# DCCD Controller user manual

**System connector**
Type: 8pin Molex Mini-Fit

Front view of controller:

| | | | |
|---|---|---|---|
| [5] Battery | [6] DCCD+ | [7] DCCD- | [8] Ground |
| [1] Ignition | [2] Dimm | [3] Handbrake | [4] Brakes |

| Pin # | Name | Type | Description |
|---|---|---|---|
| 1 | Ignition | P | Switched 12V power source, supplies control logic |
| 2 | Dimm | DIN | Dimm LEDs signal, active high. Connect to clearance lights |
| 3 | Handbrake | DIN | Handbrake signal input, active low. With built-in pull-up. |
| 4 | Brakes | DIN | Brakes signal input, active high. Connect to brake lights. |
| 5 | Battery | P | DCCD power source. Connect to battery through 10A fuse. |
| 6 | DCCD+ | AO | Output for  DCCD coil, power side. |
| 7 | DCCD- | AO | Output for DCCD coil, return side. |
| 8 | Ground | P | Power ground. |

P - Power
DIN - Digital input, 0-12V
AO - Analog output

**User interface connector**
Type: 12pin Molex Mini-Fit

Front view of controller:

| | | | | | |
|---|---|---|---|---|---|
| [7] Up | [8] OPEN | [9] 40% | [10] 80% | [11] Mode | [12] 5V |
| [1] Down | [2] 20% | [3] 60% | [4] LOCK | [5] Pot | [6] Ground |

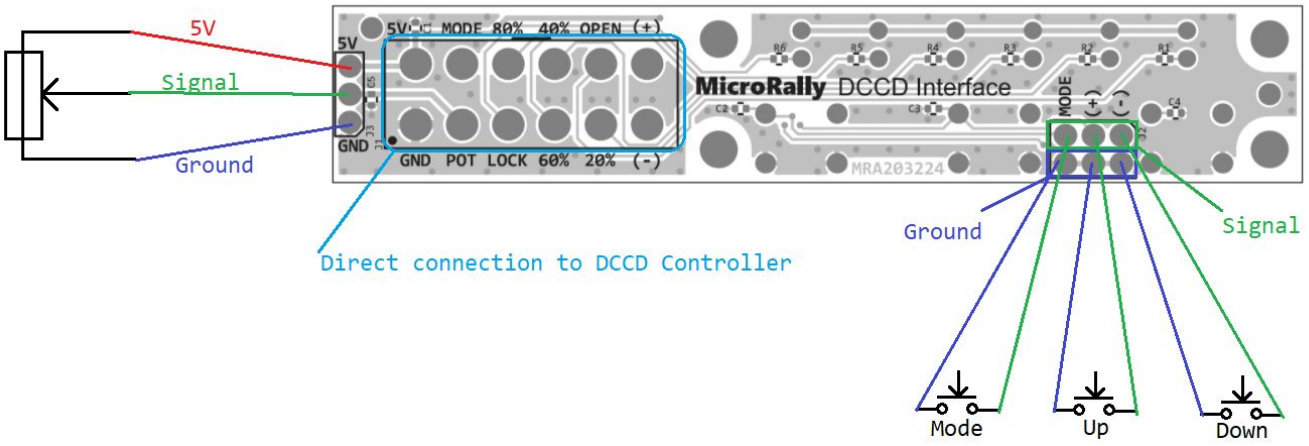
| Pin # | Name | Type | Description |
|---|---|---|---|
| 1 | Down | DIN5 | Button for reducing DCCD lock force |
| 2 | 20% | OD | Output for 20% indicator LED |
| 3 | 60% | OD | Output for 60% indicator LED |
| 4 | LOCK | OD | Output for LOCK (100%) indicator LED |
| 5 | Pot | AIN | Analog input for DCCD force control with potentiometer |
| 6 | Ground | P | User interface inputs ground |
| 7 | Up | DIN5 | Button for increasing DCCD lock force |
| 8 | OPEN | OD | Output for OPEN (0%) indicator LED |
| 9 | 40% | OD | Output for 40% indicator LED |
| 10 | 80% | OD | Output for 80% indicator LED |
| 11 | Mode | DIN5 | Button for changing operation mode |
| 12 | 5V | P | 5V supply output for user interface |

P - Power
AIN - Analog input, 0-5V max.
DIN5 - Digital input, 0-5V max, with built-in 4.7k pull-up to 5V, active low.
OD - Open drain output.

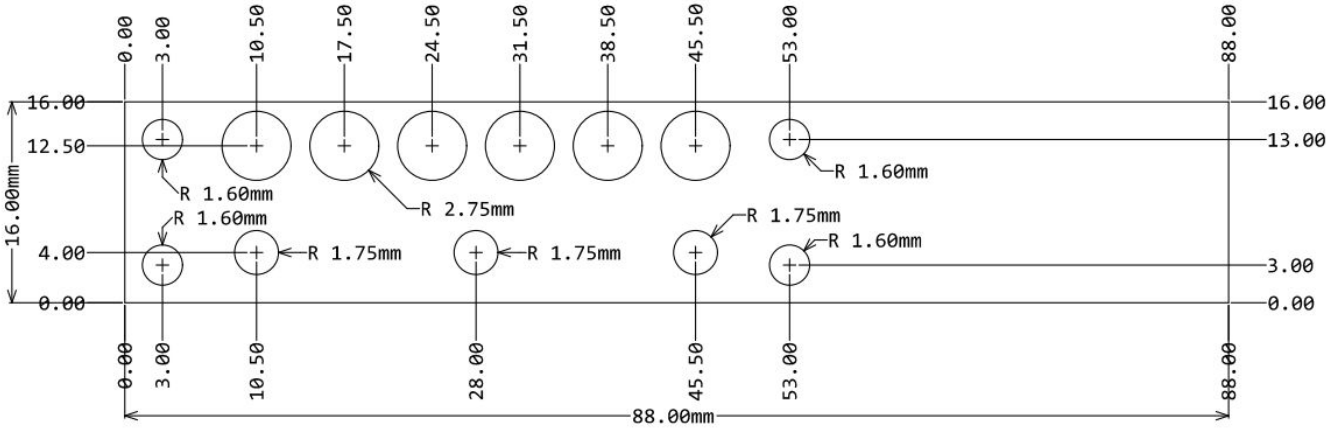
**User interface indications**

| OPEN | 20% | 40% | 60% | 80% | LOCK | Description |
|---|---|---|---|---|---|---|
| Status indications | | | | | | |
| | | | | | | Not powered, or critical supply fault |
| | | | | | | Open while braking, **mode** selected |
| | | | | | | Lock while braking, **mode** selected |
| | | | | | SLOW | Slowly flashing, indicates failed OCP retry |
| FLASH | | | | | | Flashing, indicates failed calibration |
| FLASH | FLASH | FLASH | FLASH | FLASH | FLASH | Flashing set force, indicates loss of load |
| Set or actual force indications | | | | | | |
| | | | | | | OPEN |
| | | | | | | 10% |
| | | | | | | 20% |
| | | | | | | 30% |
| | | | | | | 40% |
| | | | | | | 50% |
| | | | | | | 60% |
| | | | | | | 70% |
| | | | | | | 80% |
| | | | | | | 90% |
| | | | | | | LOCK |

**DCCD Interface board external connections, behind view**

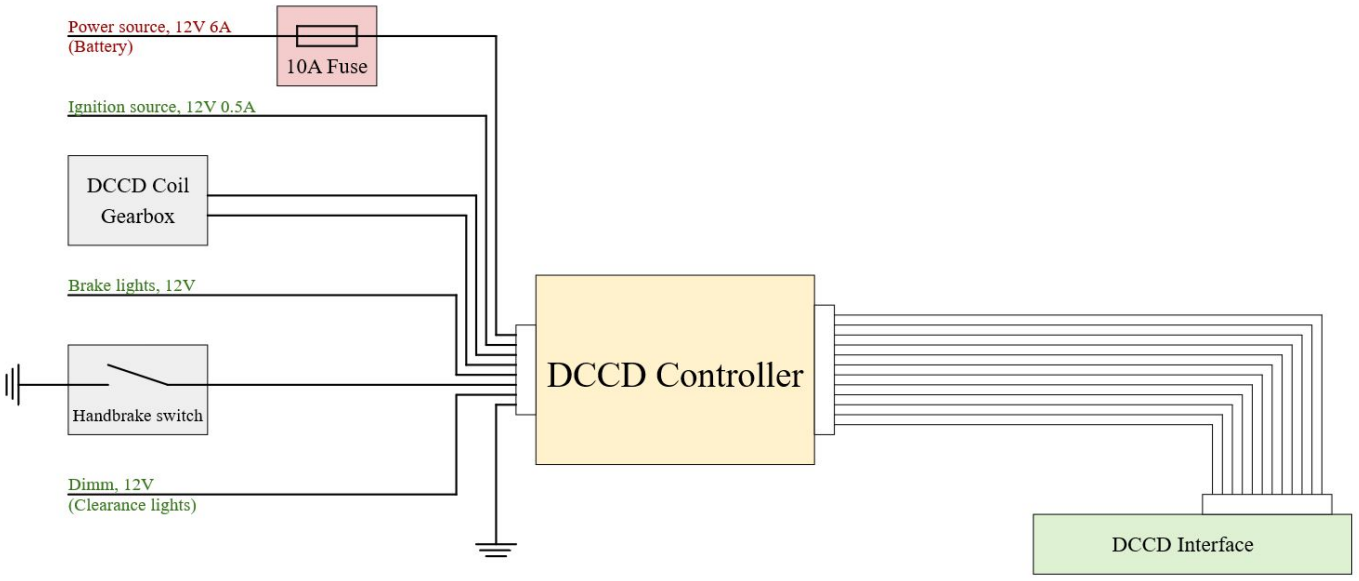



**DCCD Interface board panel cutout dimensions**

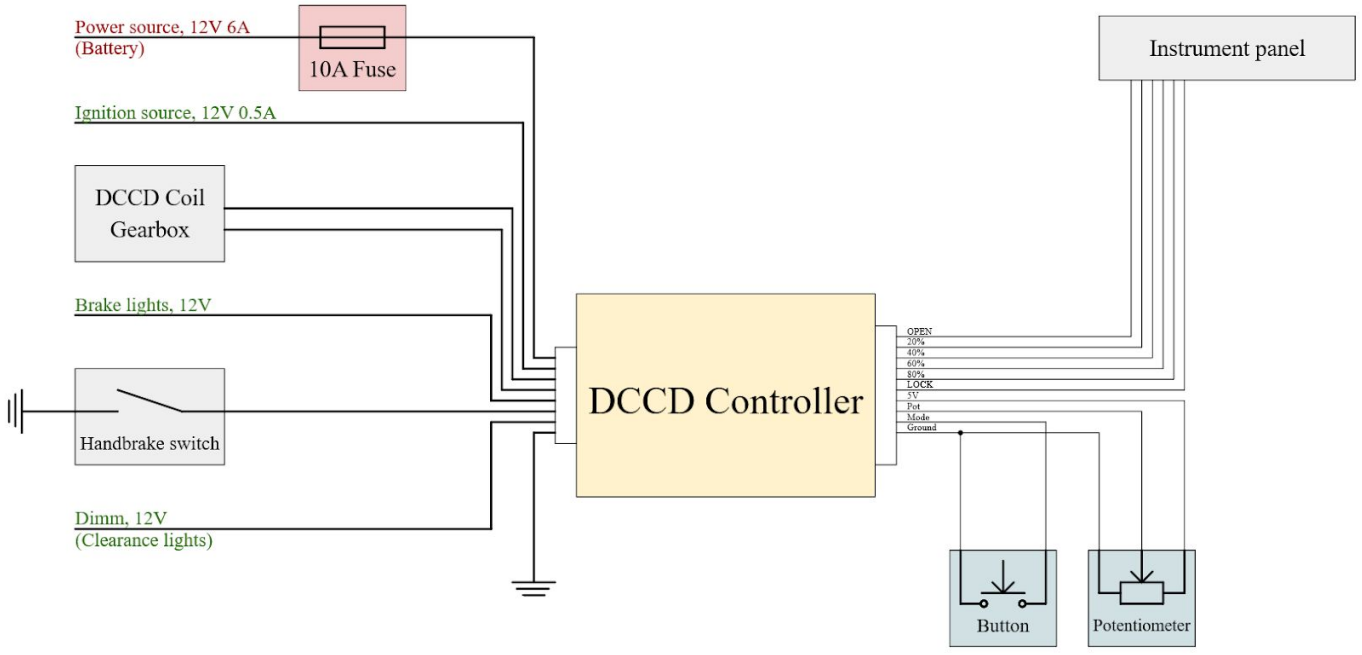



LEDs need at least 5mm drill, buttons at least 3.5mm and mounting holes use short M3 bolts.
See attached PDF for printable cutout.

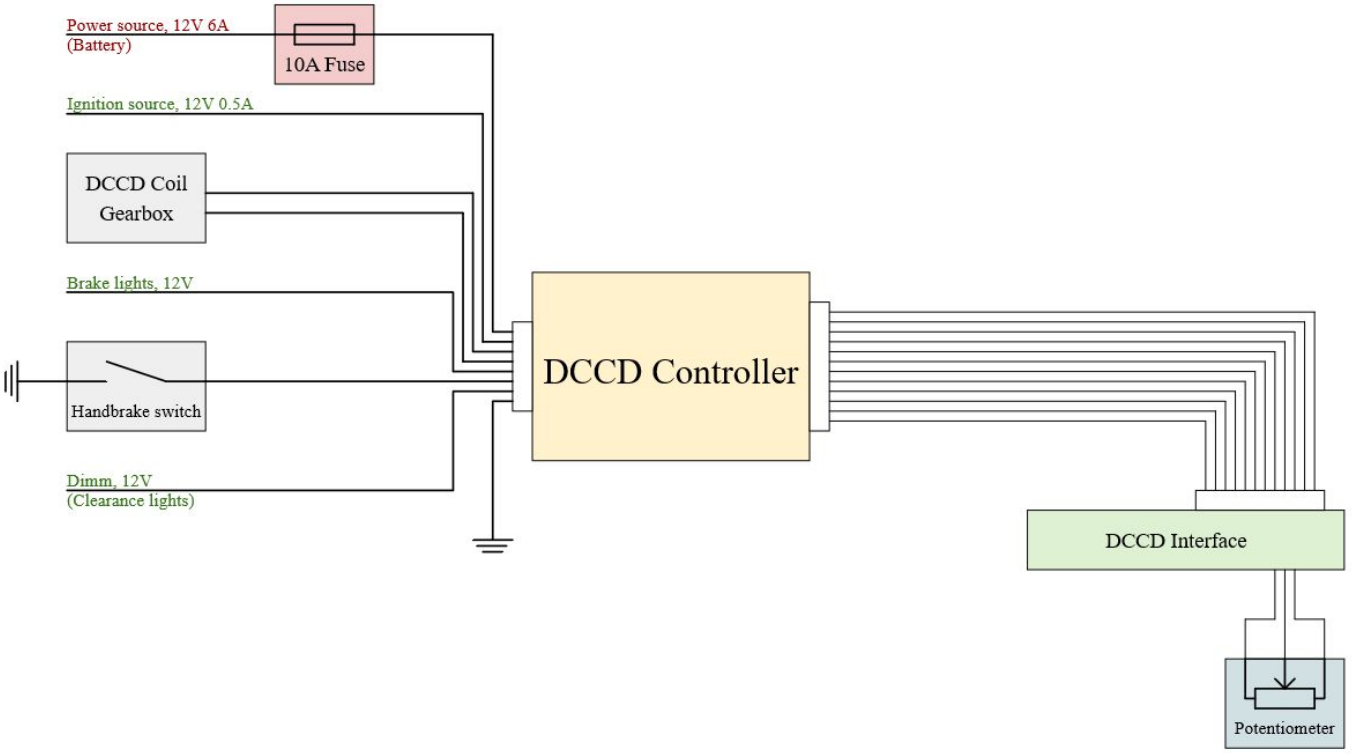
## Typical application, using only DCCD Interface board




## Connections using OEM control and indicators



## Connections using DCCD Interface board, but with potentiometer control




## Connections using DCCD Interface board, but with external buttons