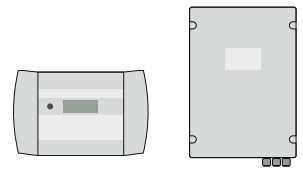# North

The ColtOPV Driver

The ColtOPV driver connects to a Colt International OPV system, providing smoke control and natural ventilation. Available for Commander and ObSys.

This document relates to ColtOPV driver version 1.0

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

Contents

# Compatibility with the ColtOPV System

The ColtOPV driver allows North to interface with a Colt International OPV system, providing smoke control and natural ventilation.

The driver supports two complementary protocols from the OPV system – Mimic and BMS.

The Mimic protocol provides information from the OPV Display Panel, including LCD screen, and zone status and fault indication of connected devices.

The BMS protocol provides virtual VFC input & outputs, and virtual CSIO devices to integrate data between the Colt OPV and North systems.

The driver connects to a single Colt OPV Heart module (Fig. 1).

Fig. 1 North to Colt OPV System
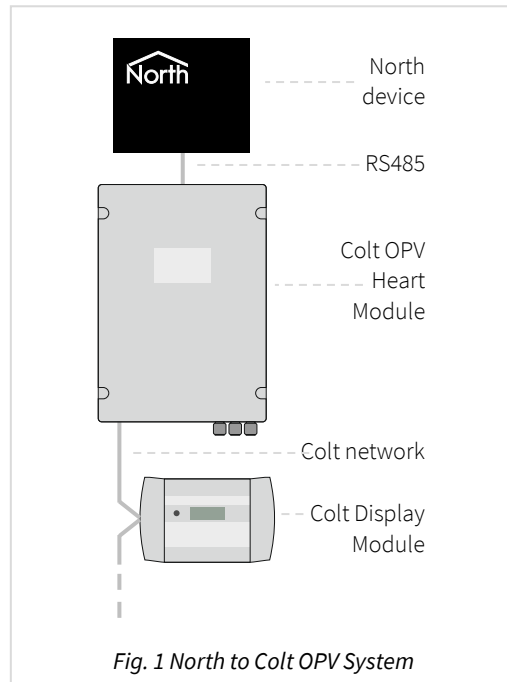
Equipment

Colt International OPV controls compatible with the driver include:

- OPV Heart Module
- EN OPV Control System

Values

The driver can typically access the following values:

- OPV Display Panel LCD screen
- Zone status
- Zone fault

- Virtual VFC input state
- Virtual VFC output state
- Virtual CSIO device

Prerequisites

The Colt OPV system must be enabled with the 'BMS' and/or 'Mimic' protocols.

An RS232-485 adapter is required and must be set to 9600 baud, 10 data bits.
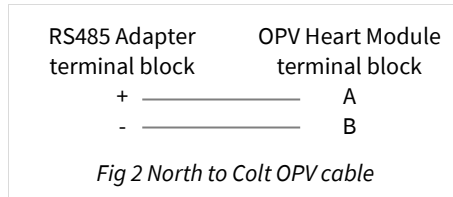
Using the Driver

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

Making the Cable

Connect the North device COM port to an RS232 to RS485 adapter.

Using the RS485 cable specification (Fig. 2), connect the RS485 adapter to the Colt OPV Heart Module terminal block labelled 'Comms':

RS485 Adapter terminal block	OPV Heart Module terminal block
+ ————————	A
- ————————	B

Fig 2 North to Colt OPV cable

RS485 adapters are available from North, order code MISC/RS232/485.

Starting the Interface

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

→ **Start Engineering** your North device using ObSys

→ Navigate to **Configuration, Interfaces,** and set an unused **Interface** to 'ColtOPV' to start the particular interface

→ Navigate to the top-level of your North device and re-scan it.

The driver setup object (M*c*), labelled **ColtOPV 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 **ColtOPV Setup** object (M*c*). For example, if you started interface 1 with the driver earlier, then the object reference will be 'M1'

→ Set **RS232 Com Port** (RS.COM) to select the serial port number on the North device the panel is connected to

Checking Communications

ColtOPV Setup contains a **Comms Established** (DS) object. A value of 'Yes' indicates the driver has connected to, and is communicating with, the OPV system.

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 Colt OPV System (S1) contains VFC Inputs & Outputs (VFC), Input 1 State (I1.S). Therefore, the complete object reference will be 'S1.VFC.I1.S'.

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.VFC.I1.S) – therefore the complete object reference is 'IP.CDIP.S1.VFC.I1.S'.

Device Top-Level Objects

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

Description	Reference	Type
ColtOPV Setup Set up the ColtOPV driver, started on interface c (c is the interface number)	Mc	Fixed Container: On the Commander platform this will be *[CDM v20\ColtOPV v10]* On the ObSys platforms this will be *[OSM v20\ColtOPV v10]*
Colt OPV System Access Colt OPV system connected to interface c (c is the interface number)	Sc	Variable Container: *[ColtOPV v10]*

ColtOPV Driver Setup

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

The ColtOPV driver contains the following objects:

Description	Reference	Type
RS232 COM Port	RS.COM	Obj\Num: 1…8; Adjustable
Comms Established	DS	Obj\NoYes

Colt OPV System

Object Type: *[ColtOPV v10]*

The Colt OPV System is a Colt International OPV control system, used for the control of natural smoke ventilators.

The **Mimic** object (M) object requires an OPV system with the 'Mimic protocol' enabled.

The **VFC Input & Outputs** (VFC) and **CSIO Devices** (CSIO) objects require a OPV system with the 'BMS protocol' enabled.

Description	Reference	Type
Mimic Information and control of the OPV Display panel	M	Fixed container: *[ColtOPV v10\Mimic]*
VFC Inputs & Outputs Virtual volt-free contacts between the interface and OPV system	VFC	Fixed container: *[ColtOPV v10\VFC]*
CSIO Devices Virtual CSIO input and output devices	CSIO	Fixed container: *[ColtOPV v10\CS]*

Mimic

Object Type: *[ColtOPV v10\Mimic]*

A Mimic object provides information from the OPV Display panel.

This object requires the 'Mimic protocol' enabling in the OPV system.

Description	Reference	Type
Vent Fault LED	LED.V	Obj\OffOn
Control Fault LED	LED.C	Obj\OffOn
Fire Signal LED	LED.F	Obj\OffOn
Supply Healthy LED	LED.S	Obj\OffOn
Display Line *a* Text displayed on the four line display. The line number, *a*, is in the range 1…4	L*a*	Obj\Text: 20 chars max
Cursor X Position Cursor horizontal position from left of display	CX	Obj\Num: 0…19
Cursor Y Position Cursor line position from top of display	CY	Obj\Num: 0…3
Cursor State	CS	Obj\ENum: In the range 0…1, 3 where 0=None, 1=Visible, 3=Flashing
Keypress Send a single keypress to the display panel	KEY	Obj\Text: 1 char; Adjustable only Range: 0…9, *, #, C=Cancel, S=Select, U=Up arrow, D=Down arrow, T=Test lamp, A=Alarm mute, R=Reset
Zone *x* The zone LED number, *x*, is in the range 1 to 60	Z*x*	Fixed container: *[ColtOPV v10\Zone]*

Zone

Object Type: *[ColtOPV v10\Zone]*

A Zone object provides information from the OPV Display's Zone indicator.

Description	Reference	Type
Status Zone status	S	Obj\ENum: 0…3 Values: 0=Unused, 1=All vents closed, 2=All vents open, 3=Some vents open and some vents closed
Fault Zone fault if present	F	Obj\ENum: 0…3 Values: 0=No fault, 1=One or more devices faulty, 2=Firefighter's override active, 3=One or more devices faulty and Firefighter's override active

VFC Inputs & Outputs

Object Type: *[ColtOPV v10\VFC]*

The VFC Inputs & Outputs object provides virtual inputs and outputs between this North interface and the Colt OPV System.

The interface is unable to read the virtual input state from the OPV System, so the driver stores the state when adjusted. This stored value is returned when reading the Input State object. When the North device is restarted, stored values will be lost.

This object requires the 'BMS protocol' enabling in the OPV system.

Description	Reference	Type
Input *x* State Provides a virtual input from the North interface to the OPV System. The driver stores the state when adjusted, providing the value when read. The input number, *x*, is in the range 1…999 (some older Colt panels only support inputs 1…255)	I*x*.S	Obj\OffOn; Adjustable
Output *y* State The state of a virtual output from the OPV System to the North interface. The output number, *y*, is in the range 1…999 (some older Colt panels only support outputs 1…255)	O*y*.S	Obj\OffOn

CSIO Devices

Object Type: *[ColtOPV v10\CS]*

The CSIO Devices object provides virtual input/output (CSIO) devices, similar to those connected to the Colt OPV System's Apollo network.

This object requires the 'BMS protocol' enabling in the OPV system.

Description	Reference	Type
Output Data *a* Virtual CSIO device's output data from the OPV System to the North interface. The CSIO device number, *a*, is in the range 1…255	O*a*.D	Obj\Num: 0…7
Input *a* Provides a virtual CSIO device's input from the North interface to the OPV System. The CSIO device number, *a*, is in the range 1…255	I*b*	Fixed container: *[ColtOPV v10\Input]*

Input

Object Type: *[ColtOPV v10\Input]*

An Input object is used to configure the virtual input (CSIO) device.

The interface is unable to request an input's values from the OPV System, so the driver stores the values when adjusted. These stored values are returned when reading the Input's objects. When the North device is restarted, stored values will be lost.

Description	Reference	Type
Data	D	Obj\Num: 0…7; Adjustable
Type Code	T	Obj\Num: 0…7; Adjustable
Analogue Value	A	Obj\Num: 0…127; Adjustable

Driver Versions

Version	Build Date	Details
1.0	18/05/1999	Driver released
1.0	28/10/1999	Enabled RS485 support
1.0	23/03/2016	Released for Commander
1.0	01/06/2019	Updated base software for Commander and ObSys platforms
1.0	21/10/2021	Added support for VFC Inputs up to 999 and VFC Outputs up to 999

Next Steps…

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

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