

# *i*<sup>3</sup> ...Display, Control, Communicate



## *i*<sup>3</sup> Tutorial

### Digital I/O Configuration

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## Introduction

The purpose of this tutorial is to demonstrate how to configure the on-board digital I/O of the *i*<sup>3</sup>.

The *i*<sup>3</sup> accepts inputs from devices that provide either a PNP or NPN signal. This needs to be configured in hardware and the user program.

## Hardware Setting

### *JP1 Setting for the digital I/O*

The digital inputs and outputs can be set to 0V common (NPN) or 24V pull up (PNP). To access the Jumpers that configure the physical I/O, disconnect the  $i^3$  and remove the back cover (shown in Figure 1.)

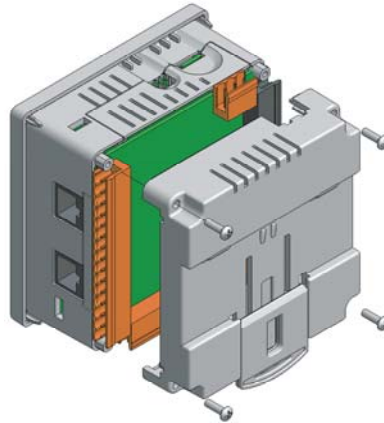


Figure 1: Removing the Back Cover

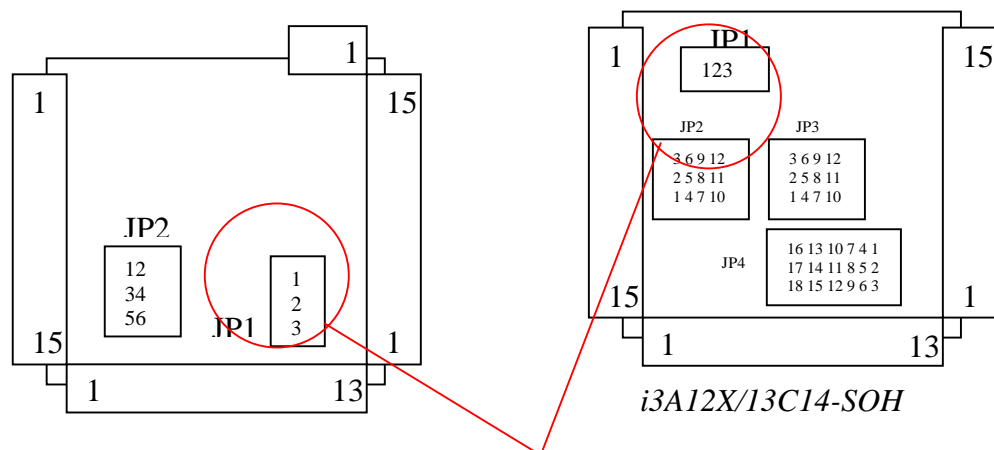
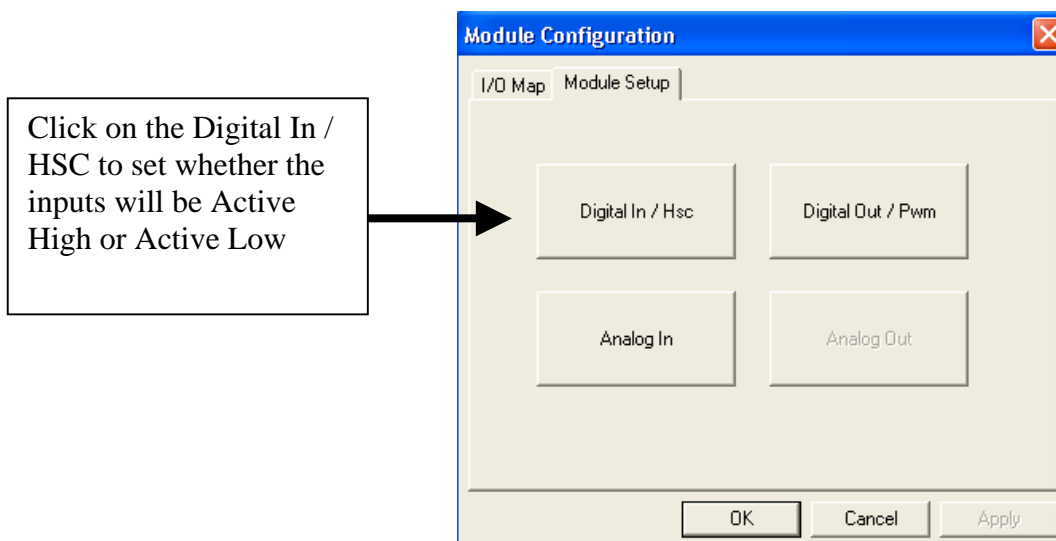
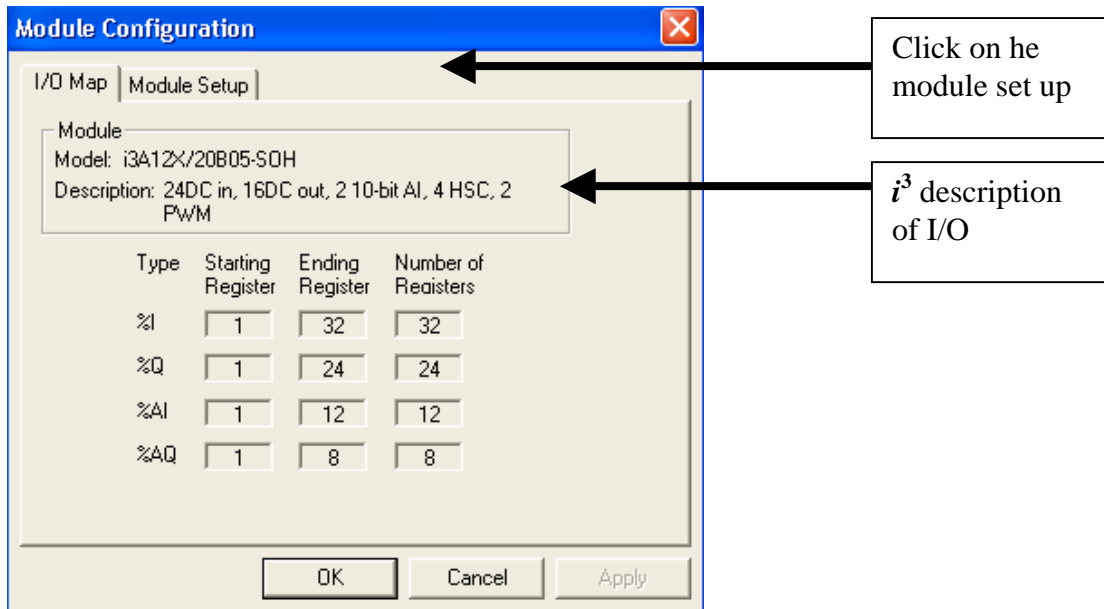
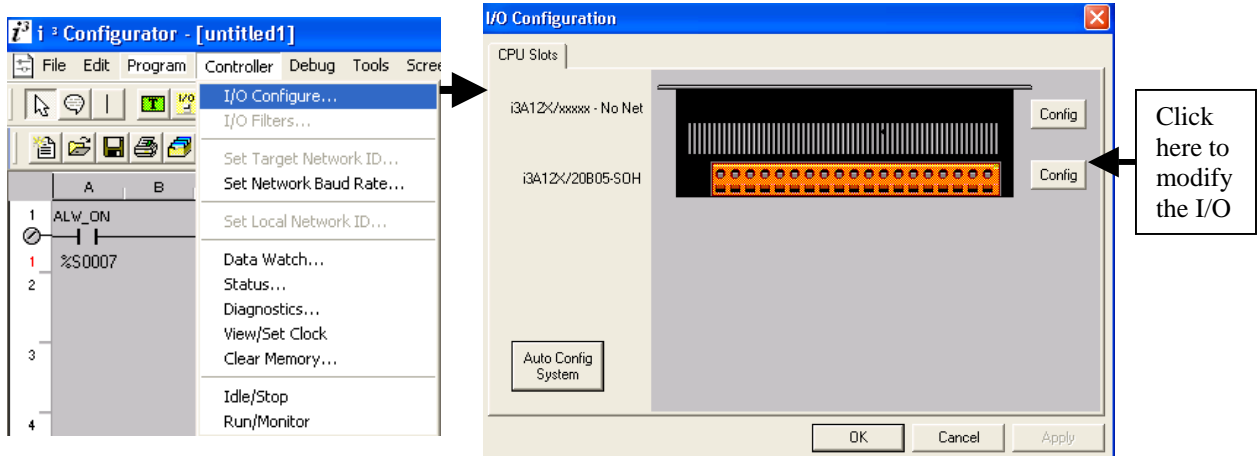


Figure 2: Position of JP1

Description	JP1 Position
24V Pullup (pnp)	2-3
0V Common (nnp)	1-2

When the  $i^3$  is in 24V pull up mode a 24V signal is required to drive an input ON. When in 0V common mode the input will be activated when the connection between 0V and the input has been closed. These also depend on whether the software has been set to active high or active low.

## Setting the inputs in the $i^3$ configuration software



**Digital / Hsc Input Configuration**

Digital inputs active mode

☒ Active high      Note: This setting must match that of the jumpers on the product

☐ Active low

Set here whether to have active high inputs or active low. Click OK and download to the  $i^3$  with the program.

High Speed Counters

	Type:	Mode:	Counts per Rev: (0 = full $2^{28}$ counts)
#1	Disabled	%I9	0
#2	Disabled	%I10	0
#3	Disabled	%I11	0
#4	Disabled	%I12	0

OK Cancel

## Digital Inputs in the Program

If the input coils are shown as active, when the input is not activated (whether it be 0V common or 24V pull up) then it is likely that the  $i^3$  is set as Active LOW.

Input 1 and 2 are not activated, however the contact is closed.



Input 1 is now activated and the contact has gone open.



The unit has now been set to Active HIGH. When there is not a signal to the input the input is not activated. However when a signal is applied the input is activated.

Input 1 and 2 do not have a signal going to them and the contacts are open.



Input 1 now has a signal applied and input 1 contact is closed.



Active High and Active Low operate directly opposite to each other.



IMO Precision Controls Limited  
1000 North Circular Road  
Staples Corner, London  
NW2 7JP United Kingdom  
Tel: +44 (0)20 8452 6444  
Fax: +44 (0)20 8450 2274  
Email: imo@imopc.com  
Web: www.imopc.com



IMO Jeambrun Automation SAS  
165 Rue Jean Jaures,  
94700 Maisons Alfort  
Paris, France  
Tel: +33 (0)1 45 13 47 05  
Fax: +33 (0)1 45 13 47 37  
Email: info@imopc.fr  
Web: www.imopc.fr



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imo@imopc.com



IMO Italia  
Viale A. Volta 127/a  
50131 Firenze, Italia  
Tel: +39 800 783281  
Fax: +39 800 783282  
Email: info@imopc.it  
Web: www.imopc.it



IMO Canada  
Unit 10, Whitmore Road  
Woodbridge, Ontario.  
L4L 8G4 Canada  
Tel: +1 905 265 9844  
Fax: +1 905 265 1749  
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