

RU Series — General Purpose Relays

Key features of the RU series include:

- Non-polarized LED indicator standard
- Solder-free construction (spot welded, no solder points, lead-free)
- No internal wires
- Mechanical flag indicator standard
- Manual latching lever with color coding for AC or DC coil
- Available without latching lever (or with momentary check button)
- Snap-on marking plate standard
- Cadmium-free contacts - RoHS compliant
- Color coded coils for visual distinction
- Contact rating 6A: 4PDT
10A: DPDT



E
Relays

	RU2	RU4
Contact Material	AgSnOIn (silver tin oxide indium)	AuAg/Ag (gold-silver alloy on silver)
Contact Resistance	50 mΩ maximum	
Minimum Applicable Load	24VDC, 5mA (reference value)	1V DC, 1mA (standard) 1V DC, 0.1mA (bifurcated)
Operating Time	20 msec maximum	
Release Time	20 msec maximum	
Maximum Continuous Applied Voltage (AC/DC) at 20°C	110%	
Minimum Operating Voltage (AC/DC) at 20°C	80%	
Drop-Out Voltage (AC) at 20°C	30%	
Drop-Out Voltage (DC) at 20°C	10%	
Power Consumption	1.1-1.4VA (AC); 0.9-1.0W (DC)	
Dielectric Strength	Between contact and coil: 2,500VAC, 1 minute Between poles: 2,500VAC, 1 minute Between contacts of the same pole: 1,000VAC, 1 minute	Between contact and coil: 2,500VAC, 1 minute Between poles: 2,000VAC, 1 minute Between contacts of the same pole: 1,000VAC, 1 minute
Frequency Response	1,800 operations/hr	
Vibration Resistance	Operating extremes: 10 to 55Hz, Amplitude 1.0 mm p-p Damage limits: 10 to 55Hz, Amplitude 1.0 mm p-p	
Shock Resistance	Operating extremes: 150 m/s ² (15G) Damage limits: 1,000 m/s ² (100G)	
Life Expectancy	Mechanical: AC: 20,000,000 operations minimum DC: 30,000,000 operations minimum Electrical: see electrical life curve	
Degree of Protection	IP40	
Operating Temperature	-55 to +70°C (no freezing)	
Weight	35g	

UL Recognized
File No. E66043, Vol 8, sec. 1
Vol 8, sec. 2

TÜV
PRODUCT SERVICE
B020813332451

CSA Certified
File No. LR35144-135844



Ordering Information

Consult factory for other voltages.

Basic Part No. **Coil Voltage:**
RU 4 S - () - D12

of Contacts **Coil Voltage Code****

2 = DPDT
4 = 4PDT
42 = 4PDT bifurcated contacts

Option*

(Blank) = with latching check button
C = without check button
M = momentary check button
D = surge suppression diode (DC coils only)

D12 = 12V DC
D24 = 24V DC
D110 = 110V DC
A24 = 24V AC
A110 = 110-120V AC
A220 = 220-240V AC

- *All come with bi-polar LED, mechanical flag indicator, marking plate.
- **Contact IDEC for other voltages.

Part Numbers

Part Numbers: RU Series with Options

Termination		Contact Configuration	Standard	Without Latching Lever	With Momentary Check Button	With Diode*
S: Solder/plugin	Standard	DPDT	RU2S	RU2S-C	RU2S-M	RU2S-D
		4PDT	RU4S	RU4S-C	RU4S-M	RU4S-D
	Bifurcated	4PDT	RU42S	RU42S-C	RU42S-M	RU42S-D



*DC coils only.

Part Numbers: Sockets

Relays	Spring Clamp DIN Rail Mount	Standard DIN Rail Mount	Finger-Safe DIN Rail Mount	Panel Mount	PC Mount	Springs & Clips (optional)	
						Part Number	Use With
RU2S	SU2S-11L	SM2S-05	SM2S-05C	SY4S-51	SY4S-61 SY4S-62	SFA-101① SFA-202② SY4S-02F1③	use with SY4S-05, -05C SM2S-05, -05C SU4S-11L, SU2S-11L
RU4S	SU4S-11L	SY4S-05	SY4S-05C			SFA-301① SFA-302② SY4S-51F1③	use with SY4S-51, -61



See Section F for details on sockets. All DIN rail mount sockets shown above can be mounted using DIN rail BNDN1000.



- ① Top latch
- ② Side latch
- ③ Pullover spring

Part Numbers: Marking Strip

Item	Part Number	Quantity
RU Marking Strip	RU9Z-P①PN10,	10 pieces per package



In place of ①, insert color code from chart at right.

Marking Strip Color Code

Color	Code	Color	Code
Yellow*	Y	Blue	S
Green	G	White	W
Amber	A		



*yellow marking strip standard on all RU relays.

Ratings

Coil Ratings

Rated Voltage	Voltage Code	Coil Tape Colors	Rated Current ±15% at 20°C	Coil Resistance ±10% at 20°C	Inrush Current	Inductance		
						Energizing	De-Energizing	
AC	24V	A24	white	37.5mA	164 Ω	60mA	1.8H	0.96H
	110-120V	A110	dark blue	8.4mA	4,550 Ω	14mA	36H	22H
	220-240V	A220	red	4.2mA	18,230Ω	7mA	144H	87H
DC	12V	D12	yellow*	83.3mA	160 Ω	N/A		
	24V	D24	green	41.7mA	605 Ω			
	110V	D110	yellow*	9.1mA	12, 100 Ω			



*Voltage printed in black.

Contact Ratings (Standard)

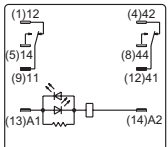
Voltage		Resistive	Inductive
30V DC	DPDT	10A	5A
	4PDT	6A	3A
110V DC	DPDT	0.6A	0.3A
	4PDT	0.4A	0.2A
120V AC	DPDT	10A	5A
	4PDT	6A	3A
240V AC	DPDT	10A	5A
	4PDT	6A	3A

Contact Ratings (Bifurcated)

Voltage		Resistive	Inductive
30V DC	4PDT	3A	1.5A
110V DC	4PDT	—	—
120V DC	4PDT	3A	0.8A
250V DC	4PDT	3A	0.8A

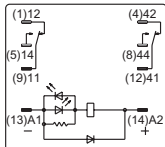
Internal Circuit*

RU2S Standard



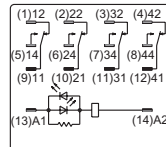
Over 24V AC/DC

RU2S-D with Diode



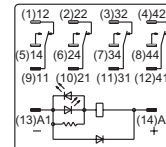
Over 24V DC

RU4S/RU42S Standard

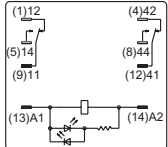


Over 24V AC/DC

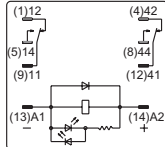
RU4S-D/RU42S-D with Diode



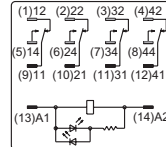
Over 24V DC



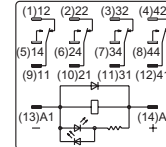
24V AC/DC or less



24V DC or less



24V AC/DC or less



24V DC or less



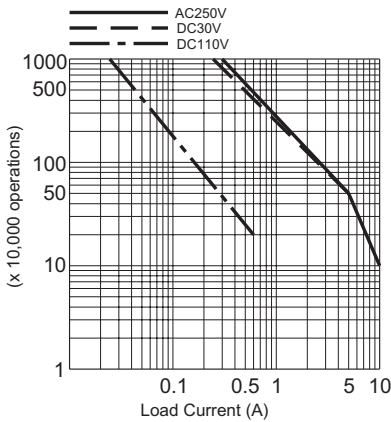
Image as viewed from bottom of relay. Refer to socket for exact wiring layout (Section F).



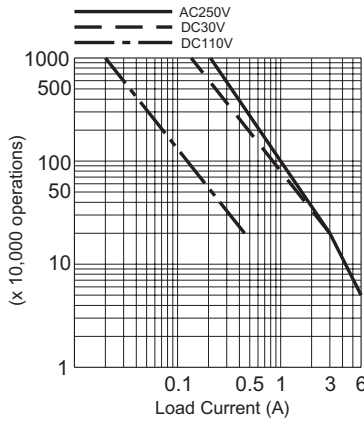
Numbers not in parenthesis follow international system of labeling terminals.

Electrical Life Curves

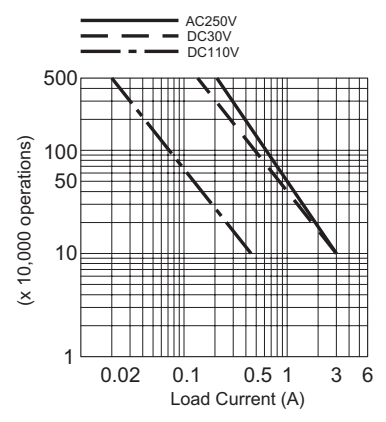
RU2 (Resistive Load)



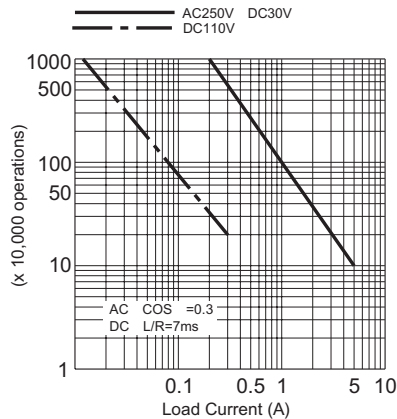
RU4 (Resistive Load)



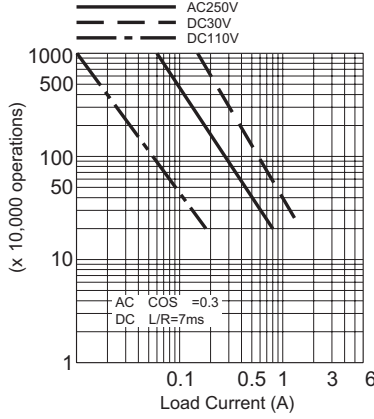
RU42 (Resistive Load)



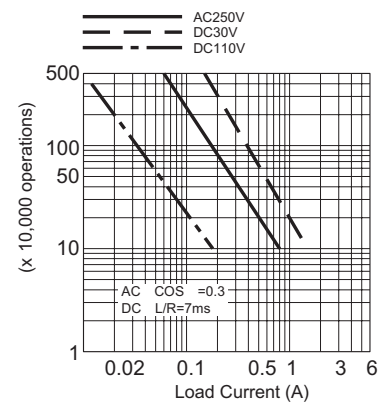
RU2 (Inductive Load)



RU4 (Inductive Load)

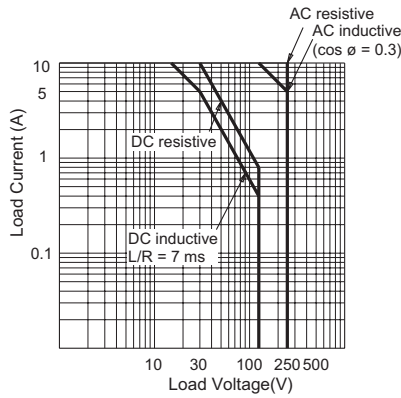


RU42 (Inductive Load)

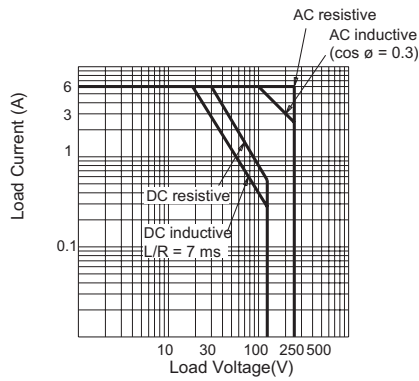


Maximum Switching Capacity

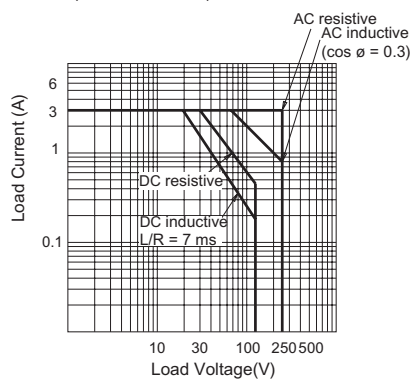
RU2 (Maximum Load)



RU4 (Maximum Load)

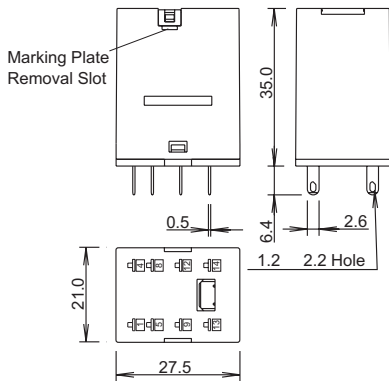


RU42 (Maximum Load)



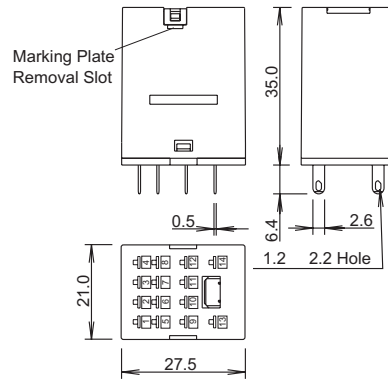
Dimensions & Mounting Hole Layouts

RU2
Dimensions



Marking plate removal slot is provided only on one side.
Insert a flat screwdriver into the slot to remove the marking plate.

RU4/RU42
Dimensions



Marking plate removal slot is provided only on one side.
Insert a flat screwdriver into the slot to remove the marking plate.

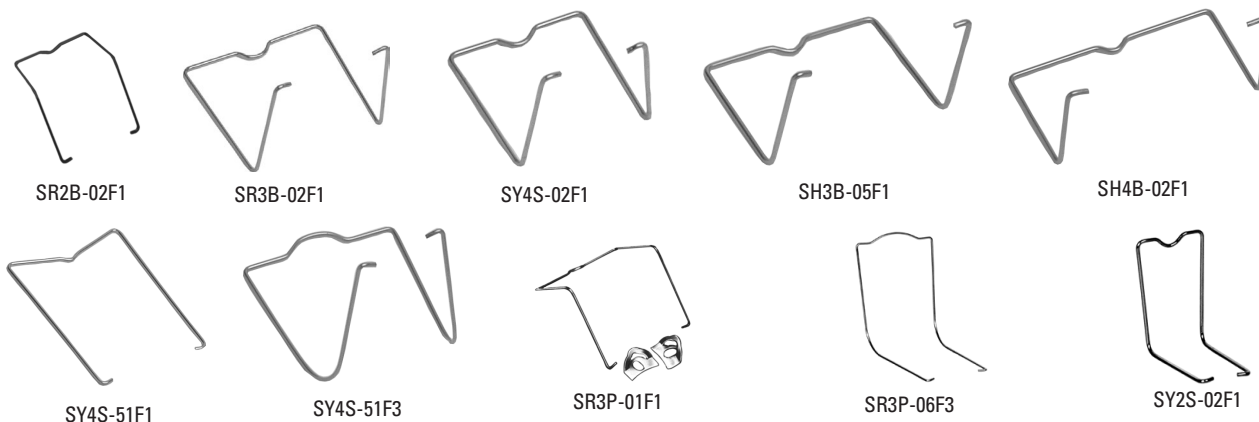
Dimensions are in mm.

Hold-Down Springs and Clips Selection Guide

DIN Rail Snap/Surface-Mount Sockets

Socket Part No.	Applicable Relays, Timer	Hold-Down Pullover Spring	Hold-Down Clip (side latch)	Hold-Down Clip (top latch)
SU2S-11L SU4S-11L	RM2S, RU2, GT5Y-2	SY4S-51F1	SFA-202	SFA-101
	RY4S, RY42S, RU4, RU42, GT5Y, RY2KS, RM2S	SY4S-51F1	SFA-202	SFA-101
SR2P-05 SR2P-05C	RR2P	SR2B-02F1	SFA-203	—
	RTE-P1, GT3, GT5P	—	SFA-203	—
SR2P-06	RR2P	SR2B-02F1	SFA-202	—
	GT3 (8-pin), RTE-P1, GT5P	—	SFA-202	—
SR3P-05 SR3P-05C	RR3PA	SR3B-02F1	SFA-203	—
	RR2KP	SR3P-06F3	SFA-203	—
	RTE-P2, GT3 (11-pin)	—	SFA-203	—
SR3P-06	RR3PA	SR3B-02F1	SFA-202	—
	RR2KP	SR3P-06F3	SFA-202	—
	RTE-P2, GT3 (11-pin)	—	SFA-202	—
SR3B-05	RR1BA, RR2BA, RR3B, RTE-B	SR3B-02F1	SFA-202	—
SH1B-05 SH1B-05C	RH1B	SY2S-02F1	SFA-202	SFA-101
SH2B-05 SH2B-05C	RH2B	SY4S-02F1	SFA-202	SFA-101
SH3B-05 SH3B-05C	RH3B, RH2LB	SH3B-05F1	SFA-202	SFA-101
SH4B-05 SH4B-05C	RH4B	SH4B-02F1	SFA-202	SFA-101
SY2S-05 SY2S-05C	RY2S, RY22S	SY2S-02F1	SFA-202	SFA-101
SY4S-05 SY4S-05C	RY4S, RY42S, RU4, RU42, RM2S	SY4S-51F1	SFA-202	SFA-101
	RY2KS, GT5Y	(SY4S-51F3)	SFA-202	
SM2S	RM2S, RU2	SY4S-51F1	SFA-202	SFA-101
SJ1S SJ2S	RQ1S RJ2S	SJ9Z-C		
SQ1S SQ2S	RQ1V RQ2V	SQ9Z-C		

1. Hold-down springs work in conjunction with hold-down spring anchors included with DIN rail sockets.
2. When mounting relays with a check button onto panel mount or PC board mount sockets, use the hold-down spring shown in parenthesis. Hold-down springs for relays with check buttons are not available for SR2P-51.
3. For close mounting of panel mount or PC mount sockets, use hold-down clips rather than hold-down springs.
4. SFA-101, SFA-202 and SFA-302 come in pairs.



Sockets

Panel and PC Board Mount Sockets

Socket Part No.	Applicable Relays, Timer	Hold-Down Pullover Spring	Hold-Down Clip (side latch)	Hold-Down Clip (top latch)
SR2P-51	RR2P	SR3P-01F1	—	—
	GT3 (8-pin), RTE-P1	—	SFA-402	—
SR3P-51	RR3PA	SR3P-01F1	—	—
	RR2KP	SR3P-51F3	—	—
	GT3 (11-pin), RTE-P2	—	SFA-402	—
SR3B-51	RR1BA, RR2BA, RR3B, RTE-B	SR3B-02F1	—	—
SH1B-51 SH1B-62	RH1B	SY4S-51F1	—	SFA-301 SFA-302
SH2B-51	RH2B	SY4S-51F1 (SY4S-02F1)	—	SFA-301 SFA-302
SH2B-62	RH2B	SY4S-51F1 (SY4S-02F1)	—	—
SH3B-51 SH3B-62	RH3B, RH2LB	SY4S-51F1 (SY4S-02F1)	—	SFA-301 SFA-302
SH4B-51 SH4B-62	RH4B	SY4S-51F1 (SH4B-02F1)	—	SFA-301 SFA-302
SY2S-51 SY2S-61	RY2S, RY22S	SY4S-51F1	—	SFA-301 SFA-302
SY4S-51 SY4S-61	RY4S, RY42S	SY4S-51F1 (SY4S-02F1)	—	SFA-301 SFA-302
	RY2KS	SY4S-51F1 (SY4S-02F3)	SFA-302	—
	GT5Y	—	SFA-302	—
SY4S-62 *	RY4S, RY42S, RM2S	SY4S-51F1 (SY4S-02F1)	—	—
	RY2KS	SY4S-51F1 (SY4S-02F3)	—	—

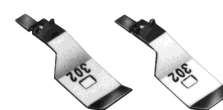
* Does not accept hold down clips



SFA-101



SFA-202



SFA-302



SFA-301

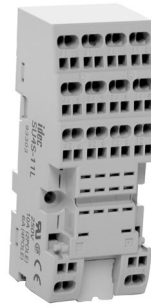
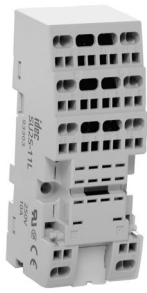


SFA-203



SFA-402

SU Series: DIN Rail Snap-Mount Sockets



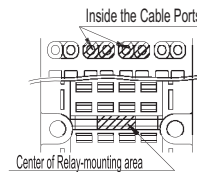
SU2S-11L	
Style	8-blade DIN-mount/surface mount
Terminal	Spring clamp terminals
Wire Size	24-16 AWG
Electrical Rating	10A
Compatible Relay	RU2, RM2
Compatible Timer	GT5Y-2
Hold-Down Clip	SFA-101 (top latch), SFA-202 (side latch)

SU4S-11L	
Style	14-blade DIN-mount/surface mount
Terminal	Spring clamp terminals
Wire Size	24-16 AWG
Electrical Rating	6A (using RU4), 10A (using RU2)
Compatible Relay	RY4S, RY42S, RU4, RU42S, RY2KS, RM2S
Compatible Timer	GT5Y
Hold-Down Clip	SFA-101 (top latch), SFA-202 (side latch)

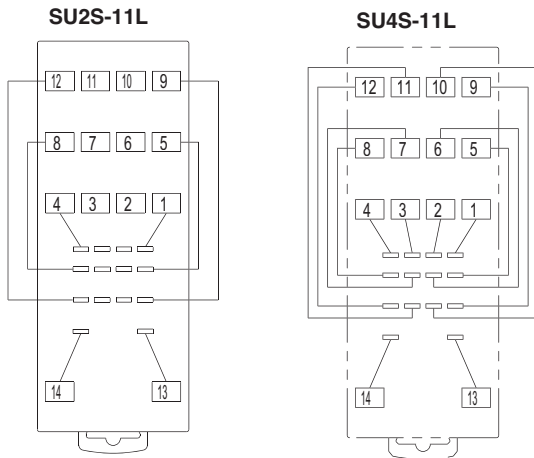
Sockets



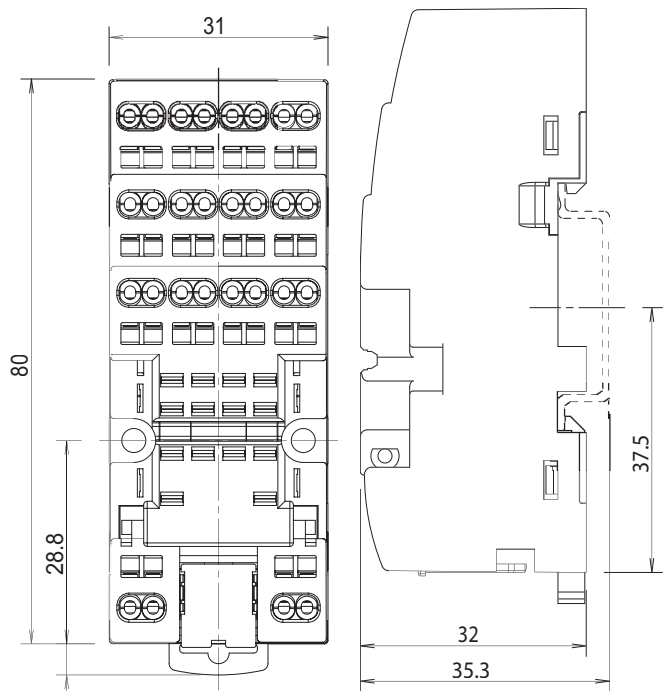
1. On the SU2S, wires or ferrules cannot be connected to terminals 2, 3, 6, 7, 10 or 11 because neither springs nor conductive brackets are installed in these terminals.
2. For socket mounting accessories, see page F-29.



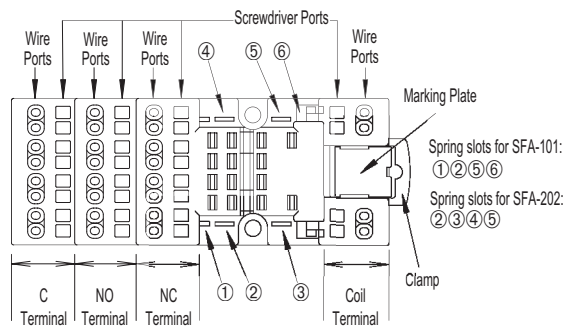
Terminal Arrangement (top view)



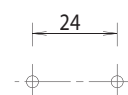
Dimensions



Parts

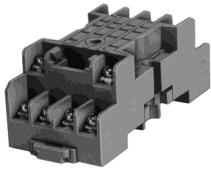


Panel Cutout for Surface Mounting



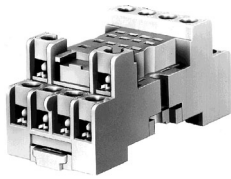
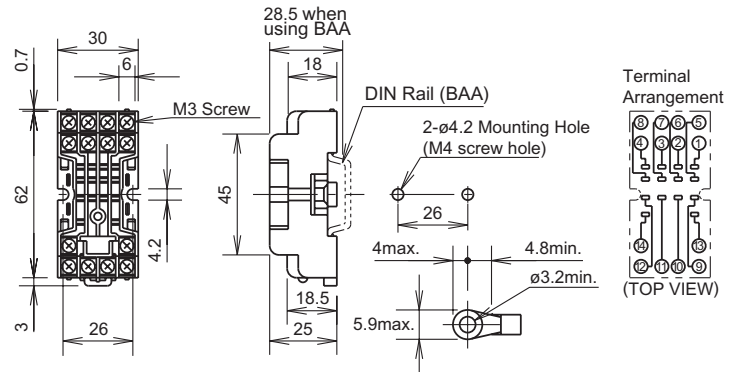
All dimensions are in mm.

SY4S Sockets



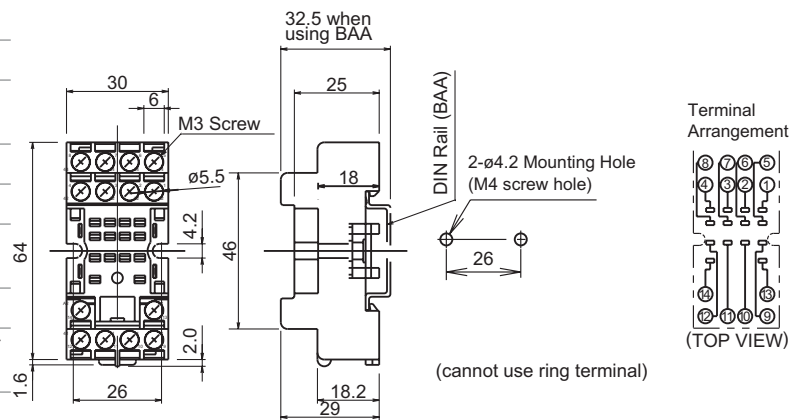
SY4S-05

Style	14-blade, snap-mount/surface mount
Terminal/Torque	M3 screw with captive wire clamp (5.5 - 9 in•lbs)
Wire Size	Maximum up to 2-#14AWG
Electrical Rating	300V, 7A
Compatible Relay	RY4S, RY42S, RU4S, RU42S, RM2S, *RY2KS, (*latching relay)
Compatible Timer	GT5Y
Hold-Down Spring	SY4S-51F1 for all relays; SY4S-51F3 for RY2KS only
Hold-Down Clip	SFA-101 (top notch), SFA-202 (side notch) for all relays and timers



SY4S-05C Fingersafe

Style	14-blade, snap-mount/surface mount
Terminal/Torque	M3 screw with captive wire clamp, fingersafe (5.5 - 9 in•lbs)
Wire Size	Maximum up to 2-#14AWG
Electrical Rating	300V, 7A
Compatible Relay	RY4S, RY42S, RM2S, RU4S, RU42S, *RY2KS, (*latching relay)
Compatible Timer	GT5Y
Hold-Down Spring	SY4S-51F1 for all relays; SY4S-51F3 for RY2KS only
Hold-Down Clip	SFA-101 (top notch), SFA-202 (side notch) for GT5Y timer and relays

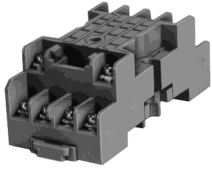


All dimensions are in mm.



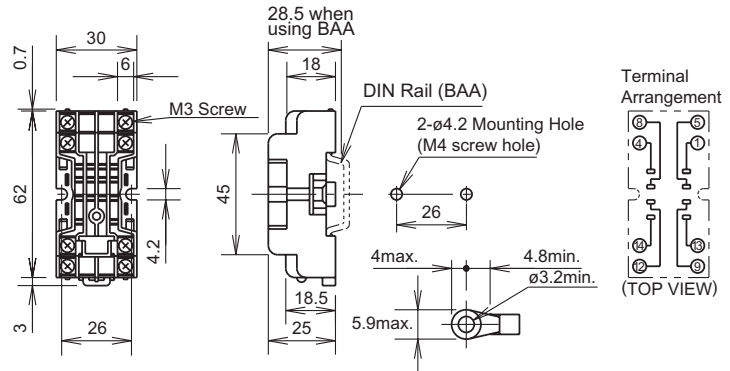
1. For socket mounting accessories, see page F-29.
2. For hold-down clip/spring selections, see page F-4.

SM2S Sockets



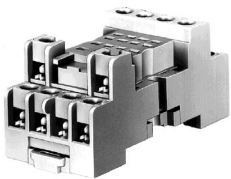
SM2S-05

Style	8-blade, snap-mount/surface mount
Terminal/Torque	M3 screw with captive wire clamp (5.5 - 9 in •lbs)
Wire Size	Maximum up to 2-#14AWG
Electrical Rating	300V, 10A
Compatible Relay	RU2S, RM2S
Compatible Timer	—
Hold-Down Spring	SY4S-51F1
Hold-Down Clip	SFA-101 (top notch), SFA-202 (side notch)



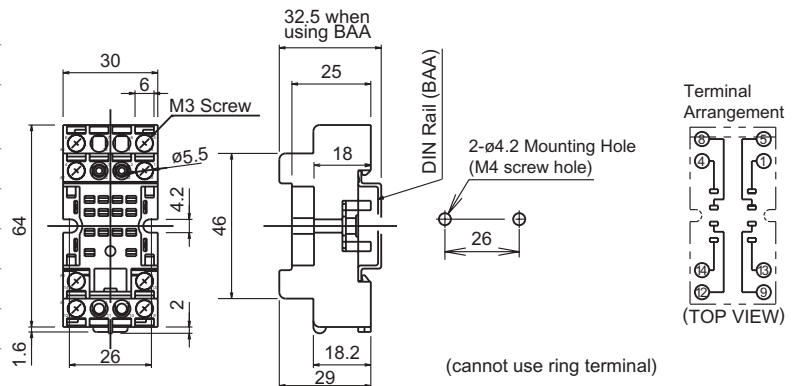
F

Sockets



SM2S-05C Fingersafe

Style	8-blade, snap-mount/surface mount
Terminal/Torque	M3 screw with captive wire clamp, fingersafe (5.5 - 9 in •lbs)
Wire Size	Maximum up to 2-#14AWG
Electrical Rating	300V, 10A
Compatible Relay	RU2S, RM2S
Compatible Timer	—
Hold-Down Spring	SY4S-51F1
Hold-Down Clip	SFA-101 (top notch), SFA-202 (side notch)

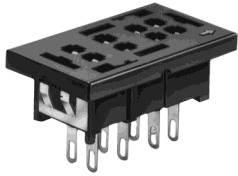


All dimensions are in mm.



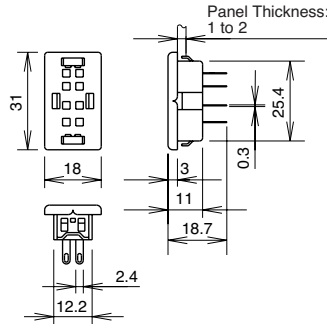
1. For socket mounting accessories, see page F-29.
2. For hold-down clip/spring selections, see page F-4.

SY Series: Panel Mount Sockets

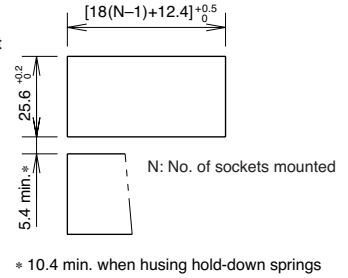
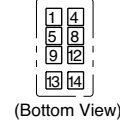


SY2S-51

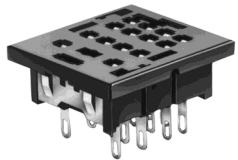
Style	8-blade, panel mount
Terminal	Solder
Electrical Rating	300V, 7A
Compatible Relay	RY2S, RY22S
Hold-Down Spring	SY4S-51F1
Hold-Down Clip	SFA-301 (top notch), SFA-302 (side notch)



Terminal Arrangement

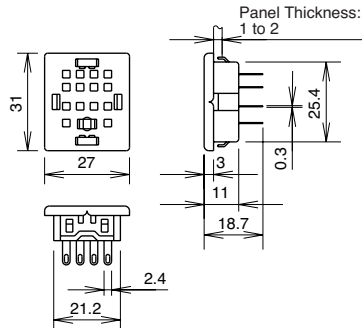


F
Sockets

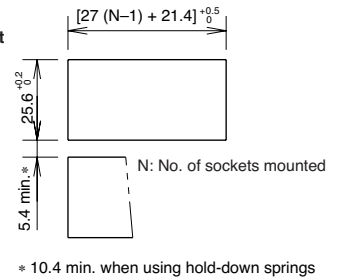
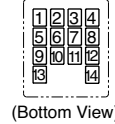


SY4S-51

Style	14-blade, panel mount
Terminal	Solder
Electrical Rating	300V, 7A
Compatible Relay	RY4S, RY42S, RM2S, RY2KS, RU4S, RU2S, RU42S
Compatible Timer	GT5Y
Hold-Down Spring	SY4S-51F1 for all relays except; SY4S-02F3 for RY2KS relay
Hold-Down Clip	SFA-301 (top notch), SFA-302 (side notch)



Terminal Arrangement



All dimensions are in mm.



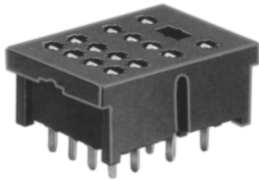
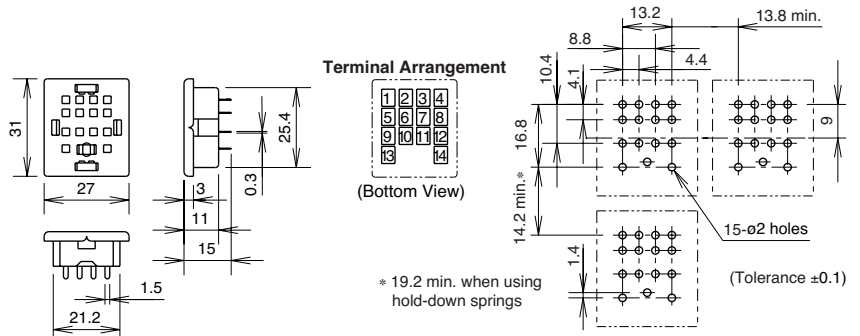
1. For socket mounting accessories, see page F-29.
2. For hold-down clip/spring selections, see page F-4.

SY Series: PC Mount Sockets, continued



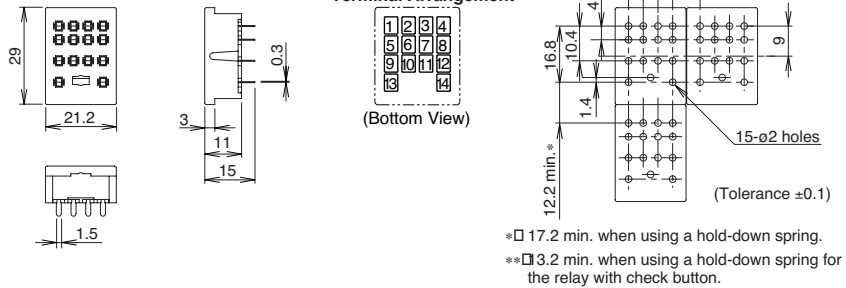
SY4S-61

Style	14-blade
Terminal	Solder/PCB mount
Electrical Rating	300V, 7A
Compatible Relay	RY4S, RY42S, RM2S, *RY2KS, RU4S, RU42S, RU2S (*latching relay)
Compatible Timer	GT5Y
Hold-Down Spring	SY4S-51F1, SY4S-02F1
Hold-Down Clip	SFA-301 (top notch; except GT5Y and RY2KS) SFA-302 (side notch for all)



SY4S-62

Style	14-blade
Terminal	Solder/PCB mount
Electrical Rating	250V, 7A
Compatible Relay	RY4S, RY42S, RU4S, RU42S, *RY2KS (*latching relay)
Compatible Timer	GT5Y
Hold-Down Spring	SY4S-51F1, SY4S-51F3, SY4S-51F4, *SY4S-02F1, *SY4S-02F3 (*when mounting a relay with check button)

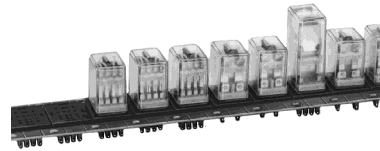
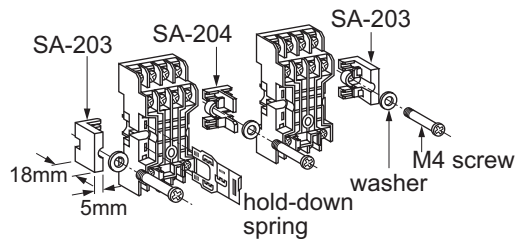


All dimensions are in mm.



1. For socket mounting accessories, see page F-29.
2. For hold-down clip/spring selections, see page F-4.

Accessories



Description	Appearance	Use with	Part No.	Remarks
Aluminum DIN Rail (1 meter length)		All DIN rail sockets	BNDN1000	IDEC offers a low-profile DIN rail (BNDN1000). The BNDN1000 is designed to accommodate snap-mount sockets. Made of durable extruded aluminum, the BNDN-1000 measures 0.413 in height and 1.37 (35mm) in width (DIN standard). Standard length is 39" (1,000mm).
DIN Rail End Stop		DIN rail	BNL5	9.1 mm wide.
Surface Mount End Connector		SY2S, SY4S, SR3B, SH1B, SH2B, SH3B, SH4B	SA-203	For use on ends of socket groupings when surface mounting.
			SA-204	For use between adjoining sockets when surface mounting.
Surface Mount Connector		SY2S, SY4S, SR3B, SH1B, SH2B, SH3B, SH4B	SA-405	For use between adjoining sockets when surface mounting.
DIN Rail Spacer		All DIN rail sockets	SA-406	
Steel Mounting Plates (for panel mount sockets)		SY4S-51, SH2B-51	SA-402	11.42" length with 10 holes.
			SA-403	23.33" length with 21 holes.
Relay Holders		RH2B, RM2S, RY4S, RY42S, RU4S, RU42S	RH-01	For diagram, see next page.
		RY2S, RH1B	RH-03	
Replacement Hold-Down Spring Anchor		Horseshoe clip for all DIN rail sockets except SR*P-05(C)	Y778-011	For use with hold-down springs (bale wire types) or DIN rail mount sockets. 2 pieces included with each socket.
Hold-Down Spring for SR*P-05(C)		Chair clip for SR*P-05(C)	Y703-102	For SR2P-05, SR2P-05C, SR3P-05, SR3P-05C

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Sockets