

Electronic device circuit breaker - PTCB E1 24DC/8A NO - 2909910

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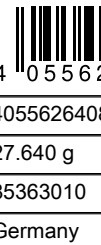
Single-channel electronic circuit breaker for protecting 24 V DC loads against overload and short circuit. Simple potential distribution using components from the CLIPLINE complete terminal block system. With fixed nominal current. For installation on DIN rails.

Your advantages

- ✓ 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



Key Commercial Data

Packing unit	1 pc
GTIN	 4 055626 408774
GTIN	4055626408774
Weight per Piece (excluding packing)	27.640 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)	-30 °C ... 60 °C
Ambient temperature (storage/transport)	-40 °C ... 70 °C
Humidity test	96 h, 95 % RH, 40 °C
Altitude	≤ 3000 m Up to 52 °C (amsl (above mean sea level))
	≤ 4000 m Up to 46 °C (amsl (above mean sea level))
Shock (operation)	30g (IEC 60068-2-27, Test Ea)

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Technical data

Ambient conditions

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)
Degree of protection	IP20

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)
	8 A DC (Rated current output)
Measuring tolerance I	± 15 %
Feedback resistance	max. 35 V DC
Fail-safe element	15 A DC
Efficiency	> 99 %
Closed circuit current I_0	typ. 12 mA
Power dissipation	typ. 0.3 W (No-load operation)
	< 1.6 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)
	7 A (Channel current at 60°C)
	8 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	0.13 V (at 8 A)
MTBF (IEC 61709, SN 29500)	25641025 h (at 25°C with 21% load)
	10989010 h (at 40°C with 34.25% load)
	1149425 h (at 60°C with 100% load)
Shutdown time load circuit	≤ 10 ms (for short circuit > $2.0 \times I_N$)

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Technical data

Electrical data

	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)
Max. capacitive load load circuit	35000 µF (Depending on the available short-circuit current)

Remote indication contact

Connection name	Remote indication circuit
Switching function	N/O contact
Stripping length	10 mm
Conductor cross section solid	0.2 mm ² ... 4 mm ²
Conductor cross section AWG	24 ... 14
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
DC operating voltage	0 V DC ... 30 V DC
DC operating current	100 mA DC

Signaling

Channel LED off	off (Channel switched off)
Channel LED green	lit (Channel switched on)
Channel LED yellow	lit (Channel switched on, channel load > 80%)
	flashing (Programming mode active)
Channel LED red	lit (Channel switched off, over- or undervoltage active)
	ON temporarily (Channel switched off, 5 s cool-down phase, overload or short-circuit release)
	flashing (Channel switched off, ready to be switched back on, overload or short-circuit release)
	flashing quickly (Channel switched off, external voltage at the output, possible installation error)

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

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Technical data

Connection data

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

Environmental Product Compliance

REACH SVHC	Lead 7439-92-1
China RoHS	Environmentally Friendly Use Period = 50
	For details about hazardous substances go to tab "Downloads", Category "Manufacturer's declaration"

Classifications

eCl@ss

eCl@ss 5.1	27141100
eCl@ss 6.0	27141100
eCl@ss 7.0	27141116
eCl@ss 8.0	27141116
eCl@ss 9.0	27141116

ETIM

ETIM 5.0	EC000899
ETIM 6.0	EC000899
ETIM 7.0	EC000899

Approvals

Approvals

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Approvals

Approvals

UL Listed / UL Recognized / cUL Listed / cULus Listed

Ex Approvals

Approval details

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

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Accessories

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

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

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Accessories

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, 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

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

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Accessories

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

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

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Accessories

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

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

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Accessories

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

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

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Accessories

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

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

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Accessories

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

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

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Accessories

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

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

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Accessories

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

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

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Accessories

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

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

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Accessories

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

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

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Accessories

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

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: PLOTMARK, CMS-P1-PLOTTER, 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: PLOTMARK, CMS-P1-PLOTTER, mounting type: snap into flat marker groove, for terminal block width: 6.2 mm, lettering field size: 5.15 x 6.15 mm

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Accessories

Marker for terminal blocks - UCT-TM 6 - 0828736



Marker for terminal blocks, Sheet, white, unlabeled, can be labeled with: TOPMARK NEO, TOPMARK LASER, BLUEMARK ID COLOR, BLUEMARK ID, BLUEMARK CLED, THERMOMARK PRIME, THERMOMARK CARD 2.0, THERMOMARK CARD, 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: BLUEMARK ID COLOR, BLUEMARK ID, THERMOMARK PRIME, THERMOMARK CARD 2.0, THERMOMARK CARD, mounting type: adhesive, lettering field size: 104 x 3.8 mm