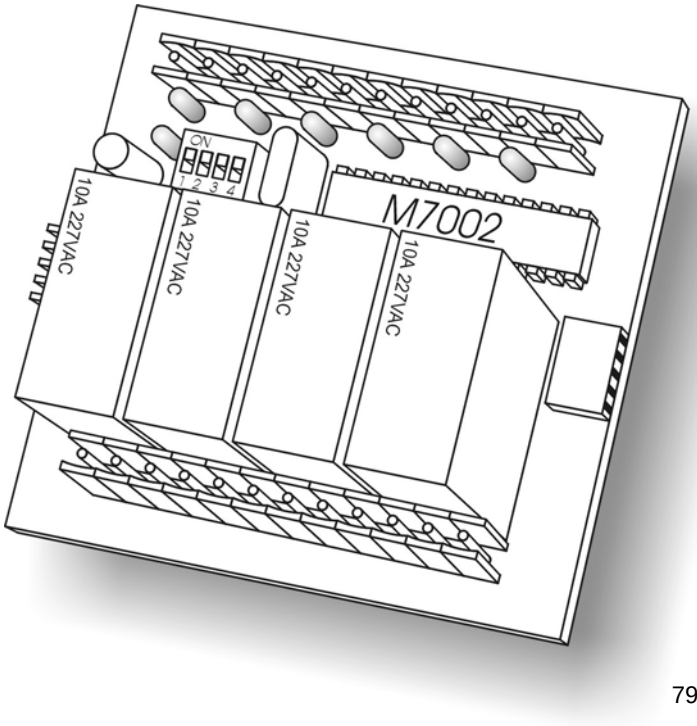
Product Engineering Guide

ZIP Module 7002E

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 M7002E.



79mm x 72mm

ZIP M7002E

The ZIP M7002E is North Communication's alarm latching module with isolate for 2 zones. 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.

Engineering

Step 1 – Power down ZIP System

Before connecting the ZIP M7002E 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 M7002E. See section ***'Power Supply and Network'***

Step 4 – Connecting the ZIP Net

Using the appropriate cable connect the ZIP M7002E to your ZIPMaster. See section ***'Power Supply and Network'***

Step 5 – Connect External Hardware

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

Step 6 – Power up ZIP System, including the M7002E

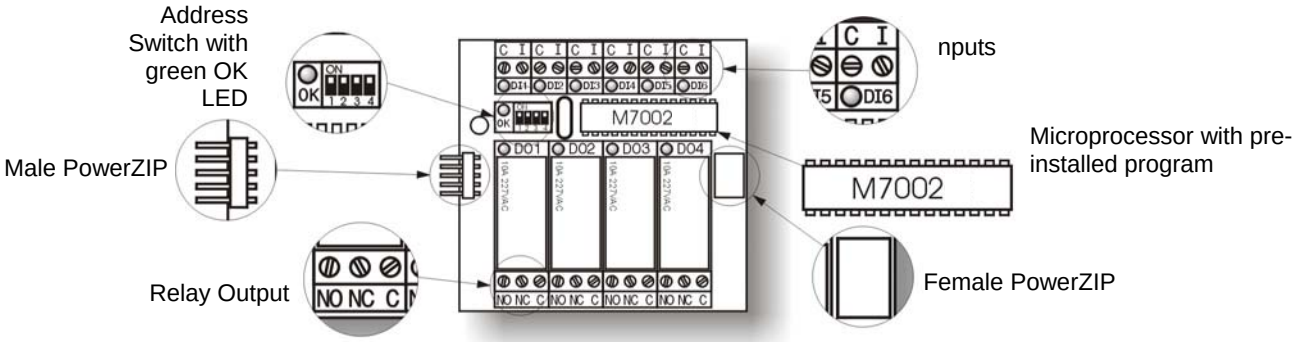
When power is re-applied, the green LED beside the address switch should flash on and off to show the module is working properly. As soon as the master is communicating with the module, the LED will remain continuously lit. If the module fails to communicate with the master the LED will continue to flash.

Step 7 – Object Engineering

Use object-engineering software to access your ZIPMaster and set up the objects within the M7002E.

For greater detail see the relative sections in ***'M7002E 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.

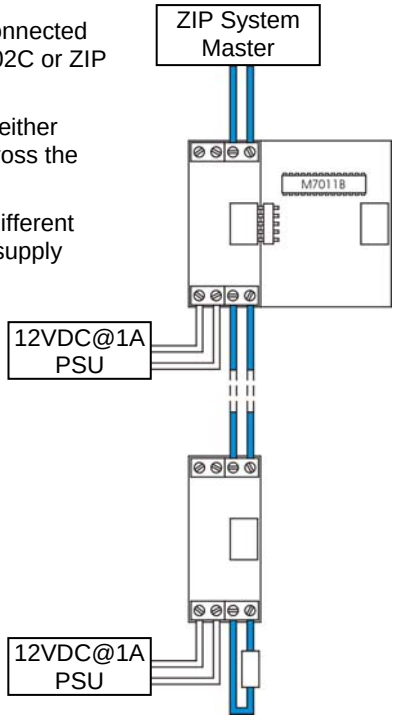
With the Address Switch set with 1=on, 2=off, 3=off, 4=on, the modules address will be 9.

Power Supply and Network module

The ZIP M7002E 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 M7002C 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 M7002E's ZIPNet is isolated, simplifying power supply selection.



M7002E 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 M7002E.

Alarm Input State 1 S1 and Alarm Input State 2 S2

The Alarm Input States are the hardware inputs (labelled DI1 and DI4 on the module) that trigger the Alarm Latches and require normally open switches.
When the hardware input is open, the Alarm Input State is in the ok state. When the hardware input is closed, the Alarm Input State is in the alarm state. If a hardware input is not being used then ensure that it is left in an open state.
The Alarm 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 M7002E, 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.

Alarm Latch 1 SL1 and Alarm Latch 2 SL2

The Alarm Latches are the alarm states of the alarm-latching module.
From initialisation the Alarm Input State is open and the corresponding Alarm Latch is in the ok state. When the hardware input is closed, and the Isolate Latch is not set, then the Alarm Latch switches to the alarm state. It will remain in this state until the corresponding Reset Alarm Latch has been triggered, even if the Alarm Input State returns to the ok state.
The ZIP M7002E 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 and 3 (DO1 and DO3) follow the states of Alarm Latches 1 and 2.
The Alarm 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 M7002E, 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 Alarm Latch 1 R1 and Reset Alarm Latch 2 R2

The Reset Alarm Latches are the method of clearing the Alarm Latches (and therefore the relay outputs) of the alarm-latching module. These are the hardware inputs (labelled DI2 and DI5 on the module) and require normally open switches.
When the hardware input is closed, Reset Alarm Latch is enabled, and the corresponding Alarm Latch, if set, will be returned to the ok state.
The Reset Alarm 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 M7002E, 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.

Isolate Input State 1 I1 and Isolate Input State 2 I2

The Isolate Input States are the hardware inputs (labelled DI3 and DI6 on the module) that trigger the Isolate Latches and require normally open switches.
When the hardware input is open, the Isolate Input State is in the ok state. When the hardware input is closed, the Isolate Input State is in the alarm state. If a hardware input is not being used then ensure that it is left in an open state.
The Isolate 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 M7002E, 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.

Isolate Timer 1 T1 and Isolate Timer 1 T2

The Isolate Timers are the period of time after the Isolate Input State is triggered and the Isolate Latch is therefore set, that the Isolate Latch will remain set for.
The Isolate Timer Objects have the following objects that require engineering:
Label: The label is used in alarm generation.
Time: The delay in seconds.

Isolate Latch 1 IL1 and Isolate Latch 2 IL2

The Isolate Latches are the method of preventing alarm states within the alarm-latching module.
From initialisation the Isolate Input State is open and the corresponding Isolate Latch is in the ok state. When the hardware input is closed, and the Alarm Latch is not set, then the Isolate Latch switches to the set state and the Isolate Timer starts. It will remain in this state until the Isolate Timer elapses, even if the Isolate Input State returns to the ok state.
The ZIP M7002E 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 2 and 4 (DO2 and DO4) follow the states of Isolate Latches 1 and 2.
The Isolate 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 M7002E, 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.

Once the M7002E Objects have been engineered, data from your ZIP Module can be accessed to test that it is functioning correctly.