

The VaisalaWXT Driver

The VaisalaWXT driver allows North to interface with a Vaisala WXT series weather station. Available for Commander and ObSys.

This document relates to VaisalaWXT driver version 1.0

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

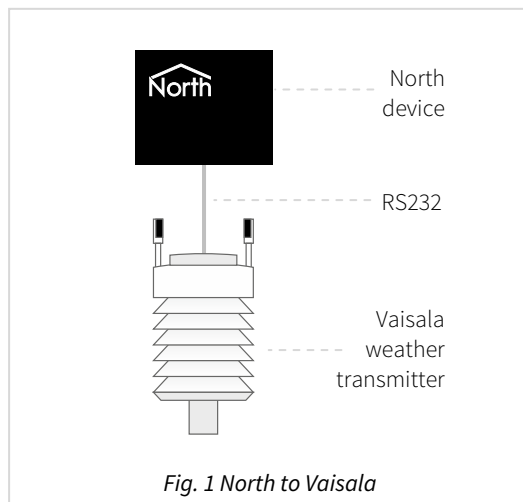
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Compatibility with the Vaisala System

The VaisalaWXT driver allows North to interface with a Vaisala WXT series weather station.

The driver connects directly to a single Vaisala weather station (Fig. 1). The weather station sends its values periodically, which are then stored by the driver.



Equipment

Vaisala weather transmitters compatible with the driver include:

- WXT530 series
- WXT520 series
- WXT510 series

Values

The driver can typically access the following values:

- Wind speed
- Wind direction
- Air temperature
- Air pressure
- Relative humidity
- Rain accumulation
- Rain duration
- Rain intensity

Prerequisites

The Vaisala weather transmitter should be ordered pre-configured with the options below. Alternatively, it must be re-configured using Vaisala software before connecting to the driver.

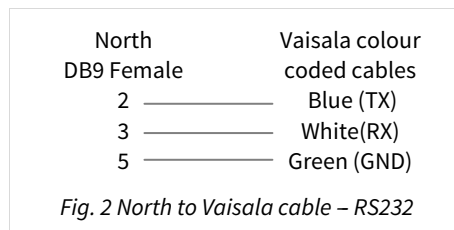
- If the cable from the North device to the WXT will be less than 15 meters, then order with the RS232 communications option enabled. If the cable is 15 meters or more, then order with RS485 enabled (an additional RS232/485 converter will be also required)
- It is important the WXT is set to send data periodically - Standard ASCII auto
- Communication set to 19200 baud, 8, N, 1
- Shielded cable with an 8-pin M12 connector at one end only
- As only one weather station is supported, the address is not used and can be left at the default.

Using the Driver

On ObSys, the VaisalaWXT driver is pre-installed. On Commander, the driver is available to download in the file 'Bank15 Vaisala.cdm'. On all of these North devices, you can use the driver to create an interface to a Vaisala system. Once started, you will need to set up the driver before it can communicate with the Vaisala system.

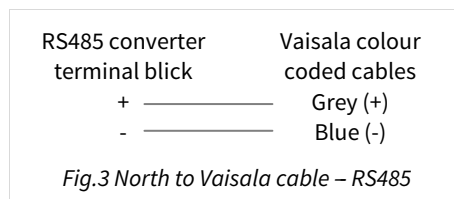
Making the Cable

If the Vaisala weather station is configured to use RS232, using the cable specification (Fig. 2) connect the North device COM port to the cable provided with the weather station. Connector types at each end of the cable are shown.



The maximum RS232 cable length is 15m.

If the weather station is configured to use RS485, connect an RS232/485 converter to the North device. Using the cable specification (Fig. 3) connect the converter to the cable provided with the weather station.



Starting the Interface

- ☞ To start an interface using the Vaisala driver, follow these steps:
 - **Start Engineering** your North device using ObSys
 - Navigate to **Configuration, Interfaces**, and set an unused **Interface** to 'VaisalaWXT' to start the particular interface
 - Navigate to the top-level of your North device and re-scan it

The driver setup object (Mc), labelled **Vaisala WXT 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 **Vaisala WXT Setup** object (Mc). For example, if you started interface 1 with the driver earlier, then the object reference will be 'M1'
 - Set **RS232 Com port** to the port number of the North device you are connecting to Vaisala
 - Set the **Baud Rate** to the baud rate specified when ordering the Vaisala unit, typically '19200'.

Checking Communications

You can check that the interface is communicating by accessing the **Vaisala Weather** object (Sc). Valid values showing in the object list, related to various weather conditions, show that the driver is communicating with the Vaisala unit.

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 Vaisala System (S1) contains an Air Temperature value (TA). Therefore, the object reference will be 'S1.TA'.

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.TA) – therefore the complete object reference is 'IP.CDIP.S1.TA'.

Device Top-Level Objects

When an interface is started using the Vaisala 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
Vaisala Setup Set up the Vaisala driver, started on interface <i>c</i> (<i>c</i> is the interface number)	Mc	Fixed Container: On the Commander platform this will be <i>[CDM v20\Vaisala v10]</i> On the ObSys platform this will be <i>[OSM v20\Vaisala v10]</i>
Vaisala System Access Vaisala system connected to interface <i>c</i> (<i>c</i> is the interface number)	Sc	Variable Container: <i>[Vaisala v10]</i>

Vaisala Setup

Object Type: [OSM v20\Vaisala v10]

Object Type: [CDM v20\Vaisala v10]

The Vaisala driver contains the following objects:

Description	Reference	Type
RS232 Com Port	RS.COM	Obj\Num: 1...8; Adjustable
Baud Rate	RS.BR	Obj\Num; Adjustable Values: 1200, 2400, 4800, 9600, 19200, 38400 Default: 19200
Device Label Label displayed when scanning the system	DL	Obj\Text; Adjustable
Precipitation Reset Period Specify how often the rain and hail accumulation counters are reset	PRP	Obj\ENum: 0...2; Adjustable; Values: 0=Day, 1=Hour, 2=Minute Default: Day

Vaisala System

Object Type: [Vaisala v10]

The Vaisala System contains the following objects:

Description	Reference	Type
Wind Speed Minimum	SN	Obj\Float
Wind Speed Average	SM	Obj\Float
Wind Speed Maximum	SX	Obj\Float
Wind Direction Minimum	DN	Obj\Float
Wind Direction Average	DM	Obj\Float
Wind Direction Maximum	DX	Obj\Float
Air Pressure	PA	Obj\Float
Air Temperature	TA	Obj\Float
Internal Temperature	TP	Obj\Float
Humidity (Relative)	UA	Obj\Float
Rain Accumulation	RC	Obj\Float
Rain Duration	RD	Obj\Float
Rain Intensity	RI	Obj\Float
Rain Peak Intensity	RP	Obj\Float
Last Rain Accumulation	LRC	Obj\Float
Last Rain Duration	LRD	Obj\Float
Hail Accumulation	HC	Obj\Float
Hail Duration	HD	Obj\Float
Hail Intensity	HI	Obj\Float
Hail Peak Intensity	HP	Obj\Float
Last Hail Accumulation	LHC	Obj\Float
Last Hail Duration	LHD	Obj\Float
Heating Temperature	TH	Obj\Float
Heating Voltage	VH	Obj\Float
Supply Voltage	VS	Obj\Float
Ref. Voltage	VR	Obj\Float

Notes

Additional external sensor values from the Vaisala system may be available as objects. In order to make the weather station send the sensor values, relevant options must be set using Vaisala's configuration software. The relevant sensor must also be fitted and connected to the weather station. For assistance with sensor value integration, please contact North Support.

Driver Versions

Version	Build Date	Details
1.0	31/01/2009	Driver released
1.0	03/10/2016	Driver compiled for Commander. External sensor object support added

Next Steps...

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



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