Bulletin 700-SF

- 3 A (resistive) Max. Continuous Load (Output) Current
- 264V AC or 52.8V DC Max. Load Voltage Range
- 4…24V DC Control/Input Voltage
- Photocoupler or Phototriac Isolation Option Between Control and Output Voltage
- LED Indicator for Input/Logic ON/OFF Status Monitoring
- 700-HN116 Socket Compatible

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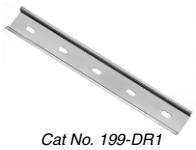
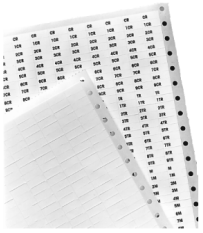
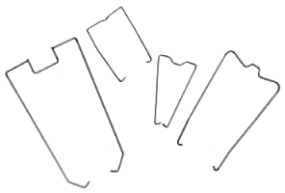
	Input-to-Output Isolation Method	Zero Cross Function	LED Indicator	Rated Output (Load) Max. Current and Voltage Range	Rated Input Control Voltage	Cat. No.	Factory-stocked Item (Single Pack)
	Photocoupler	Yes	Yes	3 A at 100…240V AC	5…24V DC	700-SFZY3Z25	✔
	Phototriac	No			24V DC	700-SFTY3Z24	✔
	Photocoupler	N/A		3 A at 4…48V DC	4…24V DC	700-SFNY3Z25	✔

	Description	Pkg. Qty.	Cat. No.	Factory-stocked Item
 *Cat. No 700-HN116*	**Screw Terminal Socket — Panel or DIN Rail Mounting** 8-blade miniature socket for use with DPDT HF relays. Order must be for 10 sockets or multiples of 10.	10	700-HN116	✔
 *Cat No. 199-DR1*	**DIN Rail Mounting Pack** Standard 35 x 7.5 mm DIN Rail, 1 meter long, 10 rails per package. Order must be for 10 rails or multiples of 10.	10	199-DR1	✔
	**Pre-printed identification tags —** contains 10 sheets of pre-printed and blank tags. Each sheet contains 13 sets of the markings CR…9CR, TR…9TR, M…9M, F, R, 1S, and 117 blank tags. Tags are peel-off with sticky backing for easy placement on relays.	10	700-N40	✔
	Blank identification tags — contains 10 sheets of blank identification tags for customer specialized printing. Each sheet contains 546 blank tags. Tags are peel-off with sticky backing for easy placement on relays.	10	700-N41	✔
 *Sample Retainer Clips*	**Retainer Clip for Cat. No. 700-HN103 and -HN128 Sockets with 700-SF Relays and Cat. No. 700-HN116 Sockets** Secures relay in socket. Order must be for 10 clips or multiples of 10.	10	700-HN114B❶	✔

❶ Bulletin 700-SF must use 700-HN114 series B retainer clip.

Control/Input Ratings					
Cat. No.	Rated Control Voltage	Operating Control Voltage Range	Impedance	Control Voltage Levels	
				Pick-up Voltage	Drop-out Voltage
700-SFZY3Z25	5…24V DC	4…28V DC	15 mA max. ❶	4V DC max.	1V DC min.
700-SFTY3Z24	24V DC	19.2…28.8V DC	2 kΩ ± 20%	19.2V DC max.	1V DC min.
700-SFNY3Z25	5…24V DC	4…28V DC	1.5 kΩ + 20%/–10% ❷	4V DC max.	1V DC min.

Load/Output Ratings					
Cat. No.	Applicable Load				
	Rated Load Voltage	Load Voltage Range	Continuous Load Current (Resistive)		Max. Inrush Current ❸
—	—	—	Min.	Max.❹	—
700-SFZY3Z25	100…240V AC	75…264V AC	0.1 A	3 A	45 A @50/60 Hz, 1 cycle
700-SFTY3Z24			0.1 A	3 A	
700-SFNY3Z25	4…48V DC	3…52.8V DC	0.1 A	3 A	18 A (10 ms)

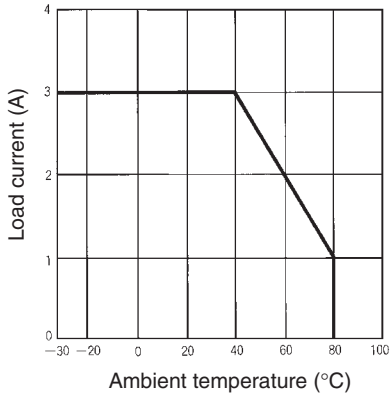
Characteristics			
Cat. No.	700-SFZY3Z25	700-SFTY32...	700-SFNY3Z25
Load Switching Method/Device	Triac	Transistor	
Pick-up time	1/2 cycle of load power source + 1 ms max.	1 ms max.	0.5 ms max.
Drop-out time	1/2 of output switching element cycle of load power source + 1 ms max.		2 ms max.
Output ON voltage drop	1.6V (RMS) max.		1.5V max.
Output Leakage current	5 mA max. (at 100V AC); 10 mA max. (at 200V AC)	2.5 mA max. (at 100V AC); 5 mA max. (at 200V AC)	5 mA max. (at 50V DC)
Output V_{DRM} V_{CEO} (V)	600	600	80
Output di/dt (A/uS)	50	50	—
Output dv/dt (V/uS)	250	250	—
Output I^2t (A^2S)	18	18	—
Output Tj (°C) (max.)	125	125	150
Insulation resistance	100 MΩ min. (at 500V DC)		
Dielectric strength	1,500V AC, 50/60 Hz for 1 min.		
Vibration resistance (max.)	10…55 Hz, 1.5 mm double amplitude (10 G)		
Shock resistance (max.)	1,000 m/s^2 (100 G)		
Ambient temperature	Operating: –30…80°C (–22…176°F) with no icing or condensation Storage: –30…100°C (–22…212°F) with no icing or condensation		
Ambient humidity	45…85% (no condensation)		
Standards	UL508, CSA C22.2, CE		
Weight	Approx. 50 g		

❶ With constant current input circuit system, SSR impedance varies with a change in input voltage.
❷ Input impedance reaches its maximum at the operating voltage.
❸ If the SSR operation is continuous ON/OFF, this value should be reduced by 50%. Refer to the “Inrush Current Resistivity” graphs on page 50 for more details.
❹ Refer to "Load Current vs. Ambient Temperature Characteristics" on page 50 for additional load current details.

Note: These data are non-repetitive. Keep the inrush current to half the rated value if it occurs repetitively. Inrush current resistivity is the ability of an SSR to withstand a large surge current for a short period of time. Surges are considered non-repetitive (max. repeatability once every 2…5 seconds). Keep the inrush current to half the rated value if it occurs repetitively. Exceeding the non-repetitive inrush current will damage the SSR.

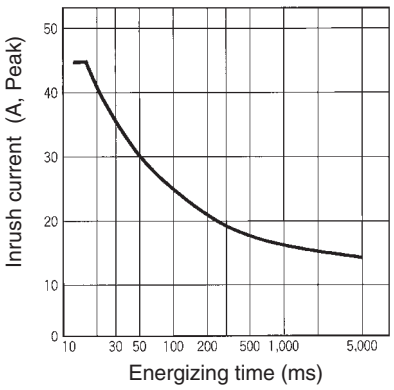
Load Current vs. Ambient Temperature Characteristics

700-SF



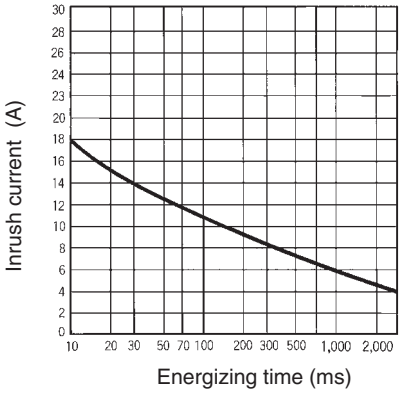
Inrush Current Resistivity ❶

700-SFZ… 700-SFT…



Inrush Current Resistivity ❶

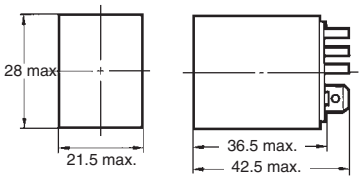
700-SFN…



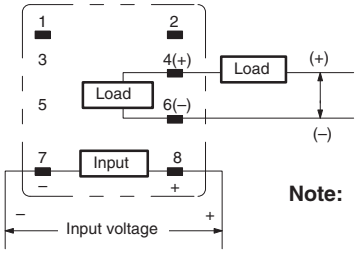
❶ Inrush current resistivity is the ability of an SSR to withstand a large surge current for a short period of time. Surges are considered non-repetitive (max. repeatability once every 2…5 seconds). Keep the inrush current to half the rated value if it occurs repetitively. Exceeding the non-repetitive inrush current will damage the SSR.

Approximate Dimensions

All units are in millimeters unless otherwise indicated. Dimensions are not intended for manufacturing purposes.



Terminal Arrangement/ Internal Connections (Bottom View)



Note:
1. The plus and minus symbols shown in the parentheses are for DC loads.
2. The coil has no polarity.

Note: The 700-SF is compatible with the 700-HN116 socket.

Basic Application Considerations of Bulletin 700-SF

High Density Mounting of Multiple SSRs

If multiple SSRs are mounted side by side be aware that the outer case wall of the SSR acts as a radiator. The SSR case serves to dissipate heat. Install the relays so that they are adequately ventilated. If poor ventilation is unavoidable, reduce the load current by half.

Connection

For DC load switching, the 700-SF SSR will operate properly if the load is connected to either the positive or negative load terminals.

Protective Component To Extend SSR Life

When controlling AC inductive loads, connect an inrush/surge absorbing device (varistor) across the SSR load terminals. If the SSR has built-in surge suppression (Bulletins 700-SE and 700-SH) and additional surge suppression is required, connect the varistor across the terminals of the load device . Select a varistor that meets the conditions of the load voltage outlined in the table below.

Load Voltage	Varistor Voltage	Varistor Surge Resistance
100…120V AC	240…270 V	1000 A min.
200…240V AC	440…470 V	
380…480V AC	820…1000 V	

Note: For additional details applying solid-state relays, refer to pub. number 700-AT001A-EN-E, Solid-State Relay Application Guide. Document available at http://www.theautomationbookstore.com.