BDG-ILINQA

Daikin *iLINQ*

BACnet® Design Guide

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⚠ WARNING

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Outline

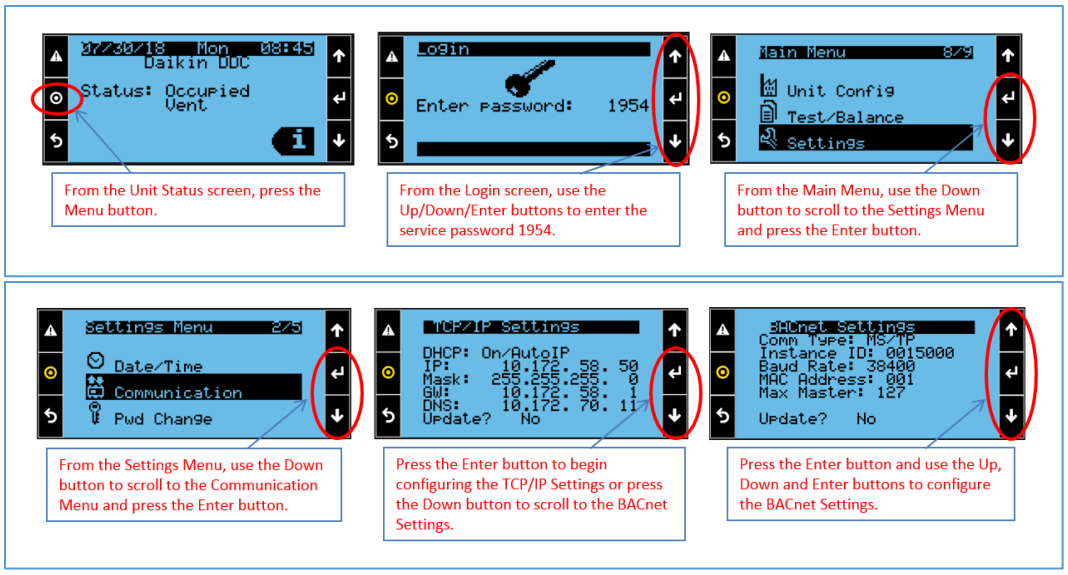
About this document

This guide describes the BACnet® communication functionality supported by the Daikin *iLINQ* controller and provides a description of the related configuration settings. It is not intended to provide a complete overview of the standard *BACnet* protocol, network, and wiring guidelines which must be followed to ensure the successful implementation of a *BACnet* network.

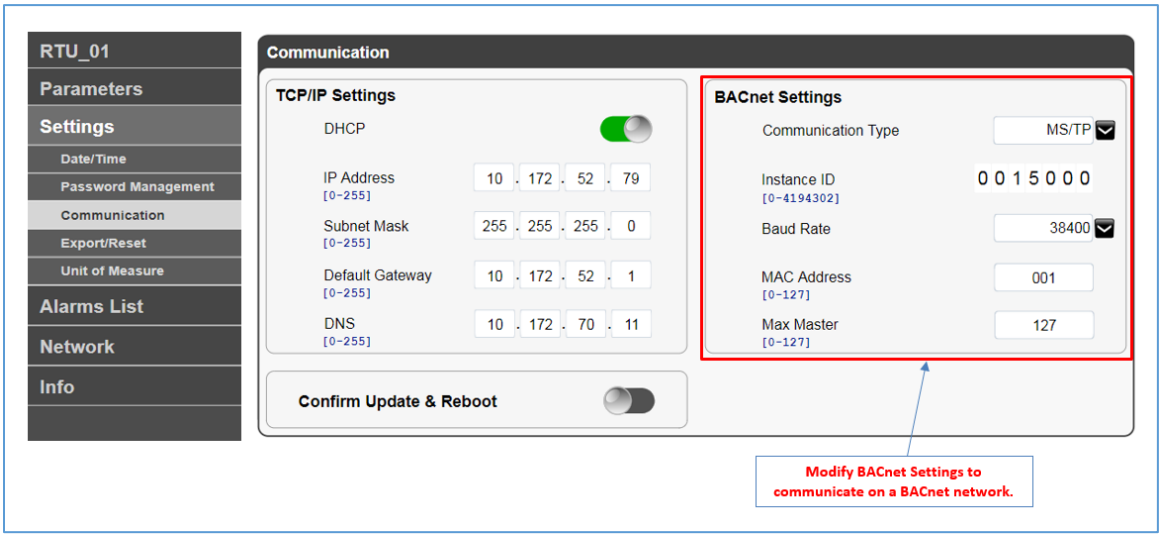
BACnet® Integration Guide
Communication Settings Menu

The Daikin *iLINQ* DDC Controller comes from the factory with the ability to communicate on *BACnet* MS/TP or *BACnet* IP networks with no additional hardware. The communication settings that must be configured should be determined based on the type of network where the controller is to be installed.

To access the *BACnet* communication settings from the onboard LCD display, follow the procedure outlined below. If the default service password has been modified, use the current service account password.



The settings can also be accessed through the web interface on the communication settings page.

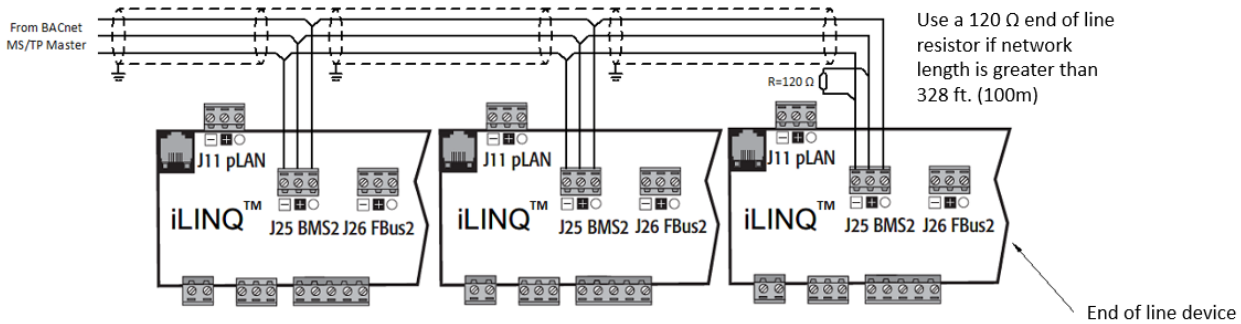


BACnet® Communication Settings

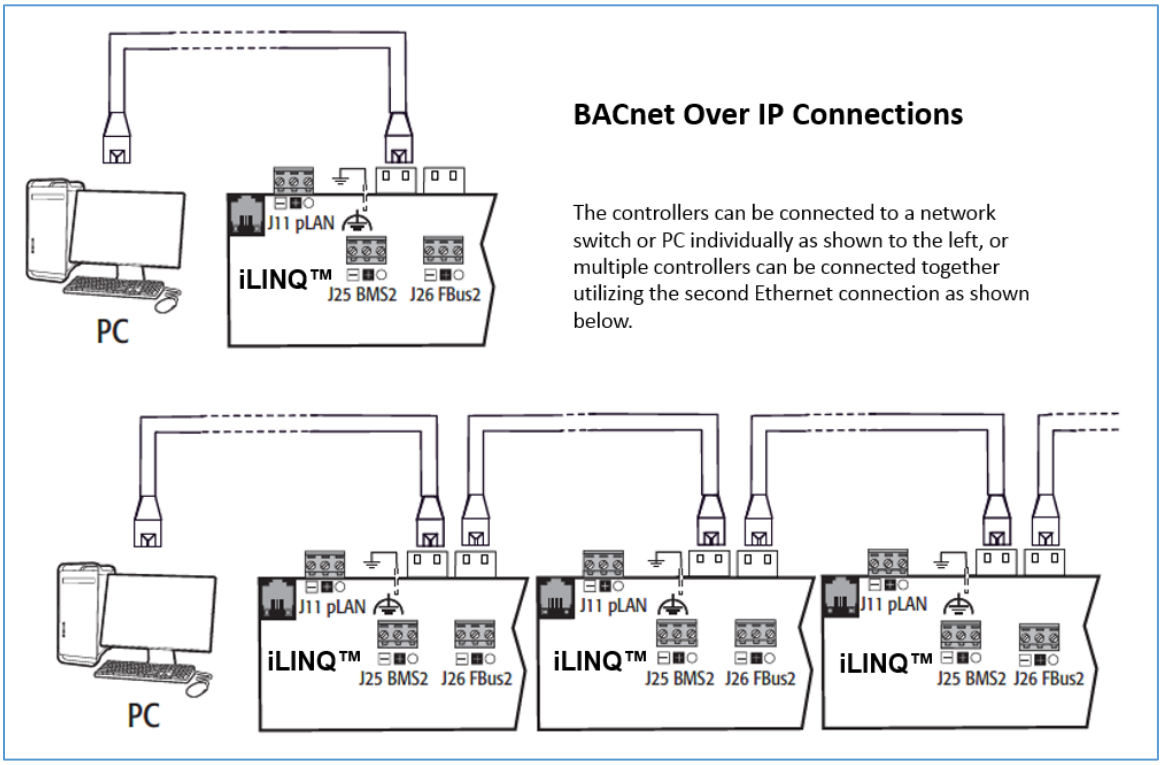
NAME	LCD DISPLAY	DESCRIPTION	DEFAULT	RANGE
Communication Type	Comm Type	Select from *BACnet* MS/TP, and *BACnet* IP communication types.	MS/TP	N/A
Instance ID	Instance ID	Enter the *BACnet* Instance ID of the controller.	15000	0-4194302
Baud Rate	Baud Rate	Select from 9600, 19200, 38400, 57600, and 76800 communication speeds.	38400	N/A
MAC Address	MAC Address	Enter the *BACnet* MAC Address of the controller.	1	0-127
Max Master	Max Master	Enter the *BACnet* Max Master of the connected network.	127	0-127
Update	Update	When Update is set to Yes, the modified settings are implemented and the controller restarts.	No	N/A

Communication Type: The controller *BACnet* communication can be configured to use Master-Slave / Token-Passing (MS/TP) over RS485 or *BACnet*/IP physical layers. When the Communication Type is set to MS/TP, the controller should be connected to the *BACnet* network by wiring to terminal J25 BMS2 serial port. Use a low capacitance 22 or 24 AWG 3-wire shielded cable connected as shown. If the network segment is more than 328 ft. (100 m) long, a 120 Ω ¼ W terminating resistor should be used at the first and last device on the network segment. The shield on each cable should be grounded on one end, and the shields of cables between controllers should be tied together.

BACnet MS/TP Wiring



When the Communication Type is set to IP, the controller should be connected to the *BACnet* network using one of the two Ethernet ports on the controller using CAT-5e shielded cables. Make the earth ground connection using the male spade near the Ethernet connectors. The maximum length of a CAT-5e Ethernet connection is 328 ft. (100 m) between consecutive devices. When *BACnet*/IP communication is used, the TCP/IP settings in the controller must also be configured to allow the controller access to the building Ethernet network.



Instance ID: The Instance ID is used to identify the device on the *BACnet* network and must be unique across the entire *BACnet* internetwork. The Instance ID can be set from 0 – 4,194,302 and should be assigned by the *BACnet* network designer to ensure that that the setting will not conflict with other existing devices on the network.

Baud Rate: The Baud Rate is the rate at which data is communicated between devices on the *BACnet* MS/TP network and all devices connected to the same MS/TP segment must be configured to use the same Baud Rate. The Baud Rate setting in the DDC controller can be configured as 9600, 19200, 38400, 57600, or 76800 bits per second. If the Communication Type is selected as IP, the Baud Rate setting is not applicable.

MAC Address: The MAC Address setting represents the MS/TP MAC address assigned to the controller. The MAC Address can be set to a value from 0 – 127 and must be unique among devices on the same MS/TP segment. It is recommended to assign all of the devices on a network to adjacent addresses without gaps so that polling for device addresses that do not exist can be minimized. If the Communication Type is selected as IP, the MAC Address setting is not applicable.

Max Master: The Max Master setting defines the highest MAC address that the controller will attempt to poll when passing the token. The Max Master can be set to a value from 0 – 127 and the default setting of 127 may be sufficient on the network. The Max Master setting can be optimized to improve network efficiency by setting it equal to the highest device address on the

network. However, if any additional devices are added to the network, the Max Master setting will need to be updated to include the additional device addresses.

COV Subscriptions: The controller supports *BACnet* COV subscriptions. The default COV Increments are set according to the type of value represented by the *BACnet* object and are listed in the table below. The COV Increment of each Analog Input and Analog Value can be modified from the *BACnet* Client to reduce unnecessary network communication.

OBJECT TYPE	COV INCREMENT
Temperature	0.25
Humidity	0.5
Percentage	0.5
CO2	10
Pressure	5
Enthalpy	0.25
Time	0.5

BACnet® Objects List

TYPE	INST.	VARIABLE NAME	VARIABLE DESCRIPTION	UNITS	MIN.	MAX.	R/W
AI	0	SpaceTemp	Space Temperature	°F	---	---	R
AI	1	SupplyAirTemp	Supply Air Temperature	°F	---	---	R
AI	2	SlideAdjustConv	Calculated Local Setpoint Adjust Value	Δ°F	---	---	R
AI	3	SpaceHumidity	Space Humidity	%RH	0.0	100.0	R
AI	4	OutdoorAirTemp	Outdoor Air Temperature	°F	---	---	R
AI	5	OutdoorAirHum	Outdoor Air Humidity	%RH	0.0	100.0	R
AI	6	EconomizerFeedback	Economizer Damper Position Feedback	%	0.0	100.0	R
AI	7	CO2	Space CO2	ppm	0.0	2000.0	R
AI	8	HeadPres1	Head Pressure for circuit 1	psi	---	---	R
AI	9	HeadPres2	Head Pressure for circuit 2	psi	---	---	R
AI	10	SuctionPres1	Suction Pressure for circuit 1	psi	---	---	R
AI	11	SuctionPres2	Suction Pressure for circuit 2	psi	---	---	R
AV	0	EconDamperPosSet	Economizer Damper Position Command	%	0.0	100.0	R
AV	1	OutdoorEnthalpy	Outdoor Enthalpy	Btu/Lb	---	---	R
AV	2	SpaceEnthalpy	Space Enthalpy	Btu/Lb	---	---	R
AV	3	ReheatValvePos	Reheat Valve position Feedback From EVD	%	0.0	100.0	R
AV	4	BlowerSpeed	Blower Speed Command	%	0.0	100.0	R
AV	5	SCRHeat	SCR Heat Command	%	0.0	100.0	R
AV	6	ActiveCoolingSP	Active Space Temperature Cooling Setpoint	°F	---	---	R
AV	7	ActiveHeatingSP	Active Space Temperature Heating Setpoint	°F	---	---	R
AV	8	ActiveSATSP	Active Supply Air Temperature setpoint	°F	---	---	R
AV	9	ActiveHumiditySP	Active Space Humidity Setpoint	%RH	0.0	100.0	R
AV	10	EffCoolingLoad	Effective Cooling Load	%	0.0	100.0	R
AV	11	EffHeatingLoad	Effective Heating Load	%	0.0	100.0	R
AV	12	SpaceTempNetwork	Space Temperature Network - From BAS	°F	---	---	R/W
AV	13	SpaceHumidityNetwork	Space Humidity Network - From BAS	%RH	0.0	100.0	R/W
AV	14	OutdoorAirHumNetwork	Outdoor Air Humidity Network - From BAS	%RH	0.0	100.0	R/W
AV	15	OutdoorAirTempNetwork	Outdoor Air Temperature Network - From BAS	°F	---	---	R/W
AV	16	CO2Network	CO2Network - From BAS	ppm	0.0	2000.0	R/W
AV	17	OccCoolSP	Occupied Space Temperature Cooling Setpoint	°F	40.0	90.0	R/W
AV	18	OccHeatSP	Occupied Space Temperature Heating Setpoint	°F	40.0	90.0	R/W
AV	19	UnoccCoolOffset	Unoccupied Space Temperature Cooling Offset	Δ°F	0.0	50.0	R/W
AV	20	UnoccHeatOffset	Unoccupied Space Temperature Heating Offset	Δ°F	0.0	50.0	R/W
AV	21	SpaceHumBand	Space Humidity Control Band	%RH	2.0	20.0	R/W
AV	22	SpaceTempAlarmOffset	Space Temperature Alarm Offset	Δ°F	1.0	30.0	R/W
AV	23	SpaceHumAlarmOffset	Space Humidity Alarm Offset	%RH	1.0	30.0	R/W
AV	24	SpaceHumSP	Occupied Space Humidity Setpoint	%RH	0.0	100.0	R/W
AV	25	AuxHeatSpaceTempOffset	Auxiliary Heat Space Temperature Setpoint Offset	Δ°F	0.0	10.0	R/W
AV	26	LoadShedOffsetTemp	Load Shedding Space Temperature Setpoint Offset	Δ°F	0.0	30.0	R/W
AV	27	LoadShedOffsetHum	Load Shedding Space Temperature Setpoint Offset	%RH	0.0	50.0	R/W
AV	28	SpaceHumUnoccOffset	Space Humidity Unoccupied Setpoint Offset	%RH	0.0	50.0	R/W
AV	29	SlideAdjustOffset	Maximum Local Setpoint Adjust	Δ°F	0.0	10.0	R/W
AV	30	CoolingBand	Space Temperature Cooling Proportional Control Band	Δ°F	2.0	8.0	R/W

TYPE	INST.	VARIABLE NAME	VARIABLE DESCRIPTION	UNITS	MIN.	MAX.	R/W
AV	31	MechCoolAlarmOffset	Mechanical Cooling Failure Alarm Supply Temperature Offset	Δ°F	0.0	30.0	R/W
AV	32	HeatingBand	Space Temperature Heating Proportional Control Band	Δ°F	2.0	8.0	R/W
AV	33	MechHeatAlarmOffset	Mechanical Heating Failure Alarm Supply Temperature Offset	Δ°F	0.0	30.0	R/W
AV	34	LowSupplyAirAlarmSP	Low Supply Air Temperature Alarm Setpoint	°F	0.0	50.0	R/W
AV	35	HighSupplyAirAlarmSP	High Supply Air Temperature Alarm Setpoint	°F	100.0	180.0	R/W
AV	36	SupplyAirCoolSP	Supply Air Temperature Cooling Cutoff Setpoint	°F	35.0	55.0	R/W
AV	37	SupplyAirHeatSP	Supply Air Temperature Heating Cutoff Setpoint	°F	80.0	180.0	R/W
AV	38	DehumMinSATSP	Minimum Supply Air Temperature Setpoint during dehumidification	°F	50.0	65.0	R/W
AV	39	DehumMaxSATSP	Maximum Supply Air Temperature Setpoint during dehumidification	°F	65.0	75.0	R/W
AV	40	CoolingOALockout	Cooling Outdoor Air Temperature Lockout	°F	0.0	100.0	R/W
AV	41	HeatingOALockout	Heating Outdoor Air Temperature Lockout	°F	0.0	100.0	R/W
AV	42	HeatPumpOALockout	Heat Pump Outdoor Air Temperature Lockout	°F	-10.0	50.0	R/W
AV	43	OAEconFixedDrybulb	Economizer Outdoor Air Drybulb Temperature Enable Setpoint	°F	35.0	90.0	R/W
AV	44	OAEconFixedEnthalpy	Economizer Outdoor Air Enthalpy Enable Setpoint	Btu/Lb	10.0	40.0	R/W
AV	45	OAEconDiffDrybulb	Economizer Outdoor Air Drybulb Temperature Differential Setpoint	Δ°F	1.0	10.0	R/W
AV	46	OAEconDiffEnthalpy	Economizer Outdoor Air Enthalpy Differential Setpoint	Btu/Lb	0.5	10.0	R/W
AV	47	CO2SP	Space CO2 Setpoint	ppm	500.0	1500.0	R/W
AV	48	CO2Band	Space CO2 Control Band	ppm	100.0	500.0	R/W
AV	49	CO2AlarmOffset	Space CO2 Alarm Offset	ppm	1.0	1000.0	R/W
AV	50	VentFanSpeed	Blower Speed for Vent Mode	%	0.0	100.0	R/W
AV	51	CoolLowFanSpeed	Blower Speed for Cooling Stage 1	%	0.0	100.0	R/W
AV	52	CoolHighFanSpeed	Blower Speed for Cooling Stage 2	%	0.0	100.0	R/W
AV	53	HeatLowFanSpeed	Blower Speed for Heating Stage 1	%	0.0	100.0	R/W
AV	54	HeatHighFanSpeed	Blower Speed for Heating Stage 2	%	0.0	100.0	R/W
AV	55	EconMinVentDCV	Minimum Economizer position for vent mode when Demand Control Ventilation is active	%	0.0	99.9	R/W
AV	56	EconMinCoolLowDCV	Minimum Economizer position for Stage 1 Cooling when Demand Control Ventilation is active	%	0.0	99.9	R/W
AV	57	EconMinCoolHighDCV	Minimum Economizer position for Stage 2 Cooling when Demand Control Ventilation is active	%	0.0	99.9	R/W
AV	58	EconMinHeatLowDCV	Minimum Economizer position for Stage 1 Heating when Demand Control Ventilation is active	%	0.0	99.9	R/W
AV	59	EconMinHeatHighDCV	Minimum Economizer position for Stage 2 Heating when Demand Control Ventilation is active	%	0.0	99.9	R/W
AV	60	EconMinVent	Minimum Economizer position for vent mode	%	0.0	99.9	R/W
AV	61	EconMinCoolLow	Minimum Economizer position for Stage 1 Cooling	%	0.0	99.9	R/W
AV	62	EconMinCoolHigh	Minimum Economizer position for Stage 2 Cooling	%	0.0	99.9	R/W
AV	63	EconMinHeatLow	Minimum Economizer position for Stage 1 Heating	%	0.0	99.9	R/W
AV	64	EconMinHeatHigh	Minimum Economizer position for Stage 2 Heating	%	0.0	99.9	R/W
AV	65	CompMinRunTime	Compressor Minimum Run Time	min	0.0	10.0	R/W
AV	66	CompMinOffTime	Compressor Minimum Off Time	min	1.0	10.0	R/W

TYPE	INST.	VARIABLE NAME	VARIABLE DESCRIPTION	UNITS	MIN.	MAX.	R/W
AV	67	HeatMinRunTime	Heating Minimum Run Time	min	0.0	10.0	R/W
AV	68	HeatMinOffTime	Heating Minimum Off Time	min	1.0	10.0	R/W
AV	69	DehumMinRunTime	Dehumidification Minimum Run Time	min	1.0	60.0	R/W
AV	70	SpaceTempAlarmTimeDelay	Space Temperature Alarm Time Delay	min	5.0	120.0	R/W
AV	71	SpaceHumAlarmTimeDelay	Space Humidity Alarm time delay	min	5.0	120.0	R/W
AV	72	MechAlarmTimeDelay	Mechanical Cooling/Heating Alarm Time Delay	min	5.0	120.0	R/W
AV	73	MaxOptStartTime	Maximum Optimal Start Time	min	0.0	240.0	R/W
AV	74	MaxOptStopTime	Maximum Optimal Stop Time	min	0.0	240.0	R/W
AV	75	CO2AlarmTimeDelay	Space CO2 Alarm Time Delay	min	5.0	120.0	R/W
AV	76	DefrostInterval	Defrost Timer Interval	min	2.0	180.0	R/W
AV	77	LeadLagRunTimeDifferential	Lead Lag Runtime Differential	hr	1.0	300.0	R/W
AV	78	UnitOccupiedStartDelay	Unit Occupied Start Delay	s	0.0	600.0	R/W
AV	79	PushButtonOvrDuration	Push Button Override Time Duration	hr	0.0	8.0	R/W
AV	80	DirtyFilterTimeSetpoint	Filter Run Time Before Alarm	hr	-1.0	2000.0	R/W
AV	81	SpaceTempCalOffset	Space Temperature Calibration Offset	Δ°F	-20.0	20.0	R/W
AV	82	SpaceHumCalOffset	Space Humidity Calibration Offset	%RH	-20.0	20.0	R/W
AV	83	SupplyTempCalOffset	Supply Temperature Calibration Offset	Δ°F	-20.0	20.0	R/W
AV	84	OutdoorTempCalOffset	Outdoor Temperature Calibration Offset	Δ°F	-20.0	20.0	R/W
AV	85	OutdoorHumCalOffset	Outdoor Humidity Calibration Offset	%RH	-20.0	20.0	R/W
AV	86	CO2CalOffset	Space CO2 Calibration Offset	ppm	-200	200	R/W
AV	87	UnitRunTIme	Unit Calculated Run Time	hr	0.0	99999.0	R
AV	88	C1RunTIme	Compressor Calculated Run Time	hr	0.0	99999.0	R
AV	89	C2RunTime	Compressor Calculated Run Time	hr	0.0	99999.0	R
AV	90	C3RunTime	Compressor Calculated Run Time	hr	0.0	99999.0	R
AV	91	C4RunTime	Compressor Calculated Run Time	hr	0.0	99999.0	R
AV	92	FilterRunTIme	Filter Calculated Run Time	hr	0.0	99999.0	R
AV	93	SoftwareRev_BacAv	*BACnet* AV Mirror: Software Revision	---	---	---	R
AV	94	NoOfCompressors_BacAv	*BACnet* AV Mirror: Number of installed compressors	---	1	4	R
AV	95	NumOfFurnaces_BacAv	*BACnet* AV Mirror: Number of Installed Furnaces	---	0	2	R
AV	96	NumAuxiliaryStages_BacAv	*BACnet* AV Mirror: Number of Auxiliary Heat Stages	---	0	2	R
AV	97	NumSuctionPresSensors_BacAv	*BACnet* AV Mirror: Number of Suction Pressure sensors installed	---	1	2	R
AV	98	NumHeadPresSensors_BacAv	*BACnet* AV Mirror: Number of Head Pressure sensors installed	---	1	2	R
AV	99	NumCoolingStages_BacAv	*BACnet* AV Mirror: Number of Cooling Stages	---	1	2	R
AV	100	NumHeatingStages_BacAv	*BACnet* AV Mirror: Number of Heating Stages	---	0	2	R
BI	0	EmergencyShutdown	Emergency Shutdown Input Status	---	---	---	R
BI	1	BlowerProvingSw	Blower Proving Switch Status	---	---	---	R
BI	2	CompPresSw1	Compressor 1 Pressure Switch Status	---	---	---	R
BI	3	CompPresSw2	Compressor 2 Pressure Switch Status	---	---	---	R
BI	4	CompPresSw3	Compressor 3 Pressure Switch Status	---	---	---	R
BI	5	CompPresSw4	Compressor 4 Pressure Switch Status	---	---	---	R
BI	6	DefrostSwitch1	Defrost Switch status for circuit 1	---	---	---	R
BI	7	DefrostSwitch2	Defrost Switch status for circuit 2	---	---	---	R
BI	8	RemoteStartStop	Remote Occupancy Input Status	---	---	---	R
BI	9	LoadShedding	Load Shedding Input Status	---	---	---	R
BI	10	DirtyFilterSw	Dirty Filter Switch Status	---	---	---	R
BI	11	IICFeedback1	IIC Furnace Board 2 Feedback	---	---	---	R
BI	12	IICFeedback2	IIC Furnace Board 1 Feedback	---	---	---	R
BI	13	Tstat_G	G Status for Thermostat mode	---	---	---	R

TYPE	INST.	VARIABLE NAME	VARIABLE DESCRIPTION	UNITS	MIN.	MAX.	R/W
BI	14	Tstat_Y1	Y1 Status for Thermostat mode	---	---	---	R
BI	15	Tstat_Y2	Y2 Status for Thermostat mode	---	---	---	R
BI	16	Tstat_W1	W1 Status for Thermostat mode	---	---	---	R
BI	17	Tstat_W2	W2 Status for Thermostat mode	---	---	---	R
BI	18	Tstat_O	O Status for Thermostat mode	---	---	---	R
BV	0	CoolingLockout	Cooling Lockout	---	---	---	R
BV	1	HeatLockout	Heating Lockout	---	---	---	R
BV	2	HeatPumpHeatLockout	Heat Pump Heating Lockout	---	---	---	R
BV	3	EconomizerEnable	Economizer Enable Status	---	---	---	R
BV	4	DefrostEnabled	Defrost Enabled	---	---	---	R
BV	5	DehumLockout	Dehumidification Lockout	---	---	---	R
BV	6	BlowerStage1	Blower Stage 1 Relay Status	---	---	---	R
BV	7	BlowerStage2	Blower Stage 2 Relay Status	---	---	---	R
BV	8	HeatStage1	Heat Stage 1 Relay Status	---	---	---	R
BV	9	HeatStage2	Heat Stage 2 Relay Status	---	---	---	R
BV	10	RevValve1	Reversing Valve 1 Relay Status	---	---	---	R
BV	11	RevValve2	Reversing Valve 2 Relay Status	---	---	---	R
BV	12	ExhaustFanEna	Exhaust Fan Relay Status	---	---	---	R
BV	13	Compressor1	Compressor 1 Relay Status	---	---	---	R
BV	14	Compressor2	Compressor 2 Relay Status	---	---	---	R
BV	15	Compressor3	Compressor 3 Relay Status	---	---	---	R
BV	16	Compressor4	Compressor 4 Relay Status	---	---	---	R
BV	17	CondFan1	Condenser Fan 1 Relay Status	---	---	---	R
BV	18	CondFan2	Condenser Fan 2 Relay Status	---	---	---	R
BV	19	ReheatPurgeValve	Purge Valve Status : False=Open; True=Closed	---	---	---	R
BV	20	AlarmDO	Alarm Digital Output	---	---	---	R
BV	21	SCRHeatInstalled	SCR Heater Kit is installed	---	---	---	R
BV	22	FanCycling	Fan Cycling	---	---	---	R
BV	23	ReheatInstalled	Modulating Hot Gas Reheat is installed	---	---	---	R
BV	24	ExhaustFanInstalled	Exhaust Fan is installed	---	---	---	R
BV	25	LeadLagEnable	Lead Lag is enabled	---	---	---	R
BV	26	AutoDefrostInterval	Enable Auto Defrost Interval Calculation	---	---	---	R
BV	27	AI_retain.Active	Retained Variable - Alarm status	---	---	---	R
BV	28	AI_Err_retain_write.Active	Write Retained Variable - Alarm status	---	---	---	R
BV	29	AI_HighSupplyAirTemp.Active	High Supply Air Temperature - Alarm status	---	---	---	R
BV	30	AI_Blower.Active	Blower Alarm - Alarm status	---	---	---	R
BV	31	AI_EmergencyShutdown.Active	Emergency Shutdown - Alarm status	---	---	---	R
BV	32	AI_CompPresSW1.Active	Compressor Pressure Switch 1 - Alarm status	---	---	---	R
BV	33	AI_CompPresSW2.Active	Compressor Pressure Switch 2 - Alarm status	---	---	---	R
BV	34	AI_CompPresSW3.Active	Compressor Pressure Switch 3 - Alarm status	---	---	---	R
BV	35	AI_CompPresSW4.Active	Compressor Pressure Switch 4 - Alarm status	---	---	---	R
BV	36	AI_DirtyFilter.Active	Dirty Filter - Alarm status	---	---	---	R
BV	37	AI_LowSupplyAirTemp.Active	Low Supply Air Temperature - Alarm status	---	---	---	R
BV	38	AI_HighSpaceHumidity.Active	High Space Air Humidity - Alarm status	---	---	---	R
BV	39	AI_MechanicalCooling.Active	Mechanical Cooling Failure - Alarm status	---	---	---	R
BV	40	AI_MechanicalHeating.Active	Mechanical Heating Failure - Alarm status	---	---	---	R
BV	41	AI_SpaceTemperature.Active	Space Temperature Alarm - Alarm status	---	---	---	R
BV	42	AI_SpaceTempSensorMissing.Active	Space Temperature Sensor Missing - Alarm status	---	---	---	R

TYPE	INST.	VARIABLE NAME	VARIABLE DESCRIPTION	UNITS	MIN.	MAX.	R/W
BV	43	AI_SupplyAirTempSensorMissing.Active	Supply Air Temperature Sensor Missing - Alarm status	---	---	---	R
BV	44	AI_OutdoorAirTempSensorMissing.Active	Outdoor Air Temperature Sensor Missing - Alarm status	---	---	---	R
BV	45	AI_OutdoorAirHumSensorMissing.Active	Outdoor Air Humidity Sensor Missing - Alarm status	---	---	---	R
BV	46	AI_SpaceHumSensorMissing.Active	Space Humidity Sensor Missing - Alarm status	---	---	---	R
BV	47	AI_HighCO2.Active	High CO2 - Alarm status	---	---	---	R
BV	48	AI_CO2SensorMissing.Active	CO2 Sensor Missing - Alarm status	---	---	---	R
BV	49	AI_EconFeedbackMissing.Active	Economizer Feedback Missing - Alarm status	---	---	---	R
BV	50	AI_EconHighSupplyTemp.Active	Economizer High Supply Air Temperature - Alarm status	---	---	---	R
BV	51	AI_EconDamperOpenAlarm.Active	Economizer Not Modulating Open - Alarm status	---	---	---	R
BV	52	AI_EconDamperClosedAlarm.Active	Economizer Not Modulating Closed - Alarm status	---	---	---	R
BV	53	AI_HeadPres1SensorMissing.Active	Missing Head Pressure 1 Sensor - Alarm status	---	---	---	R
BV	54	AI_HeadPres2SensorMissing.Active	Missing Head Pressure 2 Sensor - Alarm status	---	---	---	R
BV	55	AI_LowSuctionPres1.Active	Low Suction Pressure 1 - Alarm status	---	---	---	R
BV	56	AI_SuctionPres1SensorMissing.Active	Suction Pressure 1 Sensor Missing - Alarm status	---	---	---	R
BV	57	AI_LowSuctionPres2.Active	Low Suction Pressure 2 - Alarm status	---	---	---	R
BV	58	AI_SuctionPres2SensorMissing.Active	Suction Pressure 2 Sensor Missing - Alarm status	---	---	---	R
BV	59	AI_Batt_EVD_1.Active	EVD Battery discharge - Alarm status	---	---	---	R
BV	60	AI_EEPROM_EVD_1.Active	EVD EEPROM Alarm - Alarm status	---	---	---	R
BV	61	AI_IncompleteClosing_EVD_1.Active	EVD Incomplete closing - Alarm status	---	---	---	R
BV	62	AI_EmergencyClosing_EVD_1.Active	EVD Emergency closing - Alarm status	---	---	---	R
BV	63	AI_FW_CompatibErr_EVD_1.Active	EVD Firmware not compatible - Alarm status	---	---	---	R
BV	64	AI_ConfigErr_EVD_1.Active	EVD Configuration Error - Alarm status	---	---	---	R
BV	65	AI_EVD_Offline.Active	EVD Offline - Alarm status	---	---	---	R
BV	66	AI_IIC1Alarm.Active	Furnace Board 1 Feedback Alarm - Alarm status	---	---	---	R
BV	67	AI_IIC2Alarm.Active	Furnace Board 2 Feedback Alarm - Alarm status	---	---	---	R
BV	68	AI_DefrostFailed.Active	Defrost Cycle Incomplete Alarm - Alarm Status	---	---	---	R
MV	0	ScheduleSource	**Schedule Source Configuration** State 1 - Onboard State 2 - Remote Start Stop Only State 3 - Force Occupied State 4 - Force Unoccupied	---	1	4	R/W
MV	1	ScheduleMode_BacMsv	**Schedule Mode Status** State 1 - Unoccupied State 2 - Occupied State 3 - Push Button Override State 4 - Holiday Unoccupied State 5 - Holiday Occupied State 6 - Force Unoccupied State 7 - Force Occupied State 8 - TSTAT State 9 - Optimized Start State 10 - Optimized Stop	---	1	10	R
MV	2	HVACMode_BacMsv	**HVAC Mode Status** State 1 - Off State 2 - Vent State 3 - Cooling State 4 - Econ Cooling State 5 - Heating State 6 - Dehumidification State 7 - Force	---	1	7	R

TYPE	INST.	VARIABLE NAME	VARIABLE DESCRIPTION	UNITS	MIN.	MAX.	R/W
MV	3	LeadCompressor_BacMsv	**Lead Compressor Status** State 1 - Compressor 1 State 2 - Compressor 2 State 3 - Compressors 1&2 State 4 - Compressors 3&4	---	1	4	R
MV	4	UnitConfig_BacMsv	**Unit Configuration** State 1 - AC/Electric Heat State 2 - AC/Gas Heat State 3 - Heat Pump	---	1	3	R
MV	5	FanType_BacMsv	**Fan Type Configuration** State 1 - Single Speed State 2 - Two Speed State 3 - Variable Speed	---	1	3	R
MV	6	EconConfig_BacMsv	**Economizer Type Configuration** State 1 - None State 2 - Installed State 3 - Installed With CO2	---	1	3	R
MV	7	EconEnableSource_BacMsv	**Economizer Enable Source Setting** State 1 - None State 2 - Fixed Drybulb State 3 - Differential Drybulb State 4 - Fixed Enthalpy State 5 - Differential Enthalpy	---	1	5	R
MV	8	ControlMode_BacMsv	**Control Mode Setting** State 1 - DDC State 2 - TSTAT	---	1	2	R
MV	9	SpaceTempSource_BacMsv	**Sensor Source Setting** State 1 - Onboard IO State 2 - Network	---	1	2	R
MV	10	SpaceHumSource_BacMsv	**Sensor Source Setting** State 1 - Onboard IO State 2 - Network	---	1	2	R
MV	11	OutdoorAirTempSource_BacMsv	**Sensor Source Setting** State 1 - Onboard IO State 2 - Network	---	1	2	R
MV	12	OutdoorAirHumSource_BacMsv	**Sensor Source Setting** State 1 - Onboard IO State 2 - Network	---	1	2	R
MV	13	CO2Source_BacMsv	**Sensor Source Setting** State 1 - Onboard IO State 2 - Network	---	1	2	R

Application Examples

Most of the *BACnet* objects listed are intended to be monitored by a building automation system for display on custom graphics and to alert building personnel of potential service needs. Some of the objects can be controlled by a BAS and are identified in the table as R/W. The following are examples of control using the available *BACnet* objects.

Command unit occupancy from the building automation system: In many cases it is preferable to use a central building time schedule that is managed through the BAS rather than setting onboard time schedules in each unit. To implement this, the BAS should write a value of 3 (Force Occupied) to the ScheduleSource object when the building is occupied and write a value of 4 (Force Unoccupied) when the building is unoccupied. The onboard time schedule is ignored and the Optimized Start and Optimized Stop features are not functional. If the Push Button Override Duration (PushButtonOvrDuration) object is set to a value greater than 0, the local space sensor override button or the Remote Start Stop input can still be used for temporary occupancy overrides. The Occupied Start Delay (UnitOccupiedStartDelay) object can be set to a different value in each unit if staggered equipment startup is required.

Set space temperature cooling and heating setpoints: To set the space temperature cooling and heating setpoints, use the Occupied Space Temperature Cooling Setpoint (OccCoolSP) and Occupied Space Temperature Heating Setpoint (OccHeatSP) objects. The Active Space Temperature Cooling Setpoint (ActiveCoolingSP) and Active Space Temperature Heating Setpoint (ActiveHeatingSP) are read only objects that take into account any local user adjustment, load shedding, and unoccupied offsets.

Monitor unit alarm status: Binary Values 27 through 68 represent the status of individual alarms. The Alarm Digital Output (AlarmDO) object is set to TRUE when any alarm is active.

Provide remote sensor values instead of hard-wiring to the controller: Some of the sensors that would normally be installed in the space served by the unit and wired to the unit controller can alternatively have their values provided through *BACnet*. The Space Temperature, Space Humidity, Outdoor Air Temperature, Outdoor Air Humidity, and Space CO2 can each be configured to use values received over network communication instead of the onboard inputs. The *BACnet* objects for the configuration settings are read only so they must be set using the onboard LCD display or the web interface.

NAME	LCD DISPLAY	DESCRIPTION	DEFAULT	RANGE
Space Temperature Source	Space Temp Src	Select from Onboard, and Network to set the source of the space temperature control value.	Onboard	N/A
Space Humidity Source	Space Hum Src	Select from Onboard, and Network to set the source of the space humidity control value.	Onboard	N/A
Outdoor Temperature Source	Outdr Temp Src	Select from Onboard, and Network to set the source of the outdoor air temperature control value.	Onboard	N/A
Outdoor Humidity Source	Outdr Hum Src	Select from Onboard, and Network to set the source of the outdoor air humidity control value.	Onboard	N/A
CO2 Source	Space CO2 Src	Select from Onboard, and Network to set the source of the space CO2 control value.	Onboard	N/A

Once the sensor source settings are configured as Network, the values written to SpaceTempNetwork, SpaceHumidityNetwork, OutdoorAirHumNetwork, OutdoorAirTempNetwork, and CO2Network will be used by the controller logic instead of the value read at the onboard physical input.

WARNING

- Only qualified personnel must complete the installation.
- Consult your Daikin dealer/contractor regarding relocation and reinstallation of the remote controller. Improper installation may result in electric shock or fire.
- Electrical work must be performed in accordance with relevant local and national regulations,
  and with the instructions in this installation manual. Improper installation may cause electric shock or fire.
- Only use specified accessories and parts for installation. Failure to use specified parts may result in electric shock, fire, or controller damage.
- Do not disassemble, reconstruct, or repair. Electric shock or fire may occur.
- Only use specified wiring and verify all wiring is secured. Assure no external forces act on the terminal connections or wires. Improper connections or installation may result in electric shock or fire.
- Confirm power to the unit is OFF before touching electrical components.