

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

Wiring Specifications

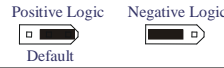
- For I/O wiring (discrete), use the following wire type or equivalent: Belden 9918, 18 AWG (0.8 mm²) or larger.
- For shielded Analogue I/O wiring, use the following wire type or equivalent: Belden 8441, 18 AWG (0.8 mm²) or larger.
- For CAN wiring, use the following wire type or equivalent: Belden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

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

I/O Configuration

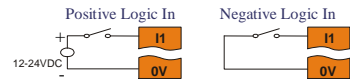
I/O Jumper settings are located internally. Remove the 4 screws on the back and lift casing off to access. **Only access when power is removed from the i³.** Care must be taken to avoid over tightening of the case screws.

JP1 Digital DC Inputs

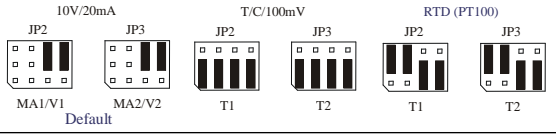


Positive Logic vs. Negative Logic Wiring

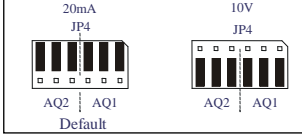
The i³ can be wired for Positive Logic inputs or Negative Logic inputs depending on the position of JP1.



Analogue In JP Settings



Analogue Out JP Settings



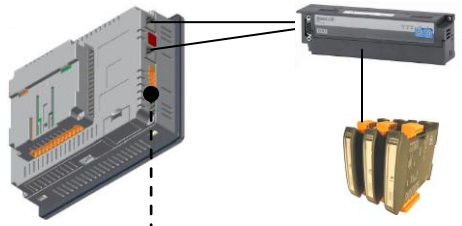
All i³ controllers can have extra analogue and digital I/O added by connecting expansion modules to either MJ1 port or Modbus TCP modules to Ethernet port. Please inquire at IMO technical support. automation@imopc.com

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



iCAN based expansion I/O is also available on special request. Please inquire at IMO technical support. 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				
Digital DC Inputs			Digital DC Outputs	
Inputs per Module	12 including 4 configurable HSC inputs		Outputs per Module	12 including 2 configurable PWM outputs
Commons per Module	1		Commons 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	28 VDC Max.
Input Impedance	10 K Ω		Output Protection	Short Circuit
Input Current	Positive Logic	Negative Logic	Max. Output Current per point	0.5 A
Upper Threshold	0.8 mA	-1.6 mA	Max. Total Current	4 A Continuous
Lower Threshold	0.3 mA	-2.1 mA	Max. Output Supply Voltage	30 VDC
Max Upper Threshold	8 VDC		Minimum Output Supply Voltage	10 VDC
Min Lower Threshold	3 VDC		Max. Voltage 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
HSC Max. Switching Rate	500 KHz		OFF to ON Response	1 ms
			ON to OFF Response	1 ms
			Output Characteristics	Current Sourcing (Positive Logic)
Analogue Inputs High Resolution				
Number of Channels	2		Thermocouple	Temperature Range
Input Ranges (Selectable)	0 - 10 VDC 0 - 20 mA 4 - 20 mA 100mV PT100 RTD, and J, K, N, T, E, R, S, B Thermocouples		B / R / S	2912°F to 32.0°F (1600°C to 0°C)
Safe input voltage range	10 VDC: -0.5 V to +15 V 20 mA: -0.5 V to +6 V RTD / T/C: \pm 24 VDC		E	1652°F to -328°F (900°C to -200°C)
			T	752.0°F to -400.0°F (400°C to -240°C)
			J	1382.0°F to -346.0°F (750°C to -210°C)
Nominal Resolution	10V, 20mA, 100mV: 14 Bits RTD, Thermocouple: 16 Bits		K / N	2498.0°F to -400°F (1370°C to -240°C)
			Thermocouple Common Mode Range	
Input Impedance (Clamped @ -0.5 VDC to 12 VDC)	Current Mode: 100 Ω , 35mA Max. Continuous Voltage Mode: 500 K Ω , 35mA Max. Continuous		Converter Type	Delta Sigma
%AI full scale	10 V, 20 mA, 100 mV: 32,000 counts full scale. RTD / T/C: 20 counts / °C		Max. Error at 25°C (*excluding zero)	*4-20 mA \pm 0.10%* *0-20 mA \pm 0.10%* *0-10 VDC \pm 0.10%* RTD (PT100) \pm 1.0 °C 0-100 mV \pm 0.05%
			Max Thermocouple Error (After 1Hr Warm Up)	\pm 0.2% (\pm 0.3% below -100°C)
Max. Over-Current	35 mA		Conversion Speed, Both Channels Converted	10V, 20mA, 100mV: 30 Times/Second RTD, Thermocouple: 7.5 Times/Second
Open Thermocouple Detect Current	50 nA		Conversion Time per Channel	10V, 20mA, 100mV: 16.7mS RTD, Thermocouple: 66.7mS
Analogue Outputs	2		RTD Excitation Current	250 mA
			General Specifications	
Number of Channels	2		Required Power (Steady State)	95 mA @ 24 VDC, 190mA @12VDC
Output Ranges	0-10 VDC, 0-20 mA		Required Power (Inrush)	2A for <1ms @ 24VDC - DC switched
Nominal Resolution	14 Bits		Primary Power Range	10 - 30 VDC
Update rate	Once per PLC scan		Operating Temperature	-10° to 60° Celsius
Minimum 10 V load	1K Ω		Storage Temperature	-30 to 70°C
Maximum 20 mA load	500 Ω		Relative Humidity	5 to 95% Non-condensing
Analogue Outputs; Output Points Required	2		Display Type Screen Resolution	3.5" QVGA TFT 320 X 240
Maximum Error at 25°C (excluding zero)	0.10%		Display Memory	64 MB
			Scan Rate	Controller 0.013 mS/K
Additional error for temperatures other than 25°C	0.01% / °C		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. (340g)
			CE / UL	Approved

Small Extras:

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



PART No: i3PC45

IP65 RJ45 Panel-Mounted Socket
Bring either MJ1 or MJ2 ports to the outside world by installing this into a 22.5mm cut-out.



PART No: i3PAD

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



PART No: PC501

Display...
Control...
Connect...

i³ Intergrated Controller & Associated Products

Communication:

Ethernet Expansion card

Part No. i3-E

Link an *i*³ to an Ethernet network. Program monitor and debug remotely, or run *i*³ as a Modbus TCP server.

GSM Modem Expansion Card

Part No. i3-MA

Send and Receive SMS messages via the *i*³, 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 SCADA^{lite}

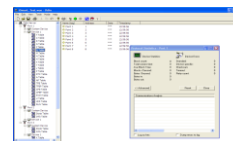
Part No. PANELPOINT (Developer)

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.

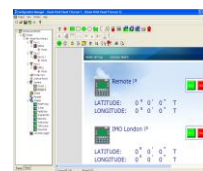
i3Transfer Part No. i3-Transfer

*i*³Transfer is a low-cost, Windows® based software application that allows you to easily transfer files between your PC and the IMO *i*³ Controllers via PC.

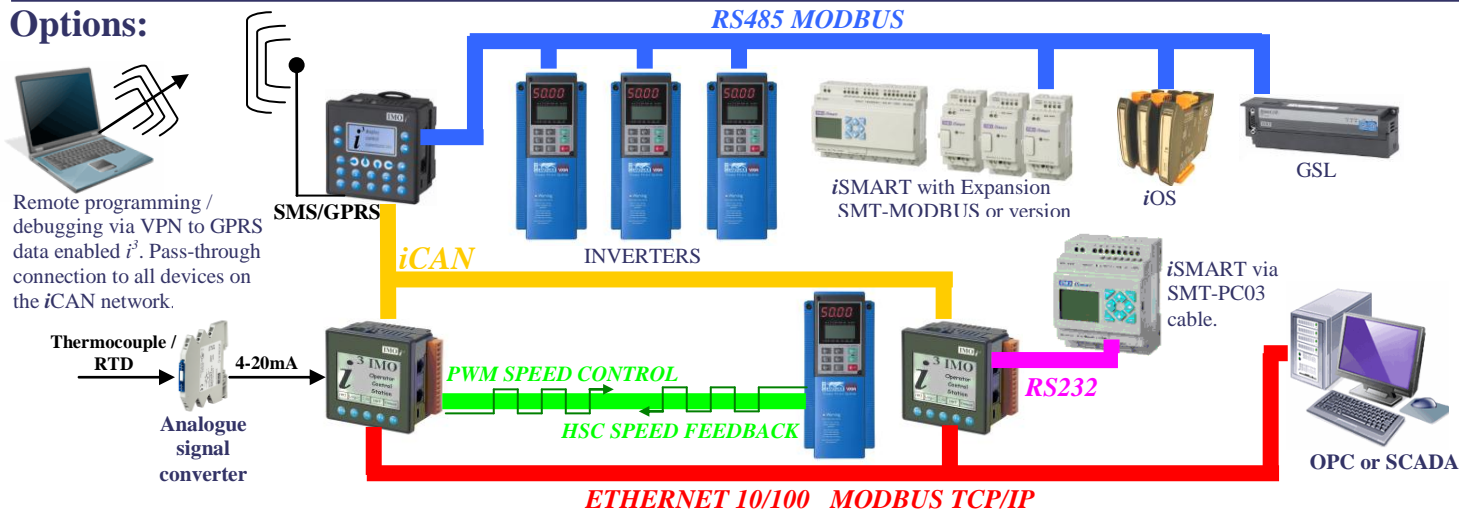


i3Portal Part No. i3Portal

*i*³Portal is a low-cost, powerful Windows® based software application that will allow you to view and access remote IMO *i*³ controllers via PC.



Options:

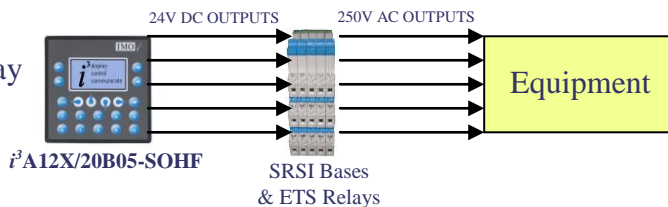


Miscellaneous:

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.

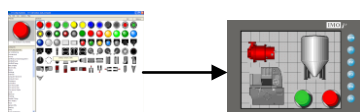
Part Numbers: SRSI-24AC/DC, ETS-1AN-SL-24VDC



*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*³C, *i*³C Mini, *i*³D, *i*³H.

Part Numbers: IMO-CDSUITE



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

Custom screen overlays

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