

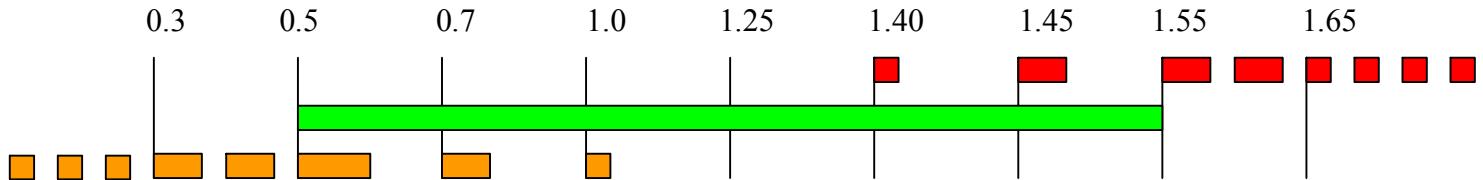
Explanation of the flowchart for the rEvodream Gauge / HUD

(Please read this paper together with the flowchart!)

- Sleep = when the controller is in sleep-mode (battery – life > 10 years)
- 3T = 3 taps on the case containing the LCD
- 2FL = 2 flashes : a Flash is equivalent to a pulse of the three LEDs together, a Pulse is a short lighting of a LED.
- Attention: 2FL is a request for confirmation of the operation that has been just carried out. If you agree, you confirm by 2T (two taps).
- Wake-up Signal = O->OG->OGR (the Orange LED lights up, then the Green one, then the Red) the controller is in service
- Attention: if in the setup (1P) 2 cells are connected, sequence OGR runs twice, if only 1 cell is selected, then the sequence only runs once.
- Display of the PPO2:
when 2 cells are connected, the gauge/HUD will show the PPO2 readings of both, alternating every 3 seconds

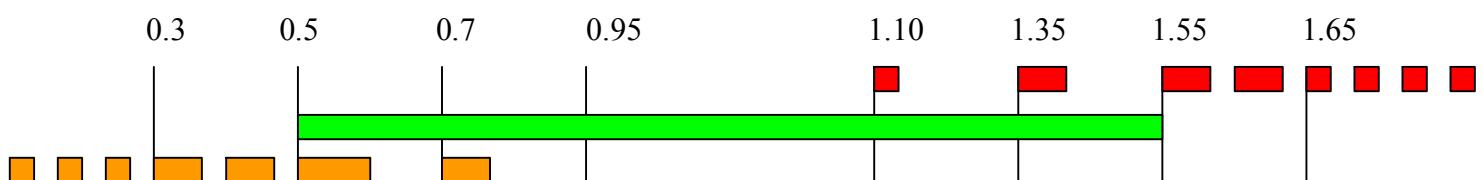
- If in the setup the variable 5P is not activated the green zone indicates PPO2 ranging between 1.25 and 1.40. The variations of PPO2 are symbolized as follows:

PO2 < 0.3 multiple fast Pulses Orange
> 0.3 < 0.5 2P Orange
> 0.5 < 0.7 1P long Orange + Green continuous
> 0.7 < 1.0 1P short Orange + Green continuous
> 1.0 < 1.25 very short Pulse Orange + Green continuous
> 1.25 < 1.40 continuous Green
> 1.40 < 1.45 very short Pulse Red + Green continuous
> 1.45 < 1.55 1P Red + Green continuous
> 1.55 < 1.65 2P Red
> 1.65 multiple fast Pulses Red



- If in the setup the variable 5P is activated the Green zone is between 0.95 and 1.10 and the variations become:

PO2 < 0.3 multiple fast Pulses Orange
> 0.3 < 0.5 2P Orange
> 0.5 < 0.7 1P long Orange + Green continuous
> 0.7 < 0.95 very short Pulse Orange + Green continuous
> 0.95 < 1.10 continuous Green
> 1.10 < 1.35 very short Pulse Red + Green continuous
> 1.35 < 1.55 1P Red + Green continuous
> 1.55 < 1.65 2P Red
> 1.65 multiple fast Pulses Red



- Calibration: always carry out it in pure oxygen. The gauge indicates initially the voltage (millivolt) of the cell, then carries out the calibration if the voltage is correct (if it ranges between 38 and 60 mV in pure oxygen)
- Pt = Pulse Train: a series of brief Pulses
- Pt O: Pulse Train of the Orange LED, means that the millivolt value of the cell is too low, the calibration is not carried out.
- Pt R: Pulse Train of the Red LED, the millivolt value of the cell is too high, no calibration
- Pt G: Pulse Train of the Green LED, the millivolt value is correct, its value is registered in the memory (setup: Pt G indicates that the value of the setup is registered in the memory)
- Setup: 6 variables can be activated, of which 5 only are used for the moment. A variable is activated by a tap (T) on the case. This tap is to be given immediately after the number of Pulse corresponding to the variable, following the table hereafter:

Variable	not activated	activated
1P	2 cells	1 cell
2P	backlighting off	permanent backlighting
3P	LEDs/HUD on	LEDs/HUD off
4P	auto-off activated	auto-off disabled
5P	green zone PPO2 1.25-1.40	green zone PPO2 0.95-1.10

Variable 1: if activated, the gauge shows only 1 (the first) cell.

- Variable 2: if not activated one tap on the case during diving gives 15 seconds of backlighting, if activated backlighting functions permanently.
- Variable 3: if activated, the LEDs/HUD do not show the PPO2 (to save the battery). (application gauge only, when no HUD installed)
- Variable 4: active auto-off: the gauge goes to sleep after 15 min if $PPO2 < 0.5$
- If no tap is given after a Pulse the variable is not activated.
- Signal To sleep: OGR->OG->O - > then nothing more. The gauge/HUD is asleep.

changing batteries:

when the indication 'low battery' appears on the screen of the rEvodream (battery-sign in the left upper corner of the lcd), both batteries have to be replaced: (type: CR2450)

unscrew the 8 bolts of the display, lift up the transparent cover, take away the engraved plate and the neoprene cushion, unscrew the battery clip. put 2 new batteries in place (+ up) and fix the clip again; *the rEvodream goes into 'sleep-mode'*. (If not loosen the clip shortly and fix again) If the polarity of the batteries is wrong, the rEvodream will not be damaged, but it will not *function* either. Put the neoprene cushion, the engraved plate back, put the transparent cover in place, but take care that the cover has contact with the whole O-ring. Fix the 8 bolts again, but do not overtighten them!! (if so, the treat will be damaged!)

now the unit can be used normally again

after changing the batteries, all the setting- and calibrationdata still remains

technical data

partial pressure oxygen gauge for max 2 cell's type R22D
display of the PPO2 on the LCD screen and with 3 LED's (orange, green, red)

PPO2 between 0.00 and 2.00

max dept: 150m (pressure resistant) use is limited to divers certification

temp range: $-5^\circ - 40^\circ$

batteries: 2 x CR2450 lithium 3V

service life: +/- 250 hours with backlight off, +/- 70 hours with backlight on

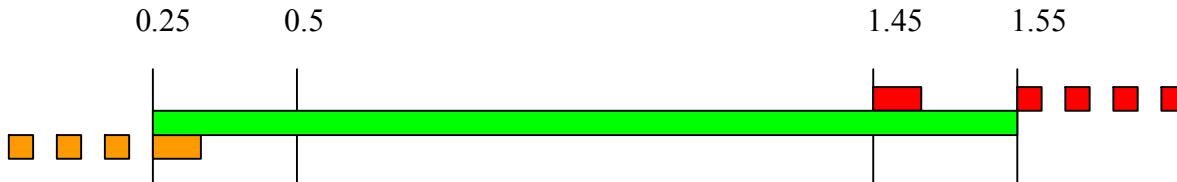
option: the rEvodream SCR/CCR (standard in 'next generation')

besides the standard functions, the rEvodream SCR/CCR has the following extra functions:

* possibility to calibrate in air: calibration in air is done by tapping 4 times after the 'setup'-signal, followed by 2 taps for confirmation: The gauge indicates initially the voltage (millivolt) of the cell, then carries out the calibration if the voltage is correct (if it ranges between 8.3 and 13 mV in air).

* a much wider 'green-only' zone: when the SCR option is set (variable 6P activated) the 'green-only' zone is between 0.50 and 1.45. The variations of PPO2 are symbolized as follows:

PPO2 < 0.25 multiple fast Pulses Orange
> 0.25 < 0.5 1P Orange + Green continuous
> 0.5 < 1.45 continuous Green
> 1.45 < 1.55 1P Red + Green continuous
> 1.55 multiple fast Pulses Red



When variable 6 is activated, the LED-output is independant from the setting of variable 5. Also the auto-off function is disabled.

Option: altitude calibration, or with less then 99% oxygen ('next generation')

* After calibration with oxygen, the display always shows 0.99 / 1.00. However, oxygen can have a lower purity then 99%, or calibration can be done at altitude (ambient pressure < 1 bar), so in those cases it is necessary to display a value less then 0.99 / 1.00. This can now be done by entering a new option in the setup-menu: 7 taps (The method is identical to reduce the 0.21 output when calibration with air at altitude for the SCR version).

After calibration, when the display shows 0.99 / 1.00, the unit returns to the alternating orange-red signal to ask if you want to do another setup. After this alternating signal, you tap 7 times, the rEvodream will reply with 7 green pulses, followed by 2 flashes. You now confirm with 2 taps, and the rEvodream will reply with one 'wake-up signal'. Immediately after this signal, it is possible to lower the reading by continuously tapping the unit: you will see the value decrease, until you stop tapping. Once stopped tapping, the rEvodream will give a green puls train, confirming that the value is saved in memory, followed by again a 'wake-up signal'. By tapping the unit now you can decrease the reading of the second cell (if the unit is set on 2 cells). Again, once stopped tapping, the unit will confirm the writing in memory by a green puls train. After this the unit returns to alternating orange-red, and if no taps received, it will go to dive-mode.

The new software also contains a modification, so prevent the flash, followed by 2 seconds of no LED's, that you get during diving when the rEvodreams receives a tap accidentally.

Once the rEvodream is switched on for **more then 2 minutes**, it is impossible to switch it off as long as the PPO2 > 0.50. While the PPO2 > 0.50 and the unit is on for more then 2 minutes, the rEvodream will not react to any tapping anymore, it will continue to display the PPO2 both on the display and on the HUD, but only the back-light will be on for 15 seconds.

To switch off the rEvodream, all that is needed is to lower the PPO2 below 0.50 (rinsing with air), and the unit will react to tapping again. Now you can switch the unit off by the normal tapping procedure, or allow the unit to go to sleep after 5 minutes (auto-off function)

(the SCR model can only be switched off by the usual tapping method)