

Relays and Optocouplers





**NEW
R600**

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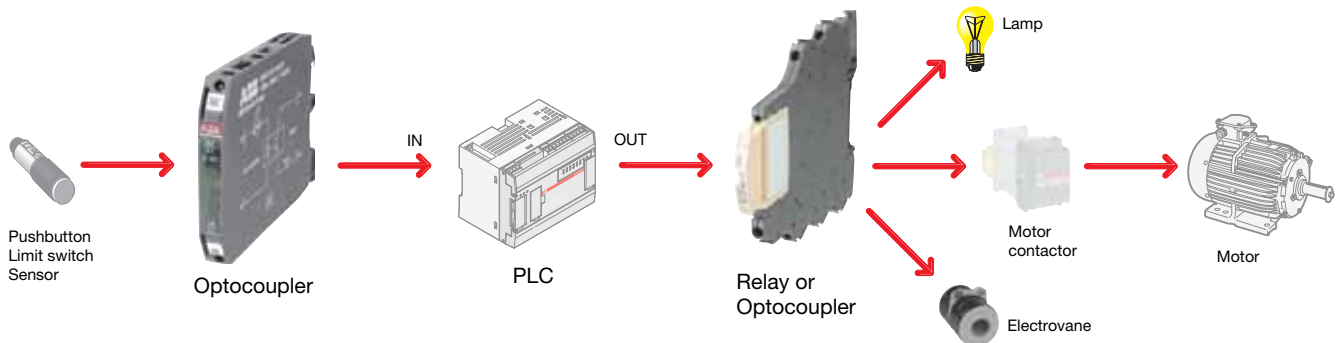
Applications

In today's automation systems, PLCs are the core of industry. They link sensors and actuators to the process, which are connected to the PLC via conventional wires.

However these PLCs are not completely isolated from the industrial environment, hence over voltage picks and transient currents can affect their operating functions. And additionally, their application field is often limited to 24 VDC / 100 mA.

So, with the aim to adapt application voltage and/or current and provide as well the right galvanic isolation to the PLC, it is recommended to install per I/O the right interface providing both voltage-current level adaptation and isolation protection.

This interfacing is possible thanks to ABB's relays and optocouplers ranges, which offer wide adaptation in both voltage (from 5 to 400 V) and current (from 10-7 to 16 A) as well as high isolation between input and output from 2 to 4 kV.



Technical data

R600 series

Standard range in screw clamp or spring clamp versions

- Spacing : 6 mm
- Wire size : 2.5 mm² (4 mm² solid wire)
- Contact type : 1 NO, 1 NC, 1 SPDT, 1 DPDT from 1 mA to 8 A / 250 V
- Transistor : 100 mA
MOS : 1 A to 5 A
Triac : 1 A to 2 A



R500 series

It is our range offering pluggable functions

- Spacing : 5.08 mm (the smallest in the market)
- Wire size : 2.5 mm² (4 mm² solid)
- Contact type : 1 SPDT from 10 mA to 6 A / 250 V
- Transistor : 30 mA to 100 mA
MOS : 1 A to 2 A
Triac : 1 A



R910 series

It is a relay inside a terminal block

- Spacing : 9 mm
- High wiring capacity 4 mm²
- Contact type : 1 NO from 10 mA to 5 A / 250 V
- Good isolation 3 kV



R900 series

The fastest optocoupler in the market

- Spacing : 9 to 15 mm
- Wire size : 2.5 mm² (4 mm² solid)
- Contact type : 1 SPDT or 1 DPDT contacts from 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 the range dedicated to special applications

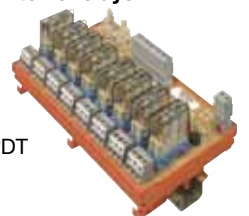
- Spacing : 18 to 23 mm
- Wire size : 2.5 mm² (4 mm² solid)
- Contact type : 1 NO, 1 NC, 1 NO + 1 NC, 4 NO, 1 SPDT, 1 DPDT from 10⁻⁷ A to 8 A / 250 V
- Transistor : 25 mA to 1 A



R20000 series

It is our PCB mounted range of modules 1 to 16 relays

- Spacing : 12,7 to 325 mm
- Wire size : 2.5 mm²
- Contact type : 1 NO, 1 NC, 1 SPDT, 1 DPDT from 1 mA to 16 A / 250 V
- MOS : 3 A
Triac : 3 A



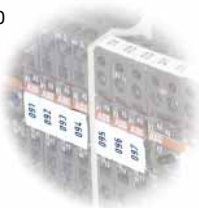
STANDARD RANGE R600

COMFORT

EASY MARKING

Box function with markers type RC610
Wire connection with markers type RC65
Electrical schematic of the block on the side of the block

Type RC610



Type RC65

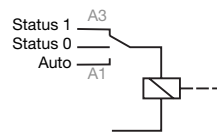
MANUAL OR AUTOMATIC FUNCTIONNING

Micro-Switch allowing forcing of the coil input to 0 or 1 for interventions in equipments.

Two possibilities:

With a visible switch located on front side. (Fig. 1)

With a secure switch (Fig. 2) after access hatch opening (Fig. 3)



(Fig. 1)



(Fig. 3)



(Fig. 2)



FUNCTIONNING STATUS

Functionning display through a green Led.



JUMPER BAR

Same jumper bar for «Screw clamp» or «Spring clamp» technologies. Independent of wire clamp and snap on held in place. Use of end sections is required to preserve IP20 protection.



DISTRIBUTION BLOCK

«Screw clamp» or «Spring clamp» technologies. With protection connected to the rail.

For polarity distribution on demand : coils and/or contacts.



MESUREMENTS - TESTS

Holes for holding DIA. 2 mm test plugs of the measurement apparatus in position.



EASY WIRING

DIA. 3,5 mm screwdriver self-gripped into spring



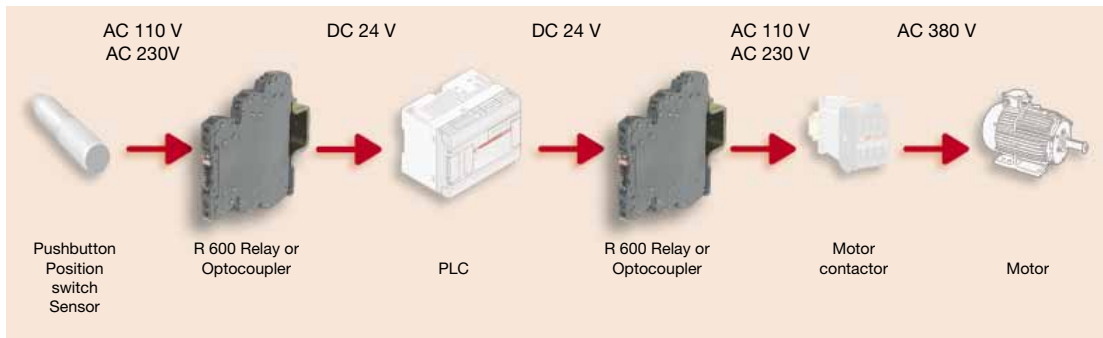
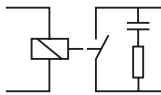


ABB PROVIDES A FULL SOLUTION FROM SENSOR TO MOTOR

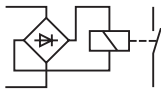
SAVING

CONTACT LIFE INCREASED



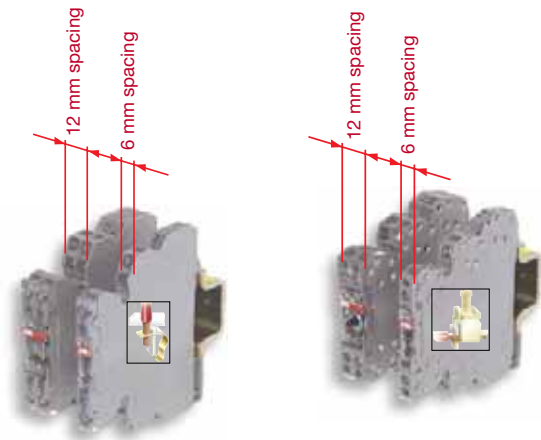
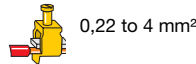
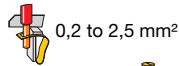
Contact protection through RC circuit

ONLY ONE PART NUMBER AC/DC



DIMENSIONS

Compact block in «spring clamp» or «screw clamp» versions with 6 mm and 12 mm spacings.



SAFETY

SEPARATION AND IDENTIFICATION OF SEVERAL VOLTAGES

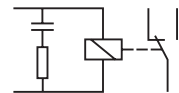
Separator end sections.

IP20 PROTECTION

NO DISTURBANCE PRODUCTION

Choice of high quality electronic components to reduce leakage currents (< 50 µA).

IMMUNITY



Leakage current protection

ACCORDANCE TO STANDARDS :



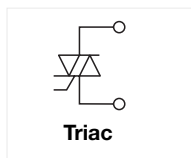
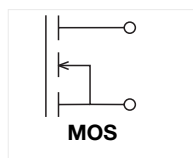
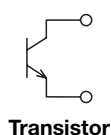
PERFORMANCES

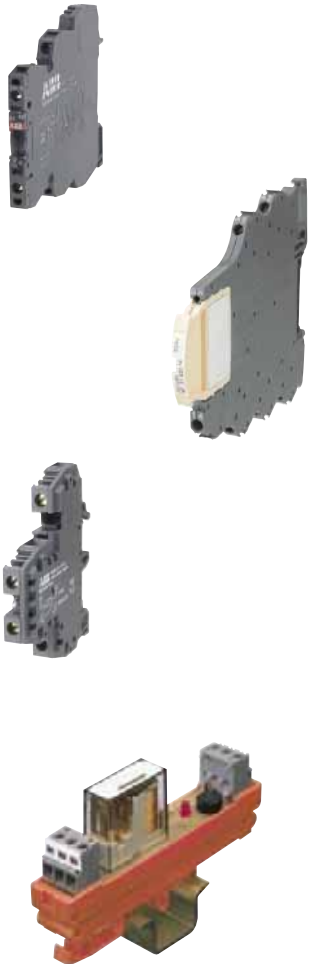


ADAPTABILITY TO ANY APPLICATION TYPE

THE PLUS IN OUR PERFORMANCES

- Triac output 400 VAC (50 Hz / 60 Hz)
- Relay output 12 A in 12 mm spacing
- 100 part numbers
- Screw clamp or spring clamp connections







Contents

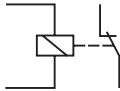
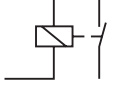
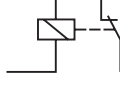
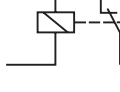
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Coding Principle

Construction of description type

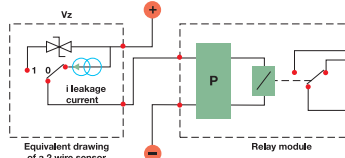
| SERIES | CODE | NB OF RELAYS | CONTACT TYPE | NB OF CONTACTS PER RELAY | PARTICULARITIES | | | |
|--|---|--------------|------------------|--------------------------|--|--------------------------|--------------------------|--------------------------|
| R 600  R 900 R 1800 | <table border="1"><tr><td>R</td><td>B</td></tr></table> | R | B | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| R | B | | | | | | | |
| R 600  R 20000 | <table border="1"><tr><td>R</td><td>B</td><td>R</td></tr></table> | R | B | R | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| R | B | R | | | | | | |
| R 500 | <table border="1"><tr><td>D</td><td>2,5/5</td><td>R</td></tr></table> | D | 2,5/5 | R | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| D | 2,5/5 | R | | | | | | |
| R 910 | <table border="1"><tr><td>M</td><td>4/9</td><td>R</td></tr></table> | M | 4/9 | R | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| M | 4/9 | R | | | | | | |
| | | | 0 1 2 3 | | None A B C N P R V I | | | |

Description of contact types :

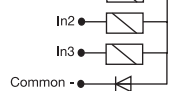
| | | | |
|---|---|---|-------------|
| 0 |  | 1 Normally Closed | 1 NC |
| 1 |  | 1 Normally Open | 1 NO |
| 2 |  | 1 Change Over or Single Pole Double Through | |
| 3 |  | 1 Normally Closed + 1 Normally Open | 1 NC + 1 NO |

Particularities description :

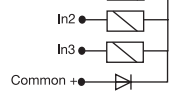
| | | |
|-------------|-----------------------------|-------|
| None | Input voltage | DC |
| A | Input voltage | AC/DC |
| B | Input voltage | AC |
| C | 2 wire sensor compatibility | |



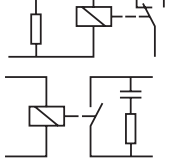
N In1 In2 In3 Common - Commons of coils connected to negative



P In1 In2 In3 Common + Commons of coils connected to positive

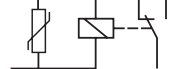


R RC circuit protection :
- Input protection against leakage current

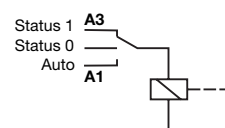


- Increases relay contacts life




V Relay protection against overvoltage peaks



I Switch to force the coil for maintenance and/or installation purposes



Color coding for relays

| Color | Current level in contacts | Switching current | Switching voltage | Switching load power |
|--|---------------------------|-------------------------|---------------------------|--|
|  green | Very low level | 10 ⁻⁷ to 5 A | 10 ⁻³ to 250 V | 10 ⁻¹⁰ to 2000 VA 10 ⁻¹⁰ to 200 W |
|  grey | Low level | 1 mA to 8 A | 5 to 250 V | 0,05 to 1500 VA 0,05 to 192 W |
|  blue | High level | 10 mA to 16 A | 12 to 380 V | 0,6 to 4000 VA 0,6 to 240 W |

Selection guide for relay modules

How to use this selection guide :

1 Choose the coil voltage AC or DC

| Input type | Rated voltage |
|------------|---------------|
| DC input | 5 VDC |
| | 12 VDC |

2 Choose the contact type together with the current needed for your application

| Contact type | Connection type | Nb of relays | Current in contacts |
|--------------|-----------------|--------------|---------------------|
| 1 SPDT | screw | 1 | 10mA-6A |
| 1 SPDT | screw | 1 | 1mA-6A |
| 1 SPDT | spring | 1 | 10mA-6A |

3 Verify the connection type, the number of relays and the spacing

| Connection type | Nb of relays | Current in contacts | Spacing (mm) |
|-----------------|--------------|---------------------|--------------|
| screw | 1 | 10mA-6A | 6 |
| screw | 1 | 1mA-6A | 6 |

4 Go to see the indicated page for more technical data or Use the part number to place an order

| Part number | Page |
|--------------------|------|
| 1SNA 645 034 R2300 | 16 |
| 1SNA 645 036 R2500 | 17 |



Screw connection



Spring connection

| Input type | Rated voltage | Contact type | Connection type | Nb of relays | Current in contacts | Spacing (mm) | Series | Available approvals | Particularities | Product type | Part number | Page |
|------------|---------------|--------------|-----------------|--------------|---------------------|--------------|--------|---------------------|-----------------|--------------------------|---------------------------|------|
| DC input | 5 VDC | 1 SPDT | screw | 1 | 10mA-6A | 6 | R600 | | | RB 121-5VDC | 1SNA 645 034 R2300 | 17 |
| | | 1 SPDT | screw | 1 | 1mA-6A | 6 | R600 | | | RB 121-5VDC | 1SNA 645 036 R2500 | 18 |
| | | 1 SPDT | spring | 1 | 10mA-6A | 6 | R600 | | | RBR 121-5VDC | 1SNA 645 534 R2500 | 17 |
| | | 1 SPDT | spring | 1 | 1mA-6A | 6 | R600 | | | RBR 121-5VDC | 1SNA 645 536 R2700 | 18 |
| | | 1 SPDT | screw | 1 | 1mA-2A | 18 | R1800 | | TTL | EBO 1R-5VDC | 1SNA 010 131 R1400 | 28 |
| | 12 VDC | 1 NO | screw | 1 | 10mA-5A | 9 | R910 | | R | M 4/9.R111L-12VDC | 1SNA 607 051 R0700 | 22 |
| | | 1 NO | screw | 1 | 10mA-5A | 9 | R910 | | R | M 4/9.R111L-12VDC | 1SNA 607 001 R0600 | 22 |
| | | 1 NO | screw | 1 | 10mA-5A | 9 | R910 | | R | M 4/9.R111L-12VDC | 1SNA 607 029 R0100 | 22 |
| | | 1 NO | screw | 1 | 10 mA-5A | 12,7 | R20000 | | | RM 111-12VDC | 1SNA 020 035 R1100 | 34 |
| | | 1 SPDT | screw | 1 | 10mA-6A | 6 | R600 | | | RB 121-12VDC | 1SNA 645 035 R2400 | 17 |
| | | 1 SPDT | screw | 1 | 1mA-6A | 6 | R600 | | | RB 121-12VDC | 1SNA 645 037 R2600 | 18 |
| | | 1 SPDT | spring | 1 | 10mA-6A | 6 | R600 | | | RBR 121-12VDC | 1SNA 645 535 R2600 | 17 |
| | | 1 SPDT | spring | 1 | 1 mA-6A | 6 | R600 | | | RBR 121-12VDC | 1SNA 645 537 R2000 | 18 |
| | | 1 SPDT | screw | 1 | 10mA-8A | 18 | R1800 | | | RB 121-12VDC | 1SNA 610 125 R2400 | 25 |
| | | 1 SPDT | screw | 1 | 1mA-6A | 11,5 | R900 | | | RB 121-12VDC | 1SNA 630 001 R0000 | 31 |
| | | 1 DPDT | screw | 1 | 0,1µA-4A | 18 | R1800 | | | RB 122-12VDC | 1SNA 010 174 R0700 | 30 |

Notes :

P Pluggable relays
R Leakage current protection

I External switch to force the coil
Is Internal switch to force the coil

V Overvoltage protection with varistor
C Static sensor compatible

Negative Coil common in negative
Positive Coil common in positive
TTL TTL compatible

High runners in bold characters

Marine Certifications :



| Input type | Rated voltage | Contact type | Connection type | Nb of relays | Current in contacts | Spacing (mm) | Series | Available approvals | Particularities | Product type | Part number | Page | |
|------------|---------------|--------------|-----------------|--------------|---------------------|--------------|--------|---------------------|-------------------|--------------------------|----------------------------|---------------------------|----|
| DC input | 24 VDC | 1 NO | screw | 1 | 10mA-6A | 12 | R600 | | R | RB 101AR-24VAC/DC | 1SNA 645 019 R0400 | 16 | |
| | | 1 NO | spring | 1 | 10mA-6A | 12 | R600 | | R | RBR 101AR-24VAC/DC | 1SNA 645 519 R0600 | 16 | |
| | | 1 NO | screw | 1 | 10mA-8A | 12,7 | R20000 | | | RM 101-24VDC | 1SNA 020 239 R0200 | 34 | |
| | | 1 NC | screw | 1 | 10mA-5A | 9 | R910 | | | M 4/9.R111L-24VDC | 1SNA 607 052 R0000 | 22 | |
| | | 1 NC | screw | 1 | 10mA-5A | 9 | R910 | | R | M 4/9.R111L-24VDC | 1SNA 607 002 R0700 | 22 | |
| | | 1 NC | screw | 1 | 10mA-5A | 9 | R910 | | R | M 4/9.R111L-24VDC | 1SNA 607 030 R0600 | 22 | |
| | | 1 NC | screw | 1 | 10mA-6A | 6 | R600 | | | RB 111A-24VAC/DC | 1SNA 645 014 R2700 | 16 | |
| | | 1 NC | screw | 1 | 10mA-6A | 6 | R600 | | Is | RB 111AI-24VAC/DC | 1SNA 645 063 R0000 | 16 | |
| | | 1 NC | screw | 1 | 10 mA-6A | 12 | R600 | | R | RB 111AR-24VAC/DC | 1SNA 645 018 R0300 | 16 | |
| | | 1 NC | spring | 1 | 10mA-6A | 6 | R600 | | | RBR 111A-24VAC/DC | 1SNA 645 514 R2100 | 16 | |
| | | 1 NC | spring | 1 | 10mA-6A | 6 | R600 | | Is | RBR 111AI-24VAC/DC | 1SNA 645 563 R0200 | 16 | |
| | | 1 NC | spring | 1 | 10mA-6A | 12 | R600 | | R | RBR 111AR-24VAC/DC | 1SNA 645 518 R0500 | 16 | |
| | | 1 NC | screw | 1 | 10mA-8A | 12,7 | R20000 | | | RM 111-24VDC | 1SNA 020 032 R1600 | 34 | |
| | | 4 NC | screw | 1 | 0,1µA-5A | 18 | R1800 | | | RB 114A-24VAC/DC | 1SNA 010 126 R1700 | 24 | |
| | | 1 NC+1 NO | screw | 1 | 10mA-5A | 18 | R1800 | | | C, V | RB 131CV-24VDC | 1SNA 010 181 R1700 | 23 |
| | | 1 NC+1 NO | screw | 1 | 1µA-5A | 18 | R1800 | | | C, V | RB 131CV-24VDC | 1SNA 010 151 R2000 | 23 |
| | | 1 NC+1 NO | screw | 1 | 1µA-8A | 18 | R1800 | | | | RB 131-24VDC | 1SNA 010 055 R2300 | 24 |
| | | 1 NC+1 NO | screw | 1 | 1µA-8A | 18 | R1800 | | | | RB 310-24VDC bistable | 1SNA 010 063 R2300 | 24 |
| | | 1 NC, 1 NC | screw | 2 | 1µA-5A | 18 | R1800 | | | | RB 211-24VDC | 1SNA 010 014 R1200 | 24 |
| | | 1 SPDT | screw | 1 | 10mA-6A | 6 | R600 | | | | RB 121A-24VAC/DC | 1SNA 645 001 R0300 | 17 |
| | | 1 SPDT | screw | 1 | 1 mA-6A | 6 | R600 | | | | RB 121A-24VAC/DC | 1SNA 645 005 R0700 | 18 |
| | | 1 SPDT | screw | 1 | 10mA-6A | 5,08 | R500 | | | P | D 2,5/5-R121-24VDC | 1SNA 607 217 R0200 | 21 |
| | | 1 SPDT | screw | 1 | 10mA-6A | 5,08 | R500 | | | P | D 2,5/5-R121L-24VDC | 1SNA 607 201 R1300 | 21 |
| | | 1 SPDT | screw | 1 | 10mA-6A | 5,08 | R500 | | | P | D 2,5/5-R121L-24VAC/DC | 1SNA 607 231 R0000 | 21 |
| | | 1 SPDT | screw | 1 | 10mA-6A | 12 | R600 | | I | | RB 121AI-24VAC/DC | 1SNA 645 032 R2100 | 19 |
| | | 1 SPDT | screw | 1 | 10mA-6A | 12 | R600 | | Is | | RB 121AI-24VAC/DC | 1SNA 645 009 R1300 | 19 |
| | | 1 SPDT | screw | 1 | 1mA-6A | 12 | R600 | | I | | RB 121AI-24VAC/DC | 1SNA 645 033 R2200 | 19 |
| | | 1 SPDT | screw | 1 | 1mA-6A | 12 | R600 | | Is | | RB 121AI-24VAC/DC | 1SNA 645 010 R0700 | 19 |
| | | 1 SPDT | spring | 1 | 10mA-6A | 6 | R600 | | | | RBR 121A-24VAC/DC | 1SNA 645 501 R0500 | 17 |
| | | 1 SPDT | spring | 1 | 1mA-6A | 6 | R600 | | | | RBR 121A-24VAC/DC | 1SNA 645 505 R0100 | 18 |
| | | 1 SPDT | spring | 1 | 10mA-6A | 12 | R600 | | I | | RBR 121AI-24VAC/DC | 1SNA 645 532 R2300 | 19 |
| | | 1 SPDT | spring | 1 | 10mA-6A | 12 | R600 | | Is | | RBR 121AI-24VAC/DC | 1SNA 645 509 R1500 | 19 |
| | | 1 SPDT | spring | 1 | 1mA-6A | 12 | R600 | | I | | RBR 121AI-24VAC/DC | 1SNA 645 533 R2400 | 19 |
| | | 1 SPDT | spring | 1 | 1mA-6A | 12 | R600 | | Is | | RBR 121AI-24VAC/DC | 1SNA 645 510 R0100 | 19 |
| | | 1 SPDT | screw | 1 | 10mA-8A | 18 | R1800 | | | | RB 121A-24VAC/DC | 1SNA 610 004 R0700 | 25 |
| | | 1 SPDT | screw | 1 | 5mA-3A | 18 | R1800 | | | C, V | RB 121CV-24VAC/DC orange | 1SNA 010 184 R1200 | 27 |
| | | 1 SPDT | screw | 1 | 1µA-5A | 18 | R1800 | | | C, V | RB 121CV-24VAC/DC orange | 1SNA 010 154 R2300 | 27 |
| | | 1 SPDT | screw | 1 | 1mA-6A | 11,5 | R900 | | | | RB 121A-24VAC/DC | 1SNA 630 002 R0100 | 31 |
| | | 1 SPDT | screw | 1 | 1mA-6A | 11,5 | R900 | | | I | RB 121AI-24VAC/DC | 1SNA 630 007 R0600 | 32 |
| | | 1 SPDT | screw | 1 | 10mA-10A | 17,8 | R20000 | | | | RM 121A-24VAC/DC | 1SNA 020 042 R2000 | 35 |
| 1 SPDT | screw | 1 | 10mA-16A | 22,5 | R20000 | | | | RM 121-24VDC | 1SNA 020 046 R2400 | 35 | | |
| 1 SPDT | screw | 4 | 10mA-16A | 89 | R20000 | | | | RM 421A-24VAC/DC | 1SNA 020 054 R2400 | 36 | | |
| 1 SPDT | screw | 8 | 10mA-16A | 165 | R20000 | | | | RM 821A-24VAC/DC | 1SNA 020 070 R0000 | 36 | | |
| 1 SPDT | screw | 16 | 10mA-16A | 325 | R20000 | | | | RM 1621A-24VAC/DC | 1SNA 020 086 R1500 | 36 | | |
| 1 SPDT | screw | 4 | 1mA-8A | 63,5 | R20000 | | | Negative | RM 421N-24VDC | 1SNA 020 604 R0100 | 37 | | |
| 1 SPDT | screw | 8 | 1mA-8A | 132 | R20000 | | | Negative | RM 821N-24VDC | 1SNA 020 112 R1300 | 37 | | |
| 1 SPDT | screw | 16 | 1mA-8A | 252 | R20000 | | | Negative | RM 1621N-24VDC | 1SNA 020 113 R1400 | 37 | | |

Notes :

- P Pluggable relays
- R Leakage current protection
- I External switch to force the coil
- Is Internal switch to force the coil
- V Overtoltage protection with varistor
- C Static sensor compatible
- Negative Coil common in negative
- Positive Coil common in positive
- TTL TTL compatible

High runners in bold characters
 Marine Certifications : RINA, DNV, GL, BV, LRS

| Input type | Rated voltage | Contact type | Connection type | Nb of relays | Current in contacts | Spacing (mm) | Series | Available approvals | Particularities | Product type | Part number | Page |
|------------|---------------|--------------|-----------------|--------------|---------------------|--------------|----------|---------------------|----------------------------|----------------------------|---------------------------|------|
| DC input | 24 VDC | 1 SPDT | screw | 4 | 1mA-8A | 63,5 | R20000 | | Positive | RM 421P-24VDC | 1SNA 020 605 R0200 | 37 |
| | | 1 SPDT | screw | 8 | 1mA-8A | 132 | R20000 | | Positive | RM 821P-24VDC | 1SNA 020 114 R1500 | 37 |
| | | 1 SPDT | screw | 16 | 1mA-8A | 252 | R20000 | | Positive | RM 1621P-24VDC | 1SNA 020 115 R1600 | 37 |
| | | 1 DPDT | screw | 1 | 1mA-8A | 12 | R600 | | V | RB 122A-24VAC/DC | 1SNA 645 012 R2500 | 20 |
| | | 1 DPDT | spring | 1 | 1mA-8A | 12 | R600 | | V | RBR 122A-24VAC/DC | 1SNA 645 512 R2700 | 20 |
| | | 1 DPDT | screw | 1 | 10mA-5A | 18 | R1800 | | V | RBR 122AV-24VAC/DC | 1SNA 610 121 R2000 | 29 |
| | | 1 DPDT | screw | 1 | 0,1µA-5A | 18 | R1800 | | V | RB 122-24VDC | 1SNA 610 059 R1500 | 29 |
| | | 1 DPDT | screw | 1 | 100mA-7A | 15 | R900 | | V | RB 122-24VDC | 1SNA 630 019 R0100 | 33 |
| | | 1 DPDT | screw | 1 | 10µA-3A | 11,5 | R900 | | V | RB 122A-24VAC/DC | 1SNA 630 011 R2100 | 33 |
| | | 1 DPDT | screw | 1 | 10mA-5A | 23 | R20000 | | | RM 122A-24VAC/DC | 1SNA 020 106 R2600 | 38 |
| | | 1 DPDT | screw | 1 | 10mA-5A | 23 | R20000 | | | RM 122-24VDC | 1SNA 020 139 R2600 | 38 |
| | | 1 DPDT | screw | 4 | 10mA-5A | 76 | R20000 | | Negative | RM 422N-24VDC | 1SNA 020 144 R2300 | 39 |
| | | 1 DPDT | screw | 4 | 10mA-5A | 76 | R20000 | | Positive | RM 422P-24VDC | 1SNA 020 146 R2500 | 39 |
| | | 1 DPDT | screw | 4 | 100mA-4A | 76 | R20000 | | Negative | RM 422N-24VDC | 1SNA 020 672 R0400 | 40 |
| | | 1 DPDT | screw | 4 | 100mA-4A | 76 | R20000 | | Positive | RM 422P-24VDC | 1SNA 020 673 R0500 | 40 |
| | | 1 DPDT | screw | 8 | 100mA-4A | 159 | R20000 | | Negative | RM 822N-24VDC | 1SNA 020 149 R0000 | 40 |
| | | 1 DPDT | screw | 8 | 100mA-4A | 159 | R20000 | | Positive | RM 822P-24VDC | 1SNA 020 492 R1100 | 40 |
| | | 1 DPDT | screw | 16 | 100mA-4A | 300 | R20000 | | Negative | RM 1622N-24VDC | 1SNA 020 151 R2200 | 40 |
| | 1 DPDT | screw | 16 | 100mA-4A | 300 | R20000 | | Positive | RM 1622P-24VDC | 1SNA 020 493 R1200 | 40 | |
| | 48 VDC | 1 NO | screw | 1 | 10mA-6A | 6 | R600 | | | RB 111A-48-60VAC/DC | 1SNA 645 015 R2000 | 16 |
| | | 1 NO | spring | 1 | 10mA-6A | 6 | R600 | | | RBR 111A-48-60VAC/DC | 1SNA 645 515 R2200 | 16 |
| | | 1 NO | screw | 1 | 10mA-8A | 12,7 | R20000 | | | RM 111-48VDC | 1SNA 020 033 R1700 | 34 |
| | | 4 NO | screw | 1 | 0,1µA-5A | 18 | R1800 | | | RB 114A-48VAC/DC | 1SNA 010 127 R1000 | 24 |
| | | 1NO+1NC | screw | 1 | 10mA-5A | 18 | R1800 | | C, V | RB 131CV-48VDC | 1SNA 010 182 R1000 | 23 |
| | | 1NO+1NC | screw | 1 | 1µA-5A | 18 | R1800 | | V | RB 131CV-48VDC | 1SNA 010 152 R2100 | 23 |
| | | 1NO+1NC | screw | 1 | 1µA-8A | 18 | R1800 | | | RB 310-48VDC Bistable | 1SNA 010 064 R2400 | 24 |
| | | 1 SPDT | screw | 1 | 10mA-6A | 6 | R600 | | | RB 121A-48-60VAC/DC | 1SNA 645 002 R0400 | 17 |
| | | 1 SPDT | screw | 1 | 1mA-6A | 6 | R600 | | | RB 121A-48-60VAC/DC | 1SNA 645 006 R0000 | 18 |
| | | 1 SPDT | spring | 1 | 10mA-6A | 6 | R600 | | | RBR 121A-48-60VAC/DC | 1SNA 645 502 R0600 | 17 |
| | | 1 SPDT | spring | 1 | 1mA-6A | 6 | R600 | | | RBR 121A-48-60VAC/DC | 1SNA 645 506 R0200 | 18 |
| | | 1 SPDT | screw | 1 | 10mA-6A | 5,08 | R500 | | P | D 2,5/5-R121L-48VAC/DC | 1SNA 607 232 R0100 | 21 |
| | | 1 SPDT | screw | 1 | 10mA-8A | 18 | R1800 | | V | RB 121AV-48VAC/DC | 1SNA 610 006 R0100 | 25 |
| | | 1 SPDT | screw | 1 | 5mA-3A | 18 | R1800 | | C, V | RB 121CV-48VDC orange | 1SNA 010 185 R1300 | 27 |
| | | 1 SPDT | screw | 1 | 1µA-5A | 18 | R1800 | | C, V | RB 121CV-48VDC orange | 1SNA 010 155 R2400 | 27 |
| | | 1 SPDT | screw | 1 | 1mA-5A | 11,5 | R900 | | | RB 121A-48VAC/DC | 1SNA 630 003 R0200 | 31 |
| | | 1 SPDT | screw | 1 | 10mA-10A | 17,8 | R20000 | | | RM 121A-48VAC/DC | 1SNA 020 043 R2100 | 35 |
| | | 1 SPDT | screw | 4 | 10mA-10A | 89 | R20000 | | | RM 421A-48VAC/DC | 1SNA 020 051 R2100 | 36 |
| | | 1 SPDT | screw | 8 | 10mA-10A | 165 | R20000 | | | RM 821A-48VAC/DC | 1SNA 020 067 R2100 | 36 |
| | | 1 SPDT | screw | 16 | 10mA-10A | 325 | R20000 | | | RM 1621A-48VAC/DC | 1SNA 020 083 R1200 | 36 |
| | | 1 DPDT | screw | 1 | 1mA-8A | 12 | R600 | | | RB 122A-48-60VAC/DC | 1SNA 645 040 R1500 | 20 |
| | | 1 DPDT | spring | 1 | 1mA-8A | 12 | R600 | | | RBR 122A-48-60VAC/DC | 1SNA 645 540 R1700 | 20 |
| | | 1 DPDT | screw | 1 | 10mA-5A | 18 | R1800 | | V | RB 122AV-48VAC/DC | 1SNA 610 122 R2100 | 29 |
| 1 DPDT | | screw | 1 | 0,1µA-5A | 18 | R1800 | | V | RB 122-48VDC | 1SNA 610 060 R1200 | 29 | |
| 1 DPDT | screw | 1 | 10mA-5A | 23 | R20000 | | | RM 122A-48VAC/DC | 1SNA 020 107 R2700 | 38 | | |
| 1 DPDT | screw | 4 | 10mA-5A | 76 | R20000 | | Negative | RM 422N-48VDC | 1SNA 020 145 R2400 | 39 | | |
| 1 DPDT | screw | 4 | 10mA-5A | 76 | R20000 | | Positive | RM 422P-48VDC | 1SNA 020 147 R2600 | 39 | | |
| 60 VDC | 1 NO | screw | 1 | 10mA-6A | 6 | R600 | | | RB 111A-48-60VAC/DC | 1SNA 645 015 R2000 | 16 | |
| | 1 NO | spring | 1 | 10mA-6A | 6 | R600 | | | RBR 111A-48-60VAC/DC | 1SNA 645 515 R2200 | 16 | |
| | 1 SPDT | screw | 1 | 10mA-4A | 6 | R600 | | | RB 121A-48-60VAC/DC | 1SNA 645 002 R0400 | 17 | |

Notes :

P Pluggable relays
R Leakage current protection

I External switch to force the coil
Is Internal switch to force the coil

V Overvoltage protection with varistor
C Static sensor compatible

Negative Coil common in negative
Positive Coil common in positive
TTL TTL compatible

High runners in bold characters

Marine Certifications : RINA, DNV, GL, BV, LRS



| Input type | Rated voltage | Contact type | Connection type | Nb of relays | Current in contacts | Spacing (mm) | Series | Available approvals | Particularities | Product type | Part number | Page | | |
|------------|---------------|--------------|-----------------|--------------|---------------------|--------------|--------|---------------------|----------------------|---------------------------|-------------------------------|-------------------------------|---------------------------|----|
| AC input | 24 VAC | 1 NC | screw | 1 | 10mA-6A | 12 | R600 | | R | RB 101AR-24VAC/DC | 1SNA 645 019 R0400 | 16 | | |
| | | 1 NC | spring | 1 | 10mA-6A | 12 | R600 | | R | RBR 101AR-24VAC/DC | 1SNA 645 519 R0600 | 16 | | |
| | | 1 NO | screw | 1 | 10mA-6A | 6 | R600 | | Is | RB 111A-24VAC/DC | 1SNA 645 014 R2700 | 16 | | |
| | | 1 NO | screw | 1 | 10mA-6A | 6 | R600 | | | RB 111AI-24VAC/DC | 1SNA 645 063 R0000 | 16 | | |
| | | 1 NO | screw | 1 | 10mA-6A | 12 | R600 | | R | RB 111AR-24VAC/DC | 1SNA 645 018 R0300 | 16 | | |
| | | 1 NO | spring | 1 | 10mA-6A | 6 | R600 | | Is | RBR 111A-24VAC/DC | 1SNA 645 514 R2100 | 16 | | |
| | | 1 NO | spring | 1 | 10mA-6A | 6 | R600 | | | RBR 111AI-24VAC/DC | 1SNA 645 563 R0200 | 16 | | |
| | | 1 NO | spring | 1 | 10mA-6A | 12 | R600 | | R | RBR 111AR-24VAC/DC | 1SNA 645 518 R0500 | 16 | | |
| | | 4 NO | screw | 1 | 0,1µA-5A | 18 | R1800 | | | | RB 114A-24VAC/DC | 1SNA 010 126 R1700 | 24 | |
| | | 1 SPDT | screw | 1 | 10mA-6A | 6 | R600 | R600 | | P | RB 121A-24VAC/DC | 1SNA 645 001 R0300 | 17 | |
| | | 1 SPDT | screw | 1 | 1mA-6A | 6 | R600 | | RB 121A-24VAC/DC | | 1SNA 645 005 R0700 | 18 | | |
| | | 1 SPDT | screw | 1 | 10mA-6A | 5,08 | R600 | R600 | | I | D 2,5/5-R121L-24VAC/DC | 1SNA 607 231 R0000 | 21 | |
| | | 1 SPDT | screw | 1 | 10mA-6A | 12 | R600 | | RB 121AI-24VAC/DC | | 1SNA 645 032 R2100 | 19 | | |
| | | 1 SPDT | screw | 1 | 10mA-6A | 12 | R600 | R600 | | Is | RB 121AI-24VAC/DC | 1SNA 645 009 R1300 | 19 | |
| | | 1 SPDT | screw | 1 | 1mA-6A | 12 | R600 | R600 | | I | RB 121AI-24VAC/DC | 1SNA 645 033 R2200 | 19 | |
| | | 1 SPDT | screw | 1 | 1mA-6A | 12 | R600 | R600 | | Is | RB 121AI-24VAC/DC | 1SNA 645 010 R0700 | 19 | |
| | | 1 SPDT | spring | 1 | 10mA-6A | 6 | R600 | R600 | | I | RBR 121A-24VAC/DC | 1SNA 645 501 R0500 | 17 | |
| | | 1 SPDT | spring | 1 | 1mA-6A | 6 | R600 | R600 | | | RBR 121A-24VAC/DC | 1SNA 645 505 R0100 | 18 | |
| | | 1 SPDT | spring | 1 | 10mA-6A | 12 | R600 | R600 | | Is | RBR 121AI-24VAC/DC | 1SNA 645 532 R2300 | 19 | |
| | | 1 SPDT | spring | 1 | 10mA-6A | 12 | R600 | R600 | | Is | RBR 121AI-24VAC/DC | 1SNA 645 509 R1500 | 19 | |
| | 1 SPDT | spring | 1 | 1mA-6A | 12 | R600 | R600 | | I | RBR 121AI-24VAC/DC | 1SNA 645 533 R2400 | 19 | | |
| | 1 SPDT | spring | 1 | 1mA-6A | 12 | R600 | R600 | | Is | RBR 121AI-24VAC/DC | 1SNA 645 510 R0100 | 19 | | |
| | 1 SPDT | screw | 1 | 10mA-8A | 18 | R1800 | | | I | RB 121A-24VAC/DC | 1SNA 610 004 R0700 | 25 | | |
| | 1 SPDT | screw | 1 | 1mA-6A | 11,5 | R900 | | | | RB 121A-24VAC/DC | 1SNA 630 002 R0100 | 31 | | |
| | 1 SPDT | screw | 1 | 1mA-6A | 11,5 | R900 | | | I | RB 121AI-24VAC/DC | 1SNA 630 007 R0600 | 32 | | |
| | 1 SPDT | screw | 1 | 10mA-10A | 17,8 | R20000 | | | | RM 121A-24VAC/DC | 1SNA 020 042 R2000 | 35 | | |
| | 1 SPDT | screw | 4 | 10mA-16A | 89 | R20000 | | | I | RM 421A-24VAC/DC | 1SNA 020 054 R2400 | 36 | | |
| | 1 SPDT | screw | 8 | 10mA-16A | 165 | R20000 | | | | RM 821A-24VAC/DC | 1SNA 020 070 R0000 | 36 | | |
| | 1 SPDT | screw | 16 | 10mA-16A | 325 | R20000 | | | | RM 1621A-24VAC/DC | 1SNA 020 086 R1500 | 36 | | |
| | 1 DPDT | screw | 1 | 1mA-8A | 12 | R600 | R600 | | V | RB 122A-24VAC/DC | 1SNA 645 012 R2500 | 20 | | |
| | 1 DPDT | spring | 1 | 1mA-8A | 12 | R600 | R600 | | | RBR 122A-24VAC/DC | 1SNA 645 512 R2700 | 20 | | |
| | 1 DPDT | screw | 1 | 10mA-5A | 18 | R1800 | | | | RBR 122AV-24VAC/DC | 1SNA 610 121 R2000 | 29 | | |
| | 1 DPDT | screw | 1 | 10µA-3A | 11,5 | R900 | | | | RB 122A-24VAC/DC | 1SNA 630 011 R2100 | 33 | | |
| | 1 DPDT | screw | 1 | 10mA-5A | 23 | R20000 | | | | RM 122A-24VAC/DC | 1SNA 020 106 R2600 | 38 | | |
| | 48 VAC | 48 VAC | 1 NO | screw | 1 | 10mA-6A | 6 | R600 | | | RB 111A-48-60VAC/DC | 1SNA 645 015 R2000 | 16 | |
| | | | 1 NO | spring | 1 | 10mA-6A | 6 | R600 | | | RBR 111A-48-60VAC/DC | 1SNA 645 515 R2200 | 16 | |
| | | | 4 NO | screw | 1 | 0,1µA-5A | 18 | R1800 | | | | RB 114A-48VAC/DC | 1SNA 010 127 R1000 | 24 |
| | | | 1 SPDT | screw | 1 | 10mA-6A | 6 | R600 | R600 | | P | RB 121A-48-60VAC/DC | 1SNA 645 002 R0400 | 17 |
| | | | 1 SPDT | screw | 1 | 1mA-6A | 6 | R600 | | RB 121A-48-60VAC/DC | | 1SNA 645 006 R0000 | 18 | |
| | | | 1 SPDT | screw | 1 | 10mA-6A | 5,08 | R500 | | | P | D 2,5/5-R121L-48VAC/DC | 1SNA 607 232 R0100 | 21 |
| 1 SPDT | | | spring | 1 | 10mA-6A | 6 | R600 | | RBR 121A-48-60VAC/DC | 1SNA 645 502 R0600 | | 17 | | |
| 1 SPDT | | | spring | 1 | 1mA-6A | 6 | R600 | R600 | | V | RBR 121A-48-60VAC/DC | 1SNA 645 506 R0200 | 18 | |
| 1 SPDT | | | screw | 1 | 10mA-8A | 18 | R1800 | | | | RB 121AV-48VAC/DC | 1SNA 610 006 R0100 | 25 | |
| 1 SPDT | | | screw | 1 | 1mA-6A | 11,5 | R900 | | | I | RB 121A-48VAC/DC | 1SNA 630 003 R0200 | 31 | |
| 1 SPDT | | | screw | 1 | 10mA-10A | 17,8 | R20000 | | | | RM 121A-48VAC/DC | 1SNA 020 043 R2100 | 35 | |
| 1 SPDT | | | screw | 4 | 10mA-10A | 89 | R20000 | | | I | RM 421A-48VAC/DC | 1SNA 020 051 R2100 | 36 | |
| 1 SPDT | | | screw | 8 | 10mA-10A | 165 | R20000 | | | | RM 821A-48VAC/DC | 1SNA 020 067 R2100 | 36 | |
| 1 SPDT | | | screw | 16 | 10mA-10A | 325 | R20000 | | | | RM 1621A-48VAC/DC | 1SNA 020 083 R1200 | 36 | |
| 1 DPDT | | | screw | 1 | 1mA-8A | 12 | R600 | R600 | | | RB 122A-48-60VAC/DC | 1SNA 645 040 R1500 | 20 | |

Notes :

P Pluggable relays
R Leakage current protection

I External switch to force the coil
Is Internal switch to force the coil

V Overvoltage protection with varistor
C Static sensor compatible

Negative Coil common in negative
Positive Coil common in positive
TTL TTL compatible

High runners in bold characters
Marine Certifications : RINA, DNV, GL, BV, LRS



| Input type | Rated voltage | Contact type | Connection type | Nb of relays | Current in contacts | Spacing (mm) | Series | Available approvals | Particularities | Product type | Part number | Page | |
|------------|---------------|--------------|-----------------|--------------|---------------------|--------------|--------|---------------------|---------------------------|---------------------------|------------------------------|---------------------------|----|
| AC input | 48 VAC | 1 DPDT | spring | 1 | 1mA-8A | 12 | R600 | | | RBR 122A-48-60VAC/DC | 1SNA 645 540 R1700 | 20 | |
| | | 1 DPDT | screw | 1 | 10mA-5A | 18 | R1800 | | V | RB 122AV-48VAC/DC | 1SNA 610 122 R2100 | 29 | |
| | | 1 DPDT | screw | 1 | 10mA-5A | 23 | R20000 | | | RM 122A-48VAC/DC | 1SNA 020 107 R2700 | 38 | |
| | 60 VAC | 1 NO | screw | 1 | 10mA-6A | 6 | R600 | | | | RB 111A-48-60VAC/DC | 1SNA 645 015 R2000 | 16 |
| | | 1 NO | spring | 1 | 10mA-6A | 6 | R600 | | | | RBR 111A-48-60VAC/DC | 1SNA 645 515 R2200 | 16 |
| | | 1 SPDT | screw | 1 | 10mA-6A | 6 | R600 | | | | RB 121A-48-60VAC/DC | 1SNA 645 002 R0400 | 17 |
| | | 1 SPDT | screw | 1 | 1mA-6A | 6 | R600 | | | | RB 121A-48-60VAC/DC | 1SNA 645 006 R0000 | 18 |
| | | 1 SPDT | spring | 1 | 10mA-6A | 6 | R600 | | | | RBR 121A-48-60VAC/DC | 1SNA 645 502 R0600 | 17 |
| | | 1 SPDT | spring | 1 | 1mA-6A | 6 | R600 | | | | RBR 121A-48-60VAC/DC | 1SNA 645 506 R0200 | 18 |
| | | 1 DPDT | screw | 1 | 1mA-8A | 12 | R600 | | | | RB 122A-48-60VAC/DC | 1SNA 645 040 R1500 | 20 |
| | | 1 DPDT | spring | 1 | 1mA-8A | 12 | R600 | | | | RBR 122A-48-60VAC/DC | 1SNA 645 540 R1700 | 20 |
| | 110-115 VAC | 1 NO | screw | 1 | 10mA-6A | 6 | R600 | | | | RB 111A-115VAC/DC | 1SNA 645 016 R2100 | 16 |
| | | 1 NO | spring | 1 | 10mA-6A | 6 | R600 | | | | RBR 111A-115VAC/DC | 1SNA 645 516 R2300 | 16 |
| | | 1 NO | screw | 1 | 10mA-6A | 12,7 | R20000 | | | | RM 111A-110VAC/DC | 1SNA 020 323 R2600 | 34 |
| | | 1 NO+1 NC | screw | 1 | 10mA-5A | 18 | R1800 | | | C, V, R | RB 131BCVR-110VAC/DC | 1SNA 010 183 R1100 | 23 |
| | | 1 NO+1 NC | screw | 1 | 1µA-5A | 18 | R1800 | | | C, V, R | RB 131BCVR-110VAC | 1SNA 010 153 R2200 | 23 |
| | | 1 SPDT | screw | 1 | 10mA-6A | 6 | R600 | | | | RB 121A-115VAC/DC | 1SNA 645 003 R0500 | 17 |
| | | 1 SPDT | screw | 1 | 1mA-6A | 6 | R600 | | | | RB 121A-115VAC/DC | 1SNA 645 007 R0100 | 18 |
| | | 1 SPDT | screw | 1 | 10mA-6A | 12 | R600 | | | R | RB 121AR-115VAC/DC | 1SNA 645 046 R0700 | 19 |
| | | 1 SPDT | screw | 1 | 10mA-6A | 5,08 | R500 | | | P | D 2,5/5-R121L-110VAC | 1SNA 607 264 R1100 | 21 |
| | | 1 SPDT | spring | 1 | 10mA-6A | 6 | R600 | | | | RBR 121A-115VAC/DC | 1SNA 645 503 R0700 | 17 |
| | | 1 SPDT | spring | 1 | 1mA-6A | 6 | R600 | | | | RBR 121A-115VAC/DC | 1SNA 645 507 R0300 | 18 |
| | | 1 SPDT | spring | 1 | 10mA-6A | 12 | R600 | | | R | RBR 121AR-115VAC/DC | 1SNA 645 546 R0100 | 19 |
| | | 1 SPDT | screw | 1 | 10mA-8A | 18 | R1800 | | | | RB 121A-110-135VAC/DC | 1SNA 010 226 R2300 | 26 |
| | | 1 SPDT | screw | 1 | 10mA-8A | 18 | R1800 | | | | RB 121A-110-230VAC/DC | 1SNA 610 132 R2300 | 25 |
| | | 1 SPDT | screw | 1 | 10mA-3A | 23 | R1800 | | | | RB 121B-115VAC gris | 1SNA 010 067 R2700 | 26 |
| | | 1 SPDT | screw | 1 | 10mA-3A | 23 | R1800 | | | | RM 121B-115VAC orange | 1SNA 010 088 R2500 | 26 |
| | | 1 SPDT | screw | 1 | 10mA-8A | 18 | R1800 | | | R | RB 121AR1-110VAC/DC | 1SNA 010 158 R0700 | 26 |
| | | 1 SPDT | screw | 1 | 10mA-8A | 18 | R1800 | | | R | RB 121AR2-110VAC/DC | 1SNA 010 168 R0100 | 26 |
| | | 1 SPDT | screw | 1 | 5mA-3A | 18 | R1800 | | | C, V, R | RB 121BCVR-110VAC orange | 1SNA 010 186 R1400 | 27 |
| | | 1 SPDT | screw | 1 | 1µA-5A | 18 | R1800 | | | C, V, R | RB 121BCVR-110VAC orange | 1SNA 010 156 R2500 | 27 |
| | 1 SPDT | screw | 1 | 1mA-5A | 11,5 | R900 | | | | RB 121A-110VAC 50 Hz | 1SNA 630 004 R0300 | 32 | |
| | 1 SPDT | screw | 1 | 1mA-5A | 11,5 | R900 | | | | RB 121A-115VAC 60 Hz | 1SNA 630 005 R0400 | 32 | |
| | 1 SPDT | screw | 1 | 100mA-8A | 17,8 | R20000 | | | | RM 121A-115VAC/DC | 1SNA 020 044 R2200 | 35 | |
| 1 SPDT | screw | 4 | 10mA-10A | 89 | R20000 | | | | RM 421A-110VAC/DC | 1SNA 020 052 R2200 | 36 | | |
| 1 SPDT | screw | 8 | 10mA-10A | 165 | R20000 | | | | RM 821A-110VAC/DC | 1SNA 020 068 R0200 | 36 | | |
| 1 SPDT | screw | 16 | 10mA-10A | 325 | R20000 | | | | RM 1621A-110VAC/DC | 1SNA 020 084 R1300 | 36 | | |
| 1 DPDT | screw | 1 | 1mA-8A | 12 | R600 | | | | RB 122A-115VAC/DC | 1SNA 645 041 R0200 | 20 | | |
| 1 DPDT | spring | 1 | 1mA-8A | 12 | R600 | | | | RBR 122A-115VAC/DC | 1SNA 645 541 R0400 | 20 | | |
| 1 DPDT | screw | 1 | 10mA-5A | 23 | R1800 | | | R | RB 122AR-110VAC/DC | 1SNA 610 011 R2500 | 29 | | |
| 1 DPDT | screw | 1 | 10mA-3A | 18 | R1800 | | | R | RB 122AR-135VAC/DC | 1SNA 010 228 R0500 | 30 | | |
| 1 DPDT | screw | 1 | 0,1µA-5A | 23 | R1800 | | | V, R | RB 122BR-110VAC | 1SNA 610 115 R2200 | 29 | | |
| 1 DPDT | screw | 1 | 100mA-7A | 15 | R900 | | | V | RB 122A-110VAC 50 Hz | 1SNA 630 021 R2300 | 33 | | |
| 1 DPDT | screw | 1 | 100mA-7A | 15 | R900 | | | V | RB 122A-115VAC 60 Hz | 1SNA 630 022 R2400 | 33 | | |
| 1 DPDT | screw | 1 | 10mA-5A | 23 | R20000 | | | | RM 122A-115VAC/DC | 1SNA 020 141 R2000 | 38 | | |
| 1 DPDT | screw | 8 | 100mA-4A | 159 | R20000 | | | | RM 822A-110VAC/DC | 1SNA 020 150 R0500 | 40 | | |
| 1 DPDT | screw | 16 | 100mA-4A | 300 | R20000 | | | | RM 1622A-110VAC/DC | 1SNA 020 152 R2300 | 40 | | |

Notes :
P Pluggable relays
R Leakage current protection
I External switch to force the coil
Is Internal switch to force the coil
V Overvoltage protection with varistor
C Static sensor compatible
Negative Coil common in negative
Positive Coil common in positive
TTL TTL compatible

High runners in bold characters
Marine Certifications :

| Input type | Rated voltage | Contact type | Connection type | Nb of relays | Current in contacts | Spacing (mm) | Series | Available approvals | Particularities | Product type | Part number | Page |
|------------|---------------|--------------|-----------------|--------------|---------------------|--------------|--------|----------------------------|---------------------------|--------------------------------|---------------------------|---------------------------|
| AC input | 135 VAC | 1 SPDT | screw | 1 | 10mA-8A | 18 | R1800 | | | RB 121A-110-135VAC/DC | 1SNA 010 226 R2300 | 26 |
| | | 1 DPDT | screw | 1 | 10mA-3A | 18 | R1800 | | R | RB 122AR-135VAC/DC | 1SNA 010 228 R0500 | 30 |
| | 230 VAC | 1 NO | screw | 1 | 10mA-6A | 6 | R600 | | | RB 111A-230VAC/DC | 1SNA 645 017 R2200 | 16 |
| | | | spring | 1 | 10mA-6A | 6 | R600 | | | RBR 111A-230VAC/DC | 1SNA 645 517 R2400 | 16 |
| | | 1 SPDT | screw | 1 | 10mA-6A | 6 | R600 | | R P | RB 121A-230VAC/DC | 1SNA 645 004 R0400 | 17 |
| | | | screw | 1 | 1mA-6A | 6 | R600 | | | RB 121A-230VAC/DC | 1SNA 645 008 R1200 | 18 |
| | | 1 SPDT | screw | 1 | 10mA-6A | 12 | R600 | | R P | RB 121AR-230VAC/DC | 1SNA 645 011 R2400 | 19 |
| | | | screw | 1 | 10mA-6A | 5,08 | R500 | | | D 2,5/5-R121L-230VAC/DC | 1SNA 607 265 R1200 | 21 |
| | | 1 SPDT | screw | 1 | 10mA-6A | 6 | R600 | | R | RBR 121A-230VAC/DC | 1SNA 645 504 R0000 | 17 |
| | | | spring | 1 | 10mA-6A | 6 | R600 | | | RBR 121A-230VAC/DC | 1SNA 645 508 R1400 | 18 |
| | | 1 SPDT | screw | 1 | 10mA-6A | 12 | R600 | | R | RBR 121AR-230VAC/DC | 1SNA 645 511 R2600 | 19 |
| | | | screw | 1 | 10mA-8A | 18 | R1800 | | | RB 121A-110-230VAC/DC | 1SNA 610 132 R2300 | 25 |
| | | 1 SPDT | screw | 1 | 1mA-5A | 11,5 | R900 | | | RB 121A-230VAC | 1SNA 630 006 R0500 | 32 |
| | | | screw | 1 | 100mA-8A | 17,8 | R20000 | | | RM 121A-230VAC/DC | 1SNA 020 045 R2300 | 35 |
| | | 1 SPDT | screw | 4 | 10mA-10A | 89 | R20000 | | | RM 421A-220VAC/DC | 1SNA 020 053 R2300 | 36 |
| | | | screw | 8 | 10mA-10A | 165 | R20000 | | | RM 821A-220VAC/DC | 1SNA 020 069 R0300 | 36 |
| | | 1 SPDT | screw | 16 | 10mA-10A | 325 | R20000 | | | RM 1621A-220VAC/DC | 1SNA 020 085 R1400 | 36 |
| | | | 1 DPDT | screw | 1 | 1mA-8A | 12 | R600 | | R V, R | RB 122A-230VAC/DC | 1SNA 645 013 R2600 |
| | | spring | | 1 | 1mA-8A | 12 | R600 | | RBR 122A-230VAC/DC | | 1SNA 645 513 R2000 | 20 |
| | | 1 DPDT | screw | 1 | 0,1µA-5A | 23 | R1800 | | | RB 122BR-230VAC | 1SNA 610 089 R0400 | 29 |
| screw | 1 | | 10mA-5A | 23 | R1800 | | | RBR 122AV-230VAC/DC | 1SNA 610 123 R2200 | 29 | | |
| 1 DPDT | screw | 1 | 10mA-5A | 23 | R20000 | | | RM 122A-230VAC/DC | 1SNA 020 142 R2100 | 38 | | |

Notes :

P Pluggable relays
R Leakage current protection

I External switch to force the coil
Is Internal switch to force the coil

V Overvoltage protection with varistor
C Static sensor compatible

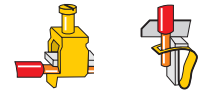
Negative Coil common in negative
Positive Coil common in positive
TTL TTL compatible

High runners in bold characters

Marine Certifications : RINA, DNV, GL, BV, LRS

Relay Interfaces

R600 relay modules

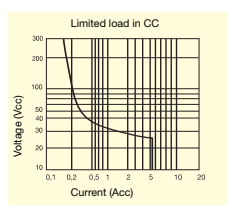


DIN 3

Relay : 1NO or 1NC high level contact 10 mA to 6 A - 6 mm .236" or 12 mm .472" spacing

Characteristics

| Relay characteristics | RB 111 A | | | | | RB 111 AI | RB 111 AR | RB 101 AR |
|---|--|------------|------------|------------|---|--|------------|------------|
| COIL | | | | | | | | |
| Rated voltage +20%, -15% on DC ; +10%, -10% on AC | 24 VAC/DC | 48 VAC/DC | 60 VAC/DC | 115 VAC/DC | ±10% on AC +10% -15% on DC 230 VAC/DC | 24 VAC/DC | 24 VAC/DC | 24 VAC/DC |
| Frequency | 50 / 60 Hz | 50 / 60 Hz | 50 / 60 Hz | 50 / 60 Hz | 50 / 60 Hz | 50 / 60 Hz | 50 / 60 Hz | 50 / 60 Hz |
| Power | 0,24 W | 0,34 W | 0,54 W | 0,46 W | 0,8 W | 0,24 W | 0,24 W | 0,24 W |
| Rated current | 10 mA | 7 mA | 9 mA | 4 mA | 3,5 mA | 10 mA | 10 mA | 10 mA |
| Drop-out voltage at 20°C | 4,5 V | 8 V | 8 V | 17 V | 27 V | 4,5 V | 4,5 V | 4,5 V |
| Status device | green LED | | | | | | green LED | green LED |
| CONTACT | | | | | | | | |
| Type | 1 NO | | | | | | 1 NO + RC | 1 NC + RC |
| Voltage switching range min./max. | 12 V / 250 V AC | | | | | | | |
| Current switching range min./max. | 10 mA / 6 A | | | | | | | |
| Load switching range | 0,6 VA / 1500 VA (ohmic load) | | | | | | | |
| AC1 min. / max. | 0,6 W / 140 W | | | | | | | |
| DC1 min. / max. | 10 ³ on AC15 | | | | | | | |
| Number of on-load operations | 10 ⁷ | | | | | | | |
| Number of off-load operations | | | | | | | | |
| Operating speed | F | 5 ms | 5 ms | 5 ms | 6 ms | 7 ms | 5 ms | 5 ms |
| | O | 8 ms | 8 ms | 8 ms | 15 ms | 15 ms | 8 ms | 8 ms |
| Bounce | 1,2 ms | | | | | | 1,2 ms | 1,2 ms |
| Insulation coil / contact | 4000 V RMS | | | | | | 3800 V RMS | 4000 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 | -20°C to +70°C (1) | | | | | | | |
| Other characteristics | Screw clamp | | | | | Spring clamp | | |
| Body material | grey | | | | | UL 94 V0 | | |
| Wire | Solid wire | | | | | UL 94 V0 | | |
| size | 0,2 - 4 mm ² / 24 - 12 AWG | | | | | 0,2 - 2,5 mm ² / 24 - 12 AWG | | |
| Stranded wire | 0,22 - 2,5 mm ² / 24 - 12 AWG | | | | | 0,22 - 2,5 mm ² / 24 - 12 AWG | | |
| Rated wire size | 2,5 mm ² / 12 AWG | | | | | 2,5 mm ² / 12 AWG | | |
| Wire stripping length | 9 mm .354" | | | | | 9 mm .354" | | |
| Recommended screwdriver | 3,5 mm .137" | | | | | 3,5 mm .137" | | |
| Protection | IP20 NEMA1 | | | | | IP20 NEMA1 | | |
| Recommended torque | 0,4 - 0,6 Nm 3.5 - 5.3 lb.in | | | | | 0,4 - 0,6 Nm 3.5 - 5.3 lb.in | | |
| Approvals | us pending, CE | | | | | | | |
| Reference standards | CEI 947-7-1 / CEI 947-1 / CEI 1131-2 (in relevant parts) / CEI 60664-1 / CEM : IRC 1000-4-2, 3, 4, 5, 6. | | | | | | | |



(1) Over 55°C, blocks have to be mounted on horizontal rail with 10 mm spacing between each block. For vertical rail mounting use temperature is 15°C less decreased.

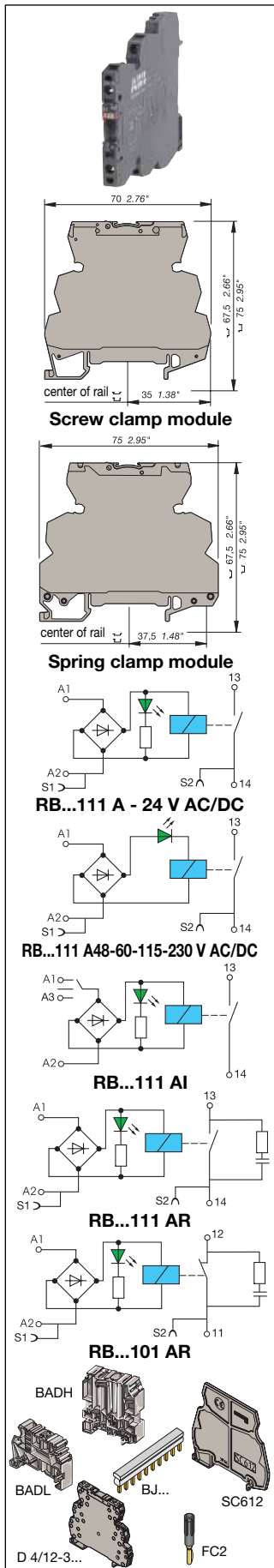
| | DC12 | AC12 | DC13 | AC15 |
|-----------|-------|------|-------|------|
| 24 V | 6 A | 6 A | 1 A | 3 A |
| 110/120 V | 0,3 A | 6 A | 0,2 A | 3 A |
| 220/230 V | 0,2 A | 6 A | 0,1 A | 3 A |

Order codes

| Description | Type | Order P/N | Packaging | Weight |
|---|-----------------------|--------------------|-----------|--------|
| Relay module 1 NO high level 6 mm spacing | RB 111 A-24VAC/DC | 1SNA 645 014 R2700 | 10 | 0,02 |
| Relay module 1 NO high level 6 mm spacing | RB 111 A-48-60VAC/DC | 1SNA 645 015 R2000 | 10 | 0,02 |
| Relay module 1 NO high level 6 mm spacing | RB 111 A-115VAC/DC | 1SNA 645 016 R2100 | 10 | 0,02 |
| Relay module 1 NO high level 6 mm spacing | RB 111 A-230VAC/DC | 1SNA 645 017 R2200 | 10 | 0,02 |
| Relay mod. 1 NO high level w/safety switch 6 mm sp. | RB 111 AI-24VAC/DC | 1SNA 645 063 R0000 | 10 | 0,02 |
| Relay mod. 1 NO high level w/contact protection 12 mm sp. | RB 111 AR-24VAC/DC | 1SNA 645 018 R0300 | 5 | 0,03 |
| Relay mod. 1 NC high level w/contact protection 12 mm sp. | RB 101 AR-24VAC/DC | 1SNA 645 019 R0400 | 5 | 0,03 |
| Relay module 1 NO high level 6 mm spacing | RBR 111 A-24VAC/DC | 1SNA 645 514 R2100 | 10 | 0,02 |
| Relay module 1 NO high level 6 mm spacing | RBR 111 A-48-60VAC/DC | 1SNA 645 515 R2200 | 10 | 0,02 |
| Relay module 1 NO high level 6 mm spacing | RBR 111 A-115VAC/DC | 1SNA 645 516 R2300 | 10 | 0,02 |
| Relay module 1 NO high level 6 mm spacing | RBR 111 A-230VAC/DC | 1SNA 645 517 R2400 | 10 | 0,02 |
| Relay mod. 1 NO high level w/safety switch 6 mm sp. | RBR 111 AI-24VAC/DC | 1SNA 645 563 R0200 | 10 | 0,02 |
| Relay mod. 1 NO high level w/contact protection 12 mm sp. | RBR 111 AR-24VAC/DC | 1SNA 645 518 R0500 | 5 | 0,03 |
| Relay mod. 1 NC high level w/contact protection 12 mm sp. | RBR 101 AR-24VAC/DC | 1SNA 645 519 R0600 | 5 | 0,03 |

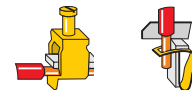
Accessories

| | | | |
|---|-------------|--------------------|----|
| End section | BADH V0 | 1SNA 116 900 R2700 | 50 |
| | BADL V0 | 1SNA 399 903 R0200 | 50 |
| | BAM2 V0 | 1SNA 399 967 R0100 | 50 |
| Separator end section | SC 612 | 1SNA 290 474 R0200 | 10 |
| Divisible shunt 10 poles | BJ 612-10 | 1SNA 290 488 R0100 | 10 |
| Divisible shunt 70 poles | BJ 612-70 | 1SNA 290 489 R0200 | 10 |
| Screw clamp distribution block sp. 12 mm | D4/12-3A-3A | 1SNA 645 031 R2000 | 5 |
| Spring clamp distribution block sp. 12 mm | D4/12-3L-3L | 1SNA 645 531 R2200 | 5 |
| Test plug DIA. 2 mm | FC2 | 1SNA 007 865 R2600 | 10 |
| Marking method | RC65 RC610 | see marking | |



Relay Interfaces

R600 relay modules



DIN 3

Relay : 1 SPDT high level contact 10 mA to 6 A - 6 mm .236" spacing

Characteristics

| Relay characteristics COIL | RB 121 | | RB 121A | | | | |
|-------------------------------|---|--------|------------|------------|------------|------------|-------------|
| | Rated voltage +20%, -15% on DC ; +10%, -10% on AC | 5 V DC | 12 V DC | 24 VAC/DC | 48 V AC/DC | 60 V AC/DC | 115 V AC/DC |
| Frequency | | | 50 / 60 Hz | 50 / 60 Hz | 50 / 60 Hz | 50 / 60 Hz | 50 / 60 Hz |
| Power | 0,2 W | 0,2 W | 0,24 W | 0,33 W | 0,54 W | 0,46 W | 0,8 W |
| Rated current | 40 mA | 16 mA | 10 mA | 7 mA | 9 mA | 4 mA | 3,5 mA |
| Drop-out voltage at 20°C | 1,2 V | 2,2 V | 4,5 V | 8 V | 8 V | 17 V | 27 V |
| Status device | green LED | | | | | | |

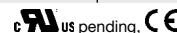
CONTACT

| | | | | | | | |
|------------------------------------|-------------------------------|------|------|------|------|-------|-------|
| 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 | 0,6 VA / 1500 VA (ohmic load) | | | | | | |
| | 0,6 W / 140 W | | | | | | |
| Number of on-load operations | 10 ⁵ on AC15 | | | | | | |
| Number of off-load operations | 10 ⁷ | | | | | | |
| Operating speed | F 5 ms | 5 ms | 5 ms | 5 ms | 5 ms | 6 ms | 7 ms |
| | O 8 ms | 8 ms | 8 ms | 8 ms | 8 ms | 15 ms | 16 ms |
| Bounce | 1,2 ms | | | | | | |
| Insulation coil / contact | 4000 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 | -20°C to +70°C (1) | | | | | | |

Other characteristics

| | Screw clamp | Spring clamp |
|-------------------------|--|--|
| Body material | grey | grey |
| Wire | Solid wire | Solid wire |
| size | 0,2 - 4 mm ² / 24 - 12 AWG | 0,2 - 2,5 mm ² / 24 - 12 AWG |
| Stranded wire | 0,22 - 2,5 mm ² / 24 - 12 AWG | 0,22 - 2,5 mm ² / 24 - 12 AWG |
| Rated wire size | 2,5 mm ² / 12 AWG | 2,5 mm ² / 12 AWG |
| Wire stripping length | 9 mm .354" | 9 mm .354" |
| Recommended screwdriver | 3,5 mm .137" | 3,5 mm .137" |
| Protection | IP20 NEMA1 | IP20 NEMA1 |
| Recommended torque | 0,4 - 0,6 Nm 3.5 - 5.3 lb.in | 0,4 - 0,6 Nm 3.5 - 5.3 lb.in |

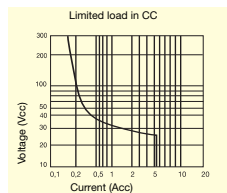
Approvals



Reference standards

CEI 947-7-1 / CEI 947-1 / CEI 1131-2 (in relevant parts) / CEI 60664-1 / CEM : IRC 1000-4-2, 3, 4, 5, 6.

(1) Over 55°C, blocks have to be mounted on horizontal rail with 10 mm spacing between each block. For vertical rail mounting use temperature is 15°C less decreased.



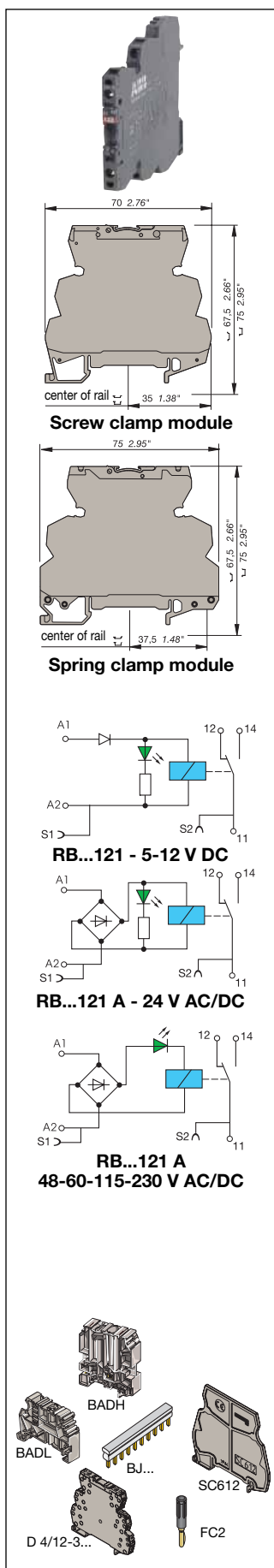
| | DC12 | AC12 | DC13 | AC15 |
|-----------|-------|------|-------|------|
| 24 V | 6 A | 6 A | 1 A | 3 A |
| 110/120 V | 0,3 A | 6 A | 0,2 A | 3 A |
| 220/230 V | 0,2 A | 6 A | 0,1 A | 3 A |

Order codes

| Description | Type | Order P/N | Packaging | Weight |
|--------------------------------|-----------------------|--------------------|-----------|--------|
| Relay module 1 SPDT high level | RB 121-5VDC | 1SNA 645 034 F2300 | 10 | 0,02 |
| Relay module 1 SPDT high level | RB 121-12VDC | 1SNA 645 035 F2400 | 10 | 0,02 |
| Relay module 1 SPDT high level | RB 121 A-24VAC/DC | 1SNA 645 001 F0300 | 10 | 0,02 |
| Relay module 1 SPDT high level | RB 121 A-48-60VAC/DC | 1SNA 645 002 F0400 | 10 | 0,02 |
| Relay module 1 SPDT high level | RB 121 A-115VAC/DC | 1SNA 645 003 F0500 | 10 | 0,02 |
| Relay module 1 SPDT high level | RB 121 A-230VAC/DC | 1SNA 645 004 F0400 | 10 | 0,02 |
| Relay module 1 SPDT high level | RBR 121-5VDC | 1SNA 645 534 F2500 | 10 | 0,02 |
| Relay module 1 SPDT high level | RBR 121-12VDC | 1SNA 645 535 F2600 | 10 | 0,02 |
| Relay module 1 SPDT high level | RBR 121 A-24VAC/DC | 1SNA 645 501 F0500 | 10 | 0,02 |
| Relay module 1 SPDT high level | RBR 121 A-48-60VAC/DC | 1SNA 645 502 F0600 | 10 | 0,02 |
| Relay module 1 SPDT high level | RBR 121 A-115VAC/DC | 1SNA 645 503 F0700 | 10 | 0,02 |
| Relay module 1 SPDT high level | RBR 121 A-230VAC/DC | 1SNA 645 504 F0000 | 10 | 0,02 |

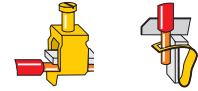
Accessories

| | | | |
|---|-------------|--------------------|----|
| End section | BADH V0 | 1SNA 116 900 F2700 | 50 |
| | BADL V0 | 1SNA 399 903 F0200 | 50 |
| | BAM2 V0 | 1SNA 399 967 F0100 | 50 |
| Separator end section | SC 612 | 1SNA 290 474 F0200 | 10 |
| Divisible shunt 10 poles | BJ 612-10 | 1SNA 290 488 F0100 | 10 |
| | BJ 612-70 | 1SNA 290 489 F0200 | 10 |
| Screw clamp distribution block sp. 12 mm | D4/12-3A-3A | 1SNA 645 031 F2000 | 5 |
| Spring clamp distribution block sp. 12 mm | D4/12-3L-3L | 1SNA 645 531 F2200 | 5 |
| Test plug DIA. 2 mm | FC2 | 1SNA 007 865 F2600 | 10 |
| Marking method | RC65 RC610 | see marking | |



Relay Interfaces

R600 relay modules



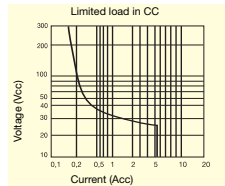
DIN 3

Relay : 1 SPDT low level contact 1 mA upto 6 A - 6 mm .236" spacing

Characteristics

| Relay characteristics | RB 121 | | RB 121 A | | | | |
|---|--|--------|------------|--|------------|------------|-------------|
| | COIL | 5 V DC | 12 V DC | 24 VAC/DC | 48 V AC/DC | 60 V AC/DC | 115 V AC/DC |
| Rated voltage +20%, -15% on DC ; +10%, -10% on AC | | | | | | | |
| Frequency | | | 50 / 60 Hz | 50 / 60 Hz | 50 / 60 Hz | 50 / 60 Hz | 50 / 60 Hz |
| Power | 0,2 W | 0,2 W | 0,24 W | 0,33 W | 0,54 W | 0,46 W | 0,8 W |
| Rated current | 40 mA | 16 mA | 10 mA | 7 mA | 9 mA | 4 mA | 3,5 mA |
| Drop-out voltage at 20°C | 1,2 V | 2,2 V | 4,5 V | 8 V | 8 V | 17 V | 27 V |
| Status device | green LED | | | | | | |
| CONTACT | | | | | | | |
| Type | 1 SPDT | | | | | | |
| Voltage switching range min./max. | 5 V / 250 V AC | | | | | | |
| Current switching range min./max. | 1 mA / 6 A | | | | | | |
| Load switching range | 0,05 VA / 1500 VA (ohmic load) | | | | | | |
| AC1 min. / max. | 0,05 W / 140 W | | | | | | |
| DC1 min. / max. | | | | | | | |
| Number of on-load operations | 10 ⁵ on AC15 | | | | | | |
| Number of off-load operations | 10 ⁷ | | | | | | |
| Operating speed | F | 5 ms | 5 ms | 5 ms | 5 ms | 6 ms | 7 ms |
| | O | 8 ms | 8 ms | 8 ms | 8 ms | 8 ms | 15 ms |
| Bounce | 1,2 ms | | | | | | |
| Insulation coil / contact | 4000 V RMS | | | | | | |
| Resistance to shock coil / contact | 4000 V RMS | | | | | | |
| Insulation contact / contact | 1000 V RMS | | | | | | |
| Ambient temperature | -40°C to +80°C | | | | | | |
| storage | | | | | | | |
| operating | -20°C to +70°C (1) | | | | | | |
| Other characteristics | Screw clamp | | | Spring clamp | | | |
| Body material | grey | | | UL 94 V0 | | | |
| Wire | Solid wire | | | UL 94 V0 | | | |
| size | 0,2 - 4 mm ² / 24 - 12 AWG | | | 0,2 - 2,5 mm ² / 24 - 12 AWG | | | |
| Stranded wire | 0,22 - 2,5 mm ² / 24 - 12 AWG | | | 0,22 - 2,5 mm ² / 24 - 12 AWG | | | |
| Rated wire size | 2,5 mm ² / 12 AWG | | | 2,5 mm ² / 12 AWG | | | |
| Wire stripping length | 9 mm .354" | | | 9 mm .354" | | | |
| Recommended screwdriver | 3,5 mm .137" | | | 3,5 mm .137" | | | |
| Protection | IP20 NEMA1 | | | IP20 NEMA1 | | | |
| Recommended torque | 0,4 - 0,6 Nm 3,5 - 5,3 lb.in | | | 0,4 - 0,6 Nm 3,5 - 5,3 lb.in | | | |
| Approvals | us pending, CE | | | | | | |
| Reference standards | CEI 947-7-1 / CEI 947-1 / CEI 1131-2 (in relevant parts) / CEI 60664-1 / CEM : IRC 1000-4-2, 3, 4, 5, 6. | | | | | | |

(1) Over 55°C, blocks have to be mounted on horizontal rail with 10 mm spacing between each block. For vertical rail mounting use temperature is 15°C less decreased.



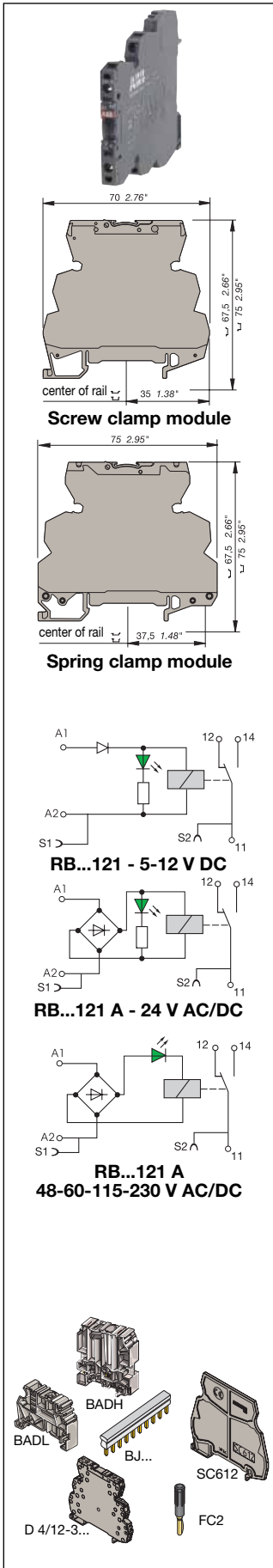
| | DC12 | AC12 | DC13 | AC15 |
|-----------|-------|------|-------|------|
| 24 V | 6 A | 6 A | 1 A | 3 A |
| 110/120 V | 0,3 A | 6 A | 0,2 A | 3 A |
| 220/230 V | 0,2 A | 6 A | 0,1 A | 3 A |

Order codes

| Description | Type | Order P/N | Packaging | Weight |
|-------------------------------|-----------------------|--------------------|-----------|--------|
| Relay module 1 SPDT low level | RB 121-5VDC | 1SNA 645 036 R2500 | 10 | 0,02 |
| Relay module 1 SPDT low level | RB 121-12VDC | 1SNA 645 037 R2600 | 10 | 0,02 |
| Relay module 1 SPDT low level | RB 121 A-24VAC/DC | 1SNA 645 005 R0700 | 10 | 0,02 |
| Relay module 1 SPDT low level | RB 121 A-48-60VAC/DC | 1SNA 645 006 R0000 | 10 | 0,02 |
| Relay module 1 SPDT low level | RB 121 A-115VAC/DC | 1SNA 645 007 R0100 | 10 | 0,02 |
| Relay module 1 SPDT low level | RB 121 A-230VAC/DC | 1SNA 645 008 R1200 | 10 | 0,02 |
| Relay module 1 SPDT low level | RBR 121-5VDC | 1SNA 645 536 R2700 | 10 | 0,02 |
| Relay module 1 SPDT low level | RBR 121-12VDC | 1SNA 645 537 R2000 | 10 | 0,02 |
| Relay module 1 SPDT low level | RBR 121 A-24VAC/DC | 1SNA 645 505 R0100 | 10 | 0,02 |
| Relay module 1 SPDT low level | RBR 121 A-48-60VAC/DC | 1SNA 645 506 R0200 | 10 | 0,02 |
| Relay module 1 SPDT low level | RBR 121 A-115VAC/DC | 1SNA 645 507 R0300 | 10 | 0,02 |
| Relay module 1 SPDT low level | RBR 121 A-230VAC/DC | 1SNA 645 508 R1400 | 10 | 0,02 |

Accessories

| | | | |
|---|-------------|--------------------|----|
| End section | BADH V0 | 1SNA 116 900 R2700 | 50 |
| | BADL V0 | 1SNA 399 903 R0200 | 50 |
| | BAM2 V0 | 1SNA 399 967 R0100 | 50 |
| Separator end section | SC 612 | 1SNA 290 474 R0200 | 10 |
| Divisible shunt 10 poles | BJ 612-10 | 1SNA 290 488 R0100 | 10 |
| | BJ 612-70 | 1SNA 290 489 R0200 | 10 |
| Divisible shunt 70 poles | | | |
| Screw clamp distribution block sp. 12 mm | D4/12-3A-3A | 1SNA 645 031 R2000 | 5 |
| Spring clamp distribution block sp. 12 mm | D4/12-3L-3L | 1SNA 645 531 R2200 | 5 |
| Test plug DIA. 2 mm | FC2 | 1SNA 007 865 R2600 | 10 |
| Marking method | RC65 RC610 | see marking | |

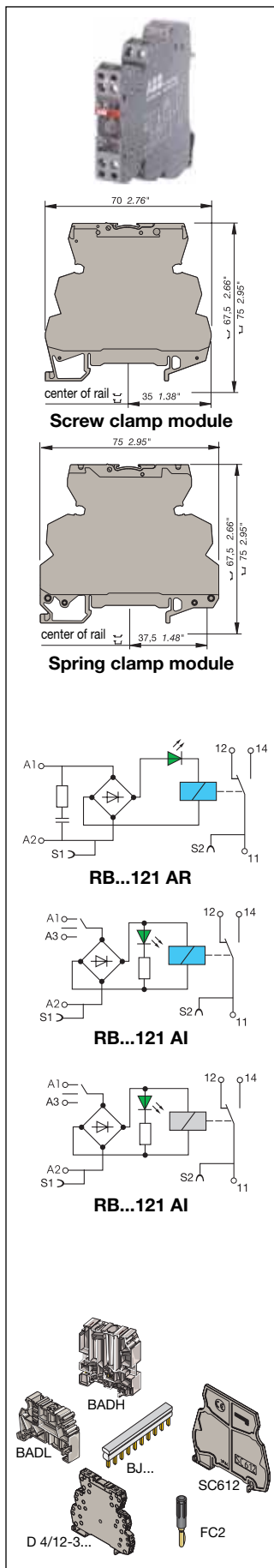


Relay Interfaces

R600 relay modules



DIN 3



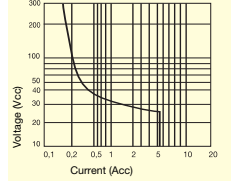
Relay : 1 SPDT high level with switch or with leakage current protection - 12 mm .472" spacing

Relay : 1 SPDT low level with switch - 12 mm .472" spacing

Characteristics

| Relay characteristics | RB...121 AR | | RB...121 AI | | RB...121 AI | |
|---|--|-------------|-------------|---|-------------|------------|
| | 115 V AC/DC | 230 V AC/DC | 24 VAC/DC | 24 VAC/DC | 24 VAC/DC | 24 VAC/DC |
| COIL | | | | | | |
| Rated voltage +20%, -15% on DC ; +10%, -10% on AC | 115 V AC/DC | 230 V AC/DC | 24 VAC/DC | 24 VAC/DC | 24 VAC/DC | 24 VAC/DC |
| Frequency | 50 / 60 Hz | 50 / 60 Hz | 50 / 60 Hz | 50 / 60 Hz | 50 / 60 Hz | 50 / 60 Hz |
| Power | 2 W | 2,8 W | 0,24 W | 0,24 W | 0,24 W | 0,24 W |
| Rated current | 18 mA | 12 mA | 10 mA | 10 mA | 10 mA | 10 mA |
| Drop-out voltage at 20°C | 17 V | 27 V | 4,5 V | 4,5 V | 4,5 V | 4,5 V |
| Permissible leakage current | 1,6 mA | 1 mA | | | | |
| Status device | green LED | | | green LED | | |
| CONTACT | | | | | | |
| Type | 1 SPDT | | | | | |
| Voltage switching range min./max. | 12 V / 250 V | | | 5 V / 250 V | | |
| Current switching range min./max. | 10 mA / 6 A | | | 1 mA / 6 A | | |
| Load switching range | | | | | | |
| AC1 min. / max. | 0,6 VA / 1500 VA (ohmic load) | | | 0,05 VA/1500 VA (ohmic load) | | |
| DC1 min. / max. | 0,6 W / 140 W | | | 0,05 W / 140 W | | |
| Number of on-load operations | 10 ⁵ on AC15 | | | 10 ⁵ on AC15 | | |
| Number of off-load operations | 10 ⁷ | | | 10 ⁷ | | |
| Operating speed | F 6 ms | 7 ms | 5 ms | 5 ms | 5 ms | 5 ms |
| | O 15 ms | 16 ms | 8 ms | 8 ms | 8 ms | 8 ms |
| Bounce | | | | | | |
| Insulation coil / contact | 4000 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 | -20°C to +70°C (1) | | | | | |
| Other characteristics | Screw clamp | | | Spring clamp | | |
| Body material | grey UL 94 V0 | | | grey UL 94 V0 | | |
| Wire size | Solid wire 0,2 - 4 mm ² / 24 - 12 AWG | | | Stranded wire 0,2 - 2,5 mm ² / 24 - 12 AWG | | |
| Rated wire size | 2,5 mm ² / 12 AWG | | | 2,5 mm ² / 12 AWG | | |
| Wire stripping length | 9 mm .354" | | | 9 mm .354" | | |
| Recommended screwdriver | 3,5 mm .137" | | | 3,5 mm .137" | | |
| Protection | IP20 NEMA1 | | | IP20 NEMA1 | | |
| Recommended torque | 0,4 - 0,6 Nm 3.5 - 5.3 lb.in | | | 0,4 - 0,6 Nm 3.5 - 5.3 lb.in | | |
| Approvals | cULus pending, CE | | | | | |
| Reference standards | CEI 947-7-1 / CEI 947-1 / CEI 1131-2 (in relevant parts) / CEI 60664-1 / CEM : IRC 1000-4-2, 3, 4, 5, 6. | | | | | |

(1) Over 55°C, blocks have to be mounted on horizontal rail with 10 mm spacing between each block. For vertical rail mounting use temperature is 15°C less decreased.



| | 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 |

Order codes

| Description | Type | Order P/N | Packaging | Weight kg |
|---|----------------------|--------------------|-----------|-----------|
| Relay mod. 1SPDT high level w/leakage current protec. | RB 121 AR-115VAC/DC | 1SNA 645 046 R0700 | 5 | 0,03 |
| Relay mod. 1SPDT high level w/leakage current protec. | RB 121 AR-230VAC/DC | 1SNA 645 011 R2400 | 5 | 0,03 |
| Relay mod. 1SPDT high level with switch | RB 121 AI-24VAC/DC | 1SNA 645 032 R2100 | 5 | 0,03 |
| Relay mod. 1SPDT high level with safety switch | RB 121 AI-24VAC/DC | 1SNA 645 009 R1300 | 5 | 0,03 |
| Relay module 1SPDT low level with switch | RB 121 AI-24VAC/DC | 1SNA 645 033 R2200 | 5 | 0,03 |
| Relay module 1SPDT low level with safety switch | RB 121 AI-24VAC/DC | 1SNA 645 010 R0700 | 5 | 0,03 |
| Relay mod. 1SPDT high level w/leakage current protec. | RBR 121 AR-115VAC/DC | 1SNA 645 546 R0100 | 5 | 0,03 |
| Relay mod. 1SPDT high level w/leakage current protec. | RBR 121 AR-230VAC/DC | 1SNA 645 511 R2600 | 5 | 0,03 |
| Relay mod. 1SPDT high level with switch | RBR 121 AI-24VAC/DC | 1SNA 645 532 R2300 | 5 | 0,03 |
| Relay mod. 1SPDT high level with safety switch | RBR 121 AI-24VAC/DC | 1SNA 645 509 R1500 | 5 | 0,03 |
| Relay module 1SPDT low level with switch | RBR 121 AI-24VAC/DC | 1SNA 645 533 R2400 | 5 | 0,03 |
| Relay module 1SPDT low level with safety switch | RBR 121 AI-24VAC/DC | 1SNA 645 510 R0100 | 5 | 0,03 |

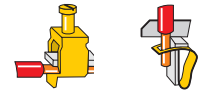
Accessories

| | | | |
|---|-------------|--------------------|----|
| End section | BADH V0 | 1SNA 116 900 R2700 | 50 |
| | BADL V0 | 1SNA 399 903 R0200 | 50 |
| | BAM2 V0 | 1SNA 399 967 R0100 | 50 |
| Separator end section | SC 612 | 1SNA 290 474 R0200 | 10 |
| Divisible shunt 10 poles | BJ 612-10 | 1SNA 290 488 R0100 | 10 |
| Divisible shunt 70 poles | BJ 612-70 | 1SNA 290 489 R0200 | 10 |
| Screw clamp distribution block sp. 12 mm | D4/12-3A-3A | 1SNA 645 031 R2000 | 5 |
| Spring clamp distribution block sp. 12 mm | D4/12-3L-3L | 1SNA 645 531 R2200 | 5 |
| Test plug DIA. 2 mm | FC2 | 1SNA 007 865 R2600 | 10 |
| Marking method | RC65 RC610 | see marking | |



Relay Interfaces

R600 relay modules



DIN 3

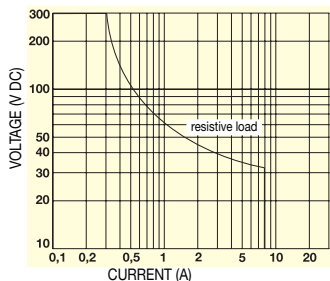
Relay : 1 DPDT low level contact 1 mA to 8 A - 12 mm .472" spacing

Characteristics

| Relay characteristics | RB...122A | | | | |
|---|--|------------|--|-------------|------------|
| | COIL | | | | |
| Rated voltage +20%, -15% on DC ; +10%, -10% on AC | 24 VAC/DC | 48 V AC/DC | 60 V AC/DC | 115 V AC/DC | 50 / 60 Hz |
| Frequency | 50 / 60 Hz | 50 / 60 Hz | 50 / 60 Hz | 50 / 60 Hz | 50 / 60 Hz |
| Power | 0,48 W | 0,62 W | 0,96 W | 0,58 W | 1,15 W |
| Rated current | 20 mA | 13 mA | 16 mA | 5 mA | 5 mA |
| Drop-out voltage at 20°C | 5,4 V | 8,8 V | 8,8 V | 20 V | 10 V |
| Status device | green LED | | | | |
| CONTACT | 1 DPDT | | | | |
| Type | 5 V / 250 V DC - 250 V AC | | | | |
| Voltage switching range min./max. | 1 mA / 8 A | | | | |
| Current switching range min./max. | 1 mA / 5 A | | | | |
| Load switching range | 5 mVA / 1500 VA | | | | |
| AC1 min. / max. | 5 mW / 192 W | | | | |
| DC1 min. / max. | 10 ⁵ | | | | |
| Number of on-load operations | 2 x 10 ⁷ | | | | |
| Number of off-load operations | 6 ms | | | | |
| Operating speed F | 6 ms | 10 ms | 10 ms | 6 ms | 6 ms |
| O | 10 ms | 14 ms | 14 ms | 15 ms | 15 ms |
| Bounce | 1 ms | | | | |
| Insulation coil / contact | 3500 V RMS | | | | |
| Resistance to shock coil / contact | 3500 V RMS | | | | |
| Insulation contact / contact | 3500 V RMS (between 2 contacts) | | | | |
| Ambient temperature storage | -40°C to +80°C | | | | |
| operating | -20°C to +70°C (1) | | | | |
| Other characteristics | Screw clamp | | Spring clamp | | |
| Body material | grey | | UL 94 V0 | | |
| Wire | Solid wire | | UL 94 V0 | | |
| size | 0,2 - 4 mm ² / 24 - 12 AWG | | 0,2 - 2,5 mm ² / 24 - 12 AWG | | |
| Stranded wire | 0,22 - 2,5 mm ² / 24 - 12 AWG | | 0,22 - 2,5 mm ² / 24 - 12 AWG | | |
| Rated wire size | 2,5 mm ² / 12 AWG | | 2,5 mm ² / 12 AWG | | |
| Wire stripping length | 9 mm .354" | | 9 mm .354" | | |
| Recommended screwdriver | 3,5 mm .137" | | 3,5 mm .137" | | |
| Protection | IP20 NEMA1 | | IP20 NEMA1 | | |
| Recommended torque | 0,4 - 0,6 Nm 3.5 - 5.3 lb.in | | 0,4 - 0,6 Nm 3.5 - 5.3 lb.in | | |
| Approvals | us pending, CE | | | | |
| Reference standards | CEI 947-7-1 / CEI 947-1 / CEI 1131-2 (in relevant parts) / CEI 60664-1 / CEM : IRC 1000-4-2, 3, 4, 5, 6. | | | | |

(1) Over 55°C, blocks have to be mounted on horizontal rail with 10 mm spacing between each block. For vertical rail mounting use temperature is 15°C less decreased.

Max. DC load breaking capacity

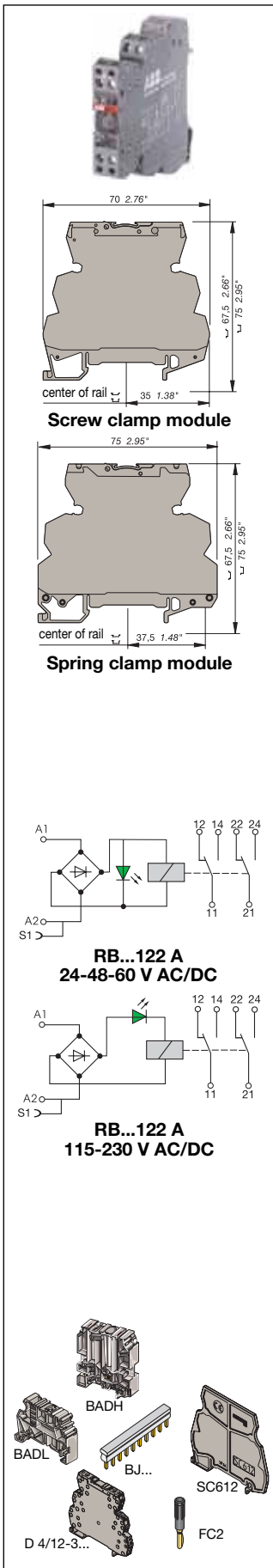


Order codes

| Description | Type | Order P/N | Packaging | Weight |
|-------------------------------|-----------------------|--------------------|-----------|---------|
| Relay module 1 DPDT low level | RB 122 A-24VAC/DC | 1SNA 645 012 R2500 | 5 | 0,03 kg |
| Relay module 1 DPDT low level | RB 122 A-48-60VAC/DC | 1SNA 645 040 R1500 | 5 | 0,03 kg |
| Relay module 1 DPDT low level | RB 122 A-115VAC/DC | 1SNA 645 041 R0200 | 5 | 0,03 kg |
| Relay module 1 DPDT low level | RB 122 A-230VAC/DC | 1SNA 645 013 R2600 | 5 | 0,03 kg |
| Relay module 1 DPDT low level | RBR 122 A-24VAC/DC | 1SNA 645 512 R2700 | 5 | 0,03 kg |
| Relay module 1 DPDT low level | RBR 122 A-48-60VAC/DC | 1SNA 645 540 R1700 | 5 | 0,03 kg |
| Relay module 1 DPDT low level | RBR 122 A-115VAC/DC | 1SNA 645 541 R0400 | 5 | 0,03 kg |
| Relay module 1 DPDT low level | RBR 122 A-230VAC/DC | 1SNA 645 513 R2000 | 5 | 0,03 kg |

Accessories

| | | | |
|---|-------------|--------------------|----|
| End section | BADH V0 | 1SNA 116 900 R2700 | 50 |
| | BADL V0 | 1SNA 399 903 R0200 | 50 |
| | BAM2 V0 | 1SNA 399 967 R0100 | 50 |
| Separator end section | SC 612 | 1SNA 290 474 R0200 | 10 |
| Divisible shunt 10 poles | BJ 612-10 | 1SNA 290 488 R0100 | 10 |
| | BJ 612-70 | 1SNA 290 489 R0200 | 10 |
| Screw clamp distribution block sp. 12 mm | D4/12-3A-3A | 1SNA 645 031 R2000 | 5 |
| Spring clamp distribution block sp. 12 mm | D4/12-3L-3L | 1SNA 645 531 R2200 | 5 |
| Test plug DIA. 2 mm | FC2 | 1SNA 007 865 R2600 | 10 |
| Marking method | RC65 RC610 | see marking | |



Relay Interfaces

R500 pluggable relay modules



DIN 3

Pluggable relay : 1 SPDT high level contact 10 mA to 6 A - 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 $\pm 20\%$, -15% DC, $\pm 15\%$ AC | 24 V DC | 24 V DC | 24 V AC | 24 V DC | 48 V AC | 48 V DC | 110 V AC | 230 V AC |
| Frequency | | | 50 / 60 Hz | | 50 / 60 Hz | | 50 / 60 Hz | 50 / 60 Hz |
| 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 at 20°C | 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 | 0.6 VA / 1500 VA (ohmic load) | | | | | | | |
| AC1 min. / max. | 0.6 W / 140 W | | | | | | | |
| DC1 min. / DC13 max. | 10 ⁵ in AC15 | | | | | | | |
| Number of on-load operations | 10 x 10 ⁵ | | | | | | | |
| Number of off-load operations | 10 x 10 ⁵ | | | | | | | |
| Pull-in time (delay time) | 5 ms | 5 ms | 5 ms | 5 ms | 5 ms | 5 ms | 5 ms | 5 ms |
| Drop-out time (delay time) | 8 ms | 8 ms | 15 ms | 15 ms | 15 ms | 15 ms | 15 ms | 15 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 curves | | | | | | | |

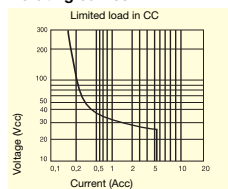
Other characteristics

| | | |
|-------------------------|---------------|--------------------------------------|
| Body material | grey | UL 94 V0 |
| Wire | Solid wire | 0.2-4 mm ² / 24-12 AWG |
| Wire 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 | | |

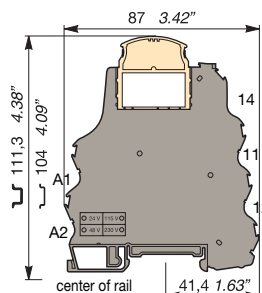
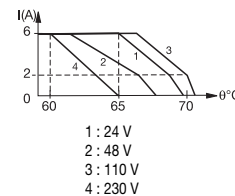
Reference standards

CEI 947-7-1 / CEI 947-1 / CEI 1131-2 (in relevant parts) / CEI 60664-1 / CEM : IRC 1000-4-2, 3, 4, 5, 6.

Derating curves

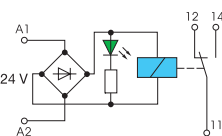


| | DC12 | AC12 | DC13 | AC15 |
|-----------|-------|------|-------|------|
| 24 V | 6 A | 6 A | 1 A | 3 A |
| 110/120 V | 0,3 A | 6 A | 0,2 A | 3 A |
| 220/230 V | 0,2 A | 6 A | 0,1 A | 3 A |

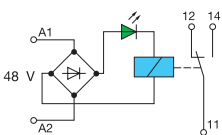


D 2,5/5-R121

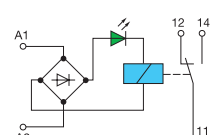
D 2,5/5-R121L



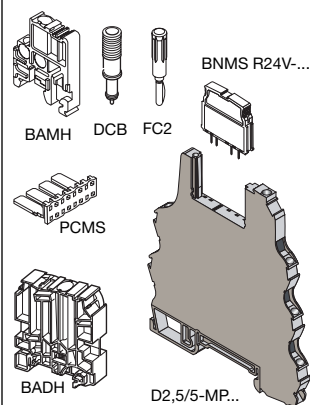
D 2,5/5-R121AL-24V



D 2,5/5-R121AL-48V



D 2,5/5-R121BL



Order codes

| Description | Type | Order P/N | Packaging | Weight kg |
|---|-------------------------|--------------------|-----------|-----------|
| Relay module 1 SPDT high level | D 2,5/5-R121-24VDC | 1SNA 607 217 R0200 | 10 | 0.032 |
| Relay module with LED 1 SPDT high level | D 2,5/5-R121L-24VDC | 1SNA 607 201 R1300 | 10 | 0.032 |
| Relay module with LED 1 SPDT high level | D 2,5/5-R121AL-24VAC/DC | 1SNA 607 231 R0000 | 10 | 0.04 |
| Relay module with LED 1 SPDT high level | D 2,5/5-R121AL-48VAC/DC | 1SNA 607 232 R0100 | 10 | 0.04 |
| Relay module with LED 1 SPDT high level | D 2,5/5-R121BL-110VAC | 1SNA 607 264 R1100 | 10 | 0.04 |
| Relay module with LED 1 SPDT high level | D 2,5/5-R121BL-230VAC | 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 | | consult us | | |
| Jumper bar 10 poles grey | PCMS V0 | 1SNA 205 523 R2200 | 8 | |
| Relay / Opto base | D 2,5/5-MP | 1SNA 607 224 R0100 | 10 | 0.028 |
| Relay / Opto base with LED 24 VDC | D 2,5/5-MP-24VDC | 1SNA 607 222 R0700 | 10 | 0.028 |
| Relay / Opto base with LED 24 VAC/VDC | D 2,5/5-MP-24VAC/DC | 1SNA 607 260 R2100 | 10 | 0.036 |
| Relay / Opto base with LED 48 VAC/VDC | D 2,5/5-MP-48VAC/DC | 1SNA 607 261 R1600 | 10 | 0.036 |
| Relay / Opto base with LED 110 VAC | D 2,5/5-MP-110VAC | 1SNA 607 266 R1300 | 10 | 0.036 |
| Relay / Opto base with LED 230 VAC | D 2,5/5-MP-230VAC | 1SNA 607 267 R1400 | 10 | 0.036 |
| Plug relay 24 V 1 SPDT 10 mA to 6 A | BNMS R24V-1 | 1SNA 031 820 R1400 | 4 | |
| Plug relay 24 V 1 SPDT 1 mA to 6 A | BNMS R24V-2 | 1SNA 031 847 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 marking | | |

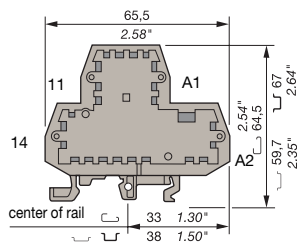
(1) Only on top decks.

Relay Interfaces

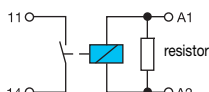
R910 relay modules



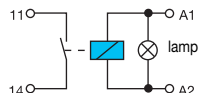
DIN 1-3



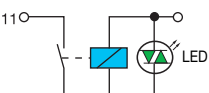
M 4/9.R111...



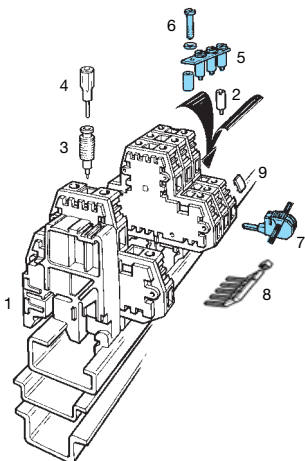
M 4/9.R111



M 4/9.R111L



M 4/9.R111L



Relay : 1 NO high level contacts 10 mA to 5 A - 9 mm .354" spacing

Characteristics

| Relay characteristics | M 4/9.R111 | | M 4/9.R111L | | M 4/9.R111L | |
|--------------------------------|------------|----------|-------------|-------|-------------|--------|
| COIL | | | | | | |
| Rated voltage +20%, -20% on DC | 12 V | 24 V | 12 V | 24 V | 12 V | 24 V |
| Frequency | | | | | | |
| Power | 0.3 W | 0.3 W | 0.6 W | 0.8 W | 0.25 W | 0.31 W |
| Rated current | 24 mA | 14 mA | 52 mA | 33 mA | 21 mA | 13 mA |
| Drop-out voltage at 20°C | 1.2 V DC | 2.4 V DC | 1.2 V | 2.4 V | 1.2 V | 2.4 V |
| Allowable leakage current | 2 mA | 1 mA | 4 mA | 3 mA | 1.5 mA | 0.7 mA |
| Status device | | | lamp | | green LED | |

CONTACT

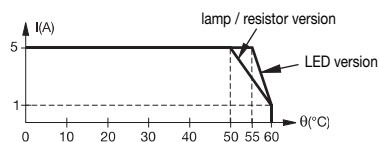
| | | | | | | |
|-------------------------------------|------------------------------|--|------------|--|------------|--|
| Type | 1 NO | | | | | |
| Voltage switching range min./max. | 12 V / 150 V DC - 250 V AC | | | | | |
| Current switching range | 10 mA / 5 A | | | | | |
| Load switching range | 0.6 VA / 1250 VA | | | | | |
| AC1 min. / max. | 0.6 W / 150 W | | | | | |
| DC1 min. / max. | 1 x 10 ⁶ | | | | | |
| Number of on-load operations | 2 x 10 ⁷ | | | | | |
| Number of off-load operations | 5 ms | | | | | |
| Pull-in time (delay time) | 7 ms | | | | | |
| Drop-out time (delay time) | 6 ms | | | | 6 ms | |
| Bounce time | 4 ms | | | | | |
| Insulation coil / contacts | 3000 V RMS | | 4000 V RMS | | 2500 V RMS | |
| Breakdown voltage with 1.2/50µ wave | 750 V RMS | | | | | |
| Insulation contacts/contacts | -40°C to +80°C | | | | | |
| Storage ambient temperature | See derating curve hereunder | | | | | |

Other characteristics

| | | |
|-------------------------|---------------|--------------------------------------|
| Body material | grey | 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 | UL US - CE | UL US pending - CE |

Reference standards CEI 947-7-1 / CEI 947-1 / CEI 1131-2 (in relevant parts) / CEI 60664-1 / CEM : IRC 1000-4-2, 3, 4, 5, 6.

Derating curve



M 4/9.R111...

Order codes

| Description | Type | Order P/N | Packaging | Weight kg |
|---|-------------------|--------------------|-----------|-----------|
| Relay module 1 NO high level | M 4/9.R111-12VDC | 1SNA 607 029 R0100 | 10 | 0.02 |
| Relay module 1 NO high level | M 4/9.R111-24VDC | 1SNA 607 030 R0600 | 10 | 0.02 |
| Relay module with lamp 1NO high level protected against leakage current | M 4/9.R111L-12VDC | 1SNA 607 001 R0600 | 10 | 0.02 |
| Relay module with lamp 1NO high level protected against leakage current | M 4/9.R111L-24VDC | 1SNA 607 002 R0700 | 10 | 0.02 |
| Relay module with LED 1 NO high level | M 4/9.R111L-12VDC | 1SNA 607 051 R0700 | 10 | 0.02 |
| Relay module with LED 1 NO high level | M 4/9.R111L-24VDC | 1SNA 607 052 R0000 | 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 | 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 | 25 | |
| | not assembled | 16 poles | BJS9 (1)(2) | 1SNA 177 584 R1300 | 25 |
| 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 | | RC65 and RC610 | see marking | | |

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

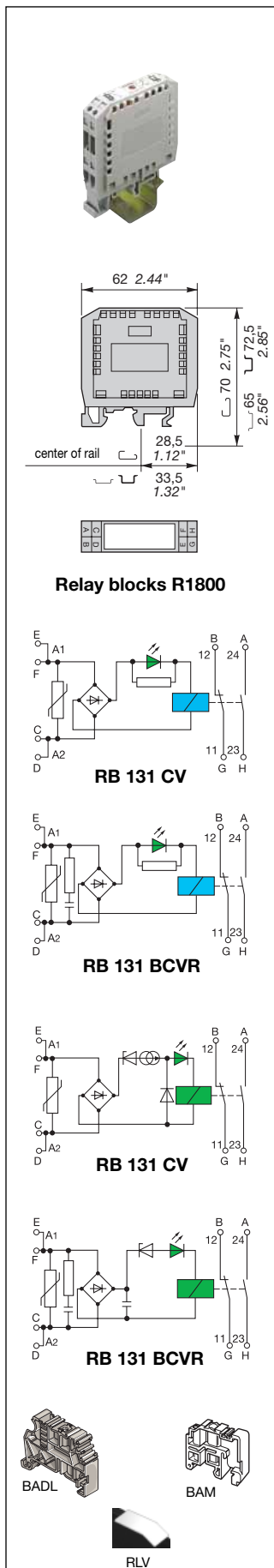
(2) Use of these accessories requires the user to cut out the precut partition.

Relay Interfaces

R1800 relay modules



DIN 1-3



- Relay : 1 NO and 1 NC high level contacts 10 mA up to 5 A - 18 mm .709" spacing
- Relay : 1 NO and 1 NC very low level contacts 10⁻⁶ mA up to 5 A - 18 mm .709" spacing

Characteristics

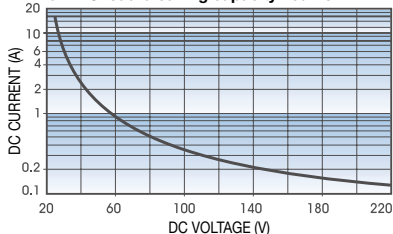
| Relay characteristics | RB 131 CV | | RB 131 BCVR | RB 131 CV | | RB 131 BCVR |
|--|--------------------------------------|----------|-------------|--|---------|-------------|
| | COIL | CONTACT | COIL | CONTACT | COIL | CONTACT |
| Rated voltage +20%, -15% on DC +10%, -15% on AC | 24 V DC | 48 V DC | 110 V AC | 24 V DC | 48 V DC | 110 V AC |
| Frequency | | | 50/60 Hz | | | 50/60 Hz |
| Power | 0.6 W | 0.7 W | 1.9 VA | 0.8 W | 1.2 W | 4.4 VA |
| Rated current | 25 mA | 14 mA | 17 mA | 34 mA | 24 mA | 40 mA |
| Drop-out voltage at 20°C | 2.4 V DC | 4.8 V DC | 11 V AC | 5 V DC | 12 V DC | 20 V AC |
| Permissible leakage current | 1 mA | 2 mA | 2 mA | 1 mA | 2.2 mA | |
| Status device | green Led | | | green Led | | |
| CONTACT | | | | | | |
| Type | 1 NO + 1 NC | | | 1 NO + 1 NC | | |
| Voltage switching range min./max. | 12 V / 250 V | | | 10 ⁻³ V / 250 V | | |
| Current switching range min./max. | 10 mA / 5 A | | | 10 ⁻⁶ mA / 5 A | | |
| Load switching range | | | | | | |
| AC1 min. / max. | 0.6 VA / 1250 VA | | | 10 ⁻⁶ VA / 1250 VA | | |
| DC1 min. / max. | 0.6 W / see curve 1 hereunder | | | 10 ⁻⁶ W / see curve 2 hereunder | | |
| Number of on-load operations | 2 x 10 ⁵ resistive | | | 2 x 10 ⁵ resistive | | |
| Number of off-load operations | 2 x 10 ⁷ | | | 10 ⁷ | | |
| Operating speed | 7 ms | | | 8 ms | | |
| Bounce | 10 ms | | | 4 ms | | |
| Insulation coil / contact | 4 ms | | | 1 ms | | |
| Resistance to shock coil / contact | 2500 V RMS | | | | | |
| Insulation contact / contact | ≥ 1000 V RMS | | | | | |
| Ambient temperature storage operating | -40°C à +80°C see derating curves | | | | | |

Other characteristics

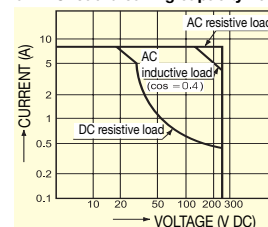
| | | |
|-------------------------|---------------|---------------------------------------|
| Body material | grey | UL 94 V2 |
| Wire | Solid wire | 0 - 4 mm ² / 20 - 12 AWG |
| size | Stranded wire | 0 - 2.5 mm ² / 20 - 12 AWG |
| Rated wire size | | 2.5 mm ² / 12 AWG |
| Wire stripping length | | 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 | | CE |

Reference standards: CEI 947-7-1 / CEI 947-1 / CEI 1131-2 (parts) / CEI 60664-1 / CEM : IRC 1000-4-2, 3, 4, 5, 6

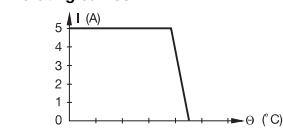
Max. DC load breaking capacity : curve 1



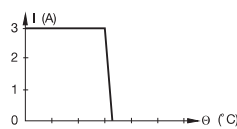
Max. DC load breaking capacity : curve 2



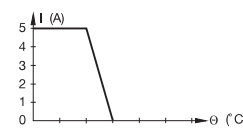
Derating curves



RB 131 CV
RB 131 BCVR



RB 131 CV
Very low level



RB 131 BCVR
Very low level

Order codes

| Description | Type | Order P/N | Packaging Weight kg |
|---|----------------------|--------------------|---------------------|
| Relay module 1 NO + 1 NC high level | RB 131 CV 24 V DC | 1SNA 010 181 R1700 | 1 |
| Relay module 1 NO + 1 NC high level | RB 131 CV 48 V DC | 1SNA 010 182 R1000 | 1 |
| Relay module 1 NO + 1 NC high level | RB 131 BCVR 110 V AC | 1SNA 010 183 R1100 | 1 |
| Relay module 1 NO + 1 NC very low level | RB 131 CV 24 V DC | 1SNA 010 151 R2000 | 1 |
| Relay module 1 NO + 1 NC very low level | RB 131 CV 48 V DC | 1SNA 010 152 R2100 | 1 |
| Relay module 1 NO + 1 NC very low level | RB 131 BCVR 110 V AC | 1SNA 010 153 R2200 | 1 |

Accessories

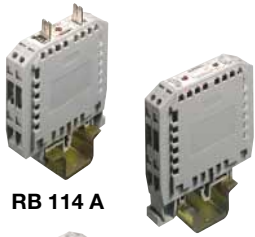
| | | | |
|-------------------|---------|--------------------|-----|
| End section | BADL V0 | 1SNA 399 903 R0200 | 50 |
| | BAM | 1SNA 103 002 R2600 | 50 |
| | BAM V0 | 1SNA 399 306 R0300 | 50 |
| Lengthwise marker | RLV | 1SNA 103 849 R0300 | 100 |
| Marker | RC55 | see markers | |

Relay Interfaces

R1800 relay modules



DIN 1-3



RB 114 A



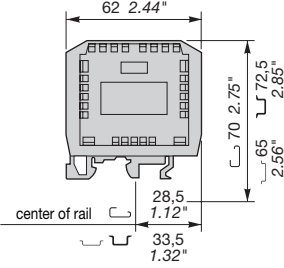
RB 211



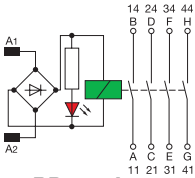
RB 310



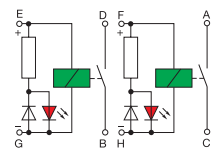
RB 131



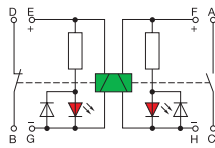
Relay blocks R1800



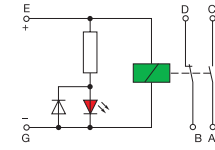
RB 114 A



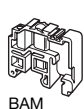
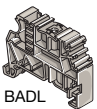
RB 211



RB 310



RB 131



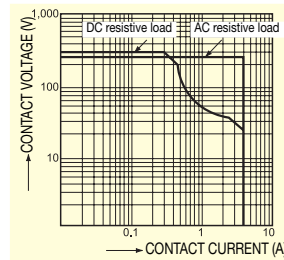
- Relay : 4 NO very low level contacts 10^{-7} A to 4 A - 18 mm .709" spacing
- 2 relays : 1 NO very low level contacts 10^{-6} A to 5 A - 18 mm .709" spacing
- Latching relay : very low level contacts 10^{-6} A to 8 A - 18 mm .709" spacing
- Relay : 1 NO and 1 NC very low level contacts 10^{-6} A to 8 A - 18 mm .709" spacing

Characteristics

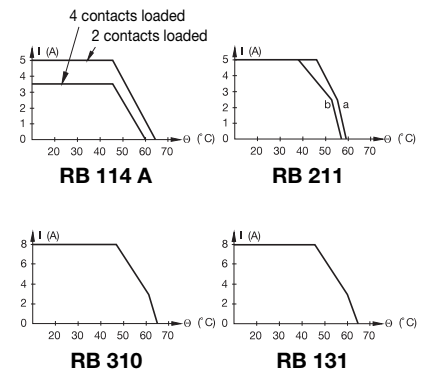
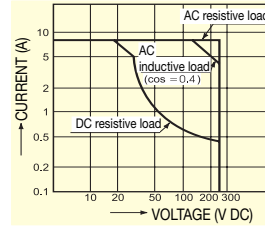
| Relay characteristics | RB 114 A | RB 211 | RB 310 | RB 131 |
|--|---|---------------------------|------------|---------------------------------------|
| COIL | | | | |
| Rated voltage +20%, -15% on DC +10%, -15% on AC | 24 V AC/DC | 48 V AC/DC | 24 V DC | 24 V DC |
| Frequency | 50/60 Hz | 50/60 Hz | | |
| Power | 0.6 W / 0.7 VA | 0.8 W / 0.9 VA | 2 x 0.36 W | 0.36 W |
| Rated current | 26 mA | 17 mA | 15 mA | 15 mA |
| Drop-out voltage | 2.7 V AC/DC | 4 V AC/DC | 2.4 V DC | |
| Permissible leakage current | | | | 2.4 V DC |
| Status device | Red Led | Red Led | | Red Led |
| CONTACT | | | | |
| Type | 4 NO | 1 NO + 1 NO | | 1 NO + 1NC |
| Voltage switching range min./max. | 10^3 V / 250 V | 10^3 V / 250 V | | 10^3 V / 250 V |
| Current switching range min./max. | 10^{-7} A / 4 A | 10^{-6} A / 5 A | | 10^{-6} A / 8 A |
| Load switching range | | | | |
| AC1 min. / max. | 10^{10} VA / 1000 VA | 10^8 VA / 1250 VA | | 10^8 VA / 2000 VA |
| DC1 min. / max. | 10^{10} W / see curve 1 hereunder | 10^8 W / see curve 2 | | 10^8 W / see curve 2 hereunder |
| Number of on-load operations | 2×10^5 resistive | 2×10^5 resistive | | 2×10^5 resistive |
| Number of off-load operations | 10^8 | 10^7 | | 10^7 |
| Operating speed | | | | |
| F | 8 ms | 8 ms | | 8 ms |
| O | 3 ms | 4 ms | | 4 ms |
| Bounce | 0.5 ms | 1 ms | | 1 ms |
| Insulation coil / contact | 1500 V RMS | 2500 V RMS | | 2500 V RMS |
| Resistance to shock coil / contact | | | | |
| Insulation contact / contact | 750 V RMS | 1500 V RMS | | 1500 V RMS |
| Ambient temperature storage operating | | | | |
| | | | | -40°C to +80°C see derating curves |
| Other characteristics | | | | |
| Body material | grey | | | UL 94 V2 |
| Wire | Solid wire | | | 0 - 4 mm ² / 20 - 12 AWG |
| size | Stranded wire | | | 0 - 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 | | | | |
| | CE | CE | CE | CE |
| Reference standards | CEI 947-7-1 / CEI 947-1 / CEI 1131-2 (parts) / CEI 60664-1 / CEM : IRC 1000-4-2, 3, 4, 5, 6 | | | |

Derating curves

Max. DC load breaking capacity :



Max. DC load breaking capacity :



Order codes

| Description | Type | Order P/N | Packaging Weight kg |
|--|---------------------|--------------------|---------------------|
| ■ Relay module 4 NO very low level | RB 114 A 24 V AC/DC | 1SNA 010 126 R1700 | 1 |
| ■ Relay module 4 NO very low level | RB 114 A 48 V AC/DC | 1SNA 010 127 R1000 | 1 |
| ■ 2 relay module 1 NO very low level | RB 211 24 V DC | 1SNA 010 014 R1200 | 1 |
| ■ Latching relay module very low level | RB 310 24 V DC | 1SNA 010 063 R2300 | 1 |
| ■ Latching relay module very low level | RB 310 48 V DC | 1SNA 010 064 R2400 | 1 |
| ■ Relay module 1 NO + 1 NC very low level | RB 131 24 V DC | 1SNA 010 055 R2300 | 1 |

Accessories

| End section | Type | Order P/N | Packaging Weight kg |
|-------------------|---------|--------------------|---------------------|
| | 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 | 100 |
| Marker | RC55 | see markers | |

Relay Interfaces

R1800 relay modules

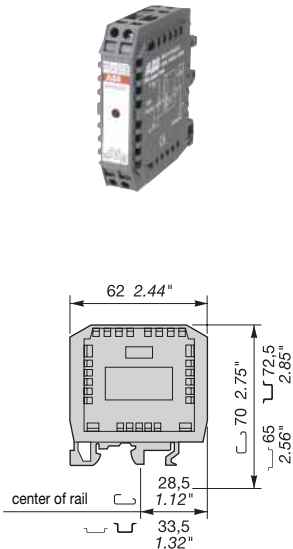


DIN 1-3

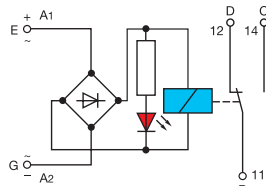
Relay : 1 SPDT high level contacts 10 mA to 8 A - 18 mm .709" spacing

Characteristics

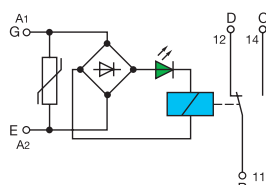
| Relay characteristics | RB 121 | RB 121 A | RB 121 AV | RB 121 A | |
|--|--|------------|-------------|--------------|-------------|
| COIL | | | | | |
| Rated voltage +15%, -10% on DC ±15% on AC | 12 V DC | 24 V AC/DC | 48 V AC/DC | 110 V AC/DC | 220 V AC/DC |
| Frequency | | 50 / 60 Hz | 50 / 60 Hz | 50 / 60 Hz | 50 / 60 Hz |
| 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 |
| Permissible leakage current | | | | | |
| Status device | red LED | | green LED | red LED | |
| 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 | AC1 min. / max. DC1 min. / max. 0.6 VA / 2000 VA 0.6 W / see curve below | | | | |
| Number of on-load operations | 2 x 10 ⁵ | | | | |
| Number of off-load operations | 2 x 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 operating | -40°C to +80°C see derating curves | | | | |
| Other characteristics | | | | | |
| Body material | grey 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 | us for RB 121A-24VAC/DC and RB 121A-110-220VAC/DC, | | | | |
| Reference standards | CEI 947-7-1 / CEI 947-1 / CEI 1131-2 (in relevant parts) / CEI 60664-1 / CEM : IRC 1000-4-2, 3, 4, 5, 6. | | | | |



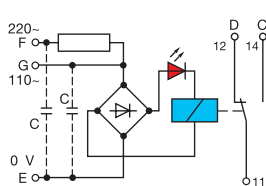
Relay blocks R1800



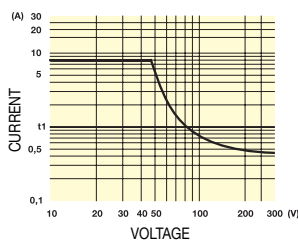
RB 121 12 VDC RB 121 A 24 VAC/DC



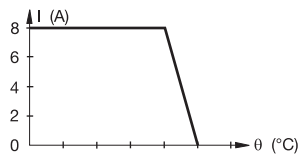
RB 121 AV 48 VAC/DC



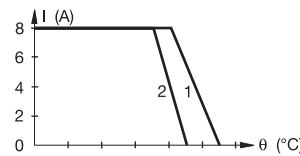
RB 121 A 110-220 VAC/DC



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

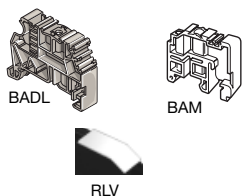
1 : 110 V AC/DC block
2 : 220 V AC block

Order codes

| Description | Type | Order P/N | Packaging | Weight kg |
|-------------------------------|-----------------------|--------------------|-----------|--------------|
| Relay block 1 SPDT high level | RB 121-12VDC | 1SNA 610 125 R2400 | 1 | 0.05 |
| Relay block 1 SPDT high level | RB 121A-24VAC/DC | 1SNA 610 004 R0700 | 1 | 0.05 |
| Relay block 1 SPDT high level | RB 121AV-48VAC/DC | 1SNA 610 006 R0100 | 1 | 0.05 |
| Relay block 1 SPDT high level | RB 121A-110-220VAC/DC | 1SNA 610 132 R2300 | 1 | 0.05 |

Accessories

| End section | Type | Order P/N | Packaging | Weight kg |
|-------------------|---------|--------------------|-----------|--------------|
| BADL V0 | BADL V0 | 1SNA 399 903 R0200 | 50 | |
| BAM | BAM | 1SNA 103 002 R2600 | 50 | |
| BAM V0 | BAM V0 | 1SNA 399 306 R0300 | 50 | |
| Lengthwise marker | RLV | 1SNA 103 849 R0300 | 100 | |
| Marking method | RC55 | see marking | | |



Relay Interfaces

R1800 relay modules



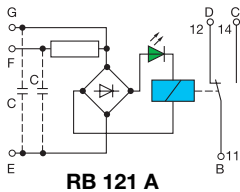
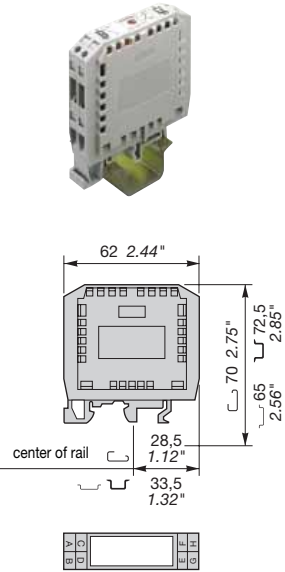
DIN 1-3

Relay : 1 SPDT high level contacts 10 mA to 8 A - 18 mm .709" or 23 mm .906" spacing

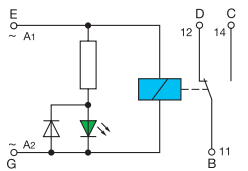
Characteristics

| Relay characteristics | RB 121 A | | RB 121 B | RB 121 AR1 | | RB 121 AR2 | |
|--|---|-------------|---|---------------------------------------|----------|------------|----------|
| COIL | | | | | | | |
| Rated voltage +20%, -15% on DC +10%, -15% on AC | 110 V AC/DC | 135 V AC/DC | 115 V AC | 110 V DC | 110 V AC | 110 V DC | 110 V AC |
| Frequency | 50/60 Hz | 50/60 Hz | 50/60 Hz | | 50/60 Hz | | 50/60 Hz |
| Power | 0.5 W | 0.6 W | 1.3 VA | 0.5 W | 4.4 VA | 0.5 W | 1 VA |
| Rated current | 4.3 mA | 4.4 mA | 11 mA | 4.5 mA | 40 mA | 4.5 mA | 9 mA |
| Drop-out voltage | 11 V AC/DC | 13.5 V DC | 20.7 V AC | 19 V DC | 20 V AC | 19 V DC | 20 V AC |
| Permissible leakage current | | | | | | | |
| Status device | green LED | | | red LED | | | |
| CONTACT | | | | | | | |
| Type | 1 SPDT | | | 1 SPDT | | | |
| Voltage switching range min./max. | 12 V / 250 V | | | 12 V / 380 V | | | |
| Current switching range min./max. | 10 mA / 8 A | | 10 mA / 3 A | 10 mA / 8 A | | | |
| Load switching range | | | | | | | |
| AC1 min. / max. | 0.6 VA / 2000 VA | | 580 mVA / 750 VA | 0.6 VA / 2000 VA | | | |
| DC1 min. / max. | 0.6 W / see curve | | 230 mW / see curve | 0.6 W / 90 W | | | |
| Number of on-load operations | 2 x 10 ⁶ ohmic | | 3A/100W : 5 x 10 ⁵ 3A/750VA : 10 ⁵ | 2 x 10 ⁶ ohmic | | | |
| Number of off-load operations | 2 x 10 ⁷ | | 10 ⁷ | 2 x 10 ⁷ | | | |
| Operating speed | F | 7 ms | 2 ms | 7 ms | | | |
| | O | 6 ms | 2 ms | 3 ms | | | |
| Bounce | | 2 ms | 0.5 ms | 2 ms | | | |
| Insulation coil / contact | 2500 V RMS | | 1500 V RMS | 2500 V RMS | | | |
| Resistance to shock coil / contact | | | | | | | |
| Insulation contact / contact | 1500 V RMS | | 750 V RMS | 1000 V RMS | | | |
| Ambient temperature | storage | | | -40°C to +80°C | | | |
| operating | | | | see derating curves | | | |
| Other characteristics | | | | | | | |
| Body material | orange or grey | | | UL 94 V2 | | | |
| Wire | Solid wire | | | 0 - 4 mm ² / 20 - 12 AWG | | | |
| size | Stranded wire | | | 0 - 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 | CE | | | UL | | FUS CE | |
| Reference standards | CEI 947-7-1 / CEI 947-1 / CEI 1131-2 (parts) / CEI 60664-1 / CEM : IRC 1000-4-2, 3, 4, 5, 6 | | | | | | |

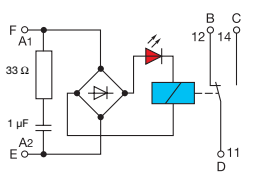
Relay blocks R1800



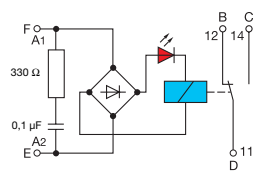
RB 121 A



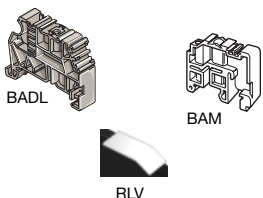
RB 121 B



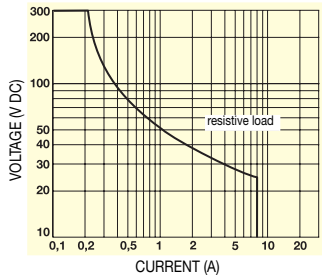
RB 121 AR1



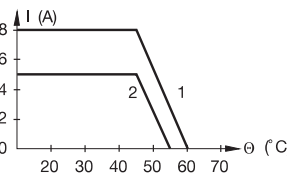
RB 121 AR2



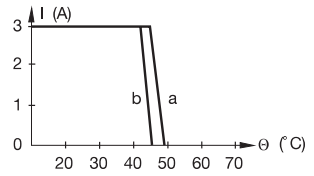
Max. DC load breaking capacity



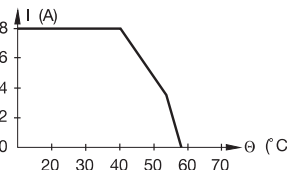
Derating curves



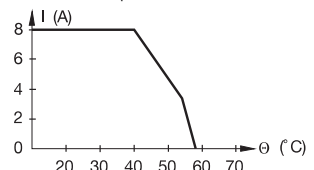
RB 121 A
1 : 110 V AC/DC block
2 : 135 V AC/DC block



RB 121 B
a : horizontal position
b : vertical position



RB 121 AR1



RB 121 AR2

Order codes

| Description | Type | Order P/N | Packaging Weight kg |
|---|--------------------------|--------------------|---------------------|
| Relay module 1 SPDT high level 18 mm spacing | RB 121 A 110-135 V AC/DC | 1SNA 010 226 R2300 | 1 |
| Relay module 1 SPDT high level 18 mm spacing | RB 121 B 115 V AC | 1SNA 010 067 R2700 | 1 |
| Relay module orange 1 SPDT high level 23 mm spacing | RB 121 B 115 V AC | 1SNA 010 088 R2500 | 1 |
| Relay module 1 SPDT* high level 18 mm spacing | RB 121 AR1 110 V AC/DC | 1SNA 010 158 R0700 | 1 |
| Relay module 1 SPDT* high level 18 mm spacing | RB 121 AR2 110 V AC/DC | 1SNA 010 168 R0100 | 1 |

* with leakage current protection ; orange

Accessories

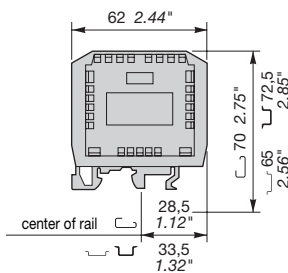
| End section | Type | Order P/N | Weight kg |
|-------------------|---------|--------------------|-----------|
| BADL | BADL V0 | 1SNA 399 903 R0200 | 50 |
| BAM | BAM | 1SNA 103 002 R2600 | 50 |
| BAM V0 | BAM V0 | 1SNA 399 306 R0300 | 50 |
| Lengthwise marker | RLV | 1SNA 103 849 R0300 | 100 |
| Marker | RC55 | see markers | |

Relay Interfaces

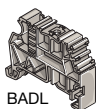
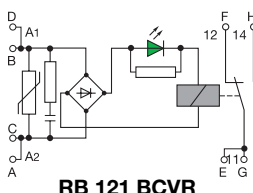
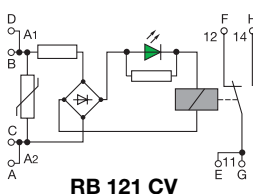
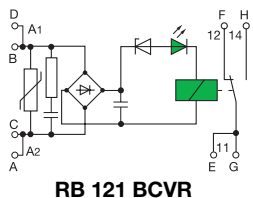
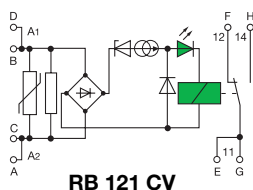
R1800 relay modules



DIN 1-3



Relay blocks R1800

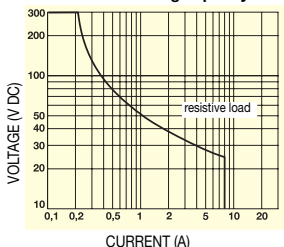


- Relay : 1 SPDT very low level contacts 10⁻⁶ A to 5 A - 18 mm .709" spacing
- Relay : 1 SPDT low level contacts 5 mA to 6 A - 18 mm .709" spacing

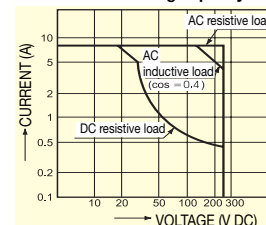
Characteristics

| Relay characteristics | RB 121 CV | | RB 121 BCVR | RB 121 CV | | RB 121 BCVR |
|--|---|-------------------|----------------|---------------------------------------|----------|---------------|
| COIL | | | | | | |
| Rated voltage +20%, -15% on DC +10%, -15% on AC | 13.2 to 26.4 V DC | 32.4 to 52.8 V DC | 82 to 121 V AC | 24 V DC | 48 V DC | 110 V AC |
| Frequency | | | 50/60 Hz | | | 50/60 Hz |
| Power | 0.8 W | 1.2 W | 4.4 VA | 0.85 W | 1 W | 3.9 VA |
| Rated current | 34 mA | 24 mA | 40 mA | 35 mA | 20 mA | 35 mA |
| Drop-out voltage | 5 V DC | 12 V DC | 20 V AC | 2.4 V DC | 4.8 V DC | 11 V AC |
| Permissible leakage current | | 1 mA | 2.2 mA | | 3.5 mA | 2 mA |
| Status device | green LED | | | | | |
| CONTACT | | | | | | |
| Type | 1 SPDT | | | 1 SPDT | | |
| Voltage switching range min./max. | 10 ⁻³ V / 250 V | | | 12 V / 250 V | | |
| Current switching range min./max. | 10 ⁻⁶ A / 5 A | | | 5 mA / 3 A | | 5 mA / 6 A |
| Load switching range | | | | | | |
| AC1 min. / max. VA | 10 ⁻⁶ VA / 1250 VA | | | 60 mVA / 750 VA | | 60 mVA / 1500 |
| DC1 min. / max. VA | 10 ⁻⁶ W / see curve 2 hereunder | | | 60 mW / see curve 1 hereunder | | |
| Number of on-load operations | 2 x 10 ⁵ ohmic | | | 2 x 10 ⁵ ohmic | | |
| Number of off-load operations | | | | | | |
| Operating speed | F 10 ⁷ | | | O 2 x 10 ⁷ | | |
| Bounce | 8 ms | | | 7 ms | | |
| Insulation coil / contact | 4 ms | | | 10 ms | | |
| Resistance to shock coil / contact | 1 ms | | | 4 ms | | |
| Insulation contact / contact | 2500 V RMS | | | 2500 V RMS | | |
| Ambient temperature storage | ≥ 1000 V RMS | | | ≥ 1000 V RMS | | |
| operating | -40°C à +80°C | | | -40°C à +80°C | | |
| | see derating curves | | | | | |
| Other characteristics | | | | | | |
| Body material | orange | | | UL 94 V2 | | |
| Wire | Solid wire | | | 0 - 4 mm ² / 20 - 12 AWG | | |
| size | Stranded wire | | | 0 - 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 | | | | CE | | |
| Reference standards | CEI 947-7-1 / CEI 947-1 / CEI 1131-2 (parts) / CEI 60664-1 / CEM : IRC 1000-4-2, 3, 4, 5, 6 | | | | | |

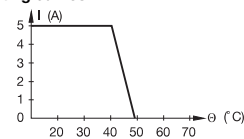
Max. DC load breaking capacity : curve 1



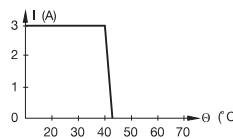
Max. DC load breaking capacity : curve 2



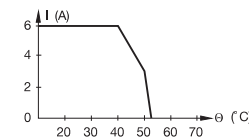
Derating curves



RB 121 CV
RB 121 BCVR



RB 121 CV



RB 121 BCVR

Order codes

| Description | Type | Order P/N | Packaging Weight kg |
|---|----------------------|--------------------|---------------------|
| ■ Relay module 1 SPDT very low level | RB 121 CV 24 V DC | 1SNA 010 154 R2300 | 1 |
| ■ Relay module 1 SPDT very low level | RB 121 CV 48 V DC | 1SNA 010 155 R2400 | 1 |
| ■ Relay module 1 SPDT very low level | RB 121 BCVR 110 V AC | 1SNA 010 156 R2500 | 1 |
| ■ Relay module 1 SPDT low level | RB 121 CV 24 V DC | 1SNA 010 184 R1200 | 1 |
| ■ Relay module 1 SPDT low level | RB 121 CV 48 V DC | 1SNA 010 185 R1300 | 1 |
| ■ Relay module 1 SPDT low level | RB 121 BCVR 110 V AC | 1SNA 010 186 R1400 | 1 |

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 | 100 |
| Marker | RC55 | see markers | |

Relay Interfaces

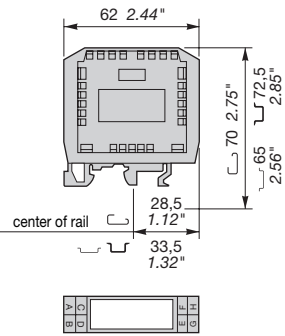
R1800 relay modules



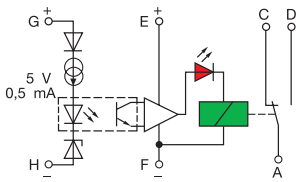
DIN 1-3



EBO 1R



Relay blocks R1800

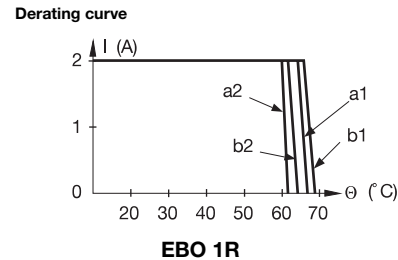
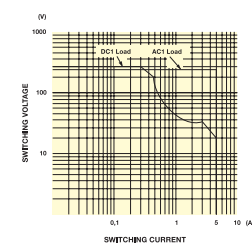


EBO 1R

Relay : 1 SPDT with TTL compatible control - 18 mm .709" spacing

Characteristics

| Relay characteristics | EBO 1R | |
|--|---|-----------------|
| COIL/INPUT | Input GH | Power supply EF |
| Rated voltage +20%, -15% on DC +10%, -15% on AC | 5 V DC | 24 V to 30 V DC |
| Frequency | | |
| Power | 2.5 mW | 0.83 W |
| Rated current | 0.5 mA | 25 mA |
| Drop-out point | 2 V DC | 17 V DC |
| Drop-out voltage | 2.1 V | 7 V |
| Insulation input / power supply | 2000 V RMS | |
| Status device | red LED | |
| CONTACT | | |
| Type | 1 SPDT | |
| Voltage switching range min./max. | 125 V AC / 150 V DC | |
| Current switching range min./max. | 2 A | |
| Load switching range | 50 VA / 30 W | |
| AC1 min. / max. | 10 ⁻⁵ VA / see curve hereunder | |
| DC1 min. / max. | 10 ⁻⁵ W | |
| Load min. | 10 ⁶ | |
| Number of on-load operations | 2 x 10 ⁷ | |
| Number of off-load operations | 30 ms | |
| Operating speed | 11 ms | |
| Bounce | 0.2 ms | |
| Insulation coil / contact | 1400 V RMS | |
| Resistance to shock coil / contact | 2 kV | |
| Ambient temperature storage | -40°C to +80°C | |
| operating | see derating curve | |
| Other characteristics | | |
| Body material | gris | |
| Wire | Solid wire | |
| size | 0 - 4 mm ² / 20 - 12 AWG | |
| Stranded wire | 0 - 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 | CE | |
| Reference standards | CEI 947-7-1 / CEI 947-1 / CEI 1131-2 (parts) / CEI 60664-1 / CEM : IRC 1000-4-2, 3, 4, 5, 6 | |



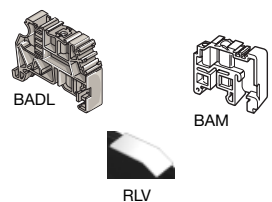
a1. horizontal at 24 V
a2. horizontal at 30 V
b1. vertical at 24 V
b2. vertical at 30 V

Order codes

| Description | Type | Order P/N | Packaging Weight kg |
|---------------------|---------------|--------------------|---------------------|
| Relay module 1 SPDT | EBO 1R 5 V DC | 1SNA 010 131 R1400 | 1 |

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 | 100 |
| Marking method | RC55 | see markers | |

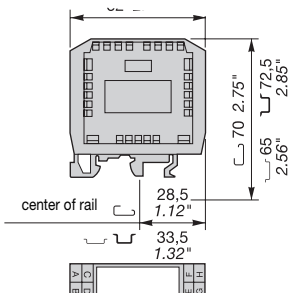


Relay Interfaces

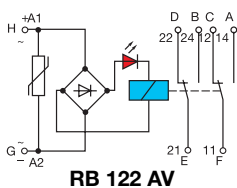
R1800 relay modules



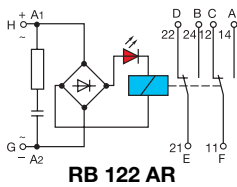
DIN 1-3



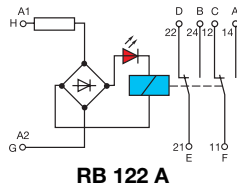
Relay blocks R1800



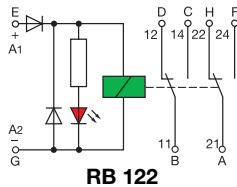
RB 122 AV



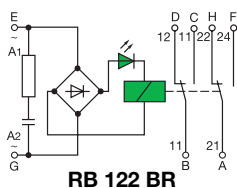
RB 122 AR



RB 122 A



RB 122



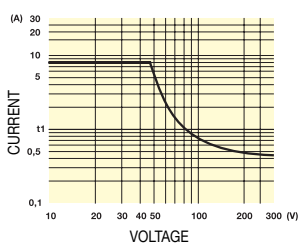
RB 122 BR



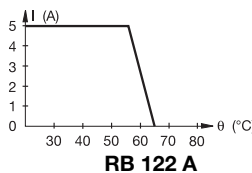
- Relay : 1 DPDT high level contacts 10 mA to 5 A - 18 mm .709" or 23 mm .906" spacing
- Relay : 1 DPDT very low level contacts 10⁻⁷ A to 5 A - 18 mm .709" or 23 mm .906" spacing

Characteristics

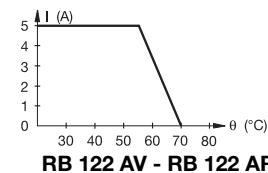
| Relay characteristics | RB 122 AV | RB 122 AR | RB 122 A | RB 122 | RB 122 BR |
|--|--|----------------------------|----------------|----------------------------|------------|
| COIL | | | | | |
| Rated voltage +15%, -10% on DC ±15% on AC | 24 VAC/DC | 48 VAC/DC | 110 VAC/DC | 24 V DC | 48 V DC |
| Frequency | 50 / 60 Hz | 50 / 60 Hz | 50 / 60 Hz | 50 / 60 Hz | 50 / 60 Hz |
| 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 |
| Permissible leakage current | | 1.6 mA | | | |
| Status device | | | red LED | | green LED |
| 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 | | | | |
| Load switching range | 10 ⁻⁷ A / 5 A | | | | |
| AC1 min. / max. | 0.6 VA / 1250 VA | | | | |
| DC1 min. / max. | 0.6 W / see curve hereunder | | | | |
| Number of on-load operations | 2 x 10 ⁵ | | | | |
| Number of off-load operations | 2 x 10 ⁷ | | | | |
| Operating speed | F 7 ms O 4 ms | | | | |
| Bounce | 3 ms | | | | |
| Insulation coil / contact | 2000 V RMS | | | | |
| Resistance to shock coil / contact | 4000 V RMS | | | | |
| Insulation contact / contact | 1500 V RMS | | | | |
| Ambient temperature storage | -40°C to +80°C | | | | |
| operating | see derating curves | | | | |
| Other characteristics | | | | | |
| Body material | grey | | | | |
| Wire | Solid wire | | | | |
| Wire size | Stranded wire | | | | |
| 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 | UL for RB 122AR-110VAC/DC, RB 122-24VDC, RB 122BR-110VAC and RB122AV-24VAC/DC, CE | | | | |
| Reference standards | CEI 947-7-1 / CEI 947-1 / CEI 1131-2 (in relevant parts) / CEM : IRC 1000-4-2, 3, 4, 5, 6. | | | | |



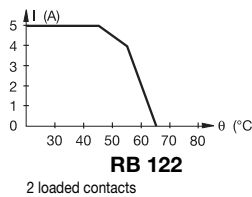
Derating curves



RB 122 A

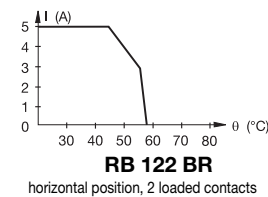


RB 122 AV - RB 122 AR
2 loaded contacts



RB 122

2 loaded contacts



RB 122 BR

horizontal position, 2 loaded contacts

Order codes

| Description | Type | Order P/N | Packaging | Weight |
|--|--------------------|--------------------|-----------|--------|
| Relay module 1 DPDT high level 18 mm sp. | RB 122AV-24VAC/DC | 1SNA 610 121 R2000 | 1 | 0.05 |
| Relay module 1 DPDT high level 18 mm sp. | RB 122AV-48VAC/DC | 1SNA 610 122 R2100 | 1 | 0.05 |
| Relay module 1 DPDT high level 18 mm sp. | RB 122AR-110VAC/DC | 1SNA 610 011 R2500 | 1 | 0.05 |
| Relay module 1 DPDT high level 18 mm sp. | RB 122A-220VAC/DC | 1SNA 610 123 R2200 | 1 | 0.05 |
| Relay module 1 DPDT very low level 18 mm sp. | RB 122-24VDC | 1SNA 610 059 R1500 | 1 | 0.05 |
| Relay module 1 DPDT very low level 18 mm sp. | RB 122-48VDC | 1SNA 610 060 R1200 | 1 | 0.05 |
| Relay module 1 DPDT very low level 23 mm sp. | RB 122BR-110VAC | 1SNA 610 115 R2200 | 1 | 0.05 |
| Relay module 1 DPDT very low level 23 mm sp. | RB 122BR-220VAC | 1SNA 610 089 R0400 | 1 | 0.05 |

Accessories

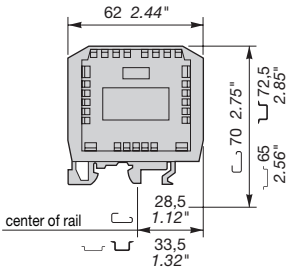
| | | | |
|-------------------|---------|--------------------|----|
| End section | BADL V0 | 1SNA 399 903 R0200 | 50 |
| | BAM | 1SNA 103 002 R2600 | 50 |
| | BAM V0 | 1SNA 399 306 R0300 | 50 |
| Lengthwise marker | RLV | 1SNA 103 849 R0300 | |
| Marking method | RC55 | see marking | |

Relay Interfaces

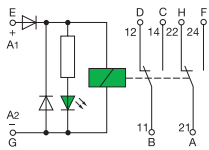
R1800 relay modules



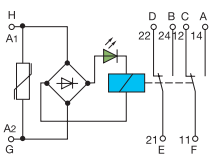
DIN 1-3



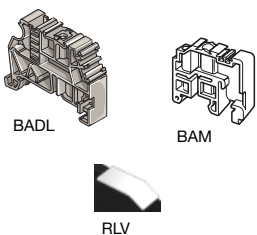
Relay blocks R1800



RB 122



RB 122 A

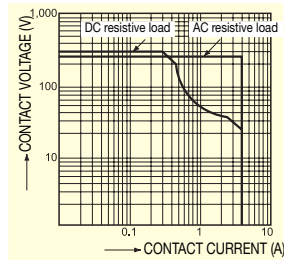


- Relay : 1 DPDT very low level contacts 10⁻⁷ A to 4 A - 18 mm .709" spacing
- Relay : 1 DPDT high level contacts 10 mA to 3 A - 18 mm .709" spacing

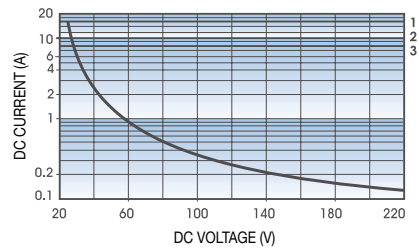
Characteristics

| Relay characteristics | RB 122 | RB 122 A |
|--|---|---------------------------------------|
| COIL | | |
| Rated voltage +20%, -15% on DC +10%, -15% on AC | 12 V DC | 135 V AC/DC |
| Frequency | | 50/60 Hz |
| Power | 0.26 W | 0.8 W |
| Rated current | 22 mA | 5.8 mA |
| Drop-out voltage | 2 V DC | 13.5 V AC/DC |
| Drop-in voltage | | |
| Permissible leakage current | | |
| Status device | green LED | green LED |
| CONTACT | | |
| Type | 1 DPDT | 1 DPDT |
| Voltage switching range min./max. | 10 ³ V / 250 V | 12 V / 250 V |
| Current switching range min./max. | 10 ⁻⁷ A / 4 A | 10 mA / 3 A |
| Load switching range | | |
| AC1 min. / max. | 10 ⁻¹⁰ VA / 1000 VA | 0.6 VA / 750 VA |
| DC1 min. / max. | 10 ⁻¹⁰ W / see curve 1 hereunder | see curve 2 hereunder |
| Number of on-load operations | 2 x 10 ⁵ resistive | 2 x 10 ⁵ resistive |
| Number of off-load operations | 10 ⁶ | 2 x 10 ⁶ |
| Operating speed | | |
| F | 8 ms | 7 ms |
| O | 7.5 ms | 4 ms |
| Bounce | 0.21 ms | 3 ms |
| Insulation coil / contact | 1500 V RMS | 2000 V RMS |
| Resistance to shock coil / contact | | |
| Insulation contact / contact | 1500 V RMS | 2000 V RMS |
| Ambient temperature storage | -40°C to +80°C | |
| operating | see derating curves | |
| Other characteristics | | |
| Body material | grey | UL 94 V2 |
| Wire | Solid wire | 0 - 4 mm ² / 20 - 12 AWG |
| size | Stranded wire | 0 - 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 | CE | CE, UL, cUL |
| Reference standards | CEI 947-7-1 / CEI 947-1 / CEI 1131-2 (parts) / CEI 60664-1 / CEM : IRC 1000-4-2, 3, 4, 5, 6 | |

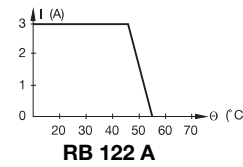
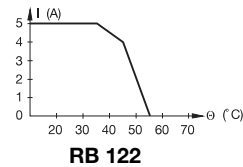
Max. DC load breaking capacity : curve 1



Max. DC load breaking capacity : curve 2



Derating curves



Order codes

| Description | Type | Order P/N | Packaging Weight kg |
|---|----------|--------------------------------|---------------------|
| ■ Relay module 1 DPDT very low level | RB 122 | 12 V DC 1SNA 010 174 R0700 | 1 |
| ■ Relay module 1 DPDT high level | RB 122 A | 135 V AC/DC 1SNA 010 228 R0500 | 1 |

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 |
| Marker | RC55 | see markers | |

Relay Interfaces

R900 relay modules

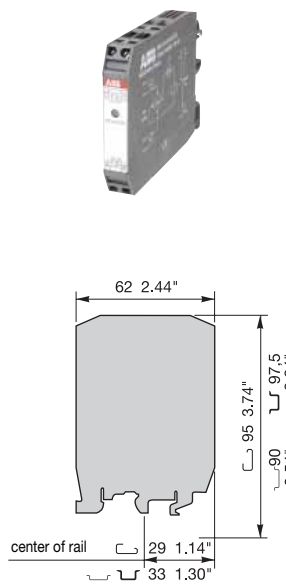


DIN 1-3

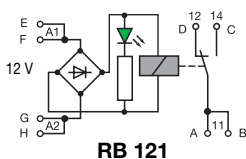
Relay : 1 SPDT low level contacts 1 mA to 6 A - 11.5 mm .453" spacing

Characteristics

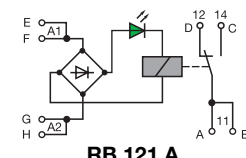
| Relay characteristics | RB 121 - 12 V | RB 121 A - 24 V | | RB 121 A - 48 V | |
|---|---|-----------------|---------|-----------------|---------|
| COIL | | | | | |
| Rated voltage +20%, -15% on DC, ±15% on AC | 12 V DC | 24 V AC | 24 V DC | 48 V AC | 48 V DC |
| Frequency | | 50 / 60 Hz | | 50 / 60 Hz | |
| 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 |
| Permissible leakage current | 3.5 mA | 2.2 mA | 1.8 mA | 1 mA | 1 mA |
| Status device | green LED | | | | |
| 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 | | | | |
| Bounce | 1 ms | | | | |
| Insulation coil / contact | 3500 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 curve | | | | |
| Other characteristics | | | | | |
| Body material | grey | | | | |
| Wire | Solid wire | | | | |
| size | Stranded wire | | | | |
| Rated wire size | UL 94 V0 | | | | |
| Wire stripping length | 0.5 - 4 mm ² / 20 - 12 AWG | | | | |
| Recommended screwdriver | 0.5 - 2.5 mm ² / 20 - 12 AWG | | | | |
| Protection | 2.5 mm ² / 12 AWG | | | | |
| Recommended torque | 7 mm .276" | | | | |
| Approvals | 3.5 mm .137" | | | | |
| Reference standards | IP20 NEMA1 | | | | |
| | 0.4 - 0.6 Nm 3.5 - 5.3 lb.in | | | | |
| | us for RB 121A-24VAC/DC, | | | | |



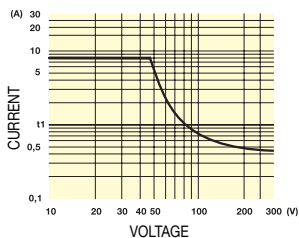
Relay blocks R900



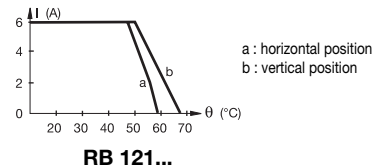
RB 121



RB 121 A



Derating curve

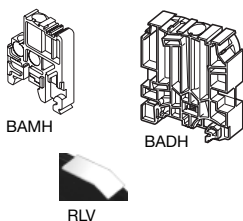


Order codes

| Description | Type | Order P/N | Packaging | Weight kg |
|-------------------------------|------------------|--------------------|-----------|-----------|
| Relay module 1 SPDT low level | RB 121-12VDC | 1SNA 630 001 R0000 | 1 | 0.04 |
| Relay module 1 SPDT low level | RB 121A-24VAC/DC | 1SNA 630 002 R0100 | 1 | 0.04 |
| Relay module 1 SPDT low level | RB 121A-48VAC/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 | 100 |
| Marking method | RC55 | see marking | |

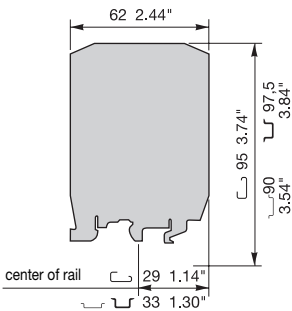


Relay Interfaces

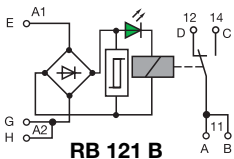
R900 relay modules



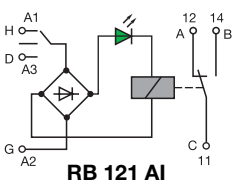
DIN 1-3



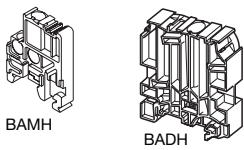
Relay blocks R900



RB 121 B



RB 121 AI

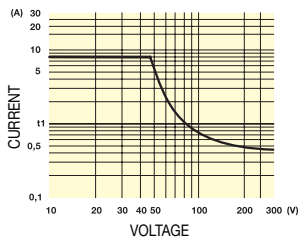


RLV

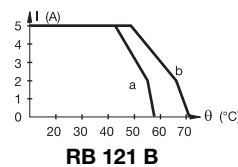
- Relay : 1 SPDT low level contacts 1 mA to 5 A - 11.5 mm .453" spacing
- Relay : 1 SPDT with switch low level contacts 1 mA to 5 A - 11.5 mm .453" spacing

Characteristics

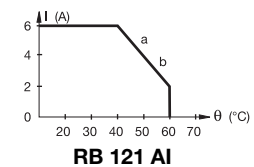
| Relay characteristics | RB 121 B | | | RB 121 AI | |
|---|--|-----------|-----------------|--------------|--------------|
| | COIL | | | | |
| Rated voltage +20%, -15% on DC, ±15% on AC | 110 V AC | 115 V AC | 230 V AC | 24 V AC ±10% | 24 V DC ±10% |
| Frequency | 50 Hz | 60 Hz | 50 Hz | 50 / 60 Hz | |
| Power | 1.5 VA | 1.6 VA | 3.22 VA | 0.53 VA | 0.44 W |
| Rated current | 14 mA | 14 mA | 14 mA | 22 mA | 18 mA |
| Drop-out voltage at 20°C | 30 V AC | 30 V AC | 60 V AC | 5.5 V | 4.6 V |
| Permissible leakage current | 2 mA max. | 2 mA max. | 3.6 mA max. | 2.2 mA | 1.8 mA |
| Status device | green LED | | | | |
| CONTACT | | | | | |
| 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. DC1 min. / max. | 5 mVA / 1250 VA | | 5 mW / 192 W | | |
| Number of on-load operations | 1 x 10 ⁵ | | | | |
| Number of off-load operations | 5 x 10 ⁶ | | | | |
| Operating speed | 10 ms | | 5 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 | 0.5 - 4 mm ² / 20 - 12 AWG | | | | |
| 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 | | | | | |
| Reference standards | CEI 947-7-1 / CEI 947-1 / CEI 1131-2 (in relevant parts) / CEI 60664-1 / CEM : IRC 1000-4-2, 3, 4, 5, 6. | | | | |



Derating curves



RB 121 B



RB 121 AI

Order codes

| Description | Type | Order P/N | Packaging | Weight |
|---|-------------------|--------------------|-----------|--------|
| Relay module 1 SPDT low level | RB 121B-110VAC | 1SNA 630 004 R0300 | 1 | 0.05 |
| Relay module 1 SPDT low level | RB 121B-115VAC | 1SNA 630 005 R0400 | 1 | 0.05 |
| Relay module 1 SPDT low level | RB 121B-230VAC | 1SNA 630 006 R0500 | 1 | 0.05 |
| Relay module 1 SPDT with switch low level | RB 121AI-24VAC/DC | 1SNA 630 007 R0600 | 1 | 0.05 |

Accessories

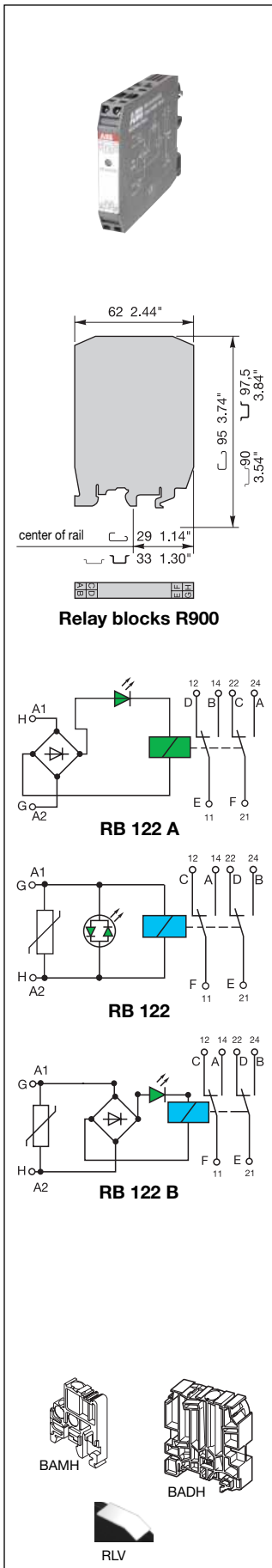
| | | | |
|-------------------|---------|--------------------|-----|
| High end section | BADH | 1SNA 116 900 R2700 | 50 |
| | BAMH | 1SNA 114 836 R0000 | 50 |
| | BAMH V0 | 1SNA 194 836 R0100 | 50 |
| Lengthwise marker | RLV | 1SNA 103 849 R0300 | 100 |
| Marking method | RC55 | see marking | |

Relay Interfaces

R900 relay modules



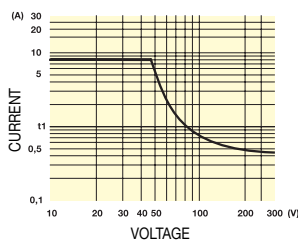
DIN 1-3



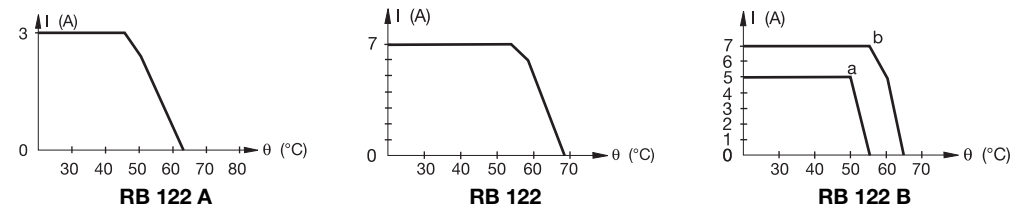
- Relay : 1 DPDT very low level contacts 10⁻⁵ A to 3 A - 11.5 mm .453" spacing
- Relay : 1 DPDT high level contacts 100 mA to 7 A - 15 mm .591" spacing

Characteristics

| Relay characteristics | RB 122 A | RB 122 | RB 122 B | |
|---|--|---|------------------|------------------|
| COIL | | | | |
| Rated voltage +15%, -10% on DC ±15% on AC | 24 V AC | 24 V DC | 24 V DC | 110 V AC |
| Frequency | 50 / 60 Hz | | | 60 Hz |
| Power | 0.4 VA | 0.35 W | 0.48 W | 3.6 VA |
| Rated current | 16.8 mA | 14.4 mA | 20 mA | 33 mA |
| Drop-out voltage at 20°C | 9.2 V | 6.5 V | 2.4 V DC | 11 V AC |
| Permissible leakage current | 2 mA max. | 2 mA max. | 1.5 mA | 2 mA |
| Status device | | | green LED | |
| 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 | | | | |
| AC1 min. / max. | 10 ⁻¹⁰ VA / 250 VA | 1.2 VA / 1750 VA | 1.2 VA / 1750 VA | 1.2 VA / 1750 VA |
| DC1 min. / max. | 10 ⁻¹⁰ W / 90 W | 1.2 W / see curve hereunder | | |
| 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 | 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 | | CE | | |
| Reference standards | CEI 947-7-1 / CEI 947-1 / CEI 1131-2 (in relevant parts) / CEI 60664-1 / CEM : IRC 1000-4-2, 3, 4, 5, 6. | | | |



Derating curves



Order codes

| Description | Type | Order P/N | Packaging Weight kg |
|--|---------------------|--------------------|---------------------|
| Relay module 1 DPDT very low level 11.5 mm sp. | RB 122A-24VAC/DC | 1SNA 630 011 R2100 | 1 0.05 |
| Relay module 1 DPDT high level 15 mm sp. | RB 122-24VDC | 1SNA 630 019 R0100 | 1 0.05 |
| Relay module 1 DPDT high level 15 mm sp. | RB 122B-110VAC/50Hz | 1SNA 630 021 R2300 | 1 0.06 |
| Relay module 1 DPDT high level 15 mm sp. | RB 122B-115VAC/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 marking | |

Relay Interfaces

R20000 relay modules



DIN 1-3

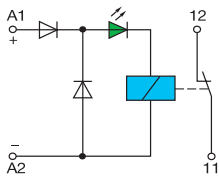
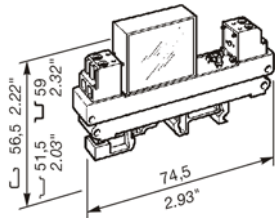
Relay modules R20000



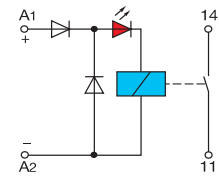
RM 101



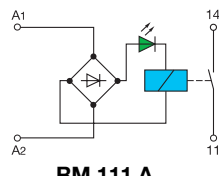
RM 111...



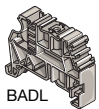
RM 101



RM 111



RM 111 A

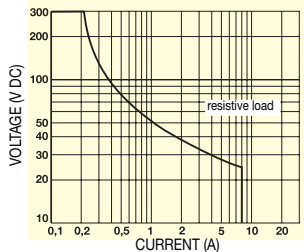


- Relay : 1 NC high level contact 10 mA to 8 A - 12,7 mm .500" spacing
- Relay : 1 NO high level contact 10 mA to 8 A - 12,7 mm .500" spacing

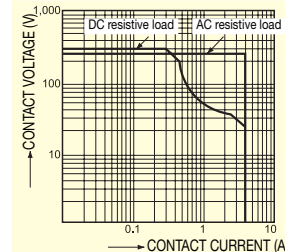
Characteristics

| Relay characteristics | RM 101 | RM 111 | | | | RM 111 A |
|--|-------------------------------|---|---------------------|----------|-----------|-------------------------------|
| COIL | | | | | | |
| Rated voltage +20%, -15% on DC +10%, -15% on AC | 24 V DC | 12 V DC | 24 V DC | 48 V DC | 110 V DC | 110 V AC/DC |
| Frequency | | | | | | 50/60 Hz |
| Power | 0.5 W | 0.5 W | 0.5 W | 0.5 W | 0.5 W | 0.5 W |
| Rated current | 20 mA | 40 mA | 20 mA | 10 mA | 4.3 mA | 4.4 mA |
| Drop-out voltage | 4.2 V DC | 1.2 V DC | 4.2 V DC | 7.8 V DC | 17.1 V DC | 14 V AC/DC |
| Permissible leakage current | | | | | | |
| Status device | green LED | green LED | red LED | | | green LED |
| CONTACT | | | | | | |
| Type | 1 NC | 1 NO | | | | 1 NO |
| Voltage switching range min./max. | 12 V / 250 V | 12 V / 250 V | | | | 12 V / 250 V |
| Current switching range min./max. | 10 mA / 8 A | 10 mA / 5 A | | | | 10 mA / 8 A |
| Load switching range | | | | | | |
| AC1 min. / max. | 0.6 VA / 2000 VA | 0.6VA/1250VA | | | | 0.6 VA / 2000 VA |
| DC1 min. / max. | 0.6 W/see curve 1 hereunder | 0.6 W/see curve 2 hereunder | | | | 0.6 W/see curve 1 hereunder |
| Number of on-load operations | 2 x 10 ⁶ resistive | | | | | 2 x 10 ⁶ resistive |
| Number of off-load operations | | 10 x 10 ⁶ | | | | 2 x 10 ⁷ |
| Operating speed | | | | | | |
| F | 4 ms | 10 ms | | | | 4 ms |
| O | 6 ms | 5 ms | | | | 6 ms |
| Bounce | 2 ms | 2 ms | | | | 2 ms |
| Insulation coil / contact | 2000 V RMS | 2000 V RMS | | | | 2000 V RMS |
| Resistance to shock coil / contact | 1.2 / 50 μs - 5 kV / 500 Ω | 1.2/50μs-4kV/500Ω | | | | 1.2 / 50 μs - 5 kV / 500 Ω |
| Insulation contact / contact | | | | | | |
| Ambient temperature storage | | | -40°C to +80°C | | | |
| operating | | | see derating curves | | | |
| Other characteristics | | | | | | |
| Body material | orange | UL 94 V2 | | | | |
| Wire | Solid wire | 0 - 2.5 mm ² / 20 - 14 AWG | | | | |
| size | Stranded wire | 0 - 2.5 mm ² / 20 - 14 AWG | | | | |
| Rated wire size | | 2.5 mm ² / 12 AWG | | | | |
| Wire stripping length | | 6 mm .236" | | | | |
| Recommended screwdriver | | 3.5 mm .137" | | | | |
| Protection | | IP20 NEMA1 | | | | |
| Recommended torque | | 0.4 - 0.6 Nm | 3.5 - 5.3 lb.in | | | |
| Approvals | | CE | CE | CE | CE | CE |
| Reference standards | | CEI 947-7-1 / CEI 947-1 / CEI 1131-2 (parts) / CEI 60664-1 / CEM : IRC 1000-4-2, 3, 4, 5, 6 | | | | |

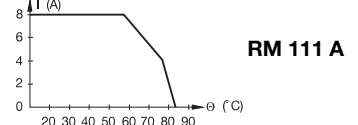
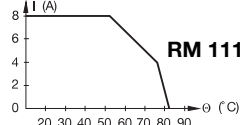
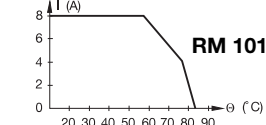
Max. DC load breaking capacity : curve 1



Max. DC load breaking capacity : curve 2



Derating curves



Order codes

| Description | Type | Order P/N | Packaging Weight kg |
|------------------------------|----------------------|--------------------|---------------------|
| Relay module 1 NC high level | RM 101 24 V DC | 1SNA 020 239 R0200 | 1 |
| Relay module 1 NO high level | RM 111 12 V DC | 1SNA 020 035 R1100 | 1 |
| Relay module 1 NO high level | RM 111 24 V DC | 1SNA 020 032 R1600 | 1 |
| Relay module 1 NO high level | RM 111 48 V DC | 1SNA 020 033 R1700 | 1 |
| Relay module 1 NO high level | RM 111 110 V DC | 1SNA 020 034 R1000 | 1 |
| Relay module 1 NO high level | RM 111 A 110 V AC/DC | 1SNA 020 323 R2600 | 1 |

Accessories

| Description | Type | Order P/N | Packaging Weight kg |
|--------------------------------------|---------|--------------------|---------------------|
| 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 | 100 |
| Pivoting marker-holder : quantity 20 | PEF | 1SNA 020 568 R0400 | 1 |
| Marker | RC55 | see markers | |

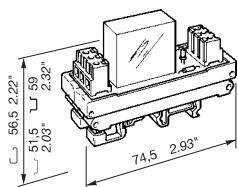
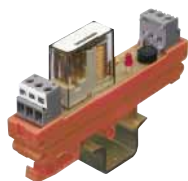
Relay Interfaces

R20000 relay modules

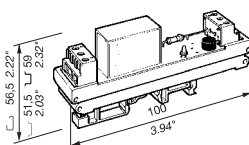


DIN 1-3

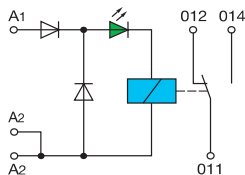
Relay modules R20000



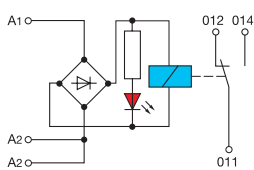
RM 121 24 V DC
RM 121 A 115 V AC/DC
RM 121 A 220 V AC/DC



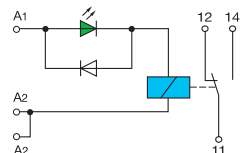
RM 121 A 24 V DC



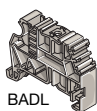
RM 121 24 V DC



RM 121 A 24 V AC/DC
RM 121 A 48 V AC/DC



RM 121 A 115 V AC/DC
RM 121 A 220 V AC/DC

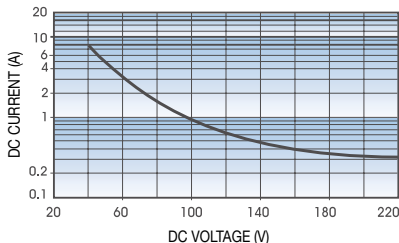


Relay : 1 SPDT high level contact 10 mA 6 A - 17,8 mm .701" or 22,5 mm .886" spacing

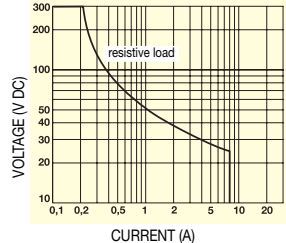
Characteristics

| Relay characteristics | RM 121 | RM 121 A | RM 121 A |
|--|---|---------------------------------------|-------------------------------|
| COIL | | | |
| Rated voltage +20%, -15% on DC +10%, -15% on AC | 24 V DC | 24 V AC/DC | 48 V AC/DC |
| Frequency | | 50/60 Hz | 50/60 Hz |
| Power | 0.65 W | 0.7 W | 0.9 W |
| Rated current | 26 mA | 30 mA | 18 mA |
| Drop-out voltage | 4 V DC | 3.6 V AC/DC | 7.2 V AC/DC |
| Permissible leakage current | | | |
| Status device | green LED | red LED | green LED |
| CONTACT | | | |
| Type | 1 SPDT | 1 SPDT | 1 SPDT |
| Voltage switching range min./max. | 12 V / 250 V | 12 V / 250 V | 12 V / 250 V |
| Current switching range min./max. | 10 mA / 16 A | 10 mA / 10 A | 100 mA / 8 A |
| Load switching range | | | |
| AC1 min. / max. | 0.6 VA / 4000 VA | 0.6 VA / 2500 VA | 0.6 VA / 2000 VA |
| DC1 min. / max. | 0.6 W / see curve 1 hereunder | 0.6 W / see curve 1 hereunder | 0.6 W / see curve 1 hereunder |
| Number of on-load operations | 2 x 10 ⁵ resistive | 2 x 10 ⁵ resistive | 2 x 10 ⁵ |
| Number of off-load operations | 2 x 10 ⁷ | 2 x 10 ⁷ | 3 x 10 ⁷ |
| Operating speed | | | |
| F | 7 ms | 7 ms | 10 ms |
| O | 8 ms | 4 ms | 15 ms |
| Bounce | 3 ms | 3 ms | 4 ms |
| Insulation coil / contact | 4 000 V RMS | 4 000 V RMS | 2 500 V RMS |
| Resistance to shock coil / contact | 1.2 / 50 µs - 5 kV / 500 Ω | 1.2 / 50 µs - 5 kV / 500 Ω | 1.2 / 50 µs - 5 kV / 500 Ω |
| Insulation contact / contact | | | 1000 V RMS |
| Ambient temperature storage operating | | -40°C to +80°C | see derating curves |
| Other characteristics | | | |
| Body material | orange | UL 94 V2 | |
| Wire | Solid wire | 0 - 2.5 mm ² / 20 - 14 AWG | |
| size | Stranded wire | 0 - 2.5 mm ² / 20 - 14 AWG | |
| Rated wire size | | 2.5 mm ² / 12 AWG | |
| Wire stripping length | | 6 mm .236" | |
| Recommended screwdriver | | 3.5 mm .137" | |
| Protection | | IP20 NEMA1 | |
| Recommended torque | | 0.4 - 0.6 Nm 3.5 - 5.3 lb.in | |
| Approvals | | CE | |
| Reference standards | CEI 947-7-1 / CEI 947-1 / CEI 1131-2 (parts) / CEI 60664-1 / CEM : IRC 1000-4-2, 3, 4, 5, 6 | | |

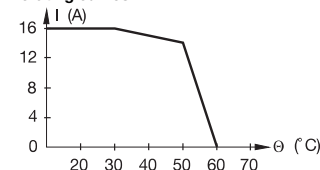
Max. DC load breaking capacity : curve 1



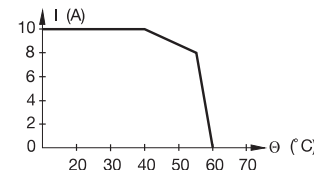
Max. DC load breaking capacity : curve 2



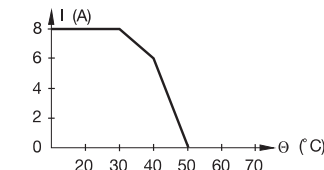
Derating curves



RM 121 24 V DC



RM 121 A 24 - 48 V AC/DC



RM 121 A 115 - 220 V AC/DC

Order codes

| Description | Type | Order P/N | Packaging Weight kg |
|--|----------|--------------------------------|---------------------|
| Relay module 1 SPDT high level 22.5 mm sp. | RM 121 | 24 V DC 1SNA 020 046 F2400 | 1 |
| Relay module 1 SPDT high level 17.8 mm sp. | RM 121 A | 24 V AC/DC 1SNA 020 042 F2000 | 1 |
| Relay module 1 SPDT high level 17.8 mm sp. | RM 121 A | 48 V AC/DC 1SNA 020 043 F2100 | 1 |
| Relay module 1 SPDT high level 17.8 mm sp. | RM 121 A | 115 V AC/DC 1SNA 020 044 F2200 | 1 |
| Relay module 1 SPDT high level 17.8 mm sp. | RM 121 A | 220 V AC/DC 1SNA 020 045 F2300 | 1 |

Accessories

| | | | |
|--------------------------------------|---------|--------------------|-----|
| End section | BADL V0 | 1SNA 399 903 F0200 | 50 |
| | BAM | 1SNA 103 002 F2600 | 50 |
| | BAM V0 | 1SNA 399 306 F0300 | 50 |
| Lengthwise marker | RLV | 1SNA 103 849 F0300 | 100 |
| Pivoting marker-holder : quantity 20 | PEF | 1SNA 020 568 F0400 | 1 |
| Marker | RC55 | see markers | |

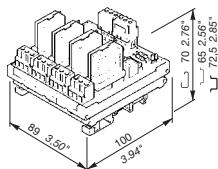
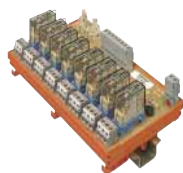
Relay Interfaces



4, 8 and 16 relay modules R20000

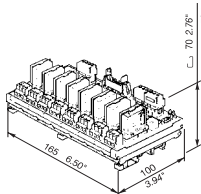
DIN 1-3

Relay modules R20000



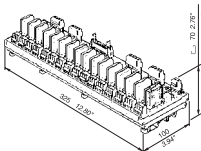
RM 421 A

Inputs : connection using pluggable connectors



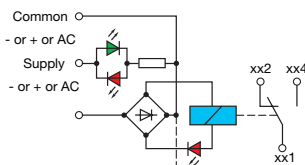
RM 821 A

10 point socket with extractors
Inputs : 24 and 48 V module connection using HE 10/10 connector mounted in parallel with pluggable connectors.
110 et 220 V module connection using pluggable connectors only.



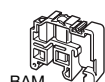
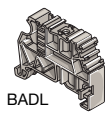
RM 1621 A

20 point socket with extractors
Inputs : 24 and 48 V module connection using HE 10/20 connector mounted in parallel with pluggable connectors.
110 et 220 V module connection using pluggable connectors only.



RM 421 A - RM 821 A - RM 1621 A

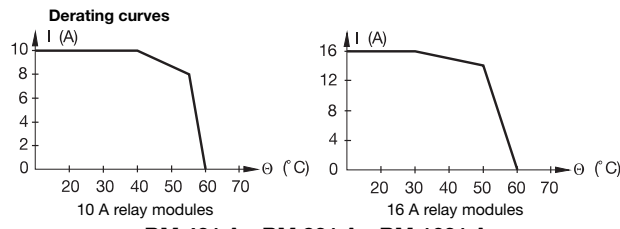
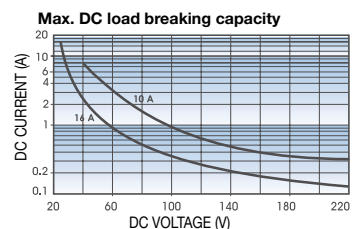
- Red diode R lighted when + on common
- Green diode V lighted when - on common
- Red diode R, green diode V both lighted when alternative



- 4 relays : 1 SPDT high level contact from 10 mA to 16 A - 89 mm 3.50" spacing
- 8 relays : 1 SPDT high level contact from 10 mA to 16 A - 165 mm 6.50" spacing
- 16 relays : 1 SPDT high level contact from 10 mA to 16 A - 325 mm 12.80" spacing

Characteristics

| Relay characteristics | RM 421 A | RM 821 A | RM 1621 A |
|--|---|---|--------------------------------|
| Modules equipped with relays | 16 Amps | 10 Amps | |
| COIL | | | |
| Rated voltage +20%, -15% on DC +10%, -15% on AC | 24 V AC/DC | 48 V AC/DC | 110 V AC/DC 220 V AC/DC |
| Frequency | 50/60 Hz | 50/60 Hz | 50/60 Hz |
| Power | 1.32 W | 1.32 W | 1.32 W |
| Rated current | 50 AC/56 DC | 24 AC/28 DC | 11 AC/12 DC 6 AC/65 DC |
| Drop-out voltage | 6 AC/5.4 DC | 8.7 AC/7.8 DC | 15.5 AC/14 DC 27.8 AC/25 DC |
| Permissible leakage current | | | |
| Status device | see description on left column | | |
| CONTACT | | | |
| Type | 1 SPDT | 1 SPDT | |
| Voltage switching range min./max. | 12 V / 250 V AC | | |
| Current switching range min./max. | 10 mA / 16 A | 10 mA / 10 A | |
| Load switching range | | | |
| AC1 min. / max. DC1 min. / max. | 0.6 VA / 4000 VA 0.6 W / see curve hereunder | 0.6 VA / 2500 VA 0.6 W / see curve hereunder | |
| Number of on-load operations | 2 x 10 ⁶ resistive | 2 x 10 ⁶ resistive | |
| Number of off-load operations | 2 x 10 ⁷ | 2 x 10 ⁷ | |
| Operating speed | 5 ms | 5 ms | |
| | 5 ms | 5 ms | |
| Bounce | 4 ms | 4 ms | |
| Insulation coil / contact | 4 000 V RMS | 4 000 V RMS | |
| Resistance to shock coil / contact | 1.2 / 50 µs - 5 000 V / 500 Ω | 1.2 / 50 µs - 5 000 V / 500 Ω | |
| Insulation contact / contact | 2 500 V RMS | 2 500 V RMS | |
| Ambient temperature | -40°C to +80°C | | |
| storage | see derating curves | | |
| operating | | | |
| Other characteristics | | | |
| Body material | UL 94 V2 | | |
| Wire | Solid wire | | |
| size | 0 - 2.5 mm ² / 20 - 14 AWG | | |
| Stranded wire | 0 - 2.5 mm ² / 20 - 14 AWG | | |
| Rated wire size | 2.5 mm ² / 12 AWG | | |
| Wire stripping length | 6 mm .236" | | |
| Recommended screwdriver | 3.5 mm .137" | | |
| Protection | IP20 NEMA1 | | |
| Recommended torque | 0.4 - 0.6 Nm 3.5 - 5.3 lb.in | | |
| Approvals | (RM 421 A 24 and 110 V AC/DC - RM 821 A 24 and 110 V AC/DC - RM 1621 A 24 and 110 V AC/DC) | | |
| Reference standards | CEI 947-7-1 / CEI 947-1 / CEI 1131-2 (parts) / CEI 60664-1 / CEM : IRC 1000-4-2, 3, 4, 5, 6 | | |



Order codes

| Description | Type | Order P/N | Packaging Weight kg |
|--|-----------|--------------------------------|---------------------|
| Pluggable 4 relay module 1SPDT high level 16A | RM 421 A | 24 V AC/DC 1SNA 020 054 R2400 | 1 |
| Pluggable 4 relay module 1SPDT high level 10A | RM 421 A | 48 V AC/DC 1SNA 020 051 R2100 | 1 |
| Pluggable 4 relay module 1SPDT high level 10A | RM 421 A | 110 V AC/DC 1SNA 020 052 R2200 | 1 |
| Pluggable 4 relay module 1SPDT high level 10A | RM 421 A | 220 V AC/DC 1SNA 020 053 R2300 | 1 |
| Pluggable 8 relay module 1SPDT high level 16A | RM 821 A | 24 V AC/DC 1SNA 020 070 R0000 | 1 |
| Pluggable 8 relay module 1SPDT high level 10A | RM 821 A | 48 V AC/DC 1SNA 020 067 R2100 | 1 |
| Pluggable 8 relay module 1SPDT high level 10A | RM 821 A | 110 V AC/DC 1SNA 020 068 R0200 | 1 |
| Pluggable 8 relay module 1SPDT high level 10A | RM 821 A | 220 V AC/DC 1SNA 020 069 R0300 | 1 |
| Pluggable 16 relay module 1SPDT high level 16A | RM 1621 A | 24 V AC/DC 1SNA 020 086 R1500 | 1 |
| Pluggable 16 relay module 1SPDT high level 10A | RM 1621 A | 48 V AC/DC 1SNA 020 083 R1200 | 1 |
| Pluggable 16 relay module 1SPDT high level 10A | RM 1621 A | 110 V AC/DC 1SNA 020 084 R1300 | 1 |
| Pluggable 16 relay module 1SPDT high level 10A | RM 1621 A | 220 V AC/DC 1SNA 020 085 R1400 | 1 |

Accessories

| End section | Part | Order P/N | Weight kg | |
|---|---------|--------------------|-------------|--|
| 12 V relay for 24 V 16 A modules 24 V relay for 48 V 10 A modules 60 V relay for 110 V 10 A modules 110 V relay for 220 V 10 A modules | BADL V0 | 1SNA 399 903 R0200 | 50 | |
| | BAM | 1SNA 103 002 R2600 | 50 | |
| | BAM V0 | 1SNA 399 306 R0300 | 50 | |
| Lengthwise marker Pivoting marker-holder : quantity 20 | RLV | 1SNA 103 849 R0300 | 100 | |
| | PEF | 1SNA 020 568 R0400 | 1 | |
| | Marker | RC55 | see markers | |

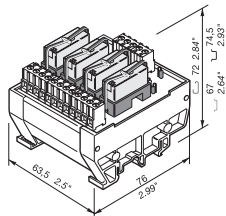
Relay Interfaces



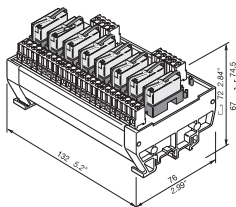
4, 8 and 16 relay modules R20000

DIN 1-3

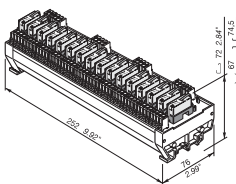
Relay modules R20000



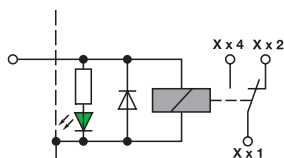
RM 421...



RM 821...

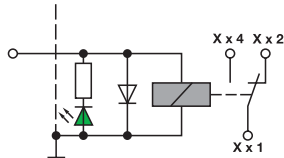


RM 1621...



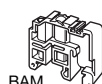
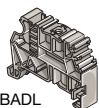
RM 421 N
RM 821 N
RM 1621 N

Negative common



RM 421 P
RM 821 P
RM 1621 P

Positive common

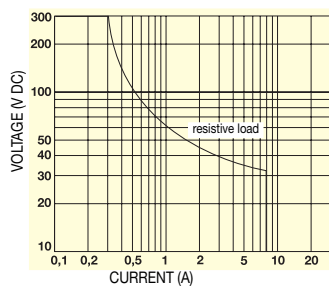


- 4 relays : 1 SPDT low level contact 1 mA to 8 A N or P version - 63,5 mm 2.5" spacing
- 8 relays : 1 SPDT low level contact 1 mA to 8 A N or P version - 132 mm 5.2" spacing
- 16 relays : 1 SPDT low level contact 1 mA to 8 A N or P version - 252 mm 10.0" spacing

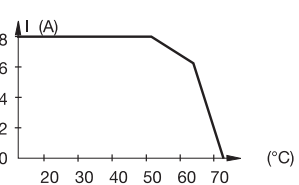
Characteristics

| Relay characteristics | RM 421 N | RM 421 P | RM 821 N | RM 821 P | RM 1621 N | RM 1621 P |
|--|----------|----------|----------|---|-----------|-----------|
| COIL | | | | | | |
| Rated voltage +20%, -15% on DC +10%, -15% on AC | | | | 24 V DC | | |
| Frequency | | | | | | |
| Power | | | | 0.36 W | | |
| Rated current | | | | 15 mA | | |
| Drop-out voltage | | | | 2.4 V | | |
| Permissible leakage current | | | | | | |
| Status device | | | | green LED | | |
| CONTACT | | | | | | |
| Type | | | | 1 SPDT | | |
| Voltage switching range min./max. | | | | 5 V / 250 V | | |
| Current switching range min./max. | | | | 1 mA / 8 A | | |
| Load switching range | | | | | | |
| AC1 min. / max. | | | | 5 mW / 2 000 VA | | |
| DC1 min. / max. | | | | 5 mW / see curve hereunder | | |
| Number of on-load operations | | | | 10 ⁸ resistive | | |
| Number of off-load operations | | | | 30 x 10 ⁶ | | |
| Operating speed | | | | | | |
| F | | | | 7 ms | | |
| O | | | | 3 ms | | |
| Bounce | | | | 1 ms | | |
| Insulation coil / contact | | | | 5 000 V RMS | | |
| Resistance to shock coil / contact | | | | | | |
| Insulation contact / contact | | | | 2 500 V RMS | | |
| Ambient temperature storage | | | | -40°C to +80°C | | |
| operating | | | | see derating curves | | |
| Other characteristics | | | | | | |
| Body material | | | | orange | | |
| Wire | | | | Solid wire | | |
| size | | | | Stranded wire | | |
| Rated wire size | | | | UL 94 V2 | | |
| Wire stripping length | | | | 0 - 2.5 mm ² / 20 - 14 AWG | | |
| Recommended screwdriver | | | | 0 - 2.5 mm ² / 20 - 14 AWG | | |
| Protection | | | | 2.5 mm ² / 12 AWG | | |
| Recommended torque | | | | 6 mm .236" | | |
| Approvals | | | | 3.5 mm .137" | | |
| | | | | IP20 NEMA1 | | |
| | | | | 0.4 - 0.6 Nm 3.5 - 5.3 lb.in | | |
| | | | | CE | | |
| Reference standards | | | | CEI 947-7-1 / CEI 947-1 / CEI 1131-2 (parts) / CEI 60664-1 / CEM : IRC 1000-4-2, 3, 4, 5, 6 | | |

Max. DC load breaking capacity



Derating curves



RM 421 N - RM 421 P
RM 821 N - RM 821 P
RM 1621 N - RM 1621 P

Order codes

| Description | Type | Order P/N | Packaging Weight kg |
|---|-----------|----------------------------|---------------------|
| 4 relay module 1 SPDT pluggable low level(1) | RM 421 N | 24 V DC 1SNA 020 604 R0100 | 1 |
| 4 relay module 1 SPDT pluggable low level(2) | RM 421 P | 24 V DC 1SNA 020 605 R0200 | 1 |
| 8 relay module 1 SPDT pluggable low level(1) | RM 821 N | 24 V DC 1SNA 020 112 R1300 | 1 |
| 8 relay module 1 SPDT pluggable low level(2) | RM 821 P | 24 V DC 1SNA 020 114 R1500 | 1 |
| 16 relay module 1 SPDT pluggable low level(1) | RM 1621 N | 24 V DC 1SNA 020 113 R1400 | 1 |
| 16 relay module 1 SPDT pluggable low level(2) | RM 1621 P | 24 V DC 1SNA 020 115 R1600 | 1 |

(1) Negative common - (2) Positive common

Accessories

| Accessories | Order P/N | Packaging Weight kg |
|--------------------------------------|----------------------------|---------------------|
| End section | BADL V0 1SNA 399 903 R0200 | 50 |
| | BAM 1SNA 103 002 R2600 | 50 |
| | BAM V0 1SNA 399 306 R0300 | 50 |
| Schrack 24 V relay | 1SNA 179 208 R2400 | 10 |
| Lengthwise marker | RLV 1SNA 103 849 R0300 | 100 |
| Pivoting marker-holder : quantity 20 | PEF 1SNA 020 568 R0400 | 1 |
| Marker | RC55 see markers | |

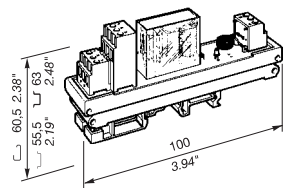
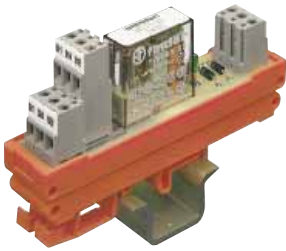
Relay Interfaces

Relay modules R20000

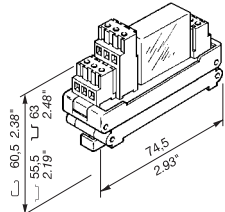


DIN 1-3

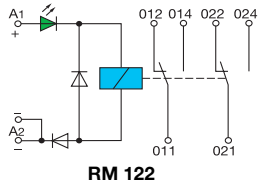
Relay modules R20000



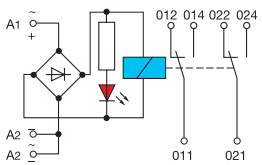
RM 122 A - 24/48 V AC/DC
RM 122 - 24 V DC



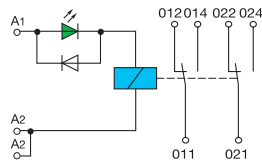
RM 122 A - 115/220 V AC/DC



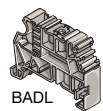
RM 122



RM 122 A - 24/48 V AC/DC



RM 122 A - 115/220 V AC/DC

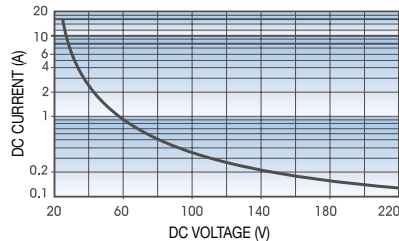


Relay : 1 DPDT high level contact from 10 mA to 8 A - 23 mm .906" spacing

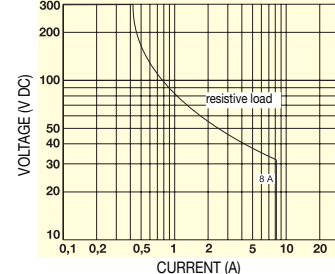
Characteristics

| Relay characteristics | RM 122 | RM 122 A | RM 122 A |
|--|---|-------------------------------|-------------------------------|
| COIL | | | |
| Rated voltage +20%, -15% on DC +10%, -15% on AC | 24 V DC | 24 V AC/DC | 48 V AC/DC |
| Frequency | | 50/60 Hz | 50/60 Hz |
| Power | 0.6 W | 0.7 W | 0.9 W |
| Rated current | 25 mA | 30 mA | 18 mA |
| Drop-out voltage | 5.6 V DC | 3.6 V AC/DC | 7.2 V AC/DC |
| Permissible leakage current | | | |
| Status device | green LED | red LED | green LED |
| CONTACT | | | |
| Type | 1 DPDT | | |
| Voltage switching range min./max. | 12 V / 250 V | | |
| Current switching range min./max. | 10 mA / 5 A | 10 mA / 5 A | 10 mA / 8 A |
| Load switching range | | | |
| AC1 min. / max. | 0.6 VA / 1250 VA | 0.6 VA / 1250 VA | 0.6 VA / 2000 VA |
| DC1 min. / max. | 0.6 W / see curve 1 | 0.6 W / see curve 1 | 0.6 W / see curve 2 |
| Number of on-load operations | 2 x 10 ⁵ resistive | 2 x 10 ⁵ resistive | 2 x 10 ⁵ resistive |
| Number of off-load operations | 10 ⁷ | 10 ⁷ | 3 x 10 ⁷ |
| Operating speed | | | |
| F | 7 ms | 7 ms | 10 ms |
| O | 4 ms | 4 ms | 15 ms |
| Bounce | 3 ms | 3 ms | 4 ms |
| Insulation coil / contact | 4000 V RMS | 4000 V RMS | 3000 V RMS |
| Resistance to shock coil / contact | | | |
| Insulation contact / contact | 1500 V RMS | 2000 V RMS | 1000 V RMS |
| Ambient temperature storage | -40°C to +80°C | | |
| operating | see derating curves | | |
| Other characteristics | | | |
| Body material | orange | | |
| Wire | Solid wire | | |
| size | Stranded wire | | |
| Rated wire size | UL 94 V2 | | |
| Wire stripping length | 0 - 4 mm ² / 20 - 12 AWG | | |
| Recommended screwdriver | 0 - 2.5 mm ² / 20 - 12 AWG | | |
| Protection | 2.5 mm ² / 12 AWG | | |
| Approvals | 7 mm .276" | | |
| | 3.5 mm .137" | | |
| | IP20 NEMA1 | | |
| | 0.4 - 0.6 Nm 3.5 - 5.3 lb.in | | |
| | CE | | |
| Reference standards | CEI 947-7-1 / CEI 947-1 / CEI 1131-2 (parts) / CEI 60664-1 / CEM : IRC 1000-4-2, 3, 4, 5, 6 | | |

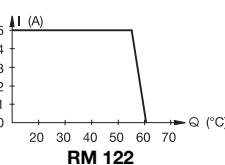
Max. DC load breaking capacity : curve 1



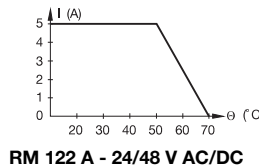
Max. DC load breaking capacity : curve 2



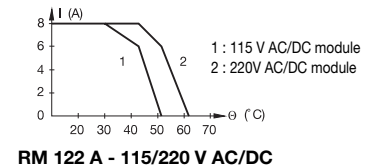
Derating curves



RM 122



RM 122 A - 24/48 V AC/DC



RM 122 A - 115/220 V AC/DC

Order codes

| Description | Type | Order P/N | Packaging Weight kg |
|--------------------------------|----------------------|--------------------|---------------------|
| Relay module 1 DPDT high level | RM 122 24 V DC | 1SNA 020 139 R2600 | 1 |
| Relay module 1 DPDT high level | RM 122 A 24 V AC/DC | 1SNA 020 106 R2600 | 1 |
| Relay module 1 DPDT high level | RM 122 A 48 V AC/DC | 1SNA 020 107 R2700 | 1 |
| Relay module 1 DPDT high level | RM 122 A 115 V AC/DC | 1SNA 020 141 R2000 | 1 |
| Relay module 1 DPDT high level | RM 122 A 220 V AC/DC | 1SNA 020 142 R2100 | 1 |

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 | 100 |
| Marker | RC55 | see markers | |

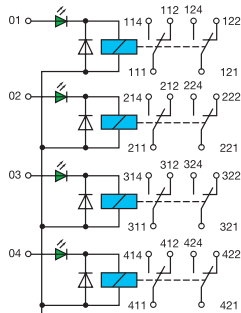
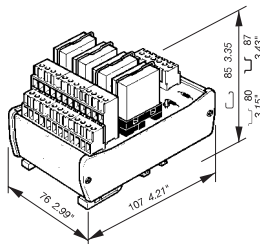
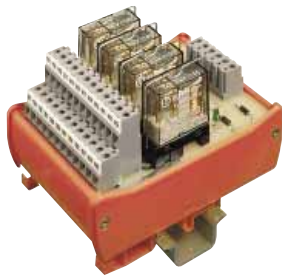
Relay Interfaces

4 relay modules R20000

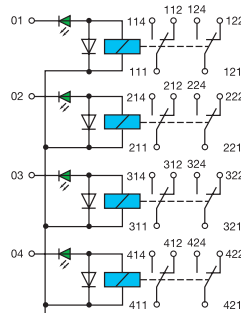


DIN 1-3

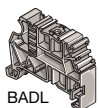
Relay modules R20000



RM 422 N



RM 422 P



BADL



BAM



RLV

4 relays : 1 DPDT high level contact from 10 mA to 5 A N or P version - 76 mm 3" spacing

Characteristics

Relay characteristics

COIL
 Rated voltage +20%, -15% on DC
 +10%, -15% on AC
 Frequency
 Power
 Rated current
 Drop-out voltage
 Permissible leakage current
 Status device

RM 422 N - RM 422 P

| | | |
|------------------|-----------|---------|
| Rated voltage | 24 V DC | 48 V DC |
| Power | 0.6 W | 0.6 W |
| Rated current | 24 mA | 13 mA |
| Drop-out voltage | 5.6 V DC | 8 V DC |
| Status device | green LED | |

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

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

Other characteristics

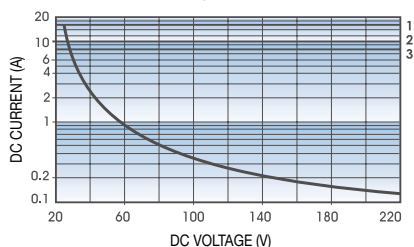
Body material
 Wire
 size
 Rated wire size
 Wire stripping length
 Recommended screwdriver
 Protection
 Recommended torque
 Approvals

| | | |
|-------------------------|---------------------------------------|--|
| Body material | UL 94 V2 | |
| Wire | Solid wire | |
| size | 0 - 4 mm ² / 20 - 12 AWG | |
| Rated wire size | 0 - 2.5 mm ² / 20 - 12 AWG | |
| Wire stripping length | 2.5 mm ² / 12 AWG | |
| Recommended screwdriver | 7 mm .276" | |
| Protection | 3.5 mm .137" | |
| Recommended torque | IP20 NEMA1 | |
| Approvals | 0.4 - 0.6 Nm 3.5 - 5.3 lb.in | |

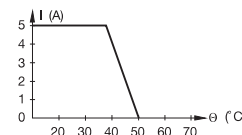
Reference standards

CEI 947-7-1 / CEI 947-1 / CEI 1131-2 (parts) / CEI 60664-1 / CEM : IRC 1000-4-2, 3, 4, 5, 6

Max. DC load breaking capacity



Derating curves



RM 422 N - RM 422 P

Order codes

| Description | Type | Order P/N | Packaging Weight kg |
|--|----------|----------------------------|---------------------|
| 4 relay module 1 DPDT high level negative common | RM 422 N | 24 V DC 1SNA 020 144 R2300 | 1 |
| 4 relay module 1 DPDT high level positive common | RM 422 P | 24 V DC 1SNA 020 146 R2500 | 1 |
| 4 relay module 1 DPDT high level negative common | RM 422 N | 48 V DC 1SNA 020 145 R2400 | 1 |
| 4 relay module 1 DPDT high level positive common | RM 422 P | 48 V DC 1SNA 020 147 R2600 | 1 |

Accessories

| End section | Part Number | Order P/N | Packaging Weight kg |
|----------------------------|--------------------|--------------------|---------------------|
| BADL V0 | 1SNA 399 903 F0200 | | 50 |
| BAM | 1SNA 103 002 R2600 | | 50 |
| BAM V0 | 1SNA 399 306 F0300 | | 50 |
| 24 V relay for 24 V module | 1SNA 174 855 F2700 | | 10 |
| 48 V relay for 48 V module | 1SNA 174 856 F2000 | | 10 |
| Lengthwise marker | RLV | 1SNA 103 849 F0300 | 100 |
| Marker | RC55 | see markers | |

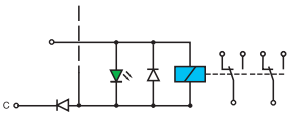
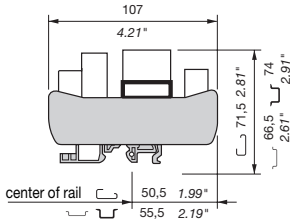
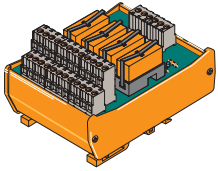
Relay Interfaces



4, 8 and 16 relay modules R20000

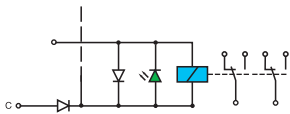
DIN 1-3

Relay modules R20000



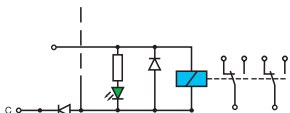
RM 422 N

Negative common



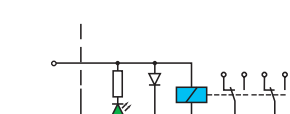
RM 422 P

Positive common



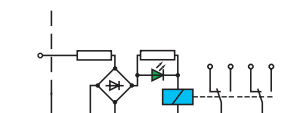
RM 822 N
RM 1622 N

Negative common



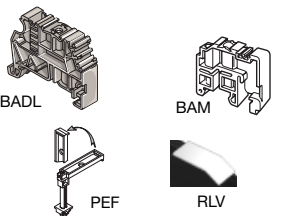
RM 822 P
RM 1622 P

Positive common



RM 822 A
RM 1622 A

Negative common



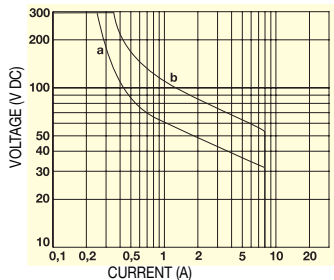
- 4 relays : 1 DPDT high level contact from 100 mA to 4 A - 76 mm 2.99" spacing
- 8 relays : 1 DPDT high level contact from 100 mA to 4 A - 159 mm 6.26" spacing
- 16 relays : 1 DPDT high level contact from 100 mA to 4 A - 300 mm 11.81" spacing

Characteristics

| Relay characteristics | RM 422 N | RM 422 P | RM 822 N | RM 822 P | RM 1622 N | RM 1622 P | RM 822 A | RM 1622 A | |
|--|------------------------------------|----------|----------|----------|-----------|-----------|---|------------------------|--|
| COIL | | | | | | | | | |
| Rated voltage +20%, -15% on DC +10%, -15% on AC | 24 V DC | | | | | | 110 V AC/DC | | |
| Frequency | | | | | | | 50/60 Hz | | |
| Power | 0.5 W | | | | | | 0.77 W | | |
| Rated current | 21 mA | | | | | | 7 mA | | |
| Drop-out voltage | 2.4 V DC | | | | | | 15 V | | |
| Permissible leakage current | | | | | | | | | |
| Status device | green LED | | | | | | | | |
| CONTACT | | | | | | | | | |
| Type | 2 DPDT | | | | | | | | |
| Voltage switching range min./max. | 12 V / 250 V AC | | | | | | | | |
| Current switching range min./max. | 100 mA / 4 A | | | | | | | | |
| Load switching range | AC1 min. / max. DC1 min. / max. | | | | | | 1.2 VA / 1 000 VA 12 W / see curve hereunder | | |
| Number of on-load operations | | | | | | | 2 x 10 ⁶ | | |
| Number of off-load operations | | | | | | | 30 x 10 ⁶ | | |
| Operating speed | F | 9 ms | | | | | | 7 ms (DC) / 12 ms (AC) | |
| | O | 12 ms | | | | | | 12 ms | |
| Bounce | | | | | | | 2 ms | | |
| Insulation coil / contact | | | | | | | 3.5 kV | | |
| Resistance to shock coil / contact | | | | | | | 10 kV | | |
| Insulation contact / contact | | | | | | | 2 kV | | |
| Ambient temperature storage operating | | | | | | | -40°C to +80°C see derating curves | | |
| Other characteristics | | | | | | | | | |
| Body material | orange | | | | | | UL 94 V2 | | |
| Wire | Solid wire | | | | | | 0 - 2.5 mm ² / 20 - 14 AWG | | |
| size | Stranded wire | | | | | | 0 - 2.5 mm ² / 20 - 14 AWG | | |
| Rated wire size | | | | | | | 2.5 mm ² / 12 AWG | | |
| Wire stripping length | | | | | | | 6 mm .236" | | |
| Recommended screwdriver | | | | | | | 3.5 mm .137" | | |
| Protection | | | | | | | IP20 NEMA1 | | |
| Recommended torque | 0.4 - 0.6 Nm | | | | | | 3.5 - 5.3 lb.in | | |
| Approvals | | | | | | | CE | | |

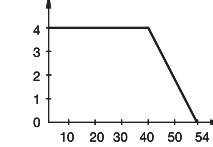
Reference standards CEI 947-7-1 / CEI 947-1 / CEI 1131-2 (parts) / CEI 60664-1 / CEM : IRC 1000-4-2, 3, 4, 5, 6

Max. DC load breaking capacity

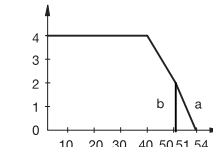


a : 1 contact
b : 2 serial contacts
2 pole resistive load

Derating curves



RM 422 N
RM 422 P



RM 822 N - RM 1622 N
RM 822 P - RM 1622 P
RM 822 A - RM 1622 A

a : 24 V DC
b : 110 V AC/DC

Order codes

| Description | Type | Order P/N | Packaging Weight kg |
|--|-----------|--------------------------------|---------------------|
| 4 relay module 1 DPDT pluggable high level(1) | RM 422 N | 24 V DC 1SNA 020 672 R0400 | 1 |
| 4 relay module 1 DPDT pluggable high level(2) | RM 422 P | 24 V DC 1SNA 020 673 R0500 | 1 |
| 8 relay module 1 DPDT pluggable high level(1) | RM 822 N | 24 V DC 1SNA 020 149 R0000 | 1 |
| 8 relay module 1 DPDT pluggable high level(2) | RM 822 P | 24 V DC 1SNA 020 492 R1100 | 1 |
| 8 relay module 1 DPDT pluggable high level | RM 822 A | 110 V AC/DC 1SNA 020 150 R0500 | 1 |
| 16 relay module 1 DPDT pluggable high level(1) | RM 1622 N | 24 V DC 1SNA 020 151 R2200 | 1 |
| 16 relay module 1 DPDT pluggable high level(2) | RM 1622 P | 24 V DC 1SNA 020 493 R1200 | 1 |
| 16 relay module 1 DPDT pluggable high level | RM 1622 A | 110 V AC/DC 1SNA 020 152 R2300 | 1 |

(1) Negative common - (2) Positive common

Accessories

| End section | Type | Order P/N | Packaging Weight kg |
|--------------------------------------|---------|--------------------|---------------------|
| BADL | BADL V0 | 1SNA 399 903 R0200 | 50 |
| BAM | BAM | 1SNA 103 002 R2600 | 50 |
| BAM V0 | BAM V0 | 1SNA 399 306 R0300 | 50 |
| Schrack 24 V relay for 24 V module | | 1SNA 210 021 R2600 | 10 |
| Schrack 60 V relay for 110 V module | | 1SNA 210 022 R2700 | 10 |
| Lengthwise marker | RLV | 1SNA 103 849 R0300 | 100 |
| Pivoting marker-holder : quantity 20 | PEF | 1SNA 020 568 R0400 | 1 |
| Marker | RC55 | see markers | |



Contents

| | |
|--|-----------|
| Coding principle | 42 |
| Selection guide - Optocoupler modules | 43 |
| Optocoupler interfaces | |
| R600 pluggable optocoupler blocks | 47 |
| R500 pluggable optocoupler blocks | 51 |
| R900 optocoupler blocks | 57 |
| R1800 optocoupler blocks | 63 |
| R20000 optocoupler modules | 66 |
| R11000 relay-optocoupler blocks | 67 |

Coding principle

Construction of description type

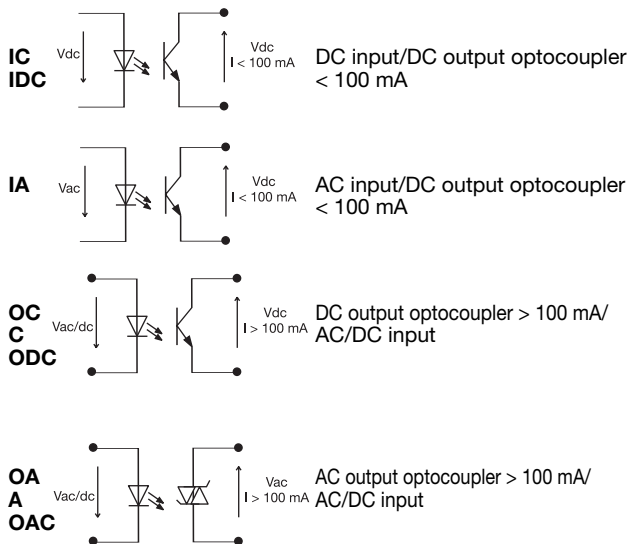
| SERIES | CODE | CONNECTION TYPE | FUNCTION TYPE | MAX. OUTPUT CURRENT (mA) | PARTICULARITIES | INPUT VOLTAGE |
|---------|-------------|--------------------------|--------------------------|---|--------------------------|--|
| R 600 | O B | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| R 500 | D 2,5/5 O B | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| R 900 | O B | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| R 1800 | E B | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| R 20000 | O M 1 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |

None : screw
 R : spring

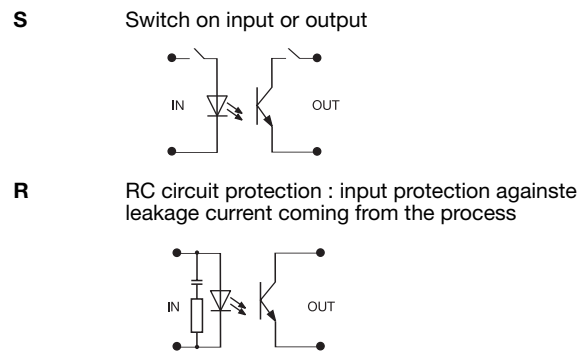
IC
 IA
 OC
 OA
 C
 A
 IDC
 ODC
 OAC

S
 R
 None

Function type description :



Particularities description :



Selection guide for optocoupler modules

How to use this selection guide :

1 Choose the input voltage of the optocoupler

| Input type | Output type | Rated voltage |
|------------|-------------|---------------|
| DC input | DC output | 5 V |
| | | 12 V |
| | | 15 V |

2 Choose the AC or DC output voltage of the optocoupler and the current needed

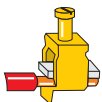
3 Verify the connection type, the input voltage range and the spacing

| Contact type | Input voltage range | Max. output voltage | Output current | Spacing (mm) |
|------------------------------------|---------------------|---------------------|----------------|--------------|
| Input optocoupler - Output voltage | | | | |
| screw | 4,25 to 14,4V | 58VDC | 100mA | 6 |
| spring | 4,25 to 14,4V | 58VDC | 100mA | 6 |
| screw | 4,5 to 5,5V | 58VDC | 30mA | 5,08 |

| Output type | Rated voltage | Contact type | Input voltage range | Max. output voltage | Output current |
|------------------------------------|---------------|--------------|---------------------|---------------------|----------------|
| Input optocoupler - Output voltage | | | | | |
| DC output | 5 V | screw | 4,25 to 14,4V | 58VDC | 100mA |
| | | spring | 4,25 to 14,4V | 58VDC | 100mA |
| | 12 V | screw | 4,5 to 5,5V | 58VDC | 30mA |
| | | screw | 4 to 5,5V | 53VDC | 50mA |
| 15 V | 12 V | screw | 4,25 to 14,4V | 58VDC | 100mA |
| | | spring | 4,25 to 14,4V | 58VDC | 100mA |
| | 10,2 to 28,8V | screw | 10,2 to 28,8V | 60VDC | 100mA |
| | | spring | 9,6 to 13,2V | 53VDC | 50mA |
| | 10 to 32V | screw | 10 to 32V | 5V TTL | 25mA |
| | | screw | 10 to 32V | 24V HLL | 25mA |
| 12 to 16,5V | screw | 12 to 16,5V | 53VDC | 50mA | |
| | screw | 12 to 16,5V | 53VDC | 50mA | |

4 Go to see the indicated page for more technical data or Use the part number to place an order

| Part number | Page |
|--------------------|------|
| 1SNA 645 047 R0000 | 46 |
| 1SNA 645 547 R0200 | 46 |
| 1SNA 607 274 R1300 | 50 |



Screw connection



Spring connection

| Input type | Output type | Rated voltage | Contact type | Input voltage range | Max. output voltage | Output current | Spacing (mm) | Series | Available approvals | Particularities | Product type | Part number | Page |
|---|-------------|---------------|--------------|---------------------|---------------------|----------------|--------------|--------|---------------------|-----------------|-------------------------------|---------------------------|------|
| Input optocoupler - Output DC voltage, current < 100 mA | | | | | | | | | | | | | |
| DC input | DC output | 5 V | screw | 4,25 to 14,4V | 58VDC | 100mA | 6 | R600 | | H | OBIC 0100 5-12VDC | 1SNA 645 047 R0000 | 47 |
| | | | spring | 4,25 to 14,4V | 58VDC | 100mA | 6 | R600 | | H | OBRIC 0100 5-12VDC | 1SNA 645 547 R0200 | 47 |
| | | | screw | 4,5 to 5,5V | 58VDC | 30mA | 5,08 | R500 | | P | D2,5/5-OBIC-0030 5VDC | 1SNA 607 274 R1300 | 51 |
| | | | screw | 4 to 5,5V | 53VDC | 50mA | 18 | R1800 | | VH | EBO3-DC | 1SNA 610 230 R1100 | 63 |
| | | 12 V | screw | 4,25 to 14,4V | 58VDC | 100mA | 6 | R600 | | H | OBIC 0100 5-12VDC | 1SNA 645 047 R0000 | 47 |
| | | | spring | 4,25 to 14,4V | 58VDC | 100mA | 6 | R600 | | H | OBRIC 0100 5-12VDC | 1SNA 645 547 R0200 | 47 |
| | | | screw | 10,2 to 28,8V | 60VDC | 100mA | 9 | R900 | | VH | OBC 0100-24VDC | 1SNA 608 017 R0600 | 57 |
| | | | screw | 9,6 to 13,2V | 53VDC | 50mA | 18 | R1800 | | VH | EBO3-DC | 1SNA 610 230 R1100 | 63 |
| | | | screw | 10 to 32V | 5V TTL | 25mA | 18 | R1800 | | TTL | EB IDC 5 | 1SNA 010 031 R1300 | 65 |
| | | | screw | 10 to 32V | 24V HLL | 25mA | 18 | R1800 | | HLL | EB IDC 24 | 1SNA 010 033 R1500 | 65 |
| | | 15 V | screw | 12 to 16,5V | 53VDC | 50mA | 18 | R1800 | | VH | EBO3-DC | 1SNA 610 230 R1100 | 63 |
| | | | | | | | | | | | | | |
| | | 24 V | screw | 20,4 to 28,8V | 58VDC | 100mA | 6 | R600 | | H | OBIC 0100 24VDC | 1SNA 645 021 R2600 | 47 |
| | | | spring | 20,4 to 28,8V | 58VDC | 100mA | 6 | R600 | | H | OBRIC 0100 24VDC | 1SNA 645 521 R2000 | 47 |
| | | | screw | 19,2 to 27,6V | 58VDC | 30mA | 5,08 | R500 | | P | D2,5/5-OBIC-0030-24VDC | 1SNA 607 210 R1700 | 51 |
| | | | screw | 10,2 to 28,8V | 60VDC | 100mA | 9 | R900 | | VH | OBC 0100-24VDC | 1SNA 608 017 R0600 | 57 |
| | | | screw | 19,2 to 26,4V | 53VDC | 50mA | 18 | R1800 | | VH | EBO3-DC | 1SNA 610 230 R1100 | 63 |
| | | | screw | 16 to 27,6V | 58VDC | 100mA | 18 | R1800 | | | EBO1-24VAC/DC | 1SNA 610 022 R2000 | 64 |
| | | | screw | 10 to 32V | 5V TTL | 25mA | 18 | R1800 | | TTL | EB IDC 5 | 1SNA 010 031 R1300 | 65 |
| | | | screw | 10 to 32V | 24V HLL | 25mA | 18 | R1800 | | HLL | EB IDC 24 | 1SNA 010 033 R1500 | 65 |

Note :

P Pluggable optocouplers
S Switch on input or output

H Max. operating frequency 1000 to 2000 Hz
HLL HLL compatible

VH Max. operating frequency 5000 to 9000 Hz
R Leakage current protection
TTL TTL compatible

High runners in bold characters

Marine certifications : RINA, DNV, GL, BV, LRS

| Input type | Output type | Rated voltage | Contact type | Input voltage range | Max. output voltage | Output current | Spacing (mm) | Series | Available approvals | Particularities | Product type | Part number | Page | | | |
|--|------------------|---------------|---------------|---------------------|---------------------|----------------|--------------|--------|---------------------|------------------|-------------------------------|--------------------------------|--------------------------------|--------------------------------|---------------------------|----|
| Input optocoupler - Output DC voltage, current < 100 mA | | | | | | | | | | | | | | | | |
| DC input | DC output | 48 V | screw | 40,8 to 72V | 58VDC | 100mA | 6 | R600 | | | OBIC 0100 48-60VAC/DC | 1SNA 645 049 R1200 | 47 | | | |
| | | | spring | 40,8 to 72V | 58VDC | 100mA | 6 | R600 | | | OBRIC 0100 48-60VAC/DC | 1SNA 645 549 R1400 | 47 | | | |
| | | | screw | 38,4 to 55,2V | 58VDC | 30mA | 5,08 | R500 | | | D2,5/5-OBIC-0030-48VDC | 1SNA 607 211 R0400 | 51 | | | |
| | | | screw | 40,8 to 57,6V | 60VDC | 100mA | 9 | R900 | | | OBC 0100-48VDC | 1SNA 608 021 R0200 | 57 | | | |
| | | | screw | 38,4 to 52,8V | 53VDC | 50mA | 18 | R1800 | | | EBO3-DC | 1SNA 610 230 R1100 | 63 | | | |
| | | | screw | 29 to 58V | 58VDC | 100mA | 18 | R1800 | | | EBO1-48VAC/DC | 1SNA 010 048 R0400 | 64 | | | |
| | | 115 V | 90 V | screw | 40,8 to 72V | 58VDC | 100mA | 6 | R600 | | | OBIC 0100 48-60VAC/DC | 1SNA 645 049 R1200 | 47 | | |
| | | | | spring | 40,8 to 72V | 58VDC | 100mA | 6 | R600 | | | OBRIC 0100 48-60VAC/DC | 1SNA 645 549 R1400 | 47 | | |
| | | | 125 V | 115 V | screw | 97,8 to 276V | 58VDC | 100mA | 6 | R600 | | | OBIC 0100 115-230VAC/DC | 1SNA 645 022 R2700 | 47 | |
| | | | | | spring | 97,8 to 276V | 58VDC | 100mA | 6 | R600 | | | OBRIC 0100 115-230VAC/DC | 1SNA 645 522 R2100 | 47 | |
| | | | 127 V | 127 V | screw | 93,5 to 140V | 58VDC | 30mA | 5,08 | R500 | | | P | D2,5/5-OBIC-0030-125VDC | 1SNA 607 275 R1400 | 51 |
| | | | | | screw | 100 to 143,8V | 58VDC | 100mA | 9 | R900 | | | VH | OBC 0100-110VAC/125VDC | 1SNA 008 048 R1700 | 58 |
| | | screw | | | 100 to 143,8V | 58VDC | 100mA | 9 | R900 | | | VH | OBC 0100-125VDC | 1SNA 008 049 R1000 | 58 | |
| | | screw | | | 106 to 150V | 58VDC | 100mA | 9 | R900 | | | VH | OBC 0100S-125VDC | 1SNA 008 004 R0400 | 58 | |
| 220 V | 220 V | screw | 97,8 to 276V | 58VDC | 100mA | 18 | R1800 | | | | EBO1-127VAC/DC | 1SNA 610 108 R1400 | 64 | | | |
| | | screw | 150 to 253V | 58VDC | 100mA | 18 | R1800 | | | | EBO1-220VAC/DC | 1SNA 610 023 R2100 | 64 | | | |
| 230 V | 230 V | screw | 97,8 to 276V | 58VDC | 100mA | 6 | R600 | | | | OBIC 0100 115-230VAC/DC | 1SNA 645 022 R2700 | 47 | | | |
| | | spring | 97,8 to 276V | 58VDC | 100mA | 6 | R600 | | | | OBRIC 0100 115-230VAC/DC | 1SNA 645 522 R2100 | 47 | | | |
| AC input | DC output | 24 V | screw | 20,4 to 26,4V | 58VDC | 30mA | 5,08 | R500 | | | P | D2,5/5-OBIA-0030-24VAC | 1SNA 607 212 R0500 | 52 | | |
| | | | screw | 12 to 27,6V | 58VDC | 100mA | 18 | R1800 | | | | EBO1-24VAC/DC | 1SNA 610 022 R2000 | 64 | | |
| | | 48 V | 48 V | screw | 43,2 to 66V | 58VDC | 100mA | 6 | R600 | | | | OBIC 0100 48-60VAC/DC | 1SNA 645 049 R1200 | 47 | |
| | | | | spring | 43,2 to 66V | 58VDC | 100mA | 6 | R600 | | | | OBRIC 0100 48-60VAC/DC | 1SNA 645 549 R1400 | 47 | |
| | | | 60 V | 60 V | screw | 40,8 to 52,8V | 58VDC | 30mA | 5,08 | R500 | | | P | D2,5/5-OBIA-0030-48VAC | 1SNA 607 213 R0600 | 52 |
| | | | | | screw | 20 to 58V | 58VDC | 100mA | 18 | R1800 | | | | EBO1-48VAC/DC | 1SNA 010 048 R0400 | 64 |
| | | 110 V | 110 V | screw | 43,2 to 66V | 58VDC | 100mA | 6 | R600 | | | | OBIC 0100 48-60VAC/DC | 1SNA 645 049 R1200 | 47 | |
| | | | | spring | 43,2 to 66V | 58VDC | 100mA | 6 | R600 | | | | OBRIC 0100 48-60VAC/DC | 1SNA 645 549 R1400 | 47 | |
| | | 115 V | 115 V | screw | 93,5 to 152,4V | 60VDC | 100mA | 9 | R900 | | | | R | OBC 0100-110VAC | 1SNA 608 024 R0500 | 57 |
| | | | | screw | 93,5 to 152,4V | 58VDC | 100mA | 9 | R900 | | | | OBC 0100R-110VAC | 1SNA 008 076 R0300 | 59 | |
| | | | | screw | 88 to 126,5V | 58VDC | 100mA | 9 | R900 | | | | OBC 0100-110VAC/125VDC | 1SNA 008 048 R1700 | 58 | |
| | | | | screw | 103,5 to 253V | 58VDC | 100mA | 6 | R600 | | | | P | OBIC 0100 115-230VAC/DC | 1SNA 645 022 R2700 | 47 |
| | | 127 V | 127 V | screw | 103,5 to 253V | 58VDC | 100mA | 6 | R600 | | | | | OBRIC 0100 115-230VAC/DC | 1SNA 645 522 R2100 | 47 |
| | | | | screw | 98 to 126,5V | 58VDC | 30mA | 5,08 | R500 | | | | D2,5/5-OBIA-0030-115VAC | 1SNA 607 214 R0700 | 52 | |
| 230 V | 230 V | screw | 88 to 140V | 58VDC | 100mA | 18 | R1800 | | | | EBO1-127VAC/DC | 1SNA 610 108 R1400 | 64 | | | |
| | | screw | 130 to 253V | 58VDC | 100mA | 18 | R1800 | | | | EBO1-220VAC/DC | 1SNA 610 023 R2100 | 64 | | | |
| | | screw | 103,5 to 253V | 58VDC | 100mA | 6 | R600 | | | | | OBIC 0100 115-230VAC/DC | 1SNA 645 022 R2700 | 47 | | |
| | | spring | 103,5 to 253V | 58VDC | 100mA | 6 | R600 | | | | | OBRIC 0100 115-230VAC/DC | 1SNA 645 522 R2100 | 47 | | |
| | | screw | 195,5 to 253V | 58VDC | 30mA | 5,08 | R500 | | | | P | D2,5/5-OBIA-0030-230VAC | 1SNA 607 215 R0000 | 52 | | |
| | | screw | 184 to 264,5V | 60VDC | 100mA | 9 | R900 | | | | | OBC 0100-230VAC | 1SNA 608 027 R0000 | 57 | | |
| screw | 195 to 253V | 58VDC | 100mA | 9 | R900 | | | | | OBC 0100R-230VAC | 1SNA 008 077 R0400 | 59 | | | | |
| Output optocoupler - Output DC voltage, current > 100 mA | | | | | | | | | | | | | | | | |
| DC input | DC output | 5 V | screw | 4,25 to 14,4V | 58VDC | 2A | 6 | R600 | | H | OBOC 1000-5-12VDC | 1SNA 645 050 R1700 | 48 | | | |
| | | | spring | 4,25 to 14,4V | 58VDC | 2A | 6 | R600 | | H | OBROC 1000-5-12VDC | 1SNA 645 550 R1100 | 48 | | | |
| | | | screw | 4,5 to 5,5V | 58VDC | 100mA | 5,08 | R500 | | | P | D2,5/5-OBOC-0100-5VDC | 1SNA 607 203 R1500 | 53 | | |
| | | | screw | 4,5 to 5,5V | 58VDC | 1A | 5,08 | R500 | | | P, H | D2,5/5-OBOC-1000-5VDC | 1SNA 607 206 R1000 | 54 | | |
| | | | screw | 4,5 to 5,5V | 30VDC | 2A | 5,08 | R500 | | | P, H | D2,5/5-OBOC-2000-5VDC | 1SNA 607 208 R2200 | 55 | | |
| | | | screw | 4,5 to 5,5V | 60VDC | 1A | 9 | R900 | | | VH | OBC 1000-5VDC | 1SNA 608 014 R2200 | 60 | | |
| | | 12 V | 12 V | screw | 4,25 to 14,4V | 58VDC | 2A | 6 | R600 | | H | OBOC 1000-5-12VDC | 1SNA 645 050 R1700 | 48 | | |
| | | | | spring | 4,25 to 14,4V | 58VDC | 2A | 6 | R600 | | H | OBROC 1000-5-12VDC | 1SNA 645 550 R1100 | 48 | | |
| | | | | screw | 10,2 to 28,8V | 60VDC | 1A | 9 | R900 | | | VH | OBC 1000-24VDC | 1SNA 608 018 R1700 | 60 | |
| | | | | screw | 20,4 to 28,8V | 58VDC | 2A | 6 | R600 | | | | H | OBOC 1000-24VDC | 1SNA 645 051 R0400 | 48 |
| | | | | screw | 20,4 to 28,8V | 58VDC | 2A | 6 | R600 | | | | H | OBOC 1500-24VAC/DC | 1SNA 645 025 R2200 | 48 |
| | | | | screw | 20,4 to 28,8V | 58VDC | 5A | 6 | R600 | | | | H | OBOC 5000-24VDC | 1SNA 645 024 R2100 | 49 |
| | | 24 V | 24 V | spring | 20,4 to 28,8V | 58VDC | 2A | 6 | R600 | | H | OBROC 1000-24VDC | 1SNA 645 551 R0600 | 48 | | |
| | | | | spring | 20,4 to 28,8V | 58VDC | 2A | 6 | R600 | | | | H | OBROC 1500-24VAC/DC | 1SNA 645 525 R2400 | 48 |
| | | | | spring | 20,4 to 28,8V | 58VDC | 5A | 6 | R600 | | | | H | OBROC 5000-24VDC | 1SNA 645 524 R2300 | 49 |
| | | | | screw | 20,4 to 28,8V | 58VDC | 100mA | 5,08 | R500 | | | | H | D2,5/5-OBOC-0100-24VDC | 1SNA 607 204 R1600 | 53 |
| | | | | screw | 20,4 to 28,8V | 58VDC | 1A | 5,08 | R500 | | | | H | D2,5/5-OBOC-1000-24VDC | 1SNA 607 207 R1100 | 54 |
| | | | | screw | 20,4 to 28,8V | 58VDC | 1A | 5,08 | R500 | | | | P | D2,5/5-OBOC-1000-24VAC/DC | 1SNA 607 250 R2700 | 54 |
| | | | | screw | 20,4 to 28,8V | 30VDC | 2A | 5,08 | R500 | | | | P, H | D2,5/5-OBOC-2000-24VDC | 1SNA 607 209 R2300 | 55 |
| | | | | screw | 20,4 to 28,8V | 30VDC | 2A | 5,08 | R500 | | | | P | D2,5/5-OBOC-2000-24VAC/DC | 1SNA 607 255 R1000 | 55 |
| | | | | screw | 10,2 to 28,8V | 60VDC | 1A | 9 | R900 | | | | VH | OBC 1000-24VDC | 1SNA 608 018 R1700 | 60 |
| | | | | screw | 19,2 to 28,8V | 58VDC | 5A | 9 | R900 | | | | | ORC 111-24VDC | 1SNA 608 068 R2100 | 62 |





















Note :
P Pluggable optocouplers
S Switch on input or output
H Max. operating frequency 1000 to 2000 Hz
HLL HLL compatible
VH Max. operating frequency 5000 to 9000 Hz
R Leakage current protection
TTL TTL compatible
High runners in bold characters
Marine certifications :

| Input type | Output type | Rated voltage | Contact type | Input voltage range | Max. output voltage | Output current | Spacing (mm) | Series | Available approvals | Particularities | Product type | Part number | Page | | |
|--|------------------|-----------------|------------------|---------------------|---------------------|----------------|--------------|--------|---------------------|-----------------|--------------|----------------------------------|----------------------------------|---------------------------|---------------------------|
| Output optocoupler - Output DC voltage, current > 100 mA | | | | | | | | | | | | | | | |
| DC input | DC output | 24V | screw | 19,2 to 28,8V | 60VDC | 1A | 18 | R1800 | | HLL | EB ODC 24 | 1SNA 010 039 R2300 | 65 | | |
| | | | screw | 9,6 to 30V | 60VDC | 3A | 12,7 | R20000 | | | | OM1C3-24VAC/DC | 1SNA 020 361 R0400 | 66 | |
| | | 48V | screw | 40,8 to 72V | 58VDC | 2A | 6 | R600 | | | | OBOC 1000-48-60VAC/DC | 1SNA 645 053 R0600 | 48 | |
| | | | spring | 40,8 to 72V | 58VDC | 2A | 6 | R600 | | | | OBROC 1000-48-60VAC/DC | 1SNA 645 553 R0000 | 48 | |
| | | | screw | 40,8 to 57,6V | 58VDC | 100mA | 5,08 | R500 | | | P | D2,5/5-OBOC-0100-48VDC | 1SNA 607 205 R1700 | 53 | |
| | | | screw | 40,8 to 57,6V | 58VDC | 1A | 5,08 | R500 | | | P | D2,5/5-OBOC-1000-48VAC/DC | 1SNA 607 251 R1400 | 54 | |
| | | | screw | 40,8 to 57,6V | 30VDC | 2A | 5,08 | R500 | | | P | D2,5/5-OBOC-2000-48VAC/DC | 1SNA 607 256 R1100 | 55 | |
| | | | screw | 40,8 to 57,6V | 60VDC | 1A | 9 | R900 | | | VH | OBC 1000-48VDC | 1SNA 608 022 R0300 | 60 | |
| | | 60V | screw | 40,8 to 72V | 58VDC | 2A | 6 | R600 | | | | OBOC 1000-48-60VAC/DC | 1SNA 645 053 R0600 | 48 | |
| | | | spring | 40,8 to 72V | 58VDC | 2A | 6 | R600 | | | | OBROC 1000-48-60VAC/DC | 1SNA 645 553 R0000 | 48 | |
| | | | screw | 97,8 to 138V | 58VDC | 2A | 6 | R600 | | | | OBOC 1000-115VAC/DC | 1SNA 645 054 R0700 | 48 | |
| | | | screw | 97,8 to 138V | 58VDC | 5A | 6 | R600 | | | | OBOC 5000-115VAC/DC | 1SNA 645 058 R1300 | 49 | |
| | | | spring | 97,8 to 138V | 58VDC | 2A | 6 | R600 | | | | OBROC 1000-115VAC/DC | 1SNA 645 554 R0100 | 48 | |
| | | | spring | 97,8 to 138V | 58VDC | 5A | 6 | R600 | | | | OBROC 5000-115VAC/DC | 1SNA 645 558 R1500 | 49 | |
| | | 230V | screw | 195 to 276V | 58VDC | 2A | 6 | R600 | | | | OBOC 1000-230VAC/DC | 1SNA 645 026 R2300 | 48 | |
| | | | screw | 195 to 276V | 58VDC | 5A | 6 | R600 | | | | OBOC 5000-230VAC/DC | 1SNA 645 059 R1400 | 49 | |
| | | | spring | 195 to 276V | 58VDC | 2A | 6 | R600 | | | | OBROC 1000-230VAC/DC | 1SNA 645 526 R2500 | 48 | |
| | | | spring | 195 to 276V | 58VDC | 5A | 6 | R600 | | | | OBROC 5000-230VAC/DC | 1SNA 645 559 R1600 | 49 | |
| | | | screw | 21,6 to 26,4V | 58VDC | 2A | 6 | R600 | | | | OBOC 1500-24VAC/DC | 1SNA 645 025 R2200 | 48 | |
| | | | spring | 21,6 to 26,4V | 58VDC | 2A | 6 | R600 | | | | OBROC 1500-24VAC/DC | 1SNA 645 525 R2400 | 48 | |
| | | AC input | DC output | 24V | screw | 21,6 to 26,4V | 58VDC | 1A | 5,08 | R500 | | P | D2,5/5-OBOC-1000-24VAC/DC | 1SNA 607 250 R2700 | 54 |
| | | | | | screw | 21,6 to 26,4V | 30VDC | 2A | 5,08 | R500 | | | | D2,5/5-OBOC-2000-24VAC/DC | 1SNA 607 255 R1000 |
| | | | | screw | 9,6 to 30V | 60VDC | 3A | 12,7 | R20000 | | | | OM1C3-24VAC/DC | 1SNA 020 361 R0400 | 66 |
| | | | | 48V | screw | 43,2 to 66V | 58VDC | 2A | 6 | R600 | | | | OBOC 1000-48-60VAC/DC | 1SNA 645 053 R0600 |
| spring | 43,2 to 66V | | | | 58VDC | 2A | 6 | R600 | | | | OBROC 1000-48-60VAC/DC | 1SNA 645 553 R0000 | 48 | |
| screw | 43,2 to 66V | | | | 58VDC | 1A | 5,08 | R500 | | | P | D2,5/5-OBOC-1000-48VAC/DC | 1SNA 607 251 R1400 | 54 | |
| screw | 43,2 to 66V | | | | 30VDC | 2A | 5,08 | R500 | | | P | D2,5/5-OBOC-2000-48VAC/DC | 1SNA 607 256 R1100 | 55 | |
| screw | 43,2 to 66V | | | | 58VDC | 2A | 6 | R600 | | | | OBOC 1000-48-60VAC/DC | 1SNA 645 053 R0600 | 48 | |
| spring | 43,2 to 66V | | | | 58VDC | 2A | 6 | R600 | | | | OBROC 1000-48-60VAC/DC | 1SNA 645 553 R0000 | 48 | |
| 60V | screw | | | 99 to 121V | 58VDC | 1A | 5,08 | R500 | | | P | D2,5/5-OBOC-1000-110VAC | 1SNA 607 270 R2300 | 54 | |
| | screw | | | 99 to 121V | 58VDC | 2A | 5,08 | R500 | | | P | D2,5/5-OBOC-2000-110VAC | 1SNA 607 272 R1100 | 55 | |
| | screw | | | 93,5 to 152,4V | 60VDC | 1A | 9 | R900 | | | | OBC 1000-110VAC | 1SNA 608 025 R0600 | 60 | |
| | screw | | | 103,5 to 126,5V | 58VDC | 2A | 6 | R600 | | | | OBOC 1000-115VAC/DC | 1SNA 645 054 R0700 | 48 | |
| | screw | | | 103,5 to 126,5V | 58VDC | 5A | 6 | R600 | | | | OBOC 5000-115VAC/DC | 1SNA 645 058 R1300 | 49 | |
| | spring | | | 103,5 to 126,5V | 58VDC | 2A | 6 | R600 | | | | OBROC 1000-115VAC/DC | 1SNA 645 554 R0100 | 48 | |
| 115V | spring | | | 103,5 to 126,5V | 58VDC | 5A | 6 | R600 | | | | OBROC 5000-115VAC/DC | 1SNA 645 558 R1500 | 49 | |
| | screw | | | 207 to 253V | 58VDC | 2A | 6 | R600 | | | | OBOC 1000-230VAC/DC | 1SNA 645 026 R2300 | 48 | |
| | screw | | | 207 to 253V | 58VDC | 5A | 6 | R600 | | | | OBOC 5000-230VAC/DC | 1SNA 645 059 R1400 | 49 | |
| | spring | | | 207 to 253V | 58VDC | 2A | 6 | R600 | | | | OBROC 1000-230VAC/DC | 1SNA 645 526 R2500 | 48 | |
| | spring | | | 207 to 253V | 58VDC | 5A | 6 | R600 | | | | OBROC 5000-230VAC/DC | 1SNA 645 559 R1600 | 49 | |
| | screw | | | 207 to 253V | 58VDC | 1A | 5,08 | R500 | | | P | D2,5/5-OBOC-1000-230VAC | 1SNA 607 271 R1000 | 54 | |
| DC input | AC output | | | 5V | screw | 4,5 to 5,5V | 253VAC | 1A | 9 | R900 | | | OBA 1000-5VDC | 1SNA 608 015 R0400 | 61 |
| | | | | | screw | 4,5 to 6V | 280VAC | 1A | 18 | R1800 | | | TTL | EB OAC 5 | 1SNA 010 034 R1600 |
| | | | | 24V | screw | 10,2 to 28,8V | 253VAC | 1A | 9 | R900 | | | | OBA 1000-24VDC | 1SNA 608 019 R1000 |
| | | screw | 20,4 to 28,8V | | 400VAC | 1A | 6 | R600 | | | | OBOA 1000-24VDC | 1SNA 645 027 R2400 | 50 | |
| | | screw | 20,4 to 28,8V | | 230VAC | 2A | 12 | R600 | | | | OBOA 2000-24VDC | 1SNA 645 029 R0600 | 50 | |
| | | spring | 20,4 to 28,8V | | 400VAC | 1A | 6 | R600 | | | | OBROA 1000-24VDC | 1SNA 645 527 R2600 | 50 | |
| | | spring | 20,4 to 28,8V | | 230VAC | 2A | 12 | R600 | | | | OBROA 2000-24VDC | 1SNA 645 529 R0000 | 50 | |
| | | screw | 20,4 to 28,8V | | 253VAC | 1A | 5,08 | R500 | | | P | D2,5/5-OBOA-1000-24VDC | 1SNA 607 238 R1700 | 56 | |
| | | screw | 20,4 to 28,8V | | 253VAC | 1A | 5,08 | R500 | | | P | D2,5/5-OBOA-1000-24VAC/DC | 1SNA 607 240 R2500 | 56 | |
| | | screw | 10,2 to 28,8V | | 253VAC | 1A | 9 | R900 | | | | OBA 1000-24VDC | 1SNA 608 019 R1000 | 61 | |
| | | screw | 19,2 to 28,8V | | 135VAC | 5A | 9 | R900 | | | | ORA 111-24VDC | 1SNA 608 069 R2200 | 62 | |
| | | screw | 19,2 to 28,8V | | 280VAC | 1A | 18 | R1800 | | | TTL | EB OAC 24 | 1SNA 010 036 R1000 | 65 | |
| | | screw | 9,6 to 30V | | 280VAC | 3A | 12,7 | R20000 | | | | OM1A3-24VAC/DC | 1SNA 020 365 R0000 | 66 | |
| | | 48V | screw | | 40,8 to 72V | 400VAC | 1A | 6 | R600 | | | | OBOA 1000-48-60VAC/DC | 1SNA 645 061 R0600 | 50 |
| | | | spring | 40,8 to 72V | 400VAC | 1A | 6 | R600 | | | | OBROA 1000-48-60VAC/DC | 1SNA 645 561 R0000 | 50 | |
| | | | screw | 40,8 to 57,6V | 253VAC | 1A | 5,08 | R500 | | | P | D2,5/5-OBOA-1000-48VAC/DC | 1SNA 607 241 R1200 | 56 | |
| | | | screw | 40,8 to 57,6V | 253VAC | 1A | 9 | R900 | | | | OBA 1000-48VDC | 1SNA 608 023 R0400 | 61 | |
| | | | screw | 40,8 to 72V | 400VAC | 1A | 6 | R600 | | | | OBOA 1000-48-60VAC/DC | 1SNA 645 061 R0600 | 50 | |
| | | | spring | 40,8 to 72V | 400VAC | 1A | 6 | R600 | | | | OBROA 1000-48-60VAC/DC | 1SNA 645 561 R0000 | 50 | |
| | | 115V | screw | 97,8 to 138V | 400VAC | 1A | 6 | R600 | | | | OBOA 1000-115VAC/DC | 1SNA 645 062 R0700 | 50 | |
| | | | spring | 97,8 to 138V | 400VAC | 1A | 6 | R600 | | | | OBROA 1000-115VAC/DC | 1SNA 645 562 R0100 | 50 | |

Note :
P Pluggable optocouplers
S Switch on input or output
H Max. operating frequency 1000 to 2000 Hz
HLL HLL compatible
VH Max. operating frequency 5000 to 9000 Hz
R Leakage current protection
TTL TTL compatible



High runners in bold characters
Marine certifications : RINA, DNV, GL, BV, LRS

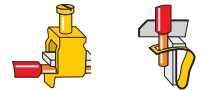
| Input type | Output type | Rated voltage | Contact type | Input voltage range | Max. output voltage | Output current | Spacing (mm) | Series | Available approvals | Particularities | Product type | Part number | Page | | | |
|---|------------------|---------------|--------------|---------------------|---------------------|----------------|-------------------------|--------------------|---|-----------------|----------------------|---------------------------|---|----------------------|--------------------|----|
| Output optocoupler - Output AC voltage, current > 1 A | | | | | | | | | | | | | | | | |
| DC | AC | 230 V | screw | 195 to 276V | 400VAC | 1A | 6 | R600 | cULus (pending)    LRS  | | OBOA 1000-230VAC/DC | 1SNA 645 028 R0500 | 50 | | | |
| | | | spring | 195 to 276V | 400VAC | 1A | 6 | R600 | | | OBROA 1000-230VAC/DC | 1SNA 645 528 R0700 | 50 | | | |
| AC input | AC output | 24 V | screw | 21,6 to 26,4V | 253VAC | 1A | 5,08 | R500 | | | P | D2,5/5-OBOA-1000-24VAC/DC | 1SNA 607 240 R2500 | 56 | | |
| | | | spring | 9,6 to 30V | 280VAC | 3A | 12,7 | R20000 | | | OM1A3-24VAC/DC | 1SNA 020 365 R0000 | 66 | | | |
| | | 48 V | screw | 43,2 to 66V | 400VAC | 1A | 6 | R600 | cULus (pending)    LRS  | | | | OBOA 1000-48-60VAC/DC | 1SNA 645 061 R0600 | 50 | |
| | | | spring | 43,2 to 66V | 400VAC | 1A | 6 | R600 | | | | | OBROA 1000-48-60VAC/DC | 1SNA 645 561 R0000 | 50 | |
| | | | screw | 43,2 to 53V | 253VAC | 1A | 5,08 | R500 | | | | | D2,5/5-OBOA-1000-48VAC/DC | 1SNA 607 241 R1200 | 56 | |
| | | 60 V | screw | 43,2 to 66V | 400VAC | 1A | 6 | R600 | cULus (pending)    LRS  | | | | OBOA 1000-48-60VAC/DC | 1SNA 645 061 R0600 | 50 | |
| | | | spring | 43,2 to 66V | 400VAC | 1A | 6 | R600 | | | | | OBROA 1000-48-60VAC/DC | 1SNA 645 561 R0000 | 50 | |
| | | 110 V | screw | 99 to 121V | 253VAC | 1A | 5,08 | R500 | | | | | D2,5/5-OBOA-1000-110VAC | 1SNA 607 268 R2500 | 56 | |
| | | | screw | 93,5 to 152,4V | 253VAC | 1A | 9 | R900 | | | | | OBA 1000-110VAC | 1SNA 608 026 R0700 | 61 | |
| | | | screw | 103,5 to 128,5V | 400VAC | 1A | 6 | R600 | | | | | cULus (pending)    LRS  | OBOA 1000-115VAC/DC | 1SNA 645 062 R0700 | 50 |
| | | | spring | 103,5 to 128,5V | 400VAC | 1A | 6 | R600 | | | | | | OBROA 1000-115VAC/DC | 1SNA 645 562 R0100 | 50 |
| | | 230 V | screw | 207 to 253V | 400VAC | 1A | 6 | R600 | cULus (pending)    LRS  | | | | OBOA 1000-230VAC/DC | 1SNA 645 028 R0500 | 50 | |
| spring | 207 to 253V | | 400VAC | 1A | 6 | R600 | OBROA 1000-230VAC/DC | 1SNA 645 528 R0700 | | | | | 50 | | | |
| screw | 207 to 253V | | 253VAC | 1A | 5,08 | R500 | D2,5/5-OBOA-1000-230VAC | 1SNA 607 269 R2600 | | | | | 56 | | | |

P Pluggable optocouplers
S Switch on input or output

H Max. operating frequency 1000 to 2000 Hz
HLL HLL compatible

VH Max. operating frequency 5000 to 9000 Hz
R Leakage current protection
TTL TTL compatible

High runners in bold characters
 Marine certifications :  RINA,  DNV,  GL,  BV, LRS

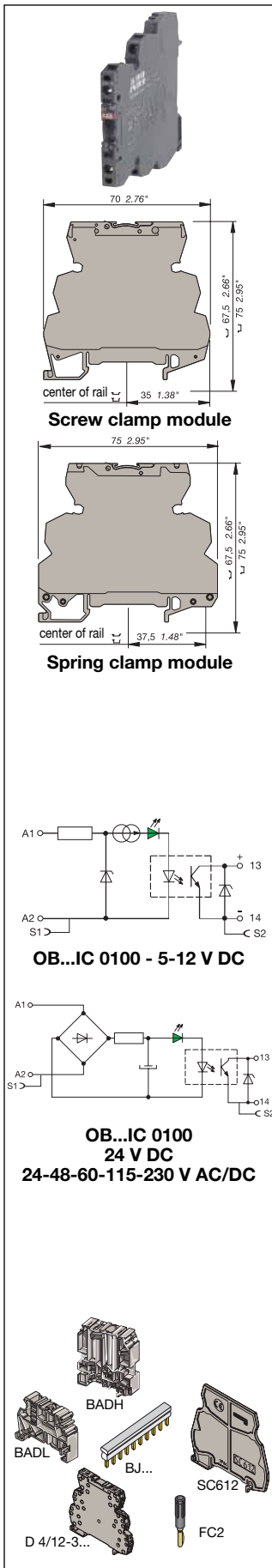


Optocoupler : 5 to 58 V DC output / 100 mA - 6 mm .236" spacing

Characteristics

| Opto. characteristics | OB...IC 0100 | | | | | | | | | | | | | |
|--|--|--|------------------|--|---------|--|--|--|------------|--|-------------|--|-------------|--|
| | INPUT | | 5 V DC - 12 V DC | | 24 V DC | | 48 V AC/DC | | 60 V AC/DC | | 115 V AC/DC | | 230 V AC/DC | |
| Input voltage +20% -15% on DC, +10% -10% on AC | | | | | | | | | | | | | | |
| Frequency | | | | | | | 50 / 60 Hz | | 50 / 60 Hz | | 50 / 60 Hz | | 50 / 60 Hz | |
| Input current | 5 mA 9 mA | | 4 mA | | | | 4 mA | | 5 mA | | | | | |
| Pull-in voltage at Is=100% | 4 V 4 V | | 15 V | | | | 25 V | | 25 V | | | | | |
| Switching time C / O | 10 µs / 500 µs | | 10 µs / 500 µs | | | | 5 ms / 20 ms | | | | | | | |
| Operating frequency | 1000 Hz | | 1000 Hz | | | | 20 Hz | | | | | | | |
| Permissible leakage current | 0,9 mA | | 1 mA | | | | 0,9 mA | | | | | | | |
| OUTPUT | | | | | | | | | | | | | | |
| Output voltage | 4,5 to 58 VDC | | | | | | | | | | | | | |
| Output current min. | 1 mA | | | | | | | | | | | | | |
| Output current max. | 100 mA | | | | | | | | | | | | | |
| Output leakage current at Umax. | < 50 µA | | | | | | | | | | | | | |
| Residual voltage at I max and U rated | typical | | 1 V | | | | | | | | | | | |
| | max. | | 1,3 V | | | | | | | | | | | |
| Frequency on inductive load | 2500 V RMS | | | | | | | | | | | | | |
| Isolation Input / Output | 2500 V RMS | | | | | | | | | | | | | |
| TEMPERATURE | | | | | | | | | | | | | | |
| Ambient temperature storage | -40°C to +80°C | | | | | | | | | | | | | |
| operating | -20°C to +70°C (1) | | | | | | | | | | | | | |
| Other characteristics | | | | | | | | | | | | | | |
| Body material | Screw clamp | | | | | | Spring clamp | | | | | | | |
| Wire | UL 94 V0 | | | | | | UL 94 V0 | | | | | | | |
| Wire size | Solid wire 0,2 - 4 mm ² / 24 - 12 AWG | | | | | | 0,2 - 2,5 mm ² / 24 - 12 AWG | | | | | | | |
| Stranded wire | 0,22 - 2,5 mm ² / 24 - 12 AWG | | | | | | 0,22 - 2,5 mm ² / 24 - 12 AWG | | | | | | | |
| Rated wire size | 2,5 mm ² / 12 AWG | | | | | | 2,5 mm ² / 12 AWG | | | | | | | |
| Wire stripping length | 9 mm .354" | | | | | | 9 mm .354" | | | | | | | |
| Recommended screwdriver | 3,5 mm .137" | | | | | | 3,5 mm .137" | | | | | | | |
| Protection | IP20 NEMA1 | | | | | | IP20 NEMA1 | | | | | | | |
| Recommended torque | 0,4 - 0,6 Nm 3.5 - 5.3 lb.in | | | | | | 0,4 - 0,6 Nm 3.5 - 5.3 lb.in | | | | | | | |
| Approvals | | | | | | | | | | | | | | |
| Reference standards | CEI 947-7-1 / CEI 947-1 / CEI 1131-2 (in relevant parts) / CEI 60664-1 / CEM : IRC 1000-4-2, 3, 4, 5, 6. | | | | | | | | | | | | | |

(1) Over 55°C, blocks have to be mounted on horizontal rail with 10 mm spacing between each block. For vertical rail mounting use temperature is 15°C less decreased.



Order codes

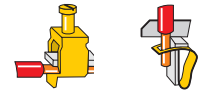
| Description | Type | Order P/N | Packaging | Weight |
|------------------------------|--------------------------|--------------------|-----------|--------|
| Optocoupler module 100 mA/DC | OBIC 0100-5-12VDC | 1SNA 645 047 R0000 | 10 | 0,02 |
| Optocoupler module 100 mA/DC | OBIC 0100-24VDC | 1SNA 645 021 R2600 | 10 | 0,02 |
| Optocoupler module 100 mA/DC | OBIC 0100-48-60VAC/DC | 1SNA 645 049 R1200 | 10 | 0,02 |
| Optocoupler module 100 mA/DC | OBIC 0100-115-230VAC/DC | 1SNA 645 022 R2700 | 10 | 0,02 |
| Optocoupler module 100 mA/DC | OBRIC 0100-5-12VDC | 1SNA 645 547 R0200 | 10 | 0,02 |
| Optocoupler module 100 mA/DC | OBRIC 0100-24VDC | 1SNA 645 521 R2000 | 10 | 0,02 |
| Optocoupler module 100 mA/DC | OBRIC 0100-48-60VAC/DC | 1SNA 645 549 R1400 | 10 | 0,02 |
| Optocoupler module 100 mA/DC | OBRIC 0100-115-230VAC/DC | 1SNA 645 522 R2100 | 10 | 0,02 |

Accessories

| | | | |
|---|-------------|--------------------|-------------|
| End section | BADH V0 | 1SNA 116 900 R2700 | 50 |
| | BADL V0 | 1SNA 399 903 R0200 | 50 |
| | BAM2 V0 | 1SNA 399 967 R0100 | 50 |
| Separator end section | SC 612 | 1SNA 290 474 R0200 | 10 |
| Divisible shunt 10 poles | BJ 612-10 | 1SNA 290 488 R0100 | 10 |
| | BJ 612-70 | 1SNA 290 489 R0200 | 10 |
| Screw clamp distribution block sp. 12 mm | D4/12-3A-3A | 1SNA 645 031 R2000 | 5 |
| Spring clamp distribution block sp. 12 mm | D4/12-3L-3L | 1SNA 645 531 R2200 | 5 |
| Test plug DIA. 2 mm | FC2 | 1SNA 007 865 R2600 | 10 |
| Marking method | RC65 | RC610 | see marking |

Electronic Interfaces

R600 optocoupler modules



DIN 3

Optocoupler : 5 to 58 V DC output / 2 A - 6 mm .236" spacing

Characteristics

| Opto. characteristics | OB...OC 1000 | | OB...OC 1500 | | OB...OC 1000 | | | |
|--|--|--|--|------------|--------------|--|--------------|--------------|
| | INPUT | | INPUT | | INPUT | | | |
| Input voltage +20% -15% on DC, +10% -10% on AC | 5 V DC - 12 V DC | | 24 V DC | 24 V AC/DC | 48 V AC/DC | 60 V AC/DC | 115 V AC/DC | 230 V AC/DC |
| Frequency | 5 mA 9 mA | | 5,4 mA | 50 / 60 Hz | 50 / 60 Hz | 50 / 60 Hz | 50 / 60 Hz | 50 / 60 Hz |
| Input current | 4 V | | 12 V | 6,3 mA | 4 mA | 5,1 mA | 4,2 mA | 4 mA |
| Pull-in voltage at Is=100% | 15 µs / 250 µs | | 30 µs/400 µs | 15 V | 27 V | 27 V | 50 V | 80 V |
| Switching time C / O | 2000 Hz | | 1000 Hz | 1 ms/7 ms | 5 ms/20 ms | 5 ms/20 ms | 500 µs/10 ms | 1 ms / 15 ms |
| Operating frequency | 1 mA | | 0,8 mA | 0,9 mA | 1 mA | 1 mA | 0,3 mA | 0,3 mA |
| Permissible leakage current | | | | | | | | |
| OUTPUT | | | | | | | | |
| Output voltage | 4,5 to 58 VDC | | | | | | | |
| Output current min. | 1 mA | | | | | | | |
| Output current max. | 2 A | | | | | | | |
| Output leakage current at Umax. | < 50 µA | | | | | | | |
| Residual voltage at I max and U rated | typical | | 0,1 V | | | | | |
| | max. | | 0,5 V | | | | | |
| Frequency on inductive load | | | | | | | | |
| Isolation Input / Output | 2500 V RMS | | | | | | | |
| TEMPERATURE | | | | | | | | |
| Ambient temperature storage | -40°C to +80°C | | | | | | | |
| operating | -20°C to +70°C (1) | | | | | | | |
| Other characteristics | | | | | | | | |
| Body material | grey | | Screw clamp | | | Spring clamp | | |
| Wire | Solid wire | | UL 94 V0 | | | UL 94 V0 | | |
| size | Stranded wire | | 0,2 - 4 mm ² / 24 - 12 AWG | | | 0,2 - 2,5 mm ² / 24 - 12 AWG | | |
| Rated wire size | | | 0,22 - 2,5 mm ² / 24 - 12 AWG | | | 0,22 - 2,5 mm ² / 24 - 12 AWG | | |
| Wire stripping length | | | 2,5 mm ² / 12 AWG | | | 2,5 mm ² / 12 AWG | | |
| Recommended screwdriver | | | 9 mm .354" | | | 9 mm .354" | | |
| Protection | | | 3,5 mm .137" | | | 3,5 mm .137" | | |
| Recommended torque | | | IP20 NEMA1 | | | IP20 NEMA1 | | |
| | | | 0,4 - 0,6 Nm 3.5 - 5.3 lb.in | | | 0,4 - 0,6 Nm 3.5 - 5.3 lb.in | | |
| Approvals | | | | | | | | |
| Reference standards | CEI 947-7-1 / CEI 947-1 / CEI 1131-2 (in relevant parts) / CEI 60664-1 / CEM : IRC 1000-4-2, 3, 4, 5, 6. | | | | | | | |

(1) Over 55°C, blocks have to be mounted on horizontal rail with 10 mm spacing between each block. For vertical rail mounting use temperature is 15°C less decreased.

Screw clamp module
70 2.76"
67,5 2.66"
75 2.95"
center of rail 35 1.38"

Spring clamp module
75 2.95"
67,5 2.66"
75 2.95"
center of rail 37,5 1.48"

OB...OC 1000 - 5-12-24 V DC

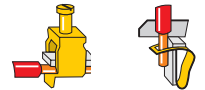
OB...OC 1500 - 24 V AC/DC
OB...OC 1000
48-60-115-230 V AC/DC

Order codes

| Description | Type | Order P/N | Packaging | Weight |
|---------------------------|------------------------|--------------------|-----------|--------|
| Optocoupler module 2 A/DC | OB0C 1000-5-12VDC | 1SNA 645 050 R1700 | 10 | 0,02 |
| Optocoupler module 2 A/DC | OB0C 1000-24VDC | 1SNA 645 051 R0400 | 10 | 0,02 |
| Optocoupler module 2 A/DC | OB0C 1500-24VAC/DC | 1SNA 645 025 R2200 | 10 | 0,02 |
| Optocoupler module 2 A/DC | OB0C 1000-48-60VAC/DC | 1SNA 645 053 R0600 | 10 | 0,02 |
| Optocoupler module 2 A/DC | OB0C 1000-115VAC/DC | 1SNA 645 054 R0700 | 10 | 0,02 |
| Optocoupler module 2 A/DC | OB0C 1000-230VAC/DC | 1SNA 645 026 R2300 | 10 | 0,02 |
| Optocoupler module 2 A/DC | OBROC 1000-5-12VDC | 1SNA 645 550 R1100 | 10 | 0,02 |
| Optocoupler module 2 A/DC | OBROC 1000-24VDC | 1SNA 645 551 R0600 | 10 | 0,02 |
| Optocoupler module 2 A/DC | OBROC 1500-24VAC/DC | 1SNA 645 525 R2400 | 10 | 0,02 |
| Optocoupler module 2 A/DC | OBROC 1000-48-60VAC/DC | 1SNA 645 553 R0000 | 10 | 0,02 |
| Optocoupler module 2 A/DC | OBROC 1000-115VAC/DC | 1SNA 645 554 R0100 | 10 | 0,02 |
| Optocoupler module 2 A/DC | OBROC 1000-230VAC/DC | 1SNA 645 526 R2500 | 10 | 0,02 |

Accessories

| | | | |
|---|-------------|--------------------|----|
| End section | BADH V0 | 1SNA 116 900 R2700 | 50 |
| | BADL V0 | 1SNA 399 903 R0200 | 50 |
| | BAM2 V0 | 1SNA 399 967 R0100 | 50 |
| Separator end section | SC 612 | 1SNA 290 474 R0200 | 10 |
| Divisible shunt 10 poles | BJ 612-10 | 1SNA 290 488 R0100 | 10 |
| | BJ 612-70 | 1SNA 290 489 R0200 | 10 |
| Screw clamp distribution block sp. 12 mm | D4/12-3A-3A | 1SNA 645 031 R2000 | 5 |
| Spring clamp distribution block sp. 12 mm | D4/12-3L-3L | 1SNA 645 531 R2200 | 5 |
| Test plug DIA. 2 mm | FC2 | 1SNA 007 865 R2600 | 10 |
| Marking method | RC65 RC610 | see marking | |



Optocoupler : 5 to 58 V DC output / 5 A - 6 mm .236" spacing

Characteristics

| Opto. characteristics | OB...OC 5000 | | | |
|--|--------------|--------------|--------------|--|
| | 24 V DC | 115 V AC/DC | 230 V AC/DC | |
| INPUT | | | | |
| Input voltage +20% -15% on DC, +10% -10% on AC | | 115 V AC/DC | 230 V AC/DC | |
| Frequency | | 50 / 60 Hz | 50 / 60 Hz | |
| Input current | 5,4 mA | 4,2 mA | 4 mA | |
| Pull-in voltage at Is=100% | 12 V | 50 V | 80 V | |
| Switching time C / O | 30 µs/400 µs | 500 µs/10 ms | 1 ms / 15 ms | |
| Operating frequency | 1000 Hz | 50 Hz | 35 Hz | |
| Permissible leakage current | 0,8 mA | 0,3 mA | 0,3 mA | |

OUTPUT

| | |
|---------------------------------------|-----------------------------|
| Output voltage | 4,5 to 58 VDC |
| Output current min. | 1 mA |
| Output current max. | 5 A |
| Output leakage current at Umax. | < 50 µA |
| Residual voltage at I max and U rated | typical 0,1 V max. 0,5 V |
| Frequency on inductive load | |
| Isolation Input / Output | 2500 V RMS |

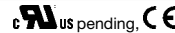
TEMPERATURE

| | |
|-----------------------------|--------------------|
| Ambient temperature storage | -40°C to +80°C |
| operating | -20°C to +70°C (1) |

Other characteristics

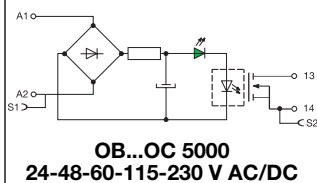
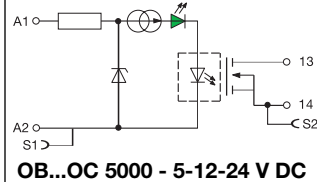
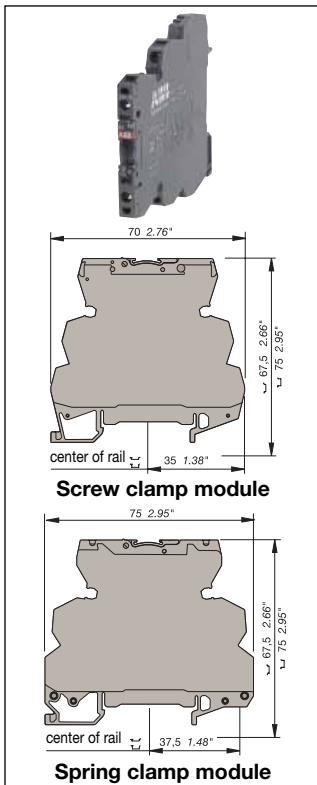
| | Screw clamp | Spring clamp |
|-------------------------|--|--|
| Body material | grey UL 94 V0 | UL 94 V0 |
| Wire size | Solid wire 0,2 - 4 mm ² / 24 - 12 AWG | 0,2 - 2,5 mm ² / 24 - 12 AWG |
| Stranded wire | 0,22 - 2,5 mm ² / 24 - 12 AWG | 0,22 - 2,5 mm ² / 24 - 12 AWG |
| Rated wire size | 2,5 mm ² / 12 AWG | 2,5 mm ² / 12 AWG |
| Wire stripping length | 9 mm .354" | 9 mm .354" |
| Recommended screwdriver | 3,5 mm .137" | 3,5 mm .137" |
| Protection | IP20 NEMA1 | IP20 NEMA1 |
| Recommended torque | 0,4 - 0,6 Nm 3.5 - 5.3 lb.in | 0,4 - 0,6 Nm 3.5 - 5.3 lb.in |

Approvals



Reference standards CEI 947-7-1 / CEI 947-1 / CEI 1131-2 (in relevant parts) / CEI 60664-1 / CEM : IRC 1000-4-2, 3, 4, 5, 6.

(1) Over 55°C, blocks have to be mounted on horizontal rail with 10 mm spacing between each block. For vertical rail mounting use temperature is 15°C less decreased.

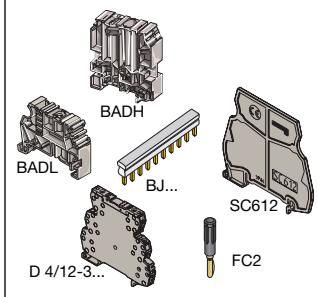


Order codes

| Description | Type | Order P/N | Packaging | Weight |
|---------------------------|----------------------|--------------------|-----------|--------|
| Optocoupler module 5 A/DC | OBOC 5000-24VDC | 1SNA 645 024 R2100 | 10 | 0,02 |
| Optocoupler module 5 A/DC | OBOC 5000-115VAC/DC | 1SNA 645 058 R1300 | 10 | 0,02 |
| Optocoupler module 5 A/DC | OBOC 5000-230VAC/DC | 1SNA 645 059 R1400 | 10 | 0,02 |
| Optocoupler module 5 A/DC | OBROC 5000-24VDC | 1SNA 645 524 R2300 | 10 | 0,02 |
| Optocoupler module 5 A/DC | OBROC 5000-115VAC/DC | 1SNA 645 558 R1500 | 10 | 0,02 |
| Optocoupler module 5 A/DC | OBROC 5000-230VAC/DC | 1SNA 645 559 R1600 | 10 | 0,02 |

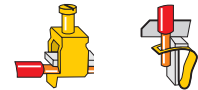
Accessories

| | | | |
|---|-------------|--------------------|----|
| End section | BADH V0 | 1SNA 116 900 R2700 | 50 |
| | BADL V0 | 1SNA 399 903 R0200 | 50 |
| | BAM2 V0 | 1SNA 399 967 R0100 | 50 |
| Separator end section | SC 612 | 1SNA 290 474 R0200 | 10 |
| Divisible shunt 10 poles | BJ 612-10 | 1SNA 290 488 R0100 | 10 |
| | BJ 612-70 | 1SNA 290 489 R0200 | 10 |
| Screw clamp distribution block sp. 12 mm | D4/12-3A-3A | 1SNA 645 031 R2000 | 5 |
| Spring clamp distribution block sp. 12 mm | D4/12-3L-3L | 1SNA 645 531 R2200 | 5 |
| Test plug DIA. 2 mm | FC2 | 1SNA 007 865 R2600 | 10 |
| Marking method | RC65 | | |
| | RC610 | see marking | |



Electronic Interfaces

R600 optocoupler modules



DIN 3

Optocoupler : 24 to 400 V AC output / 2 A max. - 6 or 12 mm spacing

Characteristics

| Opto. characteristics | OB...OA 1000 | | | | | | OB...OA 2000 |
|--|--|--------------|------------|--|--------------|-------------|--------------|
| | INPUT | | | | | | |
| Input voltage +20% -15% on DC, +10% -10% on AC | 24 V DC | 48 V AC/DC | 60 V AC/DC | 115 V AC/DC | 230 V AC/DC | 24 V DC | |
| Frequency | | 50 / 60 Hz | 50 / 60 Hz | 50 / 60 Hz | 50 / 60 Hz | | |
| Input current | 3,6 mA | 4,3 mA | 5,5 mA | 4,15 mA | 4,6 mA | 3,6 mA | |
| Pull-in voltage at Is=100% | 14 V | 15 V | 18 V | 60 V | 135 V | 14 V | |
| Switching time C / O | 150 µs/1ms | 3 ms / 30 ms | | 2,2 ms/18 ms | 2,5 ms/25 ms | 150 µs/1 ms | |
| Operating frequency | 500 Hz | 20 Hz | 25 Hz | 20 Hz | 20 Hz | 500 Hz | |
| Permissible leakage current | 1 mA | 1 mA | 1 mA | 1 mA | 1 mA | 1 mA | |
| OUTPUT | | | | | | | |
| Output voltage | 24 to 400 V AC | | | | | | 10to230VAC |
| Frequency | 50 / 60 Hz | | | | | | 50 / 60 Hz |
| Output current min. | 25 mA | | | | | | 25 mA |
| Output current max. | 1 A | | | | | | 2 A |
| Output leakage current at Umax. | < 0,5 mA | | | | | | |
| Residual voltage at I max and U rated | typical 1 V max. 1,6 V | | | | | | |
| Frequency on inductive load | 2500 V RMS | | | | | | |
| Isolation Input / Output | 2500 V RMS | | | | | | |
| TEMPERATURE | | | | | | | |
| Ambient temperature storage | - 40°C to + 80°C | | | | | | |
| operating | -20°C to +70°C (1) | | | | | | |
| Other characteristics | Screw clamp | | | Spring clamp | | | |
| Body material | grey UL 94 V0 | | | grey UL 94 V0 | | | |
| Wire | Solid wire 0,2 - 4 mm ² / 24 - 12 AWG | | | Solid wire 0,2 - 2,5 mm ² / 24 - 12 AWG | | | |
| size | Stranded wire 0,22 - 2,5 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 | | | 2,5 mm ² / 12 AWG | | | |
| Wire stripping length | 9 mm .354" | | | 9 mm .354" | | | |
| Recommended screwdriver | 3,5 mm .137" | | | 3,5 mm .137" | | | |
| Protection | IP20 NEMA1 | | | IP20 NEMA1 | | | |
| Recommended torque | 0,4 - 0,6 Nm 3.5 - 5.3 lb.in | | | 0,4 - 0,6 Nm 3.5 - 5.3 lb.in | | | |
| Approvals | us pending, CE | | | | | | |
| Reference standards | CEI 947-7-1 / CEI 947-1 / CEI 1131-2 (in relevant parts) / CEI 60664-1 / CEM : IRC 1000-4-2, 3, 4, 5, 6. | | | | | | |

(1) Over 55°C, blocks have to be mounted on horizontal rail with 10 mm spacing between each block. For vertical rail mounting use temperature is 15°C less decreased.

Screw clamp module
70 2.76"
67,5 2.66"
35 1.38"
75 2.95"

Spring clamp module
75 2.95"
67,5 2.66"
37,5 1.48"

OB...OA 1000 - 24 V DC

OB...OA 1000 48-60-115-230 V AC/DC
OB...OA 2000 - 24 V DC

Labels: BADH, BADL, BJ..., SC612, FC2, D 4/12-3...

Order codes

| Description | Type | Order P/N | Packaging | Weight kg |
|---------------------------------------|------------------------|--------------------|-----------|-----------|
| Optocoupler module 1 A/AC 6 mm spac. | OBOA 1000-24VDC | 1SNA 645 027 R2400 | 10 | 0,03 |
| Optocoupler module 1 A/AC 6 mm spac. | OBOA 1000-48-60VAC/DC | 1SNA 645 061 R0600 | 10 | 0,03 |
| Optocoupler module 1 A/AC 6 mm spac. | OBOA 1000-115VAC/DC | 1SNA 645 062 R0700 | 10 | 0,03 |
| Optocoupler module 1 A/AC 6 mm spac. | OBOA 1000-230VAC/DC | 1SNA 645 028 R0500 | 10 | 0,03 |
| Optocoupler module 2 A/AC 12 mm spac. | OBOA 2000-24VDC | 1SNA 645 029 R0600 | 5 | 0,03 |
| Optocoupler module 1 A/AC 6 mm spac. | OBROA 1000-24VDC | 1SNA 645 527 R2600 | 10 | 0,03 |
| Optocoupler module 1 A/AC 6 mm spac. | OBROA 1000-48-60VAC/DC | 1SNA 645 561 R0000 | 10 | 0,03 |
| Optocoupler module 1 A/AC 6 mm spac. | OBROA 1000-115VAC/DC | 1SNA 645 562 R0100 | 10 | 0,03 |
| Optocoupler module 1 A/AC 6 mm spac. | OBROA 1000-230VAC/DC | 1SNA 645 528 R0700 | 10 | 0,03 |
| Optocoupler module 2 A/AC 12 mm spac. | OBROA 2000-24VAC/DC | 1SNA 645 529 R0000 | 5 | 0,03 |

Accessories

| | | | |
|---|-------------|--------------------|----|
| End section | BADH V0 | 1SNA 116 900 R2700 | 50 |
| | BADL V0 | 1SNA 399 903 R0200 | 50 |
| | BAM2 V0 | 1SNA 399 967 R0100 | 50 |
| Separator end section | SC 612 | 1SNA 290 474 R0200 | 10 |
| Divisible shunt 10 poles | BJ 612-10 | 1SNA 290 488 R0100 | 10 |
| | BJ 612-70 | 1SNA 290 489 R0200 | 10 |
| Screw clamp distribution block sp. 12 mm | D4/12-3A-3A | 1SNA 645 031 R2000 | 5 |
| Spring clamp distribution block sp. 12 mm | D4/12-3L-3L | 1SNA 645 531 R2200 | 5 |
| Test plug DIA. 2 mm | FC2 | 1SNA 007 865 R2600 | 10 |
| Marking method | RC65 RC610 | see marking | |

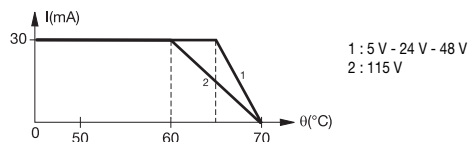


Pluggable optocoupler : 5 to 58 V DC output / 30 mA - 5.08 mm .200" spacing

Characteristics

| Opto. characteristics | D 2,5/5-OBIC-0030 | | | |
|---------------------------------------|--|---------------------|---------------------|--------------------|
| | 4.5 V to 5.5 VDC | 19.2 V to 27.6 V DC | 38.4 V to 55.2 V DC | 93.5 V to 140 V DC |
| INPUT | | | | |
| Input voltage | 4.5 V to 5.5 VDC | 19.2 V to 27.6 V DC | 38.4 V to 55.2 V DC | 93.5 V to 140 V DC |
| Frequency | | | | |
| Input current | 6 mA | 5 mA | 4.1 mA | 3 mA |
| Pull-in voltage at Is=100% | 3.5 V | 12 V | 21 V | 50 V |
| Switching time C / O | 20 µs / 1.3 ms | 20 µs / 1.3 ms | 20 µs / 1.3 ms | 20 µs / 1.3 ms |
| Operating frequency | 400 Hz | 400 Hz | 400 Hz | 400 Hz |
| Permissible leakage current | | 1 mA | 0.8 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. | < 50 µA | | | |
| Residual voltage at I max and U rated | typical 2.3 V DC max. 2.7 VDC | | | |
| Frequency on inductive load | 2500 V RMS | | | |
| Isolation Input / Output | 2500 V RMS | | | |
| TEMPERATURE | | | | |
| Ambient temperature | storage | - 40°C to + 80°C | | |
| | operating | See derating curve | | |
| Other characteristics | | | | |
| Body material | grey | | | |
| Wire | Solid wire | | | |
| Wire size | UL 94 V0 | | | |
| size | 0.2-4 mm ² / 24-12 AWG | | | |
| Rated wire size | 0.22-2.5 mm ² / 24-12 AWG | | | |
| Wire stripping length | 2.5 mm ² / 12 AWG | | | |
| Recommended screwdriver | 10 mm .394" | | | |
| Protection | 3.5 .137" | | | |
| Recommended torque | IP 20 NEMA 1 | | | |
| Approvals | 0.4-0.6 Nm 3.5-5.3 lb.in | | | |
| Reference standards | CEI 947-7-1 / CEI 947-1 / CEI 1131-2 (in relevant parts) / CEI 60664-1 / CEM : IRC 1000-4-2, 3, 4, 5, 6. | | | |

Derating curve



D 2,5/5-OBIC-0030

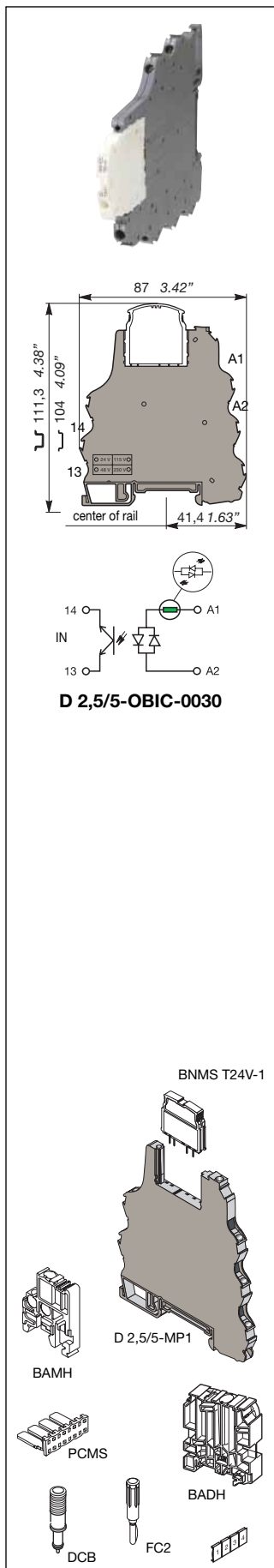
Order codes

| Description | Type | Order P/N | Packaging | Weight kg |
|-----------------------------|--------------------------|--------------------|-----------|-----------|
| Optocoupler module 30 mA/DC | D 2,5/5-OBIC-0030-5VDC | 1SNA 607 274 R1300 | 1 | 0.032 |
| Optocoupler module 30 mA/DC | D 2,5/5-OBIC-0030-24VDC | 1SNA 607 210 R1700 | 1 | 0.032 |
| Optocoupler module 30 mA/DC | D 2,5/5-OBIC-0030-48VDC | 1SNA 607 211 R0400 | 1 | 0.032 |
| Optocoupler module 30 mA/DC | D 2,5/5-OBIC-0030-125VDC | 1SNA 607 275 R1400 | 1 | 0.032 |

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 | |
| Comb type jumper bar 2 to 22 poles | consult us | | | |
| Jumper bar 10 poles grey | PCMS V0 | 1SNA 205 523 R2200 | 8 | |
| Input opto base | D 2,5/5-MP1 | 1SNA 607 223 F0000 | 10 0.028 | |
| Plug OBIC 5 V | white | BNMS T5V-1 | 1SNA 031 831 F0300 | 4 |
| Plug OBIC 24 V | white | BNMS T24V-1 | 1SNA 031 800 R2100 | 4 |
| Plug OBIC 48 V | white | BNMS T48V-1 | 1SNA 031 801 R1600 | 4 |
| Plug OBIC 125 V | white | BNMS T125V-1 | 1SNA 031 845 R1100 | 4 |
| Test device | blue | DCB (1) | 1SNA 105 028 F2100 | 10 |
| Test plug | DIA. 2 mm | FC2 | 1SNA 007 865 R2600 | 10 |
| Marking method | RC55 | see marking | | |

(1) Only on top decks.



Electronic Interfaces

R500 pluggable optocoupler modules

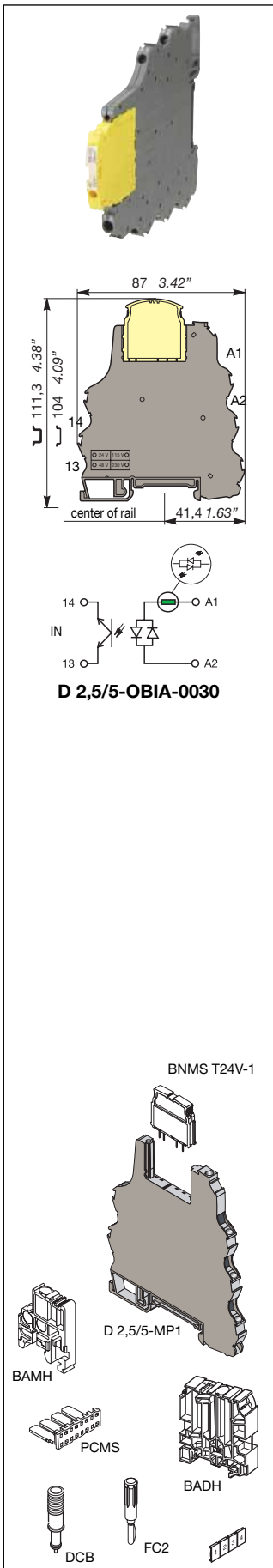


DIN 3

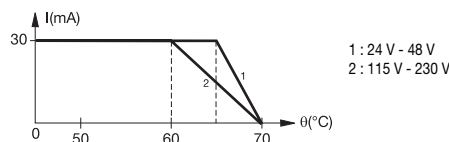
Pluggable optocoupler : 5 to 58 V DC output / 30 mA - 5.08 mm .200" spacing

Characteristics

| Opto. characteristics | D 2,5/5-OBIA-0030 | | | |
|---------------------------------------|--|---------------------|--------------------|---------------------|
| INPUT | | | | |
| Input voltage | 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 |
| Frequency | | | 50 / 60 Hz | 50 Hz |
| Input current | 8.5 mA | 4.5 mA | 8 mA | 7 mA |
| Pull-in voltage at Is=100% | 13 V | 22 V | 50 V | 95 V |
| Switching time C / O | 6 ms / 10 ms | 6 ms / 10 ms | 6 ms / 10 ms | 6 ms / 10 ms |
| Operating frequency | 30 Hz | 30 Hz | 30 Hz | 30 Hz |
| Permissible leakage current | 1 mA | 1 mA | 2 mA | 2 mA |
| OUTPUT | 4.5 V to 58 V DC | | | |
| Output voltage | | | | |
| Output current min. | 0.5 mA | | | |
| Output current max. | 30 mA | | | |
| Output leakage current at Umax. | < 50 µA | | | |
| Residual voltage at I max and U rated | 2.3 V DC | | | |
| typical | | | | |
| max. | 2.7 VDC | | | |
| Frequency on inductive load | 2500 V RMS | | | |
| Isolation Input / Output | | | | |
| TEMPERATURE | | | | |
| Ambient temperature | - 40°C to + 80°C | | | |
| storage | | | | |
| operating | See derating curve | | | |
| Other characteristics | | | | |
| Body material | UL 94 V0 | | | |
| Wire | Solid wire | | | |
| size | 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 | UL us pending, CE | | | |
| Reference standards | CEI 947-7-1 / CEI 947-1 / CEI 1131-2 (in relevant parts) / CEI 60664-1 / CEM : IRC 1000-4-2, 3, 4, 5, 6. | | | |



Derating curve



D 2,5/5-OBIA-0030

Order codes

| Description | Type | Order P/N | Packaging | Weight kg |
|-----------------------------|--------------------------|--------------------|-----------|-----------|
| Optocoupler module 30 mA/DC | D 2,5/5-OBIA-0030-24VAC | 1SNA 607 212 R0500 | 1 | 0.032 |
| Optocoupler module 30 mA/DC | D 2,5/5-OBIA-0030-48VAC | 1SNA 607 213 R0600 | 1 | 0.032 |
| Optocoupler module 30 mA/DC | D 2,5/5-OBIA-0030-115VAC | 1SNA 607 214 R0700 | 1 | 0.032 |
| Optocoupler module 30 mA/DC | D 2,5/5-OBIA-0030-230VAC | 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 | | consult us | |
| Jumper bar 10 poles | grey □ PCMS V0 | 1SNA 205 523 R2200 | 8 |
| Input opto base | D 2,5/5-MP1 | 1SNA 607 223 R0000 | 10 0.028 |
| Plug OBIA 24 V | yellow ■ BNMS T24V-1 | 1SNA 031 802 R1700 | 4 |
| Plug OBIA 48 V | yellow ■ BNMS T48V-1 | 1SNA 031 803 R1000 | 4 |
| Plug OBIA 115 V | yellow ■ BNMS T115V-1 | 1SNA 031 804 R1100 | 4 |
| Plug OBIA 230 V | yellow ■ BNMS T230V-1 | 1SNA 031 805 R1200 | 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 marking | |

(1) Only on top decks.

Electronic Interfaces

R500 pluggable optocoupler modules



DIN 3

Pluggable optocoupler : 5 to 58 V DC output / 1 A - 5.08 mm .200" spacing

Characteristics

| Opto. characteristics | D 2,5/5-OB0C-1000 5/24 VDC | | D 2,5/5-OB0C-1000 24/48 VAC/DC | | | | D2,5/5-OB0C-1000-110/230VAC | |
|---------------------------------------|-----------------------------|------------------|--|------------------|------------|------------------|-----------------------------|------------|
| | 5 VDC | 24 VDC | 24 VAC | 24 VDC | 48 VAC | 48 VDC | 110 VAC | 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% |
| Frequency | | | 50 / 60 Hz | | 50 / 60 Hz | | 50 / 60 Hz | 50 / 60 Hz |
| 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 | 4.5 to 58 VDC | | 4.5 to 58 VDC | | | | | |
| 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. | < 50 µA | | < 50 µA | | | | | |
| Residual voltage at I max and U rated | typical 0.1 V max. 0.5 V | | typical 0.1 V max. 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 | | 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 | | | UL pending, CE | | | | | |
| Reference standards | | | CEI 947-7-1 / CEI 947-1 / CEI 1131-2 (in relevant parts) / CEI 60664-1 / CEM : IRC 1000-4-2, 3, 4, 5, 6. | | | | | |

Note 1 :

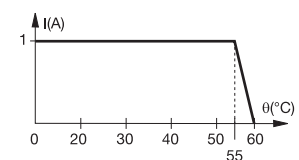
$$F_{max} = (1 - 0,007 \times U_s) / (L \times I_s^2)$$

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



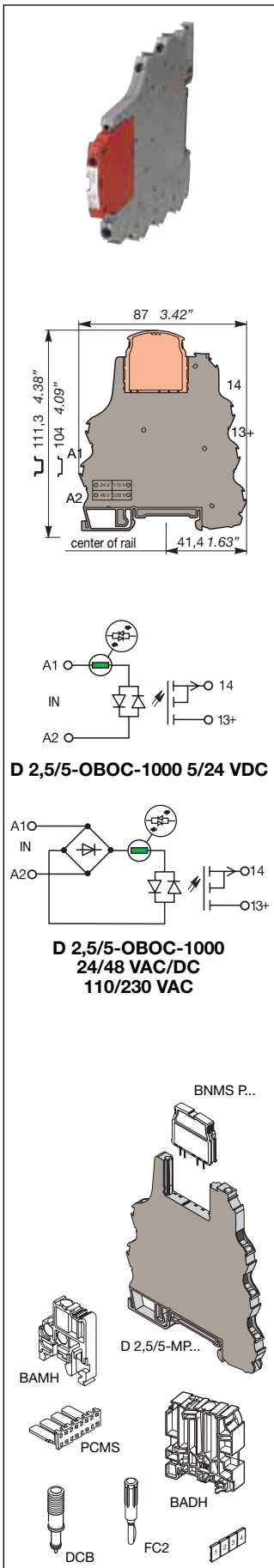
Order codes

| Description | Type | Order P/N | Packaging | Weight |
|---------------------------|----------------------------|--------------------|-----------|--------|
| Optocoupler module 1 A/DC | D 2,5/5-OB0C-1000-5VDC | 1SNA 607 206 R1000 | 1 | 0.032 |
| Optocoupler module 1 A/DC | D 2,5/5-OB0C-1000-24VDC | 1SNA 607 207 R1100 | 1 | 0.032 |
| Optocoupler module 1 A/DC | D 2,5/5-OB0C-1000-24VAC/DC | 1SNA 607 250 R2700 | 1 | 0.04 |
| Optocoupler module 1 A/DC | D 2,5/5-OB0C-1000-48VAC/DC | 1SNA 607 251 R1400 | 1 | 0.04 |
| Optocoupler module 1 A/DC | D 2,5/5-OB0C-1000-110VAC | 1SNA 607 270 R2300 | 1 | 0.04 |
| Optocoupler module 1 A/DC | D 2,5/5-OB0C-1000-230VAC | 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 | | consult us | |
| Jumper bar 10 poles grey | PCMS V0 | 1SNA 205 523 R2200 | 8 |
| Relay / Opto base | D 2,5/5-MP | 1SNA 607 224 R0100 | 10 0.028 |
| Relay / Opto base with LED 24 VAC/VDC | D 2,5/5-MP-24VAC/DC | 1SNA 607 260 R2100 | 10 0.036 |
| Relay / Opto base with LED 48 VAC/VDC | D 2,5/5-MP-48VAC/DC | 1SNA 607 261 R1600 | 10 0.036 |
| Relay / Opto base with LED 110 VAC | D 2,5/5-MP-110VAC | 1SNA 607 266 R1300 | 10 0.036 |
| Relay / Opto base with LED 230 VAC | D 2,5/5-MP-230VAC | 1SNA 607 267 R1400 | 10 0.036 |
| 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 marking | |

- (1) Only on top decks.
- (2) For D 2,5/5-OB0C-2000 5 V DC only.
- (3) For all D 2,5/5-OB0C-2000 except 5 V DC model.





Pluggable optocoupler : 5 to 30 V DC output / 2 A - 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% |
| Frequency | | | 50 / 60 Hz | | 50 / 60 Hz | | 50 / 60 Hz | 50 / 60 Hz |
| 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. | < 50 µA | < 50 µA |
| 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 | 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 | | UL, CE, etc. |
| Reference standards | CEI 947-7-1 / CEI 947-1 / CEI 1131-2 (in relevant parts) / CEI 60664-1 / CEM : IRC 1000-4-2, 3, 4, 5, 6. | |

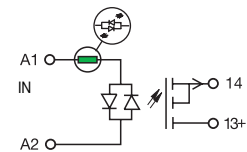
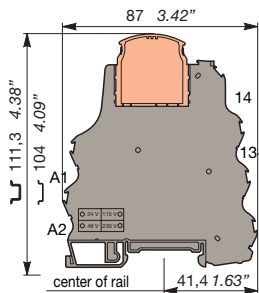
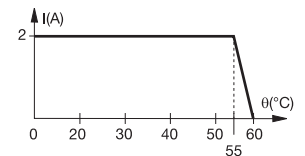
Note 1 :

$$F_{max} = (1 - 0.012 \times U_s) / (L \times I_s^2)$$

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

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

Derating curve



D 2,5/5-OBOC-2000

Order codes

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

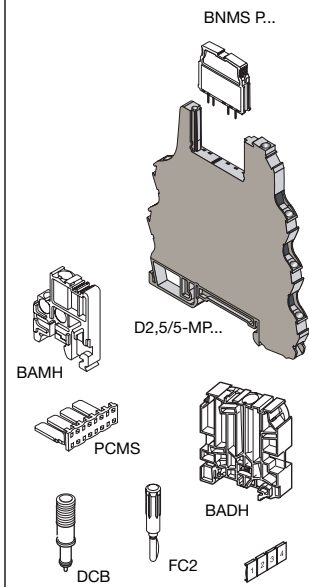
Accessories

| | | | | |
|---------------------------------------|----------------------------|--------------------|----|-------|
| High end stop | BAMH 9,1 mm | 1SNA 114 836 R0000 | 50 | |
| | BAMH V0 9,1 mm | 1SNA 194 836 R0100 | 50 | |
| | BADH 12 mm | 1SNA 116 900 R2700 | 50 | |
| Comb type jumper bar 2 to 22 poles | | consult us | | |
| Jumper bar 10 poles grey | PCMS V0 | 1SNA 205 523 R2200 | 8 | |
| Relay / Opto base | D 2,5/5-MP | 1SNA 607 224 R0100 | 10 | 0.028 |
| Relay / Opto base with LED 24 VAC/VDC | D 2,5/5-MP-24VAC/DC | 1SNA 607 260 R2100 | 10 | 0.036 |
| Relay / Opto base with LED 48 VAC/VDC | D 2,5/5-MP-48VAC/DC | 1SNA 607 261 R1600 | 10 | 0.036 |
| Relay / Opto base with LED 110 VAC | D 2,5/5-MP-110VAC | 1SNA 607 266 R1300 | 10 | 0.036 |
| Relay / Opto base with LED 230 VAC | D 2,5/5-MP-230VAC | 1SNA 607 267 R1400 | 10 | 0.036 |
| 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 marking | | |

(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

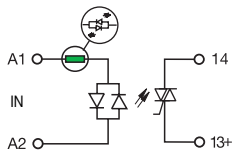
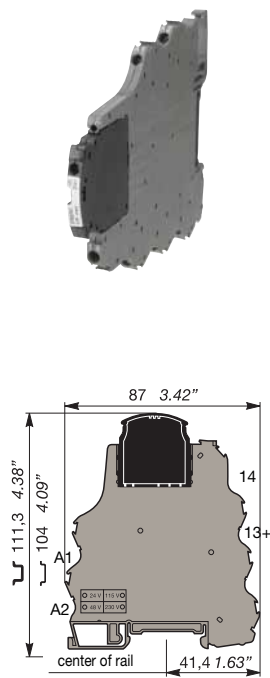


DIN 3

Pluggable optocoupler : 24 to 253 V AC output / 1 A - 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 | |
|---------------------------------------|--|------------|---------------------------------------|------------|------------------|-----------------------------------|------------|
| | 24 VDC | 24 VAC | 24 VDC | 48 VAC | 48 VDC | 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% |
| Frequency | | 50 / 60 Hz | | 50 / 60 Hz | | 50 / 60 Hz | 50 / 60 Hz |
| 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 | 24 to 253 VAC - 50 / 60 Hz | | | | | | |
| Output voltage | 24 to 253 VAC - 50 / 60 Hz | | | | | | |
| Output current min. | 25 mA | | | | | | |
| Output current max. | 1 A | | | | | | |
| Output leakage current at Umax. | < 0.5 mA | | | | | | |
| Residual voltage at I max and U rated | 1 V | | | | | | |
| typical | 1 V | | | | | | |
| max. | 1.6 V | | | | | | |
| Frequency on inductive load | See Note 1 | | | | | | |
| Isolation Input / Output | 2500 V RMS | | | | | | |
| TEMPERATURE | -40 to +80°C | | | | | | |
| Ambient temperature storage | -40 to +80°C | | | | | | |
| operating | See derating curve | | | | | | |
| Other characteristics | UL 94 V0 | | | | | | |
| Body material | grey | | | | | | |
| Wire | Solid wire | | | | | | |
| size | 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 mm .137" | | | | | | |
| Protection | IP 20 NEMA 1 | | | | | | |
| Recommended torque | 0.4-0.6 Nm 3.5-5.3 lb.in | | | | | | |
| Approvals | cULus pending, CE | | | | | | |
| Reference standards | CEI 947-7-1 / CEI 947-1 / CEI 1131-2 (in relevant parts) / CEI 60664-1 / CEM : IRC 1000-4-2, 3, 4, 5, 6. | | | | | | |



D 2,5/5-OBOA-1000

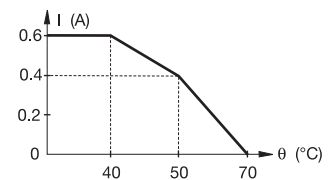
Note 1 :

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

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

Us = Output voltage
Is = 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 1 A/AC | D 2,5/5-OBOA-1000-24VDC | 1SNA 607 238 R1700 | 1 | 0.032 |
| Optocoupler module 1 A/AC | D 2,5/5-OBOA-1000-24VAC/DC | 1SNA 607 240 R2500 | 1 | 0.04 |
| Optocoupler module 1 A/AC | D 2,5/5-OBOA-1000-48VAC/DC | 1SNA 607 241 R1200 | 1 | 0.04 |
| Optocoupler module 1 A/AC | D 2,5/5-OBOA-1000-110VAC | 1SNA 607 268 R2500 | 1 | 0.04 |
| Optocoupler module 1 A/AC | D 2,5/5-OBOA-1000-230VAC | 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 | | | consult us | |
| Jumper bar 10 poles | grey | PCMS V0 | 1SNA 205 523 R2200 | 8 |
| Relay / Opto base | | D 2,5/5-MP | 1SNA 607 224 R0100 | 10 0.028 |
| Relay / Opto base with LED 24 VAC/VDC | | D 2,5/5-MP-24VAC/DC | 1SNA 607 260 R2100 | 10 0.036 |
| Relay / Opto base with LED 48 VAC/VDC | | D 2,5/5-MP-48VAC/DC | 1SNA 607 261 R1600 | 10 0.036 |
| Relay / Opto base with LED 110 VAC | | D 2,5/5-MP-110VAC | 1SNA 607 266 R1300 | 10 0.036 |
| Relay / Opto base with LED 230 VAC | | D 2,5/5-MP-230VAC | 1SNA 607 267 R1400 | 10 0.036 |
| 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 marking | |

(1) Only on top decks.



Optocoupler : 5 to 60 V DC / 100 mA high switching output - 9 mm .354" spacing

Characteristics

| Opto. characteristics | OBC 0100 - 24 V DC | OBC 0100 - 48 V DC | OBC 0100 - 110 V AC | OBC 0100 - 230 V AC |
|-----------------------------|------------------------------|---------------------|-------------------------|---------------------|
| INPUT | | | | |
| Input voltage | 10.2 V to 28.8 V DC | 40.8 V to 57.6 V DC | 93.5 V AC to 152.4 V AC | 230 V AC +15%, -20% |
| Frequency | | | 50 / 60 Hz | 50 Hz |
| Input current | 7 mA to 12 V / 10 mA to 24 V | 5 mA | 8 mA | 8 mA |
| Pull-in voltage at Is=100% | 10.2 V DC | 40.8 V DC | 93.5 V AC | 184 V AC |
| Switching time C / O | 20 μs / 50 μs | 20 μs / 50 μs | 5 ms/5 ms | 5 ms/5 ms |
| Operating frequency | 7000 Hz | 7000 Hz | 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. | < 50 μA |
| Residual voltage at I max and U rated | 1 V |
| typical | 1.3 V |
| max. | |
| Frequency on inductive load | 3000 V RMS |
| Isolation Input / Output | |

TEMPERATURE

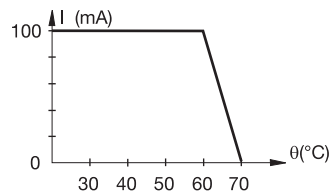
| | |
|---------------------|--------------------|
| Ambient temperature | - 40°C to + 80°C |
| storage | |
| operating | See derating curve |

Other characteristics

| | |
|-------------------------|------------------------------|
| Body material | grey |
| Wire | Solid wire |
| size | Stranded wire |
| 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 | |
| Reference standards | CEI 947-7-1 / CEI 947-1 / CEI 1131-2 (in relevant parts) / CEI 60664-1 / CEM : IRC 1000-4-2, 3, 4, 5, 6. |

Derating curve



OBC 0100

Order codes

| Description | Type | Order P/N | Packaging | Weight kg |
|------------------------------|-----------------|--------------------|-----------|-----------|
| Optocoupler module 100 mA/DC | OBC 0100-24VDC | 1SNA 608 017 R0600 | 1 | 0.04 |
| Optocoupler module 100 mA/DC | OBC 0100-48VDC | 1SNA 608 021 R0200 | 1 | 0.04 |
| Optocoupler module 100 mA/DC | OBC 0100-110VAC | 1SNA 608 024 R0500 | 1 | 0.04 |
| Optocoupler module 100 mA/DC | OBC 0100-230VAC | 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 |
| Comb type jumper bar 10 poles | PC9 | 15 A | 1SNA 210 160 R1200 | 10 |
| Lengthwise marker | RLV | | 1SNA 103 849 R0300 | 100 |
| Marking method | RC55 | | see marking | |

OBC 0100 - 24 V DC

OBC 0100 - 48 V DC

OBC 0100 - 110-230 V

Electronic Interfaces

R900 optocoupler modules



DIN 3

Optocoupler : 5 to 57,6 V DC / 100 mA output - 9 mm .354" spacing

Characteristics

| Opto. characteristics | OBC 0100 - 110 V AC / 125 V DC | | OBC 0100 - 125 V DC | OBC 0100 S - 125 V DC |
|-----------------------------|--------------------------------|-------------------|---------------------|-----------------------|
| INPUT | | | | |
| Input voltage | 88 to 126 V AC | 100 to 143.8 V DC | 100 to 143.8 V DC | 106 to 150 V DC |
| Frequency | 50 Hz | | | |
| Input current | 3.5 mA | 4.5 mA | 4.5 mA | 4.5 mA |
| Pull-in voltage at Is=100% | | 40 V DC | 40 V DC | 40 V DC |
| Switching time C / O | 15 / 35 ms | 15 / 45 ms | 5 μs / 50 μs | 5 μs / 50 μs |
| Operating frequency | 10 Hz | 10 Hz | 9000 Hz | 9000 Hz |
| Permissible leakage current | | | | |

OUTPUT

| | | | | |
|---------------------------------------|----------------|--|--|--|
| Output voltage max. | 5 to 57.6 V DC | | | |
| Output current min. | 1 mA | | | |
| Output current max. | 100 mA | | | |
| Output leakage current at Umax. | < 50 μA | | | |
| 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

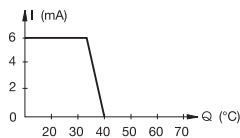
| | | |
|---------------------|-----------|---------------------|
| Ambient temperature | storage | - 40°C to + 80°C |
| | operating | see derating curves |

Other characteristics

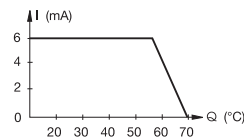
| | | |
|-------------------------|---------------|-------------------------------------|
| Body material | black | UL 94 V2 |
| Wire | Solid wire | 0.5-4 mm ² / 20-12 AWG |
| size | Stranded wire | 0.5-2.5 mm ² / 20-12 AWG |
| Rated wire size | | 2.5 mm ² / 12 AWG |
| Wire stripping length | | 7 mm .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 | | CE |

Reference standards CEI 947-7-1 / CEI 947-1 / CEI 1131-2 (parts) / CEI 60664-1 / CEM : IRC 1000-4-2, 3, 4, 5, 6

Derating curves



OBC 0100



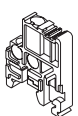
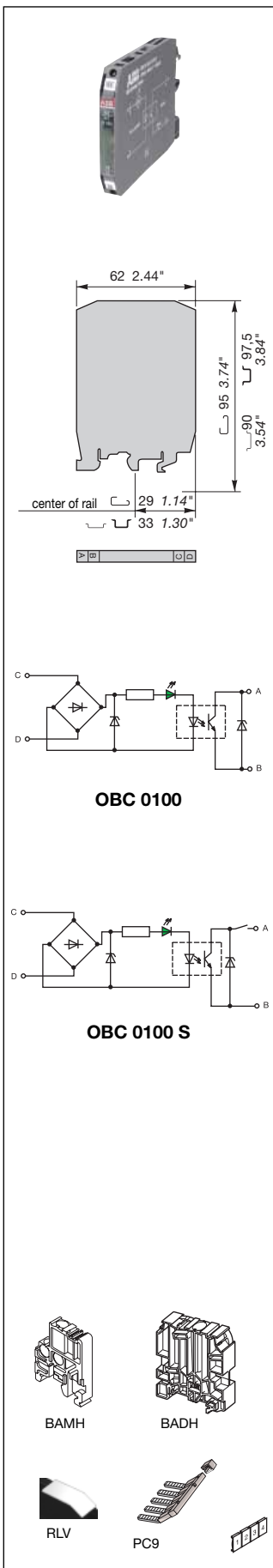
OBC 0100 S

Order codes

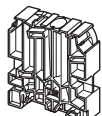
| Description | Type | Order P/N | Packaging Weight kg |
|--|--------------------------|--------------------|---------------------|
| Optocoupler module 100 mA/DC | OBC 0100 110 VAC/125 VDC | 1SNA 008 048 R1700 | 1 |
| Optocoupler module 100 mA/DC | OBC 0100 125 V DC | 1SNA 008 049 R1000 | 1 |
| Optocoupler module with switch 100 mA/DC | OBC 0100 S 125 V DC | 1SNA 008 004 R0400 | 1 |

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 | 100 |
| Comb-type jumper bar 10 poles | PC9 15 A | 1SNA 210 160 R1200 | 10 |
| Marker | RC55 | see markers | |



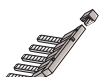
BAMH



BADH



RLV



PC9

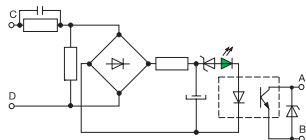
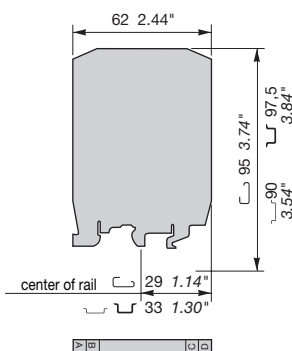




Optocoupler : 5 to 57,6 V DC / 100 mA output with leakage current protection - 9 mm .354" spacing

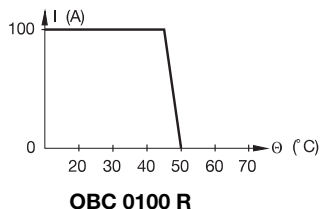
Characteristics

| Opto. characteristics | OBC 0100 R | | |
|--|---|----------------------------------|--------------------------------|
| | INPUT | 93.5 V AC to 152.4 V AC 50 Hz | 93.5 V AC to 127 V AC 60 Hz |
| Input voltage | | | |
| Frequency | | | |
| Input current | 12 mA | | 15 mA |
| Pull-in voltage at Is=100% | 93.5 V | | 195.5 V |
| Switching time C / O | 10 / 25 ms | | 10 / 25 ms |
| Operating frequency | 15 Hz | | 15 Hz |
| Permissible leakage current | 5 mA | | 5 mA |
| OUTPUT | | | |
| Output voltage max. | 4.5 to 57.6 V DC | | |
| Output current min. | 1 mA | | |
| Output current max. | 100 mA | | |
| Output leakage current at Umax. | < 50 µA | | |
| Residual voltage at I max and U rated | typical max. 1 V 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 | black UL 94 V2 | | |
| 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 | | | |
| Reference standards | CEI 947-7-1 / CEI 947-1 / CEI 1131-2 (parts) / CEI 60664-1 / CEM : IRC 1000-4-2, 3, 4, 5, 6 | | |



OBC 0100 R

Derating curve

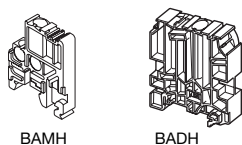


Order codes

| Description | Type | Order P/N | Packaging Weight kg |
|---|---------------------|--------------------|---------------------|
| Optocoupler mod. w. leakage current protection 100 mA/DC | OBC 0100 R 110 V AC | 1SNA 008 076 R0300 | 1 |
| Optocoupler mod. wi. leakage current protection 100 mA/DC | OBC 0100 R 230 V AC | 1SNA 008 077 R0400 | 1 |

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 | 100 |
| Comb-type jumper bar 10 poles | PC9 15 A | 1SNA 210 160 R1200 | 10 |
| Marker | RC55 | see markers | |



Electronic Interfaces

R900 optocoupler modules



DIN 3

Optocoupler : 5 to 60 V DC / 1 A high switching output - 9 mm .354" spacing

Characteristics

| Opto. characteristics | OBC 1000 - 5 V DC | OBC 1000 - 24 V DC | OBC 1000 - 48 V DC | OBC 1000 - 110 V AC | OBC 1000 - 230 V AC |
|-----------------------------|-------------------|---------------------------|--------------------|-------------------------|---------------------|
| INPUT | | | | | |
| Input voltage | 4.5 to 5.5 V DC | 10.2 V DC to 28.8 V DC | 40.5 to 57.6 V DC | 93.5 V AC to 152.4 V AC | 195 to 264.5 V AC |
| Frequency | | | | 50 / 60 Hz | 50 Hz |
| Input current | 6.5 mA | 6.5mA to 12V/9.5mA at 24V | 4.5 mA | 8 mA | 7 mA |
| Pull-in voltage at Is=100% | 4.5 V DC | 10.2 V AC | 40.8 V DC | 93.5 V AC | 184 V DC |
| Switching time C / O | 20 µs / 50 µs | 20 µs / 50 µs | 20 µs / 50 µs | 2 ms / 5 ms | 1 ms / 5 ms |
| Operating frequency | 7000 Hz | 7000 Hz | 7000 Hz | 80 Hz | 80 Hz |
| Permissible leakage current | | | | | |

OUTPUT

| | |
|---------------------------------------|--------------|
| Output voltage | 5 to 60 V DC |
| Output current min. | 1 mA |
| Output current max. | 1 A |
| Output leakage current at Umax. | < 50 µA |
| 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

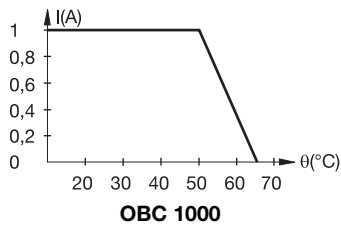
| | | |
|---------------------|---------|--------------------|
| Ambient temperature | storage | - 40°C to + 80°C |
| operating | | See derating curve |

Other characteristics

| | | |
|-------------------------|---------------|-------------------------------------|
| Body material | grey | 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 | | | | | |
| Reference standards | CEI 947-7-1 / CEI 947-1 / CEI 1131-2 (in relevant parts) / CEI 60664-1 / CEM : IRC 1000-4-2, 3, 4, 5, 6. | | | | |

Derating curve

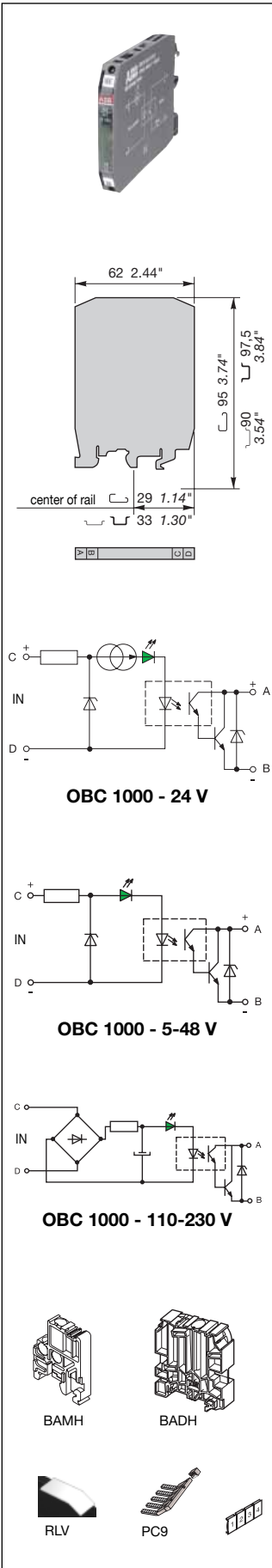


Order codes

| Description | Type | Order P/N | Packaging | Weight kg |
|---------------------------|-----------------|--------------------|-----------|--------------|
| Optocoupler module 1 A/DC | OBC 1000-5VDC | 1SNA 608 014 R2200 | 1 | 0.04 |
| Optocoupler module 1 A/DC | OBC 1000-24VDC | 1SNA 608 018 R1700 | 1 | 0.04 |
| Optocoupler module 1 A/DC | OBC 1000-48VDC | 1SNA 608 022 R0300 | 1 | 0.04 |
| Optocoupler module 1 A/DC | OBC 1000-110VAC | 1SNA 608 025 R0600 | 1 | 0.04 |
| Optocoupler module 1 A/DC | OBC 1000-230VAC | 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 |
| Comb type jumper bar 10 poles | PC9 | 15 A | 1SNA 210 160 R1200 | 10 |
| Lengthwise marker | RLV | | 1SNA 103 849 R0300 | 100 |
| Marking method | RC55 | | see marking | |





Optocoupler : 24 to 253 V AC / 1 A output - 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 | 4.5 to 5.5 V DC | 10.2 V DC to 28.8 V DC | 40.8 to 57.6 V DC | 93.5 V AC to 152.4 V AC |
| Frequency | | | | 50 / 60 Hz |
| Input current | 10 mA | 8 mA to 12 mA | 7 mA | 7 mA to 10 mA |
| Pull-in voltage at Is=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 | | 1.5 mA | | 2.5 mA |

OUTPUT

| | | | | |
|---------------------------------------|---------------------------------|--|--|--|
| Output voltage | 24 to 253 V AC - 50 / 60 Hz | | | |
| Output current min. | 25 mA | | | |
| Output current max. | 1 A | | | |
| Output leakage current at Umax. | < 0.5 mA | | | |
| Residual voltage at I max and U rated | typical 1 V max. 1.6 V | | | |
| Frequency on inductive load | 3000 V RMS | | | |
| Isolation Input / Output | 3000 V RMS | | | |

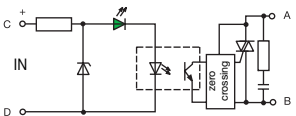
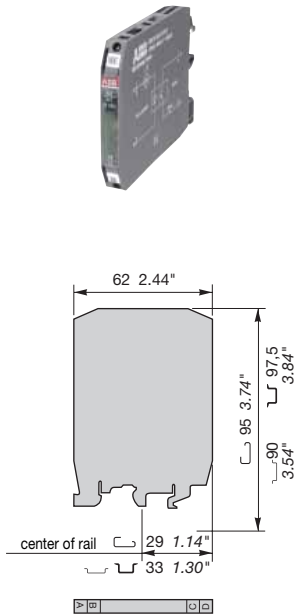
TEMPERATURE

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

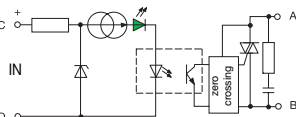
Other characteristics

| | | |
|-------------------------|---------------|-------------------------------------|
| Body material | grey | 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 |

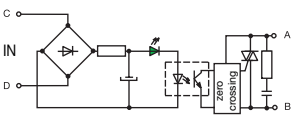
| | | | |
|---------------------|--|--|--|
| Approvals | | | |
| Reference standards | CEI 947-7-1 / CEI 947-1 / CEI 1131-2 (in relevant parts) / CEI 60664-1 / CEM : IRC 1000-4-2, 3, 4, 5, 6. | | |



OBA 1000 - 5 - 48 V DC

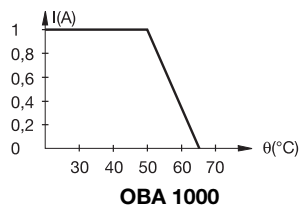


OBA 1000 - 24 V DC



OBA 1000 - 110 V AC

Derating curve

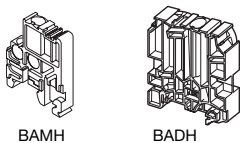


Order codes

| Description | Type | Order P/N | Packaging | Weight |
|---------------------------|-----------------|--------------------|-----------|--------|
| Optocoupler module 1 A/AC | OBA 1000-5VDC | 1SNA 608 015 R0400 | 1 | 0.05 |
| Optocoupler module 1 A/AC | OBA 1000-24VDC | 1SNA 608 019 R1000 | 1 | 0.05 |
| Optocoupler module 1 A/AC | OBA 1000-48VDC | 1SNA 608 023 R0400 | 1 | 0.05 |
| Optocoupler module 1 A/AC | OBA 1000-110VAC | 1SNA 608 026 R0700 | 1 | 0.05 |

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 10 poles | PC9 15 A | 1SNA 210 160 R1200 | 10 |
| Lengthwise marker | RLV | 1SNA 103 849 R0300 | 100 |
| Marking method | RC55 | see marking | |



BAMH

BADH



RLV

PC9

Electronic Interfaces



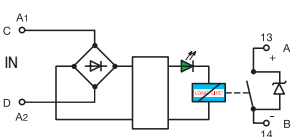
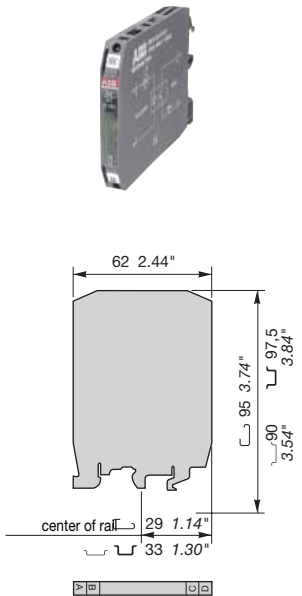
R900 "Long Life" optocoupler modules

DIN 1-3

Optocoupler : 10 to 57.6 V DC / 5 A output - 9 mm .354" spacing
 Optocoupler : 20 to 135 V AC / 5 A output - 9 mm .354" spacing

Characteristics

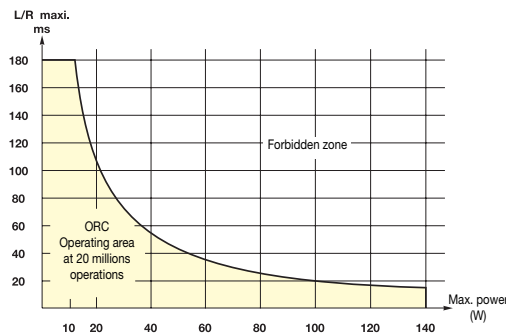
| Opto. characteristics | ORC 111 24 V DC | ORA 111 24 V DC |
|------------------------------------|--|--------------------|
| INPUT | | |
| Rated voltage $\pm 20\%$ on DC | 24 V DC | 24 V DC |
| Power | 0.65 W | 0.6 W |
| Rated current | 26 mA | 20 mA |
| Drop-out voltage at 20°C | 4 V | 5 V |
| Drop-in voltage at 20°C | | |
| Permissible leakage current | | |
| Status device | green LED | |
| OUTPUT | | |
| Type | 1 NO | 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. | 2 VA / 675 VA | |
| DC1 min. / max. | 1 W / 280 W | |
| 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 | |
| Wire | Solid wire | |
| Wire size | UL 94 V0 | |
| Stranded wire | 0.5-4 mm ² / 20-12 AWG | |
| Rated wire size | 0.5-2.5 mm ² / 20-12 AWG | |
| Wire stripping length | 2.5 mm ² / 12 AWG | |
| Recommended screwdriver | 7 mm / .276" | |
| Protection | 3.5 mm / .137" | |
| Recommended torque | IP 20 / NEMA 1 | |
| Approvals | 0.4-0.6 Nm / 3.5-5.3 lb.in | |
| | | |
| Reference standards | CEI 947-7-1 / CEI 947-1 / CEI 1131-2 (in relevant parts) / CEI 60664-1 / CEM : IRC 1000-4-2, 3, 4, 5, 6. | |



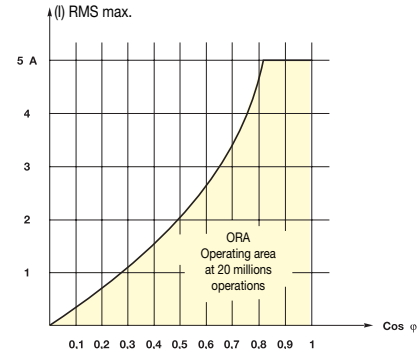
ORC 111

ORA 111

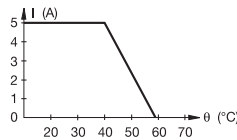
ORC type - Maximum switching power at 24V DC as per L/R



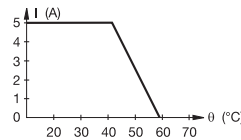
ORA type - Maximum switching current as per cos ϕ



Derating curves



ORC 111



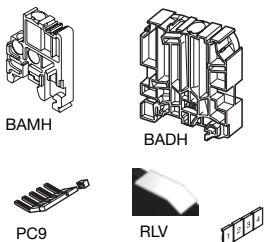
ORA 111

Order codes

| Description | Type | Order P/N | Packaging Weight kg |
|-------------------------------------|---------------|--------------------|---------------------|
| Long Life optocoupler module 5 A/DC | ORC 111-24VDC | 1SNA 608 068 R2100 | 1 0.03 |
| Long Life optocoupler module 5 A/AC | ORA 111-24VDC | 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 | 100 |
| Marking method | RC55 | see marking | |

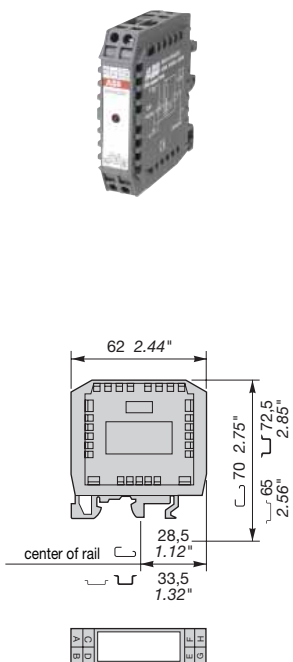




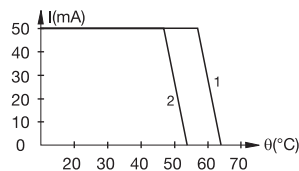
Optocoupler : 5 to 53 V DC / 50 mA output - 18 mm .709" spacing

Characteristics

| Opto. characteristics | EBO3 DC | | | | |
|---------------------------------------|--|------------------|-----------------|-------------------|-------------------|
| | INPUT | | | | |
| Input voltage | 4 to 5.5 V DC | 9.6 to 13.2 V DC | 12 to 16.5 V DC | 19.2 to 26.4 V DC | 38.4 to 52.8 V DC |
| Frequency | | | | | |
| Input current | | | 11 mA | | |
| Pull-in voltage at Is=100% | 4 V | 9.6 V | 12 V | 19.2 V | 38.4 V |
| Switching time C / O | 20 µs / 80 µs | | | | |
| Operating frequency | 5000 Hz | | | | |
| Permissible leakage current | | | | | |
| OUTPUT | | | | | |
| Output voltage | 4.5 to 53 V DC | | | | |
| Output current min. | 0.5 mA | | | | |
| Output current max. | 50 mA | | | | |
| Output leakage current at Umax. | < 50 µA | | | | |
| Residual voltage at I max and U rated | 1 V | | | | |
| typical | | | | | |
| max. | 1.3 V | | | | |
| Frequency on inductive load | 2500 V RMS | | | | |
| Isolation Input / Output | | | | | |
| TEMPERATURE | | | | | |
| Ambient temperature storage | - 40°C to + 80°C | | | | |
| operating | See derating curves | | | | |
| Other characteristics | | | | | |
| Body material | grey | | | | |
| Wire | Solid wire | | | | |
| Wire size | 0.22-4 mm ² / 22-12 AWG | | | | |
| 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 .137" | | | | |
| Protection | IP 20 NEMA 1 | | | | |
| Recommended torque | 0.4-0.6 Nm | | | | |
| Approvals | CE | | | | |
| Reference standards | CEI 947-7-1 / CEI 947-1 / CEI 1131-2 (in relevant parts) / CEI 60664-1 / CEM : IRC 1000-4-2, 3, 4, 5, 6. | | | | |



Derating curves



EBO3 DC

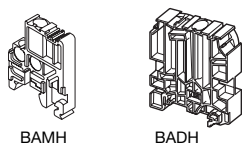
1 : 5 to 24 V DC model
2 : 48 V DC model

Order codes

| Description | Type | Order P/N | Packaging | Weight kg |
|-------------------------------|---------|--------------------|-----------|-----------|
| Optocoupler module 50 mA / DC | EBO3 DC | 1SNA 610 230 R1100 | 1 | 0.03 |

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 | 100 |
| Marking method | RC55 | see marking | |



RLV

Electronic Interfaces

R1800 optocoupler modules



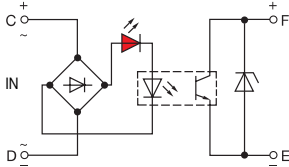
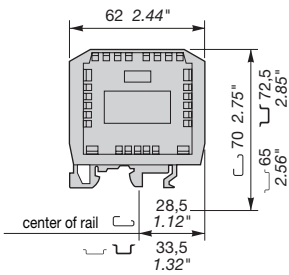
DIN 3



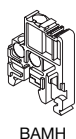
EBO1 24 - 127/230 V AC/DC



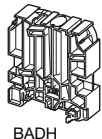
EBO1 48 V AC/DC



EBO1...



BAMH



BADH



RLV



Optocoupler : 5 to 58 V DC / 100 mA output - 18 mm .709" spacing
Optocoupler : 5 to 58 V DC / 50 mA output - 18 mm .709" spacing

Characteristics

| Opto. characteristics | EBO1 - 24 V AC/DC | | EBO1 - 48 V AC/DC | | EBO1 - 127-220 V AC/DC | | | |
|-----------------------------|-------------------|-----------------|-------------------|---------------|------------------------|------------------|-----------------|-----------------|
| | INPUT | | | | | | | |
| Input voltage | 12 to 27.6 V AC | 16 to 27.6 V DC | 20 to 58 V AC | 29 to 58 V DC | 88 to 140 V AC | 97.8 to 140 V DC | 130 to 253 V AC | 150 to 253 V DC |
| Frequency | 50/60 Hz | | 50 / 60 Hz | | 50 / 60 Hz | 50 / 60 Hz | 50 / 60 Hz | 50 / 60 Hz |
| Input current | 10 mA | 8 mA | 5 mA | 5 mA | 6 mA | 6 mA | 5 mA | 5 mA |
| Pull-in voltage at Is=100% | 12 V AC | 16 V DC | | | 88 V AC | 88 V AC | 128 V AC | 128 V AC |
| Switching time C / O | 10 ms / 7 ms | | 10 ms / 7 ms | | 25 ms / 10 ms | | | |
| Operating frequency | 30 Hz | | 30 Hz | | 15 Hz | | | |
| Permissible leakage current | | | | | | | | |

OUTPUT

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

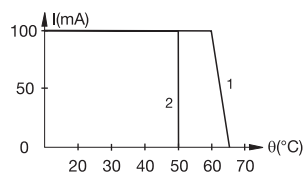
TEMPERATURE

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

Other characteristics

| | | | | |
|-------------------------|--|--------------------------------------|----------|----------|
| Body material | grey | UL 94 V0 | UL 94 V2 | 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 .137" | | |
| Protection | | IP 20 NEMA 1 | | |
| Recommended torque | | 0.4-0.6 Nm | | |
| Approvals | CE | | | |
| Reference standards | CEI 947-7-1 / CEI 947-1 / CEI 1131-2 (in relevant parts) / CEI 60664-1 / CEM : IRC 1000-4-2, 3, 4, 5, 6. | | | |

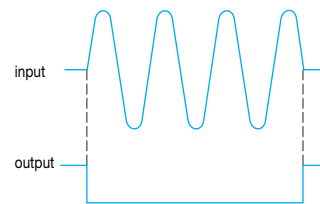
Derating curves



EBO1 24 - 127/230 V AC/DC

1 : 24 V AC/DC model

2 : 127-230 V AC/DC model



EBO1 48 V AC/DC

Order codes

| Description | Type | Order P/N | Packaging | Weight |
|------------------------------|----------------|--------------------|-----------|--------|
| Optocoupler module 100 mA/DC | EBO1-24VAC/DC | 1SNA 610 022 R2000 | 1 | 0.03 |
| Optocoupler module 100 mA/DC | EBO1-48VAC/DC | 1SNA 010 048 R0400 | 1 | 0.03 |
| Optocoupler module 50 mA/DC | EBO1-127VAC/DC | 1SNA 610 108 R1400 | 1 | 0.03 |
| Optocoupler module 50 mA/DC | EBO1-220VAC/DC | 1SNA 610 023 R2100 | 1 | 0.03 |

Accessories

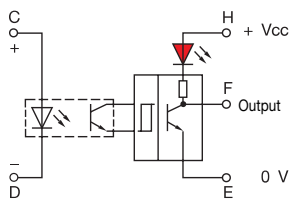
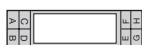
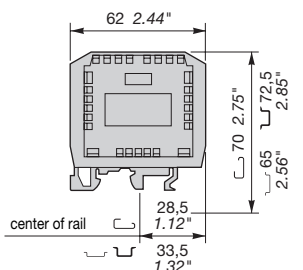
| | | | | |
|-------------------|---------|--------|--------------------|-----|
| High end stop | BAMH | 9,1 mm | 1SNA 114 836 R0000 | 50 |
| | BAMH V0 | 9,1 mm | 1SNA 194 836 R0100 | 50 |
| | BADH | 12 mm | 1SNA 116 900 R2700 | 50 |
| Lengthwise marker | RLV | | 1SNA 103 849 R0300 | 100 |
| Marking method | RC55 | | see marking | |



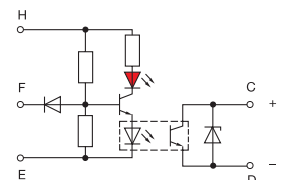
Optocoupler : 5 to 60 V DC / 1 A output - 18 mm .709" spacing
 Optocoupler : 5 to 280 V AC / 1 A output - 18 mm .709" spacing

Characteristics

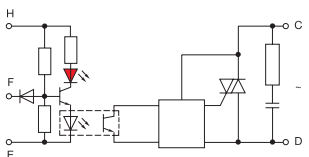
| Opto. characteristics | EB IDC | | EB ODC | | EB OAC | |
|--|---|------------|-------------------------------------|-------------------|-------------------------|-------------------|
| | TTL | HLL | TTL | HLL | TTL | HLL |
| INPUT | | | | | | |
| Input voltage | 110 to 32 V DC | | | | | |
| Voltage HE | | | 4.5 to 6 V DC | 19.2 to 28.8 V DC | 4.5 to 6 V DC | 19.2 to 28.8 V DC |
| Frequency | 32 mA at 32 V | | | | | |
| Input current | 32 mA at 32 V | | | | | |
| Current HE | | | 11 mA | 14 mA | 28 mA | 12 mA |
| Non-functioning current | 1.5 mA | | | | | |
| FE current in mode 3 | | | | | - 1.5 mA | - 0.7 mA |
| Switching time C / O | 5 ms | | ≤ 250 μs | | 10 ms | |
| Operating frequency | < 100 Hz | | < 200 Hz | | < 50 Hz | |
| Power requirement | 60 mW | 430 mW | 55 mW | 340 mW | 140 mW | 290 mW |
| OUTPUT | | | | | | |
| Logic voltage supply HE | 5 V ± 1 V | 24 V ± 6 V | | | | |
| Logic current supply HE | 12 mA | 18 mA | | | | |
| Output voltage | 5 V TTL | 24 V HLL | 12 to 60 V DC | | 24 to 280 V AC | |
| Min. output current | | | 50 mA | | 25 mA RMS | |
| Max. output current | 25 mA | | 1 A derating 20 mA / °C | | 1 A derating 20 mA / °C | |
| Output leakage current at U _{max} | 100 μA | | 3 mA at 60 V | | 4 mA max. | |
| Residual voltage | 0.4 V at 25 mA | | 2.6 V max. at 1 A | | ± 1.4 V | |
| Peak current | | | 4 A / 1 s | | 30 A / 20 ms | |
| Isolation Input / Output | 2500 V RMS | | 2500 V RMS | | 2500 V RMS | |
| TEMPERATURE | | | | | | |
| Ambient temperature | storage | | - 40°C à + 80°C | | | |
| | operating | | see derating curve | | | |
| Other characteristics | | | | | | |
| Body material | grey | | UL 94 V2 | | | |
| Wire | Solid wire | | 0 - 4 mm ² / 20-12 AWG | | | |
| size | Stranded wire | | 0 - 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 | | | CE | | | |
| Reference standards | CEI 947-7-1 / CEI 947-1 / CEI 1131-2 (parts) / CEI 60664-1 / CEM : IRC 1000-4-2, 3, 4, 5, 6 | | | | | |



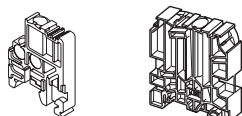
EB IDC



EB ODC



EB OAC

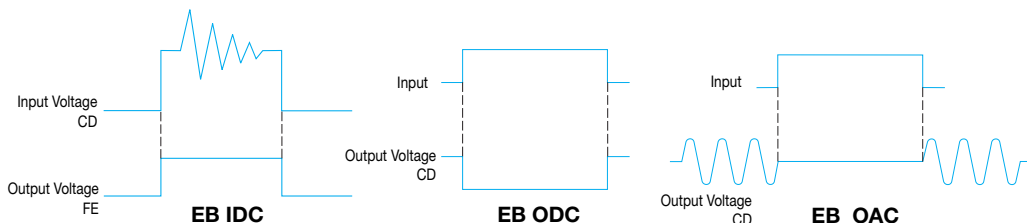


BAMH

BADH



RLV



Order codes

| Description | Type | Order P/N | Packaging Weight kg |
|---------------------------------------|-----------|--------------------|---------------------|
| Optocoupler module 25 mA / HLL | EB IDC 5 | 1SNA 010 031 R1300 | 1 |
| Optocoupler module 25 mA / HLL | EB IDC 24 | 1SNA 010 033 R1500 | 1 |
| Optocoupler module input TTL 1 A / DC | EB ODC 5 | 1SNA 010 037 R1100 | 1 |
| Optocoupler module input TTL 1 A / DC | EB ODC 24 | 1SNA 010 039 R2300 | 1 |
| Optocoupler module input TTL 1 A / AC | EB OAC 5 | 1SNA 010 034 R1600 | 1 |
| Optocoupler module input TTL 1 A / AC | EB OAC 24 | 1SNA 010 036 R1000 | 1 |

Accessories

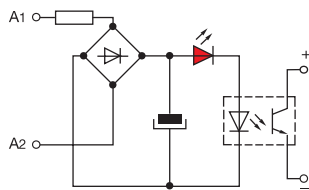
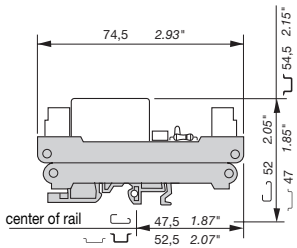
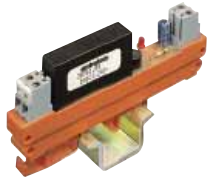
| | | | | |
|-------------------|---------|--------|--------------------|-----|
| High end stop | BAMH | 9,1 mm | 1SNA 114 836 F0000 | 50 |
| | BAMH V0 | 9,1 mm | 1SNA 194 836 R0100 | 50 |
| | BADH | 12 mm | 1SNA 116 900 F2700 | 50 |
| Lengthwise marker | RLV | | 1SNA 103 849 F0300 | 100 |
| Marking method | RC55 | | see markers | |

Electronic Interfaces

R20000 optocoupler modules



DIN 3

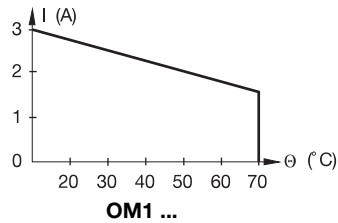


Optocoupler : 3 to 60 V DC / 3 A output - 12.7 mm .500" spacing
Optocoupler : 24 to 280 V AC / 3 A output - 12.7 mm .500" spacing

Characteristics

| Opto. characteristics | OM1 C3 | OM1 A3 |
|---------------------------------------|---|----------------|
| INPUT | | |
| Input voltage | 9.6 to 30 V AC/DC | |
| Frequency | < 50/60 Hz | |
| Input current | 11 mA | |
| Pull-in voltage at Is=100% | 4.8 V | |
| Switching time C / O | < 20 μ s / < 600 μ s | |
| Operating frequency | 800 Hz | |
| Permissible leakage current | | |
| OUTPUT | | |
| Output voltage | 3 to 60 V DC | 24 to 280 V AC |
| Output current min. | 25 mA | |
| Output current max. | 3 A | |
| Output leakage current at Umax. | 1 mA | 0.3 mA |
| Residual voltage at I max and U rated | 1.6 V | |
| Frequency on inductive load | 2500 V RMS | |
| Isolation Input / Output | 2500 V RMS | |
| TEMPERATURE | | |
| Ambient temperature storage | - 40°C to + 80°C | |
| operating | see derating curve | |
| Other characteristics | | |
| Body material | orange | |
| Wire | Solid wire | |
| size | 0 - 2.5 mm ² / 20-14 AWG | |
| Stranded wire | 0 - 2.5 mm ² / 20-14 AWG | |
| Rated wire size | 2.5 mm ² / 12 AWG | |
| Wire stripping length | 6 mm .236" | |
| Recommended screwdriver | 3.5 .137" | |
| Protection | IP 20 NEMA 1 | |
| Recommended torque | 0.4 - 0.6 Nm 3.5 - 5.3 lb.in | |
| Approvals | CE | |
| Reference standards | CEI 947-7-1 / CEI 947-1 / CEI 1131-2 (parts) / CEI 60664-1 / CEM : IRC 1000-4-2, 3, 4, 5, 6 | |

Derating curve

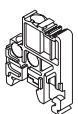


Order codes

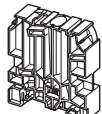
| Description | Type | Order P/N | Packaging Weight kg |
|---------------------------|--------|-------------------------------|---------------------|
| Optocoupler module 3 A/DC | OM1 C3 | 24 V AC/DC 1SNA 020 361 R0400 | 1 |
| Optocoupler module 3 A/AC | OM1 A3 | 24 V AC/DC 1SNA 020 365 R0000 | 1 |

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 | 100 |
| Pivoting marker-holder : quantity 20 | PEF | | 1SNA 020 568 R0400 | 1 |
| Marking method | RC55 | | see markers | |



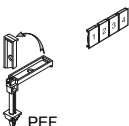
BAMH



BADH



RLV



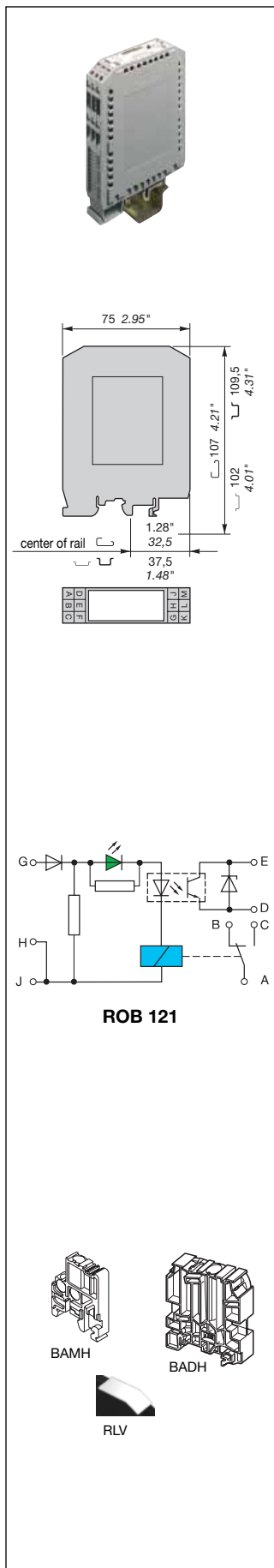
PEF

Electronic Interfaces

R11000 relay + optocoupler modules



DIN 1-3

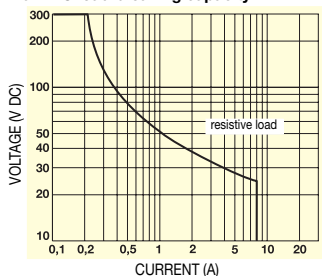


Relay + optocoupler : relay 1 SPDT and optocoupler 4.5 to 58 V DC / 30 mA output - 22.5 mm .886" spacing

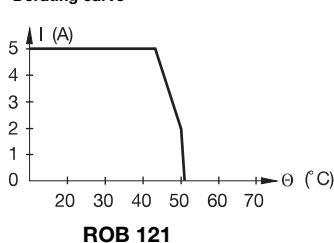
Characteristics

| Relay-opto characteristics | ROB 121 |
|--|---|
| INPUT | |
| Rated voltage +20%, -15% on DC ±15% on AC | 24 V DC |
| Power | 0.96 W |
| Rated current | 40 mA |
| Drop-out voltage | 15 V |
| Permissible leakage current | 2.9 mA |
| OPTOCOUPLER OUTPUT | |
| Output voltage | 4.5 to 58 V DC |
| Output current max. | 30 mA |
| Output current min. | |
| Residual voltage at I max and U rated | typical 0.6 V |
| Operating speed | F/O 50 µs / 1.5 ms |
| Isolation input / output | 2500 V RMS |
| RELAY OUTPUT | |
| Type | 1 SPDT |
| Voltage switching range min./max. | 12 V / 250 V |
| Current switching range min./max. | 5 A |
| Number of on-load operations | 2 x 10 ⁵ |
| Number of off-load operations | 3 x 10 ⁷ |
| Operating speed | F 5 ms O 3 ms |
| Bounce | 2 ms |
| Insulation coil / contact | 3500 V RMS |
| Opto output / relay contact isolation | 3500 V RMS |
| Ambient temperature storage | -40°C to +80°C |
| operating | see derating curve |
| Other characteristics | |
| Body material | grey UL 94 V2 |
| Wire | Solid wire 0 - 4 mm ² / 20 - 12 AWG |
| size | Stranded wire 0 - 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 | CE |
| Reference standards | CEI 947-7-1 / CEI 947-1 / CEI 1131-2 (parts) / CEI 60664-1 / CEM : IRC 1000-4-2, 3, 4, 5, 6 |

Max. DC load breaking capacity

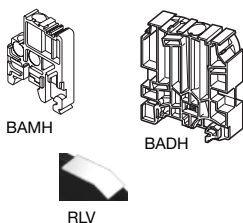


Derating curve



Order codes

| Description | Type | Order P/N | Packaging | Weight |
|--------------------------------------|---------|----------------------------|-----------|--------|
| Relay 1 SPDT - opto. 30 mA/DC module | ROB 121 | 24 V DC 1SNA 011 093 R0700 | 1 | kg |



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 | 100 |
| Marking method | RC55 | see markers | |



Component holder terminal blocks Plugs

Contents

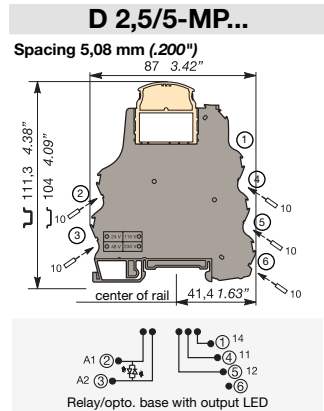
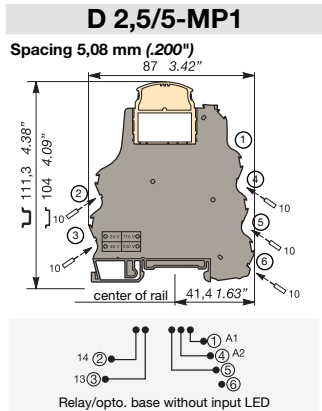
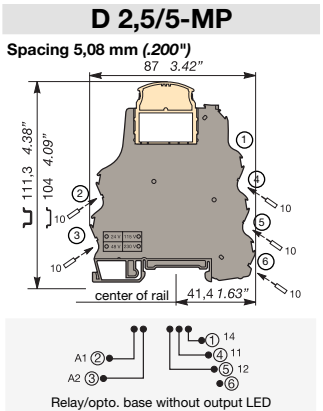
| | |
|---|----|
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| Transistor or MOS output optocoupler plugs..... | 72 |
| MOS or Triac output optocoupler plugs..... | 73 |
| Relay or analog plugs, fuse and strap plugs..... | 74 |

Terminal blocks component holder

Base for pluggable plug R500 Series

DIN 3

| | | | | | |
|----------|--|---------------|--------|----|--------------------|
| End stop | | th. 9 mm | BADL | V0 | 1SNA 399 903 R0200 |
| End stop | | th. 9,1 mm | BAM | V2 | 1SNA 103 002 R2600 |
| End stop | | th. 9,1 mm | BAM V0 | V0 | 1SNA 199 306 R0300 |
| Rail | | 35 x 7,5 x 1 | PR3.22 | | 1SNA 174 300 R1700 |
| Rail | | 35 x 15 x 2,3 | PR4 | | 1SNA 168 500 R1200 |
| Rail | | 35 x 15 x 1,5 | PR5 | | 1SNA 168 700 R2200 |



Observations

Terminal blocks are delivered without plugs.

Max. working temperature
 version without LED : 100°C
 version with LED : 85°C
 Contact resistance : < 5 mΩ

| Type | Part numbers | Type | Part numbers | Type | Part numbers |
|------------|------------------------|-------------|------------------------|---------------------|------------------------|
| Grey V0 | Order plugs separately | Grey V0 | Order plugs separately | Grey V0 | Order plugs separately |
| D 2,5/5-MP | 1SNA 607 224 R0100 | D 2,5/5-MP1 | 1SNA 607 223 R0000 | D 2,5/5-MP-24VDC | 1SNA 607 222 R0700 |
| | | | | D 2,5/5-MP-24VAC/DC | 1SNA 607 260 R2100 |
| | | | | D 2,5/5-MP-48VAC/DC | 1SNA 607 261 R1600 |
| | | | | D 2,5/5-MP-110VAC | 1SNA 607 266 R1300 |
| | | | | D 2,5/5-MP-230VAC | 1SNA 607 267 R1400 |

Characteristics

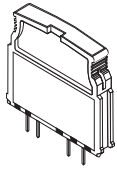
| | | | IEC | UL/CSA pending | IEC | UL/CSA pending | IEC | UL/CSA pending |
|-------------------------|-------------------|---------------|----------------------------|----------------|----------------------------|----------------|----------------------------|----------------|
| Wire size | Compression clamp | Solid wire | 0,2-4 mm ² | 24-12 AWG | 0,2-4 mm ² | 24-12 AWG | 0,2-4 mm ² | 24-12 AWG |
| | | Stranded wire | 0,22-2,5 mm ² | 24-12 AWG | 0,22-2,5 mm ² | 24-12 AWG | 0,22-2,5 mm ² | 24-12 AWG |
| Voltage | Rated | | 320 V | 300 V | 320 V | 300 V | 320 V | 300 V |
| | Pulse | | 4 kV | | 4 kV | | 4 kV | |
| | Pollution degree | | 3 | | 3 | | 3 | |
| Current | Rated | | 6 A | 6 A | 6 A | 6 A | 6 A | 6 A |
| | Wire size | Rated / Gauge | 2,5 mm ² | 12 AWG | 2,5 mm ² | 12 AWG | 2,5 mm ² | 12 AWG |
| Wire stripping length | | | 10 mm / .394" | | 10 mm / .394" | | 10 mm / .394" | |
| Recommended screwdriver | | | 3,5 mm / .137" | | 3,5 mm / .137" | | 3,5 mm / .137" | |
| Recommended torque | | | 0,4-0,6 Nm / 3,5-5,3 lb.in | | 0,4-0,6 Nm / 3,5-5,3 lb.in | | 0,4-0,6 Nm / 3,5-5,3 lb.in | |
| Protection | | | IP 20 / NEMA1 | | IP 20 / NEMA1 | | IP 20 / NEMA1 | |

Accessories

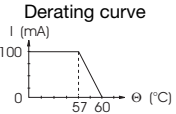
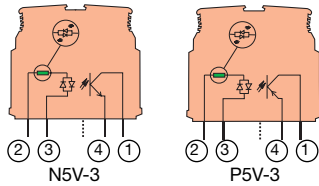
| | | Type | Part numbers | Type | Part numbers | Type | Part numbers | |
|---------------|----------------------------------|-------------------------------|---------------------|---------------------|---------------------|--------------------|---------------------|--------------------|
| 1 | Test device | DCB (1) blue | 1SNA 105 028 R2100 | DCB (1) blue | 1SNA 105 028 R2100 | DCB (1) blue | 1SNA 105 028 R2100 | |
| | 2 Test plug | FC2 DIA. 2 | 1SNA 007 865 R2600 | FC2 DIA. 2 | 1SNA 007 865 R2600 | FC2 DIA. 2 | 1SNA 007 865 R2600 | |
| 3 | Relay plug 1 SPDT 10 mA/6 A | BNMS R24V-1 beige | 1SNA 031 820 R1400 | BNMS R24V-1 beige | 1SNA 031 820 R1400 | BNMS R24V-1 beige | 1SNA 031 820 R1400 | |
| | 1 SPDT 1 mA/6 A | BNMS R24V-2 beige | 1SNA 031 847 R1300 | BNMS R24V-2 beige | 1SNA 031 847 R1300 | BNMS R24V-2 beige | 1SNA 031 847 R1300 | |
| 4 | Input optocoupler plug 5 V DC | BNMS N24V-3 red | 1SNA 031 807 R1400 | BNMS T5V-1 white | 1SNA 031 831 R0300 | BNMS N24V-3 red | 1SNA 031 807 R1400 | |
| | 24 V DC | BNMS P24V-3 red | 1SNA 031 810 R1200 | BNMS T24V-1 white | 1SNA 031 848 R2400 | BNMS P24V-3 red | 1SNA 031 810 R1200 | |
| | 24 V DC | BNMS N24V-1 red | 1SNA 031 813 R0100 | BNMS T24V-2 white | 1SNA 031 800 R2100 | BNMS N24V-1 red | 1SNA 031 813 R0100 | |
| | 48 V DC | BNMS P24V-1 red | 1SNA 031 815 R0300 | BNMS T48V-1 white | 1SNA 031 801 R1600 | BNMS P24V-1 red | 1SNA 031 815 R0300 | |
| | 125 V DC | BNMS N24V-2 red | 1SNA 031 817 R0500 | BNMS T125V-1 white | 1SNA 031 845 R1100 | BNMS N24V-2 red | 1SNA 031 817 R0500 | |
| | 24 V AC | BNMS P24V-2 red | 1SNA 031 819 R1700 | BNMS T24V-1 yellow | 1SNA 031 802 R1700 | BNMS P24V-2 red | 1SNA 031 819 R1700 | |
| | 48 V AC | BNMS A24V-4 black | 1SNA 031 839 R1300 | BNMS T48V-1 yellow | 1SNA 031 803 R1000 | BNMS A24V-4 black | 1SNA 031 839 R1300 | |
| | 115 V AC | BNMS N5V-3 red | 1SNA 031 806 R1300 | BNMS T115V-1 yellow | 1SNA 031 804 R1100 | BNMS N5V-3 red | 1SNA 031 806 R1300 | |
| | 230 V AC | BNMS P5V-3 red | 1SNA 031 809 R2600 | BNMS T230V-1 yellow | 1SNA 031 805 R1200 | BNMS P5V-3 red | 1SNA 031 809 R2600 | |
| | 5 V DC/100 mA | BNMS N48V-3 red | 1SNA 031 808 R2500 | | | BNMS N48V-3 red | 1SNA 031 808 R2500 | |
| 5 V DC/100 mA | BNMS P48V-3 red | 1SNA 031 811 R0700 | | | BNMS P48V-3 red | 1SNA 031 811 R0700 | | |
| 5 | Output optocoupler 5 V DC/100 mA | BNMS N5V-1 red | 1SNA 031 812 R0000 | | | BNMS N5V-1 red | 1SNA 031 812 R0000 | |
| | 5 V DC/2 A | BNMS P5V-1 red | 1SNA 031 814 R0200 | | | BNMS P5V-1 red | 1SNA 031 814 R0200 | |
| | 48 V DC/100 mA | BNMS N5V-2 red | 1SNA 031 816 R0400 | | | BNMS N5V-2 red | 1SNA 031 816 R0400 | |
| | 48 V DC/100 mA | BNMS P5V-2 red | 1SNA 031 818 R1600 | | | BNMS P5V-2 red | 1SNA 031 818 R1600 | |
| | 125 V/125 mA | BNMS F125mA-1 grey | 1SNA 031 821 R0100 | BNMS F125mA-1 grey | 1SNA 031 821 R0100 | BNMS F125mA-1 grey | 1SNA 031 821 R0100 | |
| | 125 V/500 mA | BNMS F500mA-1 grey | 1SNA 031 838 R1200 | BNMS F500mA-1 grey | 1SNA 031 838 R1200 | BNMS F500mA-1 grey | 1SNA 031 838 R1200 | |
| | 125 V/2 A | BNMS F2A-1 grey | 1SNA 031 822 R0200 | BNMS F2A-1 grey | 1SNA 031 822 R0200 | BNMS F2A-1 grey | 1SNA 031 822 R0200 | |
| | 125 V/5 A | BNMS F5A-1 grey | 1SNA 031 823 R0300 | BNMS F5A-1 grey | 1SNA 031 823 R0300 | BNMS F5A-1 grey | 1SNA 031 823 R0300 | |
| | 250 V/125 mA | BNMS F125mA-2 grey | 1SNA 031 824 R0400 | BNMS F125mA-2 grey | 1SNA 031 824 R0400 | BNMS F125mA-2 grey | 1SNA 031 824 R0400 | |
| | 250 V/2 A | BNMS F2A-2 grey | 1SNA 031 825 R0500 | BNMS F2A-2 grey | 1SNA 031 825 R0500 | BNMS F2A-2 grey | 1SNA 031 825 R0500 | |
| 7 | 250 V/5 A | BNMS F5A-2 grey | 1SNA 031 826 R0600 | BNMS F5A-2 grey | 1SNA 031 826 R0600 | BNMS F5A-2 grey | 1SNA 031 826 R0600 | |
| | 125 V/125 mA | BNMS F125mA-3 grey | 1SNA 031 827 R0700 | BNMS F125mA-3 grey | 1SNA 031 827 R0700 | BNMS F125mA-3 grey | 1SNA 031 827 R0700 | |
| | 250 V/125 mA | BNMS F125mA-4 grey | 1SNA 031 828 R1000 | BNMS F125mA-4 grey | 1SNA 031 828 R1000 | BNMS F125mA-4 grey | 1SNA 031 828 R1000 | |
| | 125 V/2 A | BNMS F2A-7 grey | 1SNA 031 849 R2500 | BNMS F2A-7 grey | 1SNA 031 849 R2500 | BNMS F2A-7 grey | 1SNA 031 849 R2500 | |
| | 8 Strap plug | BNMS ST1 grey | 1SNA 031 829 R1100 | BNMS ST1 grey | 1SNA 031 829 R1100 | BNMS ST1 grey | 1SNA 031 829 R1100 | |
| | | BNMS ST2 grey | 1SNA 031 830 R1600 | BNMS ST2 grey | 1SNA 031 830 R1600 | BNMS ST2 grey | 1SNA 031 830 R1600 | |
| | 9 | Converter plug 0-20 mA/0-10 V | BNMS CAI/U-500 grey | 1SNA 031 832 R0400 | BNMS CAI/U-500 grey | 1SNA 031 832 R0400 | BNMS CAI/U-500 grey | 1SNA 031 832 R0400 |
| | | 4-20 mA/2-10 V | BNMS CAI/U-250 grey | 1SNA 031 833 R0500 | BNMS CAI/U-250 grey | 1SNA 031 833 R0500 | BNMS CAI/U-250 grey | 1SNA 031 833 R0500 |
| | | 0-20 mA/0-5 V | BNMS CAI/U-250 grey | 1SNA 031 833 R0500 | BNMS CAI/U-250 grey | 1SNA 031 833 R0500 | BNMS CAI/U-250 grey | 1SNA 031 833 R0500 |
| | | 4-20 mA/1-5 V | BNMS CAI/U-250 grey | 1SNA 031 833 R0500 | BNMS CAI/U-250 grey | 1SNA 031 833 R0500 | BNMS CAI/U-250 grey | 1SNA 031 833 R0500 |
| 10 | Comb type jumper bar 10 poles | PCMS V0 (2) | 1SNA 205 523 R2200 | PCMS V0 (2) | 1SNA 205 523 R2200 | PCMS V0 (2) | 1SNA 205 523 R2200 | |
| | R See section on marking | RC 55 | | RC 55 | | RC 55 | | |

(1) Solely on the top stage. (2) Comb type jumper bar from 2 to 22 poles, see accessories.

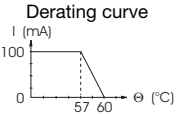
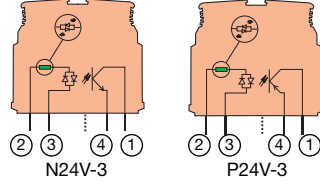
Transistor output optocoupler plugs



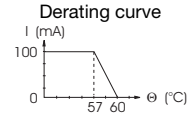
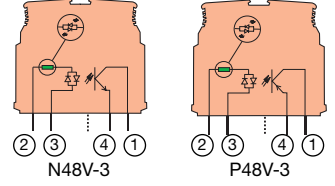
100 mA output optocoupler 5 V DC



100 mA output optocoupler 24 V DC

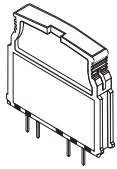


100 mA output optocoupler 48 V DC

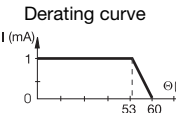
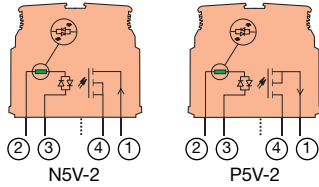


| Part numbers | Type | P/N | Type | P/N | Type | P/N |
|--|-------------------|--------------------|---------------------|--------------------|---------------------|--------------------|
| | BNMS N5V-3 | 1SNA 031 806 R1300 | BNMS N24V-3 | 1SNA 031 807 R1400 | BNMS N48V-3 | 1SNA 031 808 R2500 |
| | BNMS P5V-3 | 1SNA 031 809 R2600 | BNMS P24V-3 | 1SNA 031 810 R1200 | BNMS P48V-3 | 1SNA 031 811 R0700 |
| Characteristics | | | | | | |
| 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 | |
| Max. current | 8,5 mA | | 4,8 mA | | 3,9 mA | |
| Typical triggering threshold at Is = 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 | |
| Leakage current | 1 mA | | 1 mA | | 1 mA | |
| OUTPUT | | | | | | |
| Max. voltage / Max. current | 58 V / 100 mA | | 58 V / 100 mA | | 58 V / 100 mA | |
| Residual voltage max. I and rated U | | | | | | |
| standard U | 1 V DC | | 1 V DC | | 1 V DC | |
| max. | 1,3 V DC | | 1,3 V DC | | 1,3 V DC | |
| Frequency on inductive load | See Note 1 | | See Note 1 | | See Note 1 | |
| Input / Output isolation | 2,5 kV | | 2,5 kV | | 2,5 kV | |
| TEMPERATURE | | | | | | |
| Storage | - 30°C to + 80°C | | - 30°C to + 80°C | | - 30°C to + 80°C | |
| Operating | - 20°C to + 60°C | | - 20°C to + 60°C | | - 20°C to + 60°C | |

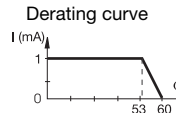
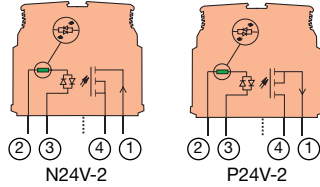
MOS output optocoupler plugs



1 A output optocoupler 5 V DC



1 A output optocoupler 24 V DC



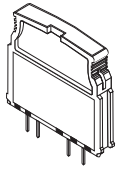
Note 1 :
 $F_{max} = (1 - 0,007 \times U_s) / (L \times I_s^2)$
 or
 $F_{max} = (1 - 0,007 \times U_s) / (P \times \frac{1}{R})$

Us = Output voltage supply
 Is = Output current
 L = Inductive load
 P = Load power
 R = Load resistance

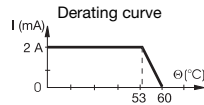
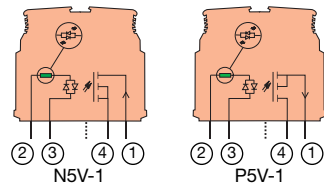
| Part numbers | Type | P/N | Type | P/N |
|---|-------------------|--------------------|---------------------|--------------------|
| | BNMS N5V-2 | 1SNA 031 816 R0400 | BNMS N24V-2 | 1SNA 031 817 R0500 |
| | BNMS P5V-2 | 1SNA 031 818 R1600 | BNMS P24V-2 | 1SNA 031 819 R1700 |
| Characteristics | | | | |
| INPUT | | | | |
| Voltage | 4,5 V to 5,5 V DC | | 20,4 V to 28,8 V DC | |
| Max. current | 12,5 mA | | 6,7 mA | |
| Typical triggering threshold at Is=100% | 3,5 V DC | | 10 V DC | |
| Switching time C/O | 20 μs / 250 μs | | 50 μs / 350 μs | |
| Leakage current | 1 mA | | 1 mA | |
| OUTPUT | | | | |
| Max. voltage / Max. current | 58 V / See graphs | | 58 V / See graphs | |
| Residual voltage max. I and rated U | | | | |
| standard U | 1 V DC | | 1 V DC | |
| max. | 1,3 V DC | | 1,3 V DC | |
| Frequency on inductive load | See Note 1 | | See Note 1 | |
| Input / Output isolation | 2,5 kV | | 2,5 kV | |
| TEMPERATURE | | | | |
| Storage | - 30°C to + 80°C | | - 30°C to + 80°C | |
| Operating | - 20°C to + 60°C | | - 20°C to + 60°C | |



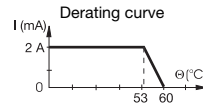
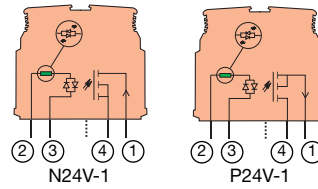
MOS output optocoupler plug 



2 A output optocoupler 5 V DC



2 A output optocoupler 24 V DC



Note 2 :

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

or

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

U_s = Output voltage supply
 I_s = Output current
 L = Inductive load
 P = Load power
 R = Load resistance

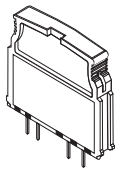
Part numbers

| Type | P/N | Type | P/N |
|-------------------|--------------------|--------------------|--------------------|
| BNMS N5V-1 | 1SNA 031 812 R0000 | BNMS N24V-1 | 1SNA 031 813 R0100 |
| BNMS P5V-1 | 1SNA 031 814 R0200 | BNMS P24V-1 | 1SNA 031 815 R0300 |

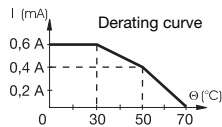
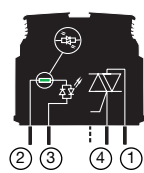
Characteristics

| INPUT | | | |
|-------------------------------------|-----|----------------------|---------------------|
| Voltage | | 4,5 V to 5,5 V DC | 20,4 V to 28,8 V DC |
| Max. current | | 12,5 mA | 6,7 mA |
| Typical triggering threshold | | 3,5 V DC | 10 V DC |
| Switching time | C/O | 20 μs / 250 μs | 50 μs / 350 μs |
| Leakage current | | 1 mA | 1 mA |
| OUTPUT | | | |
| Max. voltage / Max. current | | 30 V DC / See graphs | 30 V / See graphs |
| Residual voltage max. I and rated U | | | |
| standard U | | 1 V DC | 1 V DC |
| max. | | 1,3 V DC | 1,3 V DC |
| Frequency on inductive load | | See Note 2 | See Note 2 |
| Input / Output isolation | | 2,5 kV | 2,5 kV |
| TEMPERATURE | | | |
| Storage | | - 30°C to + 80°C | - 30°C to + 80°C |
| Operating | | - 20°C to + 60°C | - 20°C to + 60°C |

Triac output optocoupler plug 



1 A output optocoupler 24 V DC



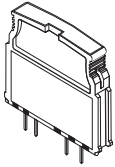
Part numbers

| Type | P/N |
|--------------------|--------------------|
| BNMS A24V-4 | 1SNA 031 839 R1300 |

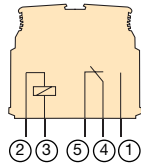
Characteristics

| INPUT | | | |
|-------------------------------------|-----|---------------------------------------|--|
| Voltage | | 20,4 V to 28,8 V DC | |
| Max. current | | 3,8 mA | |
| Typical triggering threshold | | 10 V DC | |
| Switching time | C/O | 9,5 ms / 12 ms | |
| Leakage current | | | |
| OUTPUT | | | |
| Max. voltage / Max. current | | 24 V to 253 V AC / See derating curve | |
| Residual voltage max. I and rated U | | | |
| standard U | | 1 V AC | |
| max. | | 1,3 V AC | |
| Input / Output isolation | | 2,5 kV | |
| TEMPERATURE | | | |
| Storage | | - 30°C to + 80°C | |
| Operating | | - 20°C to + 70°C | |

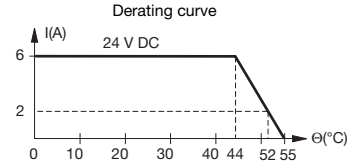
Relay plugs



1 SPDT relay



R24V-1

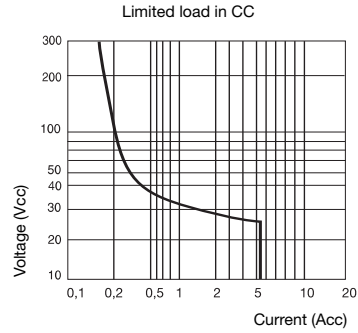


Part numbers

| Type | P/N |
|-------------|--------------------|
| BNMS R24V-1 | 1SNA 031 820 R1400 |
| BNMS R24V-2 | 1SNA 031 847 R1300 |

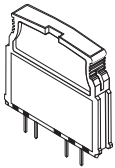
Characteristics

| Characteristics | | BNMS R24V-1 | BNMS R24V-2 |
|--------------------------------|--------------------------------------|--|--|
| COIL | | | |
| Voltage | | 20,4 V to 28,8 V DC | |
| Current max. | | 7 mA | |
| Trip voltage | | 1,2 V | |
| CONTACT | | | |
| Type | | 1 SPDT | |
| Voltage mini. / max. | | 12 V / 250 V | 5 V / 250 V |
| Switching current mini. / max. | | 10 mA / 6 A | 1 mA / 6 A |
| Switching current | AC1 mini. / max. DC1 mini. / max. | 0,6 VA/1500 VA (resistance) 0,6 W / 140 W | 0,05 VA/1500 VA (resistance) 0,05 W / 140 W |
| Number of operations | on load | 10 ⁵ operations for AC15 | |
| Number of operations | off load | 10x10 ⁶ operations | |
| Operating speed | C/O | 6 ms / 8 ms | |
| Bounce | | 1,5 ms | |
| Isolation | Coil / Contact | 4 kV | |
| Resistance to shock waves | Coil / Contact | 4 kV | |
| Isolation | Contact / Contact | 1 kV | |
| TEMPERATURE | | | |
| Storage | | - 40°C to + 80°C | |
| Operating | | - 20°C to + 55°C | |

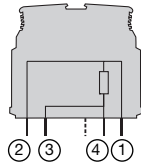


| | DC12 | AC12 | DC13 | AC15 |
|-----------|-------|------|-------|------|
| 24 V | 6 A | 6 A | 1 A | 3 A |
| 110/120 V | 0,3 A | 6 A | 0,2 A | 3 A |
| 220/230 V | 0,2 A | 6 A | 0,1 A | 3 A |

Analogical plugs

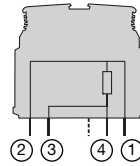


Current / Voltage Converter



Plug with 250 Ω accuracy resistance for analogical signals.

Current / Voltage Converter



Plug with 500 Ω accuracy resistance for analogical signals.

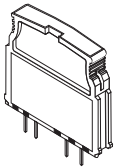
Part numbers

| Type | P/N | Type | P/N |
|-----------------|--------------------|-----------------|--------------------|
| BNMS CA I/U-250 | 1SNA 031 832 R0400 | BNMS CA I/U-500 | 1SNA 031 833 R0500 |

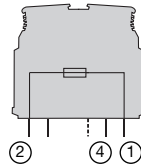
Characteristics

| Characteristics | 250 Ω | 500 Ω |
|-----------------|--------|--------|
| Resistance | 250 Ω | 500 Ω |
| Power | 0,35 W | 0,35 W |
| Accuracy | 0,1 % | 0,1 % |
| Stability | 25 ppm | 25 ppm |

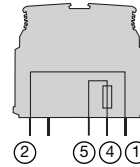
Fuse and strap plugs



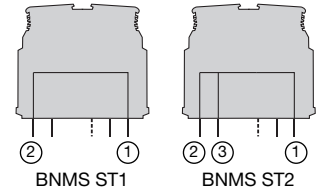
Output fuse plug



Input fuse plug



Strap plug



Part numbers

| Type | P/N | Type | P/N | Type | P/N |
|---------------|--------------------------------------|---------------|--------------------------------------|----------|--------------------|
| BNMS F125mA-1 | 125 V / 125 mA 1SNA 031 821 R0100 | BNMS F125mA-3 | 125 V / 125 mA 1SNA 031 827 R0700 | BNMS ST1 | 1SNA 031 829 R1100 |
| BNMS F500mA-1 | 125 V / 500 mA 1SNA 031 838 R1200 | BNMS F125mA-4 | 250 V / 125 mA 1SNA 031 828 R1000 | BNMS ST2 | 1SNA 031 830 R1600 |
| BNMS F2A-1 | 125 V / 2 A 1SNA 031 822 R0200 | | | | |
| BNMS F5A-1 | 125 V / 5 A 1SNA 031 823 R0300 | | | | |
| BNMS F125mA-2 | 250 V / 125 mA 1SNA 031 824 R0400 | | | | |
| BNMS F2A-2 | 250 V / 2 A 1SNA 031 825 R0500 | | | | |
| BNMS F5A-2 | 250 V / 5 A 1SNA 031 826 R0600 | | | | |



Accessories Marking

Contents

| | |
|--------------------------|----|
| Accessories | 76 |
| Marking | 78 |

Accessories

End stops

The end stops are mounted at the extremity of the terminal board assembly, giving additional support to the terminal blocks as markers. For various types of marking, refer to the marker section.

| Description | Type | Order P/N | Packaging Weight kg |
|---|----------------|--------------------|---------------------|
| End stop DIN 3 | | | |
| grey V0 | BADL 9 mm | 1SNA 399 903 R0200 | 50 |
| End stop with screws DIN 3 | | | |
| grey V0 | BAM2 V0 10 mm | 1SNA 399 967 R0100 | 50 |
| grey V2 | BAM2 10 mm | 1SNA 206 351 R1600 | 50 |
| beige V0 | BAM2 V0 10 mm | 1SNA 296 351 R0000 | 50 |
| High end stop with screws DIN 1 and DIN 3 | | | |
| grey | BAMH 9,1 mm | 1SNA 114 836 R0000 | 50 |
| beige V0 | BAMH V0 9,1 mm | 1SNA 194 836 R0100 | 50 |
| High end stop with screws DIN 3 | | | |
| grey | BADH 12 mm | 1SNA 116 900 R2700 | 50 |

Mounting rails

| | | | |
|--|------------|--------------------|---|
| Symmetrical zinc bichromate plated steel prepunched rail | PR30 2 m | 1SNA 173 220 R0500 | 1 |
| Symmetrical zinc bichromate plated steel rail | PR3.Z2 2 m | 1SNA 174 300 R1700 | 1 |
| White, symmetrical passivated galvanized steel rail | PR3.G2 2 m | 1SNA 164 800 R0300 | 1 |
| Symmetrical zinc bichromate plated steel rail | PR5 2 m | 1SNA 168 700 R2200 | 1 |
| Symmetrical zinc bichromate plated steel rail | PR4 2 m | 1SNA 168 500 R1200 | 1 |

Test devices

| | | | |
|---------------------|-----|--------------------|----|
| Test plug DIA. 2 mm | FC2 | 1SNA 007 865 R2600 | 10 |
|---------------------|-----|--------------------|----|

Assembled jumper bar

This accessory permits electrical connection between 2 to 70 blocks with 6 mm spacing placed side by side. It can be used with screw clamp or spring clamp blocks with 6 mm or 12 mm spacing. Interconnection of blocks not placed side by side is possible if teeth of the jumper bar have been cut in front of the blocks not to be connected. These teeth can be removed using pliers. Use of separator end sections before and after the jumper bar is required to preserve IP20 protection of the assembly.

| | | | |
|--------------------------------------|----------|--------------------|----|
| Assembled jumper bar 10 poles - 24 A | BJ612-10 | 1SNA 290 488 R0100 | 10 |
| Assembled jumper bar 70 poles - 24 A | BJ612-70 | 1SNA 290 489 R0200 | 10 |

Separator end section

Directly mounted on the rail beside the block, it permits to identify and make electrical insulation of product groups using jumper bars. Dimensions are the same as screw clamp blocks : width 70 mm and height on rail 67,5 mm with 2 mm spacing.

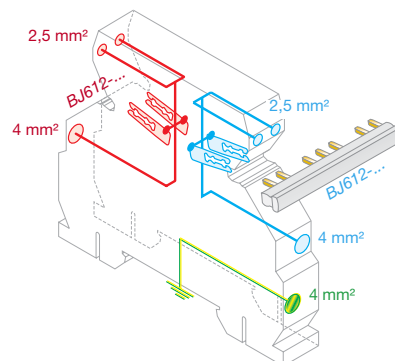
| | | | |
|-----------------------|-------|--------------------|----|
| Separator end section | SC612 | 1SNA 290 474 R0200 | 10 |
|-----------------------|-------|--------------------|----|

Distribution block

This terminal block with BJ612-... jumper bars permits 2 polarities distribution (PCL side and process side) thanks to two separate circuits, each of them including :

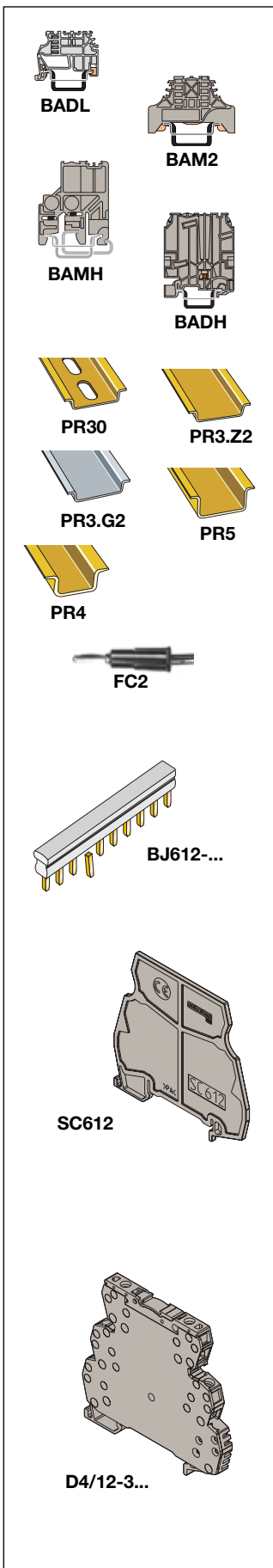
- one 4 mm² input,
- two 2,5 mm² outputs
- one double output for jumper bar BJ612-...

It permits also the connection of ground to the rail though a 4 mm² input.



Rated voltage : 250 VAC-DC
 Rated current : 32 A (4 mm²) - 16 A (2,5 mm²)
 Recommended torque : 0,4 - 0,6 Nm

| | | | |
|---|-------------|--------------------|---|
| Screw clamp distribution block sp. 12 mm | D4/12-3A-3A | 1SNA 645 031 R2000 | 5 |
| Spring clamp distribution block sp. 12 mm | D4/12-3L-3L | 1SNA 645 531 R2200 | 5 |

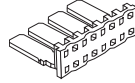


Accessories

PCMS

Comb-type jumper

This accessory permits the electrical connection of 2 to 22 blocks.



| No. of poles | Grey UL94V0 | Red UL94V0 | Blue UL94V0 | Green/Yellow UL94V0 |
|--------------|--------------------|--------------------|--------------------|---------------------|
| 2 | 1SNA 205 491 R2300 | 1SNA 205 492 R2400 | 1SNA 205 493 R2500 | 1SNA 205 494 R2600 |
| 3 | 1SNA 205 495 R2700 | 1SNA 205 496 R2000 | 1SNA 205 497 R2100 | 1SNA 205 498 R0200 |
| 4 | 1SNA 205 499 R0300 | 1SNA 205 500 R1000 | 1SNA 205 501 R0500 | 1SNA 205 502 R0600 |
| 5 | 1SNA 205 503 R0700 | 1SNA 205 504 R0000 | 1SNA 205 505 R0100 | 1SNA 205 506 R0200 |
| 6 | 1SNA 205 507 R0300 | 1SNA 205 508 R1400 | 1SNA 205 509 R1500 | 1SNA 205 510 R0100 |
| 7 | 1SNA 205 511 R2600 | 1SNA 205 512 R2700 | 1SNA 205 513 R2000 | 1SNA 205 514 R2100 |
| 8 | 1SNA 205 515 R2200 | 1SNA 205 516 R2300 | 1SNA 205 517 R2400 | 1SNA 205 518 R0500 |
| 9 | 1SNA 205 519 R0600 | 1SNA 205 520 R0300 | 1SNA 205 521 R2000 | 1SNA 205 522 R2100 |
| 10 | 1SNA 205 523 R2200 | 1SNA 205 524 R2300 | 1SNA 205 525 R2400 | 1SNA 205 526 R2500 |
| 11 | 1SNA 205 527 R2600 | 1SNA 205 528 R0700 | 1SNA 205 529 R0000 | 1SNA 205 530 R0500 |
| 12 | 1SNA 205 531 R2200 | 1SNA 205 532 R2300 | 1SNA 205 533 R2400 | 1SNA 205 534 R2500 |
| 13 | 1SNA 205 535 R2600 | 1SNA 205 536 R2700 | 1SNA 205 537 R2000 | 1SNA 205 538 R0100 |
| 14 | 1SNA 205 539 R0200 | 1SNA 205 540 R1700 | 1SNA 205 541 R0400 | 1SNA 205 542 R0500 |
| 15 | 1SNA 205 543 R0600 | 1SNA 205 544 R0700 | 1SNA 205 545 R0000 | 1SNA 205 546 R0100 |
| 16 | 1SNA 205 547 R0200 | 1SNA 205 548 R1300 | 1SNA 205 549 R1400 | 1SNA 205 550 R1100 |
| 17 | 1SNA 205 551 R0600 | 1SNA 205 552 R0700 | 1SNA 205 553 R0000 | 1SNA 205 554 R0100 |
| 18 | 1SNA 205 555 R0200 | 1SNA 205 556 R0300 | 1SNA 205 557 R0400 | 1SNA 205 558 R1500 |
| 19 | 1SNA 205 559 R1600 | 1SNA 205 560 R1300 | 1SNA 205 561 R0000 | 1SNA 205 562 R0100 |
| 20 | 1SNA 205 563 R0200 | 1SNA 205 564 R0300 | 1SNA 205 565 R0400 | 1SNA 205 566 R0500 |
| 21 | 1SNA 205 567 R0600 | 1SNA 205 568 R1700 | 1SNA 205 569 R1000 | 1SNA 205 570 R1500 |
| 22 | 1SNA 205 571 R0200 | 1SNA 205 572 R0300 | 1SNA 205 573 R0400 | 1SNA 205 574 R0500 |

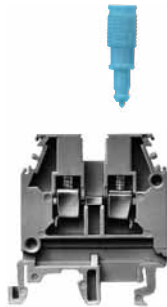
DC

Test device on screw head

This patented device is mounted on the round screwdriver opening. It is used for trouble shooting, measuring and control for monitoring and repairing an installation, on blocks without a test socket. For this, the device receives an FC2 test plug.

The DC's are differentiated by their colour :

blue for MA 2,5/5 blocks



DCB 1SNA 105 028 R2100

BJ Jumper bar

BJS Jumper bar not assembled

To connect terminal blocks, place the metal tube into the top center hole on each terminal block to be connected. The metal tube contacts the terminal block's internal connector bar. The perforated bar is cut to length and placed flat along the center opening of the series of terminal blocks. The screw is inserted into the perforated bar's hole which is located directly above the blocks being connected. The screw goes through the threaded metal tube and is screwed into the terminal block's internal connector bar. This completes the electrical connection to the perforated bar and connects the block.



To be mounted on blocks series R910 :

| | | |
|-----------------------|---------------------------|--------------------|
| Screw + washer + post | EV6D | 1SNA 168 400 R1600 |
| Perforated jumper bar | BJS9 32 A 8 poles | 1SNA 177 583 R1200 |
| | BJS9 32 A 16 poles | 1SNA 177 584 R1300 |

PEF

Identification label holders

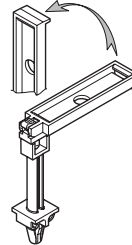
Designed to hold RPEV label (see opposite).

PEF * 1SNA 020 568 R0400

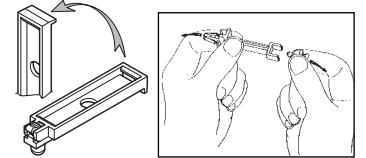
* Delivered with labels.

The label holders are removable and the labels can be changed easily.

- For mounting on PCB in a 3,7 mm diameter hole.



- For mounting on a PCB block in a 2 mm diameter hole (no support leg).



RPEV

Label for PEF 29 x 6 mm

Sheets of 99 pre-cut labels

✓ Blank

RPEV 1SNA 173 178 R0700



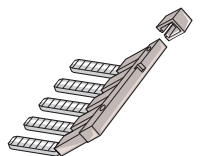
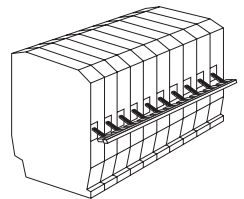
PC

Comb-type jumper bar

PC **EIP**

This accessory can be used only on the terminal blocks with at least one compression clamp connection. It permits the electrical connection of 2 to 10 blocks.

Interconnection of non-consecutive blocks is possible by removing the teeth opposite the blocks which must not be connected. The comb-type jumper bars can be cut using pliers (or a saw) : in this case, the use of an insulating tip **EIP** is recommended. The comb is placed in the compression clamp before tightening the screws, above the eventual conductor.



To be mounted on blocks series R900 and R910 :

| | | |
|-------------------------|--------------------------|--------------------|
| Insulating tip for comb | EIP | 1SNA 113 550 R2400 |
| Comb-type jumper bar | PC9 15 A 10 poles | 1SNA 210 160 R1200 |

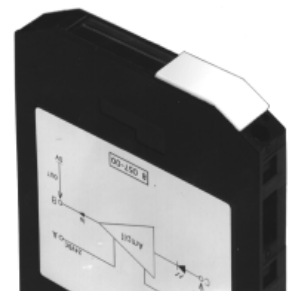
RL Lengthwise marker

RLV Lengthwise marker
Width 9 mm .354"

Large area for writing.
To be snapped onto the top of blocks.

Blank marker for writing :

RLV 1SNA 103 849 R0300



Marking

Marking for Interface Modules

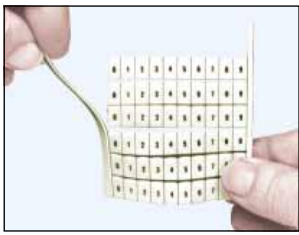
Selection table

| Markers for modules : | RC610 | RC55 | RC65 |
|-----------------------|-------|-----------------|------|
| R500 | | | |
| R600 | | POSSIBLE | |
| R900 | | | |
| R910 | | POSSIBLE | |
| R1800 | | | |

Possible mounting : **POSSIBLE**

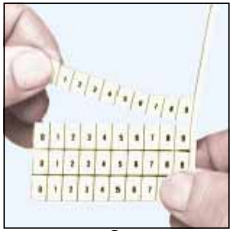
Recommended mounting :

Impossible mounting :



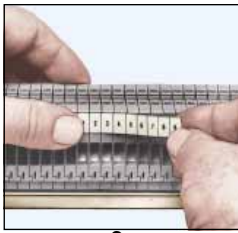
1

Remove one of the side bands of the



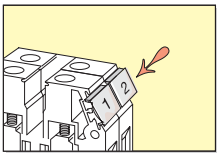
2

Separate the chosen strip from the rest of the card.

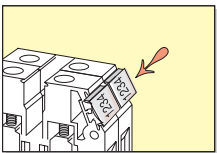


3

Press the first marker in place, hold it and slide your thumb on the rest of the strip.



Horizontal marking



Vertical marking



Refillable box of 100 cards of 18 RC markers

Marking for for terminal blocks

Standard RC marker cards

| Marker sizes | (x) = Nb of cards in 5 mm spacing kit | | | (x) = Nb of cards in 6 mm spacing kit | | |
|---------------------------|---------------------------------------|------------------------|-------------------------|---------------------------------------|------|-------|
| | RC55 | RC65 | RC610 | RC55 | RC65 | RC610 |
| Blank cards | 1SNA 230 000 R12:0 | 1SNA 232 000 R00:0 | 1SNA 233 000 R01:0 | | | |
| Horizontal marking | | | | | | |
| 10 strips from 1 to 10 | 1SNA 230 002 R00:0 (5) | 1SNA 232 002 R26:0 (5) | 1SNA 233 002 R27:0 (25) | | | |
| 10 strips from 11 to 20 | 1SNA 230 003 R01:0 (2) | 1SNA 232 003 R27:0 (2) | 1SNA 233 003 R20:0 (10) | | | |
| 10 strips from 21 to 30 | 1SNA 230 004 R02:0 | 1SNA 232 004 R20:0 | 1SNA 233 004 R21:0 (6) | | | |
| 10 strips from 31 to 40 | 1SNA 230 005 R03:0 | 1SNA 232 005 R21:0 | 1SNA 233 005 R22:0 (4) | | | |
| 10 strips from 41 to 50 | 1SNA 230 006 R04:0 | 1SNA 232 006 R22:0 | 1SNA 233 006 R23:0 (3) | | | |
| 10 strips from 51 to 60 | 1SNA 230 007 R05:0 | 1SNA 232 007 R23:0 | 1SNA 233 007 R24:0 (2) | | | |
| 10 strips from 61 to 70 | 1SNA 230 008 R16:0 | 1SNA 232 008 R04:0 | 1SNA 233 008 R05:0 (2) | | | |
| From 1 to 100 | 1SNA 230 030 R07:0 (2) | 1SNA 232 030 R25:0 (2) | 1SNA 233 030 R26:0 (15) | | | |
| From 101 to 200 | 1SNA 230 031 R24:0 | 1SNA 232 031 R12:0 | 1SNA 233 031 R13:0 (2) | | | |
| 20 times L1-L2-L3-N-PE | 1SNA 230 131 R25:0 | 1SNA 232 131 R13:0 | 1SNA 233 131 R14:0 (2) | | | |
| Vertical marking | | | | | | |
| 10 strips from 1 to 10 | 1SNA 230 041 R06:0 | 1SNA 232 041 R24:0 | 1SNA 233 041 R25:0 (5) | | | |
| 10 strips from 11 to 20 | 1SNA 230 042 R07:0 | 1SNA 232 042 R25:0 | 1SNA 233 042 R26:0 (3) | | | |
| 10 strips from 21 to 30 | 1SNA 230 043 R00:0 | 1SNA 232 043 R26:0 | 1SNA 233 043 R27:0 (2) | | | |
| 10 strips from 31 to 40 | 1SNA 230 044 R01:0 | 1SNA 232 044 R27:0 | 1SNA 233 044 R20:0 (2) | | | |
| From 1 to 100 | 1SNA 230 060 R15:0 | 1SNA 232 060 R03:0 | 1SNA 233 060 R04:0 (8) | | | |

Marking kit RC 5 mm spacing or 6 mm spacing

Box with 100 cards with 18 various part numbers (see table next page)

| Description | Type | Order P/N | Packaging Weight kg |
|------------------------------------|------|---------------------|---------------------|
| Box with 100 cards RC 5 mm spacing | | 1SNA 400 085 R27:00 | 1 |
| Refill for box RC 5 mm | | 1SNA 400 145 R07:00 | 1 |
| Box with 100 cards RC 6 mm spacing | | 1SNA 400 084 R26:00 | 1 |
| Refill for box RC 6 mm | | 1SNA 400 144 R06:00 | 1 |

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| 1SNA 008 048 R1700 | 58 | 1SNA 020 493 R1200 | 40 | 1SNA 205 498 R0200 | 77 | 1SNA 230 000 R1200 | 78 | 1SNA 607 223 R0000 | 21 |
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| 1SNA 010 048 R0400 | 64 | 1SNA 031 805 R1200 | 52 | 1SNA 205 509 R1500 | 77 | 1SNA 230 042 R0700 | 78 | 1SNA 607 260 R2100 | 21 |
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ABB Entrelec
Export Departement
10 rue Ampère Z.I. - B.P. 114
F - 69685 Chassieu cedex / France
Tel. : +33 (0) 4 7222 1722
Fax: +33 (0) 4 7222 1935

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Publication
N° : TSNC 117.003 C0201
Printed in France (M.01.2006:BF)