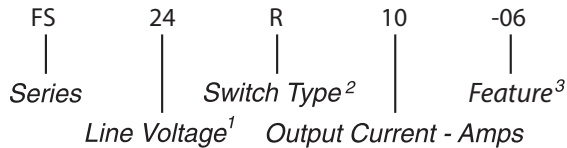


Part Number	Description
FS24R10-06	10A, 280 Vac
FS24D10-06	10A, 280 Vac
FS24D10	10A, 280 Vac
FS24D20-06	20A, 280 Vac

**Part Number Explanation**



**NOTES**

- 1) Line Voltage (nominal): 24 = 240
- 2) Switch Type: D = Zero-cross turn-on; R = Random turn-on
- 3) Feature: -06 = Faston Terminals

**MECHANICAL SPECIFICATION**

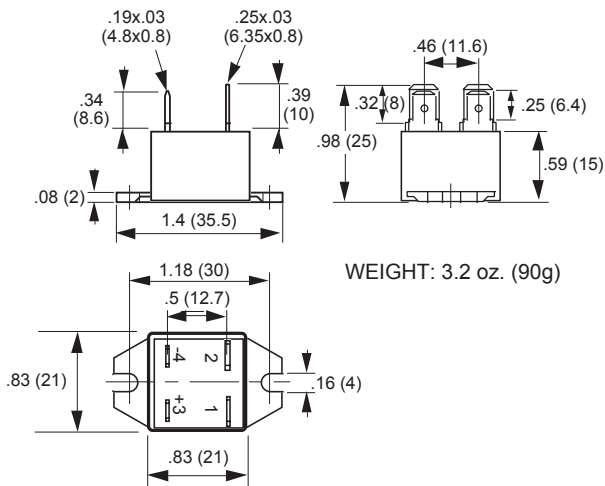


Figure 1 — FS relays except FS24D10

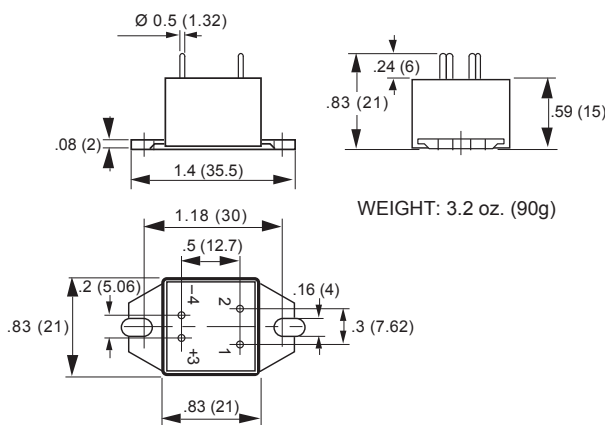


Figure 1b — FS24D10



**FEATURES/BENEFITS**

- Miniature size package
- Designed for medium-power applications
- Faston or PCB terminals available
- Tight zero-cross window for low EMI
- Excellent thermal performance
- High immunity to surges

**DESCRIPTION**

The Series FS relays are designed for medium-power loads. The design incorporates a triac output. The Series FS relays utilize optical isolation to protect the control from load transients. The FS compact package is available with faston or PCB terminals. Its compact size makes it ideal for designs where space is limited. The Series FS relays have excellent thermal performance.

**APPLICATIONS**

- Heating control
- Motor control
- Uninterruptible power supplies
- Light dimmers
- Industrial and process control
- On/Off controls of medium-power AC equipment
- Electromechanical line relay replacement

**APPROVALS**

All models are UL recognized.  
UL File Number: E128555.

**EQUIVALENT CIRCUIT**

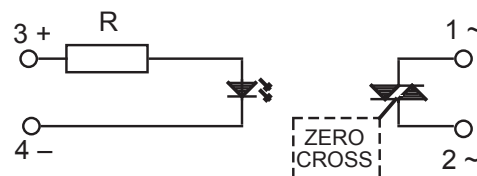


Figure 2 — FS relays

**INPUT (CONTROL) SPECIFICATION**

	Min	Max	Units
<b>Control Range</b>			
FS24R	3	30	Vdc
FS24D	4	30	Vdc
<b>Input Current Range</b>			
FS24R	2	30	mAdc
FS24D	3	30	mAdc
<b>Must Turn-off Voltage</b>			
All relays		1	Vdc
<b>Input Resistance (Typical)</b>			
All relays		1000	Ohms

**Reverse Voltage Protection**

All relays		30	V
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**OUTPUT (LOAD) SPECIFICATION**

Input Type	Min	Max	Unit
<b>Operating Range</b>			
All relays	12	280	Vrms
<b>Peak Voltage</b>			
All relays		600	Vpeak
<b>Load Current Range</b>			
10A output current	.005	10	Arms
20A output current	.005	20	Arms
<b>Inductive Load Current Range</b>			
10A output current		2.5	Arms
20A output current		4	Arms
<b>Maximum Surge Current Rating (Non-Repetitive)</b>			
10A output current		120	A
20A output current		200	A
<b>On-State Voltage Drop</b>			
All relays output current		1.3	V

**CONTROL CHARACTERISTIC**

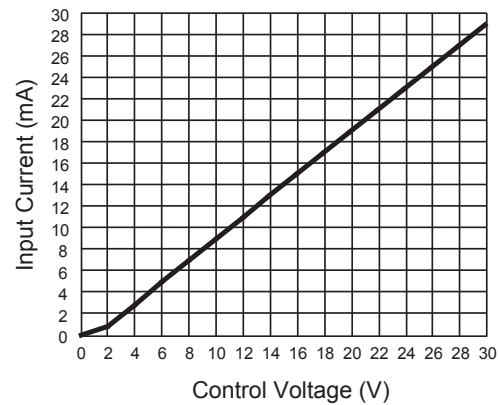


Figure 3 — FS relays

**OUTPUT (LOAD) SPECIFICATION (Continued)**

	Min	Max	Unit
<b>Zero-Cross Window (Typical)</b>			
FS24R		NA	
FS24D		±12	Vac
<b>Off-State Leakage Current (60Hz)</b>			
All relays		1	mA
<b>Turn-On Time (60Hz)</b>			
FS24	R	0.1	ms
FS24	D	8.3	ms
<b>Turn-Off Time (60Hz)</b>			
All relays		8.3	ms
<b>Off-State dv/dt</b>			
All relays		500	V/μs
<b>Maximum di/dt (Non-Repetitive)</b>			
All relays		50	A/μs
<b>Operating Frequency</b>			
All relays	0.1	440	Hz
<b>I<sup>2</sup>t for match fusing (&lt;8.3ms)</b>			
10A output current	.005	72	A <sup>2</sup> S
20A output current	.005	200	A <sup>2</sup> S

**ENVIRONMENTAL SPECIFICATION**

	Min	Max	Unit
Operating Temperature	-40	100	°C
Storage Temperature	-40	100	°C
Input-Output Isolation	4000		Vrms
Output-Case Isolation	2500		Vrms

**NOTES:**

1. External snubber is recommended when switching inductive loads.
2. Electrical specifications at 25°C unless otherwise specified.
3. For 800Hz applications, contact factory.
4. For additional/custom options, contact factory.

**SURGE CURRENT**

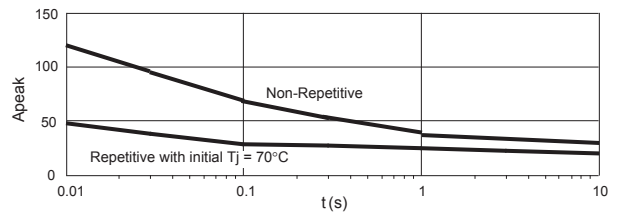


Figure 4a — All 10A FS relays output current

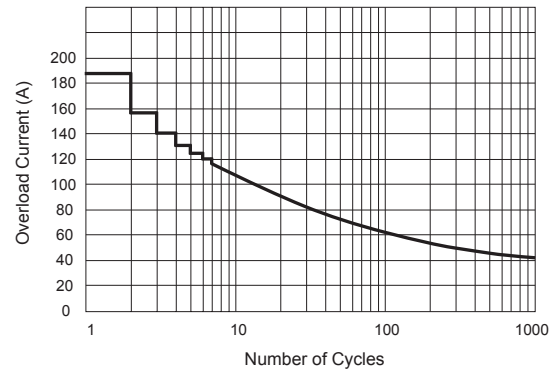


Figure 4b — FS24D20-06 output current

**THERMAL CHARACTERISTICS**

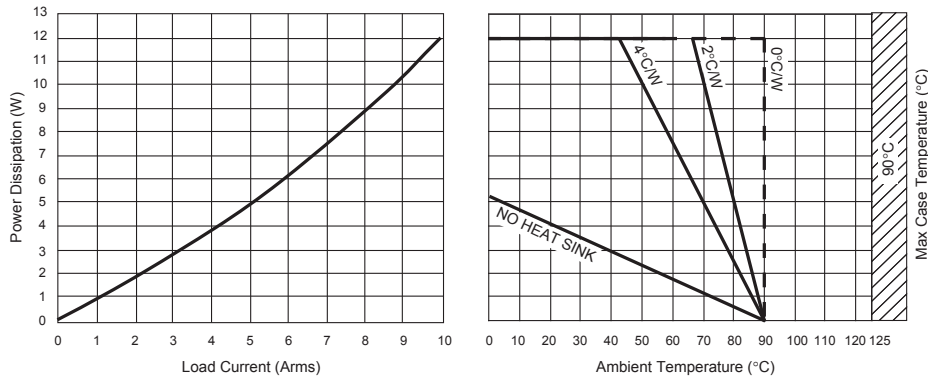


Figure 5a — All 10A FS relays output current

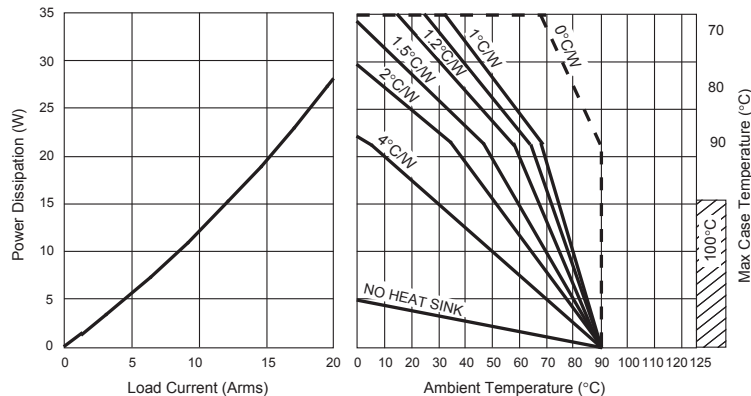


Figure 5b — FS24D20-06 output current