Module Fault LEDs

L1(RX)	L2 (TX)	EXPLANATION / REMEDY
ON	ON	Module is un-addressed. Check LAN 0V, A & B connections.
OFF	ON	Module type unknown. Firmware upgrade required to Control Module. V7.6 or later supports Paradox™ RF Expander Modules.
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 or Memory Configuration. Select a lower Module number.
ON	OFF	Too many modules on the Network for Control Module RAM size.

L3 (SYS)	
ON	Connector T3 (4-way cable) not connected to RTX3 Serial Port, or RTX3 board not operational.
Fast Flash	RTX3 communications OK.

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: 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 a metal 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*

Concept 4000

Paradox™ RF Expander Module. P/N: 995025

INSTALLATION INSTRUCTIONS

Overview

The Paradox™ RF Expander Module, designated as an "F" Type module, provides a reliable interface for Paradox™ RF Detection devices, General purpose transmitters and the Wireless Remote REM1, REM2 and REM3 Fobs. The Module is powered from the LAN or an 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 V7.62 or later.***
Insight Software V4.2.0 Beta 3 or later is recommended. ***See Note 2 on page 7.***

 Part No: 635025

RF Expander Module Parts List

- RF Expander Module & RTX3 Receiver PCB assemblies in a plastic enclosure.
- 2 x 175mm Antennae.
- Installation Manual. (This document)
- Installation Kit in Plastic bag containing: - 1 x 4 Way Plug on Screw Terminal.
  - 1 x 6.3mm Quick Connect for Earth Lug.
  - 2 x Jumper Link.

Specifications

Power Supply Input:	11V to 14V DC
Current Consumption.	65mA.

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

Enclosure dimensions:	166mm (Width) x 150mm (Height) x 32mm (Depth) (Not including antennae)
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 Band:	433 MHz

Mounting the Unit

The RF Expander Module is supplied in a plastic enclosure which can be mounted in an appropriate location using fasteners through the four mounting holes in the base.

1. Choose a location that meets the Concept 4000 LAN cabling requirements and also provides adequate signal strength for all devices that are to be associated with the Receiver. Transmitter ranges are quoted as 40 metres to 70 metres in a typical residential environment, depending on the product.
Refer to appropriate transmitter instructions for details of RF range.

2. Fit one or both of the anntennae, then mount the enclosure so that the main antenna is oriented vertically as per the drawing on pages 4 and 5.

3. Set the Module Number using DIPswitches 1 to 6 as required.
DIPswitch 7 must be Off. *See table on page 3.*

4. Connect the LAN, test, then fit the enclosure cover.

Module, Input and FOB Programming

IMPORTANT NOTES:

1) Paradox™ RF Expander Modules can only be used with Control Module Firmware V7.62 or later.

2) Prior to Insight 4.2.0 Beta 3 (Installer or Pro), any attempt to program an RF Fob with Insight will corrupt the RF Fob programming in the Panel, and it will need to be re-programmed from an LCD Terminal. Only User Fob options programming is affected, Uploads/Downloads and RF Module programming are OK.

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 (V5.6 or later) for details.

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 and programmed before they can be used in the system. This is done via the following menus.

Registration:
- 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.

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

Programming:
- RF Zone Input / System Input programming. MENU, 7, 0 (Fxx:Zxx and Fxx:Sxx)
- RF FOB Button programming (associated with a User). MENU, 2, 1.

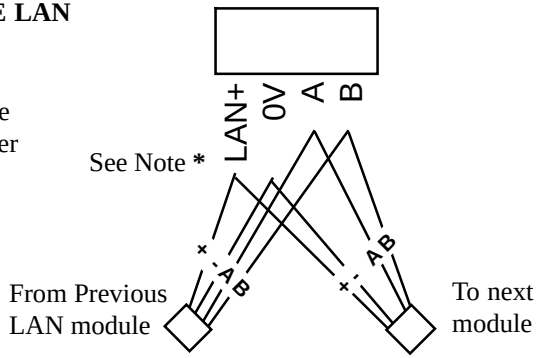
IF a FOB is used to turn an Area ON or an Area OFF, an Auxiliary can be programmed to provide visual or audible indication, (ALARM3 AUX) in Area programming. MENU, 7, 1 This option turns the assigned auxiliary on for 2 seconds when Arming and for 5 seconds when Disarming.
REM2 and REM3 Fobs also provide visual and audible User feedback.

See the Concept 3000 / Access 4000 Programming Applications & Reference Manual V7.6 for further information.

LAN and Power Supply Wiring

MODULE POWERED FROM THE LAN

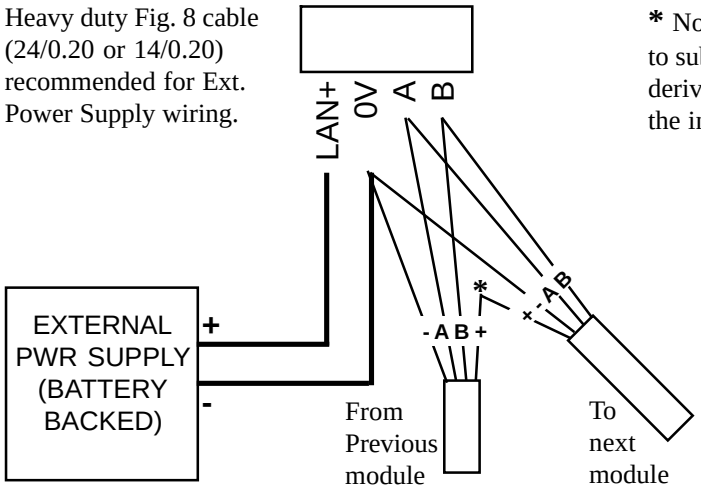
***** Note: If both "LAN +VE" wires provide a Power supply source, the one that is not required to power the Reader Module must NOT be connected.



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 "LAN+" or the incoming LAN cable.



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	off	off	off	off	off	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								
64		ON	ON	ON	ON	ON	ON	off

Installation Details

Links:

LK1	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
T2	Earth Connection
T3	Serial interface connection to RTX3 Serial Port.
T4	Tamper Switch Input. NOT CURRENTLY USED. (Tamper detection is provided by the Tamper switch on the RTX3 board)
JP3	Ancillary LAN connection.

DIPSwitches:

SW1	Module Number. *See table above.*

LEDs:

L1	LAN RX Data and FAULT INDICATION.	*See table on page 8.*
L2	LAN TX Data and FAULT INDICATION.	*See table on page 8.*
L3	SYSTEM STATUS.	*See table on page 8.*

THE PARADOX™ RF EXPANDER MODULE ASSEMBLY

DIPswitches:
Switch 1-6. Module number
(See table on page 3)

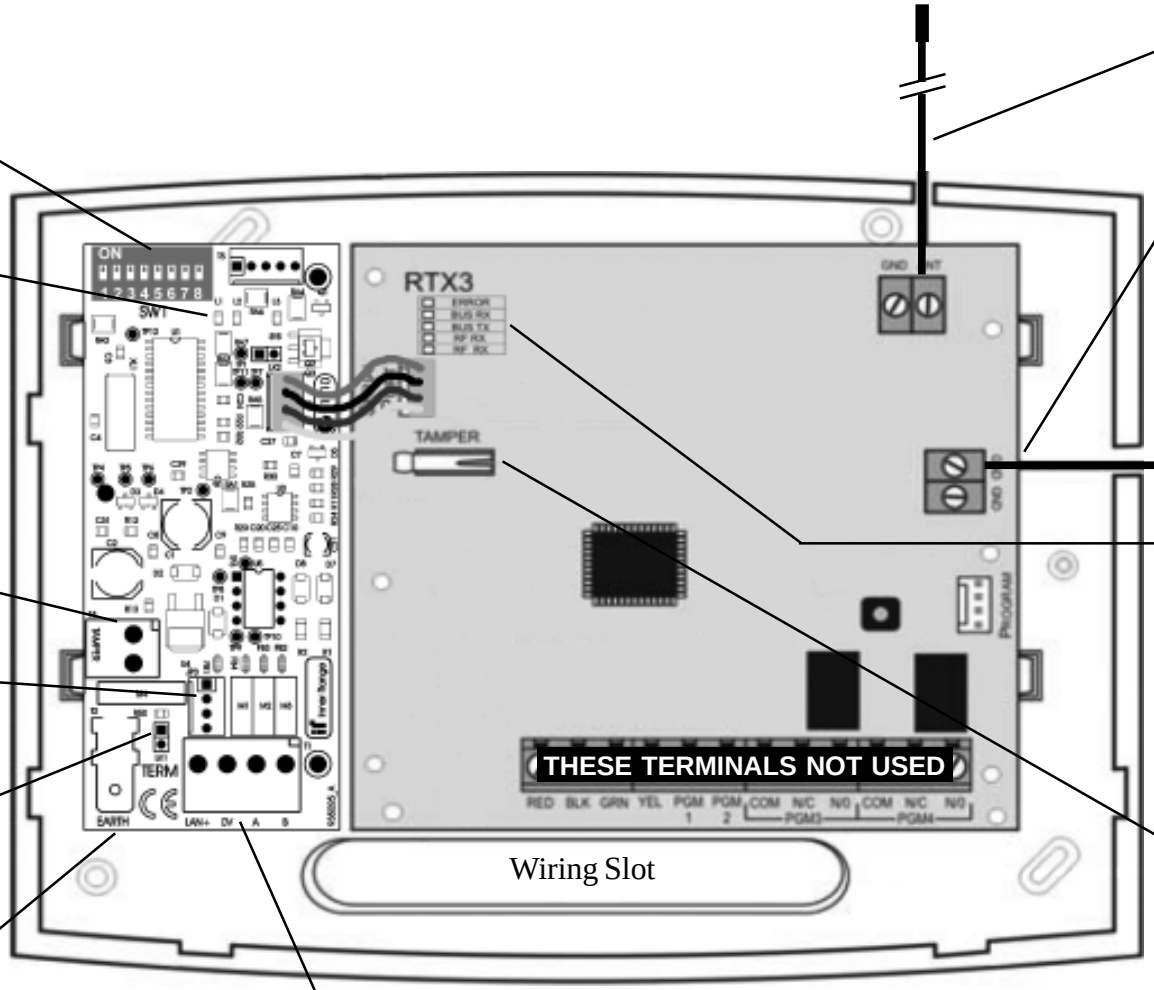
Indicator Lamps. *(See table on p 8)*
L1 (Rx). LAN Data Receive & FAULT Diagnosis
L2 (Tx). LAN Data Transmit & FAULT Diagnosis
L3 (SYS). System Status

T3 Tamper Connection.
NOT CURRENTLY USED.

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

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

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



Main Vertical Antenna.
Must be fitted.

Horizontal Antenna.
Optional antenna can be fitted to improve reception and range.

IMPORTANT NOTE:
The Antennae MUST be kept clear of any power or LAN wiring.

Receiver Indicator LEDS
ERROR Not Used (Ignore)
BUS RX Not Used
BUS TX Not Used
RF RX Data received from a Transmitter.
RF TX Data being sent to a Transmitter.
e.g. REM2 or REM3

Cabinet Tamper Switch

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.