

with adapter (V)      with adapter (H)



• General purpose relays • High resistance to inrush current • **RUC faston 4,8 x 0,5**: for plug-in sockets, 35 mm DIN rail mount, EN 50022 or on panel mounting; for PCB • **RUC faston 4,8 x 0,5** or **6,3 x 0,8**: in cover with mounting flange, on panel mounting; with vertical (V) or horizontal (H) adapters for direct mounting on 35 mm DIN rail mount, EN 50022 • Flat insert connectors - faston 4,8 x 0,5 mm (faston 187) or faston 6,3 x 0,8 mm (faston 250) • Versions with contact gap  $\geq 3$  mm available • Recognitions, certifications, directives: RoHS,

## Contact data

Number and type of contacts		2 C/O, 3 C/O, 2 NO, 3 NO	2 NO, 3 NO	with contact gap $\geq 3$ mm
Contact material		<b>AgNi, AgCdO</b>		
Rated / max. switching voltage	AC	400 V / 440 V	230 V / 250 V	①
Min. switching voltage		5 V AgNi, 10 V AgCdO		
Rated load	AC1	16 A / 250 V AC or 10 A / 400 V AC	16 A / 250 V AC	①
	DC1	16 A / 24 V DC		
Min. switching current		5 mA AgNi, 10 mA AgCdO		
Max. inrush current		40 A		
Rated current		16 A		
Max. breaking capacity	AC1	4 000 VA		
Min. breaking capacity		0,3 W AgNi, 1 W AgCdO		
Contact resistance		$\leq 100$ m $\Omega$		
Max. operating frequency	AC1	• at rated load		
		• no load		
		1 200 cycles/hour	12 000 cycles/hour	

## Coil data

Rated voltage	AC	6...240 V 50/60 Hz	①	400 V 50 Hz
	DC	6...220 V		
Must release voltage		AC: $\geq 0,15 U_n$		DC: $\geq 0,1 U_n$
Operating range of supply voltage		see Tables 1, 2, 3, 4		
Rated power consumption	AC	2,8 VA 50 Hz	2,5 VA 60 Hz	
	DC	1,5 W	1,7 W	with contact gap $\geq 3$ mm

## Insulation

Insulation category		C400	C250	①
Insulation rated voltage		400 V AC		
Rated surge voltage		4 000 V AC	PN-EN 61810-5	
Overtoltage category		III	PN-EN 61810-5	
Insulation pollution degree		3		
Dielectric strength	• between coil and contacts • contact gap • pole - pole	2 500 V AC		
		1 500 V AC		
		2 500 V AC		
Contact - coil distance	• clearance • creepage	$\geq 5$ mm		
		$\geq 8$ mm		

## General data

Operating time (typical value)		$\leq 20$ ms	
Release time (typical value)		$\leq 15$ ms	
Electrical life	• resistive AC1	$\geq 10^5$ 16 A, 250 V AC	$\geq 10^5$ 10 A, 400 V AC
	• $\cos\phi$	see Fig. 2	
Mechanical life (cycles)		$\geq 10^7$	
Motor load - according to the UL 508		2 C/O: 1/3 HP 120 V AC, single-phase motor	1/2 HP 240 V AC, single-phase motor
		3 C/O: 1/3 HP 120 V AC, single-phase motor	1/2 HP 240 V AC, single-phase motor
		3 C/O: 1/2 HP 240 V AC, three-phase motor	
Dimensions		see drawings Dimensions, pages 3, 4	
Weight		80 g ②	85 g ③
Ambient temperature	• storage	$-40...+85$ °C	
	• operating	AC: $-40...+55$ °C 3 C/O, 3 NO / 16 A	(+70 °C 2 C/O, 2 NO / 16 A)
		DC: $-40...+55$ °C 3 C/O, 3 NO / 16 A	(+70 °C 3 C/O, 3 NO / 10 A; 2 C/O, 2 NO / 16 A)
Cover protection category		IP00	
Shock resistance		10 g	
Vibration resistance		5 g	15...150 Hz
Solder bath temperature		max. 270 °C	
Soldering time		max. 10 s	

The data in bold type pertain to the standard versions of the relays.

① For RUC faston 4,8 x 0,5 with GUC11 socket max. switching voltages and coil voltages of relays are limited to 250 V AC/DC.

② Weight RUC faston 4,8 x 0,5; weight of version with adapter V, H - 85 g.      ③ Weight RUC faston 6,3 x 0,8 with adapter V, H.

Coil data - DC voltage version

Table 1

Coil code	Rated voltage VDC	Coil resistance $\pm 10\%$ at 20°C $\Omega$	Coil operating range VDC	
			min. (at 20°C)	max. (at 55°C)
1006	6	28	4,8	6,6
<b>1012</b>	<b>12</b>	<b>110</b>	<b>9,6</b>	<b>13,2</b>
1024	24	430	19,2	26,4
1042	42	1 340	33,6	46,2
1048	48	1 750	38,4	52,8
1060	60	2 700	48,0	66,0
1110	110	9 200	88,0	121,0
1120	120	11 000	96,0	132,0
1220	220	37 000	176,0	242,0

The data in bold type pertain to the standard versions of the relays.

Coil data - DC voltage version, reinforced

Table 2

Coil code ❶	Rated voltage VDC	Coil resistance $\pm 10\%$ at 20°C $\Omega$	Coil operating range VDC	
			min. (at 20°C)	max. (at 55°C)
W012	12	85	9,6	13,2
W024	24	345	19,2	26,4
W048	48	1 370	38,4	52,8
W110	110	7 300	88,0	121,0
W220	220	30 000	176,0	242,0

❶ For version with contact gap  $\geq 3$  mm.

Coil data - AC 50/60 Hz voltage version

Table 3

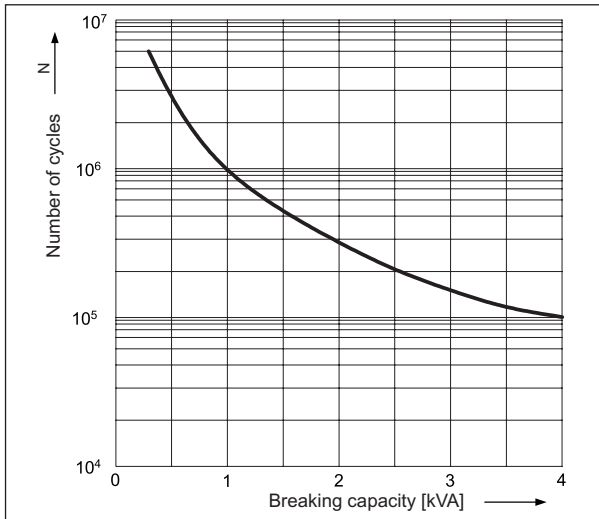
Coil code	Rated voltage VAC	Coil resistance $\pm 10\%$ at 20°C $\Omega$	Coil operating range VAC	
			min. (at 20°C)	max. (at 55°C)
5006	6	4,3	4,8	6,6
5012	12	18,5	9,6	13,2
5024	24	75,0	19,2	26,4
5110	110	1 700	88,0	121,0
5120	120	1 910	96,0	132,0
5220	220	6 980	176,0	242,0
5230	230	7 080	184,0	253,0
5240	240	7 760	192,0	264,0

Coil data - AC 50 Hz voltage version

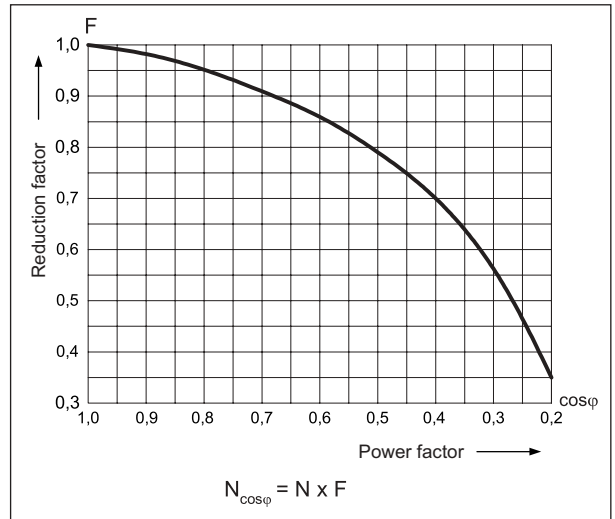
Table 4

Coil code	Rated voltage VAC	Coil resistance $\pm 10\%$ at 20°C $\Omega$	Coil operating range VAC	
			min. (at 20°C)	max. (at 55°C)
3400	400	21 500	320,0	440,0

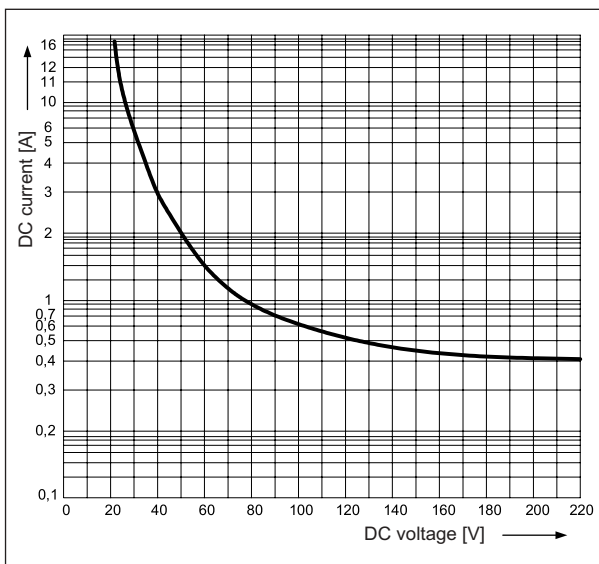
**Electrical life at AC resistive load. Maximum switching frequency at rated load** Fig. 1



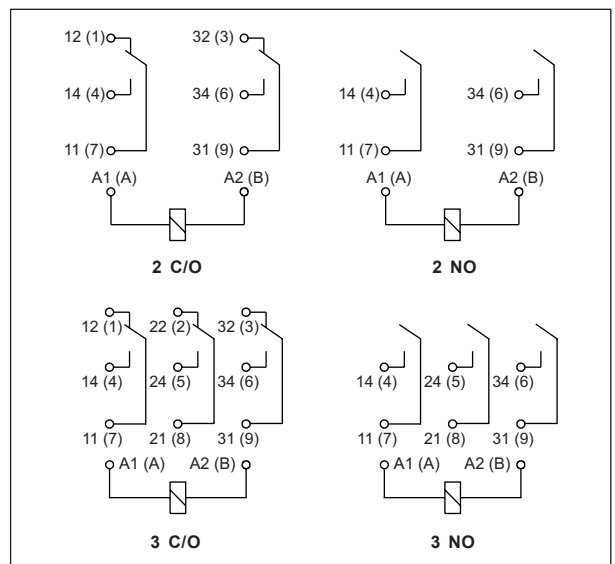
**Electrical life reduction factor at AC inductive load** Fig. 2



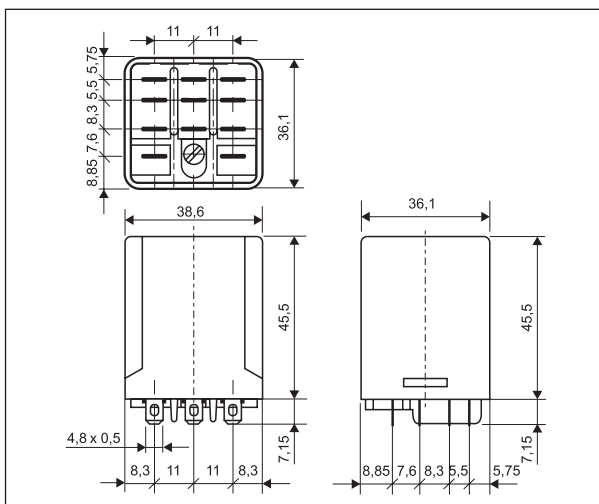
**Max. DC resistive load breaking capacity** Fig. 3



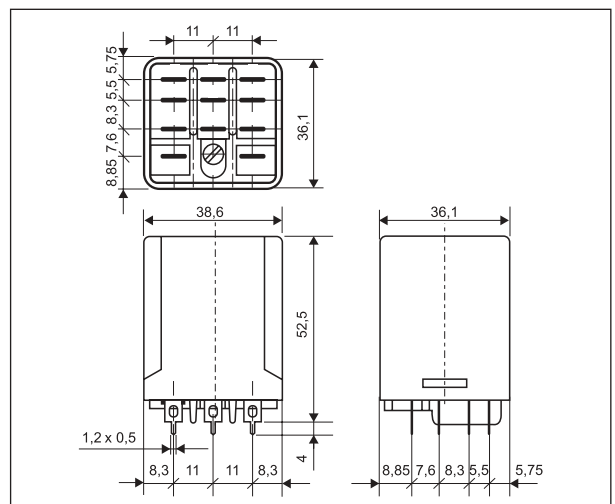
**Connections diagrams (pin side view)**



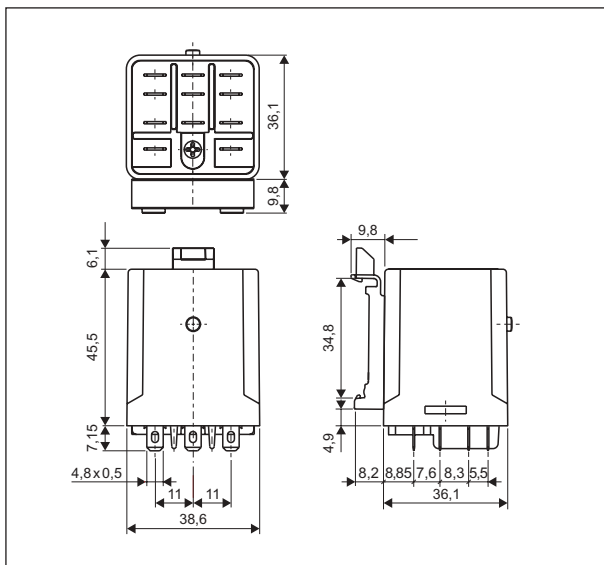
**Dimensions - RUC faston 4,8 x 0,5 - plug-in version (standard)**



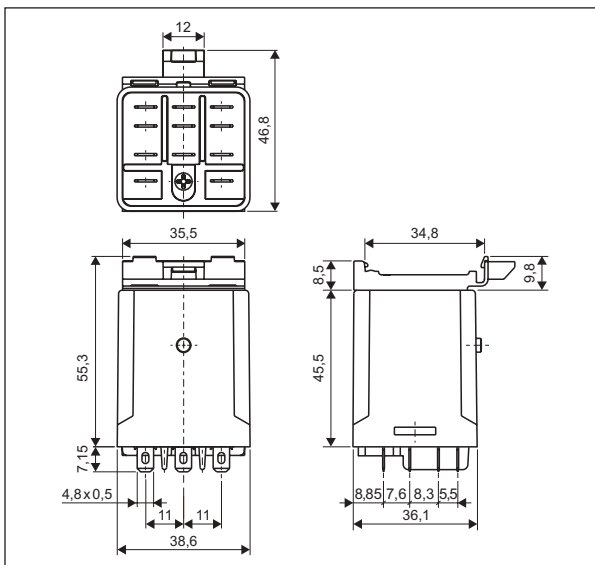
**Dimensions - RUC faston 4,8 x 0,5 - PCB version**



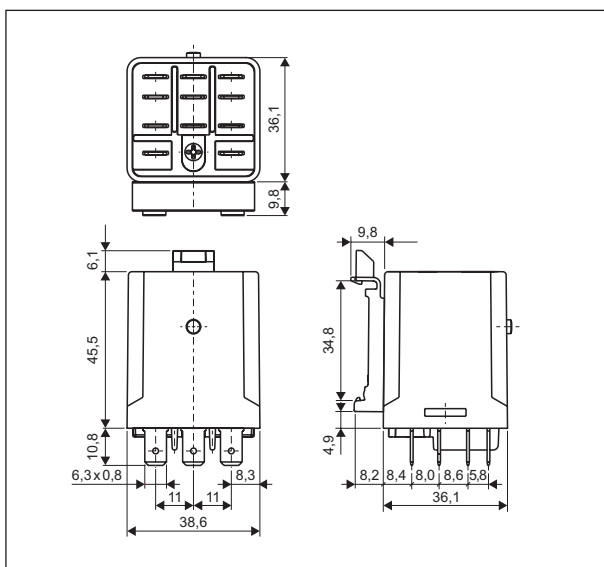
**Dimensions - RUC faston 4,8 x 0,5**  
- version with vertical adapter (V)



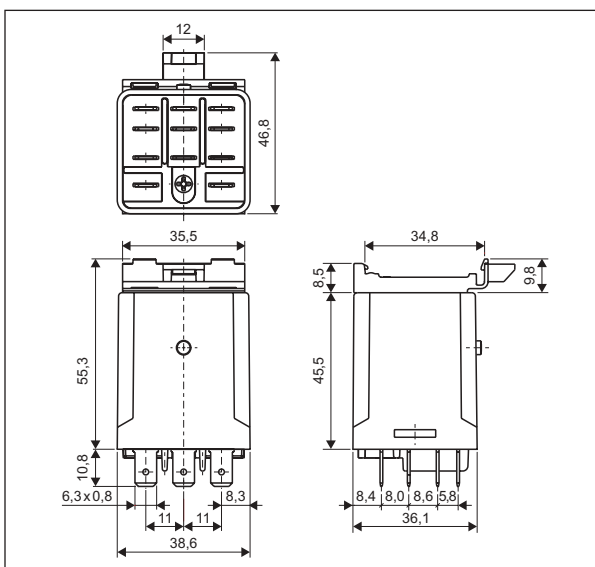
**Dimensions - RUC faston 4,8 x 0,5**  
- version with horizontal adapter (H)



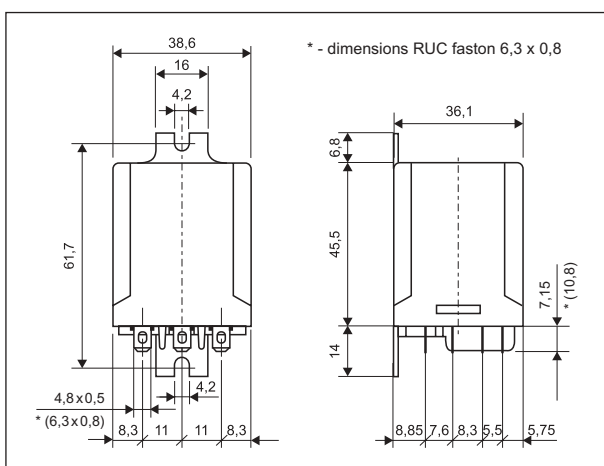
**Dimensions - RUC faston 6,3 x 0,8**  
- version with vertical adapter (V)



**Dimensions - RUC faston 6,3 x 0,8**  
- version with horizontal adapter (H)



**Dimensions - RUC faston 4,8 x 0,5 (faston 6,3 x 0,8)**  
- version with mounting flange in the wall of the cover



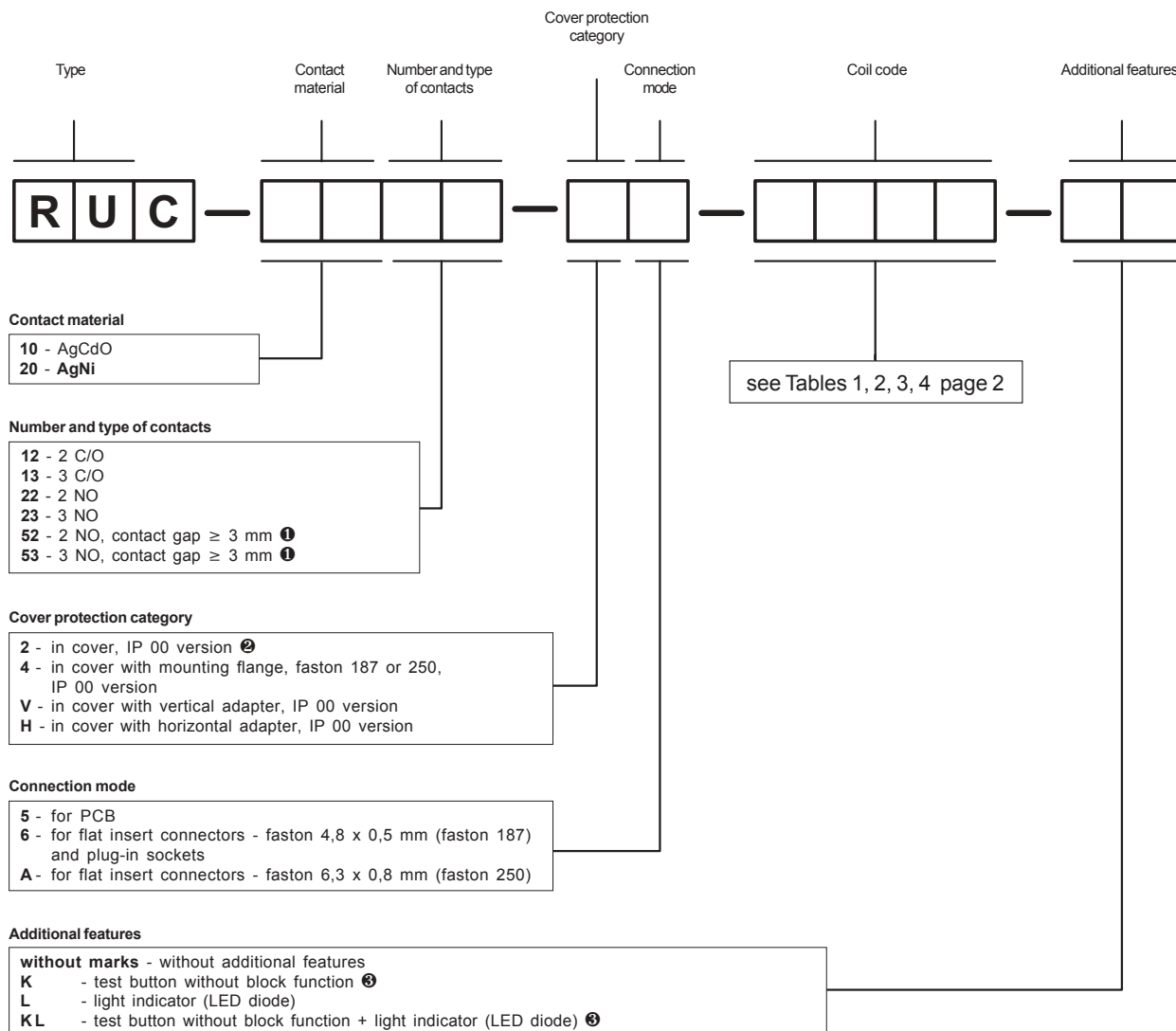
### Mounting

**Relays RUC are offered in versions:**

- standard, for screw terminals plug-in sockets **GUC11** with clip **MBA** ①, 35 mm DIN rail mount, EN 50022 or on panel mounting
- with mounting flange in the wall of the cover, on panel mounting, flat insert connections of wires - 4,8 x 0,5 mm (faston 187) or 6,3 x 0,8 mm (faston 250)
- for direct PCB mounting
- with vertical (V) or horizontal (H) adapters for direct mounting on 35 mm DIN rail mount, EN 50022, flat insert connectors - faston 4,8 x 0,5 mm (faston 187) or faston 6,3 x 0,8 mm (faston 250).

① For RUC faston 4,8 x 0,5 with GUC11 socket max. switching voltages and coil voltages of relays are limited to 250 V AC/DC.

## Ordering codes



① For versions with reinforced DC coils: W012, W024, W048, W110, W220 and with AC coils.

② Only for version RUC faston 4,8 x 0,5.

③ Additional features is not available in versions of relays with contact gap  $\geq$  3 mm.

Examples of ordering codes:

**RUC-2022-25-5024** relay **RUC**, contact material AgNi, with two normally open contacts, in cover IP 00, for PCB, voltage version 24 V AC 50/60 Hz

**RUC-2053-26-W024** relay **RUC** 4,8 x 0,5 mm (faston 187), contact material AgNi, with three normally open contacts, with contact gap  $\geq$  3 mm, in cover IP 00, for plug-in sockets GUC11, voltage version 24 V DC - reinforced coil

**RUC-2013-V6-3400-KL** relay **RUC** 4,8 x 0,5 mm (faston 187), contact material AgNi, with three changeover contacts, in cover IP00 with vertical adapter (V), for flat insert connectors, voltage version 400 V AC 50 Hz, with test button without block function and light indicator (LED diode)

**RUC-2052-HA-W220-L** relay **RUC** 6,3 x 0,8 mm (faston 250), contact material AgNi, with two normally open contacts, with contact gap  $\geq$  3 mm, in cover IP 00 with horizontal adapter (H), for flat insert connectors, voltage version 220 V DC - reinforced coil, with light indicator (LED diode)