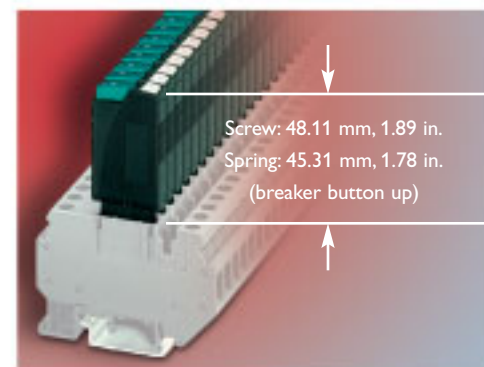


# Thermal Miniature Circuit Breaker TCP

The TCP is a compact circuit breaker designed to interrupt an electric current under overload conditions. The breaker is available to handle ten nominal currents ranging from 0.10 A to 10 A.

The TCP breaker is trip-free and can be easily reset after a current interruption by pushing the reset button. The breaker can be plugged into UK 6-FSI/C or ST 4-FSI/C fuse base terminal blocks for convenient DIN-rail mounting.



	[V AC]	[V DC]
Nominal Voltage	250	65

Technical Data	Type	Order No.	Pcs./Pkt.
<b>Thermal Circuit Breaker</b>	Nominal current [A]		
plugged into UK 6-FSI/C or ST 4-FSI/C base terminal blocks	0.10	TCP 0.10	07 12 10 7
	0.25	TCP 0.25	07 12 12 3
	0.5	TCP 0.5	07 12 15 2
	1.0	TCP 1	07 12 19 4
	2.0	TCP 2	07 12 21 7
	3.0	TCP 3	07 12 23 3
	4.0	TCP 4	07 12 25 9
	6.0	TCP 6	07 12 27 5
	8.0	TCP 8	07 12 29 1
	10.0	TCP 10	07 12 31 4

<b>(1) Flat Zack strip</b> , unprinted, 10-section for labeling the upper marker grooves	<b>ZBF 5:WH: UNPRINTED</b>	08 08 64 2	10
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Technical data in accordance with IEC/DIN VDE			
Nominal voltage	[V AC/DC]	250/65	
Nominal current	[A]	0.10-10	
Ambient temperature	°C	-20...+60	
Interrupting capacity			
for nominal currents of 0.10 - 4 A	[A]	6x rated current	
for nominal currents of 6 - 10 A	[A]	8x rated current	
UL 1077		AC 250 V: 2,000 A / DC 65 V: 200 A	
Insulating material			
Inflammability class in accordance with UL 94		Polymide (PA), non-reinforced	
Approval data (UL and c/UL)	[V AC] / [V DC] / [A]	250 AC / 65 DC / 0.1-10 A	

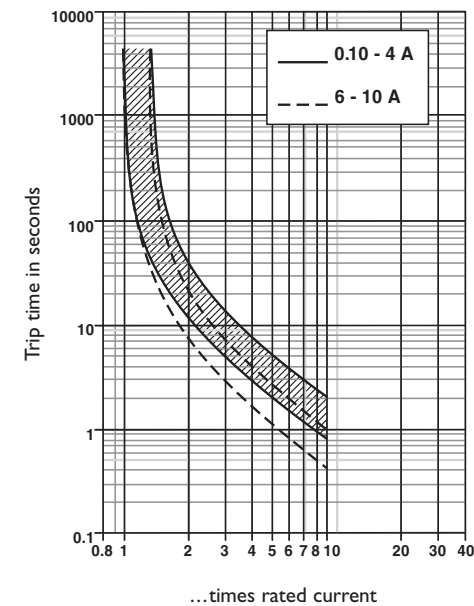
## Thermal Miniature Circuit Breaker TCP compared to Glass Fuses

TCP Feature	TCP	Glass Fuses
Convenience	Resettable when overload is resolved	Storing, ordering and locating issues
Deterioration	Virtually no aging	Age with eventual failure at normal loads
Life expectancy	3,000 operations at current rating, 500 operations at 2x current rating	Unknown
Interruption detection	Visual identification	Status not determined until fuse is removed from its holder
ON/OFF capability	Switch duty actuator allows product to operate as an electrical switch	Not applicable
Hot-swappable	May be removed or replaced under load	Not applicable
Controlled trip	Avoids nuisance trips due to high in-rush currents	Not applicable

## Technical data for TCP

### Time/current characteristic curve

Ambient temperature 23°C

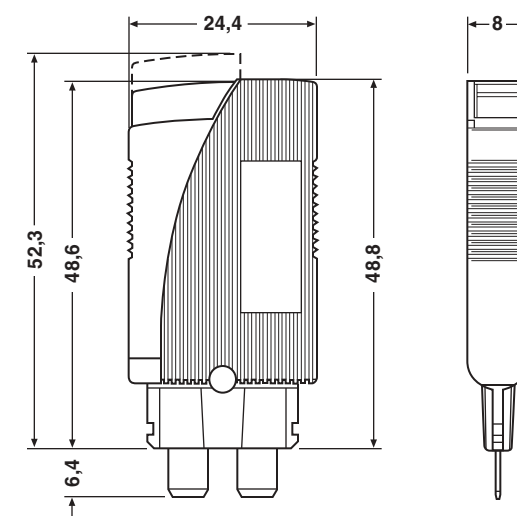


The time/current characteristic curve depends on the ambient temperatures. To avoid a premature or late switch-off, the nominal current of the circuit breaker must be multiplied with a temperature factor:

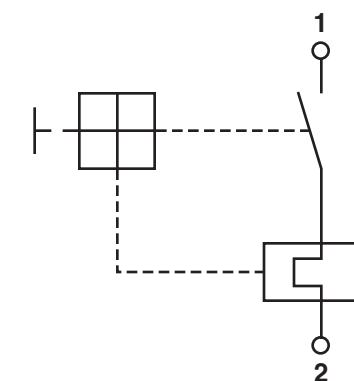
Ambient temperature °C	-20	-10	0	23	40	50	60
Temperature factor	0.76	0.84	0.92	1	1.08	1.16	1.24

**NOTE:**  
If the TCP circuit breakers are mounted side-by-side without a minimum of 1 mm of space for air movement, then do not exceed 80% of their rating.

### Dimensional drawing



### Switching diagram



### Nominal currents and internal resistances

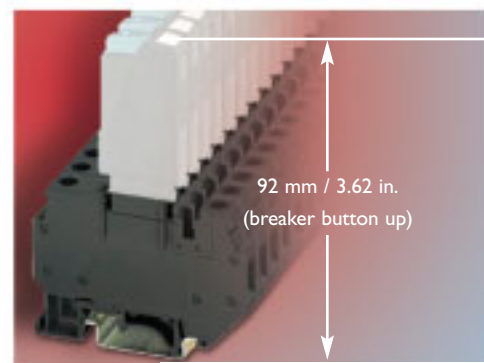
Nominal current [A]	Internal resistance [Ω]
0.1	81
0.25	14
.5	3.4
1	0.9
2	0.25
3	0.11
4	0.07
6	≤ 0.05
8	≤ 0.05
10	≤ 0.05

# Thermal Miniature Circuit Breaker TCP

## Base terminal block with screw connection for accommodating the TCP circuit breaker UK 6-FSI/C

(IEC)	rigid	flexible			
[mm <sup>2</sup> ]	solid	stranded	AWG	[A]	[V]
Connection data	0.2-10	0.2-6	24-8	*	250*

\*The current and voltage are determined by the thermal circuit breaker



Technical Data	Type	Order No.	Pcs./Pkt.
<b>Fuse Terminal Block</b> with universal foot for mounting on NS 32 or NS 35 DIN-rails	<b>UK 6-FSI/C</b>	<b>31 18 20 3</b>	<b>50</b>
<b>Fuse Terminal Block</b>	Light indicator/voltage [V] Current [mA]		
as shown above with light indicator	LED red 12V DC 2.0 A	<b>UK 6-FSI/C-LED 12</b>	<b>30 01 92 5</b>
	LED red 24V DC 2.0 A	<b>UK 6-FSI/C-LED 24</b>	<b>30 01 93 8</b>
<b>(1) Fixed Bridge</b> for cross connections in the terminal center, screw heads with insulating collar, 10 position, divisible, with 10 screws	<b>FBI 10-8</b> $i_{max}:34 A$	<b>02 03 26 3</b>	<b>50</b>
<b>(2) Separating Plate</b> for electrical separation of neighboring bridges, can be fitted later, no loss of pitch	<b>TS-KK 3</b>	<b>27 70 21 5</b>	<b>100</b>
<b>(3) Zack Strip 10</b> section, white	<b>ZB 8: UNPRINTED</b>	<b>10 52 00 2</b>	<b>10</b>
<b>(4) Screwdriver</b>	<b>SZS 1.0 x 4.0</b>	<b>12 05 06 6</b>	<b>10</b>
<b>Dimensions</b>			
Width/length	[mm / in.]	Width: 8.2 mm / 0.32 in.; Length: 64 mm / 2.52 in.	
Height (NS 35:7.5/NS 35:15/NS 32)	[mm / in.]	NS 35:7.5: 7.5 mm / 0.30 in.; NS 35:15: 15 mm / 0.60 in.	
<b>Technical data in accordance with IEC/DIN VDE</b>			
Fuse type ISO/DIS 8820/DIN 72-581-3	-	C	
Maximum current with single arrangement <sup>1)</sup>	[A]	30	
<b>Maximum power dissipation</b>			
Rated surge voltage/contamination class	[kV]/-	4/3	
Surge voltage category/insulation material group	-/-	III/I	
<b>Connection capacity</b>			
Stranded with ferrule without/with plastic sleeve	[mm <sup>2</sup> / in. <sup>2</sup> ]	Without: 0.25-6 mm <sup>2</sup> / 0.00039-0.00930 in. <sup>2</sup> ; With: 0.25-4 mm <sup>2</sup> / 0.00039-0.00620 in. <sup>2</sup>	
<b>Multi-conductor connection (2 cond. with same cross section)</b>			
Solid/stranded	[mm <sup>2</sup> ]	Solid: 0.2-2.5; Stranded: 0.2-2.5	
Stranded with ferrule without plastic sleeve	[mm <sup>2</sup> ]	0.25-2.5	
Stranded with TWIN ferrule with plastic sleeve	[mm <sup>2</sup> ]	0.5-4	
<b>Stripping length</b>	[mm]	10	
<b>Internal cylindrical gauge (IEC 60 947-1)</b>		A5	
<b>Screw thread/torque</b>	-/[Nm] / in. lbs	M 4/1.5-1.6 / M 4/13.3-14.2	
<b>Insulation material</b>			
Inflammability class in accordance with UL 94		V0	
Approval data (UL and c/UL) <sup>2)</sup>	UL: [V]/[A]/AWG	300/30/26-8	
Nom. Voltage/ nom. current/conduc. sizes	c-UL: [V]/[A]/AWG	300/30/26-8	

<sup>1)</sup> Special arrangement on request

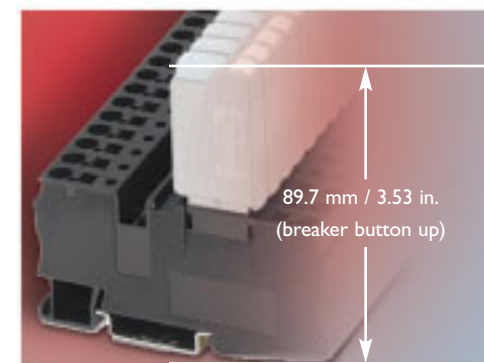
<sup>2)</sup> File number E 140459

# Thermal Miniature Circuit Breaker TCP

## Base terminal block with spring cage connection for accommodating the TCP circuit breaker ST 4-FSI/C

(IEC)	rigid	flexible			
[mm <sup>2</sup> ]	solid	stranded	AWG	[A]	[V]
Connection data	0.2-6	0.2-4	24-10	*	400*

\*The current and voltage are determined by the thermal circuit breaker



Technical Data	Type	Order No.	Pcs./Pkt.
<b>Fuse Terminal Block</b> with universal foot for mounting on 35 DIN-rail	<b>ST 4-FSI/C</b>	<b>30 36 37 2</b>	<b>50</b>
<b>Fuse Terminal Block, <sup>1)</sup></b>	Light indicator/voltage [V] Current [mA]		
as shown above with light indicator	LED red 12V DC 2.0 A	<b>ST 4-FSI/C-LED12</b>	<b>30 36 49 5</b>
	LED red 24V DC 2.0 A	<b>ST 4-FSI/C-LED 24</b>	<b>30 36 50 5</b>
<b>(1) Insulating stop sleeve</b> , prevents unintentional clamping of the insulation in the case of smaller cross sections			
Cross section range	0.25-0.5 mm <sup>2</sup> /0.0039-0.0077 in. <sup>2</sup>	Gray	<b>ISH 4/0.5</b>
	0.75-1 mm <sup>2</sup> /0.00116-0.00155 in. <sup>2</sup>	Black	<b>ISH 4/1</b>
<b>(2) Plug-in bridge</b> , for cross connections in the terminal center			
	2-position	<b>FBS 2-8</b> $i_{max}:41 A$	<b>30 30 28 4</b>
	3-position	<b>FBS 3-8</b> <b>41A</b>	<b>30 30 29 7</b>
	4-position	<b>FBS 4-8</b> <b>41A</b>	<b>30 30 30 7</b>
	5-position	<b>FBS 5-8</b> <b>41A</b>	<b>30 30 31 0</b>
	10-position	<b>FBS 10-8</b> <b>41A</b>	<b>30 30 32 3</b>
<b>(3) Test adapter</b> , for 4 mm Ø test adapter PS and 4 mm safety test plugs, making contact in the bridge shaft			
		<b>PAI 4</b>	<b>30 30 92 5</b>
<b>(4) 2.3 mm Ø test plus <sup>2)</sup></b> , consisting of a metal part and a red insulating sleeve		<b>MPS-RD</b>	<b>02 01 55 3</b>
<b>(5) Modular test plug</b> , can be labeled with ZBFM 8		<b>PS 8</b>	<b>30 31 00 5</b>
<b>(6) Zack marker sheet</b> , flat, 50-section, for labeling in the outer marker grooves		<b>ZBFM 8/WH: UNPRINTED</b>	<b>08 00 73 4</b>
<b>(7) Zack strip</b> , 10 section, for labeling in the terminal center		<b>ZB 8: UNPRINTED</b>	<b>10 52 00 2</b>
<b>(8) Screwdriver</b> , for actuating the spring cage		<b>SZF 1 - 0.6x3.5</b>	<b>12 04 51 7</b>
<b>Dimensions</b>			
Width/length	[mm / in.]	Width 8.2 mm / 0.32 in. / Length 86.5 mm / 3.4 in.	
Height (NS 35:7.5/NS 35:15)	[mm / in.]	NS 35:7.5: 7.5 mm/0.30 in./NS 35:15: 15 mm/0.60 in.	
<b>Technical data in accordance with IEC/DIN VDE</b>			
Fuse type ISO/DIS 8820/DIN 72 581-3	-	C	
Maximum current with single arrangement	[A]	30	
<b>Maximum power dissipation</b>			
Rated surge voltage/contamination class	[kV] / -	6/3	
Surge voltage category/insulation material group	- / -	III/I	
<b>Connection capacity</b>			
Stranded with ferrule without/with plastic sleeve	[mm <sup>2</sup> ] / AWG	0.25-4 mm <sup>2</sup> / AWG: 24-12	
Stranded with TWIN ferrule with plastic sleeve	[mm <sup>2</sup> ] / AWG	0.5-1 mm <sup>2</sup> / AWG: 20-18	
<b>Stripping length</b>	[mm / in.]	10 mm / 0.39 in.	
<b>Internal cylindrical gauge (IEC 60 947-1)</b>		A4	
<b>Insulation material</b>			
Inflammability class in accordance with UL 94		Polyamide (PA), non-reinforced	
Approval data (UL and c/UL)	UL: [V] / [A] / AWG	300/30/24-10	
Nominal voltage/nominal current/conduc. sizes	c-UL: [V] / [A] / AWG	300/30/24-10	

<sup>1)</sup> If the fuse is defective, the downstream circuit is not off-load

<sup>2)</sup> Further colors are available on request