OEM instruments - VALVE HUB

Communication Protocol

Introduction

This document provides the information needed to communicate with the OEM Valve Hub board through direct UART communication.

Document status & Revision history

Version	Author	Release date	Comments
v1.0.0	Camille Malek	05/04/2024	launch version

Serial connection settings

Baud rate: 230400

Data bits: 8

Stop bit: 1

Parity: none

Termination character: '\n'

Syntax

Command syntax

char 0: '<' to start the query

char 1 to 5: command name

char 6: '?' to read, '!' to write

then ':' to start a value. Can iterate over many arguments

Error handling

In an answer, after the read/write character, '|xx|' with xx 2 hexadecimal numbers are also sent and indicating the error code associated with the request. '00' means non error. The following error codes are:

Error code	Meaning
00	No error
C0	Channel error: wrong channel requested
L0	Locking error: you do not have writing access to this parameter
I0	Impossible command: this query can not be processed
P0	Pause error: this command can not be processed while pause is set to 1
U0	Command incompatible with universal sensor connected to this channel
NU	Command incompatible with non universal (=classic) sensor connected to this channel
B0	Argument value out of bound

List of commands

Parameter	Mandatory arguments	Arguments	W	R	Number of characters returned	Example query	Typical answer	Note
VALVE	**int** : channel (1 to 4)	**bool:** valve state	X	X	17	<VALVE?:4 <VALVE!:4:1	>VALVE?|00|04:01 >VALVE!|00|04:01	
IDN		**str:** device name		X	22	<_IDN_?	>_IDN_?|00|OEMVALVES_	
DEVSN		**str:** SN		X	18	<DEVSN?	>DEVSN?|00|48V111	
FIRMV		**str:** firmware version		X	21	<FIRMV?	>FIRMV?|00|v01.03.01	
RESET						<RESET		**reset firmware**
VALVS		**int:** 16 bits register for all valve states(0 to 65535)	X	X	17	<VALVS? <VALVS!:65535	>VALVS?|00|65535 >VALVS!|00|65535	
PINGA				X	17	<PINGA?	>PINGA?|00|65535	
PAUSE		**int:** pause status	X	X	14	<PAUSE?	>PAUSE?|00|00	**Pause in ESI**

						<PAUSE!:1	>PAUSE!|00|01	**0 by default** **keep state of activated** **valves**
STOP_		**int:** stop status	X	X	14	<STOP_? <STOP_!:1	>STOP_?|00|00 >STOP_!|00|01	**Stop in ESI** **0 by default** **force all valve state to 0**