

**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		EEPROM problem. Reset module. If fault persists return for service.

**Programming.**

See Programmer's Manual Rev 3.0 or later for Programming Instructions.

**System Requirements.**

Control Module Firmware V3 or later.  
Min. 128k Memory Expansion fitted.

**Designed & manufactured in Australia.**

Due to on-going product development this manual is subject to change without notice.

© 1999. Inner Range Pty. Ltd.

Part No: 634088

# Analogue Input Module. P/No. 994088

## INSTALLATION NOTES

### Introduction

The Analogue Module is used to monitor analogue quantities in a system. The analogue module can be programmed so that when an analogue level exceeds/drops below a pre-programmed trigger point an alarm/seal can be generated on a Zone Input. The analogue level can also be viewed in scaled units at any LCD terminal.

Each Analogue input is processed as a Zone Input in the system. Several modes of operation are available allowing programmable trigger points to control auxiliary outputs as required. If the analogue input value is too low or too high (i.e. underflow or overflow) then the input will generate a tamper condition.

A small hysteresis applies to each trigger point to avoid "state chatter".

### Specifications

Supply Voltage:	11 to 14Vdc.
Analogue input voltage:	0-5Vdc.
Current Consumption:	Less than 30mA DC.
Auxiliary output current:	200mA DC Open collector.
Physical dimensions:	Length: 140mm Width: 95mm
Installation environment:	0° to 40° Celsius 15% to 85% Relative humidity (non-condensing)

## Installing the Analogue Module.

### Analogue Module Parts List

- Analogue Module PCB assembly in Plastic box.
- Installation Kit in Plastic bag containing:
  - 4 x self tapping 3/8" mounting screws.
  - 2 x Tamper switches.
  - 5 x Jumper Links.
  - 4 x 6.3mm Tamper switch connectors.
  - 6 x 2 Way Plug on Screw Terminals.
  - 2 x 8 Way Plug on Screw Terminals.
  - Installation Manual. (This document)

### Mounting the Unit

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

Enclosure physical dimensions:   Length:   238mm  
   Width:    118mm  
   Depth:   72mm

1. The Analogue Module is supplied in the plastic utility enclosure which can be mounted in a convenient location using fasteners through the four mounting holes in the base. **NOTE: Alternative enclosure options are available.**
2. The "Normally Open" Base and Lid tamper switches should be fitted to the enclosure before it is mounted. On the Analogue Module, these tamper switches must be wired in parallel and connected into the special "TAMPER" input provided. (Switch is Open ckt when plunger depressed. i.e. When Lid is on)
3. The Module Number is set using DIPswitches 1 to 7 as required.  
*See table on page 3.*

### Sensor Connections.

Analogue devices that provide a resistive output are connected to the Analogue Inputs "IN1" to "IN4".

Serial Temperature Sensors (P/N 994089) are connected via the Auxiliary connections, AUX1 to AUX4. For each Serial Sensor connected, the corresponding Analogue input (IN1-4) and physical Auxiliary output that the Sensor is connected to, cannot be used.

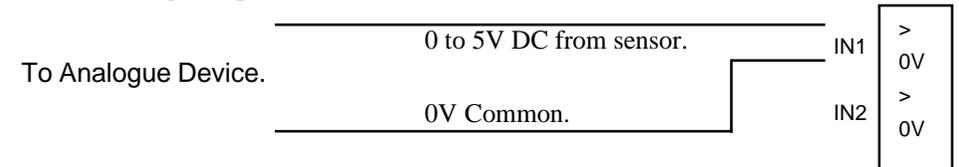
When connecting a Serial Temperature sensor, the corresponding "Aux/Sensor" link (LK1-4) and "A-D" link (LK5-8) must be changed. *See details on p3, 4 & 5.*

e.g. If a Serial Sensor is to be monitored as Qnn:Z01:

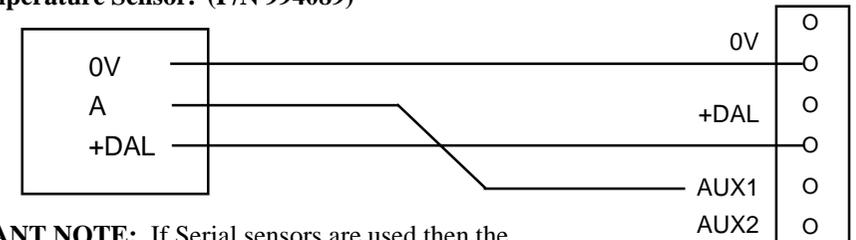
- The Sensor must be connected to J2. (0V, +DAL and AUX1)
- LK1 must be Fitted and LK5 must be in the "D" position.

### Analogue Input Wiring

#### Standard Analogue Input.



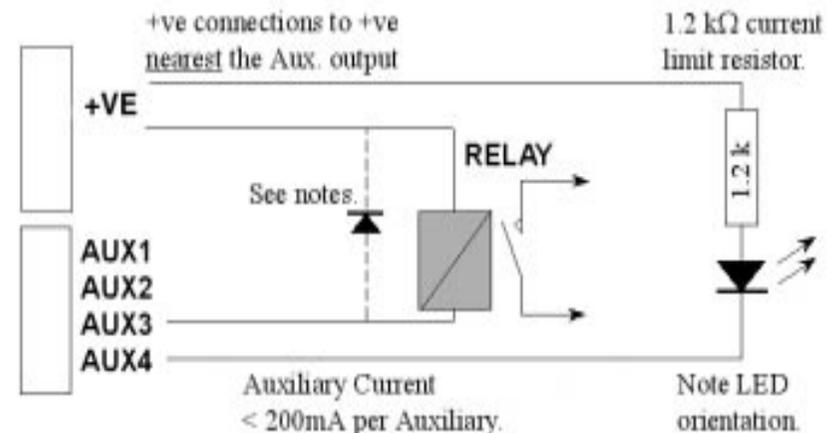
#### Serial Temperature Sensor. (P/N 994089)



**IMPORTANT NOTE:** If Serial sensors are used then the sensors **MUST** be connected before the module is powered up so that they may be detected as Serial sensors.

### Auxiliary Output Wiring

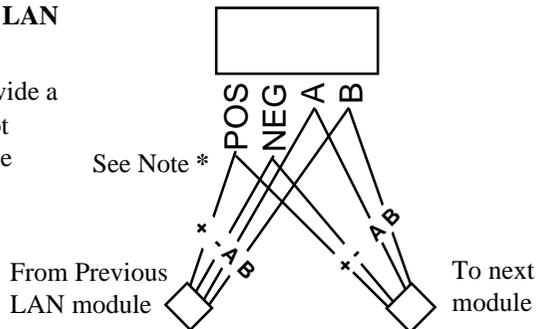
- The module should be powered by an external Power Supply if current required by Auxiliary Devices and/or Detectors exceeds available LAN current.
- When an external power supply is used to power auxiliary devices, a good common Negative connection **MUST** exist between the power supply and the module.
- Clamp diode should be fitted across inductive loads. Cathode (bar) to +ve.



**LAN and Power Supply Wiring**

**MODULE POWERED FROM THE LAN**

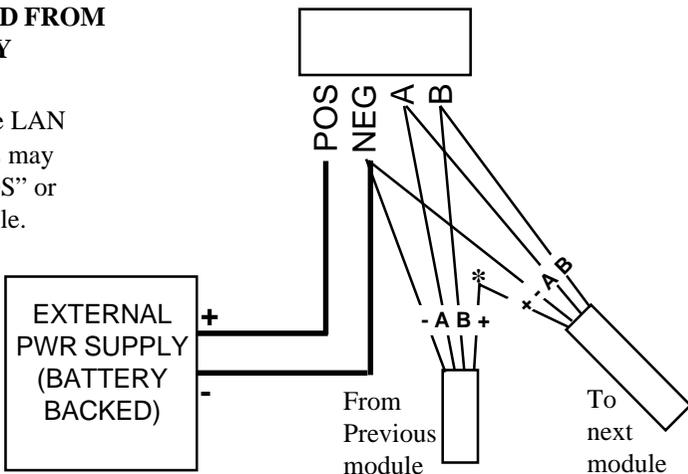
\* Note: If both “LAN +VE” wires provide a Power supply source, the one that is not required to power the Analogue Module must NOT be connected.



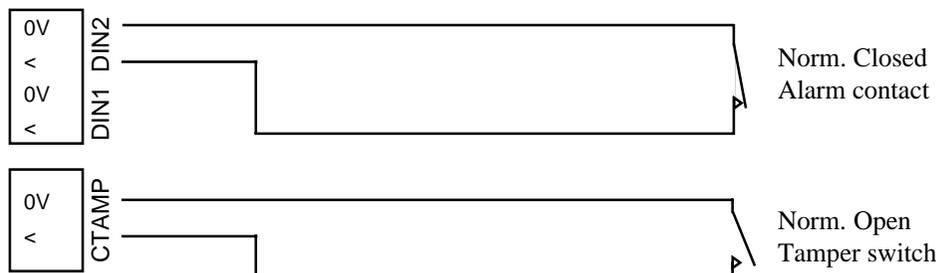
**MODULE POWERED FROM EXTERNAL SUPPLY**

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

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



**Digital Input and Tamper Input Wiring.**



**Module Numbering**

The Analogue 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.

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:**

- JP1 LAN Termination. The LAN is only terminated on two modules in the system unless LAN Isolators are used. See “LAN Installation & Troubleshooting” guide for more details.
- LK5,6,7,8 Device type selection. Set to “A” position for standard Analogue inputs. Set to “D” position for Serial Temperature sensor inputs.
- LK1,2,3,4 Auxiliary Disable. Link removed when standard analogue sensors are used. Link fitted when Serial Temperature sensor is used.

**Connectors:**

- J1 Analogue Zone Inputs.
- J2 Auxiliary outputs or Serial Temperature Sensor inputs.
- J3 Normally Closed Digital inputs. (Two state Zone Inputs)
- J4 Normally Open Cabinet Tamper input.
- J5 LAN and +12V Power input connections.

**DIPSwitches:**

SW1 Module Number. See table above.

**LEDs:**

- L1,L2 LAN comms status.
- L3,L4,L5,L6 Auxiliary status indicators.

**Module ID:** Qnn:xxx Where nn = module number xxx = Zone / Aux ID

## THE ANALOGUE MODULE PCB

### J5. 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.

### JP1. LAN Termination.

The LAN is only terminated on two modules in the system unless LAN Isolators are used. See "LAN Installation & Troubleshooting" guide for more details.

### DIPswitches.

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

### LK 5 to 8.

#### Analogue/Serial device selection.

Set to A if Analogue input used. (IN1-4)

Set to D if Serial Temp Sensor used.

(J2 connection)

LK5=IN1, LK6=IN2, etc.

### J1. Analogue Input connections.

0V Ground return for Input connections.

IN1\* Qnn:Z01

IN2\* Qnn:Z02

IN3\* Qnn:Z03

IN4\* Qnn:Z04

\*NOTE: Not used if Serial Temp Sensor is used.

LED 1 (Rx).

LAN Data Receive  
& FAULT DIAGNOSIS

LED 2 (Tx).

LAN Data Transmit  
& FAULT DIAGNOSIS

(See table on p 8)

### J2. Auxiliary Output connections OR Serial Temperature Sensor Inputs.

0V To 0V on Serial Temp Sensor.

+DAL To +DAL on Serial Temp Sensor.

AUX1-4 Open Collector outputs. <200mA max per output.

OR To "A" on Serial Temp Sensor.

+VE +12V for Auxiliary devices.

NOTE: If Temp. Sensor is used then no Auxiliary output is available.

J6. Ancilliary LAN connector.

### J3. Normally Closed Digital Inputs.

Two state Zone Inputs. No EOL Resistors required.

Short = Seal. Open = Alarm.

DIN1 Qnn:Z05

DIN2 Qnn:Z06

### J4. Normally Open Cabinet Tamper Input.

### LK1 to 4.

#### J2 Input/Output mode selection.

Fitted for Serial Temp. Sensor.

Removed for Auxiliary output.

Link no. = Aux/Sensor I/P number.

