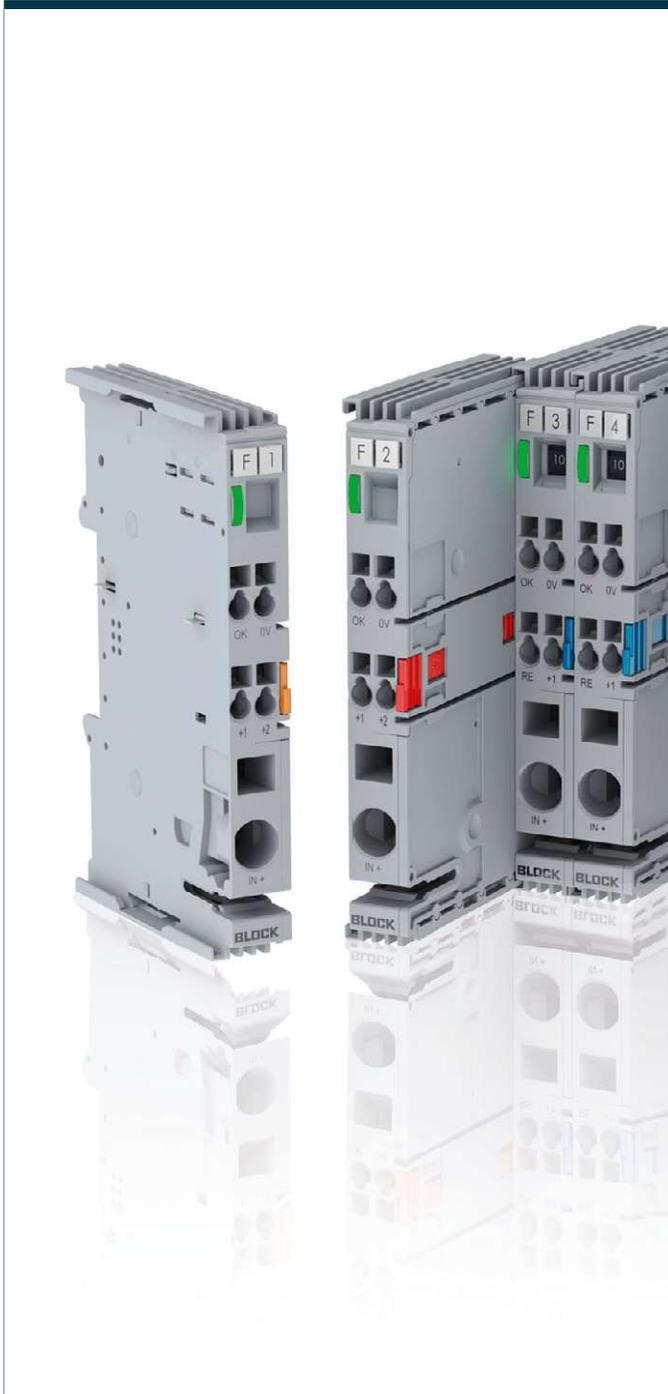


1-Channel circuit breaker EasyB 1-Channel



General Data

24 Vdc 1-channel circuit breaker system
Efficiency up to 99 %
Multi-coloured LED and status display button
Up to 40 fuse channels stackable side by side
Optionally with current limitation or thermomagnetic characteristic
Common signalling output for tripped and switched off channels
Ambient temperature -25 °C to +70 °C
Protection index IP 20

Advantages

Automatic channel assignment
Optional communication via communication modules
Optional undervoltage shutdown in combined network
Optional settings for tripping current
Additional load outputs through output expanders mountable side by side
Selective load-dependent activation
Versions with collective reset input

Applications

EB-27 Electronic circuit breaker with thermomagnetic characteristic with alarm signal forwarded for tripped and switched off channels to the connected channels. Starter version with fuse for 24 V loads.

EB-28 Electronic circuit breaker with current-limiting characteristic with alarm signal forwarded for tripped and switched off channels to the connected channels. Starter version with fuse for 24 V loads if active current limitation is required.

EB-08, EB-18, EB-38 Electronic circuit breaker with current-limiting characteristic and comprehensive communication with the connected modules. Suitable as advanced fuse for 24 V loads with option of reading more detailed current supply parameters and actively controlling the channels.

Standards

Safety:
EN 60950-1, EN 50178, EN/IEC 60204-1

EMC:
EN 61000-6-2 (interference immunity), EN 61000-6-3 (emitted interference)

CE acc. to 2014/30/EU

Approvals



UL 508 (prepared), UL 2367 (prepared), GL (prepared)



1-Channel circuit breaker

EasyB 1-Channel



Typ	EB-0824-100-0	EB-1824-010-0	EB-1824-020-0	EB-1824-030-0
Electrical data				
Special features				
Characteristics	Adjustable tripping currents	-	-	-
Input				
Input rated voltage	24 Vdc	24 Vdc	24 Vdc	24 Vdc
Input voltage range	18 - 30 Vdc	18 - 30 Vdc	18 - 30 Vdc	18 - 30 Vdc
Maximal residual ripple of supplied input voltage	3 %	3 %	3 %	3 %
Max. total input current	10 A	1 A	2 A	3 A
Max. input current for each pole of terminal	10 A (-), 40 A (+)	10 A (-), 40 A (+)	10 A (-), 40 A (+)	10 A (-), 40 A (+)
Required input voltage for turning-on of outputs	17.5 V (Turn-off Threshold 16.7 V), ± 0.7 V	17.5 V (Turn-off Threshold 16.7 V), ± 0.7 V	17.5 V (Turn-off Threshold 16.7 V), ± 0.7 V	17.5 V (Turn-off Threshold 16.7 V), ± 0.7 V
Max. power losses	0.4 W	1,2 W	1,3 W	1,4 W
Over voltage protection	Suppressor diode 33 V	Suppressor diode 33 V	Suppressor diode 33 V	Suppressor diode 33 V
Stand-by current	39 mA @24 V	39 mA @ 24 V	39 mA @ 24 V	39 mA @ 24 V
Power losses in stand-by mode	0.3 W @ 24 V	1,17 W @ 24 V	1,17 W @ 24 V	1,17 W @ 24 V
Turn on capacity	50-110 mF @ 24 Vdc / 2,5 mm² / 2,5 m	110 mF @ 24 Vdc / 2,5 mm² / 2,5 m	130 mF @ 24 Vdc / 2,5 mm² / 2,5 m	120 mF @ 24 Vdc / 2,5 mm² / 2,5 m
Output				
Output rated voltage	24 Vdc	24 Vdc	24 Vdc	24 Vdc
Maximum voltage drop between input and output	130 mV	58 mV	55 mV	82 mV
Initialization time of module	52 ms	52 ms	52 ms	52 ms
Turn-on delay of outputs	min. 50 ms / max. 5 s	min. 50 ms / max. 5 s	min. 50 ms / max. 5 s	min. 50 ms / max. 5 s
Waiting periode after switch-off of an output	500 ms (Short circuit) . . 5 s (Overload)	500 ms (Short circuit) . . 5 s (Overload)	500 ms (Short circuit) . . 5 s (Overload)	500 ms (Short circuit) . . 5 s (Overload)
Parallel use of outputs	Not allowed	Not allowed	Not allowed	Not allowed
Serial use of outputs	not allowed	not allowed	not allowed	not allowed
Resistance to reverse feed max.	35 Vdc	35 Vdc	35 Vdc	35 Vdc
Output rated current	0,5 - 10 A, adjustable (0,5A, 1A, 2A, 3A, 4A, 5A, 6A, 8A, 10A)	1 A	2 A	3 A
Efficiency	99,0 %	99,0 %	99,0 %	99,0 %
Output limited current	typ. rated current x 1,25 (@ 1-10 A) typ. rated current x 2,5 (@ 0,5 A)	typ. 1,25 A	typ. 2,5 A	typ. 3,75 A
Signaling				
Bus communication	Read-state (tripped, On, Off) -set/ current -input voltage -firmware version/serial number Write-state (on, off, reset)	Read-state (tripped, On, Off) -set/active current -input voltage -firmware version/serial number Write-state (on, off, reset)	Read-state (tripped, On, Off) -set/active current -input voltage -firmware version/serial number Write-state (on, off, reset)	Read-state (tripped, On, Off) -set/active current -input voltage -firmware version/serial number Write-state (on, off, reset)
Status indicator	LED (red, green, orange)	LED (red, green, orange)	LED (red, green, orange)	LED (red, green, orange)
Signal output	Output status, short circuit proof high = Channel on, low = Channel off, fault	Output status, short circuit proof high = Channel on, low = Channel off, fault	Output status, short circuit proof high = Channel on, low = Channel off, fault	Output status, short circuit proof high = Channel on, low = Channel off, fault
Signal output (ON/OFF/Reset)	Reset input Level high = min. 15V, max. 30V Level low = min. 0V, max. 5V	Reset input Level high = min. 15V, max. 30V Level low = min. 0V, max. 5V	Reset input Level high = min. 15V, max. 30V Level low = min. 0V, max. 5V	Reset input Level high = min. 15V, max. 30V Level low = min. 0V, max. 5V
Environment				
Type of cooling	Natural convection	Natural convection	Natural convection	Natural convection
Ambient temperature	-25 °C to +70 °C	-25 °C . . +70 °C	-25 °C . . +70 °C	-25 °C . . +70 °C
Storage temperature	-25 °C ... +85 °C	-25 °C ... +85 °C	-25 °C ... +85 °C	-25 °C ... +85 °C
Derating	max. +60 °C > 6A	-	-	-
Relative humidity	5 . . 96 %, without condensation	5 . . 96 %, without condensation	5 . . 96 %, without condensation	5 . . 96 %, without condensation
Required minimum spacing (left/right)	0 mm	0 mm	0 mm	0 mm
Required minimum spacing (over/under)	30 mm	30 mm	30 mm	30 mm
Safety and protection				
Protection index	IP 20	IP 20	IP 20	IP 20
Safety class	III, without PE connection	III, without PE connection	III, without PE connection	III, without PE connection
Degree of pollution	2	2	2	2
Order numbers				
Order Number	EB-0824-100-0	EB-1824-010-0	EB-1824-020-0	EB-1824-030-0

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1-Channel circuit breaker EasyB 1-Channel



Typ	EB-1824-040-0	EB-1824-060-0	EB-1824-080-0	EB-1824-100-0
Electrical data				
Special features				
Characteristics	-	-	-	-
Input				
Input rated voltage	24 Vdc	24 Vdc	24 Vdc	24 Vdc
Input voltage range	18 - 30 Vdc			
Maximal residual ripple of supplied input voltage	3 %	3 %	3 %	3 %
Max. total input current	4 A	6 A	8 A	10 A
Max. input current for each pole of terminal	10 A (-), 40 A (+)			
Required input voltage for turning-on of outputs	17,5 V (Turn-off Threshold 16,7 V), ± 0,7 V	17,5 V (Turn-off Threshold 16,7 V), ± 0,7 V	17,5 V (Turn-off Threshold 16,7 V), ± 0,7 V	17,5 V (Turn-off Threshold 16,7 V), ± 0,7 V
Max. power losses	1,5 W	1,8 W	2,0 W	2,5 W
Over voltage protection	Suppressor diode 33 V			
Stand-by current	39 mA @ 24 V			
Power losses in stand-by mode	1,17 W @ 24 V			
Turn on capacity	110 mF @ 24 Vdc / 2,5 mm ² / 2,5 m	80 mF @ 24 Vdc / 2,5 mm ² / 2,5 m	80 mF @ 24 Vdc / 2,5 mm ² / 2,5 m	70 mF @ 24 Vdc / 2,5 mm ² / 2,5 m
Output				
Output rated voltage	24 Vdc	24 Vdc	24 Vdc	24 Vdc
Maximum voltage drop between input and output	70 mV	100 mV	105 mV	130 mV
Initialization time of module	52 ms	52 ms	52 ms	52 ms
Turn-on delay of outputs	min. 50 ms / max. 5 s			
Waiting periode after switch-off of an output	500 ms (Short circuit) . . 5 s (Overload)	500 ms (Short circuit) . . 5 s (Overload)	500 ms (Short circuit) . . 5 s (Overload)	500 ms (Short circuit) . . 5 s (Overload)
Parallel use of outputs	Not allowed	Not allowed	Not allowed	Not allowed
Serial use of outputs	not allowed	not allowed	not allowed	not allowed
Resistance to reverse feed max.	35 Vdc	35 Vdc	35 Vdc	35 Vdc
Output rated current	4 A	6 A	8 A	10 A
Efficiency	99,0 %	99,0 %	99,0 %	99,0 %
Output limited current	typ. 5 A	typ. 7,5 A	typ. 10 A	typ. 12,5 A
Signaling				
Bus communication	Read-state (tripped, On, Off) -set/active current -input voltage -firmware version/serial number Write-state (on, off, reset)	Read-state (tripped, On, Off) -set/active current -input voltage -firmware version/serial number Write-state (on, off, reset)	Read-state (tripped, On, Off) -set/active current -input voltage -firmware version/serial number Write-state (on, off, reset)	Read-state (tripped, On, Off) -set/active current -input voltage -firmware version/serial number Write-state (on, off, reset)
Status indicator	LED (red, green, orange)			
Signal output	Output status, short circuit proof high = Channel on, low = Channel off, fault	Output status, short circuit proof high = Channel on, low = Channel off, fault	Output status, short circuit proof high = Channel on, low = Channel off, fault	Output status, short circuit proof high = Channel on, low = Channel off, fault
Signal output (ON/OFF/Reset)	Reset input Level high = min. 15V, max. 30V Level low = min. 0V, max. 5V	Reset input Level high = min. 15V, max. 30V Level low = min. 0V, max. 5V	Reset input Level high = min. 15V, max. 30V Level low = min. 0V, max. 5V	Reset input Level high = min. 15V, max. 30V Level low = min. 0V, max. 5V
Environment				
Type of cooling	Natural convection	Natural convection	Natural convection	Natural convection
Ambient temperature	-25 °C . . +70 °C	-25 °C . . +70 °C	-25 °C . . +60 °C	-25 °C . . +60 °C
Storage temperature	-25 °C ... +85 °C			
Derating	-	-	-	-
Relative humidity	5 . . 96 %, without condensation			
Required minimum spacing (left/right)	0 mm	0 mm	0 mm	0 mm
Required minimum spacing (over/under)	30 mm	30 mm	30 mm	30 mm
Safety and protection				
Protection index	IP 20	IP 20	IP 20	IP 20
Safety class	III, without PE connection			
Degree of pollution	2	2	2	2
Order numbers				
Order Number	EB-1824-040-0	EB-1824-060-0	EB-1824-080-0	EB-1824-100-0



1-Channel circuit breaker EasyB 1-Channel



Typ	EB-2724-010-0	EB-2724-020-0	EB-2724-030-0	EB-2724-040-0
Electrical data				
Special features				
Characteristics	-	-	-	-
Input				
Input rated voltage	24 Vdc	24 Vdc	24 Vdc	24 Vdc
Input voltage range	18 - 30 Vdc			
Maximal residual ripple of supplied input voltage	3 %	3 %	3 %	3 %
Max. total input current	1 A	2 A	3 A	4 A
Max. input current for each pole of terminal	10 A (-), 40 A (+)			
Required input voltage for turning-on of outputs	17,5 V (Turn-off Threshold 16,7 V), ± 0,7 V	17,5 V (Turn-off Threshold 16,7 V), ± 0,7 V	17,5 V (Turn-off Threshold 16,7 V), ± 0,7 V	17,5 V (Turn-off Threshold 16,7 V), ± 0,7 V
Max. power losses	0,4 W	0,4 W	0,4 W	0,4 W
Over voltage protection	Suppressor diode 33 V			
Stand-by current	12 mA @ 24 V			
Power losses in stand-by mode	0,3 W @ 24 V			
Turn on capacity	70 mF @ 24 Vdc / 2,5 mm ² / 2,5 m	80 mF @ 24 Vdc / 2,5 mm ² / 2,5 m	80 mF @ 24 Vdc / 2,5 mm ² / 2,5 m	80 mF @ 24 Vdc / 2,5 mm ² / 2,5 m
Output				
Output rated voltage	24 Vdc	24 Vdc	24 Vdc	24 Vdc
Maximum voltage drop between input and output	24 mV	29 mV	33 mV	34 mV
Initialization time of module	27 ms	27 ms	27 ms	27 ms
Turn-on delay of outputs	0 ms	0 ms	0 ms	0 ms
Waiting periode after switch-off of an output	500 ms (Short circuit) . . 5 s (Overload)	500 ms (Short circuit) . . 5 s (Overload)	500 ms (Short circuit) . . 5 s (Overload)	500 ms (Short circuit) . . 5 s (Overload)
Parallel use of outputs	Not allowed	Not allowed	Not allowed	Not allowed
Serial use of outputs	not allowed	not allowed	not allowed	not allowed
Resistance to reverse feed max.	35 Vdc	35 Vdc	35 Vdc	35 Vdc
Output rated current	1 A	2 A	3 A	4 A
Efficiency	99,0 %	99,0 %	99,0 %	99,0 %
Output limited current	-	-	-	-
Signaling				
Bus communication	Collective notification signal bypassed			
Status indicator	LED (red, green, orange)			
Signal output	Output status, short circuit proof high = Channel on, low = Channel off, fault	Output status, short circuit proof high = Channel on, low = Channel off, fault	Output status, short circuit proof high = Channel on, low = Channel off, fault	Output status, short circuit proof high = Channel on, low = Channel off, fault
Signal output (ON/OFF/Reset)	-	-	-	-
Environment				
Type of cooling	Natural convection	Natural convection	Natural convection	Natural convection
Ambient temperature	-25 °C . . +70 °C			
Storage temperature	-25 °C ... +85 °C			
Derating	-	-	-	-
Relative humidity	5 . . 96 %, without condensation			
Required minimum spacing (left/right)	0 mm	0 mm	0 mm	0 mm
Required minimum spacing (over/under)	30 mm	30 mm	30 mm	30 mm
Safety and protection				
Protection index	IP 20	IP 20	IP 20	IP 20
Safety class	III, without PE connection			
Degree of pollution	2	2	2	2
Order numbers				
Order Number	EB-2724-010-0	EB-2724-020-0	EB-2724-030-0	EB-2724-040-0

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1-Channel circuit breaker EasyB 1-Channel



Typ	EB-2724-060-0	EB-2724-080-0	EB-2724-100-0	EB-2824-010-0
Electrical data				
Special features				
Characteristics	-	-	-	-
Input				
Input rated voltage	24 Vdc	24 Vdc	24 Vdc	24 Vdc
Input voltage range	18 - 30 Vdc			
Maximal residual ripple of supplied input voltage	3 %	3 %	3 %	3 %
Max. total input current	6 A	8 A	10 A	1 A
Max. input current for each pole of terminal	10 A (-), 40 A (+)			
Required input voltage for turning-on of outputs	17,5 V (Turn-off Threshold 16,7 V), ± 0,7 V	17,5 V (Turn-off Threshold 16,7 V), ± 0,7 V	17,5 V (Turn-off Threshold 16,7 V), ± 0,7 V	17,5 V (Turn-off Threshold 16,7 V), ± 0,7 V
Max. power losses	0,6 W	0,9 W	1,2 W	0,6 W
Over voltage protection	Suppressor diode 33 V			
Stand-by current	12 mA @ 24 V	12 mA @ 24 V	12 mA @ 24 V	18,6 mA @ 24 V
Power losses in stand-by mode	0,3 W @ 24 V	0,3 W @ 24 V	0,3 W @ 24 V	0,5 W @ 24 V
Turn on capacity	70 mF @ 24 Vdc / 2,5 mm ² / 2,5 m	70 mF @ 24 Vdc / 2,5 mm ² / 2,5 m	50 mF @ 24 Vdc / 2,5 mm ² / 2,5 m	110 mF @ 24 Vdc / 2,5 mm ² / 2,5 m
Output				
Output rated voltage	24 Vdc	24 Vdc	24 Vdc	24 Vdc
Maximum voltage drop between input and output	54 mV	72 mV	92 mV	58 mV
Initialization time of module	27 ms	27 ms	27 ms	52 ms
Turn-on delay of outputs	0 ms	0 ms	0 ms	0 ms
Waiting periode after switch-off of an output	500 ms (Short circuit) . . 5 s (Overload)	500 ms (Short circuit) . . 5 s (Overload)	500 ms (Short circuit) . . 5 s (Overload)	500 ms (Short circuit) . . 5 s (Overload)
Parallel use of outputs	Not allowed	Not allowed	Not allowed	Not allowed
Serial use of outputs	not allowed	not allowed	not allowed	not allowed
Resistance to reverse feed max.	35 Vdc	35 Vdc	35 Vdc	35 Vdc
Output rated current	6 A	8 A	10 A	1 A
Efficiency	99,0 %	99,0 %	99,0 %	99,0 %
Output limited current	-	-	-	typ. 1,25 A
Signaling				
Bus communication	Collective notification signal bypassed			
Status indicator	LED (red, green, orange)			
Signal output	Output status, short circuit proof high = Channel on, low = Channel off, fault	Output status, short circuit proof high = Channel on, low = Channel off, fault	Output status, short circuit proof high = Channel on, low = Channel off, fault	Output status, short circuit proof high = Channel on, low = Channel off, fault
Signal output (ON/OFF/Reset)	-	-	-	-
Environment				
Type of cooling	Natural convection	Natural convection	Natural convection	Natural convection
Ambient temperature	-25 °C . . +70 °C	-25 °C . . +60 °C	-25 °C . . +55 °C	-25 °C . . +70 °C
Storage temperature	-25 °C . . +85 °C			
Derating	-	-	-	-
Relative humidity	5 . . 96 %, without condensation			
Required minimum spacing (left/right)	0 mm	0 mm	0 mm	0 mm
Required minimum spacing (over/under)	30 mm	30 mm	30 mm	30 mm
Safety and protection				
Protection index	IP 20	IP 20	IP 20	IP 20
Safety class	III, without PE connection			
Degree of pollution	2	2	2	2
Order numbers				
Order Number	EB-2724-060-0	EB-2724-080-0	EB-2724-100-0	EB-2824-010-0



1-Channel circuit breaker EasyB 1-Channel



Typ	EB-2824-020-0	EB-2824-030-0	EB-2824-040-0	EB-2824-060-0
Electrical data				
Special features				
Characteristics	-	-	-	-
Input				
Input rated voltage	24 Vdc	24 Vdc	24 Vdc	24 Vdc
Input voltage range	18 - 30 Vdc			
Maximal residual ripple of supplied input voltage	3 %	3 %	3 %	3 %
Max. total input current	2 A	3 A	4 A	6 A
Max. input current for each pole of terminal	10 A (-), 40 A (+)			
Required input voltage for turning-on of outputs	17,5 V (Turn-off Threshold 16,7 V), ± 0,7 V	17,5 V (Turn-off Threshold 16,7 V), ± 0,7 V	17,5 V (Turn-off Threshold 16,7 V), ± 0,7 V	17,5 V (Turn-off Threshold 16,7 V), ± 0,7 V
Max. power losses	0,6 W	0,7 W	0,9 W	1,1 W
Over voltage protection	Suppressor diode 33 V			
Stand-by current	18,6 mA @ 24 V			
Power losses in stand-by mode	0,5 W @ 24 V			
Turn on capacity	130 mF @ 24 Vdc / 2,5 mm ² / 2,5 m	120 mF @ 24 Vdc / 2,5 mm ² / 2,5 m	110 mF @ 24 Vdc / 2,5 mm ² / 2,5 m	80 mF @ 24 Vdc / 2,5 mm ² / 2,5 m
Output				
Output rated voltage	24 Vdc	24 Vdc	24 Vdc	24 Vdc
Maximum voltage drop between input and output	55 mV	82 mV	70 mV	100 mV
Initialization time of module	52 ms	52 ms	52 ms	52 ms
Turn-on delay of outputs	0 ms	0 ms	0 ms	0 ms
Waiting periode after switch-off of an output	500 ms (Short circuit) . . 5 s (Overload)	500 ms (Short circuit) . . 5 s (Overload)	500 ms (Short circuit) . . 5 s (Overload)	500 ms (Short circuit) . . 5 s (Overload)
Parallel use of outputs	Not allowed	Not allowed	Not allowed	Not allowed
Serial use of outputs	not allowed	not allowed	not allowed	not allowed
Resistance to reverse feed max.	35 Vdc	35 Vdc	35 Vdc	35 Vdc
Output rated current	2 A	3 A	4 A	6 A
Efficiency	99,0 %	99,0 %	99,0 %	99,0 %
Output limited current	typ. 2,5 A	typ. 3,75 A	typ. 5 A	typ. 7,5 A
Signaling				
Bus communication	Collective notification signal bypassed			
Status indicator	LED (red, green, orange)			
Signal output	Output status, short circuit proof high = Channel on, low = Channel off, fault	Output status, short circuit proof high = Channel on, low = Channel off, fault	Output status, short circuit proof high = Channel on, low = Channel off, fault	Output status, short circuit proof high = Channel on, low = Channel off, fault
Signal output (ON/OFF/Reset)	-	-	-	-
Environment				
Type of cooling	Natural convection	Natural convection	Natural convection	Natural convection
Ambient temperature	-25 °C . . +70 °C			
Storage temperature	-25 °C ... +85 °C			
Derating	-	-	-	-
Relative humidity	5 . . 96 %, without condensation			
Required minimum spacing (left/right)	0 mm	0 mm	0 mm	0 mm
Required minimum spacing (over/under)	30 mm	30 mm	30 mm	30 mm
Safety and protection				
Protection index	IP 20	IP 20	IP 20	IP 20
Safety class	III, without PE connection			
Degree of pollution	2	2	2	2
Order numbers				
Order Number	EB-2824-020-0	EB-2824-030-0	EB-2824-040-0	EB-2824-060-0

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1-Channel circuit breaker EasyB 1-Channel



Typ	EB-2824-080-0	EB-2824-100-0	EB-3824-100-0
Electrical data			
Special features			
Characteristics	-	-	Adjustable tripping currents
Input			
Input rated voltage	24 Vdc	24 Vdc	24 Vdc
Input voltage range	18 - 30 Vdc	18 - 30 Vdc	18 - 30 Vdc
Maximal residual ripple of supplied input voltage	3 %	3 %	3 %
Max. total input current	8 A	10 A	10 A
Max. input current for each pole of terminal	10 A (-), 40 A (+)	10 A (-), 40 A (+)	10 A (-), 40 A (+)
Required input voltage for turning-on of outputs	17,5 V (Turn-off Threshold 16,7 V), ± 0,7 V	17,5 V (Turn-off Threshold 16,7 V), ± 0,7 V	17,5 V (Turn-off Threshold 16,7 V), ± 0,7 V
Max. power losses	1,3 W	1,8 W	1,2 W - 2,5 W
Over voltage protection	Suppressor diode 33 V	Suppressor diode 33 V	Suppressor diode 33 V
Stand-by current	18,6 mA @ 24 V	18,6 mA @ 24 V	39 mA @ 24 V
Power losses in stand-by mode	0,5 W @ 24 V	0,5 W @ 24 V	1,17 W @ 24 V
Turn on capacity	80 mF	70 mF @ 24 Vdc / 2,5 mm ² / 2,5 m	50-110 mF @ 24 Vdc/ 2,5 mm ² /2,5 m
Output			
Output rated voltage	24 Vdc	24 Vdc	24 Vdc
Maximum voltage drop between input and output	92 mV	130 mV	130 mV
Initialization time of module	52 ms	52 ms	52 ms
Turn-on delay of outputs	0 ms	0 ms	min. 50 ms / max. 5 s
Waiting periode after switch-off of an output	500 ms (Short circuit) . . 5 s (Overload)	500 ms (Short circuit) . . 5 s (Overload)	500 ms (Short circuit) . . 5 s (Overload)
Parallel use of outputs	Not allowed	Not allowed	Not allowed
Serial use of outputs	not allowed	not allowed	not allowed
Resistance to reverse feed max.	35 Vdc	35 Vdc	35 Vdc
Output rated current	8 A	10 A	0,5 - 10 A, adjustable (0,5A, 1A, 2A, 3A, 4A, 5A, 6A, 8A, 10A)
Efficiency	99,0 %	99,0 %	99,0 %
Output limited current	typ. 10 A	typ. 12,5 A	typ. rated current x 1,25 (@ 1-10 A) typ. rated current x 2,5 (@ 0,5 A)
Signaling			
Bus communication	Collective notification signal bypassed	Collective notification signal bypassed	Read-state (tripped, On, Off) -set/ current -input voltage -firmware version/serial number Write-state (on, off, reset)
Status indicator	LED (red, green, orange)	LED (red, green, orange)	LED (red, green, orange)
Signal output	Output status, short circuit proof high = Channel on, low = Channel off, fault	Output status, short circuit proof high = Channel on, low = Channel off, fault	Output status, short circuit proof high = Channel on, low = Channel off, fault
Signal output (ON/OFF/Reset)	-	-	Reset input Level high = min. 15V, max. 30V Level low = min. 0V, max. 5V
Environment			
Type of cooling	Natural convection	Natural convection	Natural convection
Ambient temperature	-25 °C . . +60 °C	-25 °C . . +60 °C	-25 °C . . +70 °C
Storage temperature	-25 °C ... +85 °C	-25 °C ... +85 °C	-25 °C ... +85 °C
Derating	-	-	max. +60 °C > 6A
Relative humidity	5 . . 96 %, without condensation	5 . . 96 %, without condensation	5 . . 96 %, without condensation
Required minimum spacing (left/right)	0 mm	0 mm	0 mm
Required minimum spacing (over/under)	30 mm	30 mm	30 mm
Safety and protection			
Protection index	IP 20	IP 20	IP 20
Safety class	III, without PE connection	III, without PE connection	III, without PE connection
Degree of pollution	2	2	2
Order numbers			
Order Number	EB-2824-080-0	EB-2824-100-0	EB-3824-100-0

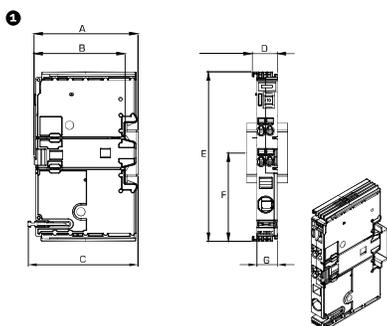


1-Channel circuit breaker EasyB 1-Channel



Typ	Terminals output, (spring clamp terminal)	Terminals input, (spring clamp terminal)	Terminals signalling, (spring clamp terminal)	Mounting position	Weight	Width	Dimension picture (in mm)							
							A	B	C	D	E	F	G	
EB-0824-100-0	max 2,5 mm ² (1 x "+")	max. 16 mm ²	max. 2,5 mm ²	horizontal for standard rail DIN TS35	0,042 kg	12 mm	1	61.2	53.7	64.5	14.8	99.3	51.7	12
EB-1824-010-0	max 2,5 mm ² (1 x "+")	max. 16 mm ²	max. 2,5 mm ²	horizontal for standard rail DIN TS35	0,042 kg	12 mm	1	61.2	53.7	64.5	14.8	99.3	51.7	12
EB-1824-020-0	max 2,5 mm ² (1 x "+")	max. 16 mm ²	max. 2,5 mm ²	horizontal for standard rail DIN TS35	0,042 kg	12 mm	1	61.2	53.7	64.5	14.8	99.3	51.7	12
EB-1824-030-0	max 2,5 mm ² (1 x "+")	max. 16 mm ²	max. 2,5 mm ²	horizontal for standard rail DIN TS35	0,042 kg	12 mm	1	61.2	53.7	64.5	14.8	99.3	51.7	12
EB-1824-040-0	max 2,5 mm ² (1 x "+")	max. 16 mm ²	max. 2,5 mm ²	horizontal for standard rail DIN TS35	0,042 kg	12 mm	1	61.2	53.7	64.5	14.8	99.3	51.7	12
EB-1824-060-0	max 2,5 mm ² (1 x "+")	max. 16 mm ²	max. 2,5 mm ²	horizontal for standard rail DIN TS35	0,042 kg	12 mm	1	61.2	53.7	64.5	14.8	99.3	51.7	12
EB-1824-080-0	max 2,5 mm ² (1 x "+")	max. 16 mm ²	max. 2,5 mm ²	horizontal for standard rail DIN TS35	0,042 kg	12 mm	1	61.2	53.7	64.5	14.8	99.3	51.7	12
EB-1824-100-0	max 2,5 mm ² (1 x "+")	max. 16 mm ²	max. 2,5 mm ²	horizontal for standard rail DIN TS35	0,042 kg	12 mm	1	61.2	53.7	64.5	14.8	99.3	51.7	12
EB-2724-010-0	max 2,5 mm ² (2 x "+")	max. 16 mm ²	max. 2,5 mm ²	horizontal for standard rail DIN TS35	0,039 kg	12 mm	1	61.2	53.7	64.5	14.8	99.3	51.7	12
EB-2724-020-0	max 2,5 mm ² (2 x "+")	max. 16 mm ²	max. 2,5 mm ²	horizontal for standard rail DIN TS35	0,039 kg	12 mm	1	61.2	53.7	64.5	14.8	99.3	51.7	12
EB-2724-030-0	max 2,5 mm ² (2 x "+")	max. 16 mm ²	max. 2,5 mm ²	horizontal for standard rail DIN TS35	0,039 kg	12 mm	1	61.2	53.7	64.5	14.8	99.3	51.7	12
EB-2724-040-0	max 2,5 mm ² (2 x "+")	max. 16 mm ²	max. 2,5 mm ²	horizontal for standard rail DIN TS35	0,039 kg	12 mm	1	61.2	53.7	64.5	14.8	99.3	51.7	12
EB-2724-060-0	max 2,5 mm ² (2 x "+")	max. 16 mm ²	max. 2,5 mm ²	horizontal for standard rail DIN TS35	0,039 kg	12 mm	1	61.2	53.7	64.5	14.8	99.3	51.7	12
EB-2724-080-0	max 2,5 mm ² (2 x "+")	max. 16 mm ²	max. 2,5 mm ²	horizontal for standard rail DIN TS35	0,039 kg	12 mm	1	61.2	53.7	64.5	14.8	99.3	51.7	12
EB-2724-100-0	max 2,5 mm ² (2 x "+")	max. 16 mm ²	max. 2,5 mm ²	horizontal for standard rail DIN TS35	0,039 kg	12 mm	1	61.2	53.7	64.5	14.8	99.3	51.7	12
EB-2824-010-0	max 2,5 mm ² (2 x "+")	max. 16 mm ²	max. 2,5 mm ²	horizontal for standard rail DIN TS35	0,040 kg	12 mm	1	61.2	53.7	64.5	14.8	99.3	51.7	12
EB-2824-020-0	max 2,5 mm ² (2 x "+")	max. 16 mm ²	max. 2,5 mm ²	horizontal for standard rail DIN TS35	0,040 kg	12 mm	1	61.2	53.7	64.5	14.8	99.3	51.7	12
EB-2824-030-0	max 2,5 mm ² (2 x "+")	max. 16 mm ²	max. 2,5 mm ²	horizontal for standard rail DIN TS35	0,040 kg	12 mm	1	61.2	53.7	64.5	14.8	99.3	51.7	12
EB-2824-040-0	max 2,5 mm ² (2 x "+")	max. 16 mm ²	max. 2,5 mm ²	horizontal for standard rail DIN TS35	0,040 kg	12 mm	1	61.2	53.7	64.5	14.8	99.3	51.7	12
EB-2824-060-0	max 2,5 mm ² (2 x "+")	max. 16 mm ²	max. 2,5 mm ²	horizontal for standard rail DIN TS35	0,040 kg	12 mm	1	61.2	53.7	64.5	14.8	99.3	51.7	12

Dimension pictures



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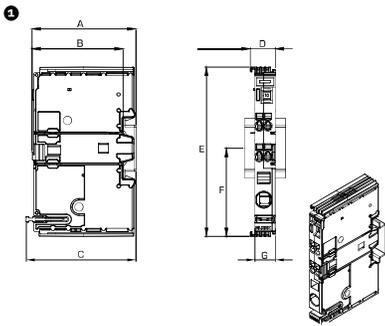


1-Channel circuit breaker EasyB 1-Channel

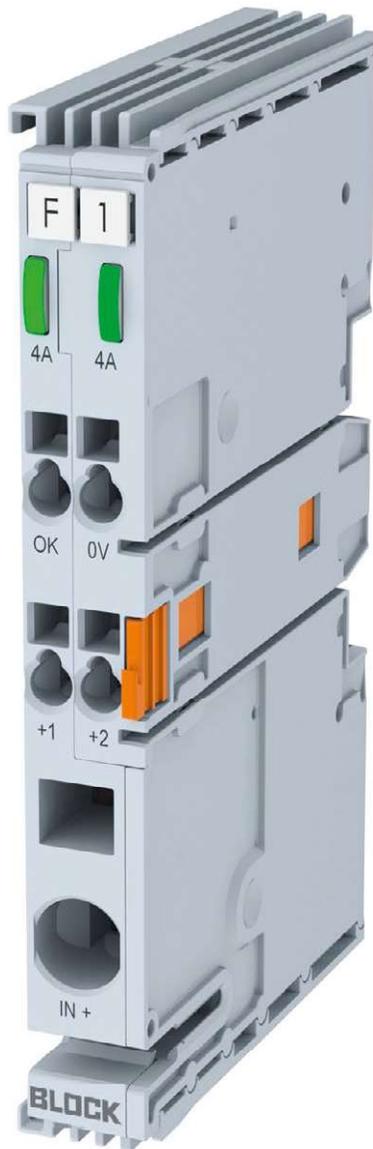


Mechanical data	Typ	Terminals output, (spring clamp terminal)	Terminals input, (spring clamp terminal)	Terminals signalling, (spring clamp terminal)	Mounting position	Weight	Width	Dimension picture (in mm)	A	B	C	D	E	F	G
									1	1	1	1	1	1	1
	EB-2824-080-0	max 2,5 mm ² (2 x "+")	max. 16 mm ²	max. 2,5 mm ²	horizontal for standard rail DIN TS35	0,040 kg	12 mm	1	61.2	53.7	64.5	14.8	99.3	51.7	12
	EB-2824-100-0	max 2,5 mm ² (2 x "+")	max. 16 mm ²	max. 2,5 mm ²	horizontal for standard rail DIN TS35	0,040 kg	12 mm	1	61.2	53.7	64.5	14.8	99.3	51.7	12
	EB-3824-100-0	max 2,5 mm ² (1 x "+")	max. 16 mm ²	max. 2,5 mm ²	horizontal for standard rail DIN TS35	0,042 kg	12 mm	1	61.2	53.7	64.5	14.8	99.3	51.7	12

Dimension pictures



2-Channel circuit breaker **EasyB 2-Channel**



General Data

- Efficiency up to 99 %
- Multi-coloured LED and status display button
- Up to 40 fuse channels stackable side by side
- With thermomagnetic characteristic
- Ambient temperature -25 °C to +55 °C / +70 °C
- Protection index IP 20

Advantages

- Compact design - 2 independent channels in 12 mm width
- Automatic channel assignment
- Additional load outputs through output expanders mountable side by side

Applications

Electronic circuit breaker with thermomagnetic characteristic with alarm signal forwarded for tripped and switched off channels to the connected channels. Starter version with fuse for 24 V loads.

Standards

Safety:
EN 60950-1, EN 50178, EN/IEC 60204-1

EMC:
EN 61000-6-2 (interference immunity), EN 61000-6-3 (emitted interference)

CE acc. to 2014/30/EU

Approvals **EAC**

UL 508 (prepared), UL 2367 (prepared), GL (prepared)

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2-Channel circuit breaker EasyB 2-Channel



Typ	EB-2724-2020-0	EB-2724-2040-0	EB-2724-2060-0	EB-2724-2080-0
Electrical data				
Special features				
Available from	Q2 2017	Q2 2017	Q2 2017	Q2 2017
Input				
Input rated voltage	24 Vdc	24 Vdc	24 Vdc	24 Vdc
Input voltage range	18 - 30 Vdc			
Maximal residual ripple of supplied input voltage	3 %	3 %	3 %	3 %
Max. total input current	2 A	4 A	6 A	8 A
Max. input current for each pole of terminal	10 A (-), 40 A (+)			
Required input voltage for turning-on of outputs	17.5 V (Turn-off Threshold 16.7 V), ± 0.7 V	17.5 V (Turn-off Threshold 16.7 V), ± 0.7 V	17.5 V (Turn-off Threshold 16.7 V), ± 0.7 V	17.5 V (Turn-off Threshold 16.7 V), ± 0.7 V
Max. power losses	0,4 W	0,4 W	0,4 W	0,4 W
Over voltage protection	Suppressor diode 33 V			
Stand-by current	12 mA @ 24 V			
Power losses in stand-by mode	0,3 W @ 24 V			
Turn on capacity	70 mF @ 24 Vdc / 2,5 mm ² / 2,5 m	80 mF @ 24 Vdc / 2,5 mm ² / 2,5 m	80 mF @ 24 Vdc / 2,5 mm ² / 2,5 m	80 mF @ 24 Vdc / 2,5 mm ² / 2,5 m
Output				
Output rated voltage	24 Vdc	24 Vdc	24 Vdc	24 Vdc
Output rated current	2 x 1 A	2 x 2 A	2 x 3 A	2 x 4 A
Maximum voltage drop between input and output	24 mV	29 mV	33 mV	34 mV
Initialization time of module	27 ms	27 ms	27 ms	27 ms
Turn-on delay of outputs	0 ms	0 ms	0 ms	0 ms
Waiting periode after switch-off of an output	500 ms (Short circuit) . . 5 s (Overload)	500 ms (Short circuit) . . 5 s (Overload)	500 ms (Short circuit) . . 5 s (Overload)	500 ms (Short circuit) . . 5 s (Overload)
Parallel use of outputs	Not allowed	Not allowed	Not allowed	Not allowed
Serial use of outputs	not allowed	not allowed	not allowed	not allowed
Resistance to reverse feed max.	35 Vdc	35 Vdc	35 Vdc	35 Vdc
Efficiency	99,0 %	99,0 %	99,0 %	99,0 %
Output limited current	-	-	-	-
Signaling				
Bus communication	Collective notification signal bypassed			
Status indicator	LED (red, green, orange)			
Signal output	Output status, short circuit, proof high = Channel on, low = Channel off, fault	Output status, short circuit, proof high = Channel on, low = Channel off, fault	Output status, short circuit, proof high = Channel on, low = Channel off, fault	Output status, short circuit, proof high = Channel on, low = Channel off, fault
Signal output (ON/OFF/Reset)	-	-	-	-
Environment				
Type of cooling	Natural convection	Natural convection	Natural convection	Natural convection
Ambient temperature	-25 °C . . +70 °C			
Storage temperature	-25 °C . . +85 °C			
Derating	-	-	-	-
Relative humidity	5 . . 96 %, without condensation			
Required minimum spacing (left/right)	0 mm	0 mm	0 mm	0 mm
Required minimum spacing (over/under)	30 mm	30 mm	30 mm	30 mm
Safety and protection				
Protection index	IP 20	IP 20	IP 20	IP 20
Safety class	III, without PE connection			
Degree of pollution	2	2	2	2
Order numbers				
Order Number	EB-2724-2020-0	EB-2724-2040-0	EB-2724-2060-0	EB-2724-2080-0



2-Channel circuit breaker EasyB 2-Channel



Typ	EB-2724-2120-0	EB-2724-2160-0
Electrical data		
Special features		
Available from	Q2 2017	Q2 2017
Input		
Input rated voltage	24 Vdc	24 Vdc
Input voltage range	18 - 30 Vdc	18 - 30 Vdc
Maximal residual ripple of supplied input voltage	3 %	3 %
Max. total input current	12 A	16 A
Max. input current for each pole of terminal	10 A (-), 40 A (+)	10 A (-), 40 A (+)
Required input voltage for turning-on of outputs	17,5 V (Turn-off Threshold 16,7 V), ± 0,7 V	17,5 V (Turn-off Threshold 16,7 V), ± 0,7 V
Max. power losses	0,6 W	0,9 W
Over voltage protection	Suppressor diode 33 V	Suppressor diode 33 V
Stand-by current	12 mA @ 24 V	12 mA @ 24 V
Power losses in stand-by mode	0,3 W @ 24 V	0,3 W @ 24 V
Turn on capacity	70 mF @ 24 Vdc / 2,5 mm ² / 2,5 m	70 mF @ 24 Vdc / 2,5 mm ² / 2,5 m
Output		
Output rated voltage	24 Vdc	24 Vdc
Output rated current	2 x 6 A	2 x 8 A
Maximum voltage drop between input and output	54 mV	72 mV
Initialization time of module	27 ms	27 ms
Turn-on delay of outputs	0 ms	0 ms
Waiting periode after switch-off of an output	500 ms (Short circuit) .. 5 s (Overload)	500 ms (Short circuit) .. 5 s (Overload)
Parallel use of outputs	Not allowed	Not allowed
Serial use of outputs	not allowed	not allowed
Resistance to reverse feed max.	35 Vdc	35 Vdc
Efficiency	99,0 %	99,0 %
Output limited current	-	-
Signaling		
Bus communication	Collective notification signal bypassed	Collective notification signal bypassed
Status indicator	LED (red, green, orange)	LED (red, green, orange)
Signal output	Output status, short circuit proof high = Channel on, low = Channel off, fault	Output status, short circuit proof high = Channel on, low = Channel off, fault
Signal output (ON/OFF/Reset)	-	-
Environment		
Type of cooling	Natural convection	Natural convection
Ambient temperature	-25 °C ... +70 °C	-25 °C ... +55 °C
Storage temperature	-25 °C ... +85 °C	-25 °C ... +85 °C
Derating	-	-
Relative humidity	5 ... 96 %, without condensation	5 ... 96 %, without condensation
Required minimum spacing (left/right)	0 mm	0 mm
Required minimum spacing (over/under)	30 mm	30 mm
Safety and protection		
Protection index	IP 20	IP 20
Safety class	III, without PE connection	III, without PE connection
Degree of pollution	2	2
Order numbers		
Order Number	EB-2724-2120-0	EB-2724-2160-0

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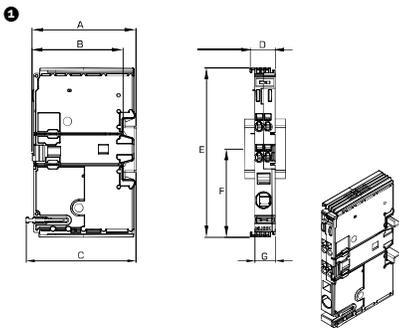


2-Channel circuit breaker EasyB 2-Channel



Mechanical data	Typ	Terminals output, (spring clamp terminal)	Terminals input, (spring clamp terminal)	Terminals signalling, (spring clamp terminal)	Mounting position	Weight	Dimension picture (in mm)						
							A	B	C	D	E	F	G
	EB-2724-2020-0	max 2,5 mm ² (2 x "+")	max. 16 mm ²	max. 2,5 mm ²	horizontal for standard rail DIN TS35	0.039 kg	④ 61.2	53.7	64.5	14.8	99.3	51.7	12
	EB-2724-2040-0	max 2,5 mm ² (2 x "+")	max. 16 mm ²	max. 2,5 mm ²	horizontal for standard rail DIN TS35	0.039 kg	④ 61.2	53.7	64.5	14.8	99.3	51.7	12
	EB-2724-2060-0	max 2,5 mm ² (2 x "+")	max. 16 mm ²	max. 2,5 mm ²	horizontal for standard rail DIN TS35	0.039 kg	④ 61.2	53.7	64.5	14.8	99.3	51.7	12
	EB-2724-2080-0	max 2,5 mm ² (2 x "+")	max. 16 mm ²	max. 2,5 mm ²	horizontal for standard rail DIN TS35	0.039 kg	④ 61.2	53.7	64.5	14.8	99.3	51.7	12
	EB-2724-2120-0	max 2,5 mm ² (2 x "+")	max. 16 mm ²	max. 2,5 mm ²	horizontal for standard rail DIN TS35	0.039 kg	④ 61.2	53.7	64.5	14.8	99.3	51.7	12
	EB-2724-2160-0	max 2,5 mm ² (2 x "+")	max. 16 mm ²	max. 2,5 mm ²	horizontal for standard rail DIN TS35	0.039 kg	④ 61.2	53.7	64.5	14.8	99.3	51.7	12

Dimension pictures



Electronic circuit breaker with thermomagnetic characteristic

ECONOMY SMART



General Data

Nominal input voltage	12 / 24 / 48 Vdc
Output channels	2 / 4 / 8
Tripping current	1 - 6 A / 2 - 10 A
Thermomagnetic characteristic	
Ambient temperature	-25 °C to +70 °C
Protection index	IP 20
Efficiency typ.	99 %

Advantages

Adjustable tripping current for each output channel via current selector switch
Ability to turn-on high load capacitance at each channel
Sequential and load-dependent switching-on of channels
Comprehensive single-channel-diagnostics and remote switching on/off of each output channel via 2-wire-interface
LED signalisation and remote request for each output channel
Group alarm contact

Applications

ECONOMY SMART circuit breakers with a thermomagnetic characteristic represent an economical alternative to the classic circuit breaker. They also ensure reliable tripping even in the case of high line resistance. This makes the circuit breakers ideal for use in standard machine production. The electronic circuit breaker distributes and monitors the load current over several current circuits. Overloads and short circuits on an output are reliably recognized. The electronics permit brief current peaks and switch longer overloads off. The rated current for each output can be individually set with a current selector switch accessible from the front. The outputs are activated depending on the time delay and load to avoid an overload current. If the rated current is exceeded for a certain amount of time, the output will be switched off automatically and can be reactivated after a waiting time (thermal relaxation) using the pushbutton or the remote signal input S1. The pushbutton can also be used to switch the output manually. It is possible to read out the state of each output using the three signal contacts. The state of each output is also indicated with a multi-colored LED.

Standards

Electronic circuit breaker
UL 508, UL 2367

Safety:
EN 60950-1, EN 50178,
EN/IEC 60204-1

EMC:
EN 61000-6-2, EN 61000-6-3

Safety extra low voltage (SELV/PELV):
IEC 60364-4-41 (DIN VDE 0100-410)

Approvals



UL 2367 (E-File: E356250)UL 508 (E-File: E219022)GL

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Electronic circuit breaker with thermomagnetic characteristic **ECONOMY SMART**



Typ	PM-0712-200-0	PM-0712-400-0	PM-0724-120-0	PM-0724-200-0
Electrical data				
Input				
Input rated voltage	12 Vdc	12 Vdc	24 Vdc	24 Vdc
Input voltage range	10 - 16 Vdc	10 - 16 Vdc	18 - 30 Vdc	18 - 30 Vdc
Maximal residual ripple of supplied input voltage	3 %	3 %	3 %	3 %
Required input voltage for turning-on of outputs	10.5 V (Turn-off Threshold 10 V)	10.5 V (Turn-off Threshold 10 V)	19.5 V (Turn-off Threshold 18 V)	19.5 V (Turn-off Threshold 18 V)
Max. total input current	20 A	40 A	12 A	20 A
Max. input current for each pole of terminal	40 A	40 A	40 A	40 A
Over voltage protection	Suppressor diode 33 V			
Stand-by current	44 mA @ 12 V	44 mA @ 12 V	35 mA @ 24 V	35 mA @ 24 V
Power losses in stand-by mode	0.53 W @ 12 V	0.53 W @ 12 V	0.84 W @ 24 V	0.84 W @ 24 V
Output				
Output rated voltage	12 Vdc	12 Vdc	24 Vdc	24 Vdc
Output rated current	2 x 2 - 10 A	4 x 2 - 10 A	2 x 1 - 6 A	2 x 2 - 10 A
Maximum voltage drop between input and output	200 mV @ 2 x 10 A	200 mV @ 4 x 10 A	120 mV @ 2 x 6 A	200 mV @ 2 x 10 A
Initialization time of module	250 ms	250 ms	250 ms	250 ms
Turn-on delay of outputs	Load dependent, min. 50 ms / max. 5 s	Load dependent, min. 50 ms / max. 5 s	Load dependent, min. 50 ms / max. 5 s	Load dependent, min. 50 ms / max. 5 s
Waiting periode after switch-off of an output	500 ms (short circuit) ... 10 s (overload)	500 ms (short circuit) ... 10 s (overload)	500 ms (short circuit) ... 10 s (overload)	500 ms (short circuit) ... 10 s (overload)
Max. power losses	5.3 W @ 2 x 10 A	10 W @ 4 x 10 A	2.5 W @ 2 x 6 A	5.5 W @ 2 x 10 A
Efficiency	99.0 %	99.0 %	99.0 %	99.0 %
Internal output fuse	15 A	15 A	15 A	15 A
Resistance to reverse feed max.	35 Vdc	35 Vdc	35 Vdc	35 Vdc
Parallel use of outputs	Not allowed	Not allowed	Not allowed	Not allowed
Serial use of outputs	Not allowed	Not allowed	Not allowed	Not allowed
Signaling				
Status indicator	LED (red, green, orange)			
Signal input S1	DC 12-24 V (On/Off/Reset)	DC 12-24 V (On/Off/Reset)	DC 24 V (On/Off/Reset)	DC 24 V (On/Off/Reset)
Signal output S2	DC 12 V, max. 25 mA (status output channels)	DC 12 V, max. 25 mA (status output channels)	DC 24 V, max. 25 mA (status output channels)	DC 24 V, max. 25 mA (status output channels)
Signal output S3	DC 12 V, max. 25 mA (Common signalling output)	DC 12 V, max. 25 mA (Common signalling output)	DC 24 V, max. 25 mA (Common signalling output)	DC 24 V, max. 25 mA (Common signalling output)
Approvals				
Approvals	-	cURus, cULus, GL	cURus, cULus, GL	cURus, cULus, GL
Environment				
Storage temperature	-25 °C to +85 °C			
Ambient temperature	-25 °C to +70 °C			
Derating	-	-	-	-
Type of cooling	Natural convection	Natural convection	Natural convection	Natural convection
Required minimum spacing (left/right)	0 mm	0 mm	0 mm	0 mm
Required minimum spacing (over/under)	40 mm	40 mm	40 mm	40 mm
Safety and protection				
Protection index	IP 20	IP 20	IP 20	IP 20
Safety class	III, without PE connection			
Degree of pollution	2	2	2	2
Order numbers				
Order Number	PM-0712-200-0	PM-0712-400-0	PM-0724-120-0	PM-0724-200-0



Electronic circuit breaker with thermomagnetic characteristic **ECONOMY SMART**



Typ	PM-0724-240-0	PM-0724-400-0	PM-0724-400-2	PM-0748-200-0
Electrical data				
Input				
Input rated voltage	24 Vdc	24 Vdc	24 Vdc	48 Vdc
Input voltage range	18 - 30 Vdc	18 - 30 Vdc	18 - 30 Vdc	32 - 58 Vdc
Maximal residual ripple of supplied input voltage	3 %	3 %	3 %	3 %
Required input voltage for turning-on of outputs	19.5 V (Turn-off Threshold 18 V)	19.5 V (Turn-off Threshold 18 V)	19.5 V (Turn-off Threshold 18 V)	35 Vdc
Max. total input current	24 A	40 A	40 A	20 A
Max. input current for each pole of terminal	40 A	40 A	40 A	40 A
Over voltage protection	Suppressor diode 33 V	Suppressor diode 33 V	Suppressor diode 33 V	Suppressor diode 68 V
Stand-by current	35 mA @ 24 V	35 mA @ 24 V	35 mA @ 24 V	
Power losses in stand-by mode	0.84 W @ 24 V	0.84 W @ 24 V	0.84 W @ 24 V	
Output				
Output rated voltage	24 Vdc	24 Vdc	24 Vdc	48 Vdc
Output rated current	4 x 1 - 6 A	4 x 2 - 10 A	4 x 2 - 10 A	2 x 2 - 10 A
Maximum voltage drop between input and output	120 mV @ 4 x 6 A	200 mV @ 4 x 10 A	200 mV @ 2 x 10 A	
Initialization time of module	250 ms	250 ms	250 ms	250 ms
Turn-on delay of outputs	Load dependent, min. 50 ms / max. 5 s	Load dependent, min. 50 ms / max. 5 s	Load dependent, min. 50 ms / max. 5 s	Load dependent, min. 50 ms / max. 5 s
Waiting periode after switch-off of an output	500 ms (short circuit) ... 10 s (overload)	500 ms (short circuit) ... 10 s (overload)	500 ms (short circuit) ... 20 s (overload)	500 ms (short circuit) ... 20 s (overload)
Max. power losses	4.2 W @ 4 x 6 A	10 W @ 4 x 10 A	10 W @ 4 x 10 A	
Efficiency	99.0 %	99.0 %	99.0 %	99.0 %
Internal output fuse	15 A	15 A	15 A	15 A
Resistance to reverse feed max.	35 Vdc	35 Vdc	35 Vdc	58 Vdc
Parallel use of outputs	Not allowed	Not allowed	Not allowed	Not allowed
Serial use of outputs	Not allowed	Not allowed	Not allowed	Not allowed
Signaling				
Status indicator	LED (red, green, orange)	LED (red, green, orange)	LED (red, green, orange)	LED (red, green, orange)
Signal input S1	DC 24 V (On/Off/Reset)	DC 24 V (On/Off/Reset)	DC 24 V (On/Off/Reset)	15 - 58 Vdc (On / Off / Reset)
Signal output S2	DC 24 V, max. 25 mA (status output channels)	DC 24 V, max. 25 mA (status output channels)	"13": Solid State Relais; max. 58 Vdc / 40 Vac / 100 mA	"S2": 24 Vdc, 20 mA, short circuit proof, status report of outputs
Signal output S3	DC 24 V, max. 25 mA (Common signalling output)	DC 24 V, max. 25 mA (Common signalling output)	"14": Solid State Relais; max. 58 Vdc / 40 Vac / 100 mA	"S3": 24 Vdc, 20 mA, short circuit proof; high = OK, low = min. one channel tripped
Approvals				
Approvals	cURus, cULus, GL	cURus, cULus, GL	cURus, cULus, GL	cURus, cULus, GL
Environment				
Storage temperature	-25 °C to +85 °C	-25 °C to +85 °C	-25 °C to +85 °C	-25 °C to +85 °C
Ambient temperature	-25 °C to +70 °C	-25 °C to +70 °C	-25 °C to +70 °C	-25 °C to +70 °C
Derating	-	-	-	-
Type of cooling	Natural convection	Natural convection	Natural convection	Natural convection
Required minimum spacing (left/right)	0 mm	0 mm	0 mm	0 mm
Required minimum spacing (over/under)	40 mm	40 mm	40 mm	40 mm
Safety and protection				
Protection index	IP 20	IP 20	IP 20	IP 20
Safety class	III, without PE connection	III, without PE connection	III, without PE connection	III, without PE connection
Degree of pollution	2	2	2	2
Order numbers				
Order Number	PM-0724-240-0	PM-0724-400-0	PM-0724-400-2	PM-0748-200-0

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Electronic circuit breaker with thermomagnetic characteristic **ECONOMY SMART**



Typ		PM-0748-200-2	PM-0748-400-0	PM-0748-400-2	PC-0724-480-0
Electrical data	Input				
	Input rated voltage	48 Vdc	48 Vdc	48 Vdc	24 Vdc
	Input voltage range	32 - 58 Vdc	32 - 58 Vdc	32 - 58 Vdc	18 - 30 Vdc
	Maximal residual ripple of supplied input voltage	3 %	3 %	3 %	3 %
	Required input voltage for turning-on of outputs	35 Vdc	35 Vdc	35 Vdc	19.5 V (Turn-off Threshold 18 V)
	Max. total input current	20 A	40 A	40 A	48 A
	Max. input current for each pole of terminal	40 A	40 A	40 A	40 A
	Over voltage protection	Suppressor diode 68 V	Suppressor diode 68 V	Suppressor diode 68 V	Suppressor diode 33 V
	Stand-by current		17 mA	17 mA	48 mA @ 24 V
	Power losses in stand-by mode		0.82 W	0.82 W	1.15 W @ 24 V
	Output				
	Output rated voltage	48 Vdc	48 Vdc	48 Vdc	24 Vdc
	Output rated current	2 x 2 - 10 A, adjustable	4 x 2 - 10 A, adjustable	4 x 2 - 10 A, adjustable	8 x 1 - 6 A
Maximum voltage drop between input and output		175 mV (4 x 10 A)	175 mV (4 x 10 A)	155 mV @ 8 x 6 A	
Initialization time of module	250 ms	250 ms	250 ms	250 ms	
Turn-on delay of outputs	Load dependent, min. 50 ms / max. 5 s	Load dependent, min. 50 ms / max. 5 s	Load dependent, min. 50 ms / max. 5 s	Load dependent, min. 50 ms / max. 5 s	
Waiting periode after switch-off of an output	500 ms (short circuit) ... 20 s (overload)	500 ms (short circuit) ... 20 s (overload)	500 ms (short circuit) ... 20 s (overload)	500 ms (short circuit) ... 10 s (overload)	
Max. power losses		8 W (4 x 10 A)	8 W (4 x 10 A)	8.6 W @ 8 x 6 A	
Efficiency	99.0 %	99.0 %	99.0 %	99.0 %	
Internal output fuse	15 A	15 A	15 A	15 A	
Resistance to reverse feed max.	58 Vdc	58 Vdc	58 Vdc	35 Vdc	
Parallel use of outputs	Not allowed	Not allowed	Not allowed	Not allowed	
Serial use of outputs	Not allowed	Not allowed	Not allowed	Not allowed	
Signaling					
Status indicator	LED (red, green, orange)	LED (red, green, orange)	LED (red, green, orange)	LED (red, green, orange)	
Signal input S1	15 - 58 Vdc (On / Off / Reset)	15 - 58 Vdc (On / Off / Reset)	15 - 58 Vdc (On / Off / Reset)	DC 24 V (On/Off/Reset)	
Signal output S2	"13": Solid State Relais; max 58 Vdc / 40 Vac / 100 mA	"S2": 24 Vdc, 20 mA, short circuit proof, status report of outputs	"13": Solid State Relais; max 58 Vdc / 40 Vac / 100 mA	DC 24 V, max. 25 mA (status output channels)	
Signal output S3	"14": Solid State Relais; max 58 Vdc / 40 Vac / 100 mA	"S3": 24 Vdc, 20 mA, short circuit proof; high = OK, low = min. one channel tripped	"14": Solid State Relais; max 58 Vdc / 40 Vac / 100 mA	DC 24 V, max. 25 mA (Common signalling output)	
Approvals	cURus, cULus, GL	-	-	cURus, cULus, GL	
Environment					
Storage temperature	-25 °C to +85 °C	-25 °C to +85 °C	-25 °C to +85 °C	-25 °C to +85 °C	
Ambient temperature	-25 °C to +70 °C	-25 °C to +70 °C	-25 °C to +70 °C	-25 °C to +70 °C	
Derating	-	-	-	-	
Type of cooling	Natural convection	Natural convection	Natural convection	Natural convection	
Required minimum spacing (left/right)	0 mm	0 mm	0 mm	0 mm	
Required minimum spacing (over/under)	40 mm	40 mm	40 mm	40 mm	
Safety and protection					
Protection index	IP 20	IP 20	IP 20	IP 20	
Safety class	III, without PE connection	III, without PE connection	III, without PE connection	III, without PE connection	
Degree of pollution	2	2	2	2	
Order numbers					
Order Number	PM-0748-200-2	PM-0748-400-0	PM-0748-400-2	PC-0724-480-0	



Electronic circuit breaker with thermomagnetic characteristic **ECONOMY SMART**



Typ	PC-0724-800-0	PC-0724-800-2	PC-0748-800-0	PC-0748-800-2
Electrical data				
Input				
Input rated voltage	24 Vdc	24 Vdc	48 Vdc	48 Vdc
Input voltage range	18 - 30 Vdc	18 - 30 Vdc	32 - 58 Vdc	32 - 58 Vdc
Maximal residual ripple of supplied input voltage	3 %	3 %	3 %	3 %
Required input voltage for turning-on of outputs	19.5 V (Turn-off Threshold 18 V)	19.5 V (Turn-off Threshold 18 V)	35 V (Turn-off Threshold 32 V)	35 V (Turn-off Threshold 32 V)
Max. total input current	70 A	70 A	70 A	70 A
Max. input current for each pole of terminal	40 A	40 A	40 A	40 A
Over voltage protection	Suppressor diode 33 V	Suppressor diode 33 V	Suppressor diode 68 V	Suppressor diode 68 V
Stand-by current	55 mA @ 24 V	55 mA @ 24 V	27 mA	27 mA
Power losses in stand-by mode	1.32 W @ 24 V	1.32 W @ 24 V	1.3 W @ 24 V	1.3 W @ 24 V
Output				
Output rated voltage	24 Vdc	24 Vdc	48 Vdc	48 Vdc
Output rated current	8 x 2 - 10 A	8 x 2 - 10 A	8 x 2 - 10 A	8 x 2 - 10 A
Maximum voltage drop between input and output	200 mV @ 8 x 10 A	200 mV @ 8 x 10 A	200 mV (8 x 10 A)	200 mV (8 x 10 A)
Initialization time of module	250 ms	250 ms	250 ms	250 ms
Turn-on delay of outputs	Load dependent, min. 50 ms / max. 5 s	Load dependent, min. 50 ms / max. 5 s	Load dependent, min. 50 ms / max. 5 s	Load dependent, min. 50 ms / max. 5 s
Waiting periode after switch-off of an output	500 ms (short circuit) ... 10 s (overload)	500 ms (short circuit) ... 10 s (overload)	500 ms (short circuit) ... 20 s (overload)	500 ms (short circuit) ... 20 s (overload)
Max. power losses	20 W @ 8 x 10 A	20 W @ 8 x 10 A	4.5 W (2 x 10 A)	4.5 W (2 x 10 A)
Efficiency	99.0 %	99.0 %	99.0 %	99.0 %
Internal output fuse	15 A	15 A	15 A	15 A
Resistance to reverse feed max.	35 Vdc	35 Vdc	58 Vdc	58 Vdc
Parallel use of outputs	Not allowed	Not allowed	Not allowed	Not allowed
Serial use of outputs	Not allowed	Not allowed	Not allowed	Not allowed
Signaling				
Status indicator	LED (red, green, orange)	LED (red, green, orange)	LED (red, green, orange)	LED (red, green, orange)
Signal input S1	DC 24 V (On/Off/Reset)	DC 24 V (On/Off/Reset)	15 - 58 Vdc (On / Off / Reset)	15 - 58 Vdc (On / Off / Reset)
Signal output S2	DC 24 V, max. 25 mA (status output channels)	"13": Solid State Relais; max. 58 Vdc / 40 Vac / 100 mA	24 Vdc, 20 mA, short circuit proof, status report of outputs	"13": Solid State Relais; max. 58 Vdc / 40 Vac / 100 mA
Signal output S3	DC 24 V, max. 25 mA (Common signalling output)	"14": Solid State Relais; max. 58 Vdc / 40 Vac / 100 mA	24 Vdc, 20 mA, short circuit proof; high = OK, low = min. one channel tripped	"14": Solid State Relais; max. 58 Vdc / 40 Vac / 100 mA
Approvals				
Approvals	cURus, cULus, GL	cURus, cULus, GL	cURus, cULus, GL	cURus, cULus, GL
Environment				
Storage temperature	-25 °C to +85 °C	-25 °C to +85 °C	-25 °C to +85 °C	-25 °C to +85 °C
Ambient temperature	-25 °C to +70 °C	-25 °C to +70 °C	-25 °C to +70 °C	-25 °C to +70 °C
Derating	-	-	-	-
Type of cooling	Natural convection	Natural convection	Natural convection	Natural convection
Required minimum spacing (left/right)	0 mm	0 mm	0 mm	0 mm
Required minimum spacing (over/under)	40 mm	40 mm	40 mm	40 mm
Safety and protection				
Protection index	IP 20	IP 20	IP 20	IP 20
Safety class	III, without PE connection	III, without PE connection	III, without PE connection	III, without PE connection
Degree of pollution	2	2	2	2
Order numbers				
Order Number	PC-0724-800-0	PC-0724-800-2	PC-0748-800-0	PC-0748-800-2

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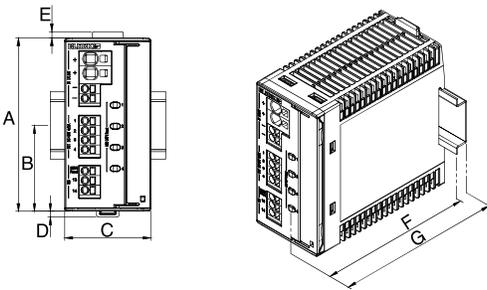
Electronic circuit breaker with thermomagnetic characteristic **ECONOMY SMART**



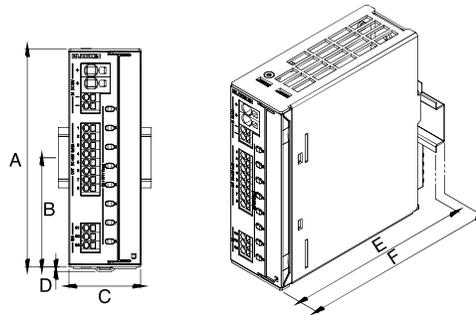
Typ	Mounting position	Terminals signalling, 1) direct plug-in technology Push-in 2) pluggable, WAGO series 721	Input terminals (2 x "1"), 1) direct plug-in technology Push-in 2) pluggable, WAGO series 721	Input terminals (2 x "1"), 1) direct plug-in technology Push-in 2) pluggable, WAGO series 831	Output terminals ("1"), 1) direct plug-in technology Push-in 2) pluggable, WAGO series 721	Weight	Dimension picture (in mm)							
							A	B	C	D	E	F	G	
PM-0712-200-0	horizontal for standard rail DIN TS35	1) max. 2,5 mm ²	1) max. 2,5 mm ²	1) max. 6 mm ²	1) max. 2,5 mm ²	0,20 kg	1	90	45	45	3	3,5	91,5	99
PM-0712-400-0	horizontal for standard rail DIN TS35	1) max. 2,5 mm ²	1) max. 2,5 mm ²	1) max. 6 mm ²	1) max. 2,5 mm ²	0,20 kg	1	90	45	45	3	3,5	91,5	99
PM-0724-120-0	horizontal for standard rail DIN TS35	1) max. 2,5 mm ²	1) max. 2,5 mm ²	1) max. 6 mm ²	1) max. 2,5 mm ²	0,20 kg	2	90	45	45	3	3,5	91,5	99
PM-0724-200-0	horizontal for standard rail DIN TS35	1) max. 2,5 mm ²	1) max. 2,5 mm ²	1) max. 6 mm ²	1) max. 2,5 mm ²	0,20 kg	1	90	45	45	3	3,5	91,5	99
PM-0724-240-0	horizontal for standard rail DIN TS35	1) max. 2,5 mm ²	1) max. 2,5 mm ²	1) max. 6 mm ²	1) max. 2,5 mm ²	0,20 kg	1	90	45	45	3	3,5	91,5	99
PM-0724-400-0	horizontal for standard rail DIN TS35	1) max. 2,5 mm ²	1) max. 2,5 mm ²	1) max. 6 mm ²	1) max. 2,5 mm ²	0,20 kg	2	90	45	45	3	3,5	91,5	99
PM-0724-400-2	horizontal for standard rail DIN TS35	1) max. 2,5 mm ²	1) max. 2,5 mm ²	1) max. 6 mm ²	1) max. 2,5 mm ²	0,20 kg	1	90	45	45	3	3,5	91,5	99
PM-0748-200-0	horizontal for standard rail DIN TS35	1) max. 2,5 mm ²	1) max. 2,5 mm ²	1) max. 6 mm ²	1) max. 2,5 mm ²	0,14 kg	1	90	45	45	3	3,5	91,5	99
PM-0748-200-2	horizontal for standard rail DIN TS35	1) max. 2,5 mm ²	1) max. 2,5 mm ²	1) max. 6 mm ²	1) max. 2,5 mm ²	0,14 kg	2	90	45	45	3	3,5	91,5	99
PM-0748-400-0	horizontal for standard rail DIN TS35	1) max. 2,5 mm ²	1) max. 2,5 mm ²	1) max. 6 mm ²	1) max. 2,5 mm ²	0,14 kg	1	90	45	45	3	3,5	91,5	99
PM-0748-400-2	horizontal for standard rail DIN TS35	1) max. 2,5 mm ²	1) max. 2,5 mm ²	1) max. 6 mm ²	1) max. 2,5 mm ²	0,14 kg	2	90	45	45	3	3,5	91,5	99
PC-0724-480-0	horizontal for standard rail DIN TS35	1) max. 2,5 mm ²	1) max. 2,5 mm ²	1) max. 6 mm ²	1) max. 2,5 mm ²	0,40 kg	3	127	63,5	42	3	116,5	124	-
PC-0724-800-0	horizontal for standard rail DIN TS35	1) max. 2,5 mm ²	1) max. 2,5 mm ²	1) max. 6 mm ²	1) max. 2,5 mm ²	0,40 kg	3	127	63,5	42	3	116,5	124	-
PC-0724-800-2	horizontal for standard rail DIN TS35	1) max. 2,5 mm ²	1) max. 2,5 mm ²	1) max. 6 mm ²	1) max. 2,5 mm ²	0,40 kg	3	127	63,5	42	3	116,5	124	-
PC-0748-800-0	horizontal for standard rail DIN TS35	2) max. 2,5 mm ²	2) max. 2,5 mm ²	2) max. 6 mm ²	2) max. 2,5 mm ²	0,40 kg	3	127	63,5	42	3	116,5	124	-
PC-0748-800-2	horizontal for standard rail DIN TS35	2) max. 2,5 mm ²	2) max. 2,5 mm ²	2) max. 6 mm ²	2) max. 2,5 mm ²	0,40 kg	3	127	63,5	42	3	116,5	124	-

Dimension pictures

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Electronic circuit breaker with thermomagnetic characteristic **ECONOMY REMOTE**



General Data

Nominal input voltage 24 Vdc
Output channels 2 / 4 / 8
Tripping current 2 - 10 A
Thermomagnetic characteristic
Operational temperature -25° C ... +70° C
Protection index IP 20
Efficiency typ. 99 %

Advantages

Adjustable tripping current for each output channel via 2-wire-interface
Ability to turn-on high load capacitance at each channel
Sequential and load-dependent switching-on of channels
Comprehensive single-channel-diagnostics and remote switching on/off of each output channel via 2-wire-interface
Group alarm contact for simple diagnosis

Applications

ECONOMY REMOTE circuit breakers with a thermomagnetic characteristic represent an economical alternative to the classic circuit breaker. They also ensure reliable tripping even in the case of high line resistance. This makes the circuit breakers ideal for use in standard machine production. The electronic circuit breaker distributes and monitors the load current over several current circuits. Overloads and short circuits on an output are reliably recognized. The electronics permit brief current peaks and switch longer overloads off. The tripping current for each output can be individually set in 6 steps only with a higher-level control system (e.g. PLC). The outputs are activated depending on the time delay and load to avoid an overload current. If the rated current is exceeded for a certain amount of time, the output will be switched off automatically and can be reactivated after a waiting time (thermal relaxation) using the pushbutton or the remote signal input S1. The pushbutton can also be used to switch the output manually. It is possible to read out the state of each output using the three signal contacts. The state of each output is also indicated with a multi-colored LED.

Standards

Electronic circuit breaker
UL 508, UL 2367

Safety:
EN 60950-1, EN 50178,
EN/IEC 60204-1

EMC:
EN 61000-6-2, EN 61000-6-3

Safety extra low voltage (SELV/PELV):
IEC 60364-4-41 (LIN VDE 0100-410)

Approvals



UL 2367 (E-File: E356250)UL 508 (E-File: E219022)GL

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Electronic circuit breaker with thermomagnetic characteristic **ECONOMY REMOTE**



Typ		PM-3724-200-0	PM-3724-400-0	PC-3724-800-0	
Electrical data	Input				
	Input rated voltage	24 Vdc	24 Vdc	24 Vdc	
	Input voltage range	18 - 30 Vdc	18 - 30 Vdc	18 - 30 Vdc	
	Maximal residual ripple of supplied input voltage	3 %	3 %	3 %	
	Required input voltage for turning-on of outputs	19.5 V (Turn-off Threshold 18 V)	19.5 V (Turn-off Threshold 18 V)	19.5 V (Turn-off Threshold 18 V)	
	Max. total input current	20 A	40 A	70 A	
	Max. input current for each pole of terminal	40 A	40 A	40 A	
	Over voltage protection	Suppressor diode 33 V	Suppressor diode 33 V	Suppressor diode 33 V	
	Stand-by current	35 mA @ 24 V	35 mA @ 24 V	55 mA @ 24 V	
	Power losses in stand-by mode	0.84 W @ 24 V	0.84 W @ 24 V	1.32 W @ 24 V	
	Output				
	Output rated voltage	24 Vdc	24 Vdc	24 Vdc	
	Output rated current	2 x (2, 3, 6, 8,10 A)	4 x (2, 3, 6, 8,10 A)	8 x (2, 3, 6, 8,10 A)	
Maximum voltage drop between input and output	200 mV @ 2 x 10 A	200 mV @ 4 x 10 A	200 mV @ 8 x 10 A		
Initialization time of module	250 ms	250 ms	250 ms		
Turn-on delay of outputs	Load dependent, min. 50 ms / max. 5 s	Load dependent, min. 50 ms / max. 5 s	Load dependent, min. 50 ms / max. 5 s		
Waiting periode after switch-off of an output	500 ms (short circuit) .. 10 s (overload)	500 ms (short circuit) .. 10 s (overload)	500 ms (short circuit) .. 10 s (overload)		
Max. power losses	5.5 W @ 2 x 10 A	10 W @ 4 x 10 A	20 W @ 8 x 10 A		
Efficiency	99.0 %	99.0 %	99.0 %		
Internal output fuse	15 A	15 A	15 A		
Resistance to reverse feed max.	35 Vdc	35 Vdc	35 Vdc		
Parallel use of outputs	Not allowed	Not allowed	Not allowed		
Serial use of outputs	Not allowed	Not allowed	Not allowed		
Signaling					
Status indicator	LED (red, green, orange)	LED (red, green, orange)	LED (red, green, orange)		
Signal input S1	DC 24 V (On/Off/Reset)	DC 24 V (On/Off/Reset)	DC 24 V (On/Off/Reset)		
Signal output S2	DC 24 V, max. 25 mA (status output channels)	DC 24 V, max. 25 mA (status output channels)	DC 24 V, max. 25 mA (status output channels)		
Signal output S3	DC 24 V, max. 25 mA (Common signalling output)	DC 24 V, max. 25 mA (Common signalling output)	DC 24 V, max. 25 mA (Common signalling output)		
Environment					
Storage temperature	-25 °C ... +85 °C	-25 °C ... +85 °C	-25 °C ... +85 °C		
Ambient temperature	-25 °C ... +70° C	-25° C ... +70° C	-25° C ... +70° C		
Derating	-	Max. output current per channel: 10 A Total current (all channels together): max. 40A @ 40°C max. 35A @ 50°C max. 25A @ 60°C max. 20A @ 70°C	Max. output current per channel: 10 A Total current (all channels together): max. 50A @ 60°C max. 40A @ 70°C		
Type of cooling	Natural convection	Natural convection	Natural convection		
Required minimum spacing (left/right)	0 mm	0 mm	0 mm		
Required minimum spacing (over/under)	40 mm	40 mm	40 mm		
Safety and protection					
Protection index	IP 20	IP 20	IP 20		
Safety class	III, without PE connection	III, without PE connection	III, without PE connection		
Degree of pollution	2	2	2		
Order numbers					
Order Number	PM-3724-200-0	PM-3724-400-0	PC-3724-800-0		



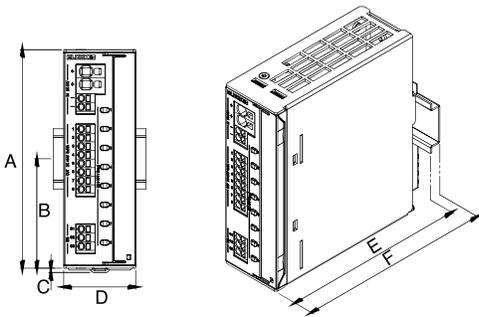
Electronic circuit breaker with thermomagnetic characteristic **ECONOMY REMOTE**



Mechanical data	Typ	Mounting position	Terminals signalling (direct plug-in technology Push-in)	Input terminals (2 x "++"), 1) direct plug-in technology Push-in	Input terminals (2 x "++"), 1) direct plug-in technology Push-in	Output terminals ("+"), direct plug-in technology Push-in	Weight	Dimension (W x H x D)	Dimension picture (in mm)						
									A	B	C	D	E	F	
	PM-3724-200-0	horizontal for standard rail DIN TS35	max. 2,5 mm ²	max. 2,5 mm ²	max. 6 mm ²	max. 2,5 mm ²	0,20 kg	45 x 90 x 90,5 mm	1	90	45	3	45	91,5	99
	PM-3724-400-0	horizontal for standard rail DIN TS35	max. 2,5 mm ²	max. 2,5 mm ²	max. 6 mm ²	max. 2,5 mm ²	0,20 kg	45 x 90 x 90,5 mm	2	90	45	3	45	91,5	99
	PC-3724-800-0	horizontal for standard rail DIN TS35	max. 2,5 mm ²	max. 2,5 mm ²	max. 6 mm ²	max. 2,5 mm ²	0,40 kg	42 x 127 x 116,5 mm	3	127	63,5	3	42	116,5	124

Dimension pictures

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Electronic circuit breaker with current limiting

BASIC SMART



General Data

Nominal input voltage 24 Vdc
Output channels 2 / 4 / 8
Tripping current 0,5 - 6 A / 2 - 12 A
Active current limiting typ. 1,7 x I _{rated}
Ambient temperature -25 °C to +70 °C
Protection index IP 20
Efficiency typ. 99 %

Advantages

- Adjustable tripping current for each output channel via current selector switch
- Selective immediate switch off of defective circuits in the event of critical supply voltage
- Sequential and load-dependent switching-on of channels
- Comprehensive single-channel-diagnostics and remote switching on/off of each output channel via 2-wire-interface
- Further diagnoses of input voltage and the current of each circuit
- Group alarm contact

Applications

The BASIC SMART circuit breakers guarantee maximum system availability. In the event of overload, only the faulty current paths are reliably switched off without affecting the remaining circuits thanks to active current limiting to 1.7 times the rated current. The electronic circuit breaker distributes and monitors the load current over several current circuits. Overloads and short circuits on an output are reliably recognized. The electronics permit brief current peaks and switch longer overloads off. The rated current for each output can be individually set with a current selector switch accessible from the front. The outputs are activated depending on the time delay and load to avoid an overload current. If the rated current is exceeded for a certain amount of time, the output will be switched off automatically and can be reactivated after a waiting time (thermal relaxation) using the pushbutton or the remote signal input S1. The pushbutton can also be used to switch the output manually. It is possible to read out the state of each output using the three signal contacts. The state of each output is also indicated with a multi-colored LED.

Standards

Electronic circuit breaker
UL 508, UL 2367

Safety:
EN 60950-1, EN 50178,
EN/IEC 60204-1

EMC:
EN 61000-6-2, EN 61000-6-3

Safety extra low voltage (SELV/PELV):
IEC 60364-4-41 (DIN VDE 0100-410)

Approvals



UL 2367 (E-File: E356250)UL 508 (E-File: E219022)GL



Electronic circuit breaker with current limiting **BASIC SMART**



Typ	PM-0824-120-0	PM-0824-240-0	PM-0824-240-2	PC-0824-480-0
Electrical data				
Input				
Input rated voltage	24 Vdc	24 Vdc	24 Vdc	24 Vdc
Input voltage range	18 - 30 Vdc			
Maximal residual ripple of supplied input voltage	3 %	3 %	3 %	3 %
Required input voltage for turning-on of outputs	19.5 V (Turn-off Threshold 18 V)			
Max. total input current	12 A	24 A	24 A	48 A
Max. input current for each pole of terminal	40 A	40 A	40 A	40 A
Over voltage protection	Suppressor diode 33 V			
Stand-by current	32 mA @ 24 V	32 mA @ 24 V	22.7 mA @ 24 V	48 mA @ 24 V
Power losses in stand-by mode	0.77 W @ 24 V	0.77 W @ 24 V	0.55 W @ 24 V	1.15 W @ 24 V
Output				
Output rated voltage	24 Vdc	24 Vdc	24 Vdc	24 Vdc
Output rated current	2 x 0.5 - 6 A	4 x 0.5 - 6 A	2 x 2 - 12 A	8 x 0.5 - 6 A
Maximum voltage drop between input and output	145 mV @ 2 x 6 A	145 mV @ 4 x 6 A	210 mV @ 2 x 12 A	155 mV @ 8 x 6 A
Initialization time of module	250 ms	250 ms	250 ms	250 ms
Turn-on delay of outputs	Load dependent, min. 50 ms / max. 5 s	Load dependent, min. 50 ms / max. 5 s	Load dependent, min. 50 ms / max. 5 s	Load dependent, min. 50 ms / max. 5 s
Waiting periode after switch-off of an output	500 ms (short circuit) . . . 10 s (overload)	500 ms (short circuit) . . . 10 s (overload)	500 ms (short circuit) . . . 10 s (overload)	500 ms (short circuit) . . . 10 s (overload)
Max. power losses	2.5 W @ 2 x 6 A	4.3 W @ 4 x 6 A	5.58 W @ 2 x 12 A	8.6 W @ 8 x 6 A
Efficiency	99.0 %	99.0 %	99.0 %	99.0 %
Internal output fuse	15 A	15 A	15 A	15 A
Resistance to reverse feed max.	35 Vdc	35 Vdc	35 Vdc	35 Vdc
Parallel use of outputs	Not allowed	Not allowed	Not allowed	Not allowed
Serial use of outputs	Not allowed	Not allowed	Not allowed	Not allowed
Signaling				
Status indicator	LED (red, green, orange)			
Signal input S1	24 Vdc (On/Off/Reset)	24 Vdc (On/Off/Reset)	24 Vdc (On/Off/Reset)	24 Vdc (On/Off/Reset)
Signal output S2	24 Vdc, max. 25mA (status output channels)			
Signal output S3	24 Vdc, max 25mA (Common signalling output)			
Approvals				
Approvals	cURus, cULus, GL	cURus, cULus, GL	cURus, cULus, GL	cURus, cULus, GL
Environment				
Storage temperature	-25 °C to +85 °C			
Ambient temperature	-25° C to +70° C			
Derating	-	-	-	-
Type of cooling	Natural convection	Natural convection	Natural convection	Natural convection
Required minimum spacing (left/right)	0 mm	0 mm	0 mm	0 mm
Required minimum spacing (over/under)	40 mm	40 mm	40 mm	40 mm
Safety and protection				
Protection index	IP 20	IP 20	IP 20	IP 20
Safety class	III, without PE connection			
Degree of pollution	2	2	2	2
Order numbers				
Order Number	PM-0824-120-0	PM-0824-240-0	PM-0824-240-2	PC-0824-480-0

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Electronic circuit breaker with current limiting **BASIC SMART**



Typ		PM-0824-480-0
Electrical data	Input	
	Input rated voltage	24 Vdc
	Input voltage range	18 - 30 Vdc
	Maximal residual ripple of supplied input voltage	3 %
	Required input voltage for turning-on of outputs	19.5 V (Turn-off Threshold 18 V)
	Max. total input current	48 A
	Max. input current for each pole of terminal	40 A
	Over voltage protection	Suppressor diode 33 V
	Stand-by current	32 mA @ 24 V
	Power losses in stand-by mode	0.77 W @ 24 V
	Output	
	Output rated voltage	24 Vdc
	Output rated current	4 x 2 - 12 A
	Maximum voltage drop between input and output	240 mV @ 4 x 12 A
Initialization time of module	250 ms	
Turn-on delay of outputs	Load dependent, min. 50 ms / max. 5 s	
Waiting periode after switch-off of an output	500 ms (short circuit) . . 10 s (overload)	
Max. power losses	12.3 W @ 4 x 12 A	
Efficiency	99.0 %	
Internal output fuse	15 A	
Resistance to reverse feed max.	35 Vdc	
Parallel use of outputs	Not allowed	
Serial use of outputs	Not allowed	
Signaling		
Status indicator	LED (red, green, orange)	
Signal input S1	24 Vdc (On/Off/Reset)	
Signal output S2	24 Vdc, max. 25mA (status output channels)	
Signal output S3	24 Vdc, max 25mA (Common signalling output)	
Approvals		
Approvals	cURus, cULus, GL	
Environment		
Storage temperature	-25 °C to +85 °C	
Ambient temperature	-25° C to +70° C	
Derating	-	
Type of cooling	Natural convection	
Required minimum spacing (left/right)	0 mm	
Required minimum spacing (over/under)	40 mm	
Safety and protection		
Protection index	IP 20	
Safety class	III, without PE connection	
Degree of pollution	2	
Order numbers		
Order Number	PM-0824-480-0	



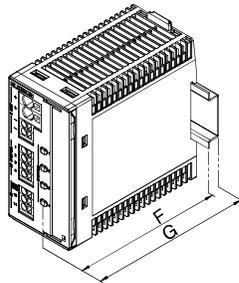
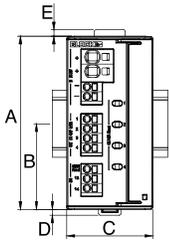
Electronic circuit breaker with current limiting **BASIC SMART**



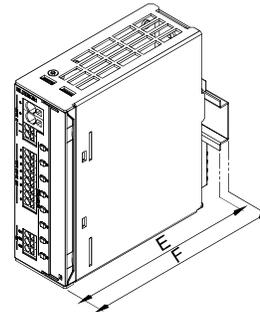
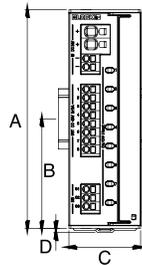
Mechanical data	Typ	Mounting position	Terminals signalling, 1) direct plug-in technology Push-in 2) pluggable, WAGO series 721	Input terminals (2 x "++"), 1) direct plug-in technology Push-in 2) pluggable, WAGO series 721	Input terminals (2 x "++"), 1) direct plug-in technology Push-in 2) pluggable, WAGO series 831	Output terminals ("+"), 1) direct plug-in technology Push-in 2) pluggable, WAGO series 721	Weight	Dimension picture (in mm)							
								A	B	C	D	E	F	G	
	PM-0824-120-0	horizontal for standard rail DIN TS35	1) max 2,5 mm ²	1) max 2,5 mm ²	1) max 6 mm ²	1) max 2,5 mm ²	0,2 kg	1	90	45	45	3	3,5	91,5	99
	PM-0824-240-0	horizontal for standard rail DIN TS35	1) max 2,5 mm ²	1) max 2,5 mm ²	1) max 6 mm ²	1) max 2,5 mm ²	0,2 kg	1	90	45	45	3	3,5	91,5	99
	PM-0824-240-2	horizontal for standard rail DIN TS35	1) max 2,5 mm ²	1) max 2,5 mm ²	1) max 6 mm ²	1) max 2,5 mm ²	0,2 kg	1	90	45	45	3	3,5	91,5	99
	PC-0824-480-0	horizontal for standard rail DIN TS35	1) max 2,5 mm ²	1) max 2,5 mm ²	1) max 6 mm ²	1) max 2,5 mm ²	0,4 kg	3	127	63,5	42	3	116,5	124	-
	PM-0824-480-0	horizontal for standard rail DIN TS35	1) max 2,5 mm ²	1) max 2,5 mm ²	1) max 6 mm ²	1) max 2,5 mm ²	0,2 kg	1	90	45	45	3	3,5	91,5	99

Dimension pictures

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Electronic circuit breaker with current limiting and non-adjustable tripping currents

BASIC FIX



General Data

Nominal input voltage 24 Vdc
Output channels 2 / 4
Fixed tripping current
Active current limiting typ. 1,3 x I _{rated}
Ambient temperature -25 °C to +70 °C
Protection index IP 20
Efficiency typ. 99 %

Advantages

Selective immediate switch off of defective circuits in the event of critical supply voltage
Sequential and load-dependent switching-on of channels
Comprehensive single-channel-diagnostics and remote switching on/off of each output channel via 2-wire-interface
Group alarm contact

Applications

If circuits are designed with the same safety values in a number of applications, the BASIC FIX circuit breakers represent the most economical basis. Different rated current combinations enable use in a wide range of applications. Each channel features active current limiting to 1,3 times the fixed preset rated current. The electronic circuit breaker distributes and monitors the load current over several current circuits. Overloads and short circuits on an output are reliably recognized. The electronics permit brief current peaks and switch longer overloads off. The outputs are activated depending on the time delay and load to avoid an overload current. If the rated current is exceeded for a certain amount of time, the output will be switched off automatically and can be reactivated after a waiting time (thermal relaxation) using the pushbutton or the remote signal input S1. The pushbutton can also be used to switch the output manually. It is possible to read out the state of each output using the three signal contacts. The state of each output is also indicated with a multi-colored LED.

Standards

Electronic circuit breaker
UL 508, UL 2367

Safety:
EN 60950-1, EN 50178,
EN/IEC 60204-1

EMC:
EN 61000-6-2, EN 61000-6-3

Approvals



UL 2367 (E-File: E356250)UL 508 (E-File: E219022)GL



Electronic circuit breaker with current limiting and non-adjustable tripping currents

BASIC FIX



Typ	PM-2824-120-0	PM-2824-180-0	PM-2824-240-0	PM-9824-076-0
Electrical data				
Special features				
Characteristics	-	-	-	For establishing NEC Class 2 circuits
Input				
Input rated voltage	24 Vdc	24 Vdc	24 Vdc	24 Vdc
Input voltage range	18 - 30 Vdc	18 - 30 Vdc	18 - 30 Vdc	20 - 28,8 Vdc
Maximal residual ripple of supplied input voltage	3 %	3 %	3 %	3 %
Required input voltage for turning-on of outputs	19.5 V (Turn-off Threshold 18 V)	19.5 V (Turn-off Threshold 18 V)	19.5 V (Turn-off Threshold 18 V)	20 V (Turn-off Threshold 18 V)
Max. total input current	12 A	18 A	24 A	7,6 A
Max. input current for each pole of terminal	40 A	40 A	40 A	40 A
Over voltage protection	Suppressor diode 33 V			
Stand-by current	32 mA @ 24 V			
Power losses in stand-by mode	0.77 W @ 24 V	0.77 W @ 24 V	0.77 W @ 24 V	0.65 W @ 24 V
Output				
Output rated voltage	24 Vdc	24 Vdc	24 Vdc	24 Vdc
Output rated current	2 x 6 A	2 x 6 A + 2 x 3 A	4 x 6 A	2 x 3,8 A (NEC Class 2)
Maximum voltage drop between input and output	145 mV @ 2 x 6 A	145 mV @ 18 A	145 mV @ 4 x 6 A	125 mV @ 2 x 3,8 A
Initialization time of module	250 ms	250 ms	250 ms	250 ms
Turn-on delay of outputs	Load dependent, min. 50 ms / max. 5 s	Load dependent, min. 50 ms / max. 5 s	Load dependent, min. 50 ms / max. 5 s	Load dependent, min. 50 ms / max. 5 s
Waiting periode after switch-off of an output	500 ms (short circuit) .. 10 s (overload)	500 ms (short circuit) .. 10 s (overload)	500 ms (short circuit) .. 10 s (overload)	500 ms (short circuit) .. 10 s (overload)
Max. power losses	2.5 W @ 2 x 6 A	3.6 W @ 18 A	4.3 W @ 4 x 6 A	1.6 W @ 2 x 3,8 A
Efficiency	99.0 %	99.0 %	99.0 %	99.0 %
Internal output fuse	15 A	15 A	15 A	15 A
Resistance to reverse feed max.	35 Vdc	35 Vdc	35 Vdc	35 Vdc
Parallel use of outputs	Not allowed	Not allowed	Not allowed	Not allowed
Serial use of outputs	Not allowed	Not allowed	Not allowed	Not allowed
Signaling				
Status indicator	LED (red, green, orange)			
Signal input S1	24 Vdc (On/Off/Reset)	24 Vdc (On/Off/Reset)	24 Vdc (On/Off/Reset)	24 Vdc (On/Off/Reset)
Signal output S2	24 Vdc, max. 25mA (status output channels)			
Signal output S3	24 Vdc, max 25mA (Common signalling output)			
Approvals				
Approvals	cURus, cULus, GL	cURus, cULus, GL	cURus, cULus, GL	cURus, cULus, GL
Environment				
Storage temperature	-25 °C to +85 °C			
Ambient temperature	-25 °C to +70 °C			
Derating	-	-	-	-
Type of cooling	Natural convection	Natural convection	Natural convection	Natural convection
Required minimum spacing (left/right)	0 mm	0 mm	0 mm	0 mm
Required minimum spacing (over/under)	40 mm	40 mm	40 mm	40 mm
Safety and protection				
Protection index	IP 20	IP 20	IP 20	IP 20
Safety class	III, without PE connection			
Degree of pollution	2	2	2	2
Order numbers				
Order Number	PM-2824-120-0	PM-2824-180-0	PM-2824-240-0	PM-9824-076-0

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Electronic circuit breaker with current limiting and non-adjustable tripping currents

BASIC FIX



Electrical data	Typ	PM-9824-152-0
	Special features	
	Characteristics	For establishing NEC Class 2 circuits
	Input	
	Input rated voltage	24 Vdc
	Input voltage range	20 - 28,8 Vdc
	Maximal residual ripple of supplied input voltage	3 %
	Required input voltage for turning-on of outputs	20 V (Turn-off Threshold 18 V)
	Max. total input current	15,2 A
	Max. input current for each pole of terminal	40 A
Over voltage protection	Suppressor diode 33 V	
Stand-by current	34 mA @ 24 V	
Power losses in stand-by mode	0.82 W @ 24 V	
Output		
Output rated voltage	24 Vdc	
Output rated current	4 x 3,8 A @ 24 V (NEC Class 2)	
Maximum voltage drop between input and output	150 mV @ 4 x 3,8 A	
Initialization time of module	250 ms	
Turn-on delay of outputs	Load dependent, min. 50 ms / max. 5 s	
Waiting periode after switch-off of an output	500 ms (short circuit) .. 10 s (overload)	
Max. power losses	3,1 W @ 4 x 3,6 A	
Efficiency	99.0 %	
Internal output fuse	15 A	
Resistance to reverse feed max.	35 Vdc	
Parallel use of outputs	Not allowed	
Serial use of outputs	Not allowed	
Signaling		
Status indicator	LED (red, green, orange)	
Signal input S1	24 Vdc (On/Off/Reset)	
Signal output S2	24 Vdc, max. 25mA (status output channels)	
Signal output S3	24 Vdc, max 25mA (Common signalling output)	
Approvals		
Approvals	cURus, cULus, GL	
Environment		
Storage temperature	-25 °C to +85 °C	
Ambient temperature	-25 °C to +70 °C	
Derating	-	
Type of cooling	Natural convection	
Required minimum spacing (left/right)	0 mm	
Required minimum spacing (over/under)	40 mm	
Safety and protection		
Protection index	IP 20	
Safety class	III, without PE connection	
Degree of pollution	2	
Order numbers		
Order Number	PM-9824-152-0	



Electronic circuit breaker with current limiting and non-adjustable tripping currents

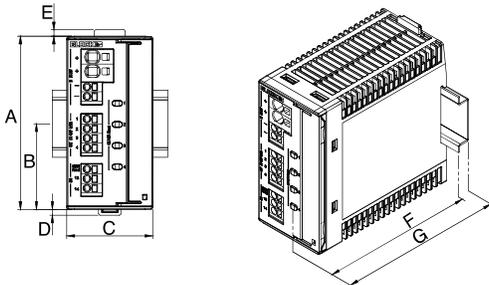
BASIC FIX



Mechanical data	Typ	Input terminals (2 x "+"), 1 direct plug-in technology Push-in		Output terminals ("+", "-"), 1 direct plug-in technology Push-in		Terminals signalling (direct plug-in technology Push-in)	Mounting position	Weight	Dimension (W x H x D)	Dimension picture (in mm)																
		max	mm ²	max	mm ²					max	mm ²	max	mm ²	A	B	C	D	E	F	G						
PM-2824-120-0		max 2,5	mm ²	max 6	mm ²	max 2,5	mm ²	max 2,5	mm ²	horizontal for standard rail DIN TS35	0.2	kg	45	x	90	x	91,5	mm	1	90	45	45	3	3,5	91,5	99
PM-2824-180-0		max 2,5	mm ²	max 6	mm ²	max 2,5	mm ²	max 2,5	mm ²	horizontal for standard rail DIN TS35	0.2	kg	45	x	90	x	91,5	mm	1	90	45	45	3	3,5	91,5	99
PM-2824-240-0		max. 2,5	mm ²	max. 6	mm ²	max. 2,5	mm ²	max. 2,5	mm ²	horizontal for standard rail DIN TS35	0.2	kg	45	x	90	x	91,5	mm	1	90	45	45	3	3,5	91,5	99
PM-9824-076-0		max 2,5	mm ²	max. 6	mm ²	max 2,5	mm ²	max 2,5	mm ²	horizontal for standard rail DIN TS35	0.2	kg	42	x	127	x	116,5	mm	1	90	45	45	3	3,5	91,5	99
PM-9824-152-0		max 2,5	mm ²	max 6	mm ²	max 2,5	mm ²	max 2,5	mm ²	horizontal for standard rail DIN TS35	0.2	kg	42	x	127	x	116,5	mm	1	90	45	45	3	3,5	91,5	99

Dimension pictures

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