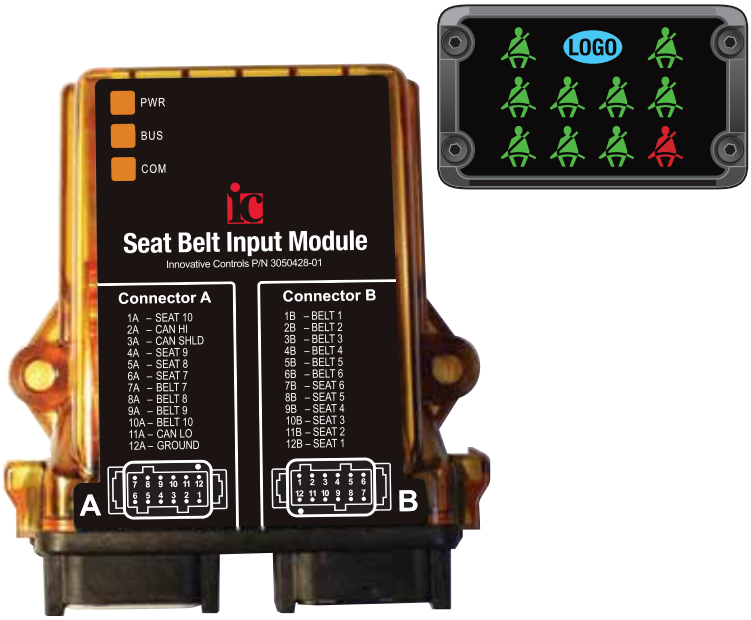
Seat Belt Monitor and Display System



The Innovative Controls Inc. Seat Belt Monitor System is a series of Seat Belt Display modules that are used to show the driver when seats are occupied and restraints are properly secured. The display modules communicate with the Seat Belt Input Module using J1939 CAN bus. The low profile cab displays are available in several different configurations to match the seating layout of your vehicle. Innovative Controls Inc can supply custom layouts with logos that differentiate your vehicle cab from the competition.

The input module can sense the occupancy and restraint sensors status for 10 seats. The system can accommodate multiple seat belt input modules for applications with more than 10 seats. The input module verifies that the seat occupancy and restraint sequence takes place in the correct order to ensure the safety of the occupants. A seat bounce filter eliminates annoying false alarms caused by fidgety passengers or bumpy roads.

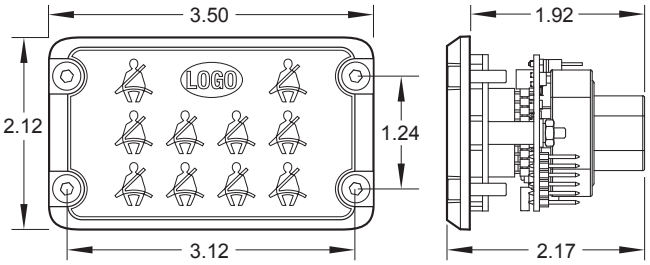
The display modules have an optional output can be used to sound an alarm when the parking brake is released with an unsecured passenger on board. The Seat Belt Monitor System J1939 CAN bus messaging is compatible with vehicle data recorder system to ensure fire apparatus compliance to NFPA-1901 and ambulance compliance to NFPA-1917. Innovative Controls Seat Belt Monitor System allows fire apparatus and ambulance builders to offer customized vehicle safety system while reducing design, labor, and installation time.

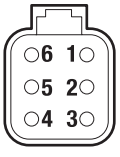
FEATURES

- **Display Status of 2 to 15 Seats**
- **J1939 CAN Bus Communication at 250K or 500K**
- **Seat Bounce Filter**
- **Seat Before Belt Sequence Verification**
- **Sensor Polarity High or Low Selectable**
- **Sensor State N.O. or N.C. Selectable**
- **Cab Display Alarm Output Option**
- **-40C to +105C (-40F to +220F) AEC-Q100 Level 2 Operating Temperature**
- **Input Module Ingress Protection Rating IP67**
- **Cab Display with Manual or Automatic Brightness Control**

SEAT BELT CAB DISPLAY SPECIFICATIONS

Operating Voltage	7 to 32VDC
Current Consumption at 13.8 VDC	30mA with no seats occupied 245mA with all seats occupied
Alarm Output Current	700mA low side switch with overcurrent protection
Operating Temperature Range	-40°C to +105°C (-40°F to +220°F)
Storage Temperature Range	-40°C to +105°C (-40°F to +220°F)
Ingress Protection	IP65
Electrical Protection	Reverse voltage polarity protection on all connections ESD protected to J1113-13 specifications Transient voltage protected to J1113-11 and J1113-42 Alarm output and power input are protected from reverse polarity, over-current, over-voltage, and voltage transients
CAN BUS Communication	SAE J1939 250K or 500K
Dimensions	3.50" x 2.12"
Weight	0.15 pounds (68 grams)



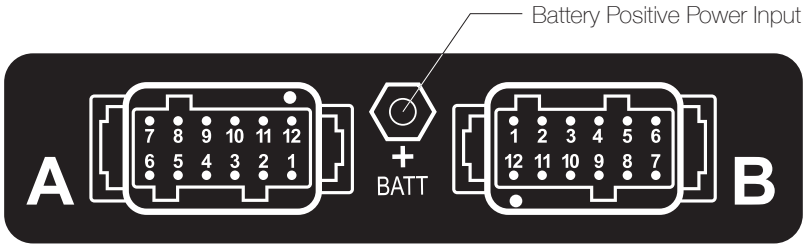


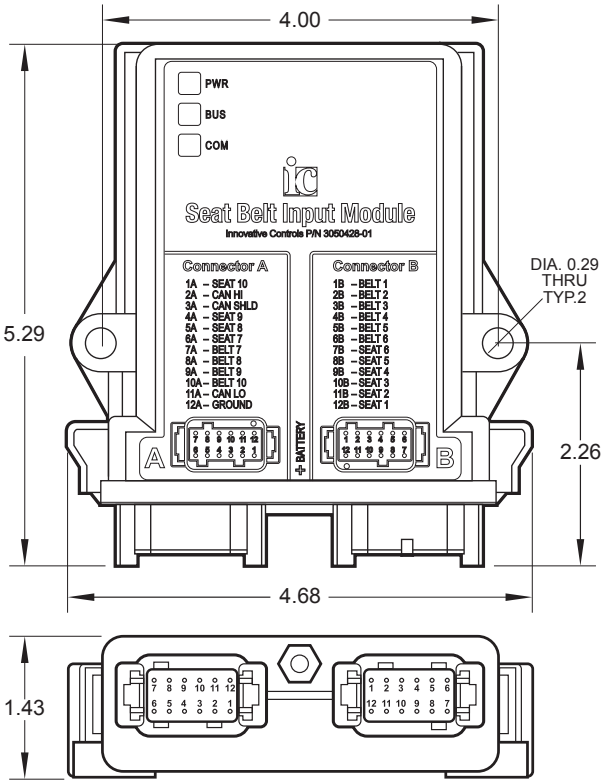
Mating connector is Deutsch DTP06-6S with WP-6S wedgelock and 0462-201-16141 sockets

Deutsch DTP15-6P Connector	
Pin	**Description**
1	+12VDC Power
2	Vehicle System Ground
3	Alarm Output
4	J1939 CAN Bus High
5	J1939 CAN Bus Low
6	J1939 CAN Shield

SEAT BELT INPUT MODULE SPECIFICATIONS

Operating Voltage	7 to 32VDC
Current Consumption at 13.8 VDC with no loads	30mA
Sensor Input	Active low for door open is default. Active high inputs available upon request.
Operating Temperature Range	-40°C to +105°C (-40°F to +220°F)
Storage Temperature Range	-40°C to +105°C (-40°F to +220°F)
Ingress Protection	IP67
Electrical Protection	Reverse voltage polarity protection on all connections ESD protected to J1113-13 specifications Transient voltage protected to J1113-11 and J1113-42 Sensor and Power inputs are protected from reverse polarity, overcurrent, over-voltage, and voltage transients
Dimensions	4.62" wide x 1.42" high x 5.21" deep
Weight	0.55 pounds (249 grams)





Deutsch DTM13-12PA-12PB Connectors		
Terminal	**Name**	**Description**
1A	SEAT 10	Seat 10 Occupancy Sensor
2A	CAN HI	J1939 CAN Bus CAN High Signal
3A	CAN SHIELD	J1939 CAN Bus CAN Shield
4A	SEAT 9	Seat 9 Occupancy Sensor
5A	SEAT 8	Seat 8 Occupancy Sensor
6A	SEAT 7	Seat 7 Occupancy Sensor
7A	BELT 7	Seat 7 Belt Sensor
8A	BELT 8	Seat 8 Belt Sensor
9A	BELT 9	Seat 9 Belt Sensor
10A	BELT 10	Seat 10 Belt Sensor
11A	CAN LO	J1939 CAN Bus low signal
12A	GROUND	Vehicle System Ground
1B	BELT 1	Seat 1 Belt Sensor
2B	BELT 2	Seat 2 Belt Sensor
3B	BELT 3	Seat 3 Belt Sensor
4B	BELT 4	Seat 4 Belt Sensor
5B	BELT 5	Seat 5 Belt Sensor
6B	BELT 6	Seat 6 Belt Sensor
7B	SEAT 6	Seat 6 Occupancy Sensor
8B	SEAT 5	Seat 5 Occupancy Sensor
9B	SEAT 4	Seat 4 Occupancy Sensor
10B	SEAT 3	Seat 3 Occupancy Sensor
11B	SEAT 2	Seat 2 Occupancy Sensor
12B	SEAT 1	Seat 1 Occupancy Sensor

Mating connector is Deutsch DTM06-12SA and DTM06-12SB with WM-12S wedgelock and 0462-201-20141 sockets

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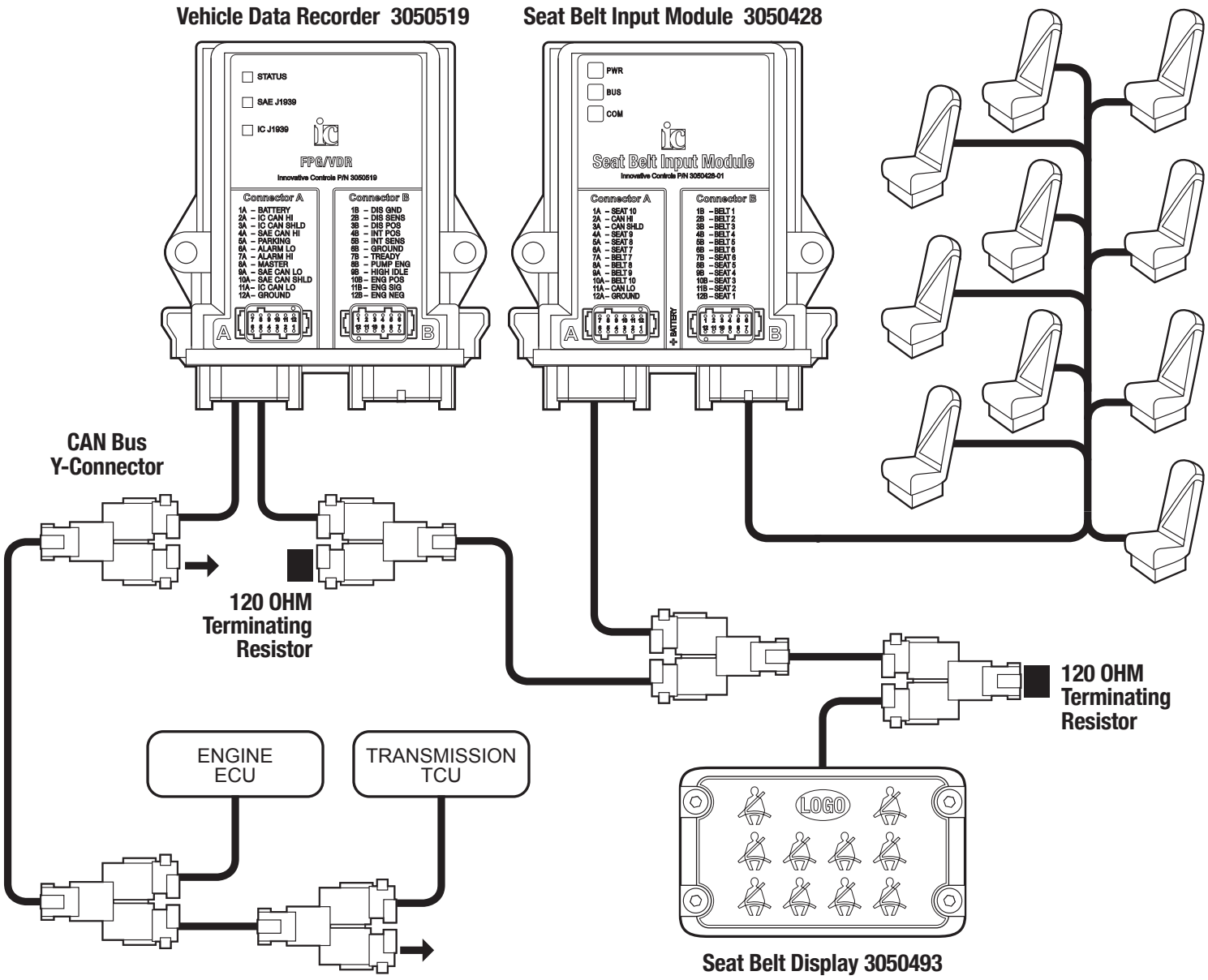
WIRING



SYSTEM COMPONENT OPTIONS

Model	Description	Part Number
Seat Belt Input Module	Capable of 10 Seats and 10 Belts	3050428-01
10 Seat Belt Display	10 Seat 2 front x 4 mid x 4 rear	3050493-01
8 Seat Display	2 front x 2 mid x 4 rear	3050493-02
12 Seat Display*	2 front x 5 mid x 5 rear	3050493-03
10 Seat Display	2 front x 3 mid x 5 rear	3050493-04
6 Seat Display	2 front x 4 rear	3050493-05
4 Seat Display	2 front x 2 rear	3050493-06
2 Seat Display	2 front	3050493-07
Vehicle Data Recorder	NFPA-1901 compliant data recorder	3050519-01

ACCESSORIES

Description	Part Number
CAN Bus Cable – ECU to Network	4000652-nn (1)
CAN Bus Cable – Network Jumper	4000653-nn (1)
CAN Bus Y-Connector	4008119
CAN Bus Terminator	4008120

(1) nn is length in feet

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