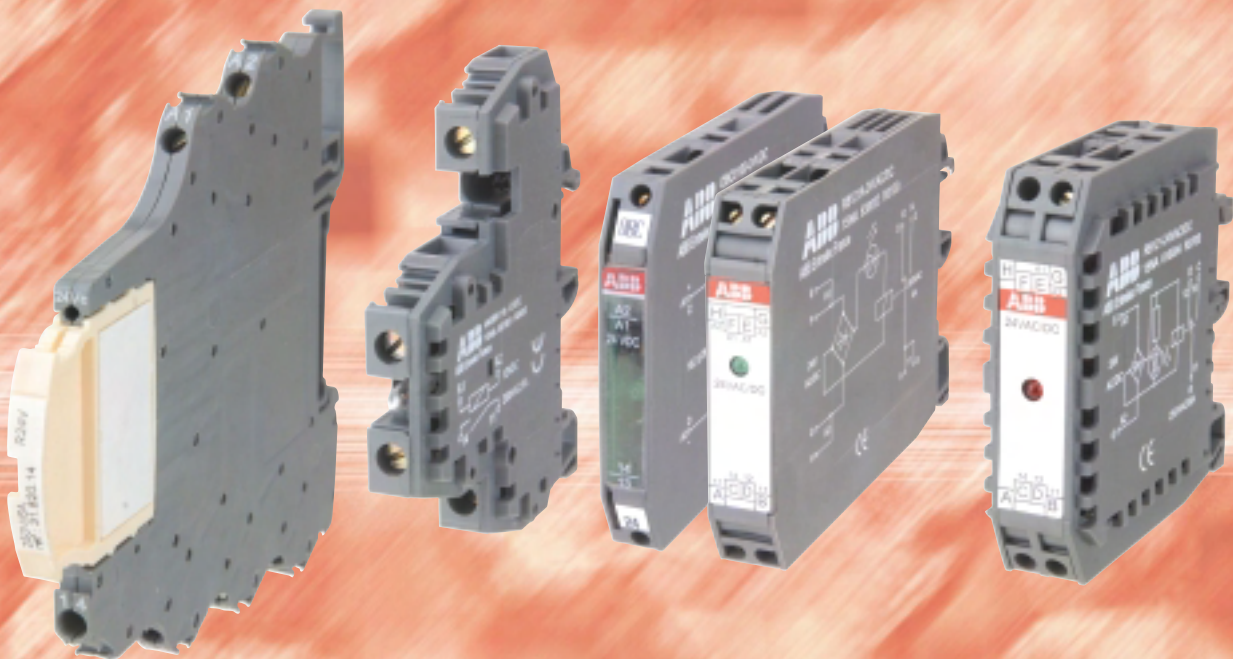


Relays Optocouplers



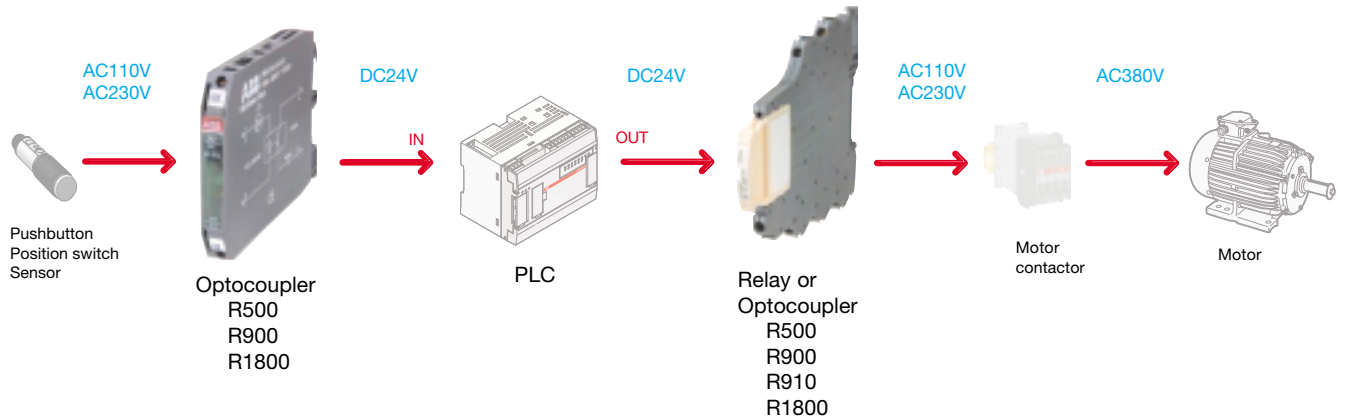
Relay interfaces Optocoupler modules

Applications - Technical data

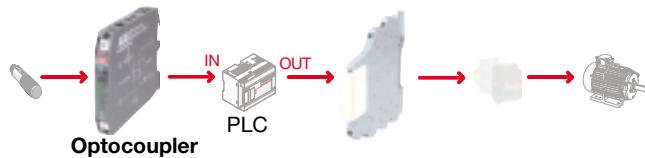
Applications

All the electrical signals from/to sensors/actuators must be adapted to the PLC's electrical level.
It is the first function of the relay or optocoupler interfaces.

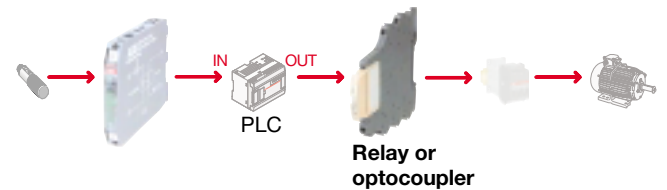
Second function of the relay and optocoupler interfaces is electrical isolation between sensors/actuators and the PLC.



An **optocoupler** is used as input interface. It is a function of insulation and adaptation.



A **relay** is used as output interface. It is voltage adaptation and it allows more power. The **power optocoupler** is used when the number of operations is important.



Technical data

R910 series

It is a terminal block !

- Spacing : 9 mm
- High wiring capacity 4 mm²
- 1 N/O contact 10 mA to 5 A / 250 V
- High isolation 3 kV



R500 series

The relay is pluggable

- Spacing : 5.08 mm (smallest on the market)
- Wire size : 2.5 mm² (4 mm² solid)
- 1 SPDT contact 10 mA to 6 A / 250 VA
- Transistor : 330 mA to 100 mA
MOS : 1 A to 2 A
Triac : 1 A



R900 series

It is the standard enclosure

- Spacing : 9 to 15 mm
- Wire size : 2.5 mm² (4 mm² solid)
- 1 or 2 SPDT contacts 1 mA to 6 A / 250 V
- Transistor : 100 mA to 5 A
MOS : 5 A
Triac : 1 A to 5 A



R1800 series

It is a compact enclosure (small height)

- Spacing : 18 to 23 mm
- Wire size : 2.5 mm² (4 mm² solid)
- 1 or 2 SPDT contacts 10⁻⁷ A to 6 A / 250 V
- Transistor : 100 mA



See cross reference table old part numbers / new part numbers at the end of the relay section.



















Selection guide

Relay modules

		Coil			
Contact		12 V DC	24 V DC	24 V AC/DC	48 V DC
1 NO without LED		 spacing : 9 mm M 4/9.R1111 12 V DC 1SNA 607 029 R0100	 spacing : 9 mm M 4/9.R1111 24 V DC 1SNA 607 030 R0600		
		 spacing : 9 mm M 4/9.R111L 12 V DC 1SNA 607 001 R0600	 spacing : 9 mm M 4/9.R111L 24 V DC 1SNA 607 002 R0700		
1 SPDT without LED			 spacing : 5.08 mm D 2,5/5-R121 24 V DC 1SNA 607 217 R0200		
1 SPDT with LED			 spacing : 5.08 mm D 2,5/5-R121L 24 V DC 1SNA 607 201 R1300	 spacing : 5.08 mm D 2,5/5-R121AL 24 V AC/DC 1SNA 607 231 R0000	
		 spacing : 18 mm RB 121 A 12 V DC 1SNA 610 125 R2400	 spacing : 11.5 mm RB 121 12 V DC 1SNA 630 001 R0000	 spacing : 18 mm RB 121 A 24 V AC/DC 1SNA 610 004 R0700	 spacing : 11.5 mm RB 121 A 24 V AC/DC 1SNA 630 002 R0100
1 SPDT with LED + switch				 spacing : 11.5 mm RB 121 AI 24 V AC/DC 1SNA 630 007 R0600	
1 DPDT with LED			 spacing : 15 mm RB 122 24 V DC 1SNA 630 019 R0100	 spacing : 18 mm RB 122 AV 24 V AC/DC 1SNA 610 121 R2000	
		 spacing : 18 mm RB 122 24 V DC 1SNA 610 059 R1500	 spacing : 11,5 mm RB 122 A 24 V AC/DC 1SNA 630 011 R2100		
1 DPDT with LED very low level				 spacing : 18 mm RB 122 48 V DC 1SNA 610 060 R1200	

Selection guide

Relay modules

48 V AC/DC	110 V AC/DC	110 V AC 50 Hz	115 V AC 60 Hz	230 V AC 230 V AC/DC
 <p>spacing : 5.08 mm D 2,5/5-R121AL 48 V AC/DC 1SNA 607 232 R0100</p>  <p>spacing : 11.5 mm RB 121 A 48 V AC/DC 1SNA 630 003 R0200</p>  <p>spacing : 18 mm RB 121 AV 48 V AC/DC 1SNA 610 006 R0100</p>	 <p>spacing : 18 mm RB 121 A 110 V AC/DC 1SNA 610 132 R2300</p>	 <p>spacing : 5.08 mm D 2,5/5-R121BL 110 V AC 1SNA 607 264 R1100</p>  <p>spacing : 11.5 mm RB 121 B 110 V AC 1SNA 630 004 R0300</p>	 <p>spacing : 5.08 mm D 2,5/5-R121BL 115 V AC 1SNA 607 264 R1100</p>  <p>spacing : 11.5 mm RB 121 B 115 V AC 1SNA 630 005 R0400</p>	 <p>spacing : 5.08 mm D 2,5/5-R121BL 230 V AC 1SNA 607 265 R1200</p>  <p>spacing : 11.5 mm RB 121 B 230 V AC 1SNA 630 006 R0500</p>  <p>spacing : 18 mm RB 121 A 230 V AC/DC 1SNA 610 132 R2300</p>
 <p>spacing : 18 mm RB 122 AV 48 V AC/DC 1SNA 610 122 R2100</p>	 <p>spacing : 23 mm RB 122 AR 110 V AC/DC 1SNA 610 011 R2500</p>	 <p>spacing : 15 mm RB 122 B 110 V AC 1SNA 630 021 R2300</p>	 <p>spacing : 15 mm RB 122 B 115 V AC 1SNA 630 022 R2400</p>	 <p>spacing : 23 mm RB 122 A 230 V AC/DC 1SNA 610 123 R2200</p>
		 <p>spacing : 23 mm RB 122 BR 110 V AC 1SNA 610 115 R2200</p>		 <p>spacing : 23 mm RB 122 BR 230 V AC 1SNA 610 089 R0400</p>



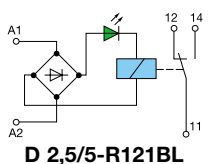
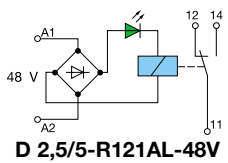
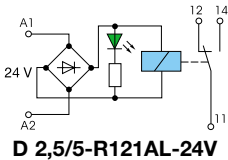
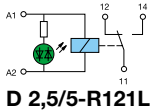
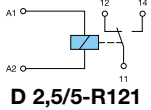
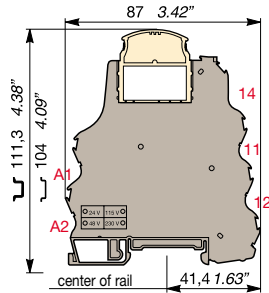
Relay Interfaces

R500 pluggable relay modules ↳ DIN 3

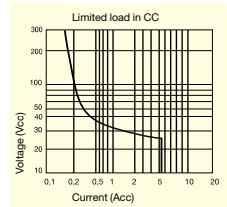
D 2,5/5-R121... - 2.5 mm² blocks - 5.08 mm .200" spacing

Characteristics

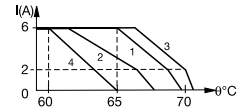
Relay characteristics	D 2,5/5-R121	D 2,5/5-R121L	D 2,5/5-R121AL			D 2,5/5-R121BL	
COIL							
Rated voltage +20%, -15%	24 V DC	24 V DC	24 V AC	24 V DC	48 V AC	48 V DC	110 V AC 230 V AC
Power	0.17 W	0.3 W	0.35 VA	0.35 W	0.44 VA	0.47 W	1.08 VA 2.13 VA
Rated current	7 mA	12 mA	12.4 mA	10 mA	7.6 mA	6.8 mA	8.4 mA 8 mA
Drop-out voltage	2.4 V	2.4 V	4.8 V	4.8 V	10 V	10 V	25 V 45 V
Status device	green LED						
CONTACT							
Type	1 SPDT						
Voltage switching range min./max.	12 V / 250 V AC						
Current switching range min./max.	10 mA / 6 A						
Load switching range	AC1 min. / max. 0.6 VA / 1500 VA (ohmic load) DC1 min. / DC13 max. 0.6 W / 140 W						
Number of on-load operations	10 ⁵ in AC15						
Number of off-load operations	10 x 10 ⁵						
Pull-in time (delay time)	5 ms	5 ms					
Drop-out time (delay time)	8 ms	8 ms					
Bounce time	1.5 ms						
Insulation coil / contacts	4000 V RMS						
Breakdown voltage coil / contacts	4000 V RMS						
Insulation contacts/contacts	1000 V RMS						
Storage ambient temperature	- 40°C to + 80°C						
Operating ambient temperature	See derating curve						
Other characteristics							
Body material	grey <input type="checkbox"/>						
Wire	UL 94 V0						
Wire size	0.2-4 mm ² / 24-12 AWG						
size	0.22-2.5 mm ² / 24-12 AWG						
Rated wire size	2.5 mm ² / 12 AWG						
Wire stripping length	10 mm .394"						
Recommended screwdriver	3.5 mm .137"						
Protection	IP 20 NEMA 1						
Recommended torque	0.4-0.6 Nm 3.5-5.3 lb.in						
Approvals							



Derating curves



	DC12	AC12	DC13	AC15
24 V	6 A	6 A	1 A	3 A
110/120 V	0,3 A	6 A	0,2 A	3 A
220/230 V	0,2 A	6 A	0,1 A	3 A



D 2,5/5-R121
 1 : 24 V
 2 : 48 V
 3 : 110 V
 4 : 230 V

D 2,5/5-R121...L

Order codes

Description	Type	Order P/N	Packaging	Weight kg
Relay module 24 V DC	D 2,5/5-R121 24 V DC	1SNA 607 217 R0200	10	0.032
Relay module with LED 24 V DC	D 2,5/5-R121L 24 V DC	1SNA 607 201 R1300	10	0.032
Relay module with LED 24 V AC/DC	D 2,5/5-R121AL 24 V AC/DC	1SNA 607 231 R0000	10	0.04
Relay module with LED 48 V AC/DC	D 2,5/5-R121AL 48 V AC/DC	1SNA 607 232 R0100	10	0.04
Relay module with LED 110 V AC	D 2,5/5-R121BL 110 V AC	1SNA 607 264 R1100	10	0.04
Relay module with LED 230 V AC	D 2,5/5-R121BL 230 V AC	1SNA 607 265 R1200	10	0.04

Accessories

High end stop	BAMH	9,1 mm	1SNA 114 836 R0000	50
	BAMH V0	9,1 mm	1SNA 194 836 R0100	50
	BADH	12 mm	1SNA 116 900 R2700	50
Comb type jumper bar 2 to 22 poles	PCMS	V0	see accessories	
Plug	BNMS R24V-1		1SNA 031 820 R1400	4
Test device	blue <input type="checkbox"/>	DCB (1)	1SNA 105 028 R2100	10
Test plug	DIA. 2 mm	FC2	1SNA 007 865 R2600	10
Marking method		Ⓟ RC55	see markers	

(1) Only on top decks.

M 4/9.R111... - 2.5 mm² blocks - 9 mm .354" spacing

Characteristics

Relay characteristics

	M 4/9.R111		M 4/9.R111L	
COIL				
Rated voltage +20%, -20% on DC	12 V	24 V	12 V	24 V
Power	0.3 W	0.3 W	0.6 W	0.8 W
Rated current	24 mA	14 mA	52 mA	33 mA
Drop-out voltage	1.2 V DC	2.4 V DC	1.2 V	2.4 V
Status device			lamp	

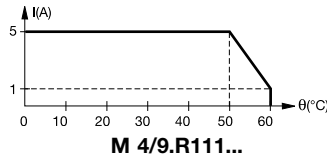
CONTACT

Type	1 NO			
Voltage switching range min./max.	12 V / 150 V DC - 250 V AC			
Current switching range	10 mA / 5 A			
Load switching range				
AC1 min. / max.	0.6 VA / 1250 VA			
DC1 min. / max.	0.6 W / 150 W			
Number of on-load operations	1 x 10 ⁶			
Number of off-load operations	2 x 10 ⁷			
Pull-in time (delay time)	5 ms			
Drop-out time (delay time)	6 ms		7 ms	
Bounce time	4 ms			
Insulation coil / contacts	3000 V RMS			
Breakdown voltage with 1.2/50µ wave	4000 V RMS			
Insulation contacts/contacts	750 V RMS			
Storage ambient temperature	-40°C to +80°C			
Operating ambient temperature	See derating curve hereunder			

Other characteristics

Body material	grey <input type="checkbox"/>	UL 94 V0
Wire	Solid wire	0.2-4 mm ² / 22-12 AWG
size	Stranded wire	0.22-2.5 mm ² / 22-12 AWG
Rated wire size		2.5 mm ² / 12 AWG
Wire stripping length		9 mm .354"
Recommended screwdriver		3.5 mm .137"
Protection		IP 20 NEMA 1
Recommended torque		0.4-0.6 Nm 3.5-5.3 lb.in
Approvals		

Derating curve



Order codes

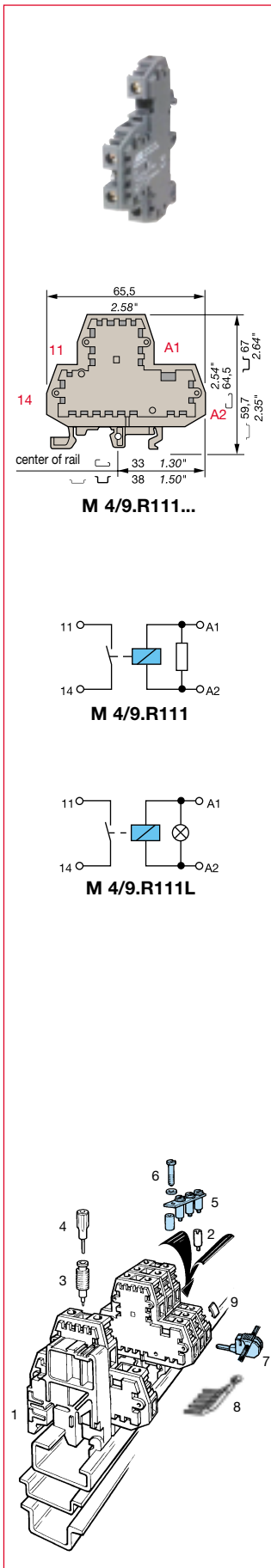
Description	Type	Order P/N	Packaging	Weight kg
Relay module 12 V DC	M 4/9.R111 12 V DC	1SNA 607 029 R0100	10	0.02
Relay module 24 V DC	M 4/9.R111 24 V DC	1SNA 607 030 R0600	10	0.02
Relay module with lamp 12 V DC	M 4/9.R111L 12 V DC	1SNA 607 001 R0600	10	0.02
Relay module with lamp 24 V DC	M 4/9.R111L 24 V DC	1SNA 607 002 R0700	10	0.02

Accessories

1 High end stop (all rails)	BAMH	9,1 mm	1SNA 114 836 R0000	50
2 Test socket	DIA. 2 mm	AL2 (1)	1SNA 163 070 R0000	50
	DIA. 3 mm	AL3 (1)	1SNA 163 261 R0000	50
3 Test device	grey <input type="checkbox"/>	DCG	1SNA 163 218 R0500	10
4 Test plug		FC2	1SNA 007 865 R2600	10
5 Jumper bar	8 poles	BJS9 (1)(2)	1SNA 177 583 R1200	
	not assembled 16 poles	BJS9 (1)(2)	1SNA 177 584 R1300	
6 Sub-assembly for jumper bar (screw + jumper + post)		EV6D (1)(2)	1SNA 168 400 R1600	20
7 IDC jumper		AD2,5	1SNA 114 205 R2000	50
8 Comb type jumper bar		PC9	1SNA 210 160 R1200	10
9 Marking method	(1)	RC65 and RC610	see markers	

(1) These accessories can be used on the lower connection only.

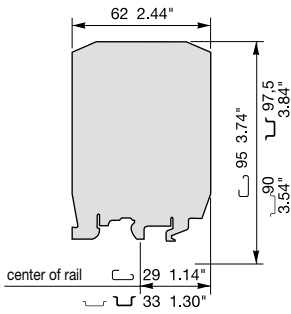
(2) Use of these accessories requires the user to cut out the pre-cut partition.



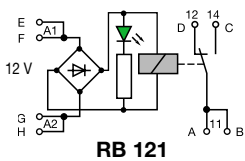


Relay Interfaces

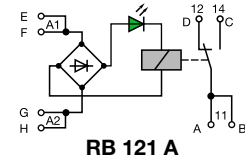
Relay modules R900 DIN 1-3



Relay blocks R900



RB 121



RB 121 A

RB 121 A - instant relay blocks - 11.5 mm .453" spacing

Characteristics

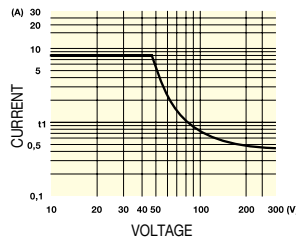
Relay characteristics	RB 121 - 12 V	RB 121 A - 24 V		RB 121 A - 48 V	
COIL					
Rated voltage +20%, -15% on DC, ±15% on AC	12 V DC	24 V AC	24 V DC	48 V AC	48 V DC
Power	0.5 W	0.52 VA	0.44 W	0.62 VA	0.48 W
Rated current	42 mA	22 mA	18 mA	13 mA	10 mA
Drop-out voltage at 20°C	2.8 V	4.6 V	4.6 V	5.8 V	5.8 V
Drop-in voltage at 20°C	7.5 V	12 V AC	14 V DC	26 V AC	30 V DC
Permissible leakage current	3.5 mA	2.2 mA	1.8 mA	1 mA	1 mA

CONTACT

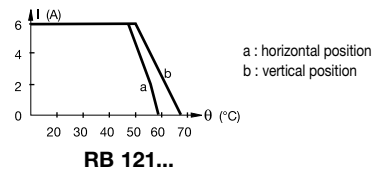
Type	1 SPDT				
Voltage switching range min./max.	5 V / 150 V DC - 250 V AC				
Current switching range min./max.	1 mA / 6 A				
Load switching range					
AC1 min. / max.	5 mVA / 1500 VA				
DC1 min. / max.	5 mW / 192 W				
Number of on-load operations	1 x 10 ⁵				
Number of off-load operations	5 x 10 ⁶				
Operating speed	5 ms				
	F				O
Bounce		11 ms		1 ms	12 ms
Insulation coil / contact	3500 V RMS				
Resistance to shock coil / contact	4000 V RMS				
Insulation contact / contact	1000 V RMS				
Ambient temperature storage	-40°C to +80°C				
operating	See derating curve				

Other characteristics

Body material	grey <input type="checkbox"/>	UL 94 V0			
Wire	Solid wire	0.5 - 4 mm ² / 20 - 12 AWG			
size	Stranded wire	0.5 - 2.5 mm ² / 20 - 12 AWG			
Rated wire size		2.5 mm ² / 12 AWG			
Wire stripping length		7 mm .276"			
Recommended screwdriver		3.5 mm .137"			
Protection		IP20 NEMA1			
Recommended torque		0.4 - 0.6 Nm 3.5 - 5.3 lb.in			
Approvals					



Derating curve

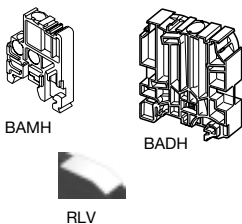


Order codes

Description	Type	Order P/N	Packaging	Weight kg
Relay module 12 V DC	RB 121	12 V DC 1SNA 630 001 R0000	1	0.04
Relay module 24 V AC/DC	RB 121 A	24 V AC/DC 1SNA 630 002 R0100	1	0.04
Relay module 48 V AC/DC	RB 121 A	48 V AC/DC 1SNA 630 003 R0200	1	0.04

Accessories

High end section	BADH	1SNA 116 900 R2700	50
	BAMH	1SNA 114 836 R0000	50
	BAMH V0	1SNA 194 836 R0100	50
Lengthwise marker	RLV	1SNA 103 849 R0300	
Marking method	RC55	see markers	





Relay Interfaces

Relay modules R900 DIN 1-3

RB 121... - instant relay blocks - 11.5 mm .453" spacing

Characteristics

Relay characteristics

COIL

Rated voltage +20%,
-15% on DC, ±15% on AC
Power
Rated current
Drop-out voltage at 20°C
Drop-in voltage at 20°C
Permissible leakage current

	RB 121 B			RB 121 AI	
110 V AC/50 Hz	115 V AC/60 Hz	230 V AC	24 V AC ±10%	24 V DC ±10%	
1.5 VA	1.6 VA	3.22 VA	0.53 VA	0.44 W	
14 mA	14 mA	14 mA	22 mA	18 mA	
30 V AC	30 V AC	60 V AC	5.5 V	4.6 V	
60 V AC	60 V AC	120 V AC	12.5 V AC	14.5 V DC	
2 mA max.	2 mA max.	3.6 mA max.	2.2 mA	1.8 mA	

CONTACT

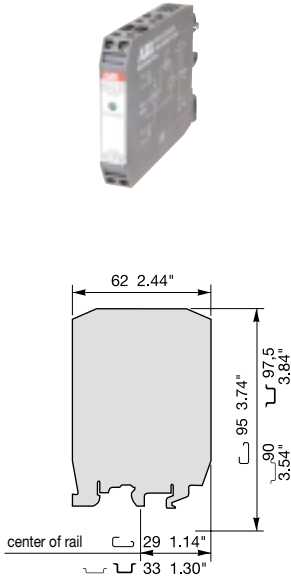
Type
Voltage switching range min./max.
Current switching range min./max.
Load switching range
AC1 min. / max.
DC1 min. / max.
Number of on-load operations
Number of off-load operations
Operating speed
Bounce
Insulation coil / contact
Resistance to shock coil / contact
Insulation contact / contact
Ambient temperature storage
operating

	RB 121 B			RB 121 AI	
Type	1 SPDT				
Voltage switching range min./max.	5 V / 150 V DC - 250 V AC				
Current switching range min./max.	1 mA / 5 A			1 mA / 6 A	
Load switching range	5 mVA / 1250 VA			5 mVA / 1500 VA	
AC1 min. / max.	5 mW / 192 W				
DC1 min. / max.	1 x 10 ⁵				
Number of on-load operations	5 x 10 ⁶				
Number of off-load operations	5 ms				
Operating speed	10 ms			11 ms	
Bounce	1 ms				
Insulation coil / contact	3000 V RMS				
Resistance to shock coil / contact	4000 V RMS				
Insulation contact / contact	1000 V RMS				
Ambient temperature storage operating	-40°C to +80°C see derating curves				

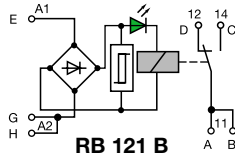
Other characteristics

Body material grey
Wire Solid wire
size Stranded wire
Rated wire size
Wire stripping length
Recommended screwdriver
Protection
Recommended torque
Approvals

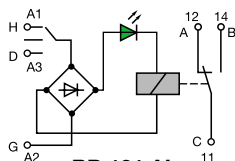
UL 94 V0
0.5 - 4 mm² / 20 - 12 AWG
0.5 - 2.5 mm² / 20 - 12 AWG
2.5 mm² / 12 AWG
7 mm .276"
3.5 mm .137"
IP20 NEMA1
0.4 - 0.6 Nm 3.5 - 5.3 lb.in



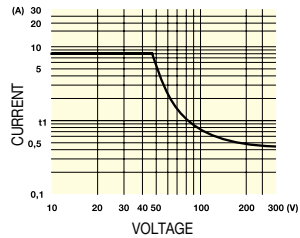
Relay blocks R900



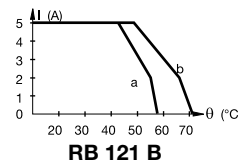
RB 121 B



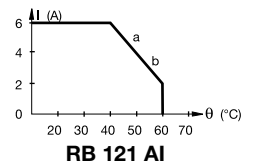
RB 121 AI



Derating curves



a : horizontal position
b : vertical position

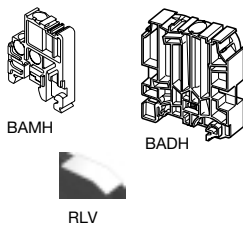


Order codes

Description	Type	Order P/N	Packaging	Weight kg
Relay module 110 V AC 50 Hz	RB 121 B 110 V AC	1SNA 630 004 R0300	1	0.05
Relay module 115 V AC 60 Hz	RB 121 B 115 V AC	1SNA 630 005 R0400	1	0.05
Relay module 230 V AC 50 Hz	RB 121 B 230 V AC	1SNA 630 006 R0500	1	0.05
Relay module 24 V AC/DC	RB 121 AI 24 V AC/DC	1SNA 630 007 R0600	1	0.05

Accessories

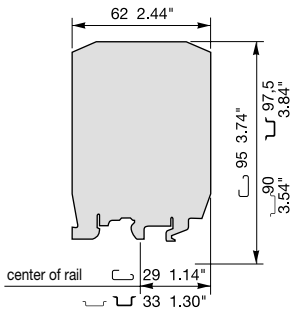
High end section	BADH	1SNA 116 900 R2700	50
	BAMH	1SNA 114 836 R0000	50
	BAMH V0	1SNA 194 836 R0100	50
Lengthwise marker	RLV	1SNA 103 849 R0300	
Marking method	RC55	see markers	



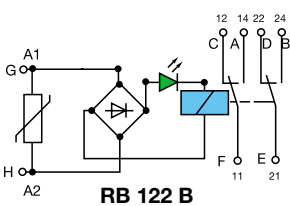
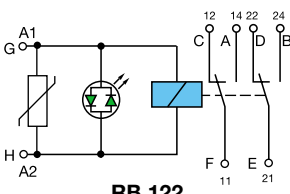
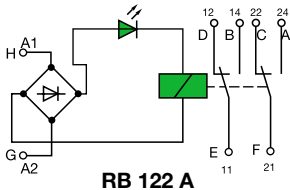


Relay Interfaces

Relay modules R900 DIN 1-3



Relay blocks R900



RB 122... - instant relay blocks - 11.5 mm .453" or 15 mm .591" spacing

Characteristics

Relay characteristics

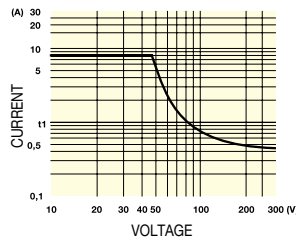
COIL	RB 122 A		RB 122	RB 122 B	
Rated voltage +15%, -10% on DC ±15% on AC	24 V AC	24 V DC	24 V DC	110 V AC/50Hz	115 V AC/60Hz
Power	0.4 VA	0.35 W	0.48 W	3.6 VA	4 VA
Rated current	16.8 mA	14.4 mA	20 mA	33 mA	35 mA
Drop-out voltage at 20°C	9.2 V	6.5 V	2.4 V DC	11 V AC	11.5 V AC
Drop-in voltage at 20°C					
Permissible leakage current	2 mA max.	2 mA max.	1.5 mA	2 mA	2.6 mA

CONTACT

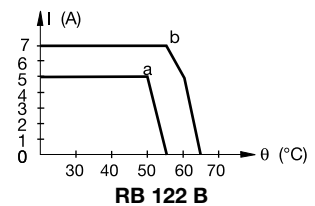
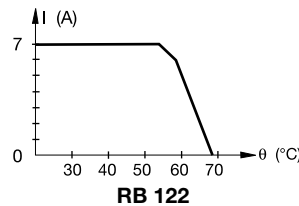
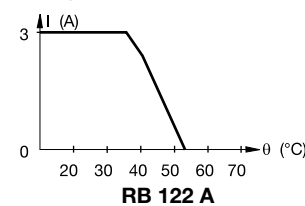
Type	1 DPDT				
Voltage switching range min./max.	10 ⁻⁵ V / 250 V AC		12 V / 250 V		
Current switching range min./max.	10 ⁻⁵ A / 3 A		100 mA / 7 A	100 mA / 7 A	100 mA / 7 A
Load switching range			1.2 VA / 1750 VA	1.2 VA / 1750 VA	1.2 VA / 1750 VA
AC1 min. / max.	10 ⁻¹⁰ VA / 250 VA		1.2 W / see curve hereunder		
DC1 min. / max.	10 ⁻¹⁰ W / 90 W				
Number of on-load operations	1.8 x 10 ⁶ (2 A / 60 W)				
Number of off-load operations	10 ⁸		30 x 10 ⁶		
Operating speed F	6 ms		8 ms		6 ms
O	11 ms		15 ms		12 ms
Bounce	1 ms		2 ms		
Insulation coil / contact	1500 V RMS		2500 V RMS		
Resistance to shock coil / contact			4000 V RMS		
Insulation contact / contact			1000 V RMS		
Ambient temperature storage			-40°C to +80°C		
operating			see derating curves		

Other characteristics

Body material	grey <input type="checkbox"/>	UL 94 V0
Wire	Solid wire	0.5 - 4 mm ² / 20 - 12 AWG
size	Stranded wire	0.5 - 2.5 mm ² / 20 - 12 AWG
Rated wire size		2.5 mm ² / 12 AWG
Wire stripping length		7 mm .276"
Recommended screwdriver		3.5 mm .137"
Protection		IP20 NEMA1
Recommended torque	0.4 - 0.6 Nm	3.5 - 5.3 lb.in
Approvals		



Derating curves



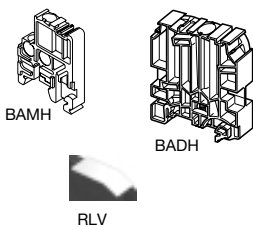
a : 110 V AC/50 Hz block
b : 115 V AC/60 Hz block

Order codes

Description	Type	Order P/N	Packaging Weight kg
Relay block 24 V AC/ DC 11.5 mm spacing	RB 122 A	24 V AC/DC 1SNA 630 011 R2100	1 0.05
Relay block 24 VDC 15 mm spacing	RB 122	24 V DC 1SNA 630 019 R0100	1 0.05
Relay block 110 V AC/50 Hz 15 mm spacing	RB 122 B	110 VAC/50Hz 1SNA 630 021 R2300	1 0.06
Relay block 115 V AC/60 Hz 15 mm spacing	RB 122 B	115 VAC/60Hz 1SNA 630 022 R2400	1 0.06

Accessories

High end section	BADH	1SNA 116 900 R2700	50
	BAMH	1SNA 114 836 R0000	50
	BAMH V0	1SNA 194 836 R0100	50
Lengthwise marker	RLV	1SNA 103 849 R0300	
Marking method	RC55	see markers	



RB 121... - instant relay blocks - 18 mm .709" spacing

Characteristics

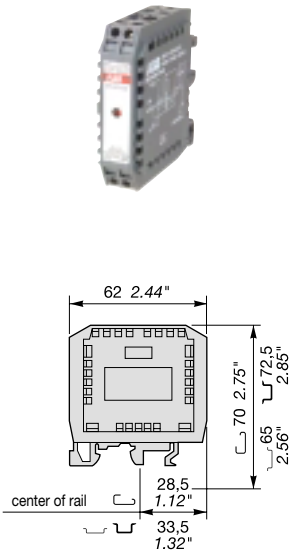
Relay characteristics	RB 121	RB 121 A	RB 121 AV	RB 121 A	
COIL					
Rated voltage +15%, -10% on DC ±15% on AC	12 V DC	24 V AC/DC	48 V AC/DC	110 V AC/DC	220 V AC/DC
Power	0.5 W	0.7 W	0.96 W	0.5 W	1.1 VA
Rated current	41 mA	29 mA	20 mA	4.3 mA	5 mA
Drop-out voltage at 20°C	3.2 V DC	5 V AC/DC	5.6 V AC/DC	14.5 V AC/DC	25.2 V AC
Drop-in voltage at 20°C					
Permissible leakage current					

CONTACT

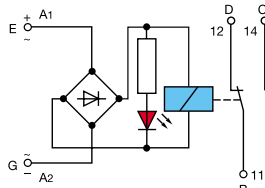
Type	1 SPDT
Voltage switching range min./max.	12 V / 380 V
Current switching range min./max.	10 mA / 8 A
Load switching range	0.6 VA / 2000 VA
AC1 min. / max.	1.2 W / see curve below
DC1 min. / max.	
Number of on-load operations	2×10^5
Number of off-load operations	2×10^7
Operating speed	F 7 ms O 6 ms
Bounce	2 ms
Insulation coil / contact	2500 V RMS
Resistance to shock coil / contact	4000 V RMS
Insulation contact / contact	1000 V RMS
Ambient temperature storage	-40°C to +80°C
operating	see derating curves

Other characteristics

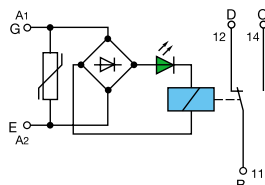
Body material	grey <input type="checkbox"/>	UL 94 V0
Wire	Solid wire	0.2 - 4 mm ² / 22 - 12 AWG
size	Stranded wire	0.22 - 2.5 mm ² / 22 - 12 AWG
Rated wire size		2.5 mm ² / 12 AWG
Wire stripping length		7 mm .276"
Recommended screwdriver		3.5 mm .137"
Protection		IP20 NEMA1
Recommended torque		0.4 - 0.6 Nm 3.5 - 5.3 lb.in
Approvals		



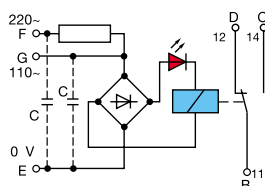
Relay blocks R1800



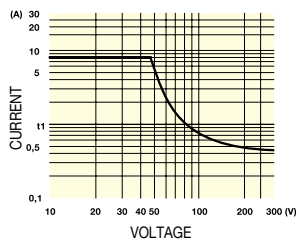
RB 121 12 VDC RB 121 A 24 VAC/DC



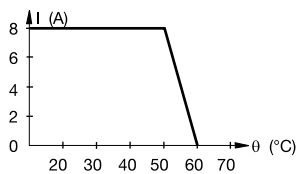
RB 121 AV 48 VAC/DC



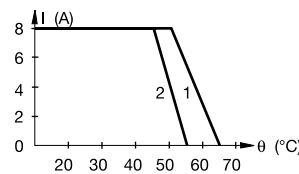
RB 121 A 110-220 VAC/DC



Derating curves



RB 121 12 VDC RB 121 A 24 VAC/DC RB 121 AV 48 VAC/DC



RB 121 A 110-220 VAC/DC

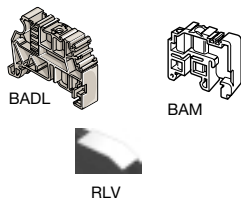
1 : 110 V AC/DC block
2 : 220 V AC block

Order codes

Description	Type	Order P/N	Packaging Weight kg
Relay block 12 V DC	RB 121 12 V DC	0610 125.24	1 0.05
Relay block 24 V AC/DC	RB 121 A 24 V AC/DC	0610 004.07	1 0.05
Relay block 48 VAC/DC	RB 121 AV 48 V AC/DC	0610 006.01	1 0.05
Relay block 110-220 V AC/DC	RB 121 A 110-220 V AC/DC	0610 132.23	1 0.05

Accessories

End section	BADL V0	0399 903.02	50
	BAM	0103 002.26	50
	BAM V0	0399 306.03	50
Lengthwise marker	RLV	0103 849.03	
Marking method	⑤ RC55	see markers	





Relay Interfaces

Relay modules R1800 DIN 1-3

RB 122... - instant relay blocks - 18 mm .709" or 23 mm .906" spacing

Characteristics

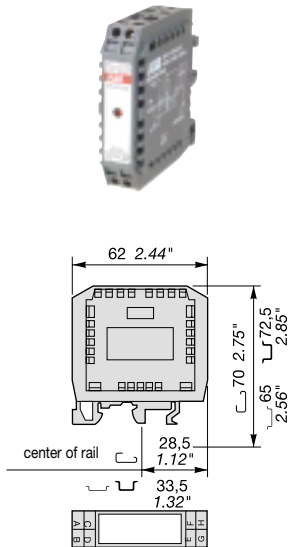
Relay characteristics	RB 122 AV	RB 122 AR	RB 122 A	RB 122	RB 122 BR
COIL					
Rated voltage $\pm 15\%$, -10% on DC $\pm 15\%$ on AC	24 VAC/DC	48 VAC/DC	110 VAC/DC	220 VAC/DC	24 V DC
Power	0.7 W	0.7 W	0.7 W - 1.8 VA	1.2 W	0.31 W
Rated current	26 mA	14 mA	16 mA	5.5 mA	13 mA
Drop-out voltage at 20°C	2.4 V AC/DC	4.8 V AC/DC	11 V AC/DC	22 V AC/DC	2.4 V DC
Drop-in voltage at 20°C					4.8 V DC
Permissible leakage current			1.6 mA		
					3 mA

CONTACT

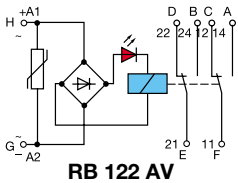
Type	1 DPDT				
Voltage switching range min./max.	12 V / 250 V	10 ³ V / 250 V 12 V / 250 V		10 ³ V / 250 V	
Current switching range min./max.		10 mA / 5 A		10 ² A / 5 A	
Load switching range	0.6 VA / 1250 VA			10 ⁻¹⁰ VA / 1000 VA	
AC1 min. / max.	0.6 W / see curve hereunder			10 ⁻¹⁰ W / see curve hereunder	
DC1 min. / max.					
Number of on-load operations	2 x 10 ⁶			5A/100W - 5A/1kVA : 10 ⁵	
Number of off-load operations	2 x 10 ⁷			2 x 10 ⁸	
Operating speed	F	7 ms		8 ms	
	O	4 ms		3 ms	
Bounce	3 ms			0.5 ms	
Insulation coil / contact	2000 V RMS			1500 V RMS	
Resistance to shock coil / contact	4000 V RMS			4000 V RMS	
Insulation contact / contact	1500 V RMS			2000 V RMS	
Ambient temperature	-40°C to +80°C				
storage					
operating	see derating curves				

Other characteristics

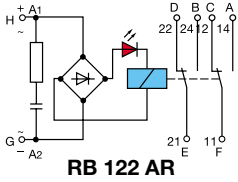
Body material	grey <input type="checkbox"/>	UL 94 V0
Wire	Solid wire	0.2 - 4 mm ² / 22 - 12 AWG
size	Stranded wire	0.22 - 2.5 mm ² / 22 - 12 AWG
Rated wire size		2.5 mm ² / 12 AWG
Wire stripping length		7 mm .276"
Recommended screwdriver		3.5 mm .137"
Protection		IP20 NEMA1
Recommended torque		0.4 - 0.6 Nm 3.5 - 5.3 lb.in
Approvals		



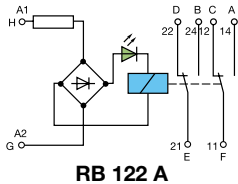
Relay blocks R1800



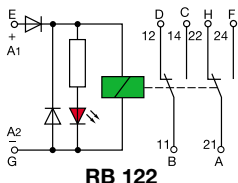
RB 122 AV



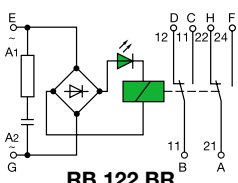
RB 122 AR



RB 122 A

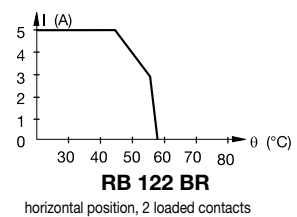
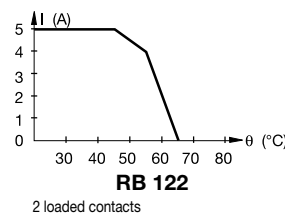
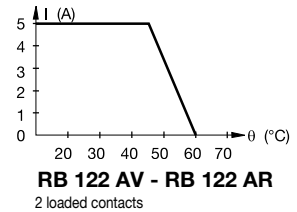
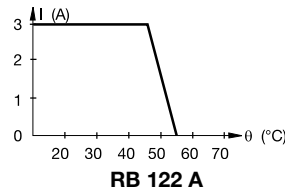
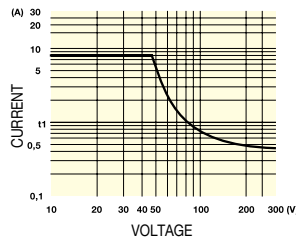


RB 122



RB 122 BR

Derating curves



Order codes











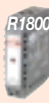





















Description	Type	Order P/N	Packaging	Weight kg
Relay module 24 V AC/DC 18 mm spacing	RB 122 AV	24 V AC/DC 1SNA 610 121 R2000	1	0.05
Relay module 48 VAC/DC 18 mm spacing	RB 122 AV	48 V AC/DC 1SNA 610 122 R2100	1	0.05
Relay module 110 V AC/DC 23 mm spacing	RB 122 AR	110 V AC/DC 1SNA 610 011 R2500	1	0.05
Relay module 220 V AC/DC 23 mm spacing	RB 122 A	220 V AC/DC 1SNA 610 123 R2200	1	0.05
Relay module 24 V DC 18 mm spacing	RB 122	24 V DC 1SNA 610 059 R1500	1	0.05
Relay module 48 V DC 18 mm spacing	RB 122	48 V DC 1SNA 610 060 R1200	1	0.05
Relay module 110 V AC 23 mm spacing	RB 122 BR	110 V AC 1SNA 610 115 R2200	1	0.05
Relay module 220 V AC 23 mm spacing	RB 122 BR	220 V AC 1SNA 610 089 R0400	1	0.05

Accessories




























End section	BADL V0	1SNA 399 903 R0200	50
	BAM	1SNA 103 002 R2600	50
	BAM V0	1SNA 399 306 R0300	50
Lengthwise marker	RLV	1SNA 103 849 R0300	
Marking method	⑤ RC55	see markers	



Selection guide Optocoupler modules

Output \ Input	5 V DC	12 V DC	24 V DC	24 V AC	24 V AC/DC
< 50 mA / 10 to 58 V DC 	 spacing : 18 mm EBO3DC 5 to 48 VDC 1SNA 610 230 R1100	 spacing : 18 mm EBO3DC 5 to 48 VDC 1SNA 610 230 R1100	spacing : 5.08 mm D 2,5/5-OBIC 0030 24 VDC 1SNA 607 210 R1700  spacing : 18 mm EBO3DC 5 to 48 VDC 1SNA 610 230 R1100	spacing : 5.08 mm D 2,5/5-OBIA 0030 24 VAC 1SNA 607 211 R0400 	
100 mA / 10 to 58 V DC 	spacing : 5.08 mm D 2,5/5-OB0C 0100 5 VDC 1SNA 607 203 R1500 	spacing : 9 mm OBC 0100 12 to 24 VDC 1SNA 608 017 R0600 	spacing : 5.08 mm D 2,5/5-OB0C 0100 24 VDC 1SNA 607 204 R1600  spacing : 9 mm OBC 0100 12 to 24 VDC 1SNA 608 017 R0600 		spacing : 18 mm EBO1 24 VAC/DC 1SNA 610 022 R2000 
1 A / 10 to 58 V DC 	spacing : 5.08 mm D 2,5/5-OB0C 1000 5 VDC 1SNA 607 206 R1000  spacing : 9 mm OBC 1000 5 VDC 1SNA 608 014 R2200 	spacing : 9 mm OBC 1000 12 to 24 VDC 1SNA 608 018 R1700 	spacing : 5.08 mm D 2,5/5-OB0C 1000 24 VDC 1SNA 607 207 R1100  spacing : 9 mm OBC 1000 12 to 24 VDC 1SNA 608 018 R1700 		spacing : 5.08 mm D 2,5/5-OB0C 1000 24 VAC/DC 1SNA 607 250 R2700 
2 A / 10 to 30 V DC 	spacing : 5.08 mm D 2,5/5-OB0C 2000 5 VDC 1SNA 607 208 R2200 		spacing : 5.08 mm D 2,5/5-OB0C 2000 24 VDC 1SNA 607 209 R2300 		spacing : 5.08 mm D 2,5/5-OB0C 2000 24 VAC/DC 1SNA 607 255 R1000 
5 A / 10 to 58 V DC 			spacing : 9 mm ORC 111 24 VDC 1SNA 608 068 R2100 		
1 A / 24 to 250 V AC 	spacing : 9 mm OBA 1000 5 VDC 1SNA 608 015 R0400 	spacing : 9 mm OBA 1000 12 to 24 VDC 1SNA 608 019 R1000 	spacing : 5.08 mm D 2,5/5-OB0A 1000 24 VDC 1SNA 607 238 R1700  spacing : 9 mm OBA 1000 12 to 24 VDC 1SNA 608 019 R1000 		spacing : 5.08 mm D 2,5/5-OB0A 1000 24 VAC/DC 1SNA 607 240 R2500 
5 A / 20 to 135 V AC 			spacing : 9 mm ORA 111 24 VDC 1SNA 608 069 R2200 		

Selection guide Optocoupler modules

48 V DC	48 V AC	48 V AC/DC	110 V AC	127 V AC/DC	230 V AC	230 V AC/DC
<p>spacing : 5.08 mm D 2,5/5-OBIC 0030 48 VDC 1SNA 607 212 R0500</p>  <p>spacing : 18 mm EBO3DC 5 to 48 VDC 1SNA 610 230 R1100</p> 	<p>spacing : 5.08 mm D 2,5/5-OBIA 0030 48 VAC 1SNA 607 213 R0600</p> 		<p>spacing : 5.08 mm D 2,5/5-OBIA 0030 110 VAC 1SNA 607 214 R0700</p> 		<p>spacing : 5.08 mm D 2,5/5-OBIA 0030 230 VAC 1SNA 607 215 R0000</p> 	
<p>spacing : 5.08 mm D 2,5/5-OBOC 0100 48 VDC 1SNA 607 205 R1700</p>  <p>spacing : 9 mm OBC 0100 48 VDC 1SNA 608 021 R0200</p> 			<p>spacing : 18 mm EBO1 127 VAC/DC 1SNA 610 108 R1400</p>  <p>spacing : 9 mm OBC 0100 110 VAC 1SNA 608 024 R0500</p> 	<p>spacing : 18 mm EBO1 220 VAC/DC 1SNA 610 023 R2100</p>  <p>spacing : 9 mm OBC 0100 230 VAC 1SNA 608 027 R0000</p> 		
<p>spacing : 9 mm OBC 1000 48 VDC 1SNA 608 022 R0300</p> 		<p>spacing : 5.08 mm D 2,5/5-OBOC 1000 48 VAC/DC 1SNA 607 251 R1400</p>  <p>spacing : 9 mm OBC 1000 48 VDC 1SNA 608 022 R0300</p> 	<p>spacing : 5.08 mm D 2,5/5-OBOC 1000 110 VAC 1SNA 607 270 R2300</p>  <p>spacing : 9 mm OBC 1000 110 VAC 1SNA 608 025 R0600</p> 		<p>spacing : 5.08 mm D 2,5/5-OBOC 1000 230 VAC 1SNA 607 271 R1000</p>  <p>spacing : 9 mm OBC 1000 230 VAC 1SNA 608 028 R1100</p> 	
		<p>spacing : 5.08 mm D 2,5/5-OBOC 2000 48 VAC/DC 1SNA 607 256 R1100</p> 	<p>spacing : 5.08 mm D 2,5/5-OBOC 2000 110 VAC 1SNA 607 272 R1100</p> 		<p>spacing : 5.08 mm D 2,5/5-OBOC 2000 230 VAC 1SNA 607 273 R1200</p> 	
<p>spacing : 9 mm OBA 1000 48 VDC 1SNA 608 023 R0400</p> 		<p>spacing : 5.08 mm D 2,5/5-OBOA 1000 48 VAC/DC 1SNA 607 241 R1200</p>  <p>spacing : 9 mm OBA 1000 48 VDC 1SNA 608 023 R0400</p> 	<p>spacing : 5.08 mm D 2,5/5-OBOA 1000 110 VAC 1SNA 607 268 R2500</p>  <p>spacing : 9 mm OBA 1000 110 VAC 1SNA 608 026 R0700</p> 		<p>spacing : 5.08 mm D 2,5/5-OBOA 1000 230 VAC 1SNA 607 269 R2600</p> 	



Electronic Interfaces

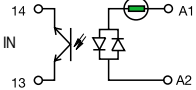
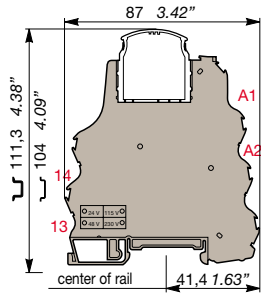
R500 pluggable optocoupler modules

↳ DIN 3

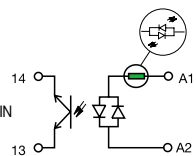
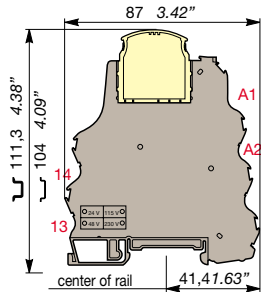
D 2,5/5-OBI...-0030 - 2.5 mm² blocks - 5.08 mm .200" spacing

Characteristics

Opto. characteristics	D 2,5/5-OBIC-0030		D 2,5/5-OBIA-0030			
INPUT						
Input voltage	19.2 V to 27.6 V DC	38.4 V to 55.2 V DC	20.4 V to 26.4 V AC	40.8 V to 52.8 V AC	98 V to 126.5 V AC	195.5 V to 253 V AC
Input current	5 mA	4.1 mA	8.5 mA	4.5 mA	8 mA	7 mA
Pull-in voltage at Is=100%	12 V	21 V	13 V	22 V	50 V	95 V
Switching time C / O	20 μs / 1.3 ms	20 μs / 1.3 ms	6 ms / 10 ms	6 ms / 10 ms	6 ms / 10 ms	6 ms / 10 ms
Operating frequency	400 Hz	400 Hz	30 Hz	30 Hz	30 Hz	30 Hz
Permissible leakage current	1 mA	0.8 mA	1 mA	1 mA	2 mA	2 mA
OUTPUT						
Output voltage	4.5 V to 58 V DC					
Output current min.	0.5 mA					
Output current max.	30 mA					
Output leakage current at Umax.						
Residual voltage at I max and U rated	typical 2.3 V DC					
	max. 2.7 VDC					
Frequency on inductive load						
Isolation Input / Output	2500 V RMS					
TEMPERATURE						
Ambient temperature	storage - 40°C to + 80°C					
	operating See derating curve					
Other characteristics						
Body material	grey	<input type="checkbox"/> UL 94 V0				
Wire size	Solid wire	0.2-4 mm ² / 24-12 AWG				
	Stranded wire	0.22-2.5 mm ² / 24-12 AWG				
Rated wire size		2.5 mm ² / 12 AWG				
Wire stripping length		10 mm .394"				
Recommended screwdriver		3.5 .137"				
Protection		IP 20 NEMA 1				
Recommended torque		0.4-0.6 Nm 3.5-5.3 lb.in				
Approvals						

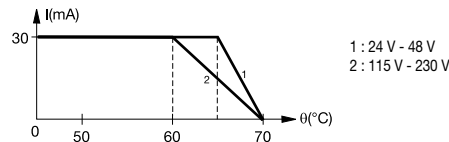


D 2,5/5-OBIC-0030



D 2,5/5-OBIA-0030

Derating curve



D 2,5/5-OBI...-0030

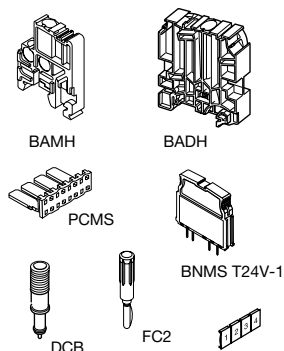
Order codes

Description	Type	Order P/N	Packaging Weight kg
Optocoupler module 24 V DC	D 2,5/5-OBIC-0030 24 V DC	1SNA 607 210 R1700	1 0.032
Optocoupler module 48 V DC	D 2,5/5-OBIC-0030 48 V DC	1SNA 607 211 R0400	1 0.032
Optocoupler module 24 V AC	D 2,5/5-OBIA-0030 24 V AC	1SNA 607 212 R0500	1 0.032
Optocoupler module 48 V AC	D 2,5/5-OBIA-0030 24 V AC	1SNA 607 213 R0600	1 0.032
Optocoupler module 115 V AC	D 2,5/5-OBIA-0030 115 V AC	1SNA 607 214 R0700	1 0.032
Optocoupler module 230 V AC	D 2,5/5-OBIA-0030 230 V AC	1SNA 607 215 R0000	1 0.032

Accessories

High end stop	BAMH 9,1 mm	1SNA 114 836 R0000	50
	BAMH V0 9,1 mm	1SNA 194 836 R0100	50
	BADH 12 mm	1SNA 116 900 R2700	50
Comb type jumper bar 2 to 22 poles	PCMS V0	see accessories	
Plug OBIC 24 V	white <input type="checkbox"/> BNMS T24V-1	1SNA 031 800 R2100	4
Plug OBIC 48 V	white <input type="checkbox"/> BNMS T48V-1	1SNA 031 801 R1600	4
Plug OBIA 24 V	yellow <input type="checkbox"/> BNMS T24V-1	1SNA 031 802 R1700	4
Plug OBIA 48 V	yellow <input type="checkbox"/> BNMS T48V-1	1SNA 031 803 R1000	4
Plug OBIA 115 V	yellow <input type="checkbox"/> BNMS T115V-1	1SNA 031 804 R1100	4
Plug OBIA 230 V	yellow <input type="checkbox"/> BNMS T230V-1	1SNA 031 805 R1200	4
Test device	blue <input type="checkbox"/> DCB (1)	1SNA 105 028 R2100	10
Test plug	DIA. 2 mm FC2	1SNA 007 865 R2600	10
Marking method	Ⓟ RC55	see markers	

(1) Only on top decks.





Electronic Interfaces

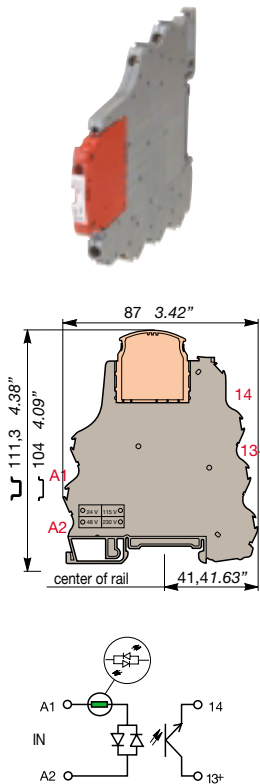
R500 pluggable optocoupler modules



D 2,5/5-OBOC-0100 - 2.5 mm² blocks - 5.08 mm .200" spacing

Characteristics

Opto. characteristics	D 2,5/5-OBOC-0100 5 V DC / 24 V DC		D 2,5/5-OBOC-0100 48 V DC
INPUT			
Input voltage	4.5 V to 5.5 V DC	20.4 V to 28.8 V DC	40.8 V to 57.6 V DC
Input current	8.5 mA	4.8 mA	3.9 mA
Pull-in voltage at I _s =100%	2.9 V DC	16 V DC	26 V DC
Switching time C / O	20 μs / 1.3 ms	20 μs / 1.3 ms	20 μs / 1.3 ms
Operating frequency	400 Hz	400 Hz	400 Hz
Permissible leakage current	1 mA	1 mA	1 mA
OUTPUT			
Output voltage	4.5 to 58 V DC		
Output current min.	1 mA		
Output current max.	100 mA		
Output leakage current at U _{max} .			
Residual voltage at I _{max} and U _{rated}	1 V DC		
typical			
max.	1.3 V DC		
Frequency on inductive load	See Note 1		
Isolation Input / Output	2500 V RMS		
TEMPERATURE			
Ambient temperature storage	- 40°C to + 80°C		
operating	See derating curves		
Other characteristics			
Body material	grey <input type="checkbox"/>	UL 94 V0	
Wire	Solid wire	0.2-4 mm ² / 24-12 AWG	
size	Stranded wire	0.22-2.5 mm ² / 24-12 AWG	
Rated wire size		2.5 mm ² / 12 AWG	
Wire stripping length		10 mm .394"	
Recommended screwdriver		3.5 mm .137"	
Protection		IP 20 NEMA 1	
Recommended torque		0.4-0.6 Nm 3.5-5.3 lb.in	
Approvals			



D 2,5/5-OBOC-0100

Note 1 :

$$F_{max} = (1 - 0,007 \times U_s) / (L \times I_s^2)$$

or

$$F_{max} = (1 - 0,007 \times U_s) / (P \times \frac{L}{R})$$

U_s = Output voltage

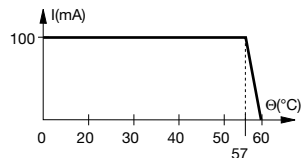
I_s = Output current

L = Inductance of load

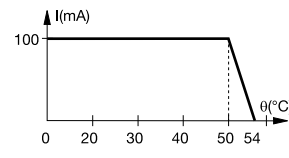
P = Power of load

R = Resistance of load

Derating curves



D 2,5/5-OBOC-0100 5 V DC / 24 V DC



D 2,5/5-OBOC-0100 48 V DC

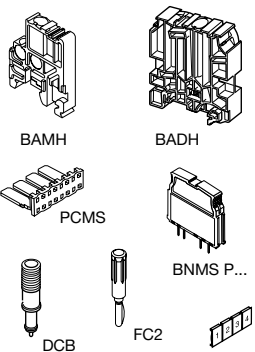
Order codes

Description	Type	Order P/N	Packaging Weight kg
Optocoupler module 5 V DC	D 2,5/5-OBOC-0100 5 V DC	1SNA 607 203 R1500	1 0.032
Optocoupler module 24 V DC	D 2,5/5-OBOC-0100 24 V DC	1SNA 607 204 R1600	1 0.032
Optocoupler module 48 V DC	D 2,5/5-OBOC-0100 48 V DC	1SNA 607 205 R1700	1 0.032

Accessories

High end stop	BAMH	9,1 mm	1SNA 114 836 R0000	50
	BAMH V0	9,1 mm	1SNA 194 836 R0100	50
	BADH	12 mm	1SNA 116 900 R2700	50
Comb type jumper bar 2 to 22 poles	PCMS	V0	see accessories	
Plug for OBOC 5 V DC	red	■ BNMS P5V-3	1SNA 031 809 R2600	4
Plug for OBOC 24 V DC	red	■ BNMS P24V-3	1SNA 031 810 R1200	4
Plug for OBOC 48 V DC	red	■ BNMS P48V-3	1SNA 031 811 R0700	4
Test device	blue	□ DCB (1)	1SNA 105 028 R2100	10
Test plug	DIA. 2 mm	FC2	1SNA 007 865 R2600	10
Marking method	Ⓟ	RC55	see markers	

(1) Only on top decks.





Electronic Interfaces

R500 pluggable optocoupler modules ↳ DIN 3

D 2,5/5-OBOC-1000 - 2.5 mm² blocks - 5.08 mm .200" spacing

Characteristics

Opto. characteristics	D 2,5/5-OBOC-1000 5/24 VDC			D 2,5/5-OBOC-1000 24/48 VAC/DC				D 2,5/5-OBOC-1000 110/230 VAC	
INPUT	5 VDC	24 VDC	24 VAC	24 VDC	48 VAC	48 VDC	110 VAC	230 VAC	
Input voltage	4.5 to 5.5 VDC	20.4 to 28.8 VDC	24 ±10%	20.4 to 28.8 VDC	48 ±10%	40.8 to 57.6 VDC	110 ±10%	230 ±10%	
Input current	12.3 mA	6.7 mA	10.5 mA	8 mA	6.8 mA	5.8 mA	8.5 mA	7.5 mA	
Pull-in voltage at Is=100%	3.5 V DC	10 V DC							
Switching time C / O	20/250 µs	50/350 µs	15/13 ms	5/13 ms	15/15 ms	6/25 ms	15/15 ms	15/15 ms	
Operating frequency	2000 Hz	1500 Hz	20 Hz	20 Hz	20 Hz	20 Hz	20 Hz	20 Hz	
Permissible leakage current									
OUTPUT									
Output voltage	4.5 to 58 VDC			4.5 to 58 VDC					
Output current min.	1 mA			1 mA					
Output current max.	1 A			1 A					
Output leakage current at Umax.									
Residual voltage at I max and U rated	typical 0.1 V max. 0.5 V			0.1 V 0.5 V					
Frequency on inductive load				See Note 1					
Isolation Input / Output				2500 V RMS					
TEMPERATURE									
Ambient temperature storage				-40°C to +80°C					
operating				See derating curve					
Other characteristics									
Body material	grey <input type="checkbox"/>			UL 94 V0					
Wire	Solid wire			0.2-4 mm ² / 24-12 AWG					
size	Stranded wire			0.22-2.5 mm ² / 24-12 AWG					
Rated wire size				2.5 mm ² / 12 AWG					
Wire stripping length				10 mm .394"					
Recommended screwdriver				3.5 mm .137"					
Protection				IP 20 NEMA 1					
Recommended torque				0.4-0.6 Nm 3.5-5.3 lb.in					
Approvals									

Note 1 :

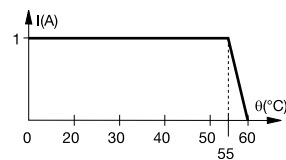
$$F_{max} = (1 - 0,007 \times U_s) / (L \times I_s^2)$$

or

$$F_{max} = (1 - 0,007 \times U_s) / (P \times \frac{L}{R})$$

U_s = Output voltage
 I_s = Output current
 L = Inductance of load
 P = Power of load
 R = Resistance of load

Derating curve



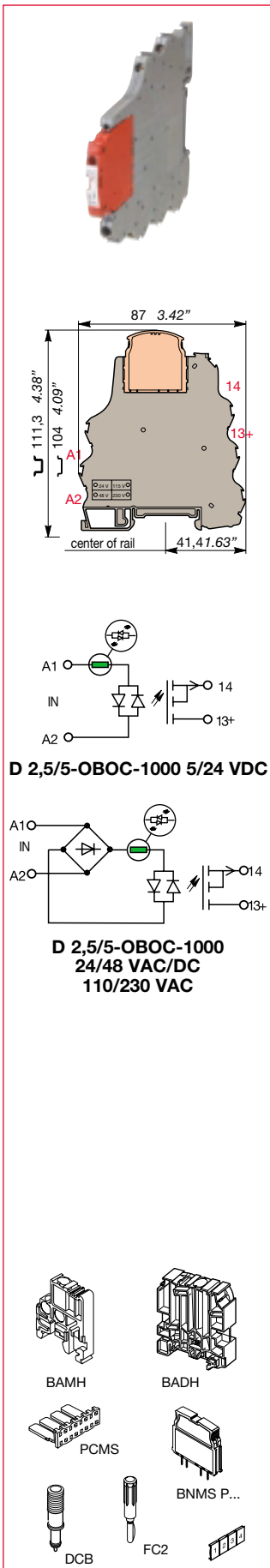
Order codes

Description	Type	Order P/N	Packaging	Weight kg
Optocoupler module 5 V DC	D 2,5/5-OBOC-1000 5 V DC	1SNA 607 206 R1000	1	0.032
Optocoupler module 24 V DC	D 2,5/5-OBOC-1000 24 V DC	1SNA 607 207 R1100	1	0.032
Optocoupler module 24 V AC/DC	D 2,5/5-OBOC-1000 24 V AC/DC	1SNA 607 250 R2700	1	0.04
Optocoupler module 48 V AC/DC	D 2,5/5-OBOC-1000 48 V AC/DC	1SNA 607 251 R1400	1	0.04
Optocoupler module 110 V AC	D 2,5/5-OBOC-1000 110 V AC	1SNA 607 270 R2300	1	0.04
Optocoupler module 230 V AC	D 2,5/5-OBOC-1000 230 V AC	1SNA 607 271 R1000	1	0.04

Accessories

High end stop	BAMH	9,1 mm	1SNA 114 836 R0000	50	
	BAMH V0	9,1 mm	1SNA 194 836 R0100	50	
	BADH	12 mm	1SNA 116 900 R2700	50	
Comb type jumper bar 2 to 22 poles	PCMS	V0	see accessories		
Plug (2)	red	■	BNMS P5V-2 5 V/1 A	1SNA 031 818 R1600	4
Plug (3)	red	■	BNMS P24V-2 24 V/1 A	1SNA 031 819 R1700	4
Test device	blue	□	DCB (1)	1SNA 105 028 R2100	10
Test plug	DIA. 2 mm		FC2	1SNA 007 865 R2600	10
Marking method		Ⓟ	RC55	see markers	

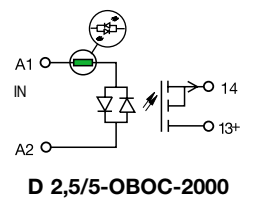
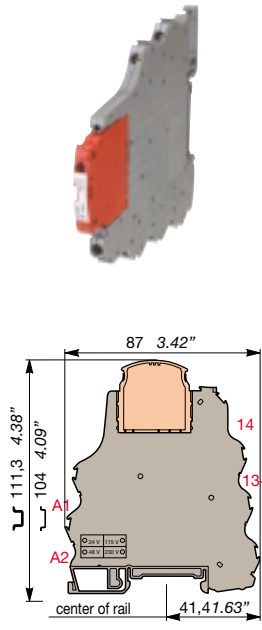
- (1) Only on top decks.
 (2) For D 2,5/5-OBOC-2000 5 V DC only.
 (3) For all D 2,5/5-OBOC-2000 except 5 V DC model.



D 2,5/5-OBOC-2000 - 2.5 mm² blocks - 5.08 mm .200" spacing

Characteristics

Opto. characteristics	D 2,5/5-OBOC-2000 5/24 VDC		D 2,5/5-OBOC-2000 24/48 VAC/DC				D 2,5/5-OBOC-2000 110/230VAC	
	5 VDC	24 VDC	24 VAC	24 VDC	48 VAC	48 VDC	110 VAC	230 VAC
INPUT								
Input voltage	4.5 to 5.5 VDC	20.4 to 28.8 VDC	24 ±10%	20.4 to 28.8 VDC	48 ±10%	40.8 to 57.6 VDC	110 ±10%	230 ±10%
Input current	12.3 mA	6.7 mA	10.5 mA	8 mA	6.8 mA	5.8 mA	8.5 mA	7.5 mA
Pull-in voltage at Is=100%	3.5 V DC	10 V DC						
Switching time C / O	20/250 μs	50/350 μs	15/13 ms	5/13 ms	15/15 ms	6/25 ms	15/15 ms	15/15 ms
Operating frequency	2000 Hz	1500 Hz	20 Hz	20 Hz	20 Hz	20 Hz	20 Hz	20 Hz
Permissible leakage current								
OUTPUT								
Output voltage	4.5 to 30 VDC		4.5 to 30 VDC					
Output current min.	1 mA		1 mA					
Output current max.	2 A		2 A					
Output leakage current at Umax.								
Residual voltage at I max and U rated	typical 0.1 V		0.1 V					
	max. 0.5 V		0.5 V					
Frequency on inductive load	See Note 1							
Isolation Input / Output	2500 V RMS							
TEMPERATURE								
Ambient temperature storage	-40°C to +80°C							
operating	See derating curve							
Other characteristics								
Body material	grey <input type="checkbox"/>		UL 94 V0					
Wire	Solid wire		0.2-4 mm ² / 24-12 AWG					
size	Stranded wire		0.22-2.5 mm ² / 24-12 AWG					
Rated wire size	2.5 mm ² / 12 AWG							
Wire stripping length	10 mm .394"							
Recommended screwdriver	3.5 mm .137"							
Protection	IP 20 NEMA 1							
Recommended torque	0.4-0.6 Nm 3.5-5.3 lb.in							
Approvals								



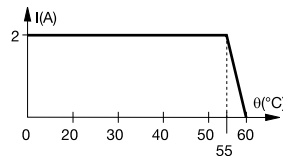
Note 1 :

Us = Output voltage
 Is = Output current
 L = Inductance of load
 P = Power of load
 R = Resistance of load

or $F_{max} = (1 - 0.012 \times Us) / (L \times Is^2)$

$F_{max} = (1 - 0.012 \times Us) / (P \times \frac{L}{R})$

Derating curve



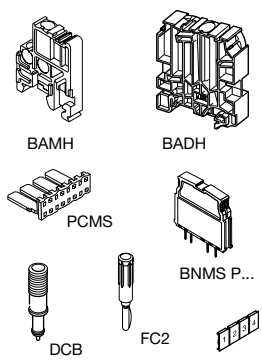
Order codes

Description	Type	Order P/N	Packaging Weight kg
Optocoupler module 5 V DC	D 2,5/5-OBOC-2000 5 V DC	1SNA 607 208 R2200	1 0.032
Optocoupler module 24 V DC	D 2,5/5-OBOC-2000 24 V DC	1SNA 607 209 R2300	1 0.032
Optocoupler module 24 V AC/DC	D 2,5/5-OBOC-2000 24 V AC/DC	1SNA 607 255 R1000	1 0.04
Optocoupler module 48 V AC/DC	D 2,5/5-OBOC-2000 48 V AC/DC	1SNA 607 256 R1100	1 0.04
Optocoupler module 110 V AC	D 2,5/5-OBOC-2000 110 V AC	1SNA 607 272 R1100	1 0.04
Optocoupler module 230 V AC	D 2,5/5-OBOC-2000 230 V AC	1SNA 607 273 R1200	1 0.04

Accessories

High end stop	BAMH	9,1 mm	1SNA 114 836 R0000	50	
	BAMH V0	9,1 mm	1SNA 194 836 F0100	50	
	BADH	12 mm	1SNA 116 900 R2700	50	
Comb type jumper bar 2 to 22 poles	PCMS	V0	see accessories		
Plug (2)	red	■	BNMS P5V-1 5 V/2 A	1SNA 031 814 R0200	4
Plug (3)	red	■	BNMS P24V-1 24 V/2 A	1SNA 031 815 R0300	4
Test device	blue	■	DCB (1)	1SNA 105 028 R2100	10
Test plug	DIA. 2 mm		FC2	1SNA 007 865 R2600	10
Marking method		Ⓟ	RC55	see markers	

- (1) Only on top decks.
- (2) For D 2,5/5-OBOC-2000 5 V DC only.
- (3) For all D 2,5/5-OBOC-2000 except 5 V DC model.





Electronic Interfaces

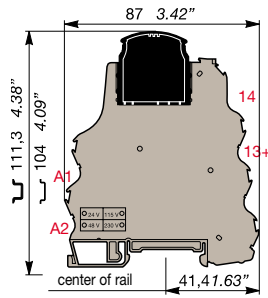
R500 pluggable optocoupler modules

↳ DIN 3

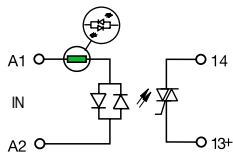
D 2,5/5-OBOA-1000 - 2.5 mm² blocks - 5.08 mm .200" spacing

Characteristics

Opto. characteristics	D 2,5/5-... 24 VDC	D 2,5/5-OBOA-1000 24 VAC/DC-48 VAC/DC				D 2,5/5-OBOA-1000 110 VAC-230 VAC	
INPUT	24 VDC	24 VAC	24 VDC	48 VAC	48 VDC	110 VAC	230 VAC
Input voltage	20.4 to 28.8 VDC	24 ±10%	20.6 to 28.8 VDC	48 ±10%	40.8 to 57.6 VDC	110 ±10%	230 ±10%
Input current	4 mA	10 mA	7 mA	6 mA	5 mA	8 mA	7.5 mA
Pull-in voltage at Is=100%							
Switching time C / O	10/20 ms	20/20 ms	10/20 ms	20/20 ms	10/20 ms	20/20 ms	20/20 ms
Operating frequency	15 Hz	15 Hz	15 Hz	15 Hz	15 Hz	15 Hz	15 Hz
Permissible leakage current							
OUTPUT							
Output voltage				24 to 253 VAC			
Output current min.				25 mA			
Output current max.				1 A			
Output leakage current at Umax.				0.5 mA max.			
Residual voltage at I max and U rated				1 V			
typical				1.6 V			
max.				See Note 1			
Frequency on inductive load				2500 V RMS			
Isolation Input / Output							
TEMPERATURE							
Ambient temperature storage				-40 to +80°C			
operating				See derating curve			
Other characteristics							
Body material	grey			UL 94 V0			
Wire	Solid wire			0.2-4 mm ² / 24-12 AWG			
size	Stranded wire			0.22-2.5 mm ² / 24-12 AWG			
Rated wire size				2.5 mm ² / 12 AWG			
Wire stripping length				10 mm .394"			
Recommended screwdriver				3.5 mm .137"			
Protection				IP 20 NEMA 1			
Recommended torque				0.4-0.6 Nm 3.5-5.3 lb.in			
Approvals							



D 2,5/5-OBOA-1000



Note 1 :

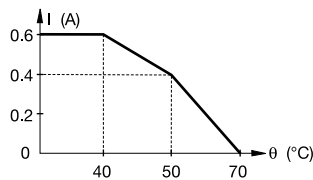
$$F_{max} = (1 - 0,012 \times U_s) / (L \times I_s^2)$$

or

$$F_{max} = (1 - 0,012 \times U_s) / (P \times \frac{L}{R})$$

U_s = Output voltage
 I_s = Output current
 L = Inductance of load
 P = Power of load
 R = Resistance of load

Derating curve



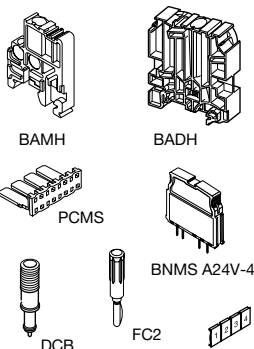
Order codes

Description	Type	Order P/N	Packaging Weight kg
Optocoupler module 24 V DC	D 2,5/5-OBOA-1000 24 V DC	1SNA 607 238 R1700	1 0.032
Optocoupler module 24 V AC/DC	D 2,5/5-OBOA-1000 24 V AC/DC	1SNA 607 240 R2500	1 0.04
Optocoupler module 48 V AC/DC	D 2,5/5-OBOA-1000 48 V AC/DC	1SNA 607 241 R1200	1 0.04
Optocoupler module 110 V AC	D 2,5/5-OBOA-1000 110 V AC	1SNA 607 268 R2500	1 0.04
Optocoupler module 230 V AC	D 2,5/5-OBOA-1000 230 V AC	1SNA 607 269 R2600	1 0.04

Accessories

High end stop	BAMH 9,1 mm	1SNA 114 836 R0000	50
	BAMH V0 9,1 mm	1SNA 194 836 R0100	50
	BADH 12 mm	1SNA 116 900 R2700	50
Comb type jumper bar 2 to 22 poles	PCMS V0	see accessories	
Plug	black ■ BNMS A24V-4 250 V/1 A	1SNA 031 839 R1300	4
Test device	blue ■ DCB (1)	1SNA 105 028 R2100	10
Test plug	DIA. 2 mm FC2	1SNA 007 865 R2600	10
Marking method	Ⓟ RC55	see markers	

(1) Only on top decks.





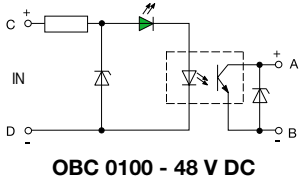
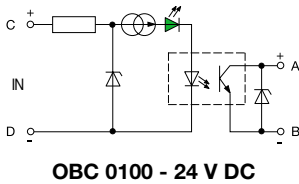
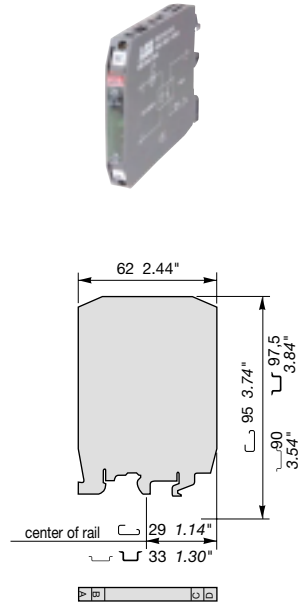
Electronic Interfaces

R900 optocoupler modules \hookrightarrow DIN 3

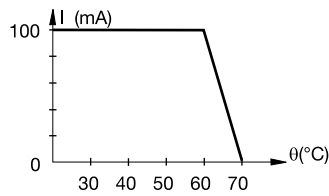
OBC 0100 - 2.5 mm² blocks - 9 mm .354" spacing

Characteristics

Opto. characteristics	OBC 0100 - 24 V DC	OBC 0100 - 48 V DC
INPUT		
Input voltage	10.2 V to 28.8 V DC	40.8 V to 57.6 V DC
Input current	7 mA to 12 V / 10 mA to 24 V	5 mA
Pull-in voltage at Is=100%	10.2 V DC	40.8 V DC
Switching time C / O	20 μ s / 50 μ s	20 μ s / 50 μ s
Operating frequency	7000 Hz	7000 Hz
Permissible leakage current		
OUTPUT		
Output voltage	5 to 60 V DC	
Output current min.	1 mA	
Output current max.	100 mA	
Output leakage current at Umax.		
Residual voltage at I max and U rated	1 V	
typical		
max.	1.3 V	
Frequency on inductive load	3000 V RMS	
Isolation Input / Output		
TEMPERATURE		
Ambient temperature storage	- 40°C to + 80°C	
operating	See derating curve	
Other characteristics		
Body material	grey <input type="checkbox"/>	UL 94 V0
Wire	Solid wire	0.5-4 mm ² / 20-12 AWG
size	Stranded wire	0.5-2.5 mm ² / 20-12 AWG
Rated wire size		2.5 mm ² / 12 AWG
Wire stripping length		7 mm .276"
Recommended screwdriver		3.5 .137"
Protection		IP 20 NEMA 1
Recommended torque		0.4-0.6 Nm 3.5-5.3 lb.in
Approvals		



Derating curve

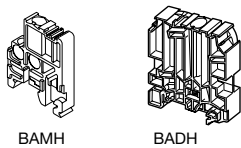


Order codes

Description	Type	Order P/N	Packaging Weight kg
Optocoupler module 24 V DC	OBC 0100 24 V DC	1SNA 608 017 R0600	1 0.04
Optocoupler module 48 V DC	OBC 0100 48 V DC	1SNA 608 021 R0200	1 0.04

Accessories

High end stop	BAMH 9,1 mm	1SNA 114 836 R0000	50
	BAMH V0 9,1 mm	1SNA 194 836 R0100	50
	BADH 12 mm	1SNA 116 900 R2700	50
Lengthwise marker	RLV	1SNA 103 849 R0300	
Marking method	⑤ RC55	see markers	





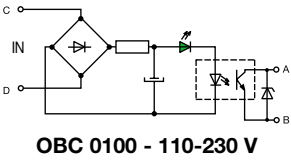
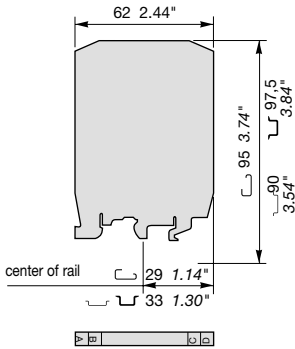
Electronic Interfaces

R900 optocoupler modules DIN 3

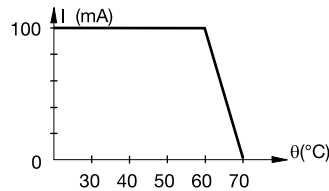
OBC 0100 - 2.5 mm² blocks - 9 mm .354" spacing

Characteristics

Opto. characteristics	OBC 0100 - 110 V AC	OBC 0100 - 230 V AC
INPUT		
Input voltage	93.5 V AC to 152.4 V AC	230 V AC +15%, -20%
Input current	8 mA	8 mA
Pull-in voltage at Is=100%	93,5 V AC	184 V AC
Switching time C / O	5 ms/5 ms	5 ms/5 ms
Operating frequency	50 Hz	50 Hz
Permissible leakage current		
OUTPUT		
Output voltage	4.5 to 60 V DC	
Output current min.	1 mA	
Output current max.	100 mA	
Output leakage current at Umax.		
Residual voltage at I max and U rated	typical 1 V	
	max. 1.3 V	
Frequency on inductive load		
Isolation Input / Output	3000 V RMS	
TEMPERATURE		
Ambient temperature	storage - 40°C to + 80°C	
	operating See derating curve	
Other characteristics		
Body material	grey <input type="checkbox"/>	UL 94 V0
Wire	Solid wire	0.5-4 mm ² / 20-12 AWG
size	Stranded wire	0.5-2.5 mm ² / 20-12 AWG
Rated wire size		2.5 mm ² / 12 AWG
Wire stripping length		7 mm .276"
Recommended screwdriver		3.5 .137"
Protection		IP 20 NEMA 1
Recommended torque		0.4-0.6 Nm 3.5-5.3 lb.in
Approvals		



Derating curve




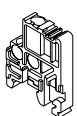
OBC 0100 - 110-230 V

Order codes

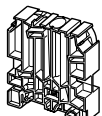
Description	Type	Order P/N	Packaging	Weight kg
Optocoupler module 110 V AC	OBC 0100 110 V AC	1SNA 608 024 R0500	1	0.04
Optocoupler module 230 V AC	OBC 0100 230 V AC	1SNA 608 027 R0000	1	0.04

Accessories

High end stop	BAMH 9,1 mm	1SNA 114 836 R0000	50
	BAMH V0 9,1 mm	1SNA 194 836 R0100	50
	BADH 12 mm	1SNA 116 900 R2700	50
Lengthwise marker	RLV	1SNA 103 849 R0300	
Marking method	 RC55	see markers	



BAMH



BADH



RLV





Electronic Interfaces

R900 optocoupler modules DIN 3

OBC 0100 - 2.5 mm² blocks - 9 mm .354" spacing

Characteristics

Opto. characteristics

INPUT

	OBC 1000 - 5 V DC	OBC 1000 - 24 V DC	OBC 1000 - 48 V DC
Input voltage	5 V DC +10%, -10%	10.2 V DC to 28.8 V DC	48 V DC +20%, -15%
Input current	6.5 mA	6.5 mA to 12 V / 9.5 mA to 24 V	4.5 mA
Pull-in voltage at Is=100%	4.5 V DC	10.2 V AC	40.8 V DC
Switching time C / O	20 μs / 50 μs	20 μs / 50 μs	20 μs / 50 μs
Operating frequency	7000 Hz	7000 Hz	7000 Hz
Permissible leakage current			

OUTPUT

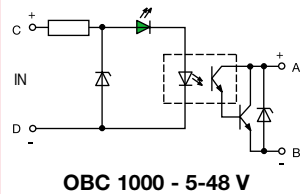
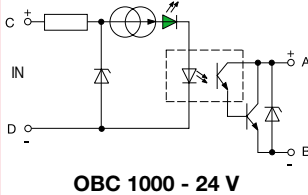
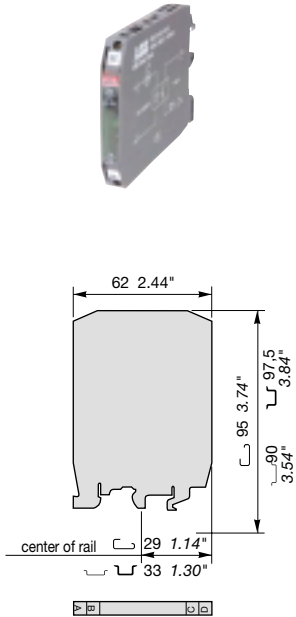
Output voltage	4.5 to 60 V DC
Output current min.	1 mA
Output current max.	1 A
Output leakage current at Umax.	
Residual voltage at I max and U rated	1 V
typical	
max.	1.3 V
Frequency on inductive load	
Isolation Input / Output	3000 V RMS

TEMPERATURE

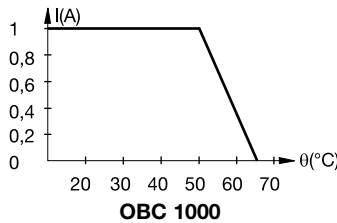
Ambient temperature	storage	- 40°C to + 80°C
	operating	See derating curve

Other characteristics

Body material	grey <input type="checkbox"/>	UL 94 V0
Wire	Solid wire	0.5-4 mm ² / 20-12 AWG
size	Stranded wire	0.5-2.5 mm ² / 20-12 AWG
Rated wire size		2.5 mm ² / 12 AWG
Wire stripping length		7 mm .276"
Recommended screwdriver		3.5 .137"
Protection		IP 20 NEMA 1
Recommended torque		0.4-0.6 Nm 3.5-5.3 lb.in
Approvals		



Derating curve

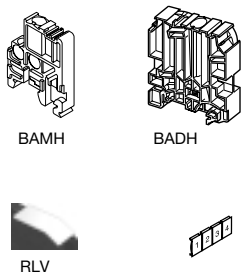


Order codes

Description	Type	Order P/N	Packaging Weight kg
Optocoupler module 5 V DC	OBC 1000 5 V DC	1SNA 608 014 R2200	1 0.04
Optocoupler module 24 V DC	OBC 1000 24 V DC	1SNA 608 018 R1700	1 0.04
Optocoupler module 48 V DC	OBC 1000 48 V DC	1SNA 608 022 R0300	1 0.04

Accessories

High end stop	BAMH 9,1 mm	1SNA 114 836 F0000	50
	BAMH V0 9,1 mm	1SNA 194 836 R0100	50
	BADH 12 mm	1SNA 116 900 R2700	50
Lengthwise marker	RLV	1SNA 103 849 F0300	
Marking method	⑤ RC55	see markers	





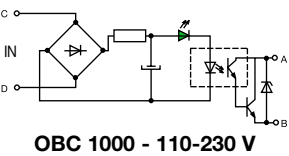
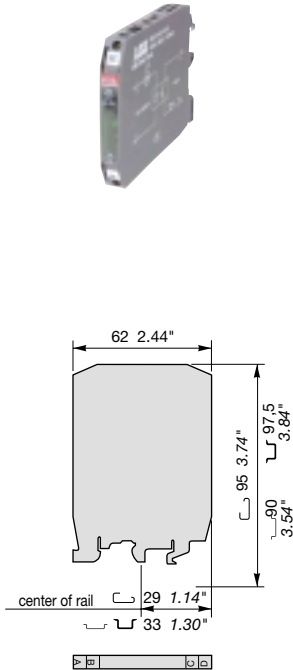
Electronic Interfaces

R900 optocoupler modules └ DIN 3

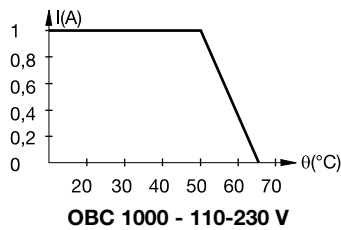
OBC 1000 - 2.5 mm² blocks - 9 mm .354" spacing

Characteristics

Opto. characteristics	OBC 1000 - 110 V AC	OBC 1000 - 230 V AC
INPUT		
Input voltage	93,5 V AC to 152,4 V AC	230 V AC + 15%, - 20%
Input current	8 mA	7 mA
Pull-in voltage at Is=100%	93,5 V AC	184 V DC
Switching time C / O	2 ms / 5 ms	1 ms / 5 ms
Operating frequency	800 Hz	800 Hz
Permissible leakage current		
OUTPUT		
Output voltage	4.5 to 60 V DC	
Output current min.	1 mA	
Output current max.	1 A	
Output leakage current at Umax.		
Residual voltage at I max and U rated	typical 1 V	
	max. 1.3 V	
Frequency on inductive load		
Isolation Input / Output	3000 V RMS	
TEMPERATURE		
Ambient temperature	storage - 40°C to + 80°C	
	operating See derating curve	
Other characteristics		
Body material	grey <input type="checkbox"/>	UL 94 V0
Wire	Solid wire	0.5-4 mm ² / 20-12 AWG
Wire size	Stranded wire	0.5-2.5 mm ² / 20-12 AWG
Rated wire size		2.5 mm ² / 12 AWG
Wire stripping length		7 mm .276"
Recommended screwdriver		3.5 .137"
Protection		IP 20 NEMA 1
Recommended torque		0.4-0.6 Nm 3.5-5.3 lb.in
Approvals		



Derating curve

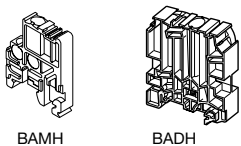


Order codes

Description	Type	Order P/N	Packaging	Weight kg
Optocoupler module 110 V AC	OBC 1000 110 V AC	1SNA 608 025 R0600	1	0.04
Optocoupler module 230 V AC	OBC 1000 230 V AC	1SNA 608 028 R1100	1	0.04

Accessories

High end stop	BAMH 9,1 mm	1SNA 114 836 R0000	50
	BAMH V0 9,1 mm	1SNA 194 836 R0100	50
	BADH 12 mm	1SNA 116 900 R2700	50
Lengthwise marker	RLV	1SNA 103 849 R0300	
Marking method	⑤ RC55	see markers	





Electronic Interfaces

R900 optocoupler modules ⌋ DIN 3

OBA 1000 - 2.5 mm² blocks - 9 mm .354" spacing

Characteristics

Opto. characteristics	OBA 1000 - 5 V DC	OBA 1000 - 24 V DC	OBA 1000 - 48 V DC	OBA 1000 - 110 V AC
INPUT				
Input voltage	5 V DC + 10%, - 10%	10.2 V DC to 28.8 V DC	48 V DC + 20%, - 15%	93.5 V AC to 152.4 V AC
Input current	10 mA	8 mA to 12 mA	7 mA	7 mA to 10 mA
Pull-in voltage at I _s =100%	4.5 V DC	10.2 V DC	40.8 V DC	93.5 V AC
Switching time C / O	10 ms / 10 ms	10 ms / 10 ms	10 ms / 10 ms	10 ms / 10 ms
Operating frequency	25 Hz	25 Hz	25 Hz	25 Hz
Permissible leakage current				

OUTPUT

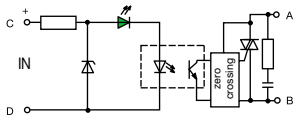
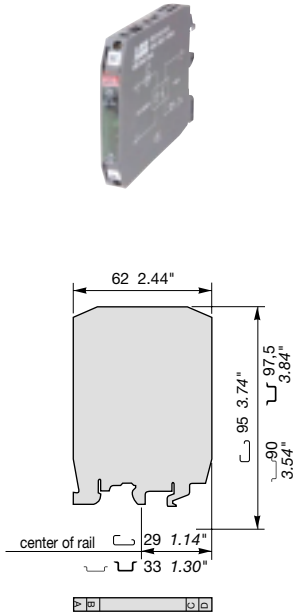
Output voltage	24 to 253 V AC
Output current min.	25 mA
Output current max.	1 A
Output leakage current at U _{max} .	0.5 mA max.
Residual voltage at I _{max} and U _{rated}	1 V
typical	1.6 V
max.	
Frequency on inductive load	
Isolation Input / Output	3000 V RMS

TEMPERATURE

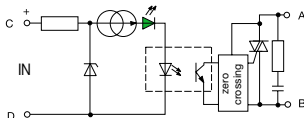
Ambient temperature storage	- 40°C to + 80°C
operating	See derating curves

Other characteristics

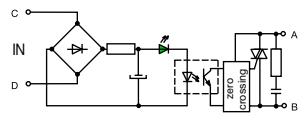
Body material	grey <input type="checkbox"/>	UL 94 V0
Wire	Solid wire	0.5-4 mm ² / 20-12 AWG
size	Stranded wire	0.5-2.5 mm ² / 20-12 AWG
Rated wire size		2.5 mm ² / 12 AWG
Wire stripping length		7 mm .276"
Recommended screwdriver		3.5 .137"
Protection		IP 20 NEMA 1
Recommended torque		0.4-0.6 Nm 3.5-5.3 lb.in
Approvals		



OBA 1000 - 5 - 48 V DC

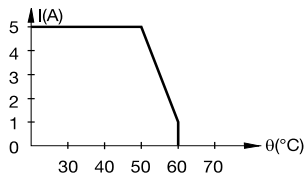


OBA 1000 - 24 V DC

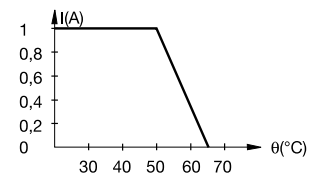


OBA 1000 - 110 V AC

Derating curves



OBA 1000 - 5 - 48 V DC



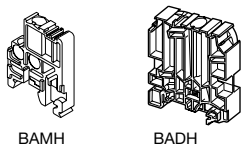
OBA 1000 - 24 V DC - 110 V AC

Order codes

Description	Type	Order P/N	Packaging Weight kg
Optocoupler module 5 V DC	OBA 1000 5 V DC	1SNA 608 015 R0400	1 0.05
Optocoupler module 24 V DC	OBA 1000 24 V DC	1SNA 608 019 R1000	1 0.05
Optocoupler module 48 V DC	OBA 1000 48 V DC	1SNA 608 023 R0400	1 0.05
Optocoupler module 110 V AC	OBA 1000 110 V AC	1SNA 608 026 R0700	1 0.05

Accessories

High end stop	BAMH 9,1 mm	1SNA 114 836 R0000	50
	BAMH 9,1 mm	1SNA 194 836 R0100	50
	BADH 12 mm	1SNA 116 900 R2700	50
Lengthwise marker	RLV	1SNA 103 849 R0300	
Marking method	Ⓢ RC55	see markers	



BAMH

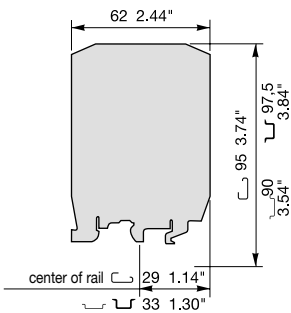
BADH

RLV

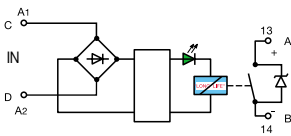


Relay Interfaces

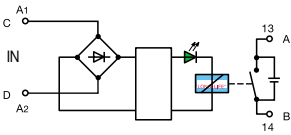
"Long Life" relay modules R900 DIN 1-3



Relay blocks R900



ORC 111



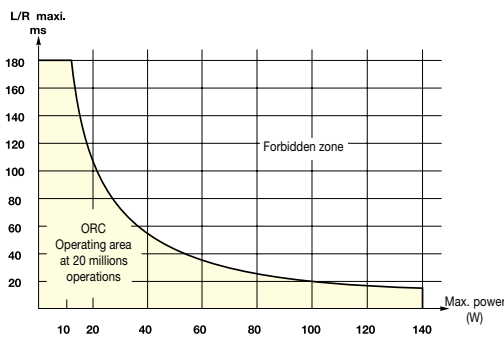
ORA 111

OR... 111 - relay blocks - 9 mm .354" spacing

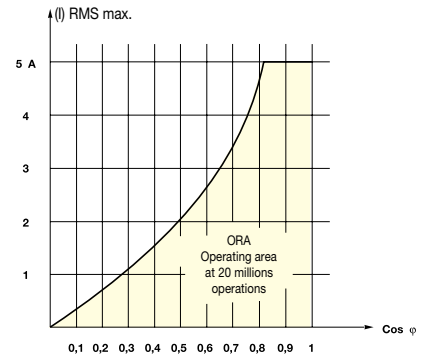
Characteristics

Relay characteristics	ORC 111 24 V DC	ORA 111 24 V DC
INPUT		
Rated voltage $\pm 20\%$ on DC	24 V DC	24 V DC
Power	0.65 W	0.6 W
Rated current	26 mA	20 mA
Drop-out voltage at 20°C	4 V	5 V
Drop-in voltage at 20°C		
Permissible leakage current		
Status device	green LED	
OUTPUT		
Type	1 NO	
Voltage switching range min./max.	10 V DC / 57,6 V DC	20 V AC / 135 V AC
Current switching range min./max.	100 mA / 5 A	
Load switching range		
AC1 min. / max.		
DC1 min. / max.	1 W / 280 W	2 VA / 675 VA
Number of on-load operations	20 x 10 ⁶ (see curves)	
Number of off-load operations	20 x 10 ⁶	
Operating speed		
F	80 μ s	10 ms
O	20 ms	30 ms
Bounce		
Insulation input / output	3000 V RMS	
Resistance to shock input / output	5000 V RMS	
Inductive load max.	see curves	
Ambient temperature	-40°C to +80°C	
storage	see derating curves	
operating		
Other characteristics		
Body material	grey <input type="checkbox"/> UL 94 V0	
Wire	Solid wire 0.5-4 mm ² / 20-12 AWG	
size	Stranded wire 0.5-2.5 mm ² / 20-12 AWG	
Rated wire size	2.5 mm ² / 12 AWG	
Wire stripping length	7 mm / .276"	
Recommended screwdriver	3.5 mm / .137"	
Protection	IP 20 / NEMA 1	
Recommended torque	0.4-0.6 Nm / 3.5-5.3 lb.in	
Approvals		

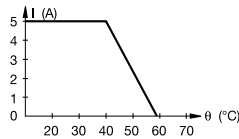
ORC type - Maximum switching power at 24V DC as per L/R



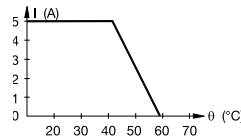
ORA type - Maximum switching current as per cos ϕ



Derating curves



ORC 111



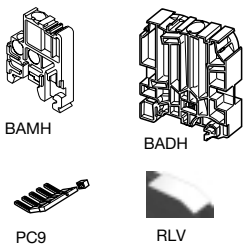
ORA 111

Order codes

Description	Type	Order P/N	Packaging Weight kg
Long Life relay module 24 V DC	ORC 111 24 V DC	1SNA 608 068 R2100	1 0.03
Long Life relay module 24 V DC	ORA 111 24 V DC	1SNA 608 069 R2200	1 0.04

Accessories

High end section	BADH	1SNA 116 900 R2700	50
	BAMH	1SNA 114 836 R0000	50
	BAMH V0	1SNA 194 836 R0100	50
Comb-type jumper bar	PC9	1SNA 210 160 R1200	10
Lengthwise marker	RLV	1SNA 103 849 R0300	
Marking method	RC55	see markers	





Electronic Interfaces

R1800 optocoupler modules ↳ DIN 3

EBO... - 2.5 mm² blocks - 9 mm .354" spacing

Characteristics

Opto. characteristics

INPUT	EBO1 - 24 V		EBO1 - 127-220 V		EBO3 DC				
	Input voltage	24 V AC	24 V DC	127 V AC/DC	220 V AC/DC	5 V DC	12 V DC	15 V DC	24 V DC
Input current	10 mA	8 mA	6 mA	5 mA			11 mA		
Pull-in voltage at Is=100%	12 V AC	16 V DC	88 V AC	128 V AC	4 V	9.6 V	12 V	19.2 V	38.4 V
Switching time C / O	10 ms / 7 ms				20 μs / 80 μs				
Operating frequency	30 Hz				500 Hz				
Permissible leakage current									

OUTPUT

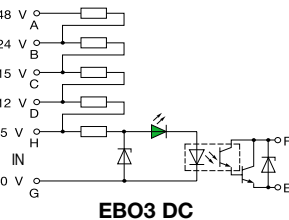
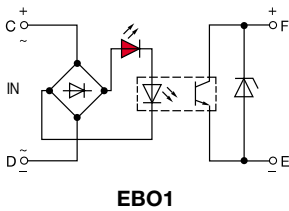
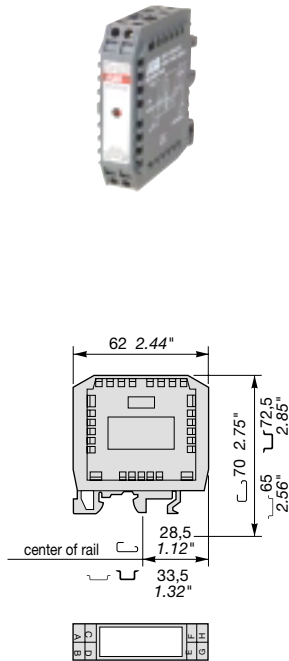
Output voltage	4.5 to 58 V DC				4.5 to 53 V DC				
Output current min.	1 mA				0.5 mA				
Output current max.	100 mA				50 mA				
Output leakage current at Umax.									
Residual voltage at I max and U rated	typical 1 V				1 V				
	max. 1.3 V				1.3 V				
Frequency on inductive load									
Isolation Input / Output	2500 V RMS				2500 V RMS				

TEMPERATURE

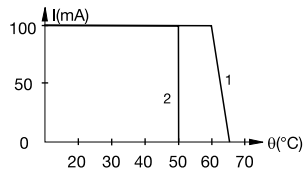
Ambient temperature storage	- 40°C to + 80°C								
operating	See derating curves								

Other characteristics

Body material	grey <input type="checkbox"/>	UL 94 V0
Wire	Solid wire	0.5-4 mm ² / 20-12 AWG
size	Stranded wire	0.5-2.5 mm ² / 20-12 AWG
Rated wire size		2.5 mm ² / 12 AWG
Wire stripping length		7 mm .276"
Recommended screwdriver		3.5 .137"
Protection		IP 20 NEMA 1
Recommended torque		0.4-0.6 Nm
Approvals		

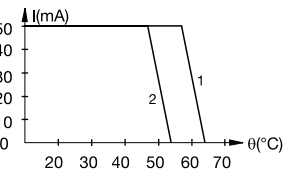


Derating curves



EBO1

1: 24 V AC/DC model
2: 127-230 V AC/DC model



EBO3 DC

1: 5 to 24 V DC model
2: 48 V DC model

Order codes

Description	Type	Order P/N	Packaging Weight kg
Optocoupler module 24 V AC/DC	EBO1 24 V AC/DC	1SNA 610 022 R2000	1 0.03
Optocoupler module 127 V AC/DC	EBO1 127 V AC/DC	1SNA 610 108 R1400	1 0.03
Optocoupler module 220 V AC/DC	EBO1 220 V AC/DC	1SNA 610 023 R2100	1 0.03
Optocoupler module 5-12-15-24-48 V DC	EBO3 DC	1SNA 610 230 R1100	1 0.03

Accessories

High end stop	BAMH 9,1 mm	1SNA 114 836 F0000	50
	BAMH V0 9,1 mm	1SNA 194 836 R0100	50
	BADH 12 mm	1SNA 116 900 F2700	50
Lengthwise marker	RLV	1SNA 103 849 F0300	
Marking method	Ⓢ RC55	see markers	

