

Electronic device circuit breaker - PTCB E1 24DC/4A NO - 2909906

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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

RoHS

Key Commercial Data

Packing unit	1 STK
GTIN	 4 055626 408736
GTIN	4055626408736
Weight per Piece (excluding packing)	27.580 g
Custom tariff number	85363010
Country of origin	Germany

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)
Degree of protection	IP20

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Technical data

General

Flammability rating according to UL 94	V-0
Mounting type	DIN rail: 35 mm
Color	traffic grey A RAL 7042
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) 4 A DC (Channel current output)
Measuring tolerance I	typ. 15 %
Rated insulation voltage U _i	33 V (Load circuit)
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) < 1.3 W (Nominal operation)
Module initialization time	1 s
Waiting time after switch off of a channel	5 s (of overload / short circuit)
Temperature derating	21 A (Total current at 60°C) 24 A (Total current at 50°C) 4 A (Channel current at 60°C) 4 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
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) ≥ 18.8 V DC (inactive)
Surge voltage shutdown load circuit	≥ 30.5 V DC (active) ≤ 29.5 V DC (inactive)

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Technical data

Electrical data

Max. capacitive load load circuit	20000 μ F (Depending on the current setting and the short-circuit current available)
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Connection data

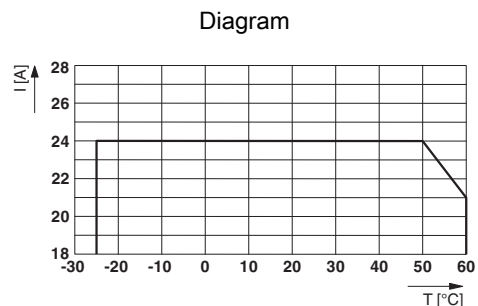
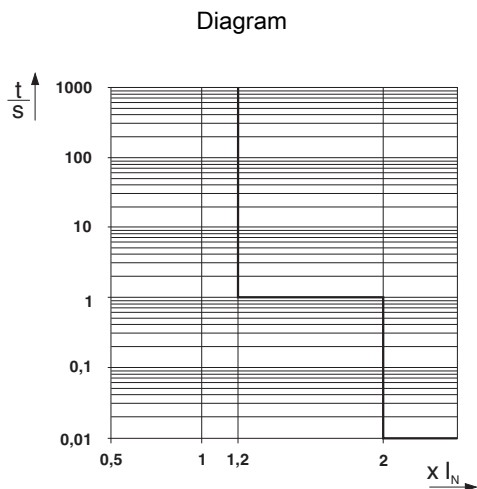
Connection name	Main circuit IN+
Connection method	Push-in connection
Stripping length	10 mm
Conductor cross section solid	0.2 mm ² ... 4 mm ²
Conductor cross section AWG	24 ... 12
Conductor cross section, flexible, with ferrule, with plastic sleeve	0.2 mm ² ... 2.5 mm ²
Conductor cross section flexible,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

Standards and Regulations

Standards/specifications	EN 61000-6-2
	EN 61000-6-3
	EN 60068-2-78
	EN 50178
	EN 60068-2-6
	EN 60068-2-27
	UL 508
	UL 2367

Drawings

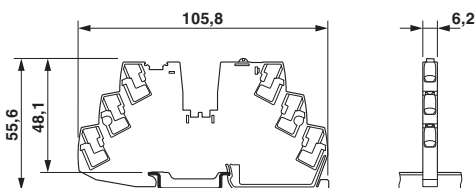
Electronic device circuit breaker - PTCB E1 24DC/4A NO - 2909906



Total current input

Trigger characteristic in the DC range

Dimensional drawing



Classifications

eCl@ss

eCl@ss 8.0	27141116
eCl@ss 9.0	27141116

ETIM

ETIM 5.0	EC000899
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Approvals

Approvals

Approvals

UL Recognized / UL Listed / cUL Listed / cULus Listed

Ex Approvals

Approval details

Electronic device circuit breaker - PTCB E1 24DC/4A NO - 2909906

Approvals

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

Accessories

Accessories

Device protection

Type 3 surge protection device - TTC-6P-T3-24DC-PT-I - 1027586



Type 3 surge protection, consisting of protective plug and base element, with integrated status indicator for 24 V DC power supplies.

Feed-through terminal block

Feed-through terminal block - PT 4 - 3211757



Feed-through terminal block, nom. voltage: 800 V, nominal current: 32 A, connection method: Push-in connection, number of connections: 2, cross section: 0.2 mm² - 6 mm², AWG: 24 - 10, width: 6.2 mm, height: 35.3 mm, color: gray, mounting type: NS 35/7,5, NS 35/15

Feed-through terminal block - ST 4 - 3031364



Feed-through terminal block, nom. voltage: 800 V, nominal current: 32 A, connection method: Spring-cage connection, number of connections: 2, cross section: 0.08 mm² - 6 mm², AWG: 28 - 10, width: 6.2 mm, color: gray, mounting type: NS 35/7,5, NS 35/15

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Accessories

Feed-through terminal block - QTC 2,5 - 3206416



Feed-through terminal block, nom. voltage: 800 V, nominal current: 24 A, connection method: Quick connection, number of connections: 2, cross section: 0.5 mm² - 2.5 mm², AWG: 20 - 14, width: 6.2 mm, color: gray, mounting type: NS 35/7,5, NS 35/15

Feed-through terminal block - PT 2,5 - 3209510



Feed-through terminal block, nom. voltage: 800 V, nominal current: 24 A, connection method: Push-in connection, number of connections: 2, number of positions: 1, cross section: 0.14 mm² - 4 mm², AWG: 26 - 12, width: 5.2 mm, height: 35.3 mm, color: gray, mounting type: NS 35/7,5, NS 35/15

Feed-through terminal block - ST 2,5 - 3031212



Feed-through terminal block, nom. voltage: 800 V, nominal current: 24 A, connection method: Spring-cage connection, number of connections: 2, cross section: 0.08 mm² - 4 mm², AWG: 28 - 12, width: 5.2 mm, color: gray, mounting type: NS 35/7,5, NS 35/15

Fast connection terminal block - QTC 1,5 - 3205019



Fast connection terminal block, nom. voltage: 800 V, nominal current: 17.5 A, connection method: Quick connection, number of connections: 2, cross section: 0.25 mm² - 1.5 mm², AWG: 24 - 16, width: 5.2 mm, color: gray, mounting type: NS 35/7,5, NS 35/15

Feed-through terminal block - PT 10 - 3212120



Feed-through terminal block, nom. voltage: 1000 V, nominal current: 57 A, connection method: Push-in connection, number of connections: 2, cross section: 0.5 mm² - 16 mm², AWG: 20 - 6, width: 10.2 mm, height: 49.5 mm, color: gray, mounting type: NS 35/7,5, NS 35/15

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Accessories

Feed-through terminal block - ST 10 - 3036110



Feed-through terminal block, nom. voltage: 1000 V, nominal current: 57 A, connection method: Spring-cage connection, number of connections: 2, cross section: 0.2 mm² - 16 mm², AWG: 24 - 6, width: 10.2 mm, color: gray, mounting type: NS 35/7,5, NS 35/15

Jumper

Plug-in bridge - FBS 2-6 - 3030336



Plug-in bridge, pitch: 6.2 mm, width: 10.7 mm, number of positions: 2, color: red

Plug-in bridge - FBS 3-6 - 3030242



Plug-in bridge, pitch: 6.2 mm, width: 16.9 mm, number of positions: 3, color: red

Plug-in bridge - FBS 4-6 - 3030255



Plug-in bridge, pitch: 6.2 mm, width: 23.1 mm, number of positions: 4, color: red

Plug-in bridge - FBS 5-6 - 3030349



Plug-in bridge, pitch: 6.2 mm, width: 29.3 mm, number of positions: 5, color: red

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Accessories

Plug-in bridge - FBS 10-6 - 3030271



Plug-in bridge, pitch: 6.2 mm, width: 60.3 mm, number of positions: 10, color: red

Plug-in bridge - FBS 20-6 - 3030365



Plug-in bridge, pitch: 6.2 mm, width: 122.3 mm, number of positions: 20, color: red

Plug-in bridge - FBS 50-6 - 3032224



Plug-in bridge, pitch: 6.2 mm, width: 308.3 mm, number of positions: 50, color: red

Plug-in bridge - FBS 2-6 BU - 3036932



Plug-in bridge, pitch: 6.2 mm, width: 10.7 mm, number of positions: 2, color: blue

Plug-in bridge - FBS 3-6 BU - 3036945



Plug-in bridge, pitch: 6.2 mm, width: 16.9 mm, number of positions: 3, color: blue

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Accessories

Plug-in bridge - FBS 4-6 BU - 3036958



Plug-in bridge, pitch: 6.2 mm, width: 23.1 mm, number of positions: 4, color: blue

Plug-in bridge - FBS 5-6 BU - 3036961



Plug-in bridge, pitch: 6.2 mm, width: 29.3 mm, number of positions: 5, color: blue

Plug-in bridge - FBS 10-6 BU - 3032198



Plug-in bridge, pitch: 6.2 mm, width: 60.3 mm, number of positions: 10, color: blue

Plug-in bridge - FBS 20-6 BU - 3032208



Plug-in bridge, pitch: 6.2 mm, width: 122.3 mm, number of positions: 20, color: blue

Plug-in bridge - FBS 50-6 BU - 3032211



Plug-in bridge, pitch: 6.2 mm, width: 308.3 mm, number of positions: 50, color: blue

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Accessories

Plug-in bridge - FBS 2-6 GY - 3032237



Plug-in bridge, pitch: 6.2 mm, width: 10.7 mm, number of positions: 2, color: gray

Plug-in bridge - FBS 3-6 GY - 3032240



Plug-in bridge, pitch: 6.2 mm, width: 16.9 mm, number of positions: 3, color: gray

Plug-in bridge - FBS 4-6 GY - 3032279



Plug-in bridge, pitch: 6.2 mm, width: 23.1 mm, number of positions: 4, color: gray

Plug-in bridge - FBS 5-6 GY - 3032266



Plug-in bridge, pitch: 6.2 mm, width: 29.3 mm, number of positions: 5, color: gray

Plug-in bridge - FBS 2-5 - 3030161



Plug-in bridge, pitch: 5.2 mm, length: 22.7 mm, width: 9 mm, number of positions: 2, color: red

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Accessories

Plug-in bridge - FBS 3-5 - 3030174



Plug-in bridge, pitch: 5.2 mm, length: 22.7 mm, width: 14.2 mm, number of positions: 3, color: red

Plug-in bridge - FBS 4-5 - 3030187



Plug-in bridge, pitch: 5.2 mm, length: 22.7 mm, width: 19.4 mm, number of positions: 4, color: red

Plug-in bridge - FBS 5-5 - 3030190



Plug-in bridge, pitch: 5.2 mm, length: 22.7 mm, width: 24.6 mm, number of positions: 5, color: red

Plug-in bridge - FBS 10-5 - 3030213



Plug-in bridge, pitch: 5.2 mm, length: 22.7 mm, width: 50.6 mm, number of positions: 10, color: red

Plug-in bridge - FBS 20-5 - 3030226



Plug-in bridge, pitch: 5.2 mm, number of positions: 20, color: red

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Accessories

Plug-in bridge - FBS 50-5 - 3038930



Plug-in bridge, pitch: 5.2 mm, number of positions: 50, color: red

Plug-in bridge - FBS 2-5 BU - 3036877



Plug-in bridge, pitch: 5.2 mm, number of positions: 2, color: blue

Plug-in bridge - FBS 3-5 BU - 3036880



Plug-in bridge, pitch: 5.2 mm, number of positions: 3, color: blue

Plug-in bridge - FBS 4-5 BU - 3036893



Plug-in bridge, pitch: 5.2 mm, number of positions: 4, color: blue

Plug-in bridge - FBS 5-5 BU - 3036903



Plug-in bridge, pitch: 5.2 mm, number of positions: 5, color: blue

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Accessories

Plug-in bridge - FBS 10-5 BU - 3036916



Plug-in bridge, pitch: 5.2 mm, number of positions: 10, color: blue

Plug-in bridge - FBS 20-5 BU - 3036929



Plug-in bridge, pitch: 5.2 mm, number of positions: 20, color: blue

Plug-in bridge - FBS 50-5 BU - 3032114



Plug-in bridge, pitch: 5.2 mm, number of positions: 50, color: blue

Plug-in bridge - FBS 2-5 GY - 3038969



Plug-in bridge, pitch: 5.2 mm, number of positions: 2, color: gray

Plug-in bridge - FBS 3-5 GY - 3038972



Plug-in bridge, pitch: 5.2 mm, number of positions: 3, color: gray

Electronic device circuit breaker - PTCB E1 24DC/4A NO - 2909906

Accessories

Plug-in bridge - FBS 4-5 GY - 3038985



Plug-in bridge, pitch: 5.2 mm, number of positions: 4, color: gray

Plug-in bridge - FBS 5-5 GY - 3038998



Plug-in bridge, pitch: 5.2 mm, number of positions: 5, color: gray

Labeled terminal marker

Marker for terminal blocks - UCT-TM 6 CUS - 0829602



Marker for terminal blocks, can be ordered: by sheet, white, labeled according to customer specifications, mounting type: snap into tall marker groove, for terminal block width: 6.2 mm, lettering field size: 5.6 x 10.5 mm

Multi-conductor terminal block

Feed-through terminal block - PT 4-TWIN - 3211771



Feed-through terminal block, nom. voltage: 800 V, nominal current: 32 A, connection method: Push-in connection, number of connections: 3, cross section: 0.2 mm² - 6 mm², AWG: 24 - 10, width: 6.2 mm, color: gray, mounting type: NS 35/7,5, NS 35/15

Feed-through terminal block - PT 4-QUATTRO - 3211797



Feed-through terminal block, nom. voltage: 800 V, nominal current: 32 A, connection method: Push-in connection, number of connections: 4, cross section: 0.2 mm² - 6 mm², AWG: 24 - 10, width: 6.2 mm, height: 35.3 mm, color: gray, mounting type: NS 35/7,5, NS 35/15

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Accessories

Feed-through terminal block - ST 4-TWIN - 3031393



Feed-through terminal block, nom. voltage: 800 V, nominal current: 32 A, connection method: Spring-cage connection, number of connections: 3, cross section:0.08 mm² - 6 mm², AWG: 28 - 10, width: 6.2 mm, color: gray, mounting type: NS 35/7,5, NS 35/15

Feed-through terminal block - ST 4-QUATTRO - 3031445



Feed-through terminal block, nom. voltage: 800 V, nominal current: 32 A, connection method: Spring-cage connection, number of connections: 4, cross section:0.08 mm² - 6 mm², AWG: 28 - 10, width: 6.2 mm, color: gray, mounting type: NS 35/7,5, NS 35/15

Feed-through terminal block - QTC 2,5-TWIN - 3206445



Feed-through terminal block, nom. voltage: 800 V, nominal current: 24 A, connection method: Quick connection, number of connections: 3, cross section:0.5 mm² - 2.5 mm², AWG: 20 - 14, width: 6.2 mm, height: 37.8 mm, color: gray, mounting type: NS 35/7,5, NS 35/7,5

Feed-through terminal block - QTC 2,5-QUATTRO - 3206446



Feed-through terminal block, nom. voltage: 800 V, nominal current: 24 A, connection method: Quick connection, number of connections: 4, cross section:0.5 mm² - 2.5 mm², AWG: 20 - 14, width: 6.2 mm, height: 37.8 mm, color: gray, mounting type: NS 35/7,5, NS 35/7,5

Feed-through terminal block - PT 2,5-TWIN - 3209549



Feed-through terminal block, nom. voltage: 800 V, nominal current: 24 A, connection method: Push-in connection, number of connections: 3, cross section:0.14 mm² - 4 mm², AWG: 26 - 12, width: 5.2 mm, height: 35.2 mm, color: gray, mounting type: NS 35/7,5, NS 35/15

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Accessories

Feed-through terminal block - PT 2,5-QUATTRO - 3209578



Feed-through terminal block, nom. voltage: 800 V, nominal current: 24 A, connection method: Push-in connection, number of connections: 4, cross section: 0.14 mm² - 4 mm², AWG: 26 - 12, width: 5.2 mm, height: 35.3 mm, color: gray, mounting type: NS 35/7,5, NS 35/15

Feed-through terminal block - ST 2,5-TWIN - 3031241



Feed-through terminal block, nom. voltage: 800 V, nominal current: 24 A, connection method: Spring-cage connection, number of connections: 3, cross section: 0.08 mm² - 4 mm², AWG: 28 - 12, width: 5.2 mm, color: gray, mounting type: NS 35/7,5, NS 35/15

Feed-through terminal block - ST 2,5-QUATTRO - 3031306



Feed-through terminal block, nom. voltage: 800 V, nominal current: 24 A, connection method: Spring-cage connection, number of connections: 4, cross section: 0.08 mm² - 4 mm², AWG: 28 - 12, width: 5.2 mm, color: gray, mounting type: NS 35/7,5, NS 35/15

Feed-through terminal block - QTC 1,5-TWIN - 3205048



Feed-through terminal block, nom. voltage: 800 V, nominal current: 17.5 A, connection method: Quick connection, number of connections: 3, cross section: 0.25 mm² - 1.5 mm², AWG: 24 - 16, width: 5.2 mm, color: gray, mounting type: NS 35/7,5, NS 35/7,5

Feed-through terminal block - QTC 1,5-QUATTRO - 3205077



Feed-through terminal block, nom. voltage: 800 V, nominal current: 17.5 A, connection method: Quick connection, number of connections: 4, cross section: 0.25 mm² - 1.5 mm², AWG: 24 - 16, width: 5.2 mm, color: gray, mounting type: NS 35/7,5, NS 35/7,5

Reducing bridge

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Accessories

Reducing bridge - RB ST 10-(2,5/4) - 3030873



Reducing bridge, pitch: 10 mm, length: 36.3 mm, width: 15 mm, number of positions: 2, color: red

Terminal marking

Zack marker strip - ZB 6:UNBEDRUCKT - 1051003



Zack marker strip, Strip, white, unlabeled, can be labeled with: CMS-P1-PLOTTER, PLOTMARK, mounting type: snap into tall marker groove, for terminal block width: 6.2 mm, lettering field size: 6.15 x 10.5 mm

Zack Marker strip, flat - ZBF 6:UNBEDRUCKT - 0808710



Zack Marker strip, flat, Strip, white, unlabeled, can be labeled with: CMS-P1-PLOTTER, PLOTMARK, mounting type: snap into flat marker groove, for terminal block width: 6.2 mm, lettering field size: 5.15 x 6.15 mm

Marker for terminal blocks - UCT-TM 6 - 0828736



Marker for terminal blocks, Sheet, white, unlabeled, can be labeled with: THERMOMARK PRIME, THERMOMARK CARD, BLUEMARK CLED, BLUEMARK LED, TOPMARK LASER, mounting type: snap into tall marker groove, for terminal block width: 6.2 mm, lettering field size: 5.6 x 10.5 mm

Marker for terminal blocks - US-TML (104X3,8) - 0830768



Marker for terminal blocks, Card, white, unlabeled, can be labeled with: THERMOMARK PRIME, THERMOMARK CARD, mounting type: adhesive, for terminal block width: 104 mm, lettering field size: 104 x 3.8 mm