

# R2M / RY2 / RUC

## Industrial Electromagnetic Relays



- Relays of general application
- For plug-in sockets, 35 mm rail mount or on panel mounting
- Cadmium-free contacts
- R2M and RUC also for PCB and soldering connections
- AC and DC coils available



R2M

RY2

RUC

### Contact Data

Number and type of contacts		DPDT	DPDT	DPDT. 3PDT. DPST. 3PST
Contact material		AgNi*	AgNi*	AgNi*
Rated / max. switching voltage	AC	250 V / 250 V	250 V / 440 V	400 V / 440 V
Min. switching voltage		5 V	5 V	5 V
Rated load	AC1	5 A / 250 V AC	12 A / 250 V AC	16 A / 250 V AC or 10 A / 400 V AC
	DC1	5 A / 24 V DC	12 A / 30 V DC	16 A / 24 V DC (see Fig. 3.3)
Min. switching current		5 mA	5 mA	5 mA
Max. inrush current		20 A	20 A	40 A
<b>Rated current</b>		<b>5A</b>	<b>12A</b>	<b>16A</b>
Max. breaking capacity	AC1	1250 VA	3000 VA	4000 VA
Min. breaking capacity		0.3 W	0.3 W	0.3 W
Contact resistance		≤ 100 mΩ	≤ 100 mΩ	≤ 100 mΩ
Max. operating frequency	at rated load	1200 cycles/hour	1200 cycles/hour	1200 cycles/hour
	no load	36000 cycles/hour	18000 cycles/hour	12000 cycles/hour

### Coil Data

Rated voltage	50/60 Hz AC	6 ... 240 V	6 ... 240 V	6 ... 240 V
	DC	6 ... 110 V	5 ... 220 V	6 ... 220 V
Must release voltage		≥ 0.05 U <sub>n</sub>	AC: ≥ 0.2 U <sub>n</sub> ; DC: ≥ 0.1 U <sub>n</sub>	AC: ≥ 0.15 U <sub>n</sub> ; DC: ≥ 0.1 U <sub>n</sub>
Operating range of supply voltage		see page 62	see page 62	see page 62
Rated power consumption	AC	1.2 VA	1.6 VA	2.8 VA 50 Hz; 2.5 VA 60 Hz
	DC	0.9 W	0.9 W	1.5 W; 1.7 W with contact gap ≥ 3 mm

### Insulation

Insulation rated voltage		250 V AC	250 V AC	400 V AC
Rated surge voltage		2500 V 1.2 / 50 μs	4000 V 1.2 / 50 μs	4000 V 1.2 / 50 μs
Overvoltage category		II	III	III
Insulation pollution degree		3	3	3
Dielectric strength between coil and contacts	• contact clearance	2000 V AC type of insulation: basic 1000 V AC type of clearance: micro-disconnection	2500 V AC type of insulation: basic 1000 V AC type of clearance: micro-disconnection	2500 V AC type of insulation: basic 1500 V AC type of clearance: micro-disconnection 2500 V AC with contact gap ≥ 3 mm. type of clearance: full-disconnection 2500 V AC type of insulation: basic
	• pole - pole	2000 V AC type of insulation: basic	2500 V AC type of insulation: basic	2500 V AC type of insulation: basic
Contact - coil distance	• clearance	≥ 3 mm	≥ 2.6 mm	≥ 5 mm
	• creepage	≥ 4 mm	≥ 4 mm	≥ 8 mm

### General data

Operating / release time (typical values)		AC: 8 ms / 7 ms; DC: 10 ms / 3 ms	15 ms / 10 ms	20 ms / 15 ms
Electrical life	• resistive AC1	> 2 x 10 <sup>6</sup> ; 5 A. 250 V AC	> 10 <sup>6</sup> ; 12 A. 250 V AC	> 10 <sup>6</sup> ; 16 A. 250 V AC; > 10 <sup>6</sup> ; 10 A. 400 V AC
	• cosφ	see Fig. 2.1	see Fig. 2.2	see Fig. 2.3
Mechanical life (cycles)		> 10 <sup>7</sup>	> 10 <sup>7</sup>	> 10 <sup>7</sup>
Motor load according to UL 508		-	-	DPDT: 1/3 HP 120 V AC, single-phase motor 1/2 HP 240 V AC, single-phase motor 3PDT: 1/3 HP 120 V AC, single-phase motor 1/2 HP 240 V AC, single-phase motor 3PDT: 1/2 HP 240 V AC, three-phase motor
Dimensions (L x W x H)		27.5 x 14 x 32.9 mm	27.5 x 21.1 x 34.5 mm	36.1 x 38.6 x 45.5 mm
Weight		22 g	35 g	80 g
Ambient temperature	• storage	-40...+70 °C	-40...+70 °C	-40...+85 °C
	• operating	-40...+55 °C	-40...+55 °C	AC: -40...+55 °C 3PDT. 3PST (NO) / 16 A (+70 °C DPDT. DPST (NO) / 16 A) DC: -40...+55 °C 3PDT. 3PST (NO) / 16 A (+70 °C 3PDT. 3PST (NO) / 10 A; DPDT. DPST (NO) / 16 A)
Cover protection category		IP 40 PN-EN 60529	IP 40 PN-EN 60529	IP 00 PN-EN 60529
Shock resistance		10 g	10 g	10 g
Vibration resistance		5 g 10...150 Hz	5 g 15...150 Hz	5 g 10...150 Hz
Solder bath temperature		max. 270 °C	-	max. 270 °C
Soldering time		max. 5 s	-	max. 5 s

\* Other contact materials (eg. gold plated) available, contact Altech Corp.

# R2M / RY2 / RUC

## Industrial Electromagnetic Relays



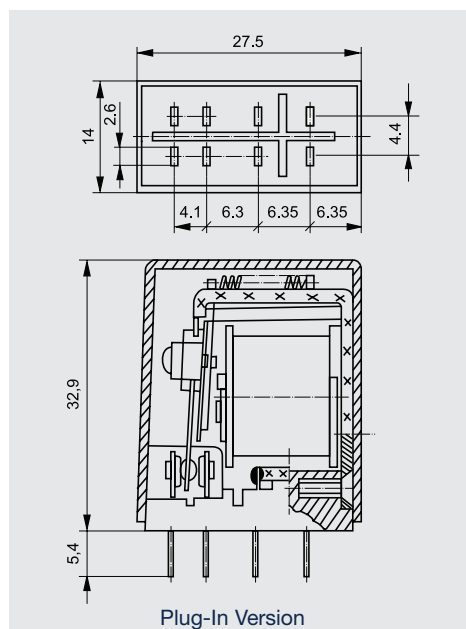
### R2M



### CONNECTION DIAGRAM

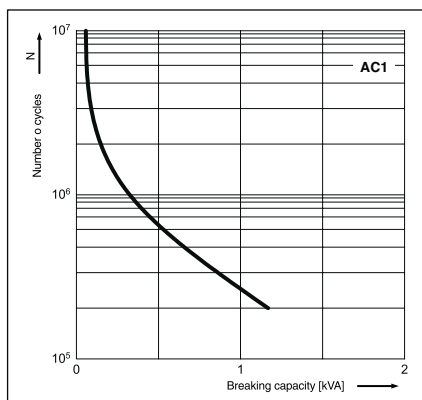


### DIMENSIONS



### LOAD CHARTS

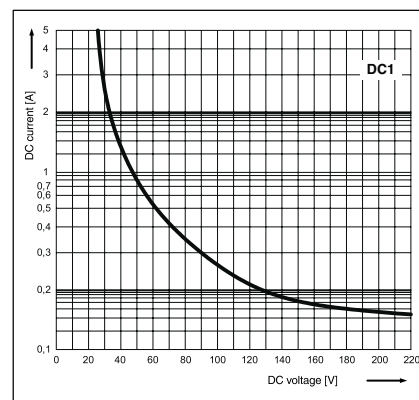
Electrical life at AC resistive load. Switching frequency: 1200 cycles/hour Fig. 1.1



Electrical life reduction factor at AC inductive load Fig. 2.1



Max. DC resistive load breaking capacity Fig. 3.1



# R2M / RY2 / RUC

## Industrial Electromagnetic Relays



**RY2**



### CONNECTION DIAGRAM



Note: the indicated polarity of the supply refers to the relays with extra equipment D - surge suppression element (diode) - for DC coils only.

### DIMENSIONS



### LOAD CHARTS

**Electrical life at AC resistive load.** Fig. 1.2  
Switching frequency: 1 200 cycles/hour



**Electrical life reduction factor at AC inductive load** Fig. 2.2



# R2M / RY2 / RUC

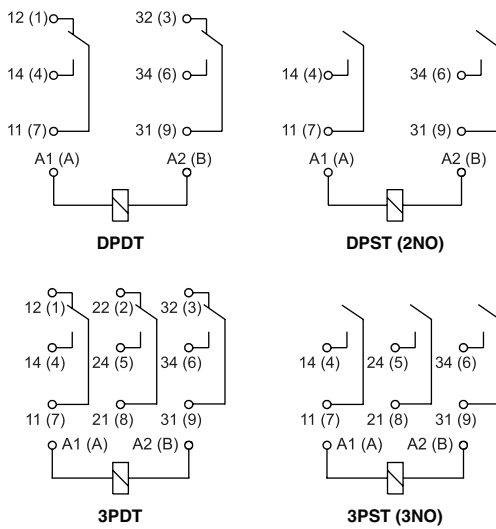
## Industrial Electromagnetic Relays



### RUC



### CONNECTION DIAGRAM



### DIMENSIONS



### LOAD CHARTS

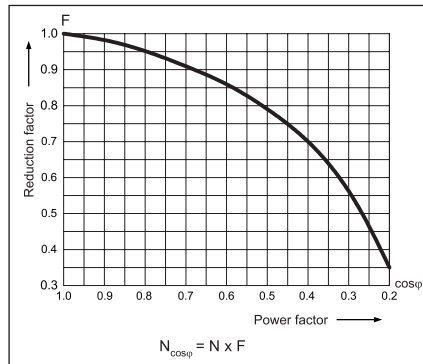
Electrical life at AC resistive load.  
Switching frequency: 1200 cycles/hour

Fig. 1



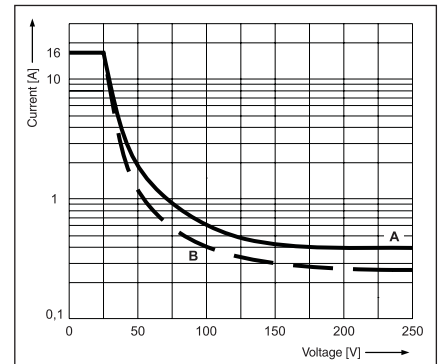
Electrical life reduction factor  
at AC inductive load

Fig. 2



Max. DC breaking capacity  
A - resistive load DC1  
B - inductive load L/R = 40 ms

Fig. 3



# R2M / RY2 / RUC

## Industrial Electromagnetic Relays

### R2M DPDT AC 50/60Hz & DC coil

Part Number	Coil Voltage (V)	Coil Type	Coil resistance at 20 °C in Ω	Coil operating range	
				min. (at 20°C)	max. (at 55°C)
R2M-2012-23-1012	12	DC	188	9.6	13.2
▶ <b>R2M-2012-23-1024</b>	24	DC	750	19.2	26.4
R2M-2012-23-1110	110	DC	13480	88.0	121.0
▶ <b>R2M-2012-23-5120</b>	120	AC 50/60Hz	6390	96.0	132.0
R2M-2012-23-5230	230	AC 50/60Hz	21470	184.0	253.0

### RY2 DPDT AC 50/60Hz & DC coil

Part Number	Coil Voltage (V)	Coil Type	Coil resistance at 20 °C in Ω	Coil operating range		Options*		
				min. (at 20°C)	max. (at 55°C)	-	L	D
▶ <b>RY2-1012-26-1012</b>	12	DC	160	9.6	13.2	x		
RY2-1012-26-1012-L	12	DC	160	9.6	13.2		x	
RY2-1012-26-1012-D	12	DC	160	9.6	13.2			x
RY2-1012-26-1012-LD	12	DC	160	9.6	13.2		x	x
▶ <b>RY2-1012-26-1024</b>	24	DC	640	19.2	26.4	x		
▶ <b>RY2-1012-26-1024-L</b>	24	DC	640	19.2	26.4		x	
RY2-1012-26-1024-D	24	DC	640	19.2	26.4			x
RY2-1012-26-1024-LD	24	DC	640	19.2	26.4		x	x
RY2-1012-26-1110	110	DC	13600	88.0	121.0	x		
RY2-1012-26-1110-L	110	DC	13600	88.0	121.0		x	
RY2-1012-26-1110-D	110	DC	13600	88.0	121.0			x
RY2-1012-26-1110-LD	110	DC	13600	88.0	121.0		x	x
RY2-1012-26-5024	24	AC 50/60Hz	158	19.2	26.4	x		
▶ <b>RY2-1012-26-5024-L</b>	24	AC 50/60Hz	158	19.2	26.4		x	
RY2-1012-26-5024-D	24	AC 50/60Hz	158	19.2	26.4			x
RY2-1012-26-5024-LD	24	AC 50/60Hz	158	19.2	26.4		x	x
▶ <b>RY2-1012-26-5120</b>	120	AC 50/60Hz	3770	96.0	132.0	x		
▶ <b>RY2-1012-26-5120-L</b>	120	AC 50/60Hz	3770	96.0	132.0		x	
RY2-1012-26-5120-D	120	AC 50/60Hz	3770	96.0	132.0			x
RY2-1012-26-5120-LD	120	AC 50/60Hz	3770	96.0	132.0		x	x
RY2-1012-26-5230	230	AC 50/60Hz	16100	184.0	253.0	x		
▶ <b>RY2-1012-26-5230-L</b>	230	AC 50/60Hz	16100	184.0	253.0		x	
RY2-1012-26-5230-D	230	AC 50/60Hz	16100	184.0	253.0			x
RY2-1012-26-5230-LD	230	AC 50/60Hz	16100	184.0	253.0		x	x

### RUC DPDT AC 50/60Hz & DC coil

Part Number	Coil Voltage (V)	Coil Type	Coil resistance at 20 °C in Ω	Coil operating range		Options*		
				min. (at 20°C)	max. (at 55°C)	-	K	L
▶ <b>RUC-2012-26-1012</b>	12	DC	110	9.6	13.2	x		
RUC-2012-26-1012-K	12	DC	110	9.6	13.2		x	
RUC-2012-26-1012-L	12	DC	110	9.6	13.2			x
RUC-2012-26-1012-KL	12	DC	110	9.6	13.2		x	x
▶ <b>RUC-2012-26-1024</b>	24	DC	430	19.2	26.4	x		
RUC-2012-26-1024-K	24	DC	430	19.2	26.4		x	
RUC-2012-26-1024-L	24	DC	430	19.2	26.4			x
▶ <b>RUC-2012-26-1024-KL</b>	24	DC	430	19.2	26.4		x	x
RUC-2012-26-1110	110	DC	9200	88.0	121.0	x		
RUC-2012-26-1110-K	110	DC	9200	88.0	121.0		x	
RUC-2012-26-1110-L	110	DC	9200	88.0	121.0			x
RUC-2012-26-1110-KL	110	DC	9200	88.0	121.0		x	x
▶ <b>RUC-2012-26-5120</b>	120	AC 50/60Hz	1910	96.0	132.0	x		
RUC-2012-26-5120-K	120	AC 50/60Hz	1910	96.0	132.0		x	
RUC-2012-26-5120-L	120	AC 50/60Hz	1910	96.0	132.0			x
▶ <b>RUC-2012-26-5120-KL</b>	120	AC 50/60Hz	1910	96.0	132.0		x	x
RUC-2012-26-5230	230	AC 50/60Hz	7080	184.0	253.0z	x		
RUC-2012-26-5230-K	230	AC 50/60Hz	7080	184.0	253.0		x	
RUC-2012-26-5230-L	230	AC 50/60Hz	7080	184.0	253.0			x
▶ <b>RUC-2012-26-5230-KL</b>	230	AC 50/60Hz	7080	184.0	253.0		x	x

- = without additional features

**K** = with test button without block function;

**L** = with light indicator (LED)

**D** = with surge suppression element (diode)

\* other options available upon request

▶ **BOLD** - Regular stocked items.

### RUC 3PDT AC 50/60Hz & DC coil

Part Number	Coil Voltage (V)	Coil Type	Coil resistance at 20 °C in Ω	Coil operating range		Options*		
				min. (at 20°C)	max. (at 55°C)	-	K	L
► <b>RUC-2013-26-1012</b>	12	DC	110	9.6	13.2	x		
RUC-2013-26-1012-K	12	DC	110	9.6	13.2		x	
RUC-2013-26-1012-L	12	DC	110	9.6	13.2			x
RUC-2013-26-1012-KL	12	DC	110	9.6	13.2		x	x
► <b>RUC-2013-26-1024</b>	24	DC	430	19.2	26.4	x		
RUC-2013-26-1024-K	24	DC	430	19.2	26.4		x	
RUC-2013-26-1024-L	24	DC	430	19.2	26.4			x
► <b>RUC-2013-26-1024-KL</b>	24	DC	430	19.2	26.4		x	x
RUC-2013-26-1110	110	DC	9200	88.0	121.0	x		
RUC-2013-26-1110-K	110	DC	9200	88.0	121.0		x	
RUC-2013-26-1110-L	110	DC	9200	88.0	121.0			x
RUC-2013-26-1110-KL	110	DC	9200	88.0	121.0		x	x
► <b>RUC-2013-26-5120</b>	120	AC 50/60Hz	1910	96.0	132.0	x		
RUC-2013-26-5120-K	120	AC 50/60Hz	1910	96.0	132.0		x	
RUC-2013-26-5120-L	120	AC 50/60Hz	1910	96.0	132.0			x
► <b>RUC-2013-26-5120-KL</b>	120	AC 50/60Hz	1910	96.0	132.0		x	x
► <b>RUC-2013-26-5230</b>	230	AC 50/60Hz	7080	184.0	253.0	x		
RUC-2013-26-5230-K	230	AC 50/60Hz	7080	184.0	253.0		x	
RUC-2013-26-5230-L	230	AC 50/60Hz	7080	184.0	253.0			x
RUC-2013-26-5230-KL	230	AC 50/60Hz	7080	184.0	253.0		x	x

### RUC DPST(2NO) AC 50/60Hz & DC coil

Part Number	Coil Voltage (V)	Coil Type	Coil resistance at 20 °C in Ω	Coil operating range		Options*		
				min. (at 20°C)	max. (at 55°C)	-	K	L
RUC-2022-26-1012	12	DC	110	9.6	13.2	x		
RUC-2022-26-1012-K	12	DC	110	9.6	13.2		x	
RUC-2022-26-1012-L	12	DC	110	9.6	13.2			x
RUC-2022-26-1012-KL	12	DC	110	9.6	13.2		x	x
RUC-2022-26-1024	24	DC	430	19.2	26.4	x		
RUC-2022-26-1024-K	24	DC	430	19.2	26.4		x	
RUC-2022-26-1024-L	24	DC	430	19.2	26.4			x
RUC-2022-26-1024-KL	24	DC	430	19.2	26.4		x	x
RUC-2022-26-1110	110	DC	9200	88.0	121.0	x		
RUC-2022-26-1110-K	110	DC	9200	88.0	121.0		x	
RUC-2022-26-1110-L	110	DC	9200	88.0	121.0			x
RUC-2022-26-1110-KL	110	DC	9200	88.0	121.0		x	x
RUC-2022-26-5120	120	AC 50/60Hz	1910	96.0	132.0	x		
RUC-2022-26-5120-K	120	AC 50/60Hz	1910	96.0	132.0		x	
RUC-2022-26-5120-L	120	AC 50/60Hz	1910	96.0	132.0			x
RUC-2022-26-5120-KL	120	AC 50/60Hz	1910	96.0	132.0		x	x
RUC-2022-26-5230	230	AC 50/60Hz	7080	184.0	253.0	x		
RUC-2022-26-5230-K	230	AC 50/60Hz	7080	184.0	253.0		x	
RUC-2022-26-5230-L	230	AC 50/60Hz	7080	184.0	253.0			x
RUC-2022-26-5230-KL	230	AC 50/60Hz	7080	184.0	253.0		x	x

### RUC 3PST(3NO) AC 50/60Hz & DC coil

Part Number	Coil Voltage (V)	Coil Type	Coil resistance at 20 °C in Ω	Coil operating range		Options*		
				min. (at 20°C)	max. (at 55°C)	-	K	L
RUC-2023-26-1012	12	DC	110	9.6	13.2	x		
RUC-2023-26-1012-K	12	DC	110	9.6	13.2		x	
RUC-2023-26-1012-L	12	DC	110	9.6	13.2			x
RUC-2023-26-1012-KL	12	DC	110	9.6	13.2		x	x
RUC-2023-26-1024	24	DC	430	19.2	26.4	x		
RUC-2023-26-1024-K	24	DC	430	19.2	26.4		x	
RUC-2023-26-1024-L	24	DC	430	19.2	26.4			x
RUC-2023-26-1024-KL	24	DC	430	19.2	26.4		x	x
RUC-2023-26-1110	110	DC	9200	88.0	121.0	x		
RUC-2023-26-1110-K	110	DC	9200	88.0	121.0		x	
RUC-2023-26-1110-L	110	DC	9200	88.0	121.0			x
RUC-2023-26-1110-KL	110	DC	9200	88.0	121.0		x	x
RUC-2023-26-5120	120	AC 50/60Hz	1910	96.0	132.0	x		
RUC-2023-26-5120-K	120	AC 50/60Hz	1910	96.0	132.0		x	
RUC-2023-26-5120-L	120	AC 50/60Hz	1910	96.0	132.0			x
RUC-2023-26-5120-KL	120	AC 50/60Hz	1910	96.0	132.0		x	x
RUC-2023-26-5230	230	AC 50/60Hz	7080	184.0	253.0	x		
RUC-2023-26-5230-K	230	AC 50/60Hz	7080	184.0	253.0		x	
RUC-2023-26-5230-L	230	AC 50/60Hz	7080	184.0	253.0			x
RUC-2023-26-5230-KL	230	AC 50/60Hz	7080	184.0	253.0		x	x

- = without additional features; **K** = with test button without block function; **L** = with light indicator (LED)

\* other options available upon request

► **BOLD** - Regular stocked items.

# R2M / RY2 / RUC

## Industrial Electromagnetic Relays

### RUC DPST(2NO) contact gap ≥ 3mm AC 50/60Hz & DC coil

Part Number	Coil Voltage (V)	Coil Type	Coil resistance at 20 °C in Ω	Coil operating range		Options*		
				min. (at 20°C)	max. (at 55°C)	-	K	L
RUC-2052-26-1012	12	DC	110	9.6	13.2	x		
RUC-2052-26-1012-K	12	DC	110	9.6	13.2		x	
RUC-2052-26-1012-L	12	DC	110	9.6	13.2			x
RUC-2052-26-1012-KL	12	DC	110	9.6	13.2		x	x
RUC-2052-26-1024	24	DC	430	19.2	26.4	x		
RUC-2052-26-1024-K	24	DC	430	19.2	26.4		x	
RUC-2052-26-1024-L	24	DC	430	19.2	26.4			x
RUC-2052-26-1024-KL	24	DC	430	19.2	26.4		x	x
RUC-2052-26-1110	110	DC	9200	88.0	121.0	x		
RUC-2052-26-1110-K	110	DC	9200	88.0	121.0		x	
RUC-2052-26-1110-L	110	DC	9200	88.0	121.0			x
RUC-2052-26-1110-KL	110	DC	9200	88.0	121.0		x	x
RUC-2052-26-5120	120	AC 50/60Hz	1910	96.0	132.0	x		
RUC-2052-26-5120-K	120	AC 50/60Hz	1910	96.0	132.0		x	
RUC-2052-26-5120-L	120	AC 50/60Hz	1910	96.0	132.0			x
RUC-2052-26-5120-KL	120	AC 50/60Hz	1910	96.0	132.0		x	x
RUC-2052-26-5230	230	AC 50/60Hz	7080	184.0	253.0	x		
RUC-2052-26-5230-K	230	AC 50/60Hz	7080	184.0	253.0		x	
RUC-2052-26-5230-L	230	AC 50/60Hz	7080	184.0	253.0			x
RUC-2052-26-5230-KL	230	AC 50/60Hz	7080	184.0	253.0		x	x

### RUC 3PST(3NO) contact gap ≥ 3mm AC 50/60Hz & DC coil

Part Number	Coil Voltage (V)	Coil Type	Coil resistance at 20 °C in Ω	Coil operating range		Options*		
				min. (at 20°C)	max. (at 55°C)	-	K	L
RUC-2053-26-1012	12	DC	110	9.6	13.2	x		
RUC-2053-26-1012-K	12	DC	110	9.6	13.2		x	
RUC-2053-26-1012-L	12	DC	110	9.6	13.2			x
RUC-2053-26-1012-KL	12	DC	110	9.6	13.2		x	x
RUC-2053-26-1024	24	DC	430	19.2	26.4	x		
RUC-2053-26-1024-K	24	DC	430	19.2	26.4		x	
RUC-2053-26-1024-L	24	DC	430	19.2	26.4			x
RUC-2053-26-1024-KL	24	DC	430	19.2	26.4		x	x
RUC-2053-26-1110	110	DC	9200	88.0	121.0	x		
RUC-2053-26-1110-K	110	DC	9200	88.0	121.0		x	
RUC-2053-26-1110-L	110	DC	9200	88.0	121.0			x
RUC-2053-26-1110-KL	110	DC	9200	88.0	121.0		x	x
RUC-2053-26-5120	120	AC 50/60Hz	1910	96.0	132.0	x		
RUC-2053-26-5120-K	120	AC 50/60Hz	1910	96.0	132.0		x	
RUC-2053-26-5120-L	120	AC 50/60Hz	1910	96.0	132.0			x
RUC-2053-26-5120-KL	120	AC 50/60Hz	1910	96.0	132.0		x	x
RUC-2053-26-5230	230	AC 50/60Hz	7080	184.0	253.0	x		
RUC-2053-26-5230-K	230	AC 50/60Hz	7080	184.0	253.0		x	
RUC-2053-26-5230-L	230	AC 50/60Hz	7080	184.0	253.0			x
RUC-2053-26-5230-KL	230	AC 50/60Hz	7080	184.0	253.0		x	x

- = without additional features

K = with test button without block function

L = with light indicator (LED)

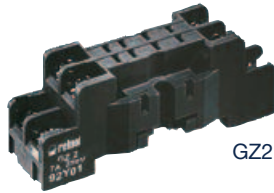
\* Other options available upon request

# R2M / RY2 / RUC

## Industrial Electromagnetic Relays - Plug-in Sockets and Accessories **Altech**<sup>®</sup>

### GZ2 (for R2M)

Screw terminals  
 Max. tightening moment  
 for the terminal: 0.7 Nm  
 35 mm rail mount  
 acc. to PN-EN 60715  
 or on panel mounting  
 65.2 x 20 x 25 mm  
 Two poles  
 7 A, 250 V AC



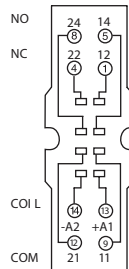
GZ2



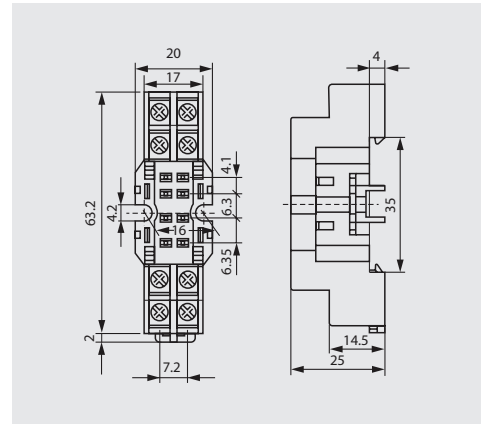
GZ2 1060

GZ2 1111

#### CONNECTION DIAGRAM



#### DIMENSIONS



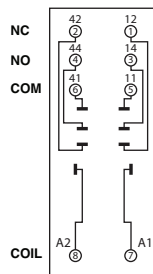
### GZY2G (for RY2)

Screw terminals  
 Max. tightening moment  
 for the terminal: 0.7 Nm  
 35 mm rail mount  
 acc. to PN-EN 60715  
 or on panel mounting  
 78.7 x 28 x 32.4 mm  
 Two poles  
 12 A, 250 V AC

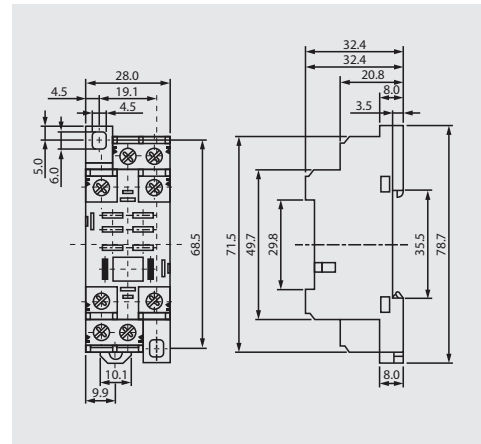


GZY2G

#### CONNECTION DIAGRAM



#### DIMENSIONS



### GUC11 (for RUC)

Screw terminals  
 Max. tightening moment  
 for the terminal: 0.7 Nm  
 35 mm rail mount  
 acc. to PN-EN 60715  
 or on panel mounting  
 82 x 42.2 x 26.5 mm  
 Three poles  
 16 A, 250 V AC

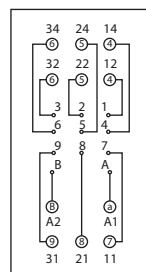


GUC11

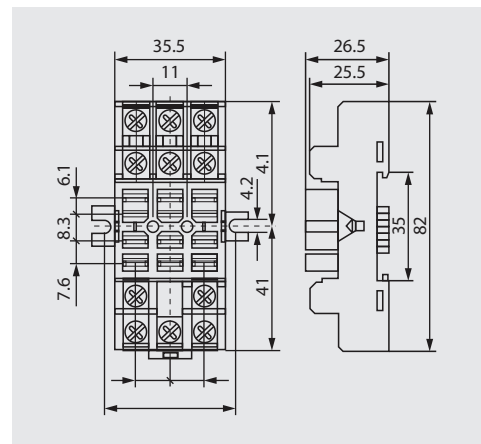


MBA

#### CONNECTION DIAGRAM



#### DIMENSIONS



All accessories are sold separately.