



PT40 Installation Guide



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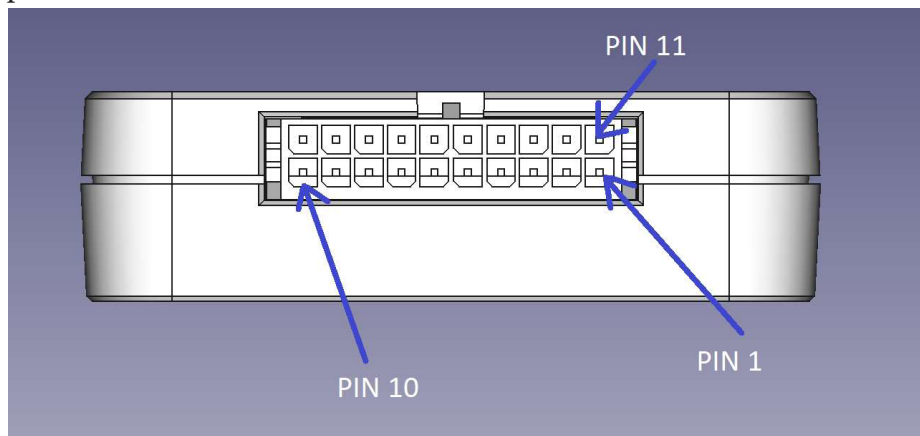
The PT40 is a full-featured cellular device that can be used for both simple and sophisticated telematics applications.

In simple applications, the PT40 can be powered with a basic power-only wiring configuration.

In more sophisticated applications, the PT40 can be connected to the vehicle bus to augment the telematics data with information collected directly from the vehicle engine. In a single device model, the PT40 supports multiple vehicle protocols: J1939, J1708/1587 and OBD-II (CAN only).

The PT40 can also be connected to digital inputs and outputs, temperature sensors, iButton™ and additional devices over a serial connection.

The PT40 uses a 20-pin Molex Micro-Fit 3.0™ connector.



The pinout of the connector is specified in the following table:

PIN	FUNTION	DETAILS / RANGE
1	POWER_OUT	+3V switched power
2	UART RX	Accessories UART Receive
3	BATTERY	Internal Battery (do not use)
4	OUTPUT 2	Open Drain Output
5	1-WIRE	1-Wire™ Interface
6	INPUT 4	3 to 32V
7	INPUT 2	3 to 32V
8	J1708+	J1708 Interface
9	CAN HIGH	J1939 or OBD-II
10	POWER IN	6 to 32V
11	GND	Ground for Accessories
12	UART TX	Accessories UART Transmit
13	VDC	DC/DC Converter Output (do not use)
14	OUTPUT 1	Open Drain Output
15	GND	Ground for 1-Wire
16	INPUT 3	3 to 32V
17	INPUT 1	3 to 32V
18	J1708-	J1708 Interface
19	CAN LOW	J1939 or OBD-II
20	POWER GND	0V

The device should be powered from pins 10 and 20.

The PT40 includes a USB-C connector. This connector can be used to connect USB 2.0 devices (computer, tablet, or smartphone) for debugging and provisioning. The connector can also be used to provide a hardwired connection to the PT40 if a wired solution is preferred over a wireless (BLE) solution.



Important note: the PT40 cannot be powered via the USB-C connector, nor can the USB-C connector provide power to a connected device.

For situations where it is desirable to keep the PT40 permanently connected to a phone or tablet, it is recommended to use a splitter cable which allows the phone/tablet to be powered and charged while maintaining a data connection with the PT40.

An example of such a configuration is shown on the left.

The PT40 has three LEDs: ORANGE, GREEN, BLUE

ORANGE LED

LED State	Meaning
Off	GPS power management engaged. GPS is turned off, GPS backup clock is ON
Blinking	GPS is in acquisition mode
On	GPS signal is locked

Note: the GPS chipset may go into power management mode (GPS OFF, RTC ON) to save power.

GREEN LED

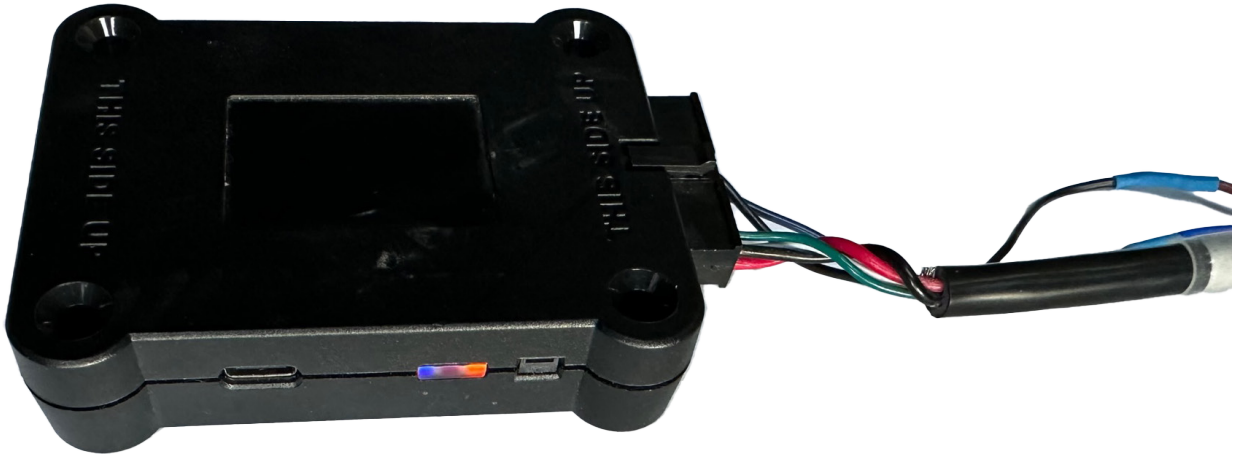
LED State	Meaning
Off	No vehicle connection active
Blinking	Temporary state while negotiating communication on the vehicle bus
On	Currently connected to and getting data from the vehicle

BLUE LED

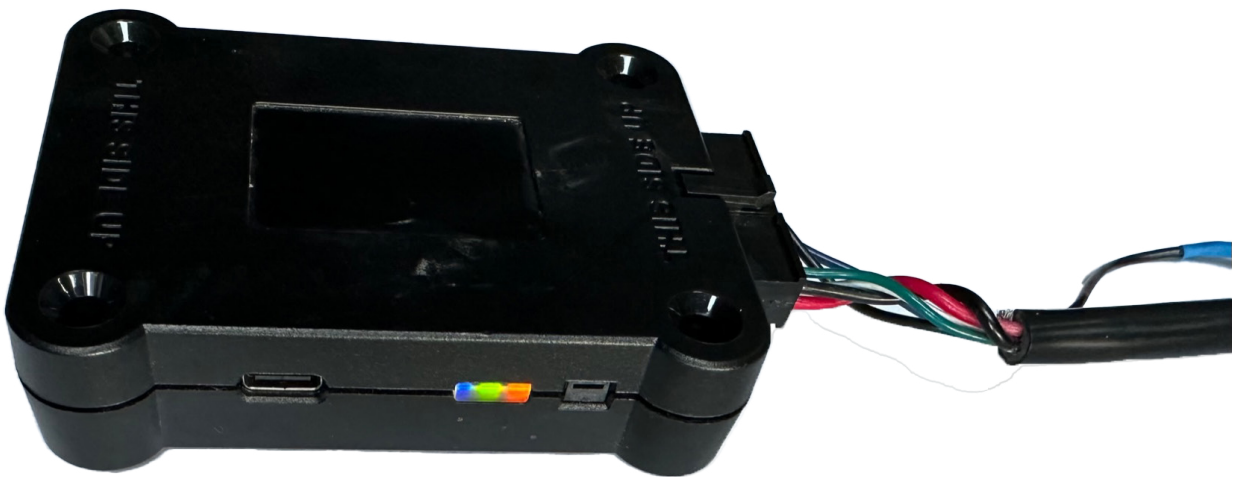
LED State	Meaning
Off	The cellular subsystem is off
One blink / 10s	The cellular subsystem is not searching
Fast blink	The cellular network has rejected the device
Slow Blink	The cellular subsystem is searching
On	The cellular subsystem is connected to a network

The image below displays the LED's when plugged in and the engine is off.

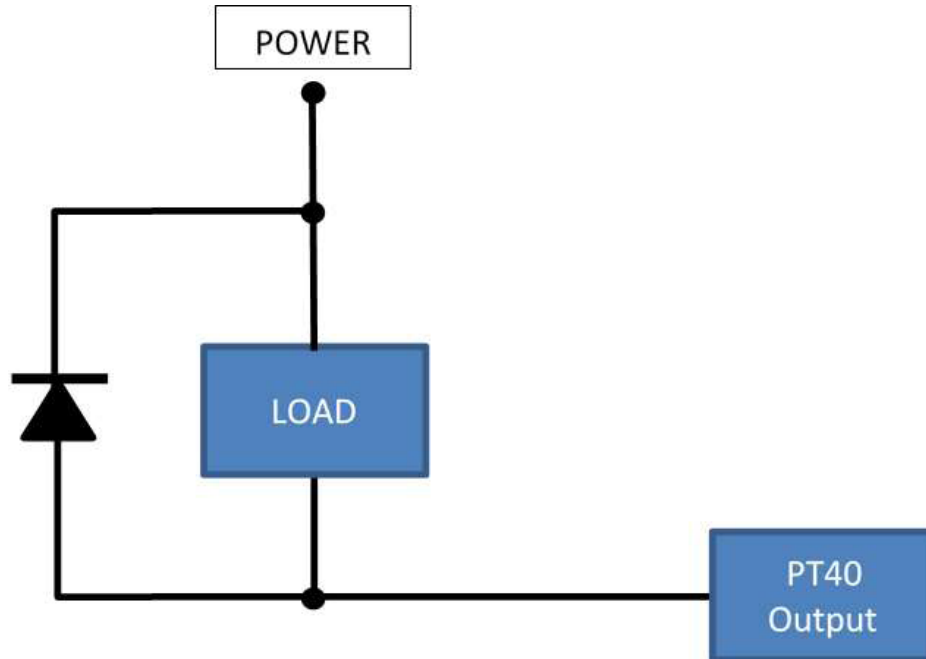
Also note device orientation with the label "this side up."



The image below displays the LED's when plugged in and the engine is on.



The PT40 includes 2 digital outputs which can, for example, be used to control relays. The load can be connected to any of the two PT40 outputs using the following schematic:



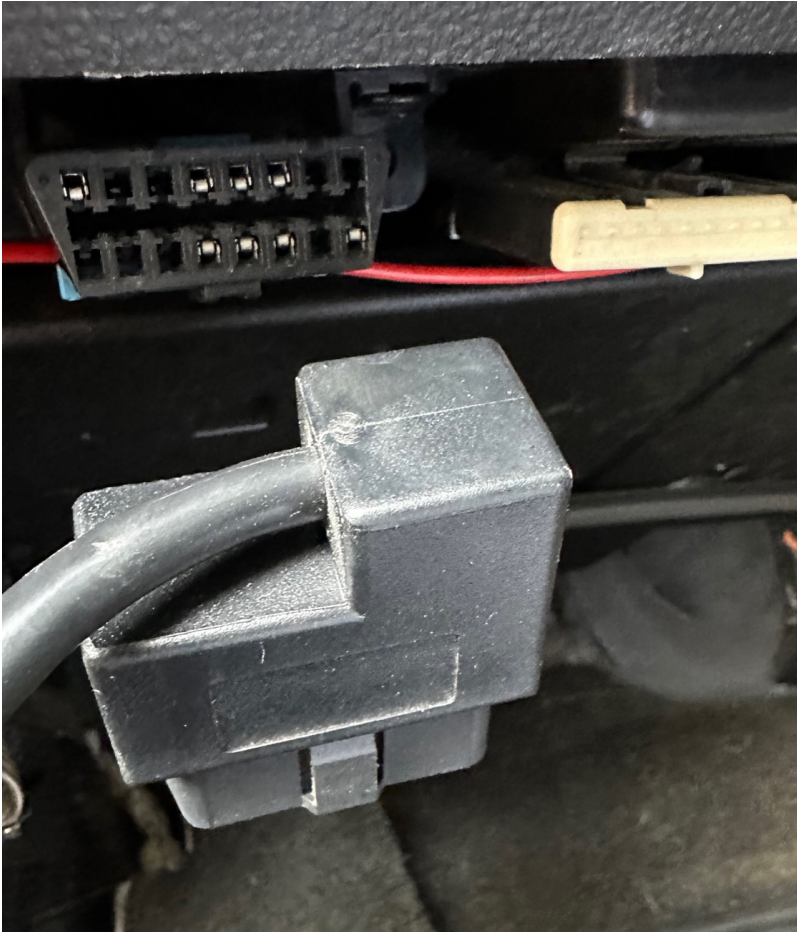
Please note the following:

- The POWER applied to the load does not need to be the same as the one powering the PT40
- When using separate power sources, the two grounds (PT40 and load) must be connected together
- The diode shown above must be present if the load is not purely resistive. If a non-resistive load such as a relay is switched without the diode, the PT40 output will be immediately destroyed.
- The maximum voltage for the load is 60V (note that this is different from the maximum voltage supported by the PT40 itself). If there is a risk of back EMF higher than 60V, the output should be protected accordingly.
- The maximum current is 3 Amps.

The PT40 is powered with a circuit that has been tested to meet the requirements of ISO 16750-2.

The circuit provides the following benefits:

- 1) Protected against reversed polarity
- 2) Protected against over current with a resettable fuse
- 3) Filtered against noise present on the power line
- 4) Protected against the overvoltage/overshoot present in automotive and industrial environments with a Transient Voltage Suppressor (TVS), which has a peak power dissipation of 1500W



The image to the left depicts the vehicle OBDII port and the device cable end that plugs into it

The image below displays both ends of the device cable: one end to the device and the other to the OBDII port.



Rastrac Fleet Health (Last 24 Hours)

- Not Reported: 21/49
- Fleet Usage: 57%
- Idle Time: 1 Minutes
- Speeding Incidents: 76
- Temperature Out Of Spec: 0
- Battery Health: 91%
- Maintenance Due: 31

Updates (44)

Vehicle	ID	Time	Address	Speed	Received	Lake Depth/Altitt
2630WP	4675008942	May 25, 2021 9:27:49 AM	Location: Rastrac, 12054 Jeckel Cir, Austin, TX, 78727	94 mph	May 25, 2021 9:28:10 AM	64
BeMini	866349042637367	Jun 8, 2022 3:06:35 AM	Location: Rastrac, Austin, TX, 78759	0 mph	Jun 8, 2022 3:06:35 AM	
BeSol	864475043993319	Jun 7, 2022 10:37:20 PM	Location: FMT 290, 9743 US-290 E, Austin, TX, 78724	0 mph	Jun 7, 2022 10:37:20 PM	6C
Bolt	355154085762140	Jun 8, 2022 2:41:36 AM	Location: MW Home, 6162 Prospect Hill Dr, Granbury, TX, 76049	0 mph	Jun 8, 2022 2:41:39 AM	7C
Camry	184600670	Jun 8, 2022 9:44:01 AM	Location: MW Home, 6162 Prospect Hill Dr, Granbury, TX, 76049		Jun 8, 2022 9:44:08 AM	
Diana	204002624	Jun 8, 2022 8:37:22 AM	Location: Rastrac, Austin, TX, 78759	0 mph	Jun 8, 2022 8:37:24 AM	94

Map Satellite

Map showing residential areas in Austin, Texas, including Forest at the Villages of Spicewood, Barrington Oaks, Oak Forest Villas, and others. A red circle highlights a specific location on the map.

Log-in to your Rastrac account to verify that the units are installed and reporting correctly. It could take up to 15 minutes for the device to send in its initial report. Your current address and location should be displayed.

For any questions or help, contact Rastrac support at (512) 918-0700.