Ecumaster Gear Display

Manual

Revision 0.2

(Preliminary version)

1 Device description

Device is used to display gear information and shift light to driver. Gear, RPM, Brightness and Shift light can be read from CAN bus or from built in analog and digital inputs. Device sends gear and RPM information through CAN-bus using Export ID.

- Voltage range: 6V - 28V (12V and 24V automotive installations)
- Analog input: 0-5V
- Digital input: TTL 0-5V (VR sensor tolerant up to 100V), 0.1Hz-50kHz, rising or falling edge

2 Configuration

2.1 Data sources:

Gear

- CAN - CAN-bus frame defined via ID, Gear data byte position and data offset
- AIN - analog input – gear sensor calibration with 9 position Voltage table. Current voltage is visable in Channels log

Shift Light

- RPM - LEDs are lit based on RPM thresholds

RPM settings

- CAN - CAN-bus frame defined by ID, Byte position, Number of bytes (1 or 2), Endian setting, divider and multiplier
- CAN-OBD - OBD requests
- FREQ - RPM is read from digital frequency input

BRIGHTNESS settings

- Manual – using LED and Gear 0-100% values from settings

2.2 Gear voltages

This section contains voltage values for gear reading from analog input. Gear with voltage closest to analog input voltage is set.

2.3 RPM settings (only when RPM source is FREQ)

Tooths per 720° (one full engine cycle – 2 revolutions)

Enter here number of digital signals per engine cycle. If you have trigger wheel with missing teeth, enter number EXCLUDING missing teeth. For example for 60 - 2 wheel enter "2*(60-2) = 116".

Signal edge

Choose signal edge that has faster passing through 2.5V threshold.

2.4 Shift Light (only when Shift Light source is RPM)

LED n color - color on n shift light led

LED n RPM - threshold for turning on LED

ALL RED RPM - threshold for overriding all LEDs to red color

BLINK RPM - threshold for all LED blinking

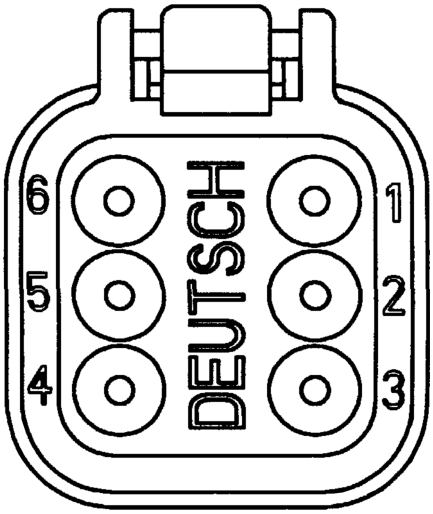
2.5 Brightness

Brightness settings for Shift Light LEDs and Segment display. Values from 0 - 100.

Device has brightness limit in case of overheating. Brightness is limited linearly from 100@40°C to 0@80°C.

Temperature reading is only for overheat protection. Precision is +- 10°C

3 Pinout



1 - V+ (6V - 28V)

2 - GND

3 – AIN Analog input

4 – FREQ Frequency input

5 - CAN low

6 - CAN high

4 Revision history

Revision	Date	Changes
0.2	14.06.2019	Initial revision

5 Dimensions