

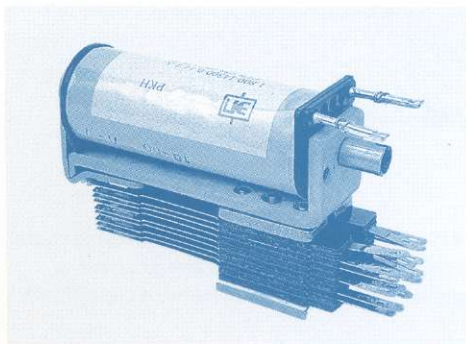


public corporation  
«ELEKTROPRIBOR» FACTORY

## CATALOGUE







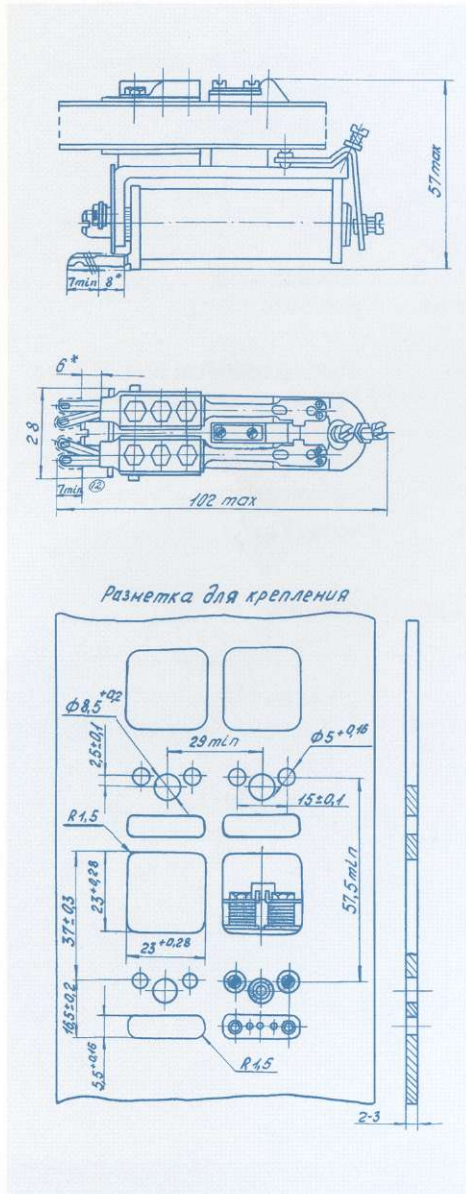
# PKH

## OPEN TYPE RELAY

### ДЫ 0.450.002У

Electromagnetic low-current open-type two-position relay with one or two contact groups, combining make contacts, break contacts and switching contacts, is intended for electrical switching of direct and alternating current.

The relay is produced according to technical requirements ДЫ 0.450.002У.



### Features:

Reliability  
1 or 2 contact groups for making, breaking and switching; smooth switching  
Number of windings is from 1 to 3  
Electric contacts' resistance is maximum 0,5 Ohm  
Maximum mass is 390 g

### Service conditions:

Ambient air temperature	from - 50 to + 60 °C
Relative humidity	up to 98% at + 20 °C
Atmospheric pressure	from 84 to 107 kPa
Vibration strain	in the frequency range of 5-35 Hz with acceleration of 20 m/s <sup>2</sup> (2 g) repeated impacts from 2000 with acceleration of up to 150 m/s <sup>2</sup> (15 g)
Impact load	

### Specifications:

Operating rated voltage, V	from 0,6 to 200
Winding resistance, Ohm	from 5 to 31000
Actuation time, ms, max	from 15 to 150
Voltage accepted by insulation between current-carrying circuits, current-carrying circuits and case (effective value), V:	
in normal climatic conditions	500
in conditions of high humidity	300
Insulation resistance between current-carrying circuits, current-carrying circuits and case, MOhm, min:	
in normal climatic conditions	200
in conditions of high humidity	10
at high temperature	50

### Wear resistance:

Switching range		Load type	Current type	Switching frequency, Hz	Wear resistance, max
Current, A	Voltage, V				
0,1-2,0	6-36	active	direct	5	10 <sup>5</sup>
0,01-0,2	12-300	active	direct	5	10 <sup>5</sup>
0,05-0,15	6-36	$\tau \leq 15$ ms	direct	1	10 <sup>5</sup>
0,15-1,0	6-36	$\tau \leq 15$ ms	direct	1	10 <sup>5</sup>
0,1-0,2	6-220	active	alternating 50-400 Hz	1	10 <sup>5</sup>
0,2-1,6	6-36	active	50-400 Hz	1	10 <sup>5</sup>





# P3C 10

## DUST- AND MOISTURE-PROOF RELAY PC 0.452.049 TY

Electromagnetic low-current dust- and moisture-proof direct current relay with switching and make contacts is intended for electrical switching of direct current.

P3C 10 relay is produced according to technical requirements PC 0.452.049 TY.

### Features:

1 contact group for making or switching	
1 winding	
Switching current from $10^{-6}$ to 2 A	
Contacts resistance, Ohm, max	
Sr Pd Mg 20-0,3	1,5
Au 999,9	0,5
Mass, g, max	7,5

### Service conditions:

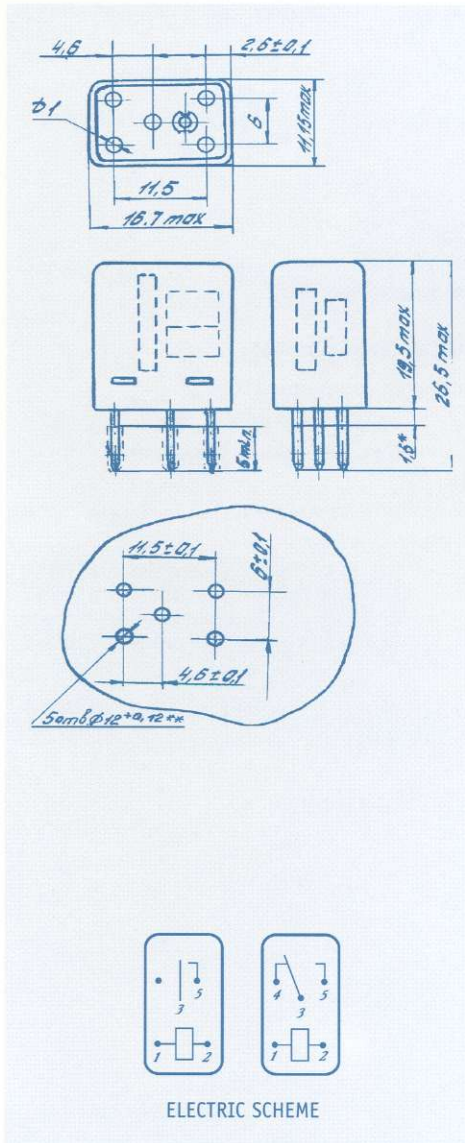
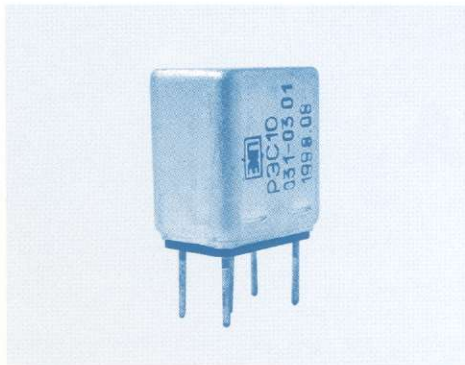
Ambient air temperature	from - 60 to + 100°C
Relative humidity	up to 98% at the temperature of + 35°C (for 72 hours max)
Vibration strain frequency in the frequency range of up to 1500 Hz	with acceleration of up to 120 m/s <sup>2</sup> (12 g)
Impact load:	
single impacts	9 with acceleration of up to 3000 m/s <sup>2</sup> (300 g)
repeated impacts	from 1000 to 10000 s
with acceleration	from 1000 (100 g) to 350 m/s <sup>2</sup> (35 g)
Standing linear accelerations	from 250 (25 g) to 800 m/s <sup>2</sup> (80 g)

### Specifications:

Operating rated current, A	12; 13; 17
Operating rated voltage, V	4,0; 5,2; 8,5; 14; 12,5; 27; 32
Winding resistance, Ohm	21; 45; 120; 630; 1600; 4500
Actuation time, ms, max	from 5 to 8
Release time, ms, max	from 2,5 to 4,5
Voltage accepted by insulation between current-carrying circuits, current-carrying circuits and case (effective value), V:	
in normal climatic conditions	500
in conditions of high humidity	250
at low atmospheric pressure	220
Insulation resistance between current-carrying circuits, current-carrying circuits and case, MOhm:	
in normal climatic conditions	200
in conditions of high humidity	10
at high temperature	20
Overall dimensions without outputs, mm	11,5x16,7x19

### Wear resistance:

Switching range		Load type	Current type	Switching frequency, Hz	Wear resistance, max
Current, A	Voltage, V				
0,10-2,0	6-30	active	direct	5	from $2,5 \times 10^4$ to $10^5$
0,20-0,50	6-115	active	50-1100 Hz	5	$10^4$
0,05-0,15	6-30	$\tau < 15$ ms	direct	5	$2 \times 10^4$
0,15-1,0	6-30	$\tau < 15$ ms	direct	1	$2 \times 10^4$
0,10-0,25	6-114	$\cos \varphi > 0,3$	50-1100 Hz	1,25	$4 \times 10^4$
0,8-1,0	60	active	50-1100 Hz	5	$2 \times 10^4$
0,10-0,30	6-250	active	direct	5	$4 \times 10^4$
Switching of maximum 5 windings of P3C 10 relay		inductive	direct	5	$10^4$
$5 \times 10^{-6}$ - $2 \times 10^{-1}$	0,05-60	active	direct	5	from $10^5$ to $2 \times 10^3$



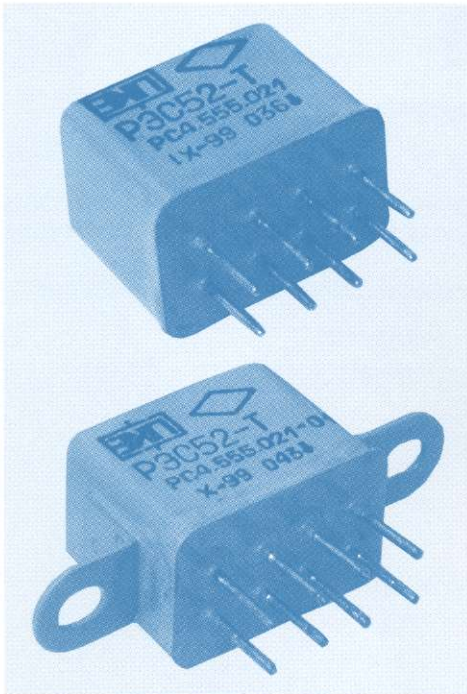


# P3C 52

# P3C 52A

## SEALED RELAY

ЯЛ 0.455.012 ТУ



Electromagnetic sealed direct current relay with two switching contact groups is intended for electrical switching of direct and alternating current. The relay is produced according to technical requirements ЯЛ 0.455.012 ТУ.

### Features:

Possibility of application both in printed wiring and point-to-point wiring  
1 winding  
Switching current  
from  $5 \times 10^{-6}$  to 1 A - P3C 52  
from  $5 \times 10^{-6}$  to 1,6 A - P3C 52A  
Contacts resistance is maximum 0,5 Ohm  
Mass (with angles for fastening) is maximum 8,5 g

### Service conditions:

Ambient air temperature	from - 60 to + 100°C
Relative humidity	up to 98% at the temperature of + 35°C
Atmospheric pressure	from $13,3 \times 10^{-7}$ to $30,4 \times 10^{-4}$ Pa
Vibration strain in the frequency range of up to 3000 Hz	with acceleration of up to $200 \text{ m/s}^2$ (20 g)
Impact load:	
single impacts	9 with acceleration of up to $5000 \text{ m/s}^2$ 600 with acceleration of $1500 \text{ m/s}^2$
repeated impacts	4000 with acceleration of up to $750 \text{ m/s}^2$ 10000 with acceleration of up to $400 \text{ m/s}^2$
Linear acceleration	up to $500 \text{ m/s}^2$ (50g)
Acoustic noise - the level of sound pressure is maximum 112 Pa (135 dB) in the frequency range from 50 to 10000 Hz	

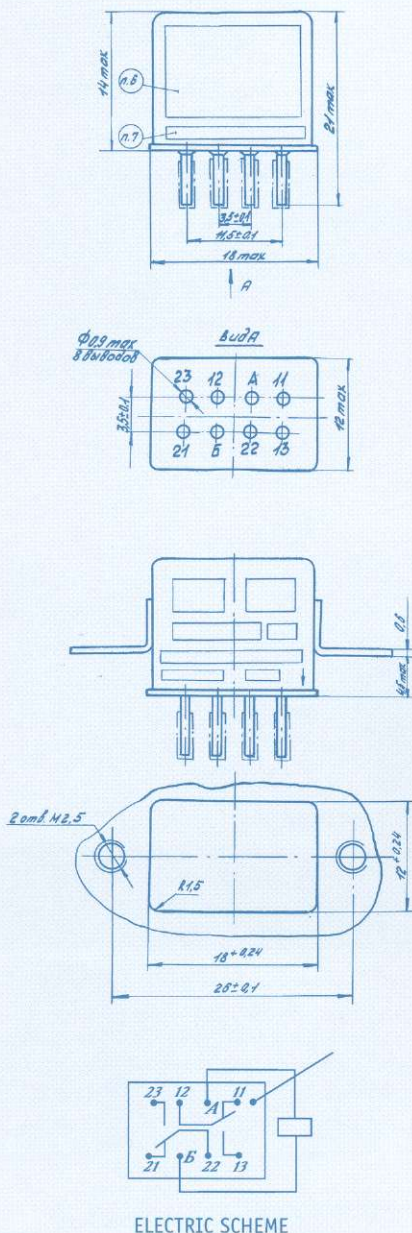
### Specifications:

Operating rated voltage, V	27
Winding resistance, Ohm	830
Actuation time, ms, max	8
Release time, ms, max	5
Voltage accepted by insulation between current-carrying circuits, current-carrying circuits and case (effective value), V:	
in normal climatic conditions	from 180 to 36
in conditions of high humidity	from 180 to 215
at low atmospheric pressure	180
Insulation resistance between current-carrying circuits, current-carrying circuits and case, MOhm:	
in normal climatic conditions	200
in conditions of high humidity	10
Overall dimensions without outputs, mm	11,5x16,7x19
Service life, min	P3C 52 - 12 years P3C 52A - 20 years

Requirements to leak tightness:

Leakage rate of indicator gas is maximum:

666,5x10<sup>-8</sup> m<sup>3</sup> Pa s<sup>-1</sup> (5x10<sup>-2</sup> l.mcm.m.c.s<sup>-1</sup>) - for P3C 52, P3C 52-T  
666,5x10<sup>-11</sup> m<sup>3</sup> Pa s<sup>-1</sup> (5x10<sup>-5</sup> l.mcm.m.c.s<sup>-1</sup>) - for P3C 52 A, P3C 52 A-T



## Wear resistance PЭC 52:

Switching range		Load type	Current type	Switching frequency, Hz	Wear resistance, max
Current, A	Voltage, V				
10 <sup>-2</sup> -1	2-30	active	direct	3	10 <sup>5</sup>
5x10 <sup>-6</sup> -10 <sup>-2</sup>	0,05-30	active	direct alternating 50-10000 Hz	10	10 <sup>6</sup>
10 <sup>-2</sup> -0,5	2-30	active	50-10000 Hz	3	10 <sup>5</sup>
10 <sup>-3</sup> -0,5	2-30	$\tau \leq 0,015$ c	direct	3	0,5x10 <sup>5</sup>
10 <sup>-3</sup> -0,5	2-30	cos $\phi$ >0,5	alternating 50-10000 Hz	3	0,5x10 <sup>5</sup>
0,01-0,5	6-115	active	50-10000 Hz	1	5x10 <sup>3</sup>

## Wear resistance PЭC 52 A:

Switching range		Load type	Current type	Switching frequency, Hz	Number of switching cycles	
Current, A	Voltage, V				total	including at +100°C
от 10 <sup>-2</sup> до 1,6	2-30* <sup>1</sup>	active	direct	3	10 <sup>5</sup>	0,5x10 <sup>5</sup>
от 5x10 <sup>-6</sup> до 10 <sup>-2</sup>	0,05-30* <sup>1</sup>	active	alternating 50-10000 Hz direct	10	10 <sup>6</sup>	0,5x10 <sup>6</sup>
от 10 <sup>-2</sup> до 0,5	2-30* <sup>1</sup>	active	alternating 50-10000 Hz	3	10 <sup>5</sup>	0,5x10 <sup>5</sup>
от 10 <sup>-3</sup> до 0,8	2-30* <sup>1</sup>	inductive $\tau \leq 0,015$ ms	direct	3	0,5x10 <sup>5</sup>	0,25x10 <sup>5</sup>
от 10 <sup>-3</sup> до 0,5	2-30* <sup>1</sup>	inductive cos $\phi$ $\geq$ 0,5	alternating 50-10000 Hz	3	0,5x10 <sup>5</sup>	0,25x10 <sup>5</sup>
от 0,01 до 0,5	6-115* <sup>2</sup>	active	alternating 50-10000 Hz	1	5x10 <sup>3</sup>	2,5x10 <sup>3</sup>

Notes:

\*1 – increase of voltage up 35 V permitted with the retained switching power

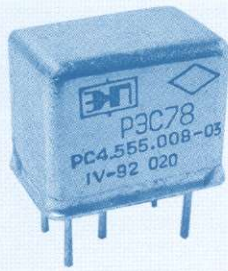
\*2 – effective value of switching voltage



# РЭС 78

## SEALED RELAY

### PC 4.455.008 TY



Electromagnetic sealed relay of direct current with one switching contact is intended for electrical switching of direct current.

The relay is produced according to technical requirements PC 4.455.008 TY.

### Features:

Possibility of application in printed wiring  
1 contact group for switching or making  
1 winding  
Switching current is from  $10^{-6}$  to 5 A  
Contacts resistance is 0,5 - 1 Ohm  
Maximum mass is 8 g

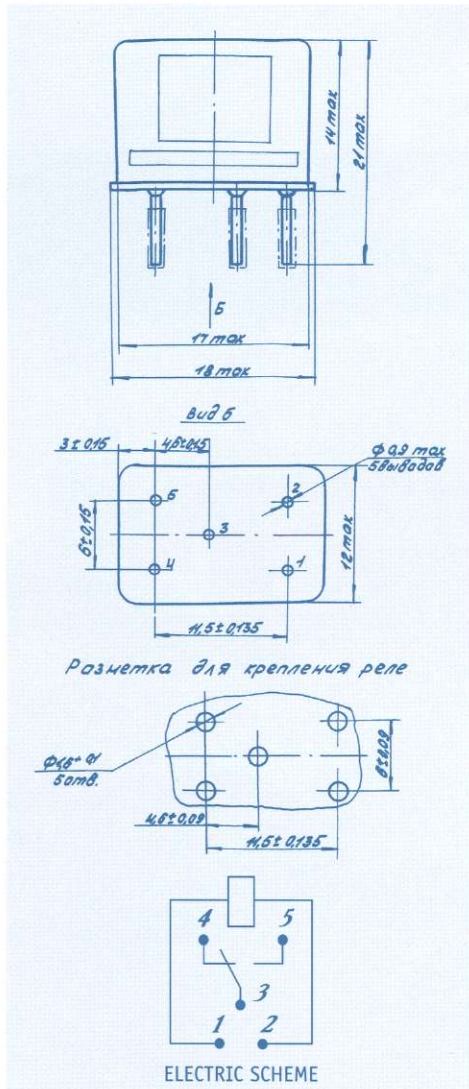
### Service conditions:

Ambient air temperature	from - 60 to + 125°C
Relative humidity	up to 98% at + 35°C
Atmospheric pressure	from $13,3 \times 10^{-4}$ to $30,4 \times 10^{-4}$ Pa
Vibration strain	in the frequency range of up to 3000 Hz with acceleration of up to $200 \text{ m/s}^2$ (20 g)
Impact load:	
single impacts	9 with acceleration of up to $3000 \text{ m/s}^2$ (300 g)
repeated impacts	4000 with acceleration of up to $1000 \text{ m/s}^2$ (100 g) 10000 with acceleration of up to $350 \text{ m/s}^2$ (35 g)
Linear acceleration	up to $1250 \text{ m/s}^2$ (125 g)

### Specifications:

Operating rated current, A	10; 8; 13
Operating rated voltage, V	4,6; 10; 27; 6
Winding resistance, Ohm	22; 45; 120; 630; 1500; 4200
Actuation time, ms, max	from 6 to 8
Release time, ms, max	from 2,5 to 4,5
Voltage accepted by insulation between current-carrying circuits, current-carrying circuits and case (effective value), V:	
in normal climatic conditions	500
in conditions of high humidity	
at low atmospheric pressure	250
Insulation resistance between current-carrying circuits, current-carrying circuits and case, MOhm:	
in normal climatic conditions	250
in conditions of high humidity	10
at high temperature	20
Overall dimensions without outputs, mm	18x12x14

### Wear resistance:



Switching range		Load type	Current type	Switching frequency, Hz	Wear resistance, max
Current, A	Voltage, V				
0,10-5,0	6-30	active	direct	от 1 до 5	from $10^3$ to $5 \times 10^3$
0,01-0,5	6-115 eff	active	alternating 50-1100 Hz	5	$10^5$
0,01-0,25	6-115 eff	$\cos \varphi > 0,3$	50-1100 Hz	1	$5 \times 10^4$
0,5-1,0	6-60 eff	active	50-1100 Hz	5	$2 \times 10^3$
0,01-0,3	6-250	active	direct	5	$10^5$
0,01-1,0	6-34	$\tau < 0,015 \text{ s}$	direct	от 1 до 5	from $2 \times 10^4$ to $10^5$
$10^{-6}-10^{-2}$	0,01-34	active	direct	7	$2 \times 10^6$
$10 \times 10^{-3}-0,1$	1-60	active	direct	7	$10^5$
$5 \times 10^{-3}-0,2$	0,01-34	active	direct	5	$10^4$
$10^{-3}-0,05$	2-10	active	direct	7	$10^6$



# РЭК 88

## SEALED RELAY

(analog of РЭС 54)

### КСИШ. 647115.001 ТУ

Electromagnetic sealed relay of direct current with one or two switching contacts is intended for electrical switching of direct and alternating current with frequency of up to 1100 Hz.

#### Features:

##### Sensitivity

1 or 2 contact groups for switching

1 winding

Switching current is from  $10^{-6}$  to 2 A

Contacts resistance is maximum 0,5 Ohm

Mass (with angles for fastening) is 21 (22) g

#### Service conditions:

Ambient air temperature is from - 60 to + 125°C

Relative humidity is up to 98% at + 35°C

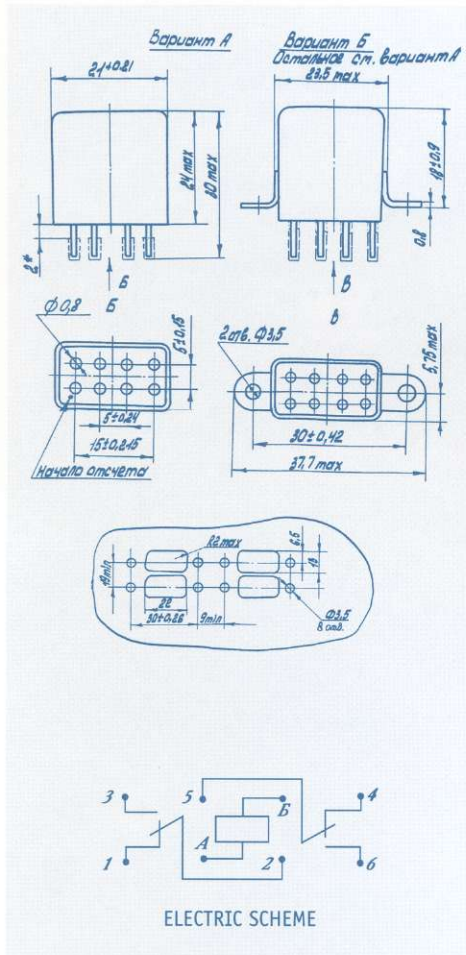
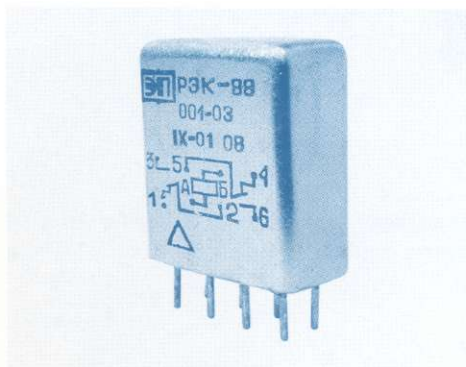
Vibration strain frequency depending on Customer's demand is in the frequency range of up to 3000 Hz with acceleration of up to 25 g

#### Specifications:

Operating rated voltage, V	27
Winding resistance, Ohm	4000
Actuation time, ms, max	12
Voltage accepted by insulation between current-carrying circuits, current-carrying circuits and case (effective value), V:	
in normal climatic conditions	500
in conditions of high humidity	300
at low atmospheric pressure	180
Insulation resistance between current-carrying circuits, current-carrying circuits and case, MOhm:	
in normal climatic conditions	1000
in conditions of high humidity	10
at low atmospheric pressure	20

#### Wear resistance:

Switching range		Load type	Current type	Switching frequency, Hz	Wear resistance, max
Current, A	Voltage, V				
0,01-0,1	6-30	active	direct	5	$10^6$
0,01-0,1	6-30	active	alternating up to 1100 Hz	5	$10^6$
0,05-0,1	30-220	active	direct	5	$10^5$
0,05-0,1	30-220	active	alternating up to 1100 Hz	5	$10^5$
0,1-0,2	12-120	active	alternating up to 1100 Hz	5	$10^5$
0,01-0,5	6-30	inductive $\tau \leq 0,015$ s	direct	1	$10^4$
0,05-0,1	12-120	inductive $\cos\varphi \geq 0,6$	alternating up to 1100 Hz	1	$10^3$
$10^{-6}-10^{-3}$	0,05-10	active	direct	10	$2 \times 10^5$
$10^{-5}-10^{-1}$	0,05-220	active	direct	5	$10^5$
$10^{-6}-10^{-3}$	1-36	active	alternating up to 1100 Hz	5	$10^5$
0,1-0,5	6-30	active	direct	5	$10^5$



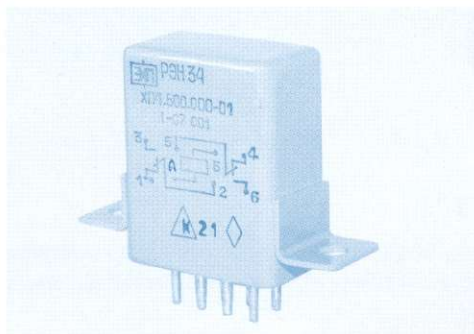


# РЭН-34

## SEALED RELAY

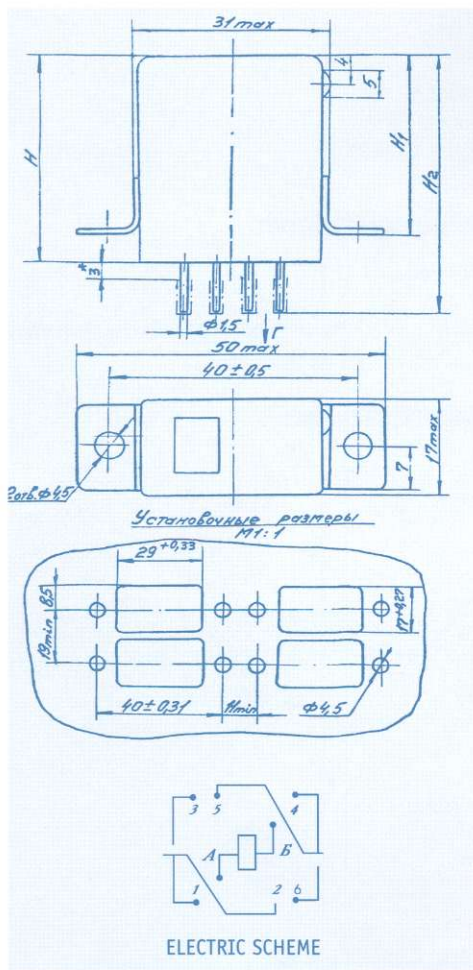
### XIIO.450.000 TY

РЭН-34 electromagnetic low-current sealed relay is intended for electrical switching of direct and alternating current.



### Performance and engineering data:

- Ambient air temperature: from - 60 to + 100°C
- Atmospheric pressure: from 1,3x10 to 306,6 kPa
- Relative humidity: up to 98% at the temperature of + 40°C
- Vibration strength and vibration resistance in the frequency range:
  - from 5 to 50 Hz with displacement amplitude of up to 2,5 mm
  - from 50 to 3000 Hz with acceleration of up to 20 g
- Impact strength:
  - single impacts: 2 impacts with acceleration of up to 500 g  
9 impacts with acceleration of up to 150 g
  - repeated impacts: 4000 impacts with acceleration of up to 50 g
- Impact resistance with acceleration: up to 50 g
- Standing linear accelerations: up to 50 g
- Actuation time: 15 ms max  
Release time: 8 ms min
- Insulation resistance between current-carrying circuits and case should be minimum:
  - in normal climatic conditions: 1000 MOhm
  - in conditions of high humidity: 10 MOhm
- Test voltage (effective value):
  - in normal climatic conditions: 750 V
  - in conditions of high humidity: 300 V
  - at low atmospheric pressure: 250 V
- Time of relay's continuous or total work at normal atmospheric pressure: 100°C, max
- Contact circuit resistance at the stage of delivery: 0,1 Ohm
- Mass: 60 g



### Wear resistance:

Configuration	Switching modes		Load type	Current type	Actuations frequency, Hz, max	Number of switching cycles	
	Current, A	Voltage, V				total	including at max temperature, °C
КСИШ. 647115.009-00	0,2-2	12-34	active	direct	3	5x10 <sup>4</sup>	10 <sup>4</sup>
КСИШ. 647115.009-02	0,2-5	12-115	active	alternating 50-1100 Hz	0,33	10 <sup>4</sup>	2x10 <sup>3</sup>
	2-10	12-30*	active	direct	0,33	10 <sup>4</sup>	2x10 <sup>3</sup>
	0,1-5	12-30*	$\tau \leq 15$ ms	direct	0,33	10 <sup>4</sup>	2x10 <sup>3</sup>
	0,1-0,5	24-250**	active	direct	0,33	10 <sup>4</sup>	2x10 <sup>3</sup>
	0,5-2	50-220**	active	alternating 50-1100 Hz	0,33	10 <sup>4</sup>	2x10 <sup>3</sup>

\* - voltage rise up to 34 V is permissible provided switching power is retained

\*\* - at atmospheric pressure of  $1,3 \times 10^{-7} - 0,67$  kPa the voltage in contacts should not exceed 115 V.

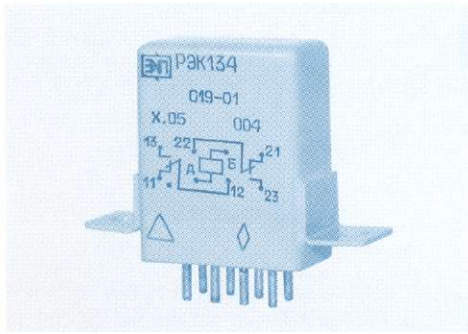
Configuration	Winding resistance, Ohm	Current, mA		Operating voltage, V
		Actuation, max	Release, min	
КСИШ. 647115.009-00	320 <sup>+32</sup> <sub>-32</sub>	40	4	27 <sup>+3</sup> <sub>-3</sub>
КСИШ. 647115.009-02	67 <sup>+7</sup> <sub>-7</sub>	100	10	12 <sup>+1</sup> <sub>-2</sub>



# РЭК-134

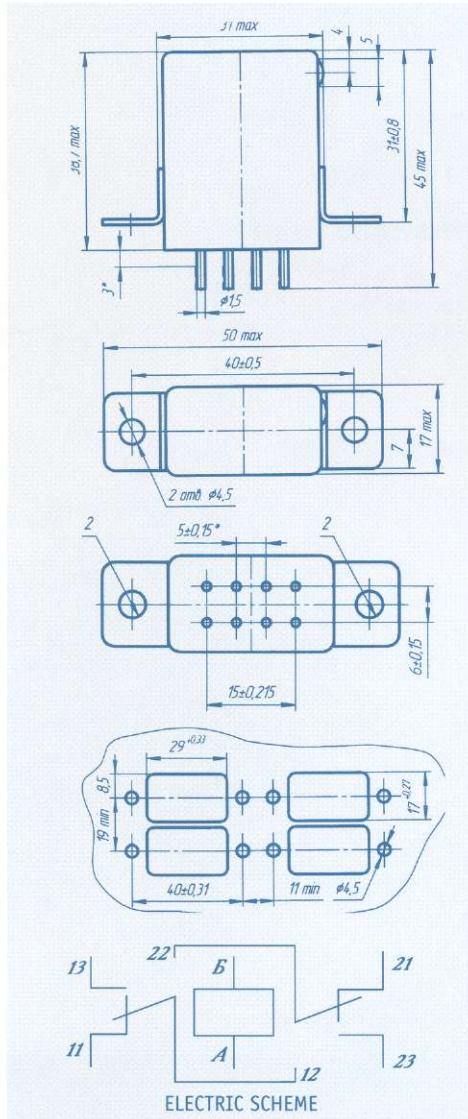
## SEALED RELAY

КСИШ. 647115.019 ТУ



РЭК 134, РЭК 134 compact neutral electromagnetic sealed relay for switching current of up to 10 A, with improved endurance, are intended for electrical switching of direct and alternating current with frequency from 50 to 1100 Hz.

### Performance and engineering data:



1. Ambient air temperature from - 60 to + 100°C
2. Atmospheric pressure from  $1,3 \times 10^{-1}$  to 297,1 kPa
3. Relative humidity up to 98% at the temperature of + 40°C
4. Operating rated voltage 27 V
5. Coil resistance  $320 \pm 32 \text{ Ohm}$
6. Vibration strength and vibration resistance in the frequency range: with acceleration of up to 20 g
  - a) from 1 to 3000 Hz
7. Impact strength:
  - a) single impacts 2 impacts with acceleration of up to 500 g
  - b) repeated impacts 9 impacts with acceleration of up to 150 g  
4000 impacts with acceleration of up to 75 g
8. Impact resistance with acceleration up to 75 g
9. Standing linear accelerations up to 50 g
10. Actuation time 15 ms max  
Release time 8 ms max
11. Insulation resistance between current-carrying circuits and case should be minimum:
  - a) in normal climatic conditions 1000 MOhm
  - b) in conditions of high humidity 10 MOhm
12. Test voltage (effective value):
  - a) in normal climatic conditions 750 V
  - b) in conditions of high humidity 300 V
  - c) at low atmospheric pressure 250 V
13. Time of relay's continuous or total work at normal atmospheric pressure 100°C, max
14. Contact circuit resistance at the stage of delivery 0,1 Ohm, max
15. Mass 55 g

### Wear resistance:

Switching range		Load type	Current type	Switching frequency, Hz	Number of switching cycles	
Current, A	Voltage, V				total	including at +100°C
0,2-2	12-34	active	direct	3	$10^5$	$5 \times 10^4$
0,2-5	12-115	active	alternating 50-1100 Hz	0,33	$2 \times 10^4$	$10^4$
2-10	12-30**	active	direct	0,33	$10^5$	$2 \times 10^3$
0,1-5	12-30**	inductive $r \leq 15 \text{ ms}$	direct	0,33	$10^4$	$2 \times 10^3$
0,1-0,5	24-250**	active	direct	0,33	$10^4$	$2 \times 10^3$
0,5-2	50-250*	active	alternating 50-1100 Hz	0,33	$10^5$	$5 \times 10^4$

\* At the atmospheric pressure from 0,00013 Pa ( $10^{-6}$  mm Hg) to 666 Pa (5 mm Hg) the contact voltage should not exceed 115 B

\*\* Increase of voltage up 34 V permitted with the retained switching power



# РЭК 90

## SEALED RELAY

(analog of РЭС 59)

**КСИШ. 647115.004 ТУ**

Electromagnetic sealed relay of direct current with one or two switching contacts is intended for electrical switching of direct and alternating current with frequency of up to 1100 Hz.

### Features:

1 or 2 contact groups for switching  
 1 winding  
 Switching current is from  $10^{-6}$  to 1 A  
 Contacts resistance is maximum 0,4 Ohm  
 Mass (with angles for fastening) is 35 (60) g

### Service conditions:

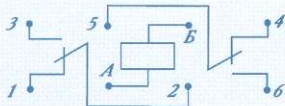
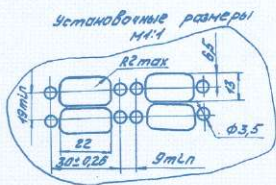
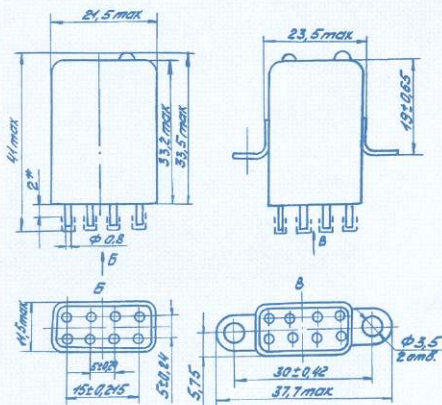
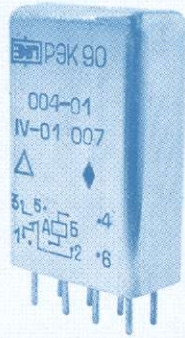
Ambient air temperature is from - 60 to + 125°C  
 Relative humidity is up to 98% at + 35°C  
 Vibration strain frequency depending on Customer's demand is in the frequency range of up to 2000 Hz

### Specifications:

Operating rated voltage, V	2,4; 10; 27
Coil resistance, Ohm	130; 80; 2000; 8000
Actuation time, ms, max	25
Release time, ms, max	12
Voltage accepted by insulation between current-carrying circuits, current-carrying circuits and case (effective value), V:	
in normal climatic conditions	750
in conditions of high humidity	300
at low atmospheric pressure	180
Insulation resistance between current-carrying circuits, current-carrying circuits and case, MOhm:	
in normal climatic conditions	1000
in conditions of high humidity	10
at low atmospheric pressure	20

### Wear resistance:

Switching range		Load type	Current type	Switching frequency, Hz	Wear resistance, max
Current, A	Voltage, V				
0,1-1	6-32	active	direct	3	$10^5$
0,1-1	6-32	active	alternating up to 1100 Hz	3	$10^5$
0,01-0,25	6-127	active	direct	5	$10^5$
0,01-0,25	6-127	active	alternating up to 1100 Hz	5	$10^5$
0,01-0,25	6-32	inductive $\tau < 0,005$ s	direct	3	$10^4$
0,05-0,1	6-127	inductive $\cos \varphi \geq 0,6$	alternating up to 1100 Hz	1	$10^3$
$10^{-6}-10^{-3}$	0,05-10	active	direct	10	$2 \times 10^5$
$10^{-5}-10^{-1}$	0,05-220	active	direct	5	$10^5$
$10^{-6}-10^{-3}$	1-36	active	alternating up to 1100 Hz	5	$10^5$
0,1-0,5	6-30	active	direct	5	$10^5$



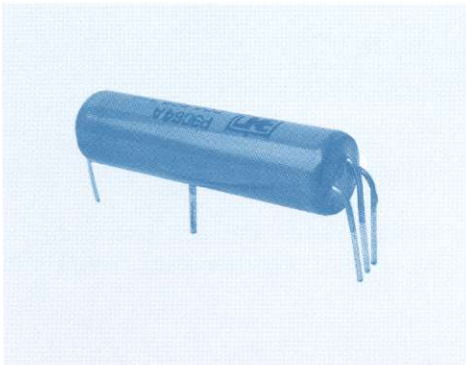
ELECTRIC SCHEME



# РЭС 64

## REED RELAY

### ДЫ 0.450.001 ТУ



Electromagnetic reed relay of direct current with one make contact group is intended for electrical switching of direct and alternating current with frequency of up to 10000 Hz in automation systems operating in conditions of significant mechanical loads.

#### Features:

1 contact group for makin  
1 winding  
Switching current is from  $5 \times 10^{-6}$  to 0,25 A  
Contacts resistance is maximum 0,2 Ohm  
Mass is 6 g

#### Service conditions:

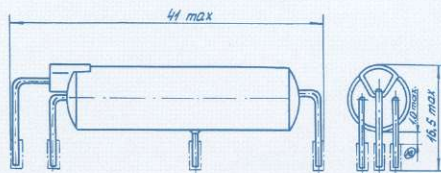
Ambient air temperature is from - 60 to + 85°C  
Relative humidity is up to 98% at + 35°C  
Vibration strain frequency depending on Customer's demand is in the frequency range of up to 2000 Hz

#### Specifications:

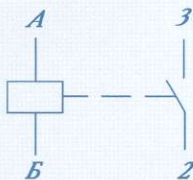
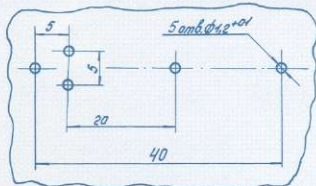
Actuation voltage, V, max	2,9; 4,1; 6,2; 16,5
Release voltage, V, min	0,35; 0,5; 0,8; 2
Operating rated voltage, V	5; 6,3; 10; 27
Coil resistance, Ohm	480; 970; 2000; 9700
Actuation time, ms	0,3 - 1,2
Voltage accepted by insulation between current-carrying circuits, current-carrying circuits and case (effective value), V:	
in normal climatic conditions	350
in conditions of high humidity	180
at low atmospheric pressure	180
Insulation resistance between current-carrying circuits, current-carrying circuits and case, MOhm:	
in normal climatic conditions	1000
in conditions of high humidity	10
at maximum temperature	20
Overall dimensions (without outputs)	9,4x33

#### Wear resistance

Switching range		Load type	Current type	Switching frequency, Hz	Wear resistance, max
Current, A	Voltage, V				
$5 \times 10^{-6} - 10^{-1}$	$5 \times 10^{-2} - 30$	active	direct alternating 10000 Hz	100	$10^8$
$2 \times 10^{-2} - 3 \times 10^{-2}$	150-180	active	alternating 10000 Hz	100	106
$10^{-1} - 2 \times 10^{-1}$	$5 \times 10^{-2} - 30$	inductive $\tau \leq 0,015$ s	direct	10	$5 \times 10^4$

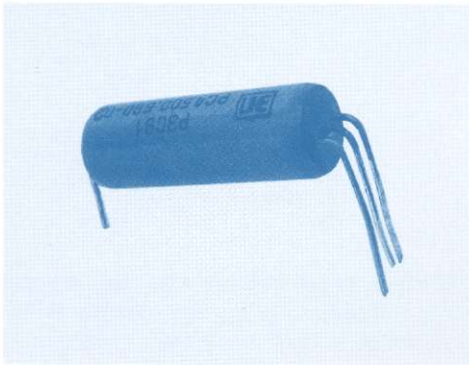


Разметка для крепления реле на печатной плате



ELECTRIC SCHEME





# PЭC 91

## REED RELAY

### ДЫ 0.450.000 ТУ

Electromagnetic reed relay of direct current with one make contact is intended for electrical switching of direct and alternating current with frequency of up to 10000 Hz.

#### Features:

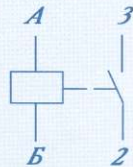
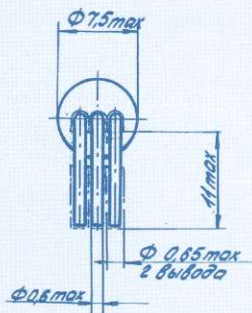
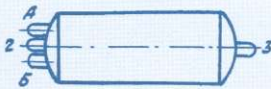
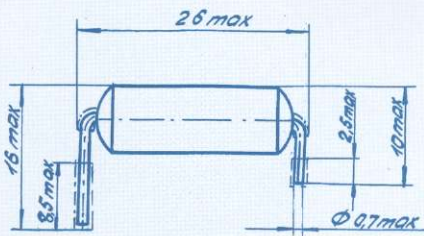
1 contact group  
1 winding  
Switching current is from  $10^{-6}$  to 0,1 A  
Contacts resistance is maximum 0,35 Ohm  
Mass is 2,8 g

#### Service conditions:

Ambient air temperature is from - 60 to + 100°C  
Relative humidity is up to 98% at + 35°C  
Vibration strain frequency depending on Customer's demand is in the frequency range of up to 3000 Hz

#### Specifications:

Actuation voltage, V, max	2,5; 6,8; 12,0; 8,0
Release voltage, V, min	0,6; 1,5; 2,2; 1,7
Operating rated voltage, V	5; 12,6; 27; 27
Coil resistance, Ohm	480; 2450; 5600; 2000
Actuation time, ms, max	1,0
Voltage accepted by insulation between current-carrying circuits, current-carrying circuits and case (effective value), V:	
in normal climatic conditions	200
in conditions of high humidity	120
at low atmospheric pressure	150
Insulation resistance between current-carrying circuits, current-carrying circuits and case, MOhm:	
in normal climatic conditions	1000
in conditions of high humidity	10
at low atmospheric pressure	20



ELECTRIC SCHEME

#### Wear resistance:

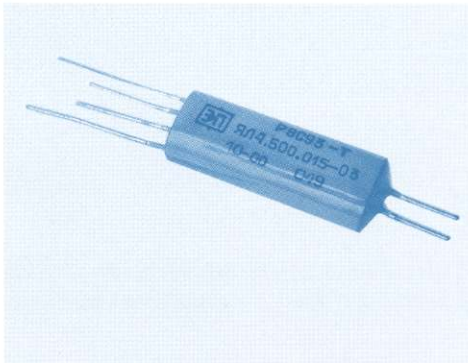
Switching range		Load type	Current type	Switching frequency, Hz	Wear resistance, max
Current, A	Voltage, V				
$10^{-6}$ - $10^{-3}$	$5 \times 10^{-2}$ -6	active	direct	100	$9 \times 10^6$
$10^{-3}$ - $10 \times 10^{-3}$	1-36	active	direct	100	$9 \times 10^5$
$10^{-3}$ - $15 \times 10^{-3}$	1-40	active	alternating	100	$9 \times 10^5$
$10^{-3}$ - $5 \times 10^{-2}$	1-36	inductive	direct	100	$9 \times 10^4$
$3 \times 10^{-2}$ -0,1	1-7	active	direct	100	$9 \times 10^5$
$3 \times 10^{-2}$ -0,1	6-36	active	direct	100	$8 \times 10^4$
$10 \times 10^{-3}$ - $15 \times 10^{-3}$	1-36	active	direct	100	$10^5$



# РЭС 93

## REED RELAY

### ЯЛ. 450.032 Y



РЭС 93 electromagnetic reed relay of direct current with two make contacts is intended for electrical switching of direct and alternating current with frequency of up to 10000 Hz.

### Features:

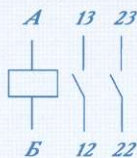
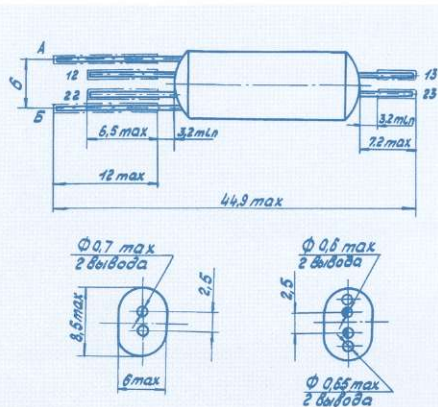
2 make contact groups  
 Number of actuations is up to  $8 \times 10^6$   
 Switching current is from  $10^{-6}$  to 0,1 A  
 Contacts resistance is maximum 0,4 Ohm  
 Mass is 2,8 g

### Service conditions:

Ambient air temperature is from - 60 to + 85°C  
 Relative humidity is up to 98% at + 35°C  
 Vibration strain frequency depending on Customer's demand is in the frequency range of up to 3000 Hz

### Specifications:

Actuation voltage, V, max	2,3; 3; 6,4; 13,3
Release voltage, V, min	0,3; 0,45; 0,9; 1,7
Operating rated voltage, V	5; 5; 12,6; 27
Coil resistance, Ohm	145; 280; 1040; 3650
Actuation time, ms, max	1,0
Voltage accepted by insulation between current-carrying circuits, current-carrying circuits and case (effective value), V:	
in normal climatic conditions	200
in conditions of high humidity	120
at low atmospheric pressure	150
Insulation resistance between current-carrying circuits, current-carrying circuits and case, MOhm:	
in normal climatic conditions	1000
in conditions of high humidity	5
at maximum temperature	20



ELECTRIC SCHEME

### Wear resistance:

Switching range		Load type	Current type	Switching frequency, Hz	Wear resistance, max
Current, A	Voltage, V				
$10^{-6}$ - $10^{-3}$	$5 \times 10^{-2}$ - 6	active	direct	100	$8 \times 10^6$
$10^{-3}$ - $10^{-2}$	1-36	active	direct	100	$8 \times 10^5$
$10^{-3}$ - $15 \times 10^{-3}$	1-40	active	alternating	100	$8 \times 10^5$
$10^{-3}$ - $5 \times 10^{-2}$	1-36	inductive	direct	100	$8 \times 10^4$
$3 \times 10^{-2}$ - 0,1	1-7	active	direct	100	$8 \times 10^5$
$3 \times 10^{-2}$ - 0,1	6-36	active	direct	100	$8 \times 10^4$
$10^{-2}$ - $15 \times 10^{-3}$	1-36	active	direct	100	$10^5$



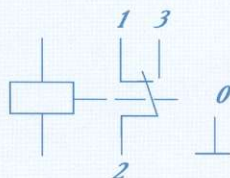
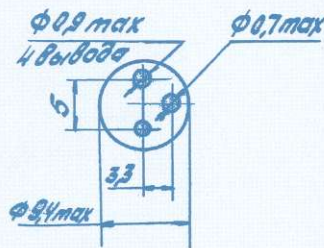
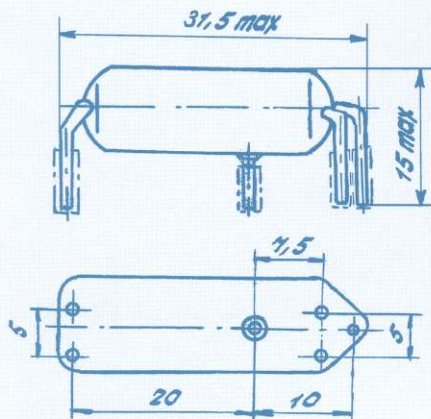
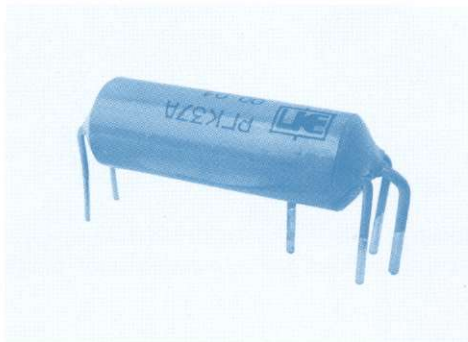
# РГК 37

## REED RELAY

(analog of РЭС 55)

КСИШ. 647116.001 ТУ

РГК 37 electromagnetic reed relay of direct current with one sealed switching contact is intended for electrical switching of direct and alternating current with frequency of up to 10000 Hz.



ELECTRIC SCHEME

### Features:

Possibility of application in printed wiring  
Switching current is from  $5 \times 10^{-6}$  to 1 A  
Contacts resistance is maximum 0,18; 0,5 Ohm  
Mass is 6 g

### Service conditions:

Ambient air temperature is from - 60 to + 85°C  
Relative humidity is up to 98% at + 35°C  
Vibration strain frequency depending on Customer's demand is in the frequency range of up to 3000 Hz with acceleration of up to 25 g

### Specifications:

Operating rated voltage, V	3; 5; 6; 10; 12,6; 27; 48
Coil resistance, Ohm	35; 67; 95; 95; 377; 1880; 4400
Actuation time, ms, max	1,5
Voltage accepted by insulation between current-carrying circuits, current-carrying circuits and case (effective value), V:	
in normal climatic conditions	500
in conditions of high humidity	200
at low atmospheric pressure	200
Insulation resistance between current-carrying circuits, current-carrying circuits and case, MOhm:	
in normal climatic conditions	500
in conditions of high humidity	10
at low atmospheric pressure	20

### Wear resistance:

Switching range		Load type	Current type	Switching frequency, Hz	Wear resistance, max
Current, A	Voltage, V				
$5 \times 10^{-6}$ -0,01	$5 \times 10^{-2}$ -5	active	direct alternating	50	$2 \times 10^6$
0,01-0,06	6-127	active	direct	50	$10^6$
0,01-0,25	6-36	active	direct	50	$5 \times 10^5$
0,01-0,15	6-36	active inductive $\tau < 0,015$ s	direct	50	$10^6$
0,01-0,1	6-36	active	direct	50	$10^6$
0,01-0,05	6-36	active	alternating	50	$7,5 \times 10^5$



# РГК 155

## REED RELAY

### КСИШ. 647116.003 TV



P3C 155 electromagnetic reed relay of direct current with one switching contact is intended for electrical switching of direct and alternating current with frequency of up to 1000 Hz.

Application of these devices in BBT units, in which reduction of power consumption 3 times, reduction of mass more than 2 times, improvement of operational reliability are the basic technical requirement. The relay provides control of winding without extra conjugation, directly with the help of electronic devices, and namely, the outputs of TTL-microchips and CMOS logic.

### Features:

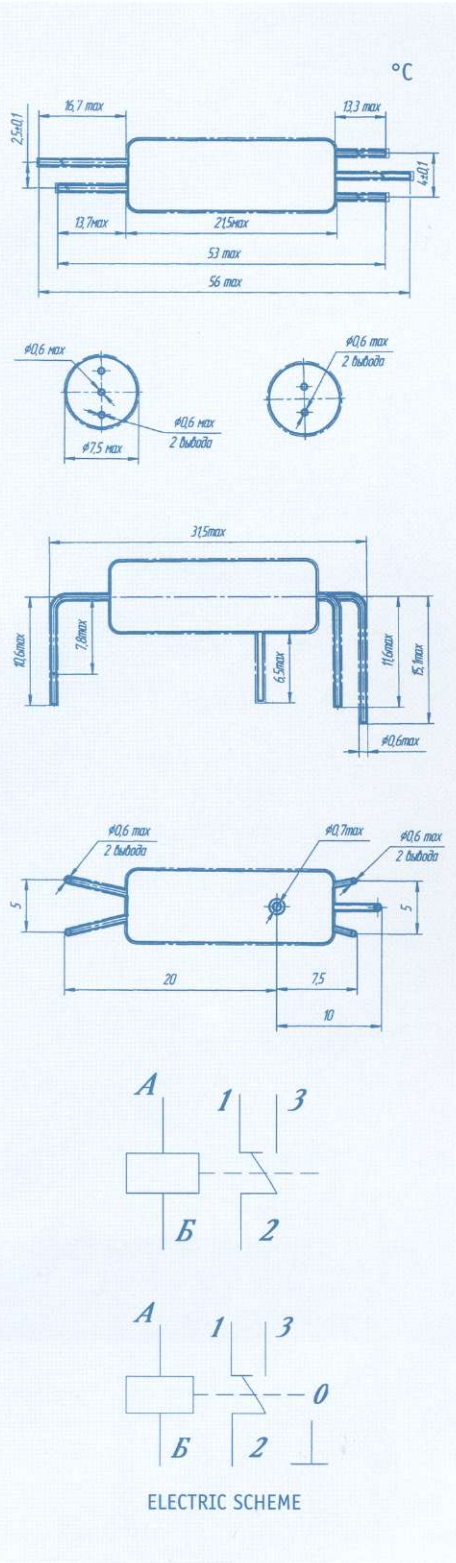
- 1 contact group for switching
- Number of actuations is up to  $2 \times 10^6$
- Switching current is from  $5 \times 10^{-6}$  to 0,5 A
- Contacts resistance is maximum 0,125 Ohm
- Mass is 2,8 g
- The relay's mounting dimensions correspond to those of the P3C 55A and P3C 55B relay

### Service conditions:

- Ambient air temperature is from - 60 to + 100°C
- Relative humidity is up to 98% at + 35°C
- Vibration strain frequency depending on Customer's demand is in the frequency range of up to 3000 Hz

### Specifications:

Operating rated voltage, V	3±3; 5±0,5; 6±0,6; 12±1,2; 27±2,7
Coil resistance, Ohm	250±40; 480±75; 550±75; 2500±370; 5600±1120
Actuation time, ms, max	0,5
Release time, max	2
Voltage accepted by insulation between current-carrying circuits, current-carrying circuits and case (effective value), V:	
in normal climatic conditions	500; 180 between break contacts
in conditions of high humidity	200; 180 between break contacts
at low atmospheric pressure	200; 180 between break contacts
Insulation resistance between current-carrying circuits, current-carrying circuits and case, MOhm:	
in normal climatic conditions	500
in conditions of high humidity	5
at maximum temperature	200





## Wear resistance:

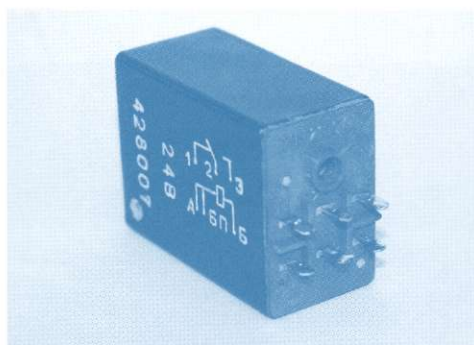
Switching range		Load type	Current type	Switching frequency, Hz	Number of switching cycles	
Current, A	Voltage, V				total	Including at +125°C
$5 \times 10^{-6} - 10^{-2}$	$5 \times 10^{-2} - 5$	active	пост./перем.	50	$2 \times 10^6$	$10^6$
$10^{-2} - 6 \times 10^{-2}$	6-127	active	пост./перем.	50	$10^6$	$5 \times 10^5$
$10^{-2} - 2,5 \times 10^{-1}$	6-36	active	direct	50	$10^6$	$5 \times 10^5$
$10^{-2} - 2,5 \times 10^{-1}$	6-36	active	alternating	50	$5 \times 10^5$	$2,5 \times 10^5$
$2,5 \times 10^{-1} - 5 \times 10^{-1}$	6-36	active	direct	10	$10^4$	$5 \times 10^3$
$2,5 \times 10^{-1} - 5 \times 10^{-1}$	6-36	active	alternating	10	$5 \times 10^3$	$5 \times 10^2$
$10^{-2} - 1,5 \times 10^{-1}$	6-36	active inductive $\tau \leq 0,015$ s	direct	50	$10^6$	$5 \times 10^5$
$10^{-2} - 10^{-1}$	6-36	active	alternating	50	$10^6$	$5 \times 10^5$

1. The relay must be designed to endure thrice-repeated mode of 30-minutes' operation at increased voltage of winding - 4,3 V; 6,5 V; 7,8 V; 14,2 V; 36 V, with one switching of rated current at this voltage.

2. According to paragraph 1, after operation in the mode of increased voltage, the relay must retain its actuation and release parameters after the time lag of 10 minutes without power supply of the winding.

3. The relay must be resistant to electrical loads, i.e. it must retain its parameters in the process and after switching of current two times exceeding the value of maximum current  $I_{max}$ . In this case the number of switching cycles is 100 - for direct current load and 200 - for alternating current load. The relay must also accept overloads in contact circuit by 2  $I_H$  current during 100 hours continually and 750 hours overall.





# ТНН21ПОДГ

The ТНН21ПОДГ relay is intended for operation as a measuring voltage relay in direct current electric systems of aeronautical engineering objects used in different climatic conditions including tropical ones.

## Specifications:

Rated DC voltage of switched circuit	27 V
Range of switched circuit's DC voltage	5 - 29,4 V
Switched circuit's rated current	0,25 A
Range of switched circuit's current	0,05 - 0,25 A
Rated DC voltage of control circuit	27 V
Range of control circuit's DC voltage	up to 29,4 V
Rated voltage of actuation	
for version I	24 V
for version II	25 V
for version III	26 V
for version IV	27 V
for version V	28 V
Voltage of release in any service conditions	15 V, max
Operation mode	ontinuous
Unit's mass	0,11 kg, max
Overall dimensions	43,5x29x68 mm



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