

# Product Engineering Guide

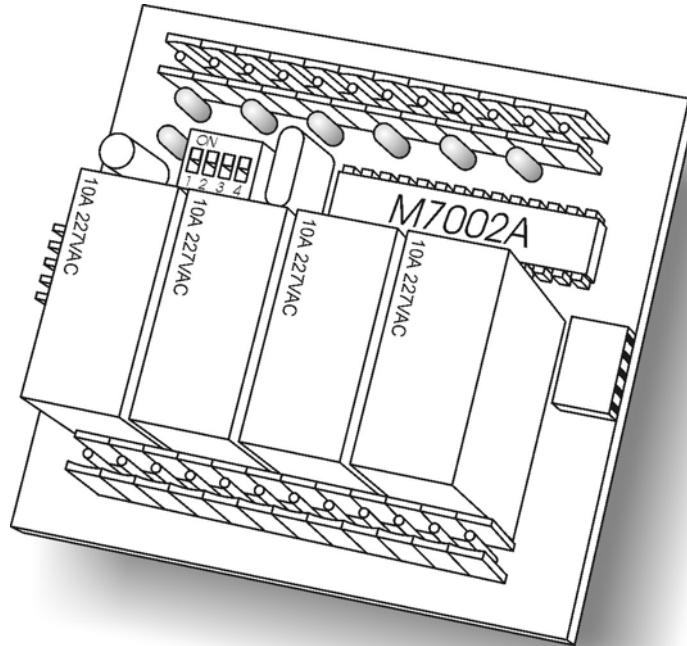
## ZIP Module 7002A

### Introduction

With the decrease of large programmable controllers and the increase of 'fixed function' controllers being used in buildings there is a growing need for a cost effective way of picking up extra inputs and outputs. ZIP is a modular data acquisition system. It is designed to operate either within a control panel or stand-alone.

A 'ZIP System' is a collective term for the connection of ZIP Modules, ZIPNet, and a ZIPMaster. The ZIP Modules link together in a 'daisy chain' style using PowerZIP connectors. One of the modules in the 'daisy chain' is the M7002A.

### ZIP M7002A

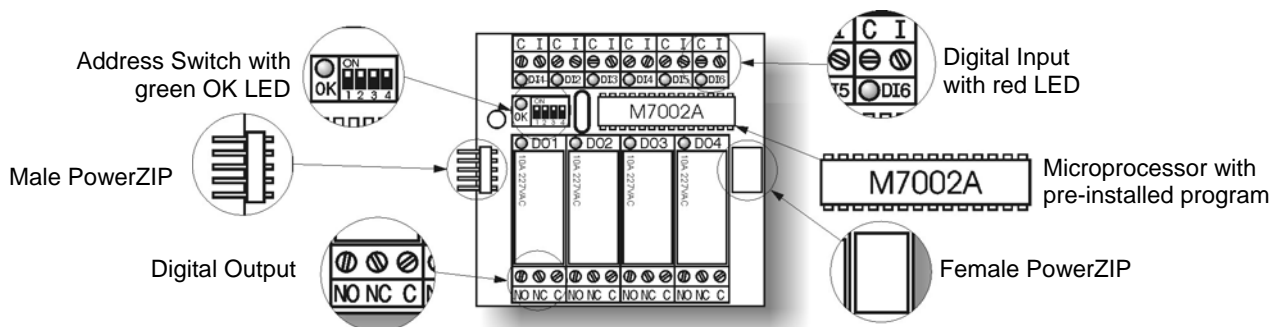


(79mm x 72mm)

The ZIP Module 7002A is a 6 digital-input, 4 relay output module. It has male and female Power ZIP connectors and can be connected to any device that has a female PowerZIP connector, for example a ZIP NetCard.

Before the module is connected to the ZIPNet, the module's address needs to be set. This is done using the Address Switch. The address of a module is in the range of 0-15, and must be unique on the ZIPNet.

With the module connected and power running through the module the green LED beside the Address Switch will be permanently on or flashing. The flashing shows the module is working properly, and as soon as the master has started to communicate with the module the LED will remain continuously lit.



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## **Engineering**

### **Step 1 – Power down ZIP System**

Before connecting the ZIP Module to a female PowerZIP connector, the device that has the female PowerZIP connector needs to have its power disconnected.

### **Step 2 – Set the ZIP Module's Address**

Set the ZIP Module's unique address using the Address Switch. The address of a module must be in the range of 0-15.

### **Step 3 – Connect ZIP Module**

Using the male PowerZIP connector, connect to the female PowerZIP connector on either a ZIPNet network card or to another ZIP Module.

### **Step 4 – Connect Sensors and Actuators**

Wire the sensors and actuators to the ZIP Module. See section '*Inputs*' and '*Outputs*'

### **Step 5 – Power up ZIP System**

When power is re-applied, the green LED beside the address switch should flash on and off to show the module is working properly, and as soon as the master is communicating with the module the LED will remain continuously lit. If the module fails to communicate with the master the LED will continue to flash.

### **Step 6 – Object Engineering**

Use object-engineering software to access your ZIPMaster and read the data from your ZIP Module to test that it is functioning correctly.

## **Address Switch**

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The Address Switch allows the modules address to set. There are 16 different address available, set with different combinations of the 4 switches labelled 1 to 4. Up is on and down is off.

Module Address	Switch Position			
	1	2	3	4
0	Off	Off	Off	Off
1	On	Off	Off	Off
2	Off	On	Off	Off
3	On	On	Off	Off
4	Off	Off	On	Off
5	On	Off	On	Off
6	Off	On	On	Off
7	On	On	On	Off

Module Address	Switch Position			
	1	2	3	4
8	Off	Off	Off	On
9	On	Off	Off	On
10	Off	On	Off	On
11	On	On	Off	On
12	Off	Off	On	On
13	On	Off	On	On
14	Off	On	On	On
15	On	On	On	On

Examples



With the Address Switch set with 1=on, 2=off, 3=on, 4=off, the modules address will be 5.

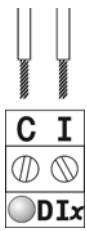


With the Address Switch set with 1=on, 2=off, 3=off, 4=on, the modules address will be 9.

**Inputs**

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The six digital inputs are labelled DI1...DI6.



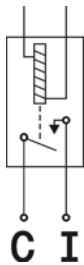
Each digital input is design to connect directly to a volt-free switch. The input reads 'off' when the switch is open, and on when the switch is closed. The digital input's red LED is lit when the input is 'on'. The two terminals are labelled:

- C 'common'
- I 'input'

Below are examples of volt-free switches that a digital input could be wired to.



A simple switch that when in the open position the digital input's red LED is off.



A relay that when not energised the digital input's red LED is off.



An Optocoupler that isolates the digital input from external power supplies.

## Outputs

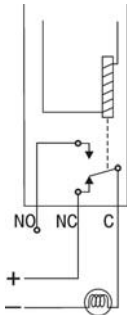
The four relay outputs are labelled as DO1...DO4.



The relay is capable of handling 277VAC @10A or 28VDC @10A. Each output has a red LED that is lit when the output is on. The three terminals are labelled:

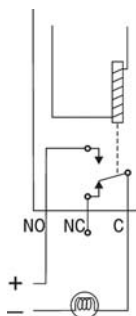
- NO 'normally open'
- C 'common'
- NC 'normally closed'

The example below shows the wiring of a bulb to the relay's Normally Closed (NC) and Common (C) output terminals.



When the relay is not energised the 'normally closed' and 'common' will be connected completing the circuit. The relays LED is off.

The example below shows the wiring of a bulb to the relay's Normally Open (NO) and Common (C) output terminals.



When the relay is energised the 'normally open' and 'common' will be connected completing the circuit. The relays LED will be on.