

CANLink® CL-413-1XX Module Family I/O Module



The CL-413 is a solid-state microprocessor based module and member of the HED® CANLink® multiplexed control family. Delivered in an aluminum enclosure, this unit provides a large and highly flexible I/O count in a compact package.

The CL-413 is designed for use as a multi-purpose stand alone unit or as a master controller in a distributed system.

The HED® CL-413 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.

39 Inputs and 24 Outputs including:

- (16) switch to battery inputs
- (13) inputs software configurable as switch to ground or 12-bit analog
- (3) inputs software configurable as switch to ground, 12-bit analog, or resistive sensor (RTD)
- (4) Inputs software configurable as switch to ground, frequency⁵ or harness code¹
- (1) 10-bit analog input
- (1) 5VDC regulated sensor supply (700mA) or 10-bit analog input (hardware configurable)
- (1) 5VDC regulated sensor supply (250mA) or 10-bit analog input (hardware configurable)

- (8) 3A PWM outputs with estimated current feedback
- (2) 3A outputs configurable as:
 - (2) PWM and (0) digital outputs, (2) frequency inputs⁵
 - (1) PWM and (1) digital outputs, (3) frequency inputs⁵
 - (0) PWM and (2) digital outputs, (4) frequency inputs⁵
- (7) 3A PWM outputs²
- (3) 3A outputs software configurable as Digital or PWM^{2,3}
- (2) or (4) 200mA outputs³ software configurable as:
 - (0) 200mA sinking PWM, (2) servo⁴
 - (2) 200mA sinking PWM, (1) servo⁴
 - (4) 200mA sinking PWM, (0) servo⁴

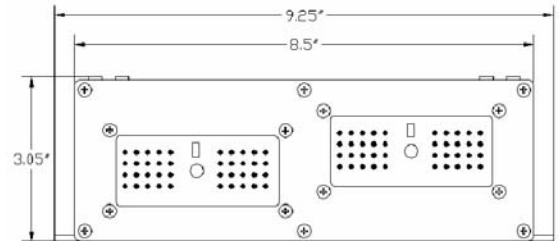
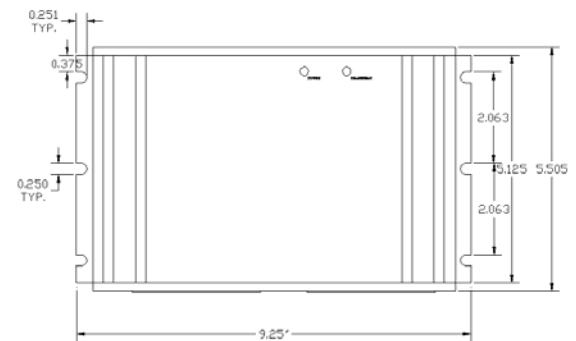
- (2) J-1939 CAN ports
- (1) RS232 or USB port (hardware configurable)

Specifications	
Enclosure:	Aluminum Extrusion
Mating Connectors: Deutsch	Deutsch DRC16-40SA Deutsch DRC16-40SB 0462-201-20141 20AWG sockets 0462-201-16141 16AWG sockets
Operating Voltage Range:	8 to 32 VDC
Operating Temperature:	-40°C to 85°C
Storage Temperature:	-40°C to 85°C
IP Rating:	IP 67
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.
<ol style="list-style-type: none"> 1. Harness codes are switch to ground inputs used to identify I/O module location and function to the master controller. 2. These outputs may require external flyback diodes when used with certain PWM valves. 3. Total of 11 PWM outputs is possible from module. Each servo output counts as 2 PWM outputs. 4. (1) servo can also be (2) 200mA sinking digital or PWM. Sourcing side of servo is 5V not battery, and is intended for driving EDC valves. 5. Number of frequency inputs capable depends on output configuration. 	

CL-413 I/O Module

CL-413 I/O Module Pinout

DRC13-40PA 40-Pin Connector		DRC13-40PB 40-Pin Connector	
Pin	Function	Pin	Function
1	Output DOUT(+)/PWM(+)/ECC(+)(3A)	1	Output DOUT(+)/PWM(+)(3A)
2	Output DOUT(+)/PWM(+)/ECC(+)(3A)	2	Output DOUT(+)/PWM(+)(3A)
3	Output DOUT(+)/PWM(+)/ECC(+)(3A)	3	Output DOUT(+)/PWM(+)(3A)
4	Output DOUT(+)/PWM(+)/ECC(+)(3A)	4	Output DOUT(+)/PWM(+)(3A)
5	Output DOUT(+)/PWM(+)/ECC(+)(3A)	5	Output DOUT(+)/PWM(+)(3A)
6	Output DOUT(+)/PWM(+)/ECC(+)(3A)	6	Output DOUT(+)/PWM(+)(3A)
7	Output DOUT(+)/PWM(+)/ECC(+)(3A)	7	Output DOUT(+)/PWM(+)(3A)
8	Output DOUT(+)/PWM(+)/ECC(+)(3A)	8	Output DOUT(+)/PWM(+)(3A)
9	Output DOUT(+)/PWM(+)(3A)	9	Output DOUT(+)/PWM(+)(3A)
10	Output DOUT(+)/PWM(+)(3A)	10	Output DOUT(+)/PWM(+)(3A)
11	Input STB	11	Output DOUT(-)/PWM(-)/Servo1A(0.2A)
12	Input STB	12	Output DOUT(-)/PWM(-)/Servo1B(0.2A)
13	Input STB	13	Output DOUT(-)/PWM(-)/Servo2A(0.2A)
14	Input STB	14	Output DOUT(-)/PWM(-)/Servo2B(0.2A)
15	BAT(+) Module and Outputs / Input Battery Voltage	15	BAT(+) Module and Outputs / Input Battery Voltage
16	Flyback Ground	16	5V Sensor Ground
17	Input STG/AIN/RTD	17	Input STB
18	Input STG/AIN/RTD	18	Input STB
19	Input STG/AIN/RTD	19	Input STB
20	BAT(+) Outputs and 5V Supply / Input Battery Voltage	20	BAT(+)Outputs and 5V Supply / Input Battery Voltage
21	BAT(-)	21	BAT(-) Module
22	Input STG/Freq	22	Input STG/AIN
23	Input STG/Freq	23	Input STG/AIN
24	Input STG/Freq	24	Input STG/AIN
25	Input STG/Freq/Unswitched Battery(+)*	25	Input STG/AIN
26	Input STG/AIN	26	5VDC Sensor Supply (250mA) / Input Sensor Supply Voltage or AIN
27	Input STG/AIN	27	Input STB
28	Input STG/AIN	28	Input STB
29	Input STG/AIN	29	Input STB
30	Input STG/AIN	30	Input STB
31	RS232 (GND) or USB (GND)	31	Servo Ground
32	RS232 (TX) or USB (DP)	32	Input STG/AIN
33	RS232 (RX) or USB (DM)	33	Input STG/AIN
34	5VDC Sensor Supply (700mA) / Input Sensor Supply Voltage or AIN	34	Input STG/AIN
35	Input AIN / CAN (Shield)	35	Input STG/AIN
36	CAN1-L	36	Input STB
37	CAN1-H	37	Input STB
38	CAN (Shield)	38	Input STB
39	CAN2-L	39	CAN-L
40	CAN2-H	40	CAN-H



Note: Different I/O combinations are available. Please refer to specific CL-413-1XX data sheet for I/O number designations for use within Composer™. Data sheets available on HED® website.

*Unswitched vehicle battery must be connected to properly store data to EEPROM. Module will draw max of 200 micro amps (12V) and 400 micro amps (24V) after turning itself off. This feature is only available on versions of this module that are Master Module capable.