RELEASED FOR PUBLICATION

ALL RIGHTS RESERVED.

3

- . -

THIS DRAWING IS UNPUBLISHED

4

(C)	COPYRIGHT	_	TE Connectivity	Ltd.

D

С

В

Timing Data									
Timing Action			Delay on Open	ate or Delay on Release					
Time Delay, Fixed M83726/28, /29 and	Commercial 28C, 29C		Select from 0.1 to 600 sec for Commercial Models Select from 0.1 to 500 sec for Mil-Spec Models						
Time Delay, Adjustable – M83726/30, /31	1 and Commercial 30C, 3	310 5	Select one decade betwee	n 0.1 to 1.0 and 60 to 6	00 seconds				
Timing Accuracy (note 1)			±10% c	of Nominal Value					
Recycle Time (note 2)			50 ms, m	nax., to next cycle.					
Power Interrupts		Accuracy is n	ot affected by power inter	ruptions up to 1 ms spa	aced at least 10ms apart.				
Input Data									
Input Voltage			28 Vdc nomi	nal, range 20 - 32 Vdc					
Duty Rating			C	ontinuous					
Input Current			110 m/	Adc Max @ 25°C					
Control Voltage (applies only to Delay on	Release type)		2	0 - 32 Vdc					
Control Current			15 mAdc Max (applies	only to delay on releas	e types)				
Input Voltage Polarity Protection	1	'he timer will be inc	perative during, and unda	imaged by, reversal of t	the polarity of the input voltage				
Output Data									
Contact Form			2 Fo	rm C (DPDT)					
Contact Material			Silver Cadmi	um Oxide, Gold plated					
Contact Rating in Amps (Continuous Dut	y)								
Type of Load	Life (Min.) Cycles	28 Vdc	115 Vac 400Hz	115/200 V 400 Hz.	/ac – 3 phase 60 Hz.*				
Resistive	100 x 10 ³	10	10	10	2.5				
Inductive	20 x 10 ³	8	8	8	2.5				
Motor Lamp	100 x 10 ³ 100 x 10 ³	4 2	4	4	2.0				
* 60 Hz. loads are rate		-	-	-					
Overload Current	a at 10 x 10 byolds.		40 Ad	c; 60A, 400 Hz.					
Rupture Current				c; 80A, 400 Hz.					
Max. Contact Drop at 10A				DV: After Life 0.175V					
Electrical Data									
Electrostatic Discharge Withstand Voltage				16.000V					
Transients (note 3):									
Positive Transients				+80V					
Self-generated Transients				50V, Max.					
Spike Susceptibility			بالرجاحين بالعادمات بالمارا مترعة ميترد فيتمار فالمارجة على بالعادمات المتعار متعارك والمارحات المتراجعا مت	IV, 10 µs, Max.					
Insulation Resistance (note 4)			1,000 megohms at 500) Vdc, between each pin and	d case				
Dielectric Strength (note 4)		1,000	Vrms at 60 Hz at sea level, b	etween case and all pins c	onnected together				
Environmental Data									
Ambient Temperature Range, Operating			-55	°C to +125°C					
Altitude			80,000) feet maximum					
Shock Resistance			10	0 G's, 6 ms.					
Vibration Resistance, Sinusoidal		Z & Y E	nclosure: 30 G's, 33-300	0Hz.; X & W Enclosure:	20 G's, 33-3000Hz.				
Mechanical Data									
Approximate Weight			2.5 0	z. (71g) Max.					

NOTES

1. The accuracy requirement applies to any combination of operating temperature and voltage. Add ±10ms for timing less than one second.

2. Recycle time to assure that the next timing cycle will be completed. Units can be recycled during timing and after time-out:

Delay on operate models - Power must be OFF the input at least 10 ms. Delay on release models - Power must be ON the control terminal at least 10 ms. 3. Transient specifications are based on a maximum duty cycle of 1/50.

4. All wired terminals must be connected together during this test. Dielectric withstanding voltage and insulation resistance are measured between all mutually insulated wired terminals and between all these terminals and case.

5. Inductive loads must be diode suppressed.

Product Facts

Qualified to:

MIL-PRF-83726/28 MIL-PRF-83726/29 MIL-PRF-83726/30 MIL-PRF-83726/31

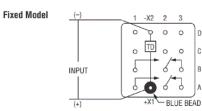
- Fixed delay on operate, fixed delay on release, adjustable delay on operate & adjustable delay on release
- Meets or exceeds electrostatic discharge MIL-STD-1686 Class Non-Sensitive
- Welded hermetically sealed enclosure occupies about 1 in³ (16.4 cm³)
- 10A, 2 form C (DPDT) output contacts

Timing Action and Terminal Wiring

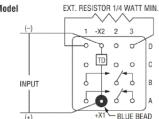
Delay On Operate:

The time delay starts on the application of input voltage to X1-X2. The timing circuit energizes the end of the time delay period.

20-30VD INPUT VOLTAGE +X1 / -X2 INPUT OFF ENERGIZED TIME OUTPUT DEENERGIZED DELAY RELAY



Adjustable Model



TD2 series time delay relays are available for delay on operate or delay on release operation. Either can be supplied as fixed or resistor adjustable types. Both military and commercial versions are offered.

These products consist of solid state timing circuits controlling our FCA-210 series relays, providing 2 Form C (DPDT) output contacts rated 10 amps. The internal timing circuit uses an R/C controlled oscillator with a programmable digital pulse counter, gating a semiconductor switch to operate the relay. Timing is independent of whether the controlling voltage is a ramp or step function.

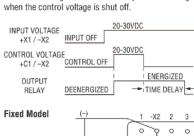
INITIAL DRAWN

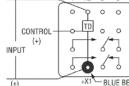
LTR

А

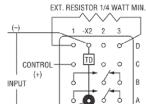
For the adjustable models the user specifies a one decade range in seconds, within which the required delay will be set. This range is programmed internally at the time of manufacture. The required delay is obtained by calculating the oscillator timing resistor as

Delay On Release: The input voltage is continuous to X1-X2. When the control voltage is applied to C1-X2 the timing circuit and the relay are both energized. The time delay starts

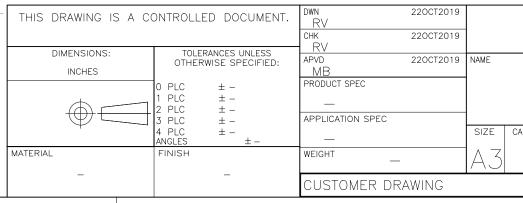




Adjustable Model



Terminal designations shown in the diagrams above are for reference only. They do not appear on the relay header.



2

I			
REVISIONS			
DESCRIPTION	DATE	DWN	APVD
	220CT2019	RV	MB

- follows and connecting it externally to terminals 1D -3D as below.
- $R_{EXT} = [(T_1 / T_0) 1] 100K$ Ohms
- $T_0 =$ Minimum time of selected decade in seconds.
- T1 = Required time delay. EXAMPLE
- Selected Range = 3-30 sec Required Time = 15 sec
- R_{EXT} = [(15/3) -1] 100K = 400K



D

С

В

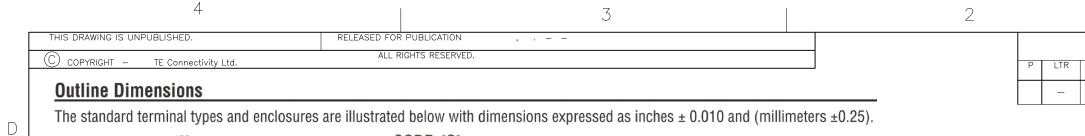
А

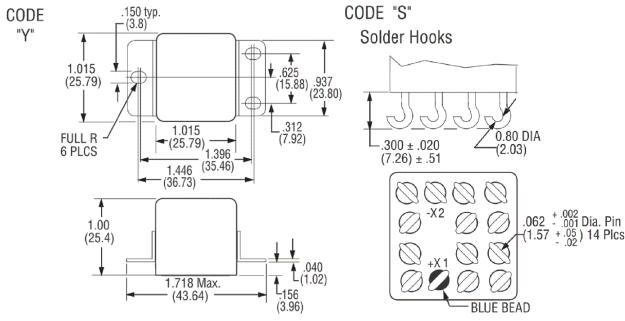
	D	
	С	
	B	
	A	
A	D	

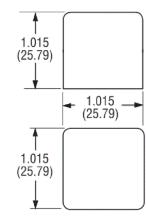
BLUE BEAD

E TE	TE Connectivity
C-TD2-SERIES	TIME DELAY RELAY

GE CODE	CODE DRAWING NO RESTRICTED TO									
_	C -td2	2–SERIE								
		^{scale} NTS	SHEET	1	OF 2	2	rev A			







1

5002	S	Typical Con
		Series:
		TD2 = Time
		Commercia
		28C = Fixed, I 29C = Fixed, I 30C = Adjusta 31C = Adjusta
		Time Delay
ant.		For fixed typ digit code. 1 number of z Example: 5
s per is the		For adjustat millisecond the range. T number of z Example: 1
		Terminals:
		S= Solder H

		2							I				
							REVISIO	NS					
			P	LTR			DESCRIPTIO	ON		DATE		DWN	APVD
				_	SEE S	SHEET 1						_	
0.010 and (millin	1000000000000000000000000000000000000				022								
,	101013 ± 0.23												
ODE 🛉													
"Z" <u>1.015</u>													
(25.79) I													
_													
	 ↓ 1.015 ↓ (25.79) 												
4													
 1.015													
(25.79)													
¥(
Part Numbe	ering System												
Mil-Spec T	/pes					Comme	ercial Types						
Typical Mil-Sp	ec Part Number	TD2	28-	5002	s	Typical C	ommercial Part	Number	TD2	28C- 1	1001	s	Y
Series:		-				Series:							
	lay relay with 2 pole, 10A outp	put						th 2 pole, 10A outp	out				
Mil-Spec Mode							ial Model:						
	(Fixed, Delay on Operate) (Fixed, Delay on Release)							e (COTS version of M e (COTS version of M					
30 = M83726/30	(Adjustable, Delay on Operate)					30C = Adju	stable, Delay on Op	perate (COTS version	of M8372	26/30)			
	(Adjustable, Delay on Release)					-		elease (COTS version		26/31)			
•	nge (Within 0.1 to 500 second	,	i					0.1 to 600 second	,	a in a face			
) types (fixed types), the delay a four-digit code. The first th			ant.				is expressed in mil digits are significa					
The fourth is t	ne number of zeros following t					number o	f zeros following	the first three.					
	2 is 50 seconds. types (adjustable types), the	dolay docado	rango i	ic.			: 5002 is 50 seco	onas. Ielay decade range	ie ovoro	cead in			
expressed in n	illiseconds in a four-digit cod	le representing	the up	per		millisecor	nds in a four-digi	it code representin	g the up	per limit o	of		
	ge. The first three digits are s s following the first three.	significant. The	fourth	is the	9		. The first three of f zeros following	digits are significar	nt. The fo	ourth is th	e		
	1 is 1 second, so the range is	0.1 to 1 secor	nd.			Example	e: 1001 is 1 secor	nd, so the range is	0.1 to 1	second.			
Terminals:					-	Terminals	3:						
	I.					O Oaldar							
S= Solder Hoo	{					S= Solder	НООК						
Note: Mil-spec	models have "Y" type enclosi	ure.				Enclosure)						
							nting Studs						
5)							ontal Flange Mou d Vertical Flange						
						Z = No M							
	A CONTROLLED DOCUME	NT DWN			220CT20	19							
		RV CHK			220CT20	19		TE TE	Conne	ctivity			
DIMENSIONS:	TOLERANCES UNLESS				220CT20	19 NAME		<u> </u>					
INCHES	OTHERWISE SPECIFIED	. <u>мв</u>	2050		2200120		C-TD2	-SERIES TIME	Dela	y rela	Y.		
<i>_</i>	0 PLC $\pm -$ 1 PLC $\pm -$	PRODUCT S	SPEC					_					
$\oplus \in$	$2 PLC \pm -$ $3 PLC \pm -$	APPLICATI	ION SPE	C									
+	$\begin{array}{c} 4 \text{ PLC} \\ 4 \text{ PLC} \\ \pm - \\ \text{ANGLES} \\ \pm - \end{array}$	_				SIZE	CAGE CODE DRAW	VING NO			RE	ESTRIC	TED TO
ATERIAL	FINISH	WEIGHT		_		TA3	- C=	-TD2-SER	IES			_	_
-	-	CUSTC						SCALE	SHE	ET _		REV	
		CUSIC	NNEK	υκά	WING			NT	S	2	^{of} 2		А

ALL DIMENSIONS ARE IN INCHES(MM)

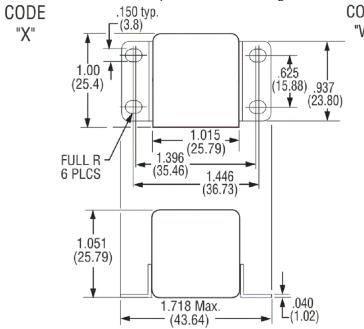
С

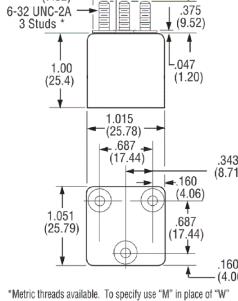
В

А

All Enclosures have cupro-nickel cans bright acid tin/lead plated after assembly to terminal headed CODE .312 (7.92)

"W"





1

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

TE Connectivity: 9-1617805-8