



FP2021/22 QE20 8 Zone / 8 WIP Expansion Boards Installation Instructions

1. General Description

This sheet describes installation of the QE20 8 Zone and 8 WIP User Interface Expansion Boards.

- FP2021 FP QE20 8 ZONE EXPANSION BRD, C/W LOOM & MTG – provides 8 Zone Controls
- FP2022 FP QE20 8 WIP EXPANSION BRD, C/W LOOM & MTG – provides 8 WIP controls.

These may be used to expand an FP2012 16 WIP Extender Module or an FP2013 16 Zone Extender Module if 16 zones or 16 WIPs are required, or for replacement of an existing 8 Zone / 8 WIP board.

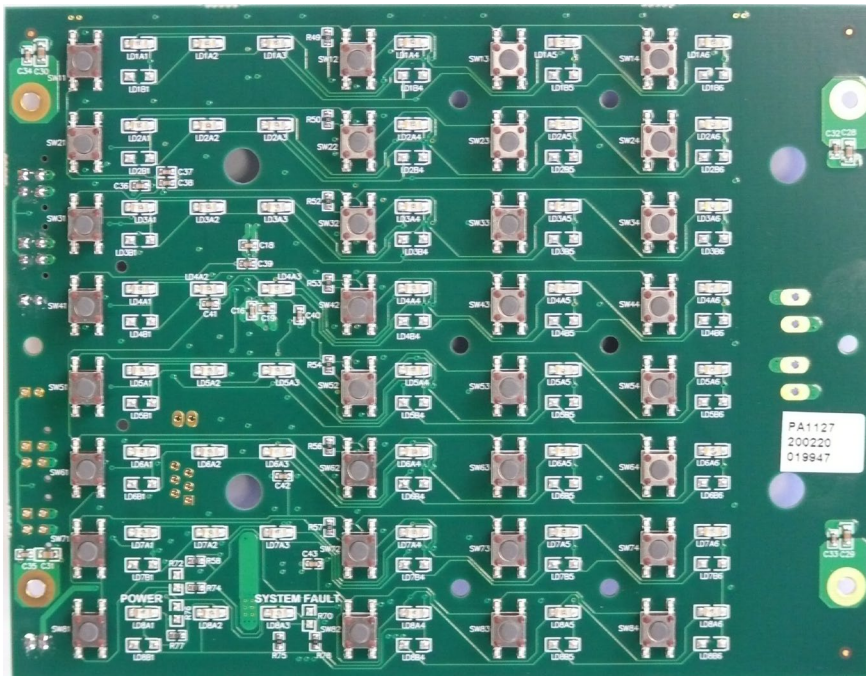


Figure 1A – FP2021 QE20 8 Zone Expansion Board

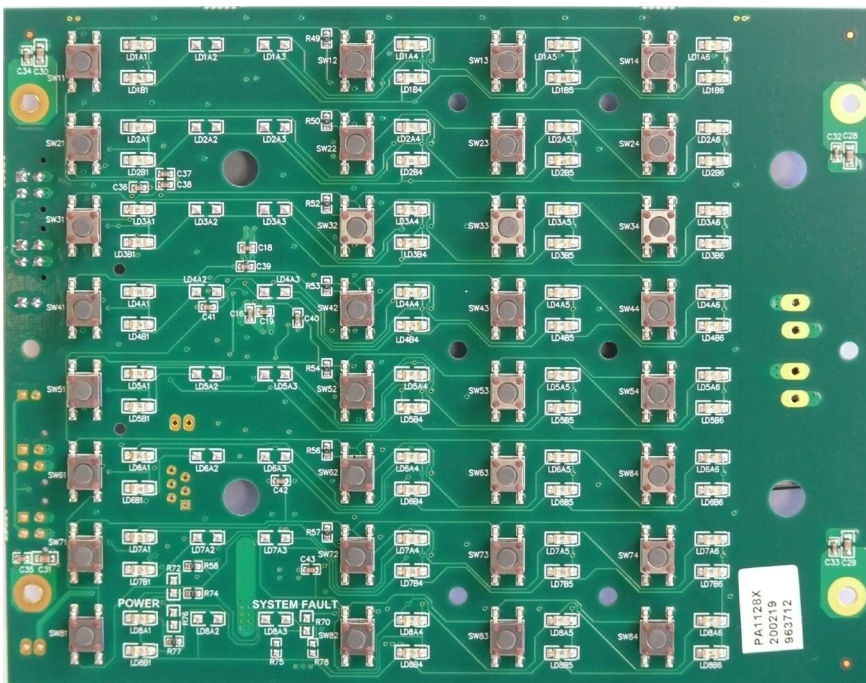


Figure 1B – FP2022 QE20 8 WIP Expansion Board

2. Kit Contents

Each kit contains:

- 1 x QE20 8 Zone or 8 WIP Board
- 1 x UBus 4-way Power/Comms loom 475mm long
- 12 x M3 x 6 screws to secure the Board onto the extender metalwork
- 1 x FA3028 FAB, 1992-19, T-GEN2, GRADE 2, UI LED DIFFUSER, (N)
- 1 x LB0694 LABEL, 1994-7, QE20, GRADE 1, BLANK 8 ZONE SLIDE IN
- 2 x SU0020 SUNDRY CABLE TIE 3.62IN TY-RAP TY-523M
- 1 x LT0715, these installation instructions.

3. Mounting the 8 Zone / 8 WIP Expansion Board

Each 8 Zone / 8 WIP Expansion Board is mounted on the Extender User Interface Module as shown in Figure 2. Fit the diffuser first, over the mounting standoffs on the Extender Module. Then fit the Board, and secure with the 12 M3 screws.

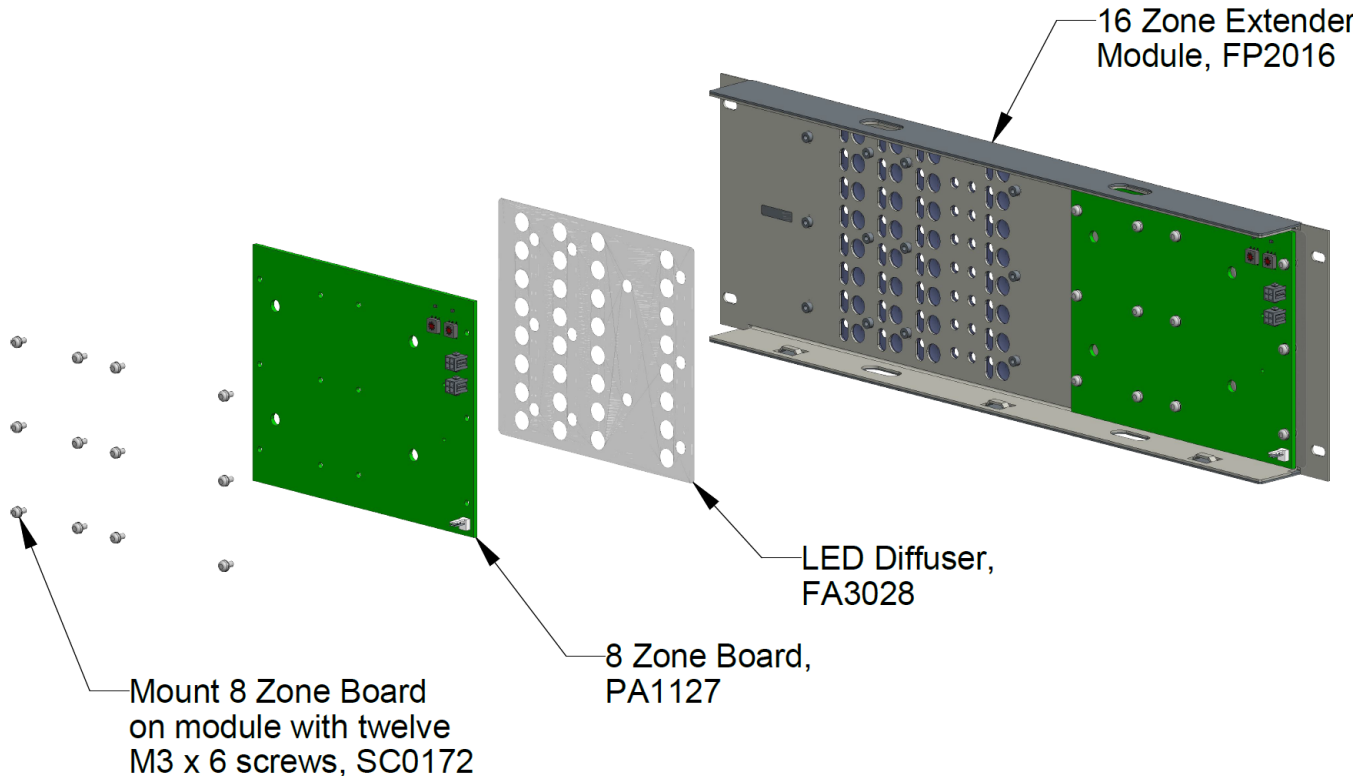


Figure 2 – QE20 8 Zone / 8 WIP Expansion Board Mounting

Zone / WIP Labels

A blank LB0694 zone / WIP label card is provided for identifying each of the zone / WIP controls on the extender module. Print the names of each of the zones / WIPs on the card and slide the card into the correct pocket provided on the front of the Extender Module. Or QE20Config can print out the labels using the zone / WIP names programmed into the site configuration.

4. Replacing an Existing 8 Zone / 8 WIP Board

When replacing an existing 8 Zone / 8 WIP Board, set the ADDRESS rotary switches on the new board to match the replaced board's settings. Refer to Figure 3 for the switch locations. Disconnect any cables to the old board, undo the twelve retaining screws and remove the existing board. Fit the replacement using Section 3 Mounting Instructions above and reconnect the cables as per Section 5 Internal Wiring below.

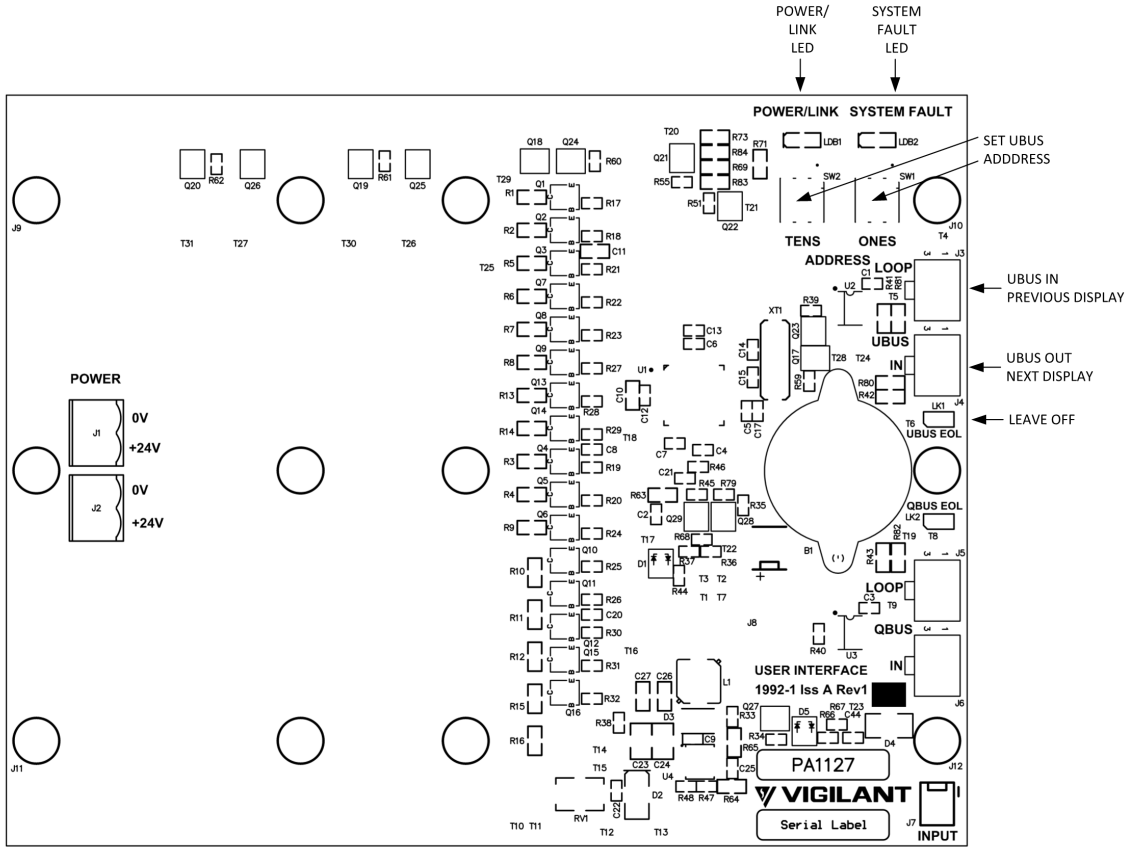


Figure 3A – 8 Zone Expansion Board Switch, LED and Connector locations

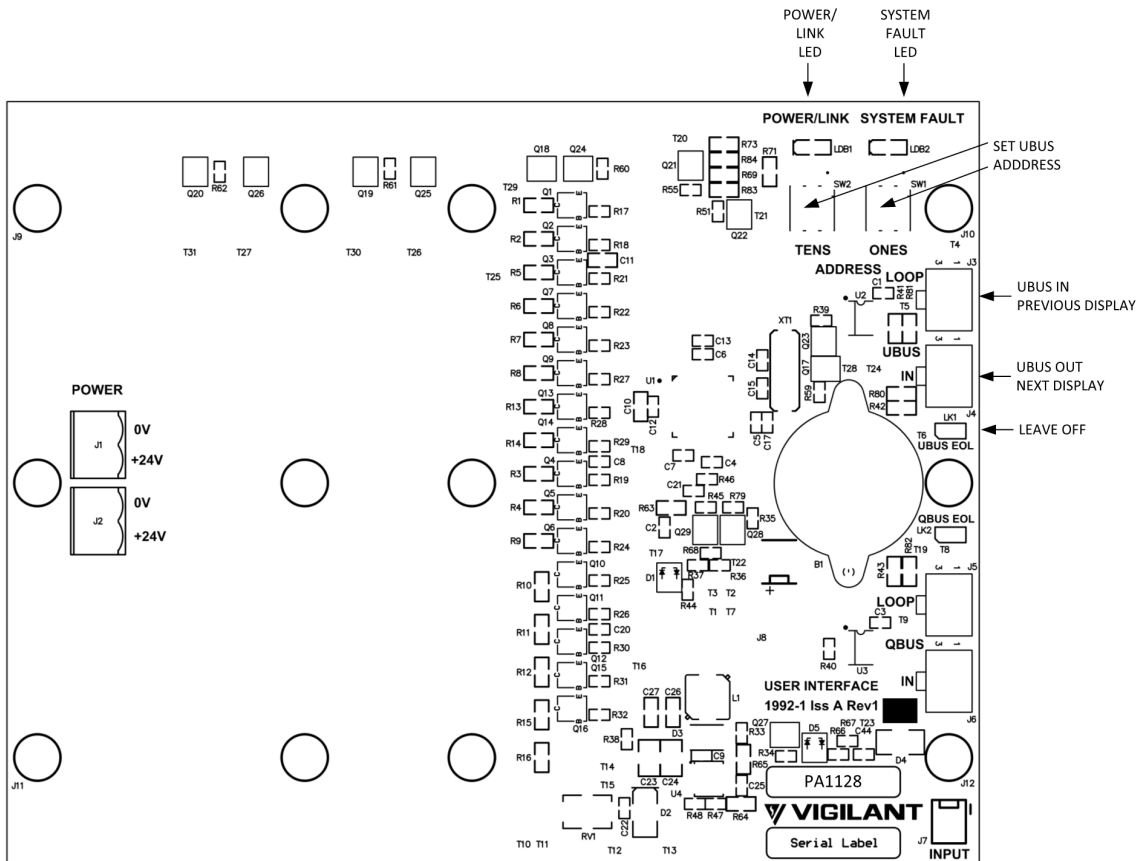


Figure 3B – 8 WIP Expansion Board Switch, LED and Connector locations

4. Adding an 8 Zone / 8 WIP Board

The QE20 site configuration will need to be updated to include the additional 8 Zone / 8 WIP Module and map the buttons to emergency zones and WIPs as required.

The UBus address rotary switches, SW1 and SW2, on each 8 Zone / 8 WIP Board need to be set to the correct address for the zones / WIP controls the Board is to provide.

Refer to the QE20 site configuration for the zones / WIPs the new Expansion Board is to control / display.

Each 8 Zone / 8 WIP Board provides 8 rows of controls and LEDs, with the:

Bottom row number = (Address-1) * 8 + 1

Top row number = (Address-1) * 8 + 8.

For example, the Board with address 2 provides rows 9 to 16. Each row is mapped to an evacuation zone number in the QE20 using QE20Config. It is possible to organise the zones going up the user interface by mapping row 1 to zone 1, and counting upwards. By allocating row 8 to zone 1, down to row 1 mapped to zone 8, and so on, it is possible to have the zones go downwards on the user interface.

Row Number	Evac Zone	Zone Nam
1	1	
2	2	
3		
4		
5		

Each Board needs to be addressed correctly to position the zone / WIP controls it provides in the desired location. Each 8 Zone Board will have a unique address and each 8 WIP Board will have a unique address (but will usually be the same as the 8 Zone Board on an FP2011 8 Zone / 8 WIP Extender User Interface Module).

In a typical system with FP2011 8 Zone / 8 WIP Modules and the zone numbers going upwards, the bottom module boards will be addressed 1, the next module up boards addressed 2, etc. This is shown in Figure 4.

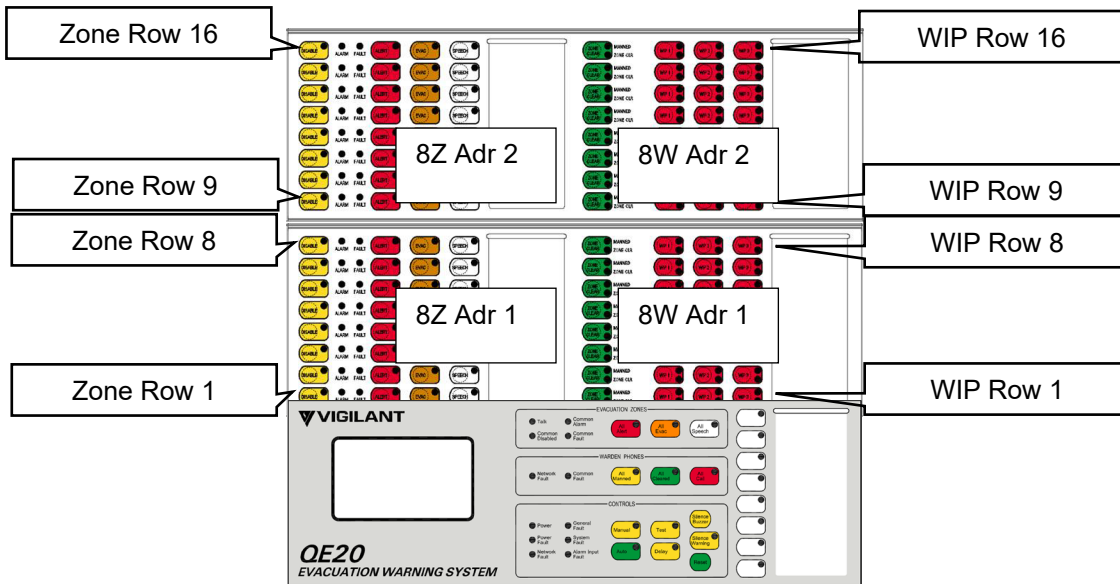


Figure 4 – Zone and WIP Rows & Addressing

Fit the new Board using the Section 3 Mounting Instructions above and connect the UBus cable as per Section 5 Internal Wiring below.

5. Internal Wiring

The 8 Zone / 8 WIP Expansion Board is connected to the previous 8 Zone / 8 WIP Expansion Board or to the Master User Interface Module using the 4-way Power/Comms loom provided.

- Connect the 4-way loom from J4 on the new Board to J3 on the previous Board or to J2 or J3 on the MKI Board contained on the Master User Interface. If cabling between user interface modules, run the cable through the slots in the top and bottom folds of each module and secure in place using the cable ties.

Secure 4 way comms loom LM0663, supplied with the Expansion Board, to module frame with cable ties in 2 places

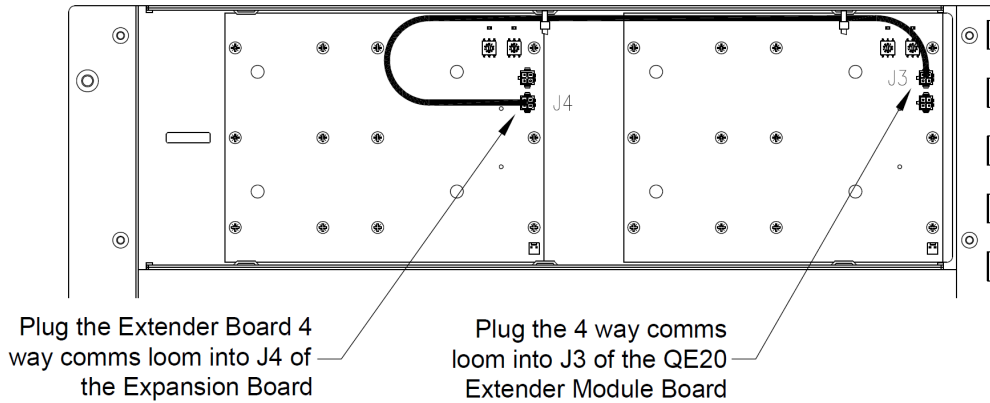


Figure 3 – QE20 8 Zone / 8 WIP Expansion Board Internal Wiring

6. Field Wiring

There are no field wiring connections on the 8 Zone / 8 WIP Expansion Boards.

7. LED Indications

There are two LED indicators on the rear of each board.

LED Name	Colour	Description
POWER/ LINK	Green	OFF – no power applied. Flashing every 1-15 seconds – operating and communicating with the Master User Interface. Steady On – not communicating with the Master User Interface, or faulty.
SYSTEM FAULT	Yellow	OFF – no fault present. Flashing – fault present When a Fault is present the SYSTEM FAULT LED shows a sequence of 8 flashes followed by a pause, with each flash short (250msec) if that fault is not present and long (750msec) if that fault is present. The system faults are indicated in this order: <ol style="list-style-type: none"> 1. Board not communicating with the Master User Interface. This will occur when the QE20 is starting up, until the Master User Interface is operational and communicating with the Extender Module. Otherwise, check the 4-way Power/Comms connection to the previous Extender or Master User Interface, the QE20 site configuration, the Address Rotary switch setting on the Board of the Extender User Interface, or for a faulty Extender. 2. Invalid Address (Not 01...99). Try rotating the address rotary switches and then put back to the desired address. If cannot be fixed, replace the Board. 3. Firmware CRC Incorrect. Replace the Board. 4. Software Fault. Will not occur. 5. Unexpected restart occurred. Something happened to cause the User Interface microprocessor to restart. Clears once status sent to the Master User Interface. If does not clear, even after power down/up, replace the Board. 6. No Configuration Data. Will occur on start up until the QE20 Controller has sent the necessary configuration data to the Master User Interface. 7. Will not occur. 8. Hardware mismatch. Replace the Board.

If the POWER/LINK and the SYSTEM FAULT LEDs are both flashing at about 8Hz then the module is in Bootloader mode. Set the address rotary switches to the required address and power the module down and up again to exit Bootloader mode.

Refer to the QE20 Operator Manual LT0711 for details on the LEDs on the front of the Expansion Boards and operation of the buttons.

8. Power On & Testing

Power up the QE20 system with its site configuration installed. Check for any fault conditions and resolve these.

- Check all the LED indicators work by carrying out an LED Test. Press and hold the **Silence Buzzer** button on the Master User Interface for more than 3 seconds to activate the test. Check all LEDs on all Display Modules turn on.
- For zone extenders, for each allocated zone in turn press the Speech button and then use the microphone to make a speech announcement to the zone's loudspeakers. Check speech is heard in the correct area of the building.
- For WIP extenders, for each allocated WIP in turn press the WIP button and check the correct field WIP rings. Press the WIP button again to stop the WIP ringing.

9. 8 Zone / 8 WIP Expansion Board Specifications

Power Requirements	18V – 32Vdc, 5mA typ @ 24V all LEDs off, per 8 Zone / 8 WIP Board 32mA typ @ 24V all LEDs on, per 8 Zone / 8 WIP Board
Operating Temperature Range	-5°C to +45°C 10% to 93% RH non-condensing
Address	01 – 28 Supported
Quantity per QE20	28 x 8 Zone & 28 x 8 WIP Boards. 224 zones in total

10. End User Licence Agreement, Privacy and Licensed Software

Please refer to the following web page for the Johnson Controls End User Licence Agreement (EULA), Open Source Software (OSS) licences and Privacy information related to this product -

www.johnsoncontrols.com/techterms