

# Product Engineering Guide

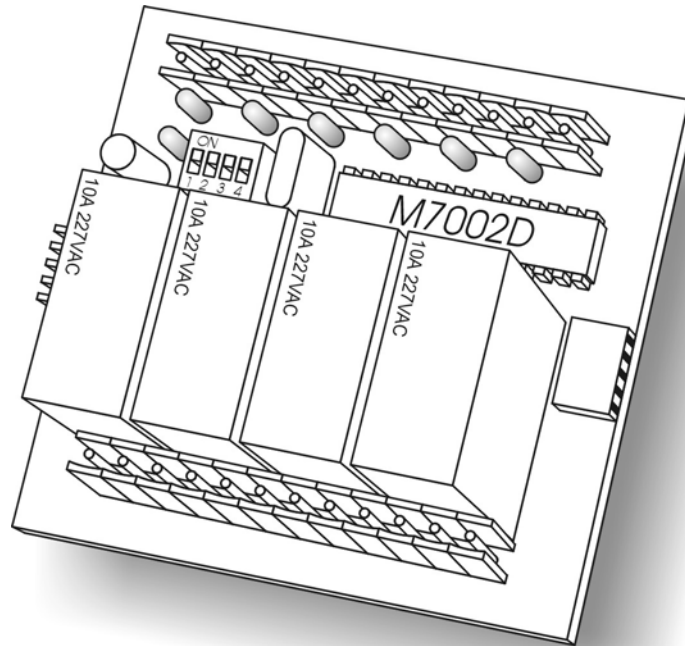
## ZIP Module 7002D

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### 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 M7002D.



79mm x 72mm

### ZIP M7002D

The ZIP M7002D is North Communication's normally closed input alarm-latching module. When the module is connected with power running through it, the green LED beside the Address Switch should 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 M7002D to the ZIPNet, turn off the power to the Zip System.

### 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 – Connecting the 12V power supply

Connect a 12VDC @ 1A power supply to one side of the ZIP M7002D. See section **'Power Supply and Network'**

### Step 4 – Connecting the ZIP Net

Using the appropriate cable connect the ZIP M7002D to your ZIPMaster. See section **'Power Supply and Network'**

### Step 5 – Connect External Hardware

Wire the normally closed inputs, and if required, the alarm indicators, to the ZIP Module.

### Step 6 – Power up ZIP System, including the M7002D

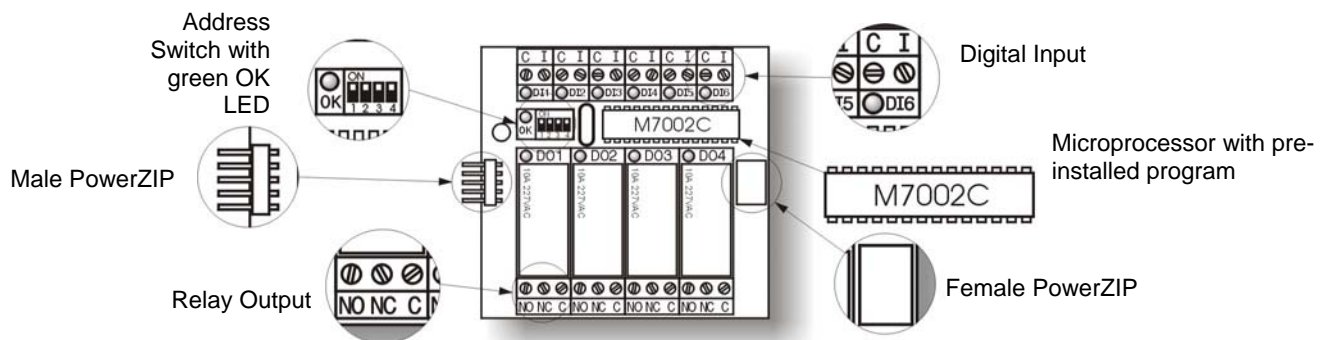
When power is re-applied, the green LED beside the address switch should flash on and off to show the module is working properly. As soon as the master is communicating with the module, the LED will remain continuously lit. If the module fails to communicate with the master the LED will continue to flash.

### Step 7 – Object Engineering

Use object-engineering software to access your ZIPMaster and set up the objects within the M7002D.

For greater detail see the relative sections in **'M7002D Objects'**.

Data from your ZIP Module can now be accessed to test that it is functioning correctly.



## Address Switch

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.



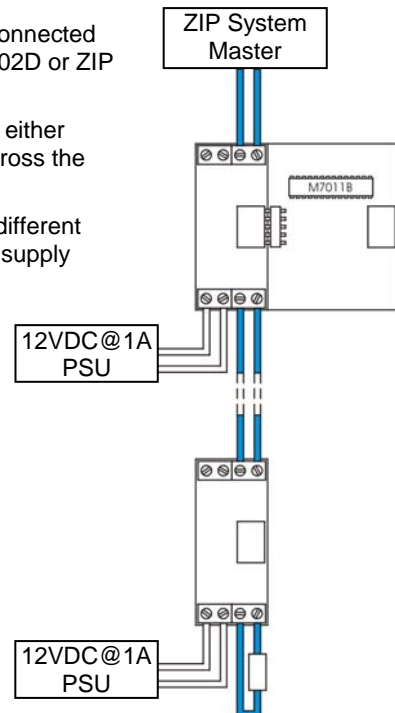
With the Address Switch set with 1=on, 2=off, 3=off, 4=on, the modules address will be 9.

## Power Supply and Network module

The ZIP M7002D must have a power supply of 12VDC @ 1A, which can be connected from either side. The 12V-power supply can also be linked to further ZIP M7002D or ZIP NetCards on the ZIPNet, but each card must have 1A.

Like the power supply, the ZIPNet from the ZipMaster can be connected from either side. The last ZIP on the ZIPNet may require a terminator of 125ohms that across the network connectors.

With the ZIPNet having a maximum length of 1000m, ZIP modules can have different 12V power supplies. The ZIP M7002D's ZIPNet is isolated, simplifying power supply selection.



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## M7002D Objects

Once the input and output hardware has been correctly wired in to the module and the 12VDC power has been connected to the ZIP System, access your ZIP Master using Object Engineering software and set up the objects within the M7002D.

### **Input State 1 S1 through to Input State 6 S6**

The Input States are the hardware inputs (labelled DI1-6 on the module) to the alarm-latching module and require normally closed switches.

When the hardware input is closed, the Input State is in the ok state. When the hardware input is open, the Input State is in the alarm state. If a hardware input is not being used then ensure that it is left in a closed state.

The Input State Objects have the following objects that require engineering:

**Label:** The label is used in alarm generation.

**Destination Object:** The Destination Object doesn't require engineering for the operation of the M7002D, but if an object reference is applied the value will be sent upon any change.

**Alarm Priority:** Alarm Priority has a scale from 1 to 9 (1 being the highest, 9 being the lowest). If no priority is set then an alarm will not be generated.

**Alarm Delay:** The period of time (in seconds) that a value has had to remain in the alarm condition before an alarm is generated.

**Alarm Condition On/Off:** Text labels used in alarm generation.

### **Latch 1 L1 through to Latch 6 L6**

The Latches are the alarm states of the alarm-latching module.

From initialisation the Input State is closed and the corresponding Latch is in the ok state. When the hardware input is open, the Latch switches to the alarm state. It will remain in this state until the corresponding Reset has been triggered, even if the Input State returns to the ok state.

The ZIP M7002D module has four relay outputs (labelled DO1-4 on the module) that are not available as objects, but may be used for additional alarm indication (lamps, sirens etc.). Relay outputs 1-3 follow the states of Latches 1-3. Relay output 4 is used as a general output, that is if any Latch is set then so is this output.

The Latch Objects have the following objects that require engineering:

**Label:** The label is used in alarm generation.

**Destination Object:** The Destination Object doesn't require engineering for the operation of the M7002D, but if an object reference is applied the value will be sent upon any change.

**Alarm Priority:** Alarm Priority has a scale from 1 to 9 (1 being the highest, 9 being the lowest). If no priority is set then an alarm will not be generated.

**Alarm Delay:** The period of time (in seconds) that a value has had to remain in the alarm condition before an alarm is generated.

**Alarm Condition On/Off:** Text labels used in alarm generation.

### **Reset 1 R1 through to Reset 6 R6**

The Resets are the method of clearing the Latches (and therefore the relay outputs) of the alarm-latching module.

When the Reset is enabled, the corresponding Latch, if set, will be returned to the ok state and the current state of the input is not monitored (this effectively acts as a disable). When the Reset is disabled, the hardware input will be monitored and will affect the Latch as mentioned in the previous object descriptions.

The Reset Objects have the following objects that require engineering:

**Label:** The label is used in alarm generation.

**Reset:** This can be written to by the user or other objects to enable/disable the Reset.

Once the M7002D Objects have been engineered, data from your ZIP Module can be accessed to test that it is functioning correctly.