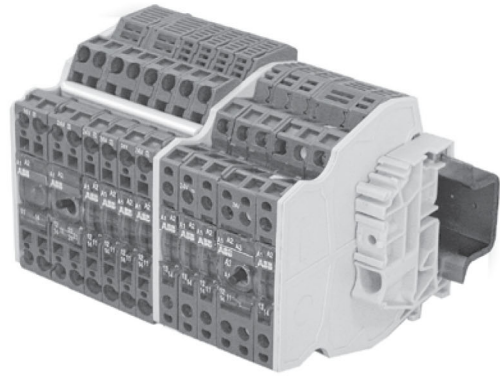


# R600 & R500 Interface relays

**ABB** Interface relays  
R600, R500



## Interface relays, R600, R500

### Benefits and advantages

6



#### R600 series

Standard range in screw clamp or spring clamp versions

- Spacing : 6 mm
- Wire size : 2.5 mm<sup>2</sup> (4 mm<sup>2</sup> 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

Standard range with pluggable functions

- Spacing : 5.08 mm (the smallest in the market)
- Wire size : 2.5 mm<sup>2</sup> (4 mm<sup>2</sup> 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 voltage spikes and transient currents can affect their operating functions. And additionally, their application range is often limited to 24 VDC / 100 mA.



So, with the aim to adapt application voltage and/or current and provide as well the appropriate galvanic isolation to the PLC, it is recommended to install the correct interface to provide 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.

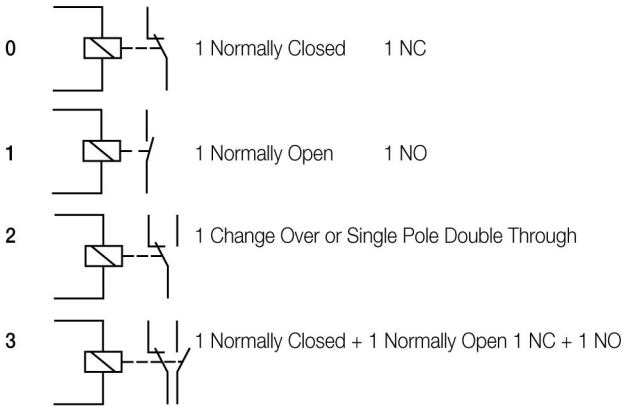
# Interface relays, R600, R500

## Type designators

Interface relays  
R600 & R500 Range

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

### Description of contact types

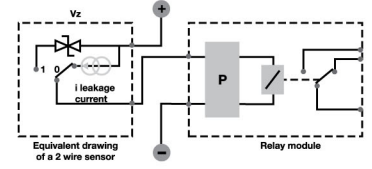


### Color coding for relays

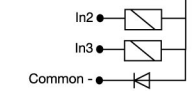
Color	Current level in contacts	Switching current	Switching voltage	Switching load power
green	Very low level	10 <sup>-7</sup> to 5 A	10 <sup>-3</sup> to 250 V	10 <sup>-10</sup> to 2000 VA 10 <sup>-10</sup> to 200 W
grey	Low level	1 mA to 8 A	5 to 250 V	0,05 to 1500 VA 0,05 to 192 W
blue	High level	10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

### Features

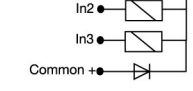
- None** Input voltage DC
- A** Input voltage AC/DC
- B** Input voltage AC
- C** 2 wire sensor compatibility



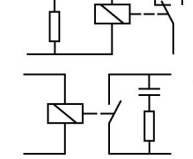
**N** In1 In2 In3 Common - Commons of coils connected to negative



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

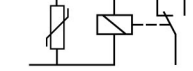


**R** RC circuit protection :  
- Input protection against leakage current

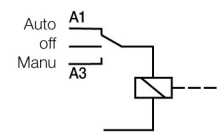


- Increases relay contacts life

**V** Relay protection against overvoltage peaks



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







# Interface relays, R600

## Benefits and advantages

### Characteristics

Standard range in screw clamp or spring clamp versions

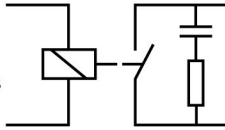
- Spacing : 6 mm
- Wire size : 2.5 mm<sup>2</sup> (4 mm<sup>2</sup> solid wire)
- Contact type : 1 NO, 1 NC, 1 SPDT, 1 DPDT from 1 mA to 8 A / 250 V
- Transistor : 100 mA
  - MOS : 1 A to 5 A
  - Triac : 1 A to 2 A

6

### Benefits

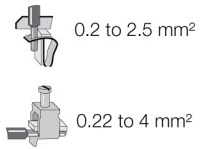
#### Increased contact life

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



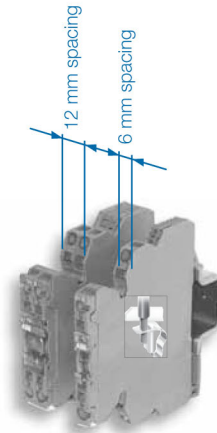
#### Variety of connections

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



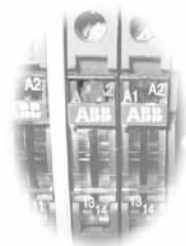
#### Space saving

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

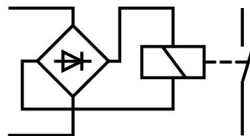


#### Functioning status

Functioning display through a green LED.



#### Only one part number AC/DC

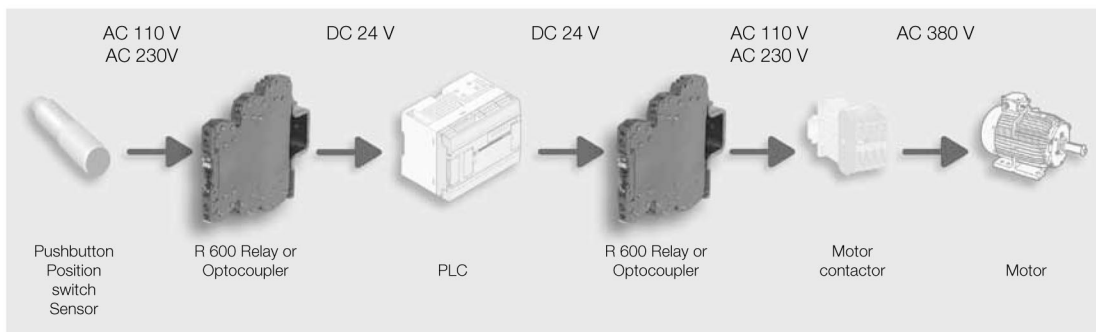


#### Measurement & Test

Holes for holding DIA. 2 mm test plugs to simplify any measure or test.



### Excellent adaptation and conversion of digital signals



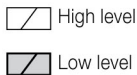
# Interface relays, R600

## Ordering details

Interface relays  
R600 & R500 Range



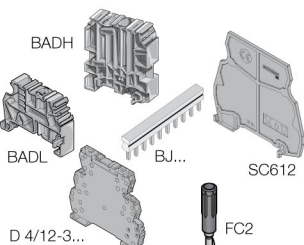
R600



R600 Relay		Reference code	Catalog number	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	5	0.03 (0.44)
☐ Relay mod. 1 NO/NC high level w/contact protection 12 mm spacing		RB 111 AR-24VAC/DC	1SNA645018R0300		
☐ 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		
☐ Relay mod. 1 NO high level w/safety switch 6 mm spacing		RBR 111 AI-24VAC/DC	1SNA645563R0200	5	0.03 (0.44)
☐ Relay mod. 1 NO/NC high level w/contact protection 12 mm spacing		RBR 111 AR-24VAC/DC	1SNA645518R0500		
☐ 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		
		RB 121 5VDC	1SNA645534R2500		
		RB 121 12VDC	1SNA645569R0000		
		RB 121 24VDC	1SNA645564R0300		
☐ Relay module 1 SPDT high level		RB 121 A-24VAC/DC	1SNA645501R0500	10	0.02 (0.44)
		RB 121 A-48-60VAC/DC	1SNA645502R0600		
		RB 121 A-115VAC/DC	1SNA645503R0700		
		RB 121 A-230VAC/DC	1SNA645504R0000		
		RB 121 5VDC	1SNA645036R2500		
☐ Relay module 1 SPDT low level		RB 121 12VDC	1SNA645037R2600	10	0.02 (0.44)
		RB 121 24VDC	1SNA645065R0200		
		RB 121 A-24VAC/DC	1SNA645005R0700		
		RB 121 A-48-60VAC/DC	1SNA645006R0000		
		RB 121 A-115VAC/DC	1SNA645007R0100		
☐ Relay module 1 SPDT low level		RB 121 A-230VAC/DC	1SNA645008R1200	10	0.02 (0.44)
		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

	Reference code	Catalog number	Pkg qty	Weight (1 pce) kg (lb)
End section	BADH V0	011690027	50	
	BADL V0	039990302	50	
	BAM2 V0	039996701	50	
Separator end section	SC 612	1SNA290474R0200	10	
Divisible shunt 10 poles	BJ 612-10	1SNA290488R0100	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	000786526	10	
Marking method	RC65 / RC610	see marking		



## Interface relays, R600

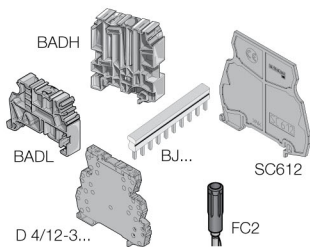
### Ordering details

6



R600

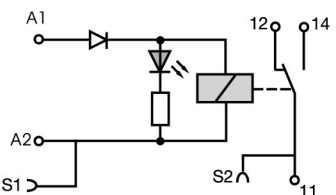
- High level
- Low level



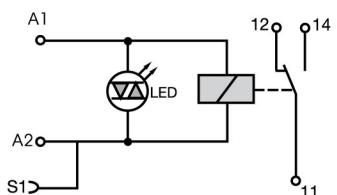
R600 Relay	Reference code	Catalog number	Pkg qty	Weight (1 pce) kg (lb)	
<input type="checkbox"/> Relay mod. 1SPDT high level w/leakage current protec.	RB 121 AR-115VAC/DC	1SNA645046R0700	5	0.03 (0.066)	
	RB 121 AR-230VAC/DC	1SNA645011R2400			
	<input type="checkbox"/> Relay mod. 1SPDT high level w/large coil voltage range	RB 121 A 60-230VAC/DC			1SNA645020R0100
		RB 121 AI-24VAC/DC			1SNA645032R2100
	<input type="checkbox"/> Relay mod. 1SPDT high level with safety switch	RB 121 AI-24VAC/DC			1SNA645009R1300
	<input checked="" type="checkbox"/> Relay module 1SPDT low level with switch	RB 121 AI-24VAC/DC			1SNA645033R2200
		RB 121 AI-24VAC/DC			1SNA645010R0700
	<input type="checkbox"/> Relay mod. 1SPDT high level w/leakage current protec.	RB 121 AR-115VAC/DC			1SNA645546R0100
		RB 121 AR-230VAC/DC			1SNA645511R2600
	<input type="checkbox"/> Relay mod. 1SPDT high level w/large coil voltage range	RB 121 A 60-230VAC/DC			1SNA645520R0300
		RB 121 AI-24VAC/DC			1SNA645532R2300
	<input type="checkbox"/> Relay mod. 1SPDT high level with safety switch	RB 121 AI-24VAC/DC			1SNA645509R1500
	<input checked="" type="checkbox"/> Relay module 1SPDT low level with switch	RB 121 AI-24VAC/DC			1SNA645533R2400
		RB 121 AI-24VAC/DC			1SNA645510R0100
<input checked="" type="checkbox"/> 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			
	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	Reference code	Catalog number	Pkg qty	Weight (1 pce) kg (lb)	
End section	BADH V0	011690027	50		
	BADL V0	039990302	50		
	BAM2 V0	039996701	50		
Separator end section	SC 612	1SNA290474R0200	10		
Divisible shunt 10 poles	BJ 612-10	1SNA290488R0100	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	000786526	10		
Marking method	RC65 / RC610	see marking			

# Interface relays, R600

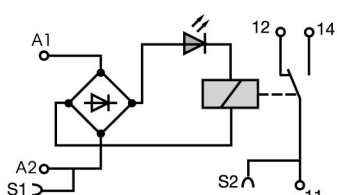
## Connection diagrams



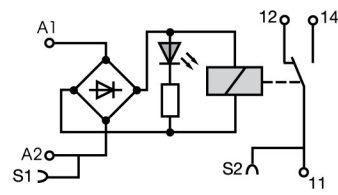
RB...121 - 5-12 V DC



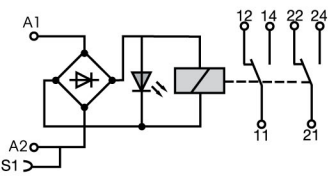
RB...121 - 24 V DC



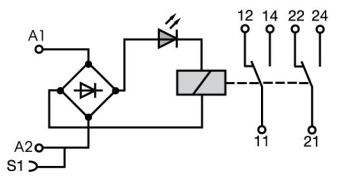
RB...121 A  
48-60-115-230 V AC/DC



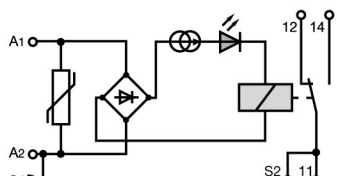
RB...121 A - 24 V AC/DC



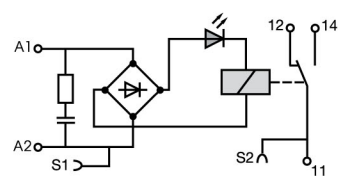
RB...122 A  
24-48-60 V AC/DC



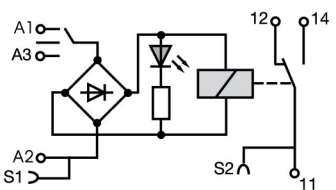
RB...122 A  
115-230 V AC/DC



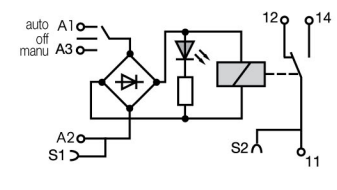
RB...121 A



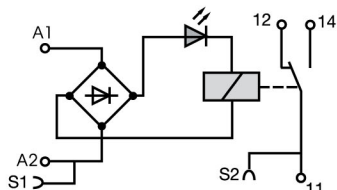
RB...121 AR



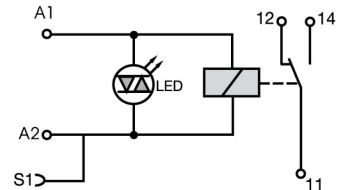
RB...121 AI



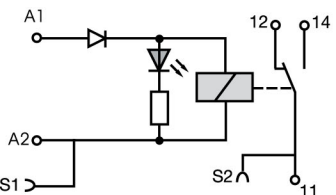
RB...121 AI



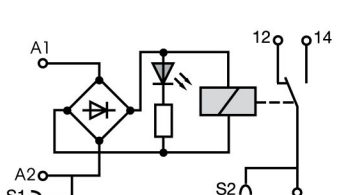
RB...121 A  
48-60-115-230 V AC/DC



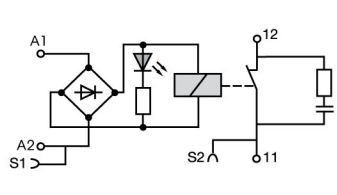
RB...121 - 12-24 V DC



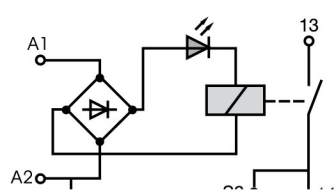
RB...121 - 5 V DC



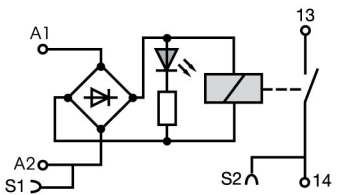
RB...121 A - 24 V AC/DC



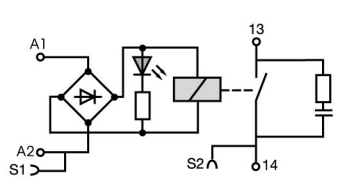
RB...101 AR



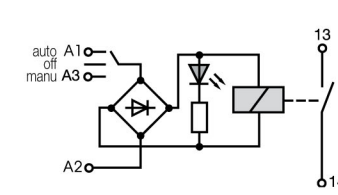
RB...111 A48-60-115-230 V AC/DC



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



RB...111 AR



RB...111 AI

# Interface relays, R600

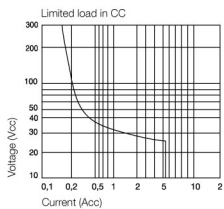
## Technical information

### Technical data

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

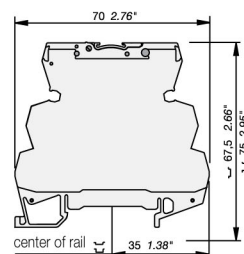
		RB 111 A					RB 111 AI	RB 111 AR	RB 101 AR
<b>Relay characteristics coil</b>									
Rated voltage: +20%, -15% on DC ; 10%, -10% on AC	24 VAC/DC	48 VAC/DC	60 VAC/DC	115 VAC/DC	230 VAC/DC ± 10% on AC ± 10%-15% on DC	24 VAC/DC	24 VAC/DC	24 VAC/DC	
Frequency	50/60 Hz								
Power	0.24 W	0.34 W	0.54 W	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								
<b>Relay characteristics contact</b>									
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 <sup>5</sup> on AC15								
Number of off-load operations	10 <sup>7</sup>								
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 <sup>1)</sup>						
<b>Other characteristics</b>		<b>Screw clamp</b>				<b>Spring clamp</b>			
Body material	grey		UL 94 V0						
Wire size	Solid wire		0.2 - 4 mm <sup>2</sup> (24-12 AWG)			0.2-2.5 mm <sup>2</sup> (24-12 AWG)			
	Stranded wire		0.22 - 2.5 mm <sup>2</sup> (24-12 AWG)						
Rated wire size	2.5 mm <sup>2</sup> (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	cUL US, (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.								

<sup>1)</sup> 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.

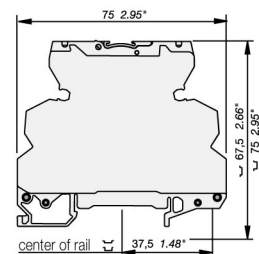


	DC12	AC12	DC13	AC15
24 V	6 A	6 A	1 A	3 A
110/120 V	0.3 A	6 A	0.2 A	3 A
220/230 V	0.2 A	6 A	0.1 A	3 A

### Dimensional drawings



Screw clamp module



Spring clamp module

# Interface relays, R600

## Technical information

Interface relays  
R600 & R500 Range

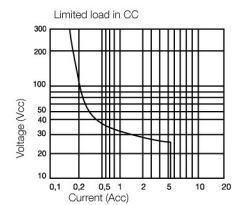
### Technical data

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

	RB 121				RB 121A				
<b>Relay characteristics coil</b>									
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								
<b>Relay characteristics contact</b>									
Type	1 SPDT								
Voltage switching range min./max.	12 V / 250 V AC								
Current switching range min./max.	10 mA / 6 A								
Load switching range	0.6 VA / 1500 VA (ohmic load)								
AC1 min./max.									
DC1 min./max.	0.6 W / 140 W								
Number of on-load operations	10 <sup>5</sup> on AC15								
Number of off-load operations	10 <sup>7</sup>								
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 <sup>1)</sup>							
<b>Other characteristics</b>									
Body material	grey	Screw clamp				Spring clamp			
		UL 94 V0							
Wire size	Solid wire	0.2 - 4 mm <sup>2</sup> (24-12 AWG)				0.2-2.5 mm <sup>2</sup> (24-12 AWG)			
	Stranded wire	0.22 - 2.5 mm <sup>2</sup> (24-12 AWG)							
Rated wire size		2.5 mm <sup>2</sup> (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 for 12 V DC) , CE (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.							

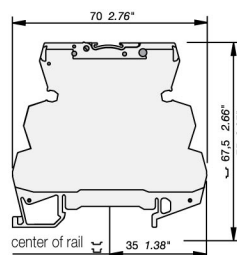
6

<sup>1)</sup> 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.

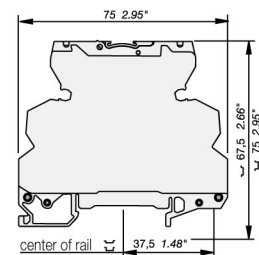


	DC12	AC12	DC13	AC15
24 V	6 A	6 A	1 A	3 A
110/120 V	0.3 A	6 A	0.2 A	3 A
220/230 V	0.2 A	6 A	0.1 A	3 A

### Dimensional drawings



Screw clamp module



Spring clamp module

# Interface relays, R600

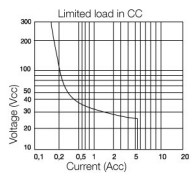
## Technical information

### Technical data

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

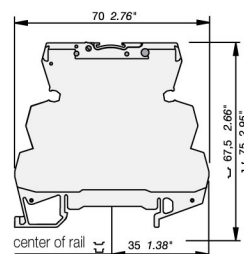
	RB 121				RB 121 A				
<b>Relay characteristics coil</b>									
Rated voltage: +20%, -15% on DC ; 10%, -10% on AC	5 V DC	12 V DC	24 V DC	24 VAC/DC	48 VAC/DC	60 V AC/DC	115 V AC/DC	230 V AC/DC	$\pm 10\%$ on AC $\pm 10\%$ -15% on DC
Frequency	50/60 Hz								
Power	0.2 W	0.2 W	0.28 W	0.24 W	0.33 W	0.54 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								
<b>Relay characteristics contact</b>									
Type	1 SPDT								
Voltage switching range min./max.	5 V / 250 V AC								
Current switching range min./max.	1 mA / 6 A								
Load switching range	0.05 VA / 1500 VA (ohmic load)								
Number of on-load operations	10 <sup>5</sup> on AC15								
Number of off-load operations	10 <sup>7</sup>								
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 <sup>1)</sup>							
<b>Other characteristics</b>									
Body material	grey	Screw clamp				Spring clamp			
Wire size	Solid wire	0.2 - 4 mm <sup>2</sup> (24-12 AWG)				0.2-2.5 mm <sup>2</sup> (24-12 AWG)			
	Stranded wire	0.22 - 2.5 mm <sup>2</sup> (24-12 AWG)							
Rated wire size		2.5 mm <sup>2</sup> (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		UL US (pending for 24 V DC), CE (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.							

<sup>1)</sup> 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.

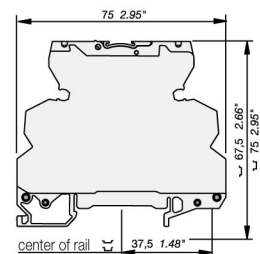


	DC12	AC12	DC13	AC15
24 V	6 A	6 A	1 A	3 A
110/120 V	0.3 A	6 A	0.2 A	3 A
220/230 V	0.2 A	6 A	0.1 A	3 A

### Dimensional drawings



Screw clamp module





Spring clamp module





# Interface relays, R600

## Technical information

Interface relays  
R600 & R500 Range

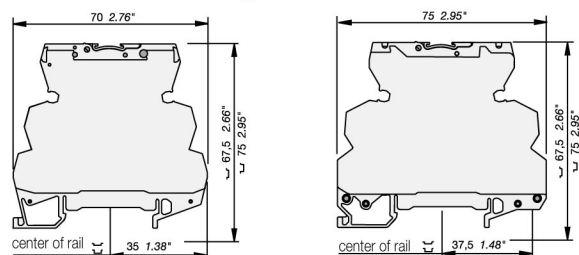
### Technical data

-  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			
<b>Relay characteristics coil</b>											
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					
<b>Relay characteristics contact</b>											
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 <sup>5</sup> on AC15					
Number of off-load operations						10 <sup>7</sup>					
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 <sup>1)</sup>					
<b>Other characteristics</b>											
Body material		grey				UL 94 V0					
		Solid wire		0.2 - 4 mm <sup>2</sup> (24-12 AWG)				0.2-2.5 mm <sup>2</sup> (24-12 AWG)			
Wire size		Stranded wire				0.22 - 2.5 mm <sup>2</sup> (24-12 AWG)					
						2.5 mm <sup>2</sup> (12 AWG)					
Rated wire size						9 mm (0.354 in)					
Wire stripping length						3.5 mm (0.137 in)					
Recommended screwdriver						IP20 NEMA1					
Recommended torque						0.4-0.6 Nm (3.5-5.3 lb.in)					
Approvals						  (pending),  , 					
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.					

<sup>1)</sup> 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.

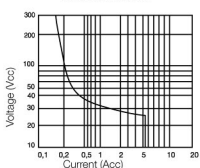
### Dimensional drawings



Screw clamp module

Spring clamp module

Limited load in CC



	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

# Interface relays, R600

## Technical information

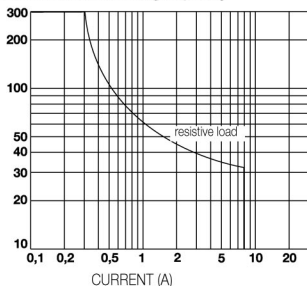
### Technical data

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

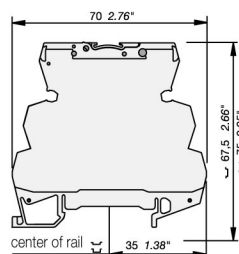
		RB ... 122A				
<b>Relay characteristics coil</b>						
Rated voltage: +20%, -15% on DC ; 10%, -10% on AC		24 V AC/DC	48 V AC/DC	60 V AC/DC	115 V AC/DC	230 V AC/DC ± 10% on AC ± 10%-15% on DC
Frequency		50/60 Hz				
Power		0.48 W	0.62 W	0.96 W	0.58 W	1.15 W
Rated current		20 mA	13 mA	16 mA	5 mA	5 mA
Drop-out voltage at 20°C		5.4 V	8.8 V	8.8 V	20 V	10 V
Status device		green LED				
<b>Relay characteristics contact</b>						
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 <sup>5</sup>				
Number of off-load operations		2 x 10 <sup>7</sup>				
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 <sup>1)</sup>				
<b>Other characteristics</b>		<b>Screw clamp</b>		<b>Spring clamp</b>		
Body material	grey	UL 94 V0				
Wire size	Solid wire	0.2 - 4 mm <sup>2</sup> (24-12 AWG)		0.2-2.5 mm <sup>2</sup> (24-12 AWG)		
	Stranded wire	0.22 - 2.5 mm <sup>2</sup> (24-12 AWG)				
Rated wire size		2.5 mm <sup>2</sup> (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 for 12 V DC) , CE (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.				

<sup>1)</sup> 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.

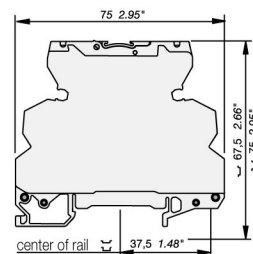
Max. DC load breaking capacity



### Dimensional drawings



Screw clamp module



Spring clamp module

# Interface relays, R500 Selection



## R500 series

It is our range offering pluggable functions

- Spacing : 5.08 mm (the smallest in the market)
- Wire size : 2.5 mm<sup>2</sup> (4 mm<sup>2</sup> 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

Reference code	Catalog number
D 2,5/5-R121-24VDC	1SNA645047R0000
D 2,5/5-R121L-24VDC	1SNA645547R0200
D 2,5/5-R121AL-24VAC/DC	1SNA645021R2600
D 2,5/5-R121AL-48VAC/DC	1SNA645521R2000
D 2,5/5-R121BL-110VAC	1SNA645049R1200
D 2,5/5-R121BL-230VAC	1SNA645549R1400

### 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	■					

# Interface relays, R500

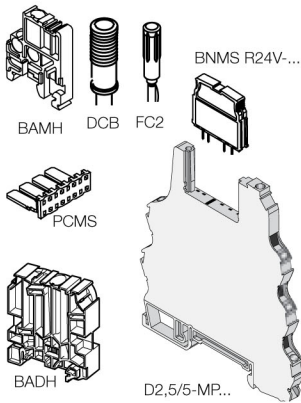
## Ordering details

6



R500

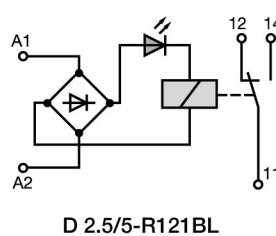
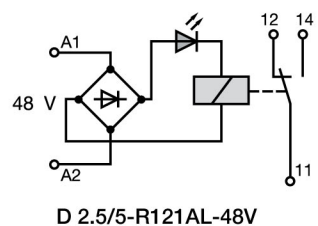
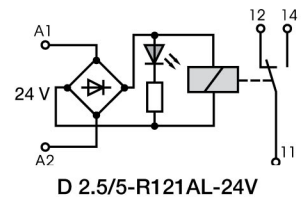
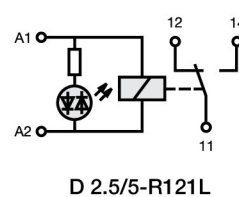
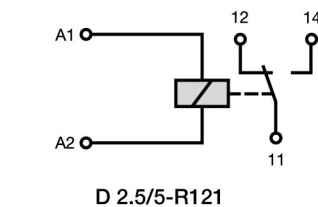
Description of R500 Relay	Reference code	Catalog number	Pkg qty	Weight (1 pce) kg (lb)
☐ Relay module 1 SPDT high level	D 2,5/5-R121-24VDC	1SNA607217R0200	10	0,032 (0,071)
	D 2,5/5-R121L-24VDC	1SNA607201R1300		
	D 2,5/5-R121AL-24VAC/DC	1SNA607231R0000		0,04 (0,088)
☐ Relay module with LED 1 SPDT high level	D 2,5/5-R121AL-48VAC/DC	1SNA607232R0100		
	D 2,5/5-R121BL-110VAC	1SNA607264R1100		
	D 2,5/5-R121BL-230VAC	1SNA607265R1200		



R500 Accessories	Reference code	Catalog number	Pkg qty	Weight (1 pce) kg (lb)
High end stop	BAMH 9,1 mm	011483600	50	
	BAMH V0 9,1 mm	019483601		
	BADH 12 mm	011690027		
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	4	
Plug relay 24 V 1 SPDT 1 mA to 6 A	BNMS R24V-2	1SNA031847R1300		
Test device blue	DCB <sup>1)</sup>	1SNA105028R2100	10	
Test plug DIA. 2 mm	FC2	000786526		
Marking method	RC55	see marking		

<sup>1)</sup> Only on top decks

### Connection diagrams



# Interface relays, R500

## Technical information

Interface relays  
R600 & R500 Range

### 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	
<b>Relay characteristics coil</b>								
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 <sup>5</sup> on AC15								
Number of off-load operations	10 x 10 <sup>7</sup>								
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 mm <sup>2</sup> (24-12 AWG)
	Stranded wire	0.22 - 2.5 mm <sup>2</sup> (24-12 AWG)
Rated wire size		2.5 mm <sup>2</sup> (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		 (pending), 
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

### Dimensional drawings

