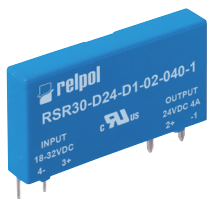




# RSR30

solid state relays, miniature



- DC or AC random-on switching • DC control input
- TTL and CMOS drive compatible
- Triac (AC) or MOSFET (DC) output • Load current 1...4 A
- Load voltage 24, 48, 100 V DC or 240 V AC
- Galvanic separation
- RC protection (AC: built-in resistor, capacitor)
- For PCB and plug-in sockets
- Recognitions, certifications, directives: RoHS,  

## Applications

Factory, office and household appliances, light systems, temperature and industrial automatic control systems.



## Basic technical data

Load voltage: 24 V DC, 48 V DC, 100 V DC, 240 V AC

Control input: DC

Max. load current: 1 A, 2 A, 2,5 A, 4 A

Type		DC switching	AC random-on
Load voltage	Control voltage	Max. load current	
		1 A	2 A
100 V DC	5 V DC	<b>RSR30-D05-D1-24-010-1</b>	
	12 V DC	<b>RSR30-D12-D1-24-010-1</b>	
	24 V DC	<b>RSR30-D24-D1-24-010-1</b>	
	48 V DC	<b>RSR30-D48-D1-24-010-1</b>	
240 V AC	5 V DC		<b>RSR30-D05-A1-24-020-1</b>
	12 V DC		<b>RSR30-D12-A1-24-020-1</b>
	24 V DC		<b>RSR30-D24-A1-24-020-1</b>

Type		DC switching	DC switching
Load voltage	Control voltage	Max. load current	
		2,5 A	4 A
24 V DC	5 V DC		<b>RSR30-D05-D1-02-040-1</b>
	12 V DC		<b>RSR30-D12-D1-02-040-1</b>
	24 V DC		<b>RSR30-D24-D1-02-040-1</b>
	48 V DC		<b>RSR30-D48-D1-02-040-1</b>
48 V DC	5 V DC	<b>RSR30-D05-D1-04-025-1</b>	
	12 V DC	<b>RSR30-D12-D1-04-025-1</b>	
	24 V DC	<b>RSR30-D24-D1-04-025-1</b>	
	48 V DC	<b>RSR30-D48-D1-04-025-1</b>	

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## Input circuit

DC switching

	RSR30-D05-D1-...	RSR30-D12-D1-...
Rated voltage	5 V DC	12 V DC
Control voltage range	3...10 V DC	7...20 V DC
Release voltage	1,8 V DC	3,6 V DC
Max. control current	12 mA	10 mA
Input resistance	0,32 k $\Omega$	1,07 k $\Omega$

## Input circuit


DC switching

	RSR30-D24-D1-...	RSR30-D48-D1-...
Rated voltage	24 V DC	48 V DC
Control voltage range	18...32 V DC	38...58 V DC
Release voltage	8,3 V DC	8,3 V DC
Max. control current	7,7 mA	4,4 mA
Input resistance	3,0 k $\Omega$	10,8 k $\Omega$

## Output circuit

DC switching

	RSR30-D05-D1-24-010-1 RSR30-D12-D1-24-010-1 RSR30-D24-D1-24-010-1 RSR30-D48-D1-24-010-1	RSR30-D05-D1-04-025-1 RSR30-D12-D1-04-025-1 RSR30-D24-D1-04-025-1 RSR30-D48-D1-04-025-1	RSR30-D05-D1-02-040-1 RSR30-D12-D1-02-040-1 RSR30-D24-D1-02-040-1 RSR30-D48-D1-02-040-1
Rated load current	0,4 A	1 A	2 A
Max. load current	1 A	2,5 A	4 A
Rated load voltage (rest condition)	100 V DC	48 V DC	24 V DC
Load voltage range	0...180 V DC	0...60 V DC	0...32 V DC
Non-repetitive peak voltage (rest condition)	180 V DC	100 V DC	60 V DC
Non-repetitive surge current (operating state)	6 A	6 A	6 A
Max. off-state leakage current (rest condition)	1 mA	1 mA	1 mA
Max. on-state voltage drop (operating state)	0,6 V DC	0,4 V DC	0,24 V DC
Min. load current (operating state)	1 mA	1 mA	1 mA
Resistance in operating state	1,5 $\Omega$	0,16 $\Omega$	0,12 $\Omega$
Peak power dissipation	600 W	600 W	600 W
Switching frequency	10 Hz	10 Hz	10 Hz
Max. voltage of suppressor operation	180 V DC	60 V DC	36 V DC
Maximum turn-on time (at rated voltage)	0,05 ms	0,05 ms	0,05 ms
Maximum turn-off time (at rated voltage)	0,6 ms	0,6 ms	0,6 ms
Dielectric strength	input - output: 2 500 V <sub>rms</sub> 50/60 Hz	input - output: 3 750 V <sub>rms</sub> 50/60 Hz	input - output: 3 750 V <sub>rms</sub> 50/60 Hz
Ambient temperature (non-condensation and/or icing)	storage: -25...+100 °C operating: -20...+80 °C (+55 °C rated value)	storage: -25...+100 °C operating: -20...+80 °C (+55 °C rated value)	storage: -25...+100 °C operating: -20...+80 °C (+55 °C rated value)

 Data given for ambient temperature  $\leq 20$  °C. Above 20 °C the maximum current decreases - see "Thermal derating curve", page 4.

# RSR30

solid state relays, miniature

## Input circuit

AC random-on

	RSR30-D05-A1-...	RSR30-D12-A1-...	RSR30-D24-A1-...
Rated voltage	5 V DC	12 V DC	24 V DC
Control voltage range	3...10 V DC	7...20 V DC	18...32 V DC
Release voltage	1 V DC	1 V DC	1 V DC
Max. control current	12 mA	10 mA	7,7 mA
Input resistance	0,3 k $\Omega$	1,01 k $\Omega$	3,0 k $\Omega$

## Output circuit ❶

AC random-on

	RSR30-D05-A1-24-020-1 RSR30-D12-A1-24-020-1 RSR30-D24-A1-24-020-1
Rated load current	1 A
Max. load current	2 A
Rated load voltage (rest condition)	240 V AC
Load voltage range	12...280 V AC
Non-repetitive peak voltage (rest condition)	600 V AC
Non-repetitive surge current (operating state)	80 A
Max. off-state leakage current (rest condition)	1,5 mA
Max. on-state voltage drop (operating state)	1,2 V DC
Min. load current (operating state)	50 mA
Maks. szybkość dV/dt (off-state) ❷	500 V/ $\mu$ s
Voltage frequency range	47...400 Hz
RC snubber	10 nF 100 $\Omega$
Maximum turn-on time (at rated voltage)	0,1 ms
Maximum turn-off time (at rated voltage)	1/2 cycle + 1 ms
Dielectric strength	input - output: 4 000 Vrms 50/60 Hz
Ambient temperature (non-condensation and/or icing)	storage: -40...+100 °C operating: -20...+80 °C (+55 °C rated value)

❶ Data given for ambient temperature  $\leq 20$  °C. Above 20 °C the maximum current decreases - see "Thermal derating curve", page 4.

❷ Najwyższa wartość „szybkości narastania napięcia w stanie wyłączenia”, która nie powoduje przełączenia ze stanu wyłączenia do stanu włączenia.

## GD699

Plug-in sockets  
for PCB  
for RM699BV, RSR30  
- see page 7



# RSR30

solid state relays, miniature

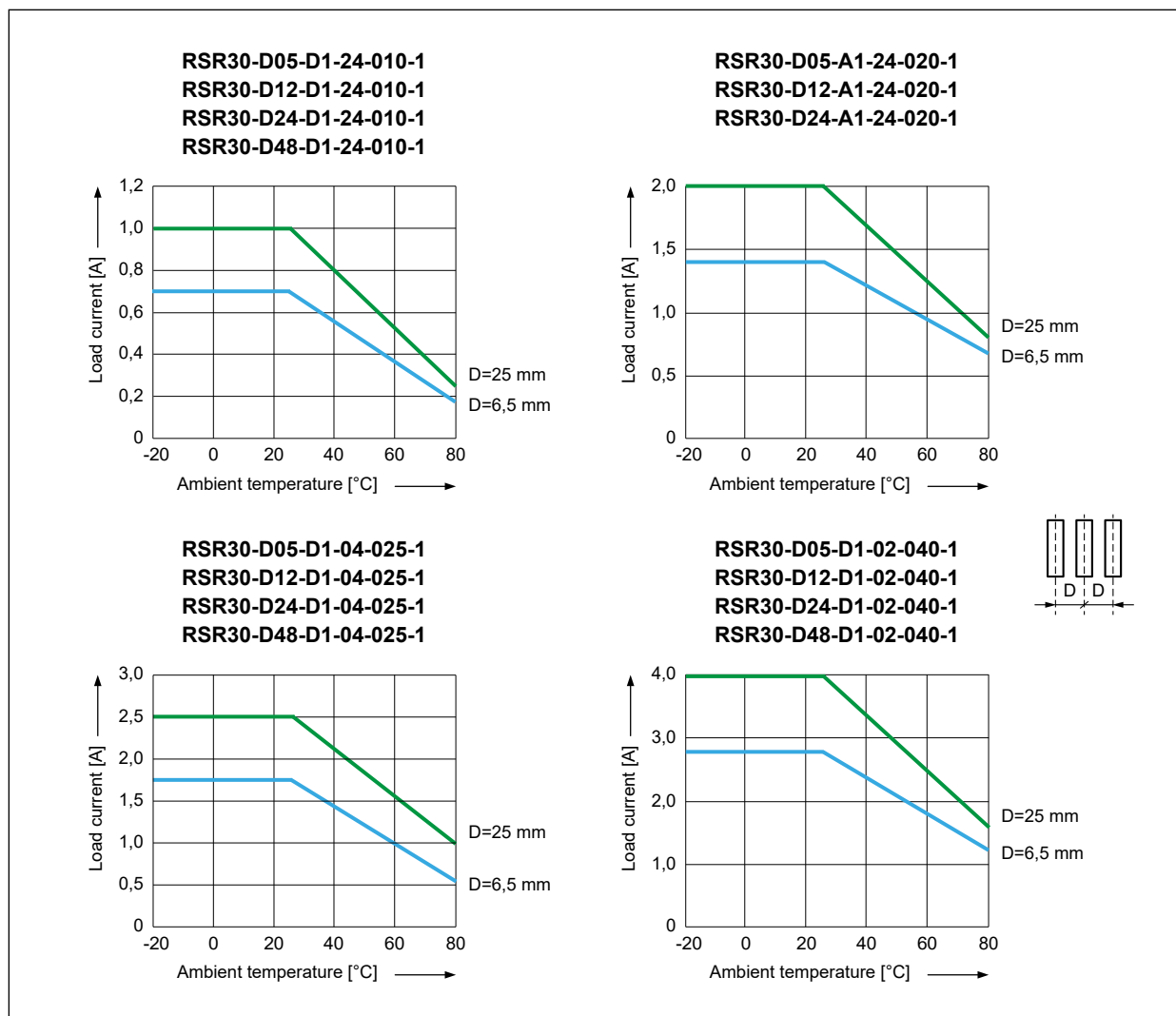
## Mechanical data

	RSR30-...
Dimensions (L x W x H)	28 x 5 x 15 mm
Weight (typical)	4 g
Protection category EN 60529	IP 00
Application	PCB, plug-in sockets
Solder bath temperature	max. 260 °C max. 10 s

## Mounting

Relays **RSR30** are designed for: • direct PCB mounting • plug-in sockets.

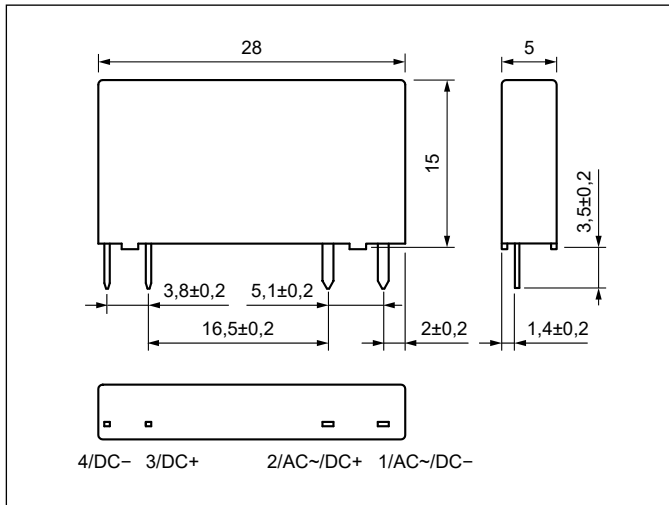
## Characteristics of the capacity



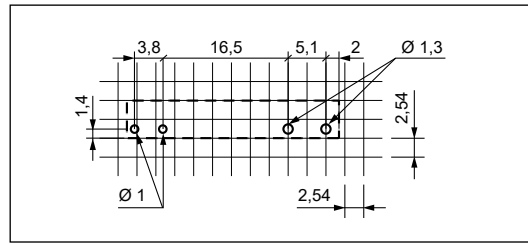
# RSR30

solid state relays, miniature

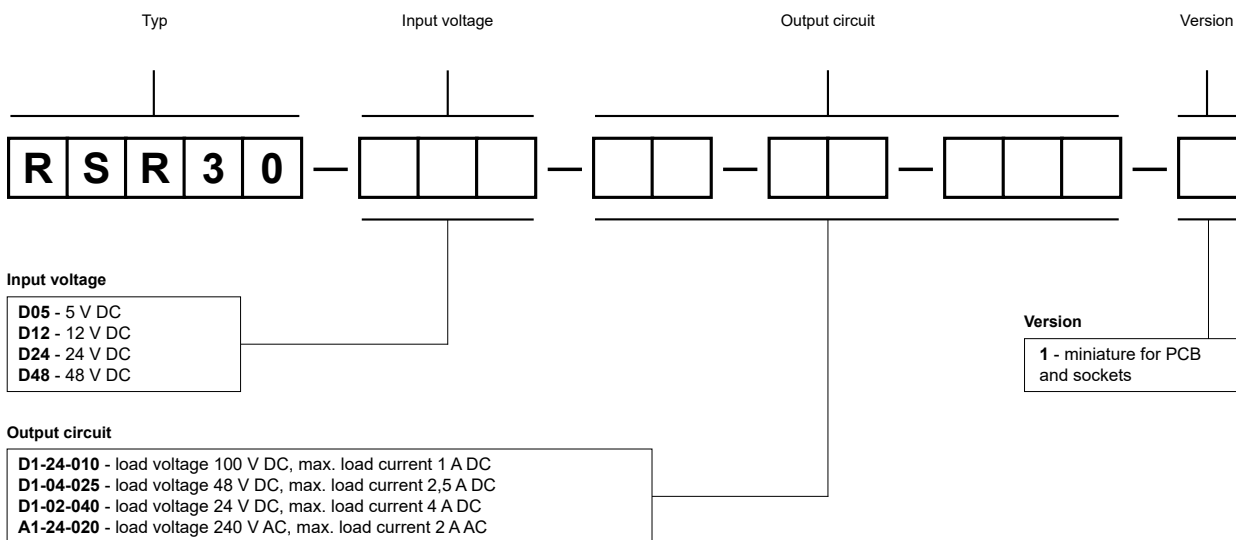
## Dimensions



## Pinout (solder side view)



## Ordering codes



Examples of ordering codes ☺:

- RSR30-D05-D1-24-010-1** relay **RSR30**, miniature for PCB and sockets, DC control, input voltage 5 V DC, load voltage 100 V DC, load current 1 A
- RSR30-D12-D1-04-025-1** relay **RSR30**, miniature for PCB and sockets, DC control, input voltage 12 V DC, load voltage 48 V DC, load current 2,5 A
- RSR30-D48-D1-02-040-1** relay **RSR30**, miniature for PCB and sockets, DC control, input voltage 48 V DC, load voltage 24 V DC, load current 4 A
- RSR30-D24-A1-24-020-1** relay **RSR30**, miniature for PCB and sockets, random-on switching, DC control, input voltage 24 V DC, load voltage 240 V AC (single-phase), load current 2 A

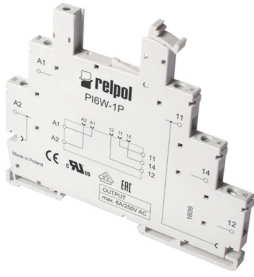
☺ Ordering codes **RSR30** are specified in table "Type" on page 1.

# Sockets and accessories

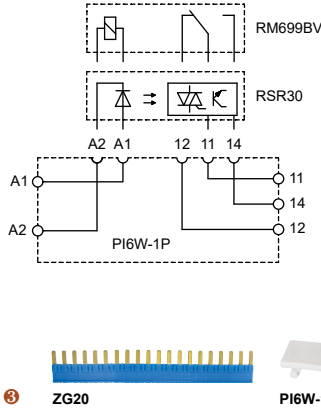
## PI6W-1P ①

For RM699BV, RSR30

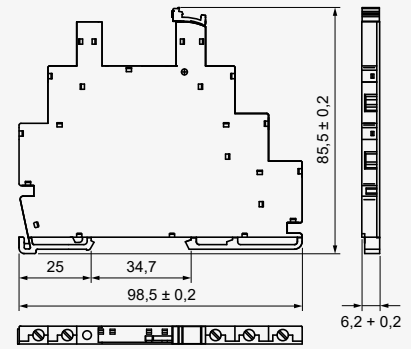
Screw terminals  
Max. tightening moment for the terminal: 0,3 Nm  
35 mm rail mount acc. to EN 60715  
98,5 x 6,2 x 85,5 mm  
One pole  
6 A, 250 V AC



### Connection diagram



### Dimensions



### Accessories ③

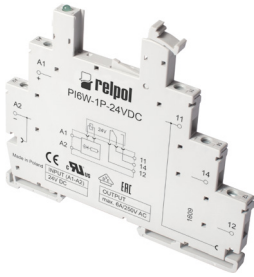
ZG20

PI6W-1246

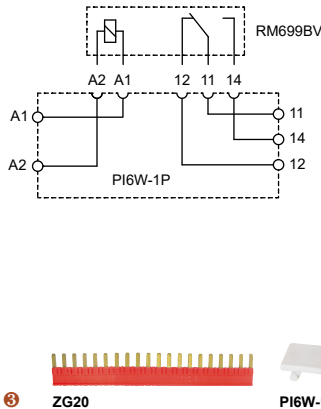
## PI6W-1P ②

For RM699BV

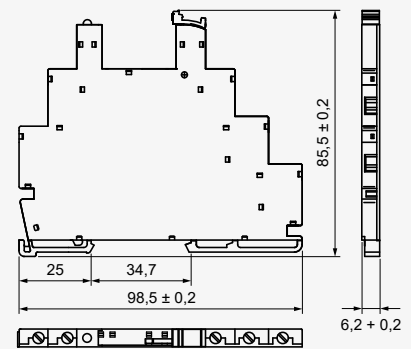
Screw terminals  
Max. tightening moment for the terminal: 0,3 Nm  
35 mm rail mount acc. to EN 60715  
98,5 x 6,2 x 85,5 mm  
One pole  
6 A, 250 V AC



### Connection diagram



### Dimensions



### Accessories ③

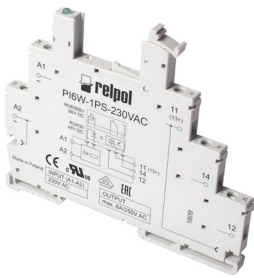
ZG20

PI6W-1246

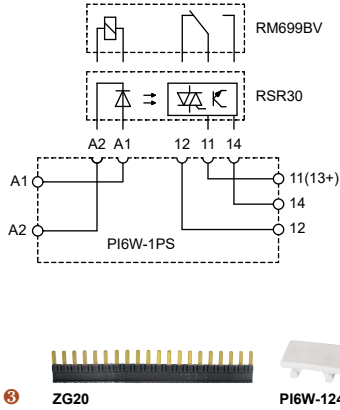
## PI6W-1PS ②

For RM699BV, RSR30

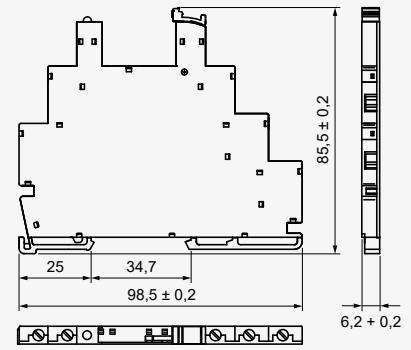
Screw terminals  
Max. tightening moment for the terminal: 0,3 Nm  
35 mm rail mount acc. to EN 60715  
98,5 x 6,2 x 85,5 mm  
One pole  
6 A, 250 V AC



### Connection diagram



### Dimensions



### Accessories ③

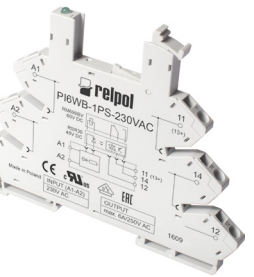
ZG20

PI6W-1246

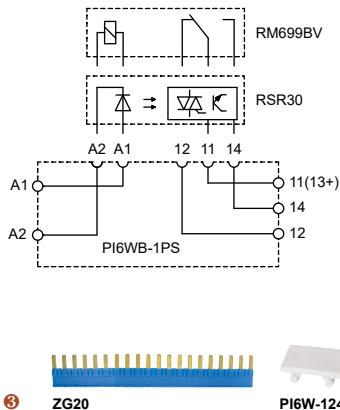
## PI6WB-1PS ②

For RM699BV, RSR30

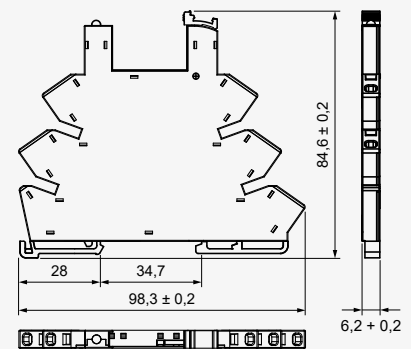
Spring terminals  
35 mm rail mount acc. to EN 60715  
98,3 x 6,2 x 84,6 mm  
One pole  
6 A, 250 V AC



### Connection diagram



### Dimensions



### Accessories ③

ZG20

PI6W-1246

① Sockets without electronic. ② Sockets with electronic PI6W., 6W.: version codes and selection of relays for sockets can be found in the data sheets of interface relays PIR6W., SIR6W. - see [www.repol.com.pl](http://www.repol.com.pl) ③ Colours of strips: ZG20-1, JB20-1 red; ZG20-2, JB20-2 black; ZG20-3, JB20-3 blue.

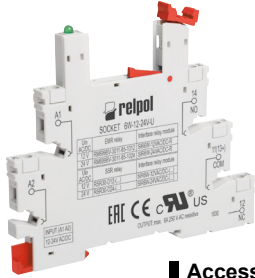
# Sockets and accessories

## 6W

For RM699BV, RSR30

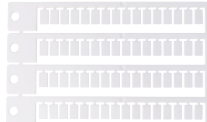
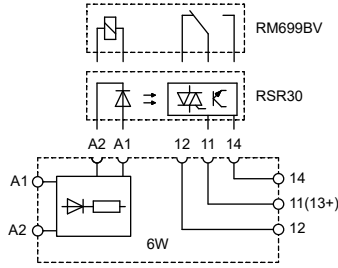
Screw terminals; Max. cross section of the cables:  
1 x 2,5 mm<sup>2</sup> / 2 x 1,5 mm<sup>2</sup>  
Stripping length: 7 mm  
Max. tightening moment for the terminal: 0,5 Nm

35 mm rail mount acc. to EN 60715  
88,6 x 6,2 x 76 mm  
One pole  
6 A, 250 V AC



Accessories

### Connection diagram



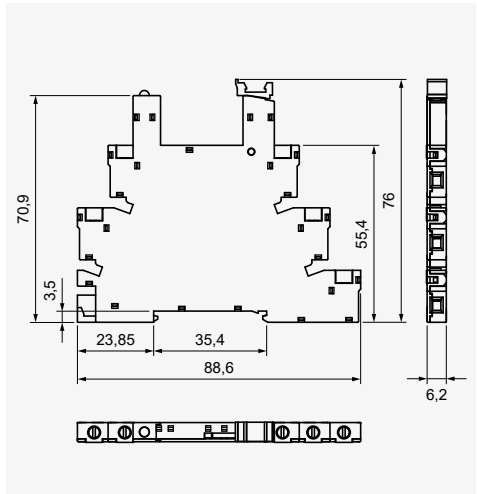
MP6-C

JB20



6W-SEP

### Dimensions

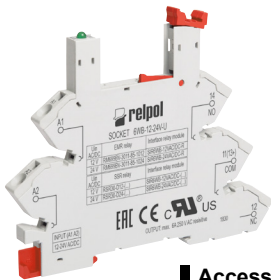


## 6WB

For RM699BV, RSR30

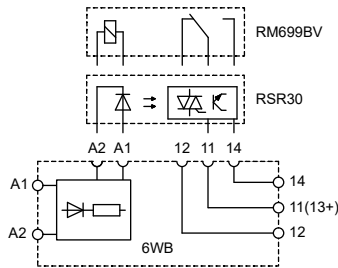
Spring terminals  
Max. cross section of the cables: 1 x 2,5 mm<sup>2</sup>  
Stripping length: 7 mm

35 mm rail mount acc. to EN 60715  
95 x 6,2 x 76,6 mm  
One pole  
6 A, 250 V AC



Accessories

### Connection diagram



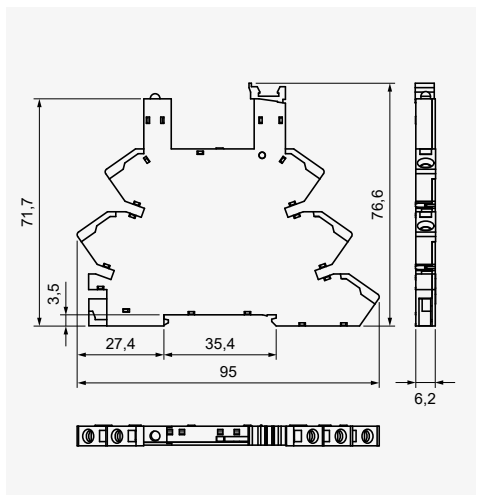
MP6-C

JB20



6W-SEP

### Dimensions



## GD699

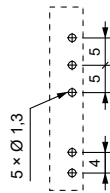
For RM699BV, RSR30

For PCB  
33 x 6 x 37,21 mm  
One pole, 5 mm pinout  
6 A, 250 V AC



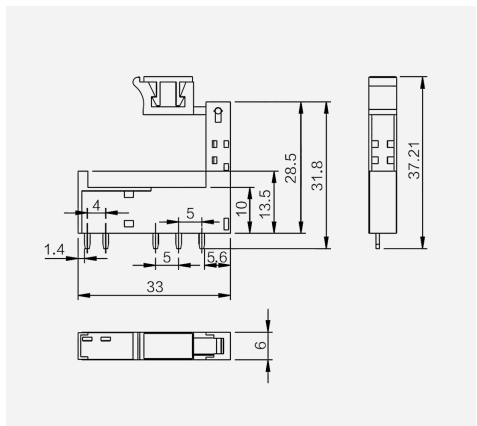
Accessories

### Pinout



MP6-C

### Dimensions



② Sockets with electronic PI6W., 6W.: version codes and selection of relays for sockets can be found in the data sheets of interface relays PIR6W., SIR6W. - see [www.repol.com.pl](http://www.repol.com.pl) ③ Colours of strips: ZG20-1, JB20-1 red; ZG20-2, JB20-2 black; ZG20-3, JB20-3 blue.