

i³C Mini Intelligent Control Station



- 3.5" TFT Colour Touchscreen
- 65,535 Colours, QVGA(320 x 240)
- MicroSD™ Data storage upto 32GB
- Real Time Clock
- CAN Port, RS 232/RS 485
- 10 - 30 VDC Power Supply
- Built in Ethernet Port
- Free Configuration Software
- USB Port for Programming
- USB Port for Flash Drives upto 2TB
- Remote IO Communication
- Optional: Modem (SMS, GSM,GPRS)



General Specification

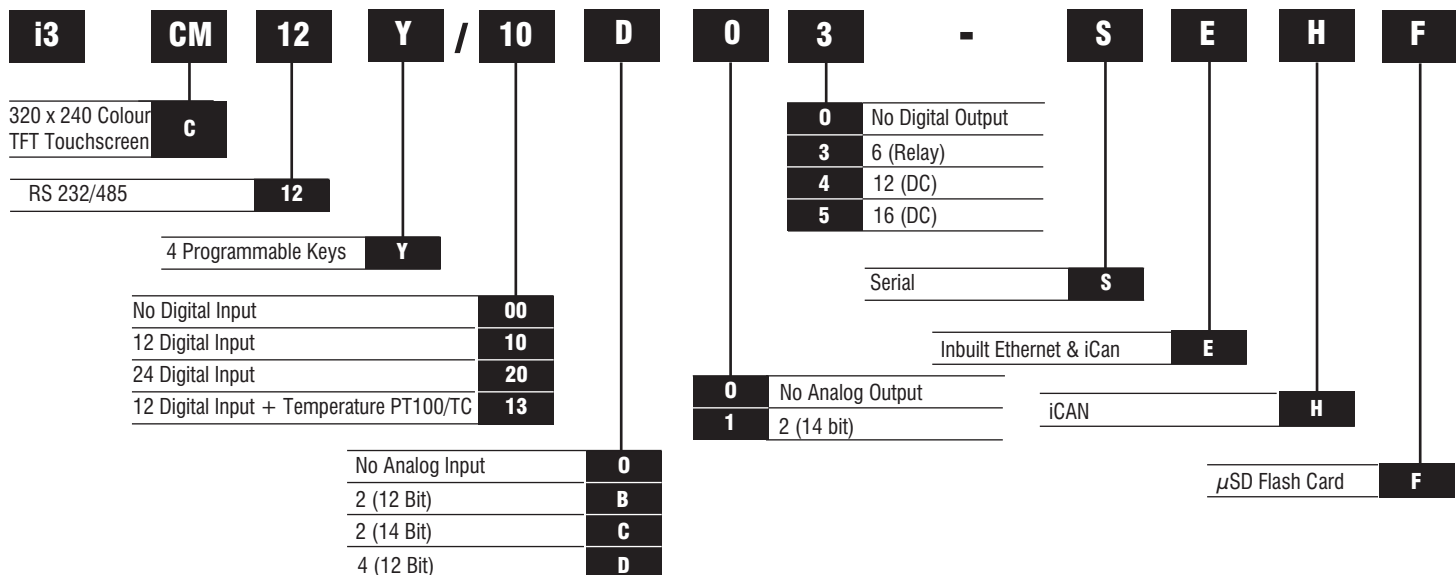
Required Power (Steady State)	95 mA @ 24 VDC, 190mA @12VDC
Primary Voltage Range	10 – 30 VDC
Relative Humidity	5 to 95% Non-condensing
Clock Accuracy	+/-20 ppm maximum at 25°C (+/-1 Minutes per Month)
Operating Temperature	-10°C to + 60°C
Storage Temperature	-30°C to 70 °C
Display Type	3.5" QVGA TFT Transmissive colour
Screen Resolution	320 x 240
Colours	65535 (16 Bit)
Screen & Program Memory	22MB & 1MB
Configuration Memory	4MB
Scan Rate	Controller 0.013ms/k
Display Life	LED, Min 50000 Hours
User Keys	4 User defined Function Keys
User Programmable Screen	1023
Weight	12 oz. (340g.)
Approvals	CE, UL
Terminal Type	Screw Type, 5mm Removable



Options & Ordering Codes

Standard Options	DI	DO	AI	AO
I3CM12Y/00000-SEHF	-	-	-	-
I3CM12Y/10B04-SEHF	12	12	2	-
I3CM12Y/10D03-SEHF	12	6 Relay	4	-
I3CM12Y/13C14-SEHF	12	12	2*	2
I3CM12Y/20B05-SEHF	24	16	2	-

* 2 Universal High resolution Analogue Inputs for V/mA/TC/RTD



Technical Specifications

Digital DC Inputs		
Input Voltage Range	12VDC/24VDC	
Absolute Max. Voltage	35 VDC Max.	
Input Impedance	10k Ω	
Input Current	Positive Logic	Negative Logic
Upper Threshold	0.8 mA	-1.6 mA
Lower Threshold	0.3 mA	-2.1 mA
Max Upper Threshold	8 VDC	
Min Lower Threshold	3 VDC	
Time Response Off - On/On - Off	1 mS	
HSC Max. Switching Rate	Up to 500KHz each	

Digital Outputs	
Output Type	Sourcing / 10K Pull Down
Absolute Max. Voltage	28VDC Max
Output Protection	Short Circuit
Max. Output Current Per Point	0.5A
Max. Total Current	4A Continuous
Max. Output Supply Voltage	30VDC
Minimum Output Supply Voltage	10VDC
Max. Voltage Drop at Rated Current	0.25VDC
Max. Inrush Current	650mA Per Channel
OFF to ON / ON to OFF response	1mS
Output Characteristics	Current Sourcing (Positive Logic)

Analogue Inputs - Medium Resolution	
Input Ranges	0 - 10VDC
	0 - 20mA
	4 - 20mA
Safe input voltage range	-0.5V to +12V
Input Impedance (Clamped @ -0.5VDC to 12VDC)	Current Mode: 100W Voltage Mode: 500k Ω
Nominal Resolution	10 Bits
%AI full scale	32,000 counts
Max. Over-Current	35mA
Max. Error at 25°C 4-20mA	1.00%
Max. Error at 25°C 0-20mA	1.00%
Max. Error at 25°C 0-10VDC	1.50%
Filtering	160Hz Hash Noise Filter
Additional Error for temperatures other than 25°C	TBD

Digital Relay Outputs	
Max. Output Current per Relay	3A at 250 VAC, resistive
Max. Total Output Current	5A continuous
Max. Output Voltage	275 VAC, 30 VDC
Max. Switched Power	1250VA, 150W
Contact Isolation to i ³ ground	1000VAC
Max. Voltage Drop at Rated Current	0.5V
Expected Life at No load	5,000,000
At Rated load	100,000
Max. Switching Rate at no load	300 CPM
At rated load	20 CPM
Type	Mechanical Contact
Response Time	One update per ladder scan plus 10ms

Analogue Outputs	
Output Range	0-10V, 0-20mA
Nominal Resolution	12 bits
Maximum Load at 20mA	500W
Minimum Load at 10V	1000W
Maximum Error at 25°C	0.10%
Additional Error for temperatures other than 25°C	0.01%/°C

Analogue Inputs - High Resolution		
Input Ranges	0 - 10VDC	
	0 - 20mA	
	100mV	
	4 - 20mA	
	J,K,N,T,E,R,S,B Thermocouples PT100 RTD	
Safe input voltage range	10VDC: -0.5V to +15V 20mA: -0.5V to +6V RTD/TC: +/- 24VDC	
	Nominal Resolution	10V, 20mA, 100mV: 14 Bits RTD, Thermocouples: 16 Bits
	Input Impedance	Current Mode: 100W, 35mA Max Voltage Mode: 500k Ω , 35mA Max
%AI full scale	10V, 20mA, 100mV-32,000 counts full scale RTD/TC: 20 counts / °C	
Max. Over-Current	35mA	
Open Thermocouple Detect Current	50nA	
Thermocouple Temp. range: B/R/S	2912°F to 32°F (1600°C to 0°C)	
	E 1652°F to -328°F (900°C to -200°C)	
	T 752°F to -400°F (400°C to -240°C)	
	J 1382°F to -346°F (750°C to -210°C)	
K/N 2498°F to -400°F (1370°C to -240°C)		
Thermocouple Common	+/-10V	
Mode Range		
Max. Error at 25°C (4(0)-20mA, 0-10VDC)	+/-0.1%	
Max. Error at 25°C PT100	+/-1.0°C	
Max. Error at 25°C 0-100mV	+/-0.05%	
Max. Error after 1Hr Warmup TC	+/- 0.2%	
Conversion speed both channel converted	10V, 20mA, 100mV: 30 Times / Second	
	RTD, Thermocouple: 7.5 Times/ Second	
Conversion speed both channel converted	10V, 20mA, 100mV: 16.7ms	
	RTD, Thermocouple: 66.7ms	
RTD Excitation Current	250MA	

Communication Ports

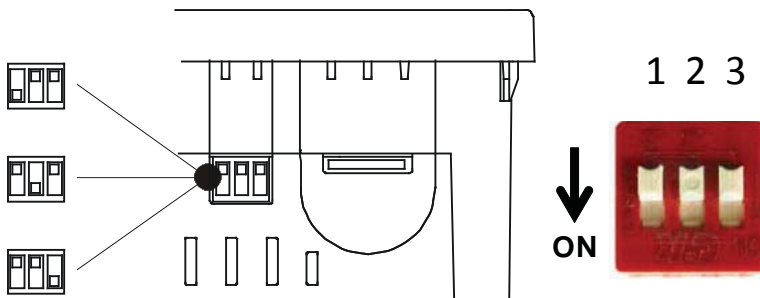
MJ1 Serial Port Pin Assignments

Pin	Signal	Signal Description
8	TD1	RS-232 Transmit Data
7	RD1	RS-232 Receive Data
6	0V	Ground
5	5	+5 VDC max
4	RTS1	RS-232 Request to Send
3	CTS1	RS-232 Clear to Send
2	RX/TX-	Receive / Transmit Negative
1	RX/TX+	Receive / Transmit Positive

Connectivity

Serial Ports	1 RS232 & 1 RS485 on Single Modula Jack
USB Mini-B	USB 2.0 for Programming & Data Access
USB A	USB 2.0 for USB Flach Drives (2TB)
CAN	Remote IO, P2P, i3 Softwares
Ethernet	10/100 Mb (Auto MDC), Modbus TCP, HTTP, FTP, SMTP, i3 Configurator
Protocols & Remote IO's	Modbus RTU - Smart IO, IOS & Modbus TCPIP - (SmartIO Ethernet Header and XGB IO's)
Remobale Media	MicroSD Support upto 32GB, Application Updates, Datalogging, Alarm logging

External Jumper Configuration

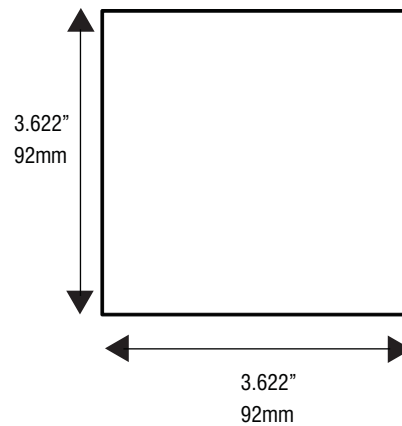


SW 1 ON - RS 485 Termination ON (121Ω)
 SW 2 - Spare, Always OFF
 SW 3 OFF - Factory Use

Dimension



Cut Out Details



Accessory Products

1. Communication Cable: RS 232 Serial Communication Cable for programming and i3 Controllers, Part No. i3PC45.



2. IP65 RJ45 Panel Mounted Socket Brings either MJ1 or MJ2 ports outside by installing this into a 22.5mm cut out Part No : i3PAD

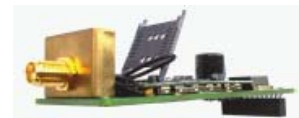


3. USB to RS232 Converter for PC's without a serial Com port to communicate with the controllers, Part No. PC501.



Add - ins

1. GSM Modem Expansion Card - 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, Part No. i3M.



2. ODIN OPC SERVER with LOKI Data Logger - ODIN can be used with LOKI to log either to an excel spreadsheet or an access database, with no tag limit and 30+ protocols to choose from (including IMO products, Mitsubishi, Allen Bradley and Siemens), Part No. IMO-OPC-Server.



3. Panel Point SCADA Lite - A powerful graphical editor, and a VB-based scripting language. Panel Point allows a PC to become the central data hub of an application, with no tag limit and 30+ protocols to choose from (including IMO products, Mitsubishi, Allen Bradley, Siemens), Part No. PANELPOINT (Developer) - Part No. PANELPOINT (Runtime)



4. i3 PORTAL - i3Portal is a low-cost, powerful Windows® based software application that will allow to view and access remote i3 controllers via PC, Part No: i3Portal



5. i3-Transfer - i3-Transfer is a low-cost, powerful Windows® based software application that allows to easily transfer files between PC and remote i3 controllers. Part No: i3-Transfer

