

RD-IQ Room Display



Description

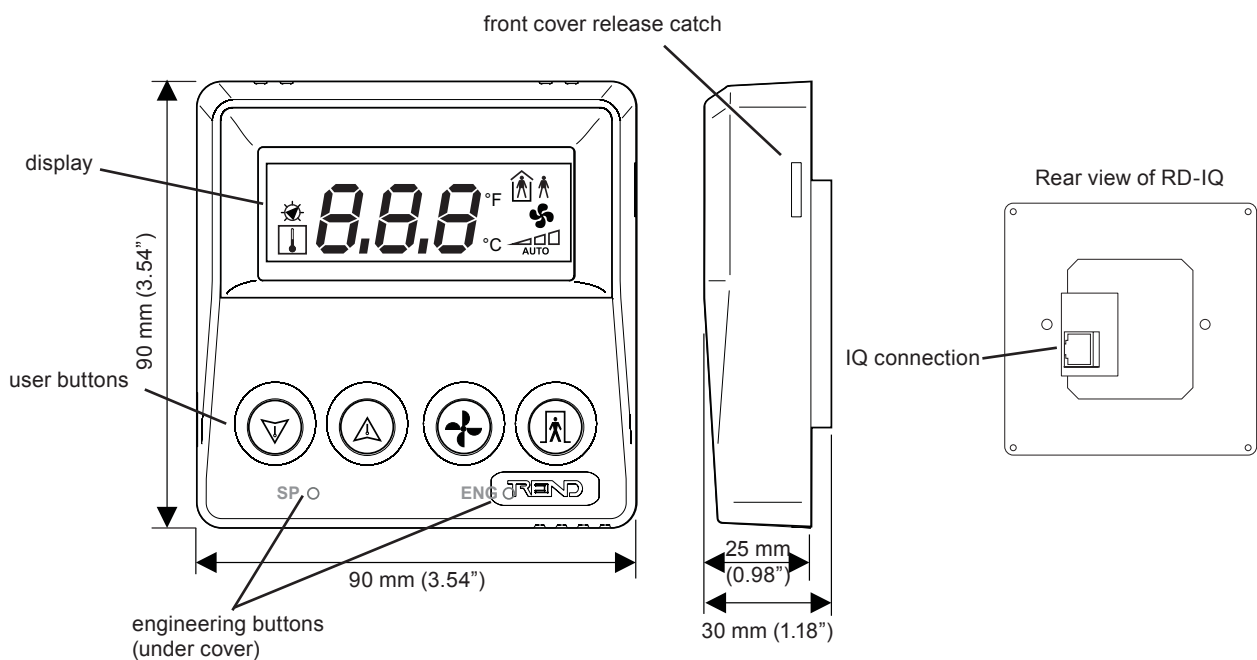
The Room Display is a temperature sensor and 3 digit display with control and indication of setpoint, and optional control and indication of fan speed and occupancy. The RD-IQ connects to the IQ controller by its local supervisor (RS232) port, it can either be fitted on a standard electrical back box or be panel mounted.

Note that RD-IQL and RD-WMB are covered by separate data sheets

Features

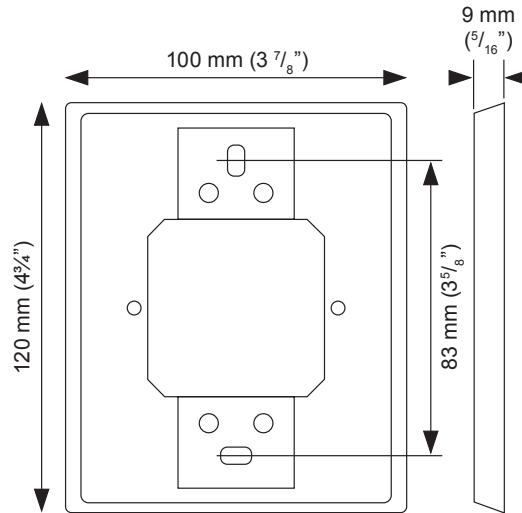
- Single power/signal connection to most IQ2xxs, IQ3s and IQ4s
- Celsius or Fahrenheit display
- Icon indication of fan speed and occupancy states
- Digital display of local temperature or setpoint
- Adjustments configurable with 'out of box' default

Physical



Physical (continued)

WSA Wall Sensor Adaptor Plate



FUNCTIONALITY

The RD Room Display senses the local temperature and displays it digitally in either °C or °F. It enables the setpoint to be displayed and adjusted locally. The appropriate versions also provide for the display and adjustment of fan speed (Off, Low, Medium, High, and Auto), and occupancy.

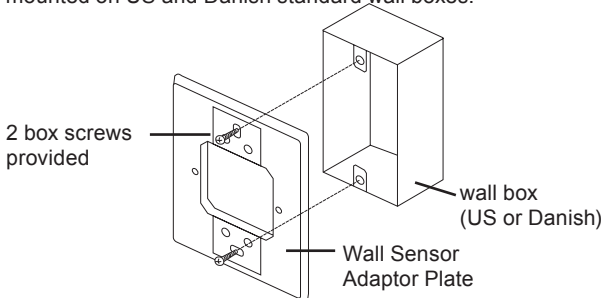
The unit consists of a main assembly and a clip-on front panel. It can be mounted on a standard electrical back box, or on the front of a panel.

An RD-IQ connects to an IQ controller by means of the local supervisor RS232 port. The IQ3, IQ4, and most new IQ2xx series controllers supply the RD with power from this port. However, for early IQ21x, early IQ22x, IQ250, IQ251, and IQ1xx controllers, adapter cables are available to make use of the IQ controller’s auxiliary supply. Alternatively, a separate 24 V (AC or DC) supply connector is available. The IQ module values displayed and controlled are set by default, but may be changed using a built-in engineering mode.

HARDWARE

Unit: The unit consists of a plastic electronics assembly with a plastic clip-on panel. The electronics assembly has two mounting holes to mount on a standard electrical back box or for screwing onto a front panel. Space must be left around the unit for airflow and access to remove the front panel.

The WSA, wall sensor adaptor plate, enables the RD to be mounted on US and Danish standard wall boxes.



It is supplied with 2 plate covers to cover up the fixings to the wall box, 2 wall box screws, and two 3.5 mm screws to fit the RD to the adaptor plate.

Versions: The RD-IQ, has the following variants:

- /K** :Temperature sensor and setpoint adjustment.
- /KOS** :Temperature sensor, setpoint adjustment, occupation override, and occupation status display.
- /KOSF** :Temperature sensor, setpoint adjustment, occupation override, occupation status display, and fan speed control.

These variants differ in that, only the buttons used for that particular variant have the icons printed on them, the unused buttons being left blank.

Input Power Supply: The RD-IQ requires 24 Vac or 24 Vdc at 10 mA. It can take its supply either from the RJ11 connector (if available on the IQ controller) or from a separate connector using the appropriate adaptor cable.

With IQ3, IQ4, and later IQ2xx series controllers (which can supply the 24 Vdc power to the RD via the RJ11 connector) only the RJ11 to RJ11 cable is required (RD/SDU-IQ2COMMSCABLE/3M or /10M).

With later IQ1xx, early IQ21x, early IQ22x, and IQ250/251 the adaptor, RD/SDU-ADAPTOR IQ2xx, must be used in addition to the RJ11 to RJ11 cable.

With IQ1xx with a 5 in line RS232 connector the adaptor, RD/SDU-ADAPTOR IQ1xx+, must be used in addition to the RJ11 to RJ11 cable. However the 2 terminal power connection may have to be modified as follows:

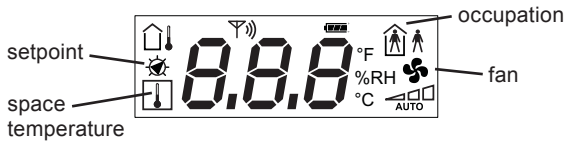
IQ	Comments
IQ10x+, IQ111+, IQ131+,	For these controllers reverse the polarity of the wires in the 2 terminal connector
IQ151+	Use as supplied

With early IQ1xx with a 25 way D type RS232 connector the adaptor, RD/SDU-ADAPTOR IQ1xx, must be used in addition to the RJ11 to RJ11 cable.

HARDWARE (continued)

Backup: The engineering mode settings are stored in EEROM which is non-volatile to power interruptions.

Display: The custom LCD display is not backlit and contains 3 large digits, and 16 icons:



Digits: In the range 0.00 to 999. Normally displays either setpoint or temperature but also used to indicate errors. In engineering mode also used for setting module numbers, and PINs.

Knob or **Thermometer** : Indicates which (setpoint or local space temperature respectively) is being displayed.
 °C or °F : Indicates the temperature display units.

Unoccupied or **Occupied** : Indicates the occupation state.

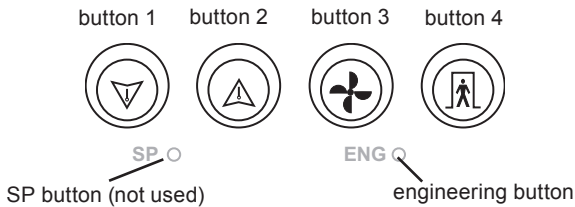
Fan : Indicates fan being controlled.

AUTO: Indicates fan is in automatic speed.

Low , **Medium** , or **High** speed: Indicate manual fan speeds.

, , , and %RH icon"/> icons are currently not used; they are reserved for future development.

Buttons: The front panel has four user buttons accessible with the front panel fitted, and two additional (engineering) buttons accessible only with the front panel removed.



The four user buttons are numbered 1 to 4 left to right, and labelled , , , and . The left engineering button (SP) is not used on the RD, and the right button (ENG) is used to select one of the engineering modes. The full use of the buttons is explained in the firmware section.

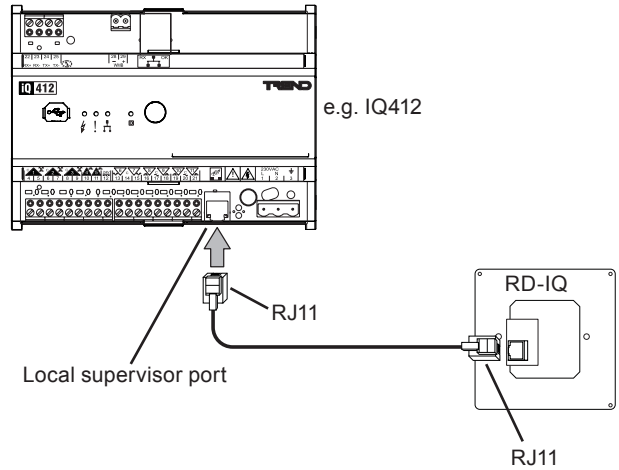
Button 1, : This button is normally used to lower the setpoint

Button 2, : This button is normally used to raise the setpoint

Button 3, : Steps through the fan speed control levels

Button 4, : Enables override of occupation

Communication: The RD-IQ connects the IQ local supervisor port (RS232). Connection to an IQ2xx, IQ3, or IQ4 is by an RJ11 to RJ11 cable. It communicates at 9k6 baud, 7 bits, odd parity. The IQ controller should have its local supervisor port CNC address set to zero for local connection, (not any other address, which implies network communication).



FIRMWARE


Normal Operation

Startup Reset: The RD will perform a reset cycle when power is applied. It will first illuminate all the display segments, then turn them all off. This is followed by a display of the RD firmware version.



If the RD-IQ doesn't communicate successfully with the IQ, it will present the communications error display described below which, in this case, will consist of °C flashing continuously until communications succeed.



Data Transfer: The unit will calculate a value from its sensor every second. If the temperature is below -20 °C (-4 °F), the RD assumes that the sensor is not fitted, and ignores the input.





Illumination: All 4 buttons of the RD-IQ are illuminated when the unit is in the 'wake' state.




Wake state: The display will normally show local temperature . Pressing any button (1 to 4) will wake the unit and turn on the pushbutton lights. Ten seconds after the last button is pressed the unit will return to the "sleep" state and turn off the pushbutton lights.

In the "wake" state the buttons operate as follows:

Button 1, : Causes the display to show the setpoint  for 10 seconds, and pressing again lowers setpoint by 0.5 °C (if °C is selected for the display) or by 0.5 °F (if °F is selected for the display).






Button 2, : Causes the display to show the setpoint  for 10 seconds, and pressing again raises setpoint by 0.5 °C (if °C is selected for the display) or by 0.5 °F (if °F is selected for the display).

Button 3, : Steps through the fan speed control levels (off, low , medium , high , auto **AUTO**)

Button 4, : Enables override of occupation (unoccupied , occupied ).



Note that the actual operation of the HVAC equipment in response to the RD buttons depends on the strategy configured in the controller.



Display: The display mode is set to **local and setpoint** by default but may be changed to **setpoint** only in engineering mode (see Engineer Display Mode).

In local and setpoint mode, the display will normally show the temperature symbol  and the value of space temperature. Pressing either button 1, , or 2, , in "wake" state will cause the display to show the knob symbol  and the setpoint (Ka). In setpoint mode, the knob symbol  is shown all the time along with the setpoint (Ka).




Fan Configuration: The fan can be operated in one of 7 modes; modes 0 to 6.


On power up of the RD the fan configuration mode is set by the controller according to I/O module 2, Fan Configuration parameter (f). The mode can be set in Engineer Display Options, but will be overridden by the I/O module setting when exiting the engineering mode


Mode 0: No fan on home screen. The fan icon  is not shown on the 'home' screen. Button 3  does nothing.





Mode 1: 2 position fan (Off/On). The fan icon  indicates the fan is on, its absence indicates the fan is off. Button 3  sends values 0=OFF, 255=ON

Note that previously Mode 1 gave values 0, 1, now gives values 0, 255.

Mode 2: 3 position fan (Off, On, Auto). The fan icon  indicates the fan is on, its absence indicates the fan is off, the fan icon  and AUTO indicates the fan is in auto mode. Button 3  sends values 0=OFF, 255=ON, 4=AUTO

Mode 3: 4 position fan (Off, 1, 2, 3). Button 3  sends values 0=OFF, 1=Low, 2=Medium, 3=High. See table below:

Mode 4 (default): 5 position fan (Off, 1, 2, 3, Auto). Button 3  sends values 0=OFF, 1=Low, 2=Medium, 3=High, 4=AUTO. See table below:

Fan State					AUTO
Off	on				
Low	on	on			
Medium	on	on	on		
High	on	on	on	on	
Auto	on				on

Note that Mode 4 previously displayed On3, now displays On4.

Mode 5: 4 position blind (0, 1, 2, 3) The state is not indicated by the icons. The value sent from the RD-WMB on each button press cycles between 0, 1, 2, 3. It can be used to control another device; for example, it can be used to control a window blind (0=static, 1=raise, 2=static, 3=lower).

Mode 6: 5 position blind (0, 1, 2, 3, 4) The state is not indicated by the icons. The value sent from the RD-IQ on each button press cycles between 0, 1, 2, 3, 4. It can be used to control another device.

The RD-IQ/KOS should be used for the blind settings, and the RD-IQ/KOSF should be used for the fan settings (see below - 'Communication with IQ')

Communication with IQ: The value is written to the IQ controller by using a text comms write [e.g. Ka(V=x)]. The temperature is written in °C or °F depending on the option selected (see Engineer Display Options).

At the refresh interval (5s in "sleep" state, 2s in "wake" state), and after every button pressed in "wake" state, the RD makes a request to the IQ controller in text comms of the form [Sx(V), Ka(V), Kb(V), Kc(V)]. This requests the values of local temperature, setpoint, occupation status, and fan speed setting where:

Variables	Description
Sx	Local space temperature sensor [default S9]
Ka	Setpoint knob [default K1]
Kb	Occupation status knob (0=Unoccupied, 1=Occupied) [default K6]
Kc	Fan speed knob (0=off, 1=Low, 2=Medium, 3=High, 4=Auto) [default K7] These defaults may be changed in engineering mode (see Engineer Communication).

Error Displays:

If a read request times out, there is a communications error (e.g. the module does not exist), and the display flashes the currently displayed value and all the icons for 4 cycles every 5 s which is effectively continuous until the communications error is cleared.

If a write to the controller is unacknowledged, either the RD has no PIN and the module requires one, or the PIN is of insufficient authority. The display digits flash '8.8.8' alternating with the currently displayed value and all the icons for 4 cycles every 5 s, again appearing continuous until the PIN is corrected.

Engineering Modes

The RD has five engineering modes which can be entered by using a combination of buttons including the buttons 1 to 4 and the right engineering button (ENG) accessible by removing the front panel:

- Temperature Offset (ENG + 2),
- Engineer Display Options (ENG + 3),
- Engineer Communication (ENG + 4),
- Enter PIN (ENG + 1),
- Restore Defaults (ENG + 1 + 4),

Note: (ENG + 1 + 4) implies buttons 1 and 4 are held down and the engineering pinhole button is pressed.

There is also a data validation mode entered after other modes are completed as described below.

All buttons are illuminated during any engineering mode.

Temperature Offset

The temperature offset is added to the sensor reading before it is sent to the controller. It enables the sensor reading to be adjusted e.g. to cater for a difference in the temperatures experienced by the sensor and the occupier. It can be adjusted in the range -3 °C to +3 °C (-5.4 °F to +5.4 °F).

The mode is entered by (ENG + 2), and exited to normal mode by completing the change, pressing (ENG + 2) again, or exited by entering another engineering mode.

On entry into the mode the offset is displayed. It is always displayed in °C regardless of the units selected in the display option below. Button 1, (V), will lower the value, and button 2, (A), will raise the value. The button is changed in 0.1 °C (0.18 °F) steps. Pressing button 4, (M), enters the change and returns to normal operation.

Engineer Display Options

The mode is entered by (ENG + 3), and exited to normal mode by completing the sequence or pressing (ENG + 3) again, or exited by entering another engineering mode.

There are 5 display options:

- Select temperature units (°C or °F)
- Display local temperature (ON/OFF)
- Use local sensor (ON/OFF)
- Display fan mode (1, 3, or 8)
- Display Occupation state (ON/OFF)

Select Temperature Units: On entry into the mode, the 1st option is ready for editing, the entire display is blank except for the °C or °F symbol, whichever is currently selected. Button 1, (V), selects °C, and button 2, (A), selects °F. Button 4, (M), stores the selection to non-volatile memory and moves on to the second option. Selecting °F causes the RD-IQ to convert the measured temperature to °F before sending it to the IQ, and it expects the IQ to send values to it in °F.

Changing temperature units also affects the setpoint increments (0.5 °C for °C and 0.5 °F for °F).

Display local temperature: The entire display is now blank except for the temperature, (I), and knob, (K), symbols. In **local and setpoint**, the symbols, (I) and (K) flash together; in **setpoint** the knob symbol, (K), only flashes. Button 1, (V), selects (I), and button 2, (A), removes (I). Button 4, (M), writes the selection to non-volatile memory and moves onto the third option. With 'Display local temperature' turned off, the RD will only display the setpoint.

Use local sensor: The word **On** or **Off** is displayed alongside a flashing temperature icon, (I). Button 1, (V), switches use of local sensor **ON**, and button 2, (A), switches use of local sensor **OFF**. Button 4, (M), writes the selection to non-volatile memory and moves onto the fourth option. With 'Use local sensor' turned off, the RD will not send its sensor value to the controller, and since the value displayed on the RD comes from the controller it will not be sourced from its own sensor, but from whatever source the controller is using.

Display fan mode: On entry, the word **Off** is displayed alongside a flashing fan icon, (F). Button 1, (V), will step through the fan modes 0 to 6 (see previous fan mode descriptions). Button 2, (A), will step through the modes in the opposite direction.

Display occupation state: The word **On** or **Off** is displayed alongside a flashing man icon, (M). Button 1, (V), switches display of occupation state **ON**, and button 2, (A), switches display of occupation state **OFF**. Button 4, (M), writes the selection to non-volatile memory and returns to the normal display. With 'Display occupation state' turned off, neither of the occupation state icons (M) are displayed, and the occupation button, (M), will be disabled.

Engineer Communication

The mode is entered by (ENG + 4), and exited to data validation mode by completing the sequence or pressing (ENG + 4) again, or exited by entering another engineering mode.

This mode enables the modules that are read and written to (as described in the data transfer section above) to be changed from defaults.

On entry into the mode, the display shows the thermometer symbol, and the sensor number (Sx) in the IQ controller used for local space temperature both flashing. Button 1 decrements the number, button 2 increments it. Button 4 writes the selection to non-volatile memory and moves on to the next selection. The sensor can be selected from the range S1 to S9.

The process is repeated for the setpoint (Ka, the knob symbol flashes), the fan speed knob (Kc, the fan symbol flashes), and the occupation status (Kb, the occupancy symbol flashes). The knobs can be selected from the range K1 to K9

After selecting Kc and pressing button 4 the RD enters data validation mode.

Enter PIN

The mode is entered by (ENG + 1), and exited to normal mode by completing the sequence or discarding the changes by pressing (ENG + 1) again, or exited by entering another engineering mode.

On entry into this mode, regardless of any PIN currently set on the RD, the right digit is set to '5'. The left digit is set to a flashing '1' to indicate this is the first digit (most significant) of the PIN. Button 1 decrements the number in the right digit, button 2 increments it. Button 4 writes the selection to non-volatile memory and moves on to the next PIN digit indicated by the first display digit now being set to a flashing '2'.

The process is repeated for all four PIN digits (1 to 4, working from most significant to least significant, left to right).



After selecting the fourth PIN digit and pressing button 4, the RD checks that there was at least one press of button 1 or button 2 before button 4 was pressed for each digit; if there was, the new PIN is written to memory, if not, the new PIN is discarded and the old value retained. The RD then returns to normal operation.

Restore Defaults

The mode is entered by (ENG + 1 + 4), and exited to validation mode automatically.

This mode returns the 'out of the box' defaults.

Variables	Default Values
Temperature units	°C
Display local temperature	ON
Use local sensor	ON
Display fan state	ON
Display Occupation state	ON
Local temperature	S9
Setpoint	K1
Occupation Status	K6
Fan speed status	K7
PIN	none

After a restore, the RD-IQ enters data validation mode

Data Validation Mode

After completing either Engineer Communication, or Restore Defaults, the RD enters data validation mode to ensure that the selections made can be correctly used.

The RD requests values in sequence from the modules selected (Sx, Ka, Kb, Kc - Kc will not be polled if c=0), followed by a write to each value. The display will indicate errors in the normal way (see Error Displays section).

COMPATIBILITY

The RD-IQ is compatible with all IQ controllers with text comms capability (all IQ4s, IQ3s, IQ2xx, IQ10x+, IQ111+, IQ131+, and IQ151+ firmware v4.7 or greater). However, if retro-fitting to a controller, the local supervisor port should not already be in use (i.e. by SDU-IQ or SDU-xcite IQView/RS232, Wireless Sensor Receiver XW/R/IQ, NDP, or local PC), and the 'superv port addr' should be set to zero (default).

Note that the RD-IQ is not compatible with /ADL, /ATM or XNC220 controllers as the RS232 port is already in use.

The standard IQ2xx connection is by an RJ11 to RJ11 cable (RD/SDU-IQ2COMMSCABLE/3M 3m, 9' 10", RD/SDU-IQ2COMMSCABLE/10M 10m, 32'10"). This will give RS232 + power for the following controllers: all IQ4s, IQ3s, IQ204, later IQ21x (board AM103614 v2 or greater), later IQ22x, IQ23x, IQ241/242, IQ246. An adapter extension cable RJ11 socket to RJ11 plug plus a 2 terminal power connection (for connection to the IQ's 24 V auxiliary supply), RD/SDU-IQ2xx, can be used for early IQ21x, early IQ22x, IQ250, IQ251, and later IQ1xx.

IQ1xx controllers with a 5 in line RS232 port can use the adapter extension RD/SDU-IQ1xx+, RJ11 socket to 5 in line socket plus a 2 terminal power connection (for connection to the IQ's 24 V auxiliary supply). IQ1xx controllers with a 25 way D type RS232 port can use the adapter extension RD/SDU-IQ1xx, RJ11 socket to 25 way D type plus a 2 terminal power connection (for connection to the IQ's 24 V auxiliary supply).

Alternatively, power may be connected separately through a 2 terminal connector.

The RD-IQ uses the following parameters as defaults:

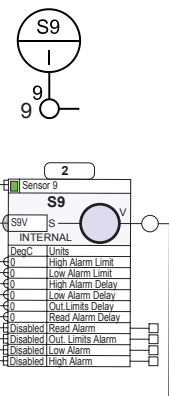
Local temperature	S9
Setpoint	K1
Occupation Status	K6
Fan speed status	K7
PIN	none

The IQ strategy must comply with these settings or the RD-IQ must be changed using the Engineering Communication feature described above.

The strategy must not overwrite the local temperature value.

For example in IQ1xx, IQ2xx, if the default S9 is used, then Sensor Module 9 must be an internal sensor sourced from node 9. The sensor should be sequenced (e.g. for logging).

In IQ4 and IQ3 all the modules used must be created in SET, the sensor must have its output looped back to its input, and the sensor **must** be sequenced



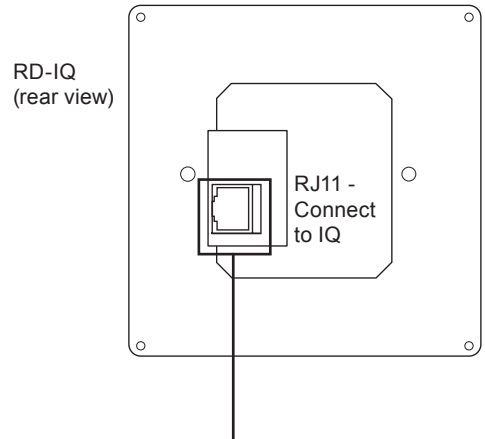
INSTALLATION

The RD should be mounted on a standard electrical back box or front panel using two screws. *Note that the display is not backlit and relies on ambient light.* The installation involves:

- Mount unit
- Connect to controller for power and signal. *Note that it can be connected while the IQ is powered.*
- Configure controller
- Configure RD
- Test

The installation procedure including configuration is covered in the RD-IQ installation instructions (TG200492), Installation of the WSA wall sensor adaptor plate is covered by (TG200842).

CONNECTIONS



IQ Controller

IQ4, IQ3, IQ2xx

Local supervisor port

RD/SDU-IQ2COMMSCABLE/3M (3 m)
RD/SDU-IQ2COMMSCABLE/10M (10 m)

If required a cable can be made to the required length, wired as below

25 m (28 yds) maximum
 RJ11
 1
2
3
4
5
6

RJ11
 6
5
4
3
2
1

Local supervisor port RJ11 carries signal and power from: All IQ4s, IQ3s, IQ204, later IQ21x, later IQ22x, IQ23x, IQ241/242, IQ246

For later IQ1xx, early IQ21x, early IQ22x, and IQ250/251 the adaptor RD/SDU-ADAPTOR IQ2xx can be used

RD/SDU-ADAPTOR IQ2xx

For IQ1xx with a 5 in line RS232 connector the adaptor RD/SDU-ADAPTOR IQ1xx+ can be used. However the 2 terminal power connection may have to be modified as shown in the table below the diagram.

RD/SDU-ADAPTOR IQ1xx+

IQ	Comments
IQ10x+, IQ111+, IQ131+, IQ151+	For these controllers reverse the polarity of the wires in the 2 terminal connector
IQ151+	Use as supplied

For early IQ1xx with a 25 way RS232 connector the adaptor RD/SDU-ADAPTOR IQ1xx can be used

RD/SDU-ADAPTOR IQ1xx

DISPOSAL

COSHH (Control of Substances Hazardous to Health - UK Government Regulation 2002) ASSESSMENT FOR DISPOSAL OF RD. No parts affected.

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.

	<p>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.</p>
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ORDER CODES













RD-IQ/K	Room Display for use with IQ controller with local sensor temperature sensor, setpoint control
RD-IQ/KOS	Room Display for use with IQ controller with local sensor temperature sensor, setpoint control, occupation override, and occupation status display
RD-IQ/KOSF	Room Display for use with IQ controller with local sensor temperature sensor, setpoint control, occupation override, occupation status display, and fan speed control

* Order codes for US versions of the RD have suffix /WSA/USA. These all include a wall sensor adaptor plate and appropriate screws.

RD/SDU-IQ2COMMSCABLE/3M	RJ11 plug to RJ11 plug cable (3 m) for RD-IQ connection to most IQ controllers (connects RS232 and power for all IQ4s, IQ3s and most IQ2xx controllers - see text)
RD/SDU-IQ2COMMSCABLE/10M	RJ11 plug to RJ11 plug cable (10 m) for RD-IQ connection to most IQ controllers (connects RS232 and power for all IQ4s, IQ3s and most IQ2xx controllers - see text)
RD/SDU-ADAPTOR IQ1xx+	RJ11 socket to 5 in line socket (RS232) + 2 wide power terminals adaptor cable for RD-IQ connection to early IQ1xx series controllers, use in conjunction with RD/SDU-IQ2COMMSCABLE/3M, /10M
RD/SDU-ADAPTOR IQ1xx	RJ11 socket to 25 Way D type male (RS232) + 2 wide power terminals adaptor cable for RD-IQ connection to early IQ1xx series controllers, use in conjunction with RD/SDU-IQ2COMMSCABLE/3M, /10M
RD/SDU-ADAPTOR IQ2xx	RJ11 socket to RJ11 plug + 2 wide power terminals adaptor cable for RD-IQ connection to later IQ1xx and early IQ2xx controllers, use in conjunction with RD/SDU-IQ2COMMSCABLE/3M, /10M
ACC/SMBOX/16/10	16 mm depth surface mount box for RD (pack of 10 boxes)
WSA/10/USA	Pack of 10 wall sensor adaptor plates to facilitate mounting RD on US or Danish wall boxes. Each plate complete with 2 plastic covers, 2 back box screws, and 2 off 3.5 mm RD screws.

SPECIFICATIONS

ELECTRICAL

Supply	:24 Vdc (20 to 33 Vdc), 24 Vac \pm 10% 50/60 Hz
Consumption	:10 mA
Buttons	:4 buttons on front panel printed with icons (Decrement  , Increment  , Fan  , Occupation ); if the front panel button is not used in the variant it is left blank. Plus 2 engineering buttons under front panel (unused, Engineering).
Display	:LCD 3 digit + 11 custom icons non backlit
Digits	:Setpoint or local space temperature (other displays in engineering mode, e.g. PIN)
Knob	:  , Setpoint displayed
Thermometer	:  , Local temperature displayed
Units	:°C or °F
Occupation	:Occupied  , or Unoccupied 
Fan	:  , fan being controlled
Fan speed	:Off, Low  , Medium  , High  , or Auto (AUTO)
Communication	
RD-IQ	:RS232 9600 Baud, 7 bit, odd parity, Values monitored/updated by terse text comms. Maximum distance 25 m (28 yds)
RD-IQL	:TBus. Maximum distance 30 m (33 yds)
CPU	:AT mega 1698 (A)
Flash	:16 kbyte
EEROM	:1 kbyte
Temperature Sensor	:Solid state
Temperature range	:10 °C (50 °F) to +45 °C (113 °F, \pm 1.8 °F)
Temperature Accuracy	:System accuracy \pm 1 °C (0 to 40 °C, 32 °F to 104 °F)
Setpoint Control	:Increment, decrement by 0.5 °C, if display set to °C, and by 0.5 °F, if display set to °F
Temperature Offset	:Increment, decrement by 0.1 °C, (0.18 °F), range -3 °C to +3 °C (-5.4 °F to +5.4 °F)

MECHANICAL

Dimensions	:90 mm (3.54") x 90 mm (3.54") x 25 mm (0.98") from electrical back box 90 mm (3.54") x 90 mm (3.54") x 30 mm (1.18") maximum
Material	
Front panel	:ABS
Front	:Polycarbonate
Back	:ABS
Buttons	:Shore 80 PVC
Weight	:130 gms, (0.29 lbs)
Protection	:IP30, NEMA1
Connections	:Maximum distance 25 m (28 yds). RJ11 also connects power for all IQ4s, IQ3s, and most IQ2xx controllers (see text); use RJ11 to RJ11 cable RD/SDU-IQ2COMMSCABLE/3M, or RD/SDU-IQ2COMMSCABLE/10M. For IQ1xx use additional adaptor cable RJ11 to 5 -in line + 2 wide power RD/SDU-ADAPTOR IQ1xx+, or RJ11 to 25 Way D type Male + 2 wide power RD/SDU-ADAPTOR IQ1xx. For late IQ1xx and early IQ2xx use additional adaptor cable RJ11 to RJ11 + 2 wide power RD/SDU-ADAPTOR IQ2xx.

ENVIRONMENTAL

EMC	:EN61326 - 1:2006
Immunity	:Table 2: For equipment intended for use in industrial locations
Emissions	:Class B
Ambient limits	
Storage	:-10 °C (14 °F) to 50 °C (122 °F)
Operating	:-10 °C (14 °F) to 45 °C (113 °F)
Humidity	:0 to 90 %RH
Altitude	:<2000 m (6562')

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