

# KMS

## KMS CAN display

Part nr: 01-01-01-0009



**Kronenburg Management Systems**

This document contains detailed information about the KMS CAN display. Additional information, user manuals, wiring examples and software can be found on our website: <http://kms.vankronenburg.nl> or on the software CD included with the ECU.

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## 2. Contents of the package

- 1 CAN display
- 1 CAN extension hub 2m



- 1 CAN extension cable male-female 0,4m



- 2 Mounting screws M3
- 1 Instruction Manual

## 3. Installation of the CAN display

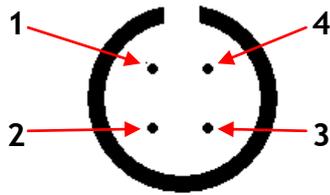
The KMS CAN display is splash waterproof. However it's best to place your KMS CAN display in a dry place where temperatures don't exceed 65°C.

**Warning:** don't place the CAN display and wires near any 'high powered' cables (sparkplug leads, etc), because of electrical interference.

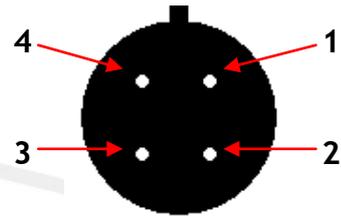
The KMS CAN display is supplied with a connector on the display and two connection cables. The function and connection of the wires in the connection cables is as follows:

Pin nr	Colour	Function
1	Red	12V supply
2	Black	Ground
3	White	Can High (+)
4	Green	Can Low (-)

Front of the male connector on display:



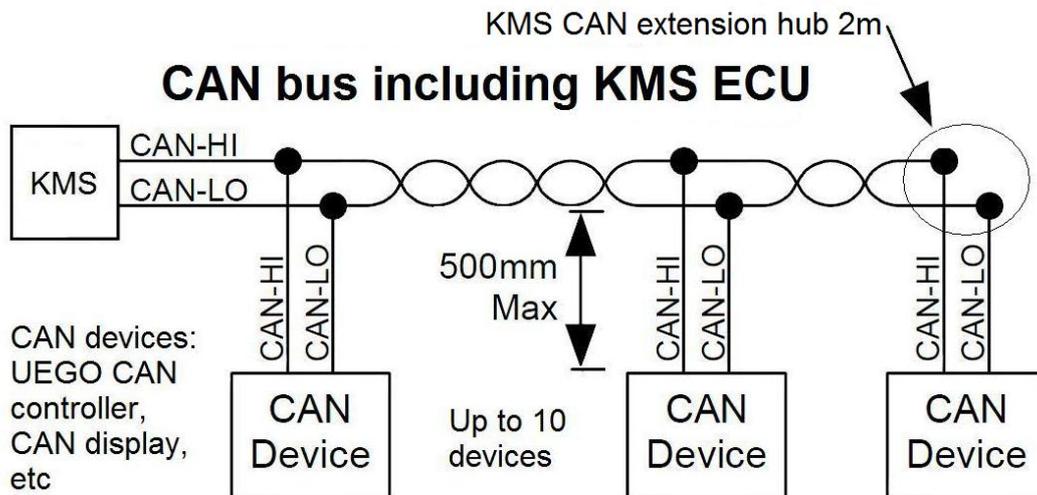
Front of the female connector:



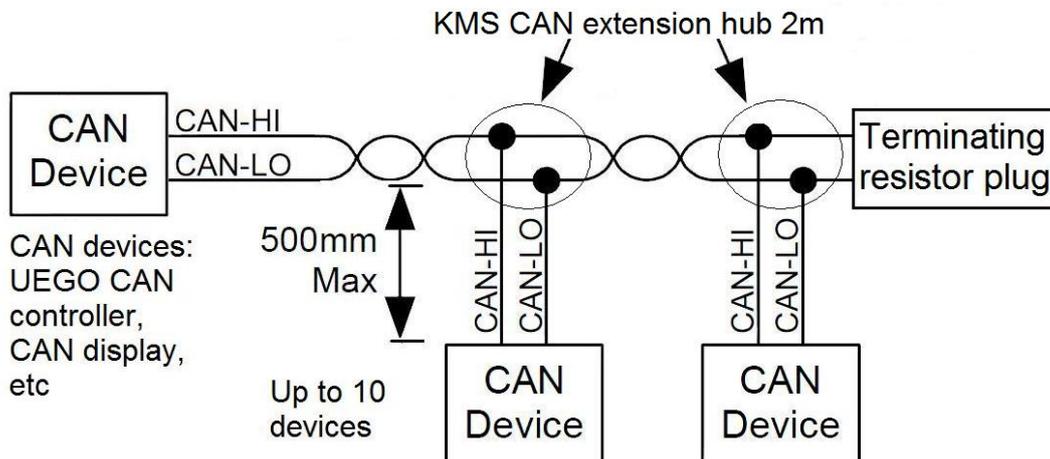
#### 4. Wiring of the CAN bus

The KMS CAN display can communicate via CAN communication through the CAN bus (grey wire) which consists of two pair of twisted wires (green and white, red and black). Up to 10 CAN devices may be connected to the CAN bus. These devices must be placed within 0,5m of the CAN bus.

If the CAN Bus is connected to the KMS MP25(M), MA25(M), IA23 or FA23 ECU (using the RS232 to CAN converter) or the KMS MD35 ECU, it is not necessary to use a CAN terminating resistor plug. The KMS MD35 ECU and serial to CAN converter already have a terminating resistor. When using the CAN display separately on a standalone CAN bus (for example in combination with a KMS UEGO CAN controller), it is necessary to use a CAN terminating resistor plug on one end of the CAN bus. The drawings below show the correct wiring of the CAN bus.



### Standalone CAN bus excluding KMS ECU



## 5. Controlling the display

There are two buttons on the right side of the CAN display. With these two buttons you can control all the options on the display.

The top/upper button is the 'enter' button. With this button you can confirm the option that is selected (the illuminating beam) in the display. Pressing the 'enter button' once while you're in the main screen of the display, opens the main menu of the display. Holding the 'enter button' for a longer period of time will cause the brightness of the screen to fade for driving at night. The brightness can be adjusted in the main menu for both daylight and night driving.

The lowest button of the two is the scrolling button. You can scroll down the menu with this button to select other options.

By touching the 'scrolling down button' when you are in the main screen of the display, you can change the layout of the display into 5 different preset layouts. In the menu of the CAN display you can configure these layouts to your own requirements and save them. See chapter 6 for more information.

## 6. The menu

### 6.1 Main screen

After connecting the display in the right way, the start-up screen will appear. This screen will disappear within 5 to 10 sec.

The following screen on the display is the main screen. Using the 'scrolling down button' you can choose between 5 layouts. These 5 screens can be configured to suit your own requirements, as will be described later.

Pressing the 'enter button' when you are in the main screen, will open the menu of the display.

Above the screen are 7 LED lights which all have two functions. Each LED can be configured as a warning or indication light for different variables such as oil pressure, water temperature, A.L.S., etc. When a warning light goes on, the exceeded limit will be flashing in the display.

The second function is to act as a shiftlight. This can also be completely adjusted to suit your own requirements.

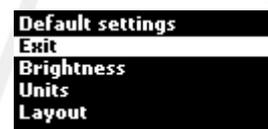
### 6.2 Main menu

The main menu contains different options for controlling the entire display. Using the operating buttons you can scroll down the menu and select different options.

The following options can be selected in the main menu:

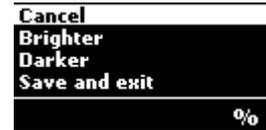
- Exit: Back to the main screen
- Brightness: Change brightness of the display
- Units: Set the units to suit your own requirements
- Layout: Set the screen layout to suit your own requirements
- LED setup: Configure the LED lights for your needs
- CAN communication: Change the CAN communication speed
- Default settings: Change all settings back to default

These options will be explained on the following pages.



### 6.3 Brightness

- Cancel: Back to the main menu
- Brighter: Increase the screen brightness
- Darker: Decrease the screen brightness
- Save and exit: Save new settings and go back to the main menu



The current brightness of the screen can be seen in the bottom part of the screen.

### 6.4 Units

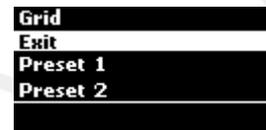
- Exit: Back to the main menu
- Pressure: Set pressure units to bar, kPa or PSI
- Temperature: Set temperature units to °C or °F
- Lambda: Set lambda units to A/F ratio or  $\lambda$  value
- TPS: Set throttle position to engine load or percentage %



The current units of the different variables are displayed in the bottom part of the screen when selected.

### 6.5 Layout

- Exit: Back to the main menu
- Preset 1: Configure layout 1
- ...
- Preset 5: Configure layout 5
- Grid: Switch grid (lines) between displayed values on or off



#### 6.5.1 Preset 1 to 5

- Exit: Back to the layout menu
- Single screen: One value displayed on the complete screen
- 2 columns: Two values displayed next to each other
- 1 row, 2 columns: One row with tachometer and two values below displayed next to each other.
- 3 rows: One row with tachometer and two values below displayed under each other.
- 1 row, 2 bargraphs: One row with tachometer and two bargraphs below displayed under each other.
- 2 rows, 2 columns: Four values displayed in a square
- 4 rows: Four values displayed under each other
- 4 bargraphs: Four bargraphs displayed under each other



##### 6.5.1.1 Single screen

- Exit: Back to the preset menu
- Column 1: Select the value to be displayed in column 1 of the single screen



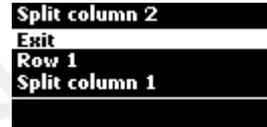
### 6.5.1.2 2 columns

- Exit: Back to the preset menu
- Column 1: Select the value to be displayed in column 1 of the two columns
- Column 2: Select the value to be displayed in column 2 of the two columns



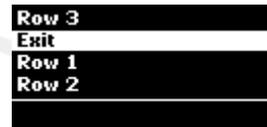
### 6.5.1.3 1 row, 2 Columns

- Exit: Back to the preset menu
- Row 1: Tacho bar which can be set to a maximum of 6000, 8000, 10000, 13000, 15000 or 20000 RPM.
- Split column 1: Select the value to be displayed in bottom column 1.
- Split column 2: Select the value to be displayed in bottom column 2.



### 6.5.1.4 3 rows

- Exit: Back to the preset menu
- Row 1: Tacho bar which can be set to a maximum of 6000, 8000, 10000, 13000, 15000 or 20000 RPM.
- Row 2: Select the value to be displayed in the second row
- Row 3: Select the value to be displayed in the third row

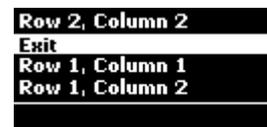


### 6.5.1.5 1 row, 2 bargraphs

- Exit: Back to the preset menu
- Row 1: Tacho bar which can be set to a maximum of 6000, 8000, 10000, 13000, 15000 or 20000 RPM.
- Row 2: Select the EGT or lambda sensor to be displayed in bargraph 1
- Row 3: Select the EGT or lambda sensor to be displayed in bargraph 2

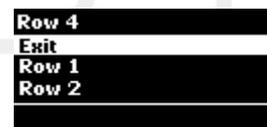
### 6.5.1.6 2 rows, 2 columns

- Exit: Back to the preset menu
- Row 1, column 1: Select the value to be displayed in the top left corner of the display
- Row 1, column 2: Select the value to be displayed in the top right corner of the display
- Row 2, column 1: Select the value to be displayed in the bottom left corner of the display
- Row 2, column 2: Select the value to be displayed in the bottom right corner of the display



### 6.5.1.7 4 rows

- Exit: Back to the preset menu
- Row 1: Select the value to be displayed in the first row



- Row 2: Select the value to be displayed in the second row
- Row 3: Select the value to be displayed in the third row
- Row 4: Select the value to be displayed in the fourth row

#### 6.5.1.8 4 bargraphs

- Exit: Back to the preset menu
- Row 1: Select the EGT or lambda sensor to be displayed in bargraph 1
- Row 2: Select the EGT or lambda sensor to be displayed in bargraph 2
- Row 3: Select the EGT or lambda sensor to be displayed in bargraph 3
- Row 4: Select the EGT or lambda sensor to be displayed in bargraph 4

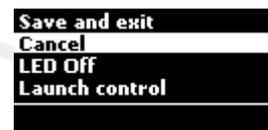
#### 6.6 LED setup

- Exit: Back to the main menu
- LED 1: Select function LED 1
- ...
- LED 7: Select function LED 7
- Shiftlight: Configure shiftlight



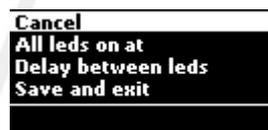
#### 6.6.1 LED 1 to 7

- Cancel: Back to LED setup menu
- LED off: LED light has no function
- Launch control: LED on when launch control is active
- Lambda control: LED on when lambda control is active
- Diagnostic: LED on when diagnostic error occurs
- Powershift: LED on when powershift is active
- Aux 1: LED on when aux 1 is active
- Aux 2: LED on when aux 2 is active
- Aux 3: LED on when aux 3 is active
- Oil pressure: LED on when oil pressure drops below limit. The limit can be configured to suit your own requirements.
- Fuel pressure: LED on when fuel pressure drops below limit. The limit can be configured to suit your own requirements.
- Water temperature: LED on when water temperature is above limit. The limit can be configured to suit your own requirements.
- EGT: LED on when exhaust gas temperature is above limit. The limit can be configured to suit your own requirements.
- Save and exit: Save new settings and return to LED setup menu



#### 6.6.2 Shiftlight

- Cancel: Back to LED setup menu
- All leds on at: Configure maximum RPM at which all LED lights must be active
- Delay between leds: RPM delay between the seven LED lights (*for example*: All leds on at: 8000 rpm, delay between leds: 100 rpm. First LED light active at:  $8000 - (6 * 100) = 7400$  rpm)
- Save and exit: Save new settings and return to LED setup menu



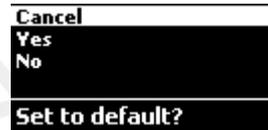
### 6.7 CAN communication

- Cancel: Back to the main menu
- 125 kHz: Set CAN communication speed to 125 kHz
- ...
- 1 MHz: Set CAN communication speed to 1 MHz
- Autodetect: Automatically search for the right CAN communication speed
- Save and exit: Save new settings and return to main menu



### 6.8 Default settings

- Cancel: Back to main menu
- Yes: Set to default settings
- No: Don't set back to default settings



## Appendix A: Display Dimensions

