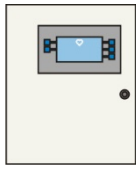
The Aqualarm Driver



The Aqualarm driver Interfaces to the JAM Aqualarm i-Zone water leak detection and environmental monitoring system. Compatible detectors, including leak detection and location modules can be monitored, and their alarm status reported to North. Available for Commander and ObSys.

This document relates to Aqualarm driver version 1.0

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

Contents

Compatibility with the Aqualarm System

The Aqualarm driver allows North to interface with a JAM Aqualarm water leak detection and environmental monitoring system.

The driver connects, via an RS485 serial connection, to a network of Aqualarm i-Zone control panels (Fig. 1). Up to 32 control panels may be connected.

Depending on i-Zone control panel type, each is capable of monitoring a maximum of between 5 and 25 detectors.

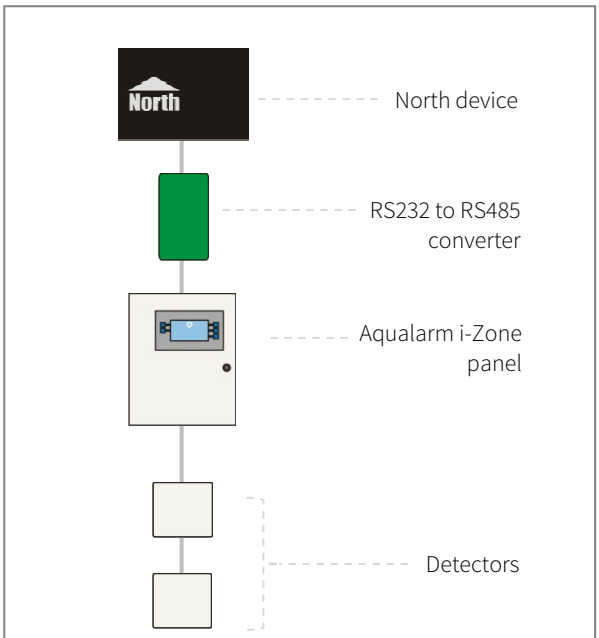


Fig. 1 North to Aqualarm i-Zone panel

Equipment

Aqualarm i-Zone detectors that are compatible with the driver include:

- Liquid leak detection module
- Leak locating module (ZML-500)
- Refrigerant gas leak detector (RGi-24)
- Temperature detector (TDi-24)
- Humidity detector (HDi-24)

Values

Depending on the type of Aqualarm detector, each zone can typically have the following values available:

- Alarm state
- Sensor value
- Mains/Battery Fail
- Alarm limits
- Detector type
- Label

In addition, the Aqualarm driver can monitor the system for an alarm state and generate alarm event messages.

Prerequisites

The Aqualarm i-Zone control panel must have software version 3.3 installed, to enable the protocol at 9600 baud.

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

Using the Driver

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

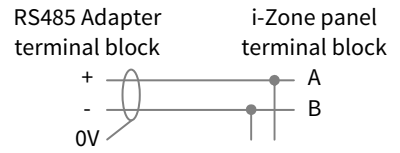


Fig. 2 RS485 adapter to i-Zone cable

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

Starting the Interface

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

- → **Start Engineering** your North device using ObSys
- → Navigate to **Configuration, Interfaces,** and set an unused **Interface** to 'Aqualarm' to start the particular interface
- → Navigate to the top-level of your North device and re-scan it

The driver setup object (Mc), labelled **Aqualarm 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 **Aqualarm 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** object (RS.COM) to the select which serial port number on the North device the Aqualarm system is connected

Checking Communications

You can check that the interface is communicating by reading the **Device Communicating** object (DS). A value of 'yes' indicates the driver has connected to, and is communicating with, an Aqualarm i-Zone panel.

Alarms

The driver polls each i-Zone panel for their alarm state. When the Aqualarm system reports an alarm condition, the driver sends a North-format alarm message to the device's alarm processing.

Format

North-format alarms contain six text fields. The Aqualarm driver places the following information into these fields:

System – copied from System Label object (DL) within driver setup

Point – 'APM' + *panel number* + *location text* (supplied by the panel)

Condition – Alarm condition supplied by the panel, or 'Ok' as the alarm has been reset

Priority – '3'

Date & Time – from North device

Examples

System	Point	Condition	Priority	Date	Time
Aqualarm System	APM 1 Zone 5	High Humidity alarm	3	04/01/13	14:28:17
Aqualarm System	APM 1 Zone 1	Detecting Cable O/C	3	04/01/13	18:29:54
Aqualarm System	APM 1 Zone 3	Liquid Detected 51 METRES	3	05/01/13	11:16:24
Aqualarm System	APM 1 Zone 3	Ok	3	05/01/13	11:24:19

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 Aqualarm System object (S1) contains APM 1 object (P1), which contains a Battery Fault object (BF). Therefore, the complete object reference is 'S1.P1.BF'.

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.P1.BF) – therefore the complete object reference is 'IP.CDIP. S1.P1.BF'.

Device Top-Level Objects

When an interface is started using the Aqualarm 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
Aqualarm Setup Set up the Aqualarm driver, started on interface *c* (*c* is the interface number)	M*c*	Fixed Container: On the Commander platform this will be *[CDM v20\Aqualarm v10]* On the ObSys platform this will be *[OSM v20\Aqualarm v10]*
Aqualarm System Access Aqualarm system connected to interface *c* (*c* is the interface number)	S*c*	Variable Container: *[Aqualarm v10]*

Aqualarm Driver Setup

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

The Aqualarm driver contains the following objects:

Description	Reference	Type
RS232 COM port	RS.COM	Obj\Num; Range: 1…8; Adjustable
Device label Label displayed when scanning the system	DL	Obj\Text; Max. 20 chars; Adjustable
Device communicating	DS	Obj\NoYes
Restart driver This will clear the drivers database of panels and zones and then re-initialize communications with the system	RST	Obj\NoYes; Adjustable
Resend alarms on restart When enabled, this option will re-send alarm event messages for active alarm states.	RA	Obj\NoYes; Adjustable

Aqualarm System

Object Type: *[Aqualarm v10]*

The Aqualarm system contains objects to access individual panels (P*x*) and System Summary (P).

Description	Reference	Type
System Summary	P	Fixed Container: *[Aqualarm v10\System]*
Panel x The panel number, *x,* is in the range 1…32	P*x*	Fixed Container: *[Aqualarm v10\Panel]*

System Summary

Object Type: *[Aqualarm v10\System]*

This object maintains a summary of all connected panels and contains the following objects:

Description	Reference	Type
Alarm state	C	Obj\ENum: 0…2 Values: 0=Ok, 1=Fault, 2=Alarm
System Ok Indicates the system is not in an alarm or fault condition	C0	Obj\NoYes
In Fault Indicates a battery, mains or comms fault	C1	Obj\NoYes
In Alarm Indicates a detector alarm	C2	Obj\NoYes
Alarm count	AC	Obj\Num

Panel

Object Type: *[Aqualarm v10\Panel]*

A panel contains the following objects:

Description	Reference	Type
Alarm state	C	Obj\ENum: 0…2 Values: 0=Ok, 1=Fault, 2=Alarm
Panel Ok Indicates the panel is not in an alarm or fault condition	C0	Obj\NoYes
In Fault Indicates a battery, mains or comms fault	C1	Obj\NoYes
In Alarm Indicates a detector alarm	C2	Obj\NoYes
Alarm count	AC	Obj\Num
Battery fault	BF	Obj\NoYes
Mains power fault	MF	Obj\NoYes
Commands	A	Fixed Container: *[Aqualarm v10\Actions]*
Detectors	D	Variable Container: *[Aqualarm v10\Detectors]*

Panel Commands

Object Type: *[Aqualarm v10\Actions]*

The following panel command objects are available:

Description	Reference	Type
Reset Force panel reset to clear alarms	R	Obj\NoYes; Adjustable
Sounders Set sounders Off to silence alarms	S	Obj\OffOn; Adjustable

Panel Detectors

Object Type: *[Aqualarm v10\Detectors]*

A group of panel detectors (zones) contains the following objects:

Description	Reference	Type
Zone x The zone number, x, is in the range 1…25.	*Zx*	Fixed Container, one of the following: Liquid leak detector *[Aqualarm v10\Liquid]* Humidity detector *[Aqualarm v10\Humidity]* Refrigerant gas leak detector *[Aqualarm v10\Gas]* Temperature detector *[Aqualarm v10\Temperature]* Leak locating module *[Aqualarm v10\Leaksense]*

Liquid Leak Detector

Object Type: *[Aqualarm v10\Liquid]*

An Aqualarm liquid leak detector contains the following objects:

Description	Reference	Type
Label	L	Obj\Text; Max. 41 chars
Detector type	TY	Obj\ENum: 0…7 Values: 0=Unknown, 1=**Liquid**, 2=Gas, 3=Temperature, 4=Humidity, 5=Leaksense I, 6=LeakSense N, 7=Dedicated
Alarm state	C	Obj\ENum: 0…2 Values: 0=Ok, 2=Alarm
In Alarm Indicates a detector alarm	C2	Obj\NoYes
Sensor value	V1	Obj\Num
Alarm sonar	V2	Obj\Num: 1…255; Adjustable

Humidity Detector

Object Type: *[Aqualarm v10\Humidity]*

An Aqualarm humidity detector contains the following objects:

Description	Reference	Type
Label	L	Obj\Text; Max. 41 chars
Detector type	TY	Obj\ENum: 0…7 Values: 0=Unknown, 1=Liquid, 2=Gas, 3=Temperature, **4=Humidity**, 5=Leaksense I, 6=LeakSense N, 7=Dedicated
Alarm state	C	Obj\ENum: 0…2 Values: 0=Ok, 2=Alarm
In Alarm Indicates a detector alarm	C2	Obj\NoYes
Relative humidity (%RH)	V1	Obj\Num: 0…100
High level 2 (%RH)	V2	Obj\Num: 1…99; Adjustable
High level 1 (%RH)	V3	Obj\Num: 1…99; Adjustable
Low level (%RH)	V4	Obj\Num: 1…99; Adjustable

Refrigerant Gas Leak Detector

Object Type: *[Aqualarm v10\Gas]*

An Aqualarm refrigerant gas leak detector contains the following objects:

Description	Reference	Type
Label	L	Obj\Text; Max. 41 chars
Detector type	TY	Obj\ENum: 0…7 Values: 0=Unknown, 1=Liquid, **2=Gas**, 3=Temperature, 4=Humidity, 5=Leaksense I, 6=LeakSense N, 7=Dedicated
Alarm state	C	Obj\ENum: 0…2 Values: 0=Ok, 2=Alarm
In Alarm Indicates a detector alarm	C2	Obj\NoYes
Refrigerant gas	V1	Obj\Num
Alarm below	V2	Obj\Num: 1…255; Adjustable

Temperature Detector

Object Type: *[Aqualarm v10\Temperature]*

An Aqualarm temperature detector contains the following objects:

Description	Reference	Type
Label	L	Obj\Text; Max. 41 chars
Detector type	TY	Obj\ENum: 0…7 Values: 0=Unknown, 1=Liquid, 2=Gas, **3=Temperature**, 4=Humidity, 5=Leaksense I, 6=LeakSense N, 7=Dedicated
Alarm state	C	Obj\ENum: 0…2 Values: 0=Ok, 2=Alarm
In Alarm Indicates a detector alarm	C2	Obj\NoYes
Temperature (°C)	V1	Obj\Float: 1dp
High level 2 (°C)	V2	Obj\Num: 1…99; Adjustable
High level 1 (°C)	V3	Obj\Num: 1…99; Adjustable
Low level (°C)	V4	Obj\Num: 1…99; Adjustable

Leak Locating Module

Object Type: *[Aqualarm v10\Leaksense]*

An Aqualarm leak-locating module (ZLM) contains the following objects:

Description	Reference	Type
Label	L	Obj\Text; Max. 41 chars
Detector type	TY	Obj\ENum: 0…7 Values: 0=Unknown, 1=Liquid, 2=Gas, 3=Temperature, 4=Humidity**, 5=Leaksense I, 6=LeakSense N**, 7=Dedicated
Alarm state	C	Obj\ENum: 0…2 Values: 0=Ok, 2=Alarm
In Alarm Indicates a detector leak or open circuit alarm	C2	Obj\NoYes
Leak Detected	V1	Obj\NoYes
Circuit state	V2	Obj\ENum: 0…2 Values: 0=Ok, 1=Leak, 2=Open circuit
Location (m) Location of leak or open circuit	V3	Obj\Num

Driver Versions

Version	Build Date	Details
1.0	05/04/2013	Driver released

Next Steps…

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

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