

ELECTRONIC TIMING RELAYS



c3controls Series ETR Electronic Timing Relays include a variety of devices with single, dual, and multi-functions and timing ranges from 0.01 seconds to 9,999 hours to satisfy the most basic to highly complex timing applications. Their compact size (17.5mm, 22.5mm, and 45mm wide) and DIN Rail, Panel, Socket, and enclosure door mounting flexibility ensures they can be installed in virtually any control panel. Devices are available with multi-voltage supply design to help reduce inventory requirements.

Section 25

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Dimensions	30



PROVEN



Conformity to Standards:

UL 61010-1, 508
C22.2 No. 61010-1, No. 14
IEC 61000-4

Certifications:

UL File #: E329857 (Guide QUYX2, QUYX8), E68568 (Guide NKCR, NKCR8)




CE Marked (per EU Low Voltage Directive 2006/95/EC, EMC 2004/108/EC and RoHS Directive 2011/65/EU)

Visit www.c3controls.com to download product certifications.

ELECTRONIC TIMING RELAYS

c3controls offers a comprehensive line of Electronic Timing Relays, just one example of our superior products designed and manufactured to meet the needs of the machine builder. Check out all the features of our Series ETR timing relays below!

COMPACT AND EFFICIENT TIMING RELAYS FOR SUPERIOR ACCURACY.

✓ Proven	Our electronic timing relays meet UL and IEC Standards requirements making them suitable for use in global applications.   
✓ Various Sizes	Our product line includes timing relays in 17.5mm, 22.5mm, and 45mm form factors.
✓ Wide Range of Operation	Wide variety of operating modes satisfies virtually any application: ON-Delay, Interval Delay, Pulse Output, Cycle (ON/OFF), Delay on Make/Delay on Break, and more.
✓ Compact Size	Compact design—reduces panel space requirements and is interchangeable with commonly available timing relays.
✓ Tripping Accuracy	Our ETRs feature a repeat tripping accuracy of 0.5%, with an accuracy of 0.05% in our 45mm Digital ETR, for precise control application performance.
✓ Superior Protection	The IP20 terminals guard against accidental contact with live parts for enhanced protection.
✓ Secure Installation	Quick and simple installation on a 35mm DIN Rail or panel mounted in high-vibration applications.
✓ Multi-Voltage Capability	Most ETRs accept a range of voltage supply inputs. (see Selection Table or individual ETR model for capabilities)
✓ AC/DC Load Switching	Our ETRs feature hard contact outputs.
✓ Digital Features	Our 45mm Digital ETR includes an intuitive key pad that allows programming from the front of the timing relay, and timing ranges from 0.01 seconds to 9999 hours.
✓ Limited Lifetime Warranty*	Every product is backed by our limited lifetime warranty—unmatched in the industry—bringing you quality components that perform in the most demanding applications.
✓ Guaranteed Same-Day Shipping*	Product availability reduces inventory, and improves cash-flow—saving you money. With c3controls any order for standard catalog items received by 6:00pm ET is guaranteed to ship same-day.
✓ Advantage Pricing	Our approach to product development, manufacturing, and focus on servicing the OEM and Electrical Equipment Builder reduces cost. The result—the best value in the industry.

*See c3controls Terms & Conditions



c3controls has proven time and time again to have better product availability and customer service than most of the larger companies we work with.



Steve Velasquez, Industrial Sales • **Broken Arrow Electric Supply**

17.5mm Wide
DIN Rail



22.5mm Wide
DIN Rail/Panel Mount



45mm Socket Mount
Door or Panel Mount, DIN Rail



45mm Digital
Door Mount



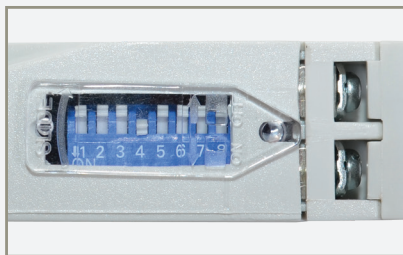
UNIQUE PRODUCT LINE FEATURES

CONVENIENT OPERATION



Easily select operating modes and timing ranges with accessible setting dials and DIP switches.

TRANSPARENT COVER



We've protected the DIP switches with a transparent cover that keeps out dust and other contaminants and allows you to see the switch settings.

QUICK TROUBLESHOOTING



Power ON and relay ON LED indicators make troubleshooting effortless.

CLEAR MARKINGS



We've clearly marked the terminals, operating modes and DIP switches, and imprinted connection diagrams to reduce downtime when commissioning and wiring during installation and while troubleshooting.

DIGITAL ADVANTAGES



Our 45mm Digital Electronic Timing Relays feature various timing and reset modes, 2 set points, programmable gate/pulse start input, batch counting, up and down counting, a 10 year memory retention, and password protection.

FIND IT FAST

Electronic Timing Relays



- Certifications
- Specifications
- Dimension Drawings
- Installation Instructions
- Easy to Buy

www.c3controls.com

ETR SELECTION GUIDE

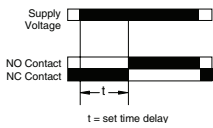
Match the functions you need in the far left column to the corresponding model along the top of the chart.

Function	ETR-D17MF1-	ETR-D22DEI-30H-	ETR-D22SD-	ETR-D22SS-	ETR-S45DEI-	ETRD-P45ME2-
Timing Functions						
Delay						
ON-Delay (Energize Delay)	✓	✓			✓	✓
OFF-Delay (De-Energize Delay)			✓			
Interval Delay	✓	✓			✓	✓
Pulse Output	✓					
Cyclic						
Repeat Cycle Equal (ON First)	✓					
Repeat Cycle Equal (OFF First)	✓					
Cyclic, ON First						✓
Cyclic, OFF First						✓
Delay On Make or Break						
Delay on Break	✓					
Delay on Break with Totalize	✓					
Delay on Make/Delay on Break	✓					
Interval						
Interval After Break	✓					
Interval with Totalize	✓					
Latching Relay	✓					
Single Shot						
Single Shot	✓					
Re-Triggerable Single Shot	✓					
Special						
Star (Wye) Delta				✓		
Motor Forward-Pause-Reverse						✓
Instantaneous + Delayed at Start Pulse						✓
Instantaneous + Delayed at Power On						✓
Timer						✓
Batch						✓
Other Characteristics						
Dimensions (mm)	17.5	22.5	22.5	22.5	45	45
Mounting	DIN, Panel	DIN, Panel	DIN, Panel	DIN, Panel	Door, DIN, Panel	Door (Only)
Quantity of Timing Ranges	10	12	2-Factory Set	2	12	Many (9999)
Timing Ranges (" < " means "less than")	< 1 sec to 3 hrs	< 1 sec to 30 hrs	1 sec to 3 min	1 sec to 1 min	< 1 sec to 30 hrs	0.01 sec to 9999 hrs
Types	Delay	Delay	Delay	Startup Delay, Changeover Delay	Delay	Start, On, Pause, Off
Control Contact (Input)	✓					✓
Output Contact(s) (C/O = Changeover, NO = Normally Open)	SPDT (1 C/O)	DPDT (2 C/O)	DPDT (2 C/O)	Star (Wye): 1 SPDT (1 C/O) Delta: 1 SPDT (1 C/O)	DPDT (2 C/O)	2 SPST (NO, not C/O)
Line Power (Voltage)						
24V DC						✓
110V 50Hz / 120V 60Hz AC				✓		
230V 50Hz / 240V 60Hz AC						
400-415V 50Hz AC				✓		
20-240V AC (50/60Hz) & 12-240V DC	✓	✓			✓	
110V 50Hz / 120V 60Hz & 24V AC/DC						
230V 50Hz / 240V 60Hz & 24V AC/DC						
85-270V AC/DC (AC: 50/60Hz)						✓
110-240V AC/DC (AC: 50/60Hz)			✓			

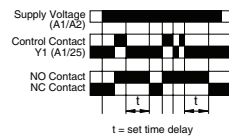
Timing Charts:

Timing Charts for 45mm Digital Electronic Timing Relays can be found on pages 28 & 29.

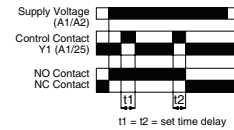
ON DELAY (ENERGIZE DELAY)



DELAY ON BREAK



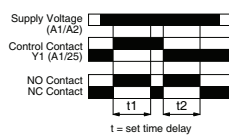
INTERVAL WITH TOTALIZE (TIME STORAGE)



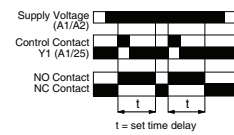
OFF DELAY (DE-ENERGIZE DELAY)



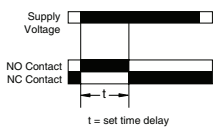
INTERVAL ON MAKE / INTERVAL ON BREAK



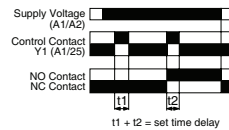
SINGLE SHOT



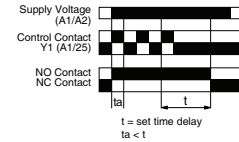
INTERVAL DELAY



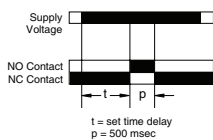
DELAY ON MAKE WITH TOTALIZE (TIME STORAGE)



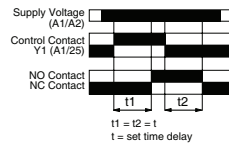
RETRIGGERABLE SINGLE SHOT



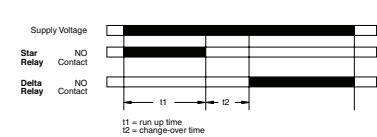
PULSE OUTPUT



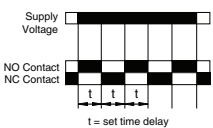
DELAY ON MAKE / DELAY ON BREAK



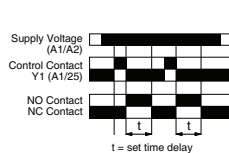
STAR (WYE) DELTA



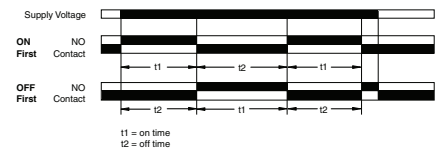
REPEAT CYCLE EQUAL (ON FIRST)



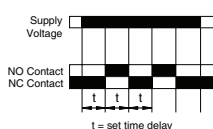
INTERVAL AFTER BREAK



(ASYMMETRICAL) CYCLIC ON FIRST, CYCLIC OFF FIRST



REPEAT CYCLE EQUAL (OFF FIRST)



IT'S EASY TO BUILD YOUR OWN ELECTRONIC TIMING RELAY

Simply pick the code number from each of the sections below and combine them to build your part number.

17.5mm Multi-Function — 10 Range Electronic Timing Relays

ETR – D17 MF1 – 03H – 1C MV4

I II III IV V VI

Example: To build one of our most popular Electronic Timing Relays, the part number would be **I + II + III + IV + V + VI** or **ETR-D17MF1-03H-1CMV4**



I. RELAY TYPE

CODE	DESCRIPTION
ETR	Electronic Timing Relay

II. FRAME SIZE AND MOUNTING METHOD

CODE	FRAME SIZE	MOUNTING METHOD
D17	17.5mm (11/16") Wide	35mm DIN Rail

III. TIMING FUNCTIONS

CODE	SINGLE/DUAL/MULTI	OPERATING MODES	LIST
MF1	Multi-Function	ON-Delay (Energize Delay), Interval Delay, Pulse Output, Repeat Cycle Equal (OFF first), Repeat Cycle Equal (ON first), Delay on Break, Delay on Break with Totalize, Delay on Make/Delay on Break, Interval after Break, Interval with Totalize, Latching Relay, Single Shot, Re-Triggerable Single Shot	\$56.00

IV. TIMING RANGE

CODE	MAXIMUM TIMING RANGE	SETTABLE TIMING RANGES
03H	3 Hours	Seconds: 1 / 3 / 10 / 30 Minutes: 1 / 3 / 10 / 30 Hours: 1 / 3

V. OUTPUT CONTACT AND RATING

CODE	OUTPUT TYPE	OUTPUT RATING
1C	SPDT (1 Changeover)	5A @ 250V AC, 24V DC Resistive

VI. SUPPLY VOLTAGE

CODE	DESCRIPTION	VOLTAGE RANGE
MV4	Multi-Voltage	20 ~ 240V AC (50/60 Hz) and 12 ~ 240V DC

DISCOUNT
SCHEDULE **G**

SOME OF OUR POPULAR CONFIGURATIONS:

17.5MM MULTI-FUNCTION — 10 RANGE ELECTRONIC TIMING RELAYS

CATALOG NUMBER	DESCRIPTION	LIST
ETR-D17MF1-03H-1CMV4	17.5mm Multi-Function, 10 Range Electronic Timing Relay, Maximum Timing Range: 3 Hours, SPDT, 12 ~ 240V AC/DC (AC: 50/60 Hz)	\$56.00

17.5MM MULTI-FUNCTION—10 RANGE ELECTRONIC TIMING RELAYS

This c3controls Series ETR Electronic Timing Relay offers maximum functionality and timing ranges in a compact, 17.5mm (11/16") wide housing. The multi-function (with 13 operating modes) timing relay with its multi-voltage supply design (12V ~ 240V DC and 20V ~ 240V AC) is an ideal solution for more complex applications. Like all of c3controls other products, these devices are UL approved and CE marked, making them suitable for use in global applications. Look and see how the Series ETR Electronic Timing Relays can help you reduce your total installed costs and enhance the performance of your equipment.

Product features include:

- Multi-Function, 10 Range
- Timing ranges from 1 second to 3 hours.
- Wide variety of operating modes to satisfy virtually any control application requirement: ON-Delay (Energize Delay), Interval Delay, Pulse Output, Repeat Cycle Equal (OFF first), Repeat Cycle Equal (ON first), Delay on Break, Delay on Break with Totalize, Delay on Make/Delay on Break, Interval after Break, Interval with Totalize, Latching Relay, Single Shot, and Re-Triggerable Single Shot.
- Repeat tripping accuracy of 0.5% for precise control application performance.
- Accepts multi-voltage supply input from 12V to 240V DC and 20V to 240V AC, reduces inventory requirements.
- Compact design, only 17.5mm (11/16") wide – reduces panel space requirements and is smaller than most commonly available timing relays.
- SPDT hard contact for switching AC (5A @ 250V) and DC (5A @ 24V) loads.
- Fast and easy installation on a 35mm DIN rail reduces installation time and costs.
- IP20 terminals guard against accidental contact with live parts by service personnel.
- UL Approved, CE Marked, and RoHS compliant.



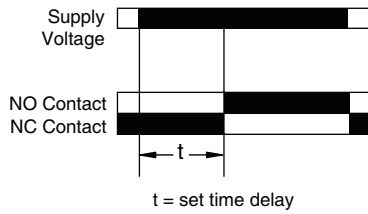
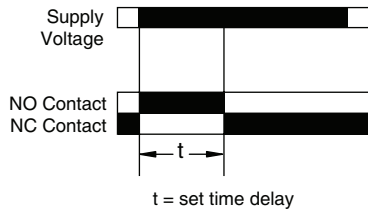
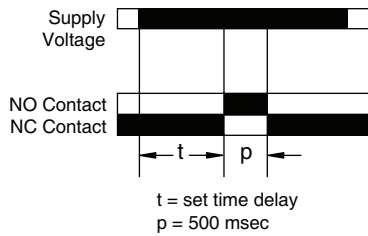
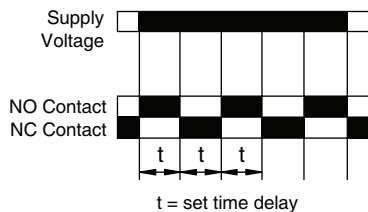
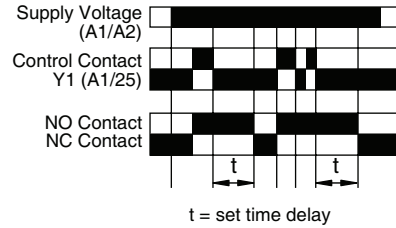
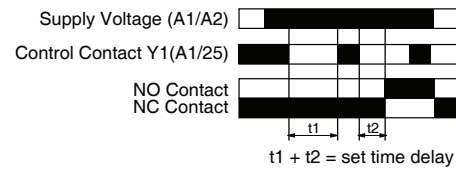
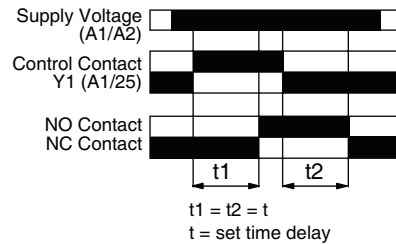
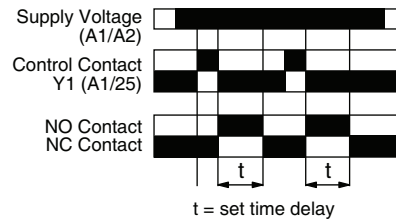
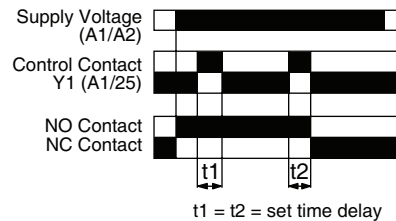
UNIQUE PRODUCT FEATURES



1. User selectable operating modes and timing ranges with convenient, front accessible setting dials.
2. LED indication of Power ON and Relay ON – for fast and easy troubleshooting.
3. Terminals and connection diagrams are clearly marked on the timing relay for easy commissioning, wiring, and troubleshooting – reduces downtime and installation time.

SPECIFICATIONS:
17.5MM MULTI-FUNCTION — 10 RANGE ELECTRONIC TIMING RELAYS

	UNITS	
TIMING PERFORMANCE		
Operating Modes		ON-Delay (Energize Delay), Interval Delay, Pulse Output, Repeat Cycle Equal (OFF first), Repeat Cycle Equal (ON first), Delay on Break, Delay on Break with Totalize, Delay on Make/Delay on Break, Interval after Break, Interval with Totalize, Latching Relay, Single Shot, Re-Triggerable Single Shot
Timing Ranges		Seconds: 1 / 3 / 10 / 30 Minutes: 1 / 3 / 10 / 30 Hours: 1 / 3
Accuracy		
Setting		± 5% of full scale
Repeat		± 0.5% of full scale or 50 msec. whichever is greater
Reset		On interruption of power
Reset Time		Less than 100 msec.
LED Indication		Power ON and Relay ON
Output Contact		SPDT (1 Changeover)
ELECTRICAL		
Operating Voltage		20 ~ 240V AC (AC: 50/60 Hz), 12 ~ 240V DC
Power Consumption	VA	3.2 Max.
Output Rating		5A @ 250V AC, 24V DC Resistive
ENVIRONMENTAL		
Ambient Operating Temperature	°C / °F	-30 to +50 / -22 to +122
Ambient Storage Temperature	°C / °F	-30 to +75 / -22 to +167
Humidity		95% Relative Humidity (Non-condensing)
Altitude	m / ft.	2,000 / 6,528
CONSTRUCTION		
Ingress Protection		
Terminals (Timer Body)		IP20
Terminal Capacity		
Solid Strand	mm ²	1 x 2.5 ~ 2 x 1.5
Fine Strand	mm ²	1 x 2.5 ~ 2 x 0.75
	AWG	14 ~ 18
Tightening Torque	Nm	0.8
	Lb-in.	7
Weight	g	64
	oz.	2.3
ROHS COMPLIANCE		
		For RoHS Compliance documentation by product, refer to www.c3controls.com

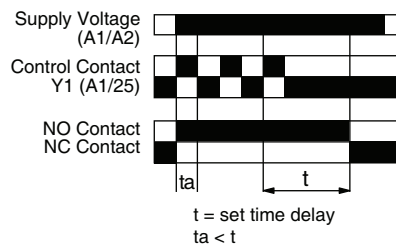
OPERATING MODES:**FUNCTION: ON DELAY****FUNCTION: INTERVAL DELAY****FUNCTION: PULSE OUTPUT****FUNCTION: REPEAT CYCLE EQUAL (OFF FIRST)****FUNCTION: REPEAT CYCLE EQUAL (ON FIRST)****FUNCTION: DELAY ON BREAK****FUNCTION: DELAY ON BREAK WITH TOTALIZE (TIME STORAGE)****FUNCTION: DELAY ON MAKE / DELAY ON BREAK****FUNCTION: INTERVAL AFTER BREAK****FUNCTION: INTERVAL WITH TOTALIZE (TIME STORAGE)**

OPERATING MODES:

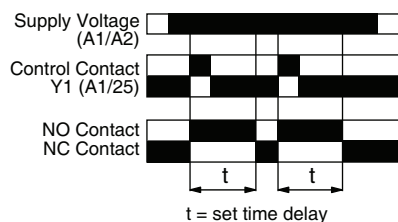
FUNCTION: LATCHING RELAY



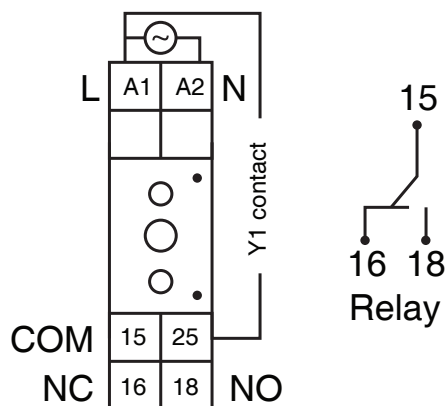
FUNCTION: RETRIGGERABLE SINGLE SHOT



FUNCTION: SINGLE SHOT



TERMINAL DIAGRAM:



IT'S EASY TO BUILD YOUR OWN ELECTRONIC TIMING RELAY

Simply pick the code number from each of the sections below and combine them to build your part number.

22.5mm Dual-Function — 12 Range Electronic Timing Relays

ETR – D22 DEI – 30H – 2C MV1

I II III IV V VI

Example: To build one of our most popular Electronic Timing Relays, the part number would be **I + II + III + IV + V + VI** or **ETR-D22DEI-30H-2CMV1**

**I. RELAY TYPE**

CODE	DESCRIPTION
ETR	Electronic Timing Relay

II. FRAME SIZE AND MOUNTING METHOD

CODE	FRAME SIZE	MOUNTING METHOD
D22	22.5mm (7/8") Wide	35mm DIN Rail and Panel Mount

III. TIMING FUNCTIONS

CODE	SINGLE/DUAL/MULTI	OPERATING MODES	LIST
DEI	Dual-Function	ON-Delay (Energize Delay) and Interval Delay	\$84.00

IV. TIMING RANGE

CODE	MAXIMUM TIMING RANGE	SETTABLE TIMING RANGES
30H	30 Hours	Seconds: 1 / 3 / 10 / 30 Minutes: 1 / 3 / 10 / 30 Hours: 1 / 3 / 10 / 30

V. OUTPUT CONTACT AND RATING

CODE	OUTPUT TYPE	OUTPUT RATING
2C	DPDT (2 Changeover)	5A @ 250V AC, 24V DC Resistive

VI. SUPPLY VOLTAGE

CODE	DESCRIPTION	VOLTAGE RANGE
MV1	Multi-Voltage	20 ~ 240V AC (50/60 Hz) and 12 ~ 240V DC

DISCOUNT
SCHEDULE **G**

SOME OF OUR POPULAR CONFIGURATIONS:

22.5MM DUAL-FUNCTION — 12 RANGE ELECTRONIC TIMING RELAYS

CATALOG NUMBER	DESCRIPTION	LIST
ETR-D22DEI-30H-2CMV1	22.5mm Dual-Function, 12 Range Electronic Timing Relay, Maximum Timing Range: 30 Hours, DPDT, 20 ~ 240V AC (50/60 Hz) and 12 ~ 240V DC	\$84.00

22.5MM ELECTRONIC TIMING RELAYS

These c3controls Series ETR Electronic Timing Relays include a variety of single function, dual-function, and multi-function relays with up to 12 timing ranges in a compact, 22.5mm (7/8") wide housing. This industry standard dimension makes these devices interchangeable with many commonly available electronic timers. Economical, simple dual-function, 12 range relay available for applications with the most basic timing requirements. For applications requiring more special operating modes, Off-Delay and Star (Wye) Delta, timing relays are available. These electronic timing relays are also available with a multi-voltage supply design (20V ~ 240V AC and 12V ~ 240V DC) – enabling inventories to be reduced. Like all of c3controls other products, these devices are UL approved and CE marked, making them suitable for use in global applications. Look and see how the Series ETR Electronic Timing Relays can help you reduce your total installed costs and enhance the performance of your equipment.

Product features include:

- Four versions available:
 - Economical, Dual-Function, 12 Range
 - ON-Delay and Interval Delay
 - Timing ranges from 1 second to 30 hours
 - Single-Function
 - OFF-Delay and Star-Delta (Wye-Delta)
 - Timing ranges – varies by function, refer to the specifications for each timing relay
- Repeat tripping accuracy of 0.5% for precise control application performance.
- Versions available that accept multi-voltage supply input from 20V to 240V AC and 12V to 240V DC, reduces inventory requirements.
- Compact design, only 22.5mm (7/8") wide – reduces panel space requirements and is interchangeable with commonly available timing relays.
- SPDT and DPDT hard contacts for switching AC (5A @ 250V) and DC (5A @ 24V) loads.
- Fast and easy installation on a 35mm DIN rail or panel mounting for high vibration applications – reduces installation time and costs.
- IP20 terminals guard against accidental contact with live parts by service personnel.
- UL Approved, CE Marked, and RoHS compliant.



UNIQUE PRODUCT FEATURES



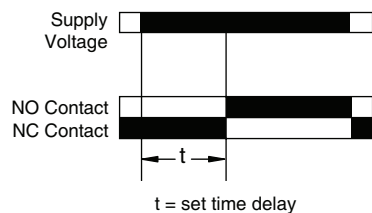
1. User selectable operating modes and timing ranges with convenient, front and top accessible setting dials and DIP switches.
2. DIP switches are protected by a cover to prevent the ingress of dust and other contaminants. Cover is transparent so the switch settings can be easily checked.
3. LED indication of Power ON and Relay ON – for fast and easy troubleshooting.
4. Terminals, connection diagrams, operating modes, and DIP switch settings are clearly marked on the timing relay for easy commissioning, wiring, and troubleshooting – reduces downtime and installation time.

SPECIFICATIONS:

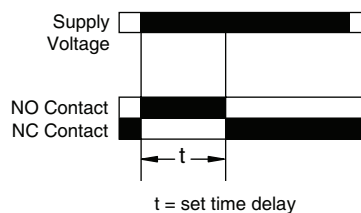
22.5MM DUAL-FUNCTION — 12 RANGE ELECTRONIC TIMING RELAYS		
	UNITS	
TIMING PERFORMANCE		
Operating Modes		ON-Delay (Energize Delay) and Interval Delay
Timing Ranges		Seconds: 1 / 3 / 10 / 30 Minutes: 1 / 3 / 10 / 30 Hours: 1 / 3 / 10 / 30
Accuracy		
Setting		± 5% of full scale
Repeat		± 0.5% of full scale or 50 msec. whichever is greater
Reset		On interruption of power
Reset Time		Less than 100 msec.
LED Indication		Power ON and Relay ON
Output Contact		DPDT (2 Changeover)
ELECTRICAL		
Operating Voltage		20 ~ 240V AC (50/60 Hz) and 12 ~ 240V DC
Operating Voltage Limits	%	85 to 110
Power Consumption	VA	2 Max.
Output Rating		5A @ 250V AC, 24V DC Resistive
ENVIRONMENTAL		
Ambient Operating Temperature	°C / °F	-30 to +50 / -22 to +122
Ambient Storage Temperature	°C / °F	-30 to +75 / -22 to +167
Humidity		95% Relative Humidity (Non-condensing)
Altitude	m / ft.	2,000 / 6,528
CONSTRUCTION		
Ingress Protection		
Terminals (Timer Body)		IP20
Terminal Capacity		
Solid Strand	mm ²	1 x 2.5 ~ 2 x 1.5
Fine Strand	mm ²	1 x 2.5 ~ 2 x 0.75
	AWG	14 ~ 18
Tightening Torque	Nm	0.8
	Lb-in.	7.0
Weight	g	100
	oz.	3.5
ROHS COMPLIANCE		For RoHS Compliance documentation by product, refer to www.c3controls.com

OPERATING MODES:

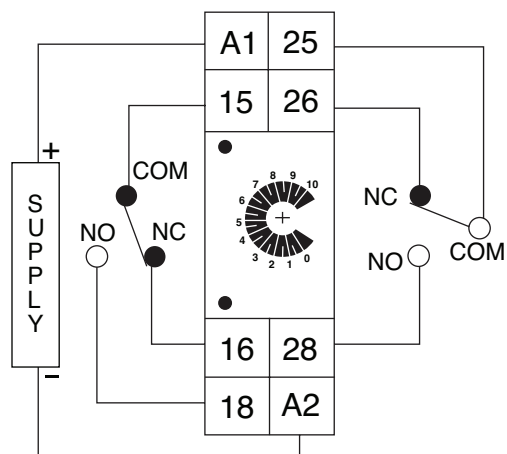
FUNCTION: ON DELAY



FUNCTION: INTERVAL DELAY



TERMINAL DIAGRAM:



IT'S EASY TO BUILD YOUR OWN ELECTRONIC TIMING RELAY

Simply pick the code number from each of the sections below and combine them to build your part number.

22.5mm Off-Delay Electronic Timing Relays

ETR - D22 SD - 180S - 2C MV2
I II III IV V VI

Example: To build one of our most popular Electronic Timing Relays, the part number would be **ETR + D22 + SD + 180S + 2C + MV2** or **ETR-D22SD-180S-2CMV2**

**I. RELAY TYPE**

CODE	DESCRIPTION
ETR	Electronic Timing Relay

IV. TIMING RANGE

CODE	MAXIMUM TIMING RANGE
180S	180 Seconds (factory set)

II. FRAME SIZE AND MOUNTING METHOD

CODE	FRAME SIZE	MOUNTING METHOD
D22	22.5mm (7/8") Wide	35mm DIN Rail and Panel Mount

V. OUTPUT CONTACT AND RATING

CODE	OUTPUT TYPE	OUTPUT RATING
2C	DPDT (2 Changeover)	5A @ 250V AC, 28V DC Resistive

III. TIMING FUNCTIONS

CODE	SINGLE/DUAL/MULTI	OPERATING MODES	LIST
SD	Single-Function	OFF-Delay (De-Energize Delay)	\$114.00

VI. SUPPLY VOLTAGE

CODE	DESCRIPTION	VOLTAGE RANGE
MV2	Multi-Voltage	110 ~ 240V AC/DC (AC: 50/60 Hz)

DISCOUNT
SCHEDULE **G**

SOME OF OUR POPULAR CONFIGURATIONS:

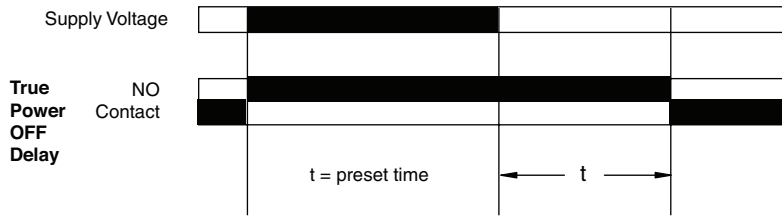
22.5MM OFF-DELAY ELECTRONIC TIMING RELAYS

CATALOG NUMBER	DESCRIPTION	LIST
ETR-D22SD-180S-2CMV2	22.5mm Single-Function OFF-Delay Electronic Timing Relay, Maximum Timing Range: 180 Seconds, DPDT, 110 ~ 240V AC/DC (AC: 50/60 Hz)	\$114.00

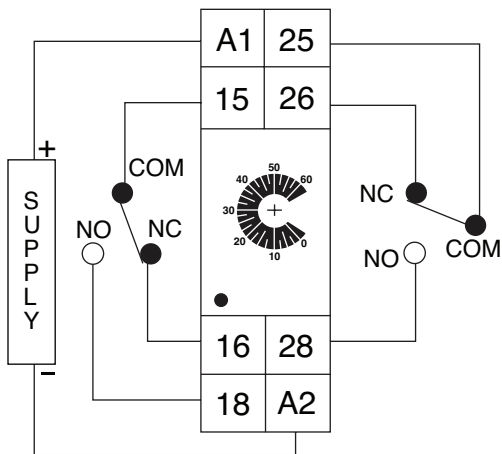
SPECIFICATIONS:

22.5MM OFF-DELAY ELECTRONIC TIMING RELAYS		
	UNITS	
TIMING PERFORMANCE		
Operating Modes		OFF-Delay (De-Energize Delay)
Timing Ranges		Seconds: 180 (factory set)
Accuracy		
Setting		± 10% of full scale
Repeat		± 2% of full scale or 100 msec. whichever is greater
Reset		On interruption of power
Reset Time		Less than 100 msec.
LED Indication		Power ON
Output Contact		DPDT (2 Changeover)
ELECTRICAL		
Operating Voltage		110 ~ 240V AC/DC (AC: 50/60 Hz)
Operating Voltage Limits	%	85 to 110
Power Consumption	VA	2.5 Max.
Output Rating		5A @ 250V AC, 28V DC Resistive
ENVIRONMENTAL		
Ambient Operating Temperature	°C / °F	0 to +50 / 32 to +122
Ambient Storage Temperature	°C / °F	-20 to +75 / -4 to +167
Humidity		95% Relative Humidity (Non-condensing)
Altitude	m / ft.	2,000 / 6,528
CONSTRUCTION		
Ingress Protection		
Terminals (Timer Body)		IP20
Terminal Capacity		
Solid Strand	mm ²	1 x 2.5 ~ 2 x 1.5
Fine Strand	mm ²	1 x 2.5 ~ 2 x 0.75
	AWG	14 ~ 18
Tightening Torque	Nm	0.8
	Lb-in.	7.0
Weight	g	110
	oz.	3.9
ROHS COMPLIANCE		
For RoHS Compliance documentation by product, refer to www.c3controls.com		

OPERATING MODE:



TERMINAL DIAGRAM:



IT'S EASY TO BUILD YOUR OWN ELECTRONIC TIMING RELAY

Simply pick the code number from each of the sections below and combine them to build your part number.

22.5mm Star (Wye) Delta Electronic Timing Relays

ETR – D22 SS – 60S – 2X
I II III IV V VI

Example: To build one of our most popular Electronic Timing Relays, the part number would be **ETR + D22 + SS + 60S + 2X + VI** or **ETR-D22SS-60S-2XD**



I. RELAY TYPE

CODE	DESCRIPTION
ETR	Electronic Timing Relay

II. FRAME SIZE AND MOUNTING METHOD

CODE	FRAME SIZE	MOUNTING METHOD
D22	22.5mm (7/8") Wide	35mm DIN Rail and Panel Mount

III. TIMING FUNCTIONS

CODE	SINGLE/DUAL/MULTI	OPERATING MODES	LIST
SS	Single-Function	Star-Delta (Wye-Delta)	\$67.00

IV. TIMING RANGE

CODE	MAXIMUM TIMING RANGE	SETTABLE TIMING RANGES
60S	60 Seconds (Starting Time)	Starting Time: 30 / 60 seconds Changeover Time: 50 / 100 milli-seconds

V. OUTPUT CONTACT AND RATING

CODE	OUTPUT TYPE	OUTPUT RATING
2X	1 SPDT (1 Changeover) for Star (Wye) and 1 SPDT (1 Changeover) for Delta	5A @ 250V AC, 24V DC Resistive

VI. SUPPLY VOLTAGE

CODE	DESCRIPTION	VOLTAGE RANGE
D	Fixed Voltage	110V 50 Hz / 120V 60 Hz
R	Fixed Voltage	400 ~ 415V (50Hz) / 480V (60Hz)

DISCOUNT
SCHEDULE **G**

SOME OF OUR POPULAR CONFIGURATIONS:

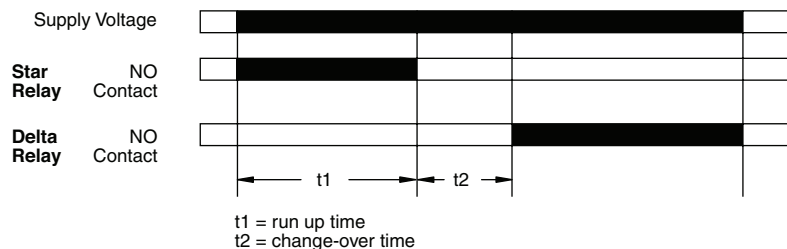
22.5MM STAR (WYE) DELTA ELECTRONIC TIMING RELAYS

CATALOG NUMBER	DESCRIPTION	LIST
ETR-D22SS-60S-2XD	22.5mm Single-Function Star (Wye) Delta Electronic Timing Relay, Maximum Timing Range: 60-Seconds, 2 SPDT, 110V 50 Hz/120V 60 Hz	\$67.00
ETR-D22SS-60S-2XR	22.5mm Single-Function Star (Wye) Delta Electronic Timing Relay, Maximum Timing Range: 60-Seconds, 2 SPDT, 400 ~ 415V (50Hz) / 480V (60Hz)	\$67.00

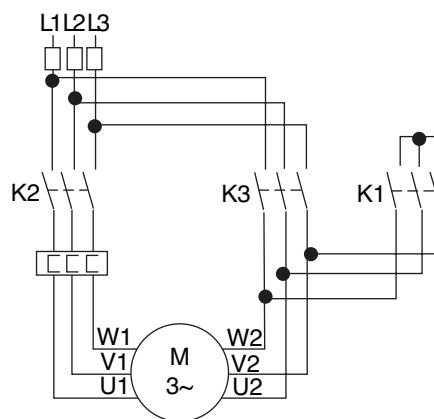
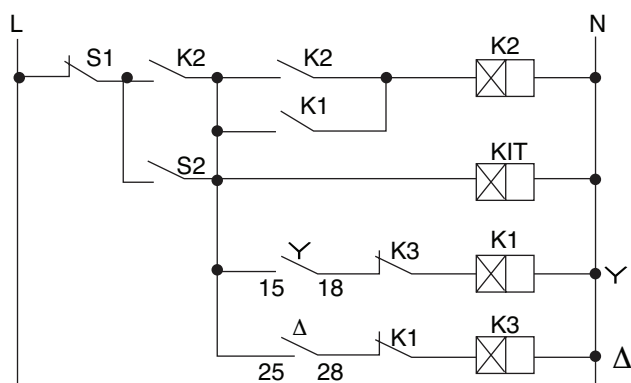
SPECIFICATIONS:

22.5MM STAR (WYE) DELTA ELECTRONIC TIMING RELAYS		
	UNITS	
TIMING PERFORMANCE		
Operating Modes		Star-Delta (Wye Delta)
Timing Ranges		Starting Time: 30 / 60 seconds Changeover Time: 40 / 100 milli-seconds
Accuracy		
Setting		± 5% of full scale
Repeat		± 0.5% of full scale or 50 msec. whichever is greater
Reset		On interruption of power
Reset Time		Less than 100 msec.
LED Indication		Star (Wye) Relay "ON", Delta Relay "ON"
Output Contact		1 SPDT (1 Changeover) for Star (Wye) and 1 SPDT (1 Changeover) for Delta
ELECTRICAL		
Operating Voltage		110V 50 Hz / 120V 60 Hz 400 ~ 415V 50Hz / 480V 60Hz
Operating Voltage Limits	%	85 to 110
Power Consumption	VA	10 Max.
Output Rating		5A @ 250V AC, 24V DC Resistive
ENVIRONMENTAL		
Ambient Operating Temperature	°C / °F	-30 to +50 / -22 to +122
Ambient Storage Temperature	°C / °F	-30 to +75 / -22 to +167
Humidity		95% Relative Humidity (Non-condensing)
Altitude	m / ft.	2,000 / 6,528
CONSTRUCTION		
Ingress Protection		
Terminals (Timer Body)		IP20
Terminal Capacity		
Solid Strand	mm ²	1 x 2.5 ~ 2 x 1.5
Fine Strand	mm ²	1 x 2.5 ~ 2 x 0.75
	AWG	14 ~ 18
Tightening Torque	Nm	0.8
	Lb-in.	7.0
Weight	g	130
	oz.	4.6
ROHS COMPLIANCE		
For RoHS Compliance documentation by product, refer to www.c3controls.com		

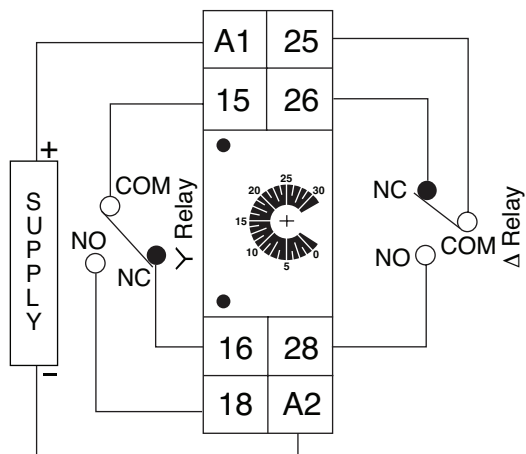
OPERATING MODE:



WIRING DIAGRAMS:



TERMINAL DIAGRAM:



IT'S EASY TO BUILD YOUR OWN ELECTRONIC TIMING RELAY

Simply pick the code number from each of the sections below and combine them to build your part number.

45mm Socket Mount Dual-Function — 12 Range Electronic Timing Relays

ETR – S45 DEI – 30H – 2C MV1

I II III IV V VI

Example: To build one of our most popular Electronic Timing Relays, the part number would be **I + II + III + IV + V + VI** or **ETR-S45DEI-30H-2CMV1**

**I. RELAY TYPE**

CODE	DESCRIPTION
ETR	Electronic Timing Relay

II. FRAME SIZE AND MOUNTING METHOD

CODE	FRAME SIZE	MOUNTING METHOD
S45	45mm (1-3/4") Wide x 45mm (1-3/4") High (1/16 DIN)	Door or Panel Mount, 35mm DIN Rail 8 Pin Socket Mount (Cat. No. GPRA-SP08G1 or GPRA-SP08U1, refer to Section 26 Page 24)

III. TIMING FUNCTIONS

CODE	SINGLE/DUAL/MULTI	OPERATING MODES	LIST
DEI	Dual-Function	ON-Delay (Energize Delay) and Interval Delay	\$118.00

IV. TIMING RANGE

CODE	MAXIMUM TIMING RANGE	SETTABLE TIMING RANGES
30H	30 Hours	Seconds: 1 / 3 / 10 / 30 Minutes: 1 / 3 / 10 / 30 Hours: 1 / 3 / 10 / 30

V. OUTPUT CONTACT AND RATING

CODE	OUTPUT TYPE	OUTPUT RATING
2C	DPDT (2 Changeover)	5A @ 250V AC, 24V DC Resistive

VI. SUPPLY VOLTAGE

CODE	DESCRIPTION	VOLTAGE RANGE
MV1	Multi-Voltage	20 ~ 240V AC (50/60 Hz) and 12 ~ 240V DC

DISCOUNT
SCHEDULE **G**

SOME OF OUR POPULAR CONFIGURATIONS:

45MM SOCKET MOUNT DUAL-FUNCTION — 12 RANGE ELECTRONIC TIMING RELAYS

CATALOG NUMBER	DESCRIPTION	LIST
ETR-S45DEI-30H-2CMV1	45mm Socket Mount Dual-Function, 12 Range Electronic Timing Relay, Maximum Timing Range: 30 Hours, DPDT, 20 ~ 240V AC (50/60 Hz) and 12 ~ 240V DC	\$118.00

45MM SOCKET MOUNT DUAL-FUNCTION— 12 RANGE ELECTRONIC TIMING RELAYS

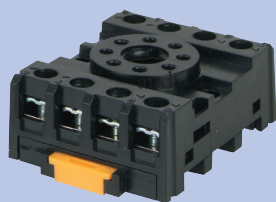
This c3controls Series ETR Electronic Timing Relay offers dual-functions and a timing range up to 30 hours in a compact, 45mm (1-3/4") Wide x 45mm (1-3/4") High (1/16 DIN) housing that can be panel mounted or mounted in an enclosure door, with an 8 pin socket. This industry standard dimension and socket mounting makes these devices interchangeable with many commonly available electronic timers. This economical, simple dual-function, 12 range timing relay is ideal for applications with the most basic timing requirements. Its multi-voltage supply design (20V ~ 240V AC and 12V ~ 240V DC) reduces inventory. Like all of c3controls other products, this device is UL approved and CE marked, making it suitable for use in global applications. Look and see how the Series ETR Electronic Timing Relays can help you reduce your total installed costs and enhance the performance of your equipment.



Product features include:

- Dual Function, 12 Range
 - ON-Delay and Interval Delay
 - Timing range from 1 second to 30 hours
- Repeat tripping accuracy of 0.5% for precise control application performance.
- Accepts multi-voltage supply input from 20V to 240V AC and 12V to 240V DC, reduces inventory requirements.
- Compact design, only 45mm (1-3/4") wide x 45mm (1-3/4") high (1/16 DIN) – reduces panel space requirements.
- DPDT hard contact for switching AC (5A @ 250V) and DC (5A @ 24V) loads.
- UL Approved, CE Marked, and RoHS compliant.

UNIQUE PRODUCT FEATURES



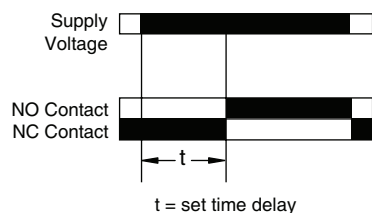
1. User selectable operating modes and timing ranges with convenient, front accessible setting dials and DIP switches.
2. DIP switches are protected by a cover to prevent the ingress of dust and other contaminants. Cover is transparent so the switch settings can be easily checked.
3. LED indication of Power ON and Relay ON – for fast and easy troubleshooting.
4. Fast and easy installation in an 8 pin socket – reduces installation time and costs. The socket can be mounted on a 35mm DIN Rail or panel, or the timing relay can be installed on an enclosure door. See Section 26 Page 24 for 8 pin sockets.
5. Terminals, connection diagrams, operating modes, and DIP switch settings are clearly marked on the timing relay for easy commissioning, wiring, and troubleshooting – reduces downtime and installation time.

SPECIFICATIONS:

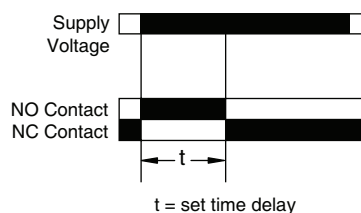
45MM SOCKET MOUNT DUAL-FUNCTION — 12 RANGE ELECTRONIC TIMING RELAYS		
	UNITS	
TIMING PERFORMANCE		
Operating Modes		ON-Delay (Energize Delay) and Interval Delay
Timing Ranges		Seconds: 1 / 3 / 10 / 30 Minutes: 1 / 3 / 10 / 30 Hours: 1 / 3 / 10 / 30
Accuracy		
Setting		± 5% of full scale
Repeat		± 0.5% of full scale or 50 msec. whichever is greater
Reset		On interruption of power
Reset Time		Less than 100 msec.
LED Indication		Power ON and Relay ON
Output Contact		DPDT (2 Changeover)
ELECTRICAL		
Operating Voltage		20 ~ 240V AC (50/60 Hz) and 12 ~ 240V DC
Operating Voltage Limits	%	85 to 110
Power Consumption	VA	2 Max.
Output Rating		5A @ 250V AC, 24V DC Resistive
ENVIRONMENTAL		
Ambient Operating Temperature	°C / °F	-30 to +50 / -22 to +122
Ambient Storage Temperature	°C / °F	-30 to +75 / -22 to +167
Humidity		95% Relative Humidity (Non-condensing)
Altitude	m / ft.	2,000 / 6,528
CONSTRUCTION		
Ingress Protection		
Terminals (Timer Body)		IP20
Exterior Bezel		IP40
Weight	g	100
	oz.	3.5
ROHS COMPLIANCE		
For RoHS Compliance documentation by product, refer to www.c3controls.com		

OPERATING MODES:

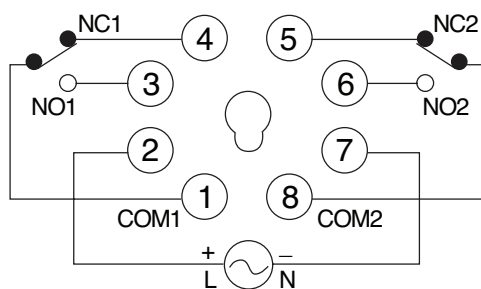
FUNCTION: ON DELAY



FUNCTION: INTERVAL DELAY



TERMINAL DIAGRAM:



IT'S EASY TO BUILD YOUR OWN ELECTRONIC TIMING RELAY

Simply pick the code number from each of the sections below and combine them to build your part number.

45mm Digital Electronic Timing Relays

ETRD – P45 MF2 – PR – 2X VI

Example: To build one of our most popular Electronic Timing Relays, the part number would be **ETRD + P45 + MF2 + PR + 2X + VI** or **ETRD-P45MF2-PR-2XMV3**

**I. RELAY TYPE**

CODE	DESCRIPTION
ETRD	Digital Electronic Timing Relay

II. FRAME SIZE AND MOUNTING METHOD

CODE	FRAME SIZE	MOUNTING METHOD
P45	45mm (1-3/4") Wide x 45mm (1-3/4") High (1/16 DIN)	Enclosure Door Mount

III. TIMING FUNCTIONS

CODE	SINGLE/DUAL/MULTI	OPERATING MODES	LIST
MF2	Multi-Function	ON-Delay (Energize Delay), Interval Delay, Cyclic ON First, Cyclic OFF First, Forward- Pause-Reverse, Instantaneous + Delayed, Timer, Batch	\$208.00

IV. TIMING RANGE

CODE	SETTABLE TIMING RANGES
PR	Seconds: 99.99 / 999.9 / 9999 Minutes : Seconds: 99:59 Minutes: 999.9 / 9999 Hours : Minutes: 99:59 Hours: 999.9 / 9999

V. OUTPUT CONTACT AND RATING

CODE	OUTPUT TYPE	OUTPUT RATING
2X	2 SPST (NO)	5A @ 250V AC, 24V DC Resistive

VI. SUPPLY VOLTAGE

CODE	DESCRIPTION	VOLTAGE RANGE
MV3	Multi-Voltage	85 ~ 270V AC/DC (AC: 50/60 Hz)
ZC	Fixed Voltage	24V DC

DISCOUNT
SCHEDULE **G**

SOME OF OUR POPULAR CONFIGURATIONS:

45MM DIGITAL ELECTRONIC TIMING RELAYS

CATALOG NUMBER	DESCRIPTION	LIST
ETRD-P45MF2-PR-2XMV3	45mm Multi-Function Digital Electronic Timing Relay, 2 NO (SPST NO Double Break), 85 ~ 270V AC/DC (AC: 50/60 Hz)	\$208.00
ETRD-P45MF2-PR-2XZC	45mm Multi-Function Digital Electronic Timing Relay, 2 NO (SPST NO Double Break), 24V DC	\$208.00

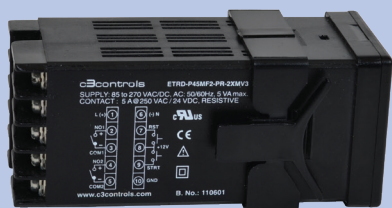
45MM DIGITAL ELECTRONIC TIMING RELAYS

The c3controls Series ETRD Digital Electronic Timing Relays offer maximum functionality and timing ranges from 0.01 seconds to 9,999 hours in a compact, 45mm (1-3/4") Wide x 45mm (1-3/4") High (1/16 DIN) housing. This industry standard dimension makes these devices interchangeable with many commonly available electronic timers. Fully programmable, this multi-function timing relay with its multi-voltage supply design (85V ~ 270V AC/DC) is an ideal solution for the most complex, timing applications. Where precision timing is required, the 0.05% repeat tripping accuracy is sure to satisfy the most demanding application requirements. The attractive, 2 line LED display, and intuitive key pad make programming and monitoring easy. Like all of c3controls other products, these devices are UL approved and CE marked, making them suitable for use in global applications. Look and see how the Series ETRD Digital Electronic Timing Relays can help you reduce your total installed costs and enhance the performance of your equipment.



- Multi-function to satisfy virtually any control application requirement: ON-Delay (Energize Delay), Interval Delay, Cyclic ON First, Cyclic OFF First, Forward-Pause-Reverse, Instantaneous + Delayed, Timer, Batch.
- Timing Ranges from 0.01 seconds to 9999 hours.
- Repeat tripping accuracy of 0.05% for the most precise and exact control application performance.
- Versions available that will accept multi-voltage supply input from 85V to 270V AC/DC, reduces inventory requirements. A fixed voltage, 24V DC version is also available.
- Compact design, only 45mm (1-3/4") wide x 45mm (1-3/4") high (1/16 DIN) – reduces panel space requirements.
- Two (2) SPST (NO) hard contacts for switching AC (5A @ 250V) and DC (5A @ 24V) loads.
- Fast and easy installation in an enclosure door.
- IP20 terminals guard against accidental contact with live parts by service personnel.
- UL Approved, CE Marked, and RoHS compliant.

UNIQUE PRODUCT FEATURES



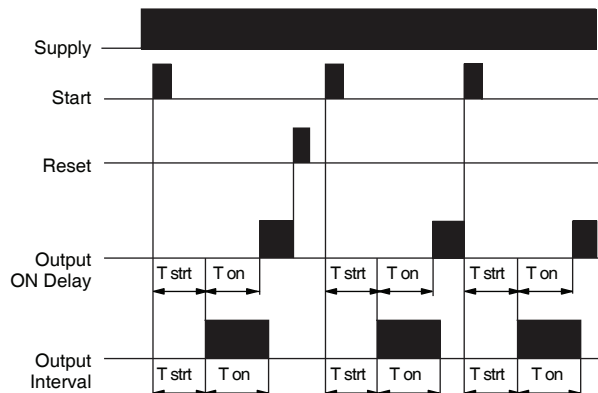
1. Operating modes and timing ranges are fully programmable, with the intuitive key pad on the front of the timing relay.
2. Advanced timing relay features include:
 - Various Reset Modes: front panel (selectable), remote, and on power interruption
 - 2 Set points
 - Start Input: gate / pulse (programmable)
 - Batch counting
 - Counting Direction: up and down
 - Memory Retention: 10 years
 - Configuration Lock: password protected
3. Easy to read two-line display:
 - Upper: 7 segment Red LED, 0.5"; 4 Digits
 - Lower: 7 segment Green LED, 0.3"; 4 Digits
4. LED indication of relay status and seconds, minutes, and hours – for fast and easy troubleshooting.
5. Terminals, connection diagrams, available supply voltages, and contact ratings are clearly marked on the timing relay for easy commissioning, wiring, and troubleshooting—reduces downtime and installation time.

SPECIFICATIONS:

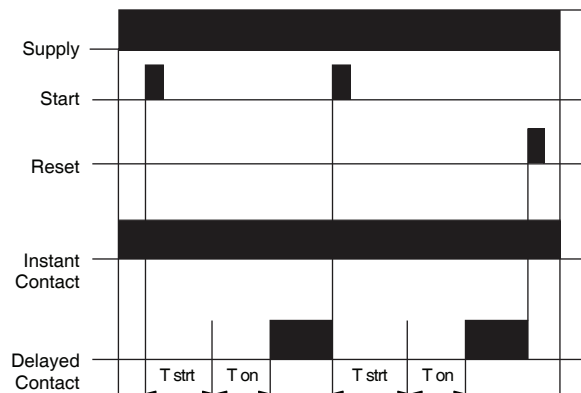
45MM DIGITAL ELECTRONIC TIMING RELAYS		
	UNITS	
TIMING PERFORMANCE		
Display		Upper: 7 segment Red LED, 0.5"; 4 Digits Lower: 7 segment Green LED, 0.3"; 4 Digits
Time Setting		Front Keypad
Operating Modes		ON-Delay (Energize Delay), Interval Delay, Cyclic ON First, Cyclic OFF First, Forward-Pause-Reverse, Instantaneous + Delayed, Timer, Batch
Set Points		2
Timing Ranges		Seconds: 99.99 / 999.9 / 9999 Minutes : Seconds: 99:59 Minutes: 999.9 / 9999 Hours : Minutes: 99:59 Hours: 999.9 / 9999
Counting Direction		Up/Down
Start Input		Gate / Pulse Start (programmable)
Accuracy		
Repeat		± 0.05% of full scale or 50 msec. whichever is greater
Reset		Front, Remote, Power Interruption (programmable)
Memory		10 Years
Configuration Lock		Password Protected (User-defined)
LED Indication		Relay 1 Status, Relay 2 Status and Timer Units: sec., min., hr.
Output Contact		2 SPST (NO)
ELECTRICAL		
Operating Voltage		85 ~ 270V AC/DC (AC: 50/60 Hz), 24V DC
Operating Voltage Limits	%	85 to 110
Power Consumption	VA	5 Max.
Output Rating		5A @ 250V AC, 24V DC Resistive
ENVIRONMENTAL		
Ambient Operating Temperature	°C / °F	0 to +50 / 32 to +122
Ambient Storage Temperature	°C / °F	-20 to +75 / -4 to +167
Humidity		95% Relative Humidity (Non-condensing)
Altitude	m / ft.	2,000 / 6,528
CONSTRUCTION		
Ingress Protection		
Terminals (Timer Body)		IP20
Exterior Bezel		IP65
Terminal Capacity		
Solid Strand	mm ²	1 x 2.5 ~ 2 x 1.5
Fine Strand	mm ²	1 x 2.5 ~ 2 x 0.75
	AWG	14 ~ 18
Tightening Torque	Nm	0.8
	Lb-in.	7.0
Weight	g	175
	oz.	6.2
ROHS COMPLIANCE		
For RoHS Compliance documentation by product, refer to www.c3controls.com		

OPERATING MODES:

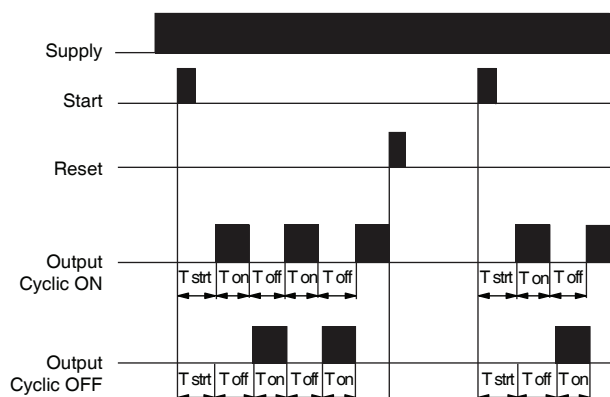
FUNCTION: ON DELAY, INTERVAL



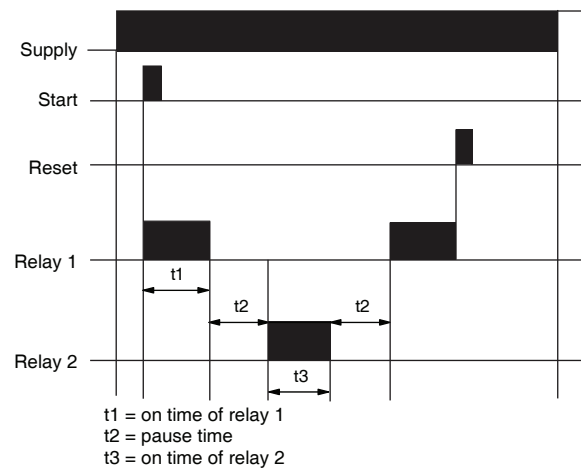
FUNCTION: INSTANTANEOUS + DELAYED AT POWER ON



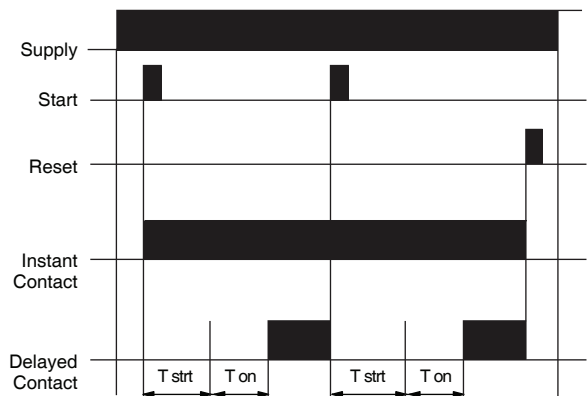
FUNCTION: CYCLIC ON FIRST, CYCLIC OFF FIRST



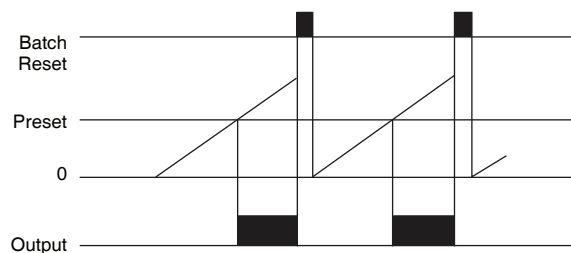
FUNCTION: MOTOR REVERSE MODE



FUNCTION: INSTANTANEOUS + DELAYED AT START PULSE

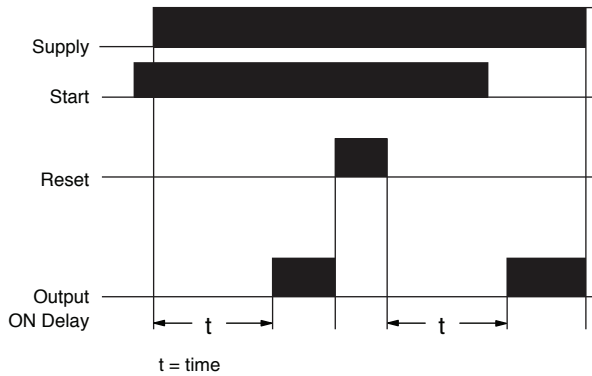


FUNCTION: BATCH MODE

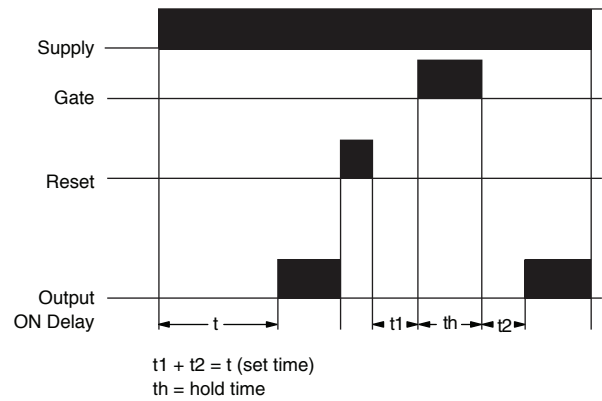


OPERATING MODES:

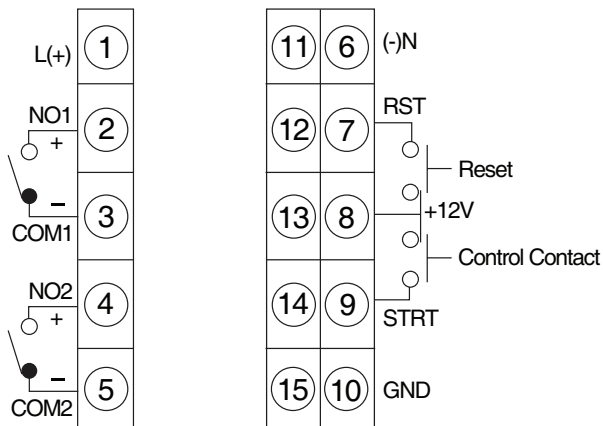
FUNCTION: TYPICAL APPLICATION OF CONTINUOUS START AND RESET IN ON DELAY



FUNCTION: TYPICAL APPLICATION OF GATE START IN ON DELAY

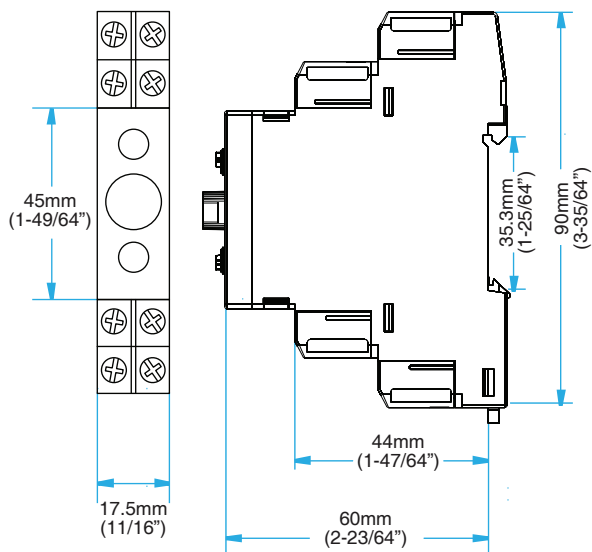


TERMINAL DIAGRAM:

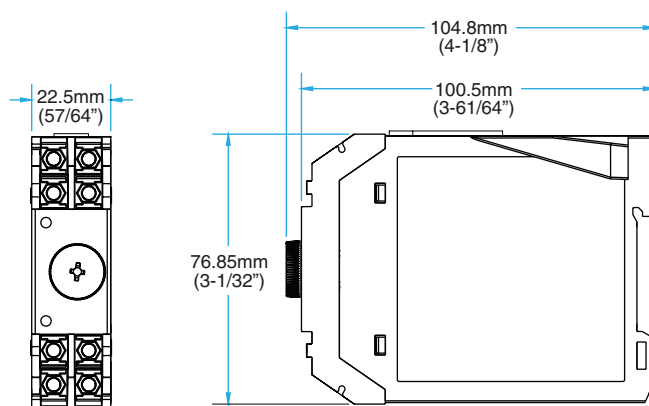


17.5MM ELECTRONIC TIMING RELAYS

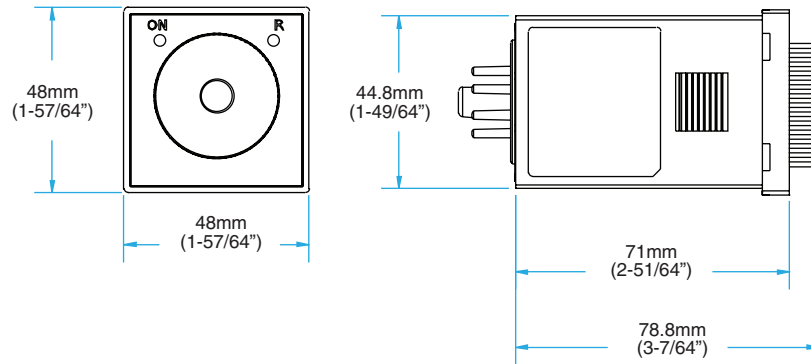
MULTI-FUNCTION



22.5MM ELECTRONIC TIMING RELAYS



45MM SOCKET MOUNTED ELECTRONIC TIMING RELAYS



DIGITAL PROGRAMMABLE ELECTRONIC TIMING RELAYS

