CRU Manual

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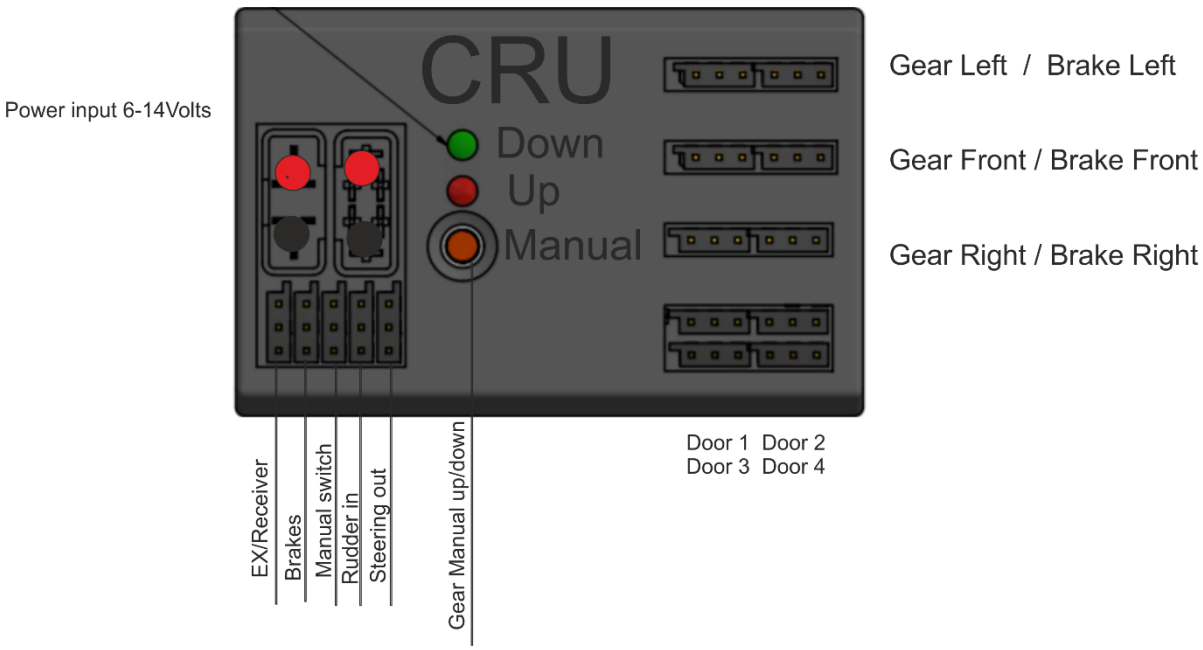
SECTION 1: CRU install and Connections

1.1



1.2

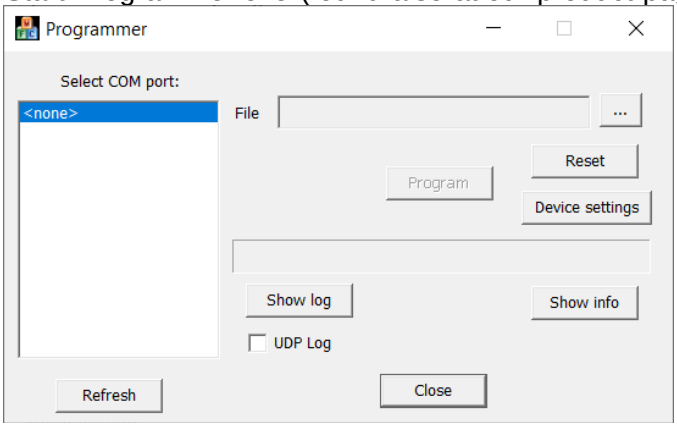
Jeti installing

The CRU is completely Menu driven thru the Transmitter.
To make sure you have all the correct files it is important :

1 . have the latest Firmware
2 . Have the latest BIN file for Jeti
You can find these at our website products on : https://www.digitech-aerosports.nl/product/919884/digitech-cru

Updating firmware :
The CRU has a build in USB , connect the CRU with a micro USB to your PC.
You must have Windows 10 or above.
Connect the CRU and wait until the driver is installed.

Start Programmer.exe (found also at our product page)



Select the Comport where your CRU is connected to .
Click on the right side next to file , and select the correct Firmware file.

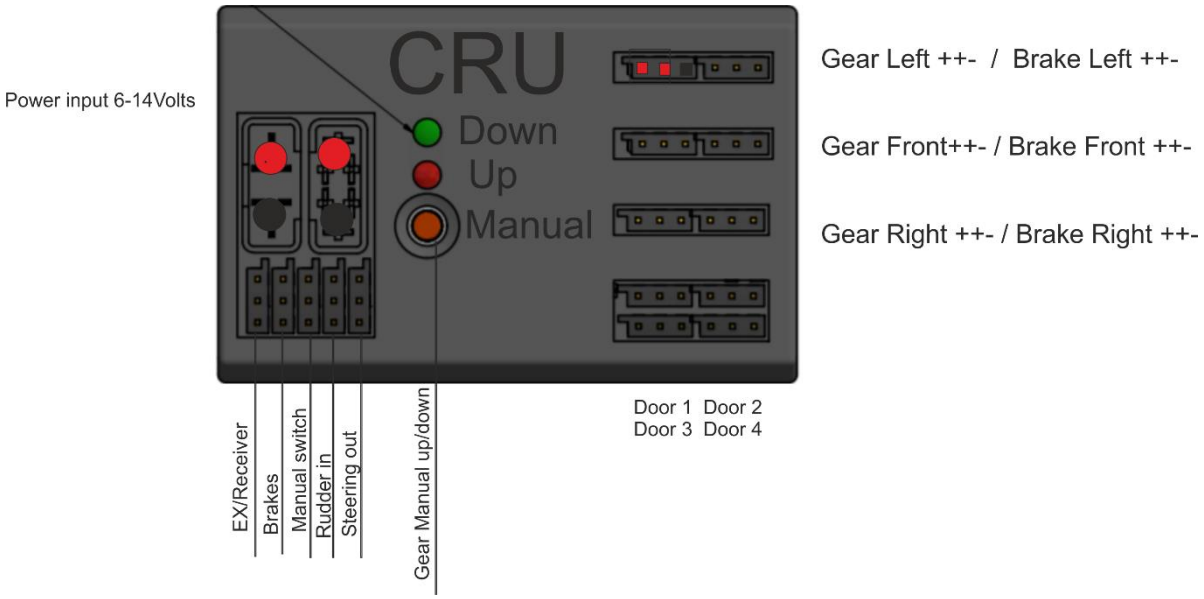
If you loaded the correct firmware the Program button will become highlighted and you can press it.
The CRU will be updated.

JETI TX

Bin file
For the Jeti TX to work correctly with your CRU it is important to load the Bin file into your TX.
Download and save the BIN file onto your computer. (it is a zip file unpack first!)
Copy the Binfile onto your TX Devices folder.

How? Connect usb cable from your TX to your PC
Turn TX on , if asked USB? You press ok.
On your PC a folder will open showing the index of your TX memory card.
Copy the CRU.bin into the Device folder. (if not already there!)
Done.

SECTION 2: Connecting to your Receiver and landing gear



To Connect to your Jeti receiver or Central Box.
Connect the EX/Receiver to a free EX or EXT channel on your Jeti receiver or central box

You MUST have a free EX port on your receiver.
Make sure this port is set to EX / Serial.

2.1 . Battery

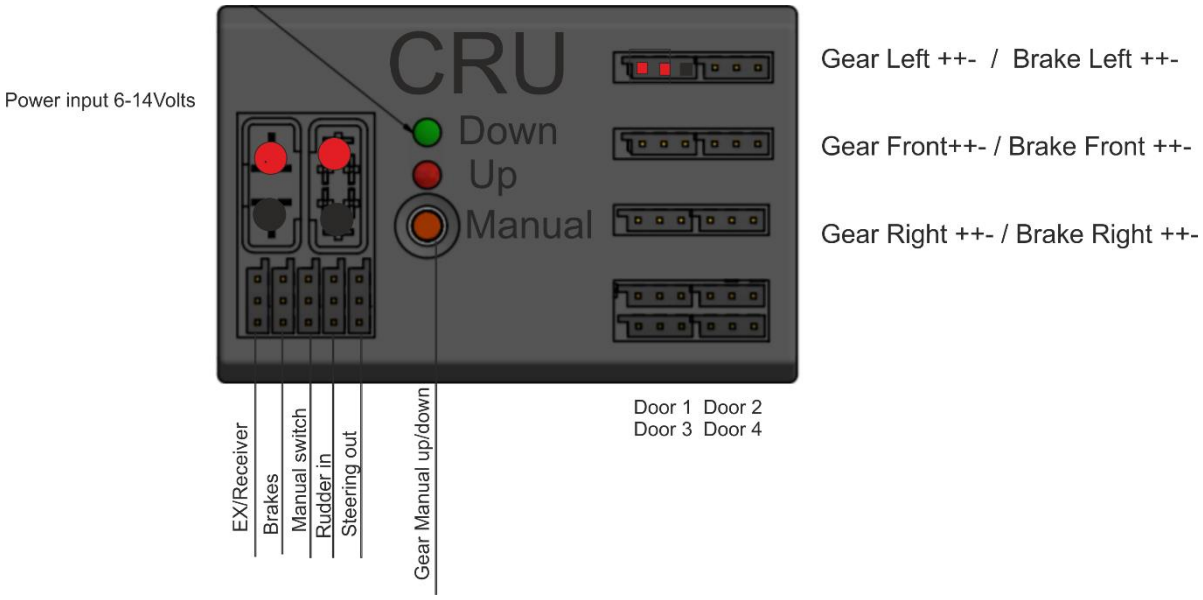
Anything works between 6 volts and 14 volts.
NOTE! Ask your manufacturer the voltage for the landing gears.!
The CRU will pass ALL voltage thru to the Landing gear.
EXEPT for the Doors these are driven directly by the Receiver Voltage!

Example :

JP landing gears 2S LI-PO / LI-ON for most Gears , Max 3S LIFE 9,9 volts for the AR200!
Electron Most gears 8,4 Volts 2S or 3S LIFE for ER50
If not sure READ the manuals or ask the manufacturer.

Sensors : in the TX you can find sensor 1: Voltage you can use this value to set a certain alarm if a min voltage is reached.

2.2
Hardware connections



Gear and brakes

On ALL connectors for the gears and brakes are 2 positives and 1 negative.

The first 2 pins are ALWAYS positive the third pin is negative.

This way almost ALL gears can be directly connected.

JP gears have small JST connector

Whilst Electron has positive followed by free space and Negative.

Make sure you connect the corresponding Left gear Front gear and Right gear

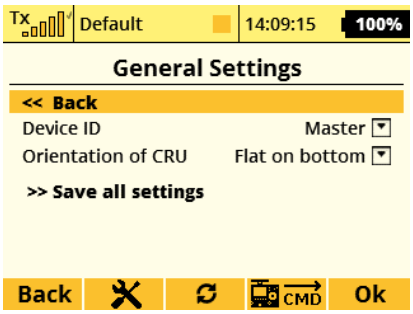
Same goes for the brakes.

MANUAL : if you shortcut pin 1 and pin 3 the gear will go up and or down.

You can make a external switch to this port if the button is hard to reach.

The Orange button is also to Retract and deploy the landing gear with using the TX..

Connect the Front steering servo to the STEERING OUT port!



Mounting the CRU there is a arrow on the CTU this MUST point forwards the nose of the aircraft.

In the general settings you can set the orientation of the unit standard its set on flat on bottom.

Device ID : when you use more then one CRU , you can set the first one to master and the others to slave.

NOTE! GYRO if you use a Gyro in your aircraft we strongly recommend you USE that servo to control also the nose steering.

And disable the GYRO function in the CRU!

SECTION 3: Connecting to your Receiver and landing gear

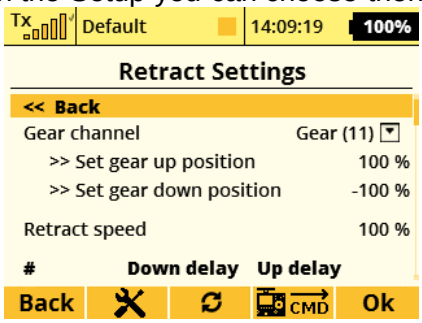
3.1

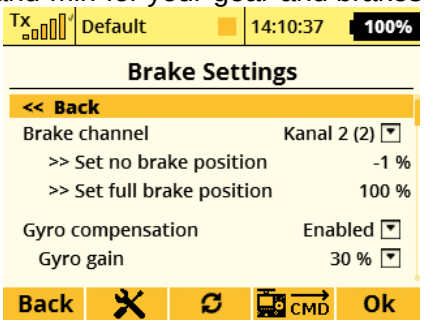
Jeti Programming :Channels

First set the following ports Virtual no need for physical PORT!

Retract
Brakes

In the Setup you can choose then the max and min for your gear and brakes.





First Select your gear channel and then set switch to up and press Gear up pos.
Same for gear down.

Repeat steps for Brakes,

Front steering , select the Rudder channel also to control your Front steering.
It will simply listen to the rudder channel.
The Steering can be adjusted inside the CRU.

SECTION 3.2:

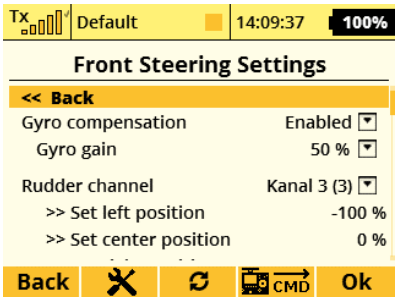
Gyro and Steering.

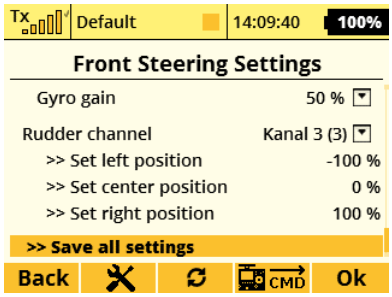
IF you use a Bavarian Demon or any other gyro that controls also your rudder we STRONGLY recommend you use THAT gyro to also controll your front steering servo.

Simply disable the Compensation!

Select your Rudder channel to act as the “master”
The steering will follow this signal.
Set the left , Right , and centre.

Don’t forget to SAVE.
Also the center will be used as a return reference when retracting.
The front steering will be DISABLED as soon its retracted and will go to centre.

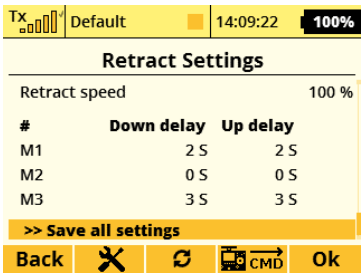




SECTION 3.3: Retract settings

Retract settings.

Retract speed :



You can set independent the speed for all 3 gears.

In down and in upwards position.

This is perfect for scale applications.

SECTION 3.4: Retract Parameters.

To set the Retract parameters you NEED to know the max Mah used by the Retracts.

Ask your Manufacturer about these.

If they don't supply them its no problem eather.

Go in this menu do a full cycle and see what your max mah used are and the time it takes.

Then add this and add 10% to these values.

A few Values we have for you :

Max Voltage and currents for Electron :

The below values come directly from info from Electron pages and manuals.

Voltage increase: The last software for ER-30 and ER-40 allows to increase the voltage up to 13V (not for ER-50). With 3S LiPo it is posible increase the brake torque a little. Old control units can be updated with the new software: (contact us). Is possible test the controller with 3S LiPo to know if this controller accept 13V. If not, the retracts simply will not run, nothing should burn. The ER-50 is limited to 10V (3S LIFE) for security, so only mechanical adjustments are posible.

ER30 : 500MaH ER40 : 1400Mah ER50: 2500MaH

ER-30: 3S LiPo or **3S LiFe**
ER-40: 2S Lipo or 3S LIFE
ER-50: 2S LiPo 3S LIFE!

For JP Retracts : all gears 2S lipo , ER200 3S LIFE 9,9 volts!

Leave the rewind time on 50ms , this is standard used on all brands.

And makes sure the gearboxes are not damaged and or get stuck in a full load.

Also you can select the max start time it takes to move the max stop time

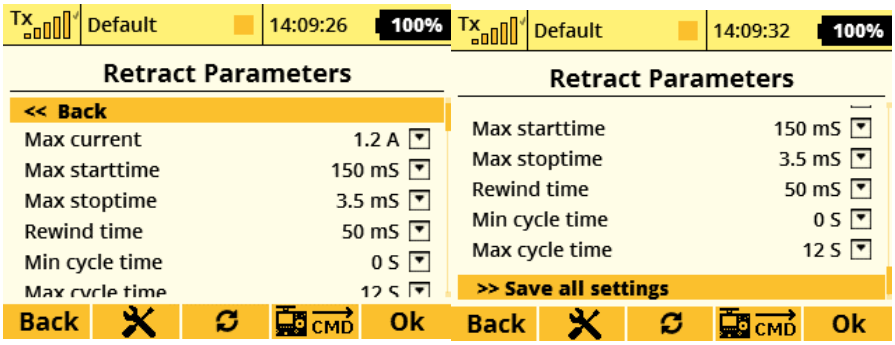
leave at 3.5ms)

You can also set the min cycle time and the Max cycle time.

If it will go OVER this time the retract will stop and think it's a obstruction

It will then give a Status number to your TX and you can set a alarm.

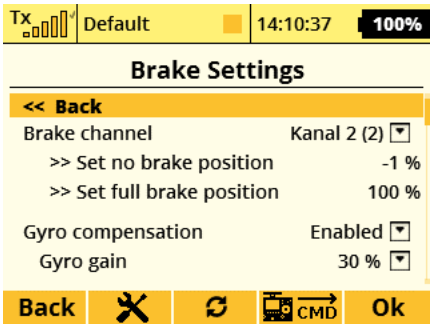
Look further in this manual for status messages.



Section 3.5 Brakes and ABS

Set your Virtual channel set max and min braking

You can enable or disable gyro to help with anti skid braking.



Set gain more or less or turn off

Pulsed Brakes (ABS)

its not a "real" abs since it has no rotating sensors.

HOWEVER you can set a PWM signal towards the brakes this will VERY fast turn the brakes on and off multiple times per seconds.

This is ideal if you have a lot of locked wheels and flat spots on tyres.

We recommend using about 40-60% for start.

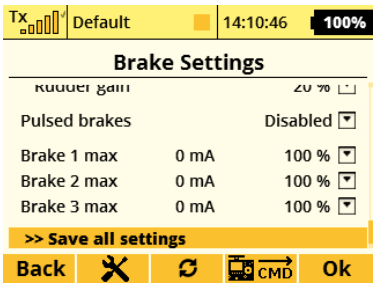
BRAKE MAX settings

Brake max settings.

This way if you have a brake that brakes more on the left then the right , you can compensate by turning down the max power to that brake.

Also when using the unique Front brakes we suggest you use 80% in the back and 30% for the front.

You will notice the very quick stops for aircrafts specially when they are a little heavy



3.6 Brakes : Rudder compensation.

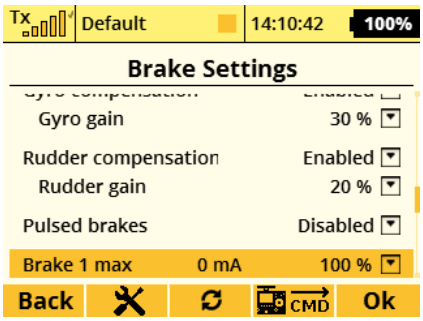
This is made for models that are a tail dragger like the new Elite Aerosports Bravado

That is a jet but with tail wheel .

You can imagine because of the thrust line it is imposible to make a turn on low speeds.

So there is the option Rudder compensation , basicly if you give left rudder it will brake on the left wheel more then on the right wheel and vice versa.

This will cause just like on a real aircraft to turn the aircraft fairly quick!



Section 4 : Sequenser and Doors

You have 4 doors available

Each door reacts to the Gear in up or down position.

You can enable or disable each door

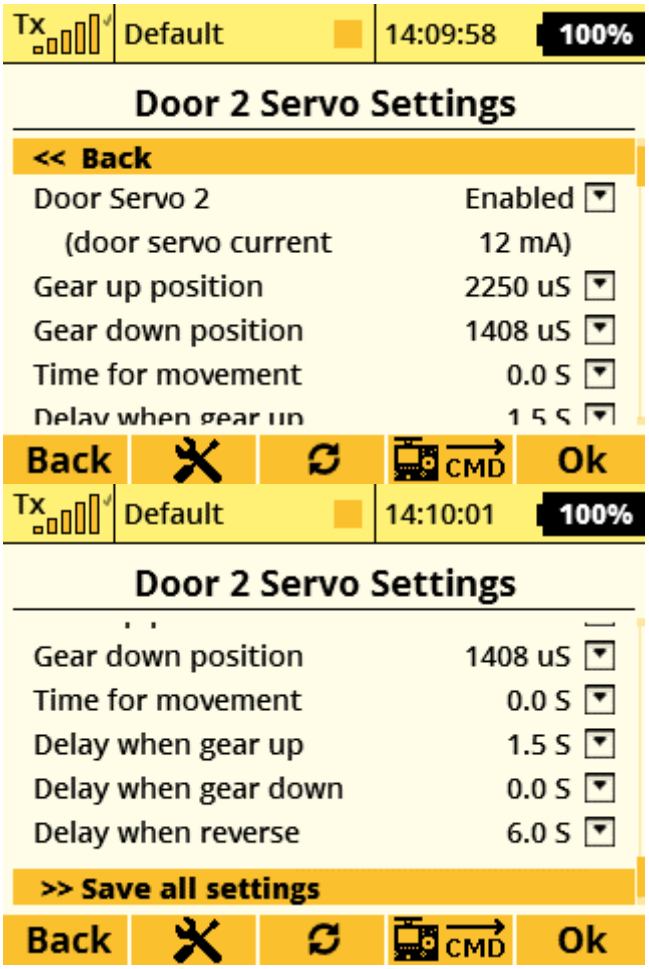
It also measure the Mah used for each door to spot a problem.

You can set the max up position , max down position.

The time for the movement.

You can also set the time for reverse delay.

So each door is freely programmable for ANY movement and time to popen and close.



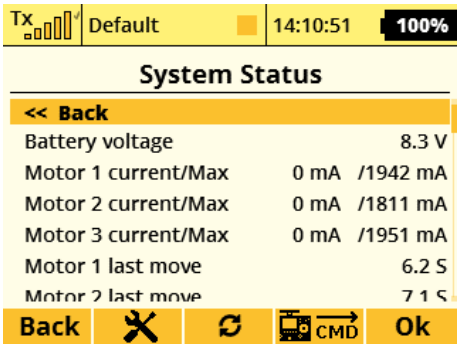
Section 5 : System status & Telemetric and warnings.

5.1 Status.

Measured input voltage

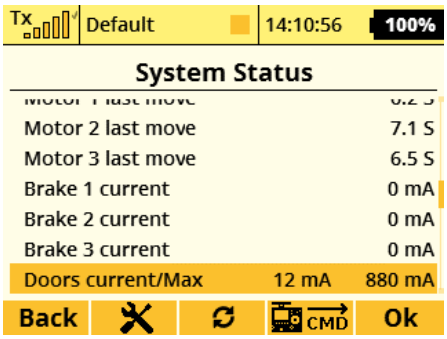
Max currents moment / and max

Time it taken to open and close (important for maintenance or spotting a problem)



Brake currents should be equal! Depending on state fo the brakes and wiring!

Easy to spot a problem!

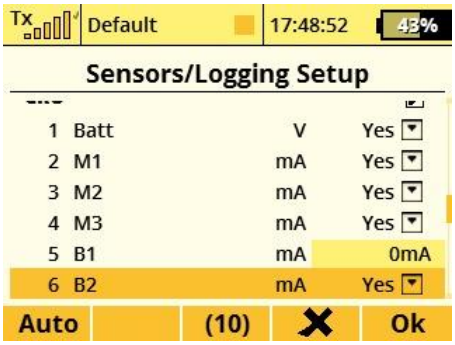


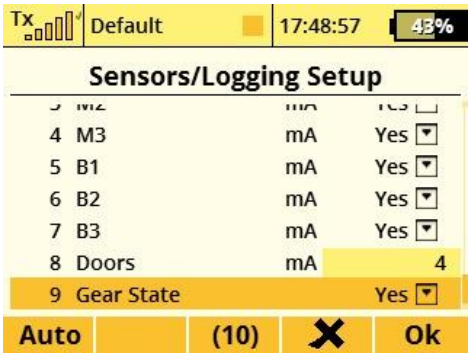
Doors max used (all doors get power from your TX!)

Frames CRC errors left : Frames send / Right Frames faulty

5.2 Telemetric sensors :

In the sensor setup you can see the following sensors so you can set alarms or program triggers to use.





Gear State:

1: Gear moving down

2: Gear is down

3: Gear moving up

4: Gear is up

0: Unknown

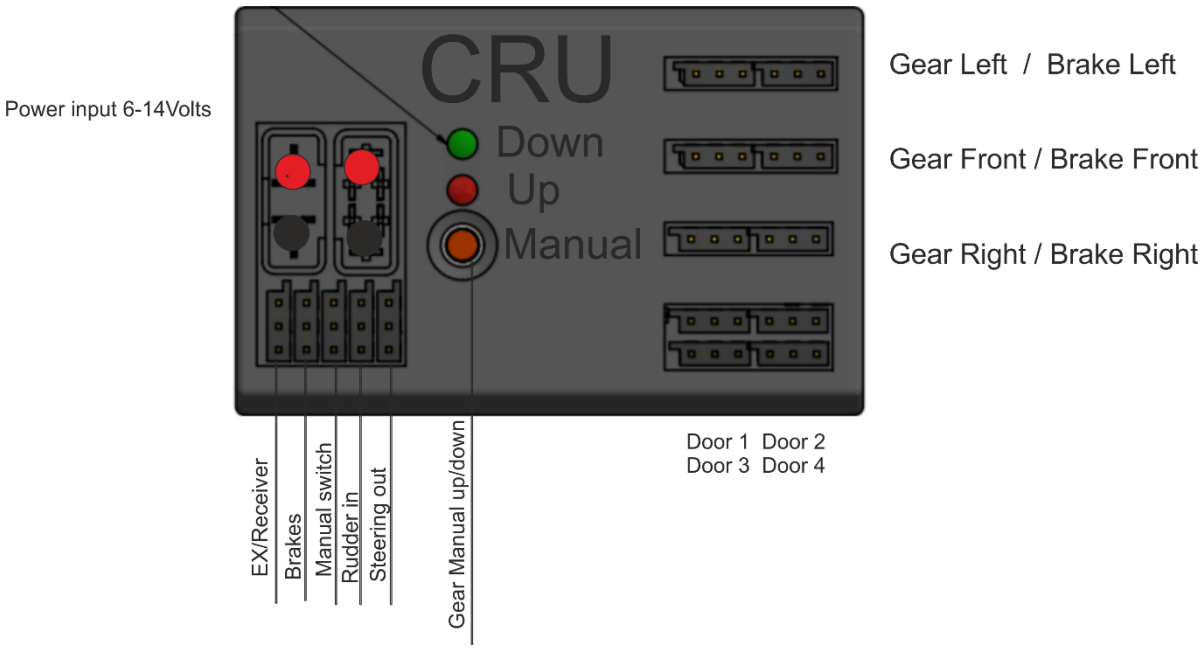
You can set voice messages so that when a gear is Really up (all 3) you can call out gear up. Or when gear is going up or down have a voice message Gear is retracting.

Also you can program any alarm when gear state is 0.

This means of the gears is stuck or is not fully deployed or retracted.

Section 6 : Using the CTU for other systems and programming over PC

6.1 connections



Connect EX / receiver to your Retract channel

Brakes : Brakes channel

Manual switch : for external usage of a button to enable the gear in or out.

Rudder channel in

Steering out.

Written by Sandor Kruise.

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If you see any mistake please let us now on

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