JONARDTOOLS®

MADE FOR LIFE

POE-1
POE & CABLE TESTING TOOL
INSTRUCTION MANUAL

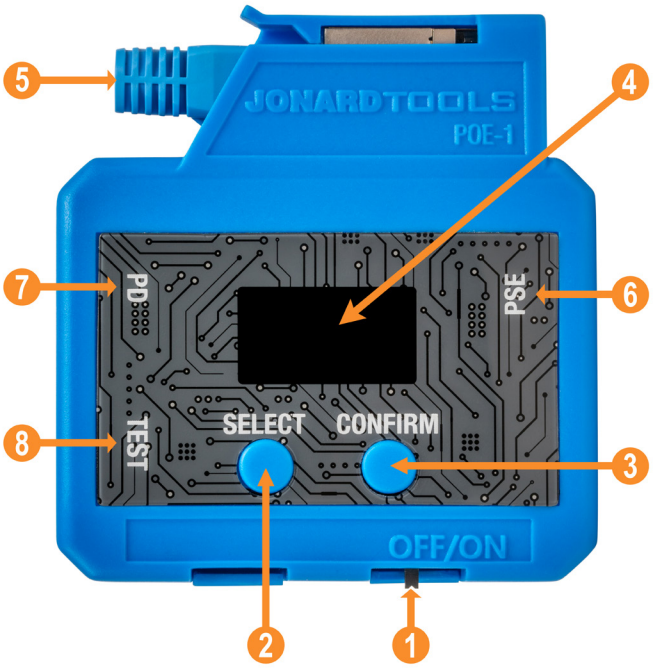
Features

The POE-1 is a POE cable tester and wire pair tester for CAT5e, CAT6, CAT6a, and CAT8 RJ45 connectorized cables. This device complies with CE, FCC, ROHS, REACH, ISO/IEC 11801, and EIA/TIA 658 standards.

It is powered by one AA battery or is powered by a PSE if it is connected to one. When powered by a battery, it has a 20 second auto-off to conserve battery life.

It does not consume battery power while connected to a PSE and is fully powered off when the ON/OFF Switch is in the OFF position. These features allow the device to be used for over 5,000 test cycles before the battery needs to be replaced.

⚠ **CAUTION: NOT FOR USE ON LIVE CIRCUITS**



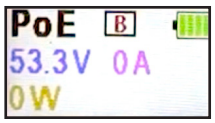
1. ON/OFF Switch
2. Function selection button, select between 3 test
   a. POE Testing
   b. Resistance/Continuity cable testing
   c. Port mapping
3. Confirm and Start Testing button
4. LCD Display
5. Remote test adapter for cable testing
6. POE test port for connecting to PSE (Power Supply Equipment)
7. POE test port for connecting to PD (Powered Device)
8. Test port for cable testing, and Port mapping

POE Testing – Power Supply Detection

Using the POE-1 in the POE mode, you can detect POE using the following standards: 802.3af, 802.3at, 802.3bt (up to 100W), 48V Passive 2 Pair and 4 Pair, Mode A and Mode B. It also displays the polarity of the POE line.

To do so, follow the instructions below:

1. Turn ON the device using the ON/OFF switch.
2. Connect the powered ethernet cable from the PSE (Power Sourcing Equipment) to the PSE port of the POE-1.
3. Test results will automatically display on the screen.
4. To evaluate the test results, please refer to the “POE Test Results” section of this manual.



NOTE: The POE-1 automatically uses the PSE as a power source when the cable is connected. When the cable is disconnected from the POE-1, the screen will turn off.

POE Testing – Inline Power Monitoring

Using the POE-1 in the POE mode, you can also perform real-time testing to display the Voltage, Power, and Current of a line connected to a PSE (Power Sourcing Equipment) and PD (Powered Device).

To do so, follow the instructions below:

1. Turn the device ON using the ON/OFF switch.
2. Connect the powered ethernet cable from the PSE to the PSE port of the POE-1 and the ethernet cable from the powered device to the PD port of the POE-1.
3. Test results will automatically display on the screen.
4. To evaluate the test results, please refer to the “POE Test Results” section of this manual.

NOTE: The POE-1 automatically uses the PSE as a power source when the cable is connected. When the cable is disconnected from the POE-1, the screen will turn off.

POE Test Results

Use the below information to determine the standards of the PSE or PD being tested.

[A] – 802.3af (2 Pairs): 1-2 (+), 3-6 (-)

[B] – 802.3at (2 Pairs): 4-5(+), 7-8(-)

[A] [B] – 802.3bt (4 Pairs): 1-2 (+), 4-5 (+), 3-6 (-), 7-8 (-)

Passive POE: Does not detect 19–26.5 kΩ and 0.25–4 mA load and does not perform a handshake; it just provides power directly.

POE Standards

	SPECIFICATION	COMMONLY KNOWN AS	CLASS	MINIMUM PSE OUTPUT POWER	MINIMUM PD INPUT POWER*	VOLTAGE RANGE AT PSE	VOLTAGE RANGE AT PD	MAX CURRENT
A	**TYPE 1** IEEE 802.3af	PoE	1	4W	3.84W	44-57 V	37-57 V	350 mA
			2	7W	6.49W			
			3	15.4W	12.95W			
B	**TYPE 2** IEEE 802.3at	PoE+	4	30W	25.5W	50-57 V	42.5-57 V	600 mA
A B	**TYPE 3** IEEE 802.3bt	PoE++ 4PPOE Cisco UPoE	5	45W	40W	50-57 V	42.5-57 V	600 mA per mode
			6	60W	51W			
A B	**TYPE 3** IEEE 802.3bt		7	75W	62W	52-57 V	41.1-57 V	960 mA per mode
			8	90W	71.3W			

* The difference between the power provided by the PSE and the power received by the PD is power lost in transmission in the form of heat.

Cable Testing – RJ45 Wire Pair Testing

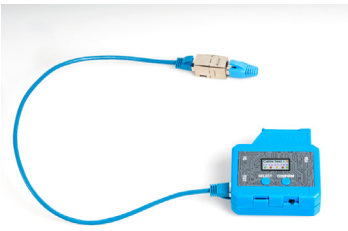
⚠ CAUTION: NOT FOR USE ON LIVE CIRCUITS

Using the POE-1 in Test Mode, you will be able to test the integrity of an ethernet cable and accurately diagnose cable issues quickly.

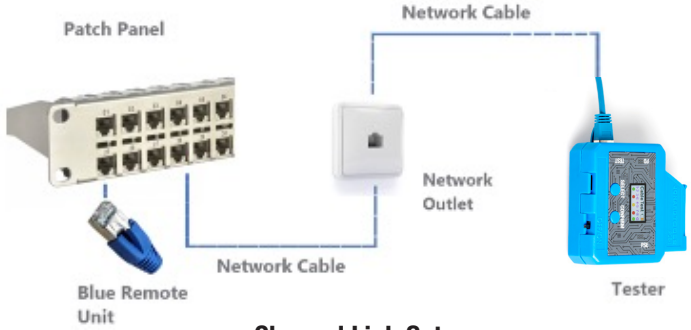
To use the Test Mode, follow the instructions below:

1. Turn the device ON using the ON/OFF switch.
2. Press the SELECT button to change to Cable Test Mode.
3. Connect the Remote Test Adapter to the side of the ethernet cable you want to test, and the other side to the TEST port of the POE-1.

MPTL Setup



Patch Cord Setup



Channel Link Setup

Cable Testing – RJ45 Wire Pair Testing (Continued)

1. Press the CONFIRM button, and the test results will appear onscreen.
2. To evaluate the test results, please refer to the "Cable Test Results" section of this manual.

NOTE: The POE-1 automatically uses the PSE as a power source when the cable is connected. When the cable is disconnected from the POE-1, the screen will turn off.

● **RED DOT** – The corresponding wire pair has a short or is miswired.

RED X – The corresponding wire pair has an open circuit.

NOTE: Resistance is an indicator of connection quality and power transmission capability for POE applications.

Cable Test Results

After testing a cable, the Cable Test Results will appear onscreen. See below for the meaning of each result:

● **GREEN DOT** – The corresponding wire pair has good continuity, and the wiring is correct.

● **ORANGE DOT** – The corresponding wire pair has Resistance that is too high

This means that the intra-pair loop resistance is over 25 Ohms, or there is an inter-pair resistance imbalance of more than 10%. In this case, the cable is NOT safe for POE applications.

Possible reasons for high resistance:

- Cable is too long
- Improper contact or termination of the RJ45 connector
- Improper cable conductor (CCA or the conductor is too thin)
- Improper cable construction