

1.1 Field Device Tagging

**** PROJECT NOTE, for the Consultant ****

Consultant to coordinate labeling with Owner and User in high finish areas.

- A. The BAS vendor shall label each system device with a point address or other clearly identifiable notation inside the device cover when mounted in the space and on the cover when mounted above the ceiling or in a mechanical room. Labels shall be black on white standard laminated tape. Control valve and duct mounted damper actuators shall be hanging style engraved tags (white background with black lettering).
- B. All control equipment shall be clearly identified in accordance with as-built control shop drawing designation
- C. Control enclosures and panels: Include mechanically attached engraved phenolic nameplate with panel number, address, power source, and system(s) served. Panel mounted controlling instruments, temperature indicators, relays, switches, gauges, etc... shall be factory installed and permanently labeled. Devices shall be located inside or flush mounted on face of panel.
- D. Provide a label directly below devices (VAV, FCU, Reheats, Air Valves, etc...) mounted above ceiling. Label the approximate location on ceiling grid. Where associated devices such as reheat valves, sensor stations or other remote instrumentation not mounted within the terminal unit shall also be labeled on the grid below. Include ceiling grid tags for static pressure sensor location. Labels shall be black on white standard laminated tape. Where hard ceilings are used, labels shall be affixed to access door.
- E. Duct static-pressure sensors and wet differential-pressure sensor locations shall be:
 - 1. Indicated on the As Built control drawings
 - 2. Identified on the BAS Floor Plan online graphic; and
 - 3. Identified in the building using a label on the nearest ceiling grid, or access-panel where concealed.

1.2 Control Wiring Identification

- A. Communication: Manufacturer approved cable labeled to indicate "BAS communication" at no less than 10 ft. intervals. Communication cable shall be labeled with Device #, previous and destination device (e.g. VAV101/VAV102 would be used to label the communication bus between VAV101 and VAV102)
- B. I/O: Label I/O wiring with unique tag to match device identifier tag (e.g. sensor Discharge Air Temperature (DA-T) wire shall be labeled at panel and device as "DA-T").
- C. Raceway Identification. All the covers to junction and pull boxes of the BAS raceway system shall be painted white.

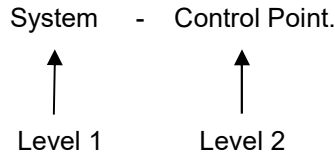
1.3 Naming Standards

- A. The intent of this section is to provide a standard naming convention for control points used within the University of Florida (UF) Building Automation System (BAS). Well-chosen point names can provide useful information about installed systems for the staff responsible for maintaining, modifying, and interconnecting various building systems. UF utilizes software analytics programs to evaluate HVAC system performance and a consistent naming standard reduces the setup time for these types of programs. Establishing a standard naming scheme allows operators to quickly search for specific point types, generate wild card searches and reports and provides consistency with regard to troubleshooting and designs. Using a consistent naming standard also reduces the time of system level programming which not only expedites implementation, but also reduces labor cost. This standard shall be

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used for all future projects, without exception. With respect to building renovations, only the renovated system shall comply with this standard.

- B. The design of the hardware and software shall integrate with the existing vendor specific servers at the University of Florida campus using new or existing global building controllers. The network shall be implemented via the campus shared Ethernet system. The campus shared Ethernet backbone uses BACnet over IP communication protocol.
- C. This section addresses the methods for developing and implementing a point naming standards, with particular emphasis on the implementation of point naming standards in a BACnet-based HVAC control system.
- D. Each complete BAS control point name consists of two levels or tiers. Each level offers a particular description and, when all levels are assembled into the naming convention, furnishes an explanation for the control point. The levels are broken down as follows: level 1 is the equipment/system identifier, and level 2 is the specific control point associated with the equipment/system. Reference the tables provided for each level under "Predefined Words and Indices" to compile each complete BAS control name. The standard naming convention shall be:



- E. A dash (-) will function to index components or systems and as a space filler for multiple words. For example, if multiple fan coil units exist in the building ('FCU' is the predefined name for a fan coil unit), the level 1 name shall be FCU-1, FCU-2, FCU-3, etc. In addition, the level 2 name for the discharge air temperature of the same FCU-3 shall be DA-T. The preferred separation symbol for Level 1 and Level 2 names shall be a dash (-). For example, the complete BAS control point name for the discharge air temperature sensor on FCU-3 would be FCU-3-DA-T. Reference the "Point Naming Standards" table for additional examples.
- F. Subfolders shall be created in the BACnet interface to help organize a building's control points and facilitate navigation. Placing corresponding control points into subfolders such as location (first floor, roof, penthouse, etc.) and room type (labs, clean rooms, etc.) will assist in avoiding exceptionally long lists on common screens. Creating subfolders shall be left up to the controls contractor but subject to approval.
- G. It is understood that this standard will not satisfy every situation but it is expected that the standard be followed whenever possible. The completed list of point names will require review and possible modification prior to implementation over the UF BAS BACnet/IP interface. Any word that is added and not included in the predefined tags below shall be submitted for approval with a complete description.
- H. The Level 1 – Point Legend Table 1-1 below lists reserved words for building specific systems and also establishes guidelines for equipment naming.

Table 1-1

Level 1 - Equipment and System Types	
Name	Description
AC-#	Air Compressor
AHU-##	Air Handling Unit
BLR-#	Boiler
CDW	Condenser Water Circuit
CH-#	Chiller
CHWR	Chilled Water Return

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CHWS	Chilled Water Supply
CHWP-#	Chilled Water Pump
CRAC-#	Computer Room Air Conditioning Unit
CT-#	Cooling Tower
CWP-#	Condenser Water Pump
DHW-#	Domestic Hot Water
DW-#	Domestic Water System
EF-##	Exhaust Fan
ERC-#	Energy Recovery Coil
ERW-#	Energy Recovery Wheel
EYW-#	Eye Wash Station
FCU-#-#1	Fan Coil Unit
FEV-#-#1	Fume Exhaust Air Valve Terminal Unit
GET-#-#1	General Exhaust Air Terminal Unit
GEV-#-#1	General Exhaust Air Valve Terminal Unit
LEF-##	Lab Exhaust Fan
HHW	Heating Hot Water
HHWP	Heating Hot Water Pump
HPA-#	Heat Pump Air Source
HPW-#	Heat Pump Water Source
HRU-#	Heat Recovery Unit
HTX-#	Heat Exchanger
HUM-#	Humidifier
LAB	Laboratory Space
OAU-##	Outside Air Unit
PEM-#	Power Energy Meter
PW	Process Water
PWP-#	Process Water Pump
RAT-#-#1	Return Air Terminal Unit
RM-#	Room
RF-#	Return Fan
SAT-#-#1	Supply Air Terminal
SAV-#-#1	Supply Air Valve Terminal Unit
SF-#	Supply Fan
UH-#	Unit Heater
VAC-#	Vacuum Pump

Note 1: When naming multiple terminal unit #-# it is preferred that the first digit represent the associated air handling unit and the second digit represent the specific terminal number. For example, a SAT box on AHU-01 should be tagged SAT-1-5, where 1 is the AHU number and 5 is the specific box identifier.

- I. The Level 2 – Point Legend Table 2-1 below lists reserved words for specific level 2 control points. When grouping more than one reserved word in the Level 2 – Point Legend, each abbreviation shall be separated by a dash (-) as explained previously under “Standard Naming Convention”.

Table 2-1

Level 2 - Point Legend	
Name	Description
A	Alarm
BYP	Bypass
BTUH	BTU/hr Energy Demand
C	Command Point

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CC	Cooling Coil
CFH	Cubic Feet per Hour (Gas flow)
CHWR	Chilled Water Return
CHWS	Chilled Water Supply
CLG	Cooling
DA	Discharge Air
DMPR	Damper
DP	Differential Pressure
EA	Exhaust Air
E	Enable
FB	Feedback
FFIL	Final Filter
FLT	Float Switch
FLW	Measured Flow (air or water)
H	Humidity
HC	Heating Coil
HEPA	HEPA Filter
HHW-R	Heating Hot Water Return
HHW-S	Heating Hot Water Supply
HSP	High Static Pressure
HTG	Heating
KBTU	BTU Energy Consumption
KTONHR	Ton-hour Chilled Water Consumption
KW	Electric Kilowatt Demand
KWH	Electric Kilowatt Consumption
LBH	Ponds per Hour (Steam)
LSP	Low Static Pressure
LT	Low Temperature
MA	Mixed Air
MAX	Maximum
MIN	Minimum
MUA	Makeup Air
OA	Outdoor Air
OCC	Occupied
P	Pressure
PFIL	Prefilter
PHC	Preheat Coil
RHC	Reheat Coil
SCFH	Standard cubic feet per Hour (Natural Gas Rate)
SMK	Smoke
SP	Setpoint
SPEED	Fan Speed
SRV	Service
S	Status
STM	Steam
STA	Static
T	Temperature
THERM	Natural Gas Consumption
TON	Tonnage (Chilled Water Demand)
UNOCC	Unoccupied
UV	Ultraviolet Light
VFD	Variable Frequency Drive
VLV	Valve
VP	Velocity Pressure
ZN	Zone

1.4 BAS Point Naming Examples

- A. Example 1: A point name is required for the chilled water pump 2 status and chilled water supply flow.

Name	Description
CHWP-2-S	Chilled Water Pump 2 Status Point
CHWS-FLW	Chilled Water Supply Flow Point

- B. Example 2: A point name is required for the FCU-1 start/stop command point and FCU condensate level alarm.

Name	Description
FCU-1-C	Fan Coil 1 Command Point
FCU-1-FLT-A	Fan Coil 1 Float Switch Alarm Point

- C. Example 3: A point name is required for the space temperature and setpoint for associated terminal unit SAT_2-1 where 2 is the associated AHU # and 1 is the unique box identifier.

Name	Description
SAT-2-1-ZN-T	Supply Air Terminal 2-1 Zone Temperature Point
SAT-2-1-ZN-SP	Supply Air Terminal 2-1 Zone Temperature Setpoint

When monitoring control points for individual spaces such as this example, it is important to place each control point in its appropriate building floor subfolder. This will prevent an extremely long list of points from each individual space. When defining zone terminal units it is important to integrate the actual room number that the thermostat resides.

- D. Example 4: A point name is required for the bypass damper command and feedback position of the exhaust air plenum for exhaust fan system LEF-1.

Name	Description
LEF-1-BYP-C	Lab Exhaust Fan 1 Bypass Damper Command Point
LEF-1-BYP-FB	Lab Exhaust Fan 1 Bypass Damper Feedback Point

1.5 BACnet Controller Naming Standards

- A. To be coordinated with Facility Services
- B. When working within an existing building, the naming shall be consistent with existing devices.