

37870-MI

12V Dual Voltage Comparator Module with SPDT Relays

Dual Precision Voltage Comparison Module.
Each independent channel compares an input to an onboard adjustable voltage reference or an external reference.

3 Jumper selectable Functions:

- 1: When the input voltage is **Greater** than the Internal reference voltage, the relay is energized.
- 2: When the input voltage is **Greater** than the External reference voltage, the relay is energized.
- 3: When the input voltage is **Less** than the Internal reference voltage, the relay is energized.

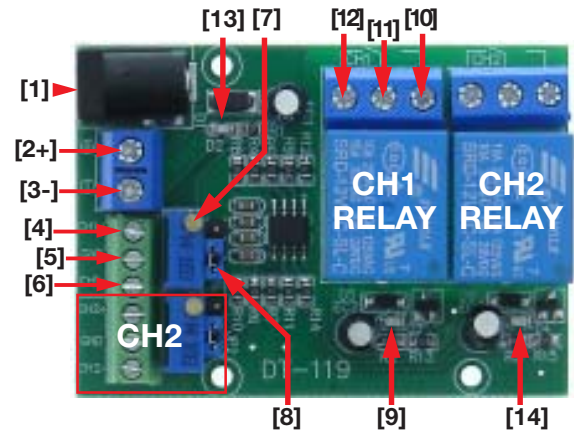
Power: 12VDC @~ 55mA

Connections:

Power: 5.5/2.1mm Coaxial Jack & Terminal Strip.

Input & Relay Contacts: Terminal Strips

Relay: SPDT 10A @ 250/125VAC/30VDC



L: 2-1/2" (63mm) **W:** 1-3/4" (45mm)
H: 3/4" (20mm) **WT:** .1

CONNECTIONS:

[1] DC Coaxial Power Jack (5.5 x 2.1mm).

[2] Positive (+) power supply Terminal.

[3] Negative (-) power supply Terminal. (Common Ground).

[1] and [2-3] are connected in parallel, You can use either option.

Note: CH1 & CH2 are identical and operate as such. ONLY CH1 Shown Here.

ALL Inputs are positive voltage (+).

[4] **CH1+** Positive (+) Comparator Input terminal Function 1. Connected to Reference Adjustment Control By Jumper Cap (Function 3)

[5] **GND** Ground terminal of CH1 Connected to Power Supply Ground And CH2 Gnd.

[6] **CH1-** Minus (-) Comparator Input terminal (This is a Positive Voltage!!)

Connected to Reference Adjustment Control By Jumper Cap (Function 1)

Comparator Input Terminal Function 3.

[7] The CH1 Reference voltage Adjustment Control, **Function 1** and **Function 3** reference voltage can be adjusted by this potentiometer.

[8] Function One, Two and Three jumper cap settings,
(Remove the jumper cap when using Function Two)

[9] Channel 1 (CH1) relay status LED. (ON Relay active)

[10] Normally open (NO) contact of relay.

[11] Common (C) contact of the relay.

[12] Normally closed (NC) contact of relay.

[13] Power LED, as long as [1] or [2-3] are correctly connected to the power source, the indicator will be on.

[14] Channel 2 (CH2) relay status LED. (ON Relay active)

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FUNCTIONS

Functions 1 & 3: The Reference Voltage is obtained by dividing the Input Power ([1] or [2-3] through precision resistors. The Power Input Voltage determines the range of the reference voltage. If the Input Voltage value is 12V, then the adjustable range of the Reference Voltage is 0-12V.

Function 2: An External Reference voltage is required.

Input<Reference: Relay Not Activated

Input>Reference: Relay Activated

Input1<Input2: Relay Not Activated

Input1>Input2: Relay Activated

Input<Reference: Relay Activated

Input>Reference: Relay Not Activated



FUNCTION 1 JUMPER



FUNCTION 3 JUMPER

NOTE: Both channels work independently without affecting each other. Different working Functions can be set.

SETUP:

Use a multimeter to Set/Test the reference voltage (Terminal **CH1-** or **CH2-**), set the multimeter to the test DC voltage range, put the black test lead (-) on GND and the red test lead + on Terminal **CH1-** or **CH2-**. Adjust the Potentiometer(s), you can see the voltage value of the multimeter is changing, this value is the reference voltage.

USE:

Function 1 Jumper as shown in Drawing SAME APPLIES TO CH2

Connect the Plus Voltage to be Compared to Terminal **CH1+** and the Minus - Voltage to Terminal **GND**.
(CH1- is the reference voltage).

Results: If the voltage value of Terminal **CH1+** input is higher than the Reference Voltage value, **CH1 Relay** will activate, The Terminals Com & NO will be connected, LED lights and Terminals Com & NC will be disconnected;
If the voltage value is less than the set Reference voltage value the relay will not activate and Terminals COM & NC will remain connected.

Function 2 Jumper Removed (NO Jumper) SAME APPLIES TO CH2

Connect the Plus Voltage to be Compared to Terminal **CH1 +** and the Minus - Voltage to Terminal **GND**.
Connect External Reference Plus Voltage to Terminal **CH-** and the Minus - Voltage to Terminal **GND**.

Results: If the voltage value of Terminal **CH+** input is higher than the External Reference Voltage value, **CH1 Relay** will activate, The Terminals Com & NO will be connected, and Terminals Com & NC will be disconnected;
If the voltage value is less than the set Reference voltage value the relay will not activate and Terminals COM & NC will remain connected.

Function 3 Jumper as shown in Drawing SAME APPLIES TO CH2

Connect the Plus Voltage to be Compared to Terminal **CH1-** and the Minus - Voltage to Terminal **GND**.
(CH1+ is now the reference voltage). (Inverse of Function 1)

Results: If the voltage value of Terminal **CH-** input is lower than the Reference Voltage value, **CH1 Relay** will activate, The Terminals Com & NO will be connected, and Terminals Com & NC will be disconnected;
If the voltage value is less than the set Reference voltage value the relay will not activate and Terminals COM & NC will remain connected.



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