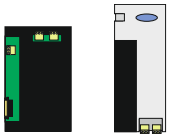
The CCNDP2 Driver



The CCNDP2 driver connects to a Carrier Comfort Network (CCN) chiller system, via the Carrier DataPort II. Available for ObSys and Commander.

This document relates to CCNDP2 driver version 1.0

Please read the *Commander Manual* or *ObSys Manual* alongside this document, available from *www.northbt.com*

Contents

Compatibility with the CCNDP2

The CCNDP2 driver allows North to interface with a Carrier Comfort Network (CCN) chiller system.

The driver connects, via an RS232 serial connection, to a Carrier DataPort II (Fig. 1). The DataPort II provides data from up to 15 CCN controllers.

The CCNDP1 driver is also available, compatible with CCN DataPort I.

up to 15 Carrier controllers. Data can be read from each controller's display configuration, occupancy, CCN and setpoint tables and subtables, and data can be written to the configuration, setpoint, CCN and occupancy tables and subtables.

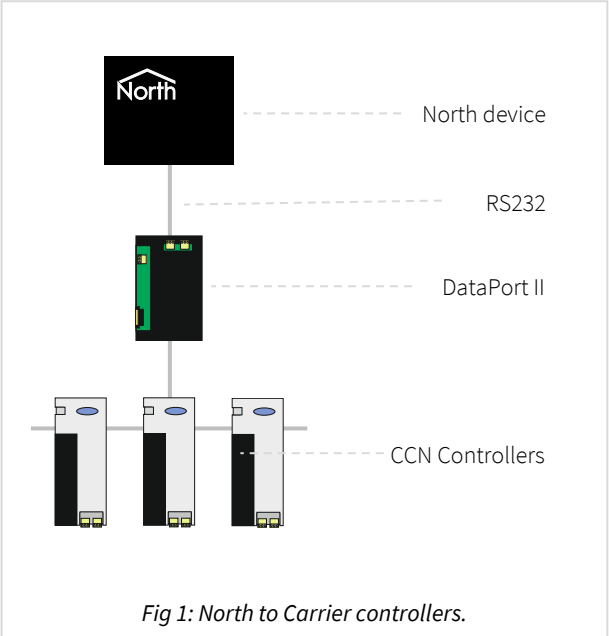


Fig 1: North to Carrier controllers.

Equipment

Any CCN controller supported by the Carrier DataPort II should be compatible with the driver.

Values

Each CCN controller can typically have the following values available:

- Individual data-point value, accessed using 'RV; command
- Data-point values within a table, accessed using 'RT' command.

Data-points are configured by Carrier, and their use will vary depending on the CCN controller model and site specific requirements.

Prerequisites

The Carrier DataPort II must be configured to exclude the 24-character point description in the response. (Set the DTPCONFG configuration table entry Include Description to 'No'.)

A CCN controller has a variable list of data-points within it, and cannot be scanned by North engineering software to determine the list of objects available. Once the table and data-point names for each CCN controller have been advised by Carrier, the objects available must be determined by the engineer.

Using the Driver

On ObSys and Commander, the CCNDP2 driver is pre-installed. On all of these North devices, you can use the driver to create an interface to Carrier DataPort II. Once started, you will need to set up the driver before it can communicate with the Carrier system.

Making the Cable

Using the RS232 cable specification, connect the North Device COM port to the DataPort II 'Comm2' port. Connector types at each end of the cable are shown.

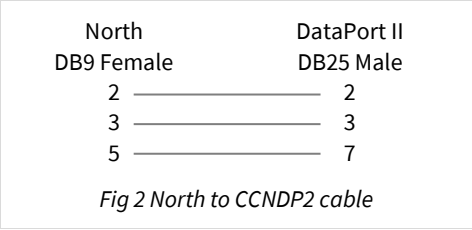


Fig 2 North to CCNDP2 cable

The maximum RS232 cable length is 15m and should be as short as possible.

Cables are available from North, order code CABLE/CCNDP2/DB25.

Starting the Interface

To start an interface using the CCNDP2 driver, follow these steps:

- → **Start Engineering** your North device using ObSys
- → Navigate to **Configuration, Interfaces,** and set a unused **Interface** to 'CCNDP2' to start the particular interface
- → Navigate to the top-level of your North device, then rescan it

The driver setup object (Mc), labelled **CCN Dataport Setup**, should now be available. If this object is not available, check an interface licence is available and the driver is installed.

Setting up the Driver

To set up the driver, follow these steps:

- → Navigate to the **CCN Dataport Setup** object (Mc). For example, if you started interface 1 with the driver earlier, then the object reference will be 'M1'
- → Set the **RS232 Com Port** (RS.COM) to select which serial port on the North Device is connected to the Carrier DataPort II.

Object Specifications

Once an interface is started, one or more extra objects become available within the top-level object of the device. As with all North objects, each of these extra objects may contain sub-objects, (and each of these may contain sub-objects, and so on) - the whole object structure being a multi-layer hierarchy. It is possible to navigate around the objects using the ObSys Engineering Software.

Each object is specified below, along with its sub-objects.

Example Object Reference

An example of a reference to an object in the same device: the CCN Dataport (S1) contains Controller 1 (C1) with a data-point 'CHIL_S_S' (CHIL_S_S), which has a Value (V). Therefore, the complete object reference is 'S1.C1.CHIL_S_S.V'.

An example of a reference to an object in a different device: the IP network object (IP) contains Default Commander object (CDIP), which contains the object above (S1.C1.CHIL_S_S.V) – therefore the complete object reference is 'IP.CDIP.S1.C1.CHIL_S_S.V'

Device Top-Level Objects

When an interface is started using the CCNDP2 driver, the objects below become available within the top-level object of the device. For example, if interface 1 is started, then the object references 'M1' and 'S1' become available.

Description	Reference	Type
CCN Dataport Setup Set up the CCNDP2 driver, started on interface *c* (*c* is the interface number)	M*c*	Fixed Container: On the Commander platform this will be *[CDM v20\CCNDP2 v10]* On the ObSys platform this will be *[OSM v20\CCNDP2 v10]*
CCN Dataport Access Carrier system connected to interface *c* (*c* is the interface number)	S*c*	Fixed Container: *[CCNDP2 v10]*

CCNDP2 Driver Setup

Object Type: *[OSM v20\CCNDP2 v10]*
Object Type: *[CDM v20\CCNDP2 v10]*

The CCN DataPort Setup contains the following objects.

A list of Alias objects (A) are available to shorten the object reference to a CCN controller. Use them to store a table or table & sub-table reference.

For example, set Alias 1 (A.A1) to the table name 'HWP01-32', then use alias (A1) in the system object reference to request values from that table. The object reference 'S1.C1.**HWP01-32**.AI_OAT.V' can then become 'S1.C1.**A1**.AI_OAT.V'.

Description	Reference	Type
RS232 COM Port	RS.COM	Obj\Num:1…8; Adjustable
Baud Rate	RS.BR	Obj\Num; Adjustable Values: 1200, 2400, 4800 or 9600 (default)
Alias *x* The alias number, x, is in the range 1…16. Store a table or table and sub-table name. See above.	A.A*x*	Obj\Text: 26 chars; Adjustable

CCNDP2 System

Object Type: *[CCNDP2 v10]*

The CCN DataPort System contains the following objects:

Description	Reference	Type
Controller *x* The CCN controller number, *x*, is in the range 0…15.	C*x*	Fixed Container: *[CCNDP2 v10\Control]*

Controller

Object Type: *[CCNDP2 v10\Control]*

A controller contains a generic list of objects that enable you to access the data-point values in a CCN controller.

Each data-point, *v*, is referenced within a controller based on the list of table and data-point names from Carrier, this may be:

- Individual point name (no table name required) – 'CHIL_S_S'
- Table and point name – 'GENUNIT.MODE'
- Table, sub-table, and point name.

Object references within the North system have a limit of 31 characters. If required, store table names in the driver's alias table (A) and use the alias in the object reference. For example, with Alias 1 (A1) set to 'HWP01-32', the object reference '**HWP01-32**.AI_OAT.V' can then become '**A1**.AI_OAT.V'.

You will find sample objects listed within North object software for a controller.

A Controller contains the following objects:

Description	Reference	Type
Data-point *v* – Text Returns data-point value without conversion. Although digital values can be read as text ('off', 'on'), on adjusting they require setting to 0...1.	*v*.T	Obj\Text; Adjustable
Data-point *v* – Analogue Value	*v*.V	Obj\Float; Adjustable
Data-point *v* – Release override Releases a data-point adjustment to it's automatic value. Any value may be set here.	*v*.M	Obj\Num; Adjustable-only
Data-point *v* – State Converts data-point text value to a numeric state. See note 1	*v*.S	Obj\Num; Adjustable
Data-point *v* – Enumerated Converts data-point text value to a numeric state based on list of first characters, *e*. See note 2	*v.e*	Obj\Num: 0…10; Adjustable
Data-point *v* – ASCII code Returns the ASCII code to the first character of the value	*v*.ASC	Obj\Num: 0…255

Notes

1. The state object (S) converts the following case-sensitive text values to their corresponding numeric state:

Text	State
NO	0
YES	1
STOP	0
START	1
OPEN	0
CLOSE	1
CLOSED	1
OFF	0
ON	1
NORMAL	0
ALARM	1
Off	0
Reset	1
Local	2
CCN	3
Normal	0

Text	State
Alert	1
Alarm	2
Timeout	0
Ready	1
Recycle	2
Prestart	3
Start-up	4
Startup	4
Ramping	5
Running	6
Demand	7
Override	8
Shutdown	9
Tripout	10
Pumpdown	11
Lockout	12

2. Using the enumerated object, *e*, provide a list of first characters for each of the expected state texts. On reading the object, the character position in this list matching the first character of the text value will be returned. Use when the state object, S, does not list the required text strings.

   For example, consider a data-point with the text states ‘Off’, ‘Low’, and ‘High’. Set the object reference, *e*, to the first-characters of each state: ‘OLH’. The object will then return the character position matching the first character of the returned text. So ‘Off’ = 0, ‘Low’ = 1, and ‘High’ = 2.

   If the first character is not found in the list, then a read failure occurs.

Driver Versions

Version	Build Date	Details
1.0	8/10/1999	Driver released
1.0	29/11/2013	Released for Commander Default Baud Rate to 9600

Next Steps…

If you require help, contact support on 01273 694422 or visit *www.northbt.com/support*

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