User Start-up Guide



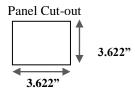


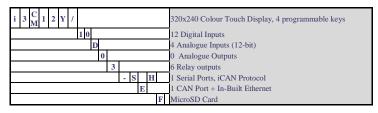


- Connect the 24VDC power as shown on the connector
- Install i^3 Configurator (V9.30 or later) onto your PC.
- Connect serial programming cable into port MJ1 or USB cable to mini USB port.
- If using the mini USB port, or a USB to serial convertor, please check in Window Device Manager which com port has been assigned. Then enter menu Tools->Editor Options->Communications port->Configure, and set accordingly.
- 5. Press the 'SYS' function key on the front of the unit and check Network ID. Then press the target sign win the Configurator and make the Target ID match that of the i^3

WARNING: Please ensure power is ON and i^3 is in Idle mode before inserting SanDiskTM MicroSD.





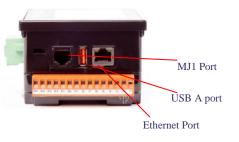


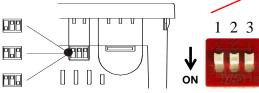
Back cover screws. Remove the 4 screws and back plate to access the Internal jumpers.

WARNING: Do not Over-tighten



External Switch Configuration





Pin	Name	Function	Default
1	RS-485 Termination	ON = Terminated	OFF
2	Spare	Always Off	OFF
3	Factory Use	Always Off	OFF

Power Connector

Power Up: Connect to Earth Ground. Apply 10 - 30 VDC. Screen lights up.

- 1 Positive 2 - Negative
 - 3 Ground

This equipment is suitable for use in Class I, Division 2, Groups A, B, C and D or Non-hazardous locations only

WARNING: EXPLOSION HAZARD - Do not disconnect equipment unless power has been switched off or the area is known to be

AVERTISSEMENT - RISOUE D'EXPLOSION - AVANT DE DECONNECTOR L'EQUIPMENT, COUPER LE COURANT OU S'ASSURER QUE L'EMPLACEMENT EST DESIGNE NON

WARNING: To avoid the risk of electric shock or burns, always connect the safety (or earth) ground before making any other connections.

WARNING: To reduce the risk of fire, electrical shock, or physical injury it is strongly recommended to fuse the voltage measurement inputs. Be sure to locate fuses as close to the source as possible.

WARNING: Replace fuse with the same type and rating to provide protection against risk of fire and shock hazards

WARNING: In the event of repeated failure, do not replace the fuse again as a repeated failure indicates a defective condition that will not clear by replacing the fuse.

WARNING: EXPLOSION HAZARD – Substitution of components may impair suitability for Class I, Division 2

AVERTISSEMENT - RISQUE D'EXPLOSION - LA SUBSTITUTION DE COMPOSANTS PEUT RENDRE CE MATERIAL INACCEPTABLE POUR LES EMPLACEMENTS DE CLASSE 1, DIVISION 2

WARNING: The USB parts are for operational maintenance only. Do not leave permanently connected unless area is known to be non-hazardous.

WARNING: EXPLOSION HAZARD - BATTERIES MUST ONLY BE CHANGED IN AN AREA KNOWN TO BE NON-HAZARDOUS

VERTISSEMENT - RISQUE D'EXPLOSION - AFIN D'EVITER TOUT RISQUE D'EXPLOSION, S'ASSURER QUE L'EMPLACEMENT EST DESIGNE NON DANGEREUX AVANT DE CHANGER LA BATTERIE

WARNING: Battery May Explode If Mistreated. Do Not Recharge, Disassemble or Dispose Of In Fire

WARNING: Only qualified electrical personnel familiar with the construction and operation of this equipment and the hazards involved should install, adjust, operate, or service this equipment. Read and understand this manual and other applicable manuals in their entirety before proceeding. Failure to observe this precaution could result in severe bodily injury or loss of life.

CAN Connector





WARNING: After installing CANopen firmware, part number suffix becomes SEHF. See CANopen Application Note for more details.



Serial Ports MJ1

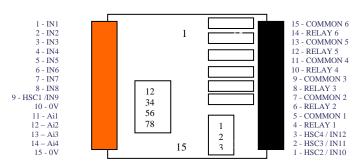
	MJ1 Serial Port Pin Assignments				
Pin	Signal	Signal Description Direction			
8	TD^1	RS-232 Transmit Data	Out		
7	RD^1	RS-232 Receive Data In			
6	0V	Ground -			
5	+5	+5 VDC 60mA max	Out		
4	RTS^1	RS-232 Request to Send	In		
3	CTS ¹	RS-232 Clear to Send	Out		
2	RX/TX-	Receive/Transmit Negative	In/Out		
1	RX/TX+	RS-485 Receive/Transmit Positive	In/Out		

¹Signals are labeled for connection to a DTE device

Analogue I/O and Digital I/O

Wiring Specifications

- ◆For I/O wiring (discrete), use the following wire type or equivalent: Belden 9918, 18 AWG (0.8 mm²) or larger.
- For shielded Analogue I/O wiring, use the following wire type or equivalent: Belden 8441, 18 AWG (0.8 mm²) or larger.
- ◆For CAN wiring, use the following wire type or equivalent: Belden 3084, 24 AWG (0.2 mm²) or larger.



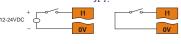
Internal Jumper Configuration

I/O Jumper settings are located internally.
Remove the 4 screws on the back and lift casing off to access. **Only access when power is removed from the** *i*³. Care must be taken to avoid over tightening the case screws.

Digital Input

Positive Logic vs. Negative Logic Wiring

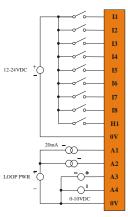
The t^3 can be wired for Positive Logic inputs or Negative Logic inputs depending on the position of JP1.

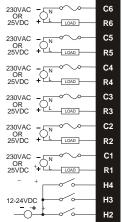


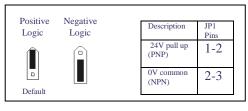
Positive Logic In Negative Logic In

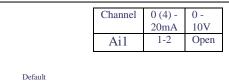
For more details on the i3C Mini, See i3C Mini Manual 0812R0

Wiring Example: Positive Logic Digital In / Relay Out 230VAC - N OR OR 25VDC + N OR OR 25VDC

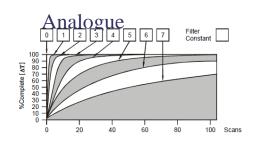












All t^3 controllers can have extra analogue and digital I/O added by connecting expansion modules to either MJ1 port or Modbus TCP modules to Ethernet port. Please inquire at IMO technical support. automation@imopc.com



Expansion I/O Modules

Basic Options

Input - 4 Channel RTD (0-2000ohm, 0-500ohm, PT100, Ni100, PT1000, Ni1000)	iOS / M 04 I P X - D1
Input - 8 Channel DC Current (-20mA to +20mA)	iOS / M 08 I C X - D1
Input - 8 Channel DC Voltage (-10V to +10V)	iOS / M 08 I V X - D1
Input - 8 Channel Thermocouple (J, K, R, S, B, E, T, N, -/+ 50mV, -/+100mV)	iOS / M 08 I T X - D1
Output - 4 Channel DC Voltage / Current (0-20mA, 0-10V)	iOS / M 04 O X A - D1
16 Digital Input, 16 Transistor output (0.1A / Channel, 2A / Common)	GSL - D T 4 A
16 Relay Output (2A / Channel, 5A / Common)	GSL - R Y 2 A
32 Digital Input	GSL - D 2 4 A

Note: Other I/O configurations and Fieldbus options are available. Please inquire at IMO. automation@imopc.com

For further information on Remote I/O please consult the Remote I/O datasheet, and the i3 Remote I/O tutorial in the downloads section of the IMO website. www.imopc.com/manuals

Technical Specifications					
		tal DC Input		_	
Inputs per Moo	lule	12 including	g 4 configurab	le HSC inputs	
Commons per M	odule		1		
Input Voltage Range		12 VDC / 24 VDC		DC	
Absolute Max. Voltage		35 VDC Max.			
Input Impedance			10 kW		
Input Current	Positive			tive Logic	
Upper Threshold		0.8 mA -1.6 mA			
Lower Threshold	0.3 n	0.3 mA -2.1 mA		2.1 mA	
Max Upper Thre	shold	8 VDC			
Min Lower Thre	shold	3 VDC			
OFF to ON Response		1 ms			
ON to OFF Response			1 ms		
HSC Max. Switching Rate		500 KHz			
	Digital	Relay Out	puts		
Outputs per N	Module		6 relay		
Commons per	Module	6			
Max. Output Current per Relay		3 A at 250 VAC, resistive			
Max. Total Output Current Max. Output Voltage		5 A continuous 275 VAC , 30 VDC			
Max. Output Voltage Max. Switched Power		1250 VA, 150 W			
		<u> </u>			
Contact Isolation t		1000 VAC			
Max. Voltage Drop at Rated Current		0.5 V			
Expected Life		No load: 5,000,000			
(See Derating section for chart.)		Rated load: 100,000			
Max. Switchin	ng Rate	300 CPM at no load			
Wax. Switching Rate		20 CPM at rated load			
Туре		Mechanical Contact			
Response T		One update per ladder scan plus 10 ms			
	logue Inpu	ts Mediun		n	
Number of Ch	nannels	4			
		0 - 10 VDC			
Input Ran	ges	0 – 20 mA			
Safe input volta	ge range	4 – 20 mA -0.5 V to +12V			
Input Imped		Curre	nt Mode:	Voltage Mode:	
(Clamped @ -0.5 VD	C to 12 VDC)	1	00 W	500 k W	
Nominal Reso	olution		12 Bits	ı	
%AI full scale		32,000 counts			
Max. Over-Current		35 mA			
Conversion	Speed	All channels converted once per ladder scan		ce per ladder scan	
Max. Error a	t 25°C	4-20 mA 1.00%		1.00%	
(excluding zero)		0-20 mA 1.00%		1.00%	
can be made tighter (~0.25%) by adjusting the digital filter setting to 3.		0-	-10 VDC	1.50%	
Additional error for other than 2		TBD			
Filterin	n	160 Hz hash (noise) filter			
F Itterin	5	1-128 sca	n digital runni	ng average filter	
		<u> </u>			

Required Power (Steady State)	95 mA @ 24 VDC, 190mA @12VDC		
Required Power (Inrush)	2A for <1ms @ 24VDC - DC switched		
Primary Power Range	10 – 30 VDC		
Operating Temperature	-10°C to +60°C		
Storage Temperature	-30 to 70°C		
Relative Humidity	5 to 95% Non-condensing		
Display Type Screen Resolution	3.5" QVGA TFT 320 X 240		
Display Memory	64MB		
Scan Rate	Controller 0.013 mS/K		
Display Life	Minimum 50000 hours (50% brightness , 25°C)		
User Keys	4 User Defined Function Keys and a System Key		
Screens and Colours Supported	1023 screens and 65535 Colours		
Weight	12 oz. (340 g)		
CE	Approved		
UL			

General Specifications

IMO Precision Controls Ltd 1000 North Circular Rd, Staples Corner, London. NW2 7JP Tel: +44 (0) 208 452 6444, Fax: +44 (0) 208 450 2274, Web: www.imopc.com



For further technical information and a full specification, please consult the Hardware Manual

Small Extras:

RS232 Serial Programming Cable For programming any i^3 Model.

IP65 RJ45 Panel-Mounted Socket Bring either MJ1 ports to the outside world by installing this into a 22.5mm cut-out.

USB to RS232 Convertor For PCs without a serial Com Port. Add one with this device.



PART No: i3PAD



PART No: PC501



Communication:

Ethernet Expansion card

Part No. i3-E

Link an i3 to an Ethernet network. Program monitor and debug remotely, or run i3 as a Modbus TCP

GSM Modem Expansion Card

Part No. i3-MA

Send and Receive SMS messages via the i3, dial-up connection over GSM data link for remote programming, debugging etc. Or, use a GPRS always-on data connection ideal for programming, debugging, monitoring and connection to a SCADA package for constant data logging and remote control.

ODIN OPC Server (LOKI Datalogger)

Part No. IMO-OPC-SERVER

With no tag limits and 30 + protocols to select from (including IMO, Siemens, Allen Bradley, Mitsubishi), ODIN can be used with LOKI to log data either to an excel spreadsheet or access database.

Panel Point SCADAlite

Part No. PANELPOINT (Developer) Part No. PANELPOINTRT (Runtime)

With no tag limit and 30+ Protocols to choose from (including IMO products, Mitsubishi, Allen Bradley, Siemens), a powerful graphical editor, and a VB-based scripting language, Panel-Point allows a PC to become the central data hub of an application.

i3Portal Part No. i3Portal

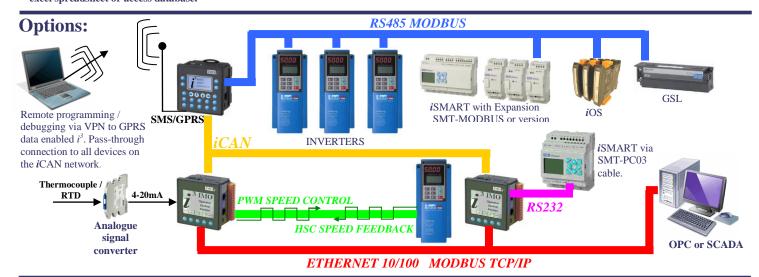
i3Portal is a low-cost, powerful Windows® based software application that will allow you to view and access remote IMO i3 controllers via PC.

i3Transfer Part No. i3-Transfer

i3Transfer is a low-cost, Windows ® based software application that allows you to easily transfer files between your PC and the IMO i3 Controllers via PC.







Miscellaneous:

DIN rail mounted SRSI Base and ETS Relay

Use the Transistor outputs of the i^3 to operate the relay coils to switch up to 6A @ 250VAC.

Part Numbers: SRSI-24AC/DC, ETS-1AN-SL-24VDC

*i*³ Configurator with Symbol Library Obtain a copy of the i^3 Software with a library of colour buttons, pipes, vessels, motors, pumps, fans etc. To enhance the look and feel of applications on the i^3 C, i^3 C Mini, i^3 D, i^3 H.

Part Numbers: IMO-CDSUITE

Custom screen overlays

Ask at IMO for custom overlays. Overlays are tooled to a customer's design.





GPS Receiver

Locate your i^3 Controller anywhere in the world by connecting this device to MJ2 of a unit equipped with a GPRS enabled modem.



Part Number: i^3 -GPS

