



# i<sup>3</sup> Intelligent Control Station



Think **inside** the box

# i<sup>3</sup> Intelligent Control Station



Think inside the box!

Intelligence raised by the power of three.

- 3 Screen options
- 3 In-built I/O options
- 3 Communication options

## Advantages of an Integrated Solution

As microprocessor technology moves forward, it is a logical step to rationalise hardware and condense many traditional control components down into a single, compact unit. This gives the benefits of reducing manufacturing costs, reducing overall power consumption of the control solutions and reducing application development time. It also allows customers to standardise to a single controller to fit most of their applications, and allow greater flexibility for future developments. The iCube has been successfully implemented in the following areas:

- Custom OEM products
- Packaging Machinery
- Food Processing
- Motion Control
- Water/Waste Treatment
- Custodial Vehicle Management
- Pump Control
- Dedicated Alarm Systems
- HVAC and Environmental Control
- Building Management
- Process Control
- Communications Hub

## Reliability

The iCube has a dedicated, real-time operating system – **NOT** a Windows® operating system. So there's no need to worry about losing control due to avoidable operating system malfunctions.



## Micro SD Card



Once the SanDisk™ card is inserted, create MS Excel compatible files, backup/restore user programs and change recipe templates. Access the data remotely using IMO FXP software. Copy, paste and delete files through Serial, Ethernet, or GSM connections. Automate the file transfer process through powerful scripting.

## Features

The in-built I/O of the i3 controller have up to 40 Digital I/O and up to 4 Analogue I/O, also supporting direct PT100, Thermocouple, mV, Voltage and Current inputs.

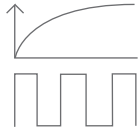
- Powerful 32-bit processor
- 2 Communication Ports RS232/RS485
- Expansion I/O
- 4 High Speed Inputs (10kHz Max)
- 2 PWM outputs (65kHz Max)
- Programmable function Keys
- Real Time Clock
- 20+ Protocols (Modbus, AB DF1, Mitsubishi, Etc)
- 256KB RAM (Ladder), 1MB Graphical (5MB I3C)
- IP65 (NEMA4) CE, cUL, UL, E-Marked
- 10-30VDC Supply

### 3 Communication options:

- Embedded Ethernet (i3C only) with Web Server, Modbus TCP Client, Remote programming
- Expansion Ethernet (All Models) Modbus TCP Server, Remote programming
- GSM Modem (All Models) SMS messages, GPRS Data service or GSM dial-up data service

## Inputs & Outputs

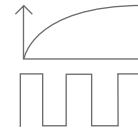
Up to 4 analogue inputs; mA, V, Thermocouple, PT100



4 high speed pulse inputs (up to 10kHz)



Up to 24 digital inputs; PNP/NPN



Option for 2 analogue outputs; mA, V



Option for 2 pulse outputs (up to 65kHz)



Option for 6 relay outputs or up to 16 transistor outputs

## Remote Access & SMS

Connect remotely via Ethernet, GPRS or a GSM dial-up connection. Send and receive up to 32 pre-defined messages. Insert variables into the messages to display, or change live data, and activate coils in the ladder program as required.

Engineer's mobile phone



## Expansion

If the in built I/O is not enough, add extra by using one of many options.

RS485 MODBUS



Recommendations:

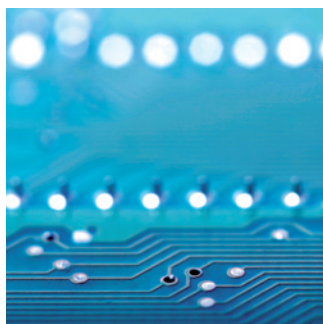
iSMART – Add extra analogue inputs and outputs, digital inputs and 8A relay outputs

iOS – Add large numbers of analogue inputs and outputs

Smart I/O – Add large quantity of digital inputs, transistor and 2A relay outputs

# Applications

The *i*Cube has been successfully implemented in the following areas



◀ Packaging Machinery

Food Processing ▶

▼ Water/Waste Treatment



▲ Custom OEM products

Motion Control ▶

▼ Pump Control



▲ Custodial Vehicle Management

◀ HVAC and Environmental Control

▼ Communications Hub



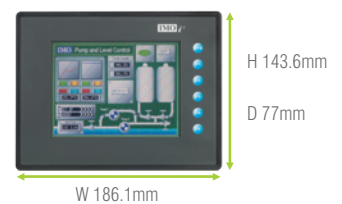
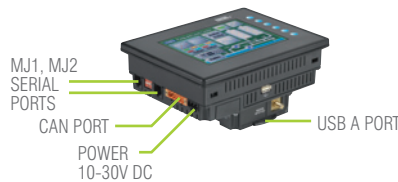
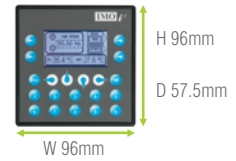
▲ Dedicated Alarm Systems

◀ Building Management

Process Control ▶



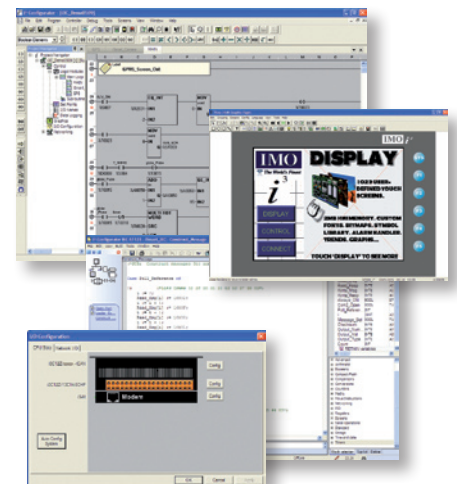
## Features & Dimensions



## i<sup>3</sup> Configurator... a high performance development environment

With a choice of either a simplified IEC-61131 based ladder editor, or a full IEC-61131 package with toolbox of powerful functions, allowing you to easily write and manage projects, configure communication networks, SMS, data logging, I/O and user screens.

- Ladder Logic, ST, SFC, FBD
- Auto Tune PID (32 loops)
- Floating Point Maths
- Serial Port and Modem commands
- Real-Time-Clock functions
- Program and Subroutine blocks
- Alarm / Recipe / Animation / Bitmaps
- Multi-language support and Custom Fonts



## Get Connected!

With most iCube models coming with 2 Serial Ports (RS232/RS485) and a CAN port as standard, and with three further communication expansion options available, no other product in its class can offer as much connectivity.

From any single point of connection, be it via RS232, USB, Ethernet, GSM, or GPRS, i3 Configurator can program, monitor and debug up to 253 iCubes on the iCAN Network.



■ Ethernet   ■ iCAN Network   ■ RS232   ■ GSM/GPRS   ■ USB

# Product Specification

## Base Unit

Part Number	Screen	Power	Colour	Keys	MicroSD Card* (up to 2GB)
<b>Entry Level</b>					
i3A12X/10A01-S00	128x64 F Key	10-30V DC	2	20	-S00F*
i3A12X/10B04-SCH	128x64 F Key	10-30V DC	2	20	-SCHF*
i3A12X/10D03-SCH	128x64 F Key	10-30V DC	2	20	-SCHF*
i3A12X/20B05-SOH	128x64 F Key	10-30V DC	2	20	-SOHF*
i3A12X/13C14-SOH	128x64 F Key	10-30V DC	2	20	-SOHF*
i3B12Y/10D03-SCHF	160x128 Touch	10-30V DC	2	5	Y
i3B12Y/20B05-SCHF	160x128 Touch	10-30V DC	2	5	Y
i3B12Y/13C14-SCHF	160x128 Touch	10-30V DC	2	5	Y
i3C12Z/10D03-SCHF	320x240 Touch	10-30V DC	32768	6	Y
i3C12Z/20B05-SCHF	320x240 Touch	10-30V DC	32768	6	Y
i3C12Z/13C14-SCHF	320x240 Touch	10-30V DC	32768	6	Y

### Entry Level



All models of i<sup>3</sup> Controller are available without

### Remote I/O (Modbus & iCAN)



iOS/M04IPX-D1		10-30V DC			
iOS/M08ICX-D1		10-30V DC			
iOS/M08IVX-D1		10-30V DC			
iOS/M08ITX-D1		10-30V DC			
iOS/M040XA-D1		10-30V DC			
iOS/M080XV-D2		24V DC			
iOS/M08BDR-D1		10-30V DC			
iOS/M12IDX-D1		10-30V DC			
iOS/M12BDD-D2		24V DC			
GSL-DT4A		24V DC			
GSL-RY2A		24V DC			
GSL-D24A		24V DC			
GCL-A21-A		24V DC			
GCL-AT1-A		24V DC			
GCL-DT4A		24V DC			
GCL-RY2A		24V DC			
GCL-D24A		24V DC			
SMT-CD-R20	16x4 Chars	24V DC	2	4	
SMT-CD-AR20	16x4 Chars	24V DC	2	4	

\* Replace part number suffix

\*\* Modem and ethernet cards should be ordered separately

I/O Options					Communication Options					
Digital Inputs (10-30VDC)	Digital Outputs (0.5A)	Relay Outputs	Analogue Inputs	Analogue Outputs	Serial Ports	CAN Port	In built Ethernet*	USB	GSM Modem Card**	Ethernet Expansion Card**
12		6 (3A)	1x 10bit (V/mA)		2				i3-MA**	i3-E**
12	12		2 x 10bit (V/mA)		2	1			i3-MA**	i3-E**
12		6 (3A)	4 x 10bit (V/mA)		2	1			i3-MA**	i3-E**
24	16		2 x 10bit (V/mA)		2				i3-MA**	i3-E**
12	12		2x 14bit(TC/RTD/V/mA)	2x12bit V/mA	2				i3-MA**	i3-E**
12		6 (3A)	4 x 10bit (V/mA)		2	1			i3-MA**	i3-E**
24	16		2 x 10bit (V/mA)		2	1			i3-MA**	i3-E**
12	12		2x 14bit(TC/RTD/V/mA)	2x12bit V/mA	2	1			i3-MA**	i3-E**
12		6 (3A)	4 x 10bit (V/mA)		2	1	-SEHF*	Y	i3-MA**	i3-E**
24	16		2 x 10bit (V/mA)		2	1	-SEHF*	Y	i3-MA**	i3-E**
12	12		2x14bit(TC/RTD/V/mA)	2x12bit V/mA	2	1	-SEHF*	Y	i3-MA**	i3-E**

in-built I/O if required, please ask [automation@imopc.com](mailto:automation@imopc.com)

			4x RTD (0.01C)		1					
			8x 16bit mA		1					
			8x 16bit V		1					
			8x TC (0.01C)		1					
				4x 14bit V/mA	1					
				8x 14bit V	1					
4 NPN		4 (2A)			1					
12 NPN					1					
4 NPN	8 NPN				1					
16 (24VDC)	16				1					
		16 (2A)			1					
32 (24VDC)					1					
			12x 14bit V/mA			1				
			8x 14bit V/mA	4x 14bit V/mA		1				
16 (24VDC)	16					1				
		16 (2A)				1				
32 (24VDC)						1				
8 (24VDC)		8 (8A)	4x 10bit V		2					
8 (24VDC)		6 (8A)	4x 12bit V	2x 12bit V	2					



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