TELEDYNE RELAYS
A Unit of Teledyne Electronics and Communications

Series BS

4A to 600 Vac SIP Package
DC Control

Part Number	Description
BS24D4A	4A, 280 Vac
BS24D4F	4A, 280 Vac
BS60D4A	4A, 600 Vac

Part Number Explanation

BS 24 D 4 A

- BS — Series
- 24 — Line Voltage[1]
- D — Switch Type[2]
- 4 — Output Current - Amps
- A — Control Range[3]

NOTES
1) Line Voltage: 24 = 280 Vac; 60 = 600 Vac
2) Switch Type: D = Zero-cross turn-on
3) Control Range: A = 3.0–10 Vdc for BS24D4A, 3.7–10 Vdc for BS60D4A; F = 8–30 Vdc

MECHANICAL SPECIFICATION

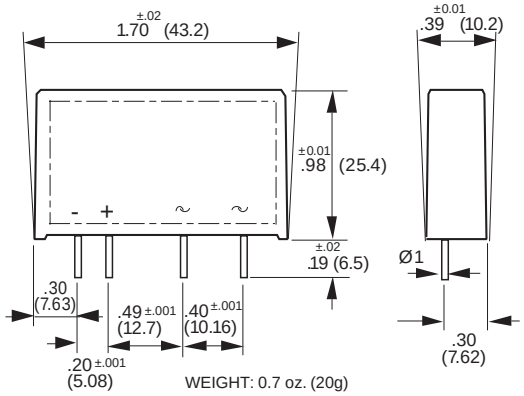

Figure 1 – BS relays; dimensions in inches (mm)

INPUT (CONTROL) SPECIFICATION

	Min	Max	Units
Control Range			
BS24D4A	3	10	Vdc
BS24D4F	8	30	Vdc
BS60D4A	3.7	10	Vdc
Input Current Range	5	30	mAdc
Must Turn-Off Voltage			
BS24D4A		0.8	Vdc
BS24D4F		0.8	Vdc
BS60D4A		1.5	Vdc
Input Resistance (Typical)			
BS24D4A		330	Ohms
BS24D4F		1200	Ohms
BS60D4A		270	Ohms

FEATURES/BENEFITS

- Industry standard package
- High in-rush capabilities
- Low input current draw
- High dv/dt capability

DESCRIPTION

The BS 4-amp solid-state single inline (SIP) four-pin relays are designed for mounting on a printed circuit board. The BS relays can withstand very high current overloads. The compact size and triac output make the BS relay an excellent choice for switching medium-power resistive loads.

APPLICATIONS

- Interface applications
- Vending machines
- Light/lamp control
- HVAC controls

APPROVALS

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

BLOCK DIAGRAM

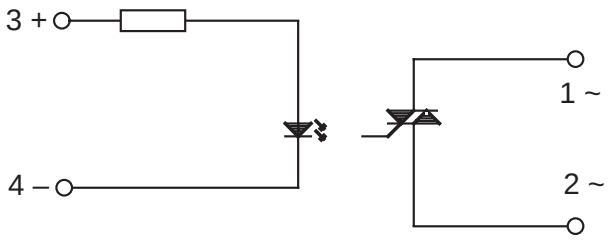

Figure 2 – BS relays

OUTPUT (LOAD) SPECIFICATION

	Min	Max	Unit
Operating Range			
BS24	15	280	Vrms
BS60	24	600	Vrms
Peak Voltage			
BS24		600	Vrms
BS60		1200	Vrms
Load Current Range			
BS24	.05	4	Arms
BS60	.08	4	Arms
Maximum Surge Current Rating (Non-Repetitive)			
(See Figure 5)		100	Apeak
On-State Voltage Drop		1.6	V
Off-State Leakage Current (60Hz)		0.3	mArms
Turn-On Time (60Hz)		8.3	ms
Turn-Off Time (60Hz)		8.3	ms
Operating Frequency	10	63	Hz
Off-State dv/dt	200		V/µs
Zero-Cross Window			
BS24	±50		V
BS60	±100		V
I^2t for match fusing (<8.3ms)			
BS24	50		A^2s
BS60	72		A^2s

ENVIRONMENTAL SPECIFICATION

	Min	Max	Unit
Operating Temperature	–40	80	°C
Storage Temperature	–40	150	°C
Input-Output Isolation	4000		Vrms
Input-Output Capacitance		8	pF

NOTES:
1. Electrical specifications at 25°C unless otherwise specified.
2. For 800Hz applications, contact factory.
3. For additional/custom options, contact factory.

TYPICAL APPLICATION

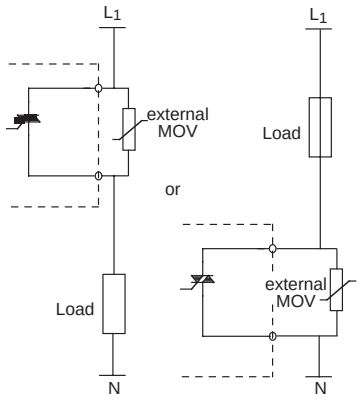

Figure 3 – BS relays

LOAD CURRENT DERATING CURVE

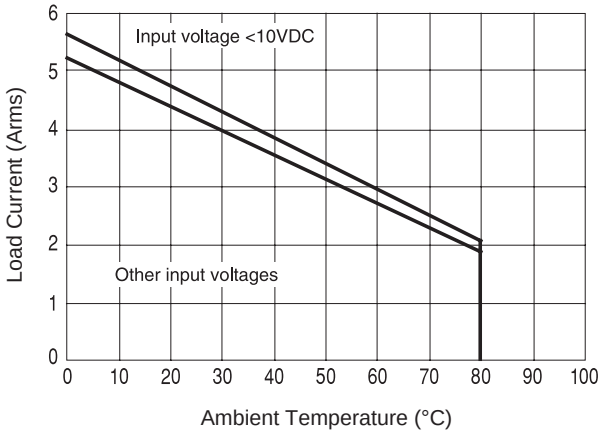

Figure 4 – Thermal curves

SURGE CURRENT RATING

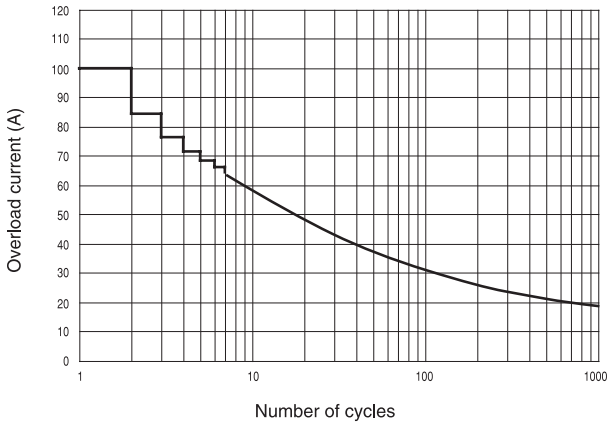

Figure 5 – Non-repetitive surge current