Hydro Electronic Devices, Inc.

Technical Data Sheet

CANLink® CL-711-111-xx Display
7in Color Display (Full I/O, 500nit)

CL-711-111-XX-000 : Standard Mount, No Touch
CL-711-111-XX-030 : Standard Mount, Touch
CL-711-111-XX-100 : Front Mount, No Touch
CL-711-111-XX-130 : Front Mount, Touch
CL-711-111-XX-120 : Front Mount, No Buttons, No Touch
CL-711-111-XX-150 : Front Mount, No Buttons, Touch
XX : 10 = Master, 20 = Client

The CL-711 is a solid-state Cortex A8 ARM microcontroller based display and member of the HED® CANLink® multiplexed control family. Delivered in a plastic enclosure, this unit provides communication messages to the end-user.

The CL-711 is designed for use as a stand alone unit or as part of a distributed system.

The HED® CL-711 can be programmed using HED®'s do-it-yourself CANLink® Arranger™ programming tool or directly by HED® engineering. The dual processor design allows for immediate CAN communication on power-up for communication with other CAN modules in the system.

Features:

- Sealed enclosure for external mounting
- Panel and RAM mount capable
- Sunlight readable 7.0" TFT Color LCD display
- WVGA 800x480 pixel format (152.4mm x 91.44mm)
- LED Backlight with 500 cd/m^2 (nits) brightness
- Cortex A8 ARM Microprocessor running at 800MHz
- 4GB eMMC FLASH
- 512MB DDR3 RAM
- Real Time Clock with Internal Battery (15 year life - typical)
- 4 Video inputs. NTSC & PAL supported.
- Video Window location and size are programmable with graphics sharing remainder of screen
- Graphics can be drawn over top of video window
- Dual processor allows for CAN communication immediately on power-up
- Navigation key for easy menu manipulation
- No Touch Screen (optional – see other CL-711 part numbers)
- Ambient light sensor
- Low Power Sleep Mode with Wake-Up by following methods: Digital Input on Connector, CAN Traffic, Time set by software using Real Time Clock

I/O Available:

- (1) USB Host (capable of supplying up to 250mA to device)
  - Allows for software updates directly from USB Memory Device
- (1) USB Client (for interfacing to HED software tools)
- (2) J1939 CAN ports
- (12) Connector pins that can be hardware configured to be various combinations inputs and/or outputs, including switch to ground, switch to battery, analog, frequency, PWM, Encoder inputs or sourcing outputs.
- (1) 5VDC Sensor Supply (250mA)

Specifications	
Enclosure:	Plastic molded enclosure.
Mating Connectors:	Deutsch DT16-18SA-K004 (for Power, CAN and I/O) RAMCO M12 4 & 8 pin Female (for USB, Video) (or other manufacturer of IP67 sealed M12 connector)
Operating Voltage:	8 to 32 VDC
Operating Temperature:	-40°C to 70°C * Graphic updates are slower for first 5 minutes if cold start at temperatures below -30°C.
Storage Temperature:	-40°C to 80°C
IP Rating:	IP67

CANLINK®

Toll-free technical support: (800) 854-3533

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Specifications

Deutsch 18-Pin DT	
Pin	**Function**
1	Output #1 DOUT(+)(2A) / PWM(+)/ECC/(+)(2A) / Input #45 STB/STG
2	Output #2 DOUT(+)(2A) / PWM(+)/ECC/(+)(2A) / Input #46 STB/STG
3	Output #3 DOUT(+)(2A) / PWM(+)/ECC/(+)(2A) / Input #47 STB/STG
4	Output #4 DOUT(+)(2A) / PWM(+)/ECC/(+)(2A) / Input #48 STB/STG
5	Battery(-)
6	Unswitched Battery(+)** / Input #9 Battery Voltage
7	CAN1-H
8	CAN1-L
9	Input #1 STB/STG/VTD(0-5.6V)/FREQ/PWM/Encoder(1A) /RTD(0-500ohm)
10	Input #2 STB/STG/VTD(0-5.6V)/FREQ/PWM/Encoder(1B) /RTD(0-2Kohm)
11	Input #3 STB/STG/Wake-Up
12	Input #4 STB/STG/VTD(0-5.6V)
13	CAN2-L
14	CAN2-H
15	Input #5 STB/STG/VTD(0-5.6V)/FREQ/PWM/Encoder(2A)
16	Input #6 STB/STG/VTD(0-5.6V)/FREQ/PWM/Encoder(2B)
17	5VDC Sensor Supply Gnd / Input #7 Supply Gnd Voltage
18	5VDC Sensor Supply / Input #8 Sensor Supply Voltage

Note: Different I/O combinations are available. Please refer to specific CL-711-101-xx data sheet for I/O number designations for use within Composer™. Data sheets available on HED® website.

**Unswitched vehicle battery must be connected for controlled shutdown to properly store data to EEPROM, and for Lower Power Sleep and Wake-Up to function properly. Display will draw <1mA after turning itself off.

Setting Client Harness Code in EEPROM:

1. Transmit the following message to change Harness Code.
   a. KK = old Harness Code
   b. HH = new Harness Code
   c. MM = Module ID = 0x0104 (260)

00EF0002	MM	MM	KK	00	84	00	00	HH

To verify new Harness Code has been set:

2. Cycle power to module.
3. Below message is sent by module on power-up.
   a. HH = new Harness Code

00EF0001	- -	- -	- -	HH	- -	- -	- -	- -

Composer Input Assignments for Button Press Reading	
Button #	**Composer Input #**
1*	Input #10 STG
2	Input #11 STG
3	Input #12 STG
4	Input #13 STG
Nav Key (Left)	Input #14 STG
Nav Key (Right)	Input #15 STG
Nav Key (Top)	Input #16 STG
Nav Key (Bottom)	Input #17 STG
Nav Key (Center)	Input #18 STG

* Note: Button 1 is left most button.

Composer Input Assignments for Real Time Clock (RTC) Items		
RTC Item	**Composer Input #**	**Valid Data Range**
Year	Input #19 VTD (0-5000mV)	0 – 255 (1900 – 2155)
Month	Input #20 VTD (0-5000mV)	0 – 11
Day of Month	Input #21 VTD (0-5000mV)	1 – 31
Day of Week	Input #22 VTD (0-5000mV)	0 – 6
Hour	Input #23 VTD (0-5000mV)	0 – 23
Minute	Input #24 VTD (0-5000mV)	0 – 59
Second	Input #25 VTD (0-5000mV)	0 – 59

Note: RTC values are not able to be set (changed) with Ladder Logic. It is able to be set with Presto.

Composer Output Assignments for LCD and Button Backlights		
Function	**Composer Output #**	**Recommended Frequency**
Button Backlight	Output #5 DOUT(+)/PWM(+)	250 Hz
LCD Backlight	Output #6 DOUT(+)/PWM(+)	6 kHz

Note: For proportional control of Backlight, the output should be configured as PWM. Digital control would only allow for Off and Full On control.

Composer Input Assignment For Ambient Light Sensor		
Function	**Composer Input #**	**Valid Data Range**
Ambient Light Sensor	Input #26 VTD (0-4095mV)	0 – 4095

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Specifications

Connector	Function	Mating Connector Type	Key
A	Not Used	N/A	D
B	Not Used	N/A	A
C	USB Client	M12 Female – 4 pin – Gold contacts	A
D	Not Used	N/A	A
E	USB Host	M12 Female – 4 pin – Gold contacts	A
F	Video Inputs - #1 & #2	M12 Female – 4 pin – Gold contacts	B
G	Video Inputs - #3 & #4	M12 Female – 4 pin – Gold contacts	B

USB Client Connector

"C" – M12 (A-Key)	
Pin	**Function**
1	USB (Power)
2	USB (DM)
3	USB (DP)
4	USB (Ground)

USB Host Connector

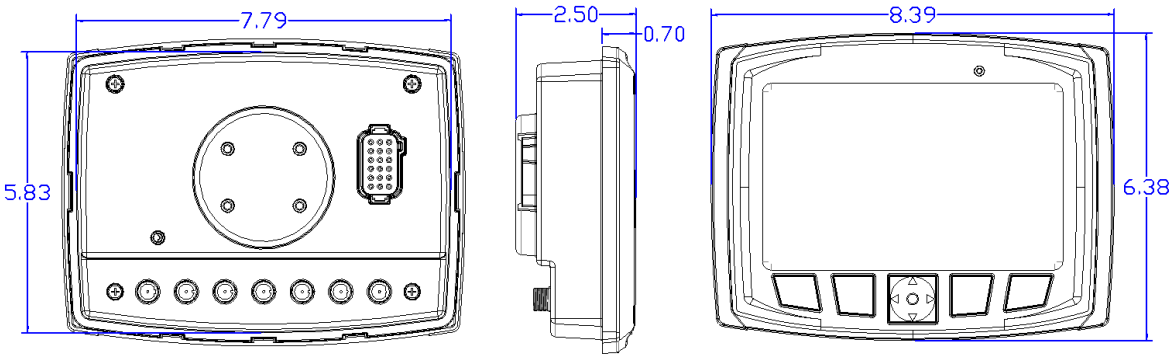
"E" – M12 (A-Key)	
Pin	**Function**
1	USB (Power)
2	USB (DM)
3	USB (DP)
4	USB (Ground)

Video #1 & #2 Connector

"F" – M12 (B-Key)	
Pin	**Function**
1	Ground
2	Ground
3	Video #1
4	Video #2

Video #3 & #4 Connector

"G" – M12 (B-Key)	
Pin	**Function**
1	Ground
2	Ground
3	Video #3
4	Video #4



RAM Mount option:

National Products, Inc.
www.rammount.com
Part Number: RAM-202U

Use size 10-24 fasteners, with max depth of 0.420" and min depth of 0.300" into display.

Torque to 30-40 in-lbs

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