RaceGrade Specification

Document Number		RG_SPEC-0022	
Title		BCD = Bi-Color Driver for LEDs	
Revision	**Date**	**Prepared By**	**Change History**
0.91	2/15/2012	Chris Brown	Beta: updated connection info

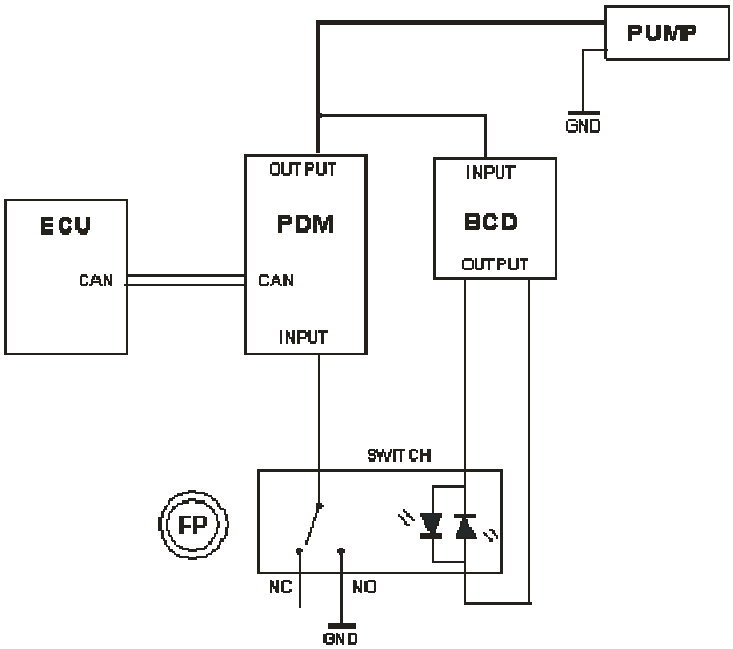
The BCD is used in conjunction with the MoTeC PDM and its cockpit switches utilizing a Bi-Color LED bezel indicator. The BCD inputs are connected in parallel to the PDM outputs using small 26 AWG wiring and therefore able to monitor the state of the PDM output. The BCD outputs then drive the LED bezels on the related cockpit switch to inform the driver of the output's status.

- Green = output is on
- Red = output is off

The master switch when on, activates all LED bezel indicators to light red as their off position. As each switch is turned on, the switch activates a PDM output and which will update the Bi-Color Switch to green.

A optional PWM input is provided for brightness control.

Part # M BSD



Specifications:

Supply Voltage:	6.5 - 18.0 VDC Max
Current Consumption:	350mA Max, 15mA typical standby
LED Outputs:	12 two-wire bidirectional outputs
LED Output Current:	Current Limited to 25mA Max
Input for Brightness:	Pulse Width Modulation of 0-100%, or Variable potentiometer control, or Fixed Full Brightness via 0v jumper
Weight:	141 grams
Dimensions:	4" L x 1.5" W x 1.25" H

Connection:

Inputs :

- 12 inputs
- 0-18Vdc
- Low state =< 0.75 Vdc'
- High stat => 1.75 Vdc
- Custom modification for 22k pull down to ground is available through PCB solder links.

LED Outputs :

- two wire bidirectional LEDs
- max 25mA current
- 120 ohm current limiting resistor is build in, therefore no series resistors are required

Mating Connectors:

AS2 12-35SN

	Green	Red
Pin 1	#11	
Pin 2	#8	
Pin 3		#5
Pin 4		#8
Pin 5		#6
Pin 6		#7
Pin 7		#1
Pin 8		#4
Pin 9		#2
Pin 10	#2	
Pin 11		#9
Pin 12	#12	
Pin 13		#11
Pin 14	#9	
Pin 15	#1	
Pin 16	#5	
Pin 17	#7	
Pin 18	#4	
Pin 19	#3	
Pin 20		#3
Pin 21		#12
Pin 22	#6	

AS2 12-35PN

Pin 1	Ground	
Pin 2	Brightness Control PWM	
Pin 3	input #3	
Pin 4	input #2	
Pin 5	input #12	
Pin 6	input #4	
Pin 7	Battery In	
Pin 8	Battery Out	
Pin 9	input #1	
Pin 10	input #5	
Pin 11	input #6	
Pin 12	input #9	
Pin 13	input #8	
Pin 14	input #7	
Pin 15	input #11	
Pin 16	input #10	
Pin 17	Aux Power Out	
Pin 18	Brightness Pot 5v	
Pin 19	Brightness Pot wiper	
Pin 20	out #10 grn	
Pin 21		out #10 red
Pin 22	Brightness Pot 0v	

Brightness Control PWM: For control via external device such as a Dash output. Signal must be PWM from 0 to 100% duty cycle with fixed frequency of 100Hz or higher. May be connected to 0v for full brightness. Link 'e' must be open on internal circuit board.

Brightness Pot 5v, wiper, 0v: For control via a directly connected 10k ohm potentiometer. Link 'e' must be closed on internal circuit board, and no connection on Pin 2.

Battery In: Supply voltage from 6.5 to 18.0 volts. A 3 amp fuse on the battery voltage input is required for reverse battery protection.

AUX Power Out : 5v up to 500mA available for additional BCD.