

# VH1160

## Test Hardware for CAN and LIN Conformance Tests with CANoe

### What is VH1160?

- > Compact hardware device for automating ECU conformance tests
- > VH1160 is integrated in the "CANoe Test Package VAG" for High-Speed CAN tests and in LIN conformance tests
- > Application areas are test implementations based on CANoe

### Overview of Advantages

- > Simple interface via USB 2.0
- > Typical voltage supply via 4 mm socket or 4-pin round connector with mechanical lock
- > Independent supply for automotive terminals IGN,  $V_{batt}$  and GND, switchable via relay. The current state is indicated by a LED immediately.
- > Program-controlled measurement of ECU current consumption for easy sleep/wake-up monitoring
- > Configurable output voltage (independent of input voltage) common to terminals IGN and  $V_{batt}$ . Overload state is indicated by an LED immediately.

### Highlights

- > Ground offset of the ECU and of the LIN line
- > Limiting of the recessive level of the LIN line
- > Short circuit and open circuit options for CAN and LIN lines
- > Analog and digital I/O connections

### Scope of Delivery

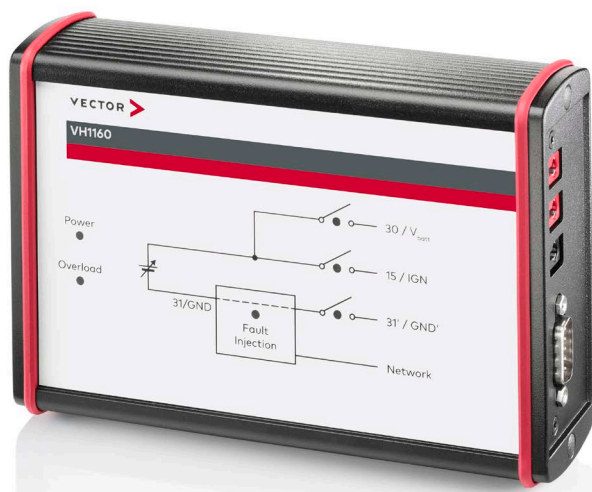
- > VH1160 hardware with USB interface
- > VH1160 manual
- > Installation CD
- > USB cable (2 meters)

Optionally available:

- > Y cable (required for CAN/LIN network disturbances)
- > External voltage supply
- > Termination resistor with 120  $\Omega$  (CANterm120)

### More information about conformance tests:

[www.vector.com/canoe\\_ctp](http://www.vector.com/canoe_ctp)



Compact VH1160 test hardware device for automating ECU conformance tests with CANoe.

## Technical Data

	VH1160
External voltage supply	12...24 V ( $\pm 0.3$ V accuracy), 5 A
Configurable output voltage (ECU supply voltage)	2...28 V ( $\pm 60$ mV accuracy)
Max. output current (ECU current consumption)	2.5 A (input voltage >18 V)
Current measurement range	0...2.5 A (accuracy 2 % of measurement value or 0.5 mA)
Temperature range	0...50 °C
Dimensions (L x W x H)	166 x 109 x 45 mm
Weight	580 g
Ground offset: Shift in ECU ground potential Shift in LIN ground potential Accuracy	0...10 V (duration depends on ECU current) 2.5...17.5 V $\pm 50$ mV
LIN recessive level: Adjustable limitation of the recessive level	3...28 V
CAN/LIN disturbance: CAN/LIN short circuit	CAN_H, CAN_L or LIN to GND/ $V_{batt}$ CAN_H, CAN_L to each other
CAN/LIN open circuit	CAN_H, CAN_L or LIN
CAN Cross Wiring	CAN_H, CAN_L
(VH1160 is connected to CAN or LIN bus via Y cable)	
I/O devices: D-Sub socket Analog input measurement range Analog output Digital input Digital output with pull-up	9-pin 0...30 V 0...15 V, $\pm 5$ mA Switching threshold approx. 2 V Max. input current (low) 100 mA