CanCom

83-833xx

JÖRGENSEN

833 Product version 015 CE 1-way radio (443 MHz), or 2-way 868 MHz, or Bluetooth

Specifikation	Specification		
Matningsspänning	Power supply	10-30	VDC
Drivspänning	Operating voltage	3 rechargable AA batteries*	
Strömförbrukning	Power consumption	20 - 200**	mA
Batteriladdare	Battery charger	Built in	1A charge current
Laddtid	Charging time	< 3	Hours
CAN protokoll	CAN protocol	2.0B	150Kbit
CAN drivkrets	CAN driver	SN65HVD235D	Texas
CPU	CPU	MC9S08DZ128	Freescale
Kapsling	Housing	Graphite grey	ABS plastic
IP-klass	IP-class	IP65	
Omgivningstemp.	Operating temp.	-20 - +50	Celsius
Lagringstemp.	Storage temp.	-20 - +50	Celcius
Lagringstemp. Batt	Storage temp. Batt	-20 - +35	Celcius
Laddningstemp	Charging temp	0 - +45	Celcius *
Mått	Dimensions	180x82x40	mm
Vikt	Weight	390	grams
* Batteries are model GP270AAHC NiMH			

Radio	Radio		
Räckvidd	Range	100	meters
Radiotyp	Radio type	Hi power (FM transmitter)	
Uteffekt radio	Transmitter output power	25	mW
Effective Radiated Power	(ERP)	max +10dBM	(10mW)
Frekvens	Frequency	433.92 or 868	MHz
Radiokod	Radio code	Programmable	

Gränssnitt	Interface		
Display	Display	102x64 pixels	Graphical
CAN-buss	CAN-bus	2.0 B	CanCom
Knappsats 8 knappar	Keypad 8 buttons	Silicone	Membrane type
Menystyrning	Menu control	2 buttons	
Driftlägen	Operating modes	Up to 6	Up to 48 functions
Vinkelsensor	Tilt sensor	2-axis	Proportional control
Antenn	Antenna	Built-in	
LED-indikeringar	LED indicators	8 green LEDs	Programmable
Knappljud	Key sound	Summer	Programmable
Display bakgrundsljus	Display backlight	Yellow light	Adjustable
Knappsats bakgrundsljus	Keypad backlight	White light	Adjustable
Stoppfunktion	Stop function	EN 13849-1	PL-d CAT3

EMC			

STARTING THE RADIO TRANSMITTER:
The radio transmitter is started by pulling out the red On/Off switch. Wait until text is shown on the display. In this mode the transmitter doesn't send anything but awaits activation. To activate: Press and release both display control buttons simultaneously (arrow left, arrow right). Now the transmitter is in active mode. To start the device with blind-mode enabled for the buzzer, hold down (7) during boot.

STOP / TURN OFF THE RADIO TRANSMITTER:
The radio transmitter is stopped by pushing the red On/Off switch. Any radio signal will be stopped within maximum 100ms. Simultaneously a diagnostic check on the On/Off switch is performed. If an error should appear it will be displayed at next startup.

SECURITY FUNCTIONS:

Secure Stop function diagnostics:
If the transmitter is turned off without a correct diagnostic check has been performed (e.g. the battery run out) or if an error has been detected in the On/Off switch the user is requested at the next startup to restart the transmitter in order to control the On/Off switch. If the error still isn't cleared the unit should be sent in for repair.

Activated function buttons diagnostics:
If any of the 8 function buttons are activated the transmitter will not enter active mode.

Module ID and Radio code

Please note that radio code is only programmed if the transmitter is equipped with a 1-way radio.
Module ID must always be programmed though.
The radio transmitter is programmed through CanPro v4.35 or later. The procedure is as follows:

- Under the tab "Module configuration" a new module is created by the button "New Module".
- Choose the module type "Analog" and set the ID to 20.
- Set port 1 to 8 as "Analog in".
- If relevant, enter the radio code as instructed below.
- Register the module by the button "Register module".

- Create another module by the button "New Module".
- Choose the type "Analog" and set the ID to 21.
- Set port 1 to 8 as analog in.
- Register the above module.

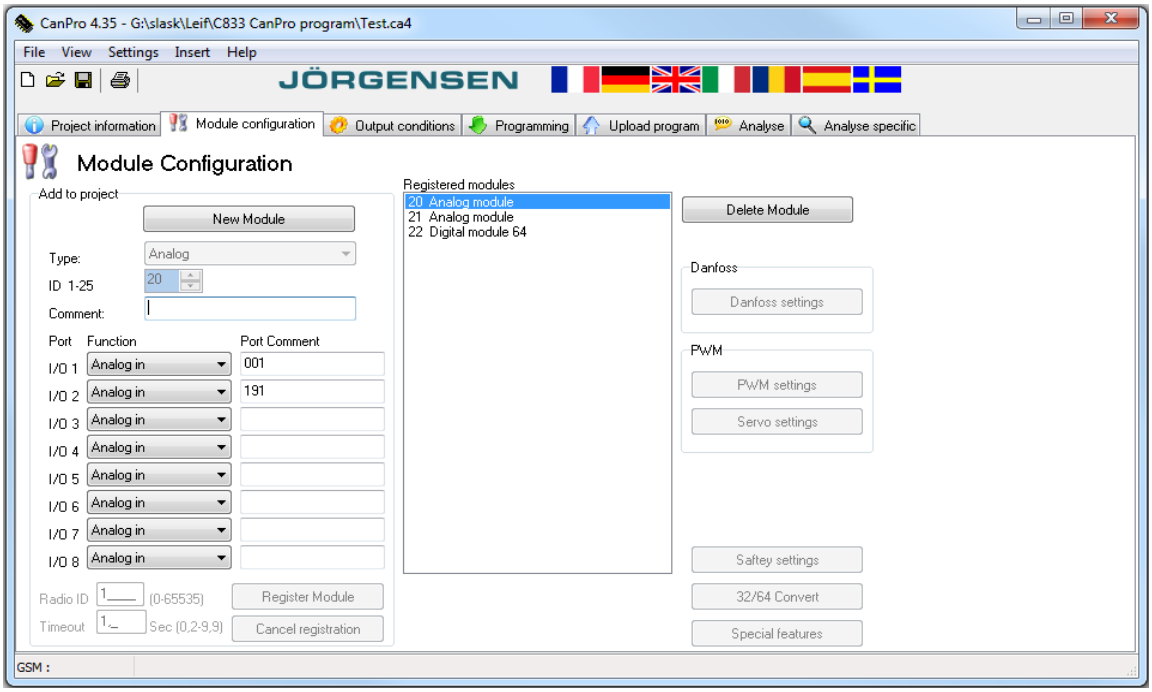
- Create a new module again.
- Choose the type "Digital64" and set the ID to 22.
- Set port 1 to 8 as digital out.
- Register the above module.

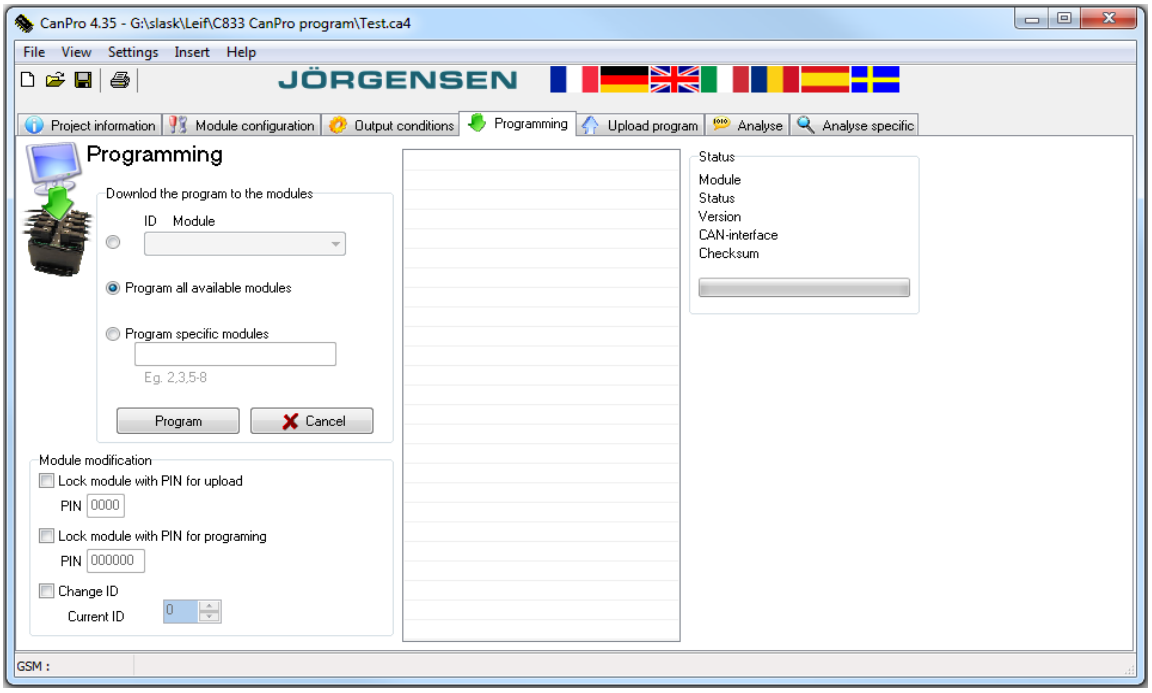
Go to the tab "Programming". Select "Program all available modules" and press button "Program" to program the transmitter (see pictures below).
Wait until you get a green tick on all three IDs that are being programmed

RADIO CODE (for 1-way radio)
The radio code is a 16 bits binary number, here in decimal form. This number is divided into a high byte and a low byte which are entered in the Port Comment fields.

ID:20 I/O 1 = high byte (always three digits)
ID:20 I/O 2 = low byte (always three digits)
The example in the picture below has a high byte =**001** and a low byte =**191.**
(The radio code to be programmed in the **receiver** is calculated with the following formula:
high byte x 256 + low byte, here: 1 x 256 + 191 = 447)

See example below:


CanPro 4.35 - G:\slask\Leif\C833 CanPro program\Test.ca4
File View Settings Insert Help
JÖRGENSEN
Project information
Module configuration
Output conditions
Programming
Upload program
Analyse
Analyse specific
Module Configuration
Add to project
New Module
Type:
Analog
ID 1-25
20
Comment:
Port Function Port Comment
I/O 1 Analog in 001
I/O 2 Analog in 191
I/O 3 Analog in
I/O 4 Analog in
I/O 5 Analog in
I/O 6 Analog in
I/O 7 Analog in
I/O 8 Analog in
Radio ID 1____ (0-65535)
Register Module
Timeout 1_ Sec (0,2-9,9)
Cancel registration
Registered modules
20 Analog module
21 Analog module
22 Digital module 64
Delete Module
Danfoss
Danfoss settings
PWM
PWM settings
Servo settings
Saftey settings
32/64 Convert
Special features
GSM :


CanPro 4.35 - G:\slask\Leif\C833 CanPro program\Test.ca4
File View Settings Insert Help
JÖRGENSEN
Project information
Module configuration
Output conditions
Programming
Upload program
Analyse
Analyse specific
Programming
Downlod the program to the modules
ID Module
Program all available modules
Program specific modules
Eg. 2,3,5-8
Program
Cancel
Module modification
Lock module with PIN for upload
PIN 0000
Lock module with PIN for programing
PIN 000000
Change ID
Current ID 0
Status
Module
Status
Version
CAN-interface
Checksum
GSM :

BUS SIGNALS

ID20 as Module type "Analog_in"

Port 1: Button 1
Port 2: Button 2
Port 3: Button 3
Port 4: Button 4
Port 5: Button 5
Port 6: Button 6
Port 7: Button 7
Port 8: Button 8

ID21 as Module type "Analog_in"

Port 1: Analog in 1 (Not in use. Now = 0)
Port 2: Analog in 2 (Not in use. Now = 0)
Port 3: Accelerometer X value (Tilt left = lower, tilt right = higher)
Port 4: Accelerometer Y value (Tilt fwd = lower, tilt bwd = higher)
Port 5: Menu choice (1 - 9)
Port 6: Free (Now = 0)
Port 7: Battery voltage x10 (E.g. value '42' = 4.2V)
Port 8: Free (Now = 0)

ID22 as Module type "Digital64", Digital out

Port 1: LED 1
Port 2: LED 2
Port 3: LED 3
Port 4: LED 4
Port 5: LED 5
Port 6: LED 6
Port 7: LED 7
Port 8: LED 8

Display menues and settings - information

To the left on the top row, radio status is shown. It can be OFF, ON, CAN or ERR (error).
In the middle of the top row the radio channel is shown (only with 2-way radio).
To the right on the top row the battery status is shown. The status is represented by different symbols, or --- during the first 30 seconds from start.

 Battery-time in % (shown in 5 steps)
 Low Battery
 Charging/CHG
 Error/ERR

When the transmitter is being charged and all is correct, CHG is shown in the top right corner.

If ERR is shown while charging it may be because:
- the charging voltage is to low to charge the batteries (absolute minimum 6V)
- the batteries are too deeply discharged (total battery voltage must be absolute minimum 1.05V)
- the batteries haven't finished charging within 4 hours (battery error)
- the batteries are defect and do not charge

Please note that while ERR is shown the transmitter can't charge. Try to stop and restart the charging.

Please note that if charging is performed outside the allowed temperature interval (0 degrees centigrade to +45 degrees centigrade) then CHG is shown but actual charging is paused in waiting for a correct temperature.
This means that the transmitter is showing CHG but the batteries are not charged.

When the transmitter is started a welcome screen is shown and an attempt to establish connection with a receiver is made. T will result in the radio status CONNECTED, OFFLINE or ERROR. The transmitter is in start mod
Now both display buttons need to be pressed and released simultaneously (indicated by "START" in the middle of bottom row).
At this point you can change Drive Mode with the left and right buttons (as indicated by left and right arrows in the bottom row) or you can enter MENU by pressing and releasing both display buttons simultaneously.

Menu navigation

To enter the menu press and release both display buttons simultaneously.

SETTINGS

LANGUAGE - Language selection

BACKLIGHT DISPLAY - Display backlight

ALWAYS ON

ALWAYS OFF

TIMEOUT - The display backlight is turned off after a set timeout time if no buttons are pressed.

TIMEOUT: Time in seconds for display backlight.

MOTION START: The accelerometer senses when the transmitter is moved and starts the backlight.

BACKLIGHT BUTTON

ALWAYS ON

ALWAYS OFF

TIMEOUT - The buttons backlight is turned off after a set timeout time if no buttons are pressed.

TIMEOUT: Time in seconds for buttons backlight.

MOTION START: The accelerometer senses when the transmitter is moved and starts the backlight

BUZZER SETUP

MODE

1-BEEP: 1 beep at the press of a button

3-BEEP: 3 beeps at the press of a button

OFF: No button sound

BLIND-MODE

OFF: No sound when switching between mode menus.

ON: Sound corresponding to the current mode menu. Menu 3 makes the device beep 3 times, and so on.

This can also be enabled by holding down button (7) during boot,

RADIO MODE (check what radio alternativs your hardware supports)

1-Way 433 MHz (May also be valid with a 1 way 869MHz transmitter)

2-Way 868 MHz

2-Way 2.4 GHz (with support for new Bluetooth protocol, e.g. MM60 Safety)

2-Way 2.4 GHz CC (with support for older Bluetooth protocol, e.g. a Bluetooth transceiver)

ONLY CANBUS (All radio communication is turned off and the device only communicates through the CAN-bus)

RADIO ID 0-9 Specifies what ID the device is to use for radio-communication.

SINGLE PUSH

OFF: Allows one or more buttons to be pushed simultaneously

ON: Allows only one button to be pushed at a time. If more than one button is pressed simultaneously no button command is sent.

AUTORECONNECT

OFF: If the transmitter has lost the radio connection you will need to manually start an attempt to reconnect.

ON: If the transmitter has lost the radio connection an attempt to reconnect will be done automatically.

PAIRING - Scans after receivers to pair with

STEP 1: Searching...

STEP 2: List of all accessible receivers. Choose a receiver from the list.

STEP 3: Pairing complete.

SERVICE

CALIBRATE GYRO: Calibrate the accelerometer in the transmitter. Move the transmitter in all different angles, standing, lying flat, standing upside down, 90 degrees left angled, 90 degrees right angled.

Drive navigation

To navigate between different drive menues use left and right display buttons.

Menu text programming

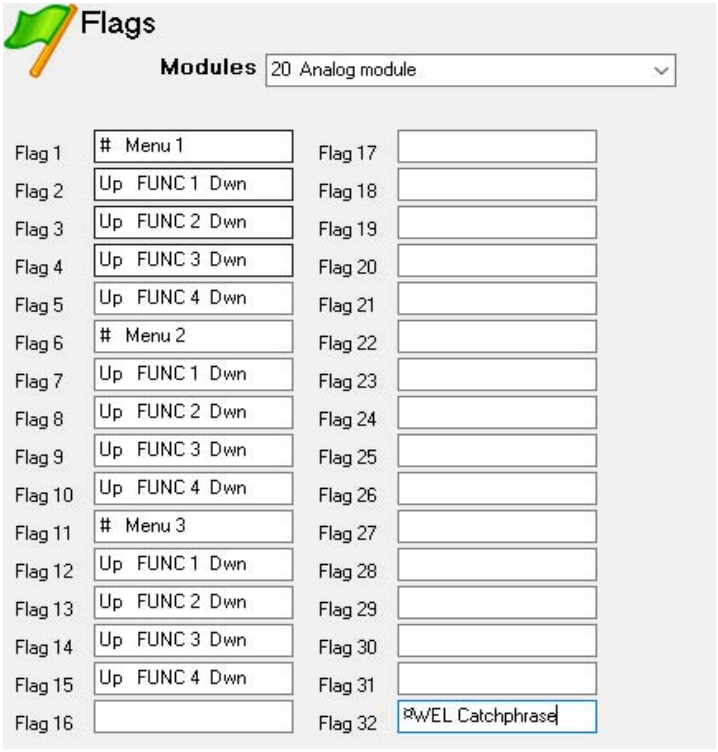
Menu texts are programmed using the CanPro tool.
To program texts first create a project with an analog module with ID20.
Go to tab 'Output conditions' and click the button 'Flag Comment'.
Choose module 20 from the drop down list.
Fill in the text following this system:
Flag 1: # MENU HEADER
Flag 2: Text row 1
Flag 3: Text row 2
Flag 4: Text row 3
Flag 5: Text row 4

Flag 1, which is menu header, can have up to 13 characters. Use blank steps to place the text in the desired position.
Flags 2-5 have a smaller font and can have up to 16 characters per row.
Up to six different menues/pages can be used. Menus/pages kan start at flag 1, 6, 11, 16, 21 and 26. They get activated with the # sign (on the menu header row).

Flag 32 can be used to replace the "Welcome" on startup with a "catchphrase". This phrase can be max 11 characters as 5 characters is taken by the "¤WEL ". See example below.

Symbols for special letters:
↑: ^
↓: ;
←: <
→: >
↕: |

Example:



Programming menu-texts - Feedback

If you in the text for a flag (which corresponds to a text row on a mode page) writes a star followed by an a (*a), the value of the flag is shown there as a analog value (0-255). If the star is followed by a p (*p), the value is shown as a percentage (0-255 scaled to 0-100). If the star is followed by an o (*o), the value is shown as a digital value (0 or 1). If the star is followed by a b (*b), the value is shown as a double byte value (0-65535). The high byte is read from five flags later. E.g. if you write "Weight *b" in flag 7, the low byte is read from flag 7, and the high byte is read from flag 12.

Exampel flag comment:
Flag 1: # Values
Flag 2: Temp *a
Flag 3: Tank *p
Flag 4: Sensor: *o
Flag 5: Sensor: *
Exampel in display:
Values
Temp 123
Tank 50%
Sensor: På
Sensor: 1

The value that is shown is the value that the flag has. E.g. if you want to show the value from a sensor on ID 1 port 5, you will need to program the flag to FOLLOW ID 1 port 5.

ERROR MESSAGES AND THEIR MEANINGS

CONNECTION TIMEOUT - Connecting...
The device has lost contact with the receiver during operation and is trying to reconnect to it.

CONNECTION LOST - Please restart
The device has lost all contact with the receiver and has given up on reconnecting, therefore demanding a restart. One car to reconnect by pressing both the arrow buttons.

ERROR STOP BUTTON - ATTEMPTS: X - Unsafe start?
The device did not shutdown correctly or there is something wrong with the emergency stop. Restart to see if the problem persists. If it does the device can still be used in an "Unsafe mode" by pressing both the arrow buttons. In this mode the buzzer always beeps on a button press. One can restart the device this way 100 times before the device becomes unusable, until the underlying problem that caused this error is handled.

DIAGNOSTIC FAILED - Please restart
The diagnostic is incomplete or corrupt. This may be the fault of loose batteries. Restart to see if the problem persists.

CORRUPT MEMORY - All settings now set to default. - Please restart
Somewhere in the memory, an error has been found. To be safe, all settings are set to their default values. This message is always shown in English, since English is the default language.

Accessories for the radio transmitter

Following accessories are available for the 833 transmitter:

Cabling

Charging cable
2 meters M12 speedcon charging cable with plug for a lighter socket.
Art. no: 30-20367

2 meters M12 speedcon charging cable with open end.
Art. no: 30-20366

CAN data/charging cable
This cable is used for CAN bus communication and charging.
10 meters M12 speedcon Female to M12 speedcon Male
Art. no: 30-20365

2 meters M12 to mini-Hirschmann (for programming / charging)
Art. no: 30-20368

Cover

Protective cover for M12 chassi connector.
Art. no: 30-20356