



CLUTCH CONTROL UNIT

The CCU was introduced for the successful Formula 2 race series in 2009 to allow the use of a two pedal race car where clutch is controlled by a paddle on the steering wheel.

Since then it's been used in many top flight single seater race series including IRL, World Series by Renault and Super Formula Japan. The CCU is also popular in rallycross, GT3 and amongst drivers with disabilities.

ROAD RACE



KEY POINTS

- Enables Conversion To 2 Pedal Car Set Up
- Low Current Consumption
- High Accuracy of Control
- Full Clutch Control From Steering Wheel Paddles
- Emergency Neutral Facility
- Anti-Stall Strategy Options

PRODUCT ORDERING INFORMATION

DESCRIPTION	PART NO
Clutch Control Unit	ZM022-1
Position Sensor Connector	
DTM04-6P	ZM023-1
ASI07-35PN	ZM027-1
ASI08-35PN	ZM028-1

The CCU enables full closed loop FBW clutch follow control from our clutch paddle, it's compatible with standard master and slave cylinder installations.

A full user defined CAN interface and sophisticated failure detection and system diagnostics aid ease of use. Anti-stall options are possible when paired with suitable engine controls.

CONNECTOR PIN OUT

PIN	Function	Destination	
1	Emergency Neutral +	NC	
2	Emergency Neutral -	NC	
3	A4	Clutch Paddle 1	
4	A3	Clutch Paddle 2	
5	A6	NC	
6		NC	
7		NC	
8	CAN Lo	Can Bus Lo	
9	CAN Hi	Can Bus Hi	
10	A2	CCU Ex Sensor 2	External Pin 5
11	A1	CCU Ex Sensor 1	External Pin 2
12	Relay	NC	Compressor
13		NC	
14	Serial Rx	CCU Comms Plug Rx	
15	Serial Tx	CCU Comms Plug Tx	
16	A5 -ve	NC	
17	A6 -ve	NC	
18	GND	CCU Coms Plug 0V	
19	AN +5V	CCU Ex Sensor 1 & 2	External Pins 3&6
20	AN GND Ref	CCU Ex Sensor 1 & 2	External Pins 1&4
21	GP Out	NC	
22	A5	NC	
23	Speed 2	NC	
24	Speed 1	NC	
25	Power GND	Main Power Battery -ve	
26	Power 12V	Main Power Switched Battery +ve	

TECHNICAL DATA

Maximum Operating Pressure	10 Bar
Minimum Operating Pressure	7.5 Bar
Air Inlet Fitting	Dash 4 JIC Male
AV Mounting Holes	3x M6
Wiring Connector Fitted	TE: 6437288-6
Required Mating Connector	TE: 3-1437290-7

SYSTEM REQUIREMENTS

Air Supply	8 - 9.5 Bar
Ambient Working Temperature	-10C to 70C
Voltage Range	10V - 16V

DIMENSIONS (EXCLUDING MASTER CYLINDER)

Weight	1120g
Width	61mm
Height	99mm
Length	141mm

REQUIRED MATING CONNECTOR

ZM023-1	DTM06-6S
ZM027-1	AS607-35SN
ZM028-1	AS608-35SN

INSTALLATION NOTES

- Requires clean, filtered (40micron) dry air supply
- Install away from direct heat sources
- Use copperslip when attaching hose fittings – not Loctite or PTFE tape
- Use only aluminium or stainless steel hose fittings
- Keep vent hole clean of dirt and debris
- Mount with AV isolation mounts
- Service interval of 30hrs or 6000km

INITIAL SET UP

- Initial set up at Shiftec with the customers clutch assembly allows for perfect matching of master cylinder to provide the correct force and travel from the CCU.
- Bite point can be optimised with a clutch position to paddle demand calibration table allowing full control over the paddle map.