TELEDYNE
RELAYS

A Unit of Teledyne Electronics and Communications

Series DX

3A to 220 Vdc
DIN Rail Relay, AC/DC Control

Part Number	**Description**
DX22R1E-02	1A, 220 Vdc
DX6R3E-02	3A, 60 Vdc
DX6R3U-02	3A, 60 Vdc

Part Number Explanation

DX   **22**   **R**   **1**   **E**   **-02**

Series   *Switch Type* [2]   *Control Range* [3]

Line Voltage [1]   *Output Current - Amps*   *Feature* [4]
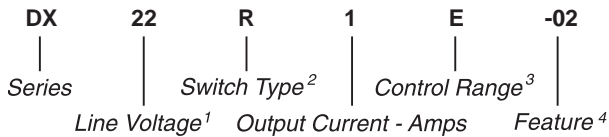
NOTES
1) Line Voltage (nominal): 6 = 60 Vdc; 22 = 220 Vdc
2) Switch Type: R = Random turn-on
3) Control Range: E = 5-30 Vdc (3-30 Vdc for DX6R3E-02);
                  U = 90-240 Vdc
4) Feature: 02 = With LED
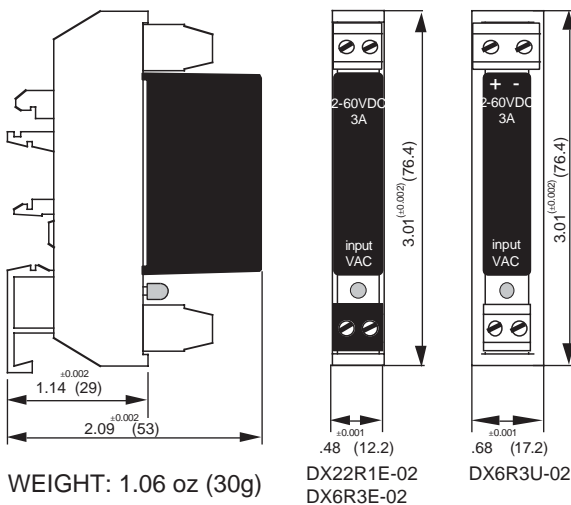
MECHANICAL SPECIFICATION

±0.002
1.14 (29)

±0.002
2.09 (53)

WEIGHT: 1.06 oz (30g)

3.01 (+0.002) (76.4)

input VAC

±0.001
.48 (12.2)

DX22R1E-02
DX6R3E-02

3.01 (+0.002) (76.4)

input VAC

±0.001
.68 (17.2)

DX6R3U-02

Figure 1 — DX relays, dimensions in inches (mm)

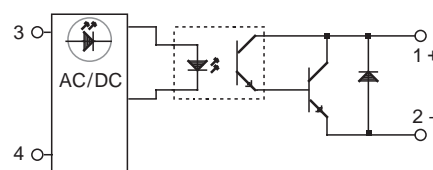#### FEATURES/BENEFITS
• New generation of solid-state relays for DIN-rail mounting
• Control visualization by LED
• AC/DC control
• High immunity to surges

DESCRIPTION
The Series DX relays are designed for DIN-rail mounting. These solid-state relays include a control LED that provides visual control status. The tight zero-cross window significantly reduces EMI. Its compact size and user friendly package make the Series DX relay an excellent choice for designers.

APPLICATIONS
• Interface applications
• Vending machines
• Light/lamp control
• Contactor driver
• Fan speed control
• HVAC controls

TYPICAL APPLICATION

1 +

2 −

Load

(*)

Figure 2 — DX relays

BLOCK DIAGRAM

3

AC/DC

4

1 +

2 −

Figure 3 — DX relays

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INPUT (CONTROL) SPECIFICATION

	Min	Max	Unit
Control Range			
DX22R1E-02	5	30	Vdc
DX6R3E-02	3	30	Vdc
DX6R3U-02	90	240	Vac/dc
Input Current Range			
DX22R1E-02	1	30	mA
DX6R3E-02	1	30	mA
DX6R3U-02	2	5.7	mA
Must Turn-Off Voltage			
DX22R1E-02	1		Vdc
DX6R3E-02	1		Vdc
DX6R3U-02	15		Vac/dc
Input Resistance (Typical)			
DX22R1E-02		1000	Ohms
DX6R3E-02		600	Ohms
DX6R3U-02		41,000	Ohms

OUTPUT (LOAD) SPECIFICATION

	Min	Max	Unit
Operating Range			
DX22R1E-02	2	220	V
DX6	2	60	V
Peak Voltage			
DX22R1E-02		220	V
DX6		60	V
Load Current Range			
DX22R1E-02	.003	1	A
DX6R3E-02	.003	3	A
DX6R3U-02	.005	3	A
On-State Voltage Drop		1.6	V
Maximum Surge Current Rating (Non-Repetitive)			
DX22R1E-02		3	Apeak
DX6R3E-02		5	Apeak
DX6R3E-02		10	Apeak

OUTPUT (LOAD) SPECIFICATION (Continued)

	Min	Max	Unit
Off-State Leakage Current (60Hz)			
DX22R1E-02		0.3	mA
DX6R3E-02		0.3	mA
DX6R3E-02		1	mA
Turn-On Time		0.2	ms
Turn-Off Time		0.8	ms
Off-State dv/dt	200		V/µs
Switching Frequency		500	Hz

THERMAL CURVES
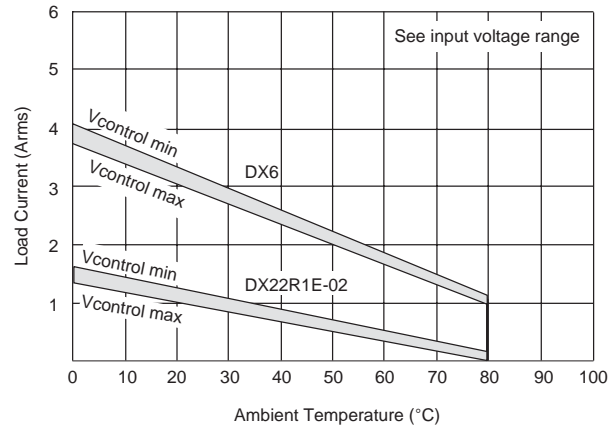
Figure 4 — DX relays

ENVIRONMENTAL SPECIFICATION

	Min	Max	Unit
Operating Temperature	–40	80	°C
Storage Temperature	–40	105	°C
Input-Output Isolation	2500		Vrms
Input-Output Capacity		8	pF

NOTES:
1. Electrical specifications at 25°C unless otherwise specified.
2. On inductive loads, a free-wheeling diode (or clamp) is recommended.
3. For additional/custom options, contact factory.