

Setup Guide

Dual Communication Setup Vaisala Mobile Detector MD30

MD30 dual communication setup

With MD30DUALSET, you can have 2 data collection systems connected to 1 mobile road sensor.

The dual communication setup that is instructed in this document applies to Bluetooth module enclosure BM10 and BM10-NA. Dual communication with BM10-RW is not instructed.


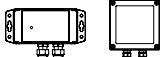

 <p>BM10</p> <ul style="list-style-type: none"> • 2.5-mm flathead screwdriver • 16-mm step drill bit • Crosshead screwdriver • Step drill • Pliers • Torx Tx10 • Wire cutters 	<p>BM10 BM10-NA</p> 
	 <p>BM10-NA</p> <ul style="list-style-type: none"> • 2.5-mm flathead screwdriver • Pliers • Wire cutters

Table 1 MD30DUALSET contents

Part	Pcs	Use with
8-pin extension cable 8 m (26 ft)	1	BM10, BM10-NA
Connection wire (yellow)	1	BM10
Cable gland with lock nuts	2	BM10
O-ring for cable gland	2	BM10
Wire connector	3 + 3 (spare)	BM10

In addition, you need the 6-pin extension cable (8 m / 26 ft) delivered with the MD30 sensor or your own cable. This document instructs the use of Vaisala provided extension cable.

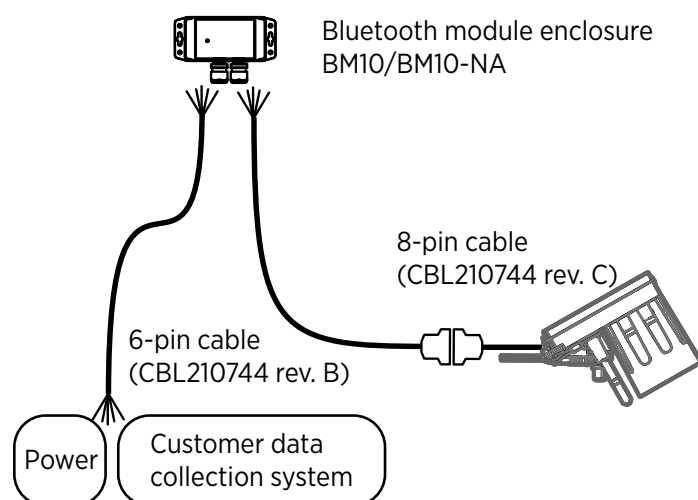
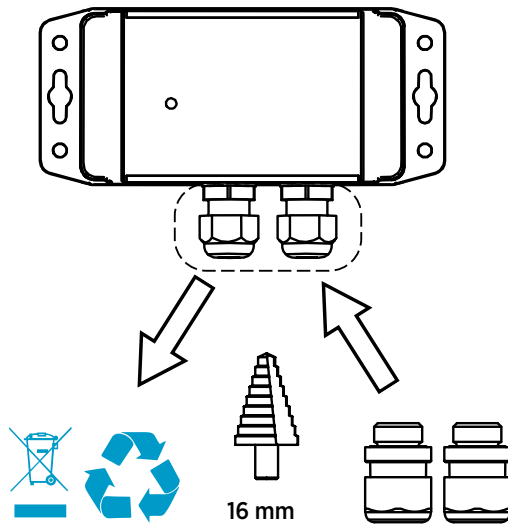


Figure 1 Cabling overview



If you already have MD30 in use, disconnect the cables from MD30 and the Bluetooth module enclosure before you start the setup.

- ▶ 1. Open the cover of the Bluetooth module enclosure.
2. If you have BM10-NA, go to step [step 3](#).
If you have BM10, replace the existing cable glands with new ones.
 - a. Remove the 4 Torx screws that hold the printed circuit board (PCB) in place, and remove the PCB.
 - b. Remove the cable glands from the Bluetooth module enclosure.
 - c. Use a step drill to enlarge the cable gland holes from $\varnothing 15.4$ mm to $\varnothing 16$ mm.
 - d. Attach the O-rings to the new cable glands and the cable glands to the Bluetooth module enclosure.
Secure with the lock nuts.

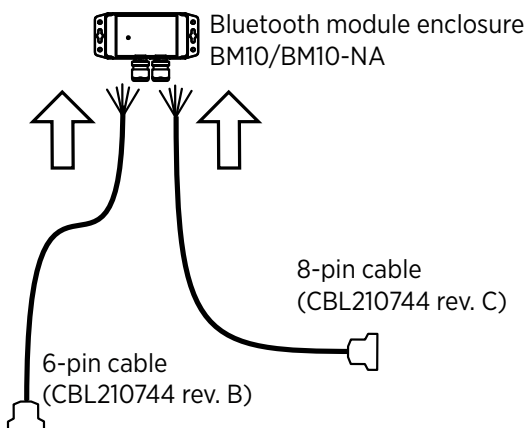


- e. Attach the printed circuit board (PCB) back to the Bluetooth module enclosure.




Follow the statutory regulations for disposing of the old cable glands.

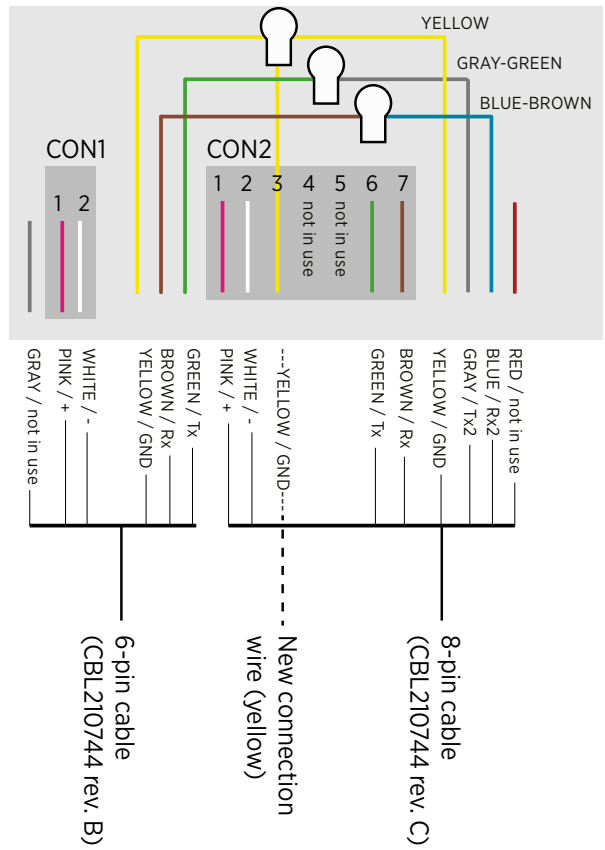
3. Lead the cables through the cable glands to the Bluetooth module enclosure.




4. Connect the wires in the Bluetooth module enclosure BM10 as shown.
 - a. Connect extension cable wires to pins 1 and 2, and 1, 2, 6, and 7.
 - b. Connect the new short connection wire to pin 3.
 - c. To connect the remaining wires, use 3 wire connectors (3M™ Scotchlok™). Remove the existing crimping (no need to strip the wires), insert the wires to the wire connector, and crimp with capsid down using pliers.


 The following image shows the wiring for Bluetooth module enclosure **BM10**.

Bluetooth module enclosure BM10

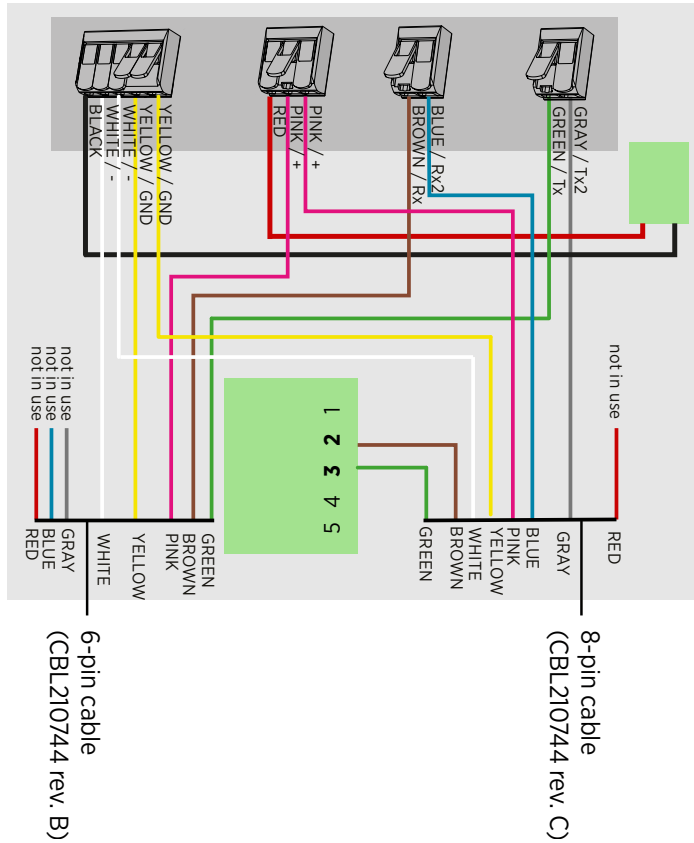



 The wire colors are based on the MD30 extension cable wires. Your own cable may use different colors.

5. Connect the wires in the Bluetooth module enclosure BM10-NA as shown. The wires must be crimped or stripped.
 - a. Disconnect the existing brown and green wires from the green connector, and connect the brown and green of the extension cable wires to those pins (2 and 3).
 - b. Connect the remaining wires as shown.

 The following image shows the wiring for Bluetooth module enclosure **BM10-NA**.

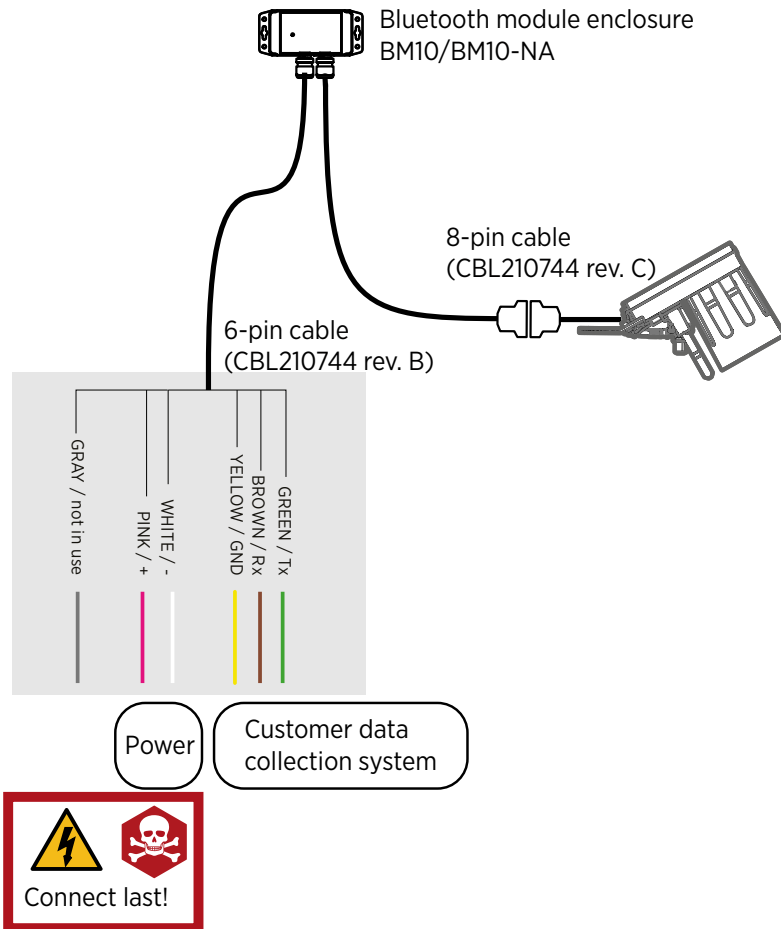
Bluetooth module enclosure BM10-NA



 The wire colors are based on the MD30 extension cable wires. Your own cable may use different colors.

6. Tighten the cable glands.
7. Attach the cover of the Bluetooth module enclosure.
8. Connect the other end of the 8-pin extension cable to MD30.

- 9. Remove the connector from the end of the 6-pin extension cable, strip the wires, and connect the wires to your data collection system as shown.



i The wire colors are based on the MD30 extension cable wires.

- 10. Attach the Bluetooth module enclosure to the vehicle cabin.
- 11. If there are loose cables, attach them with cable ties to the vehicle structure.
- 12. Continue the system setup according to *Vaisala Mobile Detector MD30 Setup Guide*. For implementing data collection to external systems, see *Vaisala Mobile Detector MD30 Interface Description*.

i MD30 sensors delivered before November 2020 require a firmware update for dual communication to work. Check that the MD30 sensor firmware version is 1.1.0 or later.

i For MD30 instructions, including documents and videos, see <https://www.vaisala.com/en/support/md30>.