Data Sheet

IQVISION Supervisor

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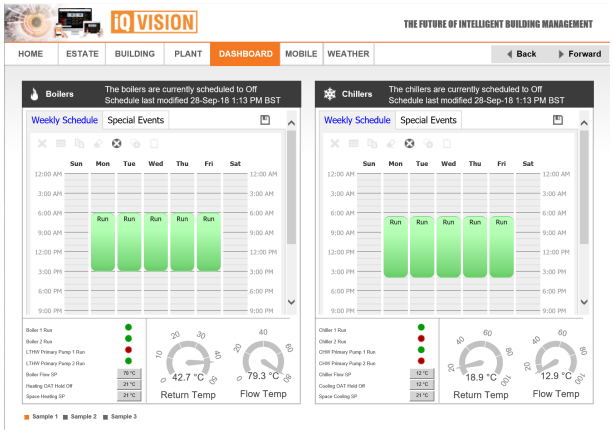


Description

IQ™VISION is a building monitoring and management solution built upon the powerful Niagara 4 Framework®. It can integrate Trend controllers, third party devices and internet protocols into a centralised software platform that is designed to manage buildings at an enterprise level.

It can serve real-time graphical information to standard web-browser clients and provides server-level functions such as: centralized data logging, archiving, alarming, trending, master scheduling, system-wide database management, and integration with enterprise software applications – all of which can be used for highlighting and investigating energy use within buildings.

In addition, IQVISION provides a comprehensive, graphical engineering toolset for application development. HMTL5 support enables the customisation of user interfaces that are viewable on diverse web-enabled computers, tablets and phones.

The embedded System Migration Tool greatly reduces set up time by allowing existing system data to be imported from the IQSET engineering tool and 963 supervisor. The tool also allows 963 schematics to be imported and converted into IQVISION's HTML5 format.

Third party device integration using open standard protocols such as BACnet, Modbus, MBUS and KNX is also supported.

Features

Information display
- Schematic pages
- Point List View
- Graphs
- Data analytics
- Healthy Building Dashboard
- Accessible with a standard web browser.

Trend Driver
- Multi-site capability, compatible with IQ1, IQ2, IQ3, IQ4, IQ5, IQECO and IQLs.
- Connection to multiple vCNCs provides additional connection reliability and bandwidth.
- Advanced alarm filtering

Alarms
- Sophisticated alarm processing and routing, including e-mail alarm acknowledging.
- Alarm transmission to mobile devices using push notification and Action Management Service.

Security
- Audit Trail of database changes, database storage and backup, global time functions, calendar, central scheduling, control, and energy management routines.
- Password protection and security using standard authentication and encryption techniques with optional security supported via an external LDAP connection.
- Cyber Security Dashboard
- Unlimited users over the VPN / Intranet with a standard web browser, depending on the host PC resources.
- Optional enterprise-level data archival using SQL.
- Optional facility to import from CSV file.
- BACnet/SC connectivity defines a secure, encrypted datalink layer.

Connectivity
- Commuication with IQX controllers
- Optional direct Ethernet based driver support for BACnet IP, BACnet/SC, EIB/KNX IP, Lon IP, Modbus IP master and slave, MBUS IP, SNMP and OPC-UA capability.
- IOT ready JSON & Honeywell Forge Cloud connections

Engineering
- Simplified Engineering using 'Easy' tools
- System Migration Tool for migrating device data and schematics from existing 963 and IQSET projects.
- Configure TONN8s and IQX controllers.

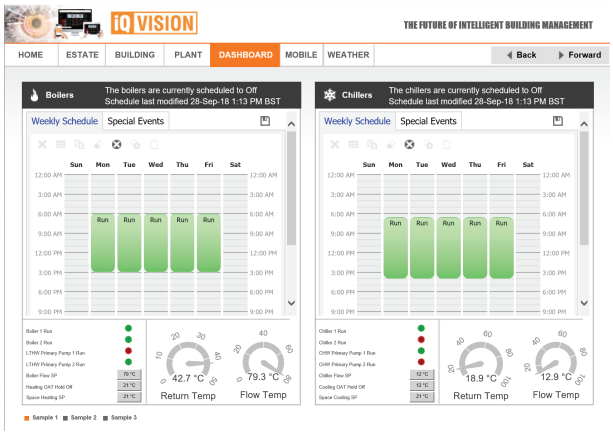
FUNCTIONALITY

INFORMATION DISPLAY

Access to graphics pages, alarms, logs, schedules, and configuration data.

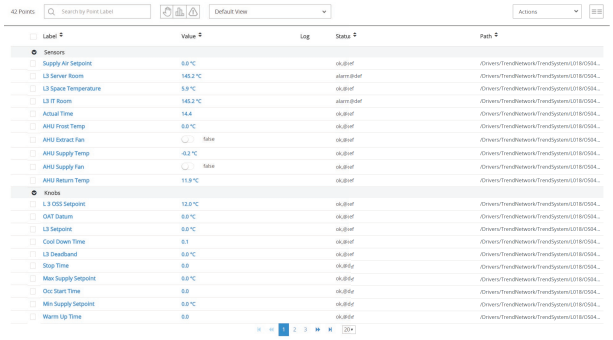
Schematics

IQVISION provides the facility for graphics pages, which can display live information from the system and enable adjustments.



Point List View

The Point List View allows the points to be viewed as a list and for appropriate actions, e.g. change value, to be performed.



Module Property Adjustment

All properties (e.g. High Alarm and Low alarm thresholds) from discovered Trend modules can be viewed and adjusted using virtual points. Virtual points do not add to the licensable point count.

Graphs

Data from points on the system can be displayed as a graph.

Occupation Times

The occupation times of Trend devices can be adjusted from a central location.

Analytics

IQVISION Supports Niagara analytics - see the Analytics Data Sheet (TA201430).

Access via Web Browser

The HTML5 compliant web framework allows full smart device compatibility making the information available with a standard web browser.

Healthy Building Dashboard

IQVISION integrates with the Honeywell Healthy Building Dashboard to provide an overview of the performance, comfort level and environment safety of the building environment. For more details see the Healthy Building Dashboard Data Sheet (TA201468).

Note: IQVISION supports a maximum of 5 zones.

TREND N4 DRIVER

The Trend N4 driver enables connection to IQ1, IQ2, IQ3, IQ4, IQ5, IQECO and IQL controllers over an IP network. It can connect to multiple sites via vCNCs, easily learn an entire Trend System with LANs, Devices, Points, Histories and Schedules and make them available in IQVISION. Use of multiple vCNCs provides redundancy in the case of failure, and enables higher bandwidth.

When used in conjunction with IQ4 v3.70 (or greater) firmware, or IQ5 controllers the driver can connect to vCNCs in secure mode which allow encryption using AES-128 with a 2048-bit RSA public/private key exchange.

The driver provides AlarmClassModification filters which enable incoming alarms to be sent to an alarm class if the information they contain meets the conditions defined within an AlarmClassModification filter. This makes assignment of alarms to alarms classes much faster and flexible.

ALARMS

IQVISION's sophisticated alarm processing and routing enables alarms from the systems to which it is connected to be displayed in an alarm console. If required alarms can be routed to alternative destination such as a mobile phone using push notification and the Action Management Service.

The Enhanced Alarm Console which displays alarms in a list and enables the user to acknowledge them.

SECURITY

IQVISION has a comprehensive password security system that uses standard authentication and encryption techniques to enable access to be controlled. If required, an external LDAP connection can be used.

The Cyber Security Dashboard provides a system wide view of security status with built in recommendations to improve security for IQVISION and controllers connected to it.

The audit trail contains a log of database changes, database storage and backup, global time functions, calendar, central scheduling, control, and energy management routines.

E-signature

IQVISION supports Niagara e-signature which facilitates compliance with the FDA's 21 CFR Part 11 - see the E-signature Data Sheet (TA201432).

CONNECTIVITY

IQX Controllers
IQVISION can communicate with IQX controllers over the Niagara network.

3rd Party Systems
IQVISION can communicate with a number of 3rd party systems using standard Niagara drivers - see page 6. Use of these drivers requires IQVISION to be licensed with the appropriate number of open points - see page 6.

Cloud Connectivity
IQVISION supports connectivity with the Honeywell Forge Cloud solution.

Connected Power System
The IQVISION Connected Socket Dashboard allows the energy and control status of Connected Power Sockets to be monitored. For further details see the Connected Power System Data Sheet (TA201500).

ENGINEERING

Simplified Engineering
A range of 'Easy' engineering tools simplify the engineering workflow. Easy Templating allows page templates to be created and used to create standardised schematic pages. Easy Binding makes it simple to bind graphics to points on the system. Easy Database Manager enables unused or unwanted points stored in the database to be found and removed.

Data Migration
IQVISION includes a Migration Tool that can be used to import system data from 963 and IQSET. Imported data can include device configurations and/or schematics.

If you wish to have historical logged data from 963 transferred across to IQVISION, talk to your Trend account manager as there are some chargeable services available where large multi-sites and logged data can be transferred as a service.

TONN8 and IQX
IQVISION is the Engineering Tool for TONN8s and IQX controllers.

COMPATIBILITY

TREND SYSTEM

Trend network: IQVISION provides connectivity to a Trend network via any Ethernet-enabled device with an available virtual CNC (vCNC) including vCNC in secure mode. IQVISION is not compatible with TMN connections to remote sites.

Controllers: Trend IQ controllers and IQX controllers. IQ4 v3.70 or greater or IQ5 controllers required for secure vCNC connection.

Tools: IQSET v7.30 or greater required for data export for IQVISION. Schematic Export Tool v2.10 or greater required for export of 963 projects.

TONN: Data from TONN8s and TONNs can be added to IQVISION. IQVISION provides the engineering tool for TONN8s.

3RD PARTY SYSTEMS

Direct Ethernet based driver support for BACnet IP, EIB/KNX IP, Lon IP, Modbus IP master and slave, MBUS IP, SNMP, OPC UA Generic Client Profile, OPC UA Data Access Client Profile, OPC UA History Data Access Client Profile, OPC UA Alarm and, Fidelio, Honeywell Forge.

IQVISION is not compatible with serial SMS modems, but can support SMS via TONN8 and GSM modem.

Alarm push notification to a mobile device is available using the Action Management Service - see the Action Management Data Sheet (TA201429).

Niagara Compatibility Statement (NiCS):

Property	Value
STATION COMPATIBILITY IN	All
STATION COMPATIBILITY OUT	All
TOOL COMPATIBILITY IN	All
TOOL COMPATIBILITY OUT	All

BACNET CERTIFICATION

IQVISION V4.14 uses Niagara 4.14 which contains changes for Protocol Revision 15 - but is not BACnet certified.

For applications where BACnet certification is required, we recommend that the latest release of IQVISION 2.60 (using Niagara 4.10ux) is used.

Niagara 4.10ux is certified with BTL as a BACnet Advanced Workstation (B-AWS). For details of the certification go to:

https://www.bacnetinternational.net/btl/index.php?m=18&sf151417323=1

For details of compatibility please refer to the IQVISION BACnet Protocol Implementation Conformance Statement (TP201384).

BACNET / SC

BACnet/SC for encrypted communication via HTTPS over Transport Security Layer 1.3 (TLSv1.3)

INSTALLATION

IQVISION is available as a download from the Trend Approved Partners site (PNet): http://partners.trendcontrols.com. Once downloaded a step-by-step installation program will guide you through the installation process. After installation, the software must be licensed, and configured to operate as required, as described in the IQVISION Configuration Manual (TE201382).

ORDER CODES

For details of ordering an upgrade from 963 to IQVISION see 963 to IQVISION Upgrade Information Sheet (TP201427). For Niagara analytics order codes see the Analytics Data Sheet (TA201430). For Niagara e-signature order codes see the E-Signature Data Sheet (TA201432). For Healthy Building Dashboard order codes see the Healthy Building Dashboard Data Sheet (TA201468).

The IQVISION licence scheme is based around a point count. A point is a single item of information that is stored in the IQVISION database. There are three main categories of points in IQVISION - Trend points, open points and TONN points.

Trend Points

These are points (e.g. sensors, knobs, switches, digital inputs, drivers) from Trend controllers (IQ1, IQ2, IQ3, IQ4, IQ5, IQL, IQECO). Time Schedule modules and Plot modules are not included in the point count.

The license should be sized according to the number of the points to be monitored. Point discovery is an embedded feature available through the discovery wizard embedded in the Trend driver. Trend devices and networks are not counted for licensing purposes.

IQV-300	IQVISION starter kit including Trend native driver and 300 point database size
IQV-500	IQVISION starter kit including Trend native driver and 500 point database size
IQV-2500	IQVISION starter kit including Trend native driver and 2500 point database size
IQV-5000	IQVISION starter kit including Trend native driver and 5000 point database size
IQV-15000	IQVISION starter kit including Trend native driver and 15000 point database size
IQV-150000	IQVISION starter kit including Trend native driver and 150000 point database size

For systems requiring a license capacity of 1 million points, please contact your Trend account manager for details.

If additional Trend points are required, the following codes can be combined to reach the desired number of points:

IQV-100-EXT	IQVISION additional 100 Trend database points
IQV-500-EXT	IQVISION additional 500 Trend database points
IQV-2500-EXT	IQVISION additional 2500 Trend database points
IQV-5000-EXT	IQVISION additional 5000 Trend database points
IQV-15000-EXT	IQVISION additional 15000 Trend database points
IQV-25000-EXT	IQVISION additional 25000 Trend database points
IQV-50000-EXT	IQVISION additional 50000 Trend database points
IQV-150000-EXT	IQVISION additional 150000 Trend database points

Open Points

These are points from open protocol equipped devices or subsystems that you wish to integrate into IQVISION. The IQVISION open driver licences include a selection of standard drivers (BACnet IP, EIB/KNX IP, Lon IP, Modbus IP master and slave, MBUS IP, SNMP and OPC UA) that can be selected as necessary to enable head end integration.

IQV-500-OPEN	Extend base licence with additional 500 Open protocols points
IQV-2500-OPEN	Extend base licence with additional 2500 Open protocols points
IQV-5000-OPEN	Extend base licence with additional 5000 Open protocols points
IQV-10000-OPEN	Extend base licence with additional 10000 Open protocols points
IQV-25000-OPEN	Extend base licence with additional 25000 Open protocols points
IQV-50000-OPEN	Extend base licence with additional 50000 Open protocols points

Note: When reach the limit for point count is reached a licence upgrade must be purchased if additional points are required.

TONN / IQX Points

These are points from a Trend TONN or IQX. The licence scheme is based around the number of devices.

IQV-BASE-1-N	Base license for 1 TONN8/IQX
IQV-BASE-5-N	Base license for up to 5 TONN8/IQX
IQV-BASE-10-N	Base license for up to 10 TONN8/IQX
IQV-1-N	Extend base license with additional 1 TONN/IQX connection.
IQV-10-N	Extend base license with additional 10 TONN/IQX connections.
IQV-100-N	Extend base license to 100 TONN/IQX connections only.
IQV-UNL-N	Extend 100 TONN/IQX connection supervisor to unlimited connections.
IQV-ZERO-UNL-NODE	IQVISION Zero Trend Points unlimited TONN/IQX connections included.

Maintenance Upgrade Options

IQVISION starter kits include an 18 month maintenance and free upgrade package. This can be extended by purchasing one of the following maintenance upgrade options:

IQV-MNT1	IQVISION additional 1 year maintenance fee for Points base license
IQV-MNT3	IQVISION additional 3 years maintenance fee for Points base license
IQV-MNT5	IQVISION additional 5 years maintenance fee for Points base license
IQV-MNT1-1	IQVISION additional 1 year maintenance fee for 1 Node base license
IQV-MNT3-1	IQVISION additional 3 years maintenance fee for 1 Node base license
IQV-MNT5-1	IQVISION additional 5 years maintenance fee for 1 Node base license
IQV-MNT1-10	IQVISION additional 1 year maintenance fee for 10 Nodes base license
IQV-MNT3-10	IQVISION additional 3 years maintenance fee for 10 Nodes base license
IQV-MNT5-10	IQVISION additional 5 years maintenance fee for 10 Nodes base license
IQV-MNT1-100	IQVISION additional 1 year maintenance fee for 100 Nodes base license
IQV-MNT3-100	IQVISION additional 3 years maintenance fee for 100 Nodes base license
IQV-MNT5-100	IQVISION additional 5 years maintenance fee for 100 Nodes base license
IQV-MNT1-UNL	IQVISION additional 1 year maintenance fee for UNL Nodes base license
IQV-MNT3-UNL	IQVISION additional 3 years maintenance fee for UNL Nodes base license
IQV-MNT5-UNL	IQVISION additional 5 years maintenance fee for UNL Nodes base license

Extended Support Options

IQV-ALM-PORTAL	Licence for the Alarm Portal on a remote PC.
IQV-DB-CSV	Extend the capability for IQVISION to interact with Microsoft Excel
IQV-DB-MYSQL	Extend the capability for IQVISION to communicate MYSQL database
IQV-DB-ORCL	Extend the capability for IQVISION to communicate with Oracle 11G database
IQV-DB-SQL	Extend the capability for IQVISION to communicate SQL

ADDITIONAL DRIVERS

TONN-DR-MFID	Fidelio Driver for N4 IQVISION or TONN8.
IQV-DR-S-JSON	JSON Toolkit for IQVISION, SMA required
IQV-DR-S-HTTP	N4 HTTP client driver for IQVISION, SMA required
IQV-DR-S-OPENADR	IQVISION VEN Supervisor Driver for OpenADR 2.0

SYSTEM REQUIREMENTS

IQVISION

IQVISION will run on the following operating systems:

Windows 11 Professional (64-bit)
Windows Server 2022 (64-bit)

64 bit operating systems recommended

Your PC must comply with the minimum specification for the installed operating system as specified by Microsoft. In addition to meeting the requirements for the operating system IQVISION requires the following:

Processor	Intel Xeon 4th Gen (or better), Intel Core i-series 12th Gen (or better), AMD Ryzen 5 Gen 3 (or better).
Memory (RAM)	16 GB DDR4 minimum, 32 GB or more recommended for larger systems.
Hard Drive	SSD 512 GB minimum, more recommended depending on archiving requirements.
Display	Video card and monitor capable of 1920 x 1080 pixel resolution or greater
Network Support	Ethernet adapter (10/100/1000 Mb with RJ-45 connector)
Video	1080p (1920 x 1080) minimum resolution.
Connectivity	Full time high speed ISP connection recommended for remote site access (i.e. T1, ADSL, cable modem).

Niagara 4 supervisors may run acceptably on lower-rated platforms, or may even require more powerful platforms, depending on the application, number of data points integrated, data poll rate, number of concurrent users, performance expectations, etc.

The biggest factors for performance will be the amount of memory available to Niagara and the speed of disk drives.

If enterprise-level data archiving is required (optional), one of the following compatible database applications will need to be installed:

MS SQL Server 2016
MS SQL Server 2019

WEB SERVER

Supported clients:	Most modern browsers, including mobile devices (Apple, Android etc). *Note: Microsoft Internet Explorer is not supported.*
Web server used:	Jetty Web Server

ENERGY PERFORMANCE OF BUILDINGS

EN ISO 52120-1	When used as part of a complete Trend Controls system AND when programmed with an appropriate application/strategy, IQVISION can support compliance with EN ISO 52120-1. This enables buildings to achieve up to 30% energy cost savings (Energy classification “A”) alongside maximizing comfort and well being.
EN12098-1	IQVISION complies with the performance specification defined in EN12098-1. With an appropriate application/strategy it can make use of operation modes, scheduling, optimum start/stop, OAT and frost protection to enhance the energy performance of buildings.

Please send any comments about this or any other Trend technical publication to techpubs@trendcontrols.com

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