KONGSBERG
AUTOMOTIVE

GEM APPLICATION USER'S GUIDE

KAntrak™ 1700

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Gem Application User's Guide

Thank you for choosing the KAntrak™ 1700 display.

These pages provide a brief introduction to the KAntrak™ *1700 Generic Engine Monitoring (GEM)*.

For more information please see the web site:

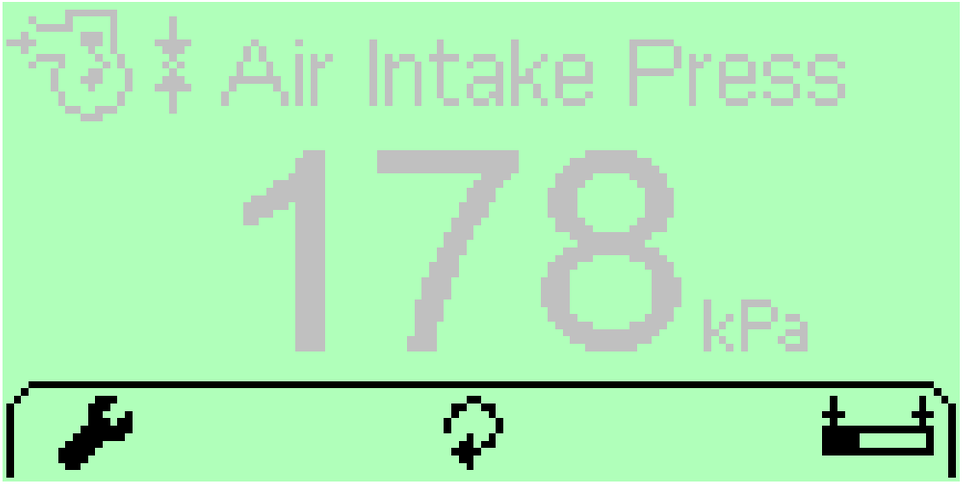
http://www.kongsbergautomotive.com/

Section/Contents **Page**

1. Menu Browsing

The KAntrak™ 1700 unit has only three(3) buttons for different features selection. For that reason a dynamic style menu system has been implemented.

During normal operation, the buttons have no specific functions. When pressing any button once, a dynamic pop-up menu appears. The menu contains some functions icons aligned above the associated button. The user selects the required function from the displayed menu. After a few seconds, the menu will be hidden.



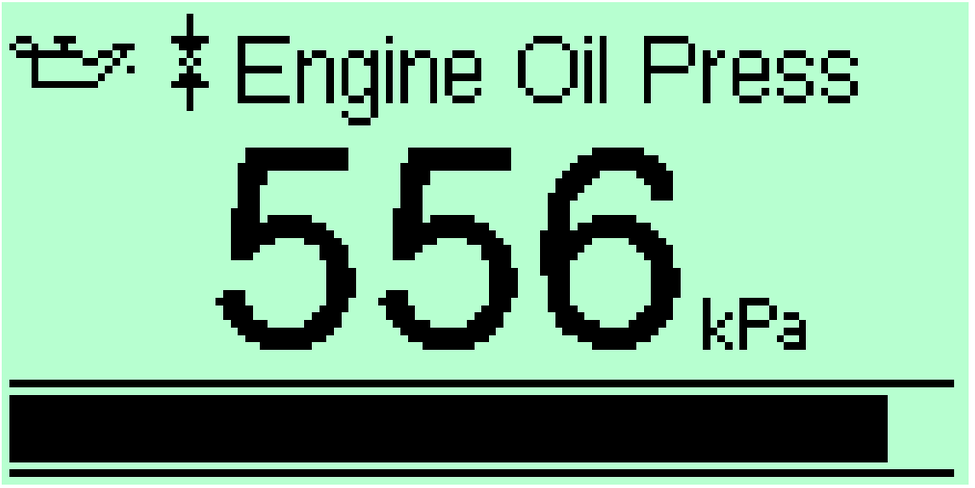
2. Display Modes

The GEM application is used to display live parameters and diagnostic trouble codes available on the J1939 bus. By pressing the  button the user can scroll through the available parameters on the vehicle's network. A complete list of supported parameters are listed into the *Supported Parameters* section.

At any time in any display mode, the user can select the  tool to access the setting menu and change the current display mode. See *Settings Menu* section.

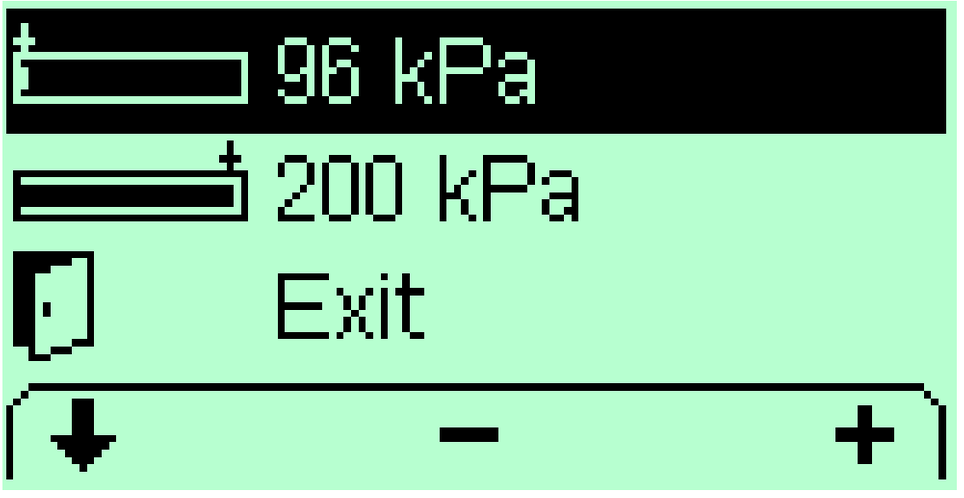
2.1 Single Screen

This mode is used to monitor one parameter at a time. The screen also displays the associated parameter icon, the description, the units and a bar graph.



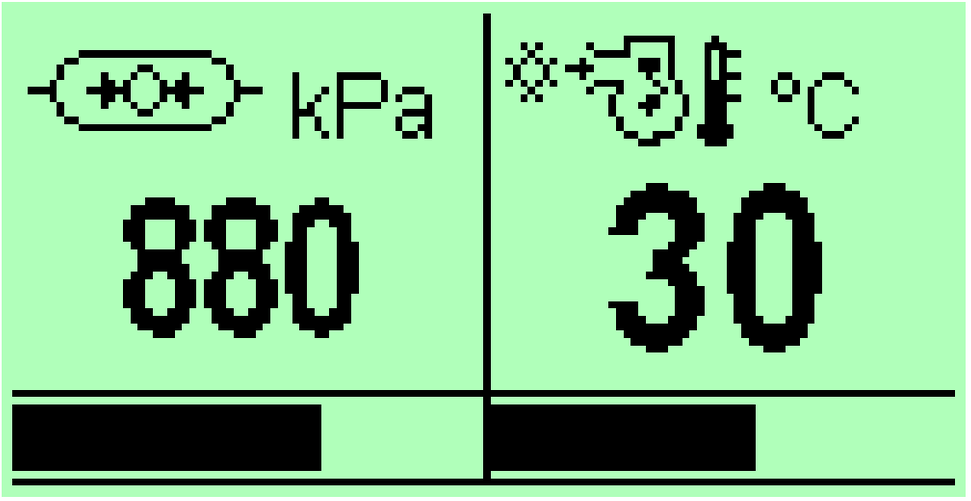
2.1.1. Bar graph Limits adjust

The *Single Screen* mode has a special function for bar graph limits minimum and maximum adjustment. This can be done by selecting the related parameter and then pressing the button. The unit should now display the bar graph limits adjust mode. Use +/- for adjustment and select *Exit* when finished.



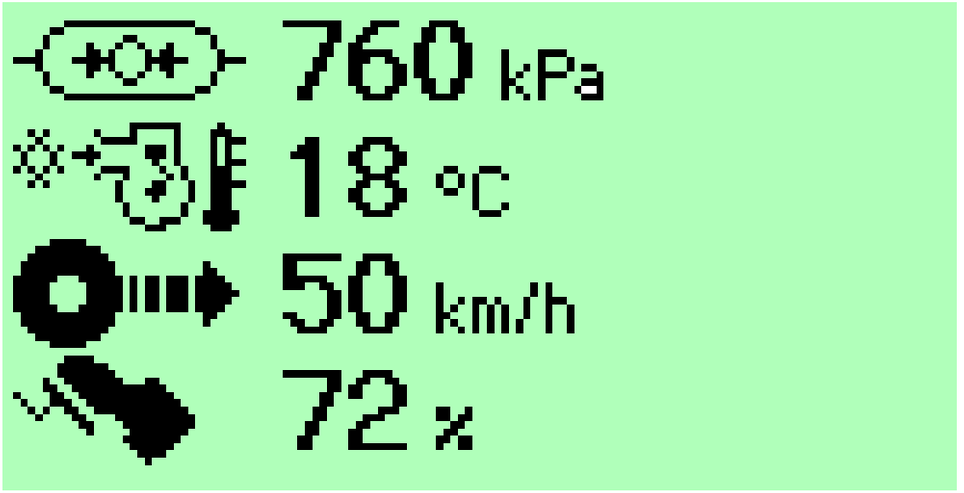
2.2 Dual Screen

The *Dual Screen* mode is used to monitor two parameters at a time. The screen also displays the associated parameter icon and units.



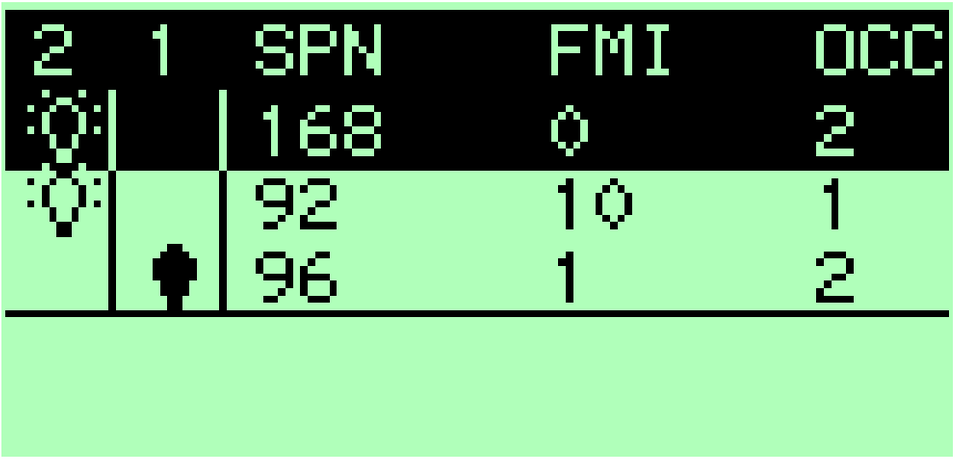
2.3 Multi Screen

The *Multi Screen* mode is used to monitor a list of four(4) parameters selected by the user. Every item is listed with its associated icon and units.



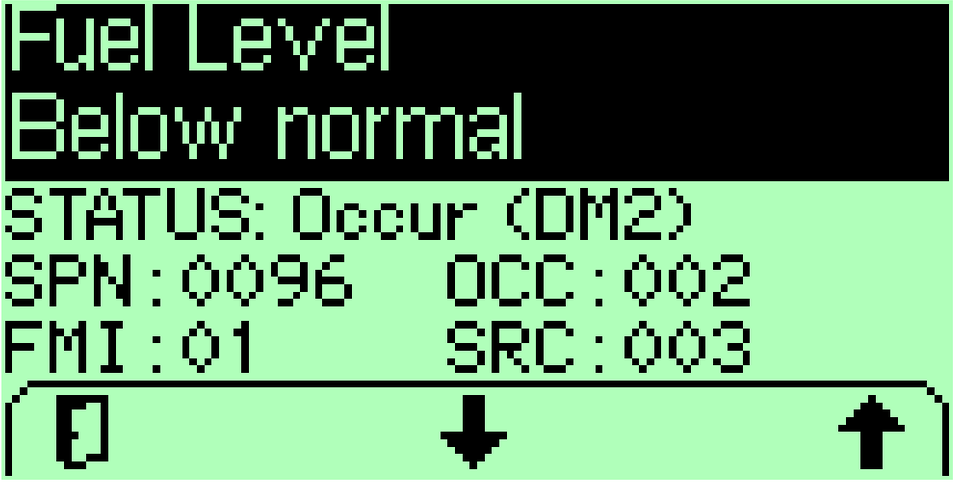
2.4 DTC Screen

The *DTC Screen* mode is used to display *Data Trouble Codes* according to *SAE J1939-73*. The main screen displays all vehicle active faults (DM1) and occurs faults (DM2). A bright bulb means that the current fault is active while a dark bulb means that the current fault has occured. The header contains the total active/inactive faults, the associated SPN and FMI and the numbers of occurances as well.

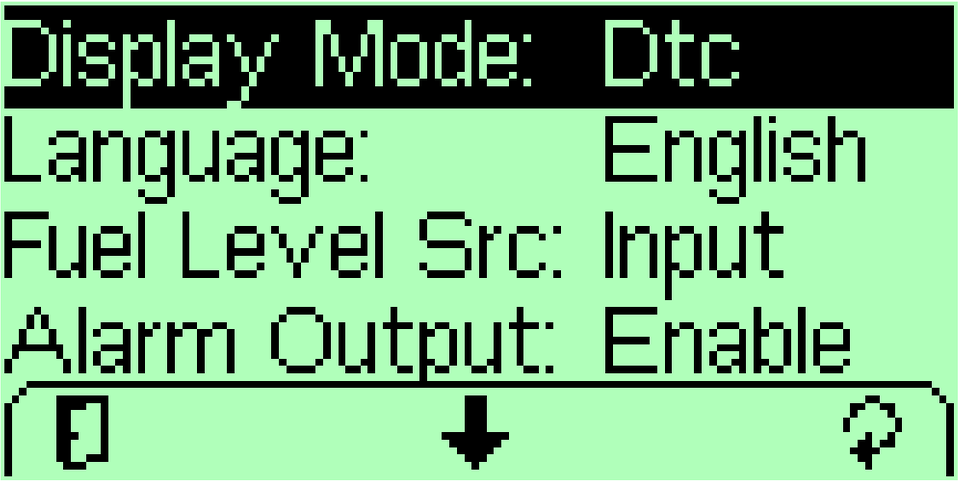


2.4.1. DTC Detailed info

For a given DTC, the user may select the **?** function from the menu. A detailed screen of the selected DTC including the SPN description (*Header*), the FMI Description (*Header*), the fault status (*Status*), the SPN Number (*SPN*), the FMI Number (*FMI*), the total number of occurrences (*OCC*) and the related node source address (*SRC*) will then appear.



3. Settings Menu



3.1 Display Mode

This setting is used to select the current display mode: *Single, Dual, Multi or Dtc*. Display modes are explained into the *section 2*.

3.2 Language

The user can select various supported languages for interface display.

3.3 Fuel Level Source

With *Input* mode selected, the device reads the fuel level signal from the discrete sensor input. In this mode, the local information is also broadcasted on the J1939 network to other nodes.

In *Network* mode, the device reads the fuel signal from the associated PGN on the J1939 network.

3.4 Alarm Output

When enabled the external alarm device is turned on when a new active fault (DM1) occurs. The alarm is turned off when all new active faults have been acknowledged. In *Disable* mode, the external device is never activated.

3.5 Demo Mode

By enabling this option, the users can test the unit even though is not connected to the vehicle network. The network feed is replaced by a simulation lead that allows the user to display every supported SPNs. Moreover some Data Trouble Codes (DTC) are also generated. This is disabled by default at power on.

3.6 Tier4 Popout Mode

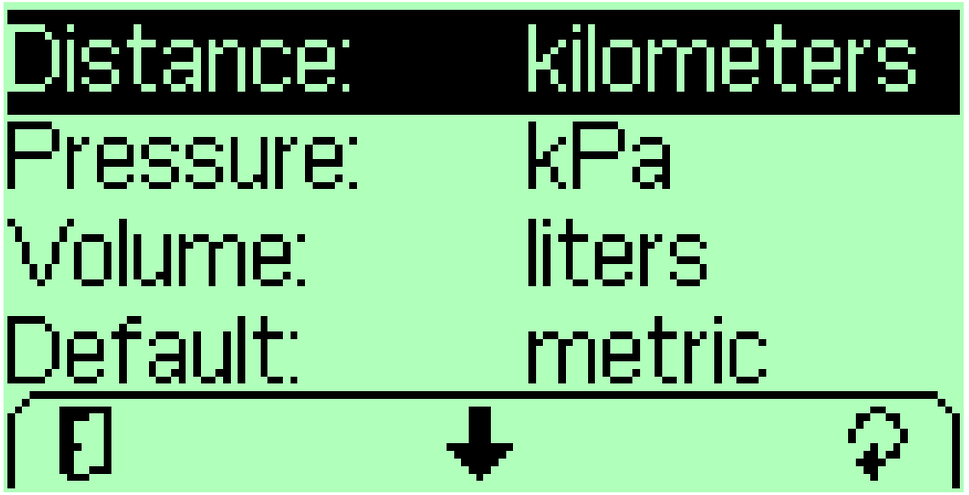
This option enables pop-up monitoring of the selective catalytic reduction (SCR) parameters available in J1939. When enabled, any status change will appear in a pop-up window even if the main window does not monitor the TIER4 parameters.

3.7 Contrast /Backlight

Contrast and backlight commands according to the user's preferences.

3.8 Units

The system supports many combinations of units depending on the user's preferences. *Distance, Pressure* and *Volume* units could be selected independently. *Default* settings correspond to all other measurements units.



3.9 Faults Clear

This submenu is used to send a request to every modules on the vehicle to clear all occured faults (DM2).

3.10 Fuel Tank Calibration

This submenu is related to the discrete fuel input calibration. By doing the calibration sequence, the user can calibrate the fuel sender response for any custom tank in three(3) points. The best way to do this is to start with an empty thank and fill it with fuel during the process. The bargraph level represents the resistance signal value as read from the discrete input. The response profile may be different according to the sender characteristics.

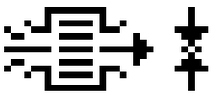
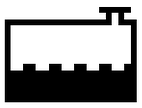
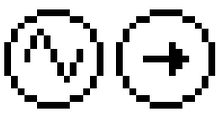
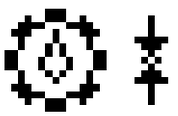
3.11 Factory settings

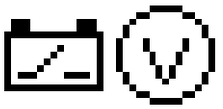
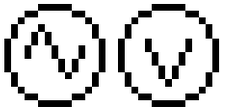
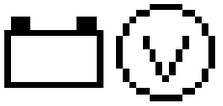
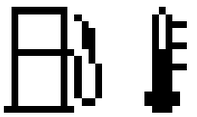
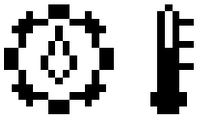
This is intended to turn the unit back to the original factory settings. All current setttings will be lost.

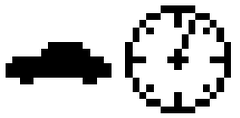
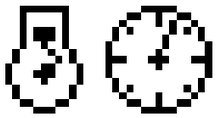
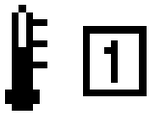
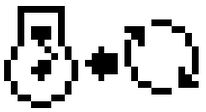
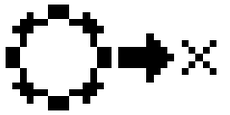
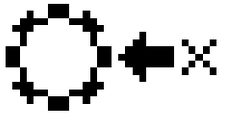
4. Supported Parameters

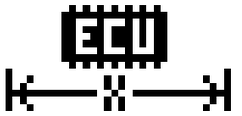
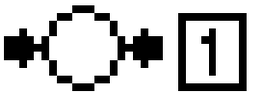
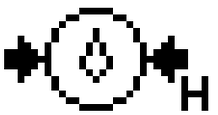
Supported parameters as defined into *SAE J1939-71*

SPN #	PGN #	Description	Icon
46	65198	Pneumatic Supply Pressure	
52	65262	Engine Intercooler Temperature	
84	65265	Wheel-Based Vehicle Speed	
91	61443	Accelerator Pedal Position 1	
92	61443	Engine Percent Load At Current Speed	
94	65263	Engine Fuel Delivery Pressure	
96	65276	Fuel Level 1	
98	65263	Engine Oil Level	
100	65263	Engine Oil Pressure	

SPN #	PGN #	Description	Icon
102	65270	Engine Intake Manifold #1 Pressure	
105	65270	Engine Intake Manifold #1 Temperature	
106	65270	Engine Air Inlet Pressure	
107	65270	Engine Air Filter 1 Differential Pressure	
108	65269	Barometric Pressure	
109	65263	Engine Coolant Pressure	
110	65262	Engine Coolant Temperature	
111	65263	Engine Coolant Level	
114	65271	Net Battery Current	
115	65271	Alternator Current	
127	65272	Transmission Oil Pressure	

SPN #	PGN #	Description	Icon
158	65271	Keyswitch Battery Potential	
167	65271	Charging System Potential (Voltage)	
168	65271	Battery Potential / Power Input 1	
172	65269	Engine Air Inlet Temperature	
173	65270	Engine Exhaust Gas Temperature	
174	65262	Engine Fuel Temperature 1	
175	65262	Engine Oil Temperature 1	
176	65262	Engine Turbocharger Oil Temperature	
177	65272	Transmission Oil Temperature	
183	65266	Engine Fuel Rate	
184	65266	Engine Instantaneous Fuel Economy	

SPN #	PGN #	Description	Icon
185	65266	Engine Average Fuel Economy	
190	61444	Engine Speed	
191	61442	Transmission Output Shaft Speed	
246	65255	Total Vehicle Hours	
247	65253	Engine Total Hours of Operation	
441	65164	Auxiliary Temperature 1	
512	61444	Driver's Demand Engine - Percent Torque	
513	61444	Actual Engine - Percent Torque	
517	65256	Navigation-Based Vehicle Speed	
523	61445	Transmission Current Gear	
524	61445	Transmission Selected Gear	

SPN #	PGN #	Description	Icon
975	65213	Estimated Percent Fan Speed	
1032	65201	Total ECU Distance	
1081	65252	Engine Wait to Start Lamp	
1387	65164	Auxiliary Pressure #1	
1761	65110	Catalyst Tank Level	
1762	61448	Hydraulic Pressure	
3031	65110	Catalyst Tank Temperature	
3241	64948	Aftertreatment 1 Exhaust Gas Temperature 1 (upstream)	
3245	64947	Aftertreatment 1 Exhaust Gas Temperature 3 (downstream)	
3697*	64892	Particulate Trap Lamp Command	
3700*	64892	Particulate Trap Active Regeneration Status	

SPN #	PGN #	Description	Icon
3701*	64892	Particulate Trap Status	
3703*	64892	Particulate Trap Active Regeneration Inhibited Due to Inhibit Switch	
3719	64891	Particulate Filter 1 Soot Load Percent	
3720	64891	Particulate Filter 1 Ash Load Percent	

(*) See section 4.1

4.1 Tier 4 specific display

For SCR parameters (SPN# 3697, 3700, 3701 and 3703), the regeneration status is presented in 3 columns as follows when monitored in the main screen. When monitored by pop-up, the status will be labeled.

√ Not Needed	√ Not Inhibited	0 Not Active
R Request Level	i Inhibited	1 Active
W Warning Level	? Unknown	N Needed
S Service Level		? Unknown
C Stop Level		
– Not Available		
? Unknown		

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