

# "ORANGE LINE" INDUSTRIAL RELAY

## Features and Ratings

### ■ FEATURES

#### NEW SH SERIES EXPANDABLE INDUSTRIAL RELAY APPLICATIONS (U.S. Catalog No. 4SH and 4GH Series)

##### High contact reliability that accommodates electronic devices.

- All contacts are bifurcated, providing high contact reliability (minimum operational voltage and current: 5V and 3mA DC) and enabling direct input to an electronic control circuit.

##### A wide variety of optional units.

- In addition to an auxiliary contact block (two or four poles), many function units such as a coil surge suppression unit and terminal covers can be installed on standard industrial relays. This allows for flexibility and easy modification in the field.

##### Snap-on mounting on an IEC or DIN rail.

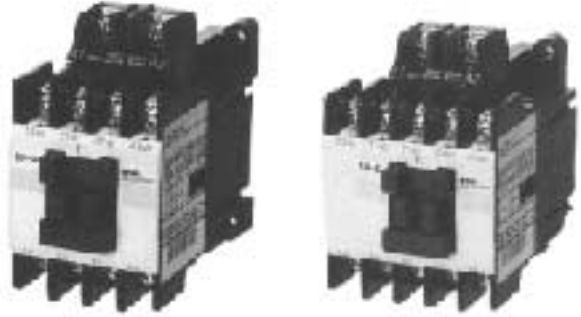
- All models can be mounted on an IEC or DIN Standard 35mm rail.

##### Meets International Standards.

- The SH Series industrial relays conform to the following International Standards: IEC, NEMA, BS and VDE. They are also UL, CSA, BV and Lloyd approved.

##### Compatible with conventional models.

- SH Series industrial relays are compatible with the discontinued Fuji SRCa50-3/X, SRCa50-3F/X, and SRC50-05/X



industrial relays. In addition to the mounting holes needed for the compatibility, mounting holes based on the IEC Standard are also provided.

##### Terminal numbers conforming to IEC Standards.

- Terminal numbers are based on IEC Standards.

##### New design.

- The arc extinguishing cover is ivory colored with orange accents, providing a new look to the conventional industrial relay.

### ■ AC OPERATED INDUSTRIAL RELAYS

U.S. Catalog No.	Aux. Contact	Fuji Type
4SH440#	4NO	SH-4 4 POLE
4SH431#	3NO+1NC	
4SH422#	2NO+2NC	
4SH880#	8NO	SH-4 8 POLE
4SH871#	7NO+1NC	
4SH862#	6NO+2NC	
4SH853#	5NO+3NC	
4SH844#	4NO+4NC	
4SH550#	5NO	SH-5 5 POLE
4SH541#	4NO+1NC	
4SH532#	3NO+2NC	
4SH523#	2NO+3NC	
4SH514#	1NO+4NC	
4SH505#	5NC	

### ■ DC OPERATED INDUSTRIAL RELAYS

U.S. Catalog No.	Aux. Contact	Fuji Type
4GH440#	4NO	SH-4/G 4 POLE
4GH431#	3NO+1NC	
4GH422#	2NO+2NC	
4GH880#	8NO	SH-4/G 8 POLE
4GH871#	7NO+1NC	
4GH862#	6NO+2NC	
4GH853#	5NO+3NC	
4GH844#	4NO+4NC	
4GH550#	5NO	SH-5/G 5 POLE
4GH541#	4NO+1NC	
4GH532#	3NO+2NC	
4GH523#	2NO+3NC	
4GH514#	1NO+4NC	
4GH505#	5NC	

### EXPLANATION OF PART NUMBER SYSTEM

**4 S H 4 2 2 #**

- **APPROVAL**  
4=UL Listed  
JIS Approved

- **OPERATION**  
S=AC Coil  
G=DC Coil

- **DESCRIPTION**  
H=Industrial Relay

- **COIL VOLTAGE**  
Select code from chart on next page  
For AC: use Table 1  
For DC: use Table 2

- **QUANTITY OF N.C. AUX. CONTACTS**
- **QUANTITY OF N.O. AUX. CONTACTS**
- **TOTAL NUMBER OF CONTACTS**

# "ORANGE LINE" INDUSTRIAL RELAY

## Coil and Operating Characteristics, and Performance Data

### AVAILABLE COILS

■ TABLE 1: AC Coils

Code Letter	AC coil 60Hz	AC coil 50Hz
E	24-26V	24V
F	48-52V	48V
A	100-110V	100V
1	110-120V	100-110V
G	120-130V	110-120V
B	200-220V	200V
2	220-240V	200-220V
4	440-480V	415-440V
5	550-600V	500-650V

■ TABLE 2: DC Coils

Code Letter	DC coil
T	12V
M	24V
N	48V
1	100V
R	110V
2	200V
S	220V

### COIL CHARACTERISTICS

Power Consumption		Pick-Up Voltage (V)		Drop-Out Voltage (V)		Watt Loss (W)	
Inrush (VA)	Sealed (VA)	200V, 50Hz.	220V, 60Hz.	200V, 50Hz.	220V, 60Hz.	200V, 50Hz.	220V, 60Hz.
95	9	108-128	120-144	62-90	74-100	2.7	2.8

### OPERATING CHARACTERISTICS

Coil Type	Voltage	Frequency (Hz)	Pick-Up Time (m sec.)		Drop-Out Time (m sec.)	
			No Contact ON	NC Contact OFF	NO Contact OFF	NC Contact ON
AC	200V AC	50	9-20	5-15	5-15	9-20
DC	200V DC	-	45-50	35-40	20-25	20-30

### RATINGS UL File No. E44592, CSA File No. LR20479

Continuous Current (A)	Rated Operational Current (A)						Code	
	AC Volts	Make	Break	DC Volts	Make	Break	AC	DC
10	120	60	6	125	0.55	0.55	A600	Q300
	240	30	3	250	0.27	0.27		
	480	15	1.5					
	600	12	1.2					

### PERFORMANCE DATA (AC11) Life Expectancy (Conforming to JIS C4531, JEM1230)

Operating Cycles Per Hour	Mechanical Life (Operations)	Electrical Life (Operations)				
		AC11		AC13		DC11, 14
		220V	440V	220V	440V	24V~220V
1,800	10 Million	500,000	500,000	250,000	250,000	500,000

# "ORANGE LINE" INDUSTRIAL RELAY Combinations and Contact Arrangements

## ■ COMBINATION OF INDUSTRIAL RELAY AND AUXILIARY CONTACT BLOCK

The standard type industrial relays can be used with a combination of the auxiliary contact blocks shown below.

Industrial Relay		Auxiliary Contact Block								
		Front Mounting						Side Mounting		
Type (U.S. Cat. No.)	Contact Arrangement	SZ-A40 4NO	SZ-A31 3NO + 1NC	SZ-A22 2NO + 2NC	SZ-A20 2NO	SZ-A11 1NO + 1NC	SZ-A02 2NC	SZ-AL+SZ-AR 2NO + 2NC	SZ-AL 1NO + 1NC	SZ-AR 1NO + 1NC
SH-4 (4SH4) • SH-4/G (4GH4)	4NO 3NO + 1NC 2NO + 2NC	8NO 7NO + 1NC 6NO + 2NC	7NO + 1NC 6NO + 2NC 5NO + 3NC	6NO + 2NC 5NO + 3NC 4NO + 4NC	6NO 5NO + 1NC 4NO + 2NC	5NO + 1NC 4NO + 2NC 3NO + 3NC	4NO + 2NC 3NO + 3NC 2NO + 4NC	6NO + 2NC 5NO + 3NC 4NO + 4NC	5NO + 1NC 4NO + 2NC 3NO + 3NC	5NO + 1NC 4NO + 2NC 3NO + 3NC
SH-5 (4SH5) • SH-5/G (4GH5)	5NO 4NO + 1NC 3NO + 2NC 2NO + 3NC 1NO + 4NC 5NC	9NO 8NO + 1NC 7NO + 2NC 6NO + 3NC 5NO + 4NC 4NO + 5NC	8NO + 1NC 7NO + 2NC 6NO + 3NC 5NO + 4NC - -	7NO + 2NC 6NO + 3NC 5NO + 4NC - -	7NO 6NO + 1NC 5NO + 2NC 4NO + 3NC 3NO + 4NC 2NO + 5NC	6NO + 1NC 5NO + 2NC 4NO + 3NC 3NO + 4NC - -	5NO + 2NC 4NO + 3NC 3NO + 4NC - -	7NO + 2NC 6NO + 3NC 5NO + 4NC - -	6NO + 1NC 5NO + 2NC 4NO + 3NC 3NO + 4NC - -	6NO + 1NC 5NO + 2NC 4NO + 3NC 3NO + 4NC - -

Note: Auxiliary contact blocks cannot be mounted both front mounting and side mounting at the same time.

## ■ CONTACT ARRANGEMENT

U.S. Catalog No.	Fuji Type	Contact Arrangement	
		NO	NC
4SH440# 4GH440#	SH-4 4-Pole • SH-4/G 4-Pole	4NO	
4SH431# 4GH431#	SH-4 4-Pole • SH-4/G 4-Pole	3NO + 1NC	
4SH422# 4GH422#		2NO + 2NC	
4SH880# 4GH880#		* SH-4 8-Pole • SH-4/G 8-Pole	8NO
4SH871# 4GH871#	SH-4 8-Pole • SH-4/G 8-Pole	7NO + 1NC	
4SH862# 4GH862#		6NO + 2NC	
4SH853# 4GH853#		5NO + 3NC	
4SH844# 4GH844#		4NO + 4NC	

U.S. Catalog No.	Fuji Type	Contact Arrangement	
		NO	NC
4SH550# 4GH550#	SH-5 5-Pole • SH-5/G 5-Pole	5NO	
4SH541# 4GH541#	SH-5 5-Pole • SH-5/G 5-Pole	4NO + 1NC	
4SH532# 4GH532#		3NO + 2NC	
4SH523# 4GH523#		2NO + 3NC	
4SH514# 4GH514#		1NO + 4NC	
4SH505# 4GH505#	SH-5 5-Pole • SH-5/G 5-Pole	5NC	

\*Note: 8 pole units are made from standard 4 pole frames with 4 pole Aux. contacts added. The 5 available configurations are made as follows:

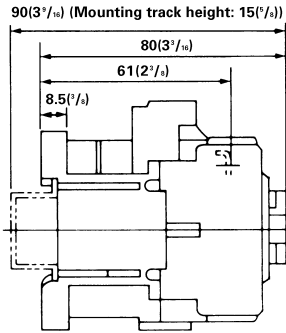
- 4\_H880# (8NO, no NC) = 4\_H440# Base + SZ-A40 Aux.
- 4\_H871# (7NO + 1 NC) = 4\_H440# Base + SZ-A31 Aux.
- 4\_H862# (6NO + 2 NC) = 4\_H440# Base + SZ-A22 Aux.
- 4\_H853# (5NO + 3 NC) = 4\_H422# Base + SZ-A31 Aux.
- 4\_H844# (4NO + 4 NC) = 4\_H422# Base + SZ-A22 Aux.

# "ORANGE LINE" INDUSTRIAL RELAY

## Dimensions

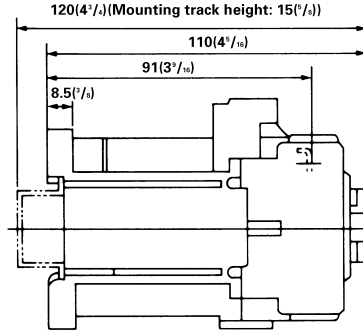
■ **DIMENSIONS:** mm (inches)

**SH-4/4-Pole (U. S. Catalog No. 4SH4)**

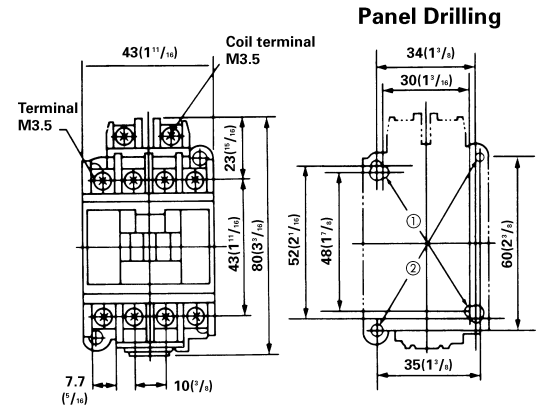


Net weight: 0.32kg (.71 lbs.)

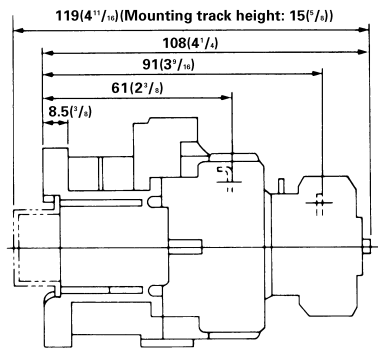
**SH-4/G, 4-Pole (U. S. Catalog No. 4GH4)**



Net weight: 0.55kg (1.2 lbs.)

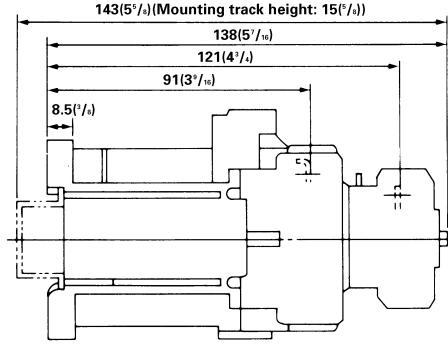


**SH-4/8-Pole (U. S. Catalog No. 4SH8)**

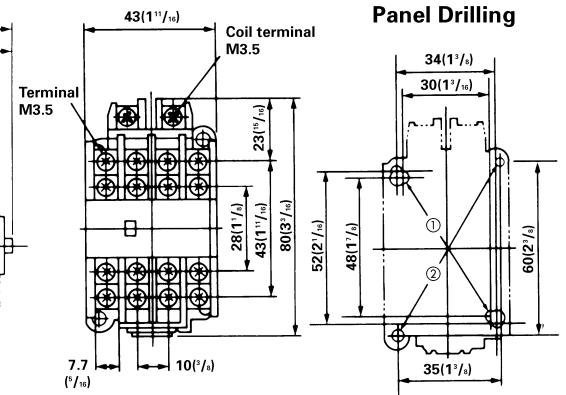


Net weight: 0.36kg (.8 lbs.)

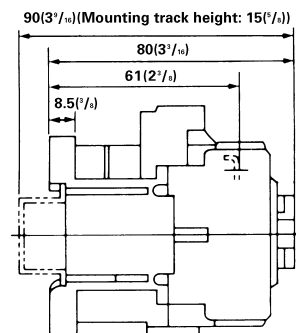
**SH-4/G, 8-Pole (U. S. Catalog No. 4GH8)**



Net weight: 0.59kg (1.3 lbs.)

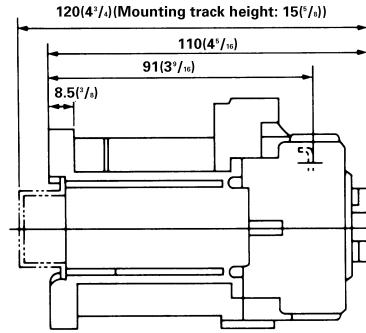


**SH-5/5-Pole (U. S. Catalog No. 4SH5)**

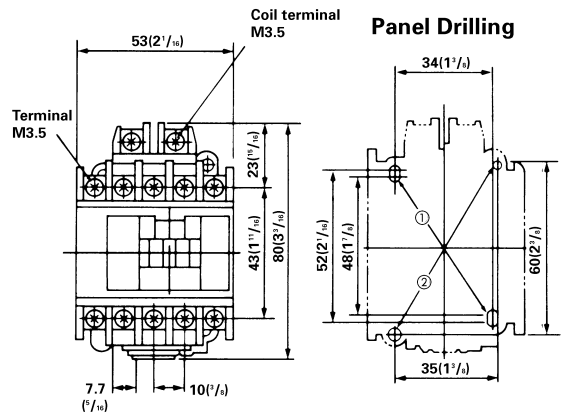


Net weight: 0.34kg (.75 lbs.)

**SH-5/G, 5-Pole (U. S. Catalog No. 4GH5)**



Net weight: 0.58kg (1.3 lbs.)



Notes: Panel Drilling -

- Use the two mounting holes on a diagonal line to mount a relay.
- Mounting holes indicated by ① are compatible with those of SRC type.
- Mounting holes indicated by ② conform to IEC Standards.