

Circuit Breakers for Equipment — continued

FUS110

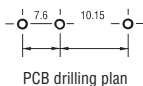
Thermal PCB Mounting – Low Profile



1410 Series



L = 28, W = 9, H = 10
Actuator L = 4.5, W = 3



PCB drilling plan

- Fast acting thermal circuit breaker for PCB mounting in a low profile housing with side fitted re-set slide
- Suitable for replacing fuses in many PCB applications
- Approved to **VDE, UL, CSA** and Circuit Breaker for Equipment to **EN 60934** (CBE)

Voltage rating 250V ac, 28Vdc Maximum interrupt current 8 In
Insulation resistance 100MΩ @ 500Vdc Typical life 300 ops @ 2 In

Current Rating	Internal Resistance	Mftrs. List No.	Order Code
1A	0.7Ω	1410-L210-L2F1-S02-1A	237-383
1.5A	0.5Ω	1410-L210-L2F1-S02-1.5A	237-395
2A	0.4Ω	1410-L210-L2F1-S02-2A	237-401
3.15A	0.06Ω	1410-L210-L2F1-S02-3.15A	237-425
5A	0.04Ω	1410-L210-L2F1-S02-5A	237-437
6.3A	0.03Ω	1410-L210-L2F1-S02-6.3A	237-449
8A	0.05Ω	1410-L210-L2F1-S02-8A	976-210

FUS219

Current Rating	Order Code	1+	10+	50+	100+	250+
1A	237-383					
1.5A	237-395					
2A	237-401					
3.15A	237-425					
5A	237-437					
6.3A	237-449					
8A	976-210					

Thermal Panel Mounting



- Panel mounting single pole press to reset thermal circuit breaker with push-on connectors
- **VDE, UL and CSA** approved
- Typical applications: battery chargers, power supplies, motors, wheelchairs, stairlifts, etc.

H = 32, W = 14, D = 27
Panel cut-out = 9.5 dia
Tabs = 6.3 x 0.8

Voltage rating 250Vac or 28Vdc
Current rating trip current is 125% of rated current
Tripping time in seconds at 21°C 100% - NO TRIP 200% - 5 to 25
300% - 1.5 to 8 400% - 1 to 5
Insulation resistance 100MΩ

Mftrs. List No. 1658-G21-02-P10 + Rating

FUS185

Current Rating	Order Code	1+	10+	50+	100+	250+
8A	597-818					
10A	597-820					
15A	597-831					
20A	597-843					
25A	597-855					

Thermal Panel Mounting-Subminiature



- Miniature thermal circuit breakers moulded in flame-retardant plastic
- Approved by **VDE, SEMKO, NEMKO, CSA, SEV ÖVE.**, and Circuit Breaker for Equipment to **EN60934**
- Single pole action is manually resettable, and has a release limit of 102/130% of the nominal current rating
- **IP54** translucent splashcover and press to reset disc indicator disc also available
- Typical applications: Battery chargers, power supplies, motors and consumer products

H = 19, W = 11, D = 27.6,
Panel cut-out = 9.5 dia.
Tabs = 2.8 0.8, 446-786 = 6.3 0.8

Voltage rating 250V ac, 48V dc Max. interrupt rating 6 In (0.1 to 2A)
Current derating 10% for rise of 10°C 5 In (3A to 10A)
Test voltage 4000V for 1 minute Calibration temperature 23°C
Insulation resistance 710MΩ (500V) Operating temperature -20°C to +60°C

Current Rating	Internal Resistance	Mftrs. List No.	Order Code
0.5A	3.3Ω ±5%	106-P30-0.5A	143-569
1A	0.9Ω ±5%	106-P30-1A	143-570
2A	0.25Ω ±20%	106-P30-2A	143-571
3A	0.11Ω ±20%	106-P30-3A	143-827
4A	0.07Ω	106-P30-4A	143-572
5A	0.05Ω	106-P30-5A	143-828
6A	0.05Ω	106-P30-6A	178-740
10A	0.05Ω	106-P10-10A	446-786
Splashproof cover		X201.285.01	178-741
Reset disc		00701	178-742

Current Rating	Order Code	1+	10+	50+	100+	250+
0.5A	.143-569					
1A	.143-570					
2A	.143-571					
3A	.143-827					
4A	.143-572					
5A	.143-828					
6A	178-740					
10A	446-786					
Splashproof cover	178-741					
Reset disc	178-742					

Thermal Panel Mounting



L = 54.3 (in set position)
Bezel = 19 19
Depth behind panel = 45

Panel cut-out (double flat) = 13.8 16 dia
Panel thickness = 0.5 to 2.0mm
Tabs = 6.3 0.8

Robust 'fuseholder size' thermal circuit breakers which while in the set position, only display the current rating. When tripped, the button pops out, clearly showing that a failure has occurred. In this position, the unique reflective button gives the appearance of being illuminated and clearly shows the words 'press reset'. Available in 3A to 15A ratings, with values 7.5A and below being suited to inductive loads, and with 10A and above being suited to resistive loads. Approved to **UL and CSA**.

Voltage rating 3 – 10A 240V ac, 50V dc Breaking capacity 1000A
15A 120V ac, 50V dc Dielectric strength 1500V ac
Max. interrupt rating 6-10 In

These devices will carry the rated current (I_R) without tripping. Between 1.01 I_R and 1.34 I_R they may trip. At 1.35 I_R they will trip within the hour, thereafter times as below:-

2 I_R = 2.2s – 15s 4 I_R = 0.55s – 1.8s 6 I_R = 0.27s – 0.8s 10 I_R = 0.12s – 0.4s
3 I_R = 1.0s – 4.5s 5 I_R = 0.35s – 1.1s 8 I_R = 0.15s – 0.6s

The following derating factors must be applied:-

0°C = 0.83, 25°C = 1.0, 38°C = 1.13, 49°C = 1.31, 60°C = 1.60.

Mftrs. List No. 2000-001-030 = 106-862, 2000-001-050 = 106-863, 2000-001-075 = 106-864,
2002-001-100 = 106-865, 2002-001-150 = 106-866.

FUS164X

Current Rating	Order Code	1+	5+	25+	100+	250+
3A	.106-862					
5A	.106-863					
7.5A	.106-864					
10A	.106-865					
15A	.106-866					

Thermal Panel Mounting with Switch



L = 66.6 (in OFF position)
Bezel = 19 19
Depth behind panel = 47.5
Panel cut-out (double flat) = 13.8 16 dia
Panel thickness = 0.8 to 1.6
Tabs = 6.3 0.8

- Single pole 'fuseholder size' thermal circuit breaker featuring a unique latching push button operation which allows the breaker to be switch ON or OFF
- Two colour button also provides visual indication by showing a white band when the breaker is in the 'OFF' or 'tripped' position
- Approved to **VDE, UL, CSA, LRoS, BV, SEMKO** and Circuit Breaker for Equipment to **EN60934**
- Typical applications: Motors, transformers, solenoids, office machines and instrumentation

Voltage rating 250V ac, 28V dc Typical life expectancy 10,000 ops (0.5 to 3A)
6000 ops (5 to 16A)
Dielectric strength Max. interrupt current
operating area 4000V ac 8 In (0.5 to 3A)
mounting area 2000V ac 10 In (5 to 16A)
Insulation resistance >100MΩ Operating temperature 0°C to +55°C
Tripping Time @ 23°C
Rated Current 2 In 3In 4 In 5 In 6 In 8 In 10 In
0.5 to 5A 13-46s 5.8-13s 3.9-7.5s 3.0-5.5s 2.2-4.4s 1.3-3.3s 0.9-2.6s
10A, 16A 10-38s 4.3-7.5s 2.5-4.4s 1.3-3.2s 0.8-2.1s 0.56-1.0s 0.43-0.7s

Mftrs. List No. 110-F112-P1M1-xxA, where xx = current rating in amps.

FUS230X

Current Rating	Internal Resistance	Order Code	1+	10+	25+	100+
0.5A	4.5	248-460				
1A	1.1	248-472				
2A	0.25	248-484				
3A	0.13	248-496				
5A	0.05	248-502				
10A	0.02	248-514				
16A	0.02	248-526				