# **ANSI/ASHRAE Standard**

# Building Automation and Control Networks BACnet/IP Driver

Supported version TOP Design Studio V1.4.3.0 or higher



# CONTENTS

We would like to thank our customers for using M2I's "Touch Operation Panel (M2I TOP) Series". Read this manual and familiarize yourself with the connection method and procedures of the "TOP and external device".

## **1.** System configuration

#### Page 2

Describes the devices required for connection, the setting of each device, cables, and configurable systems.

Please refer to this section and select the appropriate system.

## **2.** External device selection

Select a TOP model and an external device.

### **3.** TOP communication setting

#### Page 4

Page 3

Describes how to set the TOP communication. When changing external device settings, refer to this section and set identical TOP communication settings.

### 4. Supported addresses

### Page 10

Refer to this section to check the addresses which can communicate with an external device.



# 1. System configuration

The system configuration of TOP and "BACnet/IP" is as follows.

Series	Communication method	System setting	Cable
Building Automation and Control Networks	Ethernet	<u>3. TOP communication</u>	Twisted pair cable*Note 1)
BACnet-IP	(UDP)	setting	

\*Note 1) Twisted pair cable

- Refer to STP (Shielded Twisted Pair Cable) or UTP (Unshielded Twisted Pair Cable) Category 3, 4, 5.

- Depending on the network configuration, you can connect to components such as the hub and transceiver, and in this case, use a direct cable.

■ Connectable configuration

• 1:1 connection (one TOP and one external device) connection



1 : N connection (one TOP and multiple external devices) connection



N: 1 connection (N TOPs and one external device) connection





# 2. External device selection

■ Select a TOP model and a port, and then select an external device.

elect Device					
PLC select [Et	hernet]				
Filter : [All]	-	$\sim$	:	Search :	
				Mod	el 🔾 Vendor
Vendor		Model			
YASKAWA Electric Corp	oration	BACn	et		
YOKOGAWA Electric Co	rporation				
Schneider Electric Indus	tries				
KDT Systems					
RS Automation					
FATEK Automation Corp	oration				
DST ROBOT					
BACnet					
SEMI Organization					
EMOTIONTEK					
FUJI Electric Co., Ltd.					
OPTICON					
PATLITE					
Giddings & Lewis Motion	Control				
					10
elect Device					
PLC Setting[ BAC:	net 1				
Alias Name	PLC1		Bind IP : Auto	$\sim$	
Interface	: Ethernet	~			
Protocol	: BACnet/IP	~		C	omm Manual
String Save Mode	: First HL HL	Change			
Use Redundan	Y				
Operate Condition :	ND V	E (Car			
Change Condition : E	Condition	5 V (Sec	iona)		Edit
D.1					)
romary Option					
IF	192 🖨	168 🕤 0	1		
Eurernet Protocol	UDP ~				
Port	47808	1			
Timeout	300	msec			
Send Wait	0	msec			
Retry	5				
HMI Port	1025				

Sett	ings		Contents	
ТОР	Model	Check the TOP display and process t	Check the TOP display and process to select the touch model.	
External device	Vendor	Select the vendor of the external develocity of the select "OTHERS Manufacture".	vice to be connected to TOP.	
	PLC	Select the external device to be con	nected to the TOP.	
		Model	Interface	Protocol
		BACnet/IP	Ethernet	BACnet/IP
		Please check the system configurat	ion in Chapter 1 to see if th	e external device you want to
		connect is a model whose system ca	n be configured.	



# 3. TOP communication setting

The communication can be set in TOP Design Studio or TOP main menu. The communication should be set in the same way as that of the external device.

### 3.1 Communication setting in TOP Design Studio

#### (1) Communication interface setting

- [ Project > Project properties > TOP settings] → [Project option > Check "Use HMI settings" > Edit > Ethernet ]
  - Set the TOP communication interface in TOP Design Studio.



Items	ТОР	External device	Remarks
IP Address*Note 1) Note 2)	192.168.0.50	192.168.0.51	
Subnet Mask	255.255.255.0	255.255.255.0	
Gateway	192.168.0.1	192.168.0.1	

\*Note 1) The network addresses of the TOP and the external device (the first three digits of the IP, 192. 168.0.0) should match.

\*Note 2) Do not use duplicate IP addresses over the same network.

\* The above settings are examples recommended by the company.

Items	Description
IP Address	Set an IP address to be used by the TOP to use over the network.
Subnet Mask	Enter the subnet mask of the network.
Gateway	Enter the gateway of the network.



#### (2) Communication option setting

- [ Project > Project properties > PLC settings > ETHERNET(1) > "PLC1: BACnet/IP"]
  - BACnet/IP. Set the options of the communication driver in TOP Design Studio

Project Option		×
Change HMI[H] Add PL	C [A] TI Change PLC[C] Delete PLC[D]	
Change HMI[H] TOP Setting TOP Setting FieldBus (0) FieldBus (0) COM1 (0) COM2 (0) COM3 (0) Fibernet (1) Fibernet (1) USBDevice (0) COM3 (0) Fibernet (1) Fibernet (1) Fibe	C (A)       The Change PLC[Q) <ul> <li>Pelc Setting[ BACnet ]</li> <li>Alas Name : PLC1</li> <li>Interface : Ethernet</li> <li>Protocol : BACnet/IP</li> <li>String Save Mode : First HL HL</li> <li>Change</li> <li>Operate Condition :</li> <li>Interface : TimeOut</li> <li>Condition :</li> <li>Interface : TimeOut</li> <li>Condition :</li> <li>Interface :</li> <li>Is8</li> <li>Is8<!--</td--><td>Import Address Comm Manual</td></li></ul>	Import Address Comm Manual
		Apply Close

\* The above settings are examples recommended by the company.

Items	Settings	Remarks
Interface	Select "Ethernet".	Refer to "2. External
Protocol	Select "BACnet/IP."	device selection".
IP	Enter the IP address of the external device.	
Ethernet Protocol	TOP – Select "UDP" Ethernet protocol between external devices.	Fixed
Port	Enter the Ethernet communication port number of the external device.	
TimeOut (ms)	Set the time for the TOP to wait for a response from an external device.	
SendWait (ms)	Set the waiting time between TOP's receiving a response from an external device	
	and sending the next command request.	
Who-Is	Select whether to use Who-Is service of BACnet/IP protocol.	
Device ID	Enter the Device ID (Instance No.) of the external device. (Set when using Who-Is)	
HMI Port	Set the TOP Ethernet port number. (Set when using Who-Is)	
Import Address	Register the address to be used for drawing.	Refer to "4. Supported
		addresses"



#### 3.2. Communication setting in TOP

\* This is a setting method when "Use HMI Setup" in the setting items in "3.1 TOP Design Studio" is not checked.

■ Touch the top of the TOP screen and drag it down. Touch "EXIT" in the pop-up window to go to the main screen.



#### (1) Communication interface setting

■ [ Main screen > Control panel > Ethernet ]



Items	ТОР	External device	Remarks
IP Address*Note 1) Note 2)	192.168.0.50	192.168.0.51	
Subnet Mask	255.255.255.0	255.255.255.0	
Gateway	192.168.0.1	192.168.0.1	

\*Note 1) The network addresses of the TOP and the external device (the first three digits of the IP, <u>192</u>. <u>168</u>. <u>0</u>. 0) should match.

\*Note 2) Do not use duplicate IP addresses over the same network.

\* The above settings are examples recommended by the company.

Items	Description
IP Address	Set an IP address to be used by the TOP to use over the network.
Subnet Mask	Enter the subnet mask of the network.
Gateway	Enter the gateway of the network.



#### (2) Communication option setting

■ [ Main screen > Control panel > PLC ]

	Å		PLC			×
		Driver(ETH)	PLC1(BACnet) 🗸			
Run	System 😵	Interface	Ethernet	-		
		Protocol	BACnet/IP	-		
VIET		Bind IP	Auto	•		
	PLC S	IP	192 🗘 168 🌩 🛛	\$ 51 \$		
VNC	~	Ethernet				
viewer		Port	47808			
	Ethernet	Timeout	300 🖨 msec			
		Send Wait	0 🖨 msec			
Screen	tor The	Retry	5			
SHOT	Diagnostic	HMI Port	1025			
		Diagnostic	Ping Test		Apply	Cancel
	[System]			CI	ose	
oprx – toprxo80	)0S			A 20	)21-08-31	03:33:57

 $^{\star}$  The above settings are  $\underline{\text{examples}}$  recommended by the company.

Items	Settings	Remarks
Interface	Select "Ethernet".	Refer to "2. External
Protocol	Select "BACnet/IP."	device selection".
IP	Enter the IP address of the external device.	
Ethernet Protocol	TOP – Select "UDP" Ethernet protocol between external devices.	Fixed
Port	Enter the Ethernet communication port number of the external device.	
TimeOut (ms)	Set the time for the TOP to wait for a response from an external device.	
SendWait (ms)	Set the waiting time between TOP's receiving a response from an external device	
	and sending the next command request.	
Who-Is	Select whether to use Who-Is service of BACnet/IP protocol.	
Device ID	Enter the Device ID (Instance No.) of the external device. (Set when using Who-Is)	
HMI Port	Set the TOP Ethernet port number. (Set when using Who-Is)	



#### **3.3 Communication diagnostics**

■ Check the interface setting status between the TOP and an external device.

- Touch the top of the TOP screen and drag it down. Touch "EXIT" in the pop-up window to go to the main screen.

- Check whether the port (ETH1/ETH2) settings you want to use are the same as those of the external devices in [Control panel > Ethernet].

Diagnosis of whether the port communication is normal or not

- Touch "Communication diagnostics" in [Control Panel > PLC ].

- The Diagnostics dialog box pops up on the screen and determines the diagnostic status.

ОК	Communication setting normal
Time Out Error	Communication setting abnormal
	- Check the cable, TOP, and external device setting status. (Reference: Communication diagnostics sheet)

Communication diagnostics sheet

- If there is a problem with the communication connection with an external terminal, please check the settings in the sheet below.

Items	Conte	ents	Ch	eck	Remarks
System	How to connect the sys	stem	OK	NG	1 System configuration
configuration	Connection cable name	9	OK	NG	1. System computation
ТОР	Version information		OK	NG	
	Port in use		OK	NG	
	Driver name		ОК	NG	
	Other detailed settings		OK	NG	
	Relative prefix	Project setting	OK	NG	2. External device selection
		Communication diagnostics	ОК	NG	3. Communication setting
	Ethernet port setting	IP Address	OK	NG	
		Subnet Mask	OK	NG	
		Gateway	OK	NG	
External device	CPU name		OK	NG	
	Communication port na	ame (module name)	OK	NG	
	Protocol (mode)		ОК	NG	
	Setup Prefix		OK	NG	
	Other detailed settings		OK	NG	
	Ethernet port setting	IP Address	OK	NG	
		Subnet Mask	ОК	NG	
		Gateway	OK	NG	
	Check address range		ОК	NG	<u>4. Supported addresses</u> (For details, please refer to the PLC vendor's manual.)



# 4. Supported addresses

This chapter describes how to register objects of BACnet devices in TOP Design Studio.

#### **※** Precautions when registering an address

This function is to register the object properties of the BACnet device as a variable address in TOP Design Studio.

1. When importing by communication, the PC running TOP Design Studio and the BACnet device must be connected to the same network.

2. When importing by communication, the name of the address is registered as the contents of Description among the properties of the object.

3. You cannot use "`" characters in the name of the address.

4, The description field of the address shows [Object type, Instance number, Properties].

Ex) If there is an Analog Input object whose instance number is 100 and Description is "AI\_100", it is registered as follows.

Name	Data type	Description
AI_100	REAL	Al.00100.PresentValue

5. Import by communication function registers only Present Value as an address amoung object's properties. Other properties can be registered by entering the address name, object type, instance number and property with the "Add" button.

#### How to use Import Address

Step 1. Execute "Import Address" among PLC setting items in TOP Design Studio.

Project Option			×
Change HMI[ <u>H</u> ] Add	PLC [A] TI Change PLC[C] Delete PLC[D]		
TOP Setting SYS : RD1010S Option Module Setting FieldBus (0) RFID (0) COM1 (0) COM2 (0) COM3 (0) Ethernet (1) USBDevice (0)	PLC Setting[ BACnet ] Alas Name : PLC1 Interface : Ethernet Protocol : BACnet/IP String Save Mode : First HL HL Change Use Redundancy Operate Condition : InneOut Condition : Condition Edit Primary Option IP 192 : 168 : 0 : 1 : Ethernet Protocol UDP Port 47808 : Timeout 300 : msec Send Wait 0 : msec Retry 5 : HMI Port 1025 :	Co	port Address Imm Manual
		Apply	Close



**Step 2.** Click the Import button to enter the IP and device ID (Instance No.) of the corresponding device, and then click the OK button.

Import[]       Check Address         Search         Search         Select / Unselect[1]       Add[A]       Delete[D]         Tag Name       Data Type       Description         BACNet Connect Setting       \vee       PC         Port[D]       100       0       51       0         BACNet       Device ID[D]       20002       0       Cancel	Import BACNet Address		- D X
Search         Keyword:       Data Type:       ALL       Search(5)         Select / Unselect(1)       Add(A)       Delete(D)       Edit         Tag Name       Data Type       Description         BACNet Connect Setting       Image: Connect Setting       Image: Connect Setting         PC       Image: Image: Image: Description       Image: Image: Connect Setting       Image: Image: Connect Setting         PC       Image: Im	Import / Export Import[I]	Check Add Check A	ddress[C] Delete Error Data[T]
Select / Unselect[L]       Add[A]       Delete[D]       Edition of the second of the	Search Keyword :	Data Type : ALL	Search[5]
Tag Name     Data Type     Description       BACNet Connect Setting     X       PC     IP[1:     192.168.255.37       Port[0:     1000       BACNet     IP[1:       IP[1:     192.168.255.37       Port[0:     1000       Port[0:     1000       Port[0:     1000       Port[0:     1000       OK     Cancel	Select / Unselect[L]		Add[A] Delete[D] Edit[E]
Total count:       1       Search count       Search count	Tag Name	Data Type	Description
PC       IP[I]:       192.168.255.37         Port[Q]:       1000         BACNet       IP[P]:       192         Port[R]:       47808       Image: Concel         Ok       Cancel		BACNet Connect Setting	×
BACNet         IPIP:       192       168       0       \$1       *         Port(R):       47808       *       *       *       *         Device ID[D):       260002       *       *       K       Cancel		PC IP[I]: 192.168.255.37 Port[O]: 1000	
IPE:       192       168       0       \$ 51       1         Port®:       47808       •       •       •       •         Device ID[D:       260002       •       •       •       •         OK       Cancel       •       •       •       •       •         Total count:       0       Search count:       •       •       •       •       •		BACNet	
OK Cancel Total count : 0 Search count :		IP[P]:       192          168          0          Port[R]:       47808          €          Device ID[D]:       260002          €	\$ 51 <b>\$</b>
Total count : 0 Search count :		ОК	Cancel
Total count : 0 Search count :			
	Total count : 0	Search count :	



#### ■ Object and property supported by TOP Design Studio

#### % Character String data type supports up to 80 characters. Character String data type supports ANSI X3.4 encoding method.

OBJECT TYPE	PROPERTY	Remarks
	ObjectIdentifier	
	ObjectName	
	ObjectType	
	PresentValue	
	Description	
	DeviceType	
	StatusFlags	
	EventState	
	Reliablity	
	OutOfService	
	UpdateInterval	
	Units	
Analog Input	MinPresValue	
	MaxPresValue	
	Resolution	
	COVIncrement	
	TimeDelay	
	NotificationClass	
	HighLimit	
	LowLimit	
	Deadband	
	LimitEnable	
	EventEnable	
	AckedTransition	
	NotifyType	
	EventTimeStamps	
	ProfileName	
	ObjectIdentifier	
	ObjectName	
	ObjectType	
	PresentValue	
	Description	
	DeviceType	
	StatusFlags	
	EventState	
	Reliablity	
	OutOfService	
Analog Output	UpdateInterval	
(AO)	Units	
	MinPresValue	
	MaxPresValue	
	Resolution	
	PriorityArray	
	RelinquishDefault	
	COVIncrement	
	LimeDelay	
	NotificationClass	
	HighLimit	
	LowLimit	1

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OBJECT TYPE	PROPERTY	Remarks
	Deadband	
	LimitEnable	
	EventEnable	
	AckedTransition	
	NotifyType	
	EventTimeStamps	
	ProfileName	
	ObjectIdentifier	
	ObjectName	
	ObjectType	
	PresentValue	
	Description	
	StatusFlags	
	EventState	
	Reliablity	
	PriorityArray	
(AV)		
	Notification Class	
	LowLimit	
	AckedTransition	
	NotifyType	
	EventTimeStamps	
	ProfileName	
	ObjectIdentifier	
	ObjectName	
	ObjectType	
	PresentValue	
	Description	
	DeviceType	
	StatusFlags	
	EventState	
	Reliablity	
	OutOfService	
Binary Input	Polarity	
(BI)	InactiveText	
	ActiveText	
	ChangeOfStateTime	
	ChangeOfStateCount	
	TimeOfStateCountReset	
	ElapsedActiveTime	
	TimeOfActiveTimeReset	
	TimeDelay	
	NotificationClass	
	AlarmValue	
	EventEnable	

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OBJECT TYPE	PROPERTY	Remarks
	AckedTransition	
	NotifyType	
	EventTimeStamps	
	ProfileName	
	ObjectIdentifier	
	ObjectName	
	ObjectType	
	PresentValue	
	Description	
	DeviceType	
	StatusFlags	
	EventState	
	Beliablity	
	Polarity	
Pinany Outnut		
	MinimumOffTime	
	MinimumOnTime	
	TimeDelay	
	Notification Class	
	Foodback/alua	
	EventEnable	
	AckedTransition	
	Acceditation	
	EventTimeStamps	
	Objectidentiller	
	Objectivane	
	Object type	
	Description	
	CtatuaFlaga	
	StatusFlags	
Binary Value		
(BV)		
	Active lext	
	ElansodActiveTime	
	MinimumOffTime	
	MinimumOnTime	
	FHUILYAHAY	





OBJECT TYPE	PROPERTY	Remarks
Object The	RelinquishDefault	
	TimeDelay	
	NotificationClass	
	AlarmValue	
	EventEnable	
	AckedTransition	
	NotifyType	
	EventTimeStamps	
	ProfileName	
	Object/dentifier	
	ObjectName	
Calendar	ObjectType	
(CD)	Present/alue	
	Datalict	
	Object/dentifier	
	ObjectName	
Command	ObjectTurp	
Command	Drecent/alua	
	Allwhitessuccessful	
	Objectidentiller	
	Objectivame	
	Object Type	
	Systemstatus	
	VendoriName	
	ModelName	
	FirmwareRevision	
	ApplicationSoftwareVersion	
Divice	Protocolversion	
(DV)	ProtocolRevision	
	MaxAPDUlengthAccepted	
	SegmentationSupported	
	Apdulimeout	
	NumberOfAPDUretries	
	DataBaseRevision	
	MaxSegmentsAccepted	
	DaylightSavingsStatus	
	ApduSegmentTimeout	
	BackupFailureTimeout	
	ObjectIdentifier	
	ObjectName	
	Object lype	
	Description	
	EventType	
Event Enrollment	NotifyType	
(ER)	EventParameter	
	ObjectPropertyReference	
	EventState	
	EventEnable	
	AckedTransitions	
	NotificationClass	
	Recipient	

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Processidentifier           Priority           IssueConfirmedNotification           ObjectMame	OBJECT TYPE	PROPERTY	Remarks
Priority         IssueConfirmedNotification           ObjectName         ObjectName           ObjectVame         ObjectName           ObjectVame         Image: ConfirmedNotification           (Fi)         FileSize           Archike         Image: ConfirmedNotification           ObjectVame         Image: ConfirmedNo		ProcessIdentifier	
IssueConfirmedNutification         issueConfirmedNutification           ObjectName         ObjectName           ObjectName         ObjectName           ObjectName         ObjectName           ItelSize         International		Priority	
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File         Object/type           (File         Image: Constant of the second of the sec		ObjectIdentifier	
File         Object/ppe         Image: Section of the sectin of the section of the section of the section of the se		ObjectName	
File     FileType       (F)     FileType       PasSize     Interface       Archive     Interface       Archive     Interface       ReadOnly     Interface       ObjectIdentifier     Interface       OutOfService     Interface       OutOfService     Interface       ObjectIdentifier     Interface       ObjectIdentifier     Interface       ObjectIdentifier     Interface       ObjectIdentifier     Interface       ObjectIdentifier     Interface       ObjectIdentifier     Interface       OutofService     Interface		ObjectType	
(H)     FileSize       Archive     Image: Constraint of the second of t	File	FileType	
Archive         Image: Constraint of the section of the sectista of the section of the sectista of the section of the sectis	(FI)	FileSize	
ReadOnly         Image: Construction of the second of		Archive	
Group (GR)		ReadOnly	
ObjectName         ObjectType           ObjectType         ObjectType           LatoGoupMembers         ObjectMame           ObjectIther         ObjectMame           ObjectType         ObjectMame           ObjectIther         ObjectMame           OutOfService         Immediate           Mode         Immediate           Silenced         Immediate           ObjectItype         Immediate           PresentValue         Immediate           Itfe Safety Zone         Immediate           (IS2)         ObjectIther           Itfe Safety Zone         Immediate           (IS2)         ObjectIther           ObjectItype         Immediate           ObjectItype         Immediate           ObjectItype         Immediate           ObjectItype         Immediate		ObjectIdentifier	
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ObjectName         Image: Construct of the section of the sectio		ObjectIdentifier	
ObjectType         Image: Control of Control	Loop	ObjectName	
PresentValue         Image: matrix intermediate intermedintermediate intermed		ObjectType	
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ObjectName         ObjectType           DiscrtType         Image: Constraint of the second of the secon		ObjectIdentifier	
ObjectType         Image: Constraint of the system of		ObjectName	
PresentValue         IntrackingValue           ItrackingValue         IntrackingValue           EventState         IntrackingValue           Reliability         IntrackingValue           OutOfService         IntrackingValue           Mode         IntrackingValue           Silenced         IntrackingValue           ObjectIdentifier         IntrackingValue           ObjectType         IntrackingValue           ItackingValue         IntrackingValue           Itage         ObjectIntifier           ObjectIntifier         IntrackingValue           Itage         IntrackingValue           Itage         IntrackingValue           Itage         IntrackingValue		ObjectType	
Life Safety Point (LSP)         TrackingValue           Reliability		PresentValue	
(LSP)     EventState       Reliability     OutOfService       Mode     Silenced       Silenced     ObjectIdentifier       ObjectIVpe     PresentValue       PresentValue     International (Silenced)       (LSZ)     EventState       Reliability     OutofService       Mode     Silenced       OutofService     OutofService       Reliability     OutofService       Mode     Silenced       Silenced     ObjectType       ObjectType     PresentValue       OutofService     ObjectType       PresentValue     International (Silenced)       Silenced     ObjectType       ObjectType     PresentValue       VotofService     ObjectType       ObjectType     PresentValue       EventState     ObjectType       OutofService     International (Silenced)       Multi State Input     OutofService       (Mi)     Reliability       NumberofStates     InterDelay       NotifyType     ProfileName	Life Safety Point	TrackingValue	
Reliability         Image: Construct of the system of	(LSP)	EventState	
OutOfService           Mode           Silenced           ObjectIdentifier           ObjectVame           ObjectType           PresentValue           TrackingValue           (LSZ)           EventState           Reliability           OutOfService           Mode           Silenced           OutOfService           Mode           Silenced           ObjectType           PresentValue           Reliability           OutOfService           Mode           Silenced           ObjectType           PresentValue           EventState           ObjectType           PresentValue           EventState           ObjectType           PresentValue           EventState           OutOfService           Reliability           NumberofStates           TimeDelay           NotifyType           ProfileName		Reliability	
Mode           Silenced           ObjectIdentifier           ObjectType           PresentValue           IrackingValue           EventState           Reliability           OutOfService           Mode           Silenced           Silenced           OutOfService           Mode           Silenced           ObjectType           PresentValue           CutOfService           Mode           Silenced           ObjectIdentifier           ObjectType           PresentValue           EventState           ObjectType           PresentValue           EventState           OutOfService           Reliability           OutOfService           Reliability           NumberofStates           TimeDelay           NotifyClass           NotifyClass           NotifyClass           NotifyClass		OutOfService	
Silenced         ObjectIdentifier         ObjectName         ObjectType         PresentValue         TrackingValue         (LSZ)         EventState         Reliability         OutOfService         Mode         Silenced         ObjectType         PresentValue         Reliability         OutOfService         Mode         Silenced         ObjectType         PresentValue         Silenced         ObjectIdentifier         ObjectType         PresentValue         EventState         OutOfService         Reliability         OutOfService         Reliability         NumberofStates         TimeDelay         NotifyClass         NotifyType         ProfileName		Mode	
Multi State Input (M)		Silenced	
Multi State Input (MI)  CbjectName  CbjectType  PresentValue  EventState  CbjectType  PresentValue  EventState  CbjectState  CbjectState CbjectState  CbjectState  CbjectState  CbjectState CbjectState CbjectState CbjectStat		ObjectIdentifier	
Multi State Input (MI) ObjectType PresentValue  Description  ObjectType PresentValue  TrackingValue  EventState  OutOfService  Mode Silenced ObjectIdentifier ObjectName ObjectType PresentValue EventState OutOfService NumberofStates TimeDelay NotifyClass NotifyType ProfileName		ObjectName	
Life Safety Zone       TrackingValue         (LSZ)       EventState         Reliability       OutOfService         Mode       Silenced         Silenced       ObjectIdentifier         ObjectVame       ObjectIdentifier         ObjectType       PresentValue         EventState       OutOfService         Multi State Input       OutOfService         FresentValue       EventState         DutOfService       Intervice         Reliability       NumberofStates         TimeDelay       NotifyType         ProfileName       ProfileName		ObjectType	
Life Safety Zone (LSZ)  FventState Reliability  OutOfService  Mode Silenced  ObjectIdentifier ObjectType PresentValue EventState  VutOfService  Multi State Input (MI)  Reliability NumberofStates TimeDelay NotifyClass NotifyType ProfileName		PresentValue	
(LSZ)       EventState         Reliability       Image: Constraint of the system	Life Safety Zone	TrackingValue	
Reliability       OutOfService         Mode       Silenced         Silenced       ObjectIdentifier         ObjectType       ObjectType         PresentValue       EventState         OutOfService       Reliability         Multi State Input       OutOfService         Multi State Input       OutOfService         PresentValue       Intervice         EventState       Intervice         NumberofStates       Intervice         TimeDelay       NotifyType         ProfileName       Intervice	(LSZ)	EventState	
Mode Silenced ObjectIdentifier ObjectName ObjectType PresentValue EventState OutOfService Multi State Input (MI) Reliability NumberofStates TimeDelay NotifyClass NotifyType ProfileName			
Mode Silenced ObjectIdentifier ObjectName ObjectType PresentValue EventState OutOfService Reliability NumberofStates TimeDelay NotifyType ProfileName		OutOfService	
Silenced       Objectldentifier         ObjectName       ObjectType         ObjectType       PresentValue         EventState       OutOfService         Multi State Input       OutOfService         (MI)       Reliability         NumberofStates       TimeDelay         NotifyClass       NotifyType         ProfileName       EventState		Mode	
Multi State Input (MI) ObjectIdentifier ObjectName ObjectType PresentValue EventState OutOfService Reliability NumberofStates TimeDelay NotifyClass NotifyType ProfileName		Silenced	
Multi State Input (MI) ObjectName ObjectName ObjectType PresentValue EventState OutOfService Reliability NumberofStates TimeDelay NotifyClass NotifyType ProfileName			
Multi State Input (MI) PresentValue EventState OutOfService Reliability NumberofStates TimeDelay NotifyClass NotifyType ProfileName		Objectivane	
Multi State Input       EventState         (MI)       OutOfService         Reliability       NumberofStates         TimeDelay       Interpretation         NotifyClass       NotifyType         ProfileName       Interpretation		Disectlype	
Multi State Input (MI) OutOfService Reliability NumberofStates TimeDelay NotifyClass NotifyType ProfileName		Presentvalue	
Multi State Input     OutOrservice       (MI)     Reliability       NumberofStates     Image: Control of States       TimeDelay     NotifyClass       NotifyType     ProfileName			
(MI)       Nenability       NumberofStates       TimeDelay       NotifyClass       NotifyType       ProfileName	Multi State Input		
TimeDelay       NotifyClass       NotifyType       ProfileName	(IVII)	NumberofStates	
NotifyClass       NotifyType       ProfileName		TimeDelay	
NotifyType       ProfileName		Notify/Class	
ProfileName		NotifyType	
		ProfileName	

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OBJECT TYPE	PROPERTY	Remarks
	ObjectIdentifier	
	ObjectName	
	ObjectType	
	PresentValue	
	EventState	
Multi State Output	OutOfService	
(MO)	Reliability	
(	NumberofStates	
	TimeDelay	
	NotifyClass	
	NotifyType	
	ProfileName	
	ObjectIdentifier	
	ObjectName	
	ObjectType	
	PresentValue	
	EventState	
Multi State Value	OutOfService	
(MV)	Reliability	
()	NumberofStates	
	TimeDelay	
	NotifyClass	
	NotifyType	
	ProfileName	
	ObjectIdentifier	
Notification Class	ObjectName	
(NC)	ObjectType	
	NotifyClass	
	ObjectIdentifier	
	ObjectName	
	ObjectType	
	Description	
	ProgramState	
	ProgramChange	
Program	ReasonForHalt	
(PG)	DescriptionOfHalt	
	ProgramLocation	
	InstanceOf	
	StatusFlags	
	Reliability	
	OutOfService	
	ObjectIdentifier	
Schedule	ObjectName	
(SC)	ObjectType	
	PriorityForWriting	
	ObjectIdentifier	
	ObjectName	
	ObjectType	
Trend Log	Enable	
(TL)	StopWhenFull	
	BufferSize	
	RecordCount	
	TotalRecordCount	