MEITAVTEC LTD, 23.11.2021

MODBUS OBJECT LIST for **CTU4501 P2 H3 SUPER UV** (ID= 21193602)

CTU with microcontroller PIC18F46K22.
MODBUS RTU Mode, Address Slave 1-247, Maximum Time Out for reply = 200ms,
Baud rate= 9600, 19200, 38400. Default = 9600. No parity, 8bits, 1 stop.
CTU support only one type of data - Holding registers, signed Integer 16 bit word.
Supported command: 0x03 = Read Holding Registers
0x06 = Write Single Register
0x10 = Write Multiple Registers
0x2B = Read Device Identification (Basic = 0x01, Regular = 0x02)

Function 0x2B (Encapsulated Interface Transport)

MEI Type 0x0E (Read Device Identification)

Read Dev ID code 0x01 (request to get the Basic Device Identification)

ObjectId	Object Name / Description	Type	M/O	Category
0x00	VendorName	ASCII String	**Mandatory**	**Basic**
0x01	ProductCode	ASCII String	**Mandatory**	**Basic**
0x02	MajorMinorRevision	ASCII String	**Mandatory**	**Basic**

VendorName = " Meitav-Tec Ltd "

ProductCode = “21193602.3654"

MajorMinorRevision = "21193602”

Function 0x2B (Encapsulated Interface Transport)

MEI Type 0x0E (Read Device Identification)

Read Dev ID code 0x02 (request to get the Regular Device Identification)

ObjectId	Object Name / Description	Type	M/O	Category
0x03	VendorUrl	ASCII String	Optional	**Regular**
0x04	ProductName	ASCII String	Optional	**Regular**
0x05	ModelName	ASCII String	Optional	**Regular**
0x06	UserApplicationName	ASCII String	Optional	**Regular**

VendorUrl = “www.meitavtec.com”

ProductName = “CTU4501-P2-H3-SUPER-UV”

ModelName = “21193602.3654 "

UserApplicationName = “CTU4501-P2-H3-SUPER-UV”

Register Num / Address	Name	Range, Value, Units	Default
1 / [0x000]	T1_RoomTemperature	7...32°C	(R)***
2 / [0x001]	T2_ChangeOverSensorTemperature	-40...89°C	(R)***
3 / [0x002]	T3_IndoorCoilTemperature	-40...89°C	(R)***
4 / [0x003]	AI1_UV_lampInput	0...10000 mV	(R)***
5 / [0x004]	AI2_Input	0...10000 mV	(R)***
6 / [0x005]	AO_Cool	0...10000 mV	0 mV ***
7 / [0x006]	AO_Heat	0...10000 mV	0 mV ***
8 / [0x007]	Reserve	0...10000 mV	0 mV (R)
9 / [0x008]	SW2_1_TestOccupancySensor	0 - Off, 1 - On	(R)
10 / [0x009]	SW2_2	0 - Off, 1 - On	(R)
11 / [0x00A]	SW2_3	0 - Off, 1 - On	(R)
12 / [0x00B]	DI1: 0-Short, 1-Open (if polarity=0)	0, 1	(R)
13 / [0x00C]	DI2: 0-Short, 1-Open (if polarity=0)	0, 1	(R)
14 / [0x00D]	DI3: 0-Short, 1-Open (if polarity=0)	0, 1	(R)
15 / [0x00E]	DI4: 0-Short, 1-Open (if polarity=0)	0, 1	(R)
16 / [0x00F]	DI5: 0-Short, 1-Open (if polarity=0)	0, 1	(R)
17 / [0x010]	DI6: 0-Short, 1-Open (if polarity=0)	0, 1	(R)
18 / [0x011]	DI7: 0-Short, 1-Open (if polarity=0)	0, 1	(R)
19 / [0x012]	DI8_OccupancySensor 0-Short, 1-Open (if polarity=0).	0, 1	(R)
20 / [0x013]	Fan_low	0 - Off, 1 – On	0 (R)

Register Num / Address	Name	Range, Value, Units	Default
21 / [0x014]	Fan_medium	0 - Off, 1 - On	0 (R)
22 / [0x015]	Fan_high	0 - Off, 1 - On	0 (R)
23 / [0x016]	Cool1	0 - Off, 1 - On	0 (R)
24 / [0x017]	Heat1	0 - Off, 1 - On	0 (R)
25 / [0x018]	Heat2	0 - Off, 1 - On	0 (R)
26 / [0x019]	Heat3	0 - Off, 1 - On	0 (R)
27 / [0x01A]	G1_Light_Off	0 - Off, 1 - On	0 (R)
28 / [0x01B]	UV_Out	0 - Off, 1 - On	0 (R)
29 / [0x01C]	OnOff	0 - Off, 1 - On	0 (RW)
30 / [0x01D]	AutoFanInCool	0 - Off, 1 - On	0 (RW)
31 / [0x01E]	AutoFanInHeat	0 - Off, 1 - On	1 (RW)
32 / [0x01F]	UnOccupancy	0 - Off, 1 - On	0 (R)
33 / [0x020]	RestoreDefault	0 - Off, 1 - On	0 (RW)
34 / [0x021]	PanelTemperatureDisplay	0 - Off, 1 - On	1 (RW)
35 / [0x022]	EnableOverrideInputOutput	0 - Off, 1 - On	0 (RW)
36 / [0x023]	ViewFloatValue	0 - Off, 1 - On	1 (RW)
37 / [0x024]	DisableOccupancySensor	0 - Enable, 1 - Disable	0 (RW)
38 / [0x025]	DI1_Polarity: if “0” – N. Open polarity of DI1, mean DI1 open = 1 (5VDC); DI1 short = 0 (0VDC). If “1” – N. Close polarity of DI1, mean DI1 open = 0 (5VDC); DI1 short = 1 (0VDC).	0 - N.Open, 1 - N.Close	0 (RW)
39 / [0x026]	DI2_Polarity	0 - N.Open, 1 - N.Close	0 (RW)
40 / [0x027]	DI3_Polarity	0 - N.Open, 1 - N.Close	0 (RW)
41 / [0x028]	DI4_Polarity	0 - N.Open, 1 - N.Close	0 (RW)
42 / [0x029]	DI5_Polarity	0 - N.Open, 1 - N.Close	0 (RW)
43 / [0x02A]	DI6_Polarity	0 - N.Open, 1 - N.Close	0 (RW)
44 / [0x02B]	DI7_Polarity	0 - N.Open, 1 - N.Close	0 (RW)
45 / [0x02C]	DI8_OccupancySensor_Polarity	0 - N.Open, 1 - N.Close	0 (RW)
46 / [0x02D]	LockRoomModule	0 - Off, 1 - On	0 (RW)
47 / [0x02E]	LockRoomModuleMode	0 - Off, 1 - On	0 (RW)
48 / [0x02F]	LockRoomModuleSetPoint	0 - Off, 1 - On	0 (RW)
49 / [0x030]	LockRoomModuleFanSpeed	0 - Off, 1 - On	0 (RW)
50 / [0x031]	LockRoomModuleOnOff	0 - Off, 1 - On	0 (RW)
51 / [0x032]	LockRoomModuleBeeper	0 - Off, 1 - On	0 (RW)
52 / [0x033]	UV_Enable	0 - Disable, 1 - Enable	1 (RW)
53 / [0x034]	UV_Fault	0 - Off, 1 - On	0 (R)
54 / [0x035]	UV_Lamp_Replace_Alarm	0 - Off, 1 - On	0 (R)
55 / [0x036]	LightOff If On – binary output “G1_Light_Off” = 1 If Off – binary output “G1_Light_Off” = 0.	0 - Off, 1 - On	0 (RW)

Register Num / Address	Name	Range, Value, Units	Default
56 / [0x037]	Mode • 0 – Fan Only; • 1 – Cool; • 2 – Heat; • 3 – Auto Change;	0…3	1 (RW)
57 / [0x038]	FanSpeed • 0 – Auto Speed; • 1 – Low; • 2 – Medium; • 3 – High;	0…3	1 (RW)
58 / [0x039]	SetPoint	10…30°C	22°C (RW)
59 / [0x03A]	SetPointLimitCool	10…30°C	10°C (RW)
60 / [0x03B]	SetPointLimitHeat	10…30°C	30°C (RW)
61 / [0x03C]	SetPointEffective	10…30°C	22°C (R)
62 / [0x03D]	DeadZoneForCool Actual value = 0.5 * DeadZoneForCool	(0…5) * 0.5°C	1 = 0.5°C (RW)
63 / [0x03E]	DeadZoneForHeat	(0…5) * 0.5°C	1 = 0.5°C (RW)
64 / [0x03F]	FanEffectiveValue 0 – Off, 1-Low, 2- Medium, 3 - High	0...3	1 (R)
65 / [0x040]	HeatRelayTimeDelayOnNext	0…60 sec	1 sec (RW)
66 / [0x041]	ReturnAirSensorCalibration	-6…6°C	0°C (RW)
67 / [0x042]	CoolProportionalLimitOn	0…50%	40% (RW)
68 / [0x043]	CoolProportionalLimitOff	0…20%	10% (RW)
69 / [0x044]	CoolProportionalBand	1…10°C	2°C (RW)
70 / [0x045]	CoolProportionalLowLimit	0…100%	0% (RW)
71 / [0x046]	CoolProportionalHighLimit	0…100%	100% (RW)
72 / [0x047]***	CoolDemand	0…100%	0% (RW) ***
73 / [0x048]	CoolIntegralTime	0…600 sec	240 sec (RW)
74 / [0x049]	CoolIntegralValue	0…100%	10% (RW)
75 / [0x04A]	CoolOutputsThresholdTime	0…100 sec	60 sec(RW)
76 / [0x04B]	HeatProportionalLimitOn	0…50%	40% (RW)
77 / [0x04C]	HeatProportionalLimitOff	0…20%	10% (RW)
78 / [0x04D]	HeatProportionalBand	1…10°C	2°C (RW)
79 / [0x04E]	HeatProportionalLowLimit	0…100%	0% (RW)
80 / [0x04F]	HeatProportionalHighLimit	0…100%	100% (RW)
81 / [0x050]***	HeatDemand	0…300%	0% (RW) ***
82 / [0x051]	HeatIntegralTime	0…600 sec	240 (RW)
83 / [0x052]	HeatIntegralValue	0…100%	10% (RW)
84 / [0x053]	HeatOutputsThresholdTime	0…100 sec	60 sec (RW)
85 / [0x054]	CoolFanOnDelay	0…300 sec	0 sec (RW)
86 / [0x055]	CoolFanOffDelay	0…300 sec	0 sec (RW)

Register Num / Address	Name	Range, Value, Units	Default
87 / [0x056]	Reserve	0…0 sec	0 sec (R)
88 / [0x057]	HeatFanOffDelay	0…300 sec	30 sec (RW)
89 / [0x058]	TimeSwitchingToUnOccupiedMode	0…3600 sec	1200 sec (RW)
90 / [0x059]	UnOccupancyModeSelect • 0 – On/Off Light and HVAC; • 1 – Start/Stop Light and HVAC; • 2 – On/Off Light Only; • 3 – Economy	0…3	0 (RW)
91 / [0x05A]	StartStop	0…1	0 (RW)
92 / [0x05B]	CO2_FromPanel	0…5000 ppm	0 ppm (R)
93 / [0x05C]	CO2_MinimumValue	0…5000 ppm	0 ppm (R)
94 / [0x05D]	CO2_MaximumValue	0…5000 ppm	2500 ppm (R)
95 / [0x05E]	CO2_EffectiveValue	0…5000 ppm	0 ppm (R)
96 / [0x05F]	CO2_Alarm	0…1	0 (R)
97 / [0x060]	HumidityFromPanel	0…100%	0% (R)
98 / [0x061]	HumidityMinimumValue	0…100%	20% (RW)
99 / [0x062]	HumidityMaximumValue	0…100%	90% (RW)
100 / [0x063]	HumidityEffectiveValue	0…100%	0% (R)
101 / [0x064]	HumidityAlarm 1 – sensor not connected or Humidity lower then “HumidityMinimumValue”	0…1	(R)
102 /[0x065]	PanelTimeChangeDisplay: 0 – Temperature indication only, 5 – 5 seconds humidity, 5 seconds temperature, 10 – Humidity indication only.	0…10 sec	0 sec (RW)
103 / [0x066]	UV_VoltageAI1LowLevel	500…2000 mV (DC)	1800 mV (RW)
104 / [0x067]	UV_VoltageAI1HighLevel	3000…6000 mV (DC)	5000 mV (RW)
105 / [0x068]	UV_ReplaceTime (0 – disable UV_LAMP_Replace_Alarm)	0…32000 hours	13000 hours (RW)
106 / [0x069]	UV_WorkingTime (Attention! writing 0 to this register will clear UV_LAMP_Replace_Alarm register)	0…32000 hours	0 hours (RW)
107 / [0x06A]	UV_OffDelayTime	0…3600 sec	0 sec (RW)
108 / [0x06B]	UV_AlwaysOn 0 – UV work only in On state of CTU. 1 – UV work always.	0…1	0 (RW)
109 / [0x06C]	BaudRate: 0 – 9600; 1 - 19200; 2 - 38400	0…2	0 (RW)
110 / [0x06D]	PI_Enable	0…1	0 (RW)
111 / [0x06E]	Heater1_CutIn (% of HeatDemand)	0…300%	40% (RW)

Register Num / Address	Name	Range, Value, Units	Default
112 / [0x06F]	Heater1_CutOut (% of HeatDemand)	0…300%	10% (RW)
113 / [0x070]	Heater2_CutIn (% of HeatDemand)	0…300%	80% (RW)
114 / [0x071]	Heater2_CutOut (% of HeatDemand)	0…300%	40% (RW)
115 / [0x072]	Heater3_CutIn (% of HeatDemand)	0…300%	120% (RW)
116 / [0x073]	Heater3_CutOut (% of HeatDemand)	0…300%	80% (RW)

***-writable only if a value of the register35 (“EnableOverrideInputOutput”) is equal to 1.

Attention! Writing to the registers 72*** (“CoolDemand”) and 81*** (“HeatDemand”) has influence on OnOff outputs (registers 23…26) and must be used only for commissioning purposes. To test the proportional outputs, the registers 6 and 7 could be used only.

After end of commissioning the technician must make Restore Default operation – write “1” to register 33 (“RestoreDefault”)**.**

Registers 1…5* have range -32655…32655 during override. After the break of power all overridden registers return to values, measured by analog inputs.**

While register 36 (“ViewFloatValue”) is “1”, all the registers of units °C (temperature) are presented in format

Integer (Real value * 10, Meitav-tec OEM ”floating point” format).

Read value examples:

Register 1 “T1_RoomTemperature = 221” represents a real value = 22.1°C.

Register 58 “SetPoint = 150” represents a real value = 15.0°C.

Register 62 “DeadZoneForCool = 10” represents a value = 1 * 0.5 °C = 0.5°C

Write value examples:

To write 20°C to the “SetPoint”, send “200” to the Register 58.

To write 25°C to the “SetPointLimitHeat”, send “250” to the Register 60.

To write 1.5 °C to the “DeadZoneForCool”, send 3 * 10 = “30” to the Register 62.

Attention! When PI is enabled, writing to any register will cause clearing of the Integral correction Value (used to compensate the static error) of HeatDemand and CoolDemand.