



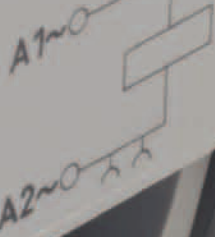
HF115FP
m-24VDC

HF115FP
m-24VDC

788-508

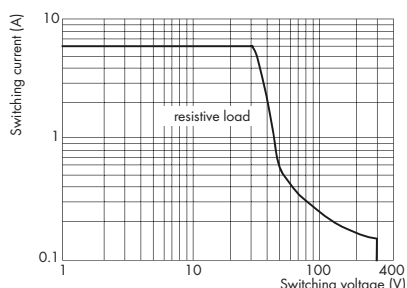
IN: AC 230V

OUT: AC 250V / 16A

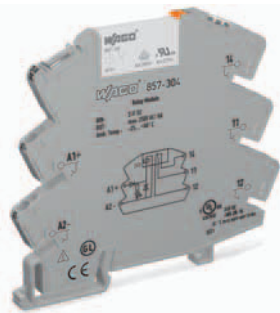


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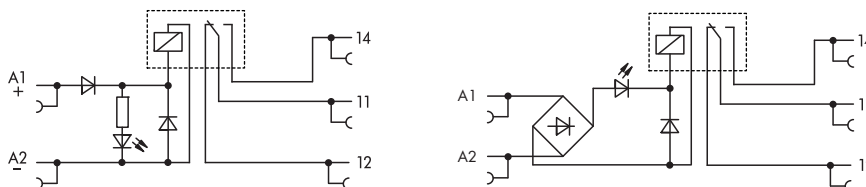
	Relay with 1 changeover contact (1u) for normal switching power Nominal input voltage V_N 12 V, 24 V, 48 V, 60 V, 110 V, 220 V DC	Relay with 1 changeover contact (1u) for normal switching power Nominal input voltage V_N 24 V, 115 V, 230 V AC/DC
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DC load limit curve



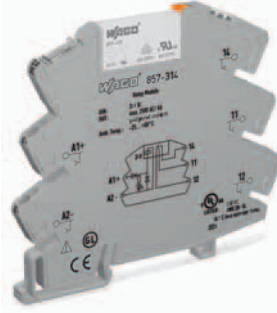
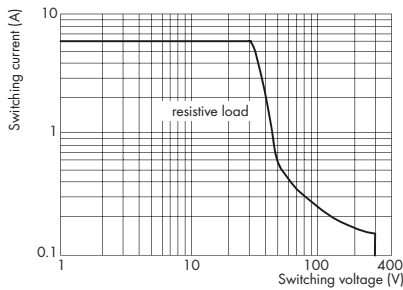
Note: Inductive loads have to be attenuated by an appropriate protective circuit in order to protect relay coils and contacts.



Description	V_N	I_N	Item No.	Pack. Unit	V_N	I_N	Item No.	Pack. Unit
Relay socket with miniature switching relay, for DIN 35 rail	12 V DC	17 mA	857-303	1	24 V AC/DC	8.5 mA	857-354	1
	24 V DC	10 mA	857-304	1	115 V AC/DC	4 mA	857-357	1
	48 V DC	6.5 mA	857-305	1	230 V AC/DC	3.5 mA	857-358	1
	60 V DC	5.2 mA	857-306	1				

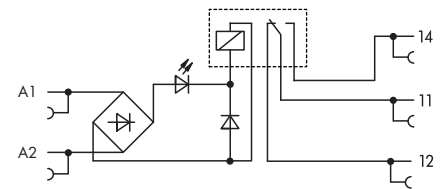
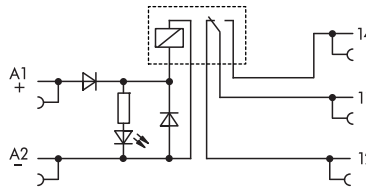
Technical Data	Accessories see pages 33 ... 35	Accessories see pages 33 ... 35
Coil:		
Input voltage range	V_N -15 % ... +20 %	V_N -15 % ... +20 % (857-354/857-357) V_N -15 % ... +10 % (857-358)
Contacts:		
Contact material	AgNi	AgNi
Max. continuous current	6 A	6 A
Max. switching voltage	250 VAC	250 VAC
Max. switching power (resistive)	1500 VA AC; DC see load limit curve	1500 VA AC; DC see load limit curve
Recommended minimum load	10 VDC / 10 mA, 24 VDC / 1 mA	10 VDC / 10 mA, 24 VDC / 1 mA
Pull-in/drop-out/bounce time typ.	8ms / 4ms / -	8ms / 4ms / -
Mechanical life	5×10^6 switching operations	5×10^6 switching operations
General specifications:		
Nominal voltage to EN 60664-1	250 V / 4 kV / 2	250 V / 4 kV / 2
Dielectric strength, contact-coil (AC, 1 min)	4 kV _{rms}	4 kV _{rms}
Dielectric strength open contact (AC, 1 min)	1 kV _{rms}	1 kV _{rms}
Dielectric strength contact-contact (AC, 1 min)	-	-
Ambient operating temperature at V_N	-40 °C ... +60 °C	-25 °C ... +60 °C
Storage temperature	-40 °C ... +70 °C	-40 °C ... +70 °C
Dimensions (mm) W x H x L	6 x 81 x 94	6 x 81 x 94
Wire connection	Height from upper-edge of DIN 35 rail CAGE CLAMP® S	Height from upper-edge of DIN 35 rail CAGE CLAMP® S
Cross sections	0.34 ... 2.5 mm ² / AWG 22 ... 14	0.34 ... 2.5 mm ² / AWG 22 ... 14
Strip length	9 ... 10 mm / 0.35 ... 0.39 in	9 ... 10 mm / 0.35 ... 0.39 in
Standards/specifications	EN 60664-1; EN 61810-1; EN 61140; Ⓢ (857-304: Ⓢ)	EN 60664-1; EN 61810-1; Ⓢ (857-358: Ⓢ)

	<p>Relay with 1 changeover contact (1u) (gold contacts) for normal switching power Nominal input voltage V_N 24 V DC</p>	<p>Relay with 1 changeover contact (1u) (gold contacts) for normal switching power Nominal input voltage V_N 24 V, 115 V, 230 V AC/DC</p>
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DC load limit curve

* In order to prevent the gold layer from being damaged, 30 VDC switching voltages and 50 mA currents shall not be exceeded. Higher switching power leads to evaporation of the gold layer. The resulting deposits in the housing may reduce the service life.



Description	V_N	I_N	Item No.	Pack. Unit	V_N	I_N	Item No.	Pack. Unit
Relay socket with miniature switching relay, for DIN 35 rail	24 V DC	10 mA	857-314	1	24 V AC/DC	8.5 mA	857-364	1
					115 V AC/DC	4 mA	857-367	1
					230 V AC/DC	3.5 mA	857-368	1

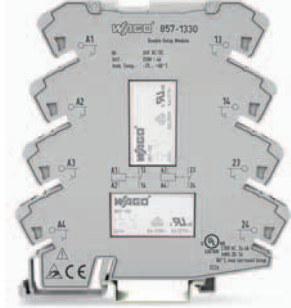
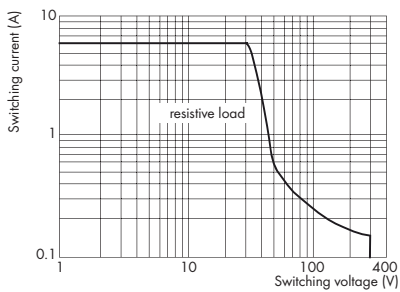
Technical Data

Accessories see pages 33 ... 35

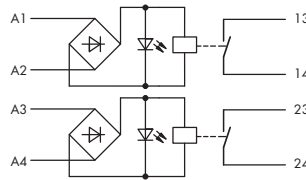
Accessories see pages 33 ... 35

Coil:		
Input voltage range	$V_N -15 \% \dots +20 \%$	$V_N -15 \% \dots +20 \%$ (857-364/857-367) $V_N -15 \% \dots +10 \%$ (857-368)
Contacts:		
Contact material	AgNi + Au	AgNi + Au
Max. continuous current	6 A *	6 A *
Max. switching voltage	250 VAC *	250 VAC *
Max. switching power (resistive)	(1250 VA AC; DC see load limit curve)	1500 VA AC; DC see load limit curve *
Recommended minimum load	1 VDC / 1 mA / 1 mW, 24 VDC / 0.05 mA	1 VDC / 1 mA / 1 mW
Pull-in/drop-out/bounce time typ.	8ms / 4ms / -	8ms / 4ms / -
Mechanical life	5×10^6 switching operations	5×10^6 switching operations
General specifications:		
Nominal voltage to EN 60664-1	250 V / 4 kV / 2	250 V / 4 kV / 2
Dielectric strength, contact-coil (AC, 1 min)	4 kV _{rms}	4 kV _{rms}
Dielectric strength open contact (AC, 1 min)	1 kV _{rms}	1 kV _{rms}
Dielectric strength contact-contact (AC, 1 min)	-	-
Ambient operating temperature at V_N	-25 °C ... +60 °C	-25 °C ... +60 °C
Storage temperature	-40 °C ... +70 °C	-40 °C ... +70 °C
Dimensions (mm) W x H x L	6 x 81 x 94	6 x 81 x 94
Wire connection	Height from upper-edge of DIN 35 rail CAGE CLAMP® S	Height from upper-edge of DIN 35 rail CAGE CLAMP® S
Cross sections	0.34 ... 2.5 mm ² / AWG 22 ... 14	0.34 ... 2.5 mm ² / AWG 22 ... 14
Strip length	9 ... 10 mm / 0.35 ... 0.39 in	9 ... 10 mm / 0.35 ... 0.39 in
Standards/specifications	EN 60664-1; EN 61810-1; EN 61140; Ⓢ; (857-314: Ⓢ)	EN 60664-1; EN 61810-1; Ⓢ; (857-368: Ⓢ)

	<p>2 relays with 1 make contact (1 a) for normal switching power Nominal input voltage V_N 24 V AC/DC</p>	
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DC load limit curve



Note: Inductive loads have to be attenuated by an appropriate protective circuit in order to protect relay coils and contacts.

Description	V_N	I_N	Item No.	Pack. Unit
Relay socket with miniature switching relay, for DIN 35 rail	24 V AC/DC	10 mA	857-1330	1

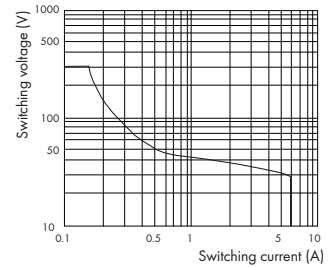
Technical Data

Accessories see pages 33 ... 35

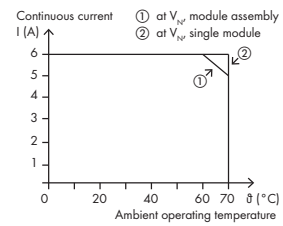
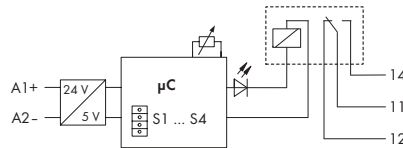
Coil:	
Input voltage range	$V_N - 15 \% \dots + 20 \%$
Contacts:	
Contact material	AgNi
Max. continuous current	4 A
Max. switching voltage	250 VAC
Max. switching power (resistive)	1000 VA AC; DC see load limit curve
Recommended minimum load	10 VDC / 10 mA, 24 VDC / 1 mA
Pull-in/drop-out/bounce time typ.	8ms / 4ms / -
Mechanical life	5×10^6 switching operations
General specifications:	
Nominal voltage to EN 60664-1	250 V / 4 kV / 2
Dielectric strength, contact-coil (AC, 1 min)	2.5 kV _{rms}
Dielectric strength open contact (AC, 1 min)	1 kV _{rms}
Dielectric strength contact-contact (AC, 1 min)	
Ambient operating temperature at V_N	-25 °C ... +60 °C
Storage temperature	-40 °C ... +85 °C
Dimensions (mm) W x H x L	6 x 96 x 94
Wire connection	Height from upper-edge of DIN 35 rail CAGE CLAMP® S
Cross sections	0.34 ... 2.5 mm ² / AWG 22 ... 14
Strip length	9 ... 10 mm / 0.35 ... 0.39 in
Standards/specifications	EN 60664-1; EN 61810-1

	Multifunction time relay with 1 changeover contact (1u) 4 time ranges, 4 functions Temperature range: -25 °C ... +70 °C For railway applications	
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- 4 functions:
 - On-delay
 - Single-shot leading edge
 - On-delay and single-shot leading edge (1 s fixed)
 - Blinking
- Function and time range adjustable via DIP switch



DC load limit curve



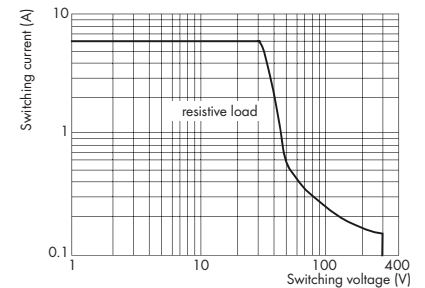
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Description	V _N	I _N	Item No.	Pack. Unit
Multifunction time relay, for DIN 35 rail	24 VDC	17.5 mA	857-604	1

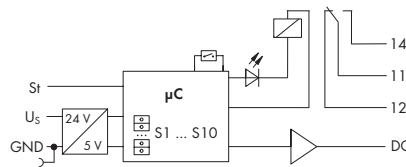
Technical Data		Accessories see pages 33 ... 35	
Coil:			
Input voltage range	V _N -30 % ... +30 %		
Power consumption at V _N	17.5 mA (active) / 2.3 mA (passive)		
Contacts:			
Contact material	AgNi		
Max. continuous current	6 A		
Max. switching voltage	250 VAC		
Max. switching power (resistive)	1500 VA AC, DC see load curve		
Recommended minimum load	10 VDC / 10 mA, 24 VDC / 1 mA		
Pull-in/drop-out/bounce time typ.	8ms / 4ms / -		
Mechanical life	5 x 10 ⁶ switching operations		
General specifications:			
Time range	adjustable: 0.1 ... 10 s; 3 ... 300 s; 0.3 ... 30 min; 3 ... 300 min		
Reset time	50 ms		
Repeat accuracy	±1 %		
Nominal voltage to EN 60664-1	250 V / 2.5 kV / 2		
Dielectric strength, contact-coil (AC, 1 min)	2.5 kV _{rms}		
Dielectric strength open contact (AC, 1 min)	1 kV _{rms}		
Ambient operating temperature	-25 °C ... +70 °C		
Storage temperature	-40 °C ... +70 °C		
Dimensions (mm) W x H x L	6 x 81 x 94		
	Height from upper-edge of DIN 35 rail		
Wire connection	CAGE CLAMP® S		
Cross sections	0.34 ... 2.5 mm ² / AWG 22 ... 14		
Strip length	9 ... 10 mm / 0.35 ... 0.39 in		
Standards/specifications	EN 60664-1; EN 61812-1; EN 61373; EN50121-3-2		
Approvals	CE		

	Multifunction time relay with 1 changeover contact (1u) 8 time ranges, 14 functions Temperature range: -25 °C ... +70 °C For railway applications	
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- 14 functions:
 - On-delay
 - On-delay with control input
 - Off-delay with control input
 - On- and off-delay with control input
 - Single-shot leading edge
 - Single-shot leading edge with control input
 - Single-shot trailing edge with control input
 - Single-shot leading and trailing edge with control input
 - On-delay and single-shot leading edge
 - On-delay and single-shot leading edge with control input
 - Step switching
 - Blinking, pulse start
 - Blinking, interval start
 - Relay switching
- Function and time range adjustable via DIP switch
- Digital output (DO): max. 31.2 VDC, 100 mA
- Control input: max. 31.2 VDC, min. pulse length 10 ms



DC load limit curve



Description	V _N	I _N	Item No.	Pack. Unit
Multifunction time relay, for DIN 35 rail	24 VDC	18 mA	857-640	1

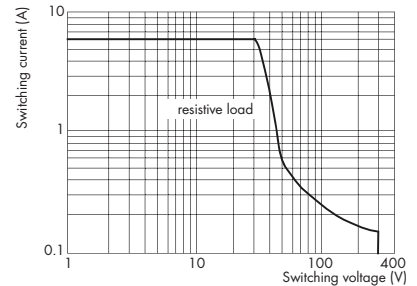
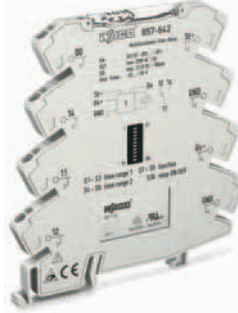
Technical Data

Accessories see pages 33 ... 35

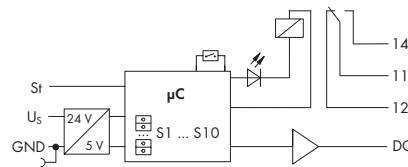
Coil:	
Input voltage range	V _N -30 % ... +30 %
Power consumption at V _N	18 mA (active) / 4.5 mA (passive)
Contacts:	
Contact material	AgNi
Max. continuous current	6 A (up to 60 °C) 2 A (60 °C ... 70 °C)
Max. switching voltage	250 VAC
Max. switching power (resistive)	1500 VA AC, DC see load curve
Recommended minimum load	10 VDC / 10 mA, 24 VDC / 1 mA
Pull-in/drop-out/bounce time typ.	8ms / 4ms / -
Mechanical life	5 x 10 ⁶ switching operations
General specifications:	
Time range	adjustable: 0.01 ... 0.1 s; 0.1 ... 1 s; 1 ... 10 s; 10 ... 100 s; 1 ... 10 min; 10 ... 100 min; 1 ... 10 h; 10 ... 100 h
Reset time	50 ms
Nominal voltage to EN 60664-1	250 V / 2.5 kV / 2
Dielectric strength, contact-coil (AC, 1 min)	2.5 kV _{rms}
Dielectric strength open contact (AC, 1 min)	1 kV _{rms}
Ambient operating temperature	-25 °C ... +70 °C
Storage temperature	-40 °C ... +70 °C
Dimensions (mm) W x H x L	6 x 96 x 94
Wire connection	Height from upper-edge of DIN 35 rail CAGE CLAMP® S
Cross sections	0.34 ... 2.5 mm ² / AWG 22 ... 14
Strip length	9 ... 10 mm / 0.35 ... 0.39 in
Standards/specifications	EN 60664-1; EN 61812-1; EN 61373; EN50121-3-2
Approvals	CE

	Multifunction time relay with 1 changeover contact (1u) 8 time ranges, 7 functions 2 adjustable time ranges Temperature range: -25 °C ... +70 °C For railway applications	
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- 7 functions:
 - On- and off-delay with control input
 - On-delay and single-shot leading edge
 - On-delay and single-shot leading edge with control input
 - Single-shot leading and trailing edge with control input
 - Pulse sequence evaluation with control input
 - Repeat cycle timer, pulse start
 - Repeat cycle timer, interval start, control input
- 2 separately adjustable time ranges
- Function and time range adjustable via DIP switch
- Digital output (DO): max. 31.2 VDC, 100 mA
- Control input: max. 31.2 VDC, min. pulse length 10 ms



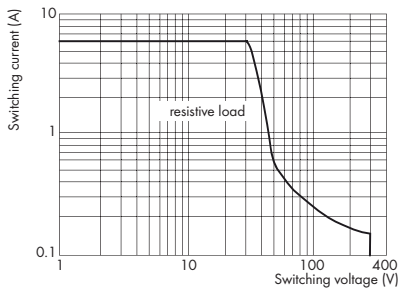
DC load limit curve



Description	V _N	I _N	Item No.	Pack. Unit
Multifunction time relay, for DIN 35 rail	24 VDC	18 mA	857-642	1

Technical Data		Accessories see pages 33 ... 35
Coil:		
Input voltage range	V _N -30 % ... +30 %	
Power consumption at V _N	18 mA (active) / 4.5 mA (passive)	
Contacts:		
Contact material	AgNi	
Max. continuous current	6 A (up to 60 °C) 2 A (60 °C ... 70 °C)	
Max. switching voltage	250 VAC	
Max. switching power (resistive)	1500 VA AC, DC see load curve	
Recommended minimum load	10 VDC / 10 mA, 24 VDC / 1 mA	
Pull-in/drop-out/bounce time typ.	8ms / 4ms / -	
Mechanical life	5 x 10 ⁶ switching operations	
General specifications:		
Time range	adjustable: 0.01 ... 0.1 s; 0.1 ... 1 s; 1 ... 10 s; 10 ... 100 s; 1 ... 10 min; 10 ... 100 min; 1 ... 10 h; 10 ... 100 h	
Reset time	50 ms	
Nominal voltage to EN 60664-1	250 V / 2.5 kV / 2	
Dielectric strength, contact-coil (AC, 1 min)	2.5 kV _{rms}	
Dielectric strength open contact (AC, 1 min)	1 kV _{rms}	
Ambient operating temperature	-25 °C ... +70 °C	
Storage temperature	-40 °C ... +70 °C	
Dimensions (mm) W x H x L	6 x 96 x 94	
Wire connection	Height from upper-edge of DIN 35 rail CAGE CLAMP® S	
Cross sections	0.34 ... 2.5 mm ² / AWG 22 ... 14	
Strip length	9 ... 10 mm / 0.35 ... 0.39 in	
Standards/specifications	EN 60664-1; EN 61812-1; EN 61373; EN50121-3-2	
Approvals	CE	

	Pluggable miniature switching relays 1 changeover contact	Pluggable miniature switching relays 1 changeover contact (gold contacts)
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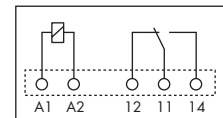
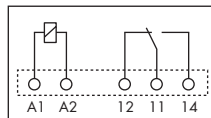


DC load limit curve



* In order to prevent the gold layer from being damaged, 30 VDC switching voltages and 50 mA currents shall not be exceeded.

Higher switching power leads to evaporation of the gold layer. The resulting deposits in the enclosure may cause sparkovers between the coil and the contact.

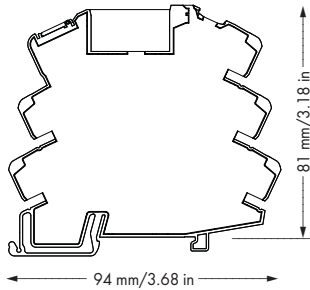


Description	V _N	Item No.	Pack. Unit	V _N	Item No.	Pack. Unit
Pluggable miniature switching relays	12 V DC	857-150	20			
	24 V DC	857-152	20	24 V DC	857-153	20
	48 V DC	857-154	20			
	60 V DC	857-155	20	60 V DC	857-157	20
The 60 V DC replacement relays must be used with 60 V DC, 110 V DC, 220 V DC and 115 V AC/DC, 230 V AC/DC relay modules.						

Technical Data

Contacts:		
Contact material	AgNi	AgNi + Au
Max. continuous current	6 A	6 A *
Max. switching voltage	250 VAC	250 VAC *
Max. switching power (resistive)	1500 VA AC; DC see load limit curve	1500 VA AC; DC see load limit curve *
Recommended minimum load	10 VDC / 10 mA, 24 VDC / 1 mA	1 VDC / 1 mA / 1 mW
Pull-in/drop-out/bounce time typ.	8ms / 4ms / -	8ms / 4ms / -
Mechanical life	5 x 10 ⁶ switching operations	5 x 10 ⁶ switching operations
General specifications:		
Dielectric strength, contact-coil (AC, 1 min)	4 kV _{rms}	4 kV _{rms}
Dielectric strength open contact (AC, 1 min)	1 kV _{rms}	1 kV _{rms}
Dielectric strength contact-contact (AC, 1 min)	-	-
Ambient operating temperature at V _N	-40 °C ... +85 °C	-40 °C ... +85 °C
Storage temperature	-40 °C ... +85 °C	-40 °C ... +85 °C
Relative humidity	5 % ... 85 %	5 % ... 85 %
Dimensions (mm) W x H x L	5 x 15 x 28	5 x 15 x 28

	Sockets for miniature switching relay and SSR	
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Description	Item No.	Pack. Unit
Socket for miniature switching relay and SSR, 24 V AC/DC for DIN 35 rail	857-104	1
Socket for miniature switching relay and SSR, 110 V AC/DC for DIN 35 rail	857-107	1
Socket for miniature switching relay and SSR, 230 V AC/DC for DIN 35 rail	857-108	1

Technical Data		
Status indication	LED yellow	
Operating temperature	-25 °C ... +70 °C	
Storage temperature	-40 °C ... +70 °C	
Dimensions (mm) W x H x L	6 x 81 x 94	
Wire connection	Height from upper edge of DIN 35 rail CAGE CLAMP® S	
Cross sections	0.34 mm ² ... 2.5 mm ² / AWG 22 ... 12	
Strip length	9 ... 10 mm / 0.37 in	
Approvals		

Assignment Socket / Replacement Relay / Replacement Optocoupler				
	Input Voltage	Item No.	Socket	Replacement Relays or Optocouplers
Miniature Switching Relays	12 V DC	857-303	857-103	857-150
	24 V DC	857-304	857-104	857-152
	48 V DC	857-305	857-105	857-154
	60 V DC	857-306	857-106	857-155
	110 V DC	857-307	857-107	857-155
	220 V DC	857-308	857-108	857-155
	24 V AC/DC	857-354	857-104	857-152
	115 V AC/DC	857-357	857-107	857-155
	230 V AC/DC	857-358	857-108	857-155
	Miniature Switching Relays (gold contacts)	24 V DC	857-314	857-104
110 V DC		857-317	857-107	857-157
220 V DC		857-318	857-108	857-157
24 V AC/DC		857-364	857-104	857-153
115 V AC/DC		857-367	857-107	857-157
230 V AC/DC		857-368	857-108	857-157
24 V DC		857-704	857-104	857-164
Solid State Relays	115 V AC/DC	857-707	857-107	857-165
	230 V AC/DC	857-708	857-108	857-165
	24 V DC	857-714	857-104	857-167
	115 V AC/DC	857-717	857-107	857-168
	230 V AC/DC	857-718	857-108	857-168
	24 V DC	857-724	857-104	857-161
	115 V AC/DC	857-727	857-107	857-162
	230 V AC/DC	857-728	857-108	857-162

Push-in type jumper bar



Commoning



Description		Item No.	Pack. Unit
Push-in type jumper bars, light gray, insulated, 18 A	2-way	859-402	200 (8x25)
	3-way	859-403	200 (8x25)
	4-way	859-404	200 (8x25)
	5-way	859-405	200 (8x25)
	6-way	859-406	100 (4x25)
	7-way	859-407	100 (4x25)
	8-way	859-408	100 (4x25)
	9-way	859-409	100 (4x25)
	10-way	859-410	100 (4x25)
	Item no. suffix for colored push-in type jumper bars	yellow	... /000-029
red		... /000-005	
blue		... /000-006	
Comb-style jumper bar, insulated	2-way	281-482	100

WMB Multi marking system



Marking



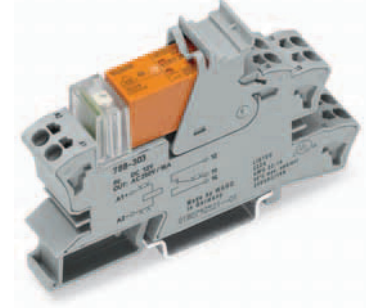
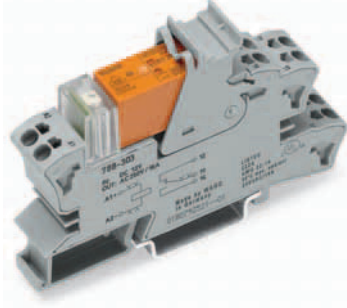
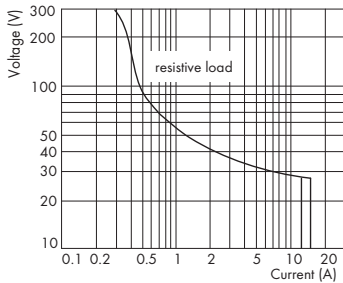
Description		Item No.	Pack. Unit
WMB Multi marking system	plain	793-501	5 cards
Marking software and printer/plotter see Section 11			
Marking	1 ... 10 (10x)	793-502	5 cards
	11 ... 20 (10x)	793-503	5 cards
	21 ... 30 (10x)	793-504	5 cards
	31 ... 40 (10x)	793-505	5 cards
	41 ... 50 (10x)	793-506	5 cards
	1 ... 50 (2x)	793-566	5 cards
10 strips with 10 markers, white with black printing			

Operating tool



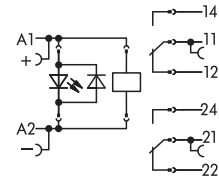
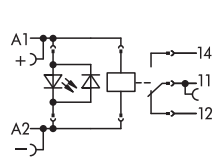
Description		Item No.	Pack. Unit
Operating tool, with partially insulated shaft	Type 2, blade (3.5 x 0.5) mm	210-720	1

	Relay with 1 changeover contact and status indication (Relay height: 15 mm) Nominal input voltage V_N 12 V, 24 V, 48 V, 60 V, 110 V DC	Relay with 2 changeover contact and status indication (Relay height: 15 mm) Nominal input voltage V_N 12 V, 24 V, 48 V, 60 V, 110 V DC
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Load limit curve for 788-303 to 788-307, 788-506, 788-507 and 788-508

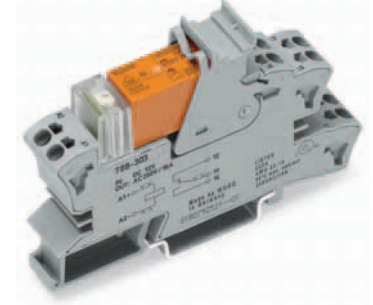
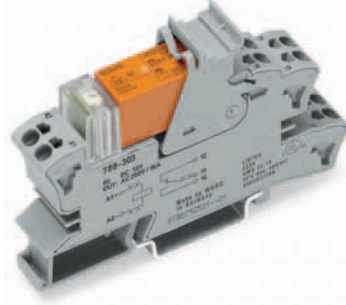
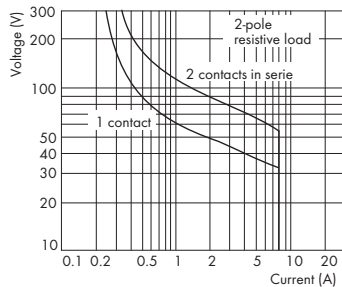
Note: Inductive loads have to be attenuated by an appropriate protective circuit in order to protect relay coils and contacts.



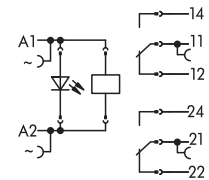
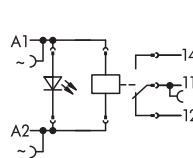
Description	V_N	I_N	Item No.	Pack. Unit	V_N	I_N	Item No.	Pack. Unit
Relay socket with miniature switching relay, for DIN 35 rail	12 V DC	36 mA	788-303	1	12 V DC	36 mA	788-311	1
	24 V DC	19.1 mA	788-304	1	24 V DC	19.1 mA	788-312	1
	48 V DC	11 mA	788-305	1	48 V DC	11 mA	788-313	1
	60 V DC	10.5 mA	788-306	1	60 V DC	10.5 mA	788-314	1
	110 V DC	6 mA	788-307	1	110 V DC	6 mA	788-315	1

Technical Data	Accessories see pages 50 ... 55	
Coil:		
Input voltage range	$V_N \pm 10\%$	$V_N \pm 10\%$
Contacts:		
Contact material	AgNi 90/10	AgNi 90/10
Max. continuous current	16 A	2 x 8 A
Max. make current	4 s 30 A (AC)	4 s 15 A (AC)
Max. switching voltage	250 V AC	250 V AC
Max. switching power (resistive)	4 kVA AC, DC see load limit curve	2 x 2 kVA AC, DC see load limit curve
Recommended minimum load	12 VDC / 10 mA	12 VDC / 10 mA
Pull-in/drop-out/bounce time typ.	8ms / 6ms / 6 ms	8ms / 6ms / 10 ms
Mechanical life	30 x 10 ⁶ switching operations	30 x 10 ⁶ switching operations
General specifications:		
Nominal voltage to EN 60664-1	250 V / 4 kV / 3	250 V / 4 kV / 3
Dielectric strength, contact-coil (AC, 1 min)	5 kV _{rms}	5 kV _{rms}
Dielectric strength open contact (AC, 1 min)	1 kV _{rms}	1 kV _{rms}
Dielectric strength contact-contact (AC, 1 min)	-	2.5 kV _{eff}
Ambient operating temperature at V_N	-25 °C ... +50 °C	-25 °C ... +50 °C
Storage temperature	-40 °C ... +70 °C	-40 °C ... +70 °C
Dimensions (mm) W x H x L	15 x 54 x 86	15 x 54 x 86
Wire connection	Height from upper-edge of DIN 35 rail CAGE CLAMP® S	Height from upper-edge of DIN 35 rail CAGE CLAMP® S
Cross sections	0.34 mm ² ... 2.5 mm ² / AWG 22 ... 12	0.34 mm ² ... 2.5 mm ² / AWG 22 ... 12
Strip length	9 ... 10 mm / 0.35 ... 0.39 in	9 ... 10 mm / 0.35 ... 0.39 in
Standards/specifications	EN 60664-1; EN 61810-5; EN 61810-1; UL 508 (788-307: UL 508, max. 40 °C/10 A)	EN 61140; EN 50178; UL 508 (788-315: UL 508, max. 40 °C)

	Relay with 1 changeover contact and status indication (Relay height: 15 mm) Nominal input voltage V_N 24 V, 115 V, 230 V AC	Relay with 2 changeover contact and status indication (Relay height: 15 mm) Nominal input voltage V_N AC 24 V, 115 V, 230 V
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Load limit curve for 788-311 to 788-315, 788-512, 788-515 and 788-516



Description	V_N	I_N	Item No.	Pack. Unit	V_N	I_N	Item No.	Pack. Unit
Relay socket with miniature switching relay, for DIN 35 rail	24 V AC	34 mA	788-506	1	24 V AC	34 mA	788-512	1
	115 V AC	8 mA	788-507	1	115 V AC	8 mA	788-515	1
	230 V AC	3.5 mA	788-508	1	230 V AC	3.5 mA	788-516	1

Technical Data

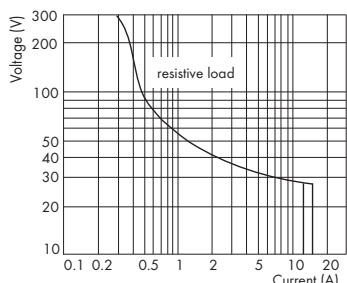
Accessories see pages 50 ... 55

Accessories see pages 50 ... 55

Coil:		
Input voltage range	$V_N \pm 10\%$	$V_N \pm 10\%$
Contacts:		
Contact material	AgNi 90/10	AgNi 90/10
Max. continuous current	16 A	2 x 8 A
Max. make current	4 s 30 A (AC)	4 s 15 A (AC)
Max. switching voltage	250 V AC	250 V AC
Max. switching power (resistive)	4 kVA AC, DC see load limit curve	2 x 2 kVA AC, DC see load limit curve
Recommended minimum load	12 VDC / 10 mA	12 VDC / 10 mA
Pull-in/drop-out/bounce time typ.	8ms / 6ms / 6 ms	8ms / 6ms / 10 ms
Mechanical life	10 x 10 ⁶ switching operations	5 x 10 ⁶ switching operations
General specifications:		
Nominal voltage to EN 60664-1	250 V / 4 kV / 3	250 V / 4 kV / 3
Dielectric strength, contact-coil (AC, 1 min)	5 kV _{rms}	5 kV _{rms}
Dielectric strength open contact (AC, 1 min)	1 kV _{rms}	1 kV _{rms}
Dielectric strength contact-contact (AC, 1 min)	-	2.5 kV _{eff}
Ambient operating temperature at V_N	-25 °C ... +50 °C	-25 °C ... +50 °C
Storage temperature	-40 °C ... +70 °C	-40 °C ... +70 °C
Dimensions (mm) W x H x L	15 x 54 x 86	15 x 54 x 86
Wire connection	Height from upper-edge of DIN 35 rail CAGE CLAMP® S	Height from upper-edge of DIN 35 rail CAGE CLAMP® S
Cross sections	0.34 mm ² ... 2.5 mm ² / AWG 22 ... 12	0.34 mm ² ... 2.5 mm ² / AWG 22 ... 12
Strip length	9 ... 10 mm / 0.35 ... 0.39 in	9 ... 10 mm / 0.35 ... 0.39 in
Standards/specifications	EN 61140; EN 50178; Ⓢ; UL 508 (788-507, 788-508: UL 508, max. 40 °C/10 A)	EN 61140; EN 50178; UL 508; Ⓢ

**Relay with 1 changeover contact with gold contacts and and status indication (Relay height: 15 mm)
Nominal input voltage V_N 24 V DC**

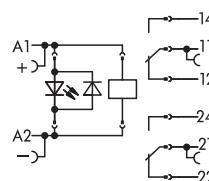
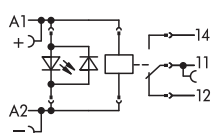
**Relay with 2 changeover contact with gold contacts and and status indication (Relay height: 15 mm)
Nominal input voltage V_N 24 V DC**



Load limit curve for 788-404, 788-607 and 788-608

* In order to prevent the gold layer from being damaged, 30 VDC switching voltages and 50 mA currents shall not be exceeded.

Higher switching power leads to evaporation of the gold layer. The resulting deposits in the enclosure may cause sparkovers between the coil and the contact.



Description	V_N	I_N	Item No.	Pack. Unit	V_N	I_N	Item No.	Pack. Unit
Relay socket with miniature switching relay, for DIN 35 rail	24 V DC	19 mA	788-404	1	24 V DC	17 mA	788-412	1

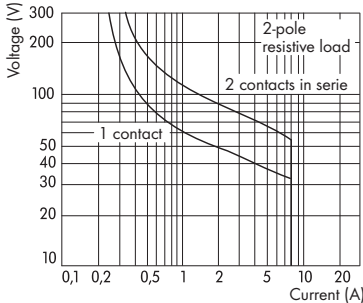
Technical Data

Accessories see pages 50 ... 55

Accessories see pages 50 ... 55

Coil:	$V_N \pm 10\%$	$V_N \pm 10\%$
Input voltage range	$V_N \pm 10\%$	$V_N \pm 10\%$
Contacts:		
Contact material	AgNi + AU	AgNi + AU
Max. continuous current	16 A *	2 x 8 A *
Max. switching voltage	250 VAC *	250 VAC *
Max. switching power (resistive)	4 kVA AC, DC see load limit curve *	2 x 2 kVA AC, DC see load limit curve *
Recommended minimum load	5 V / 2 mA / 50 mW	5 V / 2 mA / 50 mW
Pull-in/drop-out/bounce time typ.	7ms / 3ms / -	7ms / 3ms / -
Mechanical life	3×10^7 switching operations	3×10^7 switching operations
General specifications:		
Nominal voltage to EN 60664-1	250 V / 4 kV / 3	250 V / 4 kV / 3
Dielectric strength, contact-coil (AC, 1 min)	5 kV _{rms}	5 kV _{rms}
Dielectric strength open contact (AC, 1 min)	1 kV _{rms}	1 kV _{rms}
Dielectric strength contact-contact (AC, 1 min)	-	2.5 kV _{eff}
Ambient operating temperature at V_N	-25 °C ... +50 °C	-25 °C ... +50 °C
Storage temperature	-40 °C ... +70 °C	-40 °C ... +70 °C
Dimensions (mm) W x H x L	15 x 54 x 86	15 x 54 x 86
Wire connection	Height from upper-edge of DIN 35 rail CAGE CLAMP® S	Height from upper-edge of DIN 35 rail CAGE CLAMP® S
Cross sections	0.34 mm ² ... 2.5 mm ² / AWG 22 ... 12	0.34 mm ² ... 2.5 mm ² / AWG 22 ... 12
Strip length	9 ... 10 mm / 0.35 ... 0.39 in	9 ... 10 mm / 0.35 ... 0.39 in
Standards/specifications	EN 61140; EN 50178; UL 508	EN 61140; EN 50178; UL 508

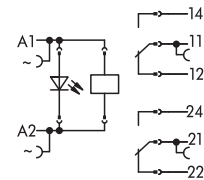
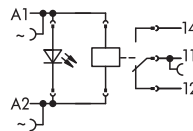
	<p>Relay with 1 changeover contact with gold contacts and and status indication (Relay height: 15 mm) Nominal input voltage V_N 115 V, 230 V AC</p>	<p>Relay with 2 changeover contact with gold contacts and and status indication (Relay height: 15 mm) Nominal input voltage V_N 115 V, 230 V AC</p>
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Load limit curve for 788-412, 788-615 und 788-616

* In order to prevent the gold layer from being damaged, 30 VDC switching voltages and 50 mA currents shall not be exceeded.

Higher switching power leads to evaporation of the gold layer. The resulting deposits in the enclosure may cause sparkovers between the coil and the contact.



Description	V_N	I_N	Item No.	Pack. Unit	V_N	I_N	Item No.	Pack. Unit
Relay socket with miniature switching relay, for DIN 35 rail	115 V AC	8.2 mA	788-607	1	115 V AC	8.2 mA	788-615	1
	230 V AC	5 mA	788-608	1	230 V AC	5 mA	788-616	1

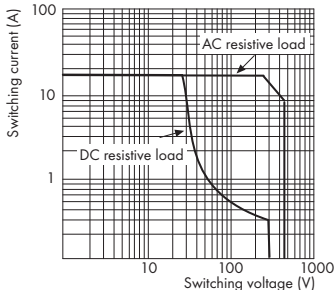
Technical Data

Accessories see pages 50 ... 55

Accessories see pages 50 ... 55

Coil:		
Input voltage range	$V_N \pm 10\%$	$V_N \pm 10\%$
Contacts:		
Contact material	AgNi + AU	AgNi + AU
Max. continuous current	16 A *	2 x 8 A *
Max. switching voltage	250 VAC *	250 VAC *
Max. switching power (resistive)	4 kVA AC, DC see load limit curve *	2 x 2 kVA AC, DC see load limit curve *
Recommended minimum load	5 V / 2 mA / 50 mW	5 V / 2 mA / 50 mW
Pull-in/drop-out/bounce time typ.	7ms / 3ms / -	7ms / 3ms / -
Mechanical life	3×10^7 switching operations	3×10^7 switching operations
General specifications:		
Nominal voltage to EN 60664-1	250 V / 4 kV / 3	250 V / 4 kV / 3
Dielectric strength, contact-coil (AC, 1 min)	5 kV _{rms}	5 kV _{rms}
Dielectric strength open contact (AC, 1 min)	1 kV _{rms}	1 kV _{rms}
Dielectric strength contact-contact (AC, 1 min)	2.5 kV _{off}	2.5 kV _{off}
Ambient operating temperature at V_N	-25 °C ... +50 °C	-25 °C ... +50 °C
Storage temperature	-40 °C ... +70 °C	-40 °C ... +70 °C
Dimensions (mm) W x H x L	15 x 54 x 86	15 x 54 x 86
Wire connection	Height from upper-edge of DIN 35 rail CAGE CLAMP® S	Height from upper-edge of DIN 35 rail CAGE CLAMP® S
Cross sections	0.34 mm ² ... 2.5 mm ² / AWG 22 ... 12	0.34 mm ² ... 2.5 mm ² / AWG 22 ... 12
Strip length	9 ... 10 mm / 0.35 ... 0.39 in	9 ... 10 mm / 0.35 ... 0.39 in
Standards/specifications	EN 61140; EN 50178; UL 508	EN 61140; EN 50178; UL 508

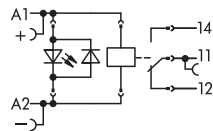
	Relay with 1 changeover contact and status indication (15 mm high) Nominal input voltage V_N 12 V, 24 V DC	
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Load limit curve



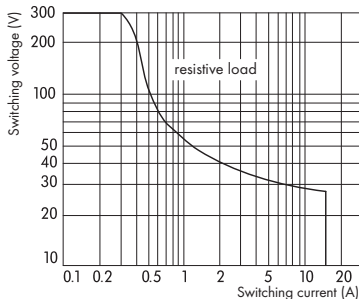
Contact life, type of load	Capability	Electrical life
Incandescent lamp	2200 W	20,000
Halogen lamp 230 VAC	1400 W	50,000
Halogen trafo	120 VA	20,000
Fluorescent lamp not comp., CCG ①, cos φ 0.406	20 x 58 W	25,000
Fluorescent lamp comp., CCG ①, C parallel	9 x 58 W	25,000
Fluorescent lamp comp., CCG ①, Duo-circuit	600 W	20,000
Fluorescent lamp with ECG ②	12 x 58 W	25,000
Energy saving lamp 15 W	25 pcs	20,000
Energy saving lamp 13 W	30 pcs	20,000
Energy saving lamp 9 W	38 pcs	20,000
Gas discharge lamp	1000 W	20,000



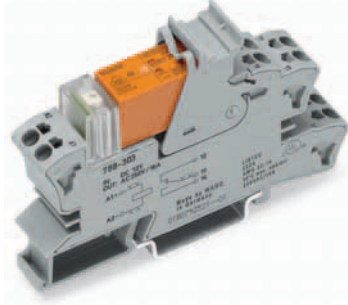
Description	V_N	I_N	Item No.	Pack. Unit
Relay socket with miniature switching relay, for DIN 35 rail	12 VDC	35 mA	788-353	1
	24 VDC	19 mA	788-354	1

Technical Data		Accessories see pages 50 ... 55
Coil:		
Input voltage range	$V_N - 15\% \dots +20\%$	
Contacts:		
Contact material	Ag alloy	
Max. continuous current	16 A	
Max. make current	120 A / 50 ms	
Max. switching voltage	250 VAC	
Max. switching power (resistive)	4 kVA AC, DC see load curve	
Recommended minimum load	> 100 mA / 12 V AC/DC	
Pull-in/drop-out/bounce time typ.	15ms / 5ms / -	
Mechanical life	10×10^6 switching operations	
General specifications:		
Nominal voltage to EN 60664-1	250 V / 4 kV / 3	
Dielectric strength, contact-coil (AC, 1 min)	5 kV _{rms}	
Dielectric strength open contact (AC, 1 min)	1 kV _{rms}	
Dielectric strength contact-contact (AC, 1 min)	-	
Ambient operating temperature at V_N	-25 °C ... +50 °C	
Storage temperature	-40 °C ... +70 °C	
Dimensions (mm) W x H x L	15 x 54 x 86	
Wire connection	Height from upper-edge of DIN 35 rail CAGE CLAMP® S	
Cross sections	0.34 mm ² ... 2.5 mm ² / AWG 22 ... 12	
Strip length	9 ... 10 mm / 0.35 ... 0.39 in	
Standards/specifications	EN 61140; EN 60664-1; EN 50178; UL 508 (max. 10 A)	

	Relay with 1 make contact and status indication (15 mm high) Nominal input voltage V_N: 24 VDC for lamp loads	
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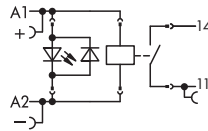


DC load limit curve



Similar to picture

Contact life, type of load	Electrical life
1000 W, incandescent lamp	80,000
16 A, 240 VAC, UL 508	50,000
21/3.5 A, 230 VAC, Compressor, $\cos \varphi = 0.5$	230,000



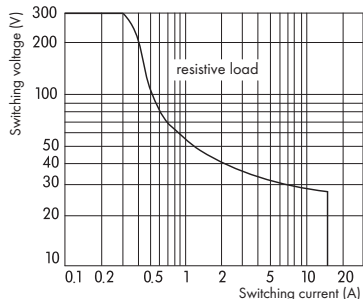
Description	V_N	I_N	Item No.	Pack. Unit
Relay socket with miniature switching relay, for DIN 35 rail	24 VDC	19 mA	788-356	1

Technical Data

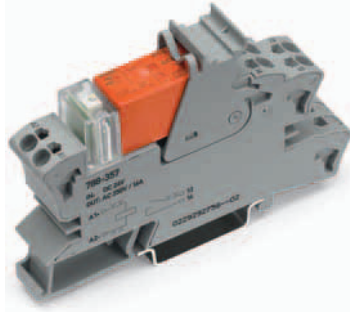
Accessories see pages 50 ... 55

Coil:	
Input voltage range	$V_N -15\% \dots +20\%$
Contacts:	
Contact material	AgSnO ₂
Max. continuous current	16 A
Max. make current	30 A / 4 s (AC); 80 A / 20 ms (AC)
Max. switching voltage	250 VAC
Max. switching power (resistive)	4 kVA AC, DC see load curve
Recommended minimum load	≥ 100 mA / 12 V AC/DC
Pull-in/drop-out/bounce time typ.	8ms / 3ms / -
Mechanical life	30×10^6 switching operations
General specifications:	
Nominal voltage to EN 60664-1	250 V / 4 kV / 3
Dielectric strength, contact-coil (AC, 1 min)	5 kV _{rms}
Dielectric strength open contact (AC, 1 min)	1 kV _{rms}
Dielectric strength contact-contact (AC, 1 min)	-
Ambient operating temperature at V_N	-25 °C ... +50 °C
Storage temperature	-40 °C ... +70 °C
Dimensions (mm) W x H x L	15 x 53 x 96
Wire connection	Height from upper-edge of DIN 35 rail CAGE CLAMP® S
Cross sections	0.34 mm ² ... 2.5 mm ² / AWG 22 ... 12
Strip length	9 ... 10 mm / 0.35 ... 0.39 in
Standards/specifications	EN 61810-1, EN 60664-1, EN 61140, UL 508 (max. 10 A)

Relay with 1 make contact and status indication (15 mm high)
Nominal input voltage V_N : 24 VDC for lamp loads

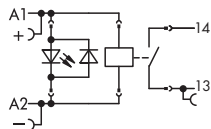


DC load limit curve



Contact life, type of load	Electrical life
3000 W, incandescent lamp, 230 VAC, OT 8.3 % ①, 5 min ⁻¹	12,000
620 W, gas discharge lamp, CCG ②, 120/277 VAC, UL 508, 50 °C	6,000
1200 W, tungsten lamp, 120/277 VAC, UL 508, 50 °C	6,000
16 A, 250 VAC, cos φ = 1, 85 °C, IEC 61810	5,000

① OT= On-Time
 ② CCG = Conventional Control Gear



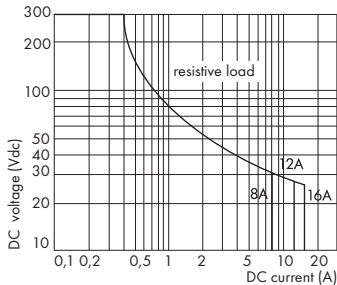
Description	V_N	I_N	Item No.	Pack. Unit
Relay socket with miniature switching relay, for DIN 35 rail	24 VDC	17 mA	788-357	1

Technical Data

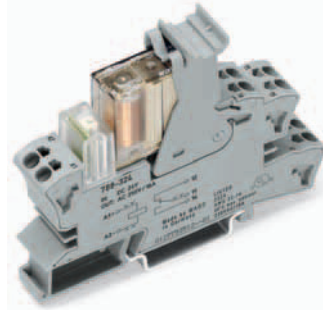
Accessories see pages 50 ... 55

Coil:	
Input voltage range	$V_N - 10 \% \dots + 20 \%$
Contacts:	
Contact material	AgSnO ₂ , W pre-make contact
Max. continuous current	16 A
Max. make current	165 A / 20 ms (AC)
Max. switching voltage	250 VAC
Max. switching power (resistive)	4 kVA AC, DC see load curve
Recommended minimum load	-
Pull-in/drop-out/bounce time typ.	10ms / 5ms / 4 ms
Mechanical life	5 x 10 ⁶ switching operations
General specifications:	
Nominal voltage to EN 60664-1	250 V / 4 kV / 3
Dielectric strength, contact-coil (AC, 1 min)	4 kV _{rms}
Dielectric strength open contact (AC, 1 min)	1.25 kV _{rms}
Dielectric strength contact-contact (AC, 1 min)	-
Ambient operating temperature at V_N	-25 °C ... +50 °C
Storage temperature	-40 °C ... +70 °C
Dimensions (mm) W x H x L	15 x 53 x 86
Wire connection	Height from upper-edge of DIN 35 rail CAGE CLAMP® S
Cross sections	0.34 mm ² ... 2.5 mm ² / AWG 22 ... 12
Strip length	9 ... 10 mm / 0.35 ... 0.39 in
Standards/specifications	EN 61810-1, EN 60664-1, EN 61140
	-

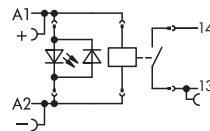
Relay with 1 make contact and status indication
(Relay height: 25 mm)
Nominal input voltage V_N 24 V DC



DC load limit curve



Contact life at different lamp loads Load	Switching operations
12 A, 250 V AC, $\cos \phi = 1$	3×10^5
TV 8 acc. to UL 508	25×10^3
2500 W, 230 V AC Halogen lamp	$> 10^4$
1000 W, 250 V AC Incandescent lamp	2.3×10^5
3000 W, 250 V AC Incandescent lamp	3.6×10^4
1500 VA, Fluorescent lamp 163 μ F	10^4



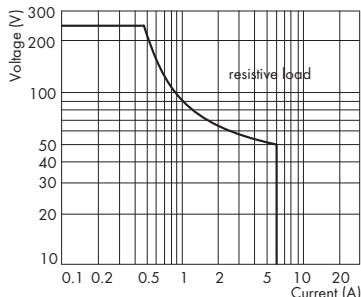
Description	V_N	I_N	Item No.	Pack. Unit
Relay socket with miniature switching relay, for DIN 35 rail	24 V DC	21.8 mA	788-355	1

Technical Data

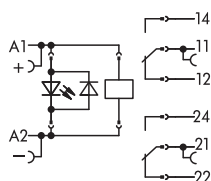
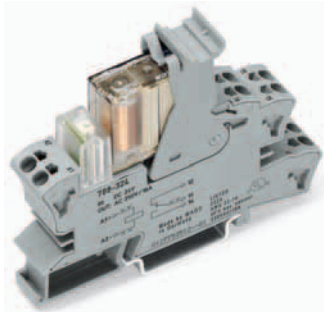
Accessories see pages 50 ... 55

Coil:	
Input voltage range	$V_N - 15 \% \dots + 20 \%$
Contacts:	
Contact material	AgSnO ₂
Max. continuous current	16 A
Max. make current	4 s (AC) 25 A / 20 ms 120 A
Max. switching voltage	250 V AC
Max. switching power (resistive)	4 kVA AC, DC see load limit curve
Recommended minimum load	> 100 mA / 12 V AC/DC
Pull-in/drop-out/bounce time typ.	8ms / 2ms / 2 ms
Mechanical life	30×10^6 switching operations
General specifications:	
Nominal voltage to EN 60664-1	250 V / 4 kV / 3
Dielectric strength, contact-coil (AC, 1 min)	4 kV _{rms}
Dielectric strength open contact (AC, 1 min)	1 kV _{rms}
Dielectric strength contact-contact (AC, 1 min)	-
Ambient operating temperature at V_N	-25 °C ... +50 °C
Storage temperature	-40 °C ... +70 °C
Dimensions (mm) W x H x L	15 x 64 x 86
Wire connection	Height from upper-edge of DIN 35 rail CAGE CLAMP® S
Cross sections	0.34 mm ² ... 2.5 mm ² / AWG 22 ... 12
Strip length	9 ... 10 mm / 0.35 ... 0.39 in
Standards/specifications	DIN EN 61140; EN 50178; UL 508 (max. 10 A)

Safety relay SR2M (2 changeover contacts) with forced guided contacts (Type A) and status indication
(Relay height: 25 mm)
Nominal input voltage V_N 24 V DC



DC load limit curve



In accordance with EN 50205, it is only permitted to use 1 make contact / 1 break contact for safety circuits (11-14 and 22-21 or 12-11 and 21-24)

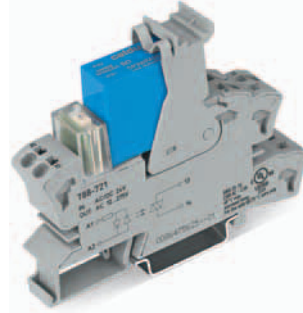
Description	V_N	I_N	Item No.	Pack. Unit
Relay socket with miniature switching relay, for DIN 35 rail	24 V DC	31 mA	788-384	1

Technical Data

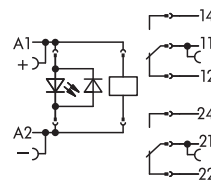
Accessories see pages 50 ... 55

Coil:	
Input voltage range	$V_N - 15\% \dots +10\%$
Contacts:	
Contact material	AgNi
Max. continuous current	6 A
Max. make current	4 s 14 A (AC)
Max. switching voltage	250 V AC
Max. switching power (resistive)	AC 1500 VA; DC see load limit curve
Recommended minimum load	5 V / 10 mA / 50 mW
Pull-in/drop-out/bounce time typ.	10ms / 4ms / -
Mechanical life	10×10^6 switching operations
General specifications:	
Nominal voltage to EN 60664-1	250 V / 4 kV / 3
Dielectric strength, contact-coil (AC, 1 min)	4 kV _{rms}
Dielectric strength open contact (AC, 1 min)	1.5 kV _{rms}
Dielectric strength contact-contact (AC, 1 min)	3 kV _{eff}
Ambient operating temperature at V_N	-25 °C ... +55 °C
Storage temperature	-40 °C ... +70 °C
Dimensions (mm) W x H x L	15 x 64 x 86
Wire connection	Height from upper-edge of DIN 35 rail CAGE CLAMP® S
Cross sections	0.34 mm ² ... 2.5 mm ² / AWG 22 ... 12
Strip length	9 ... 10 mm / 0.35 ... 0.39 in
Standards/specifications	EN 60664-1, EN 50205; UL 508

**Safety relay (2 changeover contacts)
with force-guided gold contacts (Type A)
and status indication
Nominal input voltage V_N 24 VDC**



Similar to picture



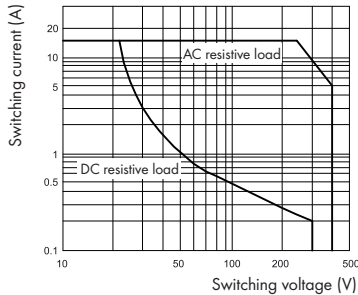
Description	V_N	I_N	Item No.	Pack. Unit	
Relay socket with miniature switching relay, for DIN 35 rail	24 VDC	30 mA	788-906	1	

Technical Data

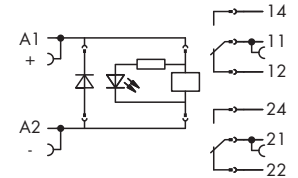
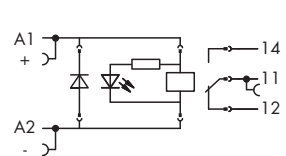
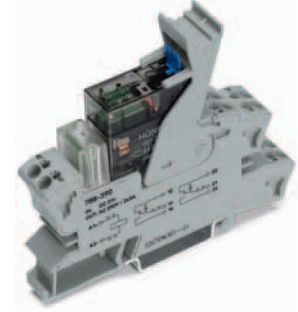
Accessories see pages 50 ... 55

Coil:					
Input voltage range		$V_N - 15 \% \dots + 10 \%$			
Contacts:					
Contact material		AgNi10 + Au			
Max. continuous current		0.3 A			
Max. switching voltage		60 V			
Recommended minimum load		0.1 V / 1 mA / 1 mW			
Pull-in/drop-out/bounce time typ.		15ms / 12ms / -			
Mechanical life		50×10^6 switching operations			
General specifications:					
Nominal voltage to EN 60664-1		250 V / 4 kV / 2			
Dielectric strength, contact-coil (AC, 1 min)		4 kV _{rms}			
Dielectric strength contact-contact (AC, 1 min)		2.5 kV _{eff}			
Ambient operating temperature at V_N		-25 °C ... +55 °C			
Storage temperature		-40 °C ... +70 °C			
Dimensions (mm) W x H x L		15 x 54 x 86			
		Height from upper-edge of DIN 35 rail			
Wire connection		CAGE CLAMP® S			
Cross sections		0.34 mm ² ... 2.5 mm ² / AWG 22 ... 12			
Strip length		9 ... 10 mm / 0.35 ... 0.39 in			
Standards/specifications		EN 61140, EN 60664-1, EN 61810-5, EN 50205, UL 508 (max. 40 °C)			

	Relay with 1 changeover contact Electrical and mechanical status indication Manual operation (Relay height: 25 mm) Nominal input voltage V_N: 24 V DC, 48 V DC, 110 V DC	Relay with 2 changeover contact Electrical and mechanical status indication Manual operation (Relay height: 25 mm) Nominal input voltage V_N: 24 V DC, 48 V DC, 110 V DC
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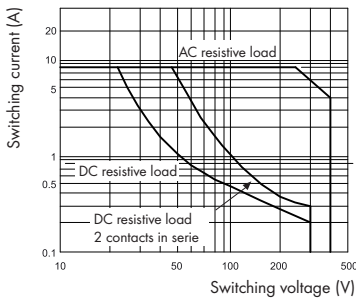
Load limit curve for 788-346, -347, -349, -391



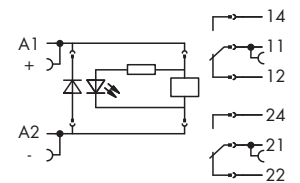
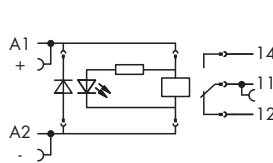
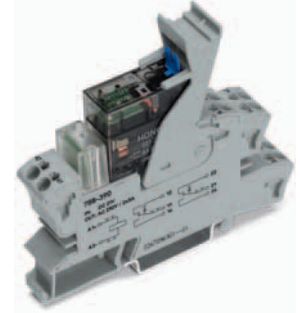
Description	V_N	I_N	Item No.	Pack. Unit	V_N	I_N	Item No.	Pack. Unit
Relay socket with miniature switching relay, for DIN 35 rail	24 V DC	16.7 mA	788-341	1	24 V DC	16.7 mA	788-346	1
	48 V DC	8.3 mA	788-342	1	48 V DC	8.3 mA	788-347	1
	110 V DC	3.6 mA	788-344	1	110 V DC	3.6 mA	788-349	1

Technical Data	Accessories see pages 50 ... 55	
Coil:		
Input voltage range	$V_N \pm 10\%$	$V_N \pm 10\%$
Contacts:		
Contact material	AgNi	AgNi
Max. continuous current	16A	2 x 8A
Max. make current	24 A	2 x 12 A
Max. switching voltage	250 V AC	250 V AC
Max. switching power (resistive)	4 kVA AC	2 x 2 kVA AC
Recommended minimum load	10 mA / 12 V AC/DC	10 mA / 12 V AC/DC
Pull-in/drop-out/bounce time typ.	15ms / 8ms / -	15ms / 8ms / -
Mechanical life	5×10^6 switching operations	5×10^6 switching operations
General specifications:		
Nominal voltage to EN 60664-1	250 V / 4 kV / 3	250 V / 4 kV / 3
Dielectric strength, contact-coil (AC, 1 min)	5 kV _{rms}	5 kV _{rms}
Dielectric strength open contact (AC, 1 min)	1 kV _{rms}	1 kV _{rms}
Dielectric strength contact-contact (AC, 1 min)	-	2.5 kV _{eff}
Ambient operating temperature at V_N	-25 °C ... +50 °C	-25 °C ... +50 °C
Storage temperature	-40 °C ... +70 °C	-40 °C ... +70 °C
Dimensions (mm) W x H x L	15 x 73 x 86	15 x 73 x 86
Wire connection	Height from upper-edge of DIN 35 rail CAGE CLAMP® S	Height from upper-edge of DIN 35 rail CAGE CLAMP® S
Cross sections	0.34 mm ² ... 2.5 mm ² / AWG 22 ... 12	0.34 mm ² ... 2.5 mm ² / AWG 22 ... 12
Strip length	9 ... 10 mm / 0.35 ... 0.39 in	9 ... 10 mm / 0.35 ... 0.39 in
Standards/specifications	EN 61140; EN 50178; UL 508 (max. 10 A)	EN 61140; EN 50178; UL 508

	<p>Relay with 1 changeover contact Electrical and mechanical status indication (25 mm high) Nominal input voltage V_N: 24 VDC Railway applications</p>	<p>Relay with 2 changeover contact Electrical and mechanical status indication (25 mm high) Nominal input voltage V_N: 24 VDC Railway applications</p>
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Load limit curve for 788-341, -342, -344, -390



Description	V_N	I_N	Item No.	Pack. Unit	V_N	I_N	Item No.	Pack. Unit
Relay socket with miniature switching relay, for DIN 35 rail	24 VDC	19.1 mA	788-391	1	24 VDC	19.1 mA	788-390	1

Technical Data

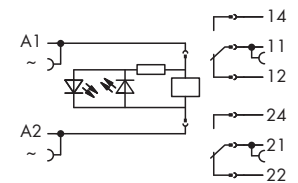
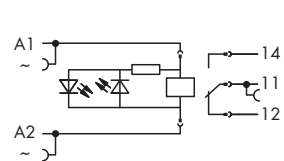
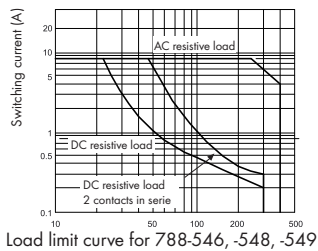
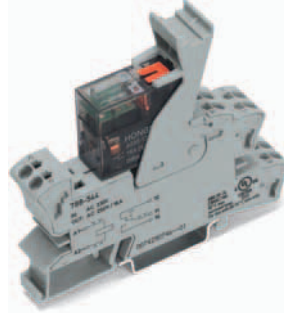
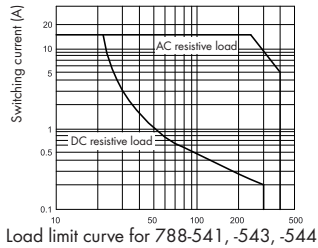
Accessories see pages 50 ... 55

Accessories see pages 50 ... 55

Coil:		
Input voltage range	$V_N -30 \% \dots +25 \%$	$V_N -30 \% \dots +25 \%$
Contacts:		
Contact material	AgNi	AgNi
Max. continuous current	3 A (single socket)	2 x 3 A (single socket)
Max. make current	24 A	2 x 12 A
Max. switching voltage	250 VAC	250 VAC
Max. switching power (resistive)	750 VA AC	2 x 750 VA AC
Recommended minimum load	10 mA / 12 V AC/DC	10 mA / 12 V AC/DC
Pull-in/drop-out/bounce time typ.	15ms / 8ms / -	15ms / 8ms / -
Mechanical life	5×10^6 switching operations	5×10^6 switching operations
General specifications:		
Nominal voltage to EN 60664-1	250 V / 4 kV / 3	250 V / 4 kV / 3
Dielectric strength, contact-coil (AC, 1 min)	5 kV _{rms}	5 kV _{rms}
Dielectric strength open contact (AC, 1 min)	1 kV _{rms}	1 kV _{rms}
Dielectric strength contact-contact (AC, 1 min)	-	2.5 kV _{eff}
Ambient operating temperature at V_N	-25 °C ... +70 °C	-25 °C ... +70 °C
Storage temperature	-40 °C ... +70 °C	-40 °C ... +70 °C
Dimensions (mm) W x H x L	15 x 73 x 86	15 x 73 x 86
Wire connection	Height from upper-edge of DIN 35 rail CAGE CLAMP® S	Height from upper-edge of DIN 35 rail CAGE CLAMP® S
Cross sections	0.34 mm ² ... 2.5 mm ² / AWG 22 ... 12	0.34 mm ² ... 2.5 mm ² / AWG 22 ... 12
Strip length	9 ... 10 mm / 0.35 ... 0.39 in	9 ... 10 mm / 0.35 ... 0.39 in
Standards/specifications	EN 61810-1, EN 60664-1, EN 61140	EN 61810-1, EN 60664-1, EN 61140

Relay with 1 changeover contact
Electrical and mechanical status indication
Manual operation
(Relay height: 25 mm)
Nominal input voltage V_N :
24 V AC, 115 V AC, 230 V AC

Relay with 2 changeover contact
Electrical and mechanical status indication
Manual operation
(Relay height: 25 mm)
Nominal input voltage V_N :
24 V AC, 115 V AC, 230 V AC

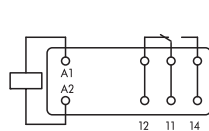
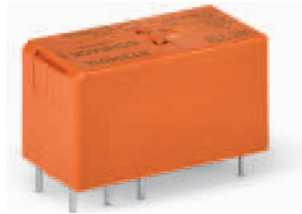
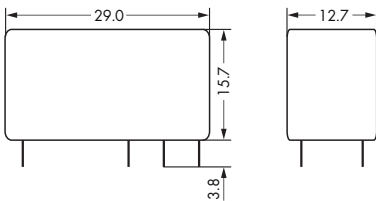


Description	V_N	I_N	Item No.	Pack. Unit	V_N	I_N	Item No.	Pack. Unit
Relay socket with miniature switching relay, for DIN 35 rail	24 V AC	31.6 mA	788-541	1	24 V AC	31.6 mA	788-546	1
	115 V AC	6.6 mA	788-543	1	115 V AC	6.6 mA	788-548	1
	230 V AC	3.2 mA	788-544	1	230 V AC	3.2 mA	788-549	1

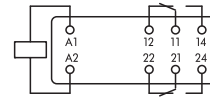
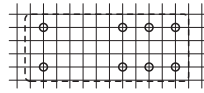
Technical Data	Accessories see pages 50 ... 55	
Coil:		
Input voltage range	$V_N \pm 10\%$	$V_N \pm 10\%$
Contacts:		
Contact material	AgNi	AgNi
Max. continuous current	16A	2 x 8A
Max. make current	24 A	2 x 12 A
Max. switching voltage	250 V AC	250 V AC
Max. switching power (resistive)	4 kVA AC	2 x 2 kVA AC
Recommended minimum load	10 mA / 12 V AC/DC	10 mA / 12 V AC/DC
Pull-in/drop-out/bounce time typ.	15ms / 8ms / -	15ms / 8ms / -
Mechanical life	5 x 10 ⁶ switching operations	5 x 10 ⁶ switching operations
General specifications:		
Nominal voltage to EN 60664-1	250 V / 4 kV / 3	250 V / 4 kV / 3
Dielectric strength, contact-coil (AC, 1 min)	5 kV _{rms}	5 kV _{rms}
Dielectric strength open contact (AC, 1 min)	1 kV _{rms}	1 kV _{rms}
Dielectric strength contact-contact (AC, 1 min)	-	2.5 kV _{eff}
Ambient operating temperature at V_N	-25 °C ... +50 °C	-25 °C ... +50 °C
Storage temperature	-40 °C ... +70 °C	-40 °C ... +70 °C
Dimensions (mm) W x H x L	15 x 73 x 86	15 x 73 x 86
Wire connection	Height from upper-edge of DIN 35 rail CAGE CLAMP® S	Height from upper-edge of DIN 35 rail CAGE CLAMP® S
Cross sections	0.34 mm ² ... 2.5 mm ² / AWG 22 ... 12	0.34 mm ² ... 2.5 mm ² / AWG 22 ... 12
Strip length	9 ... 10 mm / 0.35 ... 0.39 in	9 ... 10 mm / 0.35 ... 0.39 in
Standards/specifications	EN 61140; EN 50178; UL 508 (max. 10 A)	EN 61140; EN 50178; UL 508

	Pluggable miniature switching relays (Relay height: 15 mm) 1 changeover contact	Pluggable miniature switching relays (Relay height: 15 mm) 2 changeover contact
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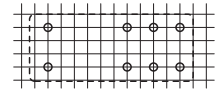
Relay height 15 mm



Pinning 5 mm



Pinning 5 mm



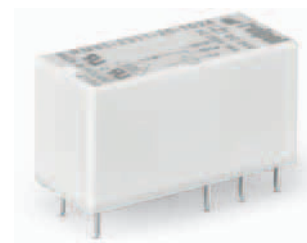
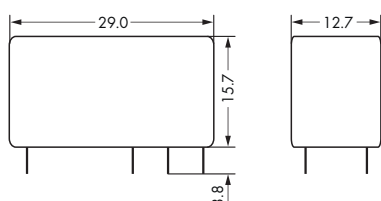
Description	V _N	Item No.	Pack. Unit	V _N	Item No.	Pack. Unit
Pluggable miniature switching relays	12 V DC	788-150	20	12 V DC	788-152	20
	24 V DC	788-154	20	24 V DC	788-156	20
	48 V DC	788-158	20	48 V DC	788-160	20
	60 V DC	788-162	20	60 V DC	788-164	20
	110 V DC	788-166	20	110 V DC	788-168	20
	24 V AC	788-170	20	24 V AC	788-172	20
	115 V AC	788-174	20	115 V AC	788-176	20
	230 V AC	788-178	20	230 V AC	788-180	20

Technical Data

Contacts:		
Contact material	AgNi 90/10	AgNi 90/10
Max. continuous current	16 A	2 x 8 A
Max. make current	30 A (4 s)	15 A (4 s)
Max. switching voltage	250 V AC	250 V AC
Max. switching power (resistive)	4 kVA AC	2 x 2 kVA AC
Recommended minimum load	12 VDC / 10 mA	12 VDC / 10 mA
Pull-in/drop-out/bounce time typ.	8ms / 6ms / 6 ms	8ms / 6ms / 10 ms
Mechanical life	> 30 x 10 ⁵ switching operations	> 30 x 10 ⁶ switching operations
General specifications:		
Dielectric strength, contact-coil (AC, 1 min)	5 kV _{rms}	5 kV _{rms}
Dielectric strength open contact (AC, 1 min)	1 kV _{rms}	1 kV _{rms}
Dielectric strength contact-contact (AC, 1 min)	-	2.5 kV _{eff}
Ambient operating temperature at V _N	-40 °C ... +85 °C	-40 °C ... +85 °C
Dimensions (mm) W x H x L	12.7 x 15.7 x 29	12.7 x 15.7 x 29

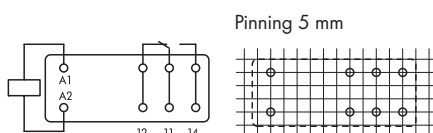
	Pluggable miniature switching relays (Relay height: 15 mm) 1 changeover contact (gold contacts)	Pluggable miniature switching relays (Relay height: 15 mm) 2 changeover contact (gold contacts)
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Relay height 15 mm

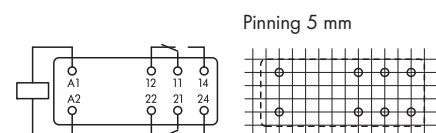


* In order to prevent the gold layer from being damaged, 30 VDC switching voltages and 50 mA currents shall not be exceeded.

Higher switching power leads to evaporation of the gold layer. The resulting deposits in the enclosure may cause sparkovers between the coil and the contact.



Pinning 5 mm



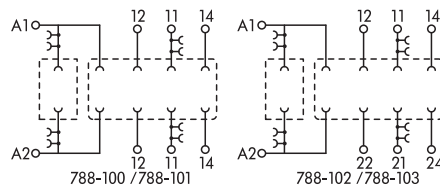
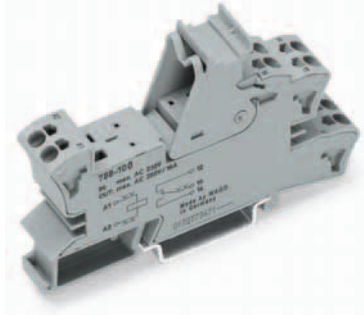
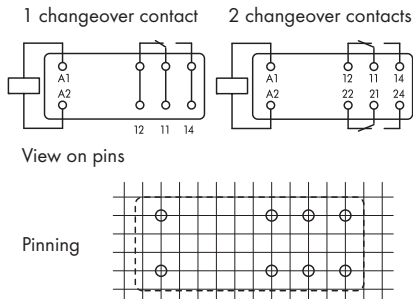
Pinning 5 mm

Description	V _N	Item No.	Pack. Unit	V _N	Item No.	Pack. Unit
Pluggable miniature switching relays	24 V DC	788-155	20	24 V DC	788-157	20
	115 V AC	788-175	20	115 V AC	788-177	20
	230 V AC	788-179	20	230 V AC	788-181	20

Technical Data

Contacts:		
Contact material	AgNi + Au	AgNi + Au
Max. continuous current	16 A *	2 x 8 A *
Max. switching voltage	250 V AC *	250 V AC *
Max. switching power (resistive)	4 kVA AC *	2 x 2 kVA AC *
Recommended minimum load	5 V / 2 mA / 50 mW	5 V / 2 mA / 50 mW
Pull-in/drop-out/bounce time typ.	7ms / 3ms / -	7ms / 3ms / -
Mechanical life	> 3 x 10 ⁷ switching operations	> 3 x 10 ⁷ switching operations
General specifications:		
Dielectric strength, contact-coil (AC, 1 min)	5 kV _{rms}	5 kV _{rms}
Dielectric strength open contact (AC, 1 min)	1 kV _{rms}	1 kV _{rms}
Dielectric strength contact-contact (AC, 1 min)	-	2.5 kV _{off}
Ambient operating temperature at V _N	-40 °C ... +85 °C	-40 °C ... +85 °C
Dimensions (mm) W x H x L	12.7 x 15.7 x 29	12.7 x 15.7 x 29

Sockets for miniature switching relay
1 changeover contact / 2 changeover contact



Description	Item No.	Pack. Unit
Socket without relay, for DIN 35 rail Relay height 15 mm, 1 changeover contact	788-100	1
Relay height 15 mm, 2 changeover contacts	788-102	1
Relay height 25 mm, 1 changeover contact	788-101	1
Relay height 25 mm, 2 changeover contacts	788-103	1

Technical Data

Contacts:	
Max. continuous current	16 A / 2 x 8 A
Max. switching voltage	250 V AC
Max. switching power (resistive)	4 kVA / 2 x 2 kVA AC
General specifications:	
Nominal input voltage (V _N)	depending on relay; max. 250 V AC
Nominal voltage to EN 60664-1	250 V / 4 kV / 3
Dielectric strength	5 kV _{rms} (depending on relay)
Storage temperature	-40 °C ... +80 °C
Ambient operating temperature	-25 °C ... +70 °C (depending on relay)
Wire connection	CAGE CLAMP® S
Cross sections	0,34 mm ² ... 2,5 mm ² / AWG 22 ... 12
Strip length	9 ... 10 mm / 0.35 ... 0.39 in
Standards/specifications	EN 61140; EN 50178

Status indication



Description	Power consumption at V_N	Item No.	Pack. Unit
Status indication with recovery diode, 24 V DC (12 V ... 24 V)	2.4 mA	788-120	50 (2x25)
Status indication with recovery diode, 48 V DC (48 V ... 60 V)	1.9 mA	788-121	50 (2x25)
Status indication 110 V DC	1.9 mA	788-122	50 (2x25)
Status indication 24 V AC	2.1 mA	788-123	50 (2x25)
Status indication 115 V AC	1.7 mA	788-124	50 (2x25)
Status indication 230 V AC	1.6 mA	788-125	50 (2x25)

Push-in type jumper bar 788-113



Commoning



Push-in type jumper bar



Description			Item No.	Pack. Unit
Push-in type jumper bar, I max. 18 A	2-way	(module/module)	788-113	200 (8x25)
	3-way		788-114	100 (4x25)
	4-way		788-115	100 (4x25)
	6-way		788-116	100 (4x25)
	8-way		788-117	100 (4x25)
Push-in type jumper bars, light gray, insulated, 18 A	2-way	(internal)	859-402	200 (8x25)

WMB Multi marking system



Marking



Group marker carrier



Description		Item No.	Pack. Unit
WMB Multi marking system	plain	793-501	5 cards
Marking software and printer/plotter see Section 11			
Marking	1 ... 10 (10x)	793-502	5 cards
	11 ... 20 (10x)	793-503	5 cards
	21 ... 30 (10x)	793-504	5 cards
	31 ... 40 (10x)	793-505	5 cards
	41 ... 50 (10x)	793-506	5 cards
	1 ... 50 (2x)	793-566	5 cards
10 strips with 10 markers, white with black printing			
Group marker carrier		209-145	100 (50)

Operating tool



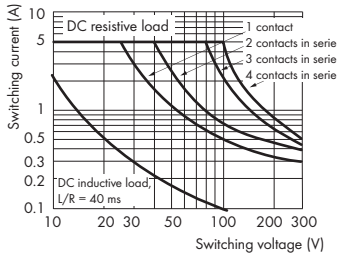
Description		Item No.	Pack. Unit
Operating tool, with partially insulated shaft	Type 2, blade (3.5 x 0.5) mm	210-720	1

Ferrule



Description	Sleeve for mm ² / AWG	Item No.	Pack. Unit
Ferrule, red insulated, 12 mm	2 x 1 mm ² / 2 x 18	216-542	500

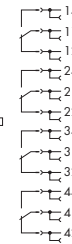
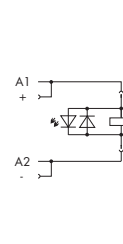
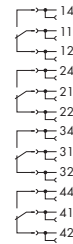
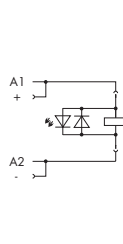
	Socket with industrial relay Coil voltage: 24 V, 48 V, 110 V, 220 v DC 4 changeover contacts	Socket with industrial relay Coil voltage: 24 V DC 4 changeover contacts (gold contacts)
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DC load limit curve

* In order to prevent the gold layer from being damaged, 30 VDC switching voltages and 50 mA currents shall not be exceeded.

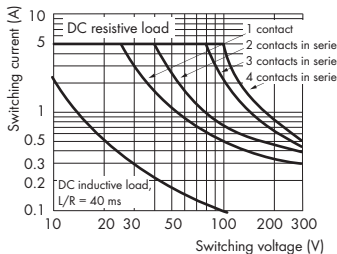
Higher switching power leads to evaporation of the gold layer. The resulting deposits in the enclosure may cause sparkovers between the coil and the contact.



Description	V _N	I _N	Item No.	Pack. Unit	V _N	I _N	Item No.	Pack. Unit
Socket with industrial relay, for DIN 35 rail	24 VDC	36.9 mA	858-304	1	24 VDC	36.9 mA	858-314	1
	48 VDC	18.5 mA	858-305	1				
	110 VDC	10 mA	858-307	1				
	220 VDC	4.1 mA	858-308	1				

Technical Data	Accessories see pages 61 ... 65	
Coil:		
Input voltage range	V _N -20 % ... +10 %	V _N -20 % ... +10 %
Contacts:		
Contact material	AgCe	AgCe + Au
Max. continuous current	5 A	5 A *
Max. make current	15 A (4 s)	15 A (4 s)
Max. switching voltage	250 VAC	250 VAC *
Max. switching power (resistive)	1250 VA AC, DC see load limit curve	1250 VA AC, DC see load limit curve *
Recommended minimum load	100 mA / 12 V AC/DC	1 mA / 5 VDC / 50 mW
Pull-in/drop-out/bounce time typ.	25ms / 25ms / 4 ms	25ms / 25ms / 4 ms
Mechanical life	20 x 10 ⁶ switching operations	20 x 10 ⁶ switching operations
General specifications:		
Nominal voltage to EN 60664-1	250 V / 2.5 kV / 2	250 V / 2.5 kV / 2
Dielectric strength, contact-coil (AC, 1 min)	1.5 kV _{rms}	1.5 kV _{rms}
Dielectric strength open contact (AC, 1 min)	1 kV _{rms}	1 kV _{rms}
Dielectric strength contact-contact (AC, 1 min)	1.5 kV _{eff}	1.5 kV _{eff}
Ambient operating temperature at V _N	-25 °C ... +70 °C	-25 °C ... +70 °C
Storage temperature	-40 °C ... +80 °C	-40 °C ... +80 °C
Dimensions (mm) W x H x L	31 x 73 x 97	31 x 73 x 97
Wire connection	Height from upper-edge of DIN 35 rail CAGE CLAMP® S	Height from upper-edge of DIN 35 rail CAGE CLAMP® S
Cross sections	2 x 0.34 mm ² ... 2 x 1.5 mm ² / 1 x 2.5 mm ² / AWG 22 ... 16	2 x 0.34 mm ² ... 2 x 1.5 mm ² / 1 x 2.5 mm ² / AWG 22 ... 16
Strip length	9 ... 10 mm / 0.35 ... 0.39 in	9 ... 10 mm / 0.35 ... 0.39 in
Standards/specifications	EN 61810-1; EN 60664-1; (858-304: GL; UL 508, max. 50 °C)	EN 61810-1; EN 60664-1; GL; UL 508 (max. 50 °C)

	<p>Relay sockets with industrial relay Coil voltage: 24 V, 48 V, 115 V AC 4 changeover contacts</p>	<p>Relay sockets with industrial relay Coil voltage: 24 V, 48 V, 115 V AC 4 changeover contacts (gold plating)</p>
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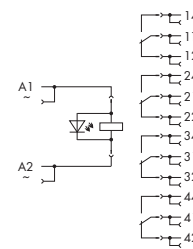
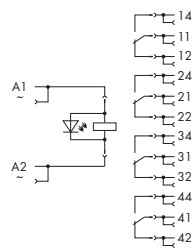


DC load limit curve



* In order to prevent the gold layer from being damaged, 30 VDC switching voltages and 50 mA currents shall not be exceeded.

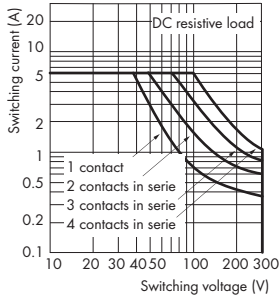
Higher switching power leads to evaporation of the gold layer. The resulting deposits in the enclosure may cause sparkovers between the coil and the contact.



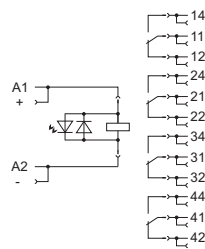
Description	V _N	I _N	Item No.	Pack. Unit	V _N	I _N	Item No.	Pack. Unit
Socket with industrial relay, for DIN 35 rail	24 VAC	50 mA	858-504	1	24 VAC	50 mA	858-514	1
	115 VAC	10 mA	858-507	1	115 VAC	10 mA	858-517	1
	230 VAC	8.3 mA	858-508	1	230 VAC	8.3 mA	858-518	1

Technical Data	Accessories see pages 61 ... 65	Accessories see pages 61 ... 65
Coil:		
Input voltage range	V _N -20 % ... +10 %	V _N -20 % ... +10 %
Contacts:		
Contact material	AgCe	AgCe + Au
Max. continuous current	5 A	5 A *
Max. make current	15 A (4 s)	15 A (4 s)
Max. switching voltage	250 VAC	250 VAC *
Max. switching power (resistive)	1250 VA AC, DC see load limit curve	1250 VA AC, DC see load limit curve *
Recommended minimum load	100 mA / 12 V AC/DC	1 mA / 5 VDC / 50 mW
Pull-in/drop-out/bounce time typ.	25ms / 25ms / 4 ms	25ms / 25ms / 4 ms
Mechanical life	20 x 10 ⁶ switching operations	20 x 10 ⁶ switching operations
General specifications:		
Nominal voltage to EN 60664-1	250 V / 2.5 kV / 2	250 V / 2.5 kV / 2
Dielectric strength, contact-coil (AC, 1 min)	1.5 kV _{rms}	1.5 kV _{rms}
Dielectric strength open contact (AC, 1 min)	1 kV _{rms}	1 kV _{rms}
Dielectric strength contact-contact (AC, 1 min)	1.5 kV _{eff}	1.5 kV _{eff}
Ambient operating temperature at V _N	-25 °C ... +70 °C	-25 °C ... +70 °C
Storage temperature	-40 °C ... +80 °C	-40 °C ... +80 °C
Dimensions (mm) W x H x L	31 x 73 x 97	31 x 73 x 97
Wire connection	Height from upper-edge of DIN 35 rail CAGE CLAMP® S	Height from upper-edge of DIN 35 rail CAGE CLAMP® S
Cross sections	2 x 0.34 mm ² ... 2 x 1.5 mm ² / 1 x 2.5 mm ² / AWG 22 ... 16	2 x 0.34 mm ² ... 2 x 1.5 mm ² / 1 x 2.5 mm ² / AWG 22 ... 16
Strip length	9 ... 10 mm / 0.35 ... 0.39 in	9 ... 10 mm / 0.35 ... 0.39 in
Standards/specifications	EN 61810-1; EN 60664-1; (858-508: GL; UL 508, max. 50 °C)	EN 61810-1; EN 60664-1; (858-518: GL; UL 508, max. 50 °C)

Relay sockets with industrial relay
Coil voltage:
24 V, 110 V, 220 V DC
4 changeover contacts



DC load limit curve



Description	V _N	I _N	Item No.	Pack. Unit
Socket with industrial relay, for DIN 35 rail	24 VDC	31.5 mA	858-390	1
	110 VDC	7.7 mA	858-392	1
	220 VDC	4.3 mA	858-391	1

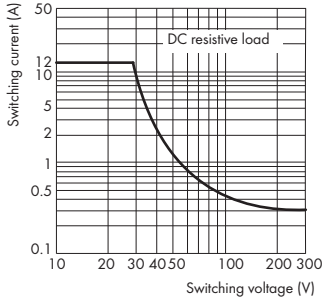
Technical Data

Accessories see pages 61 ... 65

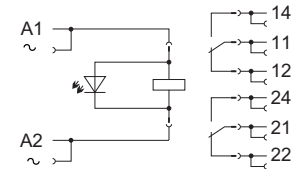
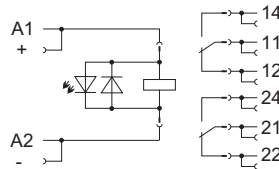
Coil:	
Input voltage range	V _N -10 % ... +30 %
Contacts:	
Contact material	AgNi 90/10
Max. continuous current	4 x 6 A
Max. make current	12 A (20 ms)
Max. switching voltage	240 VAC
Max. switching power (resistive)	4 AC x 1500 VA, DC see load limit curve
Recommended minimum load	10 mA / 12 V AC/DC
Pull-in/drop-out/bounce time typ.	15ms / 18ms / 8 ms
Mechanical life	30 x 10 ⁶ switching operations
General specifications:	
Nominal voltage to EN 60664-1	250 V / 2.5 kV / 2
Dielectric strength, contact-coil (AC, 1 min)	2.5 kV _{rms}
Dielectric strength open contact (AC, 1 min)	1.2 kV _{rms}
Dielectric strength contact-contact (AC, 1 min)	2 kV _{eff}
Ambient operating temperature at V _N	-40 °C ... +70 °C
Storage temperature	-40 °C ... +85 °C
Dimensions (mm) W x H x L	31 x 55 x 97
Wire connection	Height from upper-edge of DIN 35 rail CAGE CLAMP® S
Cross sections	2 x 0.34 mm ² ... 2 x 1.5 mm ² / 1 x 2.5 mm ² / AWG 22 ... 16
Strip length	9 ... 10 mm / 0.35 ... 0.39 in
Standards/specifications	EN 61810-1; EN 60664-1; (858-390, -391: UL 508, max. 50 °C)

1 Sockets with Industrial Relay

	Relay sockets with industrial relay Coil voltage: 24 V, 48 V, 110 V, 220 V DC 2 changeover contacts	Relay socket with industrial relay Coil voltage: AC 230 V 2 changeover contacts
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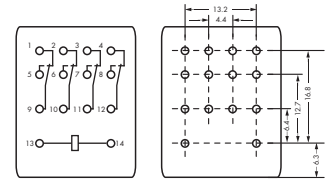
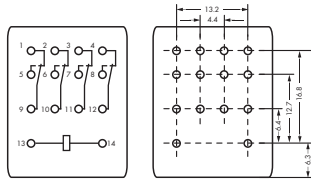
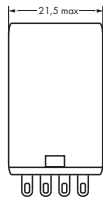
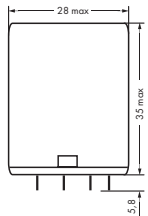
DC load limit curve



Description	V _N	I _N	Item No.	Pack. Unit	V _N	I _N	Item No.	Pack. Unit
Socket with industrial relay, for DIN 35 rail	24 VDC	37.5 mA	858-324	1	230 VAC	11 mA	858-528	1
	48 VDC	18.5 mA	858-325	1				
	110 VDC	8.1 mA	858-327	1				
	220 VDC	4.1 mA	858-328	1				

Technical Data		Accessories see pages 61 ... 65		Accessories see pages 61 ... 65	
Coil:					
Input voltage range		V _N -20 % ... +10 %		V _N -20 % ... +10 %	
Contacts:					
Contact material		AgNi		AgNi	
Max. continuous current		2 x 12 A		2 x 12 A	
Max. make current		24 A (4 s)		24 A (4 s)	
Max. switching voltage		250 VAC		250 VAC	
Max. switching power (resistive)		2 AC x 3000 VA, DC see load limit curve		2 AC x 3000 VA, DC see load limit curve	
Recommended minimum load		5 V / 5 mA / 0.3 W		5 V / 5 mA / 0.3 W	
Pull-in/drop-out/bounce time typ.		13ms / 3ms / -		10ms / 8ms / -	
Mechanical life		2 x 10 ⁷ switching operations		2 x 10 ⁷ switching operations	
General specifications:					
Nominal voltage to EN 60664-1		250 V / 2.5 kV / 2		250 V / 2.5 kV / 2	
Dielectric strength, contact-coil (AC, 1 min)		2.5 kV _{rms}		2.5 kV _{rms}	
Dielectric strength open contact (AC, 1 min)		1.5 kV _{rms}		1.5 kV _{rms}	
Dielectric strength contact-contact (AC, 1 min)		2.5 kV _{eff}		2.5 kV _{eff}	
Ambient operating temperature at V _N		-40 °C ... +70 °C		-40 °C ... +70 °C	
Storage temperature		-40 °C ... +70 °C		-40 °C ... +70 °C	
Dimensions (mm) W x H x L		31 x 73 x 97		31 x 73 x 97	
Wire connection		Height from upper-edge of DIN 35 rail CAGE CLAMP® S		Height from upper-edge of DIN 35 rail CAGE CLAMP® S	
Cross sections		2 x 0.34 mm ² ... 2 x 1.5 mm ² / 1 x 2.5 mm ² / AWG 22 ... 16		2 x 0.34 mm ² ... 2 x 1.5 mm ² / 1 x 2.5 mm ² / AWG 22 ... 16	
Strip length		9 ... 10 mm / 0.35 ... 0.39 in		9 ... 10 mm / 0.35 ... 0.39 in	
Standards/specifications		EN 61810-1; EN 60664-1		EN 61810-1; EN 60664-1	

	<p>Pluggable industrial relays, 4 changeover contacts with integrated LED and recovery diode and manual operation, Nominal input voltage V_N 24 VDC</p>	<p>Pluggable industrial relays, 4 changeover contacts with integrated LED and recovery diode and manual operation, Nominal input voltage V_N 24 V ... 230 VAC</p>
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Description	V_N	I_N	Item No.	Pack. Unit	V_N	I_N	Item No.	Pack. Unit
Pluggable industrial relay	24 VDC	36.9 mA	858-150	1	24 VAC	50 mA	858-154	1
					230 VAC	8.3 mA	858-151	1

Technical Data

Coil:	V_N	I_N	Item No.	Pack. Unit
Input voltage range	V_N -20 % ... +10 %			
Contacts:				
Contact material	AgCe			
Max. continuous current	5 A			
Max. switching voltage	250 VAC			
Max. switching power (resistive)	1250 VA AC			
Recommended minimum load	100 mA / 12 V AC/DC			
Pull-in/drop-out/bounce time typ.	25ms / 25ms / 4 ms			
Mechanical life	20 x 10 ⁶ switching operations			
General specifications:				
Nominal voltage to EN 60664-1	250 V / 2.5 kV / 2			
Dielectric strength, contact-coil (AC, 1 min)	1.5 kV _{rms}			
Dielectric strength open contact (AC, 1 min)	1 kV _{rms}			
Dielectric strength contact-contact (AC, 1 min)	1.5 kV _{eff}			
Ambient operating temperature at V_N	-25 °C ... +70 °C			
Storage temperature	-40 °C ... +70 °C			
Dimensions (mm) W x H x L	21.5 x 35 x 28			

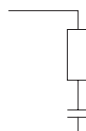
	<p>Suppressor module, pluggable, for 788 and 858 Series Relay Sockets</p>	
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Note: To guarantee safe operation, residual voltages (due to the cable capacitance of long connection lines or leakage currents of semi-conductor switches and their protective circuits) must be lower than the release voltage of the relays.

For DC relays, the release voltage is specified with $\leq 5\%$ of the nominal voltage; for AC relays, it is 15% of the nominal voltage (acc. to VDE 0435).

The relay may not reset if a high residual voltage exists. Depending on the reason for the residual voltage, changing the cable routing or a parallel connection of an RC element could remedy this situation.



Description	Item No.	Pack. Unit
Suppressor module for miniature switching relay	788-148	50

Technical Data

Operating data:		
Operating voltage	max. 230 VAC, 50 ... 60 Hz	
Operating current	3.6 mA at 115 VAC, 50 Hz	
	7.2 mA at 230 VAC, 50 Hz	
Module's characteristics:		
Resistor	470 Ω	
Capacity	100 nF	
General specifications:		
Ambient operating temperature	-25 °C ... +70 °C	
Storage temperature	-40 °C ... +70 °C	
Dimensions (mm) W x H x L	15 x 15 x 10	
Standards/specifications	EN 60664-1	

Holding bracket



Description	Item No.	Pack. Unit
Holding bracket for industrial relays (height 33.5 mm ... 35.5 mm)	858-110	1

Push-in type jumper bar



Description	Item No.	Pack. Unit
Push-in type jumper bar	858-402	200

Status indication



Description	Power consumption at V_N	Item No.	Pack. Unit
Status indication with recovery diode, 24 V DC (12 V ... 24 V)	2.4 mA	788-120	50 (2x25)
Status indication with recovery diode, 48 V DC (48 V ... 60 V)	1.9 mA	788-121	50 (2x25)
Status indication 110 V DC	1.9 mA	788-122	50 (2x25)
Status indication 24 V AC	2.1 mA	788-123	50 (2x25)
Status indication 115 V AC	1.7 mA	788-124	50 (2x25)
Status indication 230 V AC	1.6 mA	788-125	50 (2x25)

NOTE:

Only required when using relays without integrated operating indicator!

Operating tool



Description	Item No.	Pack. Unit
Operating tool, with partially insulated shaft Type 2, blade (3.5 x 0.5) mm	210-720	1