

# Model 3000 / Access 4000

## Inovonics Interface Module.

### P/N: 995075

## INSTALLATION MANUAL

### Contents

Overview .....	1
Inovonics Solution Block Diagram .....	2
Zone Mapping .....	2
System Inputs .....	3
Programming .....	4
Multiple Receivers .....	5
Registration .....	6
Review Messages .....	7
Review Examples .....	7
Installation FA400 .....	8
Installation MF4232 .....	9

### Overview

The Model 3000 / Access 4000 can be connected to the Inovonics Wireless receivers, FA400 and MF4232 via the IR400 Inovonics interface board. Part No: 995075. The IR400 is connected between the Serial Port of the Inovonics Receivers and a UART Port on the Model 3000/ Access 4000 Control Module.

This interface allows all zone information from Inovonics wireless transmitters to be interpreted as Model 3000 / Access 4000 Zone Inputs. The Inovonics system is viewed by the 3000/4000 as a **virtual** LAN Module, called a **Wireless Network Module (Nxx)**. Each group of 16 zones is allocated a virtual Wireless Network Module number and can share 4 System Inputs. There can be a maximum of 13 of these virtual Wireless Network Modules, allowing up to 208 wireless transmitters to be individually monitored (13x16=208 Zone Inputs).

Each transmitter “zone” (Nxx:Z01 to Nxx:Z16) can report seal, alarm or tamper individually.

- Separate Low Battery system alarm for each group of 16 transmitters.
- Separate No Poll system alarm for each group of 16 transmitters.
- The IR400 status can be monitored via an assigned Zone Input.
- The Receiver status can be monitored via an assigned Zone Input.

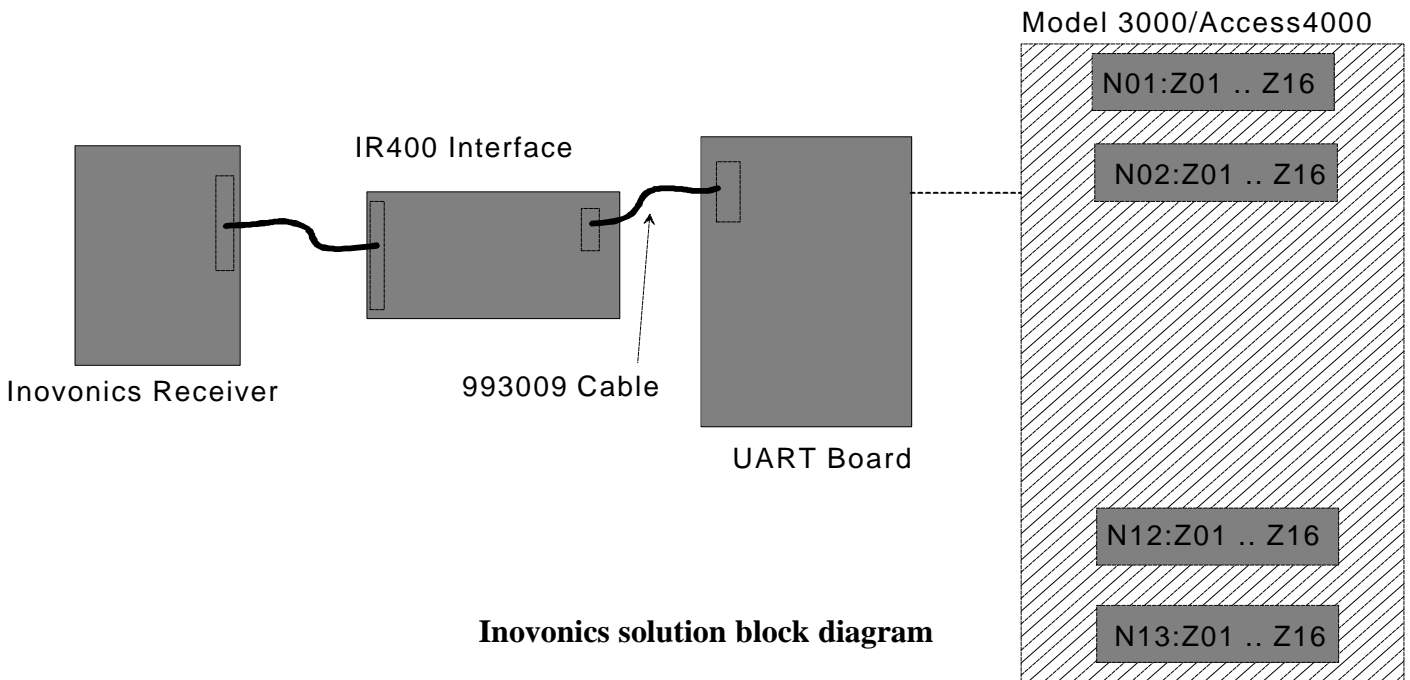
**Overview cont.**

Optional review of the following items can aid in commissioning and troubleshooting:

- Review of individual transmitter “no poll” timeouts.
- Review of individual transmitter low battery.
- Review of individual transmitter signal and noise levels.
- Review of communication problems with the receiver, or IR400 interface board.

All zone transmitters can be named continuing the Model 3000/ Access4000 tradition of “user friendly” operation.

Control Module Firmware must be V4.58 or later.

**Zone Mapping**

A Wireless Network Module handles 16 Inovonics transmitters and uses the prefix “N”.

**NOTE:** Inovonics FA series transmitters have programmable Transmitter ID, also programmable are the Application ID and System ID parameters that are used by the Concept panel.

Inovonics offers a number of options for programming these parameters into their transmitters, the values **must be known** to use the transmitters with the Model 3000/Access 4000, they can also be programmed from the IR400, outlined in a separate document available from Inner Range.

In addition, the Inovonics MF series transmitters, must be registered into the Model 3000/Access 4000, this process is explained in the “registration” section.

In the FA series Inovonics transmitters, the Transmitter ID is two hexadecimal digits where:

-The 1st digit corresponds to a Wireless Network module no., with 0 mapping to Module 1, 1 mapping to Module 2, etc.

-The 2nd digit corresponds to the Zone Input no., with 0 mapping to Zone 1, 1 mapping to Zone 2, etc.

i.e. The mapping corresponds one-to-one with an offset of 1.

For example;

-An Inovonics Transmitter ID of \$34 would map to Module 4, Zone 5. i.e. “N04:Z05” within the 3000/4000 system.

-An Inovonics Transmitter ID of \$85 would map to Module 9, Zone 6. i.e. “N09:Z06” within the 3000/4000 system.

-An Inovonics Transmitter ID of \$CA would map to Module 13, Zone 11. i.e. “N13:Z11, within the 3000/4000 system.

These inputs can now be used in any context where 3000/4000 inputs can be specified such as Areas, Function zones, etc, and are programmed in exactly the same manner as normal physical Zone Inputs, thereby offering all the usual functionality offered by the system.

## **System Inputs**

### **There are 4 System Inputs per Module:**

#### **S01 Timeout**

This input is put into alarm whenever any one of the 16 zone transmitters for this module fails to report in the nominated poll time. The input will only be re-sealed at the low priority time check if all modules have reported in, or by re-starting the Comms Task.

(The details of the actual transmitter with the timeout condition is saved to Review if the “T”imeout option is set to Yes in the Review options)

**Poll Times.** Two poll rates, a high priority rate and a low priority rate can be programmed for the Inovonics Comms Task. The poll rates determine when the system will check that the transmitters have reported in. All transmitters are checked when the low priority poll timer expires. Only nominated “high priority” transmitters are checked when the high priority poll timer expires.

Note: Poll times should be set in accordance with the Inovonics equipment manufacturers recommendations.

#### **S02 Low Battery**

This input is put into alarm whenever any one of the 16 zone transmitters for this module reports a low battery condition. The input can only be re-sealed by restarting the Comms Task. (The details of the actual transmitter with the low battery condition is saved to Review)

#### **S03 Spare**

Spare for future development. Set to “n”.

#### **S04 Spare**

Spare for future development. Set to “n”.

**Important Note:** Some communication formats are unable to report individual Inovonics Zones or are limited as to what they can report on each Zone. See the Tables section at the rear of the V4.5 programming and reference manual for Zone mapping details.

## **Programming**

To interface the INOVONICS receiver to a Model 3000/ Access 4000, a Comms Task must be programmed to the “INOVONICS” format and set to Active. Special Inovonics options are reached by pressing “HELP” “9” twice at the Active Idle screen on the Terminal (“HELP” “0” returns to the common options). Refer to the Programming and Reference manual for further explanations. The programming parameters for an INOVONICS Comms Task are described below:

*Port* This screen which port (0 to 5) the receiver is going to be connected to. Port 0 should be avoided as it is shared with on-board communications.

*Baud Rate* This screen determines the baud rate used in communications. At present it is forced to 9600 Baud.

*Application ID* This screen sets the **Application ID** to be used for this installation. It may be set from 000 to 255. (See Inovonics literature for more information.) Note that changes may take up to one minute to be recognized by the FA400

*System ID* This screen sets the **System ID** to be used for this installation. It may be set from 000 to 255. (See Inovonics literature for more information.)

*High Poll Rate* This screen sets high priority poll rate, the rate at which all high priority transmitters will be checked to see they have reported in. This time is programmable from 1 to 255 minutes, in one minute increments. (See Inovonics literature for more information.) For example set the High Poll Rate to a minimum of 120, lower values will significantly increase the signal traffic.

*Low Poll Count* This screen sets the low priority poll rate, as a multiple of the high priority poll rate set above. The poll count is set from 1 to 255. For example setting a poll rate of 120 minutes and a poll count of 4, will cause low priority transmitters to be checked every 120 times 4 equals 480 minutes (8 hours) (See Inovonics literature for more information.)

### *IR400 Zone*

### *FA400 Zone*

These screens allows the Installer to select any unused Zone Inputs in the 3000/Access 4000 system to indicate changes in the status of the Inovonics communications.

-The IR400 OK Zone will go into alarm if communications to the IR400 fails and will restore when communications is re-established.

-The FA400 OK Zone will go into alarm if no supervisory messages are received from the FA-400 for 90 seconds and will restore when a supervisory poll is received.

These Zone Inputs can then be programmed in the same manner as normal Zone Inputs to generate the type of messages and/or alarms required.

## **Important Note:**

The Zone inputs selected for *IR400* and *FA400 Zone* above, will have no physical termination, therefore the “Ignore Physical Zone option must be set to Yes in the programming options for that Zone Input, if this is not set, **Review** will be constantly updated with the *Comms Task On-Line* message.

See “Input programming”. MENU 7, 0. in the programming and reference manual.

*Options*

This screen allows certain Yes/No review options to be selected as follows:

(A)lways allows all transmitter activity to be saved to review, including transmitter signal and noise level figures.

(T)imeouts allows all transmitters which exceed the poll timeout to be saved to review to allow individual transmitter identification.

(M)ismatch allows any transmitter activity with a application/system ID mismatch to be saved to review.

(C)hanges allows transmitter activity to only be saved only when a change in input status has occurred.

*Poll Flags*

These screens allow the installer to specify which transmitters the Model 3000/ Access 4000 will check to ensure that a poll has occurred within the correct time.

*High Priority*

These screens allow the installer to nominate which transmitters that a poll is expected from will be checked at the high priority poll rate. If transmitters are not nominated as high priority they will be checked at the low priority poll rate.

*Diagnostics*

(..R.), Pressing the ON Key whilst the Active/Idle screen is displayed will display the UART Port status screen. This screen can be cleared when desired by pressing the OFF Key. A “Y” under this flag means the receive fifo (16 bytes) has overflowed and at least one character has been lost. This will normally cause a retry of some kind.

The “R” flag may be monitored after communications via this port. In the event that the system places a “Y” flag under the “R”, the Status screen should be reset and monitored further. Should a “Y” flag appear under the “R” with some regularity, a potential cause would be the baud rate at which the port is attempting to communicate.

**Multiple Receivers**

Although multiple receivers may be connected (on separate UART ports and not recommended), only 13 groups of 16 Zones may ever be received. If multiple receivers are used, transmitters must be specific to one receiver only. If a transmitter reports to multiple receivers, multiple activations will occur for every transmission and a comms fail will be generated if the transmitter goes out of range of any one receiver.

e.g. A separate “Application ID” and “System ID” must be used for each receiver and the transmitter must be programmed accordingly.

## **Registration**

Transmitters using the MF receiver do not need to be programmed but rather need to be registered with the 3000/ Access 4000. This is done by first setting up the Comms Task and setting it active. The “Inovonics” CT must be operational to register transmitters.

Using any terminal, go to RF module programming (MENU,7,2,5)

The screen will show:

**N01:Z01 Not Registered**

Press the “reset” button on the transmitter you wish to register as N01:Z01. The transmitter will be registered, the terminal will beep and the screen will advance to the next zone:

**N01:Z02 Not Registered**

Now press the “reset” button on the transmitter you wish to register as N01:Z02. The transmitter will be registered and the screen will advance as before. All transmitters can be registered sequentially by simply pressing the reset buttons of all transmitters in zone order.

Use the arrow keys to view the status of each zone:

Up	Go back 1 zone
Down	Go to next zone
Right	Advance 16 zones
Left	Go back 16 zones

If the zone is already registered it will show:

**N02:Z09 Registered**

Pressing a reset button for a zone that is already registered to a transmitter will display the brief message:

**Zone already Registered**

If the displayed zone is not registered, but a reset button is pushed on a transmitter that is already registered to another zone, will cause the display to beep for 1 second and jump to the zone it has been registered to:

**N01:Z02 Registered**

To de-register any zone, use the arrow keys to display the selected zone and press the OFF key.

To register any zone (not in sequence), use the arrow keys to display the selected zone. If the zone is already registered, press the OFF key. Now press the reset button on the transmitter you wish to register as this zone.

Note that the registration takes note of all 4 ID bytes used to identify a transmitter.

## **Review Messages**

The Model 3000/ Access 4000 maintains a comprehensive review memory that can be viewed via an LCD terminal or via PC software. The following review messages are used with the Inovonics format Comms Task:

### *Aborted – No Structure*

This means that the memory chip has not been configured correctly to handle the “Inovonics module”.

### *Wrong Module N08:Z01*

This means that the transmitter has been set to a device number that is higher than what the memory chip has been configured to handle. (Detail)

### *Tx Sealed N03:Z12 S/N: 06/00 dB*

This review entry records a reception from the nominated transmitter including its current state and signal margin.

### *Tx Alarm N03:Z11 S/N: 07/00 dB*

This review entry records a reception from the nominated transmitter including its current state and signal margin.

### *Tx Tamper N01:Z07 S/N: 03/00 dB*

This review entry records a reception from the nominated transmitter including its current state and signal margin. Note that a module reset is also reported as a tamper, and may not restore till the next time report.

### *Tx Low Batt N02:Z04 S/N: 04/00 dB*

This review entry records a reception from the nominated transmitter including its current state and signal margin.

### *Tx No Poll N05:Z16*

This review entry records that the expected reception from the nominated transmitter did not occur.

### *Now Polling*

This review entry is generated whenever period polling between the FA400 and IR400 is restored.

### *No Poll*

This review entry is generated whenever period polling between the FA400 and IR400 fails.

### *Rxed Activate*

This review entry is generated whenever the IR400 is reset.

### *Off Line*

This review entry indicates communications with the IR400 has failed.

### *On Line*

This review entry indicates communications with the IR400 has restored.

### *Xmit Discarded*

This review entry indicates a transmitter report has been received with the wrong application ID or wrong system ID. It may indicate that other transmitters not associated with this site are within range of the FA400.

### *Wrong Type*

Contact Inner Range.(Detail)

### *Rx Cmd \$0000*

This review entry indicates an error has occurred between the FA400 and IR400. (Detail)

## **Review Examples**

Jan01 18:29:50.1 CT02 - Started

Jan01 18:30:01.9 CT02 - Off-Line

Jan01 18:30:02.2 CT02 - On-Line

Jan01 18:31:19.6 CT02 - Tx Alarm N02:Z16 S/N: 05/00 dB

Jan01 18:31:22.6 CT02 - Tx Sealed N02:Z16 S/N: 05/00 dB

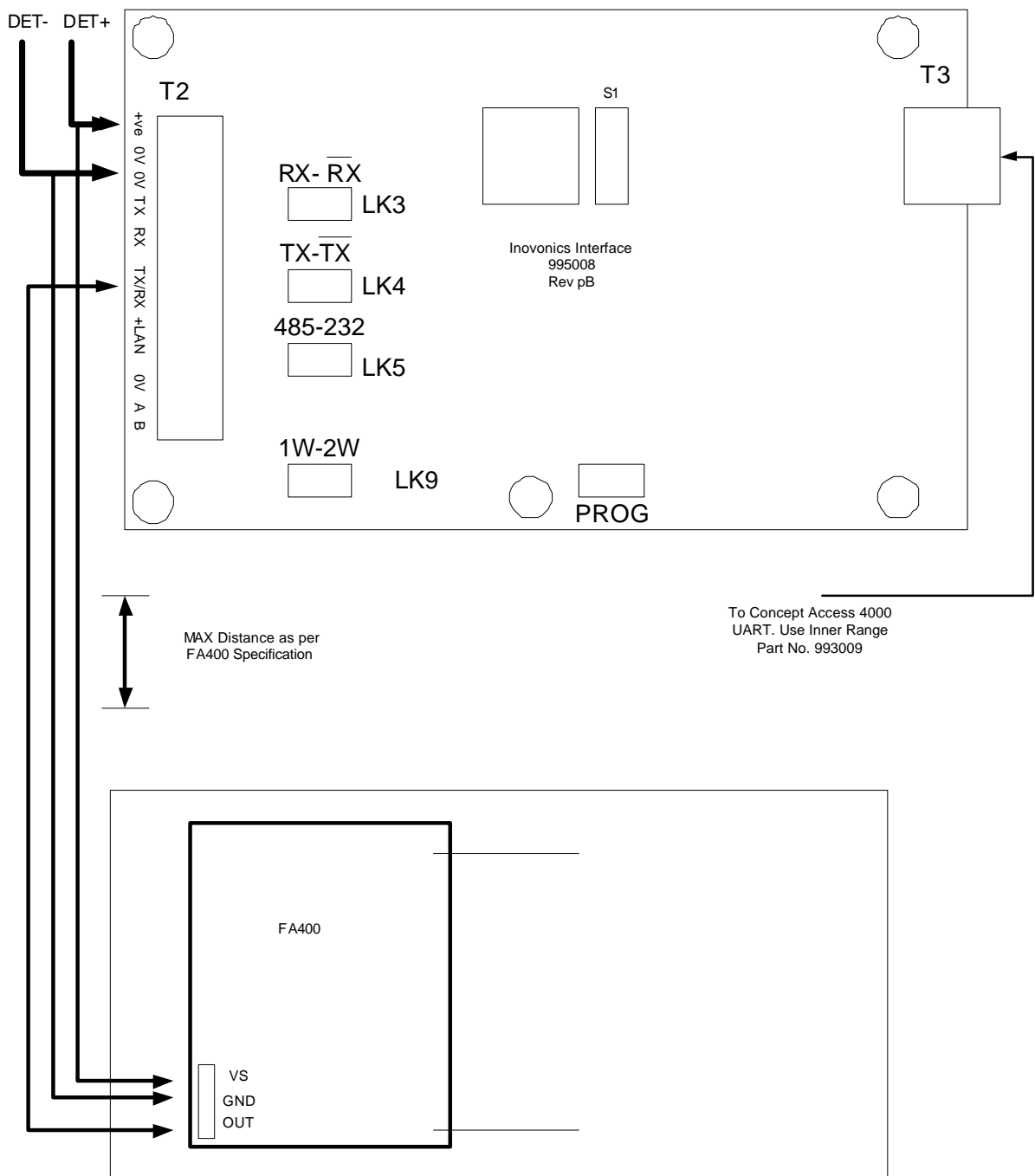
Jan01 18:32:19.6 CT02 - Tx Tamper N01:Z08 S/N: 03/00 dB

Jan01 18:32:22.6 CT02 - Tx Low Batt N01:Z12 S/N: 03/00 dB

Jan01 18:34:00.6 CT02 - Tx No Poll N01:Z04

Comms task 2 was started but went off-line because the IR400 wasn't powered up. The IR400 and FA400 were powered up and the Comms Task went back on line. An alarm and seal was received from a transmitter programmed to transmitter ID \$1f. The signal margin was 05. A tamper was received from transmitter ID \$07 whilst transmitter ID \$0b reported a low battery. Transmitter ID \$03 failed to report in the nominated time. All transmitters had the correct Application id and System ID.

### **Installation.** **FA400**



Installation of the IR400 interface should be made as close to the Concept Access 4000 as possible.

Power for both the IR400 interface and the FA400 receiver may be taken from the Concept Access 4000 DET+ & DET- supply. However if the FA400 receiver is to be mounted in a remote location to the IR400 interface, then a separate power supply may be used to power the FA400. Do NOT forget to common the 0V of the IR400 and FA400.

Follow the installation instruction for correct positioning and mounting of the FA400 receiver.

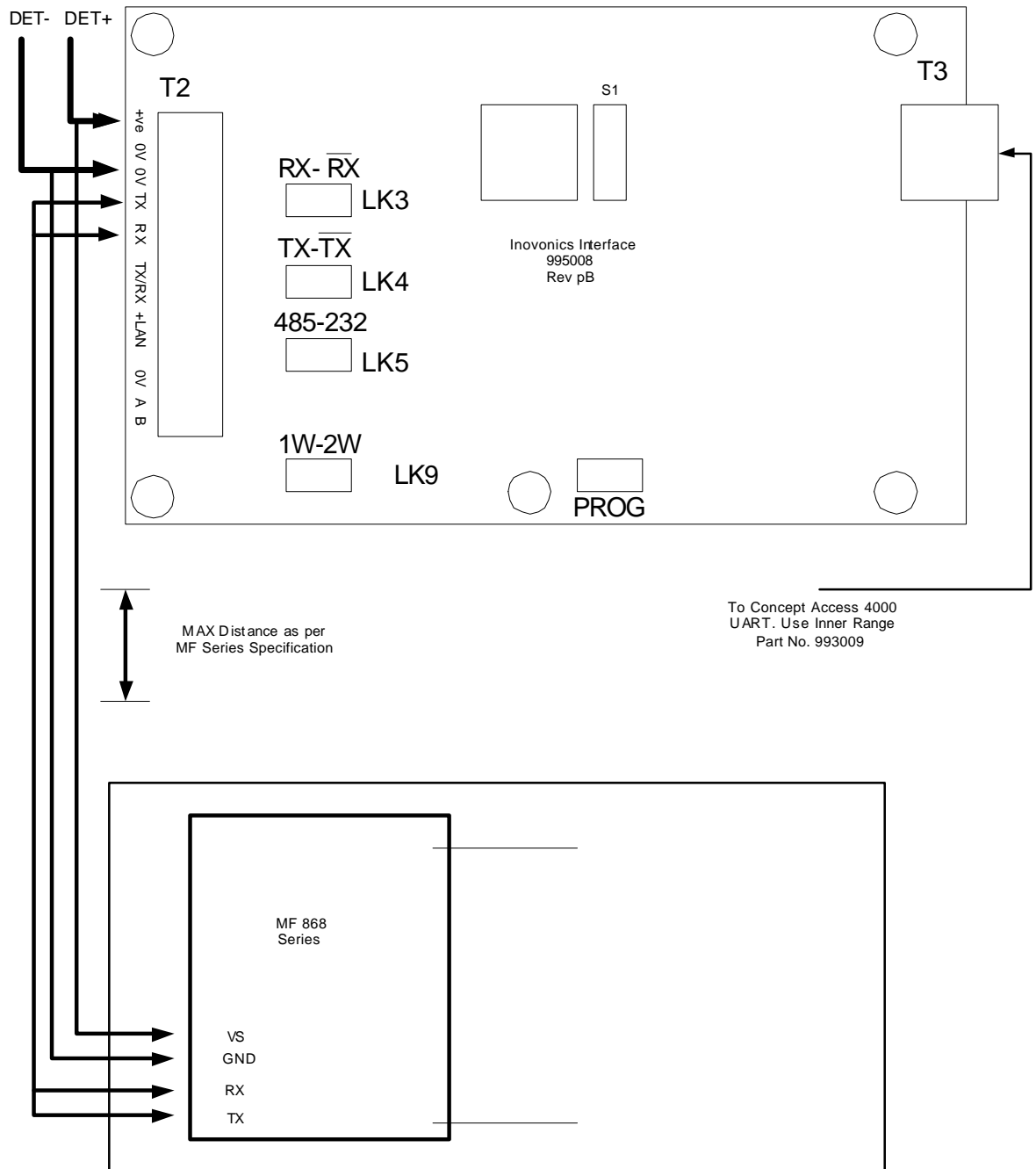
In normal operation all switches on S1 MUST BE OFF.

- LK3 must be set to  $\overline{\text{RX}}$
- LK4 must be set to TX
- LK5 must be set to 485
- LK9 must be set to 1W (1 wire).

During commissioning it is a good idea to turn the 'A always allow all transmitter activity to review' option on in the Inovonics comms task so that operation can be monitored.



## Installation. MF4232



Installation of the IR400 interface should be made as close to the Concept Access 4000 as possible.

Power for both the IR400 interface and the MF Series receiver may be taken from the Concept Access 4000 DET+ & DET- supply. However if the MF receiver is to be mounted in a remote location to the IR400 interface, then a separate power supply may be used to power the receiver. Do NOT forget to common the 0V of the IR400 and FA400.

- LK3 must be set to  $\overline{\text{RX}}$
- LK4 must be set to  $\overline{\text{TX}}$
- LK5 must be set to 485
- LK9 must be set to 2W (2 wire).
- In normal operation switch on S8 MUST BE ON.

Follow the installation instruction for correct positioning and mounting of the MF receiver.

During commissioning it is a good idea to turn the 'A always allow all transmitter activity to review' option on in the Inovonics comms task so that operation can be monitored.

**Disclaimer:**

1. The manufacturer &/or it's agents take no responsibility for any damage, financial loss or injury caused to any equipment, property or persons resulting from the correct or incorrect use of the system or it's peripherals. The purchaser assumes all responsibility in the use of the system and it's peripherals.
2. While every effort has been made to ensure the accuracy of this manual, the manufacturer assumes no responsibility or liability for any errors or omissions. Due to ongoing development, this manual is subject to change without notice.