

# ZBS-160

## Interface Control Document

**History:**

<b>DVers.:</b>	<b>Date</b>	<b>Author</b>	<b>Change</b>	<b>State</b>
1.00	29.12.2015	PI-MH	Born	

Direction from Coordinator	Syntax	Parameter	Description	Example
I	GET	./.	(no single parameter possible) Get bulk sensor information telegram from ZBS module	see below
		WATERCONTACT	Water contact condition (OPENED/CLOSED)	WATERCONTACT=OPENED
		BAT	Battery Status (only if battery is present e.g. ZBS-1xx) "LOW" if battery is low "OK" if battery is ok	BAT=OK
		UBAT	Battery Voltage in [V] with decimal point	UBAT=3.85V
I	DEV	./.	(no single parameter possible) Get bulk device information telegram from ZBS module	see below
		PID	Product Identification	PID=ZBS-160
		HW	Hardware Version	HW=0110
		SW	Software Version	SW=0100
		SN	Serial Number, also used as node identifier in XBee module, max. 12 bytes	SN=00012345

		ID	ID for customer's purpose, max. 12 bytes	ID=0815BZ4711
		ST	<p>Cause of DEV telegram</p> <p>1 = DEV command</p> <p>2 = Push button</p> <p>4 = Device reset</p> <p>8 = PAN connect</p> <p>16 = Heartbeat</p> <p>32 = XBee reset after fail</p> <p><u>Note:</u> Concurrent causes are added to one value (e.g. Device reset and PAN connect → ST=12)</p>	ST=16
		EV	TX telegram counter (repeatedly counts up to 65535 and restarts from 0)	EV=12
		BAT	Power supply status of the device	BAT=OK
		UBAT	Power supply voltage of the device	UBAT=3.76V
O	SET	TWMIN	This period of time (* 100 ms) must be changed the water contact to trigger a report. Set to 0 will be deactivate the water contact sensor, default 1	SET TWMIN=13

O	SET	TWREP	The "WATER CLOSED ALARM" or "WATER OPENED ALARM" alarm message is repeated after this period of time (* 100 ms), default 300	SET TWREP=600
O	WATER CONFIRMED		Confirmed the receiving of the "WATER CLOSED ALARM" or "WATER OPENED ALARM" message and stop them	WATER CONFIRMED
O	SET	HBEAT	Heartbeat Interval in [s] (1..65000), 0 means no heartbeat, default 0, sends DEV telegram	SET HBEAT=3600
O	SET	LD0	An action of the green LED triggers [reiterations, duration on * 100ms, duration off * 100ms]	SET LD0=10,4,1
O	SET	LD1	An action of the orange LED triggers [reiterations, duration on * 100ms, duration off * 100ms]	SET LD0=10,4,1
O	RESET	./.	Resets and associates device to the network	RESET
O	DEFAULTS	./.	Loads factory defaults	DEFAULTS

I	./.	WATER CLOSED ALARM  or  WATER OPENED ALARM	Outgoing message in case of water contact has changed.	WATER CLOSED ALARM  or  WATER OPENED ALARM
O	!#*	ID	Sets ID (default is the serial number)	!#*ID=1234567890
O	!#*	B1	Prepares for firmware update	!#*B1
O	!#*	B2	Erases flash and wait for updates	!#*B2
O	!#*	WRITE	Writes XBee register directly	!#*WRITE=SPG  (writes '0x67' to 'sp' register)
O	!#*	READ	Reads XBee register directly	!#*READ=NP
I	./.	Register name and value	Separate message for READ result	NP='0x00''0x54'
O	!#*	REG1	Reads the first part of the ZBS settings	!#*REG1
I	./.		Separate message for REG1 result	TWMIN=1 TWREP=300 HBEAT=0

### Communication Facts & Features

- Communication Mode XBee-Module: API
- All incoming messages must be terminated with linefeed character (0x0a)
- All outgoing messages are terminated with double linefeed character
- Maximum incoming message length: 24 bytes including linefeed
- Device acknowledges positive and negative:
  - SET TXT=480 ...will lead to... ack: set txt=480
  - SET TXR=480 ...will lead to... nack: set txr=480

### Firmware Update will affect

- Firmware
- SW-Version
- PID (product identification)

### Firmware Update will NOT affect

- HW-Version
- ID
- SN