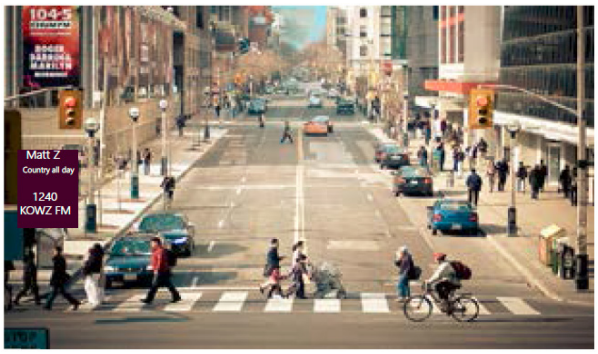
Model 242
DC Isolator

Dimensions: 1.12" W x 4.5" H x 6.485" L
Handle adds 1" to depth dimension



Pedestrian Push-Button Isolation

- Exceeds CALTRAN TEES Standards
- AC line input voltage: 89 VAC to 135 VAC, 50/60Hz
- AC Input Power: ≤2.5W (max)
- AC input - fuse protected
- I/O Insulation: ≥1000 Megaohms
- I/O Isolation Voltage: ≥3000VAC RMS
- Channel Output to Controller: Open Collector
- Output Time: 100 msec minimum hang time for call
- Fault Detection and Indication for each channel
- Connector: 2 x 22 contact card edge connector with a 0.0156-inch contact center with keyed slots.
- Operating Temperature: –40°C to +85°C

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Model 242DC Series Specifications

General: The Model 242 is designed to meet and exceed the specifications in Chapter 5, section 4, of the Caltrans Transportation Electrical Equipment specifications (TEES) dated 08/16/02. Section 4 specifies the requirements for a two channel DC isolator to provide isolation between a VDC input circuit (external electrical switch closure) and the controller unit input.

The Reno A&E Model 242 is optically isolated from the input using an Opto-isolator. Each isolated channel is equipped with a test switch that allows for a simulation of a valid input signal. Each channel has two light-emitting diodes (LED): a red LED (OUT) that indicates a call and a red LED (FAULT) that indicates fault status.

Over current protection: The A.C. input is fused with 3AG, 250V, and 0.25A slow blow fuse. The fuse is located on the PCB with a protective nylon cover.

DC Input: When the DC voltage falls to ≤ 9VDC for ≥ 6 msec, a call is detected and passed to the output via an Opto-isolator. Regardless of input signal duration, the signal to the output is a minimum of 100 msec in duration. When a DC voltage on the input rises to above 9 VDC, the call state is cleared.

Output to Controller: The output of each channel is an open collector, 30VDC (max), and able to support 100 mA. When a valid call is detected, the output allows current to flow. When the call is cleared, the output path becomes high impedance to current flow.

Front Panel Controls: Each channel has a 3-position toggle switch allowing the channel to be set in:

CALL simulates a call signal going directly to the channel input. This position overrides the normal operation of the DC isolator.

NORM allows a channel to operate under normal conditions. The toggle switch must be in this position for the DC isolator to function properly.

TEST simulates a call signal going directly to the channel input overriding the normal operation, however, only momentarily. The toggle switch must be held in the Test position because, once released, the toggle switch will return to the Norm position.

Front Panel LED Indicators: Each channel is equipped with two front panel LEDs: The red OUT LED, when on, indicates that a channel is in the call state. When off, it indicates the channel is in a no call state. The OUT LED is on when one of the following three conditions occur: 1) a call from the isolated DC input is received while the toggle switch is in the NORM position. 2) The toggle switch is set in the CALL position. 3) The toggle is held in the TEST position. The red FAULT LED, when on, signifies a previous call was present for longer than one minute. The DC isolator is reset by cycling AC power off and than on by pulling the DC isolator card from the rack slot until the fault LED goes dark and then immediately reinserting the card.

Input Line Voltage: 89 VAC to 135 VAC

Input Line Frequency: 47 Hz to 63 Hz

AC Input Power: ≤2.5W

Fuse Protection: The AC line is protected with a 0.25 Amp slow blow fuse.

Output Indicators: Two LEDs for each channel provide front panel indication of Call State and Fault State of a channel.

Channel Input Voltage: 0 to 24 VDC

Channel Input Current: 21.8 mA delivered to external electrical contact at closure

Call State Voltage: 0 to 9 VDC

No Call State Voltage: 12 to 24 VDC

Response Time: ≥ 6 msec for activation and deactivation

Channel Output Voltage: Open Collector; 30 VDC max.

Channel Output Current: ≤ 100 mA

Output Time: ≥ 100 msec hang time for call state.

I/O Isolation Resistance: ≥ 1000 Megaohms

I/O Isolation Voltage: ≥ 3000 VAC

Operating Ambient Temperature: –40°C to +85°C

Circuit Board: The printed circuit board is 0.062 inch thick FR4 material with 2 Oz. Copper. All holes are plated through. Circuit boards and components are conformal coated with polyurethane

Size: 4.5 in. (11.43 cm) high x 1.12 in. (2.85 cm) wide x 6.88 in. (17.46 cm) deep excluding handle. Handle adds 1.00 in. (2.54 cm) to the depth dimension.

Connector: 2 x 22 contact card edge connector with 0.0156-inch (0.396 cm) contact centers. Key slots located between pins B/2 and C/3 and M/11 and N/12.

Weight: 9.02 oz. (256 gm)

PIN Assignments

PIN	Function	PIN	Function
A	No Connection	1	No Connection
B	No Connection	2	No Connection
C	No Connection	3	No Connection
D	Channel 1 Input	4	No Connection
E	Channel 1 Input Return	5	No Connection
F	Channel 1 Output, Collector (Drain)	6	No Connection
H	Channel 1 Output, Emitter (Source)	7	No Connection
J	Channel 2 Input	8	No Connection
K	Channel 2 Input Return	9	No Connection
L	Chassis Ground	10	No Connection
M	AC Neutral	11	No Connection
N	AC Line	12	No Connection
P	No Connection	13	No Connection
R	No Connection	14	No Connection
S	No Connection	15	No Connection
T	No Connection	16	No Connection
U	No Connection	17	No Connection
V	No Connection	18	No Connection
W	Channel 2 Output, Collector (Drain)	19	No Connection
X	Channel 2 Output, Emitter (Source)	20	No Connection
Y	No Connection	21	No Connection
Z	No Connection	22	No Connection