



The CL-446 is a solid-state microprocessor based module and member of the HED[®] CANLink[®] multiplexed control family. Delivered in a Deutsch enclosure, this unit provides a high density and flexible I/O count in a compact and economical package.

The CL-446 is designed for use as a multi-purpose stand alone unit or as a master controller or I/O module in a distributed system.

The HED[®] CL-446 can be programmed using HED[®]'s do-it-yourself CANLink[®] Composer[™] programming tool or directly by HED[®] engineering, and is designed for use with the CANLink[®] Conductor[™] software tool for diagnostics and field troubleshooting.

CANLink[®] CL-446-100 Module

Master I/O Module w/ Software Configurable Inputs

20 Inputs and 8 Outputs including:

- (10) Inputs software configurable as switch to battery, switch to ground or 12-bit analog (0-5.5VDC).
- (4) Inputs software configurable as switch to battery, switch to ground or 12-bit analog (0-11.0VDC).
- (4) Inputs software configurable as switch to battery, switch to ground, 12-bit analog (0-5.5VDC) or RTD (1K ohm)
- (2) Inputs software configurable as switch to battery, switch to ground, 12-bit analog (0-5.5VDC), frequency, PWM or Quadrature Encoder
 - Frequency max is 10KHz at 50% duty cycle
- (8) 2A PWM outputs with estimated current feedback
 - or 2.5A digital outputs (software configurable as PWM or Digital)
- (1) 5VDC Regulated Sensor Supply (500mA)
- (2) J1939 CAN ports
- (1) USB port (for interfacing to HED[®] Orchestra[™] software tools)

Specifications

Enclosure:	Deutsch EEC-5X650 enclosure with 48-pin receptacle.
Mating Connectors: Deutsch	DT06-12SA DT06-12SB DT06-12SC DT06-12SD W12S (wedge) – one per connector required 0462-201-16141 16AWG sockets 114017 Sealing Plugs – Unused pins are required to be sealed to maintain module sealing
Operating Voltage Range:	8-32 VDC
Operating Temperature:	-40°C to 70°C
Storage Temperature:	-40°C to 85°C
IP Rating:	IP67
PC Boards:	The printed circuit boards are designed for high EMI/RFI protection. The boards are conformal coated with a silicone coating for further water/moisture protection. All inputs and outputs are protected against shorts to Battery(+) or Battery(-). 100% of the boards are functionally tested before shipment.



Hydro Electronic Devices, Inc.

Specifications

Connector A		Connector C		Connector D		Connector B	
Pin	Function	Pin	Function	Pin	Function	Pin	Function
1	Input #1 STB/STG/VTD/RTD ²	1	BAT(+) Outputs 1-4 / Input #22 Battery Voltage	1	CAN2-L	1	Input #9 STB/STG/VTD
2	Input #2 STB/STG/VTD/RTD ²	2	Output #1 DOUT+(2.5A) / PWM/ECC+(2A)	2	CAN2-H	2	Input #10 STB/STG/VTD
3	Input #3 STB/STG/VTD/RTD ²	3	Output #2 DOUT+(2.5A) / PWM/ECC+(2A)	3	No Connect	3	Input #11 STB/STG/VTD
4	Input #4 STB/STG/VTD/RTD ²	4	Output #3 DOUT+(2.5A) / PWM/ECC+(2A)	4	No Connect	4	Input #12 STB/STG/VTD
5	BAT(+) Module / Input #25 Battery Voltage	5	Output #4 DOUT+(2.5A) / PWM/ECC+(2A)	5	USB (Power) ³	5	Input #13 STB/STG/VTD ¹
6	BAT(-) Module	6	5VDC Sensor Supply (500mA) / Input #21 Sensor Supply	6	USB (Gnd)	6	Input #14 STB/STG/VTD ¹
7	CAN1-L	7	5VDC Sensor Supply Ground	7	USB (DP)	7	Input #15 STB/STG/VTD ¹
8	CAN1-H	8	Output #5 DOUT+(2.5A) / PWM/ECC+(2A)	8	USB (DM)	8	Input #16 STB/STG/VTD ¹
9	Input #5 STB/STG/VTD	9	Output #6 DOUT+(2.5A) / PWM/ECC+(2A)	9	No Connect	9	Input #17 STB/STG/VTD
10	Input #6 STB/STG/VTD	10	Output #7 DOUT+(2.5A) / PWM/ECC+(2A)	10	No Connect	10	Input #18 STB/STG/VTD
11	Input #7 STB/STG/VTD/FREQ/PWM/Encoder(1A) ⁵	11	Output #8 DOUT+(2.5A) / PWM/ECC+(2A)	11	No Connect	11	Input #19 STB/STG/VTD
12	Input #8 STB/STG/VTD/FREQ/PWM/Encoder(1B) ⁵	12	BAT(+) Outputs 5-8 / Input #23 Battery Voltage	12	Unswitched Battery(+) ⁴ / Input #24 Battery Voltage	12	Input #20 STB/STG/VTD

Note: Above pinout is for part number CL-446-100. Different I/O combinations are available. Additional part number data sheets available on HED® website.

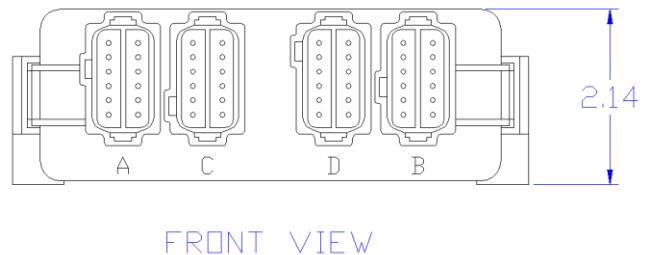
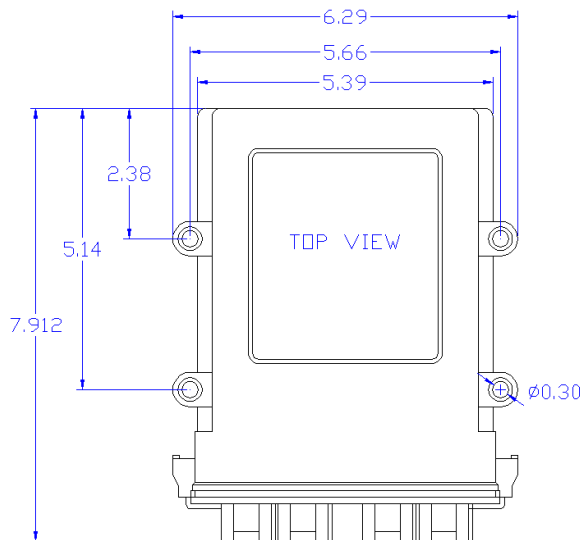
Note 1: VTD inputs on pins B5-B8 have range of 0-11.0VDC. All other VTD inputs on this module are 0-5.5VDC.

Note 2: RTD ranges are 0-1K ohm.

Note 3: USB cable utilized is required to have a wire between USB connector Pin 1 and this USB(Power) pin on the HED module.

Note 4: Unswitched vehicle battery must be connected to properly store data to EEPROM when module configured as master module. Module will draw max of 200 micro amps (12V) and 400 micro amps (24V) after turning itself off.

Note 5: Early versions of Composer™ require input to be configured as Pulse Counter when using Encoder input feature. If Composer does not show Encoder as available option to configure input, select one of Encoder pins to be Pulse Counter and this will configure two paired inputs as Encoder. Second pin does not need to be configured as anything, but can be configured as FREQ if application also requires the frequency of the Encoder. Both A & B signals from Encoder are required to be connected to pins 1A and 1B.



Information contained on this sheet is accurate at the time of printing. HED, Inc. reserves the right to change specifications without notice.

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