



KLIXON® | 2TC49 SERIES

2.5 to 10 Amps, Single Pole Aircraft Circuit Breakers

FEATURES

- Extension of the 2TC series
- Ambient Compensated
- 2.5 to 10 amps ratings
- Miniature size, lightweight
- Separable link
- Redundancy protection in hard fault, catastrophic conditions

DESCRIPTION

The Klixon® 2TC49 “Dual Safety™” circuit breaker represents a refinement in electrical control and circuit protection. The 2TC49 dual safety circuit breaker incorporates a fusible element in a standard 2TC (MS 3320) package size to provide redundant protection in hard fault conditions.

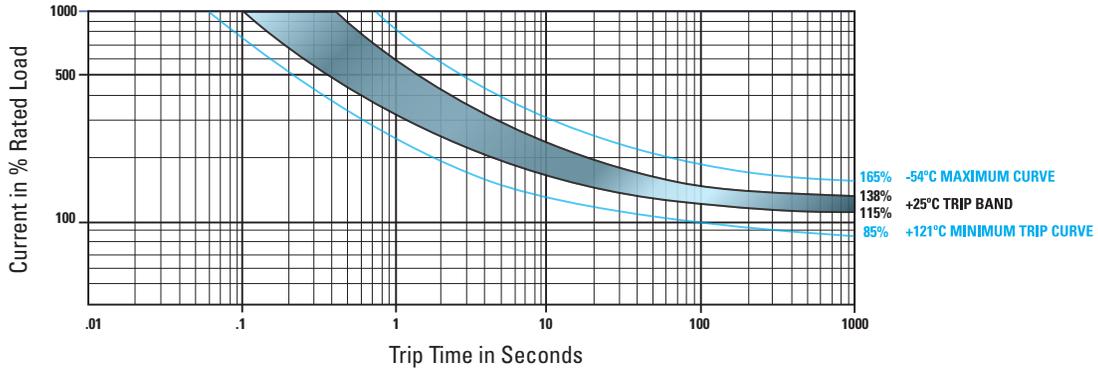
“Hard Fault” Tripping - The 2TC49 dual safety circuit breaker operates identically to a standard circuit breaker under all normal conditions, including short circuit. In the event of circumstances, which disable the internal circuit breaker mechanisms, such that the device is able to carry current, but unable to clear an overload via its normal means, the dual safety element acts as a built in fuse to provide redundant circuit protection. The key part in the dual safety design is a two part current carrying element joined by a special alloy. The geometry and material of the element determine its heating properties. The elements heating properties are slower than the bimetal sensor but faster than the smoke curve of the wire the rating is designed to protect. In the case where the standard mechanism is disabled or cannot operate normally, the separable element “fuses” open, interrupting the current. The benefits of the dual safety design result in calibrated overcurrent protection (based on fuse times) and specified post fuse dielectric properties for system and human protection.

PERFORMANCE CHARACTERISTICS	
Interrupt Current Capacity	2.5 amps : 6,000 amps @ 28 VDC 2.5 amps : 2,800 amps @ 115 VAC, 400 Hz 3-10 amps : 2,500 amps @ 115 VAC, 400 Hz
Vibration Resistance	10G minimum, 50 - 500 Hz
Mechanical Shock Resistance	Exceeds 50G's
Insulation Resistance	100 MΩ min @500VDC
Endurance	<i>120VAC 400Hz</i> 2,500 cycles inductive 5,000 resistive load <i>28VDC</i> 2,500 cycles inductive load 5,000 resistive load 10,000 cycles mechanical no load
Overload Cycling	Minimum 100 cycles @ 200% rated current
Acceleration	Exceeds 10G's
Weight	2TC49 - 25 gm max

ORDERING INFORMATION	
2TC X - X 	
2TC Style	49 = MS58091/1-XX
Amp Rating§	(2 ½, 3, 5, 7 ½, 10)

§ Amperage ratings of 2.5 to 10 amps are MS approved

TRIP CURVE - Approximate Time, Current Characteristics at 77°F (25°C)



MAX VOLTAGE DROP @ NOMINAL RATED CURRENT			
Amp Rating	Max Drop	Amp Rating	Max Drop
2.5	0.70	7.5	0.30
3	0.55	10	0.28
5	0.35	2.5 to 10 amps = MS approved ⁶	

TEMP °C / °F	MIN ULT TRIP	MAX ULT TRIP	Trip Time in Seconds		
			200%	500%	1000%
+25 / +77	115%	138%	5 to 20	.5 to 2.0	.12 to .53
-55 / -65	115%	165%	7 to 40	.6 to 3.0	.16 to .8
+121 / 250	90%	138%	3 to 13	.33 to 1.1	.07 to .3

Nominal Amperage Rating	% OVERLOAD RATED CURRENT						
	Time (Seconds)						
	400%	500%	600%	700%	800%	900%	1000%
2.5 amps	—	—	34.0	20.0	13.0	9.0	6.0
3 amps	—	—	34.0	20.0	13.0	9.0	6.0
5 amps	—	95.0	36.0	18.0	10.0	6.0	3.5
7.5 amps	69.0	28.0	14.0	8.0	4.0	3.5	2.0
10 amps	60.0	35.0	20.0	12.0	7.0	4.0	2.5

DIMENSIONAL DRAWINGS

