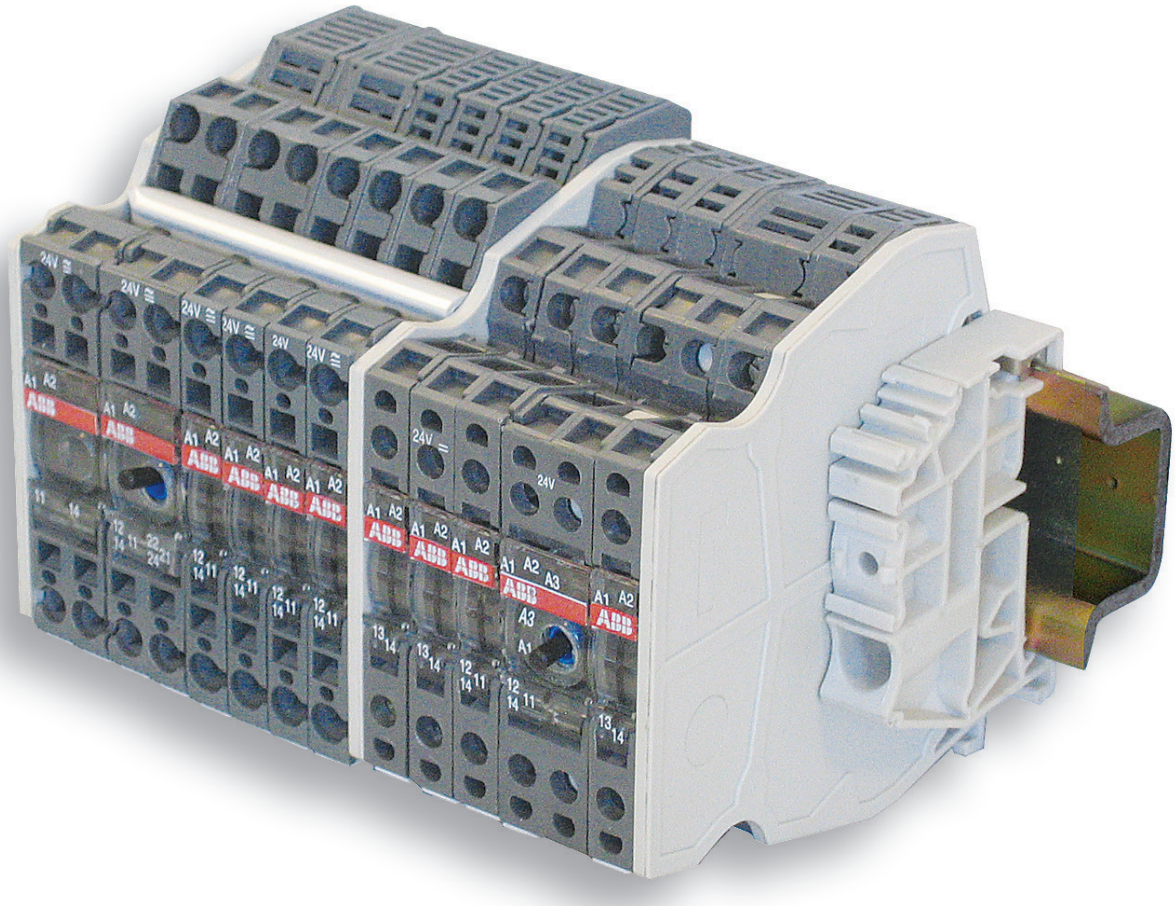
Interface Relays R600, R500
Product group picture



Interface Relays R600, R500
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Interface Relays R600, R500
Benefits and advantages

R600 series

5

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

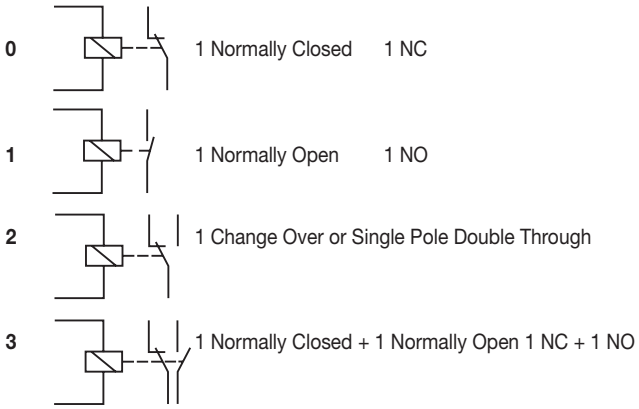
- Spacing : 5.08 mm (the smallest in the market)
- Wire size : 2.5 mm² (4 mm² solid)
- Contact type : 1 SPDT from 10 mA to 6 A / 250 V
- Transistor : 30 mA to 100 mA
  MOS : 1 A to 2 A
  Triac : 1 A

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.

Interface Relays R600, R500
Type designators

SERIES	CODE	NB OF RELAYS	CONTACT TYPE	NB OF CONTACTS PER RELAY	PARTICULARITIES
R 600	R B	1 2	0 1 2 3	1 2	None A B C N P R V I
R 600	R B R				
R 500	D 2,5/5 R				

Description of contact types

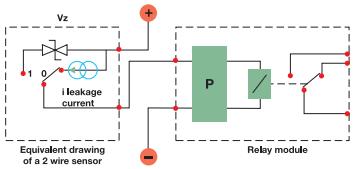


Color coding for relays

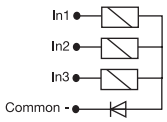
Color	Current level in contacts	Switching current	Switching voltage	Switching load power
green	Very low level	10^{-7} to 5 A	10^{-3} to 250 V	10^{-10} to 2000 VA 10^{-10} to 200 W
grey	Low level	1 mA to 8 A	5 to 250 V	0,05 to 1500 VA 0,05 to 192 W
blue	High level	10 mA to 16 A	12 to 380 V	0,6 to 4000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

Features

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

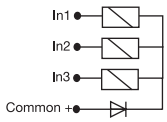


N



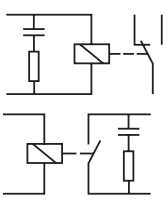
Commons of coils connected to negative

P



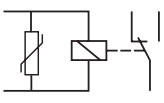
Commons of coils connected to positive

R



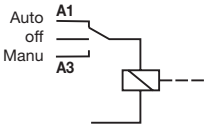
RC circuit protection :
- Input protection against leakage current
- Increases relay contacts life

V



Relay protection against overvoltage peaks

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

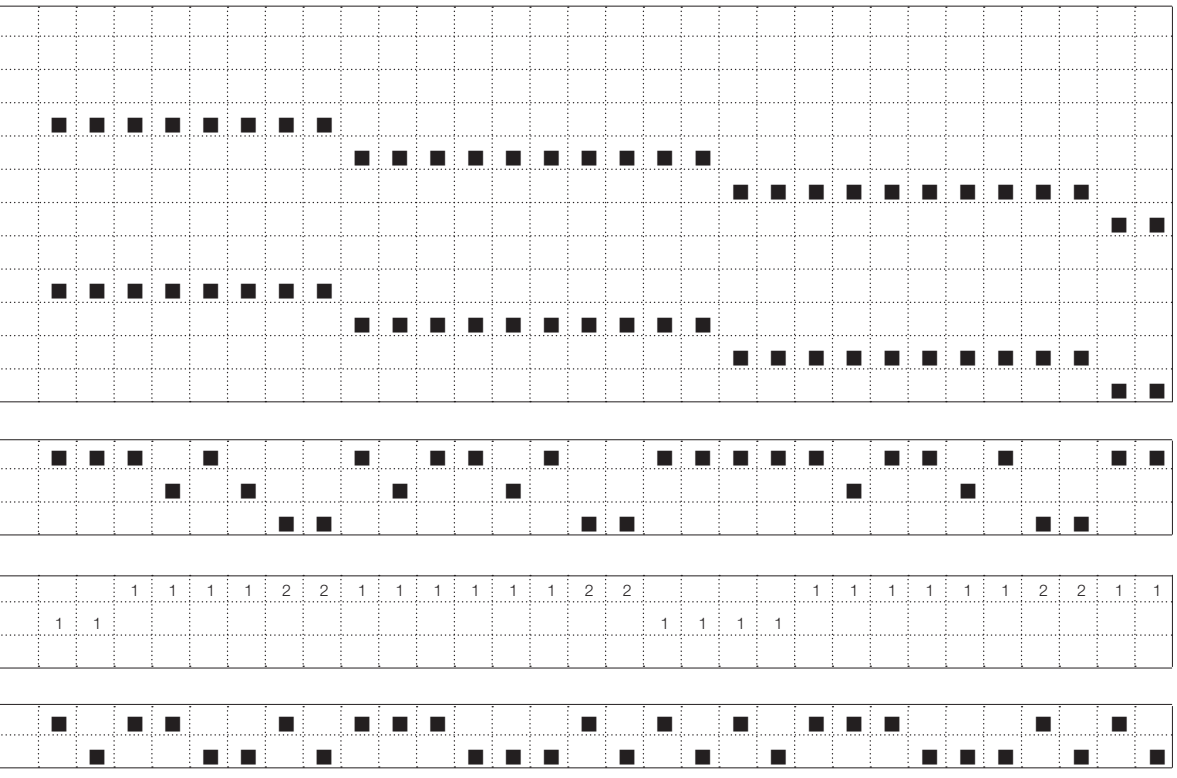


Interface Relays R600
Selection

Order number	1SNA 645 034 R2300	1SNA 645 036 R2500	1SNA 645 534 R2500	1SNA 645 536 R2700	1SNA 645 069 R0000	1SNA 645 037 R2600	1SNA 645 569 R0000	1SNA 645 537 R2000	1SNA 645 019 R0400	1SNA 645 519 R0600	1SNA 645 014 R2700	1SNA 645 063 R0000	1SNA 645 018 R0300	1SNA 645 514 R2100	1SNA 645 563 R0200	1SNA 645 518 R0500	1SNA 645 064 R0100	1SNA 645 065 R0200	1SNA 645 001 R0300	1SNA 645 005 R0700	1SNA 645 032 R2100	1SNA 645 009 R1300	1SNA 645 033 R2200	1SNA 645 010 R0700	1SNA 645 564 R0300	1SNA 645 565 R0400	1SNA 645 501 R0500	1SNA 645 505 R0100	1SNA 645 532 R2300	1SNA 645 509 R1500	1SNA 645 533 R2400	1SNA 645 510 R0100	1SNA 645 012 R2500	1SNA 645 512 R2700
Type	RB 121-5VDC	RB 121-5VDC	RBR 121-5VDC	RBR 121-5VDC	RB 121-12VDC	RB 121-12VDC	RBR 121-12VDC	RBR 121-12VDC	RB 101AR-24VAC/DC	RBR 101AR-24VAC/DC	RB 111A-24VAC/DC	RB 111AI-24VAC/DC	RB 111AR-24VAC/DC	RBR 111A-24VAC/DC	RBR 111AI-24VAC/DC	RBR 111AR-24VAC/DC	RB 121-24VDC	RB 121-24VDC	RB 121A-24VAC/DC	RB 121A-24VAC/DC	RB 121AI-24VAC/DC	RB 121AI-24VAC/DC	RB 121AI-24VAC/DC	RB 121AI-24VAC/DC	RBR 121-24VDC	RBR 121-24VDC	RBR 121A-24VAC/DC	RBR 121A-24VAC/DC	RBR 121AI-24VAC/DC	RBR 121AI-24VAC/DC	RBR 121AI-24VAC/DC	RBR 121AI-24VAC/DC	RB 122A-24VAC/DC	RBR 122A-24VAC/DC
Input voltage																																		
5 V DC	■	■	■	■																														
12 V DC					■	■	■	■																										
24 V DC									■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	
48 - 60 V DC																																		
110 - 115 V DC																																		
230 V DC																																		
60 - 230 V DC																																		
24 V AC									■	■	■	■	■	■	■	■			■	■	■	■	■	■			■	■	■	■	■	■	■	
48 - 60 V AC																																		
115 V AC																																		
230 V AC																																		
60 - 230 V AC																																		
Output rating																																		
10 mA - 6 A	■		■		■		■		■	■	■	■	■	■	■	■	■		■		■	■			■		■		■	■				
1 mA - 6 A		■		■		■		■										■		■			■	■		■		■			■	■		
1 mA - 8 A																																	■	■
Output contacts																																		
c/o	1	1	1	1	1	1	1	1									1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2
n/o											1	1	1	1	1	1																		
n/c									1	1																								
Terminal type																																		
Screw	■	■			■	■			■		■	■	■				■	■	■	■	■	■	■	■									■	
Spring			■	■			■	■		■				■	■	■									■	■	■	■	■	■	■	■		■

Interface Relays R600
Selection

RB 111A-48-60VAC/DC	1SNA 645 015 R2000
RBR 111A-48-60VAC/DC	1SNA 645 515 R2200
RB 121A-48-60VAC/DC	1SNA 645 002 R0400
RB 121A-48-60VAC/DC	1SNA 645 006 R0000
RBR 121A-48-60VAC/DC	1SNA 645 502 R0600
RBR 121A-48-60VAC/DC	1SNA 645 506 R0200
RB 122A-48-60VAC/DC	1SNA 645 040 R1500
RBR 122A-48-60VAC/DC	1SNA 645 540 R1700
RB 121A-115VAC/DC	1SNA 645 003 R0500
RB 121A-115VAC/DC	1SNA 645 007 R0100
RB 121AR-115VAC/DC	1SNA 645 046 R0700
RBR 121A-115VAC/DC	1SNA 645 503 R0700
RBR 121A-115VAC/DC	1SNA 645 507 R0300
RBR 121AR-115VAC/DC	1SNA 645 546 R0100
RB 122A-115VAC/DC	1SNA 645 041 R0200
RBR 122A-115VAC/DC	1SNA 645 541 R0400
RB 111A-115VAC/DC	1SNA 645 016 R2100
RBR 111A-115VAC/DC	1SNA 645 516 R2300
RB 111A-230VAC/DC	1SNA 645 017 R2200
RBR 111A-230VAC/DC	1SNA 645 517 R2400
RB 121A-230VAC/DC	1SNA 645 004 R0400
RB 121A-230VAC/DC	1SNA 645 008 R1200
RB 121AR-230VAC/DC	1SNA 645 011 R2400
RBR 121A-230VAC/DC	1SNA 645 504 R0000
RBR 121A-230VAC/DC	1SNA 645 508 R1400
RBR 121AR-230VAC/DC	1SNA 645 511 R2600
RB 122A-230VAC/DC	1SNA 645 013 R2600
RBR 122A-230VAC/DC	1SNA 645 513 R2000
BR 121 A 60-230VAC/DC	1SNA 645 020 R0100
RBR 121 A 60-230VAC/DC	1SNA 645 520 R0300



Interface Relays R600
Benefits and advantages

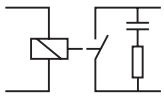
Characteristics

Standard range in screw clamp or spring clamp versions

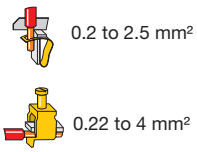
- Spacing : 6 mm
- Wire size : 2.5 mm² (4 mm² solid wire)
- Contact type : 1 NO, 1 NC, 1 SPDT, 1 DPDT from 1 mA to 8 A / 250 V
- Transistor : 100 mA
  MOS : 1 A to 5 A
  Triac : 1 A to 2 A

Benefits

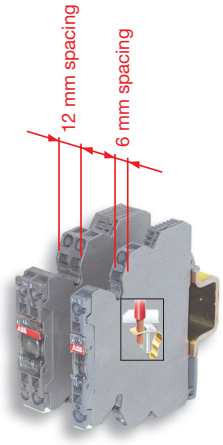
Increased contact life
The contacts are proteced by built in RC-circuits which result in increased contact life.



Variety of connections
R600 relays and optocouplers are available with both screw terminals or spring terminals.

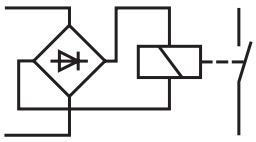


Space safing
With a width of only 6 mm or 12 mm the compact design safes space in each cabinet.



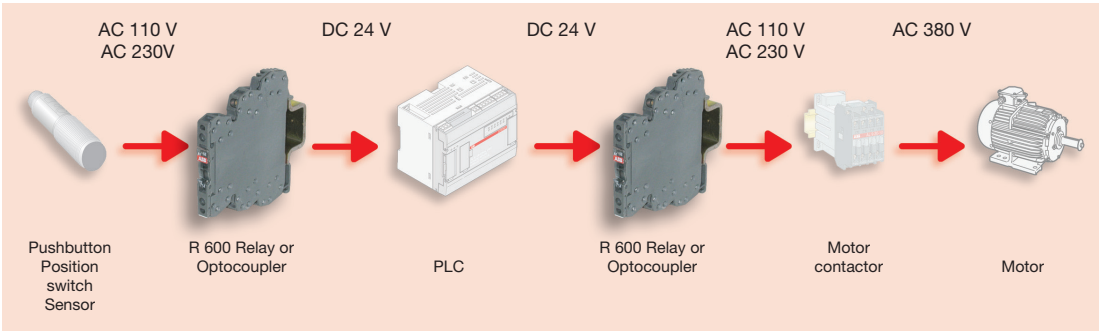
Functionning status
Functionning display through a green LED.

Only one part number AC/DC



Measurement & Test
Holes for holding DIA. 2 mm test plugs to simplify any measury or test.

Excellent adaption and conversion of digital signals



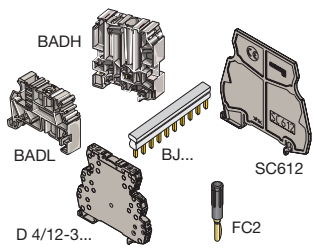
Interface Relays R600
Ordering details

R600

High level

Low level

R600 Relay		Type	Order code	Price	Pkg qty	Weight (1 pce) kg (lb)
Relay module 1 NO high level 6 mm spacing		RB 111 A-24VAC/DC	1SNA645014R2700		10	0.02 (0.44)
		RB 111 A-48-60VAC/DC	1SNA645015R2000			
		RB 111 A-115VAC/DC	1SNA645016R2100			
		RB 111 A-230VAC/DC	1SNA645017R2200			
Relay mod. 1 NO high level w/ safety switch 6 mm spacing		RB 111 AI-24VAC/DC	1SNA645063R0000			
Relay mod. 1 NO high level w/ contact protection 12 mm spacing		RB 111 AR-24VAC/DC	1SNA645018R0300		5	0.03 (0.44)
Relay mod. 1 NC high level w/ contact protection 12 mm spacing		RB 101 AR-24VAC/DC	1SNA645019R0400			
Relay module 1 NO high level 6 mm spacing		RBR 111 A-24VAC/DC	1SNA645514R2100		10	0.02 (0.44)
		RBR 111 A-48-60VAC/DC	1SNA645515R2200			
		RBR 111 A-115VAC/DC	1SNA645516R2300			
		RBR 111 A-230VAC/DC	1SNA645517R2400			
Relay mod. 1 NO high level w/ safety switch 6 mm spacing		RBR 111 AI-24VAC/DC	1SNA645563R0200			
Relay mod. 1 NO high level w/ contact protection 12 mm spacing		RBR 111 AR-24VAC/DC	1SNA645518R0500		5	0.03 (0.44)
Relay mod. 1 NC high level w/ contact protection 12 mm spacing		RBR 101 AR-24VAC/DC	1SNA645519R0600			
Relay module 1 SPDT high level		RB 121-5VDC	1SNA645034R2300		10	0.02 (0.44)
		RB 121-12VDC	1SNA645069R0100			
		RB 121-24VDC	1SNA645064R0100			
		RB 121 A-24VAC/DC	1SNA645001R0300			
		RB 121 A-48-60VAC/DC	1SNA645002R0400			
		RB 121 A-115VAC/DC	1SNA645003R0500			
		RB 121 A-230VAC/DC	1SNA645004R0400			
Relay module 1 SPDT high level		RB 121-5VDC	1SNA645534R2500			
		RB 121-12VDC	1SNA645569R0000			
		RB 121-24VDC	1SNA645564R0300			
		RB 121 A-24VAC/DC	1SNA645501R0500			
		RB 121 A-48-60VAC/DC	1SNA645502R0600			
		RB 121 A-115VAC/DC	1SNA645503R0700			
		RB 121 A-230VAC/DC	1SNA645504R0000			
Relay module 1 SPDT low level		RB 121-5VDC	1SNA645036R2500		10	0.02 (0.44)
		RB 121-12VDC	1SNA645037R2600			
		RB 121-24VDC	1SNA645065R0200			
		RB 121 A-24VAC/DC	1SNA645005R0700			
		RB 121 A-48-60VAC/DC	1SNA645006R0000			
		RB 121 A-115VAC/DC	1SNA645007R0100			
		RB 121 A-230VAC/DC	1SNA645008R1200			
Relay module 1 SPDT low level		RB 121-5VDC	1SNA645536R2700			
		RB 121-12VDC	1SNA645537R2000			
		RB 121-24VDC	1SNA645565R0400			
		RB 121 A-24VAC/DC	1SNA645505R0100			
		RB 121 A-48-60VAC/DC	1SNA645506R0200			
		RB 121 A-115VAC/DC	1SNA645507R0300			
		RB 121 A-230VAC/DC	1SNA645508R1400			



Accessories R600	Type	Order code	Price	Pkg qty	Weight (1 pce) kg (lb)
End section	BADH V0	1SNA116900R2700		50	
	BADL V0	1SNA399903R0200		50	
	BAM2 V0	1SNA399967R0100		50	
Seperator end section	SC 612	1SNA290474R0200		10	
Divisible shunt 10 poles	BJ 612-10	1SNA290488R0100		10	
Divisible shunt 70 poles	BJ 612-70	1SNA290489R0200		10	
Screw clamp distribution block sp. 12 mm	D4/12-3-3	1SNA645031R2000		5	
Spring clamp distribution block sp. 12 mm	D4/12-3R-3R	1SNA645531R2200		5	
Test plug DIA. 2 mm	FC2	1SNA645531R2200		10	
Marking method	RC65 / RC610	see marking			

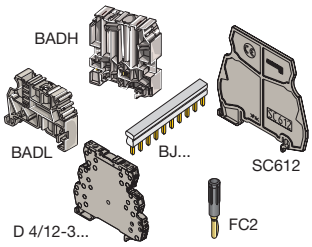
Interface Relays R600
Ordering details

R600

High level

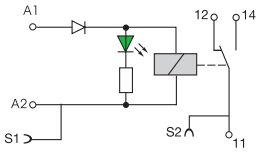
Low level

R600 Relay		Type	Order code	Price	Pkg qty	Weight (1 pce) kg (lb)
Relay mod. 1SPDT high level w/leakage current protec.		RB 121 AR-115VAC/DC	1SNA645046R0700		5	0.03 (0.066)
		RB 121 AR-230VAC/DC	1SNA645011R2400			
Relay mod. 1SPDT high level w/large coil voltage range		RB 121 A 60-230VAC/DC	1SNA645020R0100			
Relay mod. 1SPDT high level with switch		RB 121 AI-24VAC/DC	1SNA645032R2100			
Relay mod. 1SPDT high level with safety switch		RB 121 AI-24VAC/DC	1SNA645009R1300			
Relay module 1SPDT low level with switch		RB 121 AI-24VAC/DC	1SNA645033R2200			
Relay module 1SPDT low level with safety switch		RB 121 AI-24VAC/DC	1SNA645010R0700			
Relay mod. 1SPDT high level w/leakage current protec.		RB 121 AR-115VAC/DC	1SNA645546R0100			
		RB 121 AR-230VAC/DC	1SNA645511R2600			
Relay mod. 1SPDT high level w/large coil voltage range		RB 121 A 60-230VAC/DC	1SNA645520R0300			
Relay mod. 1SPDT high level with switch		RB 121 AI-24VAC/DC	1SNA645532R2300			
Relay mod. 1SPDT high level with safety switch		RB 121 AI-24VAC/DC	1SNA645509R1500			
Relay module 1SPDT low level with switch		RB 121 AI-24VAC/DC	1SNA645533R2400			
Relay module 1SPDT low level with safety switch		RB 121 AI-24VAC/DC	1SNA645510R0100			
Relay module 1 DPDT low level		RB 122 A-24VAC/DC	1SNA645012R2500		5	0.03 (0.066)
		RB 122 A-48-60VAC/DC	1SNA645040R1500			
		RB 122 A-115VAC/DC	1SNA645041R0200			
		RB 122 A-230VAC/DC	1SNA645013R2600			
Relay module 1 DPDT low level		RBR 122 A-24VAC/DC	1SNA645512R2700			
		RBR 122 A-48-60VAC/DC	1SNA645540R1700			
		RBR 122 A-115VAC/DC	1SNA645541R0400			
		RBR 122 A-230VAC/DC	1SNA645513R2000			

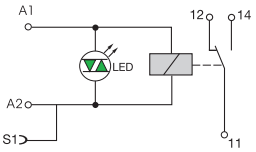


Accessories R600	Type	Order code	Price	Pkg qty	Weight (1 pce) kg (lb)
End section	BADH V0	1SNA116900R2700		50	
	BADL V0	1SNA399903R0200		50	
	BAM2 V0	1SNA399967R0100		50	
Seperator end section	SC 612	1SNA290474R0200		10	
Divisible shunt 10 poles	BJ 612-10	1SNA290488R0100		10	
Divisible shunt 70 poles	BJ 612-70	1SNA290489R0200		10	
Screw clamp distribution block sp. 12 mm	D4/12-3-3	1SNA645031R2000		5	
Spring clamp distribution block sp. 12 mm	D4/12-3R-3R	1SNA645531R2200		5	
Test plug DIA. 2 mm	FC2	1SNA645531R2200		10	
Marking method	RC65 / RC610	see marking			

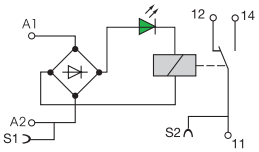
Interface Relays R600
Connection diagrams



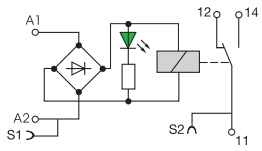
RB...121 - 5-12 V DC



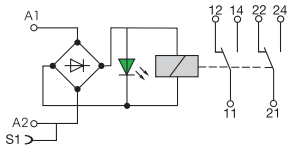
RB...121 - 24 V DC



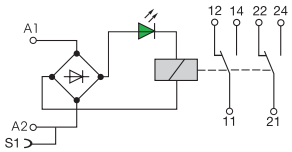
RB...121 A
48-60-115-230 V AC/DC



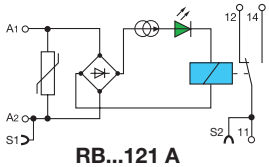
RB...121 A - 24 V AC/DC



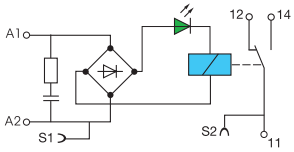
RB...122 A
24-48-60 V AC/DC



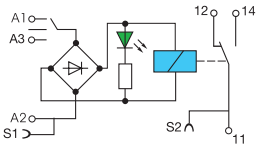
RB...122 A
115-230 V AC/DC



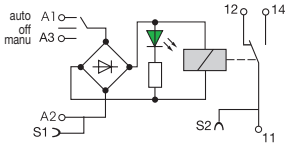
RB...121 A



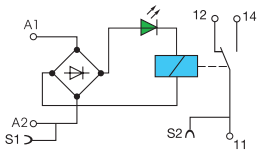
RB...121 AR



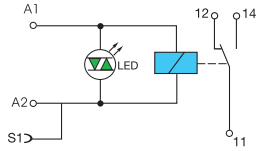
RB...121 AI



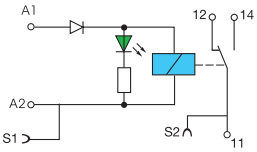
RB...121 AI



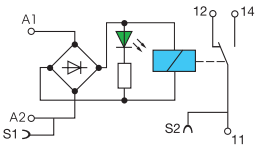
RB...121 A
48-60-115-230 V AC/DC



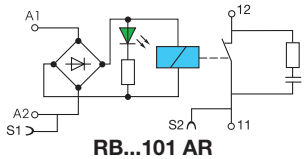
RB...121 - 12-24 V DC



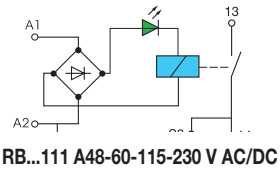
RB...121 - 5 V DC



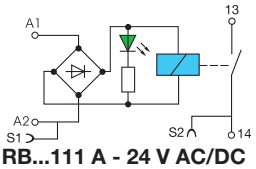
RB...121 A - 24 V AC/DC



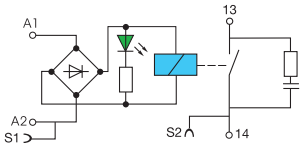
RB...101 AR



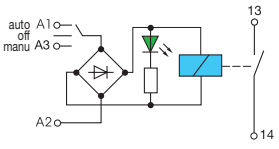
RB...111 A48-60-115-230 V AC/DC



RB...111 A - 24 V AC/DC



RB...111 AR



RB...111 AI

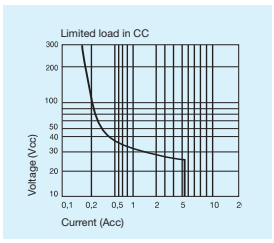
Interface Relays R600
Technical information

Technical data

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

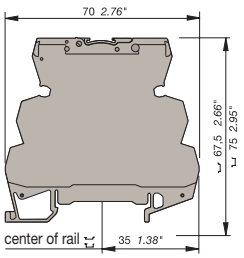
		RB 111 A					RB 111 AI	RB 111 AR	RB 101 AR
Relay characteristics coil									
Rated voltage: +20%, -15% on DC ; 10%, -10% on AC		24 VAC/DC	48 VAC/DC	60 VAC/DC	115 VAC/DC	230 VAC/DC ± 10% on AC ± 10%-15% on DC	24 VAC/DC	24 VAC/DC	24 VAC/DC
Frequency		50/60 Hz							
Power		0.24 W	0.34 W	0.54 W	0.46 W	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							
Relay characteristics contact									
Type		1 NO						1 NO + RC	
Voltage switching range min./max.		12 V / 250 VAC							
Current switching range min./max.		10 mA / 6 A							
Load switching range	AC1 min./max.	0.6 VA / 1500 VA (ohmic load)							
	DC1 min./max.	0.6 W / 140 W							
Number of on-load operations		10^5 on AC15							
Number of off-load operations		10^7							
Operation speed	F	5 ms			6 ms	7 ms	5 ms		
	O	8 ms			15 ms		8 ms		
Bounce		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 size	Solid wire	0.2 - 4 mm² (24-12 AWG)				0.2-2.5 mm² (24-12 AWG)			
	Stranded wire	0.22 - 2.5 mm² (24-12 AWG)							
Rated wire size		2.5 mm² (12 AWG)							
Wire stripping length		9 mm (0.354 in)							
Recommended screwdriver		3.5 mm (0.137 in)							
Protection		IP20 *NEMA1*							
Recommended torque		0.4-0.6 Nm (3.5-5.3 lb.in)							
Approvals		cULus , GL (pending) , GL , LRS , 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.

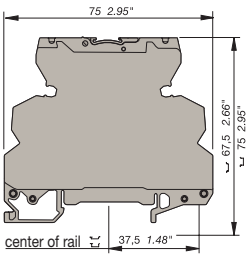


	DC12	AC12	DC13	AC15
24 V	6 A	6 A	1 A	3 A
110/120 V	0,3 A	6 A	0,2 A	3 A
220/230 V	0,2 A	6 A	0,1 A	3 A

Dimensional drawings



Screw clamp module



Spring clamp module

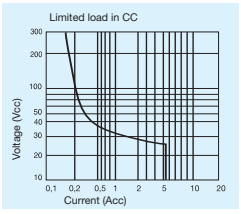
Interface Relays R600
Technical information

Technical data

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

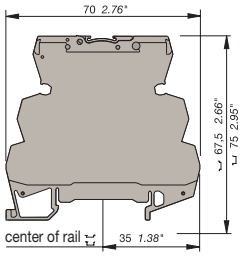
		RB 121			RB 121A				
Relay characteristics coil									
Rated voltage: +20%, -15% on DC ; 10%, -10% on AC		5 V DC	12 V DC	24 V DC	24 V AC/DC	48 V AC/DC	60 V AC/DC	115 V AC/DC	230 V AC/DC ± 10% on AC ± 10%-15% on DC
Frequency		-			50/60 Hz				
Power		0.2 W	0.2 W	0.28 W	0.24 W	0.33 W	0.54 W	0.46 W	0.8 W
Rated current		40 mA	16 mA	12 mA	10 mA	7 mA	9 mA	4 mA	3.5 mA
Drop-out voltage at 20°C		1.2 V	2.2 V	1.2 V	4.5 V	8 V	8 V	17 V	27 V
Status device		green LED							
Relay characteristics contact									
Type		1 SPDT							
Voltage switching range min./max.		12 V / 250 V AC							
Current switching range min./max.		10 mA / 6 A							
Load switching range	AC1 min./max.	0.6 VA / 1500 VA (ohmic load)							
	DC1 min./max.	0.6 W / 140 W							
Number of on-load operations		10^5 on AC15							
Number of off-load operations		10^7							
Operation speed	F	5 ms						6 ms	7 ms
	O	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	UL 94 V0							
Wire size	Solid wire	0.2 - 4 mm² (24-12 AWG)			0.2-2.5 mm² (24-12 AWG)				
	Stranded wire	0.22 - 2.5 mm² (24-12 AWG)							
Rated wire size		2.5 mm² (12 AWG)							
Wire stripping length		9 mm (0.354 in)							
Recommended screwdriver		3.5 mm (0.137 in)							
Protection		IP20 *NEMA1*							
Recommended torque		0.4-0.6 Nm (3.5-5.3 lb.in)							
Approvals		c UL us (pending for 12 V DC) , CSA (pending), GL , LRS , 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.

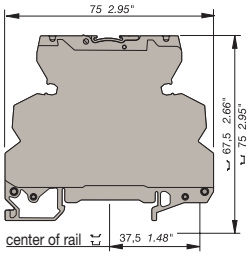


	DC12	AC12	DC13	AC15
24 V	6 A	6 A	1 A	3 A
110/120 V	0,3 A	6 A	0,2 A	3 A
220/230 V	0,2 A	6 A	0,1 A	3 A

Dimensional drawings



Screw clamp module



Spring clamp module

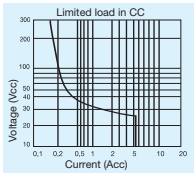
Interface Relays R600
Technical information

Technical data

Relay : 1 SPDT low level with contact 1 mA upto 6 A - 6 m 0.236“ spacing

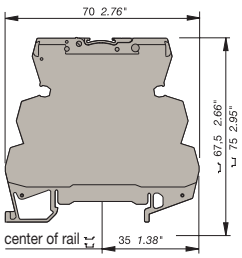
		RB 121			RB 121 A				
Relay characteristics coil									
Rated voltage: +20%, -15% on DC ; 10%, -10% on AC		5 V DC	12 V DC	24 V DC	24 VAC/DC	48 VAC/DC	60 V AC/DC	115 V AC/DC	230 V AC/DC ± 10% on AC ± 10%-15% on DC
Frequency					50/60 Hz				
Power		0.2 W	0.2 W	0.28 W	0.24 W	0.33 W	0.54 W	0.46 W	0.8 W
Rated current		40 mA	16 mA	12 mA	10 mA	7 mA	9 mA	4 mA	3.5 mA
Drop-out voltage at 20°C		1.2 V	2.2 V	1.2 V	4.5 V	8 V	8 V	17 V	27 V
Status device		green LED							
Relay characteristics 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	AC1 min./max.	0.05 VA / 1500 VA (ohmic load)							
	DC1 min./max.	0.05 W / 140 W							
Number of on-load operations		10^5 on AC15							
Number of off-load operations		10^7							
Operation speed	F	5 ms	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	8 ms	15 ms	16 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	UL 94 V0							
Wire size	Solid wire	0.2 - 4 mm² (24-12 AWG)			0.2-2.5 mm² (24-12 AWG)				
	Stranded wire	0.22 - 2.5 mm² (24-12 AWG)							
Rated wire size		2.5 mm² (12 AWG)							
Wire stripping length		9 mm (0.354 in)							
Recommended screwdriver		3.5 mm (0.137 in)							
Protection		IP20 *NEMA1*							
Recommended torque		0.4-0.6 Nm (3.5-5.3 lb.in)							
Approvals		c UL us (pending for 24 V DC) , SP (pending) , GL , LRS , 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.

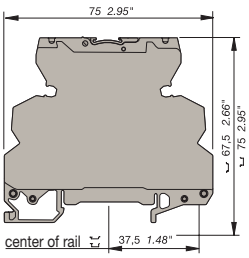


	DC12	AC12	DC13	AC15
24 V	6 A	6 A	1 A	3 A
110/120 V	0,3 A	6 A	0,2 A	3 A
220/230 V	0,2 A	6 A	0,1 A	3 A

Dimensional drawings



Screw clamp module



Spring clamp module

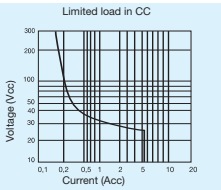
Interface Relays R600
Technical information

Technical data

Relay : 1 SPDT high level with switch or large coil voltage range or with leakage current protection 12 mm 0.472“ spacing
Relay : 1 SPDT low level with switch - 12 mm 0.472“ spacing

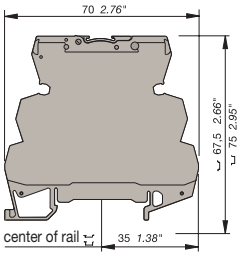
		RB 121 AR		RB 121AI	RB 121 AI		RB 121 AI
Relay characteristics coil							
Rated voltage: +20%, -15% on DC ; 10%, -10% on AC		115 V AC/DC	230 V AC/DC ± 10% on AC ± 10%-15% on DC	24 VAC/DC	24 VAC/DC		60 to 253 VAC/DC
Frequency		50/60 Hz					
Power		2 W	2.8 W	0.24 W	0.24 W		1 W
Rated current		18 mA	12 mA	10 mA	10 mA		4 mA max.
Drop-out voltage at 20°C		17 V	27 V	4.5 V	4.5 V		15 V
Permissible leakage current		1.6 mA	1 mA				
Status device		green LED					
Relay characteristics contact							
Type		1 SPDT					
Voltage switching range min./max.		12 V / 250 V AC			5 V / 250 V		12 V / 250 V
Current switching range min./max.		10 mA / 6 A					
Load switching range	AC1 min./max.	0.6 VA / 1500 VA (ohmic load)			0.05 VA / 1500 VA (ohmic load)		0.6 VA / 1500 VA (ohmic load)
	DC1 min./max.	0.6 W / 140 W			0.05 W / 140 W		0.6 W / 140 W
Number of on-load operations		10^5 on AC15					
Number of off-load operations		10^7					
Operation speed	F	6 ms	7 ms	5 ms	5 ms	5 ms	7 ms
	O	15 ms	16 ms	8 ms	8 ms	8 ms	20 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	UL 94 V0					
Wire size	Solid wire	0.2 - 4 mm² (24-12 AWG)			0.2-2.5 mm² (24-12 AWG)		
	Stranded wire	0.22 - 2.5 mm² (24-12 AWG)					
Rated wire size		2.5 mm² (12 AWG)					
Wire stripping length		9 mm (0.354 in)					
Recommended screwdriver		3.5 mm (0.137 in)					
Protection		IP20 *NEMA1*					
Recommended torque		0.4-0.6 Nm (3.5-5.3 lb.in)					
Approvals		cULus, SP (pending), GL , LRS , 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.

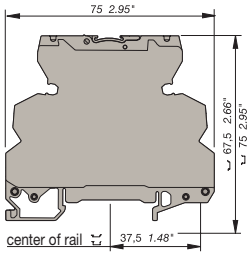


	DC12	AC12	DC13	AC15
24 V	6 A	6 A	1 A	3 A
110/120 V	0,3 A	6 A	0,2 A	3 A
220/230 V	0,2 A	6 A	0,1 A	3 A

Dimensional drawings



Screw clamp module



Spring clamp module

Interface Relays R600
Technical information

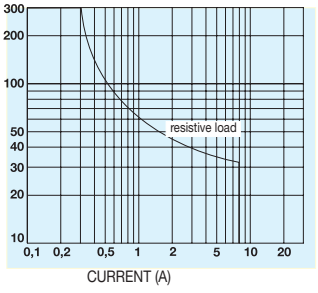
Technical data

Relay : 1 DPDT low level contact 1 mA to 8 A - 12 mm 0.472“ spacing

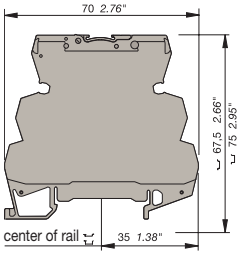
		RB ... 122A				
Relay characteristics coil						
Rated voltage: +20%, -15% on DC ; 10%, -10% on AC		24 V AC/DC	48 V AC/DC	60 V AC/DC	115 V AC/DC	230 V AC/DC ± 10% on AC ± 10%-15% on DC
Frequency		50/60 Hz				
Power		0.48 W	0.62 W	0.96 W	0.58 W	1.15 W
Rated current		20 mA	13 mA	16 mA	5 mA	5 mA
Drop-out voltage at 20°C		5.4 V	8.8 V	8.8 V	20 V	10 V
Status device		green LED				
Relay characteristics contact						
Type		1 DPDT				
Voltage switching range min./max.		5 V / 250 V DC - 250 V AC				
Current switching range min./max.		1 mA / 8 A		1 mA / 5 A		
Load switching range	AC1 min./max.	5 mVA / 1500 VA (ohmic load)				
	DC1 min./max.	5 mW / 192 W				
Number of on-load operations		10^5				
Number of off-load operations		2 x 10^7				
Operation 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 size	Solid wire	0.2 - 4 mm² (24-12 AWG)			0.2-2.5 mm² (24-12 AWG)	
	Stranded wire	0.22 - 2.5 mm² (24-12 AWG)				
Rated wire size		2.5 mm² (12 AWG)				
Wire stripping length		9 mm (0.354 in)				
Recommended screwdriver		3.5 mm (0.137 in)				
Protection		IP20 *NEMA1*				
Recommended torque		0.4-0.6 Nm (3.5-5.3 lb.in)				
Approvals		c UL us (pending for 12 V DC) , (pending), , LRS , 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.

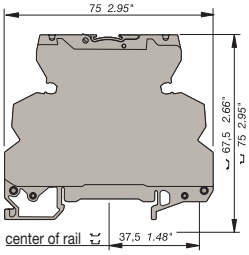
Max. DC load breaking capacity



Dimensional drawings



Screw clamp module



Spring clamp module

Interface Relays R500
Selection

	Order number	1SNA 645 047 R0000	1SNA 645 547 R0200	1SNA 645 021 R2600	1SNA 645 521 R2000	1SNA 645 049 R1200	1SNA 645 549 R1400
	Type	D 2,5/5-R121-24VDC	D 2,5/5-R121L-24VDC	D 2,5/5-R121AL-24VAC/DC	D 2,5/5-R121AL-48VAC/DC	D 2,5/5-R121BL-110VAC	D 2,5/5-R121BL-230VAC
Input voltage							
24 V DC		■	■	■			
48 V DC					■		
24 V AC				■			
48 V AC					■		
110 V AC						■	
230 V AC							■
Output rating							
10 mA - 6 A		■	■	■	■	■	■
Output contacts							
c/o		1	1	1	1	1	1
Type							
with LED			■	■	■	■	■
without LED		■					

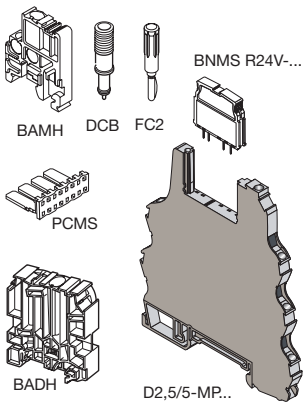
R500 series

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

Interface Relays R500
Ordering details

R500



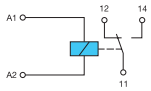
Description of R500 Relay	Type	Order code	Price	Pkg qty	Weight (1 pce) kg (lb)
Relay module 1 SPDT high level	D 2,5/5-R121-24VDC	1SNA607217R0200		10	0.032 (0.071)
Relay module with LED 1 SPDT high level	D 2,5/5-R121L-24VDC	1SNA607201R1300			
	D 2,5/5-R121AL-24VAC/DC	1SNA607231R0000			0.04 (0.088)
	D 2,5/5-R121AL-48VAC/DC	1SNA607232R0100			
	D 2,5/5-R121BL-110VAC	1SNA607264R1100			
	D 2,5/5-R121BL-230VAC	1SNA607265R1200			

R500 Accessories	Type	Order code	Price	Pkg qty	Weight (1 pce) kg (lb)
High end stop	BAMH 9,1 mm	1SNA114836R0000		50	
	BAMH V0 9,1 mm	1SNA194836R0100			
	BADH 12 mm	1SNA116900R2700			
Comb type jumper bar 2 to 22 poles		consult us			
Jumper bar 10 poles grey	PCMS V0	1SNA205523R2200		8	
Relay / Opto base	D 2,5/5-MP	1SNA607224R0100		10	0.028 (0.062)
Relay / Opto base with LED 24 VDC	D 2,5/5-MP-24VDC	1SNA607222R0700			
Relay / Opto base with LED 24 VAC/VDC	D 2,5/5-MP-24VAC/DC	1SNA607260R2100			0.036 (0.0794)
Relay / Opto base with LED 48 VAC/VDC	D 2,5/5-MP-48VAC/DC	1SNA607261R1600			
Relay / Opto base with LED 110 VAC	D 2,5/5-MP-110VAC	1SNA607266R1300			
Relay / Opto base with LED 230 VAC	D 2,5/5-MP-230VAC	1SNA607267R1400			
Plug relay 24 V 1 SPDT 10 mA to 6 A	BNMS R24V-1	1SNA031820R1400			
Plug relay 24 V 1 SPDT 1 mA to 6 A	BNMS R24V-2	1SNA031847R1300		4	
Test device blue	DCB [1]	1SNA105028R2100			
Test plug DIA. 2 mm	FC2	1SNA007865R2600		10	
Marking method	RC55	see marking			

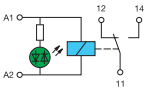
[1] Only on top decks

High level

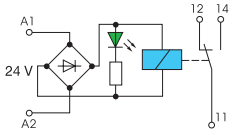
Connection diagrams



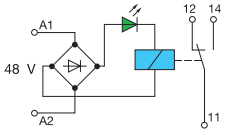
D 2,5/5-R121



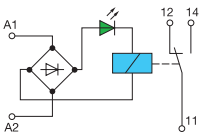
D 2,5/5-R121L



D 2,5/5-R121AL-24V



D 2,5/5-R121AL-48V



D 2,5/5-R121BL

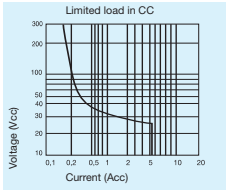
Interface Relays R500
Technical information

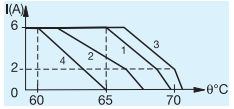
Technical data

Relay : 1 SPDT high level with contact 10 mA to 6 A - 5.08mm 0.200“ spacing

		D 2.5/5-R121	D 2.5/5-R121L	D 2.5/5-R121AL				D 2.5/5-R121BL	
Relay characteristics coil									
Rated voltage: +20%, -15% on DC ; 10%, -10% on 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 W	0.35 W	0.44 W	0.47 W	1.08 W	2.13 W
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							
Relay characteristics contact									
Type		1 SPDT							
Voltage switching range min./max.		12 V / 250 V AC							
Current switching range min./max.		10 mA / 6 A							
Load switching range	AC1 min./max.	0.6 VA / 1500 VA (ohmic load)							
	DC1 min./max.	0.6 W / 140 W							
Number of on-load operations		10^5 on AC15							
Number of off-load operations		10 x 10^7							
Operation speed	F	5 ms	5 ms	5 ms	5 ms	5 ms	5 ms	6 ms	7 ms
	O	8 ms	8 ms	15 ms	15 ms	15 ms	15 ms	15 ms	15 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	See derating curves							
Other characteristics									
Body material	grey	UL 94 V0							
Wire size	Solid wire	0.2 - 4 mm² (24-12 AWG)							
	Stranded wire	0.22 - 2.5 mm² (24-12 AWG)							
Rated wire size		2.5 mm² (12 AWG)							
Wire stripping length		10 mm (0.394 in)							
Recommended screwdriver		3.5 mm (0.137 in)							
Protection		IP20 *NEMA1*							
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.							

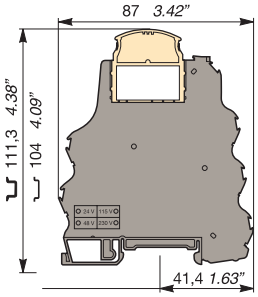
	DC12	AC12	DC13	AC15
24 V	6 A	6 A	1 A	3 A
110/120 V	0,3 A	6 A	0,2 A	3 A
220/230 V	0,2 A	6 A	0,1 A	3 A



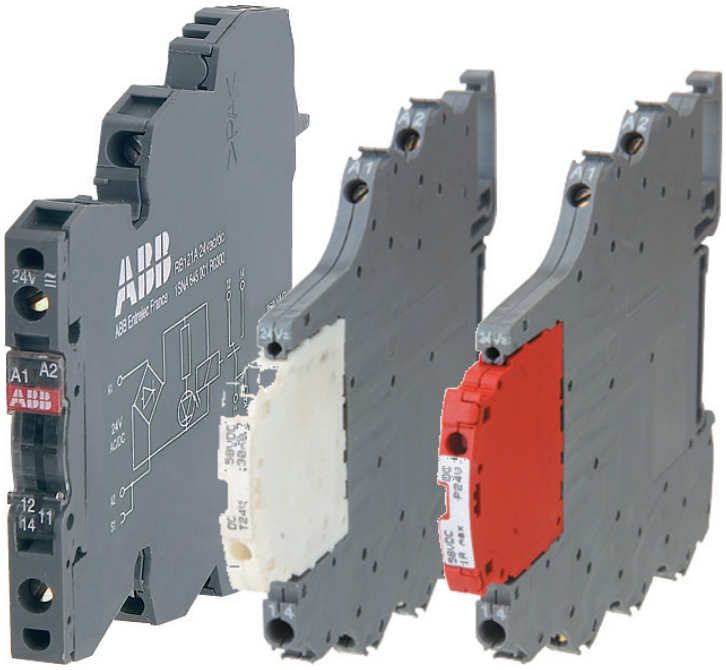


D 2,5/5-R121

Dimensional drawings



Optocouplers
Product group picture

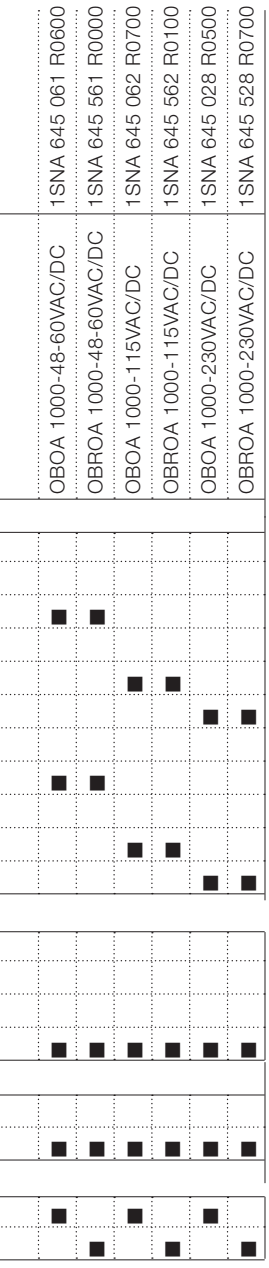


Optocouplers
Table of contents

R600 Optocouplers
Selection

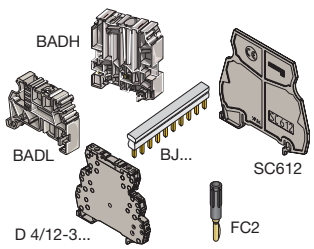
Order number	1SNA 645 047 R0000	1SNA 645 547 R0200	1SNA 645 021 R2600	1SNA 645 521 R2000	1SNA 645 049 R1200	1SNA 645 549 R1400	1SNA 645 022 R2700	1SNA 645 522 R2100	1SNA 645 050 R1700	1SNA 645 550 R1100	1SNA 645 051 R0400	1SNA 645 025 R2200	1SNA 645 024 R2100	1SNA 645 551 R0600	1SNA 645 525 R2400	1SNA 645 524 R2300	1SNA 645 053 R0600	1SNA 645 553 R0000	1SNA 645 054 R0700	1SNA 645 058 R1300	1SNA 645 554 R0100	1SNA 645 558 R1500	1SNA 645 026 R2300	1SNA 645 059 R1400	1SNA 645 526 R2500	1SNA 645 559 R1600	1SNA 645 027 R2400	1SNA 645 029 R0600	1SNA 645 527 R2600	1SNA 645 529 R0000
Type	OBIC 0100 5-12VDC	OBRIC 0100 5-12VDC	OBIC 0100 24VDC	OBRIC 0100 24VDC	OBIC 0100 48-60VAC/DC	OBRIC 0100 48-60VAC/DC	OBIC 0100 115-230VAC/DC	OBRIC 0100 115-230VAC/DC	OBOC 1000-5-12VDC	OBROC 1000-5-12VDC	OBOC 1000-24VDC	OBOC 1500-24VAC/DC	OBOC 5000-24VDC	OBROC 1000-24VDC	OBROC 1500-24VAC/DC	OBROC 5000-24VDC	OBOC 1000-48-60VAC/DC	OBROC 1000-48-60VAC/DC	OBOC 1000-115VAC/DC	OBOC 5000-115VAC/DC	OBROC 1000-115VAC/DC	OBROC 5000-115VAC/DC	OBOC 1000-230VAC/DC	OBOC 5000-230VAC/DC	OBROC 1000-230VAC/DC	OBROC 5000-230VAC/DC	OBOA 1000-24VDC	OBOA 2000-24VDC	OBROA 1000-24VDC	OBROA 2000-24VDC
Input voltage																															
5 - 12 V DC	■	■							■	■																					
24 V DC			■	■							■	■	■	■	■	■												■	■	■	■
48 - 60 V DC					■	■											■	■													
115 - 230 V DC							■	■																							
115 V DC																			■	■	■	■									
230 V DC							■	■															■	■	■	■					
24 V AC												■			■																
48 - 60 V AC					■	■											■	■													
115-230 V AC							■	■																							
115 V AC																			■	■	■	■									
230 V AC																							■	■	■	■					
Output rating																															
100 mA	■	■	■	■	■	■	■	■																							
2 A									■	■	■	■		■	■		■	■	■		■		■		■				■		■
5 A													■			■				■		■		■			■				
1 A																												■		■	
Output voltage																															
58 V DC	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■				
400 V AC																												■	■	■	■
Terminal type																															
Screw	■		■		■		■		■		■	■	■				■		■	■			■	■				■	■		
Spring		■		■		■		■		■				■	■	■		■			■	■			■	■				■	■

R600 Optocouplers
Selection



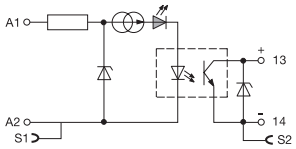
R600 Optocouplers
Ordering details

R600 Optocoupler		Type	Order code	Price	Pkg qty	Weight (1 pce) kg (lb)
Optocoupler module 100 mA/DC		OBIC 0100-5-12VDC	1SNA645047R0000		10	0.02 (0.44)
		OBIC 0100-24VDC	1SNA645021R2600			
		OBIC 0100-48-60VAC/DC	1SNA645049R1200			
		OBIC 0100-115-230VAC/DC	1SNA645022R2700			
Optocoupler module 100 mA/DC		OBRIC 0100-5-12VDC	1SNA645547R0200		10	0.02 (0.44)
		OBRIC 0100-24VDC	1SNA645521R2000			
		OBRIC 0100-48-60VAC/DC	1SNA645549R1400			
		OBRIC 0100-115-230VAC/DC	1SNA645522R2100			
Optocoupler module 2 A/DC		OBOC 1000-5-12VDC	1SNA645050R1700		10	0.02 (0.44)
		OBOC 1000-24VDC	1SNA645051R0400			
		OBOC 1500-24VAC/DC	1SNA645025R2200			
		OBOC 1000-48-60VAC/DC	1SNA645053R0600			
		OBOC 1000-115VAC/DC	1SNA645054R0700			
		OBOC 1000-230VAC/DC	1SNA645026R2300			
Optocoupler module 2 A/DC		OBROC 1000-5-12VDC	1SNA645550R1100		10	0.02 (0.44)
		OBROC 1000-24VDC	1SNA645551R0600			
		OBROC 1500-24VAC/DC	1SNA645525R2400			
		OBROC 1000-48-60VAC/DC	1SNA645553R0000			
		OBROC 1000-115VAC/DC	1SNA645554R0100			
		OBROC 1000-230VAC/DC	1SNA645526R2500			
Optocoupler module 5 A/DC		OBOC 5000-24VDC	1SNA645024R2100		10	0.02 (0.44)
		OBOC 5000-115VAC/DC	1SNA645058R1300			
		OBOC 5000-230VAC/DC	1SNA645059R1400			
Optocoupler module 5 A/DC		OBROC 5000-24VDC	1SNA645524R2300		10	0.02 (0.44)
		OBROC 5000-115VAC/DC	1SNA645558R1500			
		OBROC 5000-230VAC/DC	1SNA645559R1600			
Optocoupler module 1 A/AC 6 mm spacing		OBOA 1000-24VDC	1SNA645027R2400		10	0.03 (0.066)
		OBOA 1000-48-60VAC/DC	1SNA645061R0600			
		OBOA 1000-115VAC/DC	1SNA645062R0700			
		OBOA 1000-230VAC/DC	1SNA645028R0500			
Optocoupler module 2 A/AC 12 mm spacing		OBOA 2000-24VDC	1SNA645029R0600		5	0.03 (0.066)
Optocoupler module 1 A/AC 6 mm spacing		OBROA 1000-24VDC	1SNA645527R2600		10	0.03 (0.066)
		OBROA 1000-48-60VAC/DC	1SNA645561R0000			
		OBROA 1000-115VAC/DC	1SNA645562R0100			
		OBROA 1000-230VAC/DC	1SNA645528R0700			
Optocoupler module 2 A/AC 12 mm spacing		OBROA 2000-24VDC	1SNA645529R0000		5	0.03 (0.066)

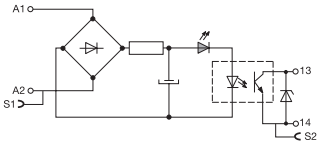


Accessories	Type	Order code	Price	Pkg qty	Weight (1 pce) kg (lb)
End section	BADH V0	1SNA116900R2700		50	
	BADL V0	1SNA399903R0200		50	
	BAM2 V0	1SNA399967R0100		50	
Seperator end section	SC 612	1SNA290474R0200		10	
Divisible shunt 10 poles	BJ 612-10	1SNA290488R0100		10	
Divisible shunt 70 poles	BJ 612-70	1SNA290489R0200		10	
Screw clamp distribution block sp. 12 mm	D4/12-3-3	1SNA645031R2000		5	
Spring clamp distribution block sp. 12 mm	D4/12-3R-3R	1SNA645531R2200		5	
Test plug DIA. 2 mm	FC2	1SNA645531R2200		10	
Marking method	RC65 / RC610	see marking			

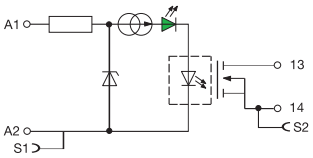
R600 Optocouplers
Connection diagrams



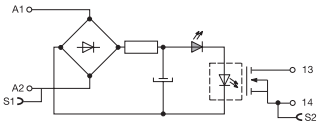
OB...IC 0100 - 5-12 V DC
115-230 V AC/DC



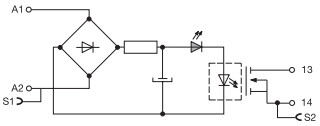
OB...IC 0100
24 V DC
24-48-60 V AC/DC



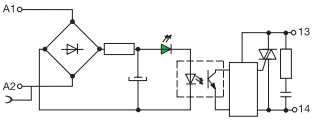
OB...OC 1000 - 5-12 V DC



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



OB...OC 5000
24 V DC
24-48-60-115-230 V AC/DC



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

R600 Optocouplers
Technical data

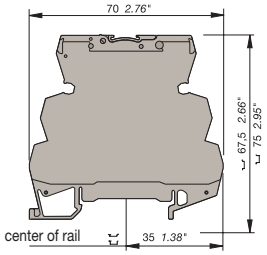
Technical data

Optocoupler : 5 to 58 V DC output / 100 mA - 6 mm 0.236“ spacing

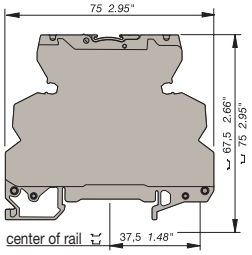
		OB...IC 0100						
Relay characteristics coil								
Input voltage: +20%, -15% on DC ; 10%, -10% on AC		5 V DC - 12 V DC		24 V DC	48 V AC/DC	60 V AC/DC	115 V AC/DC	230 V AC/DC
Frequency					50 / 60 Hz			
Input current AC/DC		5 mA	9 mA	4 mA	4 mA	5 mA	7 mA / 16 mA	11.5 mA / 25 mA
Pull-in voltage at Is=100%		4 V		15 V	25 V		60 V AC / 70 V DC	
Switching time C / O		10 µs / 500 µs						
Operating frequency		1000 Hz			5 ms / 20 ms		5 ms / 15 ms	
Permissible leakage current					20 Hz			
Output		0.9 mA		1 mA	0.9 mA		1.6 mA	
Output voltage		4.5 to 58 V DC						
Output current min.		1 mA						
Output current max.		100 mA						
Output leakage current at U_{max}		< 50 µA						
Redidual voltage at I max and U rated	typical	1 V						
	max	1.3 V						
Frequency on inductive load								
Isolation Input / Output	input / Output	2500 V RMS						
Temperature	storage	-40...+80 °C						
	operating	-20...+70 °C [1]						
Other characteristics		**Screw clamp**			**Spring clamp**			
Body material	grey	UL 94 V0						
Wire size	Solid wire	0.2 - 4 mm² (24-12 AWG)			0.2-2.5 mm² (24-12 AWG)			
	Stranded wire	0.22 - 2.5 mm² (24-12 AWG)						
Rated wire size		2.5 mm² (12 AWG)						
Wire stripping length		9 mm (0.354 in)						
Recommended screwdriver		3.5 mm (0.137 in)						
Protection		IP20 *NEMA1*						
Recommended torque		0.4-0.6 Nm (3.5-5.3 lb.in)						
Approvals		c UL us (pending for 12 V DC) , SIQ (pending), GL , LRS , 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.

Dimensional drawings



Screw clamp module



Spring clamp module

R600 Optocouplers
Technical data

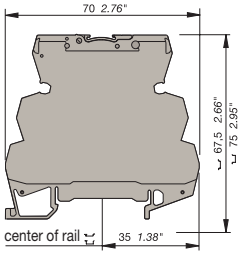
Technical data

Optocoupler : 5 to 58 V DC output / 2 A - 6 mm 0.236“ spacing

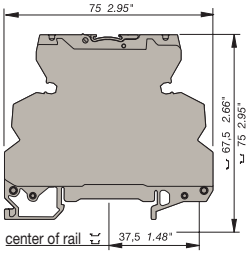
		OB...IC 0100			OB..OC 1500	OB...OC 1000			
Relay characteristics coil									
Input voltage: +20%, -15% on DC ; 10%, -10% on AC		5 V DC - 12 V DC		24 V DC	24 V AC/DC	48 V AC/DC	60 V AC/DC	115 V AC/ DC	230 V AC/ DC
Frequency					50 / 60 Hz				
Input current		5 mA	9 mA	4 mA	6.3 mA	4 mA	5.1 mA	4.2 mA	4 mA
Pull-in voltage at Is=100%		4 V		15 V	15 V	27 V		50 V	80 V
Switching time C / O		15 µs / 250 µs		30 µs / 400 µs	1 ms / 7 ms	5 ms / 20 ms		500 µs / 10 ms	1 ms / 15 ms
Operating frequency		2000 Hz		1000 Hz	60 Hz	20 Hz			
Permissible leakage current		1 mA		0.8 mA	0.9 mA	1 mA		0.3 mA	
Output									
Output voltage		4.5 to 58 V DC							
Output current min.		1 mA							
Output current max.		2 A							
Output leakage current at U_{max}		< 50 µA							
Redidual voltage at I max and U rated	typical	0.1 V							
	max	0.5 V							
Frequency on inductive load									
Isolation Input / Output	input / Output	2500 V RMS							
Temperature	storage	-40...+80 °C							
	operating	-20...+70 °C [1]							
Other characteristics		**Screw clamp**				**Spring clamp**			
Body material	grey	UL 94 V0							
Wire size	Solid wire	0.2 - 4 mm² (24-12 AWG)				0.2-2.5 mm² (24-12 AWG)			
	Stranded wire	0.22 - 2.5 mm² (24-12 AWG)							
Rated wire size		2.5 mm² (12 AWG)							
Wire stripping length		9 mm (0.354 in)							
Recommended screwdriver		3.5 mm (0.137 in)							
Protection		IP20 *NEMA1*							
Recommended torque		0.4-0.6 Nm (3.5-5.3 lb.in)							
Approvals		c UL us (pending for 12 V DC) , (pending), , LRS , 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.

Dimensional drawings



Screw clamp module



Spring clamp module

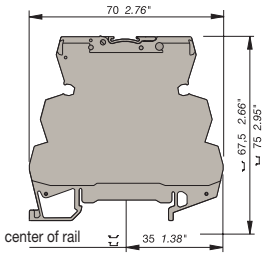
R600 Optocouplers
Technical data

Technical data

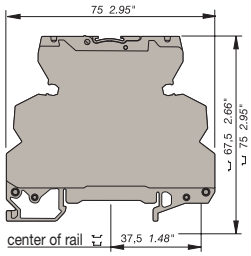
Optocoupler : 5 to 58 V DC output / 5 A - 6 mm 0.236“ spacing

		OB... OC 5000		
Input				
Input voltage		24 V DC	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	1ms / 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- 58 V DC		
Output current min.		25 mA		
Output current max.		1 A		
Output leakage current at $U_{max.}$		< 0.50 mA		
Redidual voltage at I max and U rated	typical	1 V		
	max	1.6 V		
Frequency on inductive load		See Note 1		
Isolation Input / Output	input / Output	2500 V RMS		
Temperature				
Ambient temperature	storage	-40...+80 °C		
	operating	See derating curve		
Other characteristics				
Body material	grey	UL 94 V0		
Wire size	Solid wire	0.2 - 4 mm² (24-12 AWG)		
	Stranded wire	0.22 - 2.5 mm² (24-12 AWG)		
Rated wire size		2.5 mm² (12 AWG)		
Wire stripping length		10 mm (0.394 in)		
Recommended screwdriver		3.5 mm (0.137 in)		
Protection		IP20 *NEMA1*		
Recommended torque		0.4-0.6 Nm (3.5-5.3 lb.in)		
Approvals		c 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.		

Dimensional drawings



Screw clamp module



Spring clamp module

R600 Optocouplers
Technical data

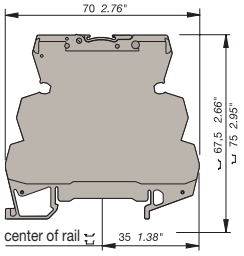
Technical data

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

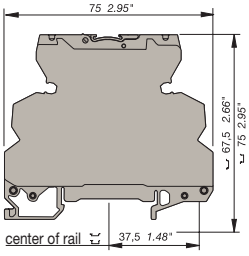
		OB...OA 1000					OB...OA 2000
Relay characteristics coil							
Input voltage: +20%, -15% on DC ; 10%, -10% on AC		24 V DC	48 V AC/DC	60 V AC/DC	115 V AC/DC	230 V AC/DC	24 V DC
Frequency			50/60 Hz				
Input current		3.6 mA	4.3 mA	5.5 mA	4.15 mA	4.6 mA	3.6 mA
Pull-in voltage at Is=100%		14 V	15 V	18 V	60 V	135 V	14 V
Switching time C / O		150 µs / 1 ms	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	500 Hz
Permissible leakage current		1 mA					
Output							
Output voltage		24-58 V AC					
Frequency		50/60 Hz					
Output current min.		25 mA					
Output current max.		1 A					2 mA
Output leakage current at U_{max}		< 0.50 mA					
Redidual voltage at I max and U rated	typical	1 V					
	max	1.6 V					
Frequency on inductive load							
Isolation Input / Output	input / Output	2500 V RMS					
Temperature	storage	-40...+80 °C					
	operating	-20...+70 °C [1]					
Other characteristics		Screw clamp			Spring clamp		
Body material	grey	UL 94 V0					
Wire size	Solid wire	0.2 - 4 mm² (24-12 AWG)			0.2-2.5 mm² (24-12 AWG)		
	Stranded wire	0.22 - 2.5 mm² (24-12 AWG)					
Rated wire size		2.5 mm² (12 AWG)					
Wire stripping length		9 mm (0.354 in)					
Recommended screwdriver		3.5 mm (0.137 in)					
Protection		IP20 *NEMA1*					
Recommended torque		0.4-0.6 Nm (3.5-5.3 lb.in)					
Approvals		c UL us (pending for 12 V DC) , CSA (pending), GL , LRS , 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.

Dimensional drawings



Screw clamp module



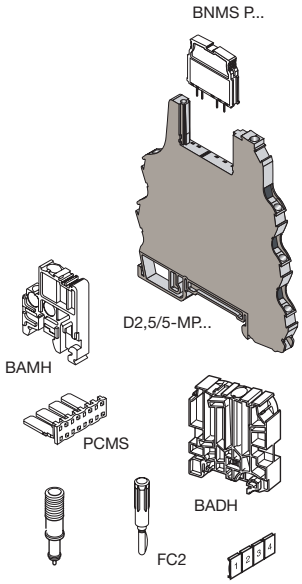
Spring clamp module

R500 Optocouplers
Selection

	Order number	1SNA 607 274 R1300	1SNA 607 210 R1700	1SNA 607 211 R0400	1SNA 607 275 R1400	1SNA 607 212 R0500	1SNA 607 213 R0600	1SNA 607 214 R0700	1SNA 607 215 R0000	1SNA 607 203 R1500	1SNA 607 204 R1600	1SNA 607 205 R1700	1SNA 607 206 R1000	1SNA 607 207 R1100	1SNA 607 250 R2700	1SNA 607 251 R1400	1SNA 607 270 R2300	1SNA 607 271 R1000	1SNA 607 208 R2200	1SNA 607 209 R2300	1SNA 607 255 R1000	1SNA 607 256 R1100	1SNA 607 272 R1100	1SNA 607 273 R1200	1SNA 607 238 R1700	1SNA 607 240 R2500	1SNA 607 241 R1200	1SNA 607 268 R2500	1SNA 607 269 R2600
	Type	D 2,5/5-OBIC-0030-5VDC	D 2,5/5-OBIC-0030-24VDC	D 2,5/5-OBIC-0030-48VDC	D 2,5/5-OBIC-0030-125VDC	D 2,5/5-OBIA-0030-24VAC	D 2,5/5-OBIA-0030-48VAC	D 2,5/5-OBIA-0030-115VAC	D 2,5/5-OBIA-0030-230VAC	D 2,5/5-OBOC-0100-5VDC	D 2,5/5-OBOC-0100-24VDC	D 2,5/5-OBOC-0100-48VDC	D 2,5/5-OBOC-1000-5VDC	D 2,5/5-OBOC-1000-24VDC	D 2,5/5-OBOC-1000-24VAC/DC	D 2,5/5-OBOC-1000-48VAC/DC	D 2,5/5-OBOC-1000-110VAC	D 2,5/5-OBOC-1000-230VAC	D 2,5/5-OBOC-2000-5VDC	D 2,5/5-OBOC-2000-24VDC	D 2,5/5-OBOC-2000-24VAC/DC	D 2,5/5-OBOC-2000-48VAC/DC	D 2,5/5-OBOC-2000-110VAC	D 2,5/5-OBOC-2000-230VAC	D 2,5/5-OBOA-1000-24VDC	D 2,5/5-OBOA-1000-24VAC/DC	D 2,5/5-OBOA-1000-48VAC/DC	D 2,5/5-OBOA-1000-110VAC	D 2,5/5-OBOA-1000-230VAC
Input voltage																													
5 V DC		■								■			■						■										
24 V DC			■								■			■	■					■	■					■	■			
48 V DC				■								■				■						■						■		
125 V DC					■																									
24 V AC						■									■						■					■				
48 V AC							■									■						■					■			
110 V AC																	■						■					■		
115 V AC								■																						
230 V AC									■									■						■					■	
Output rating																													
30 mA		■	■	■	■	■	■	■	■																				
100 mA										■	■	■																		
2 A																			■	■	■	■	■	■						
1 A													■	■	■	■	■	■							■	■	■	■	■	
Output voltage																													
30 V DC																			■	■	■	■	■	■						
58 V DC		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■												
253 V AC																									■	■	■	■	■	
Type																													
input optocoupler		■	■	■	■	■	■	■	■																				
output optocoupler										■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■

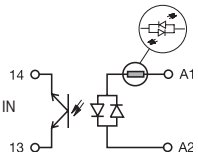
R500 Optocouplers
Ordering details

Description of R600 Optocoupler	Type	Order code	Price	Pkg qty	Weight (1 pce) kg (lb)
Optocoupler module 30 mA/DC	D 2,5/5-OBIC-0030-5VDC	1SNA607274R1300		1	0.032 (0.071)
	D 2,5/5-OBIC-0030-24VDC	1SNA607210R1700			
	D 2,5/5-OBIC-0030-48VDC	1SNA607211R0400			
	D 2,5/5-OBIC-0030-125VDC	1SNA607275R1400			
Optocoupler module 30 mA/AC	D 2,5/5-OBIA-0030-24VAC	1SNA607212R0500		1	0.032 (0.071)
	D 2,5/5-OBIA-0030-48VAC	1SNA607213R0600			
	D 2,5/5-OBIA-0030-115VAC	1SNA607214R0700			
	D 2,5/5-OBIA-0030-230VAC	1SNA607215R0000			
Optocoupler module 100 mA/DC	D 2,5/5-OBOC-0100-5VAC	1SNA607203R1500		1	0.032 (0.071)
	D 2,5/5-OBOC-0100-24VAC	1SNA607204R1600			
	D 2,5/5-OBOC-0100-48VAC	1SNA607205R1700			
Optocoupler module 1 A/DC	D 2,5/5-OBOC-1000-5VDC	1SNA607206R1000		1	0.04 (0.088)
	D 2,5/5-OBOC-1000-24VDC	1SNA607207R1100			
	D 2,5/5-OBOC-1000-24VAC/DC	1SNA607250R2700			
	D 2,5/5-OBOC-1000-48VAC/DC	1SNA607251R1400			
	D 2,5/5-OBOC-1000-110VAC	1SNA607270R2300			
	D 2,5/5-OBOC-1000-230VAC	1SNA607271R1000			
Optocoupler module 2 A/DC	D 2,5/5-OBOC-2000-5VDC	1SNA607208R2200		1	0.04 (0.088)
	D 2,5/5-OBOC-2000-24VDC	1SNA607209R2300			
	D 2,5/5-OBOC-2000-24VAC/DC	1SNA607255R1000			
	D 2,5/5-OBOC-2000-48VAC/DC	1SNA607256R1100			
	D 2,5/5-OBOC-2000-110VAC	1SNA607272R1100			
	D 2,5/5-OBOC-2000-230VAC	1SNA607273R1200			
Optocoupler module 1 A/DC	D 2,5/5-OBOA-1000-24VAC	1SNA607238R1700		1	0.032 (0.071)
	D 2,5/5-OBOA-1000-24VAC/DC	1SNA607240R2500			0.04 (0.088)
	D 2,5/5-OBOA-1000-48VAC/DC	1SNA607241R1200			
	D 2,5/5-OBOA-1000-110VAC	1SNA607268R2500			
	D 2,5/5-OBOA-1000-230VAC	1SNA607269R2600			

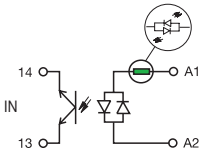


Description of Accessories	Type	Order code	Price	Pkg qty	Weight (1 pce) kg (lb)
High end stop	BAMH 9.1 mm	1SNA114836R0000		50	
	BAMH V0 9.1 mm	1SNA194836R0100			
	BADH 12 mm	1SNA116900R2700			
Comb type jumper bar 2 to 22 poles		consult us			
Jumper bar 10 poles grey	PCMS V0	1SNA205523R2200		8	
Input opto base	D 2.5-5-MP1	1SNA607223R0000		10	0.028 (0.062)
Plug OBIC 5 V white	BNMS T5V-1	1SNA031831R0300		4	
Plug OBIC 24 V white	BNMS T24V-1	1SNA031800R2100			
Plug OBIC 48 V white	BNMS T48V-1	1SNA031801R1600			
Plug OBIC 125 V white	BNMS T125V-1	1SNA031845R1100			
Test device blue	DCB (1)	1SNA105028R2100		10	
Test plug DIA 2 mm	FC2	1SNA105028R2100			
Marking method	RC55	see marking			

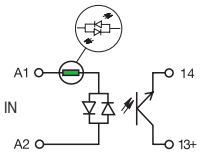
R500 Optocouplers
Connection diagrams



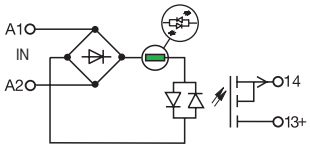
D 2,5/5-OBIC-0030



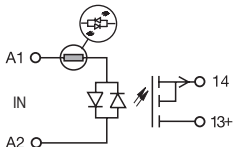
D 2,5/5-OBIA-0030



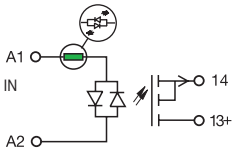
D 2,5/5-OBOC-0100



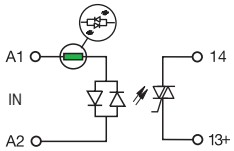
D 2,5/5-OBOC-1000
24/48 VAC/DC
110/230 VAC



D 2,5/5-OBOC-1000 5/24 VDC



D 2,5/5-OBOC-2000



D 2,5/5-OBOA-1000

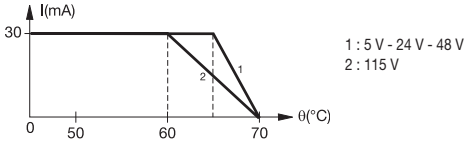
R500 Optocouplers
Technical data

Technical data

Pluggable optocoupler : 5 to 58 V DC output / 30 mA - 5.08 mm 0.200“ spacing

		D 2,5/5-OBIC-0030			
Input					
Input voltage		4.5 V to 5.5 VDC	19.2 V to 27.6 VDC	38.4 V to 55.2 VDC	93.5 V to 140 VDC
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			
Operating frequency		400 Hz			
Permissible leakage current			1 mA	0.8 mA	
Output					
Output voltage		4.5 to 58 V DC			
Output current min.		0.5 mA			
Output current max.		30 mA			
Output leakage current at U_{max}		< 50 µA			
Redidual voltage at I max and U rated	typical	2.3 V DC			
	max	2.7 V DC			
Frequency on inductive load					
Isolation Input / Output	input / Output	2500 V RMS			
Ambient temperature	storage	-40...+80 °C			
	operating	See derating curve			
Other characteristics					
Body material	grey	UL 94 V0			
Wire size	Solid wire	0.2 - 4 mm² (24-12 AWG)			
	Stranded wire	0.22 - 2.5 mm² (24-12 AWG)			
Rated wire size		2.5 mm² (12 AWG)			
Wire stripping length		9 mm (0.354 in)			
Recommended screwdriver		3.5 mm (0.137 in)			
Protection		IP20 *NEMA1*			
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.			

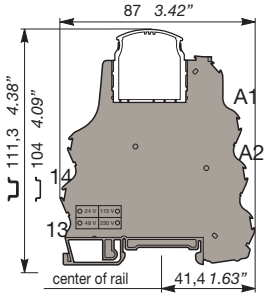
Derating curve



1 : 5 V - 24 V - 48 V
2 : 115 V

D 2,5/5-OBIC-0030

Dimensional drawings



R500 Optocouplers
Technical data

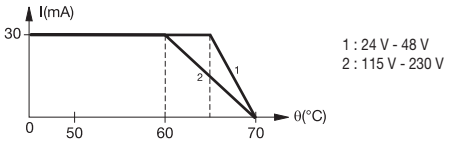
Technical data

Pluggable optocoupler : 5 to 58 V DC output / 30 mA - 5.08 mm 0.200“ spacing

		D 2,5/5-OBIA-0030			
Input					
Input voltage		20.4 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
				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			
Operating frequency		30 Hz			
Permissible leakage current		1 mA		2 mA	
Output					
Output voltage		4.5 V to 58 V DC			
Output current min.		0.5 mA			
Output current max.		30 mA			
Output leakage current at $U_{max.}$		< 50 µA			
Redidual voltage at I max and U rated	typical	2.3 V DC			
	max	2.7 V DC			
Frequency on inductive load		2500 V RMS			
Isolation Input / Output	input / Output				
Temperature					
Ambient temperature	storage	-40...+80 °C			
	operating	See derating curve			
Other characteristics					
Body material	grey	UL 94 V0			
Wire size	Solid wire	0.2 - 4 mm² (24-12 AWG)			
	Stranded wire	0.22 - 2.5 mm² (24-12 AWG)			
Rated wire size		2.5 mm² (12 AWG)			
Wire stripping length		9 mm (0.354 in)			
Recommended screwdriver		3.5 mm (0.137 in)			
Protection		IP20 *NEMA1*			
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.			

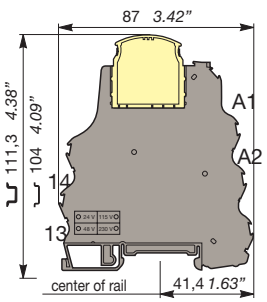
5

Derating curve



D 2,5/5-OBIA-0030

Dimensional drawings



R500 Optocouplers
Technical data

Technical data

Pluggable optocoupler : 5 to 58 V DC output / 100 mA - 5.08 mm 0.200“ spacing

		D 2,5/5-OBIA-0100 5 V DC / 24 V DC		D 2,5/5-OBIA-0100 48 V DC
Input				
Input voltage		4.5 V to 5.5 V DC	20.4 V to 28.8 V DC	40.8 V to 57.6 V DC
Frequency				
Input current		8.5 mA	4.8 mA	3.9 mA
Pull-in voltage at Is=100%		2.9 V DC	16 V DC	26 V DC
Switching time C / O			20 µs / 1.3 ms	
Operating frequency			400 Hz	
Permissible leakage current			1 mA	
Output				
Output voltage			4.5 V to 58 V DC	
Output current min.			1 mA	
Output current max.			100 mA	
Output leakage current at U_{max}			< 50 µA	
Redidual voltage at I max and U rated	typical		1 V DC	
	max		1.3 V DC	
Frequency on inductive load			See Note 1	
Isolation Input / Output	input / Output		2500 V RMS	
Temperature				
Ambient temperature	storage		-40...+80 °C	
	operating		See derating curve	
Other characteristics				
Body material	grey		UL 94 V0	
Wire size	Solid wire		0.2 - 4 mm² (24-12 AWG)	
	Stranded wire		0.22 - 2.5 mm² (24-12 AWG)	
Rated wire size			2.5 mm² (12 AWG)	
Wire stripping length			9 mm (0.354 in)	
Recommended screwdriver			3.5 mm (0.137 in)	
Protection			IP20 *NEMA1*	
Recommended torque			0.4-0.6 Nm (3.5-5.3 lb.in)	
Approvals			c 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.	

Note 1 :

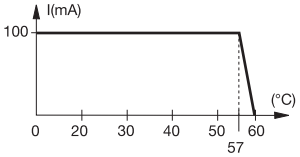
$F_{max} = (1\text{-}0{,}007 \times U_s) / (L \times I_s^2)$

or

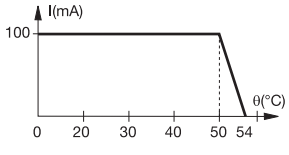
$F_{max} = (1\text{-}0{,}007 \times U_s) / (P \times \frac{L}{R})$

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

Derating curve

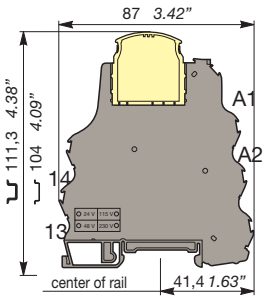


D 2,5/5-OBOC-0100 5 V DC / 24 V DC



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

Dimensional drawings



R500 Optocouplers
Technical data

Technical data

Pluggable optocoupler : 5 to 58 V DC output / 1 A - 5.08 mm 0.200“ spacing

		D 2,5/5-OBOC-1000 5/24 V DC		D 2,5/5-OBOC-1000 24/48 V AC/DC				D 2,5/5-OBOC-1000 110/230 V AC	
Input		5 V DC	24 V DC	24 V AC	24 V DC	48 V AC	48 V DC	110 V AC	230 V AC
Input voltage		4.5 - 5.5 V DC	20.4 - 28.8 V DC	24 ± 10 %	20.4 - 28.8 V DC	48 ± 10 %	40.8 to 57.6 V DC	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					
Permissible leakage current									
Output									
Output voltage		4.5 V to 58 V DC							
Output current min.		1 mA							
Output current max.		1 A							
Output leakage current at $U_{max.}$		< 50 µA							
Redidual voltage at I max and U rated	typical	0.1 V DC							
	max	0.5 V DC							
Frequency on inductive load		See Note 1							
Isolation Input / Output	input / Output	2500 V RMS							
Temperature									
Ambient temperature	storage	-40...+80 °C							
	operating	See derating curve							
Other characteristics									
Body material	grey	UL 94 V0							
Wire size	Solid wire	0.2 - 4 mm² (24-12 AWG)							
	Stranded wire	0.22 - 2.5 mm² (24-12 AWG)							
Rated wire size		2.5 mm² (12 AWG)							
Wire stripping length		10 mm (0.394 in)							
Recommended screwdriver		3.5 mm (0.137 in)							
Protection		IP20 *NEMA1*							
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.							

Note 1 :

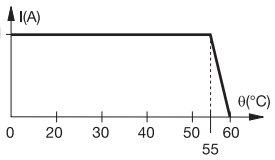
$Fmax = (1\text{-}0{,}007 \times Us) / (L \times Is^2)$

or

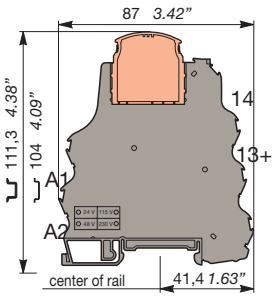
$Fmax = (1\text{-}0{,}007 \times Us) / (P \times \frac{L}{R})$

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

Derating curve



Dimensional drawings



R500 Optocouplers
Technical data

Technical data

Pluggable optocoupler : 5 to 30 V DC output / 2 A - 5.08 mm 0.200“ spacing

		D 2,5/5-OBOC-2000 5/24 V DC		D 2,5/5-OBOC-2000 24/48 V AC/DC				D 2,5/5-OBOC-2000 110/230 V AC	
Input		5 V DC	24 V DC	24 V AC	24 V DC	48 V AC	48 V DC	110 V AC	230 V AC
Input voltage		4.5 - 5.5 V DC	20.4 - 28.8 V DC	24 ± 10 %	20.4 - 28.8 V DC	48 ± 10 %	40.8 to 57.6 V DC	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					
Permissible leakage current									
Output									
Output voltage		4.5 V to 58 V DC							
Output current min.		1 mA							
Output current max.		2 A							
Output leakage current at $U_{max.}$		< 50 µA							
Redidual voltage at I max and U rated	typical	0.1 V DC							
	max	0.5 V DC							
Frequency on inductive load		See Note 1							
Isolation Input / Output	input / Output	2500 V RMS							
Temperature									
Ambient temperature	storage	-40...+80 °C							
	operating	See derating curve							
Other characteristics									
Body material	grey	UL 94 V0							
Wire size	Solid wire	0.2 - 4 mm² (24-12 AWG)							
	Stranded wire	0.22 - 2.5 mm² (24-12 AWG)							
Rated wire size		2.5 mm² (12 AWG)							
Wire stripping length		10 mm (0.394 in)							
Recommended screwdriver		3.5 mm (0.137 in)							
Protection		IP20 *NEMA1*							
Recommended torque		0.4-0.6 Nm (3.5-5.3 lb.in)							
Approvals		c 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.							

Note 1 :

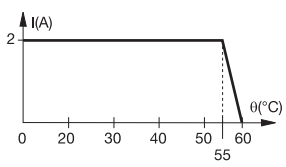
$$Fmax = (1\text{-}0{,}012 \times Us) / (L \times Is^2)$$

or

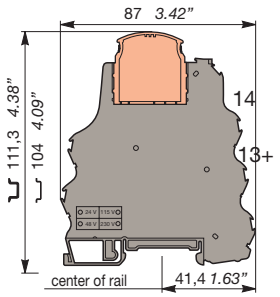
$$Fmax = (1\text{-}0{,}012 \times Us) / (P \times \frac{L}{R})$$

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

Derating curve



Dimensional drawings



R500 Optocouplers
Technical data

Technical data

Pluggable optocoupler : 24 to 253 V AC output / 1 A - 5.08 mm 0.200“ spacing

		D 2,5/5-... 24 V DC	D 2,5/5-OBOA-1000 24 V AC/DC - 48 V AC/DC				D 2,5/5-OBOA-1000 110 V AC - 230 V AC	
Input		24 V DC	24 V AC	24 V DC	48 V AC	48 V DC	110 V AC	230 V AC
Input voltage		20.4 - 28.8 V DC	24 ± 10 %	20.6 - 28.8 V DC	48 ± 10 %	40.8 -57.6 V DC	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						
Permissible leakage current								
Output								
Output voltage		24-253 V AC - 50/60 Hz						
Output current min.		25 mA						
Output current max.		1 A						
Output leakage current at U_{max}		< 0.50 mA						
Redidual voltage at I max and U rated	typical	1 V						
	max	1.6 V						
Frequency on inductive load		See Note 1						
Isolation Input / Output	input / Output	2500 V RMS						
Temperature								
Ambient temperature	storage	-40...+80 °C						
	operating	See derating curve						
Other characteristics								
Body material	grey	UL 94 V0						
Wire size	Solid wire	0.2 - 4 mm² (24-12 AWG)						
	Stranded wire	0.22 - 2.5 mm² (24-12 AWG)						
Rated wire size		2.5 mm² (12 AWG)						
Wire stripping length		10 mm (0.394 in)						
Recommended screwdriver		3.5 mm (0.137 in)						
Protection		IP20 *NEMA1*						
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.						

Note 1 :

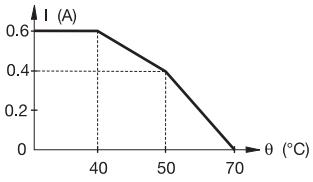
Fmax = (1-0,012 x Us) / (L x Is²)

or

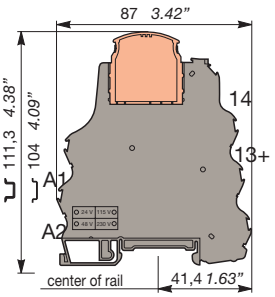
Fmax = (1-0,012 x Us) / (P x $\frac{L}{R}$)

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

Derating curve



Dimensional drawings



Interface Relays and Optocouplers Accessories
Table of Contents

Terminal blocks component holder

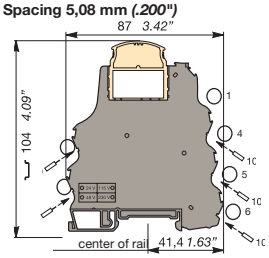
Base for pluggable plug
R500 Series

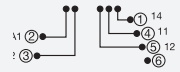
DIN 3

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.Z2**		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**

D 2,5/5-MP

Spacing 5,08 mm *(.200")*

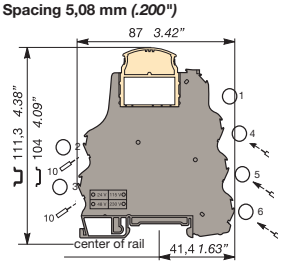


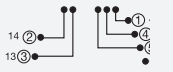


Relay/opto. base without output LED

D 2,5/5-MP1

Spacing 5,08 mm *(.200")*

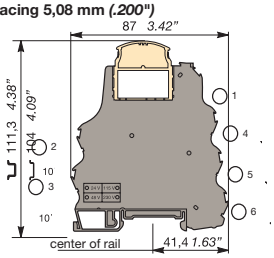


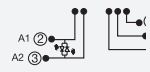


Relay/opto. base without input LED

D 2,5/5-MP...

Spacing 5,08 mm *(.200")*





Relay/opto. base with output LED

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
Grey V0 **Order plugs separately**	
D 2,5/5-MP	1SNA**607224R0100**

Type	Part numbers
Grey V0 **Order plugs separately**	
D 2,5/5-MP1	1SNA**607223R0000**

Type	Part numbers
Grey V0 **Order plugs separately**	
D 2,5/5-MP-24VDC	1SNA**607222R0700**
D 2,5/5-MP-24VAC/DC	1SNA**607260R2100**
D 2,5/5-MP-48VAC/DC	1SNA**607261R1600**
D 2,5/5-MP-110VAC	1SNA**607266R1300**
D 2,5/5-MP-230VAC	1SNA**607267R1400**

Characteristics

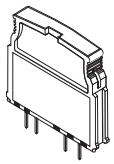
			IEC	UL/CSA pending	IEC	UL/CSA pending	IEC	UL/CSA pending
Wire size	Compression clamp	Solid wire	0,2-4 mm²	24-12 AWG	0,2-4 mm²	24-12 AWG	0,2-4 mm²	24-12 AWG
		Stranded wire	0,22-2,5 mm²	24-12 AWG	0,22-2,5 mm²	24-12 AWG	0,22-2,5 mm²	24-12 AWG
Voltage	Rated		320 V	300 V	320 V	300 V	320 V	300 V
	Pulse		4 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 mm²	12 AWG	2,5 mm²	12 AWG	2,5 mm²	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

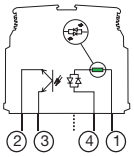
			Type		Part numbers	Type		Part numbers	Type		Part numbers
	1 Test device		DCB (1)	blue	1SNA**105028R2100**	DCB (1)	blue		DCB (1)	blue	1SNA**105028R2100**
	2 Test plug		FC2	DIA. 2	1SNA**007865R2600**	FC2	DIA. 2	1SNA**105028R2100**	FC2	DIA. 2	1SNA**007865R2600**
1	**3** Relay plug	1 SPDT 10 mA/6 A	BNMS R24V-1	beige	1SNA**031820R1400**			1SNA**007865R2600**	BNMS R24V-1	beige	1SNA**031820R1400**
		1 SPDT 1 mA/6 A	BNMS R24V-2	beige	1SNA**031847R1300**				BNMS R24V-2	beige	1SNA**031847R1300**
2	**4** Input optocoupler plug	5 V DC				BNMS T5V-1	white	1SNA**031831R0300**			
		24 V DC				BNMS T24V-1	white	1SNA**031848R2400**			
		24 V DC				BNMS T24V-2	white	1SNA**031800R2100**			
		48 V DC				BNMS T48V-1	white	1SNA**031801R1600**			
		125 V DC				BNMS T125V-1	white	1SNA**031845R1100**			
		24 V AC				BNMS T24V-1	yellow	1SNA**031802R1700**			
		48 V AC				BNMS T48V-1	yellow	1SNA**031803R1000**			
		115 V AC				BNMS T115V-1	yellow	1SNA**031804R1100**			
		230 V AC				BNMS T230V-1	yellow	1SNA**031805R1200**			
3, 4, 5, 6, 7, 8, 9	**5** Output optocoupler plug	24 V DC/100 mA	BNMS N24V-3	red	1SNA**031807R1400**				BNMS N24V-3	red	1SNA**031807R1400**
		24 V DC/100 mA	BNMS P24V-3	red	1SNA**031810R1200**				BNMS P24V-3	red	1SNA**031810R1200**
		24 V DC/2 A	BNMS N24V-1	red	1SNA**031813R0100**				BNMS N24V-1	red	1SNA**031813R0100**
		24 V DC/2 A	BNMS P24V-1	red	1SNA**031815R0300**				BNMS P24V-1	red	1SNA**031815R0300**
		24 V DC/1 A	BNMS N24V-2	red	1SNA**031817R0500**				BNMS N24V-2	red	1SNA**031817R0500**
		24 V DC/1 A	BNMS P24V-2	red	1SNA**031819R1700**				BNMS P24V-2	red	1SNA**031819R1700**
		24 V DC/1 A	BNMS A24V-4	black	1SNA**031839R1300**				BNMS A24V-4	black	1SNA**031839R1300**
10	**5** Output optocoupler plug	5 V DC/100 mA	BNMS N5V-3	red	1SNA**031806R1300**						
		5 V DC/100 mA	BNMS P5V-3	red	1SNA**031809R2600**						
		48 V DC/100 mA	BNMS N48V-3	red	1SNA**031808R2500**						
		48 V DC/100 mA	BNMS P48V-3	red	1SNA**031811R0700**						
		5 V DC/2 A	BNMS N5V-1	red	1SNA**031812R0000**						
		5 V DC/2 A	BNMS P5V-1	red	1SNA**031814R0200**						
		5 V DC/1 A	BNMS N5V-2	red	1SNA**031816R0400**						
		5 V DC/1 A	BNMS P5V-2	red	1SNA**031818R1600**						
	7 Fuse plug	125 V/125 mA	BNMS F125mA-1	grey	1SNA**031821R0100**	BNMS F125mA-1	grey	1SNA**031821R0100**	BNMS F125mA-1	grey	1SNA**031821R0100**
		125 V/500 mA	BNMS F500mA-1	grey	1SNA**031838R1200**	BNMS F500mA-1	grey	1SNA**031838R1200**	BNMS F500mA-1	grey	1SNA**031838R1200**
		125 V/2 A	BNMS F2A-1	grey	1SNA**031822R0200**	BNMS F2A-1	grey	1SNA**031822R0200**	BNMS F2A-1	grey	1SNA**031822R0200**
		125 V/5 A	BNMS F5A-1	grey	1SNA**031823R0300**	BNMS F5A-1	grey	1SNA**031823R0300**	BNMS F5A-1	grey	1SNA**031823R0300**
		250 V/125 mA	BNMS F125mA-2	grey	1SNA**031824R0400**	BNMS F125mA-2	grey	1SNA**031824R0400**	BNMS F125mA-2	grey	1SNA**031824R0400**
		250 V/2 A	BNMS F2A-2	grey	1SNA**031825R0500**	BNMS F2A-2	grey	1SNA**031825R0500**	BNMS F2A-2	grey	1SNA**031825R0500**
		250 V/5 A	BNMS F5A-2	grey	1SNA**031826R0600**	BNMS F5A-2	grey	1SNA**031826R0600**	BNMS F5A-2	grey	1SNA**031826R0600**
		125 V/125 mA	BNMS F125mA-3	grey	1SNA**031827R0700**				BNMS F125mA-3	grey	1SNA**031827R0700**
		250 V/125 mA	BNMS F125mA-4	grey	1SNA**031828R1000**				BNMS F125mA-4	grey	1SNA**031828R1000**
		125 V/2 A	BNMS F2A-7	grey	1SNA**031849R2500**	BNMS F2A-7	grey	1SNA**031849R2500**			
	8 Strap plug		BNMS ST1	grey	1SNA**031829R1100**	BNMS ST1	grey	1SNA**031829R1100**	BNMS ST1	grey	1SNA**031829R1100**
			BNMS ST2	grey	1SNA**031830R1600**	BNMS ST2	grey	1SNA**031830R1600**			
	9 Converter plug	0-20 mA/0-10 V	BNMS CAI/U-500	grey	1SNA**031832R0400**						
		4-20 mA/2-10 V	BNMS CAI/U-500	grey	1SNA**031832R0400**						
		0-20 mA/0-5 V	BNMS CAI/U-250	grey	1SNA**031833R0500**						
		4-20 mA/1-5 V	BNMS CAI/U-250		1SNA**031833R0500**						
R	**10** Comb type jumper bar	10 poles	PCMS V0 (2)		1SNA**205523R2200**	PCMS V0 (2)		1SNA**205523R2200**	PCMS V0 (2)		1SNA **205523R2200**
	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.

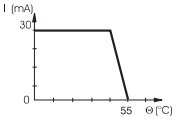
Input optocoupler plugs



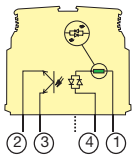
DC plugs



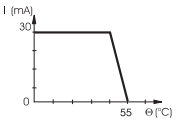
Derating curve



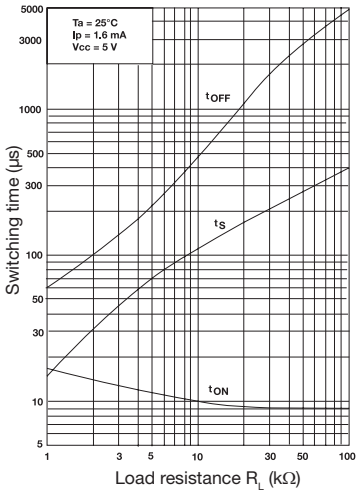
AC plugs



Derating curve



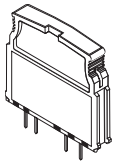
Switching time R_L curve 1 for 24 V DC plugs only



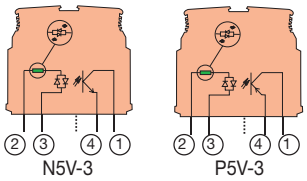
	5 V DC	24 V DC	48 V DC	125 V DC
Part number	**Type** **P/N**	**Type** **P/N**	**Type** **P/N**	**Type** **P/N**
	BNMS T5V-1 1SNA**031831**R**0300**	**BNMS T24V-1** 1SNA**031800**R**2100** **BNMS T24V-2** 1SNA**031848**R**2400**	**BNMS T48V-1** 1SNA**031801**R**1600**	**BNMS T125V-1** 1SNA**031845**R**1100**
Characteristics				
INPUT		**BNMS T24V-1** | **BNMS T24V-2**		
Voltage	4,5 V to 5,5 V DC	19,2 V to 27,6 V DC	38,4 V to 55,2 V DC	93,5 V to 140 V DC
Max. current	6 mA	5 mA	4,1 mA	3 mA
Typical triggering threshol at Is = 100%	3,5 V	12 V DC	21 V DC	50 V DC
Switching time C/O	20 µs / 1,3 ms	20 µs / 1,3 ms | 10 µs / see curve 1	20 µs / 1,3 ms	20 µs / 1,3 ms
Leakage current		1 mA	0,8 mA	
OUTPUT				
Max. voltage. / Max. current	58 V / 30 mA	58 V / 30 mA | 58 V / 5 mA	58 V / 30 mA	58 V / 30 mA
Residual voltage max. I and rated U standard	2,3 V DC	2,3 V DC | 0,3 V DC	2,3 V DC	2,3 V DC
max.	2,7 V DC	2,7 V DC | 0,5 V DC	2,7 V DC	2,7 V DC
Compatibility		TTL		
Input / Ouput isolation	2,5 kV	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	- 30°C to + 80°C
Operating	- 20°C to + 55°C	-20°C to + 55°C	- 20°C to + 55°C	- 20°C to + 55°C

	24 V AC	48 V AC	115 V AC	230 V AC
Part number	**Type** **P/N**	**Type** **P/N**	**Type** **P/N**	**Type** **P/N**
	BNMS T24V-1 1SNA**031802**R**1700**	**BNMS T48V-1** 1SNA**031803**R**1000**	**BNMS T115V-1** 1SNA**031804**R**1100**	**BNMS T230V-1** 1SNA**031805**R**1200**
Charateristics				
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
Max. current	8,5 mA	4,5 mA	8 mA	7 mA
Typical triggering threshold at Is = 100%	13 V AC	22 V AC	50 V AC	95 V AC
Switching time C/O	6 ms / 10 ms	6 ms / 10 ms	6 ms / 10 ms	6 ms / 10 ms
Leakage current	1 mA	1 mA	2 mA	2 mA
OUPUT				
Max. voltage / Max. current	58 V / 30 mA	58 V / 30 mA	58 V / 30 mA	58 V / 30 mA
Residual voltage max. I and rated U standard	2,3 V DC	2,3 V	2,3 V	2,3 V
max.	2,7 V DC	2,7 V	2,7 V	2,7 V
Input / Ouput isolation	2,5 kV	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	- 30°C to + 80°C
Operating	- 20°C to + 55°C	- 20°C to + 55°C	- 20°C to + 55°C	- 20°C to + 55°C

Transistor output optocoupler plugs

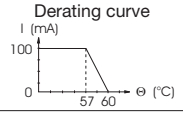


100 mA output optocoupler 5 V DC

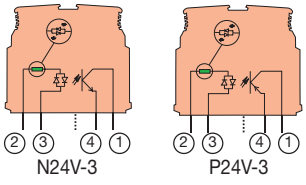


N5V-3 P5V-3

Derating curve

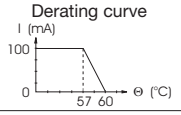


100 mA output optocoupler 24 V DC

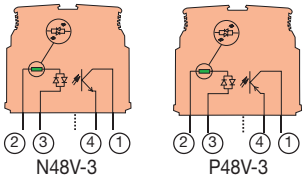


N24V-3 P24V-3

Derating curve

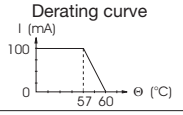


100 mA output optocoupler 48 V DC



N48V-3 P48V-3

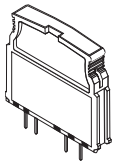
Derating curve



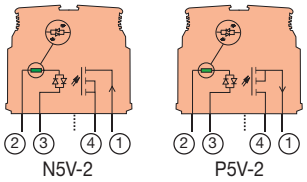
Part numbers	Type	P/N	Type	P/N	Type	P/N
	BNMS N5V-3	1SNA**031806**R1**3**00	**BNMS N24V-3**	1SNA**031807**R1**4**00	**BNMS N48V-3**	1SNA**031808**R2**5**00
	BNMS P5V-3	1SNA**031809**R2**6**00	**BNMS P24V-3**	1SNA**031810**R1**2**00	**BNMS P48V-3**	1SNA**031811**R0**7**00

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

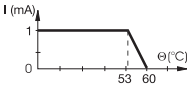


1 A output optocoupler 5 V DC

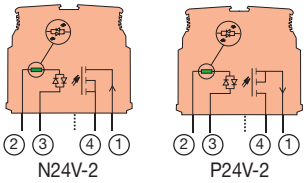


N5V-2 P5V-2

Derating curve

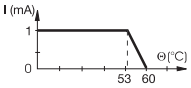


1 A output optocoupler 24 V DC



N24V-2 P24V-2

Derating curve



Note 1 :

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

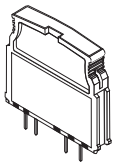
U_s = Output voltage supply
I_s = Output current
L = Inductive load
P = Load power
R = Load resistance

Part numbers	Type	P/N	Type	P/N
	BNMS N5V-2	1SNA**031816**R0**4**00	**BNMS N24V-2**	1SNA**031817**R0**5**00
	BNMS P5V-2	1SNA**031818**R1**6**00	**BNMS P24V-2**	1SNA**031819**R1**7**00

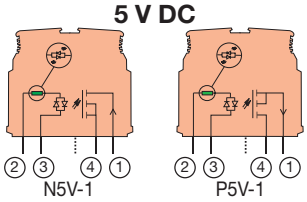
Characteristics		
INPUT		
Voltage	4,5 V to 5,5 V DC	20,4 V to 28,8 V DC
Max. current	12,5 mA	6,7 mA
Typical triggering threshold at Is=100%	3,5 V DC	10 V DC
Switching time C/O	20 µs / 250 µs	50 µs / 350 µs
Leakage current	1 mA	1 mA
OUTPUT		
Max. voltage / Max. current	58 V / See graphs	58 V / See graphs
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

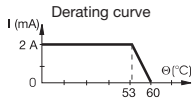
MOS output optocoupler plug

CE

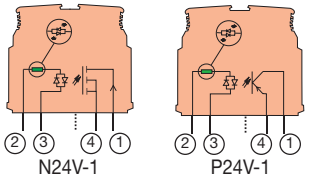


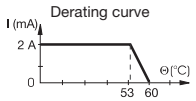
2 A output optocoupler
5 V DC





2 A output optocoupler
24 V DC





Note 2 :

Fmax = (1 - 0,012 x Us) / (L x Is²)
or
Fmax = (1 - 0,012 x Us) / (P x $\frac{L}{R}$)

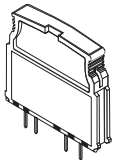
Us = Output voltage supply
Is = Output current
L = Inductive load
P = Load power
R = Load resistance

Part numbers	Type	P/N	Type	P/N
	BNMS N5V-1	1SNA**031812**R**0**000	**BNMS N24V-1**	1SNA**031813**R**01**00
	BNMS P5V-1	1SNA**031814**R**02**00	**BNMS P24V-1**	1SNA**031815**R**03**00

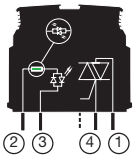
Characteristics			
INPUT			
Voltage		4,5 V to 5,5 V DC	20,4 V to 28,8 V DC
Max. current		12,5 mA	6,7 mA
Typical triggering threshold		3,5 V DC	10 V DC
Switching time	C/O	20 µs / 250 µs	50 µs / 350 µs
Leakage current		1 mA	1 mA
OUTPUT			
Max. voltage / Max. current		30 V DC / See graphs	30 V / See graphs
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

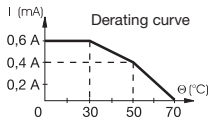
Triac output optocoupler plug

CE



1 A output optocoupler
24 V DC

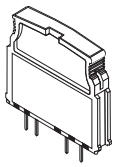




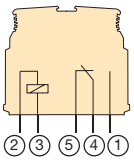
Part numbers	Type	P/N
	BNMS A24V-4	1SNA**031839**R**13**00

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

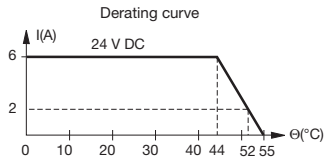
Relay plugs

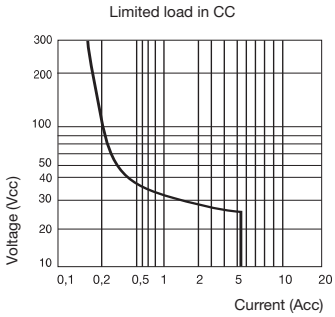


1 SPDT relay



R24V-1



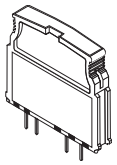


Part numbers	Type	P/N
	BNMS R24V-1	1SNA**031820**R1400
	BNMS R24V-2	1SNA**031847**R1300

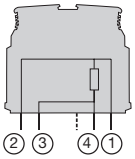
Characteristics	BNMS R24V-1	BNMS R24V-2
COIL		
Voltage	20,4 V to 28,8 V DC	
Current max.	7 mA	
Trip voltage	1,2 V	
CONTACT		
Type	1 SPDT	
Voltage mini. / max.	12 V / 250 V	5 V / 250 V
Switching current mini. / max.	10 mA / 6 A	1 mA / 6 A
Switching current AC1 mini. / max.	0,6 VA/1500 VA (resistance)	0,05 VA/1500 VA (resistance)
DC1 mini. / max.	0,6 W / 140 W	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

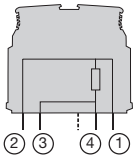


Current / Voltage Converter



Plug with 250 Ω accuracy resistance for analogical signals.

Current / Voltage Converter

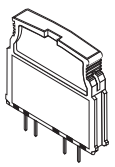


Plug with 500 Ω accuracy resistance for analogical signals.

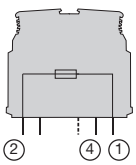
Part numbers	Type	P/N	Type	P/N
	BNMS CA I/U-250	1SNA**031832**R0400	**BNMS CA I/U-500**	1SNA**031833**R0500

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

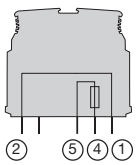
Fuse and strap plugs



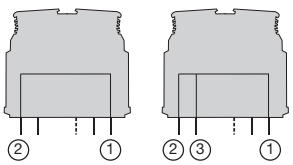
Output fuse plug



Input fuse plug



Strap plug

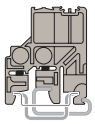


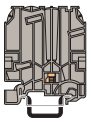
BNMS ST1 BNMS ST2

Part numbers	Type		P/N	Type		P/N	Type	P/N
	BNMS F125mA-1	125 V / 125 mA	1SNA**031821**R0100	**BNMS F125mA-3**	125 V / 125 mA	1SNA**031827**R0700	**BNMS ST1**	1SNA**031829**R1100
	BNMS F500mA-1	125 V / 500 mA	1SNA**031838**R1200	**BNMS F125mA-4**	250 V / 125 mA	1SNA**031828**R1000	**BNMS ST2**	1SNA**031830**R1600
	BNMS F2A-1	125 V / 2 A	1SNA**031822**R0200					
	BNMS F5A-1	125 V / 5 A	1SNA**031823**R0300					
	BNMS F125mA-2	250 V / 125 mA	1SNA**031824**R0400					
	BNMS F2A-2	250 V / 2 A	1SNA**031825**R0500					
	BNMS F5A-2	250 V / 5 A	1SNA**031826**R0600					

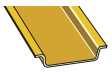

BADL

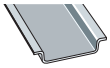

BAM2


BAMH


BADH


PR30


PR3.Z2


PR3.G2


PR5


PR4


FC2

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**399903**R**02**00	50	
End stop with screws DIN 3						
grey V0		BAM2 V0	10 mm	1SNA**399967**R**01**00	50	
grey V2		BAM2	10 mm	1SNA**206351**R**16**00	50	
beige V0		BAM2 V0	10 mm	1SNA**296351**R**00**00	50	
High end stop with screws DIN 1 and DIN 3						
grey		BAMH	9,1 mm	1SNA**114836**R**00**00	50	
beige V0		BAMH V0	9,1 mm	1SNA**194836**R**01**00	50	
High end stop with screws DIN 3						
grey		BADH	12 mm	1SNA**116900**R**27**00	50	

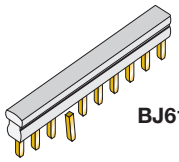
Mounting rails

Symmetrical zinc bichromate plated steel prepunched rail	PR30	2 m	1SNA**173220**R**05**00	1	
Symmetrical zinc bichromate plated steel rail	PR3.Z2	2 m	1SNA**174300**R**17**00	1	
White, symmetrical passivated galvanized steel rail	PR3.G2	2 m	1SNA**164800**R**03**00	1	
Symmetrical zinc bichromate plated steel rail	PR5	2 m	1SNA**168700**R**22**00	1	
Symmetrical zinc bichromate plated steel rail	PR4	2 m	1SNA**168500**R**12**00	1	

Test devices

Test plug DIA. 2 mm	FC2	1SNA**007865**R**26**00	10	

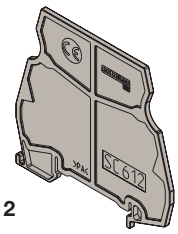
Assembled jumper bar


BJ612-...

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**290488**R**01**00	10	
Assembled jumper bar 70 poles - 24 A	BJ612-70	1SNA**290489**R**02**00	10	

Separator end section

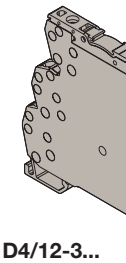


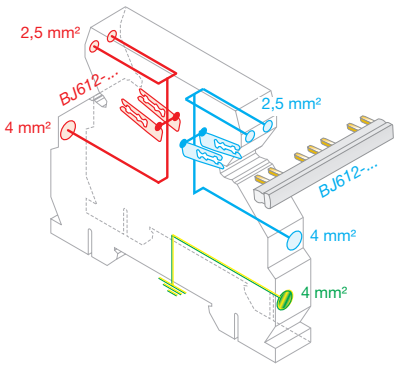
SC612

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**290474**R**02**00	10	

Distribution module


D4/12-3...



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.

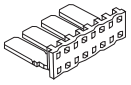
Rated voltage : 250 VAC-DC
Rated current : 32 A (4 mm²) - 16 A (2,5 mm²)
Recommended torque : 0,4 - 0,6 Nm

Screw clamp distribution block sp. 12 mm	D4/12-3-3	1SNA**645031**R**20**00	5	
Spring clamp distribution block sp. 12 mm	D4/12-3R-3R	1SNA**645531**R**22**00	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**205491R2300**	1SNA**205492R2400**	1SNA**205493R2500**	1SNA**205494R2600**
3	1SNA**205495R2700**	1SNA**205496R2000**	1SNA**205497R2100**	1SNA**205498R0200**
4	1SNA**205499R0300**	1SNA**205500R1000**	1SNA**205501R0500**	1SNA**205502R0600**
5	1SNA**205503R0700**	1SNA**205504R0000**	1SNA**205505R0100**	1SNA**205506R0200**
6	1SNA**205507R0300**	1SNA**205508R1400**	1SNA**205509R1500**	1SNA**205510R0100**
7	1SNA**205511R2600**	1SNA**205512R2700**	1SNA**205513R2000**	1SNA**205514R2100**
8	1SNA**205515R2200**	1SNA**205516R2300**	1SNA**205517R2400**	1SNA**205518R0500**
9	1SNA**205519R0600**	1SNA**205520R0300**	1SNA**205521R2000**	1SNA**205522R2100**
10	1SNA**205523R2200**	1SNA**205524R2300**	1SNA**205525R2400**	1SNA**205526R2500**
11	1SNA**205527R2600**	1SNA**205528R0700**	1SNA**205529R0000**	1SNA**205530R0500**
12	1SNA**205531R2200**	1SNA**205532R2300**	1SNA**205533R2400**	1SNA**205534R2500**
13	1SNA**205535R2600**	1SNA**205536R2700**	1SNA**205537R2000**	1SNA**205538R0100**
14	1SNA**205539R0200**	1SNA**205540R1700**	1SNA**205541R0400**	1SNA**205542R0500**
15	1SNA**205543R0600**	1SNA**205544R0700**	1SNA**205545R0000**	1SNA**205546R0100**
16	1SNA**205547R0200**	1SNA**205548R1300**	1SNA**205549R1400**	1SNA**205550R1100**
17	1SNA**205551R0600**	1SNA**205552R0700**	1SNA**205553R0000**	1SNA**205554R0100**
18	1SNA**205555R0200**	1SNA**205556R0300**	1SNA**205557R0400**	1SNA**205558R1500**
19	1SNA**205559R1600**	1SNA**205560R1300**	1SNA**205561R0000**	1SNA**205562R0100**
20	1SNA**205563R0200**	1SNA**205564R0300**	1SNA**205565R0400**	1SNA**205566R0500**
21	1SNA**205567R0600**	1SNA**205568R1700**	1SNA**205569R1000**	1SNA**205570R1500**
22	1SNA**205571R0200**	1SNA**205572R0300**	1SNA**205573R0400**	1SNA**205574R0500**

PEF

Identification label holders

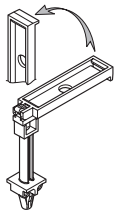
Designed to hold **RPEV** label (see opposite).

PEF * 1SNA**020568R0400**

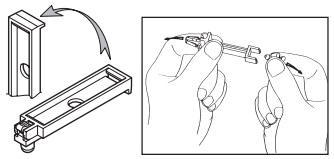
* *Delivered with labels.*

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

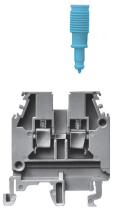
Sheets of 99 pre-cut labels

✓ **Blank** **RPEV** 1SNA**173178R0700**

5

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**105028R2100**

BJ Jumper bar

BJS **Jumper bar not assembled**

Subassembly screw + washer + post

Perforated jumper bar to be cut to length

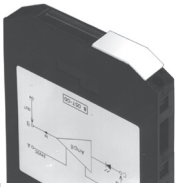
To connect terminal blocks, place the metal tube into the top center hole on each terminal block to be connected.
The metal tube contacts the terminal block's internal connector bar.
The perforated bar is cut to length and placed flat along the center opening of the series of terminal blocks.
The screw 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**168400R1600**
Perforated jumper bar	**BJS9** 32 A	8 poles	1SNA**177583R1200**
	BJS9 32 A	16 poles	1SNA**177584R1300**

RL Lengthwise marker

RLV **Lengthwise marker Width 9 mm *.354*"**

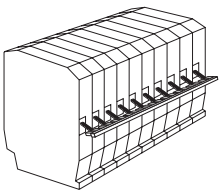


Large area for writing.
To be snapped onto the top of blocks.

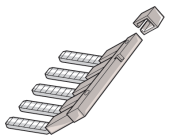
Blank marker for writing : **RLV** 1SNA**103849R0300**

PC

Comb-type jumper bar



PC **EIP**



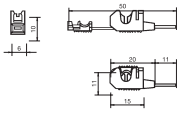
This accessory can be used only on the terminal blocks with at least one compression clamp connection. It permits the electrical connection of 2 to 10 blocks.
Interconnection of non-consecutive blocks is possible by removing the teeth opposite the blocks which must not be connected. The comb-type jumper 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 :

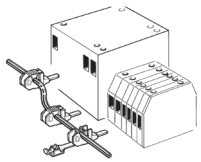
Insulating tip for comb	**EIP**			1SNA**113550R2000**
Comb-type jumper bar	**PC9**	15 A	10 poles	1SNA**210160R1200**

IDC jumper

(insulation displacement jumper)

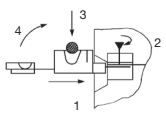


Characteristics		IEC NFC VDE	CSA
Wire size mm² / AWG	Rigid	2,5 mm²	14 AWG
	Flexible	2,5 mm²	
Voltage	V	600	600
Current	A	26	15
Rated wire size	mm² / AWG	2,5 mm²	14 AWG
Working temperature	°C	-55°C -> +110°C	
Protection		IP20 / *NEMA1*	



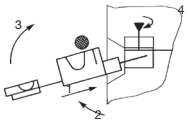
Quick-jump lets you interconnect screw clamp terminals of different sizes, levels and all manufacturers quickly and safely. Its insulation displacement technology makes it easy to use, fast, economical and does not require a special tool. Use as a jumper between relays, switches and other electronic components. ABB Quick-jump will fit any screw clamp type terminal block, from 6 mm .238" spacing and larger.

How to use : connecting Quick-jump to your terminal



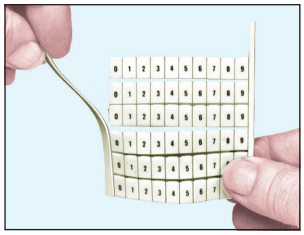
1 - Insert ABB Quick-jump into your terminal screw clamp.
2 - Tighten the terminal screw.
3 - Guide jumper wire through the V-shaped opening in the Quick-jump.
4 - Secure the wire by closing the Quick-jump lever with any flat nose pliers.

Adding a shunt in an installation :

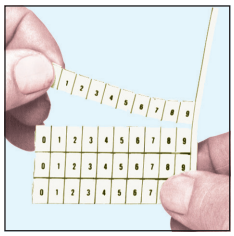


1 - Insert ABB Quick-jump into your terminal screw clamp.
2 - Guide the terminal screw clamp into contact with the wire.
3 - Secure the wire by closing the Quick-jump lever with any flat nose pliers.
4 - Tighten the terminal screw.

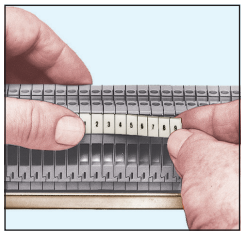
Insulation displacement jumper AD 2,5 1SNA**114205R2000**



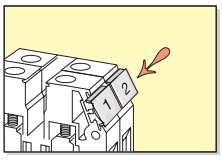
1
Remove one of the side bands of the card.



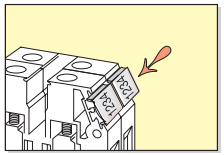
2
Separate the chosen strip from the rest of the card.



3
Press the first marker in place, hold it and slide your thomb on the rest of the strip.



Horizontal marking



Vertical marking

Refilable box of 100 cards of 18 RC markers

Marking for Interface Modules

Selection table

Markers for modules :	RC610	RC55	RC65
R500	⛔	🟢	⛔
R600	🟢	POSSIBLE	🟢
R900	⛔	🟢	⛔
R910	🟢	POSSIBLE	🟢
R1800	⛔	🟢	⛔

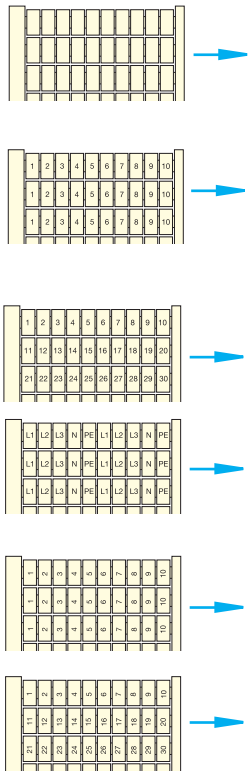
Possible mounting : POSSIBLE

Recommended mounting : 🟢

Impossible mounting : ⛔

Marking for terminal blocks

Standard RC marker cards



Marker sizes	RC55 (x) = Nb of cards in 5 mm spacing kit	RC65 (x) = Nb of cards in 6 mm spacing kit	RC610 (x) = Nb of cards in 6 mm spacing kit
Blank cards	1SNA**230000R1200**	1SNA**232000R0000**	1SNA**233000R0100**
Horizontal marking			
10 strips from 1 to 10	1SNA**230002R0000** (5)	1SNA**232002R2600** (5)	1SNA**233002R2700** (25)
10 strips from 11 to 20	1SNA**230003R0100** (2)	1SNA**232003R2700** (2)	1SNA**233003R2000** (10)
10 strips from 21 to 30	1SNA**230004R0200**	1SNA**232004R2000**	1SNA**233004R2100** (6)
10 strips from 31 to 40	1SNA**230005R0300**	1SNA**232005R2100**	1SNA**233005R2200** (4)
10 strips from 41 to 50	1SNA**230006R0400**	1SNA**232006R2200**	1SNA**233006R2300** (3)
10 strips from 51 to 60	1SNA**230007R0500**	1SNA**232007R2300**	1SNA**233007R2400** (2)
10 strips from 61 to 70	1SNA**230008R1600**	1SNA**232008R0400**	1SNA**233008R0500** (2)
From 1 to 100	1SNA**230030R0700** (2)	1SNA**232030R2500** (2)	1SNA**233030R2600** (15)
From 101 to 200	1SNA**230031R2400**	1SNA**232031R1200**	1SNA**233031R1300** (2)
20 times L1-L2-L3-N-PE	1SNA**230131R2500**	1SNA**232131R1300**	1SNA**233131R1400** (2)
Vertical marking			
10 strips from 1 to 10	1SNA**230041R0600**	1SNA**232041R2400**	1SNA**233041R2500** **(5)**
10 strips from 11 to 20	1SNA**230042R0700**	1SNA**232042R2500**	1SNA**233042R2600** **(3)**
10 strips from 21 to 30	1SNA**230043R0000**	1SNA**232043R2600**	1SNA**233043R2700** **(2)**
10 strips from 31 to 40	1SNA**230044R0100**	1SNA**232044R2700**	1SNA**233044R2000** **(2)**
From 1 to 100	1SNA**230060R1500**	1SNA**232060R0300**	1SNA**233060R0400** **(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**400085R2700**	1	
Refill for box RC 5 mm		1SNA**400145R0700**	1	
Box with 100 cards RC 6 mm spacing		1SNA**400084R2600**	1	
Refill for box RC 6 mm		1SNA**400144R0600**	1	