

# RAVAS MANUAL FOR SERVICE TECHNICIANS INDICATOR 3200



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## RAVAS SERVICE PROTOCOL

The indicator 3200 offers the possibility to communicate bi-directional with a PC or other hardware devices. Especially for servicing several commands were added to help determining failures.

### ***Transfer Protocol for wired connection over the RS232 port:***

Baudrate- 9600  
Databits- 8  
Stopbits- 1  
Parity- none  
Handshake-none

### ***Transfer Protocol for wireless connection over the BLE port:***

Baudrate- 115200  
Databits- 8  
Stopbits- 1  
Parity- none  
Handshake-none

### ***Data Protocol for Servicing***

For using the Servicing Commands, the proper data protocol of the selected communication port of the indicator should be set. Please follow next instructions;

- Press the totalizing button (no. 3) for 12 seconds until the display shows [USEr ]
- Press the totalizing button shortly. The display will show [ SUP. ]
- Press the enter button (no. 1 from the left) shortly to enter the Supervisor Menu. The display will show [00000] with the most right digit blinking. For entering the supervisor mode a password is required.
- Enter the password [05220] and press the enter button. The display will show [ bLE] which stands for the Bluetooth port.

If the communication needs to be handled over the wired RS232 port you need to push the totalizing button shortly. Next proceed with the following steps;

- Press the enter button shortly to enter the Bluetooth (or RS232) port settings.

The displays default is [ NonE] but it is possible that another data protocol has been set. In that case note down this and underlying settings so you will be able to restore the same settings after servicing. For going through these settings please check the Supervisor flow diagram at the back of this manual.

If the default value [ NonE] is set proceed with following steps;

- Press the totalizing button shortly. The display will show [ PC ]
- Press the enter button shortly to enter the PC settings. The display will show [bidir]
- Press the enter button shortly to enter the PC settings. The display will shortly show [ SEt ] and next return to the main Supervisor menu [ SUP.]
- Press the On/Off button (no.5 from the left) shortly to return to the weighing mode.

## ***SERVICE commands***

| SERVICE command | Response string        | Operation                                     |
|-----------------|------------------------|---|
| GE<CR>          | See chapter GE command | Read out of last 50 messages                  |
| GI<CR>          | See chapter GI command | Read out of general info and parameters       |
| GS<CR>          | See chapter GS command | Read out of status and calibration            |
| GL<CR>          | See chapter GL command | Read out total log file                       |
| RE<CR>          | See chapter RE command | Reset the ERRORS database (passcode required) |
| GA<CR>          | A;+000.0;+000.0<CR>    | Get angle positions X and Y                   |
| SA<CR>          | A;+000.0;+000.0<CR>    | Send angle positions X and Y (continuously)   |
|                 |                        |   |

## Special command 'GE'

With this command the last 50 errors of P93 can be read out. In these 50 errors only the most important user errors, like tip-loading or side-loading handling errors are taken into consideration. In the table underneath these are marked with an asterisk "\*". Other errors are summed up and will follow after the 50 errors have been sent. The transmission will be completed by sending out a form feed <FF>.

Example of Error logging:

```
01;71;170418;1400
02;71;300318;1232
03;71;300318;1232
04;71;300318;1448
05;02;130418;1409
06;02;130418;1417
07;02;130418;1419
08;02;130418;1419
09;02;130418;1419
10;02;130418;1419
11;71;130418;1613
12;71;130418;1634
13;02;130418;1728
14;71;130418;1730
15;71;170418;0836
16;71;170418;0854
17;71;170418;1359
18;71;170418;1400
01;0000
02;0007
03;0000
04;0001
06;0000
08;0000
09;0000
10;0000
21;0066
22;0059
23;0051
24;0052
25;0000
26;0000
40;0056
41;0002
42;0000
43;0000
44;0001
45;0001
46;0002
60;0000
61;0000
62;0000
71;0011
72;0000
80;0010
81;0001
92;0011
98;0000
99;0000
<FF>
```



## Explanation data lines

01;71;170418;1400 =

|                   |                 |                     |           |   |   |   |   |   |   |           |   |   |   |   |   |   |
|-------------------|-----------------|---------------------|-----------|---|---|---|---|---|---|-----------|---|---|---|---|---|---|
| 0                 | 1               | ;                   | 7         | 1 | ; | 1 | 7 | 0 | 4 | 1         | 8 | ; | 1 | 4 | 0 | 0 |
| register counter. | Separation sign | error no. displayed | Sep. sign | D | D | M | M | Y | Y | Sep. sign | H | H | M | M |   |   |



The first error retrieved from the database was registered on the date 17<sup>th</sup> April 2018 at 14:00h and was error "71" which stands for unsafe tip-load handling.


71;0011 =

|           |                 |   |                           |   |   |   |
|-----------|-----------------|---|---------------------------|---|---|---|
| 7         | 1               | ; | 0                         | 0 | 1 | 1 |
| error no. | Separation sign |   | Number of times displayed |   |   |   |

'71' which stands for tip-load handling, was registered 11 times since the unit has been put in the field.

## List of messages 3200 indicating device

| function   | Log Nummer | Disp Txt   |
|--|------------|--|
| LOAD CELL SIGNAL UNSTABLE                        | 1          | "Err01" *  |
| IFORKS OVERLOADED ON MAXIMUM CAPACITY            | 2          | "Err02" *  |
| TARA WHILE NEGATIVE WEIGHT                       | 3          | "Err03"  |
| ZERO OUT OF RANGE                                | 4          | "Err04"  |
| IFORKS OVERFLOW ADC                              | 6          | "Err06" *  |
| CALIBRATION OUT OF RANGE NEGATIVE                | 8          | "Err08"  |
| CALIBRATION OUT OF RANGE SIGNAL TOO LOW          | 9          | "Err09"  |
| CALIBRATION POINT LOWER THAN PREVIOUS POINT      | 10         | "Err10"  |
| LOW BATTERY FORK 1 CRITICAL                      | 11         | "LoBAF"  |
| LOW BATTERY FORK 2 CRITICAL                      | 12         | "LoBAF"  |
| LOW BATTERY INDICATOR CRITICAL                   | 13         | "LoBAI"  |
| COMMUNICATION FAILURE FORK 1                     | 21         | "ErrF1"  |
| COMMUNICATION FAILURE FORK 2                     | 22         | "ErrF2"  |
| COMMUNICATION FORK 1 TOO FEW SAMPLES received    | 23         | "Er_F1"  |
| COMMUNICATION FORK 2 TOO FEW SAMPLES received    | 24         | "Er_F2"  |
| COMMUNICATION FAILURE 1AD                        | 25         | "ErrAd"  |
| COMMUNICATION 1AD TOO FEW SAMPLES received       | 26         | "Er_Ad"  |
| ERROR WITH CORRECTION SENSOR not found           | 39         | "ErrCS"  |
| LEVEL MAX  | 40         | "Err L"  |
| OIML restriction while printing                  | 41         | "OInnL"  |
| NTEP restriction while printing                  | 42         | "ntEP"   |
| OIML restriction while calibration               | 43         | "OInnL"  |
| NTEP restriction while calibration               | 44         | "ntEP"   |
| CALIBRATION NOT ALLOWED PROTECTED BY JUMPER      | 45         | "Cal-J"  |
| AUDITTRAIL OUT OF RANGE *1                       | 46         | "SCall"  |
| LOW BAT INDICATOR                                | 60         |     |
| LOW BAT FORK 1 (only active with wireless units) | 61         | F1  |

|   |    |  |
|---|----|--|
| LOW BAT FORK 2 (only active with wireless units)        | 62 | F2  |
| OFF CENTRE LOAD TIP (only active with wireless units)   | 71 | "tiP" *  |
| OFF CENTRE LOAD SIDE (only active with wireless units)  | 72 | "SidE" *   |
| ERROR in RDC transfer (only active whit RDC-a protocol) | 80 | "trErr"  |
| RDC buffer full (only active whit RDC-a protocol)       | 81 | "FULL"   |
| ERROR EEPROM  | 82 | "ErrEP"  |
| GROSS NEGATIVE UNDERLOAD                                | 92 | "-----"  |
| CALIBRATION POINT MUST BE HIGHER THAN PREVIOUS ONE      | 98 | "Err98"  |
| ZEROING/TARING or PRINTING ACTION WHILE UNIT SWITCHED   | 99 | "Err99"  |

\*: These errors are registered in the P93 database with time and date stamp. All other errors will be shown as the number of times that they occurred and are only visible via the GE or GL command.

\*1: This error will only occur when the system has been calibrated (CA\_)or parameters (CF\_) have been changed more than 99 times. It concerns only legal for trade scales. For non-legal for trade scales this message will never occur. In that case the audit trail numbers will return to 00.

In case of this error message a service visit from a RAVAS employee or RAVAS agent will always be needed to check the unit and if needed recalibrate and re-stamp the scale. A password [20399] is required for this.

## Special command 'RE'

With this command the list of errors can be reset to none. For this a password [5220<CR>] is required. All errors in the database of the indicator will be erased. Only use this option if you want to start out with a fresh unit **after** a service.

### Example routine:

| Command   | Reply indicator  |
|-----------|--|
| RE <CR>   | PASSWORD?  |
| 5220 <CR> | OK   |
| GE <CR>   | 01;0000<br>02;0000<br>03;0000<br>04;0000<br>06;0000<br>08;0000<br>09;0000<br>10;0000<br>21;0000<br>22;0000<br>23;0000<br>24;0000<br>25;0000<br>26;0000<br>40;0000<br>41;0000<br>42;0000<br>43;0000<br>44;0000<br>45;0000<br>46;0000<br>60;0000<br>61;0000<br>62;0000 |

|  |  |
|--|--|
|  | <b>71;0000</b><br><b>72;0000</b><br><b>80;0000</b><br><b>81;0000</b><br><b>92;0000</b><br><b>98;0000</b><br><b>99;0000</b><br><FF> |
|--|--|

## Special command 'GI'

With this command the firmware versions of all the  $\mu$ P's can be read out and all the settings of the parameters will be listed after which the transfer is ended by sending the form feed command <FF>.

Example of information logging:

|             |   |
|-------------|---|
| STM;V0.21   | (firmware release for the STM $\mu$ -processor on the main board)   |
| NRFM;V0.3_t | (firmware release for the Nordic chip on the receiver option board) |
| NRFS;V0.6   | (firmware release for the Nordic chip on the main board)            |
| NRFT1;V0.7  | (firmware release for the Nordic chip on the transmitter board F1)  |
| NRFT2;V0.7  | (firmware release for the Nordic chip on the transmitter board F2)  |
| MacS;179DBD | (UID address for the Nordic chip on the main board)                 |
| Mac1;1E39CD | (UID address for the Nordic chip on the transmitter board F1)       |
| Mac2;7C82C7 | (UID address for the Nordic chip on the transmitter board F2)       |
| P001;1      | (setting of the start-up units)                                     |
| P002;5      | (setting of the smallest graduation)                                |
| P003;10     | (setting of the biggest graduation)                                 |
| P004;1000   | (setting of the maximum number of divisions)                        |
| P005;02500  | (setting of the maximum capacity)                                   |
| P006;0.5    | (setting of the motion detection)                                   |
| P007;3      | (setting of the filter size)  |
| P008;0.25   | (setting of the zero track)   |
| P009;002    | (setting of the negative zero range)                                |
| P010;002    | (setting of the positive zero range)                                |
| P012;nO     | (setting of the power on zero mode)                                 |
| P013;oinmL  | (setting of the legal for trade version)                            |
| P015;nO     | (setting of units switch activity)                                  |
| P017;0      | (setting of the Data Protocol for BLE in the SUP. menu)             |
| P018;9.812  | (setting of the gravity value working area)                         |
| P019;EU     | (setting of the date/time format)                                   |
| P020;9600   | (setting of the baudrate for RS232 connection main board)           |
| P021;8_n_1  | (setting of the interface protocol for RS232 connection main board) |
| P023;05     | (setting for the transmission rate of the remote protocol)          |
| P024;Cr     | (setting of the end character for RS232 connection main board)      |
| P025;4      | (setting of the Data Protocol for RS232 connection main board)      |
| P026;4      | (setting of the no. of LF for the RS232 connection main board)      |
| P028;StAnd  | (setting of the printout format)                                    |
| P030;9600   | (setting of the baudrate for COM3 connection main board)            |
| P031;8_n_1  | (setting of the interface protocol for COM3 connection main board)  |
| P032;Cr     | (setting of the end character for COM3 connection main board)       |
| P035;6      | (setting of the Data Protocol for COM3 connection main board)       |
| P036;4      | (setting of the no. of LF for the COM3 connection main board)       |
| P040;G-SrA  | (setting of leveling device mode)                                   |
| P041;1      | (setting of the delay time for the leveling device)                 |
| P042;1.00   | (setting of the correction factor for +X direction leveling device) |
| P043;1.00   | (setting of the correction factor for -X direction leveling device) |
| P044;1.00   | (setting of the correction factor for +Y direction leveling device) |
| P045;1.00   | (setting of the correction factor for -Y direction leveling device) |
| P046;3      | (setting of the filter size for the leveling device)                |
| P047;5.0    | (setting of the switch off angle for the X direction lev. device)   |
| P048;5.0    | (setting of the switch off angle for the Y direction lev. device)   |
| P049;002    | (setting of the maximum allowed underload)                          |
| P060;FLt    | (setting of the battery used for the indicator)                     |
| P061;02     | (setting of the low battery switch off time for the indicator)      |
| P062;3.7    | (setting of the battery supply for the transmitter modules)         |
| P063;120    | (setting of the auto shut off time for the transmitter modules)     |
| P064;08     | (setting of the low batt. switch off time for the transm. Modules)  |
| P068;00000  | (setting not implemented yet > future use)                          |
| P070;YES    | (setting of the clear tare mode)                                    |
| P071;100    | (setting of the maximum allowed tip-load)                           |
| P072;015    | (setting of the maximum allowed side-load)                          |
| P080;0      | (setting of the corner calibration enabling)                        |
| P081;0.000  | (setting of the corner correction factor for load cell A)           |
| P082;0.000  | (setting of the corner correction factor for load cell B)           |
| P083;0.000  | (setting of the corner correction factor for load cell C)           |
| P084;0.000  | (setting of the corner correction factor for load cell D)           |

P085;1E39Cd-7C82C7 (setting of the connected transmitter device UID's)  
 P086;6 (setting of the communication filter for the transmitters)  
 P096;1 (setting of the hardware configuration)  
 P098;001 (setting of the terminal no.)  
 P122;00 (setting of the auto off function in USER menu)  
 P123;00 (setting of the sleep function in USER menu)  
 P124;01 (setting of the auto reconnect time transmission modules [fixed])  
 P125;20 (setting of back light off in USER menu)  
 P126;100 (setting of the back light brightness in USER menu)  
 <FF>

### Explanation data lines

STM;V0.21 =

|                    |   |   |                 |   |                  |   |   |   |   |
|--------------------|---|---|-----------------|---|------------------|---|---|---|---|
| S                  | T | M |                 | ; | V                | 0 | . | 2 | 1 |
| main processor STM |   |   | Separation sign |   | Firmware version |   |   |   |   |

The firmware version of the main processor of this device is V0.21. (4/9/2019: V1.01)  
 NRFM;V0.3\_t = Firmware version of the BLE-Master processor on the iFork receiver option board is V0.3\_t. (4/9/2019: V0.8t, only visible for wireless units)  
 NRFS;V0.6 = Firmware version of the BLE-Slave processor on the main board is V0.6. (4/9/2019: V0.9)  
 NRFT1;V0.7 = Firmware version of the BLE processor of the iForks transmitter module 1 is V0.7. (4/9/2019: V2.0, only visible for wireless units) \*<sub>1</sub>  
 NRFT2;V0.7 = Firmware version of the BLE processor of the iForks transmitter module 2 is V0.7. (4/9/2019: V2.0, only visible for wireless units) \*<sub>1</sub>

MacS;179DBD

|  |   |   |   |                 |   |             |   |   |   |   |   |
|--|---|---|---|-----------------|---|-------------|---|---|---|---|---|
| M  | a | c | S |                 | ; | 1           | 7 | 9 | D | B | D |
| Mac address Bluetooth Slave (fixed on mainboard) |   |   |   | Separation sign |   | Mac address |   |   |   |   |   |

The Mac address of the Bluetooth modules are given.  
 MacS; ABC123 = Mac address of the Bluetooth Slave (placed directly on the main board)  
 Mac1; ABC123 = Mac address of the Bluetooth Fork1 (placed on the iForks transmitter module 1, only visible for wireless units)  
 Mac2; ABC123 = Mac address of the Bluetooth Fork2 (placed on the iForks transmitter module 2, only visible for wireless units)

P001;1 =

|               |   |   |   |                 |   |                          |   |
|---------------|---|---|---|-----------------|---|--------------------------|---|
| P             | 0 | 0 | 1 |                 | ; |                          | 1 |
| Parameter no. |   |   |   | Separation sign |   | Setting of the parameter |   |

Parameter 001 was set on value 1 which stands for the start-up unit of the device. In this example that would be 'kg'. For the complete parameter list please see document [ms-ravas-3200-eu-rev-20190919.pdf] for wired units or [ms-ravas-iforks-32-(xt)-eu-rev-20191128.pdf] for wireless units.

\*1: The firmware versions of the transmitters should always be the same! If they differ the iForks are likely to malfunction. In that case uploading of firmware is required.

## Special command 'GS'

With this command the status of the device can be read out and information will be given about the calibration values and the last time a calibration and/or parameter setting had taken place. The data transfer will be ended with a form feed <FF>.

Example of status logging:

```
VF1;4.0
VF2;4.0
VFI;13.2
W+00185;G-000.17
LC1;-0001066
LC2;-0001076
LC3;+0676794
LC4;-0001477
GS0;-0021;+0051;+1017
GSA0;+090.27;-090.00
GS1;-0019
GS2;+0053
GS3;+1019
GSC;+0750;+0.00000;+0.00000;+0.00000;+0.00000;+00.000000
CP0;-0001065;-0001074;-0001271;-0001470
CP1U;01500;+1029207;+1029207;+1029207;+1029207;00704.74
CP2U;00000;+0000000;+0000000;+0000000;+0000000;00000.00
CP3U;00000;+0000000;+0000000;+0000000;+0000000;00000.00
CP1D;00000;+0000000;+0000000;+0000000;+0000000;00000.00
CP2D;00000;+0000000;+0000000;+0000000;+0000000;00000.00
CP3D;00000;+0000000;+0000000;+0000000;+0000000;00000.00
CorA;01.0000
CorB;01.0000
CorC;01.0000
CorD;01.0000
CF;77;120218;1315
CA;02;120218;1315
<FF>
```

### ***Explanation data lines***

VF1;4.0V =

Supply voltage of Fork1 is given in Volts. In this example it is 4.0 Volts. (only for wireless units)

VF2;4.0V =

Supply voltage of Fork2 is given in Volts. In this example it is 4.0 Volts. (only for wireless units)

VFI;13.2V =

Supply voltage of the indicator is given in Volts. In this example it is 13.2 Volts.

W±00185;G-000.17 =

The actual displayed weight in basic units (P01 depending) and present level of the G-sensor in fork 2 in grades(°) are given. In this example the actual weight is 185 kg and the number of grades in (driving direction) is 0.17°.

LC1;-0001066 =

The actual number of AD counts of load cell input 1 is given. In this example -1066 counts.

LC2;±123456 =

The actual number of AD counts of load cell input 2 is given.

LC3;±123456 =

The actual number of AD counts of load cell input 3 is given.

LC4;±123456 =

The actual number of AD counts of load cell input 4 is given.

In case of an 1AD unit (hand pallet truck scale with LC-junction board) these values would be expected to be the same but could actually differ in the last 3 numbers because of the delay of 100 msec. per reading. The first 4 numbers should be the same for a properly working unit.

In case of an iFork unit these values will be different because the outputs of the load cells will always differ a little.

If there is a big difference in one of the load cell outputs than this is an indication that the load cell might be defect or the capacity of that load cell differs from the capacity of the other load cells.

GSO;-0021;+0051;+1017 =

The calibrated X,Y and Z values of the G-sensor are given at zero degrees and zero load. In this example X value is -21 counts, the Y value is +51 counts and the Z value is +1017 counts. (only for wireless units)

GSA0;+090.27;-090.00 =

The calibrated values of raw X and raw Y at 0 calibration of the CS001 correction sensor. In this example X value is +90.27 and Y value is -90.00 (only for wired units)

GS1;-0019 =

The actual number of AD counts of G-sensor direction 1(X) is given. In this example -19 counts. (only for wireless units)

GS2;+0053 =

The actual number of AD counts of G-sensor direction 2(Y) is given. In this example +53 counts. (only for wireless units)

GS3;+1019 =

The actual number of AD counts of G-sensor direction 3(Z) is given. In this example +1019 counts. (only for wireless units)

GSC;750.0;0.00000;0.00000;0.00000;0.00000;00.0000;

The used calibration weight, the compensation factors for P1, P2, P3 and P4 and the level offset are given in this order {Cal\_Weight};{P1\_Comp}, {P2\_Comp}; {P3\_Comp}; {P4\_Comp};{Loffset\_kg}. In this example only a zero calibration was done for the G-sensor, leaving the values for the span calibration on 0. (only for wireless units)

CP0;-0001065;-0001074;-0001271;-0001470 =

The AD counts of the 4 LC's at 0 kg of the original weight calibration are given. In this example LC-A was -1065 counts, LC-B was -1074 counts, LC-C was -1271 counts and LC-D was -1470 counts.

CP1U; 01500;+1029207;+1029207;+1029207;+1029207;00704,74 =



The AD counts of the 4 LC's at the first calibration point UP of the original calibration are given as well as the gain factor. In this example the calibration point was 1500 (kg/lb depending on the setting of P01), the counts of the load cells were all 1029207 (which indicates that it was a wired 1AD unit) and the gain factor was 704.74.

CP2U; 00000;000000;000000;000000;000000;00000,00 =

The AD counts of the 4 LC's at the second calibration point UP of the original calibration are given as well as the gain factor. If as in this example no values are filled in the fields it means that no multi-calibration points were used.

CP3U; 00000;000000;000000;000000;000000;00000,00 =

The AD counts of the 4 LC's at the third calibration point UP of the original calibration are given as well as the gain factor.

CP1D; 00000;000000;000000;000000;000000;00000,00 =

The AD counts of the 4 LC's at the first calibration point DOWN of the original calibration are given as well as the gain factor. If as in this example no values are filled in the fields it means that the calibration down functionality was not used. This option is only available for approved weighing systems (P13 ≠ n0)

CP2D; 00000;000000;000000;000000;000000;00000,00 =

The AD counts of the 4 LC's at the second calibration point DOWN of the original calibration are given as well as the gain factor.

CP1D; 00500;000000;000000;000000;000000;00000,00 =

The AD counts of the 4 LC's at the third calibration point DOWN of the original calibration are given as well as the gain factor.

CorA;1.000 =

The correction factor at the original calibration for corner A is given. In this example no correction factors are given which means no corner calibration has been performed which makes sense for a wired 1AD unit.

For wireless units these factors would normally be different for each corner since each load cell has its own characteristics which slightly differ from each other and the mechanical construction influences this during the replacement of the weight.

CorB; 1.000 =

The correction factor at the original calibration for corner B is given.

CorC; 1.000 =

The correction factor at the original calibration for corner C is given.

CorD; 1.000 =

The correction factor at the original calibration for corner D is given.

CF;00;061017;1533 =

Present audit trail number {00} for the parameter setting with the time stamp [6<sup>th</sup> October 2017 at 15:33h]

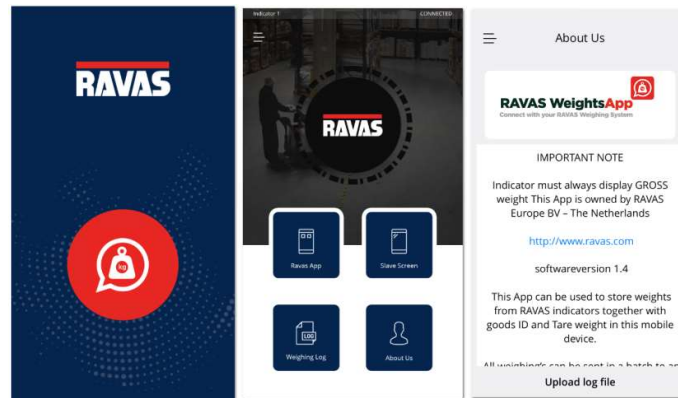
CA;00;061017;1533 =

Present audit trail number for the calibration [00] with the time stamp [6<sup>th</sup> October 2017 at 15:33h]

## Special command 'GL'

This command is used to retrieve all data of the commands 'GE', 'GI' and 'GS' combined in one dataflow without the form feeds in between but only a form feed at the end.

So the response would be the response at 'GE' minus the form feed, followed by the response at 'GI' minus the form feed, followed by the response at 'GS' with the form feed.

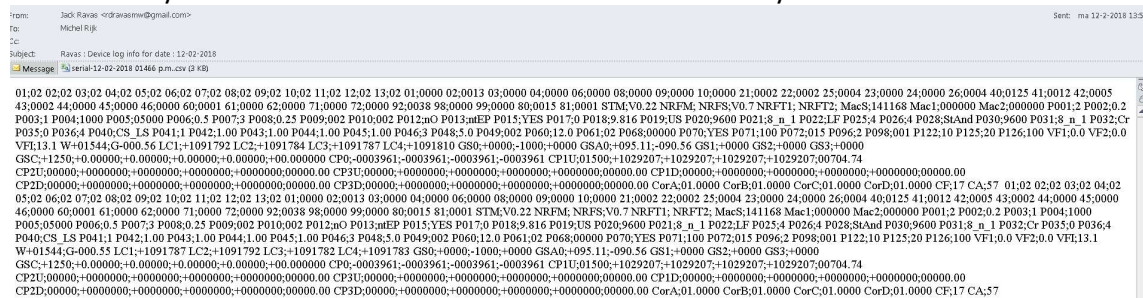


In the RAVAS APP this command is automatically generated when pressing the [Upload Log File] button in the menu {About Us}.

You will be asked to send the saved log. The default email address is service @ravas.com.

You may replace it by another address or add it with another email address.

In the email you will see the data as a CSV file as well as directly on the screen:



## Special command [SL]

This command is used for a customer who needs to have the proper error message in his reply to be able to perform the right action in his terminal.

The command is resembling the [SW]-command but in case of an error in the indicators display it will return the error number. For example; <ERR40> in case of a tilted position. The error numbers resemble the numbers of the errors list mentioned in the [GE]-command. It will be transmitted 2x/second. As soon as the error situation has been solved it will display the weight-string again.

In case of low battery of the forks it will also be transmitted but only once every 30 seconds. Only if the batteries are completely empty and the display of the indicator mentions "LOBAF", it will be transmitted 2x/second as well since this is a critical situation.

## Free Bluetooth serial terminal program for Android

For Service Technicians this app is very useful. It is a free downloadable app for Android phones.

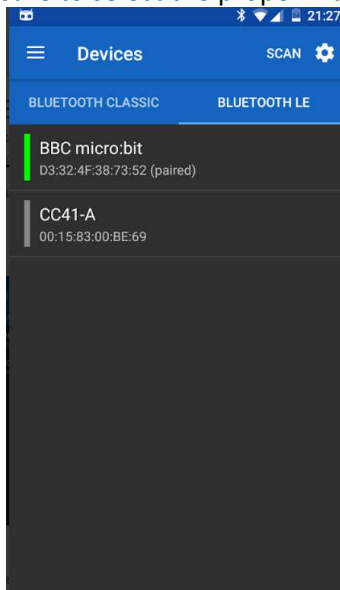
It gives you the possibility to enter separate commands like [GE] or [GI]. It will also enable you to reset the errors. (This is not possible with the RAVAS app).

For download go to the Play-Store  and open the app. In the search bar enter next search text "serial Bluetooth terminal" and start the search. Select the Serial Bluetooth Terminal app by Kai Morich by clicking on the icon:

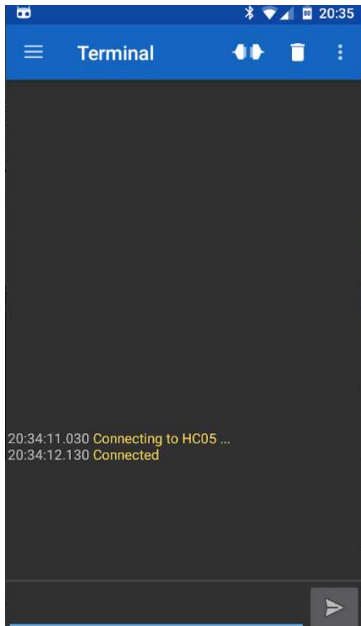


Select "download". The app will be downloaded on your Android device. After the download select "open". The terminal will be started. You need to give permission for location and Bluetooth for the app to work properly.

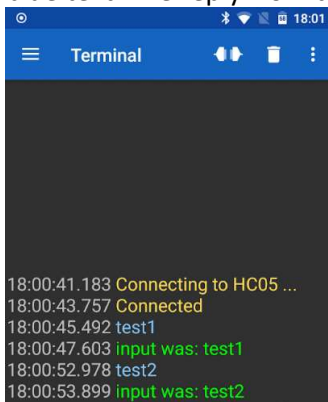
By selecting the menu [Devices] and performing a scan you may search for your device. (Be sure to select the proper Bluetooth tab first; BLUETOOTH LE)



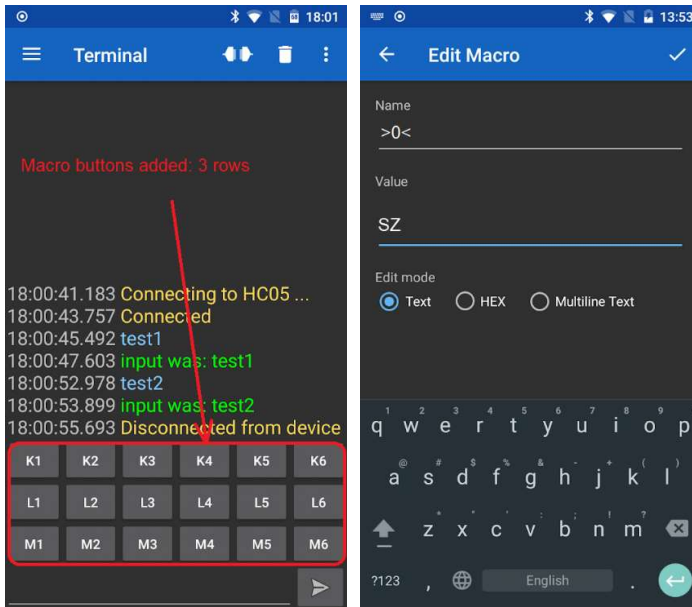
Clicking on a found device will activate the pairing sequence. The terminal program will automatically turn to the terminal page and make the connection.



In the bottom bar you may enter a command to be generated through the Bluetooth terminal to your device like [GE]. By pressing the arrow button the command will be forwarded to the Bluetooth port of the device. It will be shown in the terminal display in blue text. The reply from the device will be shown in green text:

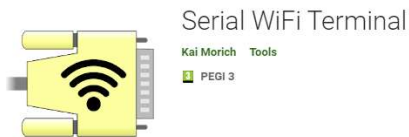


It is also possible to make some macro commands for this. In that case you only need to click on the macro button. For adding macro commands select the menu [Terminal>Settings>Misc.] After you have added the macro buttons they will become visible in the terminal display. You can select several rows. Normally 2 rows will give you enough macro's needed for your commands.



After this the macro buttons need to be configured. For this you need to press and hold a macro button for a few seconds until another window pops up. There you can give a name to the button and enter the command code.


For WIFI connections a similar app is available:




## Free Bluetooth serial terminal program for IOS

For Service Technicians using an Apple device this app is very useful. It is a free downloadable app for iOS phones.

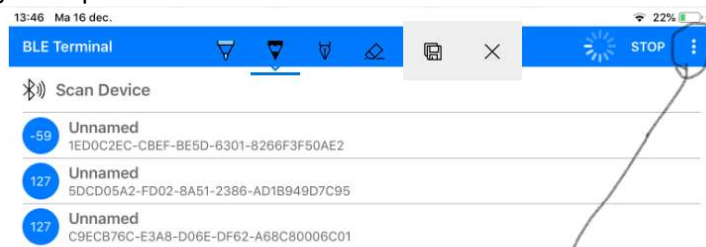
It gives you the possibility to enter separate commands like [GE] or [GI]. It will also enable you to reset the errors. (This is not possible with the RAVAS app).

For download go to the APP-Store  and open the app. In the search bar enter next search text "BLE terminal hm-10" and start the search. Select the BLE Terminal HM-10 app by clicking on the [DOWNLOAD] button.

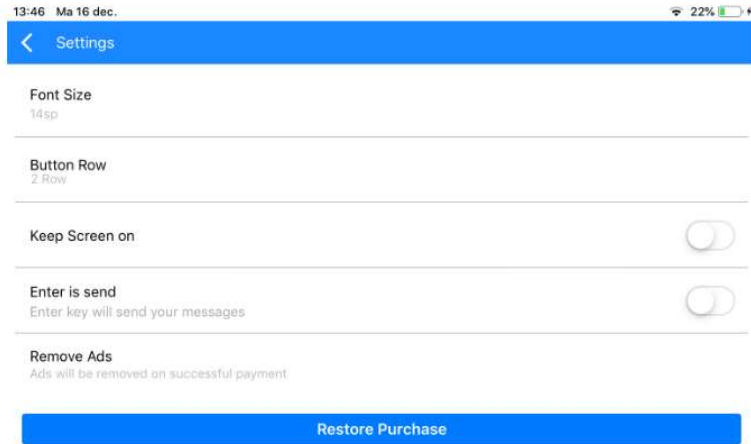


After installing open the BLE Terminal by clicking on the icon: 

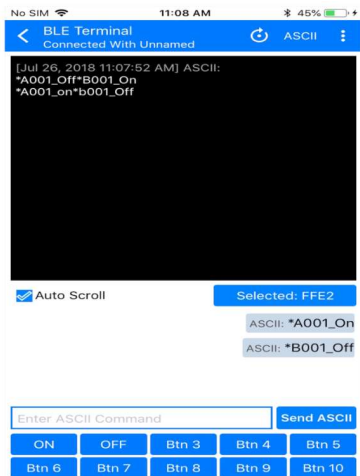
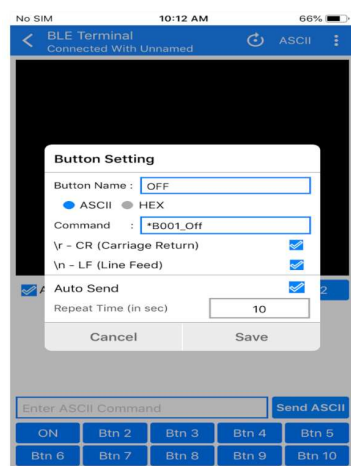
The program will automatically start searching for devices. In the right upper corner you can select the settings. See picture underneath.



In the following window you can change these settings like vadding more command button rows or selecting another font size or defining if the command should be send upon Enter.



Once you have made connection to a device you can start giving commands. See example underneath.

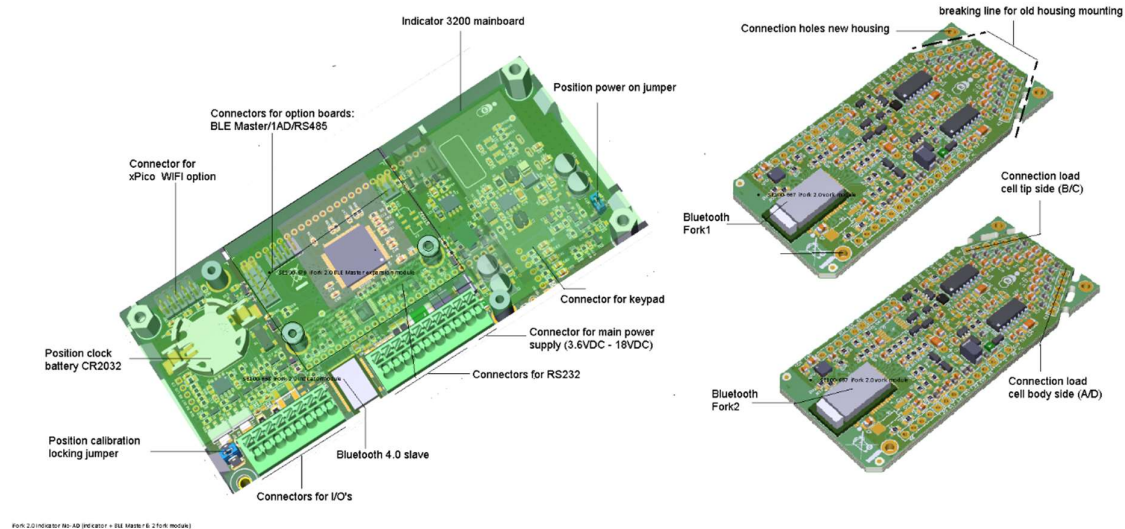


For WIFI connections a similar app is available: TCP Telnet terminal



## Hardware

The indicator 3200 consists of several PCB's depending on the configuration. See picture underneath:



The mainboard can be supplied with either an 1AD option board or an iForks master option board.

1AD: this has the AD-converter placed on the PCB. There is no micro-processor on this board and therefore no programming connector is required. It comes in 2 versions:

- a) Legal for trade version
- b) Standard version

- Legal for trade version is always with the extra connector for the correction sensor and has the EMC protection cover at the back side of the 1AD board.

- Standard version does not have the EMC protection cover and depending on the supplier (we always use 2 supply sources) it could come with or without the connector for the correction sensor.

iForks: this option board does not have the AD-converter mounted, instead it has the BLE-receiver mounted which communicates with the BLE-transmitters of the iFork modules. The BLE-chipset needs to be programmed and therefore there is also a connector for uploading firmware.

iFork transmitter modules:

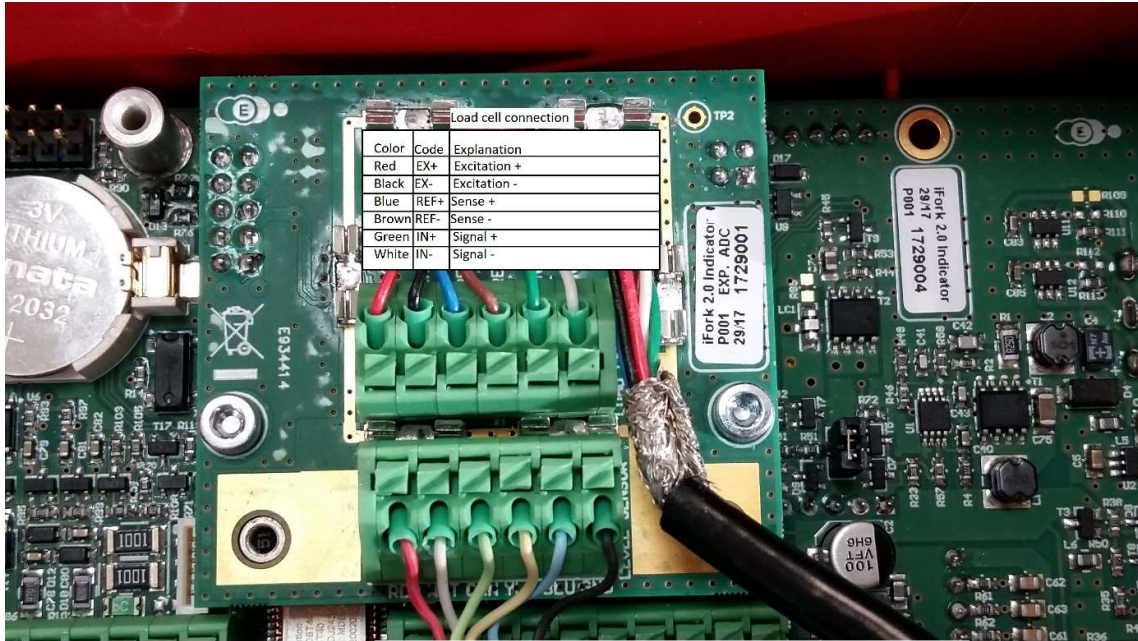
The iFork transmitter module PCB's are the same for the legal for trade and the standard versions. Only difference is the way they are sealed in the housing.

- a) Standard and NTEP are completely covered by a special compound
- b) OIML is not covered by a compound and placed in an EMC protective housing. The wires to the LED/BAT pcb are supplied with a ferrite filter.



# Wiring

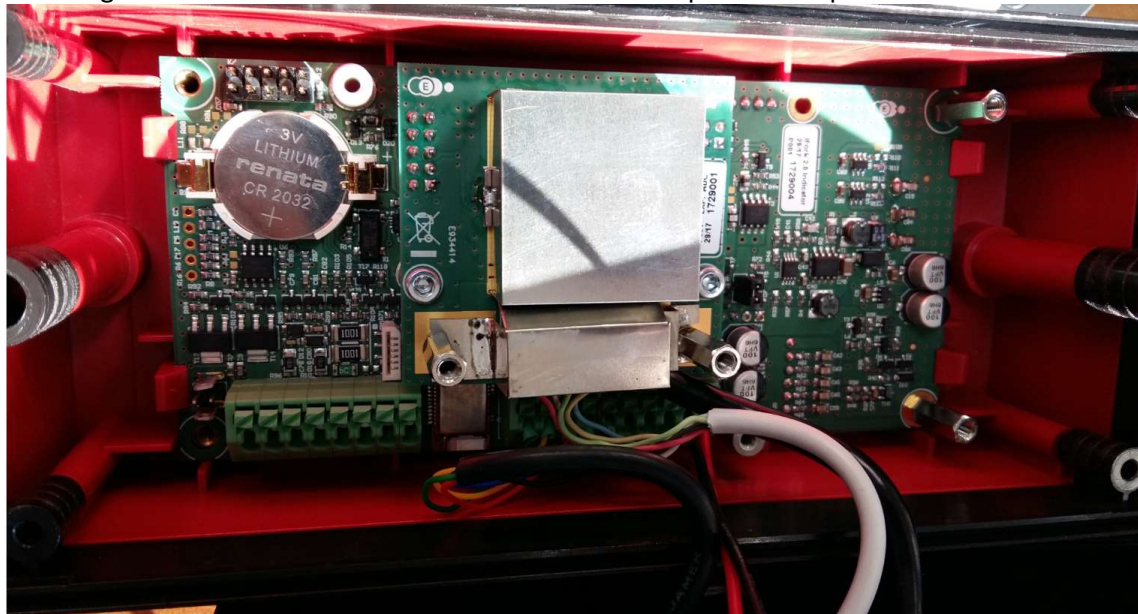
## 1AD board



| Color | Code | Explanation  |
|-------|------|--------------|
| Red   | EX+  | Excitation + |
| Black | EX-  | Excitation - |
| Blue  | REF+ | Sense +      |
| Brown | REF- | Sense -      |
| Green | IN+  | Signal +     |
| White | IN-  | Signal -     |

| Color  | Code | Explanation           |
|--------|------|-----------------------|
| Red    | RED  | Power supply (VCC)    |
| White  | WHT  | Clock (SCL)           |
| Green  | GRN  | Data line (SD0)       |
| Yellow | YLW  | Sample complete (SD1) |
| Blue   | BLU  | Zero reset            |
| Black  | GND  | Ground                |

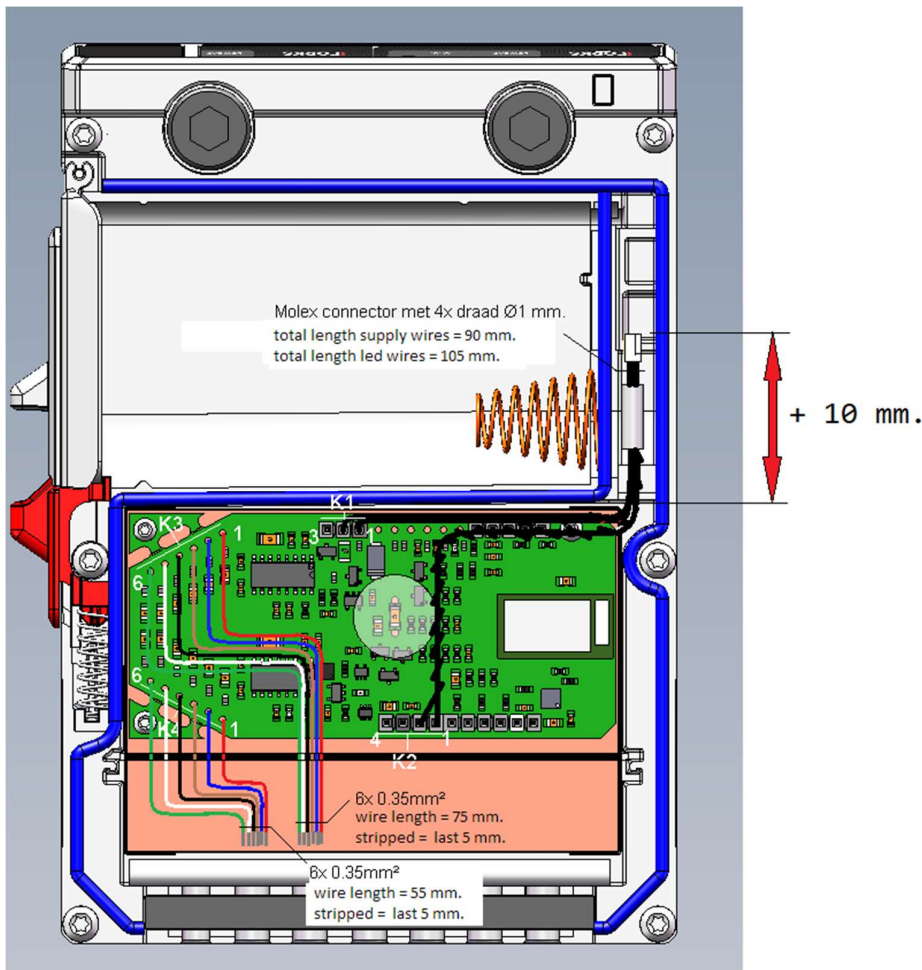
OIML legal for trade units need to be covered with the special EMC protection covers:



## BLE Master



## iFork modules



### Wiring connections iForks 2.0

#### Power supply (Connector K1):

| Connector pin | color | function            |
|---------------|-------|---------------------|
| 1             | black | V- Molex pin 4 BAT- |
| 2             | black | V+ Molex pin 3 BAT+ |

#### LED (Connector K2):

| Connector pin | color | function              |
|---------------|-------|-----------------------|
| 1             | black | LED- Molex pin 1 LED- |
| 2             | black | LED+ Molex pin 2 LED+ |

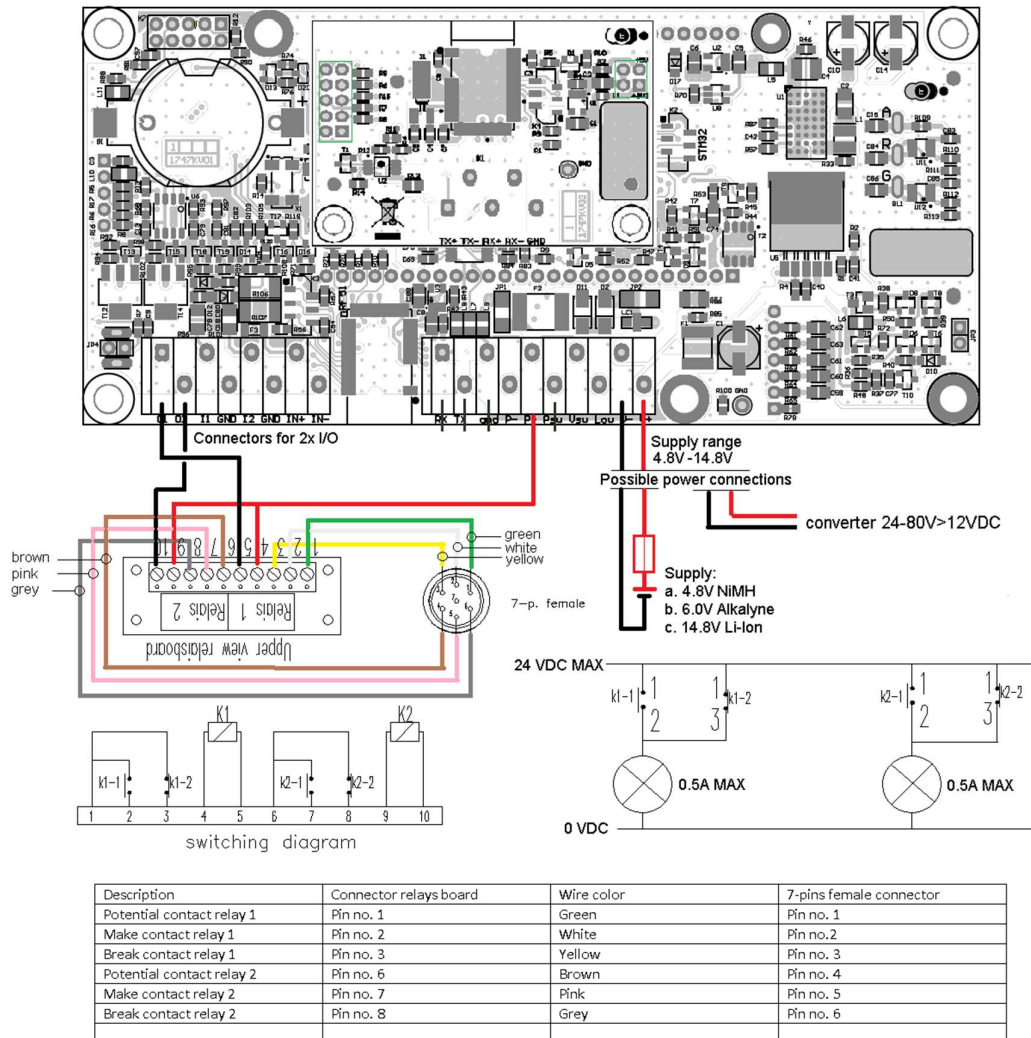
#### Loadcell body side (Connector K3):

| Connector pin | color | function      |
|---------------|-------|---------------|
| 1             | red   | Excitation+   |
| 2             | blue  | Reference+    |
| 3             | brown | Reference-    |
| 4             | black | Excitation-   |
| 5             | white | Input signal- |
| 6             | green | Input signal+ |

#### Loadcell tip side (Connector K4):

| Connector pin | color | function      |
|---------------|-------|---------------|
| 1             | red   | Excitation+   |
| 2             | blue  | Reference+    |
| 3             | brown | Reference-    |
| 4             | black | Excitation-   |
| 5             | white | Input signal- |
| 6             | green | Input signal+ |

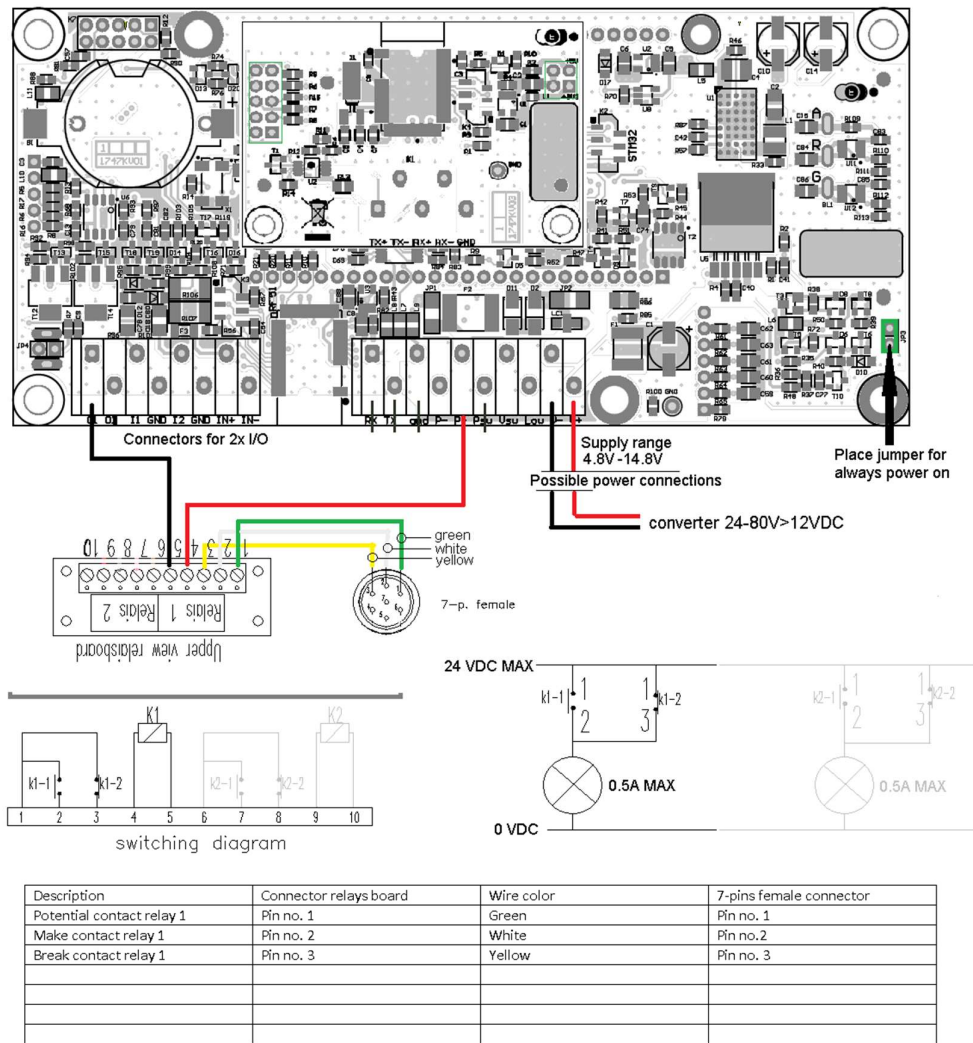
## Relais fill option



Remark: for the fill application to become active you need to set the proper parameters in the "Function menu".

Select the option [SetP] > [FILL] in the function menu. Next select whether you want to have a manual tare [PuSHb] or an automatic tare [Aut.t]. The setpoints will become active directly after the tare action has been completed.

## Relais overload option



Remark: for the overload application to become active you need to set the proper parameters in the "Function menu".

Select the option [SetP] > [OLOAD] in the function menu. Next select whether you want to have the overload active on the net weight [NEt] or the gross weight [gross]. Furthermore you can select whether the operator is authorized to change the setting of the overload value [AUt-Y] or that only a supervisor is authorized [AUt-N].

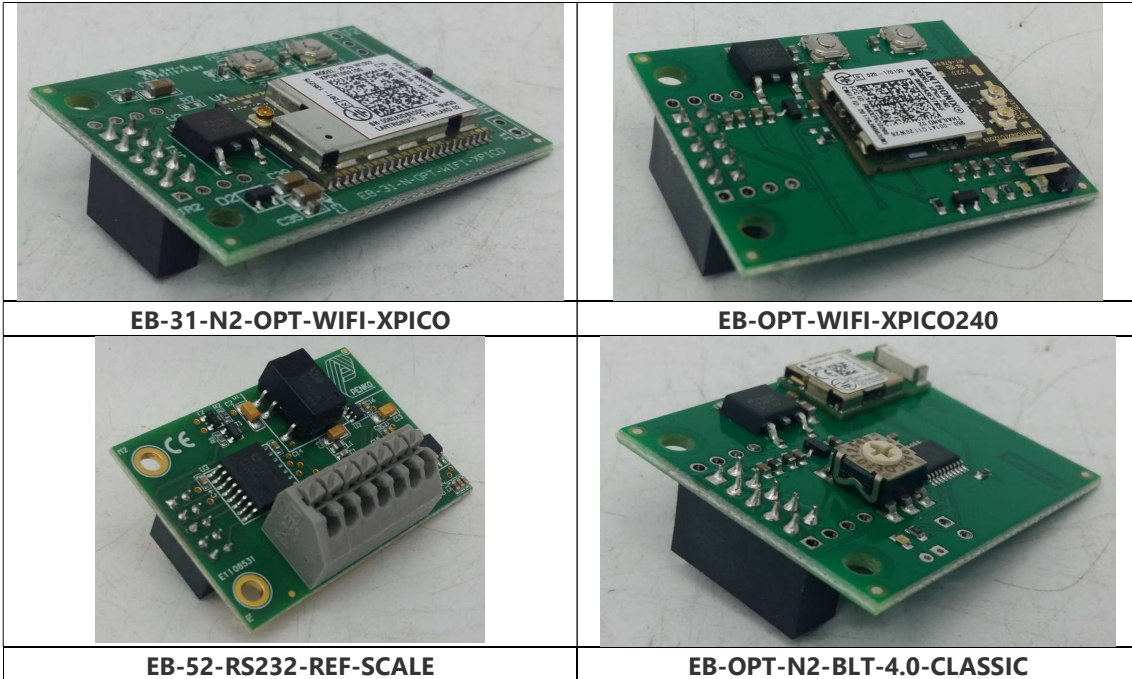
A delay time for the setpoint to become active upon reaching the overload value may be set next. The setpoint will become active after the overload value has been reached and the delay time has been expired.

The default values for the overload setting are; Net/Aut-Y/Delay=0.

## COM 3 options

For COM 3 there are several option boards available:

- **EB-31-N2-OPT-WIFI-XPICO**
- **EB-OPT-WIFI-XPICO240**
- **EB-52-RS232-REF-SCALE**
- **EB-OPT-N2-BLT-4.0-CLASSIC**



## Software versions

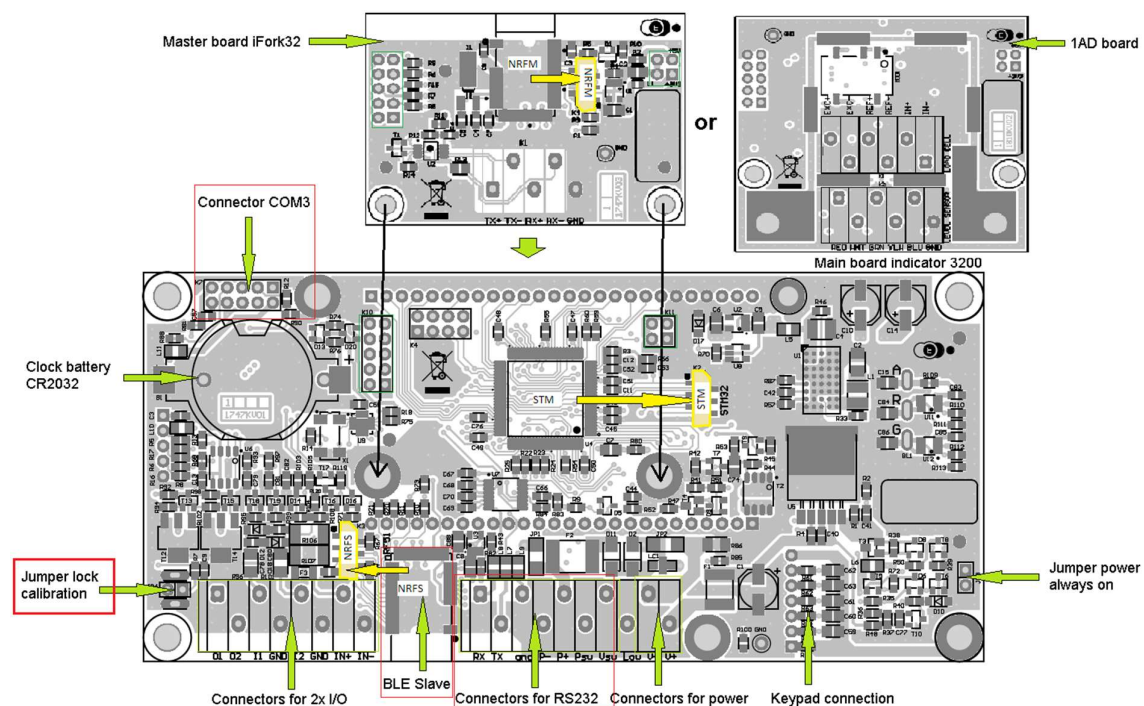
The indicator has several  $\mu$ P's mounted. The main  $\mu$ P is called the STM-processor and is located underneath the 1AD/Master option board. The programming connector is aside of the  $\mu$ P.

The Bluetooth chipset on the mainboard has its own  $\mu$ P and is located between the two green connectors. The programming connector for the NRFS is located aside the  $\mu$ P.

On the master option board another Bluetooth chipset is located with its own programming connector aside (NRFM).

The 1AD option board doesn't have a separate  $\mu$ P and therefore it doesn't have a programming connector.

See for more detail picture underneath. The yellow markers indicate the positions of the programming connectors.



## Status firmware releases

Initial version, release date 13-03-2018

|          | Release         |                 |
|----------|-----------------|-----------------|
| $\mu$ P↓ | 3200 1AD        | 32-BLE          |
| STM      | 1.00 / P88=0.24 | 1.00 / P88=0.24 |
| NRFS     | 1.0             | 0.9             |
| NRFM     | --              | 0.3             |
| NRFT1/2  | --              | 0.9             |

Status as of date 29-06-2020

|         | Release          |                  |
|---------|------------------|------------------|
| μP↓     | 3200 1AD         | 32-BLE           |
| STM     | 1.02 / P88=0.33H | 1.02 / P88=0.33H |
| NRFS    | 1.0              | 1.0              |
| NRFM    | --               | 0.8t             |
| NRFT1/2 | --               | 2.0              |

### Release V0.1 dd 13-6-2017

This was the first firmware version intended for testing only. Only basic functionality was implemented.

### Release V0.2 dd 5-7-2017

#### New functions:

- Handmatige level compensatie
- Low battery indicatie Vork en Indicator
- Error handling
- Redesign menu structuur + toepassen 5<sup>e</sup> knop
- Opsaan gewicht events in Alibi geheugen
- Alibi geheugen uitlees routine

#### Repaired deviations:

- Weergave/afhandeling P1-P4 in debug menu en bij kalibratie in juiste volgorde en overeenkomstig met P42-P45.
- Total en Tara functionaliteiten zijn weer actief volgens iForks Eco spec.

### Release V0.3 dd 24-7-2017

#### New functions:

- RTC driver
- P13 geijkt/niet geijkt

### Release V0.4 dd 28-7-2017

#### New functions:

- Metrologische parameters gekoppeld aan setting P13. Overeenkomstige defaults worden ingesteld.
- Rood backlight toegevoegd
- Automatisch resetten tara dmv P70
- Aanpassen opstartroutine
- Beveiliging metrologische instellingen
- Total/print functionaliteit aanpassen
- Preset tara afronding
- Aanpassen/testen printbon
- Underload aanpassing

#### Repaired deviations:

- Powerup zero ingesteld op +/- 10% van initiële nul
- Parameter lijst gekoppeld aan het parameter audittrail nummer is aangepast.

### Release V0.5 dd 22-8-2017

#### New functions:

1. Reset menu voor Audittrail nummers
2. Doorvoeren parameter aanpassing
3. Parameter menu handling aanpassing
4. Level parameters P40 en P41
5. Implementeer afweeg span kalibratie
6. Genereer spancurve voor opwegen en voor afwegen
7. Detecteer opweeg en afwegen en map op juiste curve
8. Batterij instelling 'Adj' toevoegen
9. Nieuw! Instelling Vork batterij via Parameter
10. Toevoegen vorkmodule parameters ( Vorkmodule batterij en P17: 4/6 draads Ic )

## **Release V0.6 dd 22-8-2017**

### **New functions:**

- Off centre last zwaartepunt detectie + P71 voor tip threshold en P72 voor side-threshold.
- PC++ protocol. Selecteerbaar via P25

### **Repaired deviations:**

- Afronding bij Print/Add actie
- Selectie parameters in parameter menu: Edit mode is nu direct actief.

## **Release V0.7 dd 8-9-2017**

### **Repaired deviations:**

- Afhandeling in level kalibratie menu
- Compensatie factor bepaling in level kalibratie menu

## **Release V0.8 dd 19-9-2017**

### **Changes:**

- Off-centre load detectie SIDE en TIP error gescheiden. Error delay time verkort van 3 seconden naar 1.2s.

### **New functions:**

- P89 voor wissen alibi geheugen + alibinummer.

### **Repaired deviations:**

- PC++ protocol: continuous mode acties worden gestopt als een willekeurig ander commando wordt ontvangen.
- LoadCell aansluitingen voor/achter omgedraaid. K3 = Punt vork, K4 = Vorkbed

## **Release V0.9 dd 13-10-2017**

### **New functions:**

1. Code Ingeven
2. Uitbreiding PC++ protocol met GI, GS en GE
3. Communicatie PC++ protocol via BLE
4. Commando GE uitgebreid met error counts, en GS met Eeprom info.
5. Supervisor Menu ( nog niet aangepaste naar laatste wijzigingsverzoek)

### **Repaired deviations:**

1. Zerotrack limiet op +/-2% bij P13 != none
2. Afbreken Power down routine na powerdown timeout
3. Bug na verlaten sleepmode
4. Decimalen achter de komma bij PC++ protocol.
5. Fout in afweeg linearisatie bij 1 en 2 punten gekalibreerd.

## **Release V0.10 dd 25-10-2017**

### **New functions:**

6. Uitbreiding Supervisor menu
7. Shortcut parameter menu en kalibratiemenu



8. Functionaliteit voor COM2 (voor oa XPico).
9. Baudrate en portsettings voor COM1 en COM2

**Repaired deviations:**

6. Levelkalibratie reset P3 en P4 na afbreken kalibratiemenu na P2
7. Communicatie naar BLE slave
8. Aanpassing Ravas Ascii protocol

**Release V0.11 dd 3-11-2017**

**Changes:**

- Starten supervise (sub)menu's met opgeslagen settings.

**New functions:**

- Uitlezen BLE Uuids van Fork1, Fork2 en BleSlave doormiddel van GI
- Uitlezen BLE Uuids via Usermenu

**Repaired deviations:**

- Communicatie naar Bla Slave (deze funcioneerde niet na opnieuw opstarten).
- ASCII Protocol ( ST, SZ)
- Reset preset tara bij P13 != none en brutogewicht <= 0
- Unit switch error bij print en preset tara edit.

**Release V0.12 dd 15-11-2017**

**New functions:**

- RDC menu
- Unit selectie weergave (kg/Lb) in parametermenu

**Repaired deviations:**

- Fout in alibi uitleesmenu

**Release V0.13 dd 29-11-2017**

**New functions:**

- Aangepaste Level compensatie
- LevelFiltering
  - Com port power handling

**Repaired deviations:**

- Rs232 Com port

**Release V0.14 dd 7-12-2017**

**New functions:**

- LevelFiltering
- Ravas Ascii protocol: Reset Errors, Get Angles

**Repaired deviations:**

- Level compensatie P2 -> Done

**Release V0.15 dd 15-12-2017**

**Repaired deviations:**

- Corner kalibratie -> Done -> Set
- Shortcut to Cal-menu
- Bug in Alibi memory

## Release V0.16 dd 19-11-2017

### Changes:

- Err09 'tijdelijk' uitgeschakeld

### New functions:

- RDC menu. RDC tekst veranderd in 'WDR' en timeout vergroot naar 3s.
- P96 en functionaliteit om tussen noAD en 1AD toepassing te schakelen. Hierin is nog zijn de (default) parameters en kalibratie nog niet aangepast. De functionaliteit voor de 1AD oplossing kan dus nog niet gebruikt worden.

## Release V0.17 dd 9-1-2018

### Repaired deviations:

- Low battery routine en instellingen dmv P60-64 gefixt.

## Release V0.18 dd 15-1-2018

### New functions:

- Functionaliteit Indicator-1AD en noAD geschakelbaar dmv P96.
- CS001 functionaliteit.

## Release V0.19 dd 17-1-2018

### Changes:

- Parameter menu -> parameters die niet actief horen te zijn bij een geselecteerd applicatie (noAD of 1AD) worden geblokkeerd.

### New functions:

- Resetten nummer edit menu dmv clear toets
- Info GS0, GSA0 en GSC toegevoegd aan GS commando van het Ravas Ascii protocol.

### Repaired deviations:

- Corner kalibratie -> Done en SEt weergave.
- Display teksten.
- Parameter menu -> bij CE indrukken in parameter nummer edit mode, werd het parameter nummer niet gereset. Bij opnieuw activeren parameter menu, werd vorige parameter nummer weergegeven.
- Gewichtberekening ->  $Weight = multA * (RawA - ZeroA) + \dots + multD * (RawD - ZeroD)$ 
  - a. Dit was eerst ->  $Weight = (multA * RawA - ZeroA) + \dots + (multD * RawD - ZeroD)$ .

## Release V0.20 dd 23-1-2018

### Changes:

- Ack/Nack commando voor RDC protocol
- Level error weergave bij CS\_FA level sensor

### Repaired deviations:

- Setten parameters bij leeg Eeprom

## Release V0.21 dd 31-1-2018

### Changes:

- Reset errors in Ravas ASCII protocol
- RDC ACK afhandeling
- Print snelheid afhankelijk van geselecteerde lowbat

### New functions:

- Display routine bij AG, AN en RS commando van Ravas ASCII protocol

### Repaired deviations:

- Powerdown routine
- Backlight routine

## Release V0.22 dd 6-2-2018

Update naar V0.22. Versie V0.21 bevatte bugs door verkeerde toegepaste compiler. Daarom zijn de functionaliteiten van V021 hieronder nog een keer genoemd.

### Changes:

- Reset errors in Ravas ASCII protocol
- RDC ACK afhandeling
- Print snelheid afhankelijk van geselecteerde lowbat

### New functions:

- Display routine bij AG, AN en RS commando van Ravas ASCII protocol
- Init string voor RDC protocol.

### Repaired deviations:

- Powerdown routine
- Backlight routine
- Sleep routine

## Release V0.23 dd 12-3-2018

### Changes:

- Aangepaste sleep en powerdown routine
- Fixeren printlayout naar [stand] bij P13 != none
- Datum + Tijd toegevoegd bij GS – audittrail nummer.
- Details in implementatie PDR protocol
- GE- Datum + tijd toegevoegd.

### New functions:

- Display routine bij AG, AN en RS commando van Ravas ASCII protocol
- Init string voor PDR protocol.
- 1AD defaults
- COM settings (End-of line en power handling)
- BLE communicatie verbetering -> periodiek retry bij communicatie error.
- Uitbreiden afschakelhoek. Instelbaar maken door P47 voor X-as en P48 voor Y-as

### Repaired deviations:

- RDC:
  - a. Alibinummer
  - b. Reset tijd na powerdown
- Defaults P13 werden overschreven bij P90 actie
- PDR communicatie via Xpico.

## Release V0.24 dd 14-3-2018\*

This is the first official released version P99=1.00/P88=0.24

|         | Release         |                 |
|---------|-----------------|-----------------|
| μP↓     | 3200 1AD        | 32-BLE          |
| STM     | 1.00 / P88=0.24 | 1.00 / P88=0.24 |
| NRFS    | 1.0             | 0.9             |
| NRFM    | --              | 0.3             |
| NRFT1/2 | --              | 0.9             |

### Repaired deviations:

- Small change in RDC protocol ( RVIRDC )
- Bug fix in BLE salve communicatie stm - nrf after sleep mode
- Bug fix in communication with forkmodules.

## Release V0.24B dd 16-03-2018

THIS IS A QUICK TEST VERSION TO SOLVE A CRITICAL BUG IN ANGLE CAL  
JvV 16-03-2018 @ Ravas

## Release V0.25A dd 29-3-2018

Fixes:

- CE exits calibration submenus\*
- Angle menu does not crash
- Total print does not have undesired whitespace
- Level errors settings can be enabled/disabled individually for X and Y
- Corner calibration doesn't hang on Err\_08 anymore

## Release V0.25b dd 29-3-2018

### Repaired deviations:

- Total print does not have undesired whitespace [functionality restored from regression in v0.25A]

## Release V0.25c dd 30-3-2018

### Repaired deviations:

- sleeptimer only active is measuring state or error state
- powerdowntimer only active is measuring state or error state.

## Release V0.25D dd ??

- #1 Defaults controleren
- #39 P28 "Print format" wordt niet geblokkeerd door de jumper bij NTEP/OIML
- #41 P32 in de parameter lijst is P34 in het systeem
- #44 P41 en P70 hebben verschil in de rode kleur voor NTEP/OIML, de code lijkt dit verschil niet te maken
- #47 RS232 RX wordt niet meer ingeschakeld na sleep
- #48 P92 crashed
- #50 password P94 moet in te geven zijn met shift toets (f2/pcs) ipv enter
- #3 Na sleep mode wordt parameter menu weer actief terwijl die al verlaten is
- #26 LP: Verzegeling van parameters met jumper
- #19 Sleep mode wordt niet wakker op alle knoppen
- #25 Bij annuleren van span blijft een pointer knipperen
- #4 Backlight off functie werkt niet
- #14 Het Ascii protocol heeft een extra <CR> bij diverse continuous modes
- #15 Het PDR protocol heeft een <LF> terwijl dit niet in de spec staat
- #21 Het aantal witregels bij print instellingen moet altijd tot LF leiden
- #51 Parametermenu: na eerste keer CE drukken wordt menu niet-bedienbaar, 2e keer is pas exit
- #52 Applicatie (P96) wordt als default overschreven door P13. Dit zou niet moeten kunnen.

## Release V0.25e dd 23-4-2018

### Repaired deviations:

- Na tarrering moet de indicator in de schaalgrootte blijven waarin hij zich op dat moment bevindt.

- De default waardes van P60 bij de geijkte 1AD varianten moeten op 12V staan i.p.v. 6V.

### **Release V0.25F dd ??**

- #55 Na tarrering moet de indicator in de schaalgrootte blijven waarin hij zich op dat moment bevindt. -Werkt nu ook voor preset
- #51 Parametermenu: na eerste keer CE drukken wordt menu niet-bedienbaar, 2e keer is pas exit
- #58 RDC-a protocol geeft gewichten niet juist door bij kleinere schaaldelen dan 1.0 kg/lb
- #61 Bij het opvragen van gewichten via het PC-bidir protocol wordt het gewicht altijd in kg verstuurd

### **Release V0.25h dd 25-4-2018**

#### **Repaired deviations:**

- Parametermenu: na eerste keer CE drukken wordt menu niet-bedienbaar, 2e keer is pas exit - werkt nu ook na editen van een parameter.
- Release van tarra bij geijkte stand P13 moet ook plaatsvinden als bruto gewicht  $\leq 0$  kg/lb.

#### **New functions:**

- Remote display protocol
- Remote protocol moet instelbare line ending hebben (cr-crlf-lf)

### **Release V0.25l dd 25-4-2018**

#### **Repaired deviations:**

- Na sleep mode wordt parameter menu weer actief terwijl die al verlaten is -> trad nog op bij het naar sleep gaan, nu niet meer.

### **Release V0.25p dd 2-5-2018**

#### **Repaired deviations:**

- Bluetooth adres instellen (P85) instabiel.
- In remote display mode wisselt het min teken

### **Release V0.25t dd 4-5-2018**

#### **Repaired deviations:**

- bij P13=no kunnen netto negatieve gewichten niet uitgeprint worden
- Bruto totaal gewicht mist bij transmissie RDC-A protocol

#### **New functions:**

- totaal wordt gereset bij 'overflow' van gewicht (99999) of counter (99)

### **Release V0.26A dd ??**

- #70 Default waardes voor de 1AD variant van P47 en P48 zetten op 3°.
- #71 Indien je nu op P21 staat en je drukt op Enter dan spring je naar P24. Druk je daarna weer op enter dan spring je terug naar P23.
- #72 ASCII/Bidir GW response herstellen: geen decimaal punt!
- #73 ASCII/Bidir GP/GT decimaal punt moet aan het eind niet aan het beign van het gewicht
- #74 Als P13 !=0 (OIML/NTEP) dan iForks low bat error op display bij spanning onder 3.6V
- #75 bidir GT/GP/AN/AG geeft altijd een extra linefeed in de response.
- #76 Maak #41 ongedaan: P34 moet de Cr/LF instelling zijn

## Release V0.26C dd 23-5-2018

- #66 Bluetooth adres instellen (P85) instabiel
- #74 Als P13 !=0 (OIML/NTEP) dan iForks low bat error op display bij spanning onder 3.6V
- #75 bidir GT/GP/AN/AG geeft altijd een extra linefeed in de response.
- #77 afschakelen bij vBat fork onder 3.55V van indicator onafhankelijk maken van P13
- #78 opnemer spanning vork schakelt weer in tijdens sleep, blijft ook actief na auto off

## Release V0.26f dd 25-5-2018

### Repaired deviations:

- Low bat waardes aanpassen
- #83 onafhankelijk maken van P13
- Na wakeup moet gewacht worden op een nieuw stabiel gewicht voor print/rdc

## Release V0.26h dd 30-5-2018

### Changes:

- Low bat waardes en instellingen aanpassen

## Release V0.26j dd 31-5-2018

### Changes:

- LOBAT error op scherm

## Release V0.26l dd 31-5-2018

### Changes:

- 1AD drempelwaarde verlaagd met 200mv
- interne batterijspanning ligt hoger dan wat de multimeter aangeeft, daarom 4.5V verlaagd naar 4.3V.  
dit betekent dat CUST instelbaar is vanaf 4.4V.  
dit betekent dat critical LoBat getriggered wordt bij intern gemeten 4.2V (extern ~ 4.4V)

## Release V0.26p dd 7-6-2018

### Changes:

- vorkmodules gaan soms spontaan weer aan.
- om onderscheid te kunnen maken tussen een indicator en een ander BLE device, moet de indicator altijd settings sturen na connect. Dit is toegevoegd.

## Release V0.26t dd 12-6-2018

### Repaired deviations:

- Weegnummer verspringt automatisch van 08 naar 01 in versie 0.26P

### Changes:

- andere wijzigingen zijn gemaakt in het opslaan van RDC buffers, maar het is nog niet getest of dit effect heeft.

## Release V0.27a dd 13-6-2018

### Repaired deviations:

- RDC backlog raakt verloren bij harde voedingsonderbreking van indicator

- dit probleem trad ook op in sleep mode en was niet gegarandeerd bij power off
- de RDC backlog wordt nu altijd gesaved bij sleep en poweroff, maar niet bij een harde voedingsonderbreking. - dit is overlegd.

### **Release V0.27c dd 15-6-2018**

#### **Changes:**

- Als buffer FULL bij RDC-A, dan ook niet meer printen
- Bij geijkte systemen (P13 <> no) mag een negatief bruto gewicht niet geprint kunnen worden
- Bij de STD print layout de tekst "out" bij een negatief netto gewicht weglaten
- Ravas ASCII RS geeft een factor 10 te hoog aan als met 1 decimaal nauwkeurig wordt gewerkt

### **Release V0.27e dd 16-6-2018**

#### **Changes:**

- Als buffer FULL bij RDC-A, dan ook niet meer printen -> ook totaal

### **Release V0.27f dd 18-6-2018**

#### **Changes:**

- #109 Geen negatief bruto printen ook als P13 = none --> Err03
- overig: implementatie totaal layout gecontroleerd, is conform #68 laat - zien voor p13 = none en OUT in approved versies. niet te testen ivm met lock op standaard layout.

### **Release V0.28a dd 21-6-2018**

#### **Repaired deviations:**

- Invoer van preset tarra waarde bij P01 = 2 (lb) is niet juist
- de waarde van de auto tarra bij P01 = 2(lb) wordt niet juist uitgeprint/opgeslagen
- Systeem aanpassen zodat het intern met de eenheid volgens P01 werkt
- Let op: Deze versie is een major redesign t.o.v. 0.27F!!!!  
Alle weegaspecten, print, opslag en communicatieaspecten moeten goed getest worden in Kg en Lb.

#### **Changes:**

- In feite is er na een P01 wisseling (KG/Lb) een factory reset nodig. Er moet nog bepaald worden hoe hier het best mee omgegaan kan worden, nu is dus handmatige herkalibratie alsmede wissen van alibigeheugen etc. noodzakelijk.

### **Release V0.28c dd 23-6-2018**

#### **Repaired deviations:**

- Bij parameter 1 wisseling kalibratie, alibi geheugen, totaal en (preset) Tarra wissen >> kalibratie toegevoegd: Totaal, RDC en preset tarra worden niet gewist, dit moet de gebruiker doen.
- commando [GL] komt niet goed door via BLE
- Printen tijdens unit switched werkt nu wel, dat zou niet mogelijk moeten zijn.
- defaults voor NTEP controleren, inclusief default kalibratie.
- Bij P40=CS\_LS alleen nul afregeling en geen verdere kalibratie >> JVV: alleen menu getest, niet functioneel getest!
- unit wordt niet gezet bij wisseling van defaults.
- niet geconfigureerd systeem mag niet in lowbat gaan

### **Release V0.28e dd 27-6-2018**

#### **Changes:**

- NTEP: het totaal mag enkel geprint worden indien de weegschaal binnen het nulbereik is ;  $0 \pm 1/4e$  (foutmelding [ntEP])

### **Release V0.29a dd 9-7-2018**

#### **Changes:**

- Maak zero track (p08) aanpasbaar voor OIML testen
- Nauwkeurige weergave loadcell debug waardes

**Repaired deviations:**

- Fix critical lowbat bug

**Release V0.29c dd 16-7-2018****Changes:**

- printformaat aanpassing NMI "Kg PT" "Kg C"
- zero binnen marge ook omhoog

**Release V0.29e dd 19-7-2018****New functions:**

- Functie menu
- Instellen limietwaarde 1 en 2
- Setpoint instelling en afhandeling
- Doseren en vullen

**Release V0.29F dd ??**

- #127 Checks toevoegen op geldigheid ingevoerde parameters setpoint/overload
- #128 Afrondingsprobleem bij vullen??? 100 als setpoint, maar pas bij 101 actief??

**Release V0.29H dd ??**

- #2 1 BLE vork moet op 0 gezet kunnen worden

**Release V0.29I dd 10-9-2018****Changes:**

- Let op: er zitten wijzigingen in de printafhandeling. Deze zouden geen effect moeten hebben op printgedrag, maar dat is nog niet volledig getest.

**Repaired deviations:**

- gsensor in 1 fork oplossing zit op verkeerde vork
- debug mode geeft geen X/Y weer voor 1 AD

**Release V0.29p dd 19-9-2018****Changes:**

- Layout menu laten vervallen
- extra LF accepteren in PC protocol

**New functions:**

- LP: Instellen printer bon header volgens header protocol
- LP: P27 Print Twice. opmerkingen:- Print twice toont "Wait" na "Copy" zolang het systeem niet in staat is een nieuwe druk op de print knop te accepteren.
- LP: Implementeer Barcode print protocol

**Repaired deviations:**

- P29 "Header lines added" ontbreekt in het systeem
- SCall error zou via enter knop te resetten moeten zijn
- Spontane side error melding
- verzend gewicht via bluetooth op basis van print knop
- Als er snel achter elkaar geprint wordt dan vervallen de witregels.

**Release V0.29s dd 15-10-2018****Changes:**

- Scanner via ble/serial functie direct bij print knop, onafhankelijk van motion



- pointers gelijk met uitgang aan bij uitsturen bij vullen / doseren
- Consequent indicatiehoekjes uitzetten in menu's waar die geen betekenis hebben
- sleep / auto-off uit tijdens doseren of vullen
- aanpassingen print menu t.b.v. printer onderscheid

#### Repaired deviations:

- printen met twee decimalen werkt niet
- support voor code 128 op martel printers
- als er op clear gedrukt wordt bij het printen van de totaalbon, krijg je wel copy
- pauzeren setpoint werkt niet bij pushb.
- pauzeren setpoint bij auto tare pauzeert R2 niet als setp1 nog niet gehaald is
- kapotte level sensor op 1ad zou errorCS moeten geven
- doseren/vullen functie stuurt driehoekjes F1/F2 omgekeerd aan
- P25=3. als je het print menu in gaat en niets aan past en dan verlaat is P25 daarna 4

### Release V0.30a dd 25-10-2018\*

This is the second official released version P99=1.01/P88=0.30a

|         | Release          |                  |
|---------|------------------|------------------|
| µP↓     | 3200 1AD         | 32-BLE           |
| STM     | 1.01 / P88=0.30a | 1.01 / P88=0.30a |
| NRFS    | 1.0              | 1.0              |
| NRFM    | --               | 0.8t             |
| NRFT1/2 | --               | 0.9              |

#### Changes:

- Lowbat error mag het systeem niet uitschakelen wanneer je in een menu zit
- Factory reset (90) lijkt application (96) op 0 te zetten
- aanpassen default waardes voor 1AD: A\_OFF van 3 naar 30 en SLEEP van 2 naar 20
- De passcode voor het afschermen van de supervisor en de function mode willen we niet [4996] hebben maar [5220]
- In de flow van de printer instelling willen we de instelling "ASCII" aanpassen naar "EndCR"
- Voor de verduidelijking willen we dan de tekst "LF=04" veranderen in "EOP=4"
- Default aanpassen voor P15 voor niet geijkt/EU
- Default setting van parameter 72 veranderen van 15 naar 30.
- Default setting van parameter 71 veranderen van 100 naar 120.
- Default setting van parameter 2 en 3 aanpassen voor de iForks uitvoeringen.
- Default setting van parameter 47 en 48 aanpassen voor de iForks uitvoeringen.
- Aanpassen default P49 voor niet geijkt van 2 naar 10
- P99 op V1.01 zetten
- errors meenemen in overload functie en actief maken op output 2
- Aanpassing P47, 48, 49

#### Repaired deviations:

- Bug fixen in [GW] commando
- Max + 9e in orde maken voor OIML en NTEP setting
- Parameter 34 lijkt niet actief te zijn. Enkel <CR> werkt, de andere instellingen niet

### Release V0.30c dd 15-3-2019

#### Changes:

- In de flow van de printer instelling willen we de instelling "ASCII" aanpassen naar "EndCR"
- Remote display transmissie snelheid ook gebruiken voor COM3 en RS232
- Ble stabiliteits verbeteringen aan de vorkmodule kant (Deze firmware is hierop voorbereid)

#### Repaired deviations:

- ErrFX / Er\_FX bij lage batterijspanning (3.6v)
- Trage tot standkoming van verbinding na powercycle vorkmodules
- Bug fixen in [GW] commando

Opmerkingen:

DIT IS EEN TESTRELEASE!!!! - Testen bij Salland zijn nog bezig ten tijde van release.  
Vroege release om parallel testen mogelijk te maken zoals afgestemd met Michel.

Bonding is uitgeschakeld. net als bij de eco kan het nodig zijn meerdere malen te pairen.

## Release V0.30d dd 26-3-2019

### Changes:

- Optie "-- --" > "F1 --" > "F1 F2" display na sleep
- Instabiel gewicht na sleep mode verbergen
- P88 meenemen in logfile ascii protocol GL/GI
- Disconnect timeout parameter vastgezet op 1 sec

### New functions:

- Parameter 86 voor fork ble feature selection (Joost/Niels)
- P86 (BLE opties voor vorkcommunicatie) specificatie:
- 0 = voorkeur standaard formaat
  - 1 = voorkeur standaard formaat + fout hysteresis + F1 F2 tijdens wake-up uit sleep
  - 2 = voorkeur standaard formaat + fout hysteresis
  - 3 = voorkeur standaard formaat + fout hysteresis + neger gefragmenteerde data
  - 4 = voorkeur gecompriemd formaat
  - 5 = voorkeur gecompriemd formaat + fout hysteresis + F1 F2 tijdens wake-up uit sleep
  - 6 = voorkeur gecompriemd formaat + fout hysteresis + F1 F2 tijdens wake-up uit sleep + neger gefragmenteerde data
  - 8 = 0
  - 9 = 0

n.b.

- voorkeur selectie 'gecompriemd formaat' werkt ook met (oude) vorkmodules die alleen standaard formaat ondersteunen
  - een (oude) indicator (zonder P86) stuurt altijd de voorkeur 'standaard formaat'. Dit betekent dat nieuwe vorkmodules automatisch in standaard formaat antwoorden.
  - een mix van een oude vorkmodule firmware en een nieuwe werkt ook, zelfs als de indicator ingesteld is op 'voorkeur gecompriemd formaat'.
- De forward en backward compatibility is getest met een nieuwe vorkmodule firmware die nog in ontwikkeling is.

### Repaired deviations:

- Ble stabiliteits verbeteringen aan de vorkmodule kant (Forward compatibility getest)
- Scan functie [S-NET] geeft niet de juiste waarde uit bij multi-range hele kg.
- ascii protocol GW moet minimum stepsize gebruiken
- Soms "hickup" uit sleep bij direct wakker maken nadat backlight uitging bij sleep

## Release V0.30e dd 1-4-2019

### Changes:

- Mac in logging staat op 0 voor vorken met FW versie 2.0

### Repaired deviations:

- P86 optie 5 is niet te selecteren

## Release V0.30f dd 8-4-2019

### Changes:

- Debug output ingeschakeld (maar niet in ble master)
- P86 F1-F2 actief bij alles anders dan 0
- Debug error codes toevoegen --> ErrEP toegevoegd (komt kort in beeld)

### New functions:

- Uibreding PC protocol met mogelijkheid F1/F2 adressen te zetten
- ErrEp (82) wanneer de data die in EEPROM geschreven wordt niet overeenkomt met wat er daarna weer teruggelezen wordt.

### Repaired deviations:

- SerialPoort menu geeft 'Remote' niet weer
- RDC stuurt soms dubbele nummers

- onderliggend probleem missed RDC updates en Tare locks
- PC protocol bevat niet-geïmplementeerde commando's

### **Release V0.30h dd 9-4-2019**

#### **Repaired deviations:**

- ErrEp bij ascii protocol GetInfo

Opmerkingen:

De fout zat in een functie die uitsluitend gebruikt wordt in de info weergave in het ascii protocol.

Hier werd een onbedoelde schrijfactie in flash gestart waardoor alle persistente geheugens in een fouttoestand kwamen bij volgende schrijfacties.

Het is zeer onwaarschijnlijk dat de wijziging (die zeer klein is) tot functioneel ander gedrag leidt in andere onderdelen van het systeem.

Het is getest dat de wijziging de fout corrigeert.

### **Release V0.30l dd 15-4-2019**

#### **Changes:**

- Econf als P96=0
- Angle menu uitschakelen als P40 = no (update: en 1AD applicatie)

#### **Repaired deviations:**

- Angle calibratie menu voor 1AD niet volgens spec (unhide tabs excell!)

### **Release V0.30p dd 9-5-2019**

#### **Repaired deviations:**

- Headers accepteren alleen uppercase karakters en getallen

### **Release V0.31a dd 20-5-2019\***

This version of the STM firmware is only compatible with BLE Master firmwares V0.8 or V0.9. Other versions will lead to the error message "ESoFt".

#### **Changes:**

- Header lengte beperkt tot 16 karakters ipv 25

Header lengte van 25 leidt tot wrapping naar volgende regel, want maar 24 karakters beschikbaar

Staat me bij dat Mees een goede reden had om 25 karakters te willen i.v.m. karakters die samengesteld werden uit twee codes.

- SCALL moet enkel voorkomen bij geijkte systemen: P13 = NTEP/OIML
- ESoFt error wanneer een master opsteekprint met ongeschikte firmware gebruikt wordt
- Printer timing aangepast en gecontroleerd met APS inbouwprinter.

#### **New functions:**

- Reset Audittrail via P87

P87 bestaat is uitgevoerd als een menu met 3 weergaves waartussen genavigeerd kan worden met omhoog en omlaag.

Wanneer 'CLEAR' bevestigd wordt met 'enter' worden de audittrail counters gewist en verschijnt 'DONE'.

#### **Repaired deviations:**

- Rood scherm bij 1AD met overload UIT. wordt groen met overload functie aan.
- zoals afgesproken worden in het PC protocol de getallen van de audittrail counters voor niet gecertificeerde systemen niet weergegeven.

deze worden ook daadwerkelijk niet meer opgehoogd in niet-gecertificeerde systemen.

De datum wordt wel opgeslagen en weergegeven in de logfile. Dus "CF;;260319;1324" en "CA;;260319;1324".

P87 geeft de waardes van CA en CF wel weer zodat de getallen wel te achterhalen zijn als het nodig is.

### **Release V0.31b dd 2-12-2019**

**Repaired deviations:**

- switched error codes for tip/side load

**Release V0.32A**

- #213 added "SL" command to RAVAS ASCII PROTOCOL

**Release V0.32B**

- #214 corrected error codes in "SL" command (RAVAS ASCII PROTOCOL)
- #215 added low batt error codes in "SL" command (RAVAS ASCII PROTOCOL)

**Release V0.32C**

- #214 switched tip/side load error codes

**Release V0.33A dd 4-6-2020**

- Added parameter set commando to RAVAS ASCII PROTOCOL (Edits by Tjeu).
- auto switch to <CR> line ending when selecting PC-Prot from user menu.
- add level switch support (to P40).
- add possibility to have no-levelswitch or sensor when in oiml mode.
- Add remote display 2 protocol

**Release V0.33B**

- fixed remote display 2 protocol not working on RS232.

**Release V0.33C**

- P60 -> Flt -- print fast
- More Baudrate options
- p40 -> add LS\_in for OIML and NTEP

**Release V0.33D**

- Set zero command now instantly works or throws an error for Manual as well as PC commands.
- P07 -> 0 (No filter) no longer blocks motion detection.
- removed setting 7 from P17/P25/P35
- removed setting 9 from P17/P25

**Release V0.33E**

- P68 -> off (0) Vsw+ is now always on instead of off.
- P97 Button test no longer sounds buzzer (Vsw+).

**Release V0.33F dd 29-6-2020**

- reconfigured outputs:
  - o Output 1 schakelt alleen op basis van Fill (setpoint 1) of Overload. (op basis van het functie menu.)

- Output 2 schakelt op basis van Fill (setpoint 2?) of Overload + Tip, Side & vork connectie errors. (gedrag als voorheen P68 -> yes, maar nu altijd)
- Vsw+ P68 -> 0 : altijd aan. P68 -> 1 : aan bij elke error (met 1s delay)
- P50 no longer allows "No" as option. default set to "vErt".
- some general cleanup in the
- 

### Release V0.33H dd 1-7-2020

P60 -> Flt.: print fast. for real this time.

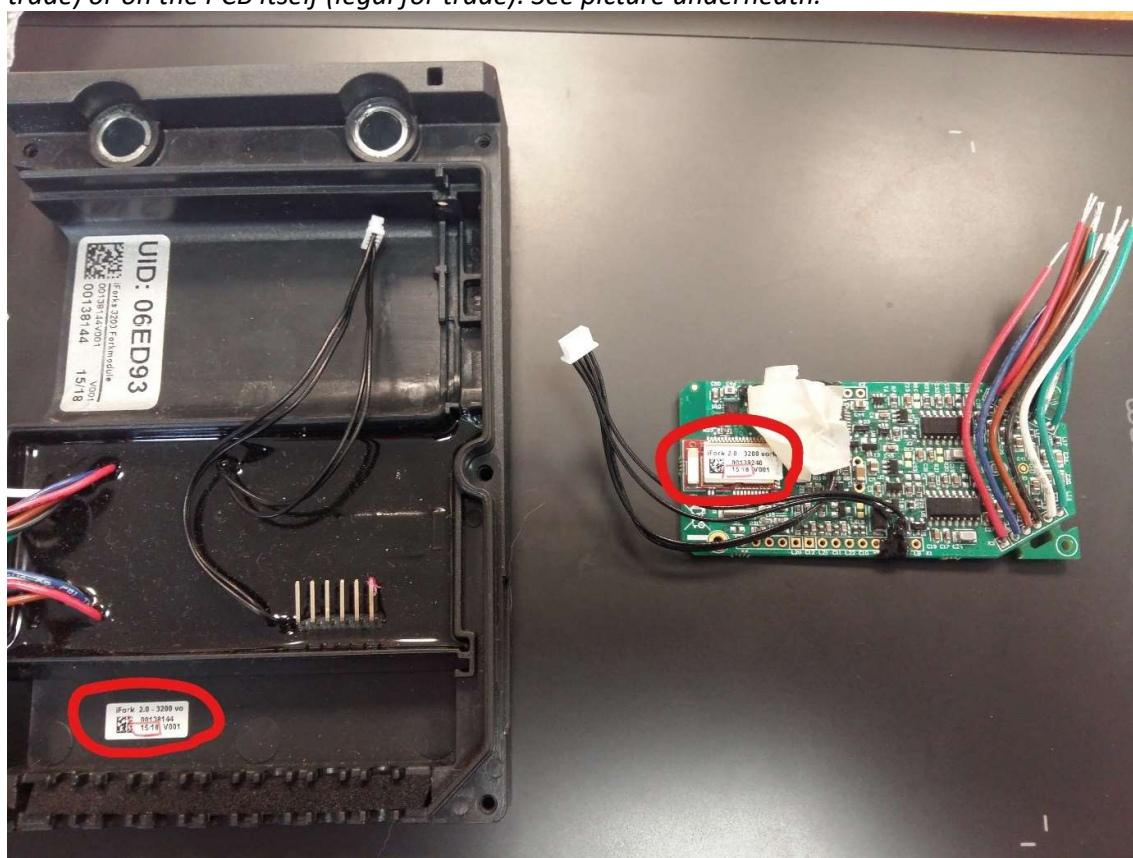
|         | Release          |                  |
|---------|------------------|------------------|
| μP↓     | 3200 1AD         | 32-BLE           |
| STM     | 1.02 / P88=0.33H | 1.02 / P88=0.33H |
| NRFS    | 1.0              | 1.0              |
| NRFM    | --               | 0.8t             |
| NRFT1/2 | --               | 2.0              |

## Known issues

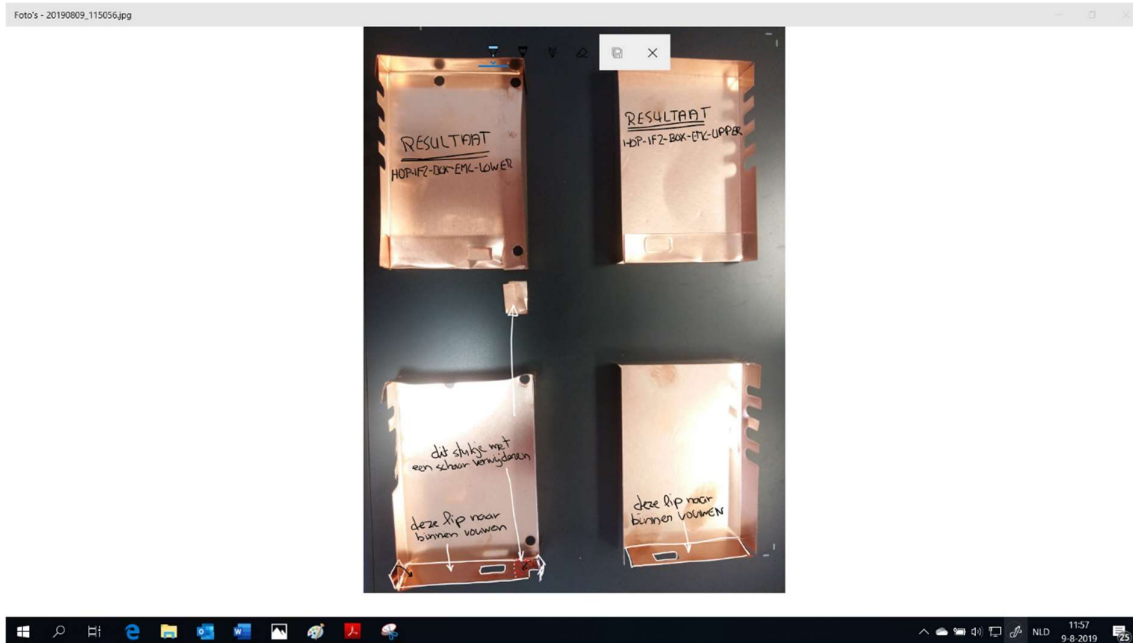
In this section known issues with the 3200 indicator are mentioned and possible solutions are given. This section will be maintained up to date as much as possible.

1. Bad or insufficient communication with the iForks (legal for trade and non legal for trade);

*In the first version of the hardware the PCB supplier used the wrong configuration for the PCB layers. This might cause problems with communication between the fork modules and the indicator. It is visible by checking the error log [GE] and look for errors (21/22/23 and 24). If the number of occurrences exceeds the value 1000, changing the fork modules is advised. There is no need for changing the modules if there are no communication problems! Modules from the first batch are marked with a small label inside the housing (non legal for trade) or on the PCB itself (legal for trade). See picture underneath.*



2. Bad or insufficient communication with the iForks (legal for trade);  
*Bad communication with legal for trade units can also occur when the EMC protection is not according last version. In the first versions of this EMC housing the side at the BLE transmitter antenna was still present. In the new version this side is left out to get a better signal range. For older versions please fold down this side as shown in picture underneath.*



### 3. Bad or insufficient communication with the transmitter modules

*If a main board has been replaced it depends on the firmware of the fork module to set P86 properly. If the firmware in the fork module is of V1.0 or older it is advised to set P86 to 0 (or 1/2/3). If the firmware in the fork module is of V2.0 or higher it is advised to set P86 to 6 (or 4/5). Parameter 86 sets the communication filtering for the transmitters.*

*Setting to 0 = standard format to be used with V1.0 or older.*

*Setting to 1 = standard format with error hysteresis and F1\_F2 after wake-up from sleep ( $\leq V1.0$ )*

*Setting to 2 = standard format with error hysteresis ( $\leq V1.0$ )*

*Setting to 3 = standard format with error hysteresis and ignoring defragmented data packages ( $\leq V1.0$ )*

*Setting to 4 = compressed format to be used with V2.0 or newer.*

*Setting to 5 = compressed format with error hysteresis and F1\_F2 after wake up from sleep ( $\geq V2.0$ )*

*Setting to 6 = compressed format with error hysteresis, F1\_F2 and ignoring defragmented data packages ( $\geq V2.0$ )*

### 4. Bad WIFI connection XPico-240 modules

*In some cases, we have had some issues with finding and configuring the XPico-240 modules. It is not always possible to find the proper solution for this problem for a service technician. In case the indicator is supplied by a built-in convertor, removing the antenna running along the converter might help you solving the problem. The XPico-240 can also work well with only 1 antenna mounted.*

### 5. Message [EConF] in display

*If this message is displayed after starting up it means that the parameter 96 is not set yet. Parameter 96 determines the configuration of the hardware used. In case of iForks (wireless units in general) P96 should be set to [1], in case of wired units P96 should be set to [2].*

*It is most likely to happen when spare parts are being send to a customer. Since the spare parts division dos not know what configuration is needed if a separate mainboard is ordered the setting of P96 cannot be determined upfront. It is most unlikely that this message is seen with new or existing units in the field.*

6. Display keeps in display mode of version number [1.01]

*This will occur if P96 is set to 3 instead of 1 or 2. Setting 3 is reserved for future use and at present not active. Setting the P96 to the proper hardware configuration (see point 4) will solve this problem.*

7. Message [ErrAd] in display

*This message will occur if P96 was set to 2 (for wired systems) whilst the hardware for iForks (wireless systems) was mounted or no hardware option module was mounted or improperly installed. For the first case setting the P96 to [1] would be the solution for the second case mounting the 1AD module on the mainboard would be the solution.*

8. [ErrF1] or [ErrF2] in display

*This message will appear if no receiver board was installed or improperly installed (1), if instead of the receiver board the 1AD option board was installed(2), if the batteries of the transmitter modules weren't installed(3) or if the forks are switched off because of long time no use(4).*

*For case 1 the solution would be installing the receiver board (properly).*

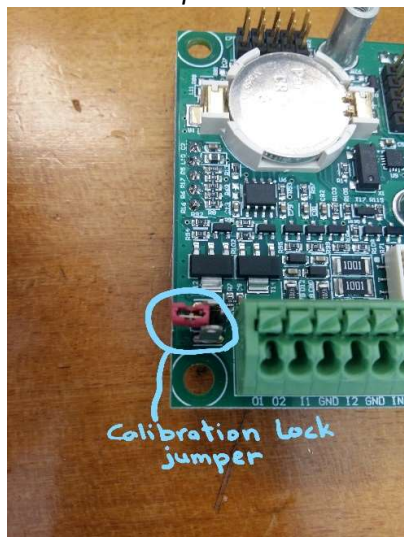
*For case 2 the solution would be exchanging the 1AD option board for the receiver board.*

*For case 3 the solution would be installing (full) batteries.*

*For case 4 the solution would be moving the forks up and down to activate them.*

9. [CAL-J] in the display

*This message will appear if the calibration jumper was placed and an attempt was made to re-calibrate the unit. The only solution for this is removing the calibration jumper. See picture underneath. Warning: if it concerns a legal for trade unit the sealing needs to be renewed by an authorized person.*



10. Indicator turns on automatically after installing the battery



This would be the case if the power on jumper was placed. To solve this removing the jumper would be sufficient. See picture underneath.



11. [SCALL] in the display

*If this message is displayed it means that a legal for trade unit has been calibrated or parameter changes have been made more than 99 times since the unit was put in the field. A service is required to check the system on faults or flaws. This is a requirement according EN45501:2015 paragraph "4.1.2.4 Securing of components and pre-set controls note1: The term "non-resettable" above implies that if the counter has reached its maximum number it will not continue with zero without the intervention of an authorized person".*

*After the servicing the unit needs to be sealed again. For removing the [SCALL] message a password is required (20399). Press the on/off key for 8 seconds to enter the passcode mode. See also instructions in the service manual.*

12. [ESOFt] in the display

*This message means that the receiver board has got a firmware installed which is too old. This might happen if a new main board was used as spare part for instance. Solution is to update the firmware of the receiver board. This can only be done with the proper programming tools.*

13. [ErrEP] in the display

*Although it is unlikely that this message will appear in practice it is possible. The error stands for a unintended writing error of the flash memory. If it happens it doesn't mean that the unit will not work anymore but that a part of the flash memory could be damaged. The error can only come up with the ASCII command [GI].*

14. Transmitter module doesn't become active after placing a fully charged battery.

*This might happen if P62 was set to the wrong battery supply. If for instance P62 was set to 6V and Li-Ion battery is used, the fork module will not start up (after having been powered off due to a "LOBAF" status), because it needs to see the voltage of a full battery which would be 6VDC. A fully charged Li-Ion is merely 4.1 VDC so not enough to restart the fork module. The only solution for this is putting 6VDC on the battery contacts of the fork module, after which the fork module will be restarted, and the led will be activated. After the indicator has*

*made a successful connection again, you can change P62 to the proper setting and install the Li-Ion battery again without any problem.*

15. [NO\_Ad] in the display (not connected to a host device by BLE).

*This means that the main board STM processor is not capable of retrieving any signals from the AD-option board. It could mean that the AD-option board is broken or that the main board is broken. If the main board isn't functioning correctly and a new AD-option board is placed on the malfunctioning main board you could be blowing up another AD-option board. Therefore it is wise to start with mounting the AD-option board onto a new main board to see whether the AD-board is the cause or the main board is the cause. A damaged AD-option board will not damage the main board but a damaged main board could damage an AD-option board. At this point it is not cleared yet what causes a damaged main board to damage also the AD-option board. Investigation is still going on [dd. 22-7-2020]*

*10-8-2020: Investigation has shown that the most probable cause is the fact that older main boards sometimes have a bad solder connection at a critical point which can only be detected with a stress test. This stress test is from now on being performed by the supplier. The bad soldering causes the main board to give a higher voltage output to the 1AD-option board than allowed.*

16. [NO\_Ad] in the display (connected to a host device by BLE).

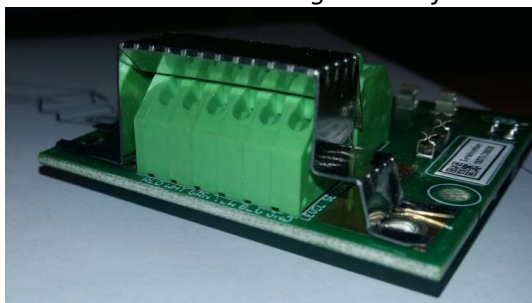
*This could mean that the BLE on the main board was connected to a host device which had RAVAS app active and running. In case the connection is lost (due to the indicator going into sleep mode) the BLE of the host device will try to restore the connection. Trying to wake up the indicator again will then result in the error [NO\_Ad] because the BLE and the 1AD use the same BLE processor and the Bluetooth connection has priority above the 1AD connection. The problem can be solved by closing the RAVAS app on the host device and powering off and on the indicator. If this situation repeats too often it is advised to turn off the sleep mode. The indicator will consume more power so batteries need to be recharged sooner. The newest firmware [1.02 / P88=0.33H] has solved this problem.*

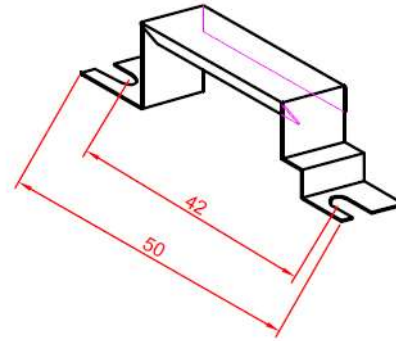
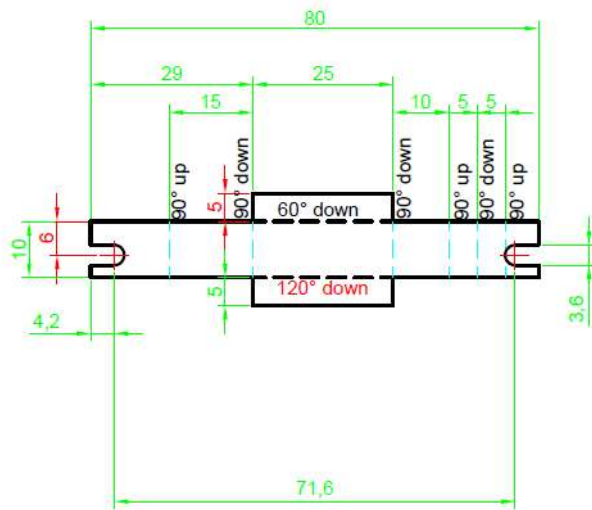
17. Indicator (OIML legal for trade) will not power on.

*This can be caused by a short-circuit at the 1AD board. The metal protection cover for the correction sensor might have scratched through the PCB surface making the shield short-circuit with the GND. Because the shield of the black legal for trade load cells is connected to the body of the load cell this creates a loop.*

*For a temporary solution remove the metal of the cover which is touching the GND surface.*

*10-8-2020: a new drawing is made for the cover which should prevent this in the future.*





18. [ErrAD] in the display for 30 seconds after which the weight is shown.  
*The cause is not exactly defined yet. Solution for now is to remove the back-up battery (CR3202) and wait for about 2 minutes before placing it back. This should start up the indicator normal.*  
 7-9-2020: a software solution is being investigated for this.
- 19.





