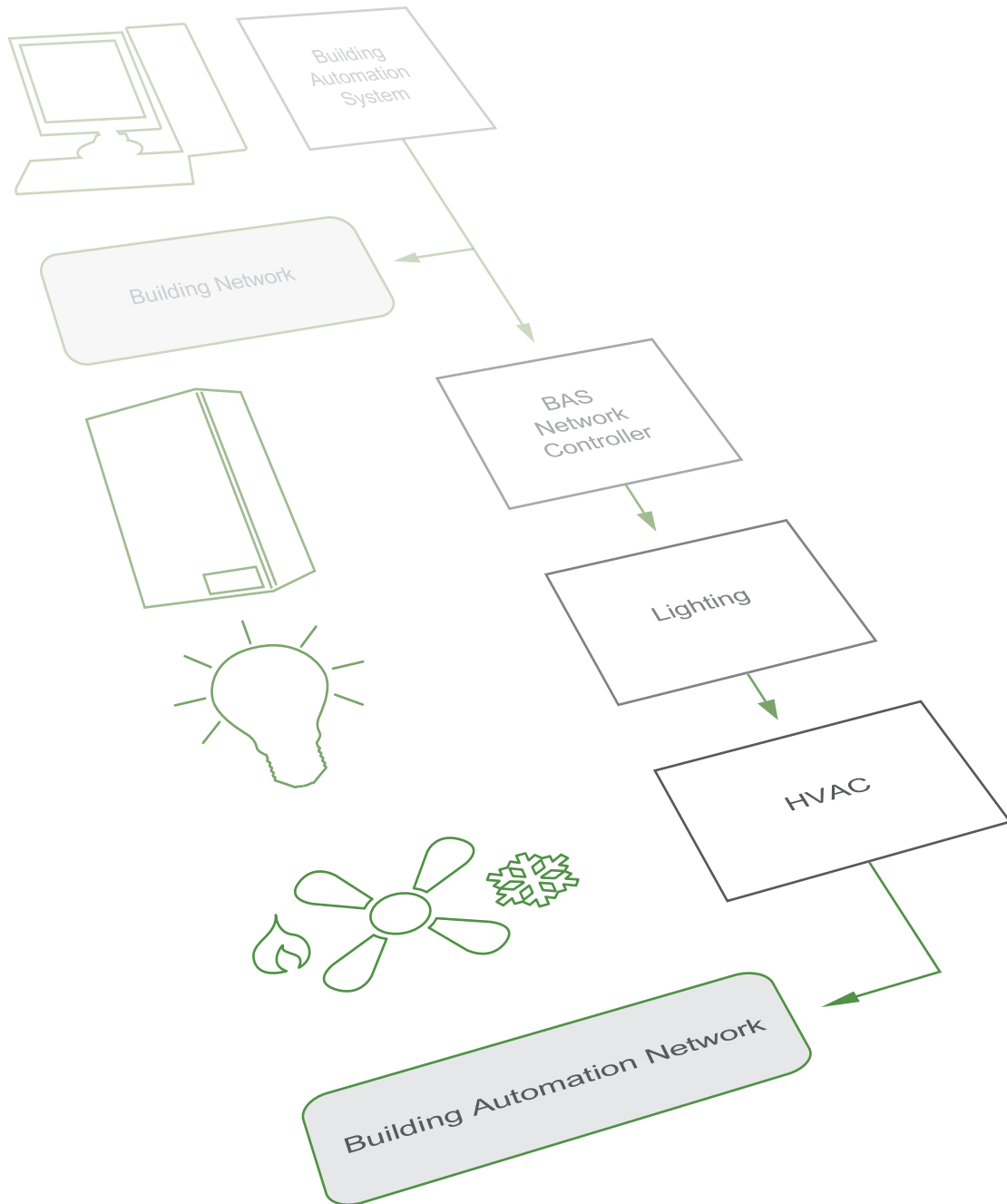


Integration Instructions and Point List (BACnet MSTP and N2)



Attention

This section serves as a notice of the immediate or potential dangers involved when working with the equipment described throughout this manual. Any person involved in installation, maintenance, or service of the equipment should first carefully examine the equipment and read the instructions contained in this manual to ensure that personal and/or equipment injury is avoided.

The following safety messages appear throughout this manual to alert of immediate or potential danger to life as well as property.



Note : Indicates an important note.



Tip : Indicates a helpful tip or trick.



Safety Reminder : Applicable safety instructions will be included with this symbol.



DANGER : Indicates an immediately hazardous situation which ,if not avoided, will result in serious injury or death.



WARNING : Indicates a potentially hazardous situation which ,if not avoided, may result in serious injury or death.



CAUTION : Indicates a potentially hazardous situation which ,if not avoided, may result in minor or moderate injury.

Disclaimer

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designated to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his own expense.

Instructions contained in this user's guide should be performed only by qualified persons in accordance with local and national codes. Blue Ridge Technologies International, LLC and its affiliates assume no responsibility for any consequences related to the improper use of this manual.

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Document Overview

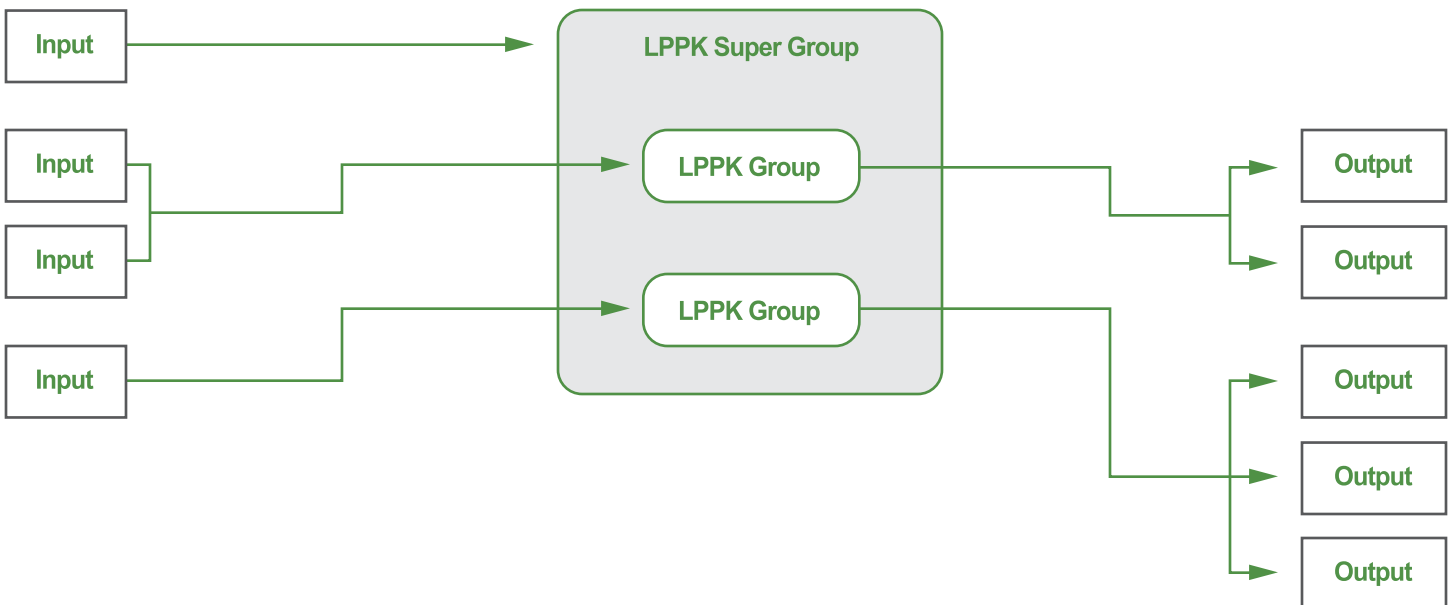
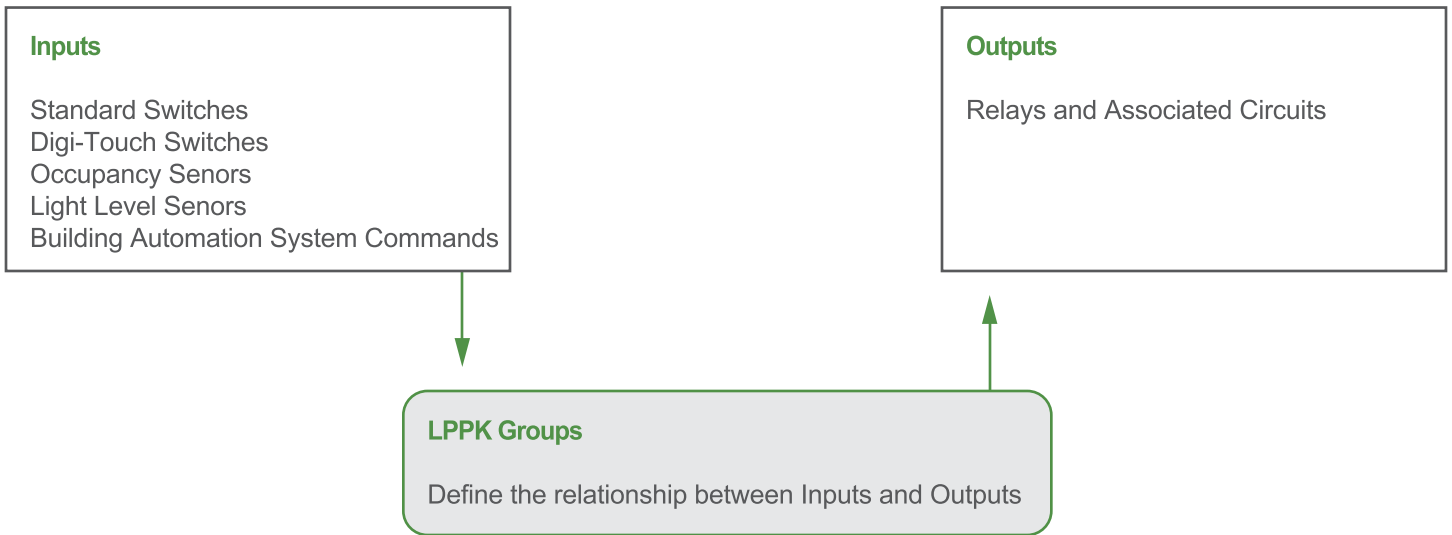
This document provides point list information for networking Lx5 relay panel controllers to a Building Automation System (BAS) using the BACnet MSTP or N2 data communication protocol.

BACnet and N2 are data communication protocols governing data exchange externally between digitally controlled building equipment devices and a BAS. Digital functions within the equipment are beyond the scope of these protocols and are explained in supplementary Blue Ridge documents.

For advanced Lx5 programming, including LPPK and AppLoader software instructions, refer to USB Tech Kit User Guide.

For Lx5 hardware location and configuration as well as EIA-485 network construction and connection refer to the Lx5 Hardware User Guide.

For physical installation of panels or retrofit kits, refer to the appropriate product Installation Guide.



BACnet Integration Overview

BAS Integration involves three components BACnet Device ID, Groups, and Communication Objects.

BACnet Device ID

The BAS identifies each Lx5 controller on a BACnet network utilizing Lx5 controller's BACnet Device ID. (See page 6)

Groups

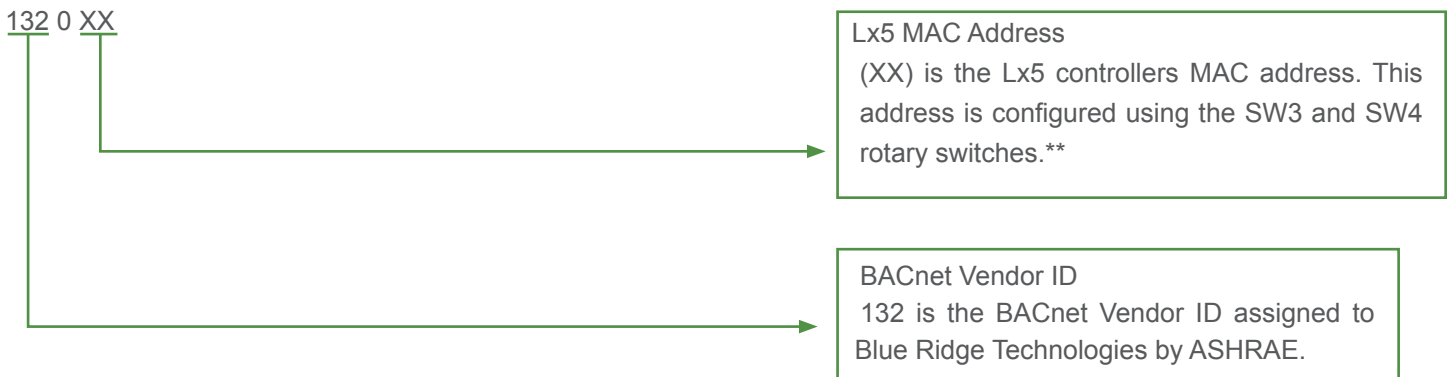
The BAS controls lighting through Groups. (See USB Tech Kit User Guide for Group configuration instructions.) Each communication is addressed to one of up to 60 Groups controlled by each Lx5.

Communication Objects

The BAS specifies actions of a Group by addressing one of five standard communication objects. Identification of these objects is achieved with an Object ID and Object Name. (See page 7)

BACnet Device ID

The BACnet Device ID allows the BAS to identify specific Lx5 controllers on a BACnet network. This Device ID is composed of two elements the BACnet Vendor ID and Lx5 MAC Address. Each controller must have a unique Device ID on the BAS Internetwork.*



* A custom BACnet Device ID is necessary if more than 99 controllers are incorporated or controllers share MAC addresses on various network segments. Contact Blue Ridge Technical Support for details.

** Refer to Lx5 Hardware User Guide for addressing instructions.

BACnet Value Table

These priorities regulate the relationship between the BAS components. Altering the default priorities listed below is not recommended.*

Value Name	Valid Values	Value Definition
Group Command - Binary Value (BBV)	0	Command Group OFF
Group Command - Binary Value (BBV)	1	Command Group ON
Group Status - Binary Value (BBV)	0	Group State OFF
Group Status - Binary Value (BBV)	1	Group State ON
Group Command - Multi State Value (BMSV)	1	Do Nothing ¹
Group Command - Multi State Value (BMSV)	2	Command Group OFF with Flash Warning ²
Group Command - Multi State Value (BMSV)	3	Command Group OFF
Group Command - Multi State Value (BMSV)	4	Command Group ON
Group Status - Multi State Value (BMSV)	1	Group State OFF due to serial command
Group Status - Multi State Value (BMSV)	2	Group State ON due to serial command
Group Status - Multi State Value (BMSV)	3	Group State OFF due to override switch
Group Status - Multi State Value (BMSV)	4	Group State ON due to override switch
Group Status - Multi State Value (BMSV)	5	Group State ON due to override switch with timer count
Group Status - Multi State Value (BMSV)	6	Group State ON due to manual override switch on Lx5
Group Status - Multi State Value (BMSV)	7	Group State OFF due to manual override switch on Lx5
Group Timer - Analog Value (BAV)	0 - 64,800	Group timer count down value (seconds)
Analog Input - Analog Value (BAV)	0 - 1024	Analog Input Value
	0 - XXX	Analog Input Value (Foot-Candles)
	0 - XXX	Analog Input Value (LUX)
Analog Input Minimum - Analog Value (BAV)	0 - 1000	Set Minimum Value of Analog Input
Analog Input Maximum - Analog Value (BAV)	0 - 1000	Set Maximum Value of Analog Input
Relay Status - Binary Value (BBV)	0	Relay State OFF
Relay Status - Binary Value (BBV)	1	Relay State ON
Relay Status Range - Analog Value (BAV)	0 - 255	Value represents an 8 relay range. Demultiplex method determines status of each relay.

Default Serial Priorities

These priorities regulate the relationship between the BAS components. Altering the default priorities listed below is not recommended.*

Commands	Group Setup	
	Serial On Priority Selected	Serial On Priority Deselected
BACnet Schedule (Local or Remote)	15	16
Switches (Wall Switch, Occupancy Sensor, Etc.)	16	16
BAS Manual Override (Operator Override)	8	8

Event Alarms

Event Alarms allow the Lx5 controller to alert of errors to ease trouble shooting.

Name	Type	Object ID	Object Name
Common Alarms / Module Halted	EVT	BV:4000000	Module Halted Alarm
Common Alarms / All Programs Stopped	EVT	BV:4000001	All Programs Stopped Alarm
Common Alarms / Duplicate Address	EVT	BV:4000002	Duplicate Address Alarm
Common Alarms / Locked I/O	EVT	BV:4000003	Locked I/O Alarm
Common Alarms / Control Program	EVT	BV:4000004	Control Program Alarm
Common Alarms / Program Stopped	EVT	BV:4000005	Program Stopped Alarm

* Refer to USB Tech Kit User Guide for Serial On Priority configuration.

BACnet Points

Name	Type	Object ID	Object Name
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Group 1

Group Schedule (Local)	Schedule	Schedule:1	schedule_schedule_1
Group Command Binary	BBV	BV:1	schedule_1
Group Status Binary	BBV	BV:101	b_groupstat_1
Group Command Multi State Value	BMSV	MSV:1	cmd_1
Group Status Multi State Value	BMSV	MSV:101	ms_groupstat_1
Group Timer	BAV	AV:1	timer_1

Group 2

Group Schedule (Local)	Schedule	Schedule:2	schedule_schedule_2
Group Command Binary	BBV	BV:2	schedule_2
Group Status Binary	BBV	BV:102	b_groupstat_2
Group Command Multi State Value	BMSV	MSV:2	cmd_2
Group Status Multi State Value	BMSV	MSV:102	ms_groupstat_2
Group Timer	BAV	AV:2	timer_2

Group 3

Group Schedule (Local)	Schedule	Schedule:3	schedule_schedule_3
Group Command Binary	BBV	BV:3	schedule_3
Group Status Binary	BBV	BV:103	b_groupstat_3
Group Command Multi State Value	BMSV	MSV:3	cmd_3
Group Status Multi State Value	BMSV	MSV:103	ms_groupstat_3
Group Timer	BAV	AV:3	timer_3

Group 4

Group Schedule (Local)	Schedule	Schedule:4	schedule_schedule_4
Group Command Binary	BBV	BV:4	schedule_4
Group Status Binary	BBV	BV:104	b_groupstat_4
Group Command Multi State Value	BMSV	MSV:4	cmd_4
Group Status Multi State Value	BMSV	MSV:104	ms_groupstat_4
Group Timer	BAV	AV:4	timer_4

Group 5

Group Schedule (Local)	Schedule	Schedule:5	schedule_schedule_5
Group Command Binary	BBV	BV:5	schedule_5
Group Status Binary	BBV	BV:105	b_groupstat_5
Group Command Multi State Value	BMSV	MSV:5	cmd_5
Group Status Multi State Value	BMSV	MSV:105	ms_groupstat_5
Group Timer	BAV	AV:5	timer_5

BACnet Points

Name	Type	Object ID	Object Name
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Group 6

Group Schedule (Local)	Schedule	Schedule:6	schedule_schedule_6
Group Command Binary	BBV	BV:6	schedule_6
Group Status Binary	BBV	BV:106	b_groupstat_6
Group Command Multi State Value	BMSV	MSV:6	cmd_6
Group Status Multi State Value	BMSV	MSV:106	ms_groupstat_6
Group Timer	BAV	AV:6	timer_6

Group 7

Group Schedule (Local)	Schedule	Schedule:7	schedule_schedule_7
Group Command Binary	BBV	BV:7	schedule_7
Group Status Binary	BBV	BV:107	b_groupstat_7
Group Command Multi State Value	BMSV	MSV:7	cmd_7
Group Status Multi State Value	BMSV	MSV:107	ms_groupstat_7
Group Timer	BAV	AV:7	timer_7

Group 8

Group Schedule (Local)	Schedule	Schedule:8	schedule_schedule_8
Group Command Binary	BBV	BV:8	schedule_8
Group Status Binary	BBV	BV:108	b_groupstat_8
Group Command Multi State Value	BMSV	MSV:8	cmd_8
Group Status Multi State Value	BMSV	MSV:108	ms_groupstat_8
Group Timer	BAV	AV:8	timer_8

Group 9

Group Schedule (Local)	Schedule	Schedule:9	schedule_schedule_9
Group Command Binary	BBV	BV:9	schedule_9
Group Status Binary	BBV	BV:109	b_groupstat_9
Group Command Multi State Value	BMSV	MSV:9	cmd_9
Group Status Multi State Value	BMSV	MSV:109	ms_groupstat_9
Group Timer	BAV	AV:9	timer_9

Group 10

Group Schedule (Local)	Schedule	Schedule:10	schedule_schedule_10
Group Command Binary	BBV	BV:10	schedule_10
Group Status Binary	BBV	BV:110	b_groupstat_10
Group Command Multi State Value	BMSV	MSV:10	cmd_10
Group Status Multi State Value	BMSV	MSV:110	ms_groupstat_10
Group Timer	BAV	AV:10	timer_10

BACnet Points

Name	Type	Object ID	Object Name
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Group 11

Group Schedule (Local)	Schedule	Schedule:11	schedule_schedule_11
Group Command Binary	BBV	BV:11	schedule_11
Group Status Binary	BBV	BV:111	b_groupstat_11
Group Command Multi State Value	BMSV	MSV:11	cmd_11
Group Status Multi State Value	BMSV	MSV:111	ms_groupstat_11
Group Timer	BAV	AV:11	timer_11

Group 12

Group Schedule (Local)	Schedule	Schedule:12	schedule_schedule_12
Group Command Binary	BBV	BV:12	schedule_12
Group Status Binary	BBV	BV:112	b_groupstat_12
Group Command Multi State Value	BMSV	MSV:12	cmd_12
Group Status Multi State Value	BMSV	MSV:112	ms_groupstat_12
Group Timer	BAV	AV:12	timer_12

Group 13

Group Schedule (Local)	Schedule	Schedule:13	schedule_schedule_13
Group Command Binary	BBV	BV:13	schedule_13
Group Status Binary	BBV	BV:113	b_groupstat_13
Group Command Multi State Value	BMSV	MSV:13	cmd_13
Group Status Multi State Value	BMSV	MSV:113	ms_groupstat_13
Group Timer	BAV	AV:13	timer_13

Group 14

Group Schedule (Local)	Schedule	Schedule:14	schedule_schedule_14
Group Command Binary	BBV	BV:14	schedule_14
Group Status Binary	BBV	BV:114	b_groupstat_14
Group Command Multi State Value	BMSV	MSV:14	cmd_14
Group Status Multi State Value	BMSV	MSV:114	ms_groupstat_14
Group Timer	BAV	AV:14	timer_14

Group 15

Group Schedule (Local)	Schedule	Schedule:15	schedule_schedule_15
Group Command Binary	BBV	BV:15	schedule_15
Group Status Binary	BBV	BV:115	b_groupstat_15
Group Command Multi State Value	BMSV	MSV:15	cmd_15
Group Status Multi State Value	BMSV	MSV:115	ms_groupstat_15
Group Timer	BAV	AV:15	timer_15

BACnet Points

Name	Type	Object ID	Object Name
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Group 16

Group Schedule (Local)	Schedule	Schedule:16	schedule_schedule_16
Group Command Binary	BBV	BV:16	schedule_16
Group Status Binary	BBV	BV:116	b_groupstat_16
Group Command Multi State Value	BMSV	MSV:16	cmd_16
Group Status Multi State Value	BMSV	MSV:116	ms_groupstat_16
Group Timer	BAV	AV:16	timer_16

Group 17

Group Schedule (Local)	Schedule	Schedule:17	schedule_schedule_17
Group Command Binary	BBV	BV:17	schedule_17
Group Status Binary	BBV	BV:117	b_groupstat_17
Group Command Multi State Value	BMSV	MSV:17	cmd_17
Group Status Multi State Value	BMSV	MSV:117	ms_groupstat_17
Group Timer	BAV	AV:17	timer_17

Group 18

Group Schedule (Local)	Schedule	Schedule:18	schedule_schedule_18
Group Command Binary	BBV	BV:18	schedule_18
Group Status Binary	BBV	BV:118	b_groupstat_18
Group Command Multi State Value	BMSV	MSV:18	cmd_18
Group Status Multi State Value	BMSV	MSV:118	ms_groupstat_18
Group Timer	BAV	AV:18	timer_18

Group 19

Group Schedule (Local)	Schedule	Schedule:19	schedule_schedule_19
Group Command Binary	BBV	BV:19	schedule_19
Group Status Binary	BBV	BV:119	b_groupstat_19
Group Command Multi State Value	BMSV	MSV:19	cmd_19
Group Status Multi State Value	BMSV	MSV:119	ms_groupstat_19
Group Timer	BAV	AV:19	timer_19

Group 20

Group Schedule (Local)	Schedule	Schedule:20	schedule_schedule_20
Group Command Binary	BBV	BV:20	schedule_20
Group Status Binary	BBV	BV:120	b_groupstat_20
Group Command Multi State Value	BMSV	MSV:20	cmd_20
Group Status Multi State Value	BMSV	MSV:120	ms_groupstat_20
Group Timer	BAV	AV:20	timer_20

BACnet Points

Name	Type	Object ID	Object Name
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Group 21

Group Schedule (Local)	Schedule	Schedule:21	schedule_schedule_21
Group Command Binary	BBV	BV:21	schedule_21
Group Status Binary	BBV	BV:121	b_groupstat_21
Group Command Multi State Value	BMSV	MSV:21	cmd_21
Group Status Multi State Value	BMSV	MSV:121	ms_groupstat_21
Group Timer	BAV	AV:21	timer_21

Group 22

Group Schedule (Local)	Schedule	Schedule:22	schedule_schedule_22
Group Command Binary	BBV	BV:22	schedule_22
Group Status Binary	BBV	BV:122	b_groupstat_22
Group Command Multi State Value	BMSV	MSV:22	cmd_22
Group Status Multi State Value	BMSV	MSV:122	ms_groupstat_22
Group Timer	BAV	AV:22	timer_22

Group 23

Group Schedule (Local)	Schedule	Schedule:23	schedule_schedule_23
Group Command Binary	BBV	BV:23	schedule_23
Group Status Binary	BBV	BV:123	b_groupstat_23
Group Command Multi State Value	BMSV	MSV:23	cmd_23
Group Status Multi State Value	BMSV	MSV:123	ms_groupstat_23
Group Timer	BAV	AV:23	timer_23

Group 24

Group Schedule (Local)	Schedule	Schedule:24	schedule_schedule_24
Group Command Binary	BBV	BV:24	schedule_24
Group Status Binary	BBV	BV:124	b_groupstat_24
Group Command Multi State Value	BMSV	MSV:24	cmd_24
Group Status Multi State Value	BMSV	MSV:124	ms_groupstat_24
Group Timer	BAV	AV:24	timer_24

Group 25

Group Schedule (Local)	Schedule	Schedule:25	schedule_schedule_25
Group Command Binary	BBV	BV:25	schedule_25
Group Status Binary	BBV	BV:125	b_groupstat_25
Group Command Multi State Value	BMSV	MSV:25	cmd_25
Group Status Multi State Value	BMSV	MSV:125	ms_groupstat_25
Group Timer	BAV	AV:25	timer_25

BACnet Points

Name	Type	Object ID	Object Name
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Group 26

Group Schedule (Local)	Schedule	Schedule:26	schedule_schedule_26
Group Command Binary	BBV	BV:26	schedule_26
Group Status Binary	BBV	BV:126	b_groupstat_26
Group Command Multi State Value	BMSV	MSV:26	cmd_26
Group Status Multi State Value	BMSV	MSV:126	ms_groupstat_26
Group Timer	BAV	AV:26	timer_26

Group 27

Group Schedule (Local)	Schedule	Schedule:27	schedule_schedule_27
Group Command Binary	BBV	BV:27	schedule_27
Group Status Binary	BBV	BV:127	b_groupstat_27
Group Command Multi State Value	BMSV	MSV:27	cmd_27
Group Status Multi State Value	BMSV	MSV:127	ms_groupstat_27
Group Timer	BAV	AV:27	timer_27

Group 28

Group Schedule (Local)	Schedule	Schedule:28	schedule_schedule_28
Group Command Binary	BBV	BV:28	schedule_28
Group Status Binary	BBV	BV:128	b_groupstat_28
Group Command Multi State Value	BMSV	MSV:28	cmd_28
Group Status Multi State Value	BMSV	MSV:128	ms_groupstat_28
Group Timer	BAV	AV:28	timer_28

Group 29

Group Schedule (Local)	Schedule	Schedule:29	schedule_schedule_29
Group Command Binary	BBV	BV:29	schedule_29
Group Status Binary	BBV	BV:129	b_groupstat_29
Group Command Multi State Value	BMSV	MSV:29	cmd_29
Group Status Multi State Value	BMSV	MSV:129	ms_groupstat_29
Group Timer	BAV	AV:29	timer_29

Group 30

Group Schedule (Local)	Schedule	Schedule:30	schedule_schedule_30
Group Command Binary	BBV	BV:30	schedule_30
Group Status Binary	BBV	BV:130	b_groupstat_30
Group Command Multi State Value	BMSV	MSV:30	cmd_30
Group Status Multi State Value	BMSV	MSV:130	ms_groupstat_30
Group Timer	BAV	AV:30	timer_30

BACnet Points

Name	Type	Object ID	Object Name
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Group 31

Group Schedule (Local)	Schedule	Schedule:31	schedule_schedule_31
Group Command Binary	BBV	BV:31	schedule_31
Group Status Binary	BBV	BV:131	b_groupstat_31
Group Command Multi State Value	BMSV	MSV:31	cmd_31
Group Status Multi State Value	BMSV	MSV:131	ms_groupstat_31
Group Timer	BAV	AV:31	timer_31

Group 32

Group Schedule (Local)	Schedule	Schedule:32	schedule_schedule_32
Group Command Binary	BBV	BV:32	schedule_32
Group Status Binary	BBV	BV:132	b_groupstat_32
Group Command Multi State Value	BMSV	MSV:32	cmd_32
Group Status Multi State Value	BMSV	MSV:132	ms_groupstat_32
Group Timer	BAV	AV:32	timer_32

Group 33

Group Schedule (Local)	Schedule	Schedule:33	schedule_schedule_33
Group Command Binary	BBV	BV:33	schedule_33
Group Status Binary	BBV	BV:133	b_groupstat_33
Group Command Multi State Value	BMSV	MSV:33	cmd_33
Group Status Multi State Value	BMSV	MSV:133	ms_groupstat_33
Group Timer	BAV	AV:33	timer_33

Group 34

Group Schedule (Local)	Schedule	Schedule:34	schedule_schedule_34
Group Command Binary	BBV	BV:34	schedule_34
Group Status Binary	BBV	BV:134	b_groupstat_34
Group Command Multi State Value	BMSV	MSV:34	cmd_34
Group Status Multi State Value	BMSV	MSV:134	ms_groupstat_34
Group Timer	BAV	AV:34	timer_34

Group 35

Group Schedule (Local)	Schedule	Schedule:35	schedule_schedule_35
Group Command Binary	BBV	BV:35	schedule_35
Group Status Binary	BBV	BV:135	b_groupstat_35
Group Command Multi State Value	BMSV	MSV:35	cmd_35
Group Status Multi State Value	BMSV	MSV:135	ms_groupstat_35
Group Timer	BAV	AV:35	timer_35

BACnet Points

Name	Type	Object ID	Object Name
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Group 36

Group Schedule (Local)	Schedule	Schedule:36	schedule_schedule_36
Group Command Binary	BBV	BV:36	schedule_36
Group Status Binary	BBV	BV:136	b_groupstat_36
Group Command Multi State Value	BMSV	MSV:36	cmd_36
Group Status Multi State Value	BMSV	MSV:136	ms_groupstat_36
Group Timer	BAV	AV:36	timer_36

Group 37

Group Schedule (Local)	Schedule	Schedule:37	schedule_schedule_37
Group Command Binary	BBV	BV:37	schedule_37
Group Status Binary	BBV	BV:137	b_groupstat_37
Group Command Multi State Value	BMSV	MSV:37	cmd_37
Group Status Multi State Value	BMSV	MSV:137	ms_groupstat_37
Group Timer	BAV	AV:37	timer_37

Group 38

Group Schedule (Local)	Schedule	Schedule:38	schedule_schedule_38
Group Command Binary	BBV	BV:38	schedule_38
Group Status Binary	BBV	BV:138	b_groupstat_38
Group Command Multi State Value	BMSV	MSV:38	cmd_38
Group Status Multi State Value	BMSV	MSV:138	ms_groupstat_38
Group Timer	BAV	AV:38	timer_38

Group 39

Group Schedule (Local)	Schedule	Schedule:39	schedule_schedule_39
Group Command Binary	BBV	BV:39	schedule_39
Group Status Binary	BBV	BV:139	b_groupstat_39
Group Command Multi State Value	BMSV	MSV:39	cmd_39
Group Status Multi State Value	BMSV	MSV:139	ms_groupstat_39
Group Timer	BAV	AV:39	timer_39

Group 40

Group Schedule (Local)	Schedule	Schedule:40	schedule_schedule_40
Group Command Binary	BBV	BV:40	schedule_40
Group Status Binary	BBV	BV:140	b_groupstat_40
Group Command Multi State Value	BMSV	MSV:40	cmd_40
Group Status Multi State Value	BMSV	MSV:140	ms_groupstat_40
Group Timer	BAV	AV:40	timer_40

BACnet Points

Name	Type	Object ID	Object Name
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Group 41

Group Schedule (Local)	Schedule	Schedule:41	schedule_schedule_41
Group Command Binary	BBV	BV:41	schedule_41
Group Status Binary	BBV	BV:141	b_groupstat_41
Group Command Multi State Value	BMSV	MSV:41	cmd_41
Group Status Multi State Value	BMSV	MSV:141	ms_groupstat_41
Group Timer	BAV	AV:41	timer_41

Group 42

Group Schedule (Local)	Schedule	Schedule:42	schedule_schedule_42
Group Command Binary	BBV	BV:42	schedule_42
Group Status Binary	BBV	BV:142	b_groupstat_42
Group Command Multi State Value	BMSV	MSV:42	cmd_42
Group Status Multi State Value	BMSV	MSV:142	ms_groupstat_42
Group Timer	BAV	AV:42	timer_42

Group 43

Group Schedule (Local)	Schedule	Schedule:43	schedule_schedule_43
Group Command Binary	BBV	BV:43	schedule_43
Group Status Binary	BBV	BV:143	b_groupstat_43
Group Command Multi State Value	BMSV	MSV:43	cmd_43
Group Status Multi State Value	BMSV	MSV:143	ms_groupstat_43
Group Timer	BAV	AV:43	timer_43

Group 44

Group Schedule (Local)	Schedule	Schedule:44	schedule_schedule_44
Group Command Binary	BBV	BV:44	schedule_44
Group Status Binary	BBV	BV:144	b_groupstat_44
Group Command Multi State Value	BMSV	MSV:44	cmd_44
Group Status Multi State Value	BMSV	MSV:144	ms_groupstat_44
Group Timer	BAV	AV:44	timer_44

Group 45

Group Schedule (Local)	Schedule	Schedule:45	schedule_schedule_45
Group Command Binary	BBV	BV:45	schedule_45
Group Status Binary	BBV	BV:145	b_groupstat_45
Group Command Multi State Value	BMSV	MSV:45	cmd_45
Group Status Multi State Value	BMSV	MSV:145	ms_groupstat_45
Group Timer	BAV	AV:45	timer_45

BACnet Points

Name	Type	Object ID	Object Name
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Group 46

Group Schedule (Local)	Schedule	Schedule:46	schedule_schedule_46
Group Command Binary	BBV	BV:46	schedule_46
Group Status Binary	BBV	BV:146	b_groupstat_46
Group Command Multi State Value	BMSV	MSV:46	cmd_46
Group Status Multi State Value	BMSV	MSV:146	ms_groupstat_46
Group Timer	BAV	AV:46	timer_46

Group 47

Group Schedule (Local)	Schedule	Schedule:47	schedule_schedule_47
Group Command Binary	BBV	BV:47	schedule_47
Group Status Binary	BBV	BV:147	b_groupstat_47
Group Command Multi State Value	BMSV	MSV:47	cmd_47
Group Status Multi State Value	BMSV	MSV:147	ms_groupstat_47
Group Timer	BAV	AV:47	timer_47

Group 48

Group Schedule (Local)	Schedule	Schedule:48	schedule_schedule_48
Group Command Binary	BBV	BV:48	schedule_48
Group Status Binary	BBV	BV:148	b_groupstat_48
Group Command Multi State Value	BMSV	MSV:48	cmd_48
Group Status Multi State Value	BMSV	MSV:148	ms_groupstat_48
Group Timer	BAV	AV:48	timer_48

Group 49

Group Schedule (Local)	Schedule	Schedule:49	schedule_schedule_49
Group Command Binary	BBV	BV:49	schedule_49
Group Status Binary	BBV	BV:149	b_groupstat_49
Group Command Multi State Value	BMSV	MSV:49	cmd_49
Group Status Multi State Value	BMSV	MSV:149	ms_groupstat_49
Group Timer	BAV	AV:49	timer_49

Group 50

Group Schedule (Local)	Schedule	Schedule:50	schedule_schedule_50
Group Command Binary	BBV	BV:50	schedule_50
Group Status Binary	BBV	BV:150	b_groupstat_50
Group Command Multi State Value	BMSV	MSV:50	cmd_50
Group Status Multi State Value	BMSV	MSV:150	ms_groupstat_50
Group Timer	BAV	AV:50	timer_50

BACnet Points

Name	Type	Object ID	Object Name
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Group 51

Group Schedule (Local)	Schedule	Schedule:51	schedule_schedule_51
Group Command Binary	BBV	BV:51	schedule_51
Group Status Binary	BBV	BV:151	b_groupstat_51
Group Command Multi State Value	BMSV	MSV:51	cmd_51
Group Status Multi State Value	BMSV	MSV:151	ms_groupstat_51
Group Timer	BAV	AV:51	timer_51

Group 52

Group Schedule (Local)	Schedule	Schedule:52	schedule_schedule_52
Group Command Binary	BBV	BV:52	schedule_52
Group Status Binary	BBV	BV:152	b_groupstat_52
Group Command Multi State Value	BMSV	MSV:52	cmd_52
Group Status Multi State Value	BMSV	MSV:152	ms_groupstat_52
Group Timer	BAV	AV:52	timer_52

Group 53

Group Schedule (Local)	Schedule	Schedule:53	schedule_schedule_53
Group Command Binary	BBV	BV:53	schedule_53
Group Status Binary	BBV	BV:153	b_groupstat_53
Group Command Multi State Value	BMSV	MSV:53	cmd_53
Group Status Multi State Value	BMSV	MSV:153	ms_groupstat_53
Group Timer	BAV	AV:53	timer_53

Group 54

Group Schedule (Local)	Schedule	Schedule:54	schedule_schedule_54
Group Command Binary	BBV	BV:54	schedule_54
Group Status Binary	BBV	BV:154	b_groupstat_54
Group Command Multi State Value	BMSV	MSV:54	cmd_54
Group Status Multi State Value	BMSV	MSV:154	ms_groupstat_54
Group Timer	BAV	AV:54	timer_54

Group 55

Group Schedule (Local)	Schedule	Schedule:55	schedule_schedule_55
Group Command Binary	BBV	BV:55	schedule_55
Group Status Binary	BBV	BV:155	b_groupstat_55
Group Command Multi State Value	BMSV	MSV:55	cmd_55
Group Status Multi State Value	BMSV	MSV:155	ms_groupstat_55
Group Timer	BAV	AV:55	timer_55

BACnet Points

Name	Type	Object ID	Object Name
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Group 56

Group Schedule (Local)	Schedule	Schedule:56	schedule_schedule_56
Group Command Binary	BBV	BV:56	schedule_56
Group Status Binary	BBV	BV:156	b_groupstat_56
Group Command Multi State Value	BMSV	MSV:56	cmd_56
Group Status Multi State Value	BMSV	MSV:156	ms_groupstat_56
Group Timer	BAV	AV:56	timer_56

Group 57

Group Schedule (Local)	Schedule	Schedule:57	schedule_schedule_57
Group Command Binary	BBV	BV:57	schedule_57
Group Status Binary	BBV	BV:157	b_groupstat_57
Group Command Multi State Value	BMSV	MSV:57	cmd_57
Group Status Multi State Value	BMSV	MSV:157	ms_groupstat_57
Group Timer	BAV	AV:57	timer_57

Group 58

Group Schedule (Local)	Schedule	Schedule:58	schedule_schedule_58
Group Command Binary	BBV	BV:58	schedule_58
Group Status Binary	BBV	BV:158	b_groupstat_58
Group Command Multi State Value	BMSV	MSV:58	cmd_58
Group Status Multi State Value	BMSV	MSV:158	ms_groupstat_58
Group Timer	BAV	AV:58	timer_58

Group 59

Group Schedule (Local)	Schedule	Schedule:59	schedule_schedule_59
Group Command Binary	BBV	BV:59	schedule_59
Group Status Binary	BBV	BV:159	b_groupstat_59
Group Command Multi State Value	BMSV	MSV:59	cmd_59
Group Status Multi State Value	BMSV	MSV:159	ms_groupstat_59
Group Timer	BAV	AV:59	timer_59

Group 60

Group Schedule (Local)	Schedule	Schedule:60	schedule_schedule_60
Group Command Binary	BBV	BV:60	schedule_60
Group Status Binary	BBV	BV:160	b_groupstat_60
Group Command Multi State Value	BMSV	MSV:60	cmd_60
Group Status Multi State Value	BMSV	MSV:160	ms_groupstat_60
Group Timer	BAV	AV:60	timer_60

BACnet Points

Name	Type	Object ID	Object Name
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Sensor Values

Analog Input 1 (Foot-Candles)	BAV	AV:101	ai1_fc_61
Analog Input 1 (LUX)	BAV	AV:111	ai1_lux_61
Analog Input 1 Min. Sensor Range	BAV	AV:121	ai1_min
Analog Input 1 Max. Sensor Range	BAV	AV:131	ai1_max
Analog Input 2 (Foot-Candles)	BAV	AV:102	ai2_fc_61
Analog Input 2 (LUX)	BAV	AV:112	ai2_lux_61
Analog Input 2 Min. Sensor Range	BAV	AV:122	ai2_min
Analog Input 2 Max. Sensor Range	BAV	AV:132	ai2_max
Analog Input 3 (Foot-Candles)	BAV	AV:103	ai3_fc_61
Analog Input 3 (LUX)	BAV	AV:113	ai3_lux_61
Analog Input 3 Min. Sensor Range	BAV	AV:123	ai3_min
Analog Input 3 Max. Sensor Range	BAV	AV:133	ai3_max
Analog Input 4 (Foot-Candles)	BAV	AV:104	ai4_fc_61
Analog Input 4 (LUX)	BAV	AV:114	ai4_lux_61
Analog Input 4 Min. Sensor Range	BAV	AV:124	ai4_min
Analog Input 4 Max. Sensor Range	BAV	AV:134	ai4_max
Analog Input 5 (Foot-Candles)	BAV	AV:105	ai5_fc_61
Analog Input 5 (LUX)	BAV	AV:115	ai5_lux_61
Analog Input 5 Min. Sensor Range	BAV	AV:125	ai5_min
Analog Input 5 Max. Sensor Range	BAV	AV:135	ai5_max
Analog Input 6 (Foot-Candles)	BAV	AV:106	ai6_fc_61
Analog Input 6 (lux)	BAV	AV:116	ai6_lux_61
Analog Input 6 Min. Sensor Range	BAV	AV:126	ai6_min
Analog Input 6 Max. Sensor Range	BAV	AV:136	ai6_max

BACnet Points

Name	Type	Object ID	Object Name
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Relay Status

Relay 1 Status	BBV	BV:201	relay1stat_61
Relay 2 Status	BBV	BV:202	relay2stat_61
Relay 3 Status	BBV	BV:203	relay3stat_61
Relay 4 Status	BBV	BV:204	relay4stat_61
Relay 5 Status	BBV	BV:205	relay5stat_61
Relay 6 Status	BBV	BV:206	relay6stat_61
Relay 7 Status	BBV	BV:207	relay7stat_61
Relay 8 Status	BBV	BV:208	relay8stat_61
Relay 9 Status	BBV	BV:209	relay9stat_61
Relay 10 Status	BBV	BV:210	relay10stat_61
Relay 11 Status	BBV	BV:211	relay11stat_61
Relay 12 Status	BBV	BV:212	relay12stat_61
Relay 13 Status	BBV	BV:213	relay13stat_61
Relay 14 Status	BBV	BV:214	relay14stat_61
Relay 15 Status	BBV	BV:215	relay15stat_61
Relay 16 Status	BBV	BV:216	relay16stat_61
Relay 17 Status	BBV	BV:217	relay17stat_61
Relay 18 Status	BBV	BV:218	relay18stat_61
Relay 19 Status	BBV	BV:219	relay19stat_61
Relay 20 Status	BBV	BV:220	relay20stat_61
Relay 21 Status	BBV	BV:221	relay21stat_61
Relay 22 Status	BBV	BV:222	relay22stat_61
Relay 23 Status	BBV	BV:223	relay23stat_61
Relay 24 Status	BBV	BV:224	relay24stat_61
Relay 25 Status	BBV	BV:225	relay25stat_61
Relay 26 Status	BBV	BV:226	relay26stat_61
Relay 27 Status	BBV	BV:227	relay27stat_61
Relay 28 Status	BBV	BV:228	relay28stat_61
Relay 29 Status	BBV	BV:229	relay29stat_61
Relay 30 Status	BBV	BV:230	relay30stat_61
Relay 31 Status	BBV	BV:231	relay31stat_61
Relay 32 Status	BBV	BV:232	relay32stat_61
Relay 33 Status	BBV	BV:233	relay33stat_61
Relay 34 Status	BBV	BV:234	relay34stat_61
Relay 35 Status	BBV	BV:235	relay35stat_61
Relay 36 Status	BBV	BV:236	relay36stat_61

BACnet Points

Name	Type	Object ID	Object Name
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Relay Status

Relay 37 Status	BBV	BV:237	relay37stat_61
Relay 38 Status	BBV	BV:238	relay38stat_61
Relay 39 Status	BBV	BV:239	relay39stat_61
Relay 40 Status	BBV	BV:240	relay40stat_61
Relay 41 Status	BBV	BV:241	relay41stat_61
Relay 42 Status	BBV	BV:242	relay42stat_61
Relay 43 Status	BBV	BV:243	relay43stat_61
Relay 44 Status	BBV	BV:244	relay44stat_61
Relay 45 Status	BBV	BV:245	relay45stat_61
Relay 46 Status	BBV	BV:246	relay46stat_61
Relay 47 Status	BBV	BV:247	relay47stat_61
Relay 48 Status	BBV	BV:248	relay48stat_61
Relay 49 Status	BBV	BV:249	relay49stat_61
Relay 50 Status	BBV	BV:250	relay50stat_61
Relay 51 Status	BBV	BV:251	relay51stat_61
Relay 52 Status	BBV	BV:252	relay52stat_61
Relay 53 Status	BBV	BV:253	relay53stat_61
Relay 54 Status	BBV	BV:254	relay54stat_61
Relay 55 Status	BBV	BV:255	relay55stat_61
Relay 56 Status	BBV	BV:256	relay56stat_61
Relay 57 Status	BBV	BV:257	relay57stat_61
Relay 58 Status	BBV	BV:258	relay58stat_61
Relay 59 Status	BBV	BV:259	relay59stat_61
Relay 60 Status	BBV	BV:260	relay60stat_61

BACnet Points

Name	Type	Object ID	Object Name
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Relay Status (Range)

Relays Status 1-8	BAV	AV:201	relays_1-8_61
Relays Status 9-16	BAV	AV:202	relays_9-16_61
Relays Status 17-24	BAV	AV:203	relays_17-24_61
Relays Status 25-32	BAV	AV:204	relays_25-32_61
Relays Status 33-40	BAV	AV:205	relays_33-40_61
Relays Status 41-48	BAV	AV:206	relays_41-48_61
Relays Status 49-56	BAV	AV:207	relays_49-56_61
Relays Status 57-60	BAV	AV:208	relays_57-60_61

Binary Position	1	2	3	4	5	6	7	8
Position Value	1	2	4	8	16	32	64	128

Relay Range 1-8	1	2	3	4	5	6	7	8
Relay Range 9-16	9	10	11	12	13	14	15	16
Relay Range 17-24	17	18	19	20	21	22	23	24
Relay Range 25-32	25	26	27	28	29	30	31	32
Relay Range 33-40	33	34	35	36	37	38	39	40
Relay Range 41-48	41	42	43	44	45	46	47	48
Relay Range 49-56	49	50	51	52	53	54	55	56
Relay Range 57-60	57	58	59	60	n/a	n/a	n/a	n/a

N2 Integration Overview

BAS Integration involves three components N2 Address, Groups, and Communication Objects.

N2 Address

The BAS identifies each Lx5 controller on a N2 internetwork utilizing the Lx5 controller's N2 Address. (See page 28)

Groups

The BAS controls lighting through Groups. (See USB Tech Kit User Guide for Group configuration instructions.) Each communication is addressed to one of up to 60 Groups controlled by each Lx5.

Communication Points

The BAS specifies actions of a Group by addressing one of three standard communication points. Identification of these points is achieved with a Point Address. (See page 28)

N2 Address

The N2 Address (1-255) allows the BAS to identify specific Lx5 controllers on a N2 network. This address is configured using the SW1 Dip Switch as well as SW3 and SW4 rotary switches.* Each controller must have a unique Address on the BAS Internetwork.

N2 Communication Points

The BAS specifies actions of a Group by addressing one of three standard communication points.

Group Command
Group Status
Sensor Values

N2 Group Command

A Group Command is a BAS request that an Lx5 Group perform an action. The Lx5 supports N2 Binary Output (BO) for this communication point.

Binary Output (BO)
0 = Command Group OFF
1 = Command Group ON

N2 Group Status

A Group Status is a BAS request that an Lx5 Group return data regarding its current state. The Lx5 supports N2 Binary Input (BI) for this communication point.

Binary Input (BI)
0 = Group Status OFF
1 = Group Status ON

N2 Sensor Value

A Sensor Value is a BAS request that an Lx5 Group return data regarding the state of one of six analog inputs (typically Light Level Sensors). The Lx5 supports Analog Data Input (ADI) for this communication object.

Analog Data Input (ADI)

Valid Values (0 to 255)

* Refer to Lx5 Hardware User Guide for addressing instructions.

N2 Points

Point Name	Point Type	Point Address
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Group 1

Group Command Binary Output	BO	BO1
Group Status Binary Input	BI	BI1

Group 2

Group Command Binary Output	BO	BO2
Group Status Binary Input	BI	BI2

Group 3

Group Command Binary Output	BO	BO3
Group Status Binary Input	BI	BI3

Group 4

Group Command Binary Output	BO	BO4
Group Status Binary Input	BI	BI4

Group 5

Group Command Binary Output	BO	BO5
Group Status Binary Input	BI	BI5

Group 6

Group Command Binary Output	BO	BO6
Group Status Binary Input	BI	BI6

Group 7

Group Command Binary Output	BO	BO7
Group Status Binary Input	BI	BI7

Group 8

Group Command Binary Output	BO	BO8
Group Status Binary Input	BI	BI8

Group 9

Group Command Binary Output	BO	BO9
Group Status Binary Input	BI	BI9

Group 10

Group Command Binary Output	BO	BO10
Group Status Binary Input	BI	BI10

Group 11

Group Command Binary Output	BO	BO11
Group Status Binary Input	BI	BI11

N2 Points

Point Name	Point Type	Point Address
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Group 12

Group Command Binary Output	BO	BO12
Group Status Binary Input	BI	BI12

Group 13

Group Command Binary Output	BO	BO13
Group Status Binary Input	BI	BI13

Group 14

Group Command Binary Output	BO	BO14
Group Status Binary Input	BI	BI14

Group 15

Group Command Binary Output	BO	BO15
Group Status Binary Input	BI	BI15

Group 16

Group Command Binary Output	BO	BO16
Group Status Binary Input	BI	BI16

Group 17

Group Command Binary Output	BO	BO17
Group Status Binary Input	BI	BI17

Group 18

Group Command Binary Output	BO	BO18
Group Status Binary Input	BI	BI18

Group 19

Group Command Binary Output	BO	BO19
Group Status Binary Input	BI	BI19

Group 20

Group Command Binary Output	BO	BO20
Group Status Binary Input	BI	BI20

Group 21

Group Command Binary Output	BO	BO21
Group Status Binary Input	BI	BI21

Group 22

Group Command Binary Output	BO	BO22
Group Status Binary Input	BI	BI22

N2 Points

Point Name	Point Type	Point Address
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Group 23

Group Command Binary Output	BO	BO23
Group Status Binary Input	BI	BI23

Group 24

Group Command Binary Output	BO	BO24
Group Status Binary Input	BI	BI24

Group 25

Group Command Binary Output	BO	BO25
Group Status Binary Input	BI	BI25

Group 26

Group Command Binary Output	BO	BO26
Group Status Binary Input	BI	BI26

Group 27

Group Command Binary Output	BO	BO27
Group Status Binary Input	BI	BI27

Group 28

Group Command Binary Output	BO	BO28
Group Status Binary Input	BI	BI28

Group 29

Group Command Binary Output	BO	BO29
Group Status Binary Input	BI	BI29

Group 30

Group Command Binary Output	BO	BO30
Group Status Binary Input	BI	BI30

Group 31

Group Command Binary Output	BO	BO31
Group Status Binary Input	BI	BI31

Group 32

Group Command Binary Output	BO	BO32
Group Status Binary Input	BI	BI32

Group 33

Group Command Binary Output	BO	BO33
Group Status Binary Input	BI	BI33

N2 Points

Point Name	Point Type	Point Address
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Group 34

Group Command Binary Output	BO	BO34
Group Status Binary Input	BI	BI34

Group 35

Group Command Binary Output	BO	BO35
Group Status Binary Input	BI	BI35

Group 36

Group Command Binary Output	BO	BO36
Group Status Binary Input	BI	BI36

Group 37

Group Command Binary Output	BO	BO37
Group Status Binary Input	BI	BI37

Group 38

Group Command Binary Output	BO	BO38
Group Status Binary Input	BI	BI38

Group 39

Group Command Binary Output	BO	BO39
Group Status Binary Input	BI	BI39

Group 40

Group Command Binary Output	BO	BO40
Group Status Binary Input	BI	BI40

Group 41

Group Command Binary Output	BO	BO41
Group Status Binary Input	BI	BI41

Group 42

Group Command Binary Output	BO	BO42
Group Status Binary Input	BI	BI42

Group 43

Group Command Binary Output	BO	BO43
Group Status Binary Input	BI	BI43

Group 44

Group Command Binary Output	BO	BO44
Group Status Binary Input	BI	BI44

N2 Points

Point Name	Point Type	Point Address
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Group 45

Group Command Binary Output	BO	BO45
Group Status Binary Input	BI	BI45

Group 46

Group Command Binary Output	BO	BO46
Group Status Binary Input	BI	BI46

Group 47

Group Command Binary Output	BO	BO47
Group Status Binary Input	BI	BI47

Group 48

Group Command Binary Output	BO	BO48
Group Status Binary Input	BI	BI48

Group 49

Group Command Binary Output	BO	BO49
Group Status Binary Input	BI	BI49

Group 50

Group Command Binary Output	BO	BO50
Group Status Binary Input	BI	BI50

Group 51

Group Command Binary Output	BO	BO51
Group Status Binary Input	BI	BI51

Group 52

Group Command Binary Output	BO	BO52
Group Status Binary Input	BI	BI52

Group 53

Group Command Binary Output	BO	BO53
Group Status Binary Input	BI	BI53

Group 54

Group Command Binary Output	BO	BO54
Group Status Binary Input	BI	BI54

Group 55

Group Command Binary Output	BO	BO55
Group Status Binary Input	BI	BI55

N2 Points

Point Name	Point Type	Point Address
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Group 56

Group Command Binary Output	BO	BO56
Group Status Binary Input	BI	BI56

Group 57

Group Command Binary Output	BO	BO57
Group Status Binary Input	BI	BI57

Group 58

Group Command Binary Output	BO	BO58
Group Status Binary Input	BI	BI58

Group 59

Group Command Binary Output	BO	BO59
Group Status Binary Input	BI	BI59

Group 60

Group Command Binary Output	BO	BO60
Group Status Binary Input	BI	BI60

Sensor Value

Analog Data Input	ADI	ADI126
Analog Data Input	ADI	ADI127
Analog Data Input	ADI	ADI128
Analog Data Input	ADI	ADI129
Analog Data Input	ADI	ADI130
Analog Data Input	ADI	ADI131