

Division 25 Addendum

Note: **Bold Double Underline text** is an insertion. ~~Strikeout text~~ is a deletion.

Refer to 25 00 11

1. Change Clause 1.15.5.6.2 to read as follows:

BAS devices that **are** only compliant with the 9th Edition of UL 864 UUKL are not allowed in the Work

2. Change Clause 1.15.5.6.5 to read as follows:

The Division 25 BAS Contractor shall isolate the 9th and ~~19~~ **10**th Edition networks so communications are completely segregated.

3. Change Clause 1.16.4.1 to read as follows:

All references in this Division 25 **Specification** to Division 27 are to the Electrical Contractor or the Trade designated by the General Contractor to perform this Work.

4. Change Clause 1.16.5.5 to read as follows (duplicate of 1.16.5.3):

~~It shall be the Division 25 BAS Contractor's responsibility to initially configure each router with routing tables containing all network numbers that are part of the IP subnet using the specified network numbering scheme for the Work.~~

5. Change Clause 1.16.5.9 to read as follows:

The Owner has set up an Intranet of BASs to segment this traffic from the rest of the traffic at the Place of the Work. Lake County BAS Consultant shall work with the Owner's IT department to connect this BAS to the Intranet. Lake County BAS Consultant is responsible for meeting all security requirements set out by the Owner. **A** a user-ID and password can be assigned to allow approved BACnet Interface Device suppliers to remotely connect to the Owner's Intranet.

Refer to 25 00 13

6. Change Clause 1.10.4.13 to read as follows:

Com'd Column: This box will be checked by the Lake County BAS Consultant ~~with~~ **when** the object is commissioned.

7. Change Clause 1.11.4.13 to read as follows:

Com'd Column: This box will be checked by the Lake County BAS Consultant ~~with~~ **when** the object is commissioned.

8. Change Clause 1.12.4.13 to read as follows:

Com'd Column: This box will be checked by the Lake County BAS Consultant ~~with~~ **when** the object is commissioned.

9. Change Clause 1.13.4.13 to read as follows:

Com'd Column: This box will be checked by the Lake County BAS Consultant ~~with~~ **when** the object is commissioned.

Refer to 25 00 33

10. Change Clause 1.04.8.11.2 to read as follows:

Indicate what additional gateways, protocol ~~converters~~ **converters** or BACnet Interface Devices are being used to control mechanical equipment.

Refer to 25 00 42

11. Change Clause 1.04.8 to read as follows:

MS/TP - A type of LAN implementation defined in BACnet that usually uses the EIA-485 signalling standard. To initiate communications on the network, a node will have an electronic “token”, which is passed from one (1) node to another around the network. Manager devices are allowed to have the token, whereas Subordinate devices are allowed only to respond to requests from Manager devices. The terms **Master/Slave have been replaced by** Manager/Subordinate ~~is no longer used for BACnet device.~~ This term is **The terms Master and Slave are** still used for Modbus devices.

12. Change Clause 1.04.20 to read as follows:

All other definitions shall be based on the following references: Direct Digital Controls for HVAC Systems by T. Hartman (McGraw-Hill, 1993); Direct Digital Control of Building Systems: Theory and Practice by M. Newman (Wiley, 1994) and BAS for HVAC Monitoring and Control course by ASHRAE (ASHRAE, 1995). **BACnet: The Global Standard Building Automation and Control Networks, H. Michael Newman (Momentum, 2013).** The Lake County BAS Consultant shall be the final arbiter of all definitions or terms.

13. Change Clause 1.05.10 to read as follows:

BACnet Testing Laboratories™ (BTL) - A lab operated by **under the authority of** BACnet International to test building automation products and certify them as BACnet compliant. Listings of tested products are available at www.bacnetinternational.org.

Refer to 25 00 75

14. Change Clause 1.02.2 to read as follows:

Division 25 BAS Contractor shall assist the TAB Division Contractor to test and balance all water systems shown in ~~Section~~ Sections 23 09 00 and 23 05 93.

Refer to 25 00 77

15. Change Clause 1.02.1.2 to read as follows (duplicate of 1.02.1.1):

~~As built documents~~

Refer to 25 05 01

16. Change Clause 1.10.12 to read as follows:

Install outdoor air temperature sensors on north wall at designated location. Outdoor installation shall be weatherproof construction in NEMA ~~42~~ **4** enclosures. These installations shall be protected from solar radiation and wind effects by stainless steel shields.

17. Change Clause 1.11.2 to read as follows:

Provide an Uninterruptible Power Supply (UPS) for all BAS devices. Size UPS to maintain power to all BAS devices during the transfer from commercial to generator power. Power all BAS devices from emergency power circuits. Co-ordinate power requirements with Division 26. **See Contract Documents for UPS to be provided by Division 26.**

18. Change Clause 1.11.2.1 to read as follows:

~~The UPS shall be a non-switching double conversion online type of UPS that continuously powers all the BAS devices. Switching UPSs are not allowed in the Work.~~

Refer to 25 08 03

19. Change the Division 25 BAS UL 864 UUKL Compliance Form for ALC 10th Edition BASs to read as follows:

Compliance Survey for UL 864 UUKL Smoke Control Listing

Date of Survey	
Division 25 BAS Contractor Authorized Representative	
Project Title	

UL Compliance Required By:

☒ **Building Codes as interpreted by AHJ**

☒ **Contract Documents**

Applicable Building Codes and Standards

Division 25 BAS Contractor Providing and Verifying Information

Initials	Full Name

General Requirements Checklist for UL Smoke Control Listing

General requirements for UL 864 UUKL 10th Edition Smoke Control Listing compliance. If the requirement was verified, mark **Y** (Yes) or **N** (No) for compliance and initialize. If the requirement is not applicable, mark **NA** and initial.

UL 864 UUKL 10th Edition Smoke Control Listing Requirements <u>as defined by Part Number WebCTRL Tenth Ed SCS (UL 864, 10th Ed. compliant).</u>	Y/N or NA	Verifier's Initials
If a system upgrade was performed, the controllers have been labeled with the correct software revision.		
The wiring guidelines for transient and surge protection have been followed as outlined in this document the <u>Part Number WebCTRL Tenth Ed SCS (UL 864, 10th Ed. compliant).</u>		
ALC <u>UL 864 UUKL 10th Edition listed</u> and the documents cited are the Basis of Design and Installation for this Work by the Division 25 BAS Contractor		
Communication links between buildings are fiber-optic cable or copper cable buried in a conduit separate from power wiring.		
Each binary output object used for pressurization and exhaust control is configured with positive feedback. The feedback input monitors the associated controlled equipment status (for example, both open and closed, on and off). For smoke control dampers, there may be a pair of feedback binary inputs for two damper end switches. Any mismatch of a command and status of the binary output occurring longer than the allowed response time must create a trouble light indication at the FSCS.		
A positive indication of airflow is evident for all fans.		
Non UL Listed control equipment is isolated from the UL Listed network. See BACnet Single Line Diagram in Schedule 3.		
The Owner is responsible for Weekly Testing of dedicated stairwell pressurization fans application is used on all dedicated smoke control systems. The Division 25 BAS Contractor has instructed the Owner's staff in the testing procedures.		
Automatic smoke control sequences take precedence over HVAC automatic and manual commands. Manual FSCS takes precedence over all else.		
Automatic activation of any smoke control sequence of operation has priority over any non-smoke control manual commands and any automatic environmental control strategy, when an auto smoke control sequence is initiated. High and low temperature protection devices and return and exhaust air-duct smoke detectors are bypassed.		
Response time for individual smoke control fans to reach commanded state is no more than 60 seconds.		
Response time for individual smoke control dampers to reach commanded state is no more than 75 seconds.		
Fire alarm system manual pull stations do not initiate automatic smoke control sequences. Smoke detectors are used to initiate a smoke control strategy only. <u>art Number WebCTRL Tenth Ed SCS (UL 864, 10th Ed. compliant).</u>		
All field controllers that monitor or control smoke control equipment are UL Listed.		
Electrical disconnects, overloads, duct static pressure limits, and supply air duct smoke detectors are not overridden by manual or automatic smoke control strategies.		
BAS and Fire Alarm system zones as shown in the Contract Documents tested and are in compliance with the Consultant's Sequence of Operations.		

Firefighter's Smoke Control Station (FSCS) Requirements Checklist for UL Smoke Control Listing as defined by ADi

Requirements for UL 864 UUKL 10th Edition Smoke Control Listing compliance for FSCSs where required. If the requirement was verified, mark **Y** (Yes) or **N** (No) for compliance and initialize. If the requirement is not applicable, mark **NA** and initialize.

FSCS Requirements for UL 864 UUKL 10th Edition Listing	Y/N or NA	Verifier's Initials
FSCS is UL Listed and provides manual control of the smoke control system, a UL Listed annunciator panel is used as FSCS. The device shall be provided by ADi and shall be an Modbus RTU device. ALC shall provide a Modbus RTU to BACnet MS/TP gateway that is 10 th Edition listed. ALC shall map all Modbus registers provided by ADi to BACnet objects. Network this gateway device on a dedicated MS/TP network back to the Second Floor Mechanical Room in a location shown on the Contract Documents..		
Custom annunciator FSCS is connected to a UL Listed Smoke Control engine through the MS/TP network. FSCS provides positive indication of the operation of all smoke control equipment (for example, both open and closed, on and off).		
FSCS provides audible and visible trouble indication when any smoke control equipment does not respond to automatic or manual commands.		
FSCS simultaneously displays the status of all smoke control systems dampers, fans. FSCS has manual control over all smoke control systems		
FSCS can override (partially or in full) any operation in progress, including programmed actions, non-smoke control manual overrides.		
FSCS has highest priority over all smoke control systems.		
FSCS indicates the actual status (not the command status) of systems and equipment used for smoke control. This includes the current position of each damper used in an active smoke control sequence and the status of airflow status of every fan.		
FSCS activates an audible signal if the operation proof sensor (binary feedback point) failed to provide positive feedback that fan or damper reached its intended position.		
Only one FSCS on the UL listed system is used for smoke control applications unless approved by the AHJ.		
FSCS manual activation or deactivation of any smoke control device has priority over any automatic smoke or environmental sequence of operation.		
Any return air duct smoke detectors in duct work of each HVAC fan system used for smoke control exhaust or purge only reports an alarm condition to the FSCS or fire alarm annunciator located at the FSCS and does not stop the fan.		
Annunciation at the FSCS to indicate smoke control equipment change of state is no more than 10 seconds after reaching commanded state.		
Fire Alarm system zones as shown in the Contract Documents tested and are in compliance with the Consultant's Sequence of Operation and operates to the satisfaction of the AHJ.		

Wiring Requirements Checklist for UL Smoke Control Listing

Requirements for UL 864 UUKL 10th Edition Smoke Control Listing compliance for Smoke Control Wiring. If the requirement was verified, mark **Y** (Yes) or **N** (No) for compliance and initialize. If the requirement is not applicable, mark **NA** and initial.

[illegible]

Application Programming Requirements for UL Smoke Control Listing

Requirement for UL 864 UUKL 10th Edition Smoke Control compliance for Smoke Control Application Programming.
If the requirement was verified, mark **Y** (Yes) or **N** (No) for compliance and initial.

[illegible]

Alterations to the standard smoke control applications that were required by local, state or federal codes and requirements. Initial each item after verification.

Alterations to the Standard Smoke Control Applications	Verifier's Initials

The information contained within this compliance checklist is verified and accepted to be true as indicated by the signatures in the table below

Date of Acceptance	
Project Title	
Automated Logic Corporation BAS Representative responsible for the UL 864 UUKL design Work (signature)	
Owner	
Lake County BAS Consultant	
Authority Having Jurisdiction	

Refer to 25 13 16

20. Change Clause 2.01.1.2.5.1 to read as follows:

Meet the memory requirements for programming, trending and alarming as outlined in 25 13 16 ~~2.18~~ **2.16**.

21. Change Clause Table 2 Priority level 2 cell to read as follows:

Automatic-Life Safety (Used by UUKL 864 ~~Listing~~ **listed** BAS hardware only).

22. Change Clause 2.02.8.2 to read as follows:

All log data shall be stored in a comma delimited format for parsing by a spreadsheet program such as Microsoft Excel. Log records shall be stored in a consistent manner at all server(s) listed on the Recipient_List so data from different ~~the~~ Division 25 BAS Contractor's BASs can be analysed by the Operator without translation or manipulation. The SQL reporting requirements described in Section 25 15 11 that use log data need not be provided via BACnet.

23. Change Clause 2.04.9.5.2.1 to read as follows:

Level 1/1A BAS devices with no data to transmit must send an "I'm OK" message each communications or scan cycle. Lack of an "I'm OK" message after successive retries shall constitute a communications or BAS device failure, be recognized as such by the network, and shall generate ~~and~~ **an** alarm. The alarm shall be recorded on the Level 0 Front End software alarm log.

24. Change Clause 2.04.9.5.2.3 to read as follows:

Error recovery and communication initialization routines shall be completely distributed (i.e., **to** each connected BAS device resident on each network).

25. Change Clause 2.07.4 to read as follows:

~~Shall~~ **If** BAS device memory be lost for any reason, the Operator shall be able to reload the BAS device programming via:

26. Change Clause 2.07.5 to read as follows:

~~Shall~~ **If** any Level 1/1A BAS device's memory become corrupted or altered for any reason, the BAS device shall automatically initiate a connection with the Front End, and instruct it to retrieve and reload the necessary programming to restart those devices that have corrupted or altered memory. This feature shall be provided as follows:

27. Change Clause 2.12.13.1 to read as follows:

Each schedule shall have a minimum thirty-~~two~~ **two** (32) character identifier.

28. Change Clause 2.14.1.6 to read as follows:

The audit trail file shall be accessible only to Administrators who can access to the device. This may be done using vendor-proprietary BACnet objects and services.

29. Change Clause 2.16.5 to read as follows:

Change Clause of value (COV) trending is encouraged but COV trending does not substitute for, nor obviate the memory requirement for trending in the Specification Documents. COV trending methods may be used as a data compression routine to reduce memory consumption (e. g., storing AHU fan stop starts) providing the data can be uncompressed and presented as one hundred and forty four (144) values sampled over a thirty (30) minute interval, as outlined in 25 13 16 2.18 **2.16.**

30. Change Clause 2.16.11 to read as follows:

Provide extended trend logging (i.e., samples longer than 1000) to the server computer hard drive for points such as meter data. The Division 25 BAS Contractor shall provide a minimum of ~~five hundred (500)~~ **100** trend logs as extended trends.

31. Change Clause 3.02.2 to read as follows:

Provide necessary power from local branch circuit device for equipment. See the Division of Responsibilities ~~table~~ **Matrix** for the Trade responsible for this function.

32. Change Clause 3.05.1.1 to read as follows:

The Division 25 BAS Contractor shall provide enough Level 1 devices to accommodate the requirements outlined in Sections 25 13 16 2.18 **2.16** and 25 13 16 2.08.5.

33. Change Clause 3.06.2.6.3 to read as follows:

Devices that implement ~~of~~ BACnet features (e. g., BACnet/SC etc.) are allowed in the Work and will be evaluated based on the current version of the feature.

Refer to 25 14 23.36

34. Change Clause 1.01.1 to read as follows:

The BACnet Interface Devices and Work responsibilities for this equipment are listed in 25 20 23.36.**00.**

35. Change Clause 2.01.1 to read as follows:

The BACnet Interface Devices and Work responsibilities for this equipment are listed in 25 20 23.36.**00.**

36. Change Clause 3.01.1 to read as follows:

The BACnet Interface Devices and Work responsibilities for this equipment are listed in 25 20 23.36.00.

Refer to 25 15 11

37. Change Clause 2.02.2 to read as follows:

Lake County will spin up a new VM for the Front End Server software **if a new VM is needed for the Work**. Division 25 BAS Contractor shall provide the requirements via a Submittal.

38. Change Clause 2.05.2.4.3 to read as follows:

Full access to Owner's **to all services and systems** as System Administrator.

39. Re-number Clause 2.07.1 and subclauses to read as follows:

2.07.1 Provide local and remote services using the Level 0 Front End software.

2.07.1.1 **The Level Front End software shall permit users to access devices on the BACnet Internetwork while connected on the LAN or remotely using Citrix.**

2.07.1.2 **Owner shall provide a Citrix account to Division 25 BAS Contractor's authorized personnel.**

40. Change Clause 2.10.2.3.3 to read as follows:

Full access to Owner's **to all services and systems** as System Administrator.

41. Change Clause 2.11.1 to read as follows:

LonWorks and LonMark products and networks are not allowed in the Work. **This requirement applies throughout this Division 25 Specification.**

42. Change Clause 2.12.2 to read as follows:

All graphics (devices, equipment, panel, floor plans, etc.) shall be isometric, ~~2-D~~ **3-D** style.

43. Change Clause 2.12.3.2 and subclauses to read as follows:

2.12.3.2 Create graphics for each plant **and device as listed in 25 15 11.01.** (~~also called a system~~) including:

- 2.12.3.2.1 ~~RTUs,~~
- 2.12.3.2.2 ~~Gas Detection~~
- 2.12.3.2.3 ~~Unit and Roof Mounted Heaters~~
- 2.12.3.2.4 ~~Radiant Heaters~~
- 2.12.3.2.6 ~~Exhaust Fans~~
- 2.12.3.2.6 ~~Fire Alarm~~

44. Change Clause 2.18.11.4 to read as follows:

Owner's wireless text message device or cell phone.

Refer to 25 15 11.01

45. Change Clause 3.14 to read as follows:

Graphics for ~~Graphics for 5 20 28.31.11~~ Integrated Automation – BACnet Interface Device (Gateways/Native BACnet Devices) – Simplex Fire Detection and Alarm (All Types)

Refer to 25 20 23.05.19

46. Change Clause 3.02.3.5 to read as follows:

The Equipment Supplier or the designated Division 25 BAS Contractor shall install and wire the devices connected to the BACnet MS/TP device as shown in the Consultant's Plans and Specifications. **The Mechanical Contractor shall determine who is responsible for this Work.**

47. Change Clause 3.02.5.3 to read as follows:

Provide a graphic of the equipment to be ~~controls~~ **controlled** and review the graphics created by ALC Chicago. This information may be provided as a .dwg file or a graphics format file. Provision of paper documents requiring scanning and post processing by Division 25 is not allowed.

48. Change Clause 3.02.6.5 to read as follows:

Connection of the BACnet MS/TP network cable to the BACnet Interface Device. **Connect the BACnet MS/TP network cable to the BACnet /IP device that is hosting this BACnet MS/TP network.**

49. Change Clause 3.02.7.6.5 to read as follows:

The process shall be overseen by **Lake County** BAS Consultant.

Refer to 25 20 23.09.00

50. Change Clause 3.02.3 to read as follows:

The Division 25 BAS Contractor is also the Equipment Supplier for this BACnet Interface Device. The Equipment Supplier of the BACnet Interface Device shall provide the following:

51. Change Clause 3.02.3.5 to read as follows:

The ~~Equipment Supplier or the~~ **Division 25 BAS Contractor** shall install and wire the devices connected to the BACnet MS/TP device as shown in the Consultant's Plans and Specifications.

52. Change Clause 3.02.5.5 to read as follows:

Connection of the BACnet MS/TP network cable to the BACnet Interface Device. **Connect the BACnet MS/TP network cable to the BACnet /IP device that is hosting this BACnet MS/TP network.**

53. Change Clause 3.02.6.6.7.1 to read as follows:

The **ADi panel that is part of the** AHU BACnet Interface Device shall be commissioned following the provisions of 25 08 03 as this equipment performs UL-listed functions. Division 25 BAS Contractor shall allow an additional 16 hours of on-site commissioning time to commission the Modbus RTU panel and the BACnet MS/TP gateway.

Refer to 25 20 23.36.00

54. Change Clause 2.03.7 to read as follows:

Heating and cooling control valves are considered external to the ATU Box. Division 25 BAS Contractor is responsible for providing these valves. Division 23 is responsible for installing the valves. Division 25 BAS Contractor is responsible for control wiring from the valves. Division 26 is responsible for power wiring to the valves. **Division 25 is responsible for providing a 120/24 V transformer to power the valves.** Division 25 BAS Contractor is responsible for providing dampers for the VAV boxes. **Division 23 is responsible for installing the dampers if they are not provided with the VAV box. Division 25 BAS Contractor is responsible for control wiring from the dampers. Division 26 is responsible for power wiring to the dampers. Division 25 is responsible for providing a 120/24 V transformer to power the dampers.**

55. Change Clause 3.02.3 to read as follows:

The Division 25 BAS Contractor is also the Equipment Supplier for this BACnet Interface Device. The Equipment Supplier of the BACnet Interface Device shall provide the following:

56. Change Clause 3.02.3.5 to read as follows:

The ~~Equipment Supplier or the~~ **Division 25 BAS Contractor** shall install and wire the devices connected to the BACnet MS/TP device as shown in the Consultant's Plans and Specifications.

57. Change Clause 3.02.5.5 to read as follows:

Connection of the BACnet MS/TP network cable to the BACnet Interface Device. **Connect the BACnet MS/TP network cable to the BACnet /IP device that is hosting this BACnet MS/TP network.**

Refer to 25 20 23.73.13

58. Change Clause 1.03.2.5.3 to read as follows:

25 20 23.09.02 ~~85~~ Air Flow Measuring Stations.

59. Change Clause 1.03.2.5.4 to read as follows:

25 20 23.09.50 ~~26.29.23~~ VFDs

60. Add Clause 1.03.2.5.5 to read as follows:

25 20 23.09.00 ADi Panel

61. Add Clause 2.10 and subclauses to read as follows:

2.10 All Air Terminal Units BACnet Interface Devices

2.10.1 The units shall be represented externally as a BACnet MS/TP device on the Owner's network.

2.10.2 Provide BACnet Interface Devices and Work per 25 20 23.36.00.

62. Change Clause 3.01.1 to read as follows:

The following BACnet Interface Devices described in this Section shall reside on the Owner's network as a **Built-Up** BACnet/IP device

63. Add the following sub-Clauses 3.01.1 as follows:

3.01.1.4 ADi Panel

3.01.1.5 Air Terminal Units

3.01.1.6 Flow Meters

64. Change Clause 3.01.6 to read as follows:

Equipment Supplier is responsible for the following if the BACnet Interface Device is a separate device not supplied and installed by the Division 25 BAS Contractor: **Otherwise the Division 25 BAS Contractor is responsible for the following Work outlined in these clauses and subclauses below. The AHUs Built-Up BACnet Interface Device to the Equipment Supplier's BACnet, Modbus or proprietary protocol Device shall be jointly commissioned by Equipment Supplier, Division 25 BAS Contractor and Lake County BAS Consultant to the satisfaction of the Owner. The Work includes the following:**

65. Change Clause 3.01.6.1 to read as follows:

The BACnet Interface Device to the Equipment Supplier's BACnet, Modbus or proprietary protocol Device shall be jointly commissioned by Equipment Supplier, Division 25 BAS

~~Contractor and Lake County BAS Consultant to the satisfaction of the Owner. The Work includes the following:~~

66. Change Clause 3.01.6.9.1 to read as follows:

Complete commissioning of a minimum of 20% and up to fifty (50) of the network visible objects ~~types~~ selected by the Lake County BAS Consultant.

67. Change Clause 3.01.7.2 to read as follows:

Provide support to TAB for all Work items within this section. See 23 05 93 and **25 00 75** for Division 25 BAS Contractor responsibilities.

68. Change Clause 3.02.1 and subclauses to read as follows:

3.02.1 The following BACnet Interface Devices described in this Section shall reside on the Owner's network as a BACnet MS/TP device. **These devices form part of the Indoor Central Station AHUs BACnet Interface Device commissioning Work.**

3.02.1.1 Flow Meters (see Contract Documents for quantities). Install and commission this BACnet Interface Device per 25 20 23.05.19

3.02.1.2 ADi Panels (see Contract Documents for quantities). Install and commission this BACnet Interface Device per 25 20 23.09.00.

3.02.1.3 Air Terminal Units (see Contract Documents for quantities). Install and commission this BACnet Interface Device per 25 20 23.36.00.

3.02.1.4 Air Flow Measuring Stations (see Contract Documents for quantities). Install and commission this BACnet Interface Device per 25 20 23.85.

3.02.1.5 VFDs (see Contract Documents for quantities). Install and commission this BACnet Interface Device per 25 20 26.29.23.

Refer to 25 20 23.82.19

69. Change Clause 2.03.7 to read as follows:

The FCU BACnet Interface Device ~~do~~ **does** not have to be UL 864 UUKL listed.

70. Change 3.02.3.5 to read as follows:

The Equipment Supplier or the designated Division 25 BAS Contractor shall install and wire the devices connected to the BACnet MS/TP device as shown in the Consultant's Plans and Specifications. **The Mechanical Contractor shall determine who is responsible for this Work.**

71. Change Clause 3.02.5.5 to read as follows:

Connection of the BACnet MS/TP network cable to the BACnet Interface Device. **Connect the BACnet MS/TP network cable to the BACnet /IP device that is hosting this BACnet MS/TP network.**

Refer to 25 20 23.85

72. Change Clause 3.02.3 to read as follows:

The Division 25 BAS Contractor is also the Equipment Supplier for this BACnet Interface Device. The Equipment Supplier of the BACnet Interface Device shall provide the following:

73. Change Clause 3.02.3.5 to read as follows:

The ~~Equipment Supplier or the~~ **Division 25 BAS Contractor** shall install and wire the devices connected to the BACnet MS/TP device as shown in the Consultant's Plans and Specifications.

74. Change Clause 3.02.5.5 to read as follows:

Connection of the BACnet MS/TP network cable to the BACnet Interface Device. **Connect the BACnet MS/TP network cable to the BACnet /IP device that is hosting this BACnet MS/TP network.**

Refer to 25 20 26.28.16

75. Change Clause 2.01.1 to read as follows:

All sensors and transmitters provided in the Work by the Equipment Supplier shall meet the accuracy requirements of Division 26, **and** 23 09 00.

76. Change Clause 3.01.5.5.3 to read as follows:

A minimum of one (1) graphic showing each Trip Unit device. Use the graphics material provided by the Equipment Supplier or create a graphic from the Division 25 BAS Contractor's available graphics library that most closely matches the device. Emulate the functionality of the supplied equipment local interface (e.g., annunciator panel, LCD display, GUI interface) at the BAS Front End.

77. Change Clause 3.01.7 to read as follows:

The **Division 25 BAS Contractor's** BACnet Interface Device **that is connected** to the Equipment Supplier's BACnet, Modbus or proprietary protocol Device shall be jointly commissioned by Equipment Supplier, Division 25 BAS Contractor and Lake County BAS Consultant to the satisfaction of the Owner. The Work includes the following:

78. Change Clause 3.01.7.8.1 to read as follows:

Complete commissioning of a minimum of 20% and up to fifty (50) of the network visible objects **s** ~~types~~ selected by the Lake County BAS Consultant.

Refer to 25 20 26.29.23

79. Change 3.02.3.5 to read as follows:

The Equipment Supplier or the designated Division 25 BAS Contractor shall install and wire the devices connected to the BACnet MS/TP device as shown in the Consultant's Plans and Specifications. **The Mechanical Contractor shall determine who is responsible for this Work.**

80. Change Clause 3.02.5.5 to read as follows:

Connection of the BACnet MS/TP network cable to the BACnet Interface Device. **Connect the BACnet MS/TP network cable to the BACnet /IP device that is hosting this BACnet MS/TP network.**

Refer to 25 20 28.31.11

81. Change Clause 2.01.1 to read as follows:

All sensors and transmitters provided in the Work by the Equipment Supplier shall meet the accuracy requirements of Division 26, **and** 23 09 00.

82. Change Clause 2.03.1 to read as follows:

The Interface Device Equipment Supplier shall map the following points generated by this typical sequence as BACnet objects to the Fire Alarm Panel BACnet gateway. The Controls Division 25 BAS Contractor responsible for creating graphics shall use the existing floor plan graphics for the building to show the location of the Fire Alarm control panels and devices as installed in the building. Fire Alarm Division 25 BAS Contractor shall co-operate with this Division 25 BAS Contractor to provide the required information on Fire Alarm Panels and devices. These requirements represent the minimum requirements. The Interface Device Equipment Supplier shall provide a final version of points to be mapped to the gateway as a Shop Drawing. **See the Syska Sequence of Operation for the Work requirements relating to the Fire Alarm System's role in the Smoke Evacuation sequences.**

83. Change Clause 3.01.7.8.1 to read as follows:

Complete commissioning of a minimum of 20% and up to fifty (50) of the network visible objects ~~types~~ selected by the Lake County BAS Consultant.

End of Addendum