



Think Automation and beyond...



Relay Sockets  
SJ series



One step wiring  
Easy & quick connection

IDEC CORPORATION

# Push-in

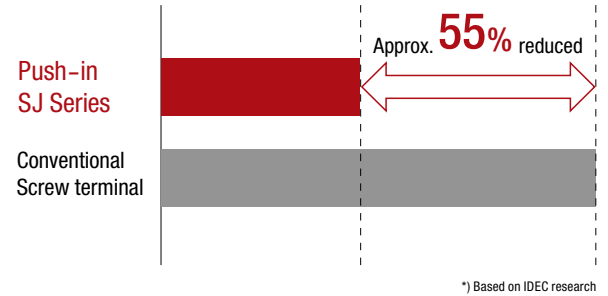


One step wiring,  
easy & quick connection  
Safe and efficient  
SJ series Push-in relay sockets

## Time saving & efficient

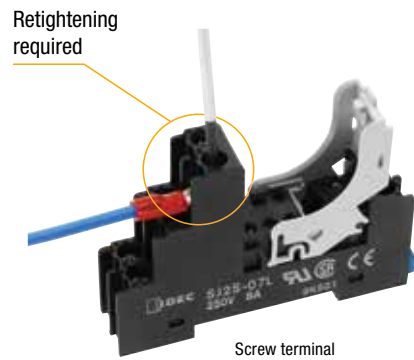
### Save up to **55%** in wiring time

Wiring time reduced greatly compared with conventional screw terminals. (Compared with IDEC products)

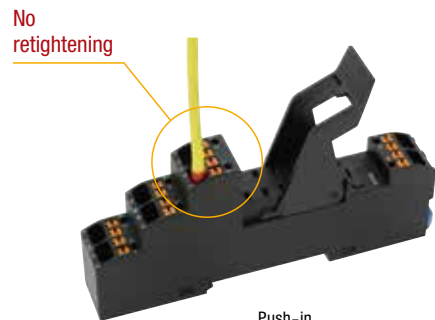


### Reduce maintenance work

Push-in terminals eliminate the need for torque maintenance such as tightening of screws because screws are not used.



Screw terminal



Push-in

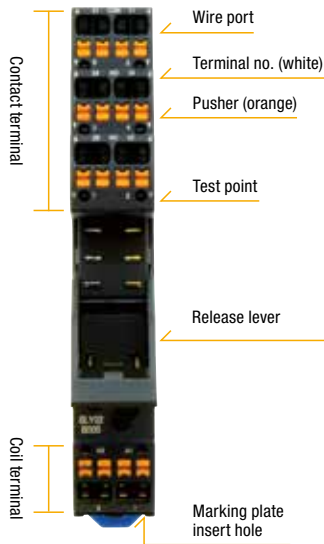


## Highly reliable

### High visibility

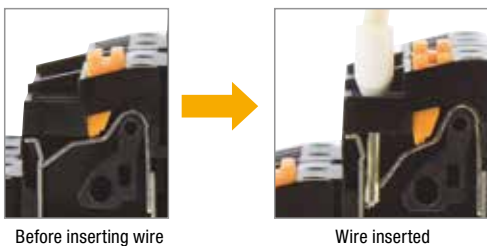
The terminal number on the socket can be clearly seen on the socket preventing incorrect wiring.

Also, the distinct color pusher prevents a flat blade screwdriver from being inserted into the wire port.



### Vibration-resistant

Safe and reliable Push-in connection achieves high contact reliability and vibration resistance regardless of the wire size or shape.



### IP20 Finger-safe

IEC60529 finger-safe design. IP20 protection. Safe contact protection structure prevents electric shock.



## Wide range of options

### Terminal jumpers

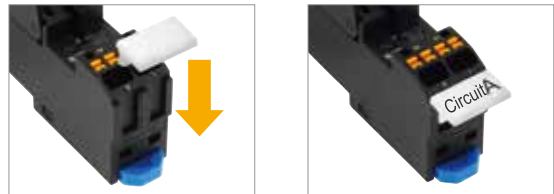
Easy wiring to coil side.



Note) The rated current is 2A.

### Marking plate

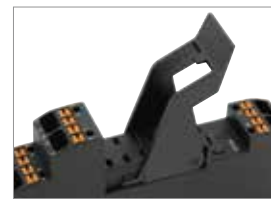
A marking plate enables easy identification of connections. Maintenance time is reduced.



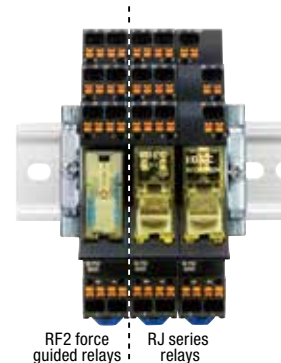
## Safe & easy

### Equipped with a release lever

The release lever easily holds and removes the relay.



### IDEC RF2 force guided relays can be mounted



Note) When using with RF2S force guided relay, use at 150V maximum.



# SJ Series Relay Sockets

Push-in relay sockets reduce wiring by 55%\*

\* Compared with conventional screw terminal relay sockets.

## Relay Sockets

Package Quantity: 1

Shape	No. of Poles	Part No. (Ordering No.)
	1	SJ1S-21L
	2	SJ2S-21L

## Applicable Relay

No. of Poles	Socket	Relay
1	SJ1S-21L	RJ1S
2	SJ2S-21L	RJ2S, RJ22S, RF2S

- For details on RJ series relay, see catalog.
- When using the SJ socket with RJ series relay, be sure to note the derating characteristics.

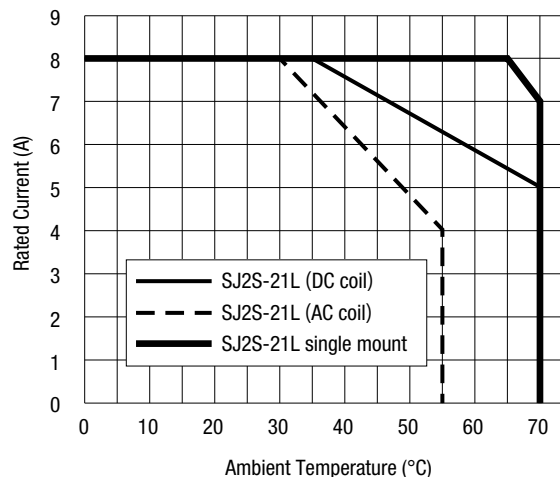
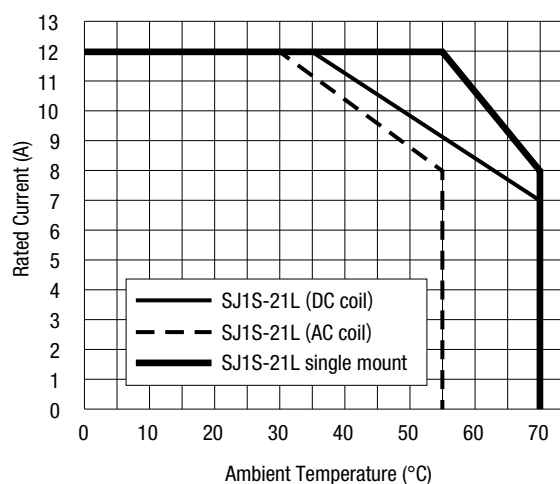
## Specifications and Ratings

Part No.	SJ2S-21L	SJ4S-21L
No. of Poles	1	2
Rated Insulation Voltage	300V AC/DC (*1)	
Rated Thermal Current (*2)	12A	8A
Applicable Wire	Solid wire / stranded wire: 0.14 to 1.5mm <sup>2</sup> , AWG26 to 16 Stranded wire with ferrule (without insulated cover): 0.5 to 1.5mm <sup>2</sup> , AWG20 to 16 Stranded wire with ferrule (with insulated cover): 0.14 to 1.0mm <sup>2</sup> , AWG26 to 18	
Insulation Resistance	100MΩ min. (500V DC megger)	
Dielectric Strength	2500V AC, 1 min. (between live and dead metal parts, between live metal parts of the different poles)	
Vibration Resistance (Damage Limits)	10 to 55 Hz, amplitude 1.5 mm	
Shock Resistance (Damage Limits)	50G (when using release lever)	
Operating Temperature	-40 to +70°C (no freezing)	
Operating Humidity	5 to 85% RH (no condensation)	
Storage Temperature	-40 to +70°C (no freezing)	
Storage Humidity	5 to 85% RH (no condensation)	
Degree of Protection	IP20 (IEC 60529)	
Weight (approx.)	35g	43g
Applicable Standards	UL508, CSA C22.2 No.14, IEC61984	

\*1) When using the socket with RF2S Force Guided Relay, the rated insulation voltage is 150V AC/DC.

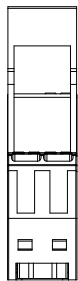
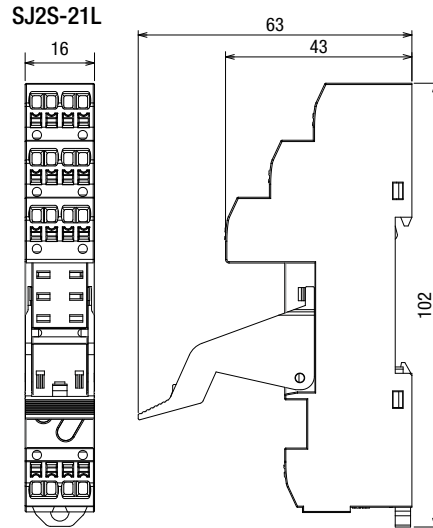
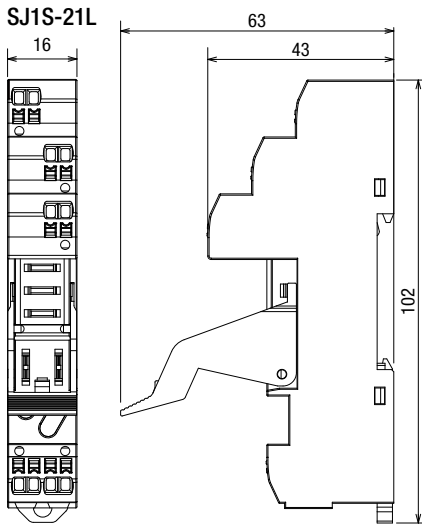
\*2) Be sure to note the derating characteristics.

## Derating Curve

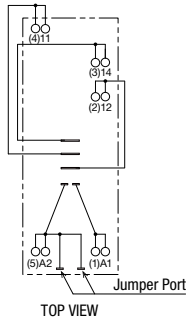


Dimensions

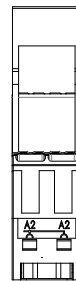
All dimensions in mm.



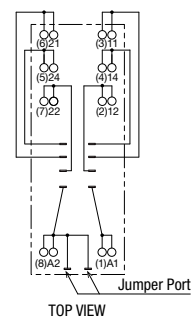
Terminal Arrangement



TOP VIEW




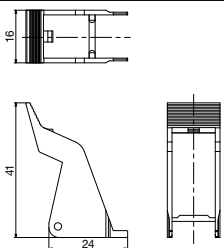
Terminal Arrangement



TOP VIEW






Note) The numbers in parentheses ( ) are values according to NEMA standards.

Maintenance Parts

Function	Shape	Material	Part No.	Ordering No.	Package Quantity	Remarks
Release Lever		Plastic	SJ9Z-C21R	SJ9Z-C21R	10	

Accessories

When ordering, specify the Ordering No.

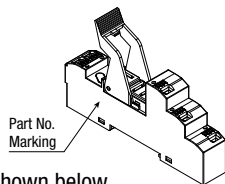
Function	Shape	Material	Part No.	Ordering No.	Package Quantity	Remarks
Marking Plate		Plastic (white)	SJ9Z-P2100W	SJ9Z-P2100W	10	
Jumper		Bronze (tin-plated) Insulation: PBT plastic	SU9Z-J2102A	SU9Z-J2102A	10	A2 terminal of the coil is connected. The rated current is 2A.
DIN Rail		Aluminum	BAA1000	BAA1000PN10	10	<ul style="list-style-type: none"> <li>Length: 1m</li> <li>Width: 35mm</li> <li>Weight: 200g (approx.)</li> </ul>
End Clip		Metal (zinc-plated steel)	BNL6	BNL6PN10	10	Weight: 15g (approx.) Use end clips when mounting multiple sockets on the DIN rail.
DIN Rail Spacer		Plastic (black)	SA-406B	SA-406B	1	Thickness: 5 mm Used for adjusting spacing between sockets mounted on a DIN rail.

Instructions

Identifying the Socket

SJ1S and SJ2S can be identified by the part number marked on the side.

No. of Poles	Part No.
1	SJ1S-21L
2	SJ2S-21L



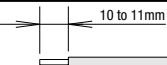
Applicable Wire

When wiring, use the applicable wires shown below.

Applicable Wire and Specifications

Applicable Wire (Stranded Wire, Solid Wire)	0.14 to 1.50mm <sup>2</sup> (AWG16 to 26)
Wire Strip Length (*1)	10 to 11mm
Ferrule Size (*2) (Weidmüller)	H0.5 to H1.5 (Without insulated cover) H0.14 to H1.0 (With insulated cover)

\*1) Strip the sheath of the wire 10 to 11 mm from the end.



\*2) When using a ferrule, refer to "Wire Size and Recommended Ferrule" below. Note: Make sure that the stranded wires do not loosen when using wiring without ferrules.

Wire Size and Recommended Ferrules

Ferrules without Insulated Covers

Applicable Wire (Stranded Wire)		Wire Strip Length	Part No.	Ordering No.
AWG	mm <sup>2</sup>			
20	0.50	10 to 11 mm	H0.5/10	9004050000
18	0.75	10 to 11 mm	H0.75/10	0542500000
18	1.00	10 to 11 mm	H1.0/10	0282800000
16	1.50	10 to 11 mm	H1.5/10	0186500000

Ferrules with Insulated Covers

Applicable Wire (Stranded Wire)		Wire Strip Length	Part No.	Ordering No.
AWG	mm <sup>2</sup>			
26	0.14	10 to 11 mm	H0.14/12 GR SV	9028240000
24	0.25	10 to 11 mm	H0.25/12 HBL	9025760000
22	0.34	10 to 11 mm	H0.34/12 TK	9025770000
20	0.50	10 to 11 mm	H0.5/14 OR	0690700000
		12 to 13 mm	H0.5/16 OR	9025870000
18	0.75	10 to 11 mm	H0.75/14 W	0462900000
		12 to 13 mm	H0.75/16 W	9025860000
18	1.00	10 to 11 mm	H1.0/14 GE	0463000000
		12 to 13 mm	H1.0/16 GE	9025950000

Recommended Tools (Optional)

Name	Part No.	Ordering No.
Crimping tool	PZ6 ROTO L	1444050000
Flat blade screwdriver	SDS 0.4x2.5x75	9009030000

Note 1) Note the crimping dimensions when using tools other than the recommended crimping tool. For details, see page 7.

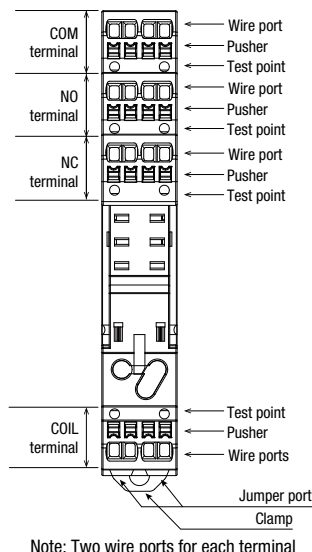
Note 2) Use a flat blade screwdriver with a blade size of 0.4x2.5mm.

Refer to the table below for other companies' ferrules that correspond to "Wire Size and Recommended Ferrules".

Applicable Wire (Stranded Wire)	PHOENIX CONTACT				WAGO	
	AWG	mm <sup>2</sup>	Without Insulation Cover	With Insulation Cover	Without Insulation Cover	With Insulation Cover
26	0.14	—	AI 0.14-8 GY-1000	—	—	—
24	0.25	—	AI 0.25-8 YE	—	FE-0.25-8N-YE	—
22	0.34	—	AI 0.34-8 TQ	—	FE-0.34-8N-TQ	—
20	0.50	A 0.5-8	AI 0.5-8 WH	FE-0.5-8	FE-0.5-8N-WH	—
		A 0.5-10	AI 0.5-10 EH	FE-0.5-10	FE-0.5-10N-WH	—
18	0.75	A 0.75-8	AI 0.75-8 GY	FE-0.75-8	FE-0.75-8N-GY	—
		A 0.75-10	AI 0.75-10 GY	FE-0.75-10	FE-0.75-10N-GY	—
18	1.00	A 1.0-8	—	FE-1.0-8	—	—
		A 1.0-10	—	FE-1.0-10	—	—
16	1.50	A 1.5-10	—	FE-1.5-10	—	—

Note) Check each company's catalog for details.

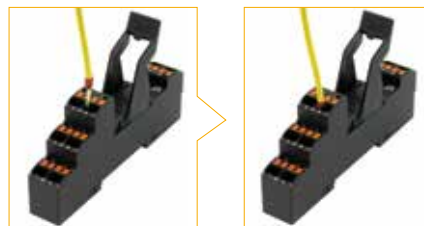
Parts Description



Inserting the Wire

Wire with ferrule or solid wire

- 1) Insert the wire to the back of the wire port.
- 2) Wiring is complete. Pull the wire lightly to make sure that the wire does not pull out from the socket.



Stranded wire

- 1) Push the pusher (orange button) using a flat blade screwdriver.
- 2) Insert the wire fully in the wiring port while pressing the pusher
- 3) Release the flat blade screwdriver. Wiring is complete. Pull the wire lightly to make sure that the wire does not pull out from the socket.



Removing the Wire

- 1) Push the pusher using a flat blade screwdriver.
- 2) Pull out the wire while pressing the pusher.
- 3) Release the flat blade screwdriver.



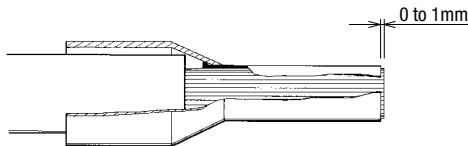
## Instructions

### Note

- After wiring, tug lightly to make sure that the wire is properly connected.
- Operate the pusher with a force of 40N. Do not press excessively.
- Do not pull the wire out without depressing the pusher. When pulling the wire, be sure to pull in a straight direction. Otherwise, the socket may be damaged.
- Use a recommended flat blade screwdriver with the blade size of 0.4×2.5mm.
- When mounting multiple sockets on a DIN rail, be sure to secure both side with end clips (BNL6).

### Crimping of Ferrules and Wiring

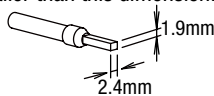
- Choose an appropriate ferrule for the wire.
- Cut the wire carefully to get a flat end.
- Make sure that ferrule sleeve is completely filled by the conductor. Depending on the cross section, the conductor should protrude approx. 0 to 1 mm from the ferrule sleeve.



- When crimping, refer to the instructions of the crimping tool.

### Crimping dimensions: W2.4×H1.9 mm

Maximum connectable crimping size is W2.4×H1.9. Make sure that the ferrule size will be smaller than this dimension.



Note 1) If a tool other than the recommended crimping is used, the ferrule may not be crimped to the appropriate size and the clamp or spring inside the socket may be deformed and may not operate normally.

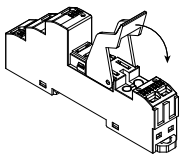
Note 2) Pin crimp terminals cannot be used.

### Installing / Removing the Relay

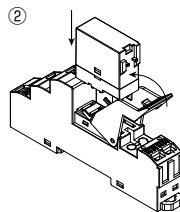
#### Installing the Relay

1. Unlock the release lever by pulling down as shown with arrow ①.
2. Press the relay against the socket as shown with arrow ②. Make sure that the relay is firmly in place.

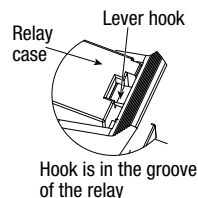
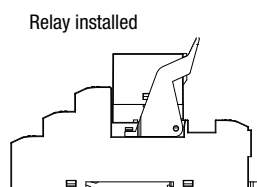
①



②

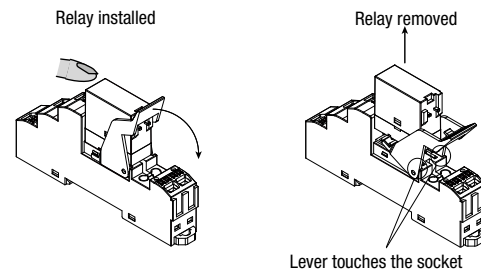


Note: Confirm that the relay is securely installed in the socket. The relay may fall off if it is not installed properly.



### Removing the Relay

Lightly press the relay to prevent it from falling off. Then pull down the release lever to the direction shown by the arrow and the remove the socket.



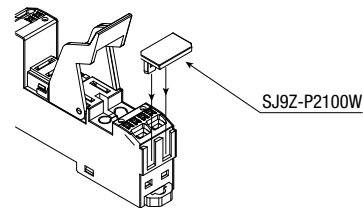
Note)

- Make sure that wire or finger is not caught between the release lever and socket.
- Because release lever is removable, make sure not to apply excessive force. Otherwise the relay may fall and result in damage.

### Installing the Marking Plate

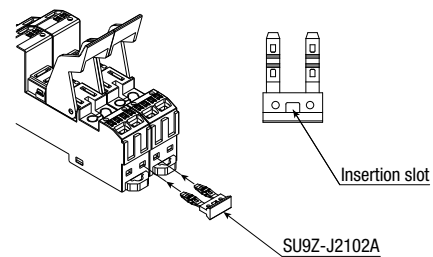
Install the marking plate as shown in the diagram below. Mark on the surface using an oil-based marker, or affix a sticker with markings.

The size of the marking surface is 8.4mm × 15mm.



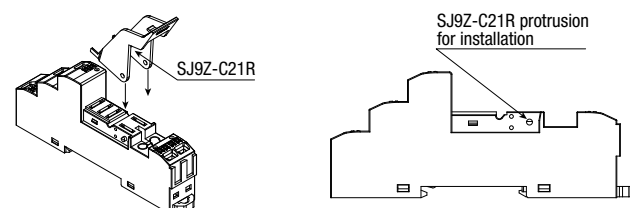
### Using the Jumper

Insert the jumper to the back of the jumper slot. To remove, insert the small flat blade driver into the slot below and pull out. Because the rated current is 2A, use at 2A maximum.



### Installing the Release Lever

To install the release lever, attach to the protrusion on the socket as shown below.



Applicable Relay

Applicable Relay (RJ Series Terminal Style: Plug-in)

Style	1-pole (SPDT)		2-pole (DPDT)		2-pole (bifurcated contacts DPDT)	
	Part No.	Code	Part No.	Code	Part No.	Code
Standard (with LED Indicator)	RJ1S-CL- *	A12, A24, A100, A110	RJ2S-CL- *	A12, A24, A100, A110	RJ22S-CL- *	A12, A24, A100, A110, A115, A120
		A200, A220		A200, A220		A200, A220, A230, A240
		D5, D6, D12, D24, D48		D5, D6, D12, D24, D48		D5, D6, D12, D24, D48
		D100		D100		D100
Standard (*1)	RJ1S-C- *	A12, A24, A100, A110	RJ2S-C- *	A12, A24, A100, A110	RJ22S-C- *	A12, A24, A100, A110, A115, A120
		A200, A220		A200, A220		A200, A220, A230, A240
		D5, D6, D12, D24, D48		D5, D6, D12, D24, D48		D5, D6, D12, D24, D48
		D100		D100		D100
With forward polarity diode (with LED indicator)	RJ1S-CLD- *	D5, D6, D12, D24, D48	RJ2S-CLD- *	D5, D6, D12, D24, D48	RJ22S-CLD- *	D5, D6, D12, D24, D48
		D100		D100		D100
With forward polarity diode (without LED indicator)	RJ1S-CD- *	D5, D6, D12, D24, D48	RJ2S-CD- *	D5, D6, D12, D24, D48	RJ22S-CD- *	D5, D6, D12, D24, D48
		D100		D100		D100
With reverse polarity diode (with LED indicator)	RJ1S-CLD1- *	D5, D6, D12, D24, D48	RJ2S-CLD1- *	D5, D6, D12, D24, D48	RJ22S-CLD1- *	D5, D6, D12, D24, D48
		D100		D100		D100
With reverse polarity diode (without LED indicator)	RJ1S-CD1- *	D5, D6, D12, D24, D48	RJ2S-CD1- *	D5, D6, D12, D24, D48	RJ22S-CD1- *	D5, D6, D12, D24, D48
		D100		D100		D100
With RC (with LED indicator)	RJ1S-CLR- *	A12, A24, A100, A110	RJ2S-CLR- *	A12, A24, A100, A110	RJ22S-CLR- *	A12, A24, A100, A110, A115, A120
		A200, A220		A200, A220		A200, A220, A230, A240
With RC (without LED indicator)	RJ1S-CR- *	A12, A24, A100, A110	RJ2S-CR- *	A12, A24, A100, A110	RJ22S-CR- *	A12, A24, A100, A110, A115, A120
		A200, A220		A200, A220		A200, A220, A230, A240

Coil voltage other than the above are available (A115, A120, A230, A240)

Applicable Relay (RF2 Series)

Terminal Style	Contact Configuration	Rated Coil Voltage	LED Indicator	w/diode of reverse polarity coil	Degree of Protection		Part No.
					Flux-tight (RTII)	Sealed (RTIII)	
Plug-in	SPST-NO + SPST-NC	12V DC	√	√	√	—	RF2S-1A1BLD1-D12
			—	—	√	—	RF2S-1A1B-D24
			—	√	√	—	RF2S-1A1BD1-D24
		√	√	√	—	RF2S-1A1BLD1-D24	
		√	√	—	√	RF2S-1A1BLD1K-D24	
		—	—	√	—	RF2S-1A1B-D48	
	DPDT (*2)	24V DC	√	√	√	—	RF2S-1A1BLD1-D48
			√	√	—	√	RF2S-1A1BLD1K-D48
			—	—	√	—	RF2S-2C-D24
			—	√	√	—	RF2S-2CD1-D24
			√	√	√	—	RF2S-2CLD1-D24
			√	√	—	√	RF2S-2CLD1K-D24

\*1) When using with RF2S force guided relay, use at AC/DC 150V maximum.

\*2) When using DPDT model as a force guided relay, use in SPST-NO+SPST-NC wiring (EN50205).

# IDEC CORPORATION

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