Metasys Integrator® Carrier® Application

Introduction

This document explains the Metasys Integrator® Carrier® application. Use this document with the Metasys Integrator unit technical bulletins on the Johnson Controls Product Information site (http://cgproducts.johnsoncontrols.com *System Manuals > Integration > Metasys Integrator)* which provide information on installing and commissioning the Metasys Integrator unit. For information on the Carrier Comfort Network (CCN) DataPort™ device and chillers, see Carrier documentation (obtainable from a Carrier representative).

Note: If you use a Universal Packaging Module (UPM) enclosure, you **must** install the Metasys Integrator 300 Series in a two high enclosure (EN-EWC25-0) rather than a one high enclosure (EN-EWC13-0) as shown in the figures in this application note.

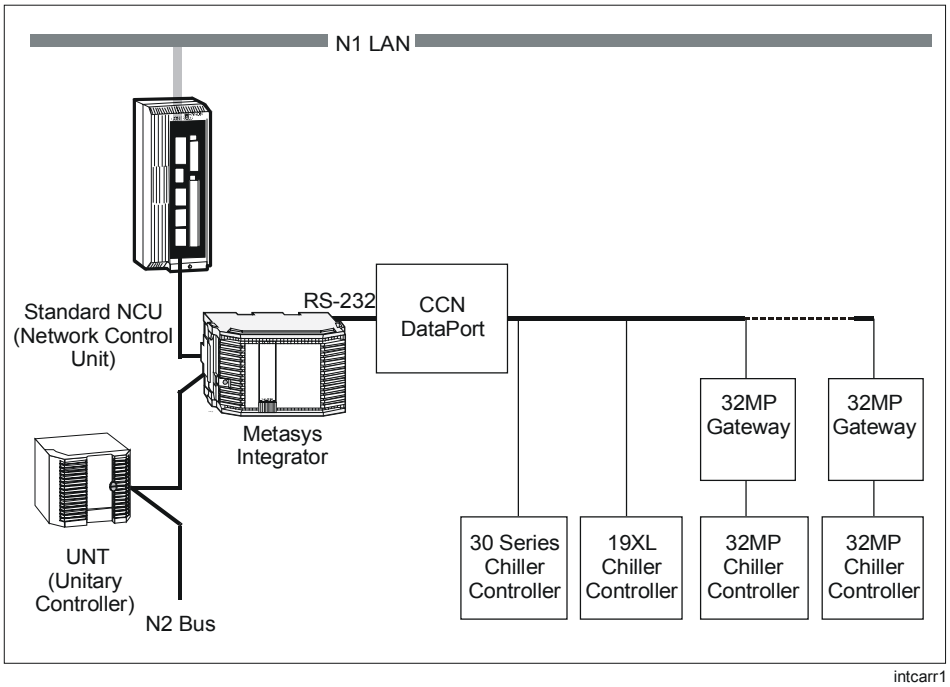
Application Details

Metasys Integrator unit allows Carrier Product Integrated Controls (PIC) equipment to become an integral part of the Metasys® and Metasys Companion Networks. Once a CCN DataPort device or DataLINK™ module is connected to a Metasys or Companion Network via the Metasys Integrator unit, its data is available to the full complement of Metasys Building Automation System (BAS) features, including Change-of-State (COS) monitoring, trend, and totalization.

The DataPort device is an interface that allows information from the CCN to be transmitted to non Carrier devices. Since the DataPort device is a read-only device (that is, the BAS reads only status and data from the mechanical equipment), it does not transmit data or commands from the Metasys System to the mechanical equipment. Single and dual compressor chillers connect to a 32MP Gateway (an input/output module), which connects to the DataPort device. All other Carrier mechanical equipment supported by Metasys Integrator applications connect directly to the DataPort device.

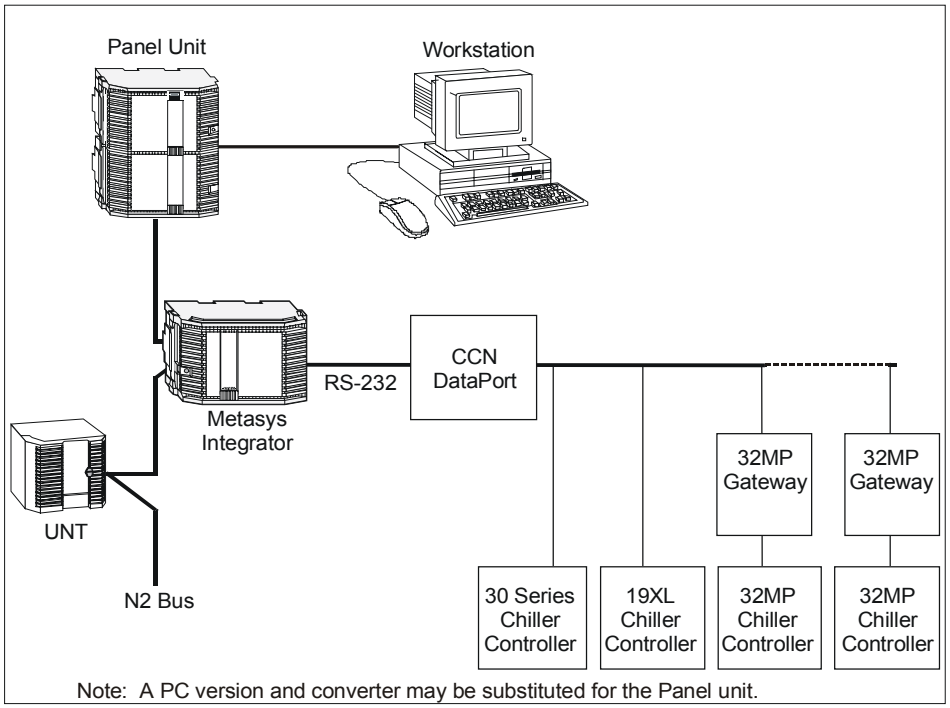
The CCN DataLINK module is an interface device that can read and write values to devices connected to a CCN communication bus. The DataLINK module acts as a data concentrator for the mechanical equipment and as an interface to other equipment. The DataLINK module converts the status information requests from each chiller into American Standard Code for Information Interchange (ASCII) for display.

Each Metasys Integrator vendor port can connect to one DataPort device or DataLINK module. Each DataPort device or DataLINK module can connect to 15 devices.
Figure 1 shows Carrier and Metasys system integration. Figure 2 shows Carrier and Metasys Companion system integration.



Note: If you use a UPM enclosure, you **must** install the Metasys Integrator 300 Series in a two high enclosure (EN-EWC25-0) rather than a one high enclosure (EN-EWC13-0) as shown in the figures in this application note.

Figure 1: Carrier CCN DataPort Device and Metasys System Integration



Note: If you use a UPM enclosure, you **must** install the Metasys Integrator 300 Series in a two high enclosure (EN-EWC25-0) rather than a one high enclosure (EN-EWC13-0) as shown in the figures in this application note.

Figure 2: Carrier CCN DataPort Device and Metasys Companion System Integration

Component Requirements

To integrate the DataPort device or DataLINK module, you need the following:

- properly installed Carrier CCN DataPort device, CCN DataLINK module, 32MP Gateway modules, and chillers
- RS-232 cable (for connecting the DataPort device to the Metasys Integrator unit)
- Metasys Integrator unit
- N2 Bus (for connecting the Metasys Integrator unit to the Metasys or Companion Network)
- portable PC for downloading vendor communication tables (.VCT files) and network setup information into the Metasys Integrator unit, and for running diagnostics
- cable for connecting portable PC to the Metasys Integrator unit
- the correct vendor communication table (.VCT file) to download into the Metasys Integrator unit (supplied on CD-ROM)

This document describes the RS-232 cable and the vendor communication tables. Carrier documentation describes their equipment. The remaining components are described in the Metasys Integrator unit technical bulletins on the Johnson Controls Product Information site (http://cgproducts.johnsoncontrols.com *System Manuals > Integration > Metasys Integrator)*.

Metasys Network Release Requirements

To integrate Carrier equipment into the Metasys Network, you need:

- Metasys Operator Workstation (OWS) software Release 6.0 or later
- Metasys Integrator software/firmware Release 9.0 or later

Metasys Companion Release Requirements

To integrate Carrier equipment into the Metasys Companion Network, you need:

- Metasys Companion Release 5.0 or later
- Metasys Integrator software/firmware Release 9.0 or later

Vendor Component Requirements

Integration between the Metasys Integrator unit and Carrier has been tested with the equipment in Table 1.

Table 1: Equipment and Part Numbers

Carrier Equipment	Part Number
CCN DataPort Device	CEPL130363-01
CCN DataLINK Module*	CEFA121549-01
32MP Gateway	CEFA121301-02 and CEFA121301-05
PIC	---
PICII	---
* The DataLINK module is sometimes referred to as a DataPort II device.	

Changes to the DataPort device or DataLINK module, Gateway, PIC, chillers, or integration of Carrier products not discussed in this document, require additional software development and testing by Johnson Controls Systems Products. For information on integrating other products, refer to the *Custom Integration* section in this document.

Note: 30GT units are no longer shipped with PIC and are available for retrofit only.

Vendor Contact Information

For technical information about Carrier equipment, contact your local Carrier equipment distributor.

Design Considerations

When integrating Carrier equipment, keep the following considerations in mind:

- Make sure all Carrier equipment is set up and running properly **before** attempting to integrate with Metasys or Metasys Companion Network. (The Carrier representative is responsible for operation of DataPort device, Gateway, and chillers.)
- The DataPort device should be set up using full 8-character names for point descriptions. Names less than eight characters should be extended with spaces.
- Make sure the DataPort device or DataLINK module baud rate is set to 9600. (The Carrier representative is responsible for setting the DataPort device baud rate.)
- RS-232 cable distance between the Metasys Integrator unit and the DataPort device can be a maximum of 50 feet.

Cable Connections

Cable Pinouts

Use the following cable pinouts for the RS-232 connection between the Metasys Integrator unit and the Carrier CCN DataPort device and DataLINK module:

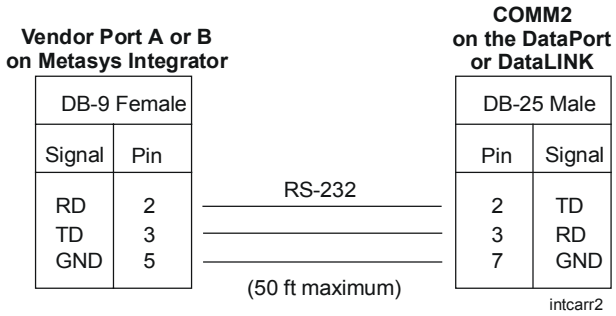


Figure 3: Cable Pinouts

Connecting the Cable

Connect the female end of the RS-232 cable to either Vendor Port A or Vendor Port B on the Metasys Integrator unit. Connect the male end to Port COMM2 on the DataPort device or DataLINK module.

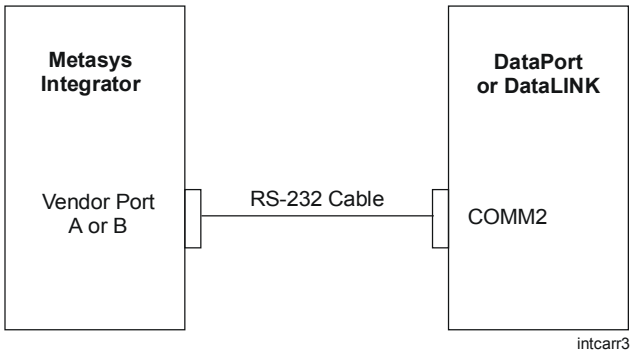


Figure 4: Port-to-Port Connection

Metasys Integrator Unit Setup

To set up the Metasys Integrator unit, use a portable PC connected to the Metasys Integrator Terminal Port. Metasys Integrator unit setup involves:

- downloading the correct vendor communication table (.VCT file)
- setting up the port
- setting up the network addressing

Table 2 provides information specific to the Carrier application. For detailed procedures, see the Metasys Integrator unit technical bulletins on the Johnson Controls Product Information site (http://cgproducts.johnsoncontrols.com *System Manuals > Integration > Metasys Integrator*).

Table 2: Metasys Integrator Unit Setup for 32MP DataPort Device

Vendor Communication Table (.VCT File)	
Single Compressor Chiller (with Rev. 01 or 02 of the 32MP Gateway)	CA_SIGL.VCT
Single compressor Chiller (with Rev. 03, 04, or 05 of the 32 MP Gateway)	CA_SIGL2.VCT
Dual Compressor Chiller **Dual Compressor Chiller (19DR)**	CA_DUAL.VCT CA_19DR.VCT
19DK Centrifugal Chiller	CA_19DK.VCT
19XL Centrifugal Chiller **19EX Centrifugal Chiller**	CA_19XL.VCT
23XL Hermetic Screw Chiller	CA_23XL.VCT
30GB Reciprocating Chiller	CA_30GB.VCT
30GN Reciprocating Chiller	CA_30GN.VCT
30GT Reciprocating Chiller	CA_30GT. VCT
30HS Reciprocating Chiller	CA_30HS. VCT
17FA Centrifugal Chiller-Open Drive **19FA Centrifugal Chiller-Hermetic** **19XR Centrifugal Chiller-Hermetic, Small Tonnage**	CA_17FA. VCT
16JT Absorption Chiller	CDP16JT.VCT
19XR Centrifugal Chiller Hermetic with PICII Controller, Small Tonnage (Version 01)	CDP19XR2.VCT
30HX Water-Cooled Screw Chiller without ComfortLink™ Controls **30GX Air-Cooled Screw Chiller without ComfortLink Controls**	CA_30HX.VCT
Continued on next page . . .	

Vendor Communication Table (.VCT File) (Cont.)	
48EJ Single Package Rooftop Unit **48EK Single Package Rooftop Unit** **48EW Single Package Rooftop Unit** **48EY Single Package Rooftop Unit** **50EJ Single Package Rooftop Unit** **50EK Single Package Rooftop Unit** **50EW Single Package Rooftop Unit** **50EY Single Package Rooftop Unit**	CA_EXRT. VCT
48EJ Single Package Rooftop Unit **48EK Single Package Rooftop Unit** **48EW Single Package Rooftop Unit** **48EY Single Package Rooftop Unit** **50EJ Single Package Rooftop Unit** **50EK Single Package Rooftop Unit** **50EW Single Package Rooftop Unit** **50EY Single Package Rooftop Unit**	CA_EXRT. VCT
Port Setup	
Baud Rate	9600
Word Length	8
Stop Bits	1
Parity	None
Interface	RS-232
Network Setup	
Vendor Address	A through O
Timeout Value (all but 30HX) **Timeout Value for 30HX**	8000 ms 16000 ms
Poll Delay	550 ms
Continued on next page . . .	

Performance Guide (Cont.)	
Approximate Scan Time	
(For a single N2 address)	
Single Compressor Chiller	9 seconds
Dual Compressor Chiller	9 seconds
19DK Centrifugal Chiller	9 seconds
19XL Centrifugal Chiller	9 seconds
19EX Centrifugal Chiller	9 seconds
23XL Hermetic Screw Chiller	9 seconds
30 Series Reciprocating Chiller	9 seconds
17FA Centrifugal Chiller-Open Drive	8 seconds
19FA Centrifugal Chiller-Hermetic	8 seconds
16JT Absorption Chiller	8 seconds
19XR Centrifugal Chiller-Hermetic, Small Tonnage	8 seconds
48/50 EJ, EK, EW, EY Single Package Rooftop Chillers	8 seconds
30GB Reciprocating Chiller	9 seconds
30GM Chiller	9 seconds
30GN Chiller	9 seconds
30GT Chiller	8 seconds
30HS Chiller	8 seconds
30HX Water-Cooled Screw Chiller	18 seconds
30GX Air-Cooled Screw Chiller	18 seconds

Table 3: Metasys Integrator Unit Setup for DataLINK Module

Vendor Communication Table (.VCT File)	
17FA, 19FA Chiller **17EX, 19EX Chiller** **19XL Chiller** **19XR Hermetic Centrifugal Chiller with PICI Controller** **23XL Chiller**	CA_DL_19.VCT
19XR Hermetic Centrifugal Chiller with PICII Controller (Version 01)	CDL19XR2.VCT
48EJ Single Package Rooftop Unit **48EK Single Package Rooftop Unit** **48EW Single Package Rooftop Unit** **48EY Single Package Rooftop Unit** **50EJ Single Package Rooftop Unit** **50EK Single Package Rooftop Unit** **50EW Single Package Rooftop Unit** **50EY Single Package Rooftop Unit**	CDL_RT.VCT
30HX Water-Cooled Screw Chiller without ComfortLink Controls **30GX Air-Cooled Screw Chiller without ComfortLink Controls**	CDL30HX.VCT
30HX Water-Cooled Screw Chiller with ComfortLink Controls **30GX Air-Cooled Screw Chiller with ComfortLink Controls**	C30GXDLC.VCT
30RA AquaSnap™ Chiller with ComfortLink Controls	C30RADL.VCT
Network Setup	
Vendor Address	Device Number (1 to 15)
Timeout Value	5000 ms
Poll Delay	550 ms
Performance Guide	
Approximate Scan Time **(For a Single MIG Device)** **17, 19, 23 Series Chillers**	8 seconds

Point Mapping Tables

The following tables show the points available for mapping in single and dual compressor chillers.

32MP Single Compressor Chiller and 19DK Centrifugal Chiller Points Using DataPort Device

To get the hardware reference for mapping points to a CS object (via the software model), combine the Network Point Type (NPT) and Network Point Address (NPA). For example, the hardware reference for the Demand Limit point is AI2.

The Analog Data Integer (ADI) points (internal parameters) cannot be mapped to standard objects. To monitor the ADIs, map them to Control System (CS) object Analog Data (AD) attributes (which can then be mapped to standard AD objects).

Table 4: 32MP (Version 02) Single Compressor Chiller and 19DK Centrifugal Chiller Point Mapping Using DataPort Device

NPT[1]	NPA[2]	Unit	Description
AI	1	DegF	Leaving Chill Water Setpoint
AI	2	%	Demand Limit
AI	3	DegF	Leaving Chill Water Temperature
AI	4	DegF	Evaporator Refrigerant Trip Point
AI	5	DegF	Evaporator Refrigerant Temperature
AI	6	DegF	Condenser Refrigerant Temperature
AI	7	%	Compressor Motor Current
AI	8	%	Compressor Motor Load
AI	9	DegF	Motor Winding Temperature
AI	10	DegF	Motor Discharge Temperature
AI	11	DegF	Motor Thrust Bearing Temperature
AI	12	DegF	Spare Sensor 1
AI	13	DegF	Spare Sensor 2
AI	14	DegF	Spare Sensor 3
AI	15	DegF	Spare Sensor 4
BI	1		Chiller Start/Stop Status 0-Stop, 1-Start
BI	2		Remote Contact Status 0-Open, 1-Closed
BI	3		Local/Remote Set Remote 0-Local, 1-Remote
ADI	1	code	Chiller Status Code
ADI	2	hour	Compressor On Time
ADI	3	code	Shutdown Code 1
ADI	4	code	Shutdown Code 2
ADI	5	code	Shutdown Code 3
ADI	6	code	Shutdown Code 4
ADI	7	code	Shutdown Code 5
ADI	8	VAC	Line Voltage[3] or Control Voltage[4]
ADI	9	#	Number of Starts in 12 Hours

1 Network Point Type
2 Network Point Address
3 32MP Single Compressor Chiller Value
4 19DK Centrifugal Chiller Value

32MP Dual Compressor Chiller Points Using DataPort Device

To get the hardware reference for mapping points to a CS object (via the software model), combine the Network Point Type (NPT) and Network Point Address (NPA). For example, the hardware reference for the Demand Limit point is AI2.

The ADI points (internal parameters) cannot be mapped to standard objects. To monitor the ADIs, map them to CS object AD attributes (which can then be mapped to standard AD objects).

Table 5: 32MP (Version 03) Dual Compressor Chiller Points Using DataPort Device

NPT[1]	NPT[2]	Unit	Description		
AI	1	DegF	Leaving Chill Water Setpoint		
AI	2	%	Demand Limit		
AI	3	DegF	Leaving Chill Water Temperature		
AI	4	DegF	Evaporator Refrigerant Trip Point		
AI	5	DegF	Evaporator Refrigerant Temperature		
AI	6	DegF	Condenser Refrigerant Temperature		
AI	7	%	Compressor A Motor Current		
AI	8	%	Compressor B Motor Current		
AI	9	%	Compressor A Motor Load		
AI	10	%	Compressor B Motor Load		
AI	11	DegF	Motor A Winding Temperature		
AI	12	DegF	Motor B Winding Temperature		
AI	13	DegF	Motor A Discharge Temperature		
AI	14	DegF	Motor B Discharge Temperature		
AI	15	DegF	Motor A Thrust Bearing Temperature		
AI	16	DegF	Motor B Thrust Bearing Temperature		
AI	17	DegF	Spare Sensor 1		
AI	18	DegF	Spare Sensor 2		
AI	19	DegF	Spare Sensor 3		
AI	20	DegF	Spare Sensor 4		
BI	1		Chiller Start/Stop Status	0-Stop	1-Start
BI	2		Remote Contact Status	0-Open	1-Closed
BI	3		Compressor B is Lead	0-B=Lag	1-B=Lead
BI	4		Local/Remote Set Remote	0-Local	1-Remote
BI	5		Lag Disable Switch Set	0-Lag_En	1-Lag_Dis
ADI	1	code	Lead Compressor Status Code		
ADI	2	code	Lag Compressor Status Code		
ADI	3	code	Compressor On Time		
ADI	4	code	Shutdown Code 1		
ADI	5	code	Shutdown Code 2		
ADI	6	code	Shutdown Code 3		
ADI	7	code	Shutdown Code 4		
ADI	8	code	Shutdown Code 5		
ADI	9	VAC	Line Voltage		
ADI	10	#	Number of Starts in 12 Hours		

1 Network Point Type
2 Network Point Address

32MP and 19DR Dual Compressor Chiller Points Using DataPort Device

To get the hardware reference for mapping points to a CS object (via the software model), combine the Network Point Type (NPT) and Network Point Address (NPA). For example, the hardware reference for the Demand Limit point is AI2.

The ADI points (internal parameters) cannot be mapped to standard objects. To monitor the ADIs, map them to CS object AD attributes (which can then be mapped to standard AD objects).

Table 6: 32MP (Version 04, 05) and 19DR Dual Compressor Chiller Points Using DataPort Device

NPT[1]	NPT[2]	Units	Description		
AI	1	DegF	Leaving Chill Water Setpoint		
AI	2	%	Demand Limit		
AI	3	DegF	Leaving Chill Water Temperature		
AI	4	DegF	Evaporator Refrigerant Trip Point		
AI	5	DegF	Evaporator Refrigerant Temperature		
AI	6	DegF	Condenser Refrigerant Temperature		
AI	7	%	Compressor A Motor Current		
AI	8	%	Compressor B Motor Current		
AI	9	%	Compressor A Motor Load		
AI	10	DegF	Compressor B Motor Load		
AI	11	DegF	Motor A Winding Temperature		
AI	12	DegF	Motor B Winding Temperature		
AI	13	DegF	Compressor A Discharge Temperature		
AI	14	DegF	Compressor B Discharge Temperature		
AI	15	DegF	Compressor A Thrust Bearing Temperature		
AI	16	DegF	Compressor B Thrust Bearing Temperature		
AI	17	DegF	Spare Sensor 1		
AI	18	DegF	Spare Sensor 2		
AI	19	DegF	Spare Sensor 3		
AI	20	DegF	Spare Sensor 4		
BI	1		Chiller Start/Stop Status	0-Stop	1-Start
BI	2		Remote Contact Input	0-Local	1-Remote
BI	3		Compressor B Is Lead	0-B=Lag	1-B=Lead
BI	4		Remote Mode Enabled	0-False	1-True
BI	5		Lag Disable Switch Set	0-Lag_En	1-Lag_Dis
ADI	1	code	Lead Compressor Status Code		
ADI	2	code	Lag Compressor Status Code		
ADI	3	hour	Compressor On Time		
ADI	4	code	Shutdown Code 1		
ADI	5	code	Shutdown Code 2		
ADI	6	code	Shutdown Code 3		
ADI	7	code	Shutdown Code 4		
ADI	8	code	Shutdown Code 5		
ADI	9	VAC	Control Voltage		
ADI	10	#	Number of Starts in 6 Hours		

1 Network Point Type
2 Network Point Address

19XL or 19EX Centrifugal Chiller Points Using DataPort Device

To get the hardware reference for mapping points to a CS object (via the software model), combine the Network Point Type (NPT) and Network Point Address (NPA). For example, the hardware reference for the Entering Chill Water point is AI3.

Table 7: 19XL or 19EX Centrifugal Chiller Points Using DataPort Device

NPT[1]	NPT[2]	Units	Description		
AI	1	DegF	Water/Brine Setpoint		
AI	2	DegF	Water/Brine Control Point		
AI	3	DegF	Entering Chill Water		
AI	4	DegF	Leaving Chill Water		
AI	5	DegF	Entering Condenser Water		
AI	6	DegF	Leaving Condenser Water		
AI	7	DegF	Evaporator Refrigerant Temperature		
AI	8	psi	Evaporator Pressure		
AI	9	DegF	Condenser Refrigerant Temperature		
AI	10	psi	Condenser Pressure		
AI	11	DegF	Discharge Temperature		
AI	12	DegF	Bearing Temperature		
AI	13	DegF	Motor Winding Temperature		
AI	14	DegF	Oil Sump Temperature		
AI	15	psi	Oil Pressure Transducer		
AI	16	psi	Oil Differential Pressure		
AI	17	%	Base Demand Limit		
AI	18	%	Active Demand Limit		
AI	19	%	Line Voltage Percent		
AI	20	Volt	Line Voltage Actual		
AI	21	%	Compressor Motor Load		
AI	22	%	Compressor Motor Current		
AI	23	Amps	Compressor Motor Amperes		
AI	24	%	Target Vane Position		
AI	25	%	Actual Vane Position		
AI	26	#	Total Compressor Starts		
AI	27	#	Starts in 12 Hours		
AI	28	Hour	Compressor Ontime		
AI	29	Hour	Service Ontime		
AI	30	KW	Compressor Motor kW		
AI	31	mA	Demand Limit 4-20 mA		
AI	32	mA	Temperature Reset 4-20 mA		
AI	33	DegF	Common CHWS Sensor		
AI	34	DegF	Common CHWR Sensor		
BI	1		Occupied	0-No,	1-Yes
BI	2		Alarm State	0-Ok,	1-Alarm
BI	3		Chiller Start/Stop	0-Stop,	1-Start
BI	4		Hot Gas Bypass Relay	0-No,	1-Yes
BI	5		Chilled Water Pump	0-No,	1-Yes
1 Network Point Type 2 Network Point Address					
Continued on next page . . .					

NPT[1] (Cont.)	NPT[2]	Units	Description	
BI	6		Chilled Water Flow	0-No, 1-Yes
BI	7		Condenser Water Pump	0-No, 1-Yes
BI	8		Condenser Water Flow	0-No, 1-Yes
BI	9		Compressor Start Relay	0-No, 1-Yes
BI	10		Compressor Start Contact	0-No, 1-Yes
BI	11		Compressor Run Contact	0-No, 1-Yes
BI	12		Starter Fault Contact	0-No, 1-Yes
BI	13		Pressure Trip Contact	0-No, 1-Yes
BI	14		Single Cycle Dropout	0-No, 1-Yes
BI	15		Oil Pump Relay	0-No, 1-Yes
BI	16		Oil Heater Relay	0-No, 1-Yes
BI	17		Motor Cooling Relay	0-No, 1-Yes
BI	18		Tower Fan Relay	0-No, 1-Yes
BI	19		Compressor Shunt Trip Relay	0-No, 1-Yes
BI	20		Alarm Relay	0-No, 1-Yes
BI	21		Remote Contacts Input	0-No, 1-Yes
BI	26		Unloader 1	0-No, 1-Yes
BI	27		Unloader 2	0-No, 1-Yes
BI	28		Outdoor Fan 1	0-No, 1-Yes
BI	29		Outdoor Fan 2	0-No, 1-Yes
BI	30		Y1 – Call for Cool 1	0-No, 1-Yes
BI	31		Y2 – Call for Cool 2	0-No, 1-Yes
BI	32		W1 – Call for Heat 1	0-No, 1-Yes
BI	33		W2 – Call for Heat 2	0-No, 1-Yes
BI	34		G – Call for Fan	0-No, 1-Yes
BI	35		Stage 1 Modulated Power Exhaust	0-No, 1-Yes
BI	36		Stage 2 Modulated Power Exhaust	0-No, 1-Yes
BI	37		Stage 3 Modulated Power Exhaust	0-No, 1-Yes
BI	38		Stage 4 Modulated Power Exhaust	0-No, 1-Yes

1 Network Point Type
2 Network Point Address

23XL Hermetic Screw Chiller Points Using DataPort Device

To get the hardware reference for mapping points to a CS object (via the software model), combine the Network Point Type (NPT) and Network Point Address (NPA). For example, the hardware reference for the Entering Chill Water point is AI3.

Table 8: 23XL Hermetic Screw Chiller Points Using DataPort Device

NPT[1]	NPA[2]	Unit	Description		
AI	1	DegF	Water/Brine Setpoint		
AI	2	DegF	Water/Brine Control Point		
AI	3	DegF	Entering Chill Water		
AI	4	DegF	Leaving Chill Water		
AI	5	DegF	Entering Condenser Water		
AI	6	DegF	Leaving Condenser Water		
AI	7	DegF	Evaporator Refrigerant Temperature		
AI	8	psi	Evaporator Pressure		
AI	9	DegF	Condenser Refrigerant Temperature		
AI	10	Psi	Condenser Pressure		
AI	11	DegF	Discharge Temperature		
AI	12	DegF	Rotor Inlet Temperature		
AI	13	DegF	Motor Winding Temperature		
AI	14	DegF	Oil Sump Temperature		
AI	15	Psi	Oil Pressure Transducer		
AI	16	psi	Oil Differential Pressure		
AI	17	%	Base Demand Limit		
AI	18	%	Active Demand Limit		
AI	19	%	Line Voltage Percent		
AI	20	Volt	Line Voltage Actual		
AI	21	%	Compressor Motor Load		
AI	22	%	Compressor Motor Current		
AI	23	Amperes	Compressor Motor Amperes		
AI	24	DegF	Common CHWS Sensor		
AI	25	DegF	Common CHWR Sensor		
AI	26	#	Total Compressor Starts		
AI	27	#	Starts in 12 Hours		
AI	28	Hour	Compressor Ontime		
AI	29	Hour	Service Ontime		
AI	30	kW	Compressor Motor kW		
AI	31	mA	Demand Limit 4-20 mA		
AI	32	mA	Temperature Reset 4-20 mA		
AI	33	#	Manual Slide Valve Count		
BI	1		Occupied	0-No,	1-Yes
BI	2		Alarm State	0-Ok,	1-Alarm
BI	3		Chiller Start/Stop	0-Stop,	1-Start
BI	4		Hot Gas Bypass Relay	0-No,	1-Yes
BI	5		Chilled Water Pump	0-No,	1-Yes

1 Network Point Type
2 Network Point Address

Continued on next page . . .

NPT[1] (Cont.)	NPA[2]	Unit	Description		
BI	6		Chilled Water Flow	0-No,	1-Yes
BI	7		Condenser Water Pump	0-No,	1-Yes
BI	8		Condenser Water Flow	0-No,	1-Yes
BI	9		Compressor Start Relay	0-No,	1-Yes
BI	10		Compressor Start Contact	0-No,	1-Yes
BI	11		Compressor Run Contact	0-No,	1-Yes
BI	12		Starter Fault Contact	0-No,	1-Yes
BI	13		Pressure Trip Contact	0-No,	1-Yes
BI	14		Single Cycle Dropout	0-No,	1-Yes
BI	15		Oil Safety Sensor	0-No,	1-Yes
BI	16		Oil Heater Relay	0-No,	1-Yes
BI	17		Variable Inlet Relay	0-No,	1-Yes
BI	18		Tower Fan Relay	0-No,	1-Yes
BI	19		Compressor Shunt Trip Relay	0-No,	1-Yes
BI	20		Alarm Relay	0-No,	1-Yes
BI	21		Remote Contacts Input	0-No,	1-Yes
BI	22		Actual Slide Valve Status	0-No,	1-Yes
BI	23		Slide Valve Increase	0-No,	1-Yes
BI	24		Slide Valve Decrease	0-No,	1-Yes

1 Network Point Type
2 Network Point Address

30GB and 30GN Reciprocating Chiller Phase 2 Using DataPort Device

To get the hardware reference for mapping points to a CS object (via the software model), combine the Network Point Type (NPT) and Network Point Address (NPA). For example, the hardware reference for the Motormaster Speed point is AI2.

Table 9: 30GB Reciprocating Chiller Points and 30GN Phase 2 Using DataPort Device

NPT[1]	NPA[2]	Unit	Description		
AI	1	%	EXV Position		
AI	2	%	Motormaster Speed		
AI	3	%	Water Valve Position		
BI	1		Alarm Relay	0-Ok,	1-Alarm
BI	2		Heat/Cool Switch	0-No,	1-Yes
BI	3		Heat/Cool Select	0-No,	1-Yes
BI	4		Cooler Pump Relay	0-No,	1-Yes
BI	5		Condenser Pump Relay	0-No,	1-Yes
BI	6		Emergency Stop/Enable	0-No,	1-Yes
BI	7		Local/Stop/CNN Switch	0-No,	1-Yes
BI	8		Stop/Start From CNN	0-No,	1-Yes
BI	9		Demand Switch 1	0-No,	1-Yes
BI	10		Demand Switch 2	0-No,	1-Yes
BI	11		Dual Setpoint Switch	0-No,	1-Yes
BI	12		Clock Status Switch	0-No,	1-Yes
			Circuit A		
BI	13		Oil Pressure Switch	0-Open,	1-Close
BI	14		Fan 1 Relay	0-No,	1-Yes
BI	15		Fan 2 Relay	0-No,	1-Yes
BI	16		Hot Gas Bypass Valve	0-No,	1-Yes
BI	17		Liquid Line Solenoid	0-No,	1-Yes
BI	18		Compressor A1 Output	0-No,	1-Yes
BI	19		Compressor A2 Output	0-No,	1-Yes
BI	20		Compressor A3 Output	0-No,	1-Yes
BI	21		Compressor A4 Output	0-No,	1-Yes
BI	22		Unloader A1	0-No,	1-Yes
BI	23		Unloader A2	0-No,	1-Yes
			Circuit B		
BI	24		Oil Pressure Switch	0-Open,	1-Close
BI	25		Fan 1 Relay	0-No,	1-Yes
BI	26		Fan 2 Relay	0-No,	1-Yes
BI	27		Hot Gas Bypass Valve	0-No,	1-Yes
BI	28		Liquid Line Solenoid	0-No,	1-Yes
BI	29		Compressor B1 Output	0-No,	1-Yes
BI	30		Compressor B2 Output	0-No,	1-Yes
BI	31		Compressor B3 Output	0-No,	1-Yes
BI	32		Compressor B4 Output	0-No,	1-Yes
BI	33		Unloader B1	0-No,	1-Yes
BI	34		Unloader B2	0-No,	1-Yes

1 Network Point Type
2 Network Point Address

30GN Reciprocating Chiller Points Using DataPort Device

To get the hardware reference for mapping points to a CS object (via the software model), combine the Network Point Type (NPT) and Network Point Address (NPA). For example, the hardware reference for the Percent Total Capacity point is AI2.

Table 10: 30GN Reciprocating Chiller Point Mapping Phase 3 Using DataPort Device

NPT[1]	NPA[2]	Unit	Description
AI	1	%	Active Demand Limit
AI	2	%	Percent Total Capacity
AI	3	DegF	Water/Brine Setpoint
AI	4	DegF	Control Point
AI	5	DegF	Entering Chilled Water Temperature
AI	6	DegF	Leaving Chilled Water Temperature
AI	7	Min	Minutes Left for Start
AI	8	%	A: Percent Total Capacity
AI	9	%	A: Percent Available Capacity
AI	10	psi	A: Discharge Pressure
AI	11	psi	A: Suction Pressure
AI	12	psi	A: Oil Pressure Difference
AI	13	DegF	A: Saturated Condensing Temperature
AI	14	DegF	A: Saturated Suction Temperature
AI	15	DegF	A: Compressor Suction Temperature
AI	16	DegF	A: Suction Superheat Temperature
AI	17	%	A: EXV Position
AI	18	%	A: Motormaster Position
AI	19	%	A: Water Valve Position
AI	20	DegF	A: Subcooling Temperature
AI	21	%	B: Percent Total Capacity
AI	22	%	B: Percent Available Capacity
AI	23	psi	B: Discharge Pressure
AI	24	psi	B: Suction Pressure
AI	25	psi	B: Oil Pressure Difference
AI	26	DegF	B: Saturated Condensing Temperature
AI	27	DegF	B: Saturated Suction Temperature
AI	28	DegF	B: Compressor Suction Temperature
AI	29	DegF	B: Suction Superheat Temperature
AI	30	%	B: EXV Position
AI	31	%	B: Motormaster Position
AI	32	%	B: Water Valve Position
AI	33	DegF	B: Subcooling Temperature
AI	34	DegF	Cooler Entering Fluid Temperature
AI	35	DegF	Cooler Leaving Fluid Temperature

1 Network Point Type

2 Network Point Address

Continued on next page . . .

NPT[1] (Cont.)	NPA[2]	Unit	Description		
AI	36	DegF	Condenser Entering Fluid Temperature		
AI	37	DegF	Condenser Leaving Fluid Temperature		
AI	38	DegF	Reclaim Entering Fluid Temperature		
AI	39	DegF	Reclaim Leaving Fluid Temperature		
AI	40	mA	4-20 mA Reset Signal		
AI	41	#	Return Reset Signal		
AI	42	#	External Reset Signal		
AI	43	DegF	Outdoor Air Temperature		
AI	44	mA	4-20 mA Demand Signal		
BI	1		Occupied Unc/Occ	0-No,	1-Yes
BI	2		CCN Chiller Start/Stop	0-No,	1-Yes
BI	3		Emergency Stop	0-No,	1-Yes
BI	4		Heat-Cool Select	0-No,	1-Yes
BI	5		A: Fan Relay 1	0-No,	1-Yes
BI	6		A: Fan Relay 2	0-No,	1-Yes
BI	7		A: Oil Pressure Switch	0-No,	1-Yes
BI	8		A: Compressor 1 Output	0-No,	1-Yes
BI	9		A: Compressor 2 Output	0-No,	1-Yes
BI	10		A: Compressor 3 Output	0-No,	1-Yes
BI	11		A: Compressor 4 Output	0-No,	1-Yes
BI	12		A: Unloader 1 Output	0-No,	1-Yes
BI	13		A: Unloader 2 Output	0-No,	1-Yes
BI	14		A: Hot Gas Bypass Valve	0-No,	1-Yes
BI	15		A: Liquid Line Solenoid	0-No,	1-Yes
BI	16		B: Fan Relay 1	0-No,	1-Yes
BI	17		B: Fan Relay 2	0-No,	1-Yes
BI	18		B: Oil Pressure Switch	0-No,	1-Yes
BI	19		B: Compressor 1 Output	0-No,	1-Yes
BI	20		B: Compressor 2 Output	0-No,	1-Yes
BI	21		B: Compressor 3 Output	0-No ,	1-Yes
BI	22		B: Compressor 4 Output	0-No,	1-Yes
BI	23		B: Unloader 1 Output	0-No,	1-Yes
BI	24		B: Unloader 2 Output	0-No,	1-Yes
BI	25		B: Hot Gas Bypass Valve	0-No,	1-Yes
BI	26		B: Liquid Line Solenoid	0-No,	1-Yes
BI	27		Demand Switch 1	0-No,	1-Yes
BI	28		Demand Switch 2	0-No,	1-Yes
BI	29		Cooler Pump Relay	0-No,	1-Yes
BI	30		Condenser Pump Relay	0-No,	1-Yes
BI	31		Heat/Cool Switch	0-No,	1-Yes
BI	32		Dual Setpoint Switch	0-No,	1-Yes
BI	33		Run Status is Ready	0-No,	1-Yes

1 Network Point Type
2 Network Point Address

Continued on next page . . .

NPT[1] (Cont.)	NPA[2]	Unit	Description
ADI	1	Code	Current Alarm 1
ADI	2	Code	Current Alarm 2
ADI	3	Code	Current Alarm 3
ADI	4	Code	Current Alarm 4
ADI	5	Code	Current Alarm 5
ADI	6	Code	Current Mode 1
ADI	7	Code	Current Mode 2
ADI	8	Code	Current Mode 3
ADI	9	Code	Current Mode 4
ADI	10	Code	Current Mode 5
ADI	11	Code	Control Mode 0-Stop 1-Reset 2-Off 3-Local 4-CCN
ADI	12	Code	Run Status 0-Ready 1-Off 2-On 3-Timeout 4-Recycle 5-Startup 6-Ramping 7-Running 8-Demand 9-Override 10-Shutdown 11-Abnormal 12-Pumpdown
ADI	13	Code	Alarm State 0-Shutdown 1-Normal 2-Alarm
ADI	14	Code	CNN Loadshed 0-Normal, 1-Alarm

1 Network Point Type
2 Network Point Address

30GT Reciprocating Chiller (PICI) Points Using DataPort Device

To get the hardware reference for mapping points to a CS object (via the software model), combine the Network Point Type (NPT) and Network Point Address (NPA). For example, the hardware reference for the Cold Setpoint point is AI2.

Table 11: 30GT Reciprocating Chiller (PICI) Point Mapping Using DataPort Device

NPT[1]	NPA[2]	Unit	Description
AI	1	#	Stage
AI	2	DegF	Cold Setpoint
AI	3	DegF	Hot Setpoint
AI	4	DegF	Reset Thermistor Temperature
AI	5	DegF	Setpoint Plus Reset
AI	6	%	Demand Limit Setpoint
AI	7	DegF	Cooler Entering Fluid Temperature
AI	8	DegF	Cooler Leaving Fluid Temperature
AI	9	DegF	Condenser Entering Fluid Temperature
AI	10	DegF	Condenser Leaving Fluid Temperature
AI	11	#	Sum
AI	12	#	Load-Unload Comp Factor
AI	13	DegF	Circ A Saturation Condensing Temperature
AI	14	DegF	Circ A Saturation Suction Temperature
AI	15	DegF	Circ A Comp Return Gas Temperature
AI	16	DegF	Circ A Superheat Temperature
AI	17	#	Circ A EXV Calculated
AI	18	#	Circ A EXV Actual
AI	19	DegF	Circ B Saturation Condensing Temperature
AI	20	DegF	Circ B Saturation Suction Temperature
AI	21	DegF	Circ B Comp Return Gas Temperature
AI	22	DegF	Circ B Superheat Temperature
AI	23	#	Circ B EXV Calculated
AI	24	#	Circ B EXV Actual

1 Network Point Type
2 Network Point Address

Continued on next page . . .

NPT[1] (Cont.)	NPA[2]	Unit	Description		
BI	1		Alarm Relay	0-No,	1-Yes
BI	2		Quick Test Mode	0-No,	1-Yes
BI	3		Heat/Cool Switch	0-No,	1-Yes
BI	4		Remote On/Off Switch	0-No,	1-Yes
BI	5		Circ A Oil Pressure Switch	0-No,	1-Yes
BI	6		Circ A Low Pressure Switch	0-No,	1-Yes
BI	7		Circ A Liq Line Solenoid	0-No,	1-Yes
BI	8		Circ B Oil Pressure Switch	0-No,	1-Yes
BI	9		Circ B Low Pressure Switch	0-No,	1-Yes
BI	10		Circ B Liq Line Solenoid	0-No,	1-Yes
BI	11		Compressor A1 Output	0-No,	1-Yes
BI	12		Compressor A2 Output	0-No,	1-Yes
BI	13		Compressor A3 Output	0-No,	1-Yes
BI	14		Compressor A4 Output	0-No,	1-Yes
BI	15		Compressor A1 Status	0-No,	1-Yes
BI	16		Compressor A2 Status	0-No,	1-Yes
BI	17		Compressor A3 Status	0-No,	1-Yes
BI	18		Compressor A4 Status	0-No,	1-Yes
BI	19		Unloader A	0-No,	1-Yes
BI	20		Compressor B1 Output	0-No,	1-Yes
BI	21		Compressor B2 Output	0-No,	1-Yes
BI	22		Compressor B3 Output	0-No,	1-Yes
BI	23		Compressor B4 Output	0-No,	1-Yes
BI	24		Compressor B1 Status	0-No,	1-Yes
BI	25		Compressor B2 Status	0-No,	1-Yes
BI	26		Compressor B3 Status	0-No,	1-Yes
BI	27		Compressor B4 Status	0-No,	1-Yes
BI	28		Unloader B	0-No,	1-Yes
BI	29		Fan Relay 1	0-No,	1-Yes
BI	30		Fan Relay 2	0-No,	1-Yes

1 Network Point Type
2 Network Point Address

30HS Reciprocating Chiller Points Using DataPort Device

To get the hardware reference for mapping points to a CS object (via the software model), combine the Network Point Type (NPT) and Network Point Address (NPA). For example, the hardware reference for the Reset Temperature point is AI9.

Table 12: 30HS Reciprocating Chiller Point Mapping Using DataPort Device

NPT[1]	NPA[2]	Unit	Description		
AI	1	DegF	Leaving Water Temperature		
AI	2	DegF	Entering Water Temperature		
AI	3	DegF	Saturation Suction 1 Temperature		
AI	4	DegF	Saturation Suction 2 Temperature		
AI	5	DegF	Compressor Saturated 1 Temperature		
AI	6	DegF	Compressor Saturated 2 Temperature		
AI	7	DegF	EXV Position Circuit 1		
AI	8	DegF	EXV Position Circuit 2		
AI	9	DegF	Reset Temperature		
AI	10	DegF	Superheat Circuit 1		
AI	11	DegF	Superheat Circuit 2		
BI	1		Run/Standby Switch	0-Stnby	1-Run
BI	2		Alarm Light	0-Ok,	1-Alarm
BI	3		Compressor 1 Output	0-No,	1-Yes
BI	4		Compressor 2 Output	0-No,	1-Yes
BI	5		Compressor 5 Output	0-No,	1-Yes
BI	6		Compressor 6 Output	0-No,	1-Yes
BI	7		Compressor 1 Feedback	0-No,	1-Yes
BI	8		Compressor 2 Feedback	0-No,	1-Yes
BI	9		Compressor 5 Feedback	0-No,	1-Yes
BI	10		Compressor 6 Feedback	0-No,	1-Yes
BI	11		Unloader 1 Output	0-No,	1-Yes
BI	12		Unloader 2 Output	0-No,	1-Yes
BI	13		Solenoid 1 Output	0-No,	1-Yes
BI	14		Solenoid 2 Output	0-No,	1-Yes
BI	15		Oil Pressure Circuit 1	0-No,	1-Yes
BI	16		Oil Pressure Circuit 2	0-No,	1-Yes
BI	17		Refrigerant Pressure Circuit 1	0-No,	1-Yes
BI	18		Refrigerant Pressure Circuit 2	0-No,	1-Yes

1 Network Point Type
2 Network Point Address

17FA, 19FA, and 19XR Chiller (PICI) Points Using DataPort Device

To get the hardware reference for mapping points to a CS object (via the software model), combine the Network Point Type (NPT) and Network Point Address (NPA). For example, the hardware reference for the Active Demand Limit point is AI2.

The ADI points (internal parameters) cannot be mapped to standard objects. To monitor the ADIs, map them to CS object AD attributes (which can then be mapped to standard AD objects).

Table 13: 17FA, 19FA, and 19XR Chiller (PICI) Points Using DataPort Device

NPT[1]	NPA[2]	Unit	Description
AI	1	%	Base Demand Limit
AI	2	%	Active Demand Limit
AI	3	%	Compressor Motor Lead
AI	4	%	Compressor Motor Current
AI	5	Amperes	Compressor Motor Amperes
AI	6	%	Target Guide Vane Pos
AI	7	%	Actual Guide Vane Pos
AI	8	DegF	Water/Brine Setpoint
AI	9	DegF	Water/Brine Control Point
AI	10	DegF	Entering Chilled Water
AI	11	DegF	Leaving Chilled Water
AI	12	DegF	Entering Condenser Water
AI	13	DegF	Leaving Condenser Water
AI	14	DegF	Evaporator Refrig Temp
AI	15	psi	Evaporator Pressure
AI	16	DegF	Condenser Refrig Temp
AI	17	psi	Condenser Pressure
AI	18	DegF	Discharge Temperature
AI	19	DegF	Bearing Temperature
AI	20	DegF	Oil Sump Temperature
AI	21	psi	Oil Pressure
AI	22	%	Line Voltage Percent
AI	23	Volt	Line Voltage Actual
AI	24	#	Total Compressor Starts
AI	25	#	Starts in 12 Hours
AI	26	Hour	Compressor Ontime
AI	27	Hour	Service Ontime
AI	28	kW	Compressor Motor kW
AI	29	mA	Demand Limit 4-20 mA
AI	30	mA	Temp Reset 4-20 mA
AI	31	DegF	Common CHWS Sensor
AI	32	DegF	Common CHWR Sensor
AI	33	DegF	Remote Reset Sensor
AI	34	DegF	Temp Sensor - Spare 1
AI	35	DegF	Temp Sensor - Spare 2
AI	36	DegF	Temp Sensor - Spare 3
AI	37	mA	4-20 mA - Spare 1
AI	38	mA	4-20 mA - Spare 2
AI	39	DegF	Temp Sensor - Spare 4
AI	40	DegF	Temp Sensor - Spare 5

1 Network Point Type
2 Network Point Address

Continued on next page . . .

NPT[1] (Cont.)	NPA[2]	Unit	Description
AI	41	DegF	Temp Sensor - Spare 6
AI	42	DegF	Temp Sensor - Spare 7
AI	43	DegF	Temp Sensor - Spare 8
AI	44	DegF	Temp Sensor - Spare 9
AI	45	psi	Oil Pressure Transducer (for 19FA)
ADI	1	Code	Control Mode 0-Reset, 1-Off, 2-Local,3-CCN
ADI	2	Code	Run Status: 0-Ready 1-Timeout 2-Recycle 3-Startup 4-Ramping 5-Running 6-Demand 7-Override 8-Shutdown 9-Abnormal 10-Pumpdown
BI	1		Occupied 0-No, 1-Yes
BI	2		Alarm State 0-Normal, 1-Alarm
BI	3		Chiller Start/Stop 0-Stop, 1-Start
BI	4		Motor High Temp Cutout 0-Normal, 1-Alarm
BI	5		Remote Contacts Input 0-Off, 1-On
BI	6		Hot Gas Bypass Relay 0-Off, 1-On
BI	7		Chilled Water Pump 0-Off, 1-On
BI	8		Chilled Water Flow 0-No, 1-Yes
BI	9		Condenser Water Pump 0-Off, 1-On
BI	10		Condenser Water Flow 0-No, 1-Yes
BI	11		Compressor Start Relay 0-Off, 1-On
BI	12		Compressor Start Contact 0-Open, 1-Closed
BI	13		Compressor Run Contact 0-Open, 1-Closed
BI	14		Starter Fault Contact 0-Open, 1-Closed
BI	15		Pressure Trip Contact 0-Open, 1-Closed
BI	16		Single Cycle Dropout 0-Normal, 1-Alarm
BI	17		Oil Pump Relay 0-Off, 1-On
BI	18		Oil Heater Relay 0-Off, 1-On
BI	19		Auxiliary Oil Pump Relay (for 17FA) 0-Off, 1-On
BI	20		Tower Fan Relay 0-Off, 1-On
BI	21		Compressor Shunt Trip Relay 0-Off, 1-On
BI	22		Alarm Relay 0-Normal, 1-Alarm
BI	23		Spare Protect Limit Input 0-Alarm, 1-Normal
BI	24		Motor Cooling Relay (for 19FA and 19XR) 0-Off, 1-On
BI	25		Run Status Is Ready 0-No, 1-Yes

1 Network Point Type
2 Network Point Address

19XR Hermetic Centrifugal Chiller (PICII) Points Using DataPort Device

To get the hardware reference for mapping points to a CS object (via the software model), combine the Network Point Type (NPT) and Network Point Address (NPA). For example, the hardware reference for the Chilled Water Temp point is AI5.

The ADI points (internal parameters) cannot be mapped to standard objects. To monitor the ADIs, map them to CS object AD attributes (which can then be mapped to standard AD objects).

Table 14: 19XR Hermetic Centrifugal Chiller (PICII) Points Using DataPort Device

NPT[1]	NPA[2]	Unit	Description
AI	1	%	Active Demand Limit
AI	2	Min	Start Inhibit Timer
AI	3	DegF	Temperature Reset
AI	4	DegF	Control Point
AI	5	DegF	Chilled Water Temp
AI	6	%	Average Line Current
AI	7	%	Motor Percent Kilowatts
AI	8	mA	Auto Demand Limit Input
AI	9	mA	Auto Chilled Water Reset
AI	10	DegF	Remote Reset Sensor
AI	11		Total Compressor Starts
AI	12		Starts in 12 Hours
AI	13	Hour	Service Ontime
AI	14	mA	Refrigerant Leak Sensor
AI	15	%	Actual Guide Vane Pos
AI	16	psi	Oil Pump Delta P
AI	17	Hour	Compressor Ontime
AI	18	%	Guide Vane Delta
AI	19	%	Target Guide Vane Pos
AI	20	DegF	Oil Sump Temperature
AI	21	DegF	Oil Sump Delta P
AI	22	DegF	Comp Discharge Temp
AI	23	DegF	Comp Thrust BRG Temp
AI	24	DegF	Comp Motor Winding Temp
AI	25	DegF	Spare Temp 1
AI	26	DegF	Spare Temp 2
AI	27	%	Diffuser Actuator
AI	28	%	Target VFD Speed
AI	29	%	Actual VFD Speed
AI	30	Psi	Chilled Water Delta P
AI	31	DegF	Entering Chilled Water
AI	32	DegF	Leaving Chilled Water
AI	33	^F	Chilled Water Delta T
AI	34	^F	Chilled Water Pulldown/Min

1 Network Point Type
2 Network Point Address

Continued on next page . . .

NPT[1] (Cont.)	NPA[2]	Unit	Description
AI	35	DegF	Evaporator Refrig Temp
AI	36	psi	Evaporator Pressure
AI	37	^F	Evaporator Approach
AI	38	psi	Condenser Water Delta P
AI	39	DegF	Entering Condenser Water
AI	40	DegF	Leaving Condenser Water
AI	41	DegF	Condenser Refrig Temp
AI	42	Psi	Condenser Pressure
AI	43	^F	Condenser Approach
AI	44	%	Average Line Current
AI	45	Amps	Actual Line Current
AI	46	%	Average Line Voltage
AI	47	Volt	Actual Line Voltage
AI	48		Power Factor
AI	49	kW	Motor Kilowatts
AI	50	kWh	Motor Kilowatt Hours
AI	51	kWh	Demand Kilowatts
AI	52	amps	Line Current Phase 1
AI	53	amps	Line Current Phase 2
AI	54	amps	Line Current Phase 3
AI	55	volt	Line Voltage Phase 1
AI	56	volt	Line Voltage Phase 2
AI	57	volt	Line Voltage Phase 3
AI	58	amps	Ground Fault Phase 1
AI	59	amps	Ground Fault Phase 2
AI	60	amps	Ground Fault Phase 3
AI	61	Hz	Frequency
AI	62	%	12T Sum Heat – Phase 1
AI	63	%	12T Sum Heat – Phase 2
AI	64	%	12T Sum Heat – Phase 3
AI	65	psi	Active Delta P
AI	66	DegF	Active Delta T
AI	67	DegF	Surge/HGBP Delta T
ADI	1	Code	Control Mode 0-Reset, 1-Off , 2-Local, 3-CCN
ADI	2	Code	Run Status: 0-Timeout 1-Ready 2-Recycle 3-Prestart 4-Startup 5-Ramping 6-Running 7-Demand 8-Override 9-Shutdown 10-Tripout 11-Pumpdown 12-Lockout
ADI	3		Alarm State 0-Normal, 1-Alert, 2-Alarm
ADI	4	Code	ISM Fault Status 0 to 255
ADI	5	cnt	Surge Protection Counts

1 Network Point Type
2 Network Point Address

Continued on next page . . .

NPT[1] (Cont.)	NPA[2]	Unit	Description		
BI	1		Occupied	0-No,	1-Yes
BI	2		CCN Chiller Start/Stop	0-Stop,	1-Start
BI	3		Remote Start Contact	0-Off,	1-On
BI	4		Ice Build Contact	0-Open,	1-Close
BI	5		Chilled Water Pump	0-Off,	1-On
BI	6		Chilled Water Flow	0-No,	1-Yes
BI	7		Condenser Water Pump	0-Off,	1-On
BI	8		Condenser Water Flow	0-No,	1-Yes
BI	9		Oil Pump Relay	0-Off,	1-On
BI	10		Compressor Start Relay	0-Off,	1-On
BI	11		Compressor Start Contact	0-Open,	1-Close
BI	12		Starter Trans Relay	0-Off,	1-On
BI	13		Compressor Run Contact	0-Open,	1-Close
BI	14		Tower Fan Relay Low	0-Off,	1-On
BI	15		Tower Fan Relay High	0-Off,	1-On
BI	16		Starter Fault	0-Alarm,	1-Normal
BI	17		Spare Safety Input	0-Alarm,	1-Normal
BI	18		Shunt Trip Relay	0-Off,	1-On
BI	19		Oil Heater Relay	0-Off,	1-On
BI	20		Hot Gas Bypass Relay	0-Off,	1-On
BI	21		Surge/HGBP Active	0-No,	1-Yes
BI	22		Single Cycle Dropout	0-Normal,	1-Alarm
BI	23		Phase Loss	0-Normal,	1-Alarm
BI	24		Overvoltage	0-Normal,	1-Alarm
BI	25		Undervoltage	0-Normal,	1-Alarm
BI	26		Current Unbalance	0-Normal,	1-Alarm
BI	27		Voltage Unbalance	0-Normal,	1-Alarm
BI	28		Overload Trip	0-Normal,	1-Alarm
BI	29		Locked Rotor Trip	0-Normal,	1-Alarm
BI	30		Start LRA Trip	0-Normal,	1-Alarm
BI	31		Ground Fault	0-Normal,	1-Alarm
BI	32		Phase Reversal	0-Normal,	1-Alarm
BI	33		Frequency Out of Range	0-Normal,	1-Alarm
BI	34		ISM Power on Reset	0-Normal,	1-Alarm
BI	35		Phase 1 Fault	0-Normal,	1-Alarm
BI	36		Phase 2 Fault	0-Normal,	1-Alarm
BI	37		Phase 3 Fault	0-Normal,	1-Alarm
BI	38		ICR Start Complete	0-False,	1-True
BI	39		1M Start/Run Fault	0-Normal,	1-Alarm
BI	40		2M Start/Run Fault	0-Normal,	1-Alarm
BI	41		Pressure Trip Contact	0-Normal,	1-Alarm
BI	42		Starter Fault	0-Normal,	1-Alarm

1 Network Point Type

2 Network Point Address

Continued on next page . . .

NPT[1] (Cont.)	NPA[2]	Unit	Description	
BI	43		Motor Amperes Not Sensed	0-Normal, 1-Alarm
BI	44		Start Acceleration Fault	0-Normal, 1-Alarm
BI	45		High Motor Amperes	0-Normal, 1-Alarm
BI	46		ICR Stop Complete	0-False, 1-True
BI	47		1M/2M Stop Fault	0-Normal, 1-Alarm
BI	48		Motor Amperes When Stopped	0-Normal, 1-Alarm
BI	49		Hardware Failure	0-Normal 1-Alarm
BI	50		System Alarm-Alert	0-False, 1-True
BI	51		System Alarm-Alarm	0-False, 1-True

1 Network Point Type

2 Network Point Address

48EJ, 48EK, 48EW, 48EY, 50EJ, 50EK, 50EW, and 50EY Single Package Rooftop Unit Points Using DataPort Device

To get the hardware reference for mapping points to a CS object (via the software model), combine the Network Point Type (NPT) and Network Point Address (NPA). For example, the hardware reference for the Supply Air Temperature point is AI2.

Table 15: 48EJ, 48EK, 48EW, 48EY, 50EJ, 50EK, 50EW, and 50EY Single Package Rooftop Unit Point Mapping Using DataPort Device

NPT[1]	NPA[2]	Unit	Description	
AI	1	DegF	Space Temperature	
AI	2	DegF	Supply Air Temperature	
AI	3	DegF	Return Air Temperature	
AI	4	DegF	Outside Air Temperature	
AI	5	DegF	Control Setpoint	
AI	6	%	Cooling Total Capacity	
AI	7	%	Heating Total Capacity	
AI	8	%	Economizer Position	
AI	9	%	IAQ Minimum Damper Position	
AI	10	DegF	SAT Reset	
AI	11	DegF	Space Temperature Offset	
AI	12	DegF	Space Temperature Reset	
BI	1		Economizer Active	0-No, 1-Yes
BI	2		Supply Fan Status	0-No, 1-Yes
BI	3		Supply Fan Relay	0-No, 1-Yes
BI	4		Modulated Power Exhaust Enable	0-No, 1-Yes
BI	5		Filter Status	0-Clean, 1-Dirty
BI	6		Field Applied Status	0-No, 1-Yes
BI	7		Remote Occupied Mode	0-No, 1-Yes
BI	8		Heat Stage 1	0-No, 1-Yes
BI	9		Enthalpy	0-No, 1-Yes
BI	10		Indoor Air Quality	0-No, 1-Yes
BI	11		Outdoor Air Quality	0-No, 1-Yes
BI	12		Alarm Warning Light	0-No, 1-Yes
BI	13		Demand Limit Switch	0-No, 1-Yes
BI	14		Evacuation	0-No, 1-Yes
BI	15		Pressurization	0-No, 1-Yes
BI	16		Smoke Purge	0-No, 1-Yes
BI	17		Fire Shutdown	0-No, 1-Yes
BI	18		Heat Stage 2	0-No, 1-Yes
BI	19		CV Power Exhaust Stage 1	0-No, 1-Yes
BI	20		CV Power Exhaust Stage 2	0-No, 1-Yes
BI	21		Heat Interlock Relay	0-No, 1-Yes
BI	22		Compressor 1	0-No, 1-Yes
BI	23		Compressor 1 Safety	0-No, 1-Yes
BI	24		Compressor 2	0-No, 1-Yes
BI	25		Compressor 2 Safety	0-No, 1-Yes

1 Network Point Type

2 Network Point Address

Continued on next page . . .

NPT[1] (Cont.)	NPA[2]	Unit	Description		
BI	26		Unloader 1	0-No,	1-Yes
BI	27		Unloader 2	0-No,	1-Yes
BI	28		Outdoor Fan 1	0-No,	1-Yes
BI	29		Outdoor Fan 2	0-No,	1-Yes
BI	30		Y1 - Call for Cool 1	0-No,	1-Yes
BI	31		Y2 - Call for Cool 2	0-No,	1-Yes
BI	32		W1 - Call for Heat 1	0-No,	1-Yes
BI	33		W2 - Call for Heat 2	0-No,	1-Yes
BI	34		G - Call for Fan	0-No,	1-Yes
BI	35		Stage 1 Modulated Power Exhaust	0-No,	1-Yes
BI	36		Stage 2 Modulated Power Exhaust	0-No,	1-Yes
BI	37		Stage 3 Modulated Power Exhaust	0-No,	1-Yes
BI	38		Stage 4 Modulated Power Exhaust	0-No,	1-Yes
1 Network Point Type					
2 Network Point Address					

Carrier 30HX and 30GX Screw Chiller Using DataPort Device or DataLINK module without ComfortLink Controls

To get the hardware reference for mapping points to a CS object (via the software model), combine the Network Point Type (NPT) and Network Point Address (NPA). For example, the hardware references for Minutes Left for Start is AI6.

Table 16: Carrier 30HX and 30GX Screw Chiller Using DataPort Device without ComfortLink Controls. Carrier 30HX and 30GX Screw Chiller Using DataLINK Module without ComfortLink Controls

NPT[1]	NPA[2]	Unit	Description	DataLINK Module Reference Point Name
AI	1	%	Active Demand Limit	DEM_LIM
AI	2	DegF	Water/Brine Setpoint	SP
AI	3	DegF	Control Point	CTRL_PNT
AI	4	DegF	Entering Fluid Temperature	EWT
AI	5	DegF	Leaving Fluid Temperature	LWT
AI	6	min	Minutes Left For Start	min_left
1 Network Point Type				
2 Network Point Address				
Continued on next page . . .				

NPT[1] (Cont.)	NPA[2]	Unit	Description	DataLINK Module Reference Point Name
AI	7	psi	A: Discharge Pressure	DP_A
AI	8	psi	A: Suction Pressure	SP_A
AI	9	psi	A: A1 Oil Pressure Diff.	DOP_A1
AI	10	psi	A: A2 Oil Pressure Diff.	DOP_A2
AI	11	psi	A: A1 Oil Pressure	OP_A1
AI	12	psi	A: A2 Oil Pressure	OP_A2
AI	13	DegF	A: Discharge Gas Temperature	DISTMP_A
AI	14	DegF	A: A1 Motor Temperature	TMTR_A1
AI	15	DegF	A: A2 Motor Temperature	TMTR_A2
AI	16	DegF	A: SAT Condensing Temperature	TMP_SCTA
AI	17	DegF	A: Saturated Suction Temperature	TMP_SSTA
AI	18		A: Cooler Level Indicator	LEVEL_A
AI	19	psi	A: Circuit A Econ Pressure	ECNP_A
AI	20	psi	B: Discharge Pressure	DP_B
AI	21	psi	B: Suction Pressure	SP_B
AI	22	psi	B: B1 Oil Pressure Diff.	DOP_B1
AI	23	psi	B: B2 Oil Pressure Diff.	DOP_B2
AI	24	psi	B: B1 Oil Pressure	OP_B1
AI	25	psi	B: B2 Oil Pressure	OP_B2
AI	26	DegF	B: Discharge Gas Temperature	DISTMP_B
AI	27	DegF	B: B1 Motor Temperature	TMTR_B1
AI	28	DegF	B: B2 Motor Temperature	TMTR_B2
AI	29	DegF	B: SAT Condensing Temperature	TMP_SCTB
AI	30	DegF	B: Saturated Suction Temperature	TMP_SSTB
AI	31	psi	B: Cooler Level Indicator	LEVEL_B
AI	32	DegF	B: Circuit B Econ Pressure	ECNP_B
AI	33	DegF	Cooler Entering Fluid	COOL_EWT
AI	34	DegF	Cooler Leaving Fluid	COOL_LWT
AI	35	DegF	Condenser Entering Fluid	COND_EWT
AI	36	DegF	Condenser Leaving Fluid	COND_LWT
AI	37	DegF	Reclaim Entering Fluid	HR_EWT
AI	38	DegF	Reclaim Leaving Fluid	HR_LWT
AI	39	mA	4-20 mA Reset Signal	RST_MA
AI	40	DegF	Return Reset Signal	RSTRTN
AI	41	DegF	External Reset Temperature	T_SPACE
AI	42	DegF	Outdoor Air Temperature	OAT
AI	43	DegF	Calculated Reset	sp_delta
AI	44	mA	4-20 mA Demand Signal	LMT_MA
AI	45	%	Maximum Allowable CAP	DEM_LIM

1 Network Point Type
2 Network Point Address

Continued on next page . . .

NPT[1] (Cont.)	NPA[2]	Unit	Description			DataLINK Module Reference Point Name
BI	1		Occupied	0-No,	1-Yes	OCC
BI	2		CCN Enable	0-Off,	1-On	ENA_CCN
BI	3		CCN Chiller Start/Stop	0-Stop,	1-Start	CHIL_S_S
BI	4	**	Emergency Stop	0-Enable,	1-Emstop	EMSTOP
BI	5	**	Heat-Cool Status	0-Heat,	1-Cool	HEATCOOL
BI	6		A: Compressor A1	0-Off,	1-On	K_AI_RLY
BI	7		A: Compressor A2	0-Off,	1-On	K_A2_RLY
BI	8		A: Loader A1	0-Off,	1-On	LOADR_A1
BI	9		A: Loader A2	0-Off,	1-On	LOADR_A2
BI	10		A: Minimum Load Valve A	0-Off,	1-On	MLV_A
BI	11		A: Circuit A Oil Heater	0-Off,	1-On	OILA_HTR
BI	12		A: A1 Mtr Cooling Solenoid	0-Off,	1-On	MTRCL_A1
BI	13		A: A2 Mtr Cooling Solenoid	0-Off,	1-On	MTRCL_A2
BI	14		A: Circuit A Oil Pump	0-Off,	1-On	OILPMP_A
BI	15		A: Oil Solenoid A1	0-Off,	1-On	OILSL_A1
BI	16		A: Oil Solenoid A2	0-Off,	1-On	OILSL_A2
BI	17		A: Circuit A Oil Switch	0-Open,	1-Close	OILA_SW
BI	18		A: Compressor A1 Feedback	0-Off,	1-On	K_A1_FBK
BI	19		A: Compressor A2 Feedback	0-Off,	1-On	K_A2_FBK
BI	20		B: Compressor B1	0-Off,	1-On	K_B1_RLY
BI	21		B: Compressor B2	0-Off,	1-On	K_B2_RLY
BI	22		B: Loader B1	0-Off,	1-On	LOADR_B1
BI	23		B: Loader B2	0-Off,	1-On	LOADR_B2
BI	24		B: Minimum Load Valve B	0-Off,	1-On	MLV_B
BI	25		B: Circuit B Oil Heater	0-Off,	1-On	OILB_HTR
BI	26		B: B1 Mtr Cooling Solenoid	0-Off,	1-On	MTRCL_B1
BI	27		B: B2 Mtr Cooling Solenoid	0-Off,	1-On	MTRCL_B2
BI	28		B: Circuit B Oil Pump	0-Off,	1-On	OILPMP_B
BI	29		B: Oil Solenoid B1	0-Off,	1-On	OILSL_B1
BI	30		B: Oil Solenoid B2	0-Off,	1-On	OILSL_B2
BI	31		B: Circuit B Oil Switch	0-Open,	1-Close	OILB_SW
BI	32		B: Compressor B1 Feedback	0-Off,	1-On	K_B1_FBK
BI	33		B: Compressor B2 Feedback	0-Off,	1-On	K_B2_FBK
BI	34		Cooler Pump Relay	0-Off,	1-On	COOL_PMP
BI	35		Cooler Pump Flow Switch	0-Off,	1-On	CFLOW_SW
BI	36		Condenser Pump Relay	0-Off,	1-On	COND_PMP
BI	37		Condenser Pump Flow Switch	0-Off,	1-On	DEFLOW_SW
BI	38		Run Status Is Ready	0-No,	1-Yes	STATUS

1 Network Point Type

2 Network Point Address

** Important: These changes deal with the Heat/Cool switch and the Enable/EmStop command. At Release 9.0 and later, the values for these open/closed states are reversed so they are more logical. Specifically, 0=Enable, 1=EmStop and 0=Heat, 1=Cool. If you are upgrading an existing job, you must update the database.

Continued on next page . . .

NPT[1] (Cont.)	NPA[2]	Unit	Description			DataLINK Module Reference Point Name
BD	1		Ice Valve	0-Off,	1-On	ICE_VALV
BD	2		Ice Build Complete	0-No,	1-Yes	ICE_DONE
BD	3	**	Heat/Cool Switch	0-Heat,	1-Cool	HC_SW
BD	4		Dual Setpoint Switch	0-Off,	1-On	DUAL
BD	5		Cooler Heater Solenoid	0-Off,	1-On	COOL_HTR
BD	6		Demand Switch 1	0-Off,	1-On	DMD_SW1
BD	7		Demand Switch 2	0-Off,	1-On	DMD_SW2
BD	8		FAN_1	0-Off,	1-On	FAN_1
BD	9		FAN_2	0-Off,	1-On	FAN_2
BD	10		FAN_3	0-Off,	1-On	FAN_3
BD	11		FAN_4	0-Off,	1-On	FAN_4
BD	12		FAN_5	0-Off,	1-On	FAN_5
BD	13		FAN_6	0-Off,	1-On	FAN_6
ADI	1	Code	Control Mode: 0-LOCAL_ON 1-CCN_ON 2-CLOCK_ON 3-EMSTOP 4-DELAYOFF 5-LOCALOFF 6-CCN_OFF 7-CLOCKOFF 8-RESET			MODE
ADI	2	Code	Run Status: 0-Ready 1-Off 2-On 3-Timeout 4-Recycle 5-Startup 6-Ramping 7-Running 8-Demand 9-Override 10-Shutdown 11-Abnormal 12-Pumpdown 13-Test			STATUS

1 Network Point Type

2 Network Point Address

** Important: These changes deal with the Heat/Cool switch and the Enable/EmStop command. At Release 9.0 and later, the values for these open/closed states are reversed so they are more logical. Specifically, 0=Enable, 1=EmStop and 0=Heat, 1=Cool. If you are upgrading an existing job, you must update the database.

Continued on next page. . .

NPT[1] (Cont.)	NPA[2]	Unit	Description	DataLINK Module Reference Point Name
ADI	3	Code	Alarm State: 0-Normal 1-Shutdown 2-Alarm 3-Partial	ALM
ADI	4	Code	CCN Loadshed Signal: 0-Normal 1-Redline 2-Shed	DL_STAT
ADF	1	Code	Current Alarm 1	alarm_1
ADF	2	Code	Current Alarm 2	alarm_2
ADF	3	Code	Current Alarm 3	alarm_3
ADF	4	Code	Current Alarm 4	alarm_4
ADF	5	Code	Current Alarm 5	alarm_5
ADF	6	%	Percent Total Capacity	CAP_T
ADF	7	%	A: Total Capacity	CAPA_T
ADF	8	%	A: Available Capacity	CAPA_A
ADF	9	%	A: EXV Percent Open	EXV_A
ADF	10	%	A: Motormaster Speed	SPEED_A
ADF	11	%	A: Water Valve Position	WV_A
ADF	12	Volts	A: CPM A1 Feedback	K_A1_FBK
ADF	13	Volts	A: CPM A2 Feedback	K_A2_FBK
ADF	14	%	B: Total Capacity	CAPB_T
ADF	15	%	B: Available Capacity	CAPB_A
ADF	16	%	B: EXV Percent Open	EXV_B
ADF	17	%	B: Motormaster Speed	SPEED_B
ADF	18	Volts	B: CPM B1 Feedback	K_B1_FBK
ADF	19	Volts	B: CPM B2 Feedback	K_B2_FBK
ADF	20	DegF	Options Temperature 1	OPT_TMP1
ADF	21	DegF	Options Temperature 2	OPT_TMP2
The following points apply to the DataLINK module **only**:				
BO	1*		Chiller Start/Stop 0-Stop, 1-Start	CHIL_S_S
BO	2*	**	Emergency Stop 0-Enable, 1-Emstop	EMSTOP
BO	3*		CCN Enable 0-Off, 1-On	ENA_CCN

1 Network Point Type
2 Network Point Address

Continued on next page . . .

NPT[1] (Cont.)	NPA[2]	Unit	Description	DataLINK Module Reference Point Name
The following points apply to the DataLINK module **only**:				
AO	1	DegF	Cooling Setpt 1 DegF 0-120	CSP1
AO	2	DegF	Cooling Setpt 2 DegF 0-120	CSP2
AO	3	DegF	Heating Setpt 1 DegF 0-120	HSP1
AO	4	DegF	Heating Setpt 1 DegF 0-120	HSP2
AO	5	%	Demand SW Setpt 1 0-100	dlswsp1
AO	6	%	Demand SW Setpt 2 0-100	dlswsp2
AO	7	%	Active Demand Limit 0-100	DEM_LIM
AO	8	DegF	Control Point DegF 0-120	CTRL_PNT
AO	9	DegC	Cooling Setpt 1 DegC -12-50	CSP1
AO	10	DegC	Cooling Setpt 2 DegC -12-50	CSP2
AO	11	DegC	Heating Setpt 1 DegC -12-50	HSP1
AO	12	DegC	Heating Setpt 2 DegC -12-50	HSP2
AO	13	DegC	Control Point DegC -12-50	CTRL_PNT

1 Network Point Type

2 Network Point Address

* Control of this point can be released back to the controller.

** Important: These changes deal with the Heat/Cool switch and the Enable/EmStop command. At Release 9.0 and later, the values for these open/closed states are reversed so they are more logical. Specifically, 0=Enable, 1=EmStop and 0=Heat, 1=Cool. If you are upgrading an existing job, you must update the database.

Carrier 30HX/GX Screw Chiller Using DataLINK Module with ComfortLink Controls

To get the hardware reference for mapping points to a CS object (via the software model), combine the Network Point Type (NPT) and Network Point Address (NPA). For example, the hardware reference for the Minutes Left for Start point is AI6.

Table 17: Carrier 30HX/GX Screw Chiller Using DataLINK Module with ComfortLink Controls

NPT[1]	NPA[2]	Unit	Description	DataLINK Module Reference Point Name
AI	1	%	Active Demand Limit	DEM_LIM
AI	2	DegF	Water/Brine Setpoint	SP
AI	3	DegF	Control Point	CTRL_PNT
AI	4	DegF	Entering Fluid Temperature	EWT
AI	5	DegF	Leaving Fluid Temperature	LWT
AI	6	min	Minutes Left For Start	MIN_LEFT
AI	7	psi	A: Discharge Pressure	DP_A
AI	8	psi	A: Suction Pressure	SP_A
AI	9	psi	A: A1 Oil Pressure Diff.	DOP_A1
AI	10	psi	A: A2 Oil Pressure Diff.	DOP_A2
AI	11	psi	A: A1 Motor Temperature	OP_A1
AI	12	psi	A: A2 Motor Temperature	OP_A2
AI	13	DegF	A: Discharges Gas Temperature	DISTMP_A
AI	14	DegF	A: A1 Motor Temperature	TMTR_A1
AI	15	DegF	A: A2 Motor Temperature	TMTR_A2
AI	16	DegF	A: SAT Condensing Temperature	TMP_SCTA
AI	17	DegF	A: Saturated Suction Temperature	TMP_SSTA
AI	18		A: Cooler Level Indicator	LEVEL_A
AI	19	psi	A: Circuit Running Current	A_CURR
AI	20	DegF	A: Suction Superheat Temperature	SH_A
AI	21	psi	B: Discharge Pressure	DP_B
AI	22	psi	B: Suction Pressure	SP_B
AI	23	psi	B: B1 Oil Pressure Diff.	DOP_B1
AI	24	psi	B: B2 Oil Pressure Diff.	DOP_B2
AI	25	psi	B: B1 Oil Pressure	OP_B1
AI	26	psi	B: B2 Oil Pressure	OP_B2
AI	27	DegF	B Discharge Gas Temperature	DISTMP_B
AI	28	DegF	B: B1 Motor Temperature	TMTR_BI
AI	29	DegF	B: B2 Motor Temperature	TMTR_B2
AI	30	DegF	B: SAT Condensing Temperature	TMP_SCTB
AI	31	DegF	B: Saturated Suction Temperature	TMP_SSTB
AI	32		B: Cooler Level Indicator	LEVEL_B
AI	33		B: Circuit Running Current	B_CURR
AI	34	DegF	B: Suction Superheat Temperature	SH_B
AI	35	DegF	Cooler Entering Fluid	COOL_EWT
AI	36	DegF	Cooler Leaving Fluid	COOL_LWT
AI	37	DegF	Condenser Entering Fluid	COND_EWT
AI	38	DegF	Condenser Leaving Fluid	COND_LWT

1 Network Point Type
2 Network Point Address

Continued on next page . . .

NPT[1] (Cont.)	NPA[2]	Unit	Description			DataLINK Module Reference Point Name
AI	39	mA	4-20 mA Reset Signal			RST_MA
AI	40	DegF	Outdoor Air Temperature			OAT
AI	41	mA	4-20 mA Demand Signal			LMT_MA
AI	42	DegF	Lead/Lag Leaving Fluid			DUAL_LWT
AI	43	DegF	Space Temp			SPT
AI	44	mA	4-20 mA Cooling Setpoint			CSP_IN
AI	45	mA	4-20 mA Heating Setpoint			HSP_IN
AI	46	%	Percent Total Capacity			CAP_T
AI	47	psi	A: Economizer Pressure			ECNP_A
AI	48	psi	B: Economizer Pressure			ECNP_B
BI	1		Occupied	0-No,	1-Yes	OCC
BI	2		Override Modes in Effect	0-Off,	1-On	MODE
BI	3		CCN Chiller Start/Stop	0-Stop,	1-Start	CHIL_S_S
BI	4	**	Emergency Stop	0-Enable,	1-Emstop	EMSTOP
BI	5	**	Heat-Cool Status	0-Heat,	1-Cool	HEATCOOL
BI	6		A: Compressor A1	0-Off,	1-On	K_A1_RLY
BI	7		A: Compressor A2	0-Off,	1-On	K_A2_RLY
BI	8		A: Loader AI	0-Off,	1-On	LOADR_A1
BI	9		A: Loader A2	0-Off,	1-On	LOADR_A2
BI	10		A: Minimum Load Valve A	0-Off,	1-On	MLV_A
BI	11		A: Circuit A Oil Heater	0-Off,	1-On	OILA_HTR
BI	12		A: A1 Mtr Cooling Solenoid	0-Off,	1-On	MTRCL_A1
BI	13		A: A2 Mtr Cooling Solenold	0-Off,	1-On	MTRCL_A2
BI	14		A: Circuit A Oil Pump	0-Off,	1-On	OILPMP_A
BI	15		A: Oil Solenold A1	0-Off,	1-On	OILSL_A1
BI	16		A: Oil Solenoid A2	0-Off,	1-On	OILSL_A2
BI	17		A: Circuit A Oil Switch	0-Open,	1-Close	OILA_SW
BI	18		A: Compressor AI Feedback	0-Off,	1-On	K_A1_FBK
BI	19		A: Compressor A2 Feedback	0-Off,	1-On	K_A2_FBK
BI	20		Run Status Is On	0-No,	1-Yes	STAT
BI	21		B: Compressor B1	0-Off,	1-On	K_B1_RLY
BI	22		B: Compressor B2	0-Off,	1-On	K_B2_RLY
BI	23		B: Loader B1	0-Off,	1-On	LOADR_B1
BI	24		B: Loader B2	0-Off,	1-On	LOADR_B2
BI	25		B: Minimum Load Valve B	0-Off,	1-On	MLV_B
BI	26		B: Circuit B Oil Heater	0-Off,	1-On	OILB_HTR
BI	27		B: B1 Mtr Cooling Solenoid	0-Off,	1-On	MTRCL_B1
BI	28		B: B2 Mtr Cooling Solenoid	0-Off,	1-On	MTRCL_B2
BI	29		B: Circuit B Oil Pump	0-Off,	1-On	OILPMP_B
BI	30		B: Oil Solenoid B1	0-Off,	1-On	OILSL_B1
BI	31		B: Oil Solenoid B2	0-Off,	1-On	OILSL_B2
BI	32		B: Circuit B Oil Switch	0-Open,	1-Close	OILB_SW
BI	33		B: Compressor B1 Feedback	0-Off,	1-On	K_B1_FBK
BI	34		B: Compressor B2 Feedback	0-Off,	1-On	K_B2_FBK

1 Network Point Type

2 Network Point Address

** Important: These changes deal with the Heat/Cool switch and the Enable/EmStop command. At Release 9.0 and later, the values for these open/closed states are reversed so they are more logical. Specifically, 0=Enable, 1=EmStop and 0=Heat, 1=Cool. If you are upgrading an existing job, you must update the database.

Continued on next page . . .

NPT[1] (Cont.)	NPA[2]	Unit	Description			DataLINK Module Reference Point Name
BI	35		Cooler Pump Relay	0-Off,	1-On	COOL_PMP
BI	36		Cooler Pump Flow Switch	0-Off,	1-On	COOLFLOW
BI	37		Condenser Pump Relay	0-Off,	1-On	COND_PMP
BI	38		Condenser Pump Flow Switch	0-Off,	1-On	CONDFLOW
BD	1		Fan 1 Relay	0-Off,	1-On	FAN_1
BD	2		Fan 2 Relay	0-Off,	1-On	FAN_2
BD	3	**	Fan 3 Relay	0-Off,	1-On	FAN_3
BD	4		Fan 4 Relay	0-Off,	1-On	FAN_4
BD	5		Demand Switch 1	0-Off,	1-On	DMD_SW1
BD	6		Demand Switch 2	0-Off,	1-On	DMD_SW2
BD	7		Ice Build Complete	0-Off,	1-On	ICE
BD	8		Dual Setpoint Switch	0-Off,	1-On	DUAL_IN
BD	9		Cooler Heater Solenoid	0-Off,	1-On	COOL_HTR
ADI	1	Code	Control Mode: 0-Off, 1-On, 2-TEST			STAT
ADI	2	Code	Control Mode: 0-Test 1-Emrgcy (Second Field) 2-Local 3-CCN 4-Clock			STAT
ADI	3	Code	Alarm State: 0-Normal, 1-Alert, 2-Alarm			ALM
ADI	4	Code	CCN Loadshed Signal: 0-Normal, 1-Redline, 2-Shed			DL-STAT
ADF	1	%	A: Total Capacity			CAPA_T
ADF	2	%	A: Available Capacity			CAPA_A
ADF	3	%	A: EXV Percent Open			EXV_A
ADF	4	%	A: Vari Head Press Pct			VHPA
ADF	5	Amps	Comp A1 Running Current			A1_CURR
ADF	6	Amps	Comp A1 % Must Trip Amps			A1_MTA
ADF	7	Amps	Comp A2 Running Current			A2_CURR
ADF	8	Amps	Comp A2 % Must Trip Amps			A2_MTA
ADF	9	%	B: Total Capacity			CAPB_T
ADF	10	%	B: Available Capacity			CAPB_A
ADF	11	%	B: EXV Percent Open			EXV_B
ADF	12	%	B: Vari Head Press Pct			VHPB
ADF	13	Amps	Comp B1 Running Current			B1_CURR
ADF	14	Amps	Comp B1 % Must Trip Amps			B1_MTA
ADF	15	Amps	Comp B2 Running Current			B2_CURR
ADF	16	Amps	Comp B2 % Must Trip Amps			B2_MTA

1 Network Point Type

2 Network Point Address

* Control of this point can be released back to the controller.

** Important: These changes deal with the Heat/Cool switch and the Enable/EmStop command. At Release 9.0 and later, the values for these open/closed states are reversed so they are more logical. Specifically, 0=Enable, 1= EmStop and 0=Heat, 1=Cool. If you are upgrading an existing job, you must update the database.

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NPT[1] (Cont.)	NPA[2]	Unit	Description	DataLINK Module Reference Point Name
The following points apply to the DataLINK module **only**:				
BO	1*		Chiller Start/Stop 0-Stop, 1-Start	CHIL_S_S
BO	2*		Emergency Stop 0-Enable, 1-Emstop	EMSTOP
The following points apply to the DataLINK module **only**:				
AO	1	DegF	Cooling Setpt 1 DegF 0-120	CSP1
AO	2	DegF	Cooling Setpt 2 DegF 0-120	CSP2
AO	3	DegF	Heating Setpt 1 DegF 0-120	HSP1
AO	4	DegF	Heating Setpt 2 DegF 0-120	HSP2
AO	5	DegF	Cooling Setpt 3 ICD DegF	CSP3
AO	6	DegC	Cooling Setpt 3 ICE DegC	CSP3
AO	7	%	Active Demand Limit 0-100	DEM_LIM
AO	8	DegC	Control Point DegF 0-120	CTRL_PNT
AO	9	DegC	Cooling Setpt 1 DegC -12-50	CSP1
AO	10	DegC	Cooling Setpt 2 DegC -12-50	CSP2
AO	11	DegC	Heating Setpt 1- DegC -12-50	HSP1
AO	12	DegC	Heating Setpt 2 DegC -12-50	HSP2
AO	13	DegC	Control Point DegC -12-50	CTRL_PNT
AO	14	%	Cooling Ramp Loading 0-100	CRAMP
AO	15	%	Heating Ramp Loading 0-100	HRAMP
AO	16	psi	Head Pressure Setpoint A	HSP_A
AO	17	psi	Head Pressure Setpoint B	HST_B
AO	18		Liquid Level Setpoint A	LVL_SPA
AO	19		Liquid Level Setpoint B	LVL_SPB

1 Network Point Type

2 Network Point Address

* Control of this point can be released back to the controller.

** Important: These changes deal with the Heat/Cool switch and the Enable/EmStop command. At Release 9.0 and later, the values for these open/closed states are reversed so they are more logical. Specifically, 0=Enable, 1=EmStop and 0=Heat, 1=Cool. If you are upgrading an existing job, you must update the database.

Carrier 30RA AquaSnap Chiller Using DataLINK Module with ComfortLink Controls

To get the hardware reference for mapping points to a CS object (via the software model), combine the Network Point Type (NPT) and Network Point Address (NPA). For example, the hardware reference for the Minutes Left for Start point is AI6.

Table 18: Carrier 30RA AquaSnap Chiller Using DataLINK Module with ComfortLink Controls

NPT[1]	NPA[2]	Unit	Description	DataLINK module Reference Point Name
AI	1	%	Active Demand Limit	DEM_LIM
AI	2	DegF	Active Setpoint	SP
AI	3	DegF	Control Point	CTRL_PNT
AI	4	DegF	Entering Fluid Temperature	EWT
AI	5	DegF	Leaving Fluid Temperature	LWT
AI	6	min	Minutes Left For Start	MIN_LEFT
AI	7	psi	A: Discharge Pressure	DP_A
AI	8	psi	A: Suction Pressure	SP_A
AI	9	DegF	A: SAT Condensing Temperature	TMP_SCTA
AI	10	DegF	A: Saturated Suction Temperature	TMP_SSTA
AI	11	psi	B: Discharge Pressure	DP_B
AI	12	psi	B: Suction Pressure	SP_B
AI	13	DegF	B: SAT Condensing Temperature	TMP_SCTB
AI	14	DegF	B: Saturated Suction Temp	TMP_SSTB
AI	15	DegF	Cooler Entering Fluid	COOL_EWT
AI	16	DegF	Cooler Leaving Fluid	COOL_LWT
AI	17	DegF	A: Suction Superheat Temperature	SH_A
AI	18	MA	4-20ma Reset Signal	RST_MA
AI	19	DegF	B: Suction Superheat Temperature	SH_B
AI	20	DegF	Outdoor Air Temperature	OAT
AI	21	DegF	Lead/Lag Leaving Fluid	DUAL_LWT
AI	22	MA	4-20ma Demand Signal	LMT_MA
AI	23	DegF	Space Temperature	SPT
AI	24	DegF	A: Calc HP Setpoint	HSP_A
AI	25	DegF	A: Comp Return Gas Temp	TMP_RGTA
AI	26	DegF	B: Calc HP Setpoint	HSP_B
AI	27	DegF	B: Comp Return Gas Temp	TMP_RGTB
AI	28	DegF	Cooler LWT Setpoint	LWT_SP

1 Network Point Type
2 Network Point Address

Continued on next page . . .

NPT[1] (Cont.)	NPA[2]	Unit	Description	DataLINK Module Reference Point Name
BI	1		Occupied 0-No, 1-Yes	OCC
BI	2		Override Modes in Effect 0-Off, 1-On	MODE
BI	3		CCN Chiller Start/Stop 0-Stop, 1-Start	CHIL_S_S
BI	4	**	Emergency Stop 0-Enable, 1-Emstop	EMSTOP
BI	5	**	Heat-Cool Status 0-Heat, 1-Cool	HC_SEL
BI	6		A: Compressor A1 0-Off, 1-On	K_AI_RLY
BI	7		A: Compressor A2 0-Off, 1-On	K_A2_RLY
BI	8		Cooler Pump 1 Relay 0-Off, 1-On	COOLPMP1
BI	9		Cooler Pump 2 Relay 0-Off, 1-On	COOLPMP2
BI	10		Cooler Pump 1 Interlock 0-Off, 1-On	PMP_FBK
BI	11		Cooler Pump 2 Interlock 0-Off, 1-On	PMP2_FBK
BI	12		Cooler Flow Switch 0-Off, 1-On	COOLFLOW
BI	13		Rotate Cooler Pumps 0-Off, 1-On	ROT_PUMP
BI	14		A: Min Load Vlv Relay 0-Off, 1-On	MLV_RLY
BI	15		A: Comp A1 Feedback 0-Off, 1-On	K_AI_FBK
BI	16		A: Comp A2 Feedback 0-Off, 1-On	K_A2_FBK
BI	17		B: Compressor B1 Relay 0-Off, 1-On	K_B1_RLY
BI	18		B: Compressor B2 Relay 0-Off, 1-On	K_B2_RLY
BI	19		B: Compressor B1 Feedback 0-Off, 1-On	K_B1_FBK
BI	20		B: Compressor B2 Feedback 0-Off, 1-On	K_B2_FBK
BI	21		B: Min Load VLV Relay 0-Off, 1-On	MLV_RLY

1 Network Point Type

2 Network Point Address

** Important: These changes deal with the Heat/Cool switch and the Enable/EmStop command. At Release 9.0 and later, the values for these open/closed states are reversed so they are more logical. Specifically, 0=Enable, 1=EmStop and 0=Heat, 1=Cool. If you are upgrading an existing job, you must update the database.

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NPT[1] (Cont.)	NPA[2]	Unit	Description	DataLINK Module Reference Point Name
BD	1		Fan 1 Relay 0-Off, 1-On	FAN_1
BD	2		Fan 2 Relay 0-Off, 1-On	FAN_2
BD	3	**	Demand Switch 1 0-Off, 1-On	DMD_SW1
BD	4		Demand Switch 2 0-Off, 1-On	DMD_SW2
BD	5		Dual Setpoint Switch 0-Off, 1-On	DUAL_IN
BD	6		Heat Request 0-Off, 1-On	HEAT_REQ
BD	7		Cooler Pump Heater 0-Off, 1-On	COOL_HTR
BD	8		Ice Done 0-Off, 1-On	ICE_DONE
ADI	1	Code	Control Mode 0-OFF, 1- ON, 2-TEST	STAT
ADI	2	Code	Alarm State 0-Normal, 1-Alert, 2-Alarm	ALM
ADI	3	Code	CCN Loadshed Signal 0-Normal, 1-Redline, 2-Shed	DL_STAT
ADF	1	%	Percent Total Capacity	CAP_T
ADF	2	%	A: Total Capacity	CAPA_T
ADF	3	%	A: Available Capacity	CAPA_A
ADF	4	%	B: Total Capacity	CAPB_T
ADF	5	%	B: Available Capacity	CAPB_A
ADF	6	Code	Requested Stage	STAGE
BO	1*		Chiller Start/Stop 0-Stop, 1-Start	CHIL_S_S
BO	2*	**	Emergency Stop 0-Enable, 1-Emstop	EMSTOP
AO	1	DegF	Cooling Setpt 1 DegF 0-120	CSP1
AO	2	DegF	Cooling Setpt 2 DegF 0-120	CSP2
AO	3	DegF	Cooling Setpt 3 ICE DegF 0-120	CSP3
AO	4	DegF	Active Demand Limit 0-100	DEM_LIM
AO	5	DegF	Control Point DegF 0-120	CTRL_PNT
AO	6	%	Cooling Ramp Loading 0-100	CRAMP

1 Network Point Type

2 Network Point Address

* Control of this point can be released back to the controller.

** Important: These changes deal with the Heat/Cool switch and the Enable/EmStop command. At Release 9.0 and later, the values for these open/closed states are reversed so they are more logical. Specifically, 0=Enable, 1=EmStop and 0=Heat, 1=Cool. If you are upgrading an existing job, you must update the database.

16JT Absorption Chiller Points Using DataPort Device

To get the hardware reference for mapping points to a CS object (via the software model), combine the Network Point Type (NPT) and Network Point Address (NPA). For example, the hardware reference for the Service Ontime point is AI15.

The ADI points (internal parameters) cannot be mapped to standard objects. To monitor the ADIs, map them to CS object AD attributes (which can then be mapped to standard AD objects).

Table 19: 16JT Absorption Chiller Points Using DataPort Device

NPT[1]	NPA[2]	Unit	Description
AI	1	DegF	Cooling Setpoint
AI	2	DegF	Control Point
AI	3	DegF	Entering Chilled Water Temp
AI	4	DegF	Leaving Chilled Water Temp
AI	5	DegF	Target Capacity Value
AI	6	DegF	Actual Capacity Value
AI	7	mA	Temp Reset 4 to 20 mA
AI	8	DegF	Remote Reset Sensor
AI	9		Common Supply Sensor
AI	10		Common Return Sensor
AI	11		Desolid Time Left
AI	12	psi	Solution Pump 1 Pressure
AI	13	psi	Solution Pump 2 Pressure
AI	14	Hour	Solution Pump Ontime
AI	15	Hour	Service Ontime
AI	16	cnt	Solution Pump Starts
AI	17	cnt	G1 HiLev Starts-Last Hr
AI	18	D/mn	CHW_IN Pulldown Deg/Min
AI	19	D/mn	CHW OUT Pulldwon Deg/Min
AI	20	DegF	Refrigerant Temp
AI	21		Refrigerant Level Sensor
AI	22		Concentration Level
AI	23		Cooling Water Ent Absorb
AI	24		CLW Pulldown Deg/Min
AI	25		Cooling Water Ent Absorb
AI	26		Recirc LiBr Ent Sprays
AI	27		Weak LiBr Leaving Absorb
AI	28		Weak LiBr Lvg Low HX2
AI	29		Weak LiBr Lvg High HX1
AI	30		G2 LiBr Overflow Pipe
AI	31		Cooling Water Leaving Ground
AI	32		Vapor Condensate Temp
AI	33		G1 Internal Pressure
AI	34		Strong LiBr Leaving Gel
AI	35		Weak LiBr Lvg LCD Box
AI	36		Strong LiBr Lvg High HX1
AI	37		Strong LiBr Lvg G2

1 Network Point Type

2 Network Point Address

Continued on next page . . .

NPT[1] (Cont.)	NPA[2]	Unit	Description		
ADI	1	Code	Control Mode 0=Reset, 1=Off, 2=Local,3=CCN		
ADI	2	Code	Run Status:		
			0=Timeout 1=Ready 2=Recycle 3=Prestart 4=Startup 5=Ramping 6=Running 7=Demand 8=Override 9=Shutdown 10=Tripout 11=Pumpdown 12=Lockout		
BI	1		Occupied	0-No,	1-Yes
BI	2		CCN Chiller Start/Stop	0-Stop,	1-Start
BI	3		Alarm State	0-No,	1-Yes
BI	4		Remote Start Contact	0-Open,	1-Close
BI	5		Startup Pulldown Failure	0-No,	1-Yes
BI	6		Chilled Run Relay	0-Off,	1-On
BI	7		Spare Prot Limit Input	0-Off,	1-On
BI	8		Desolidification Mode	0-No,	1-Yes
BI	9		Chilled Water Pump	0-Off,	1-On
BI	10		Chilled Water Flow	0-No,	1-Yes
BI	11		Cooling Water Pump	0-Off,	1-On
BI	12		Cooling Water Flow	0-No,	1-Yes
BI	13		Refrigerant Pump	0-Off,	1-On
BI	14		Ref Pum Overld/Hi Temp	0-No,	1-Yes
BI	15		Solution and Spray Pumps	0-Off,	1-On
BI	16		Sol Pump1 Overld/Hi Temp	0-Normal,	1-Alarm
BI	17		Sol Pump2 Overld/Hi Temp	0-Normal,	1-Alarm
BI	18		Spray Pump Overld/Hi Temp	0-Normal,	1-Alarm
BI	19		Cycle Guard Auto/Manual	0-Off,	1-On
BI	20		Cycle Guard Valve	0-Off,	1-On
BI	21		Low Level Switch	0-Off,	1-On
BI	22		Cycle Guard Level Switch	0-Alarm,	1-Normal
BI	23		Dilution Level Switch	0-Alarm,	1-Normal
BI	24		High Level Switch	0-Alarm,	1-Normal
BI	25		Low Chilled Water Temp	0-Alarm,	1-Normal
BI	26		Tower Fan Relay	0-Off,	1-On
BI	27		G1 High LiBr Level	0-Alarm,	1-Normal
BI	28		Generator Hi Temp/Press	0-Alarm,	1-Normal

1 Network Point Type
2 Network Point Address

17FA, 19FA, 17EX, 19EX, 19XL, 19XR with PICI Controllers, and 23XL with PICI Chiller Points Using DataLINK Module

To get the hardware reference for mapping points to a CS object (via the software model), combine the Network Point Type (NPT) and Network Point Address (NPA). For example, the hardware reference for the Active Demand Limit is AI2.

Table 20: Point Mapping for 17FA, 19FA, 17EX, 19EX, 19XL, 19XR with PICI Controllers, 23XL with PICI Chillers Using DataLINK Module

NPT[1]	NPA[2]	Unit	Description	17/19 FA	17/19 EX	19/23 XL	19 XR	DataLINK Module Reference Point Name
AI	1	%	Base Demand Limit	XX	XX	XX	X	DLM
AI	2	%	Active Demand Limit	XX	XX	XX	X	DEM_LIM
AI	3	%	Compressor Motor Load	XX	XX	XX	X	CA_L
AI	4	%	Compressor Motor Current	XX	XX	XX	X	CA_P
AI	5	Amps	Compressor Motor Amps	XX	XX	XX	X	CA_A
AI	6	%	Target Guide Vane Position	XX	XX	X-	X	GV_TRG
AI	7	%	Actual Guide Vane Position	XX	XX	X-	X	GV_ACT
AI	8	DegF	Water/Brine Setpoint	XX	XX	XX	X	SP
AI	9	DegF	Water/Brine Control Point	XX	XX	XX	X	LCW_STPT
AI	10	DegF	Entering Chilled Water	XX	XX	XX	X	ECW
AI	11	DegF	Leaving Chilled Water	XX	XX	XX	X	LCW
AI	12	DegF	Entering Condenser Water	XX	XX	XX	X	ECDW
AI	13	DegF	Leaving Condenser Water	XX	XX	XX	X	LCDW
AI	14	DegF	Evaporator Refrig Temp	XX	XX	XX	X	ERT
AI	15	psi	Evaporator Pressure	XX	XX	XX	X	ERP
AI	16	DegF	Condenser Refrig Temp	XX	XX	XX	X	CRT
AI	17	psi	Condenser Pressure	XX	XX	XX	X	CRP
AI	18	DegF	Discharge Temperature	XX	XX	XX	X	CMPD
AI	19	DegF	Bearing Temperature	XX	XX	XX	X	MTRB
AI	20	DegF	Oil Sump Temperature	XX	XX	XX	X	OILT
AI	21	psi	Oil Pressure	XX	XX	XX	X	OILPD
AI	22	%	Line Voltage Percent	XX	XX	XX	X	V_P
AI	23	Volt	Line Voltage Actual	XX	XX	XX	X	V_A
AI	24	#	Total Compressor Starts	XX	XX	XX	X	c_starts
AI	25	#	Starts In 12 Hours	XX	XX	XX	X	STARTS

1 Network Point Type
2 Network Point Address
3 Open-Drive only 17x Model
4 Hermetic only 19FA and 19XR models

Continued on next page . . .

NPT[1] (Cont.)	NPA[2]	Unit	Description	17/19 FA	17/19 EX	19/23 XL	19 XR	DataLINK Module Reference Point Name
AI	26	Hour	Compressor Ontime	XX	XX	XX	X	c_hrs
AI	27	Hour	Service Ontime	XX	XX	X-	X	S_HRS
AI	28	kW	Compressor Motor kW	XX	XX	X-	X	CKW
AI	29	mA	Demand Limit 4-20 mA	XX	XX	XX	X	DEM_OPT
AI	30	mA	Temp Reset 4-20 mA	XX	XX	XX	X	RES_OPT
AI	31	DegF	Common CHWS Sensor	XX	XX	XX	X	CHWS
AI	32	DegF	Common CHWR Sensor	XX	XX	XX	X	CHWR
AI	33	DegF	Remote Reset Sensor	XX	XXXX	XX	X	R_RESET
AI	34	DegF	Temp Sensor - Spare 1	XX	XX	XX	X	SPARE1
AI	35	DegF	Temp Sensor - Spare 2	XX	XX	XX	X	SPARE2
AI	36	mA	Temp Sensor - Spare 3	XX	XX	XX	X	SPARE3
AI	37	mA	4-20 mA - Spare 1	XX	XX	XX	X	SPARE1_M
AI	38	DegF	4-20 mA - Spare 2	XX	XX	XX	X	SPARE2_M
AI	39	DegF	Temp Sensor - Spare 4	XX	XX	XX	X	SPARE4
AI	40	DegF	Temp Sensor - Spare 5	XX	XX	XX	X	SPARE5
AI	41	DegF	Temp Sensor - Spare 6	XX	XX	XX	X	SPARE6
AI	42	DegF	Temp Sensor - Spare 7	XX	XX	XX	X	SPARE7
AI	43	DegF	Temp Sensor - Spare 8	XX	XX	XX	X	SPARE8
AI	44	psi	Temp Sensor - Spare 9	XX	4X	XX	X	SPARE9
AI	45	DegF	Oil Pressure Transducer	4X	4X	XX	-	OILP
AI	46*	cnt	Motor Winding Temp	4X	- -	XX	X	MTRW
AI	47	DegF	Manual Slide Valve Count	- -	-	- X	-	SV_MAN
AI	48	Hour	Rotor Inlet Temp	- -	- -	- X	-	RTRIN
AI	49	kW	Service Ontime	- -	- -	- X	-	s_hrs
AI	50		Compressor Motor kW	- -	- -	- X	-	CKW_A
ADI	1	Code	Control Mode 0-Reset, 1-Off, 2-Local, 3-CCN	XX	XX	XX	X	MODE
ADI	2	Code	Run Status: 0-Ready 1-Timeout 2-Recycle 3-Startup 4-Ramping 5-Running 6-Demand 7-Override 8-Shutdown 9-Abnormal 10-Pumpdown	XX	XX	XX	X	STATUS
ADI	3	Code	Actual Slide Valve State: 0-Increase, 1-Hold, 2-Decrease	- -	- -	- X	-	SV_ACT
AO	1	%	Base Demand Limit (40-100)	XX	XX	XX	X	DLM
AO	2	DegF	LCW Setpoint (10-120)	XX	XX	XX	X	lcw_sp

1 Network Point Type
2 Network Point Address
3 Open-Drive only 17x Model
4 Hermetic only 19FA and 19XR models

Continued on next page . . .

NPT[1] (Cont.)	NPA[2]	Unit	Description	17/19 FA	17/19 EX	19/23 XL	19 XR	DataLINK Module Reference Point Name
AO	3	DegF	ECW Setpoint (10-120)	XX	XX	XX	X	ecw_sp
AO	4	DegF	ICE BUILD Setpoint (15-60)	XX	XX	XX	X	icw_sp
BI	1		Occupied 0-No, 1-Yes	XX	XX	XX	X	OCC
BI	2		Alarm State 0-Normal, 1-Alarm	XX	XX	XX	X	ALM
BI	3		Chiller Start/Stop 0-Stop, 1-Start	XX	XX	XX	X	CHIL_S_S
BI	4		Motor High Temp Cutout 0-Normal, 1-Alarm	X3	X3	- -	-	MTRW
BI	5		Remote Contacts Input 0-Off, 1-On	XX	XX	XX	X	REMCON
BI	6		Hot Gas Bypass Relay 0-Off, 1-On	XX	XX	XX	X	HGBR
BI	7		Chilled Water Pump 0-Off, 1-On	XX	XX	XX	X	CHWP
BI	8		Chilled Water Flow 0-No, 1-Yes	XX	XX	XX	X	EVFL
BI	9		Condenser Water Pump 0-Off, 1-On	XX	XX	XX	X	CDP
BI	10		Condenser Water Flow 0-No, 1-Yes	XX	XX	XX	X	CDFL
BI	11		Compressor Start Relay 0-Off, 1-On	XX	XX	XX	X	CMPR
BI	12		Compressor Start Contact 0-Open, 1-Close	XX	XX	XX	X	1CR_AUX
BI	13		Compressor Run Contact 0-Open, 1-Close	XX	XX	XX	X	RUN_AUX
BI	14		Starter Fault Contact 0-Open, 1-Close	XX	XX	XX	X	STR_FLT
BI	15		Pressure Trip Contact 0-Open, 1-Close	XX	XX	XX	X	PRS_TRIP
BI	16		Single Cycle Dropout 0-Normal, 1-Alarm	XX	XX	XX	X	V1_CYCLE
BI	17		Oil Pump Relay 0-Off, 1-On	XX	XX	X-	X	OILR
BI	18		Oil Heater Relay 0-Off, 1-On	XX	XX	XX	X	OILH
BI	19		Aux Oil Pump Relay 0-Off, 1-On	X3	X3	- -	-	AUXOILR
BI	20		Tower Fan Relay 0-Off, 1-On	XX	XX	XX	X	TFR
BI	21		Compressor Shunt Trip Relay 0-Off, 1-On	XX	XX	XX	X	TRIPR
BI	22		Alarm Relay 0-Normal, 1-Alarm	XX	XX	XX	X	ALM
BI	23		Spare Protect Limit Input 0-Normal, 1-Alarm	XX	XX	XX	X	SPR_PL
BI	24		Motor Cooling Relay 0-Off, 1-On	4X	4X	X-	X	MTRC
BI	25		Run Status Is Ready 0-No, 1-Yes	XX	XX	XX	X	STATUS
BI	26		Slide Valve Increase 0-Off, 1-On	- -	- -	-X	-	SV_INC
BI	27		Slide Valve Decrease 0-Off, 1-On	- -	- -	-X	-	SV_DEC
BI	28		Variable Inlet Relay 0-Off, 1-On	- -	- -	-X	-	VIR
BI	29		Oil Safety Sensor 0-Open, 1-Close	- -	- -	-X	-	OILSS
BO	1		Chiller Start/Stop 0-Stop, 1-Start	XX	XX	XX	X	CHIL_S_S
BO	2		Remote Contacts Input 0-Off, 1-On	XX	XX	XX	X	REMCON

1 Network Point Type
2 Network Point Address
3 Open-Drive only 17x Model
4 Hermetic only 19FA and 19XR models
* Applicable only for 19XR Version 1.

19XR Hermetic Centrifugal Chiller (PICII) Points Using DataLINK Module

To get the hardware reference for mapping points to a CS object (via the software model), combine the Network Point Type (NPT) and Network Point Address (NPA). For example, the hardware reference for the Chilled Water Temp point is AI6.

The ADI points (internal parameters) cannot be mapped to standard objects. To monitor the ADIs, map them to CS object AD attributes (which can then be mapped to standard AD objects).

Table 21: 19XR Hermetic Centrifugal Chiller (PICII) Points Using DataLINK Module

NPT[1]	NPA[2]	Unit	Description
AI	1	%	Base Demand Limit
AI	2	%	Active Demand Limit
AI	3	min	Start Inhibit Timer
AI	4	DegF	Temperature Reset
AI	5	DegF	Control Point
AI	6	DegF	Chilled Water Temp
AI	7	%	Average Line Current
AI	8	%	Motor Percent Kilowatts
AI	9	mA	Auto Demand Limit Input
AI	10	mA	Auto Chilled Water Reset
AI	11	DegF	Remote Reset Sensor
AI	12		Total Compressor Starts
AI	13		Starts in 12 Hours
AI	14	Hours	Service Ontime Hours
AI	15	mA	Refrigerant Leak Sensor
AI	16	%	Actual Guide Vane Pos
AI	17	^psi	Oil Pump Delta P
AI	18	Hours	Compressor Ontime
AI	19	%	Guide Vane Delta
AI	20	%	Target Guide Vane Pos
AI	21	DegF	Oil Sump Temperature
AI	22	^psi	Oil Sump Delta P
AI	23	DegF	Comp Discharge Temp
AI	24	DegF	Comp Thrust BRG Temp
AI	25	DegF	Comp Motor Winding Temp
AI	26	DegF	Spare Temp 1
AI	27	DegF	Spare Temp 2
AI	28	%	Diffuser Actuator
AI	29	%	Target VFD Speed
AI	30	%	Actual VFD Speed
AI	31	psi	Chilled Water Delta P
AI	32	DegF	Entering Chilled Water
AI	33	DegF	Leaving Chilled Water
AI	34	^F	Chilled Water Delta T
AI	35	^F	Chilled Water Pulldown/Min
AI	36	DegF	Evaporator Refrig Temp
AI	37	psi	Evaporator Pressure
AI	38	^F	Evaporator Approach
AI	39	psi	Condenser Water Delta P

1 Network Point Type
2 Network Point Address

Continued on next page . . .

NPT[1] (Cont.)	NPA[2]	Unit	Description
AI	40	DegF	Entering Condenser Water
AI	41	DegF	Leaving Condenser Water
AI	42	DegF	Condenser Refrig Temp
AI	43	psi	Condenser Pressure
AI	44	^F	Condenser Approach
AI	45	%	Average Line Current
AI	46	Amps	Actual Line Current
AI	47	%	Average Line Voltage
AI	48	Volt	Actual Line Voltage
AI	49		Power Factor
AI	50	kW	Motor Kilowatts
AI	51	kWh	Motor Kilowatt Hours
AI	52	kWh	Demand Kilowatts
AI	53	Amps	Line Current Phase 1
AI	54	Amps	Line Current Phase 2
AI	55	Amps	Line Current Phase 3
AI	56	Volt	Line Voltage Phase 1
AI	57	Volt	Line Voltage Phase 2
AI	58	Volt	Line Voltage Phase 3
AI	59	Amps	Ground Fault Phase 1
AI	60	Amps	Ground Fault Phase 2
AI	61	Amps	Ground Fault Phase 3
AI	62	Hz	Frequency
AI	63	%	I2T Sum Heat-Phase 1
AI	64	%	I2T Sum Heat-Phase 2
AI	65	%	I2T Sum Heat-Phase 3
AI	66	psi	Active Delta P
AI	67	DegF	Active Delta T
AI	68	DegF	Surge/HGBP Delta T
AI	69	DegF	Tower Fan High Setpoint

1 Network Point Type
2 Network Point Address

Continued on next page . . .

NPT[1] (Cont.)	NPA[2]	Unit	Description
ADI*	1	Code	Control Mode 0-Reset, 1-Off, 2-Local, 3-CCN
ADI	2	Code	Run Status 0-Timeout 1-Ready 2-Recycle 3-Prestart 4-Startup 5-Ramping 6-Running 7-Demand 8-Override 9-Shutdown 10-Tripout 11-Pumpdown 12-Lockout
ADI	3		Alarm State 0-Normal, 1-Alert, 2-Alarm
ADI	4	Code	ISM Fault Status 0 to 255
ADI	5	cnt	Surge Protection Counts
AO	1	%	Base Demand Limit
AO	2	DegF	LCW Setpoint
AO	3	DegF	ECW Setpoint
AO	4	DegF	ICE Build Setpoint
BI	1		Occupied 0-No, 1-Yes
BI	2		CCN Chiller Start/Stop 0-Stop, 1-Start
BI	3		Remote Start Contact 0-Off, 1-On
BI	4		Ice Build Contact 0-Open, 1-Close
BI	5		Chilled Water Pump 0-Off, 1-On
BI	6		Chilled Water Flow 0-No, 1-Yes
BI	7		Condenser Water Pump 0-Off, 1-On
BI	8		Condenser Water Flow 0-No, 1-Yes
BI	9		Oil Pump Relay 0-Off, 1-On
BI	10		Compressor Start Relay 0-Off, 1-On
BI	11		Compressor Start Contact 0-Open, 1-Close
BI	12		Starter Trans Relay 0-Off, 1-On
BI	13		Compressor Run Contact 0-Open, 1-Close
BI	14		Tower Fan Relay Low 0-Off, 1-On
BI	15		Tower Fan Relay High 0-Off, 1-On
BI	16		Starter Fault 0-Alarm, 1-Normal
BI	17		Spare Safety Input 0-Alarm, 1-Normal
BI	18		Shunt Trip Relay 0-Off, 1-On

1 Network Point Type

2 Network Point Address

* Applicable only for 19XR Version 1.

Continued on next page . . .

NPT[1] (Cont.)	NPA[2]	Unit	Description	
BI	19		Oil Heater Relay	0-Off, 1-On
BI	20		Hot Gas Bypass Relay	0-Off, 1-On
BI	21		Surge/HGBP Active	0-No, 1-Yes
BI	22		Single Cycle Dropout	0-Normal, 1-Alarm
BI	23		Phase Loss	0-Normal, 1-Alarm
BI	24		Overvoltage	0-Normal, 1-Alarm
BI	25		Undervoltage	0-Normal, 1-Alarm
BI	26		Current Unbalance	0-Normal, 1-Alarm
BI	27		Voltage Unbalance	0-Normal, 1-Alarm
BI	28		Overload Trip	0-Normal, 1-Alarm
BI	29		Locked Rotor Trip	0-Normal, 1-Alarm
BI	30		Start LRA Trip	0-Normal, 1-Alarm
BI	31		Ground Fault	0-Normal, 1-Alarm
BI	32		Phase Reversal	0-Normal, 1-Alarm
BI	33		Frequency Out of Range	0-Normal, 1-Alarm
BI	34		ISM Power on Reset	0-Normal, 1-Alarm
BI	35		Phase 1 Fault	0-Normal, 1-Alarm
BI	36		Phase 2 Fault	0-Normal, 1-Alarm
BI	37		Phase 3 Fault	0-Normal, 1-Alarm
BI	38		ICR Start Complete	0-False, 1-True
BI	39		1M Start/Run Fault	0-Normal, 1-Alarm
BI	40		2M Start/Run Fault	0-Normal, 1-Alarm
BI	41		Pressure Trip Contact	0-Normal, 1-Alarm
BI	42		Starter Fault	0-Normal, 1-Alarm
BI	43		Motor Amperes Not Sensed	0-Normal, 1-Alarm
BI	44		Start Acceleration Fault	0-Normal, 1-Alarm
BI	45		High Motor Amperes	0-Normal, 1-Alarm
BI	46		ICR Stop Complete	0-False, 1-True
BI	47		1M/2M Stop Fault	0-Normal, 1-Alarm
BI	48		Motor Amperes When Stopped	0-Normal, 1-Alarm
BI	49		Hardware Failure	0-Normal, 1-Alarm
BO	1		CCN Chiller Start/Stop	0-Stop, 1-Start
BO	2		Remote Start Contact	0-Off, 1-On
BO	3		Chilled Water Pump	0-Off, 1-On
BO	4		Condenser Water Pump	0-Off, 1-On

1 Network Point Type
2 Network Point Address

48EJ, 48EK, 48EW, 48EY, 50EJ, 50EK, 50EW, and 50EY Single Package Rooftop Unit Points Using DataLINK Module

To get the hardware reference for mapping points to a CS object (via the software model), combine the Network Point Type (NPT) and Network Point Address (NPA). For example, the hardware reference for the Supply Air Temperature point is AI2.

Table 22: 48EJ, 48EK, 48EW, 48EY, 50EJ, 50EK, 50EW, and 50EY Single Package Rooftop Unit Point Mapping Using DataLINK Module

NPT[1]	NPA[2]	Unit	Description
AI	1	DegF	Space Temperature
AI	2	DegF	Supply Air Temperature
AI	3	DegF	Return Air Temperature
AI	4	DegF	Control Setpoint
AI	5	%	Cooling Total Capacity
AI	6	%	Heating Total Capacity
AI	7	%	Economizer Min Position
AI	8		Indoor Air Quality
AI	9	DegF	Outdoor Air Quality
AI	10	^F	Space Temperature Offset
AI	11	^F	Space Temperature Reset
AI	12	^F	Reset on External 4 to 20 mA
AO	1	DegF	Occupied Heat Setpoint
AO	2	DegF	Occupied Cool Setpoint
AO	3	DegF	Unoccupied Heat Setpoint
AO	4	DegF	Unoccupied Cool Setpoint
AO	5	DegF	Supply-Air Setpoint
AO	6	DegF	Hi OAT Lockout Temperature
AO	7	DegF	Unoccupied OAT Lockout Temp
AO	8		Reset Ratio
AO	9	^F	Reset Limit
AO	10	%	Minimum Damper Position
AO	11	%	Low Temp MDP Override
AO	12		IAQ Setpoint
AO	13	^F	Unocc. Heating Deadband
AO	14	^F	Unocc. Cooling Deadband
AO	15	%	Low Temp. Min. Position
AO	16	%	Hi Temp. Min. Position
AO	17	%	Power Exh. Stg 1 Point
AO	18	%	Power Exh. Stg 2 Point
AO	19	DegF	Outdoor Air Temperature
AO	20	%	Economizer Position

1 Network Point Type
2 Network Point Address

Continued on next page . . .

NPT[1] (Cont.)	NPA[2]	Unit	Description		
BI	1		Economizer Active	0-No,	1-Yes
BI	2		Supply Fan Status	0-Normal,	1-Alarm
BI	3		Modulated Power Exhaust Enable	0-Off,	1-On
BI	4		Filter Status	0-Clean,	1-Dirty
BI	5		Field Applied Status	0-Off,	1-On
BI	6		Heat Stage 1	0-Off,	1-On
BI	7		Enthalpy	0-Low,	1-Hi
BI	8		Alarm Warning Light	0-Off,	1-On
BI	9		Demand Limit Switch	0-Off,	1-On
BI	10		Power Exhaust Stage 1	0-Off,	1-On
BI	11		Power Exhaust Stage 2	0-Off,	1-On
BI	12		Heat Stage 2	0-Off,	1-On
BI	13		Rev. Valve Solenoid 1	0-Off	1-On
BI	14		Rev. Valve Solenoid 2	0-Off,	1-On
BI	15		Heat Interlock Relay	0-Off,	1-On
BI	16		Compressor 1	0-Off,	1-On
BI	17		Compressor 1 Safety	0-Off,	1-On
BI	18		Compressor 2	0-Off,	1-On
BI	19		Compressor 2 Safety	0-Off,	1-On
BI	20		Unloader 1	0-Off,	1-On
BI	21		Unloader 2	0-Off,	1-On
BI	22		Outdoor Fan 1	0-Off,	1-On
BI	23		Outdoor Fan 2	0-Off,	1-On
BO	1		Supply Fan Relay	0-Off,	1-On
BO	2		Remote Occupied Mode	0-Off,	1-On
BO	3		Evacuation	0-Off,	1-On
BO	4		Pressurization	0-Off,	1-On
BO	5		Smoke Purge	0-Off,	1-On
BO	6		Fire Shutdown	0-Off,	1-On

1 Network Point Type
2 Network Point Address

Metasys Network Setup

Metasys Network setup is described in the Metasys Integrator unit technical bulletins on the Johnson Controls Product Information site (http://cgproducts.johnsoncontrols.com *System Manuals > Integration > Metasys Integrator).* This section contains details specific to Carrier applications.

Spare Sensors

To enhance data monitoring of chiller operation in the 32MP chillers, we suggest that you use two of the spare sensors to measure condenser supply temperature and chiller return water temperature. The spare sensors are points AI12 through AI15 in the single compressor chiller, and points AI17 through AI20 in the dual compressor chiller.

Mapping to a CS Object

Table 23: Software Model and Control System (CS) Object Definition for DataPort Device

Application	Software Model (on Tables and Models CD-ROM)	Display Attribute (Recommended)	NT Command Attribute (Recommended)
Single Compressor Chiller	CA_SIGL.DDL	BI1 Chiller Start/Stop Status	BI1* Chiller Start/Stop Status
Dual Compressor Chiller **19DR Dual Compressor**	CA_DUAL.DDL CA_19DR.DDL	BI1 Chiller Start/Stop Status	BI1* Chiller Start/Stop Status
19DK Centrifugal Chiller	CA_19DK.DDL	BI1 Chiller Start/Stop Status	BI1* Chiller Start/Stop Status
19XL and 19EX Centrifugal Chillers	CA_19XL.DDL	BI3 Chiller Start/Stop Status	BI3* Chiller Start/Stop Status
23XL Hermetic Screw Chiller	CA_23XL.DDL	BI3 Chiller Start/Stop Status	BI3* Chiller Start/Stop Status
30GB Reciprocating Chiller	CA_30GB.DDL	BI7 Chiller Start/Stop Status	BI7* Chiller Start/Stop Status
30GN Reciprocating Chillers	CA_30GN.DDL	BI2 Chiller Start/Stop Status	BI2* Chiller Start/Stop Status
* For the NT Command attribute, use the same attribute as the Display attribute. However, since none of the chiller points are commandable, you are unable to command the attribute. (This must be defined because the NT Command attribute cannot be null.)			
Continued on next page . . .			

Application (Cont.)	Software Model (on Tables and Models CD-ROM)	Display Attribute (Recommended)	NT Command Attribute (Recommended)
30GT Reciprocating Chiller	CA_30GT.DDL	BI4 Remote On/Off Switch	BI4* Remote On/Off Switch
30HS Reciprocating Chiller	CA_30HS.DDL	BI1 Run/Standby Switch	BI1* Run/Standby Switch
30HX Water Cooled Screw Chiller	CA_30HX.DDL	BI3 Chiller Start/Stop Status	BI3* Chiller Start/Stop Status
30GX Air Cooled Screw Chiller	CA_30HX.DDL	BI3 Chiller Start/Stop Status	BI3* Chiller Start/Stop Status
17FA, 19FA, and 19XR Chillers with PICI Controller	CA_17FA.DDL	BI3 Chiller Start/Stop Status	BI3* Chiller Start/Stop Status
19XR Hermetic Centrifugal Chiller with PICII Controller	C19XRDP2.DDL	BI2 CNN Chiller Start/Stop Status	BI2* Chiller Start/Stop Status
48EJ, 48EK, 48EW, 48EY, 50EJ, 50EK, 50EW, and 50EY Single Package Rooftop Chillers	CA_EXRT.DDL	BI12 Alarm Warning Light	BI12 Alarm Warning Light
16JT Absorption Chiller	CA16JTDP.DDL	BI2 Chiller Start/Stop Status	BI2* Chiller Start/Stop Status

* For the NT Command attribute, use the same attribute as the Display attribute. However, since none of the chiller points are commandable, you are unable to command the attribute. (This must be defined because the NT Command attribute cannot be null.)

Table 24: Software Model and CS Object Definition for DataLINK Module

Application	Software Model (on Tables and Models CD-ROM)	Display Attribute (Recommended)	NT Command Attribute (Recommended)
17FA, 19FA Chiller **17EX, 19EX Chiller** **19XL Chiller** **19XR Hermetic Centrifugal Chiller**	CA_DL_19.DDL	BI3 Chiller Start/Stop Status	BO1 Chiller Start/Stop Status
19XR Hermetic Centrifugal Chiller with PICII Controller	CDL19XR2.DDL	BI2 Chiller Start/Stop Status	BO1 Chiller Start/Stop Status
23XL Chiller	CA_DL_23.DDL	BI3 Chiller Start/Stop Status	BO1 Chiller Start/Stop Status
48EJ, 48EK, 48EW, 48EY, 50EJ, 50EK, 50EW, and 50EY Single Package Rooftop Chillers	CDL_RT.DDL	BI2 Supply Fan Status	BO1 Supply Fan Relay
30HX Water-Cooled Screw Chiller **30GX Air-Cooled Screw Chiller**	CDL30HX.DDL	AI1 Base Demand Limit	AO1 Chiller Cooling Setpoint
30HX Water-Cooled Screw Chiller with ComfortLink **30GX Air-Cooled Screw Chiller with ComfortLink**	C30GXDLC.DDL	AI1 Base Demand Limit	AO1 Chiller Cooling Setpoint
30RA AquaSnap Chiller with ComfortLink	C30RADL.DDL	AI1 Active Demand Limit	AO1 Chiller Cooling Setpoint

Custom Integration

For information on integrating products that are not discussed in this document, first refer to the *Metasys Compatible Products* online list of released connectivity products. If this list does not provide the information you require, consider using the Systems Integration Services (SIS) *Request Custom Engineered Solutions* process to request a custom contract from System Integration Team.

Access both the *Metasys Compatible Products* and the *Request Custom Engineered Solutions* process from *The Advisor* by performing the following steps:

1. Click on the Products Focus link, located at the top of *The Advisor* home page.
2. Under Products, click on the *Systems Integration Services* link.
3. Click on *Metasys Compatible Products* for a searchable database.
4. Select *Metasys Compatible Products Database*.
5. Click *Online Search Tool*.
6. After the search is completed, return to the *Systems Integration Services* home page.
7. Select *Custom Engineered Solutions* to view the process used for requesting all types of SIS engineered solutions and services.
8. Select *Requesting an Engineered Solution or Service*.
9. Click *Online Request Page*.

If you need further assistance, contact the Johnson Controls Field Support Center.

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Software Release 9.2
Published in U.S.A.