

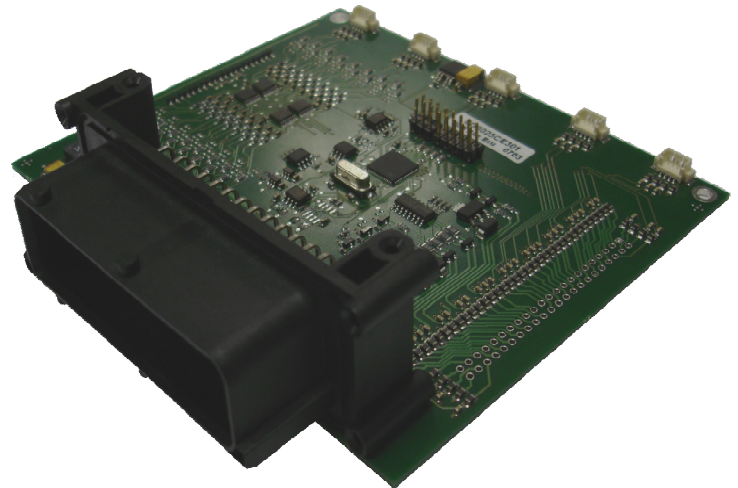
UCU - Universal CAN-I/O Unit



DTC's Universal CAN-I/O Unit (UCU) has been developed to provide the reliability required in demanding environmental conditions for heavy duty industrial applications and in off-road equipment.

The UCU has been conceived as a building block element and is able to connect a variety of different digital and analogue man machine interface (MMI) devices such as analogue joysticks, analogue or digital rockers, switches and LEDs to a CAN-Bus. The UCU therefore is an ideal solution for MMI controller communications within the cabin environment of a typical off-road vehicle.

Combined with standard MMI devices from DTC, the UCU offers a complete CAN-Bus solution for all your off-road vehicle controller needs.



Mechanical features

- Standard housing: ruggedised for off road and automotive environments

Electrical features

- All inputs for standard analogue 0.5-4.5V range
- Interface channels can supply the connected MMI devices either with
 - Ubat or 5V
- Switches can be multiplexed to one analogue input - maximum 3 switches per input
- Inputs automatically detect open circuit and shorts to +/-
- All pins protected against short circuits to Vbat and Ground
- All connections designed for off-road specific EMC requirements
- Open inputs do not affect the working of the UCU (EMC protected)
- An additional LIN interface allows further flexibility for the easy addition of switch modules and/or indicator modules

Additional Service Tool* features

- Easy configuration of MMI input device types
- Easy calibration of MMI input device signals
- Easy configuration of UCU topology (e.g. used inputs/ outputs)
- Displays diagnostic status of UCU.

UCU MMI (Man Machine Interface)

- Max. 10 universal input channels (each consisting of 2 analogue and 1 digital input)
- Max. 12 function LED channels (based on a 4x3 Matrix – individually addressable)
- 1 Background LED channel (simplifies night design)
- 5V and/or Ubat outputs at analog interface
- Modular Connector

UCU CAN / Power Supply Interface

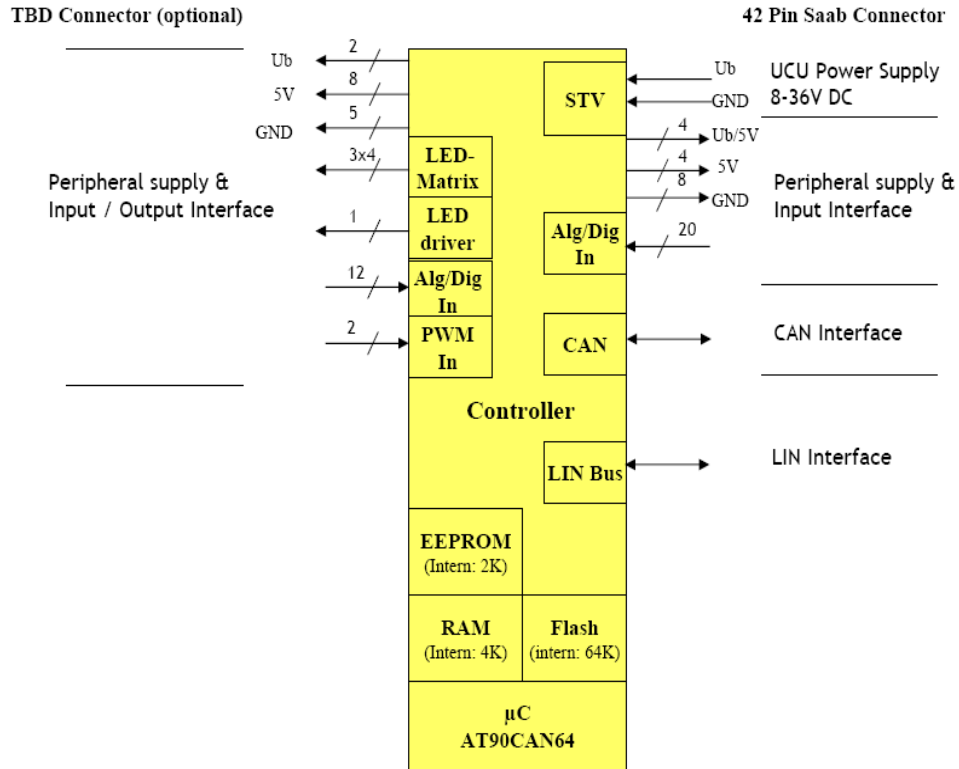
- High Speed CAN (ISO11898)
- Power Supply from Battery 12V / 24V nominal (Range: 8-36V)
- J1939 Protocol Providing
 - Basic Joystick Message #1+ #2
 - Extended Joystick Message #1 + #2
 - Basic Joystick Message Response #1
- LIN 1.3 / 2.0
- Downloadable firmware via CAN-BUS (upgradable)

* Service Tool available separately

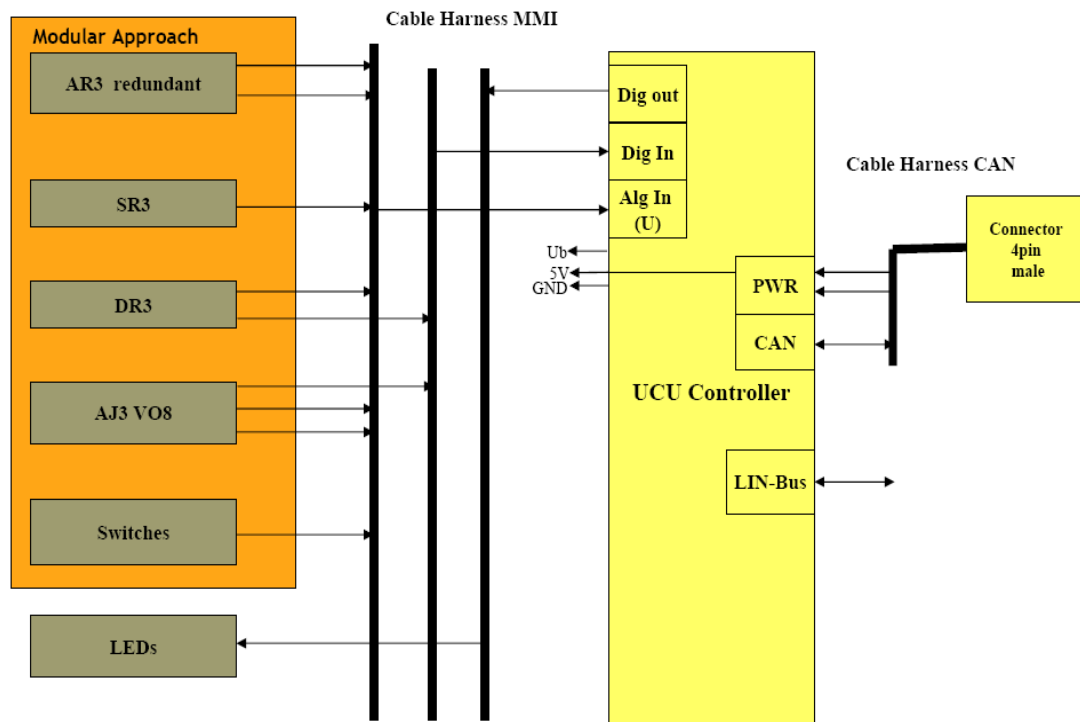
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UCU block schematic



System block schematic (example)

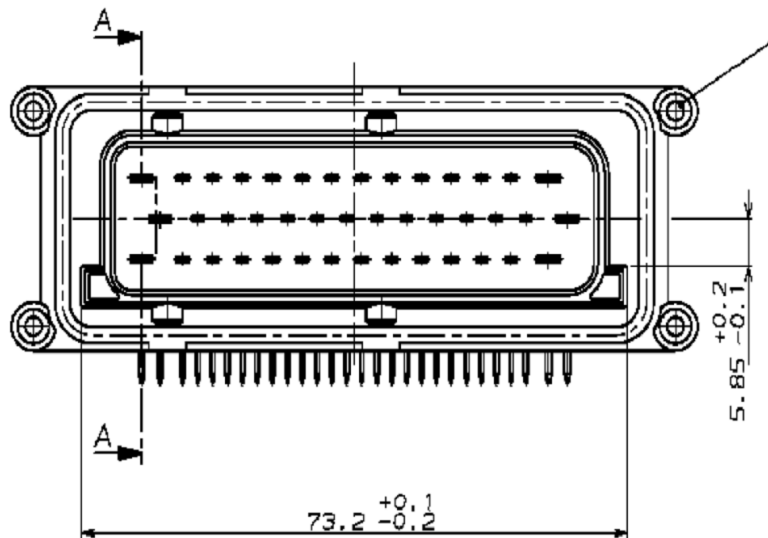


UCU - Universal CAN-I/O Unit

Connector AMP tyco 1-963224-1



Kodierung A1



42 pin Saab Connector Pinout

Pin	Signal	Pin	Signal	Pin	Signal
1	GND_IN (GND)	15	LIN	29	GND
2	V_IN (Ubat)	16	CAN_L	30	CAN_H
3	AGND	17	Ch1_AGND	31	CH4_AGND
4	Ch1_Vcc_Out	18	Ch1_Ain1	32	Ch4_Ain1
5	Ch4_Vcc_Out	19	CH1_Din	33	CH4_Din
6	Vcc_Out	20	CH1_Ain2	34	CH4_Ain2
7	Ch5_Vcc_Out	21	Opt	35	Opt
8	Ch5_AGND	22	Ch2_Ain1	36	Ch5_Ain1
9	Vcc_Out	23	CH2_Din	37	Ch5_Din
10	Ch2_Vcc_Out	24	CH2_Ain2	38	Ch5_Ain2
11	CH2_AGND	25	Ch3_Ain1	39	Ch6_Ain1
12	Ch3_Vcc_Out	26	CH3_Din	40	Ch6_Din
13	Ch6_Vcc_Out	27	CH3_Ain2	41	Ch6_Ain2
14	AGND	28	Ch3_AGND	42	Ch6_AGND

Standard pin-out with 6 universal channels

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