User Start-up Guide







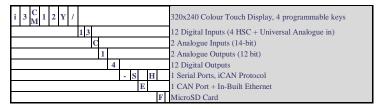
- Connect the 24VDC power as shown on the connector
- Install i^3 Configurator (V9.30 or later) onto your PC.
- Connect serial programming cable into port MJ1 or USB cable to mini USB port.
- If using the mini USB port, or a USB to serial convertor, please check in Window Device Manager which com port 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.



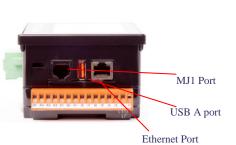


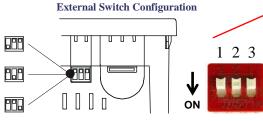
3.622"



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

WARNING: Do not Over-tighten screws.





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

Power Connector

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 - RISQUE D'EXPLOSION - AVANT DE DECONNECTOR L'EQUIPMENT, COUPER LE COURANT OU S'ASSURER OUE 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 connection

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,

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

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

AVERTISSEMENT - RISQUE D'EXPLOSION - AFIN D'EVITER TOUT RISOUE D'EXPLOSION, S'ASSURER OUE 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



- 2 CN_H
- 3 SHIELD
- 5 V-

firmware, part number suffix becomes SEHF. See CANopen Application Note

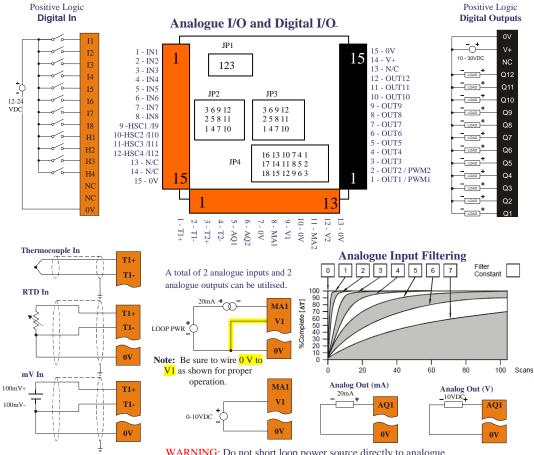


Serial Ports

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-	RS 485 Receive/Transmit Negative	In/Out		
1	RX/TX+	RS-485 Receive/Transmit Positive	In/Out		

¹Signals are labeled for connection to a DTE device

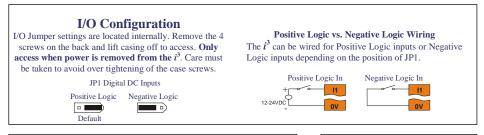


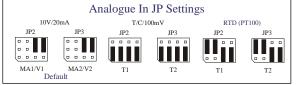
WARNING: Do not short loop power source directly to analogue inputs, more than 35mA load can damage input circuit.

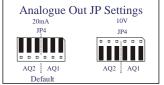
Wiring Specifications

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.

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







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



iCAN based expansion I/O is also available on special request. 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 i^3 Remote I/O tutorial in the downloads section of the IMO website. www.imopc.com/manuals

			Technical S ₁	pecificatio	ns			
D	igital DC In	puts				Digital DC	Outputs	
Inputs per Module 12 including 4 configura		uding 4 configurable	HSC inputs	ts Outputs per Module		uts per Module	12 including 2 configurable PWM outputs	
Commons per Module		1		Co	omm	ons per Module	1	
Input Voltage Range		12 VDC / 24 VDC		Output Type			Sourcing / 10 K Pull-Down	
Absolute Max. Voltage		35 VDC Max.		Absolute Max. Voltage		Ü	28 VDC Max.	
Input Impedance		10 ΚΩ		Output Protection			Short Circuit	
Input Current	Positive Logic	Nega Nega	tive Logic	Max. (Outp	ut Current per point	0.5 A	
Upper Threshold	0.8 mA	-1	.6 mA	N	Max. Total Current		4 A Continuous	
Lower Threshold	0.3 mA	-2	2.1 mA	Max. Output Supply Voltage		put Supply Voltage	30 VDC	
Max Upper Threshold		8 VDC	Minimun		ım Output Supply Voltage		10 VDC	
Min Lower Threshold		3 VDC		Max. Voltage Drop at Rated Current		Drop at Rated Current	0.25 VDC	
OFF to ON Response		1 ms		Max. Inrush Current			650 mA per channel	
ON to OFF Response		1 ms		Min. Load			None	
		500 KHz		OFF to ON Response		_	1 ms	
HSC Max. Switching Rate						OFF Response	1 ms	
		Δ	Analogue Inputs		_	t Characteristics	Current Sourcing (Positive Logic)	
Number of Channels		2		Thermocou			perature Range	
Input Ranges	1	0 - 10 VDC		mocou	F	Ten	r	
(Selectable)	1	0-20 mA						
	1	4-20 mA		B/R/S		2912°F to	32.0°F (1600°C to 0°C)	
		100mV						
		PT100 RTD,		E	E 1652°F		to -328°F (900°C to -200°C)	
	and J,	K, N, T, E, R, S, B T	hermocouples	T		752.0°F to -4	F to -400.0°F (400°C to -240°C)	
		10 VDC: -0.5 V to	+15 V	J		1382.0°F to -	to -346.0°F (750°C to -210°C)	
Safe input voltage range		20 mA: -0.5 V to +6 V		K/N		2498.0°F to -	400°F (1370°C to -240°C)	
		RTD / T/C: ±24 VDC		Therm	nocouple Common Mode Range ±10V		±10V	
		10V, 20mA, 100mV: 14 Bits RTD, Thermocouple: 16 Bits		Converter Type		~	21.0	
Nominal Resolution						Converter Type	Delta Sigma	
Input Impedance		Current Mode: 100 Ω, 35mA Max. Continuous Voltage Mode:		Max. Error at 25°C (*excluding zero)		ov. Ennoy at 25°C	*4-20 mA ±0.10%*	
(Clamped @ -0.5 VDC to 12 VDC)	1					ax. Error at 25 C	*0-20 mA ±0.10%*	
						*excluding zero)	*0-10 VDC ±0.10%*	
							RTD (PT100) ±1.0 °C	
	50	00 KΩ, 35mA Max. C	ontinuous				0-100 mV ±0.05%	
				Max Thermocouple Error (After 1Hr Warm				
%AI full scale	10 V, 20	mA, 100 mV: 32,000 RTD / T/C: 20 coun		Conversion	n Spo	eed, Both Channels Converted	10V, 20mA, 100mV: 30 Times/Second RTD, Thermocouple: 7.5 Times/Second	
		35 mA 50 nA					10V, 20mA, 100mV: 16.7mS	
Max. Over-Current				Conversion Time per Channel		sion Time per Channel	RTD, Thermocouple: 66.7mS	
Open Thermocouple Detect Current					DTD Evoltation Comment		•	
Analogue	1	JUITA			ΚIŊ	RTD Excitation Current 250 mA General Specifications		
	Jupus		Required Power		•			
Number of Channels		2	-	(Steady State)		95 mA @ 24 VDC, 190mA @12VDC		
0.4.18		0-10 VDC,				2A for <1ms @	24VDC - DC switched	
Output Ranges		0-20 mA	Required Power (Inrush)					
Nominal Resolution		14 Bits	Primary Power Range			10 - 30 VDC		
Update rate		Once per PLC scan				-10° to 60° Celsius		
Minimum 10 V load		1ΚΩ	Storage Temperature		-30 to 70°C			
Maximum 20 mA load		500 Ω	Relative Humidity		5 to 95% Non-condensing			
Analogue Outputs;		2	Display Type		3.5" QVGA TFT			
Output Points Required		Screen Resolu				3	320 X 240	
Maximum Error at 25°C (exclu-	0.10%	Display Memory		64 MB				
Additional arms for to	than than 25°C	0.01% / °C	Scan Rate		Controller 0.013 mS/K Minimum 50000 hours (50% brightness 25°C)			
Additional error for temperatures other than 25°C $$0.01\%\ /\ ^{\circ}$C$$			Display Life		Minimum 50000 hours (50% brightness , 25°C)			
			User Keys Screens and Colours Supported		4 User Defined Function Keys and a System Key 1023 screens and 65535 Colours			
						1025 screens and 05555 Colours 12 oz. (340g)		
				Weight CF / III				
IMO Precision Controls Ltd			CE / UL		Approved For further technical information and a full specification.			

Small Extras:

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

IP65 RJ45 Panel-Mounted Socket Bring either MJ1 or MJ2 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

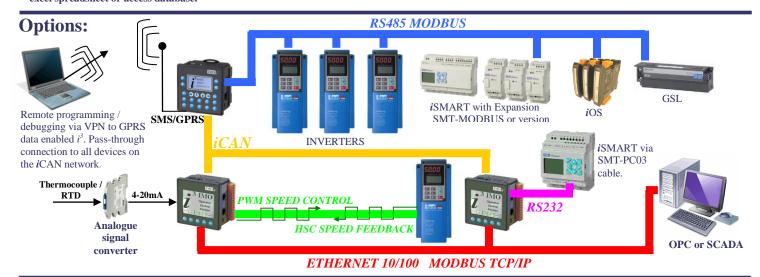
i3Portal is a low-cost, powerful Windows® based software application that will allow you to view and access remote IMO i3 controllers via PC.

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.







24V DC OUTPUTS

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

& ETS Relays

i3A12X/20B05-SOHF

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.

Equipment SRSI Bases

GPS Receiver

250V AC OUTPUTS

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