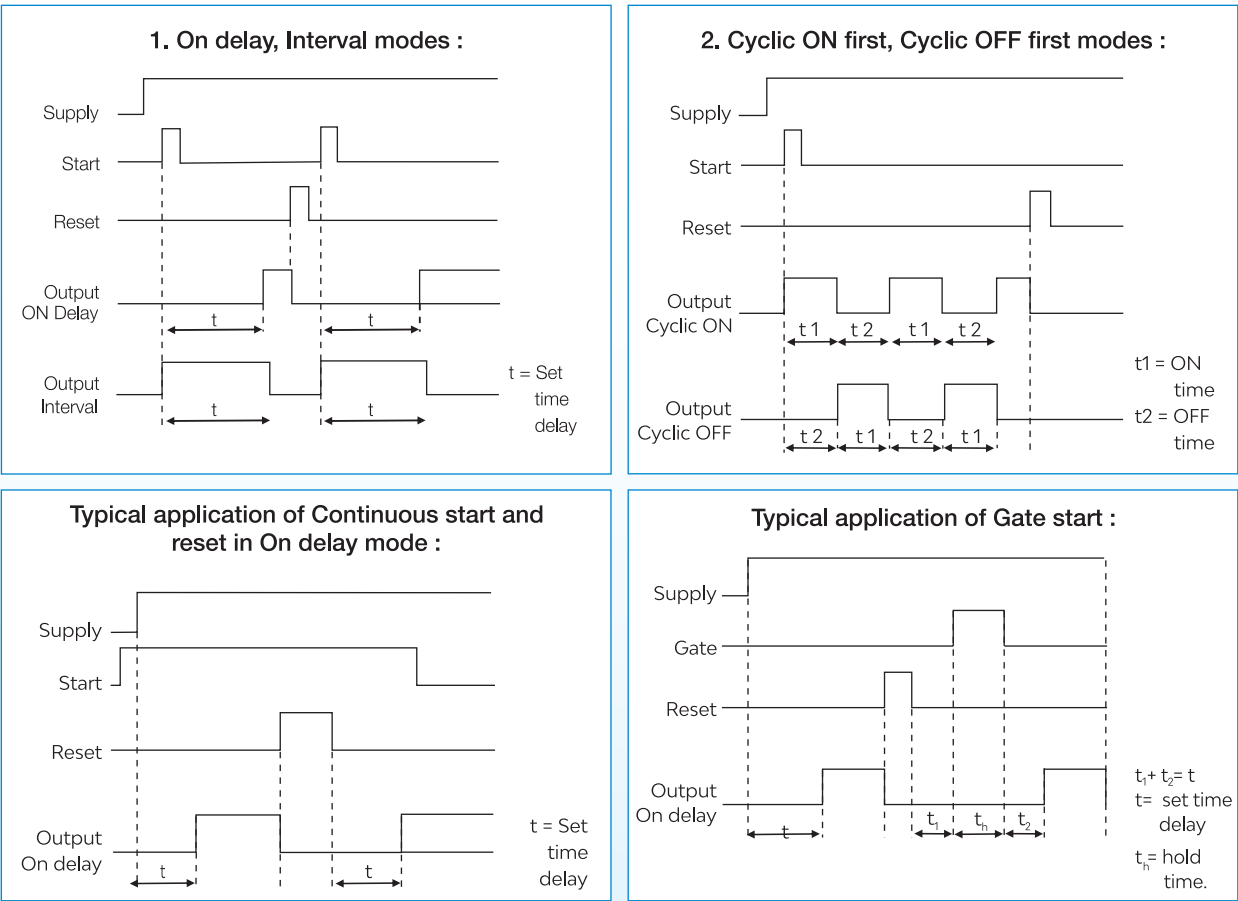
ORDERING INFORMATION OF TIMER

Product Series	Functional Mode	Operating Voltage	Timing Range	Contact Arrangement	Article No.	Article Description
48*48 mm	ON delay, Interval, Cyclic ON first, Cyclic OFF first	85 to 270 VAC	0.1 sec to 999 hr.	2 CO (SPDT)	011708392	TT-DT48-F4-3DDR

TERMINAL CONNECTIONS



TIMING DIAGRAM



Digital Four Digit Dual Display Multifunction Timer

TT-DT48-F8-4DDR

Main Features

- Dual Set Point
- LED Indications : Relay ON, Seconds, Minutes, Hours
- 4 digits, 7 segment LED, Dual Display
- Time Ranges - 0.1 sec to 9999 (sec./min./hr.)
- Relay Output - SPDT (2 C/O)
- Memory Retention
- Keypad lock configuration

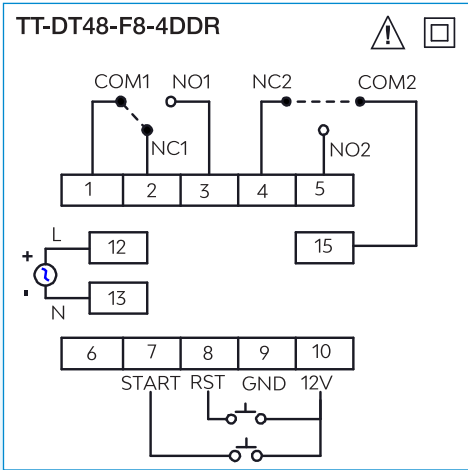


TECHNICAL SPECIFICATION	
SUPPLY VOLTAGE	
Supply Voltage	85 to 270V AC (50 / 60Hz)
Power Consumption	4VA max
FUNCTIONAL SPECIFICATIONS	
Modes	ON delay / Interval delay / Cyclic ON first / Cyclic OFF first / Forward-pause-reverse / instantaneous + delayed / timer / batch
Time Ranges	99.99 / 999.9 / 9999 sec, 99:59 min:sec, 999.9 / 9999 min, 99:59 hr:min, 999.9 / 9999 hr
Counting Direction	Up / down
Set Point	2
Time Setting	By keys on front panel
Reset	Front, Remote, On power interruption (programmable)
Memory Retention	Yes (selectable)
Configuration Lock	Yes
DISPLAY SPECIFICATIONS	
Display	4 digits, 7 segment LED, Dual display
	Height of Upper Display : 0.3785" Height of Lower Display : 0.2720"
LED Indications	Relay ON, Hr / Min / Sec
INPUT SPECIFICATIONS	
Accuracy	99.80% of F.S. or 50 msec (Whichever is greater)
Start Input	Gate / Pulse (Programmable)
OUTPUT SPECIFICATIONS	
Relay Contact	2 SPDT (C/O)
Contact Rating	5A @ 250V AC
ENVIRONMENTAL SPECIFICATIONS	
Temperature	Operating : 0 to 50°C (32 to 122°F) Storage : -20 to 75°C (-4 to 167°F)
Protection Level	IP50 for face plate
Humidity (non - condensing)	95% RH
Mounting	Panel Mount
Weight	142gms

ORDERING INFORMATION OF TIMER

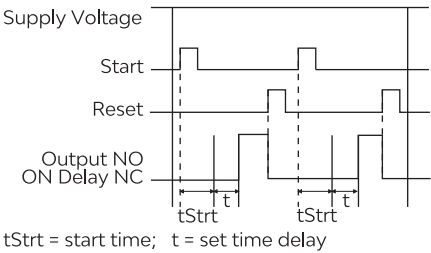
Product Series	Functional Mode	Operating Voltage	Timing Range	Contact Arrangement	Article No.	Article Description
48*48 mm	Digital 3 Digit Dual Display Multifunction Timer	85 to 270 VAC	0.1 sec to 9999 hr.	2 CO (SPDT)	011708392	TT-DT48-F4-3DDR

TERMINAL CONNECTIONS

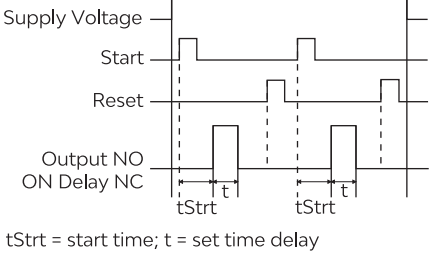


TIMING DIAGRAM

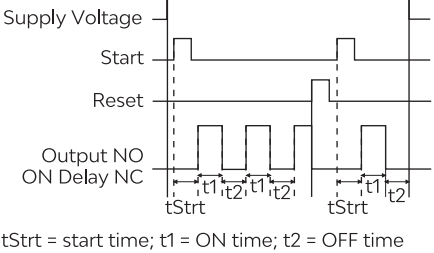
ON Delay



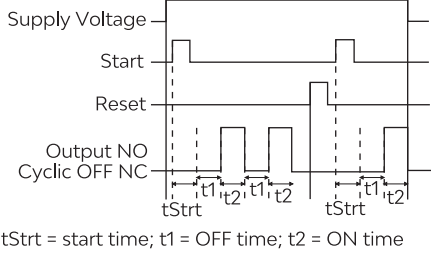
Interval



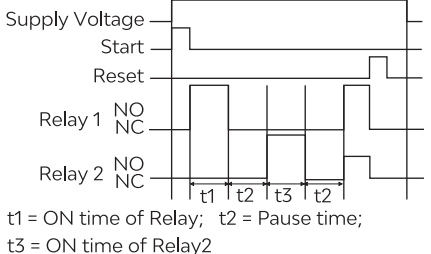
Cyclic ON First



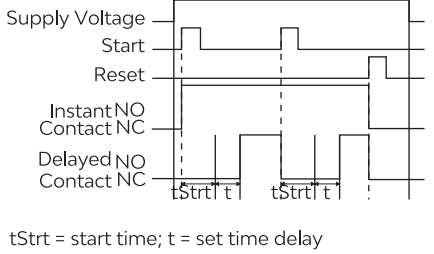
Cyclic OFF First



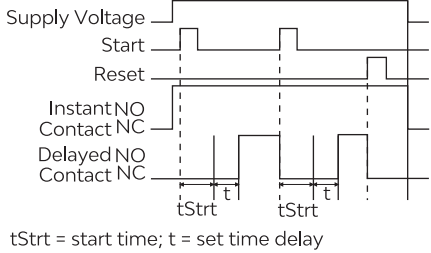
Motor Reverse Mode



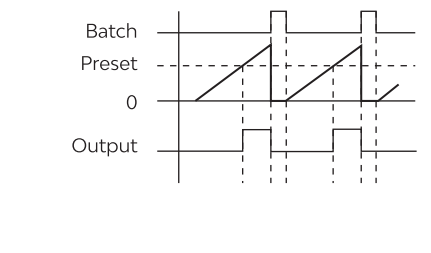
Instantaneous + Delayed At Start Pulse



Instantaneous + Delayed At Power ON



Batch



Digital Six Digit Dual Display Multifunction Timer

TT-DT96-F4-6DSR

Main Features

- Eight Set Point
- LED Indications : Relay status, Cascade O/P , Time range, ON/OFF time, Timing in progress
- 2+4 digits, 7 segment LED, Dual Display
- Timing Range 0.1 sec to 999 (sec./min./hr.)
- Memory Retention
- Keypad lock configuration



TECHNICAL SPECIFICATION					
SUPPLY VOLTAGE					
Supply Voltage	85 to 270V AC (50 / 60Hz)				
FUNCTIONAL SPECIFICATIONS					
Modes	ON Delay, Interval, Cyclic ON first, Cyclic OFF first (start up delay & no. of cycles programmable for cyclic mode) *Secuncial Programing				
Time Ranges	0 - 9.99 sec	0 - 99.9 sec	0 - 999 sec	0 - 9:59 min:sec	0 - 99.9 min
	0 - 999 min	9:59 hr:min	0 - 99.9 hr	0 - 999 hr	
Counting Direction	Up				
Set Point	8				
Time Setting	By keys on front panel				
Reset	Front, Remote, On power interruption (programmable)				
Memory Retention	Yes (selectable)				
Configuration Lock	Yes				
DISPLAY SPECIFICATIONS					
Display	7 segment LED, Dual display				
Digits	2+4 digits				
LED Indications	Relay ON, Relay status, Cascade O/P , Time range, ON/OFF time, Timing in progress				
INPUT SPECIFICATIONS					
Accuracy	99.80% of F.S. or 50 msec (Whichever is greater)				
Start Input	Start, Hold				
OUTPUT SPECIFICATIONS					
Output	8 nos., NO with single common				
Contact Rating	5A @ 250V AC				
No. of Channels	8 Channels				
ENVIRONMENTAL SPECIFICATIONS					
Temperature	Operating : 0 to 50°C (32 to 122°F)				
	Storage : -20 to 75°C (-4 to 167°F)				
Protection Level	IP50 FOR FACE PLATE				
Humidity (non - condensing)	95% RH				
Mounting	Panel Mount				
Weight	420gms				

ORDERING INFORMATION OF TIMER

Product Series	Functional Mode	Operating Voltage	Timing Range	Contact Arrangement	Article No.	Article Description
96*96 mm	ON Delay, Interval, Cyclic ON first, Cyclic OFF first	85 to 270 VAC	0.1 sec to 999 hr.	8 nos., NO with single common	011708394	TT-DT96-F4-6DSR

TERMINAL CONNECTIONS

TT-DT96-F4-6DSR

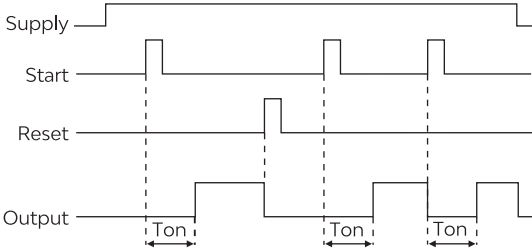


1	2	3	4	5	6	7	8	9
L	N	COM	NO8	NO7	NO6	NO5	NO4	NO3

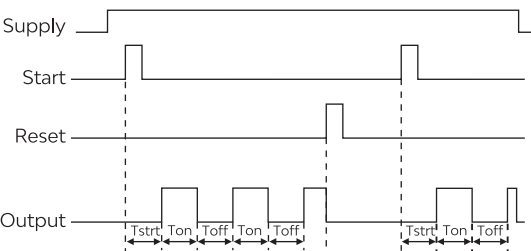
10	11	12	13	14	15	16	17	18
NO2	NO1	+24V	GND	CAS	CON- FIG	RST	HOLD	STRT

TIMING DIAGRAM

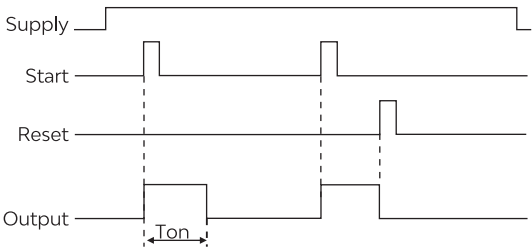
1. ON Delay



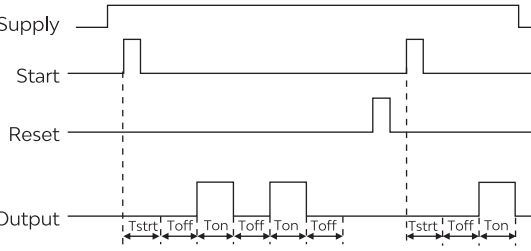
3. Cyclic ON-First



2. Interval



4. Cyclic OFF-First

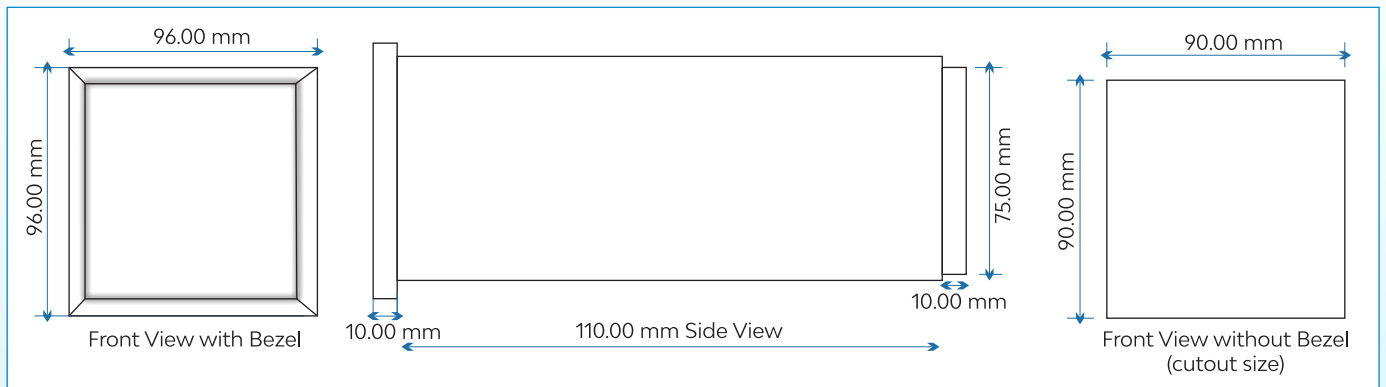
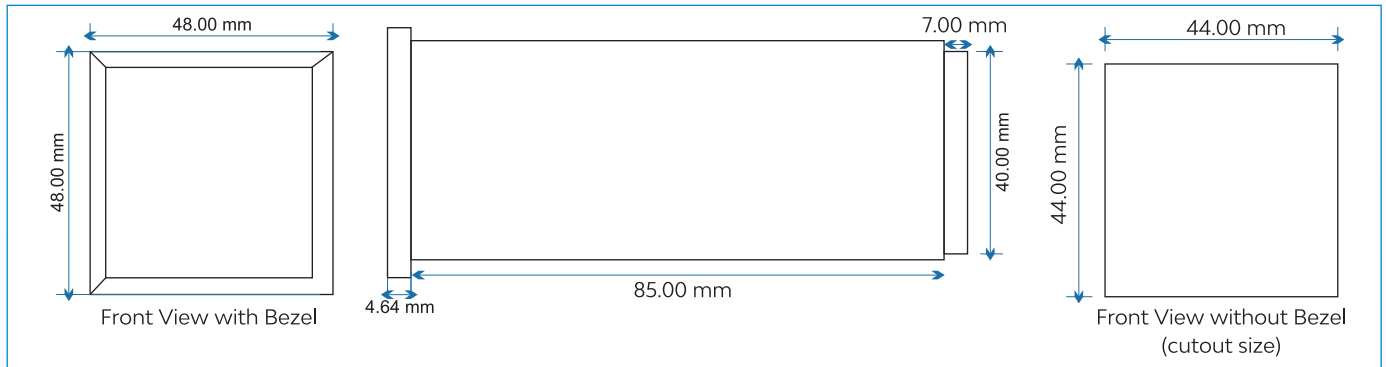


MODEL NUMBER LEGEND

TT- $\frac{\square\square}{1}$ $\frac{\square\square}{2}$ - F $\frac{\square}{3}$ - $\frac{\square\square}{4}$ $\frac{\square\square}{5}$

SN	DESCRIPTION	SYMBOL	MEANING
1	Product Type	DT	Digital Timer
2	Housing Size	48	48*48 mm
		96	96*96 mm
		F2	ON Delay / Interval
		F4	ON Delay / Interval Delay / Cyclic ON first / Cyclic OFF first
3	Function	F8	ON Delay / Interval Delay / Cyclic ON first / Cyclic OFF first / Forward-Pause-Reverse / Instantaneous+Delayed / Timer / Batch
4	Display Type	SR	Single Row Display
		DR	Dual Row Display
5	Display Digit	3D	3 Digit, 7 segment
		4D	4 Digit, 7 segment
		6D	6(2+4) Digit, 7 segment

DIMENSIONS



NOTE

Handwriting practice area with 20 horizontal dotted lines.

Industrial Controllers - PSR / SPP

Phase Sequence Relay / Single Phasing Preventer

Main Features

- 3Ø - 3 Wire Input
- Operating Voltage- 154 to 500V AC (phase to phase)
- Monitors (Unbalancing, Phase Sequence, Phase Missing)
- Separate LED Indications : Trip & Power ON
- Available in 17.5 mm , Slim, Space Saving Design size
- DIN Rail Mount



TECHNICAL SPECIFICATION

SUPPLY VOLTAGE

Nominal Input Voltage	415V AC (phase to phase)
Operating Voltage	154 to 500V AC (phase to phase)

FUNCTIONAL SPECIFICATIONS

Phase Failure Trip	<154V AC	
Phase Sequence, Phase Missing	Yes	
Unbalancing Trip setting	60 V AC fixed ±10V AC (phase to phase)	
Hysteresis	6V	20V
Trip Accuracy	±10V	

INPUT SPECIFICATIONS

	17.5	22.5
Accuracy	±3% of F.S. (F.S. = Full Scale)	
Reset	Auto reset on removal of fault condition	
Power on Indication (Green)	Yes	-
Trip Indication (Red)	Yes	Yes

OUTPUT SPECIFICATIONS

Output Contact	SPDT (1 C/O)
Contact Rating	NO/5A, NC/3A@250V AC
VA Rating	30 VA Max.

GENERAL DATA

Module Width (W)	17.5 mm	22.5 mm
Module height (h)	60 mm	103 mm
Module depth (d)	88.2 mm	75.4 mm
Housing colour	Grey (base)	

Ambient operating temperature	(0 to 50)°C	(32 to 122 °F)
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Storage temperature	(-20 to 75)°C	(-4 to 167°F)
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Ambient operating humidity	95% (Rn)
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Weight	Approx. 62 gms (0.163 lbs)
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Nominal Frequency	50/60 H(±10%)
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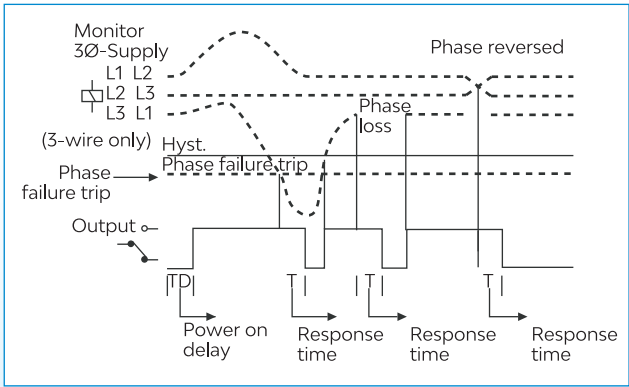
CONNECTION DATA

Type of connection	Screw Connection	
Nominal current carrying capacity	24 A	
Rated voltage capacity	400 V	
Connector cross section solid	Min./Max. 0.14/2.5 mm²	Min./Max. 0.2/4.0 mm²
Conductor cross section stranded	Min./Max. 0.14/2.5 mm²	Min./Max. 0.2/2.5 mm²
Tightening torque	0.5-0.6 Nm	

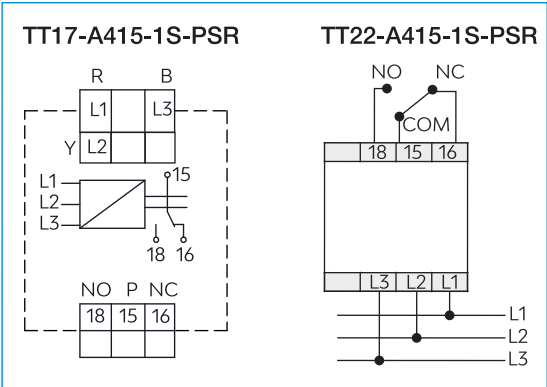
EMI/EMC COMPLIANCE

As per IEC 61000-4-2, 3, 4, 5, 6, 11.

Function Diagram



TERMINAL CONNECTIONS



ORDERING INFORMATION OF TIMER

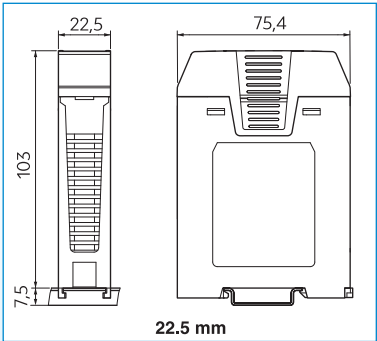
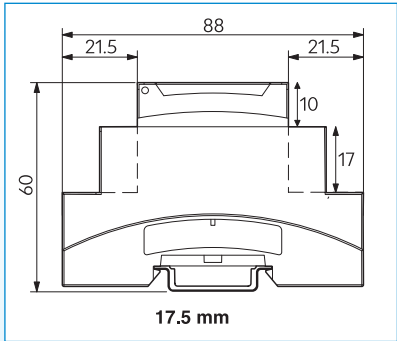
Product Series	Function	Operating Voltage	Timing Range	Contact Arrangement	Article No.	Article Description
22.5 mm	Phase Sequence Relay / Single Phasing Preventer	415 VAC	Response Time - 200 ms max. Power On Delay - 200 msec.	1 CO (SPDT)	011708396	TT22-A415-1S-PSR
17.5 mm					011709055	TT17-A415-1S-PSR

MODEL NUMBER LEGEND

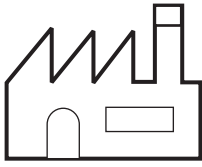


		Symbol	Meaning
1	HOUSING SIZE	22	22.5 mm Housing Width
		17	17.5 mm Housing Width
2	INPUT SUPPLY TYPE	A	AC Supply Voltage (AC)
3	SUPPLY VOLTAGE RANGE	415	154 to 500 V AC
4	CONTROL OUTPUT	1S	SPDT
5	FUNCTION	PSR	Phase Sequence Relay

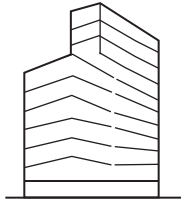
DIMENSIONS



Application Area



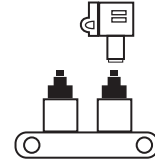
Industrial



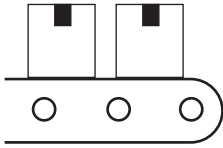
Building Automation



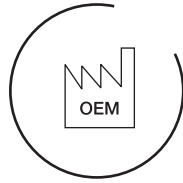
Lighting Control



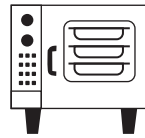
Food Processing



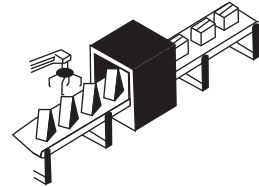
Material Handling



OEM



Baking Oven
Equipment



Packaging
Equipment



Bakery Process
Equipment

NOTE

Handwriting practice area with 20 sets of dotted lines for tracing on a lined background.

OTHER PRODUCT PROGRAMS

TRIBOX® Thermoplastic Enclosures



Cable Glands With Wide Clamping Range



DIN Rails



Wiring Ducts Wire Management Solutions PVC & Halogen Free



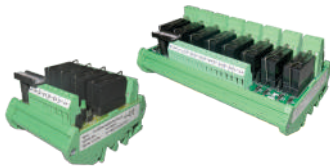
Flexible Conduits



Solderless Terminals



Interface Modules



TRISOLAR®



TRIBOX® Customised Solutions



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