IQView4
Touch Screen Display

IQView4 Touch Screen Display

Description

The IQ®VIEW4 is a touch screen display which provides an interface to an IQ controller. It enables the user to view and adjust operating times, monitor alarms, make adjustments to controller parameters, and display graphs of logged data.
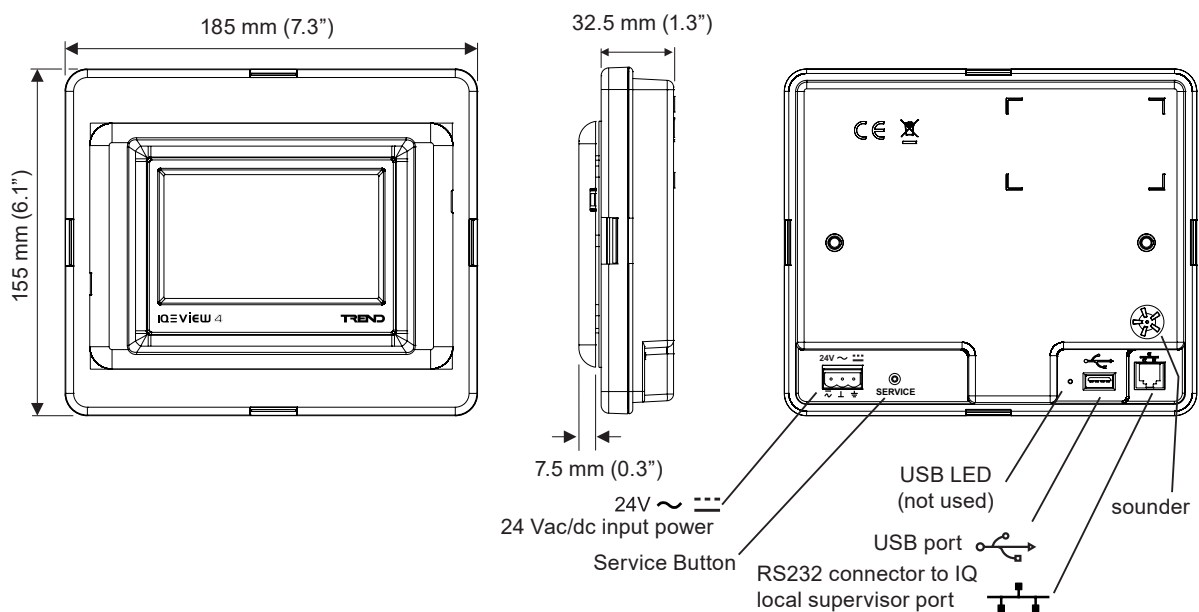
The unit is panel mountable with a surface mounting option available enabling the IQVIEW4 to be mounted in a way suitable for its environment and use.

Features

- Viewing of inputs, outputs, directories, alarms, plots
- Adjustment of knobs, switches, time zones, and time
- Graphing of logged data
- Configurable users to ensure system security
- Communicates with IQ1s (v5 and above), IQ2s, IQ3s and IQ4s via controller's local supervisor port.
- RS232 connection
- Panel or surface mounting
- 480 x 272 pixels colour touch screen LCD display screen
- 24 Vac/dc input power supply
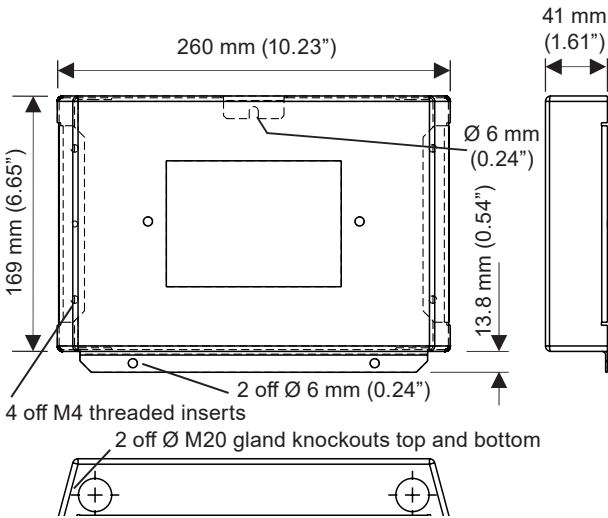- IP50 (when panel mounted)
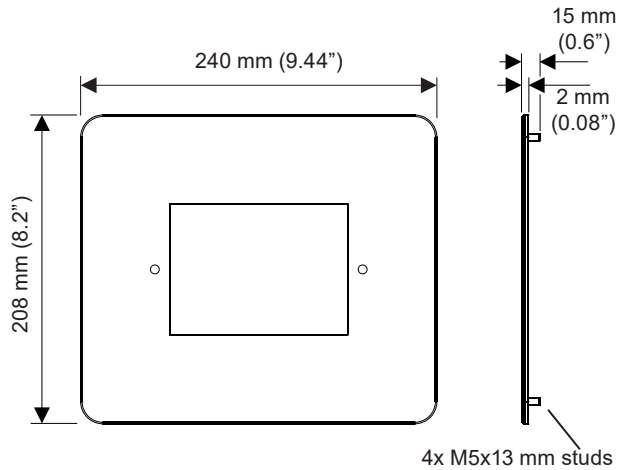
Physical

IQVIEW4 (Panel mounting)

185 mm (7.3")

155 mm (6.1")

32.5 mm (1.3")

7.5 mm (0.3")

24V ∼ ⸬
24 Vac/dc input power

Service Button

RS232 connector to IQ local supervisor port

USB LED (not used)

USB port

sounder

Physical (continued)

IQVIEW4 SM BOX (Surface Mounting)

260 mm (10.23")

169 mm (6.65")

41 mm (1.61")

Ø 6 mm (0.24")

13.8 mm (0.54")

2 off Ø 6 mm (0.24")

4 off M4 threaded inserts

2 off Ø M20 gland knockouts top and bottom

IQVIEW4/FPK ADAPTOR PLATE

240 mm (9.44")

208 mm (8.2")

15 mm (0.6")

2 mm (0.08")

4x M5x13 mm studs

# FUNCTIONALITY

The functionality of the IQVIEW4 touch screen display can be split into **Software**, **Controller Connection**, and **Hardware** sections:

SOFTWARE

The IQVIEW4's software provides its functionality. It enables viewing/adjustment of operating times and device values, as well as the display of graphs from an intuitive touch screen interface. It also enables the IQVIEW4 to be configured.

The Task Launcher - Features screen is shown below:
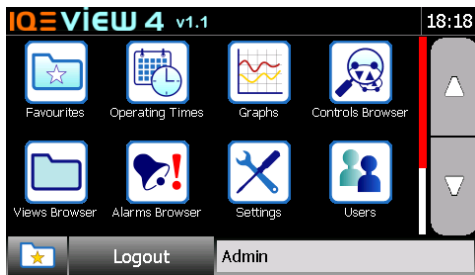
The Task Launcher - Features screen contains icons that enable the selection of the main features.

| Icon	Description
	Provides access to the operating times of controllers on the system.
	Provides access to graph views. From here graph views can be displayed, created or deleted. It also enables you to browse directly to any controller plot and display it as a graph.
	Provides access to the presentation modules (i.e. sensors, digital inputs, critical alarms (IQ1 and IQ2), knobs, switches, time zones, and drivers) and control loops of the controller which the IQVIEW4 is connected. From here the values can be viewed, adjusted, or graphed.
	Provides access to display and directory modules on the controller to which the IQVIEW4 is connected. From here the values can be viewed as a list of points.
	Provides access to alarms on the controller

Icon	Description
	Allows the IQVIEW4's settings to be viewed/configured. It also provides access to the facilities to upgrade the software, back up or restore the configuration, perform a restart, or access diagnostic information.
	Provides access to the IQVIEW4's security features enabling the creation, deletion, and editing of the IQVIEW4's users.
	Displays information about the IQVIEW4 (e.g. Version, Build, Date, Start time).

The bottom of the display has buttons and indicators. :

|	
	Present on most displays it takes the user to the Favourites page
Login/ Logout	Enables the user to log in or log out. It also indicates whether a user is logged in or out; if the button shows 'Logout' then a user is currently logged in (and vice versa).
Admin	Shows status messages.
	Indicates whether a USB memory stick is plugged in to the unit.

Operating Times

The IQVIEW4 enables the user to make adjustments to the operating times in the controller. It allows adjustment of standard operating times, operating times for the current week, or setting up exceptions for the year ahead.
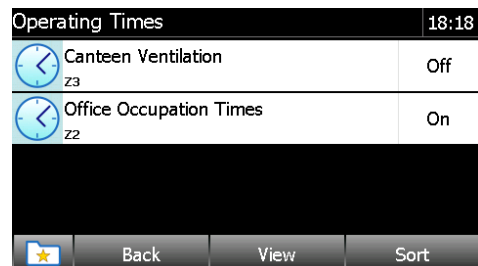
Graphs

IQVIEW4 is able to display logged data from the controller in multi-trace graphs. A single graph can contain multiple traces from different controllers enabling easy comparison of data. Any point logged in the controller can be graphed.
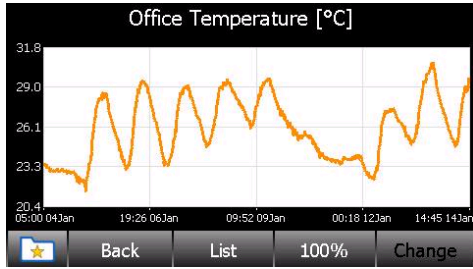
Graphs can accessed from a list of values in the controller (Controls Browser), or from the display and directory navigation (Views Browser). It is possible to zoom in on selected parts of the graph, display spot values, or view the underlying data.

The configuration of a graph can be saved and viewed again (with the latest data). Saved graphs allow quick access to regularly used graphs; each saved graph view can have multiple traces, and can be set up to look as required.

View Controller Data

Values of module parameters from presentation modules (i.e. sensors, digital inputs, critical alarms (IQ1 and IQ2), knobs, switches, loops, time zones, and drivers) from the controller to which the IQVIEW4 is connected can be viewed using either the Controls Browser, or the Views Browser.

Controls Browser

Views Browser

The Controls Browser displays a list of sensor, digital input, critical alarm, knob, switch, timezone, driver, and loop modules Once the values are displayed they can be viewed, adjusted, or graphed as appropriate depending on the type of value.

The Views Browser enables the display and directory modules in the controller to be accessed.

Alarms Browser

The Alarms Browser gives access to the controller's historic or current alarms.

The Historic Alarms come from the controller's alarm history buffer (alarm log).

The Current Alarms show all the current item alarms (module alarms which are enabled) and critical alarms (pre-IQ3 controllers only).

Users (Security)

IQVIEW4 can be operated with or without security.

When operating without security it is not necessary to provide a user name and password in order to access the unit. Anyone will have full access to all of IQVIEW4's features.

When security is enabled it is necessary to log in using a user name and password, and the features available to the user are determined by the user's access rights. There are two users set up by default (Administrator and Guest).

Each user has a user name, password, level of authority (PIN level), language, and access rights. The access rights determine which of the IQVIEW4's features they have access to.

The IQVIEW4's user security prevents unauthorised access to IQVIEW4's features. Changes made to module parameters in IQ controllers may also be protected by the controller's own security.

Settings

The IQVIEW4 provides range of menus that enable viewing or configuration of date and time, display settings (including screen saver operation), language selection for the user interface, security access settings, system functions (including backup, restore and upgrade) and diagnostic information.

About

Information about the IQVIEW4 (i.e. Version, Build, Date, Start time) is displayed.

Favourites

Any page can be selected as a favourite allowing the access to regularly used pages from the Favourites page which can be selected using .

Backup and Restore

All or part of IQVIEW4's configuration can be saved to a USB memory stick. The USB memory stick may be removed and stored in a safe location as a back up, or reused to configure another IQVIEW4.

Software Upgrade

The IQVIEW4 includes an upgrade feature allowing the software to be upgraded from a USB memory stick.

CONTROLLER CONNECTION

The IQVIEW4 has an RS232 port for connection to an IQ controller's local supervisor port. The RS232 port on the IQVIEW4 enables direct connection to the local supervisor port of IQ1xx, IQ2xx, IQ3 or IQ4 controllers.

Physical connection

Connection of IQVIEW4 using its RS232 connector requires use of the appropriate cables as described in the table:

Connecting to	Cable Required
IQ4 IQ3 IQ2xx IQ1xx with RJ11 connector	RJ11 to RJ11 adapter cable (RD/SDU-IQ2COMMSCABLE-3M) as supplied with IQVIEW4
IQ1xx with 25 Way D type connector	RJ11 to 25 Way D type male adapter cable (CABLE/EJ105651).
IQ1xx with 5 way in-line connector	RJ11 to 25 Way D type male adapter cable (CABLE/EJ105651) in conjunction with the 25 way socket to 5 in-line socket adapter cable (CABLE/78-1172).

Note: IQVIEW4 is supplied with a 3 m (9' 10") RJ11 to RJ11 cable (RD/SDU-IQ2COMMSCABLE3M). An optional 10 m cable (RD/SDUIQ2COMMSCABLE10M) is also available.

HARDWARE

Mounting

The IQVIEW4 can be panel, or surface mounted.

Panel Mounting

The IQVIEW4 is designed for rear panel mounting, and can be mounted by simply cutting the required cutout, placing the unit into the hole, and fixing the retainer clips. When correctly mounted in this way the unit has an IP rating of IP50 from the front when the panel is closed.

The assembly consists of the main unit, 2 retainer clips and screws, and a bezel. It can be mounted in panels up to 2 to 5 mm (0.08" to 0.2"), the normal thickness of a metal panel.

The power and networking cables can be run into the panel and then directly to the IQVIEW4, Access to the USB connector a require the panel to be opened.

Surface Mounting

The IQVIEW4 can be mounted on a wall or on a panel (without the need to cut holes) using the surface mounting kit (IQVIEW4 SM BOX). For wall mounting it uses a 3 point fixing, with cable access either from the rear or from M20 cable entry knockouts, two in the top face and two in the bottom face. For panel mounting it uses a 4 point fixing by screwing through the panel from the rear with cable entry normally from the rear; the 4 M4 screws are provided.

Note: IQVIEW4 SM BOX can also be used when replacing any of the display panels (GDP, FPK, NDP, SDU).

Display Replacement

IQVIEW4 can be used with the adaptor plate (IQVIEW4/FPK ADAPTOR PLATE) to replace an FPK, DP, GDP, GDP+ or NDP on panels up to 5 mm (0.2") thick.

Note: IQVIEW4 will not physically replace a DP (2 line display panel) fitted in the cover of an IQ controller; it would have to be fitted alongside, with the DP left in place.

The IQVIEW4 can also be used to replace a panel mounted SDU-IQ or SDU-xcite.

Input Power

The unit requires a 24 Vac, 50/60 Hz, 8 VA supply, or a 24 Vdc, 3 W supply.

Note: This power level cannot be provided from an IQ controller's auxiliary supply output; a separate supply is required.

Note: The 'neutral' terminal ($\perp$) of the 24 Vac input power supply is internally connected to the IQVIEW4's earth (ground) terminal.

A 230 V/24 Vac, 36 VA, transformer is available (ACC/24VAC). This is a sealed unit with two mounting lugs; it has an isolated 24 Vac output and an additional earth (ground) lead connected through from its input power supply earth (ground) to the 24 Vac output earth (ground) for earthing (grounding) the IQVIEW4.

A general purpose 24 Vac transformer may be used to supply the IQVIEW4, but if one side of its output is earthed (grounded), this side must be connected to the IQVIEW4's 'neutral' ($\perp$) terminal.

The IQVIEW4 must be earthed (through its input power supply earth (ground) terminal). For the UL rating the input power connections must be made using 18 AWG or larger wire rated at least 90ºC.

The 24 V supply must include a suitably rated switch in close proximity and be clearly marked as the disconnecting device for the unit.

Fusing

The input supply is protected by a 3.15 A fast-blow fuse; this protects the IQVIEW4 board from drawing excessive current from the supply. If it blows the unit should be returned to the supplier for repair.

Indicator

The following indicator is on the unit:

USB Power: (green) Not used. For future development

Sounder

The sounder can produce a key click when the touch screen is tapped, if the key click is enabled. By default the key click is disabled. It can be enabled using the application software.

Power failure protection

The IQVIEW4 does not require a battery. Configuration data is stored in non-volatile memory (Flash). It's database will be restored after power failure; this includes the presentation modules discovered in the controller (i.e. sensors, drivers etc) and any customer settings including Users, language etc. After power failure, the IQVIEW4 will obtain the time and date from the controller.

Display

The IQVIEW4 has a 4.3" 480 x 272 pixel (16 bit) LCD Transmissive colour display with touch screen. The backlight is LED with autodim. The autodim function enables the screen brightness to be dropped to ½ brightness after a user definable backlight delay time (auto dim off, or 1, 2, 3, 4 or 5 minutes).

The screen should only be tapped using a finger, no sharp objects (e.g. screwdriver) or pointers should be used. Failure to comply may damage the unit.

Connectors

The IQVIEW4 has the following connectors:

RS232: The RS232 connector is an RJ11 socket used for connection to the controller.

Power: The power connector is a 2 part 3 wide screw terminal connector used for connecting the unit to the power supply.

USB: Standard USB A connector for memory stick. USB stick maximum size 2 Gbyte, fully formatted FAT/FAT32.

Two part connectors are used throughout to facilitate installation.

USB Port

The IQVIEW4 has a USB port which can be used to plug in a memory stick (maximum size: 2 Gbyte, fully formatted FAT/FAT32). This can be used for several purposes:

Backup and Restore: to backup and restore the user configuration data. The data can be written to the card, and the card may be removed and stored in a safe location as a backup, or to transport the configuration from one IQVIEW4 to another.

Software Upgrade: The software can be upgraded by way of the USB port. The application software enables the user to select the upgrade function.

Service Button

The service button when pressed during power up provides access to the units factory configuration settings. This feature should only be accessed when instructed by Trend Technical Support.

FIELD MAINTENANCE

The IQVIEW4 requires virtually no routine maintenance. The unit should be cleaned with a cloth moistened with water in order to avoid buildup of dust or other contaminents. **Disconnect power before carrying out any cleaning.**

The screen should be cleaned regularly to remove dust and grease by wiping gently with a soft cloth such as that used for spectacles.

DISPOSAL

COSHH (Control of Substances Hazardous to Health - UK Government Regulations 2002) ASSESSMENT FOR DISPOSAL OF IQVIEW4.

RECYCLING ♻.
All plastic and metal parts are recyclable. The printed circuit board may be sent to any PCB recovery contractor to recover some of the components for any metals such as gold and silver.

WEEE Directive:

At the end of their useful life the packaging, and product should be disposed of by a suitable recycling centre.
Do not dispose of with normal household waste.
Do not burn.

COMPATIBILITY

The IQVIEW4 can connect to a single IQ controller.

Controllers: IQVIEW4 is compatible with IQ1xx controllers version 5 and above and all IQ2xx (not IQ22x/ADL), IQ3 and IQ4 controllers. IQL and FNC/FC controllers are not supported.

Timezones: IQVIEW4 can view and adjust the operating times in IQ1, IQ2, IQ3 and IQ4 controllers. For IQ1 and IQ2 controllers it can adjust the standard and current weeks, and when supported by the controller set up and adjust the Holiday Calendar times. For IQ3 and IQ4 controllers it can adjust the normal week, and set up and adjust the exception times.

Modules: IQVIEW4 will not discover modules without labels.

Plots: IQVIEW4 supports synchronised plots. It is unable to obtain graphs from triggered and periodic plots.

Network connection: The IQVIEW4 connects to a local controller through its supervisor (RS232) port; it has no network access.

GraphIQs: IQVIEW4 does not support the display of GraphIQs from IQ3 and IQ4 controllers.

INSTALLATION

The IQVIEW4 is designed for rear panel mounting. The panel needs to be pierced with a rectangular aperture and drilled with 2 holes, then the panel can be mounted using the two retaining clips and screws provided. A plastic front cover is clipped over the front to hide the screws.

All units are UL rated as 'UL916, listed open energy management equipment'.

The procedure involves:

>   mounting the unit
>   connecting power, do not power up
>   connecting to the controller's local supervisor port
>   reading the End User Licence Agreement
>   powering up
>   configuring the unit (if required)
>   checking operation.

A full description of installing the unit is given in the IQVIEW4 Touch Screen Display Installation Instructions (TG201038). A mounting template, IQVIEW4 Touch Screen Display Template (TG201037), is provided with the unit.

The installation of the IQVIEW4 in a IQVIEW4 SM BOX is described in the IQVIEW4 SM BOX Installation Instructions (TG201078), and IQVIEW4 SM BOX Template (TG201079).

A full description of the use of the IQVIEW4/FPK ADAPTOR PLATE is given in the IQVIEW4/FPK Adaptor Plate Installation Instructions (TG201039) and IQVIEW4/FPK Adaptor Plate Template (TG201040).

CONNECTIONS (Shown from rear)

Input Power Supply
24 Vac/dc

24V ~ ⎓

~ 24 Vac	24 Vac	E
⎓ 24 Vdc	+24V 0V	E
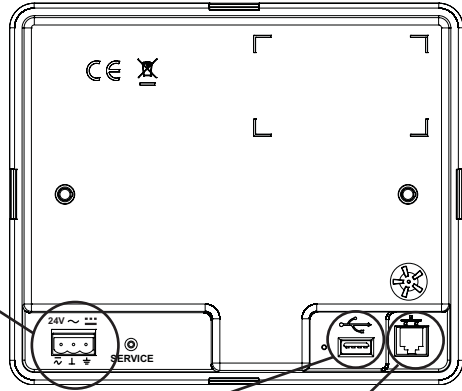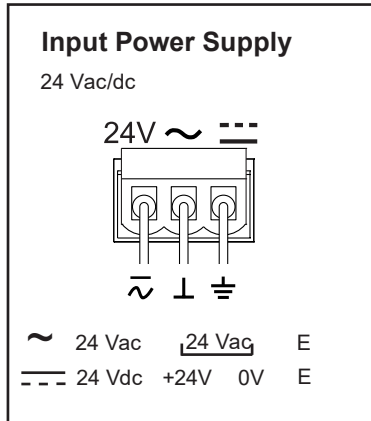
CAUTION:
Do not apply 230 V input power to this connector

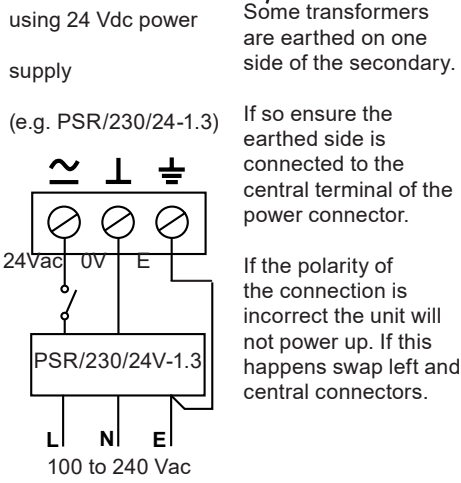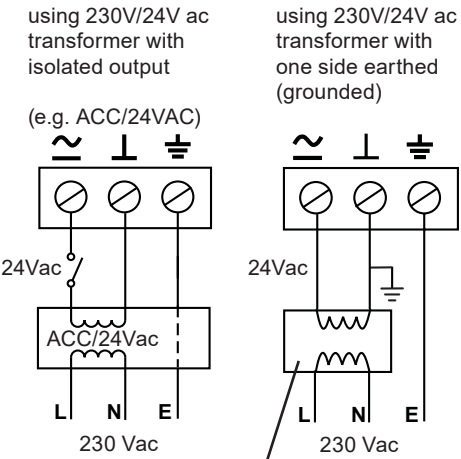*Note that the required power cannot be guaranteed to be provided from an IQ controller's auxiliary supply output; a separate supply is generally required.*

using 230V/24V ac transformer with isolated output

(e.g. ACC/24VAC)

~ ⊥ ⏚

24Vac

ACC/24Vac

L N E
230 Vac
using 24 Vdc power

supply

(e.g. PSR/230/24-1.3)

~ ⊥ ⏚

24Vac 0V E

PSR/230/24V-1.3

L N E
100 to 240 Vac

A centre tapped to earth transformer MUST not be used

using 230V/24V ac transformer with one side earthed (grounded)

~ ⊥ ⏚

24Vac

L N E
230 Vac
Some transformers are earthed on one side of the secondary.

If so ensure the earthed side is connected to the central terminal of the power connector.

If the polarity of the connection is incorrect the unit will not power up. If this happens swap left and central connectors.

RS232
For IQ4, IQ3, IQ2xx, and some IQ1xx
RD/SDU-IQ2COMMSCABLE3M,(supplied with IQVIEW4)

IQ4, IQ3, IQ2xx, IQ1xx
RS232

For IQ1xx with 25 way D type socket
CABLE/EJ105651 (additional)

IQ1xx
RS232

For IQ1xx with 5 in line plug
CABLE/EJ105651 (additional)

IQ1xx
24 V AUX
RS232

CABLE/78-1167 (additional)

USB Port

USB Memory Stick

ORDER CODES

IQVIEW4/24	:IQVIEW4 including 3 m (9' 10") RJ11 to RJ11 RS232 cable.

ACCESORIES;

IQVIEW4/FPK ADAPTOR PLATE	:Adaptor plate to facilitate mounting an IQVIEW4 in place of FPK (2 line display panel, front panel kit).
IQVIEW4 SM BOX	:Surface Mount Box for mounting the IQVIEW4 on wall or panel (without need to cut square holes); can also be used when IQVIEW4 is replacing display panels. Complete with screws for panel mounting.
RD/SDU-IQ2COMMSCABLE-3M	:(CABLE/EJ105046) RJ11 plug to RJ11 plug 3 m cable to connect to IQ4, IQ3, IQ2xx, and some IQ1xx controllers' local supervisor ports (as supplied with IQVIEW4).
RD/SDU-IQ2COMMSCABLE-10M	:(CABLE/EJ105047) RJ11 plug to RJ11 plug 10 m to connect to IQ4, IQ3, IQ2xx, and some IQ1xx controllers' local supervisor ports (not UL listed)
CABLE/EJ105651	:RJ11 socket to 25 way D type male to connect to some IQ1xx controllers' local supervisor ports.
CABLE/78-1172	:25 way D type socket to 5 in line socket used in conjunction with CABLE/EJ105651 to connect to some IQ1xx controllers' local supervisor ports.

SPECIFICATION

ELECTRICAL

CPU	:Marvell PXA270
Input Power Supply	:24 Vac ±10%, 50/60 Hz; 24 Vdc ±10%
Power consumption	
24 Vac	:8 VA max
24 Vdc	:3 W max.
Fusing	:The input supply is protected by a 3.15 A fast blow fuse.
Mains failure protection	:User configuration data is stored in non-volatile memory (Flash).
Display	:Colour (64k colours), LCD display 480 x 272 pixels (WQVGA) TFT with touch screen.
Backlight	:LED with autodim.
Sounder	:piezo electric.
RS232 port	
Transmission	:RS232, EIA/TIA,232E, V28
Distance	:15 m (16yds)
Baud rate	:9k6
Indicator	
USB LED	:(green) Not used.

MECHANICAL

Dimensions	
IQVIEW4	:185 mm (7.3") x 155 mm (6.1") x 40 mm (1.57")
Weight	
IQVIEW4	:1.16 kg, 2.55 lbs
Connectors	
RS232	:RJ11 (FCC68).
Input Power Supply	:3 wide 2 part connector with screw terminals for 0.5 to 2.5 mm^2 cross section area (20 to 14 AWG) cable
USB	:Standard USB A connector.

Materials	
IQView 4 housing	:PCABS UL94 V0 RTI 80
IQVIEW4/FPK ADAPTOR PLATE	
	:Mild steel sheet 3mm thick painted
IQVIEW4 SM BOX	:Mild steel sheet 1mm thick painted
Paint	:Organisol letherette RAL 7032

ENVIRONMENTAL

EMC:	EN61326 -1: 2006
Immunity	:(Table 2) For equipment used in industrial locations
Emissions	:EN55011: 2007 Class A
	EN61000-3-2: 2006
	EN61000-3-3 +A2: 2005

Warning: This is a class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

Safety	EN61010-1:2001
CB Certificate	:TBA
USA/Canada	:UL rated as 'UL916 listed open energy management equipment'.
Canada	:CSA22.2 No. 205-M1983 - Signal Equipment
Ambient limits	
Storage	:-10 °C (14 °F) to +50 °C (122 °F)
Operating	:0 °C (32 °F) to 45 °C (113 °F)
Humidity	:0 to 80 %RH non-condensing
Altitude	:<2000 m (6562')
Protection	
Panel mounting	:IP50 (from front if correctly mounted with panel closed)
Version	
Processor	:AP106469 issue 3

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

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