Electrical Specifications

Power Supply Input: 11V to 14V DC

Current Consumption. 70mA standby.
210mA max. with lock relays & LED outputs all active.
(NOT including Reader current.)

NOTE: Allow 50 to 120mA for small Prox Reader (~10cm range)
Allow 120 to 180mA for standard Prox Reader (~15cm range)
These values are general approximations.
See information supplied with Reader for actual current consumption.

Fuse Protection: 500mA (LAN +VE, T5 +VE and T3 +VE)
Total combined current required by devices connected to these three +VE terminals must not exceed 400mA.
ALWAYS REPLACE WITH SAME FUSE VALUE!

Reader 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.

 Part No: 633012G

Model 3000/4000

Single Door/2 Door Reader Module. P/N: 993012

INSTALLATION MANUAL

Overview

The Reader Module is designed to provide Interfacing for two Reader heads along with all input and output requirements for the control and monitoring of:
a) A Single Door using Entry and/or Exit Readers with Entry/Exit button options, OR
b) Two separate Doors each using one Reader only, with Exit button options.
Single Door or 2 Door Mode is selectable in the Reader Module programming options.

The versatile hardware and software design allows for each Reader to be configured independently, even allowing for mixed reader technologies to be used on the same module. Heavy duty relays are provided on-board for lock switching, along with Auxiliary outputs for "Valid", "Invalid" and/or "Door Open Too Long Warning*****" to control Reader LEDs and/or Buzzers. (*****V13 or later Reader firmware and V3 or later Control Module firmware required)

Simple Programming options allow for Door Access Control to be integrated with Area On/Off Control where required. Access Control processing utilizes the Door Contacts and/or Tongue Sense inputs to provide "Door Forced" and "Door Open Too Long" alarms and spare Zone inputs are available for PIRs, PE beams, and other detection devices.

Installing the Reader Module.

Reader Module Parts List

- Reader Module PCB assembly in Plastic box.
- Installation Kit in Plastic bag containing:
  - 4 x self tapping 3/8" mounting screws.
  - 2 x Tamper switches.
  - 4 x 6.3mm Tamper switch connectors.
  - 5 x 8 Way Plug on Screw Terminals.
  - 1 x 500mA Amp Fuse.
  - 10 x 2k2 End-of-line resistors. (red-red-black-brown-brown)
  - 10 x 6k8 End-of-line resistors. (blue-grey-black-brown-brown)
  - 2 x 1N4004 protection diodes. (For connecting across lock strike)
- Installation Manual. (This document)

Mounting the Unit

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

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

1. The Reader 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.

2. The "Normally Closed" Base and Lid tamper switches should be fitted to the enclosure before it is mounted, and are wired in parallel between the "TAMPER" and "GND" terminals on T1. (Switch is Open cct when plunger depressed)

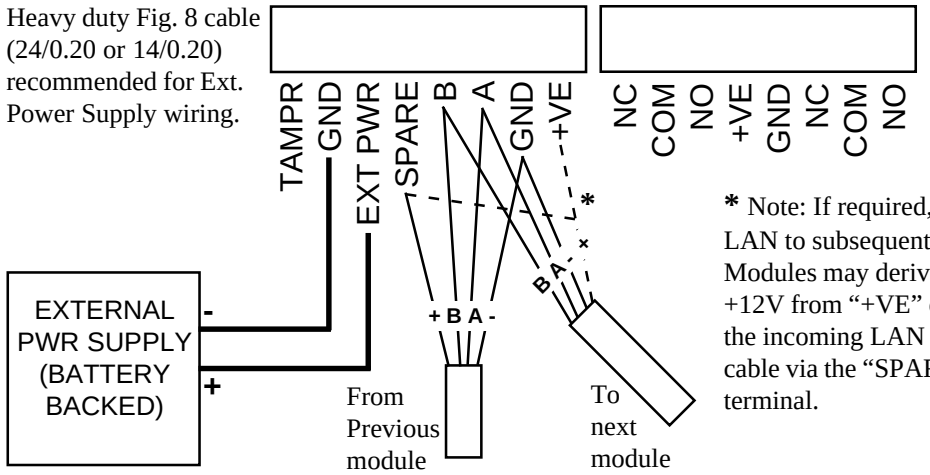
3. The Module Number is set using DIPswitches 1 to 7 as required.
See table on page 3.

4. Door Reed and Zone Inputs are wired using the End-of-Line (EOL) Resistors. REN and REX button Inputs are wired to the Normally Open contact of the button, while the COMMON contact is connected to GND. EOL reistors are not required.
See wiring diagram on page 7.

LAN and Power Supply Wiring

MODULE POWERED FROM EXTERNAL SUPPLY (Recommended)

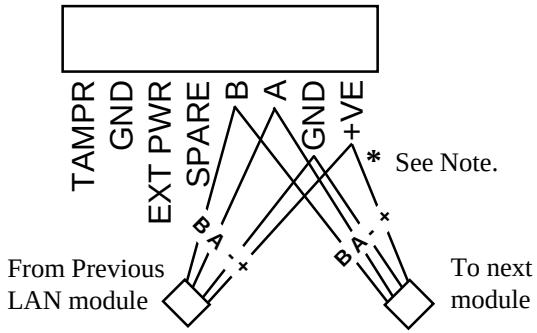
Heavy duty Fig. 8 cable (24/0.20 or 14/0.20) recommended for Ext. Power Supply wiring.



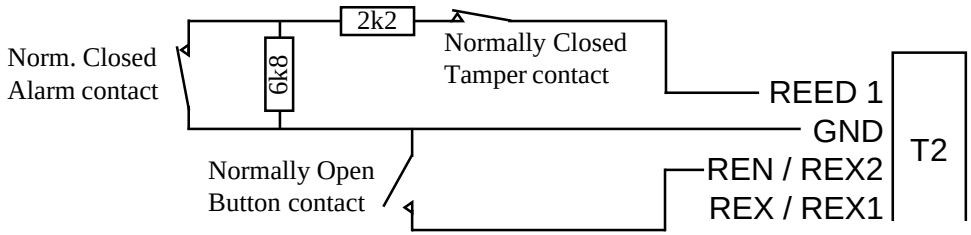
* Note: If required, the LAN to subsequent Modules may derive +12V from "+VE" or the incoming LAN cable via the "SPARE" terminal.

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 be connected to "SPARE"

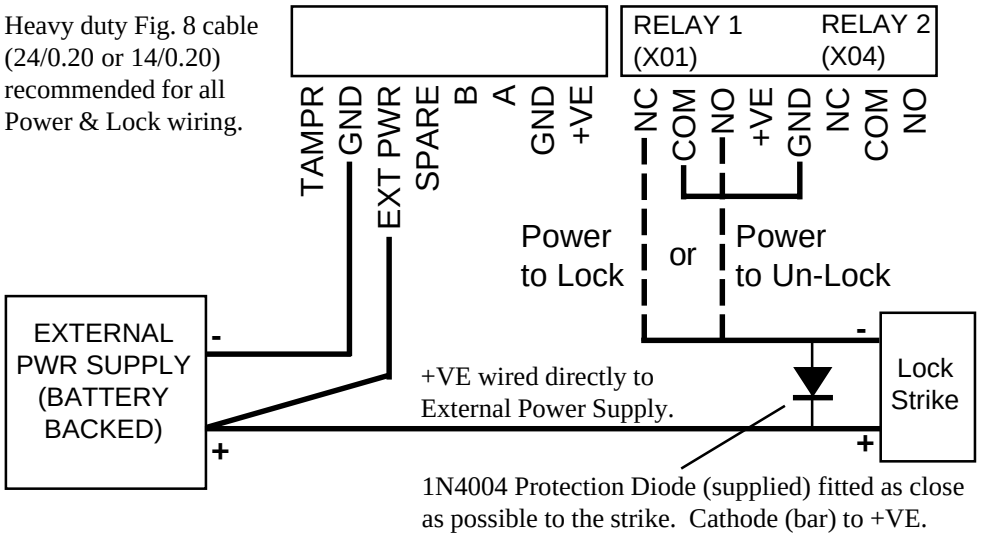


ZONE INPUT AND ENTRY/EXIT BUTTON WIRING



Lock Wiring

Heavy duty Fig. 8 cable (24/0.20 or 14/0.20) recommended for all Power & Lock wiring.



Reader Wiring

READER	D0R#	D1R#	+VE	GND
Omron Swipe	brown	red	yellow	green
Hughes MiniProx/ThinLine/ProxPro	green	white	red	black/shield
HID Sensorkey	green	white	red	black/shield
HID Classic Swipe/Insertion/ Epic Wiegand Card Reader (Units may have flying leads OR screw terminals)	green Data 0	white Data 1	red +VE	black/shield GND
Motorola Indala	green	white	red	black/shield

NOTE: The LED control wires provided on Proximity and Wiegand readers can be wired directly to the VALID / INVALID outputs on the Reader Module. (No dropping resistor required) *See information supplied with Reader for LED control details.*

Module Numbering

The Reader 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	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								
99		off	ON	off	off	off	ON	ON

Link Settings

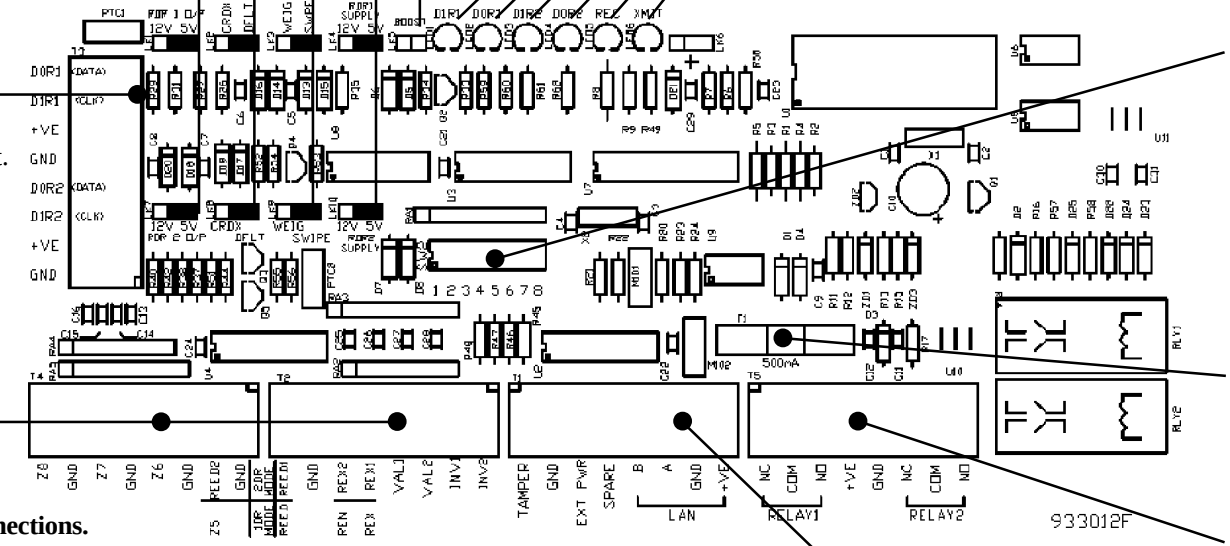
READER	**LK1/LK7** Data O/P	**LK2/LK8** Mode	**LK3/LK9** Format	**LK4/LK10** Supply
Omron Swipe	5V	DFLT	SWIPE	5V
Hughes MiniProx / ThinLine	5V	DFLT	WIEG	5V
Hughes ProxPro	12V	DFLT	WIEG	12V
HID Sensorkey	5V	DFLT	WIEG	5V
HID Swipe/Insertion/Turnstile Wiegand Card Readers	5V	DFLT	WIEG	5V
Motorola Indala. SlimLine/ WallSwitch/PinProx/ValuePro-x/SecureProx/MasterProx	5V	DFLT	WIEG	5V
Motorola Indala. Standard/ Medium Range/MasterProx (for 30cm read range)	12V	DFLT	WIEG	12V

NOTE: It is recommended that Readers with wide supply voltage ranges (e.g. 4V to 14V, 5V to 16V, etc.) are powered using the 5V option.

THE READER PCB

RDR # O/P (LK1/LK7). Reader Data output voltage. 5V / 12V.
CRDX/DFLT (LK2/LK8). Reader format option. Not currently used.
WIEG/SWIPE (LK3/LK9). Wiegand OR Swipe Data format.
RDR # SUPPLY (LK4/LK10). Reader Power Supply voltage. 5V / 12V.
See table on page 3 for common settings.
BOOST (LK5). For 12V Readers. Fit if DC Volts at Reader head is <11.5V

D1R1 (LED1). Data 1's Reader 1.
D0R1 (LED2). Data 0's Reader 1.
D1R2 (LED3). Data 1's Reader 2.
D0R2 (LED4). Data 0's Reader 2.
REC (LED5). LAN Data Receive & FAULT DIAGNOSIS *(See table on page 8)*
XMIT (LED6). LAN Data Transmit & FAULT DIAGNOSIS *(See table on page 8)*



T3. Reader connections.

D0R#(Data)	Reader Data input.
D1R#(CLK)	Reader Data or Clock input.
+VE	Reader Power.
GND	Reader Ground.

NOTE: Use shielded Data cable.
Tycab DMC6702, Garland MC7-6S, etc.
DO NOT use twisted pairs!
See connection details on page 6.

DIPswitches:
Switch 1-7. Module number *(See table on page 3)*
Switch 8. LAN Termination.
Off: Unterminated.
On: Terminated. Only set if unit is one of the two furthest modules from the Control Module.

F1. 500mA FUSE M205.
MUST BE 500mA. Do not substitute higher values.

T5. Lock Relay Connections.
See "Lock Wiring" on page 6.

T2 & T4. Input & Auxiliary Output connections.

REED / REED1	Reed Switch Input for Door #1. **1.*
GND	Ground return for Input connections.
REN / REX 2	Entry Button I/P Door #1. **2.*
	OR Exit Button I/P Door #2. **2 & 3.*
REX / REX 1	Exit Button Input for Door #1. **2.*
VAL 1 (X02)	Reader 1 "Valid"/"Warn DOTL" LED output. **4 & 8.*
VAL 2 (X04)	Reader 2 "Valid" LED output. **4 & 7.*
INV 1 (X03)	Reader 1 "Invalid" LED output. **4.*
INV 2 (X05)	Reader 2 "Invalid"/"Warn DOTL" LED output. **4 & 8.*
Z5 / REED 2	Zone 5 I/P **1.* OR Reed Switch Door #2. **1 & 3.*
Z6	Zone 6 I/P **1.* OR Tongue Sense Door #1. **1 & 6.*
Z7	Zone 7 I/P **1.* OR Tongue Sense Door #2. **1 & 6.*
Z8	Zone 8 I/P. **1.*
	OR Optional Button I/P for Area ON control. **5.*
GND	Ground return for Input connections.

*NOTES:
1. End-of-line (EOL) Resistors req.
2. EOL's NOT required.
3. "2 Door" Mode selected in Reader Module options.
4. Connect 1.2kOhm dropping resistor between +VE & LED Anode if not already supplied in Reader.
5. Area ON control selected in Reader Module options. EOL resistors required.
6. "Tongue Sense" selected in Reader Module options.
7. X04 also Door 2 Lock Output.
8. Warn DOTL requires V13.0 Reader firmware & V3.0 Controller firmware.

T1. LAN, External Power & Tamper Switch Connections.

LAN +VE	Connect LAN +ve IF Module powered from the LAN.*
LAN GND	Connect LAN Ground (-VE)
LAN A	LAN Data A connection.
LAN B	LAN Data B connection.
SPARE	Connect LAN +ve if Module powered from Ext. supply.*
EXT PWR	Ext. Power Supply +VE input.
GND	Ext. Power Supply -VE input. Tamper switch Gnd return.
TAMPER	Tamper Switch input.

*NOTE: **+VE** connections from two different power supply sources must never be connected together.
See "LAN & Power Supply Wiring" on page 7.