

**MTSC-SUPER , MTSC24-SUPER Print rev. E, F**

OBJECT LIST FOR MTSC SUPER (ID = 16415306) 03, December, 2017

MODBUS RTU Mode, Address Slave 1-247, Baud rate: 9600, n, 8, 1

Supported Commands: 0x03 = Read Holding Registers (for all). 0x06 = Preset Single Register (For R/W registers only).

**Command 0x2B will be used to identify the cassette controller as follows.**

**Request:**

**Function 0x2B (Encapsulated Interface Transport)**

**MEI Type 0x0E (Read Device Identification)**

**Read Dev ID code 0x03 (request to get the Extended Device Identification)**

**Object ID (0x80...0xFF) The range [0x80 – 0xFF] is Product dependant.**

**0x80: 0x01 (cassette ID=0x01)**

**0x81: 0x01 (version = 0x01)**

**0x82: 0x4C (release = 01 – for example, last release on)**

...

**0xFF**

**Function 0x2B (Encapsulated Interface Transport)**

**MEI Type 0x0E (Read Device Identification)**

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

Note 1. The MODBUS Register No. X is addressed in the MODBUS Register Address (PDU) X-1.

All Registers are signed Integer 16 bit.

Note 2 Reset to default ETNC configuration press on buttons Fan, Mod, On at the same time ;

| ObjectID | Object Name / Description | Type         | M/O              | Category     |
|----------|---------------------------|--------------|------------------|--------------|
| 0x00     | VendorName                | ASCII String | <b>Mandatory</b> | <b>Basic</b> |
| 0x01     | ProductCode               | ASCII String | <b>Mandatory</b> | <b>Basic</b> |
| 0x03     | MajorMinorRevision        | ASCII String | <b>Mandatory</b> | <b>Basic</b> |

VendorName = "Meitav-Tec Ltd".

ProductCode = "16415306"

MajorMinorRevision = "0.2.1309"

## Function 0x2B (Encapsulated Interface Transport)

### MEI Type 0x0E (Read Device Identification)

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

\* - if **ViewFloatValue** = 0 – integer value for this parameter,

**ViewFloatValue** = 1 - float value for this parameter with one decimal place, multiplied on10 ( for writable step of change is 0.5).

| ObjectId | Object Name / Description | Type         | M/O      | Category       |
|----------|---------------------------|--------------|----------|----------------|
| 0x03     | VendorUrl                 | ASCII String | Optional | <b>Regular</b> |
| 0x04     | ProductName               | ASCII String | Optional | <b>Regular</b> |
| 0x05     | ModelName                 | ASCII String | Optional | <b>Regular</b> |
| 0x06     | UserApplicationName       | ASCII String | Optional | <b>Regular</b> |

VendorUrl = "meitavtec.com"  
 ProductName = "MTSC SUPER"  
 ModelName = "16415306"  
 UserApplicationName = "MTSC SUPER"

### Modbus AC Object List

| N° | Address | Value (Range) | Description | Default | Permissions |
|----|---------|---------------|-------------|---------|-------------|
| 1  | 0x0000  |               | T1_AIN      | X       | R           |
| 2  | 0x0001  |               | IN1_AIN     | X       | R           |

| N° | Address | Value (Range) | Description | Default | Permissions      |
|----|---------|---------------|-------------|---------|------------------|
| 3  | 0x0002  | 0...10V       | AO_Cool     | x       | R<br>(read only) |
| 4  | 0x0003  | 0...10V       | AO_Heat     | x       | R                |
| 5  | 0x0004  | 0...10V       | AO_Fan      | x       | R                |

| N° | Address | Value (Range)                                                                                                            | Description                  | Default                         | Permissions |   |
|----|---------|--------------------------------------------------------------------------------------------------------------------------|------------------------------|---------------------------------|-------------|---|
| 6  | 0x0005  | 5...35 °                                                                                                                 | SetPoint                     | 23°C (73°F)                     | R/W         | * |
| 7  | 0x0006  | 5...35 °C (41...95°F)                                                                                                    | SetPointHeat                 | 22°C (72°F)                     | R/W         | * |
| 8  | 0x0007  | 5...35 °C (41...95°F)                                                                                                    | SetPointEffective            | 23°C (73°F)                     | R           | * |
| 9  | 0x0008  | 0...100 °C<br>(32...212°F)                                                                                               | AmbientTemperatureEffective  | x                               | R           | * |
| 10 | 0x0009  | 0 – Fan Only<br>1 – Cool<br>2 – Heat<br>3 – Auto                                                                         | Mode                         | 1 – Cool                        | R/W         |   |
| 11 | 0x000A  | 0 – Fan Only<br>1 – Cool<br>2 – Heat<br>4 – Off                                                                          | ModeEffective                | 4 – Off                         | R           |   |
| 12 | 0x000B  |                                                                                                                          | FanSpeed                     | Not use                         | R           |   |
| 13 | 0x000C  | 1 – On<br>4 – Off                                                                                                        | FanEffective                 | 4 – Off                         | R           |   |
| 14 | 0x000D  | -6...6 °C (-9...9°F)                                                                                                     | ReturnAirSensorCalibration   | 0                               | R/W         | * |
| 15 | 0x000E  | 5...35 °C (41...95°F)                                                                                                    | SetPointLimitCool            | 10 °C (50°F)                    | R/W         |   |
| 16 | 0x000F  | 5...35 °C (41...95°F)                                                                                                    | SetPointLimitHeat            | 30 °C (86°F)                    | R/W         |   |
| 17 | 0x0010  | 5...35 °C (41...95°F)                                                                                                    | EconomySetPointInCool        | 30 °C (86°F)                    | R/W         |   |
| 18 | 0x0011  | 5...35 °C (41...95°F)                                                                                                    | EconomySetPointInHeat        | 10 °C (50°F)                    | R/W         |   |
| 19 | 0x0012  | 0 – Unoccupied<br>1 – Occupied<br>2 - Temporary occupied                                                                 | OccupancyEffectiveHVAC       | 1 – Occupied                    | R           |   |
| 20 | 0x0013  | 0 – Occupancy sensor logic not in use<br>1 – Occupancy sensor logic controls HVAC                                        | OccupancySensorAuthority     | 1 – Occupancy sensor logic HVAC | R/W         |   |
| 21 | 0x0014  | 0 - On/Off logic<br>1 – Start/Stop logic<br>2 – Change setpoint logic                                                    | OccupancySensorFunction      | 2 – Change setpoint logic       | R/W         |   |
| 22 | 0x0015  | 0...250 min                                                                                                              | OccupancySensorHVACDelayTime | 20 min                          | R/W         |   |
| 23 | 0x0016  | 0 – Thermostat turn off when unoccupied<br>1 – Thermostat use economy/dehumidity unoccupied set point<br>2 – air-refresh | DoorSwitchOrKeyTag_Function  | 1                               | R/W         |   |
| 24 | 0x0017  | 0...999 sec                                                                                                              | TimeSwitchingToOccupiedMode  | 1                               | R/W         |   |
| 25 | 0x0018  | 00 – T1 terminals not in use<br>01 – External sensor<br>02 – T3 indoor sensor<br>03 – Door switch<br>04 - Key tag        | T1_Function                  | 0                               | R/W         |   |

| N° | Address | Value (Range)                                                                                                                                                           | Description                    | Default      | Permissions |   |
|----|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|--------------|-------------|---|
| 26 | 0x0019  | 00 – IN1, IN0 terminals not in use<br>01 – T2 – outdoor sensor<br>02 - T3 indoor sensor<br>03 – Remote on/off switch<br>04 – Remote economy switch<br>05 – External PIR | IN1_Function                   | 0            | R/W         |   |
| 27 | 0x001A  | 0...999 sec                                                                                                                                                             | WindowContactDelayTime         | 0            | R/W         |   |
| 28 | 0x001B  | 0...999 sec                                                                                                                                                             | DoorSwitchDelayTime            | 0            | R/W         |   |
| 29 | 0x001C  | 0...99 °C (32...210°F)                                                                                                                                                  | T2_Effective                   | -            | R           | * |
| 30 | 0x001D  | 0...99 °C (32...210°F)                                                                                                                                                  | T3_Effective                   | -            | R           | * |
| 31 | 0x001E  | 0...600 sec                                                                                                                                                             | CoolFanOffDelay                | 0            | R/W         |   |
| 32 | 0x001F  | 0...600 sec                                                                                                                                                             | HeatFanOffDelay                | 30 sec       | R/W         |   |
| 33 | 0x0020  | 8...15 °C (46...59°F)                                                                                                                                                   | FreezeProtectionCutInSetpoint  | 8 °C (46°F)  | R/W         |   |
| 34 | 0x0021  | 10...17 °C (50...63°F)                                                                                                                                                  | FreezeProtectionCutOutSetpoint | 10 °C (50°F) | R/W         |   |
| 35 | 0x0022  | 0...999 hours                                                                                                                                                           | FilterCounter                  | 0 hours      | R/W         |   |
| 36 | 0x0023  | 0...999 hours;<br>0 – disable filter alarm                                                                                                                              | FilterAlarmTimeDelay           | 0 hours      | R/W         |   |
| 37 | 0x0024  | 0...5 °C (0...10°F)                                                                                                                                                     | CoolDifferentialBand           | 1 °C (2°F)   | R/W         | * |
| 38 | 0x0025  | -5...5 °C (-10...10°F)                                                                                                                                                  | CoolDifferentialBandOffset     | 0 °C (0°F)   | R/W         | * |
| 39 | 0x0026  | 0...5 °C (0...10°F)                                                                                                                                                     | HeatDifferentialBand           | 1 °C (2°F)   | R/W         | * |
| 40 | 0x0027  | -5...5 °C (-10...10°F)                                                                                                                                                  | HeatDifferentialBandOffset     | 0 °C (0°F)   | R/W         | * |
| 41 | 0x0028  | 0...10 °C (0...20°F)                                                                                                                                                    | ShiftBetweenCoolAndHeat        | 2 °C (4°F)   | R/W         | * |
| 42 | 0x0029  | 0...10 °C (0...20°F)                                                                                                                                                    | ShiftBetweenCoolStages         | 2 °C (4°F)   | R/W         | * |
| 43 | 0x002A  | 0...10 °C (0...20°F)                                                                                                                                                    | ShiftBetweenHeatStages         | 2 °C (4°F)   | R/W         | * |
| 44 | 0x002B  | 0...600 sec                                                                                                                                                             | TimeDelayOnNextCoolStage       | 5 sec        | R/W         |   |
| 45 | 0x002C  | 0...600 sec                                                                                                                                                             | TimeDelayOnNextHeatStage       | 5 sec        | R/W         |   |
| 46 | 0x002D  | 0...600 sec                                                                                                                                                             | TimeDelayOffNextCoolStage      | 1 sec        | R/W         |   |
| 47 | 0x002E  | 0...600 sec                                                                                                                                                             | TimeDelayOffNextHeatStage      | 1 sec        | R/W         |   |

| N° | Address | Value (Range)                | Description                  | Default      | Permissions |   |
|----|---------|------------------------------|------------------------------|--------------|-------------|---|
| 48 | 0x002F  | 0...360 sec                  | CompressorStandbyDelay       | 10 sec       | R/W         |   |
| 49 | 0x0030  | -9.5...99 °C<br>(15...210°F) | DeiceInCoolCutInTemperature  | 0 °C (32°F)  | R/W         | * |
| 50 | 0x0031  | -9.5...99 °C<br>(15...210°F) | DeiceInCoolCutOutTemperature | 8 °C (46°F)  | R/W         | * |
| 51 | 0x0032  | 120...420 sec                | DeiceInHeatTime              | 300 sec      | R/W         |   |
| 52 | 0x0033  | 600...1800 sec               | DeiceInHeatBreakTime         | 1500 sec     | R/W         |   |
| 53 | 0x0034  | -9.5...99 °C<br>(15...210°F) | DeiceInHeatCutInTemperature  | 0 °C (32°F)  | R/W         | * |
| 54 | 0x0035  | -9.5...99 °C<br>(15...210°F) | DeiceInHeatCuOutTemperature  | 16 °C (61°F) | R/W         | * |
| 55 | 0x0036  | 5...99                       | BackLightDimTime             | 5            | R/W         |   |
| 56 | 0x0037  | 10...90                      | BackLightDimValue            | 10           | R/W         |   |
| 57 | 0x0038  | 100...50                     | BackLightBrightness          | 100          | R           |   |
| 58 | 0x0039  | 10...2                       | CoolVFSProportionalBand      | 2            | R/W         | * |
| 59 | 0x003A  | 10...2                       | HeatVFSProportionalBand      | 2            | R/W         | * |
| 60 | 0x003B  | 30...0                       | CoolVFSLowSpeedPercent       | 20           | R/W         |   |
| 61 | 0x003C  | 60...30                      | CoolVFSMediumSpeedPercent    | 50           | R/W         |   |
| 62 | 0x003D  | 100...60                     | CoolVFSHighSpeedPercent      | 90           | R/W         |   |
| 63 | 0x003E  | 30...0                       | HeatVFSLowSpeedPercent       | 30           | R/W         |   |
| 64 | 0x003F  | 60...30                      | HeatVFSMediumSpeedPercent    | 50           | R/W         |   |
| 65 | 0x0040  | 100...60                     | HeatVFSHighSpeedPercent      | 80           | R/W         |   |
| 66 | 0x0041  | 50...10                      | VFSMediumSpeedDiff           | 35           | R/W         |   |
| 67 | 0x0042  | 50...10                      | VFSHighSpeedDiff             | 35           | R/W         |   |
| 68 | 0x0043  | 100...0                      | CoolVFSLowLimit              | 0            | R/W         |   |
| 69 | 0x0044  | 100...0                      | CoolVFSHighLimit             | 100          | R/W         |   |
| 70 | 0x0045  | 100...0                      | HeatVFSLowLimit              | 0            | R/W         |   |
| 71 | 0x0046  | 100...0                      | HeatVFSHighLimit             | 100          | R/W         |   |

| N° | Address | Value (Range)                              | Description                   | Default | Permissions |
|----|---------|--------------------------------------------|-------------------------------|---------|-------------|
| 72 | 0x0047  | 0 – Open<br>1 – Close                      | S1_1_FanSpeeds                | X       | R           |
| 73 | 0x0048  | 0 – Open<br>1 – Close                      | S1_2_FanSpeeds                | X       | R           |
| 74 | 0x0049  | 0 – Open<br>1 – Close                      | S1_3_HC_HP                    | X       | R           |
| 75 | 0x004A  | 0 – Open<br>1 – Close                      | S1_4_HPInCool_HCElectrical    | X       | R           |
| 76 | 0x004B  | 0 – Delay On<br>1 – Delay Off              | S1_5_CompressorDelay          | X       | R           |
| 77 | 0x004C  | 0 – Open<br>1 – Close                      | S1_6_ElectricalHeater2ndStage | X       | R           |
| 78 | 0x004D  | 0 – AC<br>1 – FC                           | S1_7_AC_FC_System             | X       | R           |
| 79 | 0x004E  | 0 – Modbus<br>1 – Bacnet                   | S1_8_UseBacnet                | X       | R           |
| 80 | 0x004F  | 0 – relay COOL<br>1 – proportional<br>COOL | S2_1_CoolProportional         | X       | R           |
| 81 | 0x0050  | 0 – relay HEAT<br>1 – proportional<br>HEAT | S2_2_HeatProportional         | X       | R           |

|    | Address | Value (Range)     | Description    | Default | Permissions |  |
|----|---------|-------------------|----------------|---------|-------------|--|
| 82 | 0x0051  | 0 – Off<br>1 – On | HeatElement 1  | 0       | R           |  |
| 83 | 0x0052  | 0 – Off<br>1 – On | HeatElement 2  | 0       | R           |  |
| 84 | 0x0053  | 0 – Off<br>1 – On | HeatElement 3  | 0       | R           |  |
| 85 | 0x0054  | 0 – Off<br>1 – On | Compressor 1   | 0       | R           |  |
| 86 | 0x0055  | 0 – Off<br>1 – On | Compressor 2   | 0       | R           |  |
| 87 | 0x0056  | 0 – Off<br>1 – On | FanOnOff       | 0       | R           |  |
| 88 | 0x0057  | 0 – Off<br>1 – On | FanOnOffMedium | 0       | R           |  |
| 89 | 0x0058  | 0 – Off<br>1 – On | FanOnOffHigh   | 0       | R           |  |
| 90 | 0x0059  | 0 – Off<br>1 – On | HPOnOff        | 0       | R           |  |
| 91 | 0x005A  | 0 – Off<br>1 – On | LightOn        | 0       | R           |  |

|     | Address | Value (Range)                           | Description                | Default | Permissions |
|-----|---------|-----------------------------------------|----------------------------|---------|-------------|
| 92  | 0x005B  | 0 – Off<br>1 – On                       | OnOff                      | 0       | R/W         |
| 93  | 0x005C  | 0 – Off<br>1 – On                       | AutoFan                    | 0       | R/W         |
| 94  | 0x005D  | 0 – Off (°F)<br>1 – On (°C)             | C_F_Scale                  | 1       | R           |
| 95  | 0x005E  | 0 – Off<br>1 – On                       | LockFan                    | 0       | R/W         |
| 96  | 0x005F  | 0 – Off<br>1 – On                       | LockMode                   | 0       | R/W         |
| 97  | 0x0060  | 0 – Off<br>1 – On                       | LockOnOff                  | 0       | R/W         |
| 98  | 0x0061  | 0 – Off<br>1 – On                       | LockSetPoint               | 0       | R/W         |
| 99  | 0x0062  | 0 – Off<br>1 – On                       | One_TwoSetpoints           | 0       | R           |
| 100 | 0x0063  | 0 – Off<br>1 – On                       | FilterAlarm                | 0       | R           |
| 101 | 0x0064  | 0 – Off<br>1 – On                       | FilterReset                | 0       | R/W         |
| 102 | 0x0065  | 0 – Off<br>1 – On                       | AutoModeEnable             | 1       | R/W         |
| 103 | 0x0066  | 0 – Off<br>1 – On                       | BackLightDimEnable         | 1       | R/W         |
| 104 | 0x0067  | 0 – Off<br>1 – On                       | BeeperEnable               | 0       | R           |
| 105 | 0x0068  | 0 – Off<br>1 – On                       | FreezeProtectionEnable     | 1       | R/W         |
| 106 | 0x0069  | 0 – Off<br>1 – On                       | WindowContact              | 0       | R           |
| 107 | 0x006A  | 0 – Normally open<br>1 – Normally close | WindowContactPolarity      | 1       | R/W         |
| 108 | 0x006B  | 0 – Off<br>1 – On                       | UnoccupaedByNetwork        | 0       | R/W         |
| 109 | 0x006C  | 0 – Off<br>1 – On                       | UnoccupancyByAuxOccSensor  | 0       | R           |
| 110 | 0x006D  | 0 – Normally open<br>1 – Normally close | AuxOccupancySensorPolarity | 0       | R/W         |
| 111 | 0x006E  | 0 – Off<br>1 – On                       | DoorSwitchOpen             | 0       | R           |
| 112 | 0x006F  | 0 – Normally open<br>1 – Normally close | DoorSwitchPolarity         | 0       | R/W         |
| 113 | 0x0070  | 0 – Off<br>1 – On                       | EmergencyMode              | 0       | R/W         |
| 114 | 0x0071  | 0 – Off<br>1 – On                       | DailyTimer                 | 0       | R/W         |
| 115 | 0x0072  | 0 – Off<br>1 – On                       | SetLightOn                 | 0       | R/W         |
| 116 | 0x0073  | 0 – Off<br>1 – On                       | ViewFloatValue             | 0       | R/W         |
| 117 | 0x0074  | 0 – Off<br>1 – On                       | RestoreDefault             | 0       | R/W         |



## Modbus FC Object List

| N° | Address | Value (Range) | Description | Default | Permissions |
|----|---------|---------------|-------------|---------|-------------|
| 1  | 0x0000  |               | T1_AIN      | X       | R           |
| 2  | 0x0001  |               | IN1_AIN     | X       | R           |

| N° | Address | Value (Range) | Description | Default | Permissions      |
|----|---------|---------------|-------------|---------|------------------|
| 3  | 0x0002  | 0...10V       | AO_Cool     | x       | R<br>(read only) |
| 4  | 0x0003  | 0...10V       | AO_Heat     | x       | R                |
| 5  | 0x0004  | 0...10V       | AO_Fan      | x       | R                |

| N° | Address | Value (Range)                                                                                                            | Description                  | Default                         | Permissions |   |
|----|---------|--------------------------------------------------------------------------------------------------------------------------|------------------------------|---------------------------------|-------------|---|
| 6  | 0x0005  | 5...35 °C<br>(41...95°F)                                                                                                 | SetPoint                     | 23°C (73°F)                     | R/W         | * |
| 7  | 0x0006  | 5...35 °C<br>(41...95°F)                                                                                                 | SetPointHeat                 | 22°C (72°F)                     | R/W         | * |
| 8  | 0x0007  | 5...35 °C<br>(41...95°F)                                                                                                 | SetPointEffective            | 23°C (73°F)                     | R           | * |
| 9  | 0x0008  | 0...100 °C<br>(32...212°F)                                                                                               | AmbientTemperatureEffective  | x                               | R           | * |
| 10 | 0x0009  | 0 – Fan Only<br>1 – Cool<br>2 – Heat<br>3 – Auto                                                                         | Mode                         | 1 – Cool                        | R/W         |   |
| 11 | 0x000A  | 0 – Fan Only<br>1 – Cool<br>2 – Heat<br>4 – Off                                                                          | ModeEffective                | 4 – Off                         | R           |   |
| 12 | 0x000B  |                                                                                                                          | FanSpeed                     | Not use                         | R           |   |
| 13 | 0x000C  | 1 – On<br>4 – Off                                                                                                        | FanEffective                 | 4 – Off                         | R           |   |
| 14 | 0x000D  | -6...6 °C (-9...9°F)                                                                                                     | ReturnAirSensorCalibration   | 0                               | R/W         | * |
| 15 | 0x000E  | 5...35 °C<br>(41...95°F)                                                                                                 | SetPointLimitCool            | 10 °C (50°F)                    | R/W         |   |
| 16 | 0x000F  | 5...35 °C<br>(41...95°F)                                                                                                 | SetPointLimitHeat            | 30 °C (86°F)                    | R/W         |   |
| 17 | 0x0010  | 5...35 °C<br>(41...95°F)                                                                                                 | EconomySetPointInCool        | 30 °C (86°F)                    | R/W         |   |
| 18 | 0x0011  | 5...35 °C<br>(41...95°F)                                                                                                 | EconomySetPointInHeat        | 10 °C (50°F)                    | R/W         |   |
| 19 | 0x0012  | 0 – Unoccupied<br>1 – Occupied<br>2 - Temporary occupied                                                                 | OccupancyEffectiveHVAC       | 1 – Occupied                    | R           |   |
| 20 | 0x0013  | 0 – Occupancy sensor logic not in use<br>1 – Occupancy sensor logic controls HVAC                                        | OccupancySensorAuthority     | 1 – Occupancy sensor logic HVAC | R/W         |   |
| 21 | 0x0014  | 0 - On/Off logic<br>1 – Start/Stop logic<br>2 – Change setpoint logic                                                    | OccupancySensorFunction      | 2 – Change setpoint logic       | R/W         |   |
| 22 | 0x0015  | 0...250 min                                                                                                              | OccupancySensorHVACDelayTime | 20 min                          | R/W         |   |
| 23 | 0x0016  | 0 – Thermostat turn off when unoccupied<br>1 – Thermostat use economy/dehumidity unoccupied set point<br>2 – air-refresh | DoorSwitchOrKeyTag_Function  | 1                               | R/W         |   |
| 24 | 0x0017  | 0...999 sec                                                                                                              | TimeSwitchingToOccupiedMode  | 1                               | R/W         |   |
| 25 | 0x0018  | 00 – T1 terminals not in use<br>01 – External sensor<br>02 – T3 indoor sensor<br>03 – Door switch<br>04 – key tag        | T1_Function                  | 0                               | R/W         |   |

| N° | Address | Value (Range)                                                                                                                                                         | Description                         | Default           | Permissions |   |
|----|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|-------------------|-------------|---|
| 26 | 0x0019  | 00 – IN1, IN0 terminals not in use<br>01 – T2 outdoor sensor<br>02 - T3 indoor sensor<br>03 – Remote on/off switch<br>04 – Remote economy switch<br>05 – External PIR | IN1_Function                        | 0                 | R/W         |   |
| 27 | 0x001A  | 0...999 sec                                                                                                                                                           | WindowContactDelayTime              | 0                 | R/W         |   |
| 28 | 0x001B  | 0...999 sec                                                                                                                                                           | DoorSwitchDelayTime                 | 0                 | R/W         |   |
| 29 | 0x001C  | 0...99 °C<br>(32...210°F)                                                                                                                                             | T2_Effective                        | -                 | R           | * |
| 30 | 0x001D  | 0...99 °C<br>(32...210°F)                                                                                                                                             | T3_Effective                        | -                 | R           | * |
| 31 | 0x001E  | 0...600 sec                                                                                                                                                           | CoolFanOnDelay                      | 0                 | R/W         |   |
| 32 | 0x001F  | 0...600 sec                                                                                                                                                           | CoolFanOffDelay                     | 0                 | R/W         |   |
| 33 | 0x0020  | 0...600 sec                                                                                                                                                           | HeatFanOnDelay                      | 30 sec            | R/W         |   |
| 34 | 0x0021  | 0...600 sec                                                                                                                                                           | HeatFanOffDelay                     | 30 sec            | R/W         |   |
| 35 | 0x0022  | 8...15 °C<br>(46...59°F)                                                                                                                                              | FreezeProtectionCutInSetpoint       | 8 °C (46°F)       | R/W         |   |
| 36 | 0x0023  | 10...17 °C<br>(50...63°F)                                                                                                                                             | FreezeProtectionCutOutSetpoint      | 10 °C (50°F)      | R/W         |   |
| 37 | 0x0024  | 0...999 hours                                                                                                                                                         | FilterCounter                       | 0 hours           | R/W         |   |
| 38 | 0x0025  | 0...999 hours;<br>0 – disable filter alarm                                                                                                                            | FilterAlarmTimeDelay                | 0 hours           | R/W         |   |
| 39 | 0x0026  | 14...37 °C<br>(57...99°F)                                                                                                                                             | FanSoftStartInHeatCutInTemperature  | 36 °C (97°F)      | R/W         |   |
| 40 | 0x0027  | 12...35 °C<br>(54...95°F)                                                                                                                                             | FanSoftStartInHeatCutOutTemperature | 32 °C (90°F)      | R/W         |   |
| 41 | 0x0028  | 0.3 ... 2 °C<br>(0.6...4°F)                                                                                                                                           | DifferentialOnOffFanSpeeds          | 0.7 °C<br>(1.4°F) | R/W         |   |
| 42 | 0x0029  | 0...5 °C (0...10°F)                                                                                                                                                   | CoolDifferentialBand                | 1 °C (2°F)        | R/W         | * |
| 43 | 0x002A  | -5...5 °C (-10...10°F)                                                                                                                                                | CoolDifferentialBandOffset          | 0 °C (0°F)        | R/W         | * |
| 44 | 0x002B  | 0...5 °C (0...10°F)                                                                                                                                                   | HeatDifferentialBand                | 1 °C (2°F)        | R/W         | * |
| 45 | 0x002C  | -5...5 °C (-10...10°F)                                                                                                                                                | HeatDifferentialBandOffset          | 0 °C (0°F)        | R/W         | * |
| 46 | 0x002D  | 0...10 °C (0...20°F)                                                                                                                                                  | ShiftBetweenCoolAndHeat             | 2 °C (4°F)        | R/W         | * |

| N° | Address | Value (Range)           | Description               | Default    | Permissions |   |
|----|---------|-------------------------|---------------------------|------------|-------------|---|
| 47 | 0x002E  | 0...10 °C<br>(0...20°F) | ShiftBetweenHeatStages    | 2 °C (4°F) | R/W         | * |
| 48 | 0x002F  | 0...600 sec             | TimeDelayOnNextHeatStage  | 5 sec      | R/W         |   |
| 49 | 0x0030  | 0...600 sec             | TimeDelayOffNextHeatStage | 1 sec      | R/W         |   |
| 50 | 0x0031  | 0...100                 | Kp_PIDCool                | 100        | R/W         |   |
| 51 | 0x0032  | 0...100                 | Kp_PIDHeat                | 100        | R/W         |   |
| 52 | 0x0033  | 0...100                 | Ki_PIDCool                | 0          | R/W         |   |
| 53 | 0x0034  | 0...100                 | Ki_PIDHeat                | 0          | R/W         |   |
| 54 | 0x0035  | 0...100                 | Kd_PIDCool                | 1          | R/W         |   |
| 55 | 0x0036  | 0...100                 | Kd_PIDHeat                | 1          | R/W         |   |
| 56 | 0x0037  | 0...100                 | OutputsTresholdTimeCool   | 60         | R/W         |   |
| 57 | 0x0038  | 0...100                 | OutputsTresholdTimeHeat   | 60         | R/W         |   |
| 58 | 0x0039  | 2...10                  | CoolValueProrotionalBand  | 2          | R/W         | * |
| 59 | 0x003A  | 0...100                 | CoolProrotionalLowLimit   | 0          | R/W         |   |
| 60 | 0x003B  | 0...100                 | CoolProrotionalHighLimit  | 100        | R/W         |   |
| 61 | 0x003C  | 2...10                  | HeatValueProrotionalBand  | 2          | R/W         | * |
| 62 | 0x003D  | 0...100                 | HeatProrotionalLowLimit   | 0          | R/W         |   |
| 63 | 0x003E  | 0...100                 | HeatProrotionalHighLimit  | 100        | R/W         |   |
| 64 | 0x003F  | 0...30                  | ProrotionalOnPercent      | 30         | R/W         |   |
| 65 | 0x0040  | 0...20                  | ProrotionalOffPercent     | 10         | R/W         |   |
| 66 | 0x0041  | 5...99                  | BackLightDimTime          | 5          | R/W         |   |
| 67 | 0x0042  | 5...99                  | BackLightDimValue         | 5          | R/W         |   |
| 68 | 0x0043  | 10...2                  | CoolVFSProportionalBand   | 2          | R/W         | * |
| 69 | 0x0044  | 10...2                  | HeatVFSProportionalBand   | 2          | R/W         | * |
| 70 | 0x0045  | 30...0                  | CoolVFSLowSpeedPercent    | 20         | R/W         |   |
| 71 | 0x0046  | 60...30                 | CoolVFSMediumSpeedPercent | 50         | R/W         |   |
| 72 | 0x0047  | 100...60                | CoolVFSHighSpeedPercent   | 90         | R/W         |   |
| 73 | 0x0048  | 30...0                  | HeatVFSLowSpeedPercent    | 30         | R/W         |   |
| 74 | 0x0049  | 60...30                 | HeatVFSMediumSpeedPercent | 50         | R/W         |   |

|    |        |          |                         |     |     |  |
|----|--------|----------|-------------------------|-----|-----|--|
| 75 | 0x004A | 100...60 | HeatVFSHighSpeedPercent | 80  | R/W |  |
| 76 | 0x004B | 50...10  | VFSMediumSpeedDiff      | 35  | R/W |  |
| 77 | 0x004C | 50...10  | VFSHighSpeedDiff        | 35  | R/W |  |
| 78 | 0x004D | 100...0  | CoolVFSLowLimit         | 0   | R/W |  |
| 79 | 0x004E | 100...0  | CoolVFSHighLimit        | 100 | R/W |  |
| 80 | 0x004F | 100...0  | HeatVFSLowLimit         | 0   | R/W |  |
| 81 | 0x0050 | 100...0  | HeatVFSHighLimit        | 100 | R/W |  |

|    | Address | Value (Range)                         | Description                   | Default | Permissions |  |
|----|---------|---------------------------------------|-------------------------------|---------|-------------|--|
| 82 | 0x0051  | 0 – Open<br>1 – Close                 | S1_1_FanSpeeds                | X       | R           |  |
| 83 | 0x0052  | 0 – Open<br>1 – Close                 | S1_2_FanSpeeds                | X       | R           |  |
| 84 | 0x0053  | 0 – Open<br>1 – Close                 | S1_3_HC_HP                    | X       | R           |  |
| 85 | 0x0054  | 0 – Open<br>1 – Close                 | S1_4_HPIInCool_HCElectrical   | X       | R           |  |
| 86 | 0x0055  | 0 – Delay On<br>1 – Delay Off         | S1_5_CompressorDelay          | X       | R           |  |
| 87 | 0x0056  | 0 – Open<br>1 – Close                 | S1_6_ElectricalHeater2ndStage | X       | R           |  |
| 88 | 0x0057  | 0 – AC<br>1 – FC                      | S1_7_AC_FC_System             | X       | R           |  |
| 89 | 0x0058  | 0 – Modbus<br>1 – Bacnet              | S1_8_UseBacnet                | X       | R           |  |
| 90 | 0x0059  | 1- Cool<br>Proportional, 0 -<br>relay | S2_1_CoolProportional         | X       | R           |  |
| 91 | 0x005A  | 1- Heat<br>Proportional, 0 –<br>relay | S2_2_HeatProportional         | X       | R           |  |

|    | Address | Value (Range)     | Description    | Default | Permissions |  |
|----|---------|-------------------|----------------|---------|-------------|--|
| 92 | 0x005B  | 0 – Off<br>1 – On | HeatOnOffValve | 0       | R           |  |
| 93 | 0x005C  | 0 – Off<br>1 – On | HeatElement 2  | 0       | R           |  |
| 94 | 0x005D  | 0 – Off<br>1 – On | HeatElement 3  | 0       | R           |  |
| 95 | 0x005E  | 0 – Off<br>1 – On | CoolOnOffValve | 0       | R           |  |
| 96 | 0x005F  | 0 – Off<br>1 – On | FanOnOff       | 0       | R           |  |
| 97 | 0x0060  | 0 – Off<br>1 – On | FanOnOffMedium | 0       | R           |  |
| 98 | 0x0061  | 0 – Off<br>1 – On | FanOnOffHigh   | 0       | R           |  |
| 99 | 0x0062  | 0 – Off<br>1 – On | LightOn        | 0       | R           |  |

|     | Address | Value (Range)                           | Description                | Default | Permissions |
|-----|---------|-----------------------------------------|----------------------------|---------|-------------|
| 100 | 0x0063  | 0 – Off<br>1 – On                       | OnOff                      | 0       | R/W         |
| 101 | 0x0064  | 0 – Off<br>1 – On                       | AutoFan                    | 0       | R/W         |
| 102 | 0x0065  | 0 – Off (°F)<br>1 – On (°C)             | C_F_Scale                  | 1       | R           |
| 103 | 0x0066  | 0 – Off<br>1 – On                       | LockFan                    | 0       | R/W         |
| 104 | 0x0067  | 0 – Off<br>1 – On                       | LockMode                   | 0       | R/W         |
| 105 | 0x0068  | 0 – Off<br>1 – On                       | LockOnOff                  | 0       | R/W         |
| 106 | 0x0069  | 0 – Off<br>1 – On                       | LockSetPoint               | 0       | R/W         |
| 107 | 0x006A  | 0 – Off<br>1 – On                       | One_TwoSetpoints           | 0       | R           |
| 108 | 0x006B  | 0 – Off<br>1 – On                       | FilterAlarm                | 0       | R           |
| 109 | 0x006C  | 0 – Off<br>1 – On                       | FilterReset                | 0       | R/W         |
| 110 | 0x006D  | 0 – Off<br>1 – On                       | AutoModeEnable             | 1       | R/W         |
| 111 | 0x006E  | 0 – Off<br>1 – On                       | BackLightDimEnable         | 1       | R/W         |
| 112 | 0x006F  | 0 – Off<br>1 – On                       | BeeperEnable               | 0       | R           |
| 113 | 0x0070  | 0 – Off<br>1 – On                       | FreezeProtectionEnable     | 1       | R/W         |
| 114 | 0x0071  | 0 – Off<br>1 – On                       | WindowContact              | 0       | R           |
| 115 | 0x0072  | 0 – Normally open<br>1 – Normally close | WindowContactPolarity      | 1       | R/W         |
| 116 | 0x0073  | 0 – Off<br>1 – On                       | UnoccupaedByNetwork        | 0       | R/W         |
| 117 | 0x0074  | 0 – Off<br>1 – On                       | UnoccupancyByAuxOccSensor  | 0       | R           |
| 118 | 0x0075  | 0 – Normally open<br>1 – Normally close | AuxOccupancySensorPolarity | 0       | R/W         |
| 119 | 0x0076  | 0 – Off<br>1 – On                       | DoorSwitchOpen             | 0       | R           |
| 120 | 0x0077  | 0 – Normally open<br>1 – Normally close | DoorSwitchPolarity         | 0       | R/W         |
| 121 | 0x0078  | 0 – Off<br>1 – On                       | DailyTimer                 | 0       | R/W         |
| 122 | 0x0079  | 0 – Off<br>1 – On                       | SetLightOn                 | 0       | R/W         |
| 123 | 0x007A  | 0 – Off<br>1 – On                       | ViewFloatValue             | 0       | R/W         |
| 124 | 0x007B  | 0 – Off<br>1 – On                       | RestoreDefault             | 0       | R/W         |

## BACnet FC MSTP

TimeOut 100 ms

Baud rate: 9600, 19200, 38400, no parity, 8 data bits, 1stop bit

| N° | Object | Value | Object Name | Default |
|----|--------|-------|-------------|---------|
|----|--------|-------|-------------|---------|

### Analog Inputs

|    |                 |                  |                          |   |
|----|-----------------|------------------|--------------------------|---|
| 1. | Analog Input #3 | -20 °C... 100 °C | T1_Ext_TemperatureSensor | - |
| 2. | Analog Input #4 | -20 °C... 100 °C | IN1_AIN                  | - |

### Analog Outputs

|    |                  |  |         |   |
|----|------------------|--|---------|---|
| 3. | Analog Output#0  |  | AO_Cool | - |
| 4. | Analog Output #1 |  | AO_Heat | - |
| 5. | Analog Output #2 |  | AO_Fan  | - |

### Analog Values

|     |                  |                                                                                  |                              |              |
|-----|------------------|----------------------------------------------------------------------------------|------------------------------|--------------|
| 6.  | Analog Value #0  | 5...35°C (41...95°F)                                                             | SetPoint_SetPointCool        | 23 °C (73°F) |
| 7.  | Analog Value #1  | 5...35°C (41...95°F)                                                             | SetPointHeat                 | 22 °C (72°F) |
| 8.  | Analog Value #2  | 5...35°C (41...95°F)                                                             | SetPointEffective            | 23 °C (73°F) |
| 9.  | Analog Value #3  | 0...100 °C (32...212°F)                                                          | ReturnAirSensorEffective     | -            |
| 10. | Analog Value #4  | 0 - Fan Only<br>1 - Cool<br>2 - Heat<br>3 - Auto                                 | Mode                         | 1            |
| 11. | Analog Value #5  | 0 - Fan Only<br>1 - Cool<br>2 - Heat<br>3 - Auto<br>4 - Off                      | ModeEffective                | 4            |
| 12. | Analog Value #6  | 0 - Auto<br>1 - Low<br>2 - Medium<br>3 - High                                    | FanSpeed                     | 0            |
| 13. | Analog Value #7  | 1 - Low<br>2 - Medium<br>3 - High<br>4 - Off                                     | FanSpeedEffective            | 4            |
| 14. | Analog Value #8  | -6...6 °C (-9...9°F)                                                             | ReturnAirSensorCalibration   | 0 °C         |
| 15. | Analog Value #9  | 5...35 °C (41...95°F)                                                            | SetPointLimitCool            | 5 °C (50°F)  |
| 16. | Analog Value #10 | 5...35 °C (41...95°F)                                                            | SetPointLimitHeat            | 30 °C (86°F) |
| 17. | Analog Value #11 | 5...35 °C (41...95°F)                                                            | EconomySetPointInCool        | 30 °C (86°F) |
| 18. | Analog Value #12 | 5...35 °C (41...95°F)                                                            | EconomySetPointInHeat        | 10 °C (50°F) |
| 19. | Analog Value #13 | 0 - Unoccupied<br>1 - Occupied<br>2 - Temporary occupied                         | OccupancyEffectiveHVAC       | 1            |
| 20. | Analog Value #14 | 0 - Occupancy sensor logic not used<br>1 - Occupancy sensor logic controls HVAC. | OccupancySensorAuthority     | 1            |
| 21. | Analog Value #15 | 0 - On/Off logic;<br>1 - Start/Stop logic;<br>2 - Change setpoint logic.         | OccupancySensorFunction      | 2            |
| 22. | Analog Value #16 | 0...250 minutes                                                                  | OccupancySensorHVACDelayTime | 20 min       |
| 23. | Analog Value #17 | 0...999 seconds                                                                  | TimeSwitchingToOccupiedMode  | 1 sec        |



| N°  | Object           | Value                                                                                                                                                                                                                                                                       | Object Name                         | Default        |
|-----|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|----------------|
| 24. | Analog Value #18 | 0 - Not used;<br>1 - External sensor (T1);<br>2 - Soft start sensor (T3).<br>3 – Door switch – Door switch (Hotel configuration of occupancy logic is active)<br>04 – key tag                                                                                               | T1_Function                         | 0              |
| 25. | Analog Value #19 | 0 - Not used;<br>1- Auto changeover sensor (T2);<br>2 - Soft start sensor (T3);<br>3 – window contact(remote switch On/Off);<br>4 – window contact (remote switch EC On/EC Off = change SetpointEffective according objects AV11, AV12);<br>5 – Auxiliary Occupancy sensor. | IN1_Function                        | 0              |
| 26. | Analog Value #20 | 0...999 seconds                                                                                                                                                                                                                                                             | WindowContactDelayTime              | 600 sec        |
| 27. | Analog Value #21 | 0...999 seconds                                                                                                                                                                                                                                                             | DoorSwitchDelayTime                 | 180 sec.       |
| 28. | Analog Value #25 | 0...99 °C (32...210°F)                                                                                                                                                                                                                                                      | T2_Effective                        | -              |
| 29. | Analog Value #26 | 0...99 °C (32...210°F)                                                                                                                                                                                                                                                      | T3_Effective                        | -              |
| 30. | Analog Value #27 | 0...600 sec                                                                                                                                                                                                                                                                 | CoolFanOnDelay                      | 0 sec          |
| 31. | Analog Value #28 | 0...600 sec                                                                                                                                                                                                                                                                 | CoolFanOffDelay                     | 0 sec          |
| 32. | Analog Value #29 | 0...600 sec                                                                                                                                                                                                                                                                 | HeatFanOnDelay                      | 0 sec          |
| 33. | Analog Value #30 | 0...600 sec                                                                                                                                                                                                                                                                 | HeatFanOffDelay                     | 30 sec         |
| 34. | Analog Value #31 | 8... 15 °C (46...59°F)                                                                                                                                                                                                                                                      | FreezeProtectionCutInSetpoint       | 8 °C (46°F)    |
| 35. | Analog Value #32 | 10... 17 °C (50...63°F)                                                                                                                                                                                                                                                     | FreezeProtectionCutOutSetpoint      | 10 °C (50°F)   |
| 36. | Analog Value #33 | 0... 999 hours                                                                                                                                                                                                                                                              | FilterCounter                       | 0 hrs          |
| 37. | Analog Value #34 | 0... 999 hours; 0 – disable filter alarm.                                                                                                                                                                                                                                   | FilterAlarmTimeDelay                | 0 hrs          |
| 38. | Analog Value #35 | 0... 5 °C (0...10°F)                                                                                                                                                                                                                                                        | CoolDifferentialBand                | 1 °C (2°F)     |
| 39. | Analog Value #36 | -5... 5 °C (-10...10°F)                                                                                                                                                                                                                                                     | CoolDifferentialBandOffset          | 0 °C (0°F)     |
| 40. | Analog Value #37 | 0... 5 °C (0...10°F)                                                                                                                                                                                                                                                        | HeatDifferentialBand                | 1 °C (2°F)     |
| 41. | Analog Value #38 | -5... 5 °C (-10...10°F)                                                                                                                                                                                                                                                     | HeatDifferentialBandOffset          | 0 °C (0°F)     |
| 42. | Analog Value #39 | 0... 10 °C (0...20°F)                                                                                                                                                                                                                                                       | ShiftBetweenCoolAndHeat             | 2 °C (4°F)     |
| 43. | Analog Value #41 | 0... 10 °C (0...20°F)                                                                                                                                                                                                                                                       | ShiftBetweenHeatStages              | 2 °C (4°F)     |
| 44. | Analog Value #42 | 315000... 4000193                                                                                                                                                                                                                                                           | BacnetDeviceIdentifier              | 315000         |
| 45. | Analog Value #44 | 0...600 sec                                                                                                                                                                                                                                                                 | TimeDelayOnNextCoolStage            | 5 sec          |
| 46. | Analog Value #46 | 0...600 sec                                                                                                                                                                                                                                                                 | TimeDelayOffNextHeatStage           | 5 sec          |
| 47. | Analog Value #54 | 0...99 sec                                                                                                                                                                                                                                                                  | BackLightDimTime                    | 5 sec          |
| 48. | Analog Value #55 | 10...90 %                                                                                                                                                                                                                                                                   | BackLightDimValue                   | 10 %           |
| 49. | Analog Value #56 | 100...50%                                                                                                                                                                                                                                                                   | BackLightBrightness                 | 100 %          |
| 50. | Analog Value #57 | 14...37 °C (57...99°F)                                                                                                                                                                                                                                                      | FanSoftStartInHeatCutInTemperature  | 36 °C (97°F)   |
| 51. | Analog Value #58 | 12...35 °C (54...95°F)                                                                                                                                                                                                                                                      | FanSoftStartInHeatCutOutTemperature | 32 °C (90°F)   |
| 52. | Analog Value #59 | 0.3... 2 °C (0.6...4°F)                                                                                                                                                                                                                                                     | DifferentialOnOffFanSpeeds          | 0.7 °C (1.4°F) |
| 53. | Analog Value #60 | 0...100                                                                                                                                                                                                                                                                     | OutputsTresholdTimeCool             | 60             |
| 54. | Analog Value #61 | 0...100                                                                                                                                                                                                                                                                     | OutputsTresholdTimeHeat             | 60             |
| 55. | Analog Value #62 | 0...100                                                                                                                                                                                                                                                                     | Kp_PIDCool                          | 100            |
| 56. | Analog Value #63 | 0...100                                                                                                                                                                                                                                                                     | Kp_PIDHeat                          | 100            |
| 57. | Analog Value #64 | 0...100                                                                                                                                                                                                                                                                     | Ki_PIDCool                          | 0              |

|     |                   |                                                                                                                          |                             |     |
|-----|-------------------|--------------------------------------------------------------------------------------------------------------------------|-----------------------------|-----|
| 58. | Analog Value #65  | 0...100                                                                                                                  | Ki_PIDHeat                  | 0   |
| 59. | Analog Value #66  | 0...100                                                                                                                  | Kd_PIDCool                  | 1   |
| 60. | Analog Value #67  | 0...100                                                                                                                  | Kd_PIDHeat                  | 1   |
| 61. | Analog Value #68  | 2...10                                                                                                                   | CoolValueProrotionalBand    | 2   |
| 62. | Analog Value #69  | 0...100                                                                                                                  | CoolProrotionalLowLimit     | 0   |
| 63. | Analog Value #70  | 0...100                                                                                                                  | CoolProrotionalHighLimit    | 100 |
| 64. | Analog Value #71  | 2...10                                                                                                                   | HeatValueProrotionalBand    | 2   |
| 65. | Analog Value #72  | 0...100                                                                                                                  | HeatProrotionalLowLimit     | 0   |
| 66. | Analog Value #73  | 0...100                                                                                                                  | HeatProrotionalHighLimit    | 100 |
| 67. | Analog Value #75  | 0...30                                                                                                                   | ProrotionalOnPercent        | 30  |
| 68. | Analog Value #76  | 0...20                                                                                                                   | ProrotionalOffPercent       | 10  |
| 69. | Analog Value #77  | 10...2                                                                                                                   | CoolVFSProportionalBand     | 2   |
| 70. | Analog Value #78  | 10...2                                                                                                                   | HeatVFSProportionalBand     | 2   |
| 71. | Analog Value #79  | 30...0                                                                                                                   | CoolVFSLowSpeedPercent      | 20  |
| 72. | Analog Value #80  | 60...30                                                                                                                  | CoolVFSMediumSpeedPercent   | 50  |
| 73. | Analog Value #81  | 100...60                                                                                                                 | CoolVFSHighSpeedPercent     | 90  |
| 74. | Analog Value #82  | 30...0                                                                                                                   | HeatVFSLowSpeedPercent      | 30  |
| 75. | Analog Value #83  | 60...30                                                                                                                  | HeatVFSMediumSpeedPercent   | 50  |
| 76. | Analog Value #84  | 100...60                                                                                                                 | HeatVFSHighSpeedPercent     | 80  |
| 77. | Analog Value #86  | 50...10                                                                                                                  | VFSMediumSpeedDiff          | 35  |
| 78. | Analog Value #87  | 50...10                                                                                                                  | VFSHighSpeedDiff            | 35  |
| 79. | Analog Value #88  | 100...0                                                                                                                  | CoolVFSLowLimit             | 0   |
| 80. | Analog Value #89  | 100...0                                                                                                                  | CoolVFSHighLimit            | 100 |
| 81. | Analog Value #90  | 100...0                                                                                                                  | HeatVFSLowLimit             | 0   |
| 82. | Analog Value #91  | 100...0                                                                                                                  | HeatVFSHighLimit            | 100 |
| 83. | Analog Value #105 | 0 – Thermostat turn off when unoccupied<br>1 – Thermostat use economy/dehumidity unoccupied set point<br>2 – air-refresh | DoorSwitchOrKeyTag_Function | 1   |

Binary Inputs

| N°  | Object           | Value                           | Object Name           | Default |
|-----|------------------|---------------------------------|-----------------------|---------|
| 84. | Binary Input #0  | 1-On,0-Off                      | S1_1_FanSpeeds        |         |
| 85. | Binary Input #1  | 1-On,0-Off                      | S1_2_FanSpeeds        |         |
| 86. | Binary Input #2  | 1-On,0-Off                      | S1_3_Config4pipe      |         |
| 87. | Binary Input #3  | 1-On,0-Off                      | S1_4_ElectricalHeater |         |
| 88. | Binary Input #7  | 1-On,0-Off                      | ChilledBeam           |         |
| 89. | Binary Input #8  | 1-On,0-Off                      | FloorHeater           |         |
| 90. | Binary Input #9  | 0-AC,1-FC                       | AC_FC_System          |         |
| 91. | Binary Input #10 | 1-Bacnet ,0-Modbus              | UseBacnet             |         |
| 92. | Binary Input #11 | 1- Cool Proportional, 0 - relay | CoolProportional      |         |
| 93. | Binary Input #12 | 1- Heat Proportional, 0 – relay | HeatProportional      |         |

Binary Outputs

|      |                  |            |                |     |
|------|------------------|------------|----------------|-----|
| 94.  | Binary Output #3 | 1-On,0-Off | CoolOnOffValve | Off |
| 95.  | Binary Output #0 | 1-On,0-Off | HeatOnOffValve | Off |
| 96.  | Binary Output #5 | 1-On,0-Off | FanOnOffLow    | Off |
| 97.  | Binary Output #6 | 1-On,0-Off | FanOnOffMedium | Off |
| 98.  | Binary Output #7 | 1-On,0-Off | FanOnOffHigh   | Off |
| 99.  | Binary Output #1 | 1-On,0-Off | HeatElement    | Off |
| 100. | Binary Output #9 | 1-On,0-Off | LightOn        | Off |

Binary Values

|      |                  |                       |                            |     |
|------|------------------|-----------------------|----------------------------|-----|
| 101. | Binary Value #0  | 1-On,0-Off            | OnOff                      | Off |
| 102. | Binary Value #1  | 1-On,0-Off            | AutoFan                    | Off |
| 103. | Binary Value #2  | 1-On (°C) ,0-Off (°F) | C_F_Scale                  | On  |
| 104. | Binary Value #3  | 1-On,0-Off            | LockFan                    | Off |
| 105. | Binary Value #4  | 1-On,0-Off            | LockMode                   | Off |
| 106. | Binary Value #5  | 1-On,0-Off            | LockOnOff                  | Off |
| 107. | Binary Value #6  | 1-On,0-Off            | LockSetPoint               | Off |
| 108. | Binary Value #7  | 1-On,0-Off            | One_TwoSetpoints           | Off |
| 109. | Binary Value #8  | 1-On,0-Off            | FilterAlarm                | Off |
| 110. | Binary Value #9  | 1-On,0-Off            | FilterReset                | Off |
| 111. | Binary Value #10 | 1-On,0-Off            | AutoModeEnable             | On  |
| 112. | Binary Value #11 | 1-On,0-Off            | BackLightDimEnable         | On  |
| 113. | Binary Value #12 | 1-On,0-Off            | BeeperEnable               | On  |
| 114. | Binary Value #13 | 1-On,0-Off            | FreezeProtectionEnable     | On  |
| 115. | Binary Value #14 | 1-On,0-Off            | WindowContact              | Off |
| 116. | Binary Value #15 | 1-On,0-Off            | WindowContactPolarity      | Off |
| 117. | Binary Value #17 | 1-On,0-Off            | UnoccupancyByAuxOccSensor  | Off |
| 118. | Binary Value #18 | 1-On,0-Off            | AuxOccupancySensorPolarity | Off |
| 119. | Binary Value #19 | 1-On,0-Off            | DoorSwitchOpen             | Off |
| 120. | Binary Value #20 | 1-On,0-Off            | DoorSwitchPolarity         | Off |
| 121. | Binary Value #23 | 1-On,0-Off            | DalyTimer                  | Off |
| 122. | Binary Value #29 | 1-On,0-Off            | SetLightOn                 | Off |
| 123. | Binary Value #25 | 1-On,0-Off            | RestoreDefault             | Off |
| 124. | Binary Value #28 | 1-On,0-Off            | UnoccupaedByNetwork        | Off |
| 125. | Binary Value #31 | 1-On,0-Off            | ViewFloatValue             | Off |

## BACnet AC MSTP

TimeOut 100 ms

Baud rate: 9600, 19200, 38400, no parity, 8 data bits, 1stop bit

| N° | Object | Value | Object Name | Default |
|----|--------|-------|-------------|---------|
|----|--------|-------|-------------|---------|

### Analog Inputs

|    |                 |  |                          |   |
|----|-----------------|--|--------------------------|---|
| 1. | Analog Input #3 |  | T1_Ext_TemperatureSensor | - |
| 2. | Analog Input #4 |  | IN1_AIN                  | - |

### Analog Outputs

|    |                  |         |         |   |
|----|------------------|---------|---------|---|
| 3. | Analog Output#0  | 0...10V | AO_Cool | - |
| 4. | Analog Output #1 | 0...10V | AO_Heat | - |
| 5. | Analog Output #2 | 0...10V | AO_Fan  | - |

### Analog Values

|     |                  |                                                                                  |                              |              |
|-----|------------------|----------------------------------------------------------------------------------|------------------------------|--------------|
| 6.  | Analog Value #0  | 5...35°C (41...95°F)                                                             | SetPoint_SetPointCool        | 23 °C (73°F) |
| 7.  | Analog Value #1  | 5...35°C (41...95°F)                                                             | SetPointHeat                 | 22 °C (72°F) |
| 8.  | Analog Value #2  | 5...35°C (41...95°F)                                                             | SetPointEffective            | 23 °C (73°F) |
| 9.  | Analog Value #3  | 0...100 °C (32...212°F)                                                          | ReturnAirSensorEffective     | -            |
| 10. | Analog Value #4  | 0 - Fan Only<br>1 - Cool<br>2 - Heat<br>3 - Auto                                 | Mode                         | 1            |
| 11. | Analog Value #5  | 0 - Fan Only<br>1 - Cool<br>2 - Heat<br>3 - Auto<br>4 - Off                      | ModeEffective                | 4            |
| 12. | Analog Value #6  | 0 - Auto<br>1 - Low<br>2 - Medium<br>3 - High                                    | FanSpeed                     | 0            |
| 13. | Analog Value #7  | 1 - Low<br>2 - Medium<br>3 - High<br>4 - Off                                     | FanSpeedEffective            | 4            |
| 14. | Analog Value #8  | -6...6 °C (-9...9°F)                                                             | ReturnAirSensorCalibration   | 0 °C (0°F)   |
| 15. | Analog Value #9  | 5...35 °C (41...95°F)                                                            | SetPointLimitCool            | 5 °C (50°F)  |
| 16. | Analog Value #10 | 5...35 °C (41...95°F)                                                            | SetPointLimitHeat            | 35 °C (86°F) |
| 17. | Analog Value #11 | 5...35 °C (41...95°F)                                                            | EconomySetPointInCool        | 30 °C (86°F) |
| 18. | Analog Value #12 | 5...35 °C (41...95°F)                                                            | EconomySetPointInHeat        | 10 °C (50°F) |
| 19. | Analog Value #13 | 0 - Unoccupied<br>1 - Occupied<br>2 - Temporary occupied                         | OccupancyEffectiveHVAC       | 1            |
| 20. | Analog Value #14 | 0 - Occupancy sensor logic not used<br>1 - Occupancy sensor logic controls HVAC. | OccupancySensorAuthority     | 1            |
| 21. | Analog Value #15 | 0 - On/Off logic;<br>1 - Start/Stop logic;<br>2 - Change setpoint logic.         | OccupancySensorFunction      | 2            |
| 22. | Analog Value #16 | 0...250 minutes                                                                  | OccupancySensorHVACDelayTime | 20 min       |
| 23. | Analog Value #17 | 0...999 seconds                                                                  | TimeSwitchingToOccupiedMode  | 1 sec        |

| N°  | Object           | Value                                                                                                                                                                                                                                                                       | Object Name                    | Default      |
|-----|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|--------------|
| 24. | Analog Value #18 | 0 - Not used;<br>1 - External sensor (T1);<br>2 - Soft start sensor (T3).<br>3 - Door switch - Door switch (Hotel configuration of occupancy logic is active)<br>04 - key tag                                                                                               | T1_Function                    | 0            |
| 25. | Analog Value #19 | 0 - Not used;<br>1- Auto changeover sensor (T2);<br>2 - Soft start sensor (T3);<br>3 - window contact(remote switch On/Off);<br>4 - window contact (remote switch EC On/EC Off = change SetpointEffective according objects AV11, AV12);<br>5 - Auxiliary Occupancy sensor. | IN1_Function                   | 0            |
| 26. | Analog Value #20 | 0...999 seconds                                                                                                                                                                                                                                                             | WindowContactDelayTime         | 600 sec      |
| 27. | Analog Value #21 | 0...999 seconds                                                                                                                                                                                                                                                             | DoorSwitchDelayTime            | 180 sec.     |
| 28. | Analog Value #25 | 0...99 °C (32...210°F)                                                                                                                                                                                                                                                      | T2_Effective                   | -            |
| 29. | Analog Value #26 | 0...99 °C (32...210°F)                                                                                                                                                                                                                                                      | T3_Effective                   | -            |
| 30. | Analog Value #28 | 0...600 sec                                                                                                                                                                                                                                                                 | CoolFanOffDelay                | 0 sec        |
| 31. | Analog Value #30 | 0...600 sec                                                                                                                                                                                                                                                                 | HeatFanOffDelay                | 30 sec       |
| 32. | Analog Value #31 | 8... 15 °C (46...59°F)                                                                                                                                                                                                                                                      | FreezeProtectionCutInSetpoint  | 8 °C (46°F)  |
| 33. | Analog Value #32 | 10... 17 °C (50...63°F)                                                                                                                                                                                                                                                     | FreezeProtectionCutOutSetpoint | 10 °C (50°F) |
| 34. | Analog Value #33 | 0... 999 hours                                                                                                                                                                                                                                                              | FilterCounter                  | 0 hrs        |
| 35. | Analog Value #34 | 0... 999 hours; 0 - disable filter alarm.                                                                                                                                                                                                                                   | FilterAlarmTimeDelay           | 0 hrs        |
| 36. | Analog Value #35 | 0... 5 °C (0...10°F)                                                                                                                                                                                                                                                        | CoolDifferentialBand           | 1 °C (2°F)   |
| 37. | Analog Value #36 | -5... 5 °C (-10...10°F)                                                                                                                                                                                                                                                     | CoolDifferentialBandOffset     | 0 °C (0°F)   |
| 38. | Analog Value #37 | 0... 5 °C (0...10°F)                                                                                                                                                                                                                                                        | HeatDifferentialBand           | 1 °C (2°F)   |
| 39. | Analog Value #38 | -5... 5 °C (-10...10°F)                                                                                                                                                                                                                                                     | HeatDifferentialBandOffset     | 0 °C (0°F)   |
| 40. | Analog Value #39 | 0... 10 °C (0...20°F)                                                                                                                                                                                                                                                       | ShiftBetweenCoolAndHeat        | 2 °C (4°F)   |
| 41. | Analog Value #40 | 0... 10 °C (0...20°F)                                                                                                                                                                                                                                                       | ShiftBetweenCoolStages         | 2 °C (4°F)   |
| 42. | Analog Value #41 | 0... 10 °C (0...20°F)                                                                                                                                                                                                                                                       | ShiftBetweenHeatStages         | 2 °C (4°F)   |
| 43. | Analog Value #42 | 315000... 4000193                                                                                                                                                                                                                                                           | BacnetDeviceIdentifier         | 315000       |
| 44. | Analog Value #43 | 0...600 sec                                                                                                                                                                                                                                                                 | TimeDelayOffNextCoolStage      | 1 sec        |
| 45. | Analog Value #44 | 0...600 sec                                                                                                                                                                                                                                                                 | TimeDelayOffNextHeatStage      | 1 sec        |
| 46. | Analog Value #45 | 0...600 sec                                                                                                                                                                                                                                                                 | TimeDelayOnNextCoolStage       | 5 sec        |
| 47. | Analog Value #46 | 0...600 sec                                                                                                                                                                                                                                                                 | TimeDelayOnNextHeatStage       | 5 sec        |
| 48. | Analog Value #47 | 0...360 sec                                                                                                                                                                                                                                                                 | CompressorStandbyDelay         | 10 sec       |
| 49. | Analog Value #48 | -9.5...99 °C (15...210°F)                                                                                                                                                                                                                                                   | DeiceInCoolCutInTemperature    | 0 °C (32°F)  |
| 50. | Analog Value #49 | -9.5...99 °C (15...210°F)                                                                                                                                                                                                                                                   | DeiceInCoolCutOutTemperature   | 8 °C (46°F)  |
| 51. | Analog Value #50 | 120...420 sec                                                                                                                                                                                                                                                               | DeiceInHeatTime                | 300 sec      |
| 52. | Analog Value #51 | 600...1800 sec                                                                                                                                                                                                                                                              | DeiceInHeatBreakTime           | 1500 sec     |
| 53. | Analog Value #52 | -9.5...99 °C (15...210°F)                                                                                                                                                                                                                                                   | DeiceInHeatCutInTemperature    | 0 °C (32°F)  |
| 54. | Analog Value #53 | -9.5...99 °C (15...210°F)                                                                                                                                                                                                                                                   | DeiceInHeatCuOutTemperature    | 16 °C (46°F) |
| 55. | Analog Value #54 | 0...99 sec                                                                                                                                                                                                                                                                  | BackLightDimTime               | 5 sec        |
| 56. | Analog Value #55 | 10...90 %                                                                                                                                                                                                                                                                   | BackLightDimValue              | 10 %         |
| 57. | Analog Value #56 | 100...50%                                                                                                                                                                                                                                                                   | BackLightBrightness            | 100 %        |
| 58. | Analog Value #77 | 10...2                                                                                                                                                                                                                                                                      | CoolVFSProportionalBand        | 2            |
| 59. | Analog Value #78 | 10...2                                                                                                                                                                                                                                                                      | HeatVFSProportionalBand        | 2            |
| 60. | Analog Value #79 | 30...0                                                                                                                                                                                                                                                                      | CoolVFSLowSpeedPercent         | 20           |

|     |                   |                                                                                                                          |                             |     |
|-----|-------------------|--------------------------------------------------------------------------------------------------------------------------|-----------------------------|-----|
| 61. | Analog Value #80  | 60...30                                                                                                                  | CoolVFSMediumSpeedPercent   | 50  |
| 62. | Analog Value #81  | 100...60                                                                                                                 | CoolVFSHighSpeedPercent     | 90  |
| 63. | Analog Value #82  | 30...0                                                                                                                   | HeatVFSLowSpeedPercent      | 30  |
| 64. | Analog Value #83  | 60...30                                                                                                                  | HeatVFSMediumSpeedPercent   | 50  |
| 65. | Analog Value #84  | 100...60                                                                                                                 | HeatVFSHighSpeedPercent     | 80  |
| 66. | Analog Value #86  | 50...10                                                                                                                  | VFSMediumSpeedDiff          | 35  |
| 67. | Analog Value #87  | 50...10                                                                                                                  | VFSHighSpeedDiff            | 35  |
| 68. | Analog Value #88  | 100...0                                                                                                                  | CoolVFSLowLimit             | 0   |
| 69. | Analog Value #89  | 100...0                                                                                                                  | CoolVFSHighLimit            | 100 |
| 70. | Analog Value #90  | 100...0                                                                                                                  | HeatVFSLowLimit             | 0   |
| 71. | Analog Value #91  | 100...0                                                                                                                  | HeatVFSHighLimit            | 100 |
| 72. | Analog Value #105 | 0 – Thermostat turn off when unoccupied<br>1 – Thermostat use economy/dehumidity unoccupied set point<br>2 – air-refresh | DoorSwitchOrKeyTag_Function | 1   |

Binary Inputs

| N°  | Object           | Value              | Object Name            | Default |
|-----|------------------|--------------------|------------------------|---------|
| 73. | Binary Input #0  | 1-On,0-Off         | S1_1_FanSpeeds         |         |
| 74. | Binary Input #1  | 1-On,0-Off         | S1_2_FanSpeeds         |         |
| 75. | Binary Input #2  | 1-On,0-Off         | S1_3_Config4pipe       |         |
| 76. | Binary Input #3  | 1-On,0-Off         | S1_4_ElectricalHeater  |         |
| 77. | Binary Input #7  | 1-On,0-Off         | CompressorDelay        |         |
| 78. | Binary Input #8  | 1-On,0-Off         | ElectricalHeater2Stage |         |
| 79. | Binary Input #9  | 0-AC,1-FC          | AC_FC_System           |         |
| 80. | Binary Input #10 | 1-Bacnet, 0-Modbus | UseBacnet              |         |

Binary Outputs

|     |                  |            |                |     |
|-----|------------------|------------|----------------|-----|
| 81. | Binary Output #3 | 1-On,0-Off | Compressor 1   | Off |
| 82. | Binary Output #4 | 1-On,0-Off | Compressor 2   | Off |
| 83. | Binary Output #0 | 1-On,0-Off | HeatElemet 1   | Off |
| 84. | Binary Output #1 | 1-On,0-Off | HeatElemet 2   | Off |
| 85. | Binary Output #2 | 1-On,0-Off | HeatElemet 3   | Off |
| 86. | Binary Output #5 | 1-On,0-Off | FanOnOffLow    | Off |
| 87. | Binary Output #6 | 1-On,0-Off | FanOnOffMedium | Off |
| 88. | Binary Output #7 | 1-On,0-Off | FanOnOffHigh   | Off |
| 89. | Binary Output #8 | 1-On,0-Off | HPOnOff        | Off |
| 90. | Binary Output #9 | 1-On,0-Off | LightOn        | Off |



Binary Values

|      |                  |                       |                            |     |
|------|------------------|-----------------------|----------------------------|-----|
| 91.  | Binary Value #0  | 1-On,0-Off            | OnOff                      | Off |
| 92.  | Binary Value #1  | 1-On,0-Off            | AutoFan                    | Off |
| 93.  | Binary Value #2  | 1-On (°C), 0-Off (°F) | C_F_Scale                  | On  |
| 94.  | Binary Value #3  | 1-On,0-Off            | LockFan                    | Off |
| 95.  | Binary Value #4  | 1-On,0-Off            | LockMode                   | Off |
| 96.  | Binary Value #5  | 1-On,0-Off            | LockOnOff                  | Off |
| 97.  | Binary Value #6  | 1-On,0-Off            | LockSetPoint               | Off |
| 98.  | Binary Value #7  | 1-On,0-Off            | One_TwoSetpoints           | Off |
| 99.  | Binary Value #8  | 1-On,0-Off            | FilterAlarm                | Off |
| 100. | Binary Value #9  | 1-On,0-Off            | FilterReset                | Off |
| 101. | Binary Value #10 | 1-On,0-Off            | AutoModeEnable             | On  |
| 102. | Binary Value #11 | 1-On,0-Off            | BackLightDimEnable         | On  |
| 103. | Binary Value #12 | 1-On,0-Off            | BeeperEnable               | On  |
| 104. | Binary Value #13 | 1-On,0-Off            | FreezeProtectionEnable     | On  |
| 105. | Binary Value #14 | 1-On,0-Off            | WindowContact              | Off |
| 106. | Binary Value #15 | 1-On,0-Off            | WindowContactPolarity      | Off |
| 107. | Binary Value #17 | 1-On,0-Off            | UnoccupancyByAuxOccSensor  | Off |
| 108. | Binary Value #18 | 1-On,0-Off            | AuxOccupancySensorPolarity | Off |
| 109. | Binary Value #19 | 1-On,0-Off            | DoorSwitchOpen             | Off |
| 110. | Binary Value #20 | 1-On,0-Off            | DoorSwitchPolarity         | Off |
| 111. | Binary Value #23 | 1-On,0-Off            | DalyTimer                  | Off |
| 112. | Binary Value #24 | 1-On,0-Off            | EmergencyMode              | Off |
| 113. | Binary Value #28 | 1-On,0-Off            | UnoccupaedByNetwork        | Off |
| 114. | Binary Value #29 | 1-On,0-Off            | SetLightOn                 | Off |
| 115. | Binary Value #25 | 1-On,0-Off            | RestoreDefault             | Off |
| 116. | Binary Value #31 | 1-On,0-Off            | ViewFloatValue             | Off |