

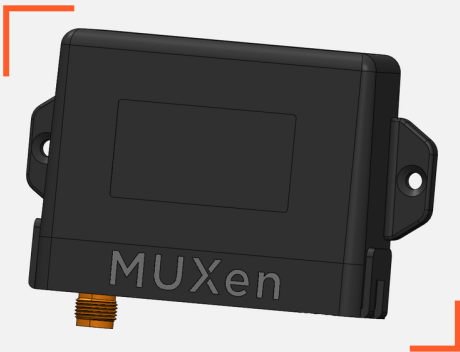
CAN GATEWAY FOR THE BATTERY SWITCH

CAN-MDV

The boat's battery switch, driven and read back from the MUXEN network like any native device.

One box answers as two devices at once. As a switch it drives the contactor and reports the position its feedback contact actually reads. As a battery it reads a Hella IBS sensor fitted on the battery beside it, via its LIN port, so the pack it isolates is also measured.

When a battery switch opens, the bus normally loses power with it. This box feeds the MUXEN network from the battery side of the switch, so the bus stays powered while the other battery switches and the chargers are opened, and no part of the boat is left live.



CAN-MDV

KEY SPECIFICATIONS

MUXEN CAN port	500 kbit/s, fixed · M12 orange, 5-pin
Devices published	Remote battery switch and battery, numbered separately
Switch drive	2 outputs, pulsed until the feedback confirms
Position feedback	1 dry contact, 0 – 14 V, filtered over 2 seconds
Battery sensor	External Hella IBS on LIN, 12 V or 24 V
Power injection	MUXEN bus and auxiliary output, from the battery side
Injected current	1 analog channel, scaled to the installation
Supply monitoring	Power-good input, published on the bus
Configuration	With Raken
Supply voltage	9 – 18 V DC
Firmware	Signed · updated over the CAN bus
Diagnostics	One system LED
Size	120 × 75 × 30 mm
Weight	260 g
IP rating	IP65

MUXEN and the MUXEN logo are trademarks of MUXEN SAS. The product shown is a design of MUXEN SAS.

ON THE BOAT

WHAT IT DOES

One box and one firmware cover all of the features highlighted below.

01 REMOTE SWITCH

The **battery switch** stops being a lever in a locker. A screen anywhere on the boat opens or closes it, and the box drives it only until the switch reports it is in position, then stops. Nothing is held energised.

04 POWER INJECTION

The box's **power injection** keeps the MUXEN bus supplied after the battery switch opens, so the other packs' switches and the chargers can be opened too and nothing stays live. After a set delay the box goes to low power mode rather than draining the pack.

02 REMOTE POSITION

The box reads a **position feedback** contact on the switch itself, so what the boat is told is where the switch actually is, not what it was last asked to do. A switch operated by hand is reported like one operated from a screen.

05 WALL SWITCH

A **logic expression** lets an ordinary wired switch, on a MUXEN input such as a Bloc 8, toggle the battery switch. No screen involved: a plain button by the companionway is enough.

03 BATTERY READINGS

A **Hella IBS** sensor on the battery, wired to the LIN port, turns it into a MUXEN battery: voltage, current, temperature, state of charge and state of health, with under and over voltage raised as MUXEN alarms.

06 POWER UP & DOWN

Closing or opening the switch raises the boat's **power-up and power-down** flags on the bus for a set time. The rest of the installation uses them to start and stop, instead of losing its supply without warning.

07 KEEP CRITICAL LOADS LIVE

ISO 23625:2025

ISO 23625:2025 lets a Li-ion bank's BMS cut the whole bank on an over-charge, over-discharge or temperature fault — at any moment, without warning. So the **critical systems** on a boat — engine start, propulsion, nav lights, VHF/AIS — must not be supplied through it: they belong on a **lead-acid battery**, one with no BMS that can cut the circuit. The CAN-MDV is the remote battery switch that respects the power-up and power-down timing for Li-ion batteries, so the house bank comes up and goes down in order, kept clear of the essentials on the lead-acid side.

On a Li-ion boat it is not an accessory but the part the standard is built around.

SOMETHING ELSE TO SWITCH?

A CAN-MDV drives one switch and reads one battery sensor. Tell us what the installation needs isolated, measured or kept powered, and we will build the application for it.

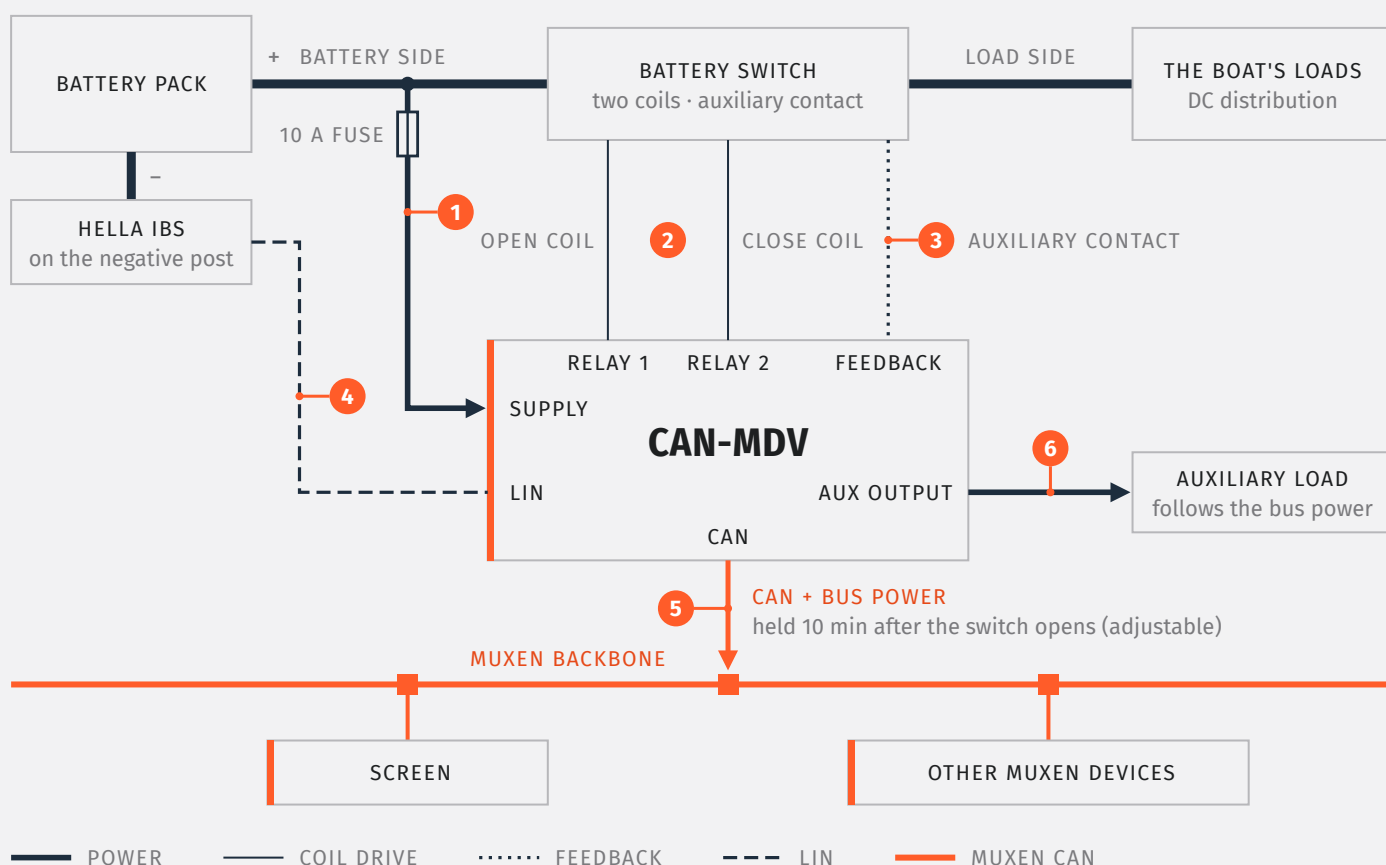
Contact us by email: contact@muxen.fr

WIRING IT IN

TYPICAL INSTALLATION

One battery pack, one remotely operated switch and one CAN-MDV, which the MUXEN bus sees as two devices: a switch and a battery. A boat with several packs takes one box per pack, each wired the same way.

ONE PACK, ONE SWITCH, ONE BOX



1 FED FROM THE BATTERY SIDE

The box is supplied **upstream of the switch**, from the pack, through a 10 A fuse. Fed from the load side, it would lose its supply as soon as the switch opens.

2 TWO COILS, PULSED

Relay 1 opens the switch and relay 2 closes it. A coil is driven only until the switch has moved. **Crossed coils** are put right with one setting, not in the loom.

3 THE FEEDBACK CONTACT

The switch's auxiliary contact closes **to ground** while the switch is closed; no resistor is needed. Everything the box does rests on it, so check it first.

4 THE BATTERY SENSOR

One **Hella IBS** on the pack's negative post, 12 V or 24 V to match the pack, alone on its LIN pair. It is optional: without it the box publishes no battery.

5 THE BUS STAYS POWERED

The bus stays powered for **ten minutes** after the switch opens: time to open the other packs' switches and the chargers. Then the box goes to low power mode.

6 THE AUXILIARY OUTPUT

A switched output that **follows the bus power** exactly. Whatever has to stay on when the boat is switched off does not belong on it.