



OVERVIEW

The DCU-W unit can be used as CAB-bus radio bridge for industrial vehicles using the standard IEEE802.15.4 radio communication protocol at 2.4GHz (frequency usable all over the world).

The main characteristics are:

- Point to Point or Mesh Radio communication
- Signal range up to 100 meters
- Fully configurable via CANOpen protocol
- Full H-bridges for 5 DC-Motors (1x 10A, 4x 2.5A)
- 16 digital inputs and 6 analog inputs
- Double CPU (security level: PLC)
- The 2nd CPU can switch-off all the outputs
- Low standby current (600uA typical)

The DCU-W control unit has been developed in order to manage the radio communication between a vehicle and a fixed station.

A typical application is the communication between a waste collecting vehicle and an "intelligent" waste container. In this case, the 5 full H-bridge outputs can be used for the direct driving of the actuators used to move the waste container in position for the collecting vehicle, and the analog and digital inputs can be used for the requested sensors.

Another application is the extension of a CAN-bus over the radio channel when the wired connection to some parts of a vehicle is not possible.

SPECIFICATIONS

- Main CPU: Microchip dsPIC33EP128MC506
Memory: 128 kByte Flash, 16kByte RAM
- Supervisor CPU: Microchip PIC24H08KL301
Memory: 8 kByte Flash, 1 kByte RAM
- IEEE802.15.4 Radio Module with external 2.4GHz antenna

OUTPUTS

- 1 x 10A (40A max.) H-Bridge output for a DC-Motor driving
- 4 x 2.5A (5A max.) H-Bridge outputs for DC-Motors driving
- 5Vdc (100mA max.) regulated power supply output for sensors

INPUTS

- 6 programmable analog inputs (0..5V, 0..25mA)
- 16 digital ON/OFF inputs configurable via software for high or low-side operation, 2 of them are usable as RPM/frequency inputs

CONNECTIVITY

- IEEE 802.15.4 Radio Module with external antenna, 2.4 GHz
- 1 CAN-bus full 2.0B, programmable baud-rate from 125Kbit/s to 1Mbit/s, CANOpen protocol
- 1 RS485 half-duplex serial interface

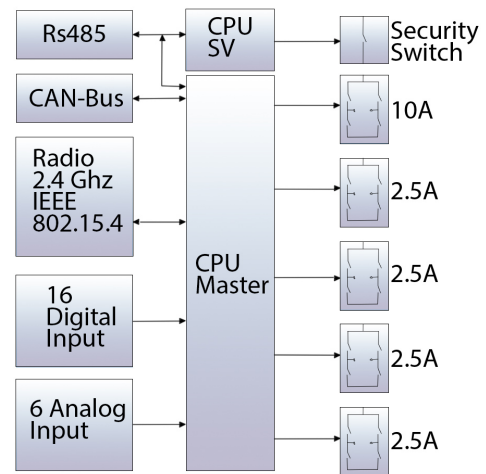
OPERATING CONDITIONS

- Supply voltage: 9 .. 32Vdc
- Operating temperature range: -40 .. +75 °C
- Storage temperature range : -40 .. +85 °C
- Max. humidity level: 95% (without condensation)
- Protection grade: IP68 (with connector plugged)
- Weight: 720 g

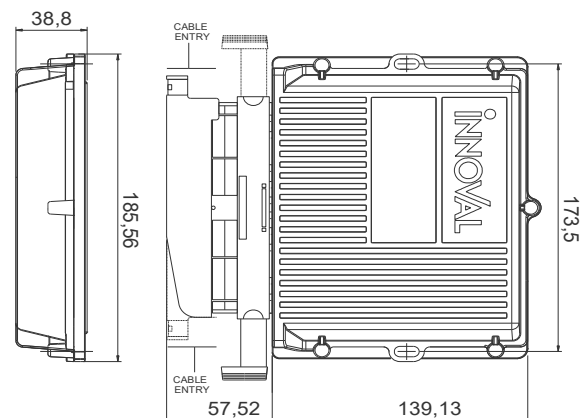
CERTIFICATIONS

- ECE/ONU n° 10/05
- IP6K8 according to ISO26653:2013

BLOCK DIAGRAM



MECHANICAL DRAWING



Remark: cable exit is possible on both sides.