

Contents

Intelli-Tank

High current 4 light remote driver module with auto refill and alarm

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Overview

The Intelli-Tank Driver module utilizes the 1-wire data line to receive tank level information from a Master 4 light tank level display (C1-PN 106299 or 106296) and then mimics the Master's display with its high current outputs. The module also incorporates an auto-refill function that, when activated, turns on the fill output at less than $\frac{3}{4}$ tank level and turns it off when the tank reaches the FULL point. An alarm output activates when tank level reaches $\frac{1}{4}$ or if data from the Master is lost for over 10 seconds.

Basic parts:

Driver module	C1 – PN	106877	12/24V
Installation Harness	C1 – PN	106692	
User Manual	C1 – PN	106759	

Prerequisite parts:

Master 4 light tank level display	C1 – PN	106299	12V
		106292	24V

Accessories:

Remote dash indicator	C1 – PN	106878	
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Modes of Operation:

Normal The module receives tank level data from the Master and mimics the Master's display with the high current outputs.

Auto-Fill When the level of the tank is below $\frac{3}{4}$ the fill output comes on and remains on until the Master display indicates FULL.

Operation

When the unit is first powered up the lights will cycle on individually starting with the EMPTY (output 1) light and then the lights will show the current status.

- A Module connected to a Master unit (through the 1-wire data line) will mimic the Master unit's LED condition and flash rate.
- A Module not connected to a Master unit will alternately flash the upper two lights and the lower two lights. This indicates a “no data” condition.

Level indications:

LEVEL	output 4	output 3	output 2	output 1
7/8 < LVL <= F	ON	ON	ON	ON
3/4 < LVL <= 7/8	FLASH .8Hz	ON	ON	ON
5/8 < LVL <= 3/4		ON	ON	ON
1/2 < LVL <= 5/8		FLASH .8Hz	ON	ON
3/8 < LVL <= 1/2			ON	ON
1/4 < LVL <= 3/8			FLASH .8Hz	ON
1/8 < LVL <= 1/4				ON
1/16 < LVL <= 1/8				FLASH .8Hz
E <= LVL <= 1/16	FLASH 1.6Hz	FLASH 1.6Hz	FLASH 1.6Hz	FLASH 1.6Hz

Auto-Fill Function

Auto-fill mode is active when the auto-fill select input (pin 8) is grounded. The auto-fill status light output (pin 2) indicates the current status of this mode and is capable of driving positive voltage to 250mA.

Status Light	Condition
On	Auto-fill mode selected and is in standby (pulses briefly every 5 seconds as a heartbeat)
Flashing	Auto-fill mode selected and is currently filling (refill output is active).
Off	Auto-fill mode de-selected or error condition is present.

The auto-fill function will energize the fill output when the tank level is at or below $\frac{3}{4}$ and de-energize when the Master display reads FULL. Auto-fill will also de-energize the fill output and turn off the auto-fill status light if there is no data being received on the data line from the Master display (serial error) or if a transducer error high or low (range error) is encountered.

4 Outputs for the level lights

Four outputs are available to drive external lights to indicate tank level. These are positive voltage outputs are capable of 7.5A each (Full light is output 4).

Alarm and alarm silence

The alarm output (pin 3) activates when the tank level falls to below $\frac{1}{4}$ tank or 10 seconds after a data line problem exists. The alarm output is a positive voltage output capable of 250mA. The alarm silence input (pin 5) will turn the alarm off during any alarm circumstance. The alarm silence activated by a momentary ground input.

1-wire serial interface

The 1-wire serial interface is the link between the master tank level module and any other remote modules. If the output driver module loses the serial link all outputs will be deactivated and then the output lights will alternate flashing the upper two lights and the lower two lights, and the auto-fill function will be deactivated. After 10 seconds in this serial failure condition the alarm will sound (it can be turned off with the alarm silence switch).

Dim level light outputs

The output lights are set to the dim condition (50% duty cycle) when a ground is input on pin 6.

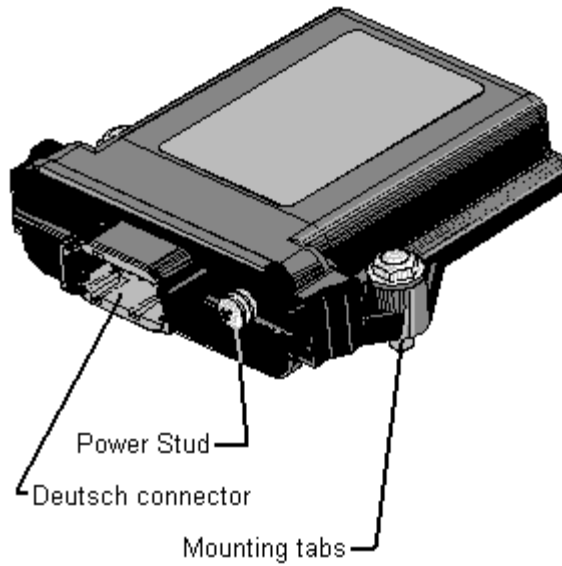
Module LED indicators

There are 3 LEDs on the front of the remote driver module. The RED LED indicates that the circuit board has power. The YELLOW LED indicates the power stud has power. The GREEN LED indicates the condition of auto-fill mode and will react the same as the auto-fill status light output (pin 2).

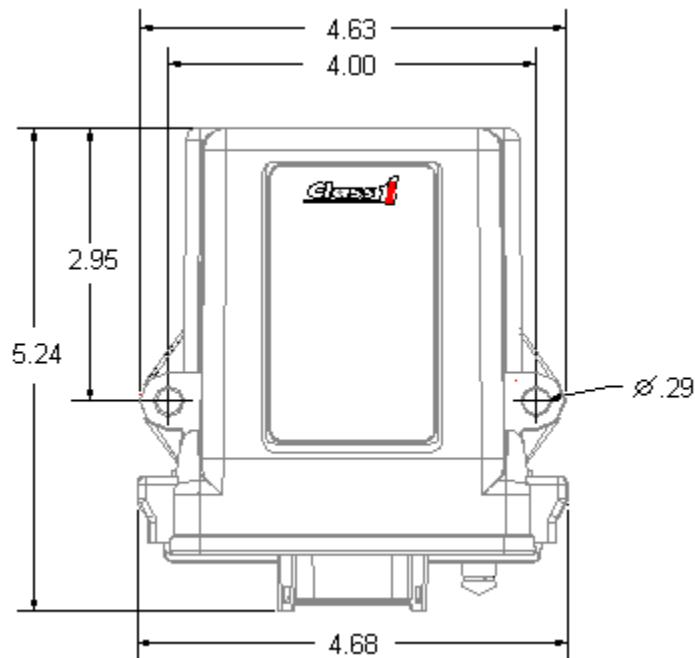
Installation and Wiring

Driver Module

The module is water tight and can be mounted any place away from large RF noise generators.

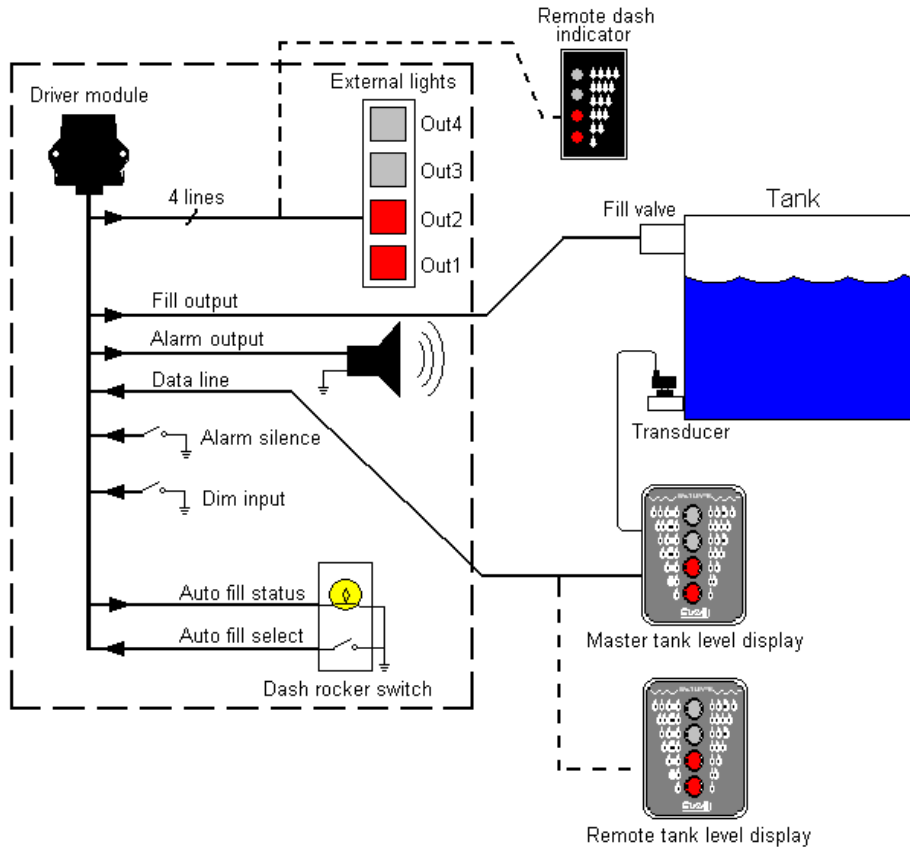


Mounting dimensions (inches)



Typical installation

Remote driver module features

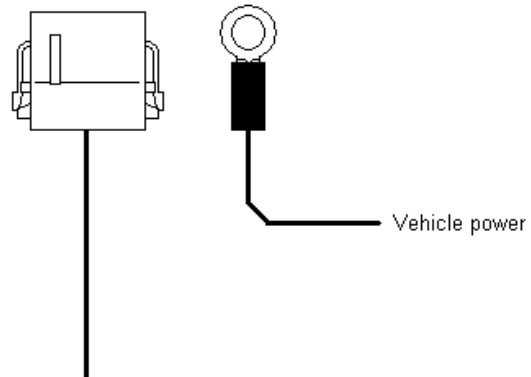


Connector detail

CONNECTOR: Deutsch
DTMD6-12S

PINS: Deutsch 20 gauge female
0462-201-20141

POS	WIRE DESCRIPTION
1	Output 1 (1/4)
2	Auto-fill status light output (+V)
3	Alarm output (+V)
4	Fill output (+V)
5	Alarm silence input (GND)
6	Dim lights input (GND)
7	Output 4 (FULL)
8	Auto-fill select input (GND)
9	Output 3 (3/4)
10	Data
11	Output 2 (1/2)
12	Ground



Power and Ground

It is imperative that the driver module and the Master tank level have a common ground.

Stud Vehicle power (12/24VDC)
 Pin 12 Ground

High Current Outputs (7.5A)

Pin 1 Output 1 (1/4)
 Pin 11 Output 2 (1/2)
 Pin 9 Output 3 (3/4)
 Pin 7 Output 4 (FULL)

Auto-Fill components

Pin 2 Auto-Fill status light output (+V)
 Pin 4 Fill output (+V)
 Pin 8 Auto-Fill select input (ground = auto-fill ON)

1-Wire Data Line

Pin 10 Data transfer line

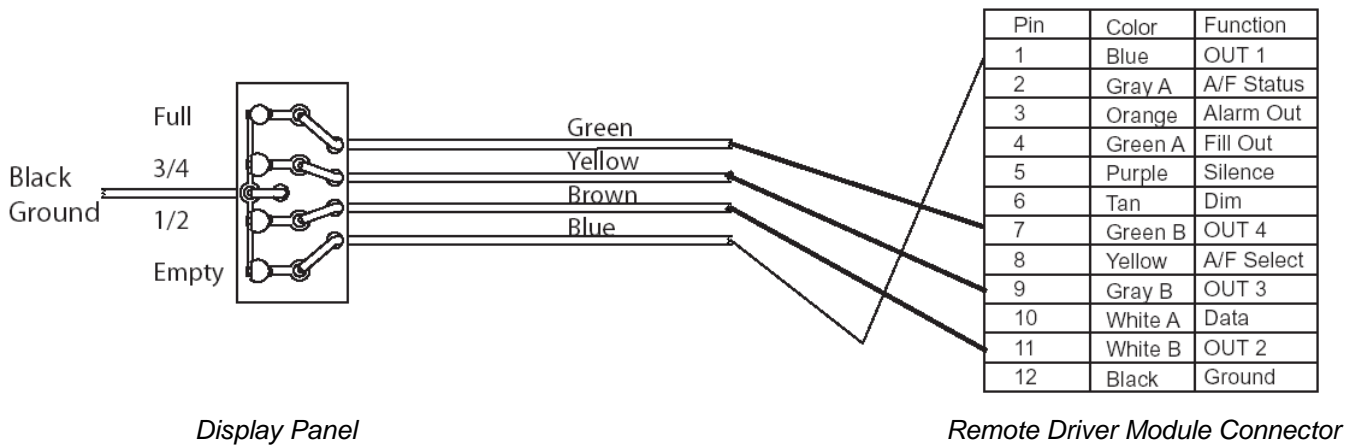
Alarm functions

Pin 3 Alarm output (+V)
 Pin 5 Alarm silence (ground = silence active)

Dim lights

Pin 6 Dim lights input (ground = dim active)

Display Panel (106878) wiring with the ITL Remote Driver Module



Specifications

Parameter	Value	Unit
Input voltage	+10 to +32	VDC
Current nominal: <i>No outputs active</i>		
@ 13.8VDC	44	mA
@ 27.6VDC	55	mA
Operating temperature	-40 to 85	°C
Maximum current:		
Alarm output	250	mA
Auto-fill status light output	250	mA
Fill output	250	mA
External light outputs	7.5	A
Maximum difference of potential between grounds (master and remote driver)	1	V

Troubleshooting

Condition	Evaluate
Bottom two lights alternate flashing.	Master tank level display's transducer signal voltage is below .4VDC. Check transducer wiring to master tank level display.
Top two lights alternate flashing.	Master tank level display's transducer signal voltage is above 4.80VDC. Check transducer wiring to master tank level display.
Bottom two and Upper two lights alternate flashing.	Remote driver module is not receiving data from the master tank level display. Check for continuity on the data line (pin 10) to the master tank level display and that the grounds are common between units (there should be less than 1V difference of potential). Insure the master tank level display is functioning properly.
Bottom and top lights alternate flashing (center two are off)	Master tank level display has an invalid calibration. Recalibrate Master display.
No lights are on.	Unit is not powered or external lights are not connected properly. Check power (Stud) and ground (Pin 12) connection for proper voltage.
Unit will not dim lights.	Check for proper ground input signal to pin 6 when activating the dim input switch.
Alarm will not silence.	Check for proper ground input signal to pin 5 when activating the alarm silence switch.
Auto fill not functioning	Check for proper ground input signal to pin 8 when activating the auto-fill select switch. Insure remote driver is displaying same information as master tank level display.