TELEDYNE
RELATES
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Series AS4
5A to 600 Vac SIP Package
DC Control

Part Number	Description
AS24D4E/R	4A, 275 Vac
AS24D4E-X1	4A, 275 Vac
AS24D4E-X2	4A, 275 Vac

Part Number Explanation

AS	46	D	4	E

Series

Line Voltage[1]

Switch Type[2]

Output Current

Control Range[3]

NOTES
1) Line Voltage (nominal): 46 = 460 Vac
2) Switch Type: D = Zero-cross turn-on
3) Control Range: E = 4–30 Vdc (5-30 Vdc for AS60D4E)
4) RoHS Compliant = /R (AS24D4E/R)

MECHANICAL SPECIFICATION

Bottom View

.39 (10.2)
.30 (7.62)
.10 (2.58)

1.70 (43.2)

50A²s
input 4-30 Vdc ●4- ●3+
output 230 Vac 4A ●2 ●1

1.0 (25.4)

.39 (10.2)

Ø1

.30 (7.63)
.49 (12.7)
.40 (10.16)
.19 (6.5)
.30 (7.62)

.20 (5.08)   WEIGHT: 1.06 oz. (30g)
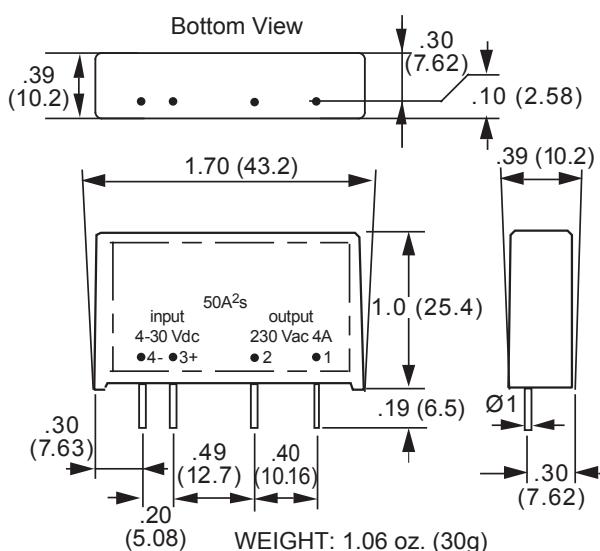
Figure 1 — AS relays; dimensions in inches (mm)

FEATURES/BENEFITS
• Industry standard package
• Tight zero-cross window for low EMI
• Low input current draw
• High dv/dt capability
• Integral transient voltage protection
• High immunity to surges

DESCRIPTION
The AS 4-amp and 5-amp solid-state single inline (SIP) four-pin relays are designed for mounting on a printed circuit board. The relays offer built-in voltage protection and can withstand very high current overloads. The Series AS4 relays have a low zero-cross window. The compact size and triac output make the AS relay the perfect retrofit for electromechanical relays.

APPLICATIONS
• Interface applications
• Vending machines
• Light/lamp control
• HVAC controls

APPROVALS
UL File Number: E128555. (Except AS60D4E)

ELECTRICAL SPECIFICATIONS

	Min	Max	Units
Operating Temperature	-40	80	°C
Storage Temperature	-40	120	°C
Input-Output Isolation	4000		Vrms
Input-Output Capacitance		3	pF

BLOCK DIAGRAM
(Control LED available on AS46R4F-02 only.)

3+ ○
4 - ○
1 ~
2 ~
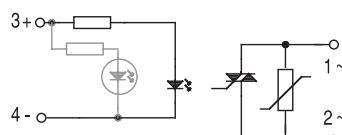
Figure 2a — All AS relays except AS60D4E

INPUT (CONTROL) SPECIFICATIONS

	Min	Max	Units
Control Range			
AS24D4E/R	4	30	Vdc
AS46D4E	4	30	Vdc
AS60D4E	5	30	Vdc
Input Current Range			
AS24D4E/R	3	30	mA
AS46D4E	3	30	mA
AS60D4E	3	30	mA
Must Turn-Off Voltage			
AS24D4E/R		0.8	Vdc
AS46D4E		0.8	Vdc
AS60D4E		1	Vdc
Input Resistance (Typical)			
AS24D4E/R		1,000	Ohms
AS46D4E		1,000	Ohms
AS60D4E		1,000	Ohms

OUTPUT (CONTROL) SPECIFICATIONS

	Min	Max	Units
Operating Range			
AS24D4E/R	12	275	Vrms
AS46D4E	12	460	Vrms
AS60D4E	24	600	Vrms
Peak Voltage (Clamping Voltage)			
AS24D4E/R		600(450)	Vpeak
AS46D4E		900(720)	Vpeak
AS60D4E		1200	Vpeak
Load Current Range			
AS24D4E/R	.005	4	Arms
AS46D4E	.005	4	Arms
AS60D4E	.005	5	Arms
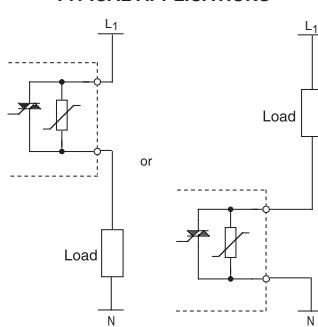
OUTPUT(CONTROL) SPECIFICATIONS (Continued)

	Min	Max	Units
Maximum Surge Current Rating (Non-Repetitive)			
(See Figure 5a and Figure 5b)			
AS24D4E/R		100	Apeak
AS46D4E		100	Apeak
AS60D4E		120	Apeak
On-State Voltage Drop		1.6	V
Zero-Cross Window (Typical)		±12	V
Off-State Leakage Current (60Hz)			
AS24D4E/R		0.3	mArms
AS46D4E		0.3	mArms
AS60D4E		1	mArms
Turn-On Time (60Hz)			
AS24D4E/R		8.3	ms
AS46D4E		8.3	ms
AS60D4E		8.3	ms
Turn-Off Time (60Hz)		8.3	ms
Off-State dv/dt	500		V/ụs
Operating Frequency	10	440	Hz
I²T for Match Fusing (<8.3ms)			
AS24D4E/R		50	A²S
AS46D4E		50	A²S
AS46D4E		72	A²S

TYPICAL APPLICATIONS

Figure 3a

AS4\092016\Q3

LOAD CURRENT DERATING CURVE

Input voltage <10VDC/without LED

Other input voltages; other models
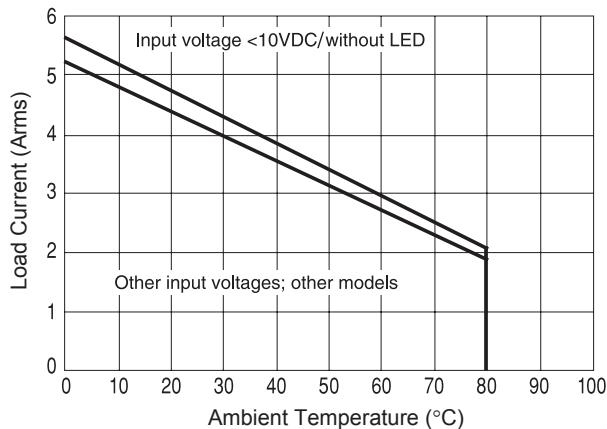
*Figure 4 — Thermal curves*

SURGE CURRENT RATING
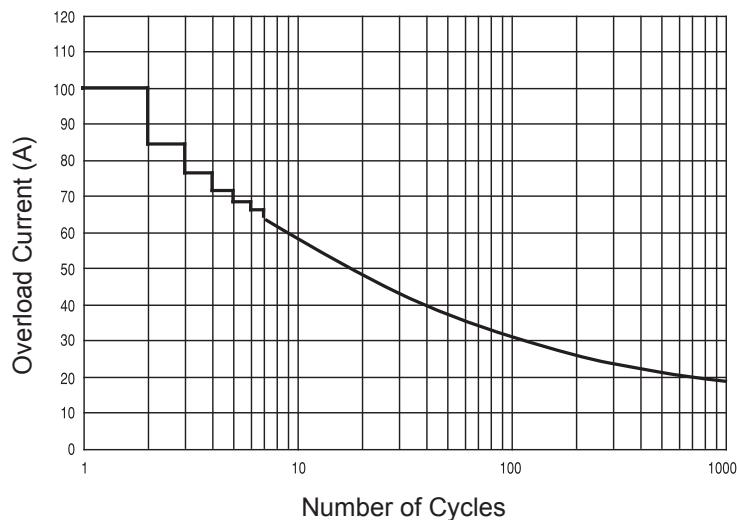
Figure 5a — Non-repetitive surge current

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

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RELAYS
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DC Control

SURGE CURRENT
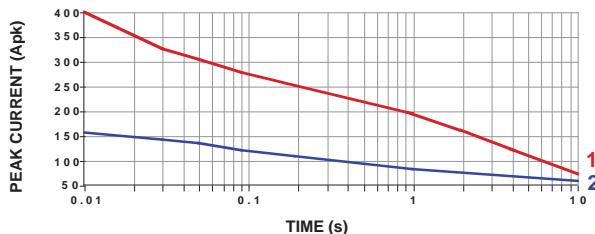
Figure 4c — 35A output current
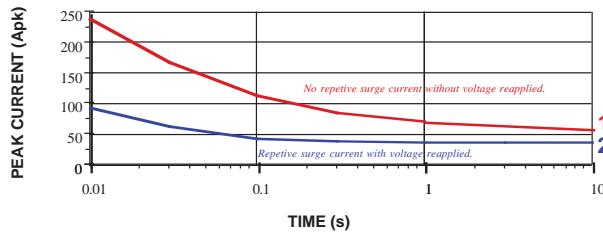
*Figure 4b — 25A output current*

## THERMAL CURVES
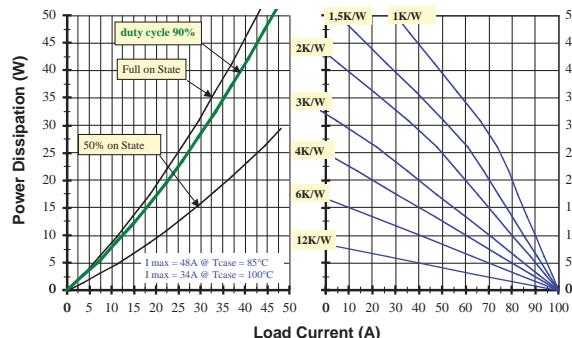
Figure 5c — 35A output power
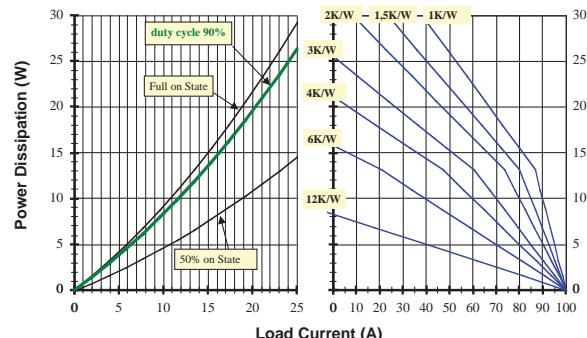
Figure 5b — 25A output power

12°C/W corresponds to a relay without heat sink
6°C/W corresponds to a relay mounted on a DIN-rail adaptor (Teledyne P/N DL12)

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