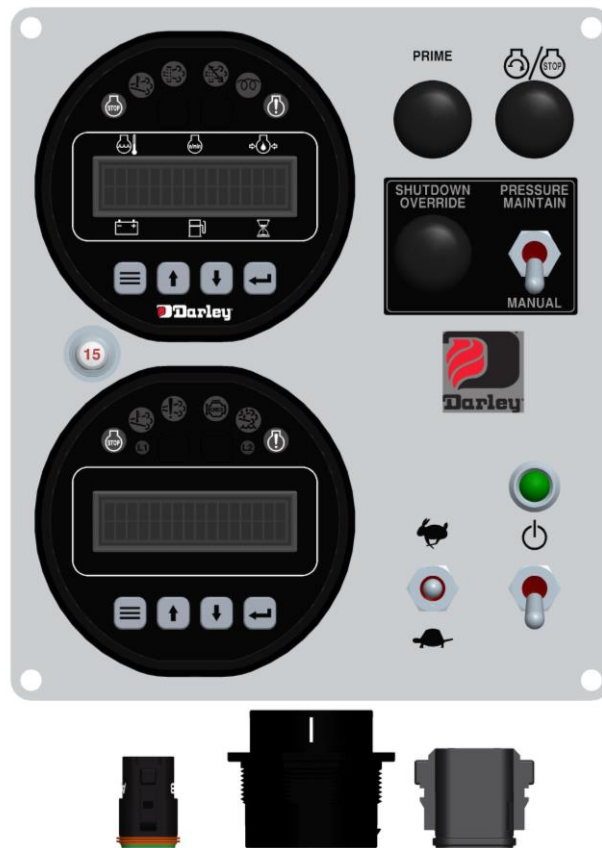

Product Manual

Pump Display & Control Panel Mechanical Engines



Part Number: MVP-A1707
Revision: 1.0

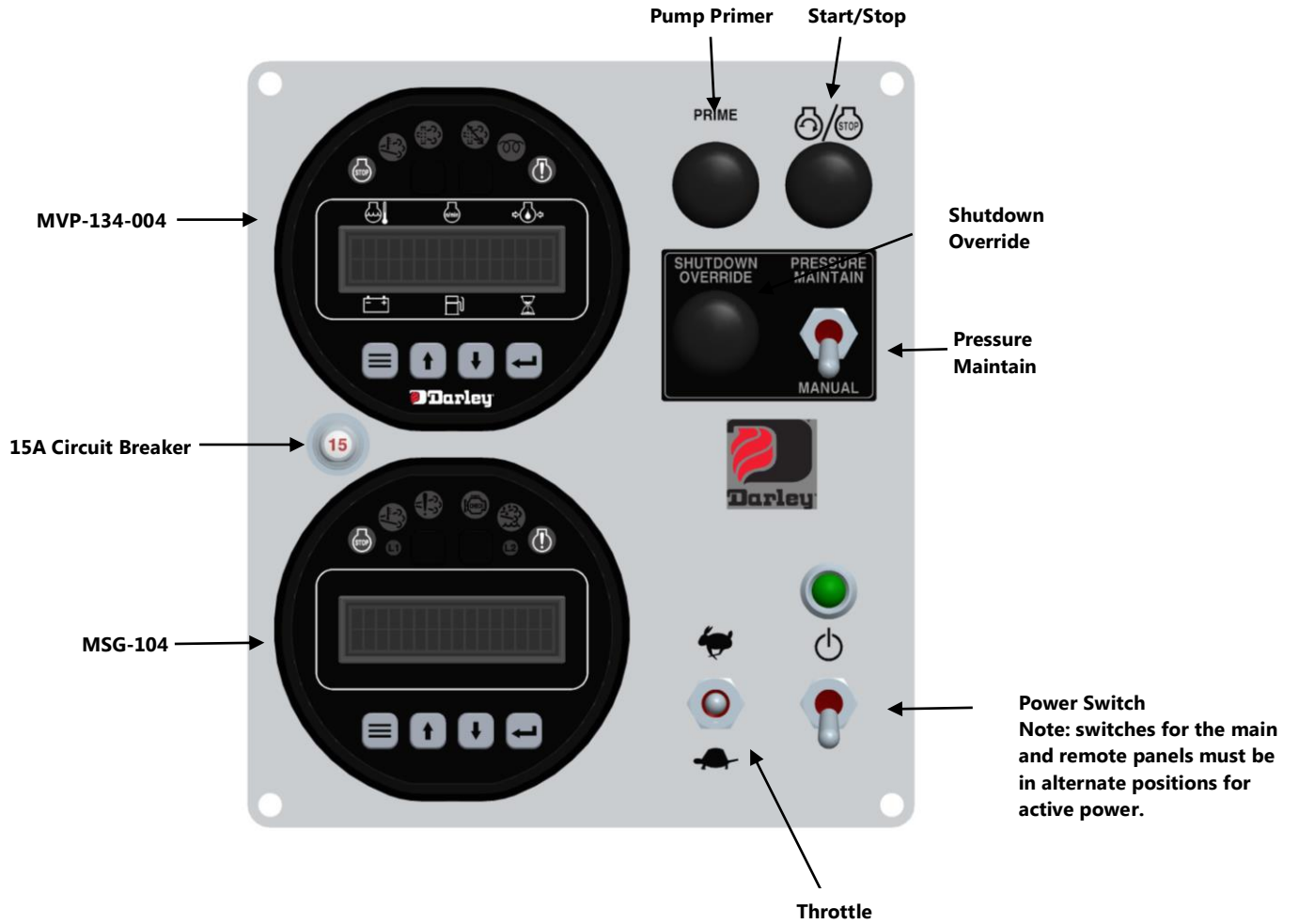
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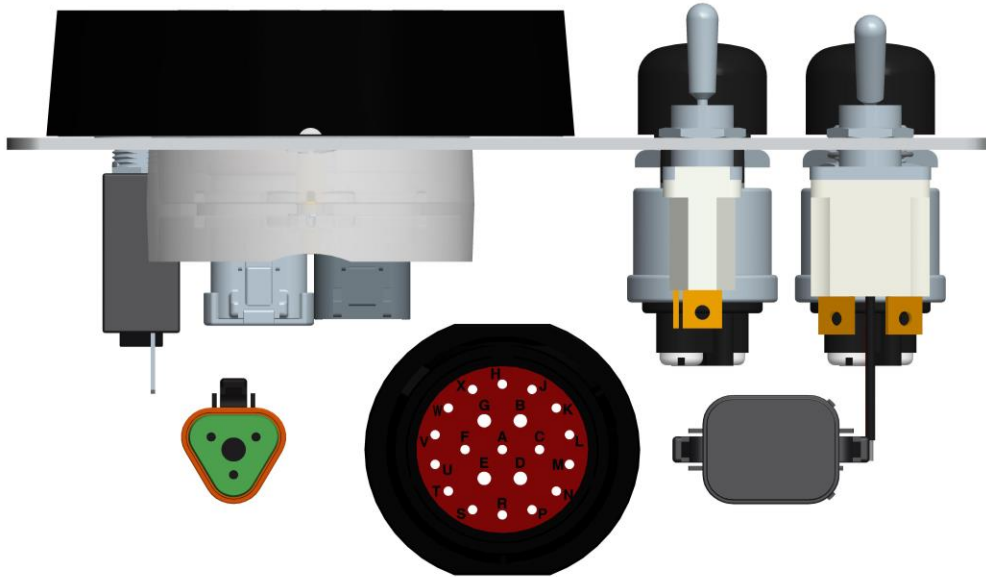
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PANEL INFORMATION



Panel Connectors



Instance:AVP-A1704

Engine Harness Connector –Deutsch 21 pin (HDP24-24-21PE)

Transducer Connector –Deutsch 3 pin (DT06-3S)

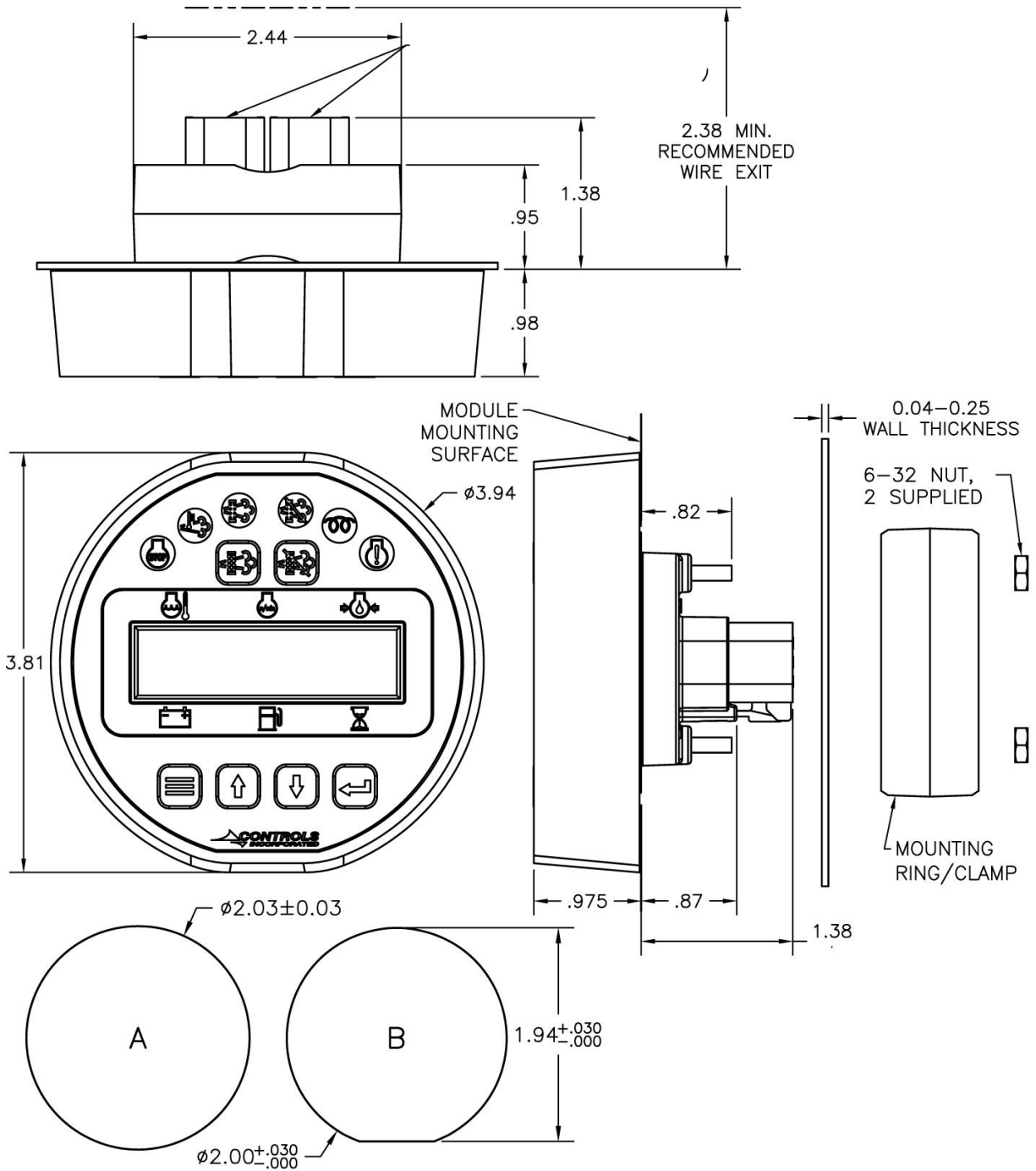
Remote Connector –Deutsch 8 pin (DT06-8S)

21 Pin Engine Harness Connector	
Pin	Function
B	Battery Positive
E	Battery Negative
G	Key On Power
D	Crank Signal
V	J1939 High
U	J1939 Low
F	Can Bus Shield
K	Tachometer
T	Pre Heat Signal
A`	Key On Power
H	Engine Temperature
X	Oil Pressure
N	Auxiliary Switch Input
R	Prime Button
S	Prime Button

3 Pin Transducer Harness Connector	
Pin	Function
A	5 VDC
B	Battery Negative
C	Transducer Signal

8 Pin Remote Harness Connector	
Pin	Function
1	Battery Positive
2	Switched B+
3	J1939 High
4	J1939 Low
5	Battery Positive
6	Prime Button
7	Prime Button
8	Battery Negative

MVP-134-004 MODULE INSTALLATION INFORMATION



MOUNTING HOLE REQUIREMENTS (A OR B)

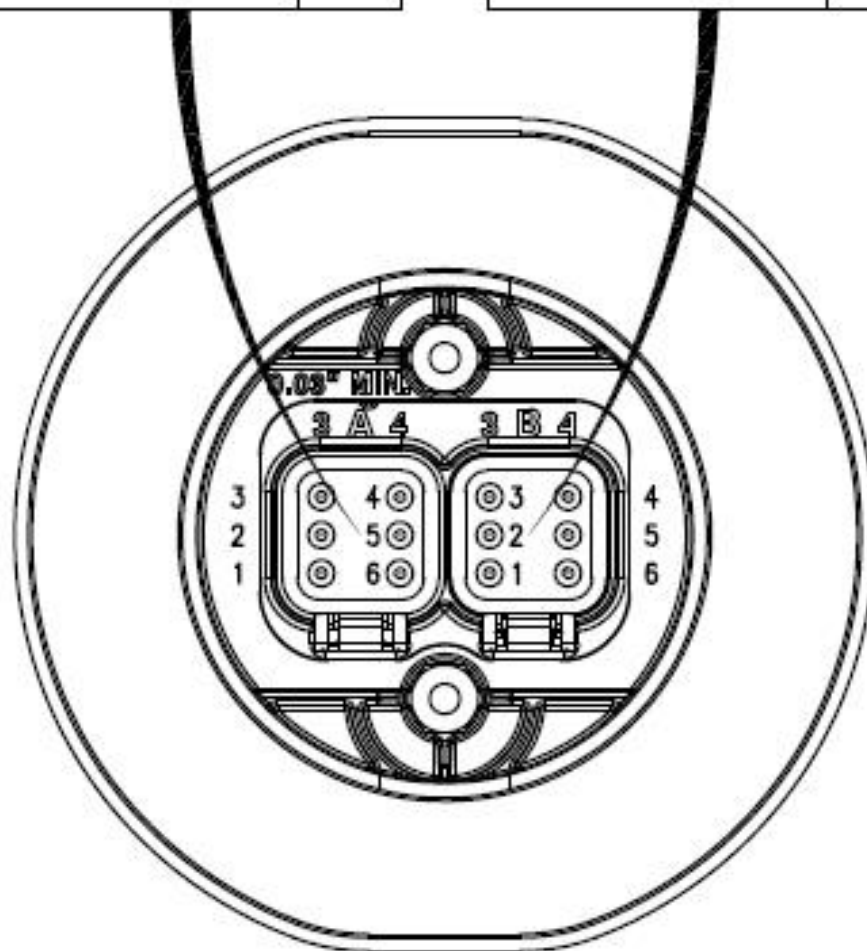
MODULE CONNECTOR INFORMATION

CONNECTOR A

FUNCTION	PIN
BATTERY +	1
CAN HIGH	2
CAN LOW	3
SPEED INPUT	4
FUEL LEVEL INPUT	5
BATTERY -	6

CONNECTOR B

FUNCTION	PIN
START/STOP INPUT	1
FUEL/RUN	2
TEMP INPUT	3
OIL PRESS INPUT	4
PREHEAT	5
CRANK	6



CONTROL PANEL SPECIFIC ALARMS AND SHUT DOWNS

The panel has its own engine safety alarms and shut downs that can be enabled. These alarms and shut downs are managed by the control panel. The available options are listed below and can be accessed via the Engine Safety Configuration menu.

Each alarm must be enabled in the Engine Safety Configuration menu to activate.

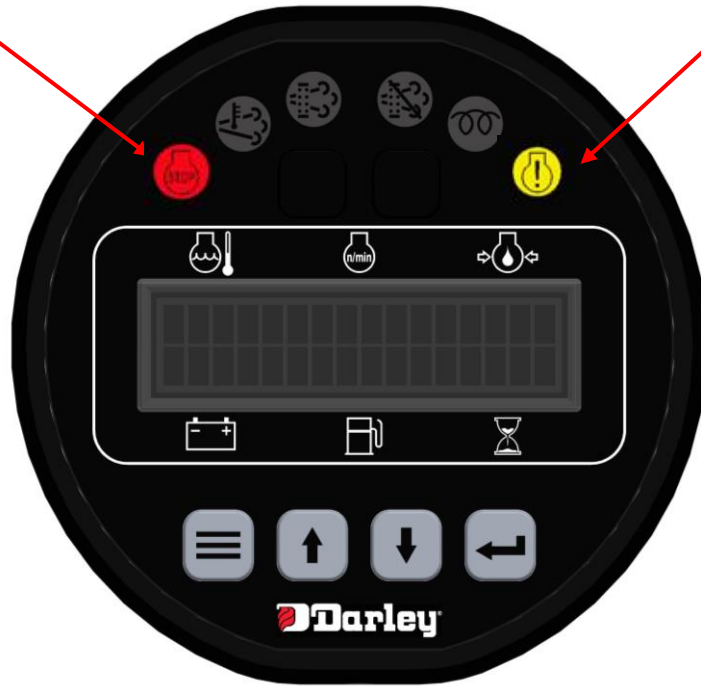
Heading	Default	Range	Units
Sender Check Bypass	0:10	0:05 – 1:00	Min:Sec
Fuel Level Check	Off	Off / Always / Run	
Low Fuel Pre Alarm	20	0 - 100	%
Low Fuel Alarm	1	0 - 100	%
Fuel Alarm Delay	0:05	0:01 – 1:40	Sec
Fuel Level Alarm Action	Shutdown		
Oil Pressure Check	Run	Off / Always / Run	
Low Oil Press Pre Alarm	15	0 - 100	PSI
Low Oil Press Alarm	10	0 - 100	PSI
Oil Pressure Alarm Action	Shutdown		
Oil Press Alarm Delay	0:05	0:01 – 1:40	Sec
Temperature Check	Run	Off / Always / Run	
High Temp Pre Alarm	220	150 - 300	Deg F
High Temp Alarm	230	150 - 300	Deg F
Temperature Alarm Action	Shutdown		
Temp Alarm Delay	0:05	0:01 – 1:40	Min:Sec
Battery Volts Check	Off	Off / Always / Run	
Low Battery Pre Alarm	12.0	0.0 – 40.0	Volts
Hi Battery Pre Alarm	15.0	0.0 – 40.0	Volts
Over Speed Check	Off	Off / Always / Run	
Over Speed Alarm	3000	650 - 5000	RPM
Over Speed Alarm Delay	0:05	0:01 – 1:40	Min:Sec

- 1) Off / Always / Run – Describes when the parameter will be monitored for alarm conditions. Run refers to when the engine is running. Off disables the alarm conditions. Always enables the alarm constantly regardless of engine state.
- 2) Alarm Delay – The time period, after Sender Check Bypass, that the parameter must be on the alarm condition before the alarm becomes latched.

Indicator Lamps

Engine
Fault
Lamp

Engine
Alarm
Lamp



CONTROL PANEL ANALOG AND DIGITAL INPUTS

The panel has one analog input and up to one digital input available to monitor other components, senders or signals. These inputs can be used for a number of purposes including alarms and shut downs.

Input	Heading	Default	Options	Connector	Pin
Digital 1	Normally	Open	Open / Closed	B	1
	Function	Start/Stop			
	Message	None			
	Check	Always	Off / Always / Run		

Digital Outputs

- 1) Alarm – Engine shutdown when active with display message as assigned. A red lamp will also be illuminated.
- 2) Pre Alarm – Warning message will be displayed along with a yellow lamp when active.
- 3) Pre Alarm & Alarm - Energizes an external audible alarm when a pre alarm or alarm condition is present. Pressing the ENTER button will silence.
- 4) Alarm Horn - Energizes an external audible alarm when an alarm condition is present. Pressing the ENTER button will silence.
- 5) Engine Run - Relay will be active when engine RPM is greater than 600. Typically used to drive an auxiliary circuit such as louvers or send a signal to a monitoring station.
- 6) Low Oil Press Alarm - Relay closes if a low oil pressure shutdown is detected.
- 7) High Coolant Temp Alarm - Relay closes if a high engine temperature shutdown is detected.
- 8) Over Speed Alarm - Relay closes if an over speed shutdown is detected.
- 9) Over Crank Alarm - Relay closes if an over crank alarm is detected.
- 10) Low Fuel Level Alarm - Relay closes if a low fuel level shutdown is detected.
- 11) Fuel / Run - Relay will be active during an engine start request and while the engine is running.
- 12) Custom 1 - Reserved for OEM applications.
- 13) Preheat - Relay will be active during programmed preheat period. Used to drive a preheat relay.

Digital Function Activation

- 1) Off / Always / Run – Describes when the parameter will be monitored for alarm conditions. Run refers to when the engine is running. Off disables the alarm conditions. Always enables the alarm constantly regardless of engine state.
- 2) Alarm Delay – The time period, after Sender Check Bypass, that the parameter must be on the alarm condition before the alarm becomes latched.

CONTROL PANEL RELAY OUTPUTS

The panel has three relay outputs available to signal other devices based on predefined events. These Outputs can be used for a number of purposes including engine operation or driving an audible alarm.

Input	Heading	Default	Connector	Pin
Relay 1	Function	Fuel Run	B	2
	Polarity	Positive		
	Initial State	On		
Input	Heading	Default	Connector	Pin
Relay 2	Function	Preheat	B	5
	Polarity	Positive		
	Initial State	Off		
Input	Heading	Default	Connector	Pin
Relay 3	Function	Crank	B	6
	Polarity	Positive		
	Initial State	Off		

MENU SYSTEM

To Enter Menu System

Hold MENU button and press ENTER button.

Menu Navigation

Press MENU button to scroll menu options.

Press UP arrow button to enter menu.

Press DOWN arrow button to reverse.

Exit Menu System

Hold MENU button and press ENTER button.

To Change a Setting

Press ENTER button to bring up brackets [].

Press UP arrow button and DOWN arrow button to change setting.

Press ENTER button to make selection, brackets disappear.

Recycle key to the OFF position after changing a setting.

Main Menu

Main Menu	Sub Menu		
Active Engine Fault Codes	View/Scroll Active Fault Codes	} Viewing Menus	
Stored Engine Fault Codes	View/Scroll Stored Fault Codes		
Engine Parameters	View ECU Engine Information (% Load, Torque, Oil Temp, etc.)		
Engine Identification	Engine Model # View		
	Engine Serial # View		
Module Information	Control Unit Part# View		
	Control Unit Software Version View		
Controller Setup (PASSWORD PROTECTED)	Quick Setup	(1)	} Configuration Menus
	Engine Parameter Configuration	(2)	
	Input Configuration	(3)	
	Throttle Configuration	(4)	
	Engine Safety Configuration	(5)	
	Module Configuration	(6)	
	Display Configuration	(7)	
	CAN Configuration	(8)	
	Maintenance Configuration	(9)	
	Target Pressure Configuration	(10)	

To access the controller setup menus, a password is required. The password is 4345.

Configuration Menus

(1) Quick Setup	Engine Type (Default = Electronic T3)
	Engine Manufacturer (Default = Kubota DOC)
	TSC Maximum Speed (Default = 2900 rpm)
	Performance Display Off/On
(2) Eng. Parameter Configuration	Engine Type
	Parameter Selection (Speed, Coolant Temp., Oil Pressure, Fuel Level, Voltage, Hour Meter)
	Temperature Source
(3) Input Configuration	Neutral Switch On/Off
	Parking Brake On/Off
	Digital 1 Setup (Default to Start/Stop)
(5) Throttle Configuration	Throttle Type (Default = TSC Vernier)
	Cooperative TSC Mode
	TSC Maximum Speed
	TSC Bump Speed
	TSC Ramp Rate
	Throttle Curve
	Governor Mode
(6) Engine Safety Configuration	Sender Check By-Pass (Default = 0:10)
	Parameter Selection (Fuel Level, Oil Pressure, Temperature, Battery, Over speed, Speed Limit, Derate to Shutdown)
	Parameter Settings (vary based on selection)
(7) Module Configuration	Preheat Time
	Low Power Mode
	Power Save Delay
	Multiplex Comm Mode
	Multiplex Timeout
	Pre-Alarms Displayed (Default = 4)
	Check Run Criteria
	Clear Operation Log (Default = No)
	Clear Alarm Log (Default = No)
	Clear # of Starts
	Engine Run Criteria
	Engine Stop Criteria

(8) Display Configuration	English/Metric Selection
	Performance Display Off/On
	Fuel Display
(9) CAN Configuration	Engine Manufacturer
	TSC1 Address (Default = 228) Others available
	Engine Status Transmit
	Panel Status Transmit
	Input Status Transmit
	Input Status Recieve
	Panel Information Transmit
	Faults Transmit
	Transmit During Sleep
	Panel Requests On/Off
Rem Speed Request	
(10) Maintenance Configuration	Service Messages
	Schedule Selection
	Schedule Reset
	Schedule Interval
	Schedule Warning
	Schedule Trip
Schedule Message	
(11) Target Pressure Configuration	Maintain Pressure Tolerance
	Gain Trim
	Minimum Control Speed
	Maximum Control Speed
	Min Speed @
	Max Speed @
	Maintain Interval

MSG-104 MODULE

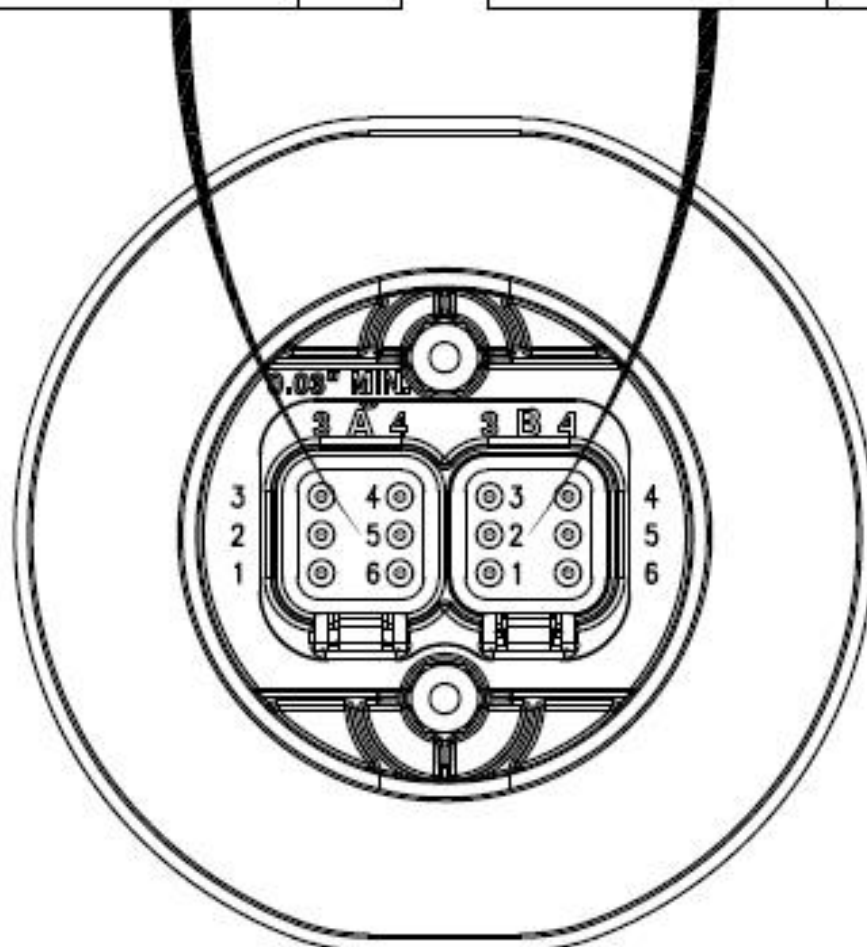
MODULE CONNECTOR INFORMATION

CONNECTOR A

FUNCTION	PIN
BATTERY +	1
CAN HIGH	2
CAN LOW	3
DIGITAL INPUT	4
EXTERNAL SD	5
BATTERY -	6

CONNECTOR B

FUNCTION	PIN
5VDC OUTPUT	1
THROTTLE UP	2
PRESSURE INPUT	3
N/A	4
THROTTLE DOWN	5
N/A	6



CONTROL PANEL ANALOG AND DIGITAL INPUTS

The panel has four digital input available to monitor other components, senders or signals. These inputs can be used for a number of purposes including alarms and shut downs.

Input	Heading	Default	Options	Connector	Pin
Digital 1	Normally	Open	Open / Closed	A	4
	Function	None			
	Message	None			
	Check	Always	Off / Always / Run		
Digital 2	Normally	Open	Open / Closed	B	2
	Function	Throttle Up			
	Message	None			
	Check	Always	Off / Always / Run		
Digital 3	Normally	Open	Open / Closed	B	5
	Function	Throttle Down			
	Message	None			
	Check	Always	Off / Always / Run		
Digital 6	Normally	Open	Open / Closed	A	5
	Function	Alarm			
	Message	Ext. Shutdown			
	Check	Always	Off / Always / Run		

MENU SYSTEM

Main Menu

Main Menu	Sub Menu	
Alarm Event Log	View/Scroll Logged Alarms (32 max)	} Viewing Menu
Module Information	Control Unit Part# View	
	Control Unit Software Version View	
Controller Setup (PASSWORD PROTECTED)	Pressure Configuration	(1) } Configuration Menu
	Input Configuration	(2)
	Pressure Safety Configuration	(3)
	CAN Configuration	(4)

To access the controller setup menus, a password is required. The password is 4345.

Configuration Menus

(1) Pressure Configuration	Parameter
	Pressure Source
	Pressure Input Channel
	Pressure Minimum
	Pressure Maximum
	Current Pressure
	Zero Trim Calibration
(2) Input Configuration	Configure Selection (Channels/Message)
	Digital 1-4 Setup
(3) Pressure Safety Configuration	Pressure Check (Default = Off)
	Low Pressure Pre Alarm @ (Default = 0 psi)
	Low Pressure Alarm @ (Default = 0 psi)
	High Pressure Pre Alarm @ (Default = 500 psi)
	High Pressure Alarm @ (default = 500 psi)
	Pressure Alarm Delay (Default = 0:05)
	Pressure Hysteresis (Default = 5 psi)
(4) CAN Configuration	Pressure Transmit

