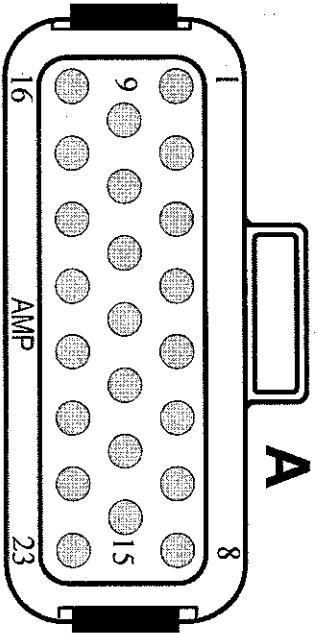
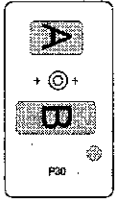
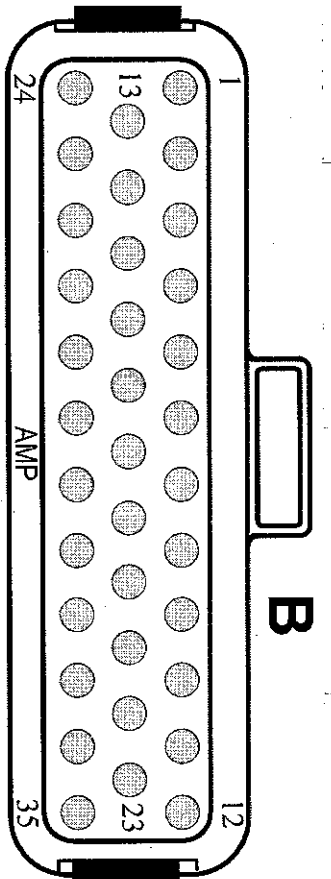


Black Box P30 Main Connectors Cable Side of Harness Plug

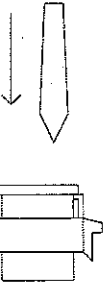


PIN	Name	Max Current / Function
A1	Output 18	8 Amp
A2	Output 17	8 Amp
A3	Output 20	8 Amp
A4	Output 19	8 Amp
A5	Output 14	8 Amp
A6	Output 13	8 Amp
A7	Output 12	8 Amp
A8	Output 11	8 Amp
A9	Output 15	8 Amp, PWM Capable.
A10	Ground	
A11	Output 30	8 Amp
A12	Master Switch	
A13	Output 29	8 Amp
A14	Ground	
A15	Output 10	8 Amp, PWM capable.
A16	Output 16	8 Amp
A17	Output 4	20 Amp, PWM Capable.
A18	CAN High	
A19	Output 2	20 Amp
A20	Output 1	20 Amp
A21	CAN Low	
A22	Output 3	20 Amp, PWM Capable.
A23	Output 9	8 Amp



PIN	Name	Max Current / Function
B1	Output 24	8 Amp
B2	Switch In 8	
B3	Switch In 2	
B4	Switch In 6	
B5	Switch In 12	
B6	Switch In 9	
B7	Switch In 16	
B8	Switch In 15	
B9	Switch In 14	
B10	Switch In 13	
B11	Switch In 18	
B12	Output 27	8 Amp, Wiper motor low speed.
B13	Output 23	8 Amp
B14	Switch In 7	
B15	Switch In 1	
B16	Switch In 5	
B17	Switch In 4	
B18	Switch In 3	
B19	Switch In 17	
B20	Switch In 19	
B21	Switch In 23	Temperature Sensor Input
B22	Switch In 22	
B23	Output 28	8 Amp, Wiper motor high speed.
B24	Output 21	8 Amp
B25	Output 22	8 Amp
B26	Switch In 11	
B27	Output 8	20 Amp
B28	Switch In 10	
B29	Output 6	20 Amp
B30	Output 5	20 Amp
B31	Switch In 20	
B32	Output 7	20 Amp
B33	Switch In 21	
B34	Output 25	8 Amp
B35	Output 26	8 Amp

Outputs 1 to 8 are 20 Amp maximum.
Outputs 9 to 30 are 8 Amp maximum.



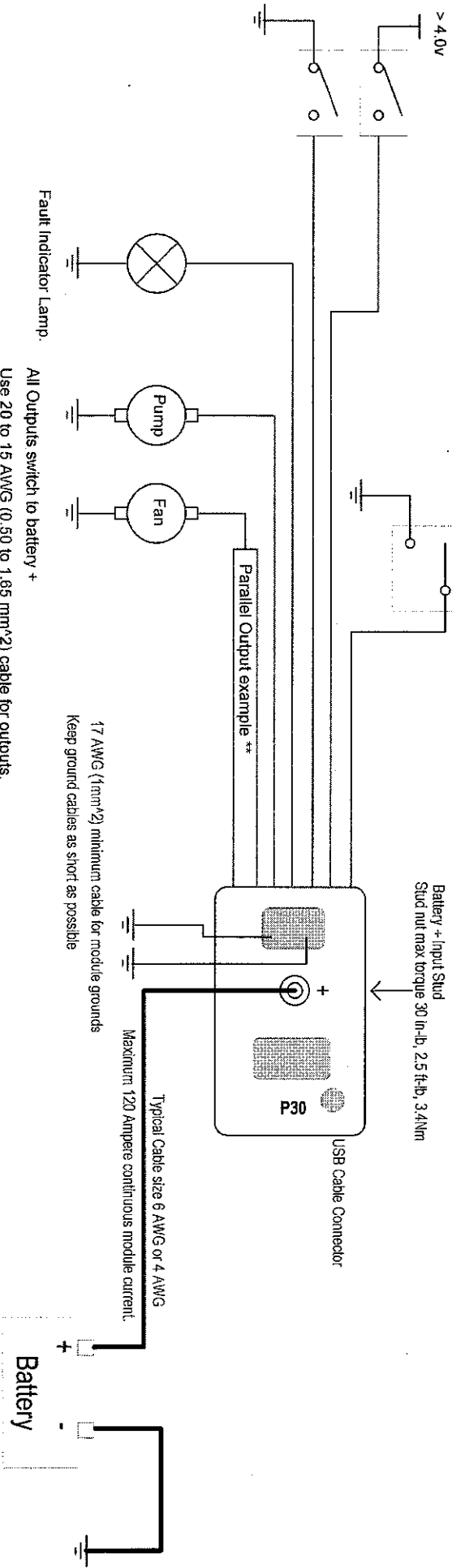
Insert cavity plug into all unused positions for dust and water resistance

Black Box P30 Wiring

All switch inputs (including Master Switch) can switch to ground or voltage > 4.0v.
 Switch inputs draw less than 5ma (0.005 Ampere). Typical cable size is 20 AWG (0.52 mm²).
 Switch Inputs are typically switched to ground for ease of wiring.
 The Master Switch Input enables or disables all outputs and activates or shuts down the module. It is usually connected to a main power switch.

3 state (center off type) switches can be used.
 Switch Input 23 can also be used as an optional temperature sensor input. It is two state only, >4.0v or ground.

Mount module away from high temperature sources such as engine, radiators and exhaust system.
 Mount module away from water and in position with some air circulation.



All Outputs switch to battery +
 Use 20 to 15 AWG (0.50 to 1.65 mm²) cable for outputs.
 Outputs can be combined for increased current capacity.
 20 or 8 Ampere max continuous for each output.
 Maximum 120 Ampere Total recommended.
 Some outputs have PWM capability. See Main Pinout diagram.

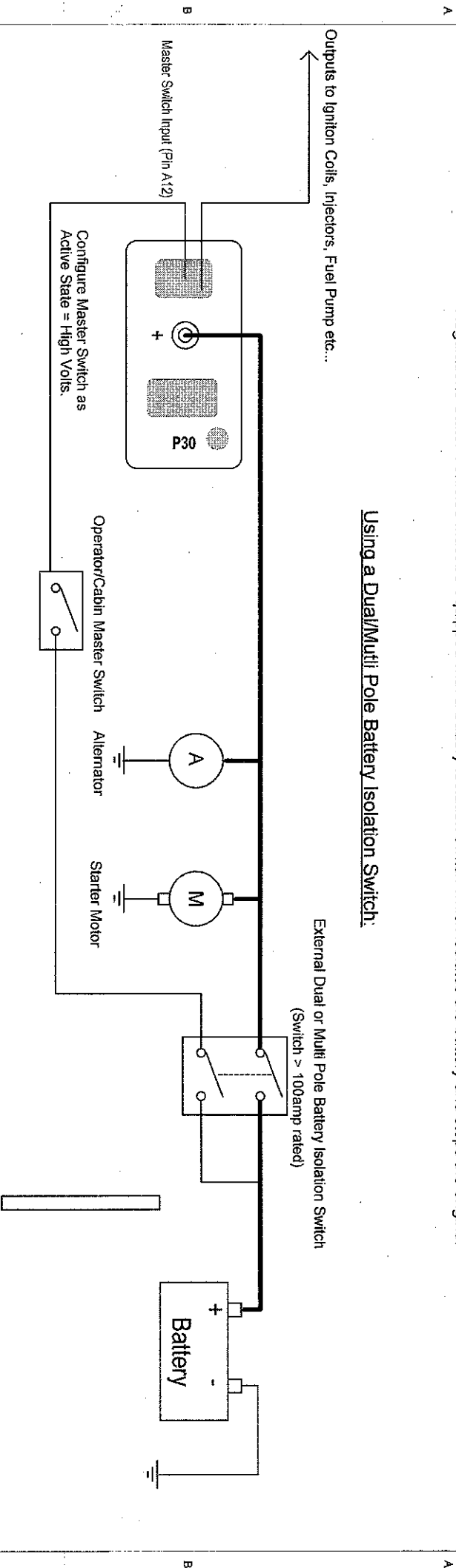
Minimum 7.5 volts battery voltage.
 Maximum 32.0 volts battery voltage.

** Parallel outputs of 2 or more must be the same current rating;
 20 Amp outputs can only be in parallel with 20 Amp outputs.
 8 Amp outputs can only be in parallel with 8 Amp outputs.

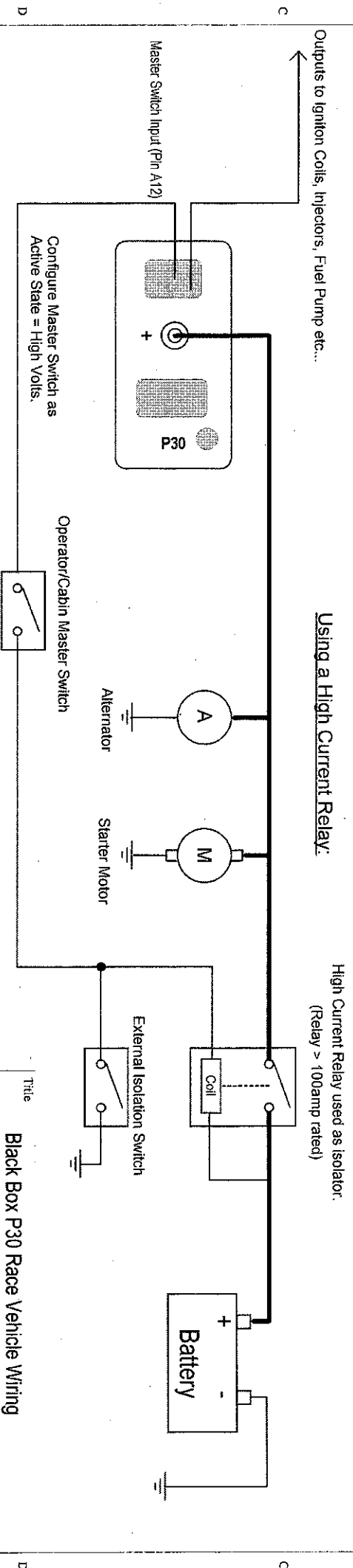
Black Box P30 Racing Vehicle Power Connection

Regulations State: Vehicles must be equipped with a battery isolation switch which isolates the battery and stops the engine.

Using a Dual/Multi Pole Battery Isolation Switch:



Using a High Current Relay:

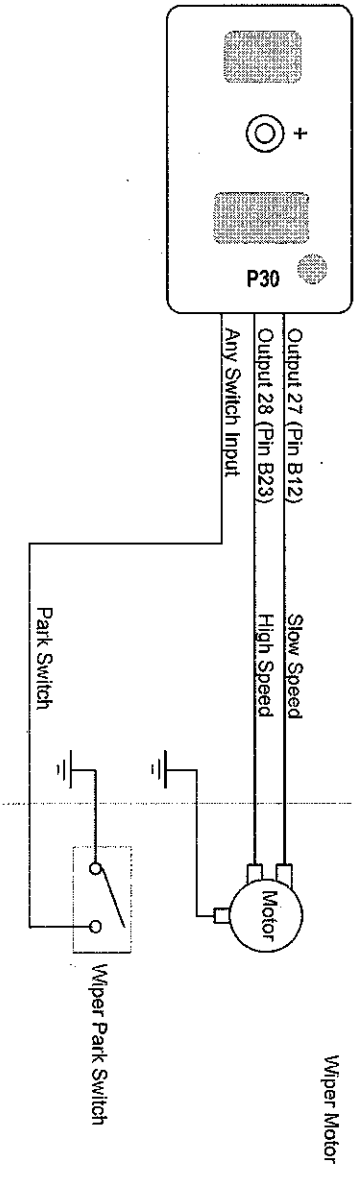


Black Box P30 Race Vehicle Wiring

Title	Black Box P30 Race Vehicle Wiring	Revision	V1.0
Size	A4	Number	
Date	20/12/2017	Sheet of	
File	F:\Motstech\p30 Racing Vehicle Power Drawdown.v1	Drawn by	O. Schilder

Black Box P30 Wiper Motor Wiring

Enable Motor Braking option in Output 27.



Wiper Motor

Wiper Park Switch

Title

P30 Wiper Motor Wiring

Size

A4

Number

Date:

20/12/2017

File:

F:\Moristech\...P30 Wiper Motor Wiring\Dashboard

Sheet of

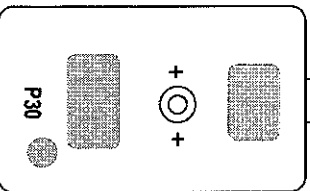
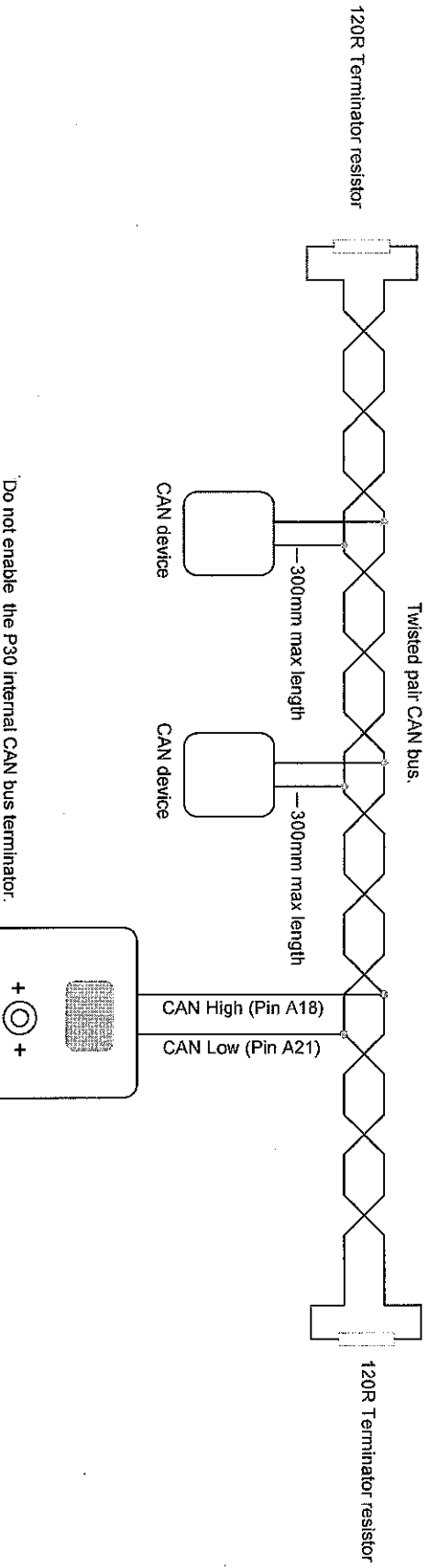
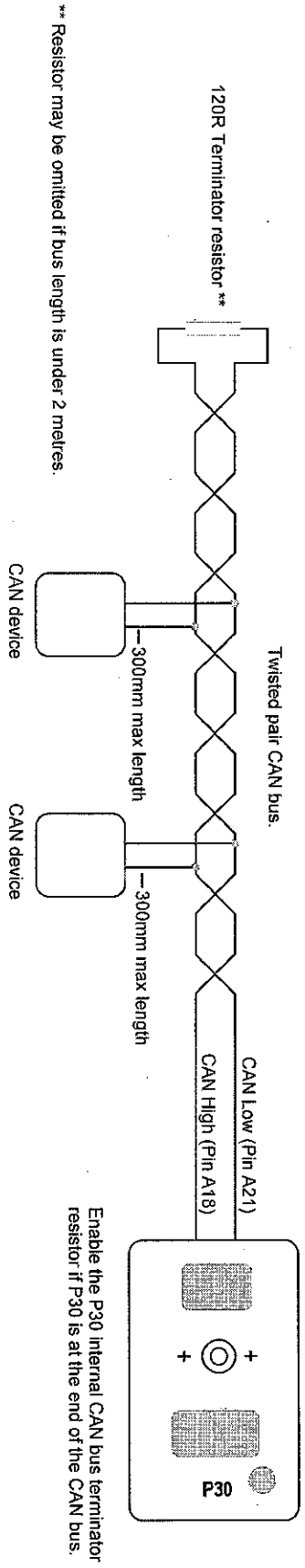
4

Revision

V1.0

Black Box P30 CAN bus wiring

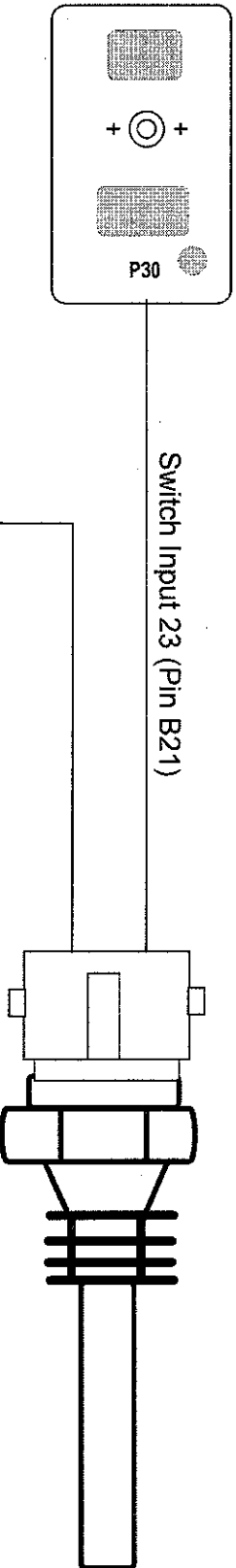
The P30 has an internal CAN bus terminator resistor. It is enable or disabled by software.



Title	
P30 CAN bus wiring	
Size	Number
A4	
Date:	2017/2/2017
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Sheet of	Revision
4	V1.0

Black Box P30 Temperature Sensor Wiring.

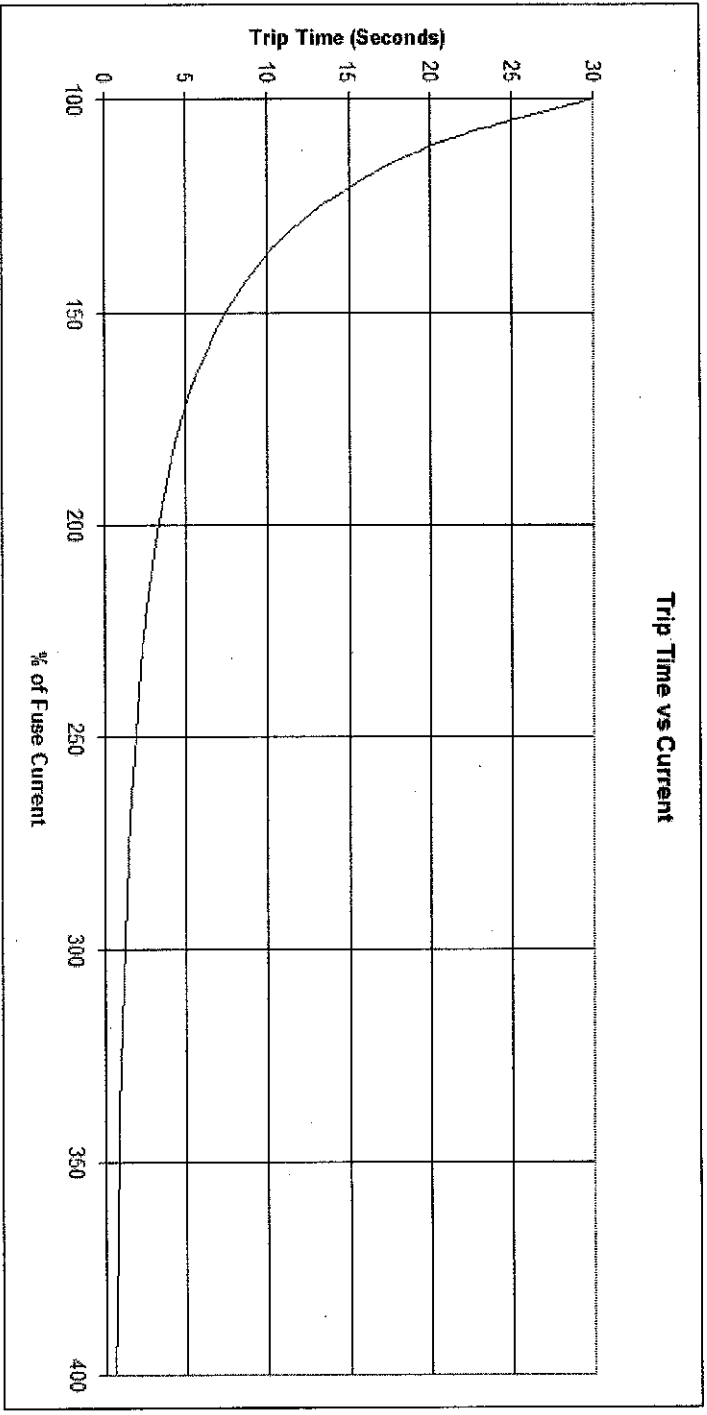
Switch input 23 can also be used for optional temperature sensor input.



Ground at same point as P30 Ground.

Moristech Coolant Temperature Sensor
Sensor can be wired in any polarity.

Black Box P30 Fuse Characteristics



Examples:

- Fuse Current set at 5.0 A. Current is 10.0 A (200% of Fuse Current) = Trip time of 3.33 Seconds.
- Fuse Current set at 15.0 A. Current is 20.0 A (133% of Fuse Current) = Trip time of 10.8 Seconds.
- Current under 100% of Fuse Current will not trip the fuse.

Tip: Set the Fuse Current 2 Ampere above the steady state current or equal to the connecting cable current rating.
 High startup currents from such things as motors or incandescent light globes will not trip the fuse due to its characteristics.
 Tripped Fuse are reset by the Master Switch.