



| Specifikation | Specification | | |
|--------------------------|--------------------------|---------------------------------------|----------------------|
| Matningsspänning | Power supply | 10-30 | VDC |
| Drivspänning | Operating voltage | 3 rechargeable internal AAA batteries | |
| Strömförbrukning | Power consumption | 20 - 200** | mA |
| Batteriladdare | Battery charger | Built in | 0,3 A charge current |
| Laddtid | Charging time | 3-4 | 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°C - +50°C | Celsius |
| Lagringstemp. | Storage temp. | -20°C - +50°C | Celsius |
| Lagringstemp. Batt | Storage temp. Batt | -20°C - +35°C | Celsius |
| Laddningstemp | Charging temp | 0°C - +45°C | Celsius |
| Mått | Dimensions | 165 x 77 x 52 | mm |
| Vikt | Weight | 330 | grams |
| ** Depending on activity | | | |
| 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 868MHz | 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 |
| Joystick | Joystick | 2-axis | Proportional control |
| Antenn | Antenna | Built-in | |
| Knappljud | Key sound | Summer | Programmable |
| Display bakgrundsljus | Display backlight | Yellow light | Adjustable |
| Stoppfunktion | Stop function | EN 13849-1 | PL-d CAT3 |
| Återkoppling/Indikation | Feedback/Indication | In display | In display |
| 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)

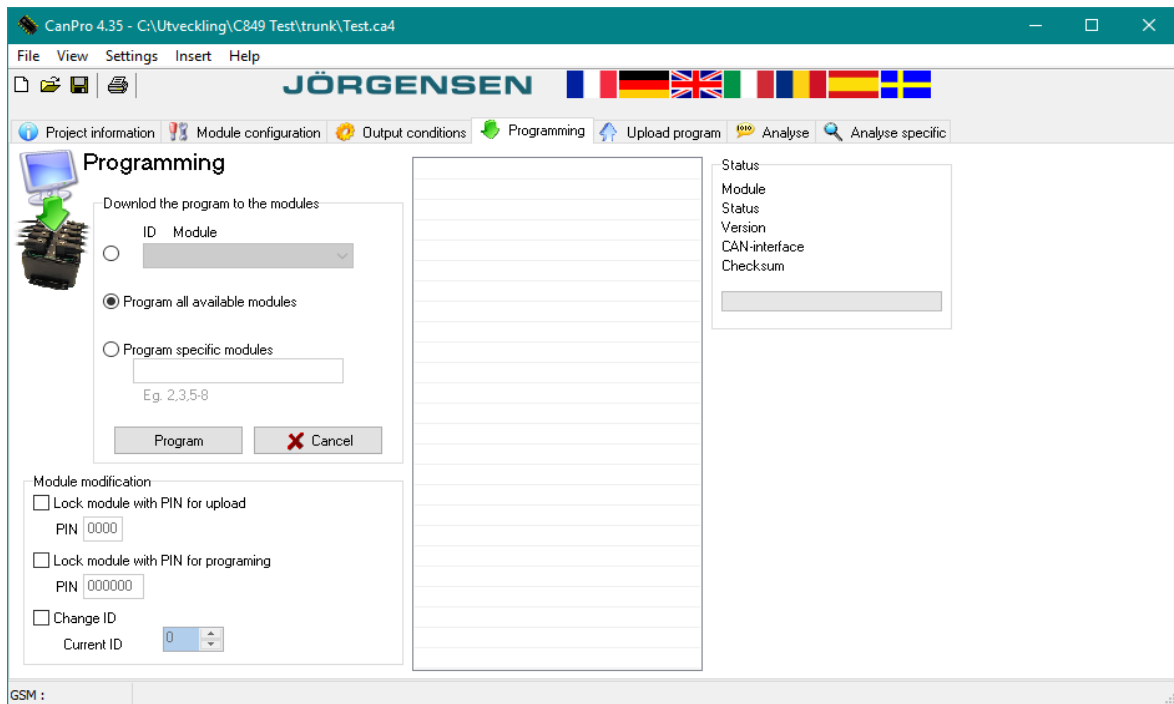
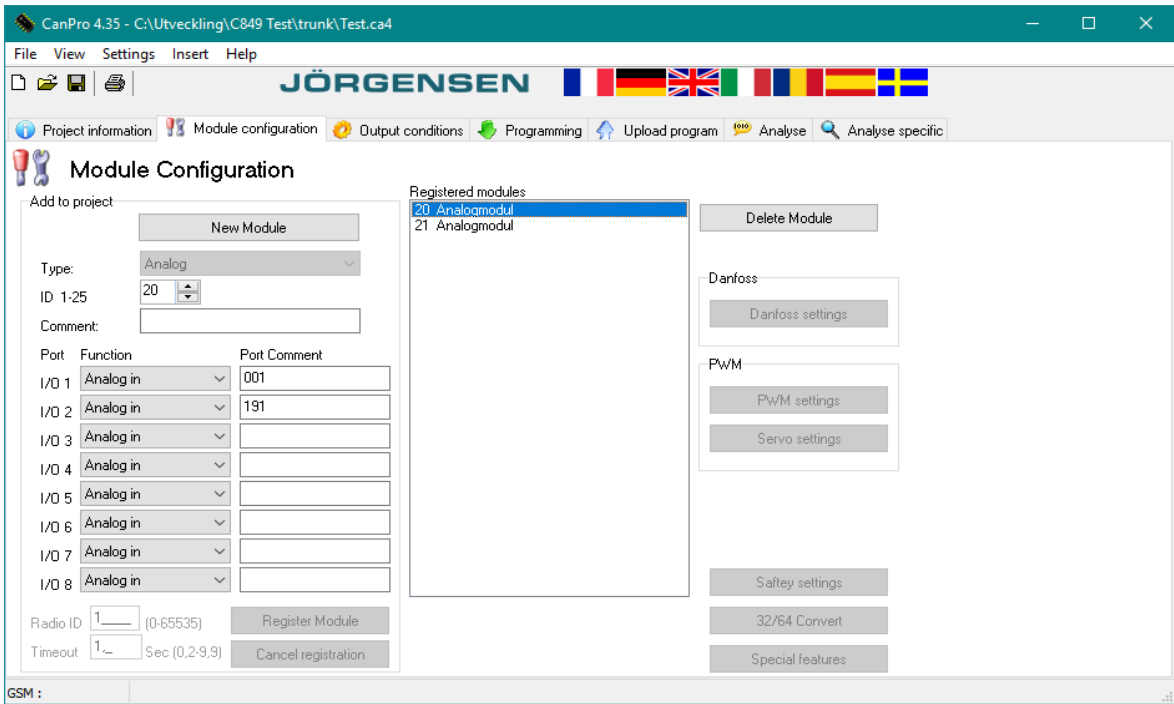
ID:20 I/O 2 = low byte (always three digits)

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:



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)

Display menus 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 too 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.

This will result in the radio status CONNECTED, OFFLINE or ERROR. The transmitter is in start mode.

Now both display buttons (and only the 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.

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 alternatives your hardware supports)

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

2-Way 868 MHz

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

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

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.

PUSH TIMEOUT - The time specified is how long the device will wait for new input before entering sleep-mode (0=OFF). In sleepmode the device is locked until the user pushes both menu-buttons again. (0-999)

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 JOYST - (Calibrate the joystick in the transmitter. Move the joystick up, down, left and right, and swirl it around. repeat a few times.)

HYSTERESIS - A value between 0-99 that represents how many steps the joystick has to move before it registers as an actual movement. (0-99) (the maximum amount of step the joystick can move in each direction is 127)

UPDATE RADIO-CHIP - A mode in which the radio-chip firmware can safely be updated

SYSTEM INFO - Information about the current radio chip state.

RADIO PAUSE - Pause time (in ms) for the radio chip. Default is 70. If feedback is used and the system is alone it can be an good idea to decrease the value (to 0), so that status for buttons and joystick can be sent faster. If the system often loses connection (because it is not alone and/or there are interference) you can test to increase the value.

Drive navigation

To navigate between different drive menus 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 menus/pages can be used. Menus/pages can 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:



Flags

Modules 20 Analog module

| | | | |
|---------|---------------|---------|-----------------|
| Flag 1 | # Menu 1 | Flag 17 | |
| Flag 2 | Up FUNC 1 Dwn | Flag 18 | |
| Flag 3 | Up FUNC 2 Dwn | Flag 19 | |
| Flag 4 | Up FUNC 3 Dwn | Flag 20 | |
| Flag 5 | Up FUNC 4 Dwn | Flag 21 | |
| Flag 6 | # Menu 2 | Flag 22 | |
| Flag 7 | Up FUNC 1 Dwn | Flag 23 | |
| Flag 8 | Up FUNC 2 Dwn | Flag 24 | |
| Flag 9 | Up FUNC 3 Dwn | Flag 25 | |
| Flag 10 | Up FUNC 4 Dwn | Flag 26 | |
| Flag 11 | # Menu 3 | Flag 27 | |
| Flag 12 | Up FUNC 1 Dwn | Flag 28 | |
| Flag 13 | Up FUNC 2 Dwn | Flag 29 | |
| Flag 14 | Up FUNC 3 Dwn | Flag 30 | |
| Flag 15 | Up FUNC 4 Dwn | Flag 31 | |
| Flag 16 | | Flag 32 | WEL Catchphrase |

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 LOST - Push both arrow buttons, or try restarting

The device has lost all contact with the receiver and has given up on reconnecting. If you press both the arrow buttons, you can try to reconnect as many times as you like. If you restart the device it will operate normally in offline-mode.

PLEASE RESTART For self-diagnostics

The Emergency-stop did not work correctly during last shutdown, which might mean that the emergency-stop is defect. Reboot to see if the problem persists.

KEYLOCK ACTIVE - Please push both arrow buttons to unlock

The device has entered sleep mode, because push of any button has not been done within set time (PUSH TIME).

PLEASE RESTART Diagnostic not completed

The device did not shutdown correctly or there is something wrong with the emergency stop. 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

Following accessories are available for the 849 transmitter:

Cabling

Charging cable

2 meter hr10 charging cable with plug for a lighter socket.

Art. no: 83-23135

2 meter HR10 to mini-Hirschmann charging cable.

Art. no: 83-23121

2 meter HR10 charging cable with open end.

Art. no: 83-23120

3 meter hr10 charging cable with plug for a lighter socket.

Art. no: 83-23136

3 meter HR10 charging cable with open end.

Art. no: 83-23117

CAN data/charging cable

This cable is used for CAN bus communication and charging.

2 meter HR10 to mini-Hirschmann communication cable.

Art. no: 83-23103

8 meter HR10 to mini-Hirschmann communication cable.

Art. no: 83-23109

10 meter HR10 to mini-Hirschmann communication cable.

Art. no: 83-23111

12 meter HR10 to mini-Hirschmann communication cable.

Art. no: 83-23112

12 meter HR10 to M12-connector communication cable.

Art. no: 83-23114

Docking stations

Magnetic holder.

Art. no: 83-84917

Magnetic holder with inductive charging (flat pin connector)

Art. no: 83-84918

Magnetic holder with inductive charging (plug for lighter socket)

Art. no: 83-84919