

# Electronic device circuit breaker - PTCB E1 24DC/2A NO - 2909903

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Single-channel electronic circuit breaker for protecting 24 V DC loads against overload and short circuit. Simple potential distribution using components from the CLIPLINE complete terminal block system. With fixed nominal current. For installation on DIN rails.

## Why buy this product

- ✔ Simple application setup due to bridging option to CLIPLINE complete terminal block system
- ✔ More space in the control cabinet: narrowest protection on just 6 mm width
- ✔ Individual setup for suitable protection, exactly according to your requirements
- ✔ Optimum protection for cables and sensors as well as NEC Class 2 circuits by means of an additional internal output fuse



## Key Commercial Data

Packing unit	1 STK
GTIN	
GTIN	4055626408712

## Technical data

### Dimensions

Height	105.8 mm
Width	6.2 mm
Depth	55.6 mm

### Ambient conditions

Ambient temperature (operation)	-25 °C ... 60 °C
Ambient temperature (storage/transport)	-40 °C ... 70 °C
Humidity test	96 h, 95% RH, 40°C
Altitude	≤ 2000 m (amsl (above mean sea level))
Shock (operation)	30g (IEC 60068-2-27, Test Ea)
Vibration (operation)	10 Hz ... 59.6 Hz (Amplitude ±0.35 mm; in accordance with IEC 60068-2-6, Test Fc)
	59.6 Hz ... 150 Hz (Acceleration 5g; in accordance with IEC 60068-2-6, Test Fc)

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## Technical data

### Ambient conditions

Degree of protection	IP20
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### General

Flammability rating according to UL 94	V-0
Mounting type	DIN rail: 35 mm
Color	traffic grey A RAL 7042
Number of positions	1
Protection class	III
Type	DIN rail module, one-piece

### Electrical data

Fuse type	electronic
Rated surge voltage	0.5 kV
Operating voltage	18 V DC ... 30 V DC
Rated voltage	24 V DC
Rated current $I_N$	24 A DC (Total current input)
	2 A DC (Channel current output)
Measuring tolerance I	± 15 %
Feedback resistance	max. 35 V DC
Fail-safe element	4 A DC (per output channel)
Efficiency	> 99 %
Closed circuit current $I_0$	typ. 12 mA
Power dissipation	typ. 0.3 W (No-load operation)
	< 0.8 W (Nominal operation)
Module initialization time	1 s
Waiting time after switch off of a channel	5 s (at overload / short circuit)
Temperature derating	21 A (Total current at 60°C)
	24 A (Total current at 50°C)
	2 A (Channel current at 60°C)
	2 A (Channel current at 50°C)
Tripping method	E (electronic)
Required backup fuse	not required, integrated failsafe element
Dielectric strength	max. 35 V DC (Load circuit)
Voltage drop	0.06 V (at 2 A)
Contact type	without electrical isolation
MTBF (IEC 61709, SN 29500)	28571428 h (at 25°C with 21% load)
	14084507 h (at 40°C with 34.25% load)
	2053388 h (at 60°C with 100% load)
Shutdown time load circuit	≤ 10 ms (for short circuit > 2.0 x $I_N$ )
	1 s (1.2 ... 2.0 x $I_N$ )
Undervoltage shutdown load circuit	≤ 17.8 V DC (active)

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## Technical data

### Electrical data

	≥ 18.8 V DC (inactive)
Surge voltage shutdown load circuit	≥ 30.5 V DC (active)
	≤ 29.5 V DC (inactive)
Max. capacitive load load circuit	20000 µF (Depending on the current setting and the short-circuit current available)

### Remote indication contact

Connection name	Remote indication circuit
Switching function	N/O contact
Stripping length	10 mm
Conductor cross section solid	0.2 mm <sup>2</sup> ... 4 mm <sup>2</sup>
Conductor cross section AWG	24 ... 14
Conductor cross section, flexible, with ferrule, with plastic sleeve	0.2 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>
Conductor cross section flexible, with ferrule without plastic sleeve	0.2 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>
DC operating voltage	0 V DC ... 30 V DC
DC operating current	100 mA DC

### Connection data

Connection name	Main circuit IN+
Connection method	Push-in connection
Stripping length	10 mm
Conductor cross section solid	0.2 mm <sup>2</sup> ... 4 mm <sup>2</sup>
Conductor cross section AWG	24 ... 12
Conductor cross section, flexible, with ferrule, with plastic sleeve	0.2 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>
Conductor cross section flexible, with ferrule without plastic sleeve	0.2 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>
Connection name	Main circuit IN-
Connection method	Push-in connection
Stripping length	10 mm
Conductor cross section solid	0.2 mm <sup>2</sup> ... 4 mm <sup>2</sup>
Conductor cross section AWG	24 ... 12
Conductor cross section, flexible, with ferrule, with plastic sleeve	0.2 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>
Conductor cross section flexible, with ferrule without plastic sleeve	0.2 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>
Connection name	Main circuit OUT
Connection method	Push-in connection
Stripping length	10 mm
Conductor cross section solid	0.2 mm <sup>2</sup> ... 4 mm <sup>2</sup>
Conductor cross section AWG	24 ... 12
Conductor cross section, flexible, with ferrule, with plastic sleeve	0.2 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>
Conductor cross section flexible, with ferrule without plastic sleeve	0.2 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>

### Standards and Regulations

Standards/specifications	EN 61000-6-2
	EN 61000-6-3

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## Technical data

### Standards and Regulations

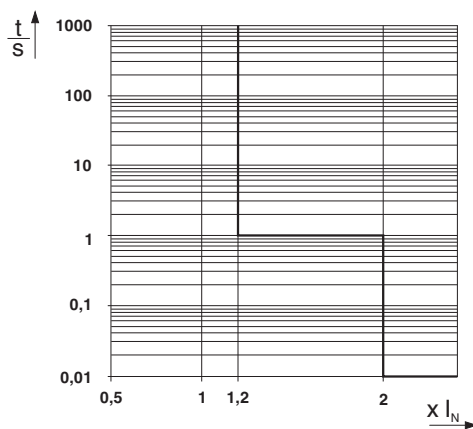
	EN 60068-2-78
	EN 50178
	EN 60068-2-6
	EN 60068-2-27
	UL 508
	UL 2367
	UL 1310 Class 2 Power Units

### Environmental Product Compliance

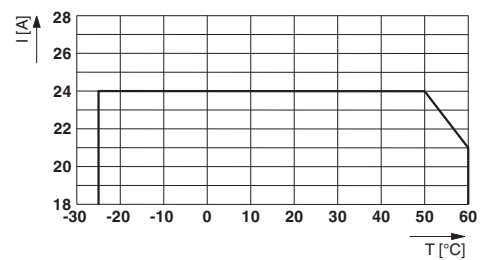
REACH SVHC	Lead 7439-92-1
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## Drawings

Diagram



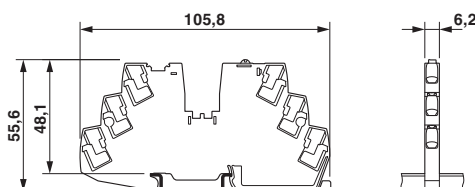
Diagram



Total current input

Trigger characteristic in the DC range

Dimensional drawing



## Approvals

Approvals

# Electronic device circuit breaker - PTCB E1 24DC/2A NO - 2909903

## Approvals

Approvals





UL Recognized / UL Listed / cUL Listed / cULus Listed

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Ex Approvals

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## Approval details

UL Recognized		<a href="http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm">http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm</a>	FILE E 317172
UL Listed		<a href="http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm">http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm</a>	FILE E 123528
cUL Listed		<a href="http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm">http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm</a>	FILE E 123528
cULus Listed			

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