

Installation Instructions

for Digital Universal Transmitter

Model: X220138



System overview

The Digital Universal transmitter is a wireless transmitter designed to be connected to the TE oil condition sensor. The sensor data is transmitted wirelessly to a Donaldson receiver connected to a vehicle CAN bus, Telematics device, or datalogger.

Contents

1. Part numbers
2. Tools
3. Oil condition sensor install
4. Harness install

Kit parts list

Part number	Item description
X220138	Universal Transmitter, digital
P290066	Harness, UT digital
*New	Oil condition sensor
*New	Oil filter adapter
	Zip ties

Tools

- side cutters (trim zip ties)
- Heat source (heat shrink)
- Hex 6mm (remove pug from oil adapter)
- Hex 1/8" (set screw)
- #2 Phillips Screwdriver (Ground terminal)
- Wire strippers/crimpers

Materials

- Medium-Strength Loctite (set screw)
- Zip ties (secure harness)



Installation Instructions

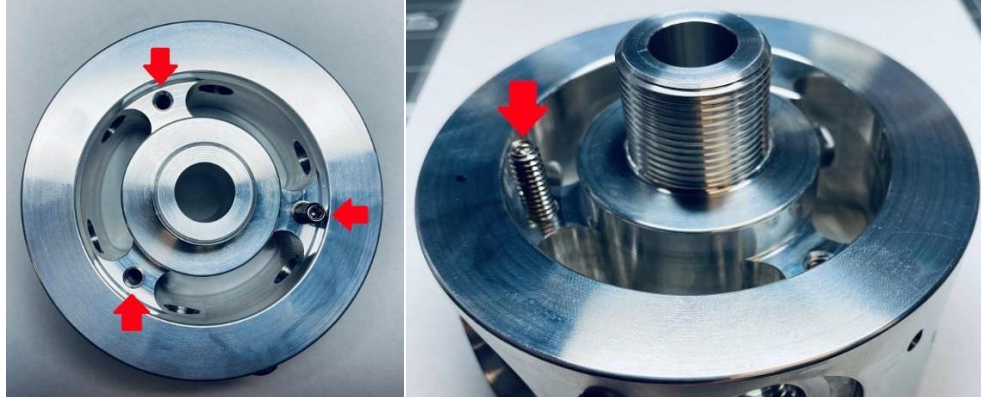
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Before beginning the install be sure to have the necessary equipment to change out an oil filter. An oil sample may have been requested, collect a sample after the completion of the install.

Oil condition sensor install

1. Locate and remove the oil filter.
 - a. follow manufacturer's instructions on oil filter removal.
2. Installing the 5 plugs to the spacer.
 - a. Install the spacer in the filter location.
 - b. Choose one of the ports free of obstruction for sensor install.
 - c. Mark the desired location of the sensor.
 - d. Remove the spacer.
 - e. Install the 5 plugs into the spacer leaving the marked location open for the sensor.
3. Installing the set screw.
 - a. Install the spacer block as you would the typical oil filter.
 - b. There are three threaded holes in the spacer for inserting a set screw. Choose a set screw hole that is not over an empty space.
 - c. Apply Loctite to the set screw. Insert the set screw into the spacer.



Note: The purpose of the set screw is to prevent the spacer from backing out during normal operation and oil filter changes.



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4. Install the oil condition sensor into the spacer block.



5. Find a location to mount the Universal Transmitter within the harness reach.
Note: It is best to have the Universal Transmitter mounted against a flat surface. The connector should not be pointed up as that may allow water to follow the wires to the connector. It is best to have water follow the wires away from the connector.
- a. The center of the box is designed to retain a strap.

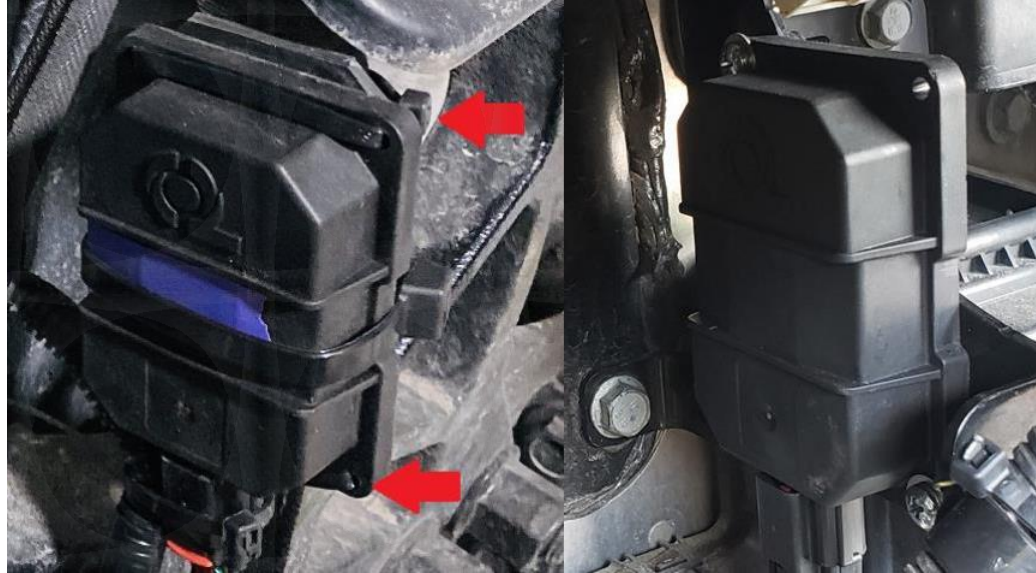




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- b. The holes at the four corners can be used for tie strap or bolts.



6. Attached the harness to the universal transmitter.



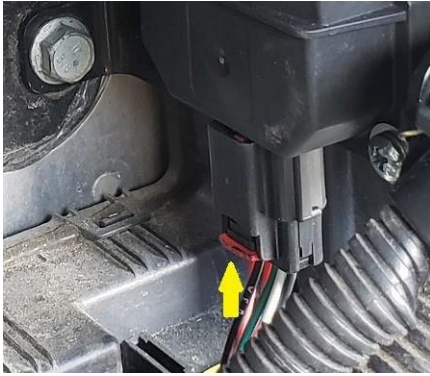
7. Press the red tab into the locked position.



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8. Attach the connector to the sensor.
 - a. Lock the connector by pressing on the red tab of the connector.
9. Secure the wires to the connector by creating a loop and using a zip tie. The loop should be 3 to 6 inches.
 - a. Secure the wire lead to the connector with a zip tie.



10. Attach the ring terminal on the harness to the spacer block.



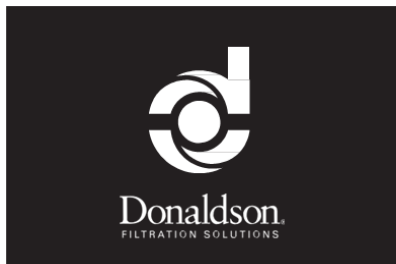
11. Install the oil filter.



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Harness install

1. Determine the locations from which to get switched (key) power and ground.
2. Power should be connected to a 5A fuse.
 - a. If an existing 5A circuit cannot be found, simply add a 5A inline fuse to the harness.
3. Route the power and ground, from any installed universal transmitter harness, to the intended power source.
 - a. Keep harness away from hot locations such as around the turbo charger.
 - b. The harness should have retention about every 12".
 - c. Avoid attaching the harness to moving parts. If attached to a hinged part, such as a hood, make sure there is enough slack to cover the distance of the movement.
4. All electrical connections made outside of the cab should be made watertight.
 - a. Solder splices covered by adhesive lined heat shrink are preferred.
 - b. If butt splice connectors are used it is recommended to use a type that come sheaved in adhesive lined heat shrink.
 - c. Electrical tape should not be considered waterproof nor permanent.
5. Use zip ties to secure the harness.

RF EXPOSURE:

This product complies with FCC and ISED radiation exposure limits set forth for an uncontrolled environment. The antenna should be installed and operated with minimum distance of 20 cm between the radiator and your body.

FCC STATEMENT WARNING:

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.



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