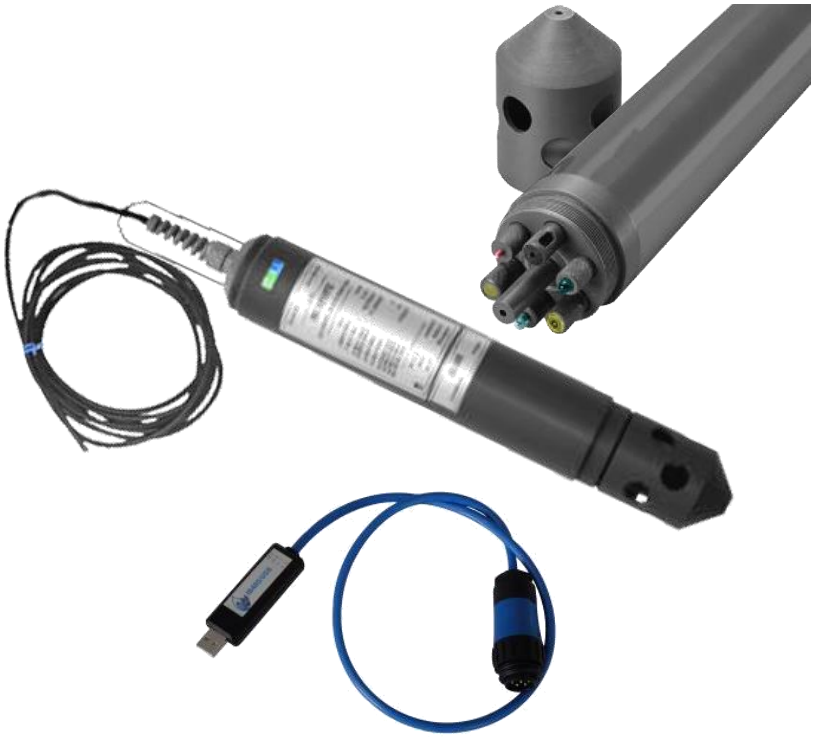
# WMP series

# Multiparametric Probe

# RS485 Data Protocol



# Configuration

**Note:** the probe has two protocols, RS485 - command line, and ModBus. The ModBus is operative on the same line RS485 and responds 5 seconds after the probe is turned on. Therefore, in the absence of communication on the RS485 line for 5 seconds from power on, the probe automatically switches to ModBus Rtu mode.

## Serial Port

| | |
|---|---|
| Transmission baud rate: | **1200/2400/4800/9600/19200 bit/s** (default 2400bps) |
| word lenght: | **8 bit** |
| Stop Bit: | **1** |
| Odd: | **none** |

## Command format

2 byte as probe Identification number ID (00-32)
1 byte for command
Carrige Return CR (Ascii 13)

Probe answers only to a right ID or at 00 (default).

Example: **00A**

**Note:** the **00A** command is also used to recognize the probes' ID, if it is not yet known, as it always responds to this command. If there are multiple probes on the same RS485 line, it is not possible to use it, as they would all respond on the same line.

## Command Set

| | |
|---|---|
| **A** | probe ready to send aquired data |
| **E** | probe ready to be configured or calibrated |
| **L, F, O, T** | factory commands |

✓ When probe receives a command **xxA**, it responds with a data record as following:

SA806x- 01 0.0 01/01/01 01:01:01 ±300.00m ±20.00°C ±40.000mS ±
. . . .+. . . | . . . .+. . . | . . . .+. . . | . . . .+. . . | . . . .+. . . | . . . .+. . . | . . . .+. . . |
12.000pH ±1000.0mV ±100.00%air 00/00/00xx

**Where:**

| | |
|---|---|
| SA806x: | Probe code (probe's ID) |
| 01: | Probe ID number |
| 0.0: | battery voltage (if present) |
| 01/01/01: | Date (not used) |

01:01:01: Time (not used)

Then follow the data values acquired and measured in this format:

Measure value – unit of measure (repeated *n* times, one for each measured parameter, separated by a tabulator)

The record ends as:

| | |
|---|---|
| 00/00/00 | not available |
| xx | 2 bytes that include the BCC |
| CR LF | end of transmission |

*Example:*

00A

SA8265- 01 0.0 01/01/01 01:01:01 1.076m 25.94øC -0.001mS 14.132pH -1200.0mV 86.59%air 00/00/00A4

✓ When the probe receives the **xxE** command, it responds with a data record as following:

SA806x- 01|. . . . . .|xx

**Where:**

| | |
|---|---|
| SA806x: | Probe code |
| 01: | Probe ID number (probe's ID) |
| \|. . . . . .\|: | 32 digits of message with the information of the measure in their order |
| xx: | 2 bytes BCC |
| CR LF | end of data transmission |

After an **xxE** command, the following commands are also active to scan the measurements and carry out the calibrations (see the probe software manual for calibration procedures).

| *Command* | *Function* |
|---|---|
| **M** | *Select the parameter to be calibrate* |
| **C** | *start with calibration steps* |
| **U** | *increases values* |
| **D** | *decreases values* |
| **I** | *confirm values* |
| **R** | *reset to factory values* |

After performing the action envisaged by the command, the probe sends a data record containing the message to the new situation.

Example:

00E:↵

SA8265- 01 LEVEL 1.075m 07

## BCC calculation

The BCC messages sent by the probe is calculated as the **XOR logic, for of all the bytes making up the message** (excluding CR and LF) and divided into 2 nibbles. The two nibbles are then converted into their ASCII codes.