

**STEP** - Interface protocol

for

**Survey meter OD-02**

(MC- Version V1.6.6 , release 10-2018)



## Content:

1. Hardware, Interface parameters
2. Serial interface: Data sent by OD-02
3. Serial interface: Commands for OD-02 for adjustment

## 1. Hardware

The device includes a USB interface, which is implemented by a circuit of FTDI (<http://www.ftdichip.com/>).

Optionally the device can be supplied with a serial interface type RS232.

Interface parameters: 115200 baud, 8 data bits, no parity

## 2. Serial interface: Data sent by OD-02

The OD-02 automatically sends a continuous stream of data as follows::

At intervals of 80 ms, the raw measured values of the probe are sent with the following syntax:

`~OD02_V1.6.3DL_LoBat_BETA_+1.234_E-04_Sv/h_#`

with:

- |     |        |       |   |
|-----|--------|-------|---|
| 1.  | ~      | ...   | Start character   |
| 2.  | OD02   | ...   | Device type   |
| 3.  | V1.6.3 | ...   | Program version controller software                                     |
| 4.  | DL     | ...   | active program mode   |
|     |        | NL >> | Zero adjustment   |
|     |        | DI >> | μSv/h – Dose rate mode  |
|     |        | DL >> | mSv/h – Dose rate mode  |
|     |        | DO >> | Dose mode   |
| 5.  | LoBat  | ...   | If the supply voltage is too low<br>(otherwise: 5 spaces)               |
| 6.  | BETA   | ...   | <u>without</u> attached wall reinforcement cap<br>(otherwise: 4 spaces) |
| 7.  | +1.234 | ...   | Measured value with sign and dot as separator                           |
| 8.  | E-04   | ...   | Exponent  |
| 9.  | Sv/h   | ...   | Unit  |
| 10. | #      | ...   | End character   |

In addition, the actual display value is transmitted between them in the interval of 1 second.

The displayed value is calculated using different algorithms in the device-internal microcontroller:

- Zero point correction
- Moving average, depending on the relative change
- Burst compensation depending on the absolute measured values
- ...

Syntax:

**DISPLAY:=xxxxBA:=Y\***

with:

xxxx	...	Display value or remaining time when switching
Y	...	Current operating mode
	0	... Zeroing active
	1	... Switching to DI ( $\mu\text{Sv/h}$ )
	2	... Mode DI ( $\mu\text{Sv/h}$ )
	3	... Switching to DL ( $\text{mSv/h}$ )
	4	... Mode DL ( $\text{mSv/h}$ )
	5	... not available
	6	... Zero adjustment is done
	7	... not available
	8	... Mode Dosis

The following operating modes are possible:

OD-02 actively performs the zero adjustment: **DISPLAY:=rzBA:=0\***  
with rz .. Remaining time in [sec] until switching end

OD-02 has calculated correct zero point: **DISPLAY:=xxxxBA:=6\***

OD-02 is in switching to DL: **DISPLAY:=rzBA:=3\***  
with rz .. Remaining time in [sec] until switching end

OD-02 is in switching to DI: **DISPLAY:=rzBA:=1\***  
with rz .. Remaining time in [sec] until switching end

OD-02 is in operating mode DL **DISPLAY:=xxxxBA:=4\***  
with xxxx ... Measured value in  $\mu\text{Sv/h}$

OD-02 is in operating mode DI **DISPLAY:=xxxxBA:=2\***  
with xxxx ... Measured value in  $\text{mSv/h}$

OD-02 is in operating mode DO **DISPLAY:=xxxxBA:=8\***  
with xxxx ... Measured value in  $\mu\text{Sv}$

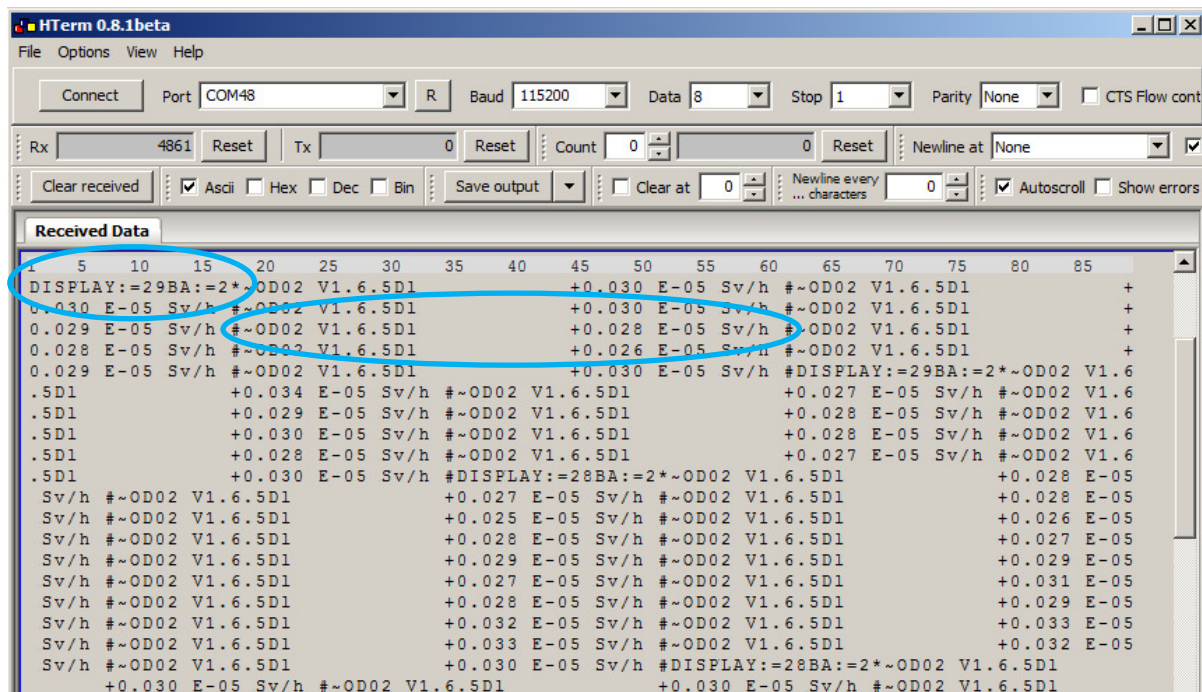


深圳市净康科技有限公司

电话: 0755-28917660 邮箱: [jkang66@163.com](mailto:jkang66@163.com) 网址: <http://www.3000buy.com>

地址: 深圳市龙岗区南湾街道吉厦社区沙平北路 111 号 6008

To control the data sent, we recommend a standard terminal program, such as HTerm. Here is an excerpt from a recording:



### 3. Serial interface: Commands for OD-02 for adjustment

The following commands can be used to make settings on the device:

Command	Description	Controller response	Comment
~AHx#	Activate measuring size <b>Hx</b>	~BAHx#	
~DHx#	Deactivate measuring size <b>Hx</b>	~BDHx#	
~SUR#	Activate unit ‚Röntgen‘	~BUR#	
~SUS#	Activate unit ‚Sievert‘	~BUS#	
~SA1xxxxx#	Set alarm threshold 1 in 10 nSv/h	~BA1xxxxx#	0030 >> 300 nSv/h
~SA2xxxxx#	Set alarm threshold 2 in 10 nSv/h	~BA2xxxxx#	0500 >> 5,0 µSv/h
~SA3xxxxx#	Set alarm threshold 3 in 10 nSv/h	~BA3xxxxx#	1000 >> 10 µSv/h
	Info: If all 3 alarm thresholds = 0, then alarm inactive + buzzer inactive		
~SOF+xxxxx#	Set positive offset in 10 nSv/h	~BOF+xxxxx#	+0020 >> +0,20 µSv/h
~SOF-xxxxx#	Set negative offset in 10 nSv/h	~BOF-xxxxx#	-0005 >> +0,05 µSv/h
~GOF#	Get current offset	~COF-xxxxx#	