

### Module Fault LEDs

RX	TX	EXPLANATION/REMEDY
ON	ON	Module is un-addressed.
OFF	ON	Module type unknown. Firmware upgrade required to Control Module.
Flash	ON	Duplicate Module. This module number is already in use by a module of the same type.
Flash	Flash	Module number selected is too big for Control Module RAM size. Select a lower Module number.
ON	OFF	Too many modules on Network for Control Module RAM size.
Alternating		RF Hardware problem. Reset module. If fault persists return for service.

### Earth Connection

An RF Expander Module should always be installed away from areas of electrical interference and in a normal installation a connection to earth is not required.

The RF Expander Module has been designed with on-board LAN input Surge Protection. Surge Protection is used to protect the inside modules from outside interference (electrical surges). Even inside a building there can be areas of electrical interference, for example: big electric motors, welders, and the power cables that lead to these appliances. If Surge protection is required, the "EARTH" connection must be wired to an effective EARTH.

Inner Range products that are mounted in chassis and have transformers, provide an earth point on the chassis, while three wire plug packs provide connection to earth through the earth wire. The wiring in the chassis and the construction of the plug pack provide connection to the building earth via the mains power point. The building earth is an effective EARTH.

Further information is available on the Inner Range Web site, [www.innerrange.com](http://www.innerrange.com)

# Model 3000 / Access 4000

## RF Expander Module. P/N: 995020

# INSTALLATION INSTRUCTIONS

### Overview

The RF Expander Module, designated as an "F" Type module, provides a reliable interface for Visonic RF Detection devices and 4-button Fobs. The Module is powered from the LAN or External Supply. There are 4 Auxiliaries assigned to the Module, but there are no physical Auxiliary outputs provided on the board.

Detectors are processed as normal Zone Inputs and the Fobs as RF remote control &/or personal alarm devices. Up to 32 RF Detectors can be monitored by each Module. RF Fob transmissions can also be monitored and actioned by any RF Expander Module in the system. Detection devices and Fobs are registered with the system via a simple procedure from an LCD Terminal or Insight software. An RF Zone will indicate an Alarm state when the device is in alarm, and a Tamper state when the housing is opened. A Restoral will occur when the device is in the sealed state and the housing is secure. Restoral is automatic for "alarm only" devices. An option is provided to save detailed Review information including transmitter signal strength which can assist in commissioning and troubleshooting.

The total number of RF Expander Module Inputs and Fobs is determined by the Control Module Memory size fitted and the Configuration selected.

**NOTE:** Control Module Firmware must be V5.1 or later.

### **Disclaimer:**

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.

## RF Expander Module Parts List

- RF Expander Module PCB assembly in a plastic enclosure.
- Installation Kit in Plastic bag containing:
  - 2 x Tamper switches.
  - 4 x 6.3mm Tamper switch connectors.
  - 1 x 2 Way Plug on Screw Terminals.
  - 1 x 5 Way Plug on Screw Terminals.
  - 1 x Jumper Link.
- Installation Manual. (This document)

## Specifications

Power Supply Input: 11V to 14V DC

Current Consumption. 17mA. Standby  
25mA Max.

Installation environment should be maintained at a temperature of 0° to 40° Celsius and 15% to 85% Relative humidity (non-condensing)

Enclosure dimensions: 135(L) x 83(W) x 44(D) (mm)

Zone Inputs: 32 Wireless zones  
System Inputs: Transmitter Low Battery, Transmitter Poll Fail and RF Jam  
Cabinet Tamper, Module Low Volts, LAN Fail  
and Module Low Battery

RF Frequency: 433.92MHz

## Mounting the Unit

1. The RF Expander Module is supplied in a plastic enclosure which can be mounted in a convenient location using fasteners through the four mounting holes in the base.
2. The “Normally Closed” tamper switches should be fitted into the plastic mouldings in the enclosure before securing the enclosure to the mounting surface.  
The tamper switches must be wired into the “TAMPER” input provided *See wiring diagram on page 6.* The Tamper Switch is Open circuit when the plunger is depressed. i.e. When Lid is on and enclosure is secured to a wall.
3. The Module Number is set using DIPswitches 1 to 7 as required.  
*See table on page 3.*

## Module, Input Zone and FOB Programming

The total number of RF Expander Module Inputs and Fobs is determined by the Control Module Memory size fitted and the Configuration selected.

*See the “Memory Configurations” section of the Manual (V5.1 or later) for details.*  
RF Expander Modules can only be used with Control Module Firmware V5.1 or later.

The RF Expander Modules are programmed via the following menus:

-RF Expander programming. MENU, 7, 2, 0, 2.

The RF Detection devices (Zones) and RF Fobs must be registered before they can be used in the system. This is done via the following menus:

-RF Expander Module Zone registration. MENU, 7, 2, 0, 0, 1.

-RF Expander Module Fob registration. MENU, 7, 2, 0, 0, 2. OR MENU, 2, 7.

-RF FOB Button programming (associated with a user) MENU, 2, 1.

IF a FOB is used to turn an Area ON or an Area OFF, an Auxiliary can be programmed to provide visual or audible indication, (ALARM3 AUX) in area programming. MENU, 7, 1

This option turns the assign auxiliary on for 2 second when Arming and for 5 seconds when Disarming.

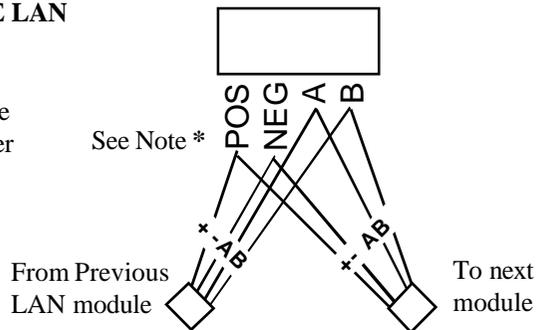
FOB's can only be programmed through one RF Expander module, the module used for programming is selected in the General Options on the Control Module.  
MENU, 7, 5, 1 (RF module for Prog), The default Module is F01.

*See the Concept 3000 / Access 4000 Programming Applications & Reference Manual V5.1 for further information.*

### LAN and Power Supply Wiring

#### MODULE POWERED FROM THE LAN

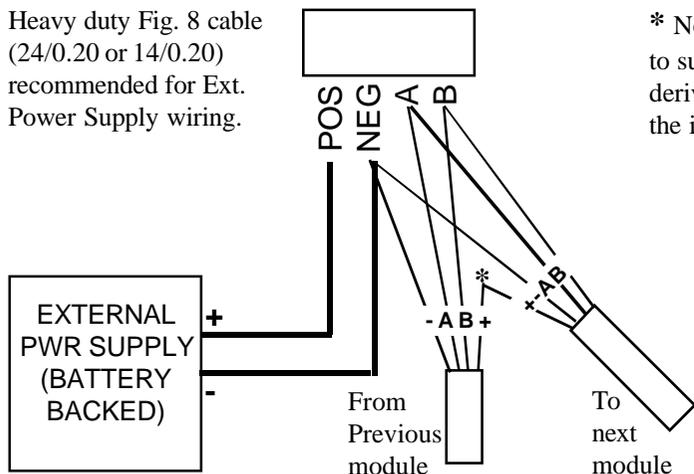
\* Note: If both “LAN +VE” wires provide a Power supply source, the one that is not required to power the Reader Module must NOT be connected.



#### MODULE POWERED FROM EXTERNAL SUPPLY

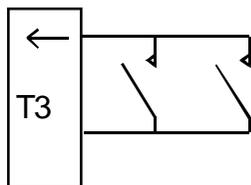
Heavy duty Fig. 8 cable (24/0.20 or 14/0.20) recommended for Ext. Power Supply wiring.

\* Note: If required, the LAN to subsequent Modules may derive +12V from “POS” or the incoming LAN cable.



### Tamper Switch Wiring

Installation of supplied Tamper Switches Contact Open when Lid is on and enclosure is secured to a wall.



Location of the tamper switches in the plastic enclosure

### Module Numbering

The RF Expander Module number is set using DIPswitches 1 to 7. The Module number equals  $n + 1$ , where  $n$  is the binary number set on DIPswitches 1 to 7. Switch 8 must be in the OFF position.

Module No:	DIPswitch:	1	2	3	4	5	6	7
	Binary value:	1	2	4	8	16	32	64
1		off						
2		ON	off	off	off	off	off	off
3		off	ON	off	off	off	off	off
4		ON	ON	off	off	off	off	off
5		off	off	ON	off	off	off	off
6		ON	off	ON	off	off	off	off
7		off	ON	ON	off	off	off	off
8		ON	ON	ON	off	off	off	off
9		off	off	off	ON	off	off	off
through to								
99		off	ON	off	off	off	ON	ON

### Installation Details

#### Links:

LK2 LAN Termination (TERM). The LAN is only terminated on two modules in the system unless LAN Isolators are used.  
See the Control Module Installation manual for more details.

#### Connectors:

T1 LAN Connection, Earth Connection  
T3 Tamper Inputs

#### DIPSwitches:

SW1 Module Number. See table above.

#### LEDs:

LED1 LAN RX Data and FAULT INDICATION. See table on page 8.  
LED2 LAN TX Data and FAULT INDICATION. See table on page 8.

**THE RF EXPANDER PCB**

**LK2(TERM)** LAN Termination.  
The LAN is only terminated on two modules in the system unless LAN Isolators are used. See the Control Module Installation manual for more details.

**JP3** Auxiliary LAN connection.  
For temporary connection of LCD Terminal for diagnostic purposes.

**IMPORTANT NOTE:**  
The Antenna Wire from the RF Receiver **MUST** be kept clear of any power or LAN wiring.

**RF Indicator LEDs**

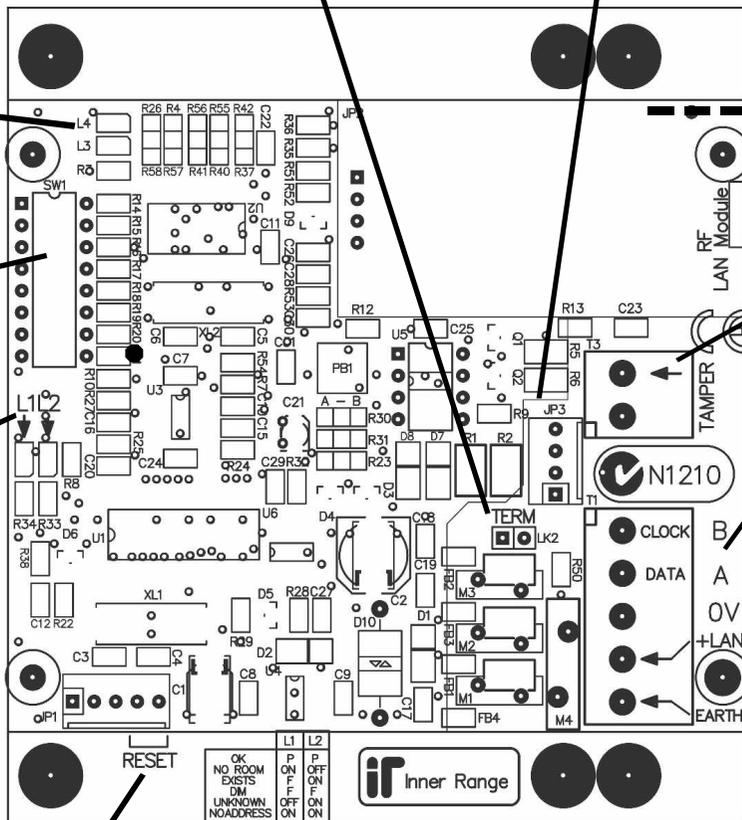
- L3. RF Activity
- L4. JAM indicator

**DIPswitches:**

Switch 1-7. Module number  
(See table on page 3)

- LED 1 (Rx). LAN Data Receive & FAULT DIAGNOSIS
- LED 2 (Tx). LAN Data Transmit & FAULT DIAGNOSIS  
(See table on p 8)

**RESET** Shorting the 2 pins together will reset the RF Module, for example, when changing the DIP switch settings, short the reset pins to restart the module.



**T3** Tamper Connection.  
Input for the 2 cabinet tamper switches

**T1. LAN & External Power Connections.**

- POS Connect LAN +ve **IF** Module powered from the LAN, OR +12V from External Power Supply. \*
- NEG Connect LAN Negative.  
Connect Negative from Ext. Power Supply if used.
- A LAN Data A connection.
- B LAN Data B connection.

\*NOTE: +VE connections from two different power supply sources **must never** be connected together.  
See "LAN & Power Supply Wiring" on page 6.

**EARTH CONNECTION.**  
See "Earth Connection" on page 8.