2021

MB607
DATA SHEET

MUXWIRING, INC.

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Rev. A.

www.muxwiring.com
forum.muxwiring.com

IMPORTANT - PLEASE READ!

The procedures and instructions contained in this document are to be used as a general guideline. We intend for the end user to be the ultimate decision maker as far as the use of this device. If you, the end user of this unit, are uncomfortable or feel unsafe while using this unit or during installation, DO NOT PROCEED and DISCONTINUE USE and seek assistance. This unit is an advanced control module and is meant to be used by a user with experience with car wiring and safety. It is considered an advanced device to be installed by a user with skills and abilities that match the scope of a project of this magnitude.

This device is designed for use with vehicles used primarily as show-only, demonstration or race style cars and trucks. User should determine local, state and federal laws concerning use of a device of this type with this function and comply with laws accordingly. MUXWIRING, INC. makes No Warranties on any products it offers for sale, expressed or implied, as to function or operation.

While use and testing were performed on this device, MUXWIRING, INC. cannot control the factors involved in the install and use of this device. All devices offered for sale are not intended for daily drivers. They are for off-highway and show car use only. The installation, use and programming of the device requires considerable time and skill to match. The user should determine suitability of device for the specific application before buying or attempting to install and use the device.

Purchaser ASSUMES ALL RISK in use of this product and is responsible for personal, property and economical injury related to use, proper or improper, installation, proper or improper, of this device. This would include any damage or injury directly or indirectly as a result of use of this device.

IF IN DOUBT, DO NOT USE, DO NOT PROCEED!

MB607

KEY FEATURES

- Six high current solid-state outputs with polarity option/setting
- Up to 7A continuous outputs, 25A MAX per module
- Battery side current sensing on each of the 6 high power output channels
- Programmable circuit breaker and reset
- Seven 20V tolerant inputs with reading range from 0V to 16.2V
- All input, outputs and supply voltages can be read in software*[1]
- Module internal temperature sensing and reading
- Two channels can be used for RPM and Speed inputs from 3V to max voltage range
- Active low or high input trigger support
- Typical Input impedance 10Kiliohms
- Durable thermal and water rated housing available (IP67)
- Ultra-low current draw in standby <1mA at 12V
- Stand-alone or CAN bus networked up to 18 modules
- High Speed – CAN bus topology up to 1Mbps
- RealDash™ display support, configuration, and diagnostics*[1]

[1] * -Requires optional programming cable and GUI tool

SPECIFICATIONS

- 7V – 16V DC (20V DC max) supply voltage with reverse voltage protection
- Maximum voltage on output channels cannot exceed power supply voltage
- Seven inputs can tolerate 5V above the supply voltage
- 7A per output
- Total output current draw combined 25A max
- Module must be externally fused 30A or less
- 60A max surge (300mS max)
- 85C max temp

ABSOLUTE MAXIMUM RATINGS

PARAMETER	PIN NAME	VALUE
VOLTAGE RANGE	BATT 12DC	0V to 20DC
OUTPUT DRIVE	I/O x (1-6)	Output drive source, 60A max (300 mS max) single channel only
OUTPUT DRIVE	I/O x (1-6)	Continuous drive current, 7A max (25A total all channels)
INPUT	I/O x (1-7)	Input range 0V to supply voltage + 5V (max 20V)
PWM	I/O x (1-6)	PWM drive, 100 Hz to x 1kHz (limited drive to 25kHZ), 0 to 100% duty
CURRENT SENSE	I/O x (1-6)	Current sense on each pin, 0.5A to 30A range (accuracy +/- 1A typical)
STORAGE TEMPERATURE		-20 to 85C no operation

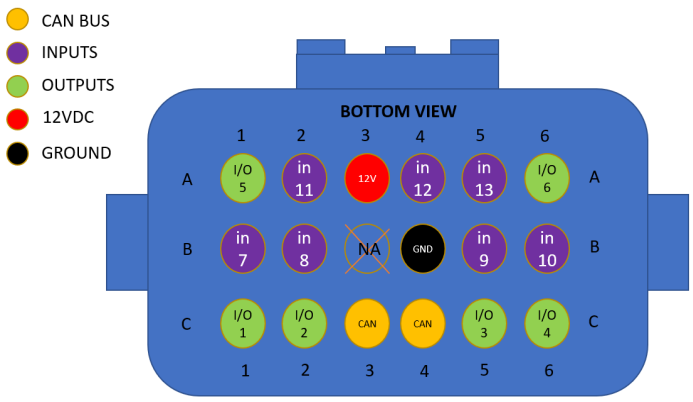
RECOMMENDED OPERATING CONDITIONS

PARAMETER	PIN NAME	VALUE
VOLTAGE RANGE	BATT 12DC	7V – 16.2V DC typical
OUTPUT DRIVE	I/O x (1-6)	7A typical each pin, max
INPUT	I/O x (1-6)	Input range 16.2V
PWM	I/O x (1-6)	PWM 100 Hz to x 500Hz
CURRENT SENSE	I/O x (1-6)	Current sense on each pin, 0.5A to 30A range
ANALOG INPUTS	IN x (7-13)	DC input, ADC in, 0V to battery voltage - trigger detect programmable

TECHNICAL DESCRIPTION

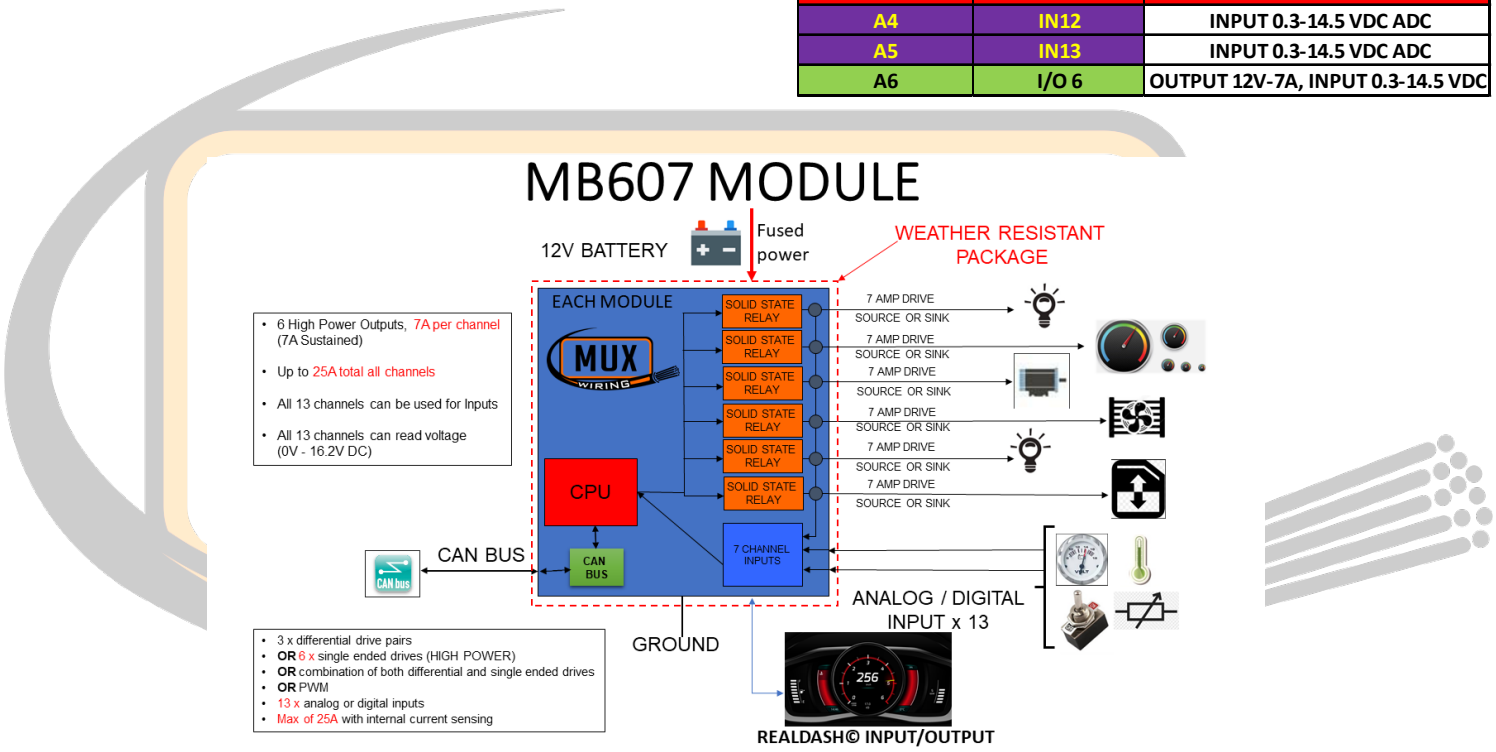
The MB607 is a fully programmable module using proprietary command language. Simple to learn yet very powerful. The module is designed for a variety of input and output settings to leverage our advanced programming capabilities. MB607 commands can be updated individually or distributed over network with common and inexpensive tools. MB607 has a wide operation temperature range and should be mounted in an environmentally sealed water-resistant housing.

The MB607 module has seven dedicated analog or digital inputs with voltage wake-up trigger threshold. The MB607 has six channels high power output drive, source or sink. Two channels can be paired as single push-pull drive for locks or power window drive with current sense on each channel for current limit-switch protection. The MB607 comes with many different standard configurations or can be ordered with custom programming.



Model MB607

PIN FUNCTIONS DEFINED		
PIN NUMBER	FUNC NAME	DESCRIPTION
C1	I/O 1	OUTPUT 12V-7A, INPUT 0.3-14.5 VDC
C2	I/O 2	OUTPUT 12V-7A, INPUT 0.3-14.5 VDC
C3	CAN+	CAN BUS +
C4	CAN-	CAN BUS -
C5	I/O 3	OUTPUT 12V-7A
C6	I/O 4	OUTPUT 12V-7A
B1	IN7	OUTPUT 12V-7A, INPUT 0.3-14.5 VDC
B2	IN8	OUTPUT 12V-7A, INPUT 0.3-14.5 VDC
B3	ALIGNMENT	NO CONNECT-KEYWAY
B4	GND	MAIN MODULE GROUND
B5	IN9	INPUT 0.3-14.5 VDC ADC
B6	IN10	INPUT 0.3-14.5 VDC ADC
A1	I/O 5	OUTPUT 12V-7A, INPUT 0.3-14.5 VDC
A2	IN11	INPUT 0.3-14.5 VDC ADC
A3	BATT 12DC	MAIN ALWAYS-ON 12DC
A4	IN12	INPUT 0.3-14.5 VDC ADC
A5	IN13	INPUT 0.3-14.5 VDC ADC
A6	I/O 6	OUTPUT 12V-7A, INPUT 0.3-14.5 VDC



USER INSTALLATION DETAILS

1. MB607 board should be installed in a dry and protected location. If MB607 enclosure is used, it can be mounted in most locations and is environmentally and temperature tolerant.
2. Ground should always be connected to frame or chassis using self-tapping screws and star washers. Paint or rust should be removed to bare metal when possible.
3. 12V power lead should feed from a wire of proper gauge and from a 25 amp always on fused location in vehicle.
4. Outputs should be of proper gauge wire to handle desired load.
5. Contact MUXWIRING technical support team for help or guidance as needed.

COMMON APPLICATIONS

- **Check gauges warning light** - monitors gauges or sensors in car and if any are out of tolerance, can be wired to alert driver with light and sound that indicate problem or issue exists.
- **Advanced power windows with one-touch control** – add power windows with one-touch up and down and wireless remote option to any car project.
- **Update to existing power windows** - cars with standard power windows can add module and upgrades car for both "one touch" auto up or down and adds wireless remote option for lock/unlock doors and/or roll up/down windows.
- **Dual gas tank supervision and reporting** - monitors tank levels and auto-switches tank pickup based on user programming; sums gauges of each tank into one reading for a single gas gauge on dashboard.
- **Advanced radiator fan temperature sensing and control** – add temperature sensing, ignition sense, A/C sense, manual override with PWM or DC motor control.
- **Replace chronic power switch failures** - in cases where OEM power switches fail regularly due to poor design or under-rated current draw, the module can replace switch with intuitive user interface control to enable use of load without fear of repeated failure with use, time, or heat.
- **True Analog measurements with interrupt or alert on specific voltage trip point** - battery voltage, gas tank level, and engine temperature can be measured and a rising edge trigger and falling edge trigger can be set by user to alert user of things like "low battery", "low fuel" or "over temperature". Actions can be taken on these events such as shutting down power to systems to save remaining battery and turn on engine fan with temperature.
- **Speed sensing-monitor** - both transmission speed sensor or front wheel speed sensor and translate to actual MPH or data log events like excess-speed occurrence. Take actions like transmission shifting, torque converter lockup or simple drive display with speedometer.
- **Monitor OBD2** - read OBD2 and acquire data like oil pressure, tachometer and engine temp and translate to, for example, classic car analog gauge drive. The MB607 is able to correctly acquire data from digital sources and correctly drive directly classic car analog gauges!
- **One-touch turn signals with self-cancelling** - MB607 can also use speed control sensor to enhance self-cancelling. Scanning taillight outputs like seen on Ford Mustangs or Thunderbirds.
- **Reverse side mirror tilt-down** – when vehicle is placed in reverse the MB607 can adjust select mirrors to tilt to assist backing up and then return to the original position when vehicle is no longer in reverse. Additionally, mirror memory can be added for multiple drivers.
- **Timed outputs** - such as headlights or fans. Additionally, voltage sense can be used to terminate current draws and preserve starting power.
- **Stepper Motor** – provides drive to standard stepper motor.
- Can be paired with user interface that allow configuration and comprehensive diagnostics to aide in installation and troubleshooting - needs optional USB interface cable.

MUXWIRING, INC. warrants against any defects in materials and workmanship to MUXWIRING MB607 module, wiring harnesses and accessory modules for a period of one (1) year from the first date of purchase. Subject to the terms of this warranty described below, MUXWIRING, INC. will replace any such defective product that is returned to MUXWIRING, INC. within the one (1) year period from initial purchase. Replacement of any defective part or product will not extend the applicable warranty period. The warranty does not apply to: (i) any product that is not installed in compliance with the applicable product documentation; (ii) any defect in, or failure of, the product resulting from an accident, shock, negligence, water immersion or misuse; (iii) any product that has been modified, adjusted, repaired, or disassembled by any party other than MUXWIRING, INC.; or (iv) any defect other than in materials and workmanship. This warranty covers only the original purchaser of product purchased from a MUXWIRING, INC. authorized dealer in the United States. In order to receive warranty service, purchaser must provide MUXWIRING, INC. with a copy of the receipt stating the dealer's name, product purchased and date of purchase. Products found to be defective during the warranty period will be replaced (with a product deemed to be equivalent or better) at the discretion of MUXWIRING, INC. MUXWIRING, INC.'s sole liability for any defective product is limited solely to the replacement of product pursuant to this warranty. MUXWIRING, INC. reserves the right to replace any repairable parts with new or refurbished parts. MUXWIRING, INC. DISCLAIMS ALL OTHER WARRANTIES, WHETHER EXPRESS, IMPLIED OR STATUTORY, SUCH AS WARRANTIES OF MERCHANTABILITY AND FITNESS FOR PURPOSE. IN NO EVENT SHALL MUXWIRING, INC. BE LIABLE FOR ANY PUNITIVE, INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES, INCLUDING WITHOUT LIMITATION, LIABILITY FOR LOSS OF USE, LOSS OF PROFITS, LOSS OF PRODUCT OR BUSINESS INTERRUPTION HOWEVER THE SAME MAY BE CAUSED, INCLUDING NEGLIGENCE.

AVAILABLE AS A KIT

- MB607 Module
- Weather Sealed Housing
- Mounting Bracket
- Metri-Pack 280 Crimp on ends
- Wire Seals
- Terminal Position Assurance Locks (TPAs)