

# Trombetta

# 20 Output Module



Trombetta offers a family of output modules designed for harsh duty with an integrated automotive connector interface that delivers superior ingress protection while meeting the sophisticated output demands of the mobile equipment market.

## Features

- Available in J1939 and CANopen protocols
- 12V or 24V nominal voltage range
- 3A (sourcing) continuous output current (all outputs)
- Auto baud rate detection 125Kbps – 1Mbps
- IP67 rated
- -40°C to 85°C operating temp range\*
- Reverse battery protection
- Open load detection
- 10 digital outputs
- 10 digital / PWM capable outputs
- LED output status
- Ground returns for each output
- Optional 2nd CAN bus
- Optional load dump circuitry

\* 30A max module current at 85°C

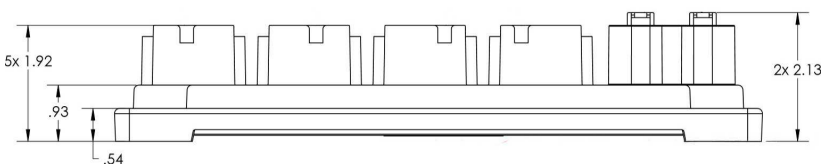
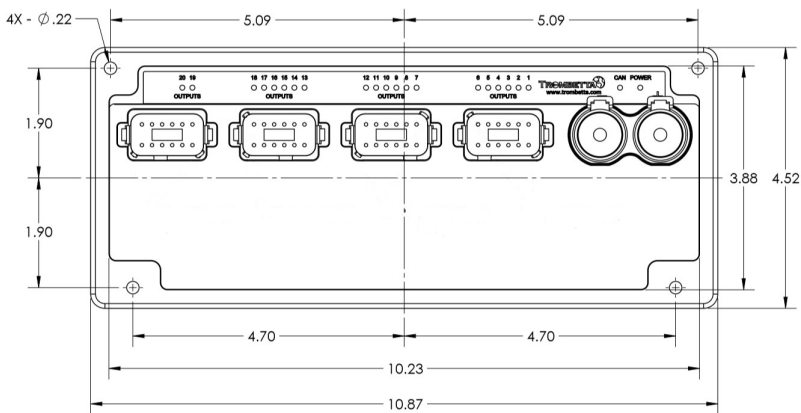
**TROMBETTA**   
DC Power Solutions for a Harsh World

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Parameter	Min	Nominal	Max	Notes
Functional Battery Voltage	8VDC	28VDC	32VDC	Nominal 12/24VDC battery systems
Reverse Battery Voltage	–	–	–32VDC	Indefinitely with 3A max loads attached. No protection mechanism are available during reverse battery.
Max Continuous Total Current	–	–	30A	Max current for entire system. Unit should be externally fused at max current to prevent damage from system overcurrent.
System Standby Current	–	25mA	30mA	Overall system current with all outputs off, input voltage in functional range.
Max Output Current (On State)	–	–	3A	Continuous, surges up to 10A (nominal) allowed for less than 2 seconds.
Output Leakage Current (Off State)	–	–	100uA	Per Channel, Current is shunted to ground via internal 47K pulldowns to allow for state measurement with a meter, and to prevent LED glow due to leakage current. 32VDC.
ESD Protection	–	–	15KV	All pins.
CAN Bus Baud Rate	125Kbps	250Kbps	1 M	Requires two devices with a fixed baud rate on the same CAN bus to determine baud rate.
Node ID	–	0xB0	–	Default, can be changed with Ground pin Matrix and Configuration Message 0xA7.

Mechanical Parameters	
Storage Temperature	-40°C to 125°C
Operating Temperature	-40°C to 125°C
Mechanical Shock - Operational	50g
Ingress Protection	IP67
Mating Connectors: Power/Ground	Deutsch DTHD06-1-4S, 0462-203-04141 (contact)
Output Connectors	Deutsch DT06-12SA (Grey) Deutsch DT06-12SB (Black) Deutsch DT06-12SC (Green) Deutsch DT06-12SD (Brown) Contact: 0462-201-1614 Wedgelock: W12S

Test Parameters	
Thermal Cycle Test	SAE J1455 Section 4.1.3 8-Hour Cycle
Thermal Shock Test	ISO16750-4 Section 5.3.2
Drop Test/ Handling Shock	IEC 60068-2-31 Section 5.1, 5.2
Humidity & Temperature Cycling (Thermal Cyclic Aging)	SAE J1455 Section 4.2.3, Figure 4A, 8-Hour Cycle
Fluid Compatibility	SAE J1455 Section 4.4
Thermal Shock Immersion	ISO16750-4 Section 5.4.3
Ingress Protection (IP)	IEC 60519, IP67
Vibration-Sinusoidal	10-22.289Hz 10mm P-P Displacement, 22.289Hz to 500Hz, 20g RMS acceleration
Vibration-Random	Trombetta profile, 11.55G RMS, 5-2000Hz
Load Dump	ISO16750-2 Section 4.6.4.2.1, SAE J1113-11, Pulse 5B, ISO7637 Pulse 5B
Reverse Battery	ISO16750-2 Section 4.7.2.3
Short I/O(s) to Power/Ground	ISO16750-2 Section 4.10
Jump Start	ISO16750-2 Section 4.3.2
Electrostatic Discharge	SAE J1313-13 Handling, Section 5, Test Sequence 1-5



This product is RoHS 3, REACH and Conflict Free Compliant.

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