MODBUS OBJECT LIST for **CTU4501 CP HP SUPER 19200** (ID= 23199401)

CTU with microcontroller PIC18F46K22.
MODBUS RTU Mode, Address Slave 1-247, Maximum Time Out for reply = 300ms,
Baud rate= 9600, 19200, 38400. Default = 19200. No parity, 8bits, 1 stop.
CTU supports only one type of data - Holding registers as a 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 = " 231994 "
MajorMinorRevision = "V0.1”

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 = “23199401”
ModelName = “23199401”
UserApplicationName = “FAN COIL UV”

Reg num	Reg Addr	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 (R)***
7	0x006	AO_Heat	0...10000 mV	0 mV (R)***
8	0x007	Reserve		
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-Close, 1-Open (if polarity=0)	0, 1	(R)
13	0x00C	DI2: 0-Close, 1-Open (if polarity=0)	0, 1	(R)
14	0x00D	DI3: 0-Close, 1-Open (if polarity=0)	0, 1	(R)
15	0x00E	DI4: 0-Close, 1-Open (if polarity=0)	0, 1	(R)
16	0x00F	DI5: 0-Close, 1-Open (if polarity=0)	0, 1	(R)
17	0x010	DI6: 0-Close, 1-Open (if polarity=0)	0, 1	(R)
18	0x011	DI7: 0-Close, 1-Open (if polarity=0)	0, 1	(R)
19	0x012	DI8_OccupancySensor 0-Close, 1-Open (if polarity=0).	0, 1	(R)
20	0x013	Fan_low	0 - Off, 1 - On	0-Off (R)
21	0x014	Fan_medium	0 - Off, 1 - On	0-Off (R)
22	0x015	Fan_high	0 - Off, 1 - On	0-Off (R)
23	0x016	Cool1	0 - Off, 1 - On	0-Off (R)
24	0x017	Heat1	0 - Off, 1 - On	0-Off (R)
25	0x018	Reserve	0 - Off	0-Off (R)
26	0x019	Reserve	0 - Off	0-Off (R)
27	0x01A	G1_Light_Off	0 - Off, 1 – G1LIghtOff	0-Off (R)
28	0x01B	Reserve	0 - Off	0-Off (R)
29	0x01C	OnOff	0 - Off, 1 - On	0-Off (RW)
30	0x01D	AutoFanInCool	0 - Off, 1 - On	0-Off (RW)
31	0x01E	AutoFanInHeat	0 - Off, 1 - On	1-On (RW)
32	0x01F	UnOccupancy	0 - Off, 1 - Unoccupied	0-Off (R)
33	0x020	RestoreDefault	0 - Off, 1 - Restore	0-Off (RW)
34	0x021	PanelTemperatureDisplay	0 - Off, 1 - On	1-On (RW)
35	0x022	EnableOverrideInputOutput	0 - Disable, 1 - Enable	0-Disable (RW)
36	0x023	ViewFloatValue	0 - Off, 1 - View	1-Viev (RW)
37	0x024	DisableOccupancySensor	0- Enable, 1- Disable	0-Disable (RW)

38	0x025	DI1_Polarity:
		if “0” – N. Open polarity of DI1, then
		DI1 open = 1 (5VDC); DI1 short = 0 (0VDC).
		If “1” – N. Close polarity of DI1, then
		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)

Reg num	Reg Addr	Name	Range, Value, Units	Default
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 – Lock	0-Off (RW)
47	0x02E	LockRoomModuleMode	0 - Off, 1 – Lock	0-Off (RW)
48	0x02F	LockRoomModuleSetPoint	0 - Off, 1 – Lock	0-Off (RW)
49	0x030	LockRoomModuleFanSpeed	0 - Off, 1 – Lock	0-Off (RW)
50	0x031	LockRoomModuleOnOff	0 - Off, 1 – Lock	0-Off (RW)
51	0x032	LockRoomModuleBeeper	0 - Off, 1 – On	0-Off (RW)
52	0x033	Reserve	0 - Off	0-Off (R)
53	0x034	Reserve	0 – Off	0-Off (R)
54	0x035	Reserve	0 – Off	0-Off (R)
55	0x036	LightOff If On – binary output “G1_Light_Off” = 1 If Off – binary output “G1_Light_Off” = 0.	0 - Off, 1 – LightOff	0-Off (RW)
56	0x037	Mode 0 – Fan Only; 1 – Cool; 2 – Heat; 3 – Auto Change	0…3	1-Cool (RW)
57	0x038	FanSpeed 0–Auto Speed; 1–Low; 2–Medium; 3–High	0…3	1-Low (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	0°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-Low (R)
65	0x040	Reserve	0 - Off	0-Off (R)
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
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…100%	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)

Reg num	Reg Addr	Name	Range, Value, Units	Default
86	0x055	CoolFanOffDelay	0…300 sec	0 sec (RW)
87	0x056	Reserve	0 - Off	0 – Off (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; 1–Start/Stop; 2–Light Only; 3–Economy;	0…3	0-On/Off (RW)
91	0x05A	StartStop: 0 – On/Off, 1 – Start/Stop	0…1	0-On/Off (RW)
92	0x05B	CO2_FromPanel	0…5000 ppm	0 ppm (R)
93	0x05C	CO2_MinimumValue	0…5000 ppm	0 ppm (RW)
94	0x05D	CO2_MaximumValue	0…5000 ppm	2500 ppm (RW)
95	0x05E	CO2_EffectiveValue	0…5000 ppm	0 ppm (R)
96	0x05F	CO2_Alarm	0 - Off, 1 - Alarm	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	0 – Off, 1 - Alarm	0 - Off
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	Reserve	0	0 (R)
104	0x067	Reserve	0	0 (R)
105	0x068	Reserve	0	0 (R)
106	0x069	Reserve	0	0 (R)
107	0x06A	Reserve	0	0 (R)
108	0x06B	Reserve	0	0 (R)
109	0x06C	BaudRate: 0 – 9600; 1 - 19200; 2 - 38400	0…2	1-19200 (RW)
110	0x06D	PI_Enable	0- Disable, 1- Enable	0-Disable (RW)
111	0x06E	Heater1_CutIn (% of HeatDemand)	0…100%	40% (RW)
112	0x06F	Heater1_CutOut (% of HeatDemand)	0…100%	10% (RW)
113	0x070	Reserve	0 - Off	0 – Off (R)
114	0x071	Reserve	0 - Off	0 – Off (R)
115	0x072	Reserve	0 - Off	0 – Off (R)
116	0x073	Reserve	0 - Off	0 – Off (R)

***-writable only if the value of the register 35 (“EnableOverrideInputOutput”) is “1”.

Attention! Writing to the registers 72*** (“CoolDemand”) and 81*** (“HeatDemand”) could be used only for commissioning purposes. When the commissioning operations finish, the technician must make Restore Default operation – write 1 to register 33 (“RestoreDefault”).

While the register 36 (“ViewFloatValue”) is “1”, all the registers of units °C are presented in format Integer (Real value * 10, Meitav-tec OEM ”floating point” format).

Read value examples:

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

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

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

Write value examples:

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

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

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