i3A Intelligent Control Station

- 128 x 64 Monochrome LCD display
- Addressable function keys
- 2 Communication Port (RS 232/RS 485
- 10 - 30 VDC Power Supply
- 256 KB Ram (Program), 1MB (Graphical)
- Free Configuration Software
- RS 232 Programming Cable
- IP65 (NEMA4)
- Optional: MicroSD upto 2GB
  Modem (SMS, GSM, GPRS)
  Ethernet Expansion Card

General Specification

Required Power (Steady State)	130 mA @ 24 VDC
Primary Power Range	10 - 30VDC
Relative Humidity	5 to 95% Non-condensing
Clock Accuracy @ 20ºC	(+/-7 Minutes per Month)
Operating Temperature	-10ºC to +60ºC
Terminal Type	Screw Type, 5mm Removable
Weight	12.5 oz. (354.36g)
Approved	CE, UL

Options & Ordering Codes

Standard Options	DI	DO	AI	AO
I3A12X/10A01-SOOF	12	6 Relay	1	-
I3A12X/10B04-SCHF	12	12	2	-
I3A12X/10D03-SCHF	12	6 Relay	4	-
I3A12X/20B05-SOHF	24	16	2	-
I3A12X/13C14-SOHF	12	12	2	2

i3 A 12 X / 10 B 0 4 - S C H F

A	
Monochrome 128 x 64 pixels	A

12	
RS232, RS 232/485/422	12

X	
14 Programmable Keys	X

10	
No Digital Input	00
12 Digital Input	10
24 Digital Input	20
12 Digital Input + Temperature PT100/TC	13

B	
No Analog Input	0
1 (10 Bit)	A
2 (10 Bit)	B
2 (14 Bit)	C
4 (10 Bit)	D

0	
No Analog Output	0
2 (12 bit)	1

4	
No Digital Output	0
6 (Relay)	1
6 (Relay)	3
12 (DC)	4
16 (DC)	5

S	
Serial	S

C	
No Option	0
CAN	C

H	
No Option	0
CANopen	A
iCAN	H

F	
No Option	0
GSM Modem	M
Expansion Ethernet	E
µSD Flash Card	F

i3A Intelligent Control Station

Technical Specifications

Digital DC Inputs	
Absolute Max. Volatge	35 VDC Max.
Input Impedance	10kW
HSC Max. Switching Rate	10 KHz Totalizer / Pulse, Edges 5 kHz Frequency / Pulse, Width 2.5 kHz Quadrature
Input Voltage Range	12VDC/24VDC
Absolute Max Voltage	35VDC
Time Response	1 ms
Max Upper Threshold	8VDC
Min Lower Threshold	3VDC

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
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

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 i3 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%

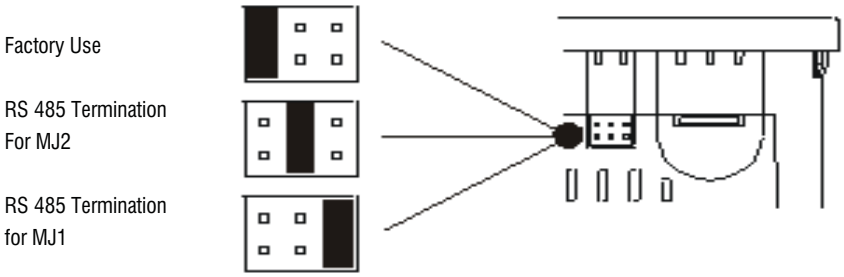
Analogue Inputs - High Resolution	
Input Ranges	0 - 10VDC
	0 - 20mA
	100mV
	4 - 20mA
	J,K,N,T,E,R,S,B Thermocouples
	PT100 RTD
Safe input voltage range	10VDC: -0.5V to +15V
	20mA : -0.5V to +6V
	RTD/TC : +/- 24VDC
Nominal Resolution	10V, 20mA, 100mV : 14 Bits
	RTD. Thermocouples : 16 Bits
Input Impedance	Current Mode : 100W, 35mA Max
	Voltage Mode : 500kW, 35mA Max
%AI full scale	32,000 counts, 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 Mode Range	+/-10V
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%
RTD Excitation Current	250MA

i3A Intelligent Control Station

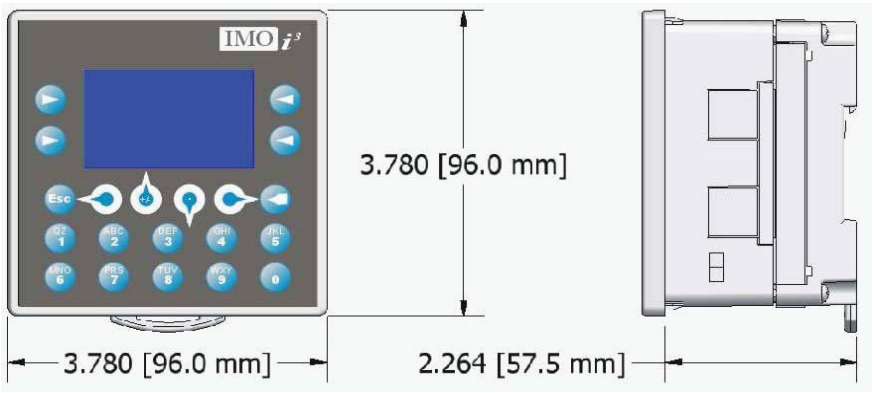
Communication Ports		
MJ1 Serial Port Pin Assignments		
Pin	Signal	Signal Description
8	TD1	RS-232 Transmit Data
7	RD1	RS-232 Receive Data
6	0V	Ground
5	5	+5 VDC max
4	RTS1	RS-232 Request to Send
3	CTS1	RS-232 Clear to Send
2	RX/TX-	Receive / Transmit Negative
1	RX/TX+	Receive / Transmit Positive

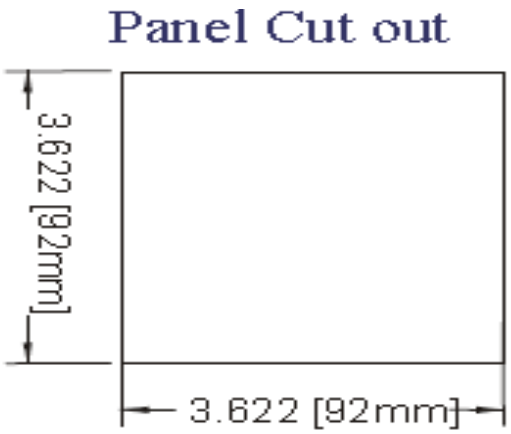
Communication Ports		
MJ2 Serial Port Pin Assignments		
Pin	Signal	Signal Description
8	TD1	RS-232 Transmit Data
7	RD1	RS-232 Receive Data
6	0V	Ground
5	+5	+5 VDC 60mA max
4	TX-	RS-485 Transmit Negative
3	TX+	RS-485 Transmit Positive
2	RX-	RS-485 Receive Negative
1	RX+	RS-485 Receive Positive

External Jumper Configuration

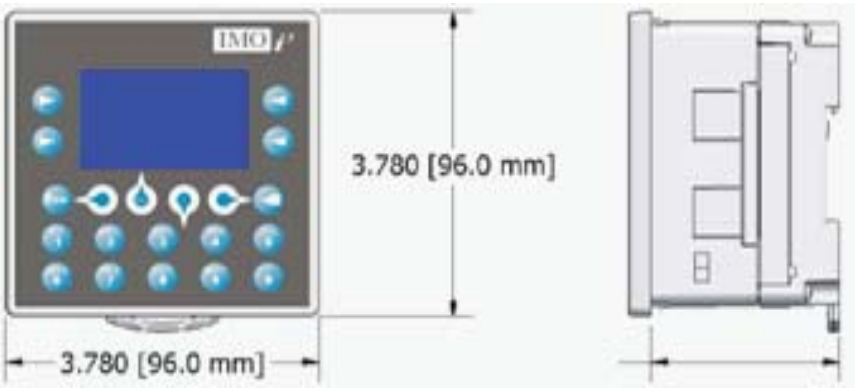


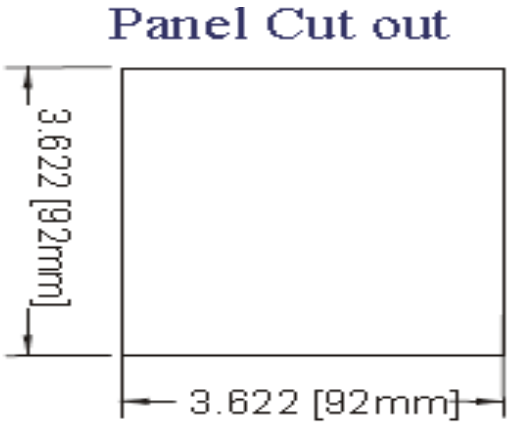
Dimension without Modem





Dimension with Modem





i3 A Intelligent Control Station

Accessory Products

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

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

Add - ins

1. Ethernet Expansion Card - Link an i3 to an ethernet netwrok. Program, debug and monitor and even run i3 as a Modbus TCP Server, Part No. i3-E

2. GSM Modem Expansion Card - Send and recieve 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.

3. 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 chose from (including IMO products, Mitsubishi, Allen Bradley and Siemens), Part No. IMO-OPC-Server.

4. Panel Point SCADAlite - 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 chose from (including IMO products, Mitsubishi, Allen Bradley, Simens), Part No. PANELPOINT (Developer) - Part No. PANELPOINT (Runtime)

i3B Intelligent Control Station

- 160 x 128 Graphical display
- High Resolution Resistive Touch Screen
- Addressable function keys
- Real Time Clock
- 2 Communication Port (RS 232/RS 485)
- 10 - 30 VDC Power Supply
- 256 KB RAM (Program), 1MB (Graphical)
- Free Configuration Software
- RS 232 Programming Cable
- IP65(NEMA4)
- Remote IO Communication
- Optional: MicroSD upto 2GB
  Modem (SMS, GSM, GPRS)
  Ethernet Expansion Card

General Specification

Required Power (Steady State)	130 mA @ 24 VDC
Primary Power Range	10 - 30VDC
Relative Humidity	5 to 95% Non-condensing
Clock Accuracy @20°C	(+/-7 Minutes per Month)
Operating Temperature	-10°C to +60°C
Terminal Type	Screw Type, 5mm Removable
Weight	12.5 oz. (354.36g)
Approved	CE, UL

Options & Ordering Codes

Standard Options	DI	DO	AI	AO
I3B12Y/10D03-SCHF	12	6 Relay	4	-
I3B12Y/13C14-SCHF	12	12	2	2
I3B12Y/20B05-SCHF	24	16	4	-

i3 B 12 Y / 10 D 0 3 - S C H F

B
- Monochrome 168 x 128 pixels: **B**

12
- RS232, RS 232/485/422: **12**

Y
- 4 Programmable Keys: **Y**

10
- No Digital Input: **00**
- 12 Digital Input: **10**
- 24 Digital Input: **20**
- 12 Digital Input + Temperature PT100/TC: **13**

D
- No Analog Input: **0**
- 2 (10 Bit): **B**
- 2 (14 Bit): **C**
- 4 (10 Bit): **D**

0
- No Analog Output: **0**
- 2 (12 bit): **1**

3
- **0** No Digital Output
- **3** 6 (Relay)
- **4** 12 (DC)
- **5** 16 (DC)

S
- Serial: **S**

C
- No Option: **0**
- CAN: **C**

H
- No Option: **0**
- CANopen: **A**
- iCAN: **H**

F
- No Option: **0**
- GSM Modem: **M**
- Expansion Ethernet: **E**
- µSD Flash Card: **F**

i3B Intelligent Control Station

Technical Specifications

Digital DC Inputs	
Absolute Max. Volatge	35 VDC Max.
Input Impedance	10kW
HSC Max. Switching Rate	10 KHz Totalizer / Pulse, Edges 5 kHz Frequency / Pulse, Width 2.5 kHz Quadrature
Input Voltage Range	12VDC/24VDC
Absolute Max Voltage	35VDC
Time Response	1 ms
Max Upper Threshold	8VDC
Min Lower Threshold	3VDC

Digital Outputs	
Output Type	Sourcing / 10K Pull Down
Output Protection	28VDC Max
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
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

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 i3 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%

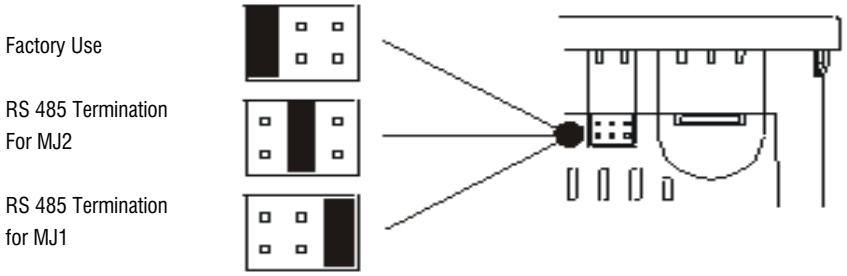
Analogue Inputs - High Resolution	
Input Ranges	0 - 10VDC
	0 - 20mA
	100mV
	4 - 20mA
	J,K,N,T,E,R,S,B Thermocouples
	PT100 RTD
Safe input voltage range	10VDC: -0.5V to +15V
	20mA : -0.5V to +6V
	RTD/TC : +/- 24VDC
Nominal Resolution	10V, 20mA, 100mV : 14 Bits
	RTD. Thermocouples : 16 Bits
Input Impedance	Current Mode : 100W, 35mA Max
	Voltage Mode : 500kW, 35mA Max
%AI full scale	32,000 counts, 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 Mode Range	+/-10V
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%
RTD Excitation Current	250MA

i^3 B Intelligent Control Station

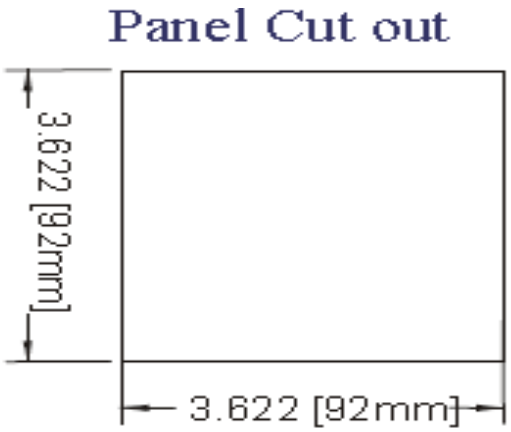
Communication Ports		
MJ1 Serial Port Pin Assignments		
Pin	Signal	Signal Description
8	TD1	RS-232 Transmit Data
7	RD1	RS-232 Receive Data
6	0V	Ground
5	5	+5 VDC max
4	RTS1	RS-232 Request to Send
3	CTS1	RS-232 Clear to Send
2	RX/TX-	Receive / Transmit Negative
1	RX/TX+	Receive / Transmit Positive

Communication Ports		
MJ2 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 60mA max
4	TX-	RS-485 Transmit Negative
3	TX+	RS-485 Transmit Positive
2	RX-	RS-485 Receive Negative
1	RX+	RS-485 Receive Positive

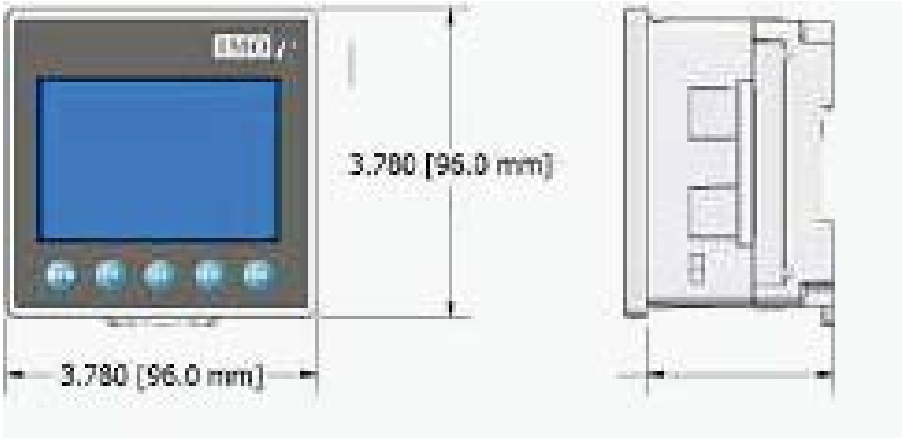
External Jumper Configuration

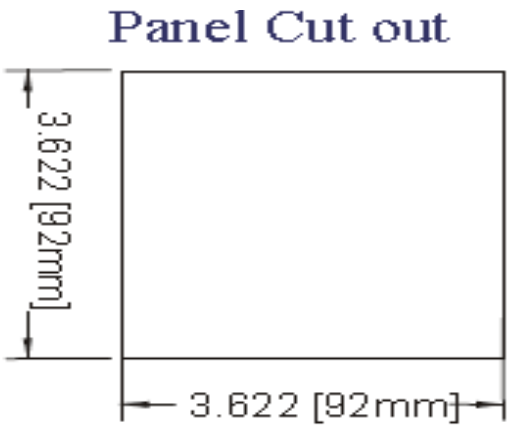


Dimension without Modem



Dimension with Modem





i3 B Intelligent Control Station

Accessory Products

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

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

Add - ins

1. Ethernet Expansion Card - Link an i3 to an ethernet netwrok. Program, debug and monitor and even run i3 as a Modbus TCP Server, Part No. i3-E

2. GSM Modem Expansion Card - Send and recieve 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.

3. 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 chose from (including IMO products, Mitsubishi, Allen Bradley and Siemens), Part No. IMO-OPC-Server.

4. Panel Point SCADAlite - 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 chose from (including IMO products, Mitsubishi, Allen Bradley, Simens), Part No. PANELPOINT (Developer) - Part No. PANELPOINT (Runtime)

i3C Intelligent Control Station

- 320 x 240 Colour Touch display
- High Resolution Resistive Touch Screen
- Addressable function keys
- Real Time Clock
- 2 Communication Port (RS 232/RS 485)
- 10 - 30 VDC Power Supply
- 256 KB RAM (Program), 5MB (Graphical)
- Free Configuration Software
- RS 232 Programming Cable
- IP65(NEMA4)
- Remote IO Communication
- Optional: MicroSD upto 2GB
  Modem (SMS, GSM, GPRS)
  Ethernet Expansion Card

General Specification

Required Power (Steady State)	500 mA @ 24 VDC
Primary Power Range	10 - 30VDC
Relative Humidity	5 to 95% Non-condensing
Clock Accuracy	+/-35ppm maximum at 25°C
	(+/-1.53 Minutes per Month)
Operating Temperature	-10°C to + 60°C
Terminal Type	Screw Type, 5mm Removable
Weight	26.5 oz. (0.751kg)
Approved	CE, UL
Display Type	Size 5.7" QVGA TFT

Options & Ordering Codes

Standard Options	DI	DO	AI	AO
I3C12Z/10D03-SCHF*	12	6 Relay	4	-
I3C12Z/13C14-SCHF*	12	12	2	2
I3C12C/20B05-SCHF*	24	16	4	-
I3C12Z/00000-SCHF*	-	-	-	-

* Inbuilt Ethernet and iCan versions available

i3 C 12 Z / 10 D 0 3 - S C H F

- C — 320 x 240 Colour Touch display: C
- 12 — RS232, RS 232/485/422: 12
- Z — 4 Programmable Keys: Z
- 10 — No Digital Input: 00; 12 Digital Input: 10; 24 Digital Input: 20; 12 Digital Input + Temperature PT100/TC: 13
- D — No Analog Input: 0; 2 (10 Bit): B; 2 (14 Bit): C; 4 (10 Bit): D
- 0 — No Analog Output: 0; 2 (12 bit): 1
- 3 — 0: No Digital Output; 3: 6 (Relay); 4: 12 (DC); 5: 16 (DC)
- S — Serial: S
- C — No Option: 0; CAN: C; Inbuilt Ethernet & iCan: E
- H — No Option: 0; CANopen: A; iCAN: H
- F — No Option: 0; GSM Modem: M; Expansion Ethernet: E; µSD Flash Card: F

i3C Intelligent Control Station

IMO

Technical Specifications

Digital DC Inputs	
Absolute Max. Volatge	35 VDC Max.
Input Impedance	10kW
HSC Max. Switching Rate	10 KHz Totalizer / Pulse, Edges 5 kHz Frequency / Pulse, Width 2.5 kHz Quadrature
Input Voltage Range	12VDC/24VDC
Absolute Max Voltage	35VDC
Time Response	1 ms
Max Upper Threshold	8VDC
Min Lower Threshold	3VDC

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
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

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 i3 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

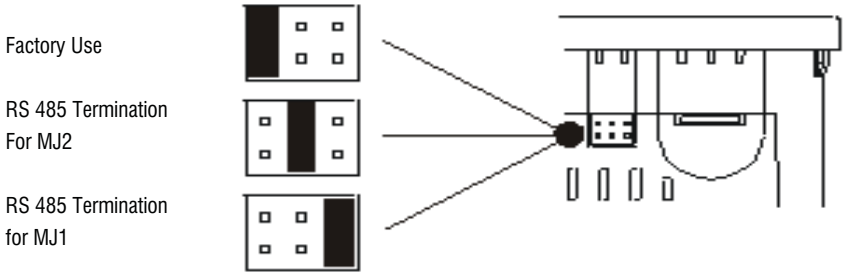
Analogue Outputs	
Output Range	0-10V, 0-20mA
Nominal Resolution	12 bits
Maximum Load at 20mA	500W
Minimum Load at 10V	1000W
Maximum Error at 25°C	0.10%

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 : 500kW, 35mA Max
%AI full scale	32,000 counts, 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 Mode Range	+/-10V
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%
RTD Excitation Current	250MA

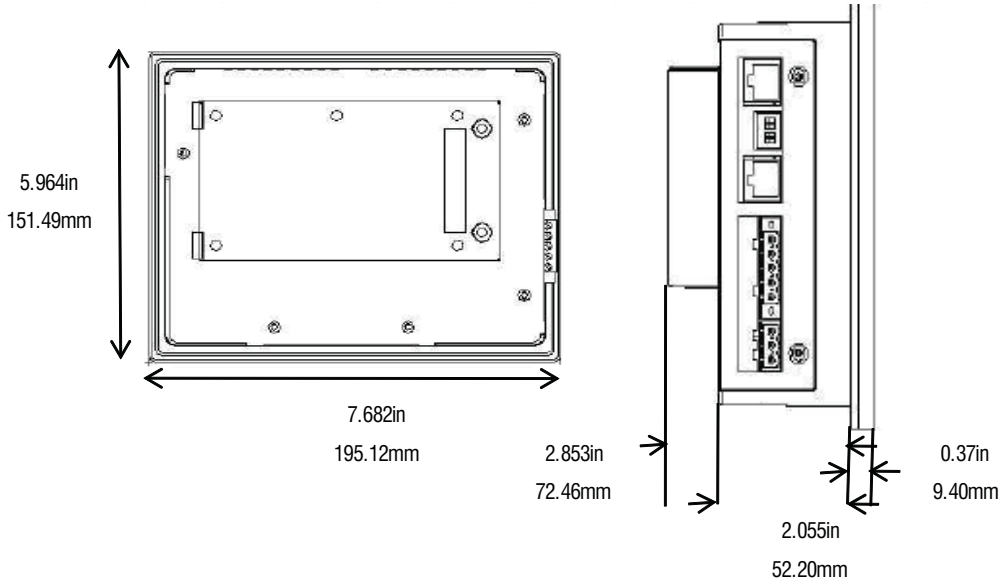
Communication Ports		
MJ1 Serial Port Pin Assignments		
Pin	Signal	Signal Description
8	TD1	RS-232 Transmit Data
7	RD1	RS-232 Receive Data
6	0V	Ground
5	5	+5 VDC max
4	RTS1	RS-232 Request to Send
3	CTS1	RS-232 Clear to Send
2	RX/TX-	Receive / Transmit Negative
1	RX/TX+	Receive / Transmit Positive

Communication Ports		
MJ2 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 60mA max
4	TX-	RS-485 Transmit Negative
3	TX+	RS-485 Transmit Positive
2	RX-	RS-485 Receive Negative
1	RX+	RS-485 Receive Positive

External Jumper Configuration



Dimension



i3C Intelligent Control Station

Accessory Products

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

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

Add - ins

1. Ethernet Expansion Card - Link an i3 to an ethernet netwrok. Program, debug and monitor and even run i3 as a Modbus TCP Server, Part No. i3-E

2. GSM Modem Expansion Card - Send and recieve 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.

3. 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 chose from (including IMO products, Mitsubishi, Allen Bradley and Siemens), Part No. IMO-OPC-Server.

4. Panel Point SCADAlite - 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 chose from (including IMO products, Mitsubishi, Allen Bradley, Simens), Part No. PANELPOINT (Developer) - Part No. PANELPOINT (Runtime)

i3D Intelligent Control Station

- 10.4” TFT Colour Toushscreen
- 32K of Colours, VGA(640 x 480)
- MicroSD™ Data storage up to 2GB
- CAN Port, RS 232/RS 485
- Real Time Clock
- 10 - 30VDC Power Supply
- Built in Ethernet Port
- Free Configuration Software
- USB Port for Programming and Flash Drive
- IP65(NEMA4)
- Remote IO Communication
- Optional: Modem (SMS, GSM, GPRS)

Options & Ordering Codes

Standard Options	DI	DO	AI	AO
I3D12Z/00000-SEHF	-	-	-	-
I3D12Z/10D03-SEHF	12	6 Relay	4	-
I3D12Z/13C14-SEHF	12	12	2	2
I3D12Z/20B05-SEHF	24	16	2	-

i3 D 12 Z / 10 D 0 3 - S E H F

- **D** — 640 x 480 Colour TFT Touchscreen: **D**
- **12** — RS232, RS 232/485/422: **12**
- **Z** — 7 Programmable Keys: **Z**
- **10** — Void: **00**; 12 Digital Input: **10**; 24 Digital Input: **20**; 12 Digital Input + Temperature PT100/TC: **13**
- **D** — No Analog Input: **0**; 2 (10 Bit): **B**; 2 (14 Bit): **C**; 4 (10 Bit): **D**
- **0** — No Analog Output: **0**; 2 (12 bit): **1**
- **3** — No Digital Output: **0**; 6 (Relay): **3**; 12 (DC): **4**; 16 (DC): **5**
- **S** — Serial: **S**
- **E** — Ethernet + CAN: **E**
- **H** — iCAN: **H**
- **F** — USD Flash Card: **F**

i3D Intelligent Control Station

General Specifications

Required Power (Steady State)	650 mA @ 24VDC, 1.3A @ 12VDC
Primary Voltage Range	10 - 30VDC
Required Power (Inrush)	25A for <1ms @ 24VDC - DC switched 15A for <1ms @ 12VDC - DC switched 2.5A for <1ms @ 24VDC - AC switched
Relative Humidity	5 to 95% Non-condensing
Clock Accuracy	+/- 35ppm maximum at 25°C (+/- 1.53 Minutes per Month
Operating Temperature	-10°C to +60°C
Storage Temperature	-30°C to +70°C
Display Type	10.4" VGA TFT (550 nit Typical)
Screen Resolution	640 x 480
Display Memory	2.75MB
Scan Rate	Controller 0.2ms/k
Display Life	Min 50000 Hours (50% brightness, 25°C)
User Keys	7 User defined Function Keys
Screen Supported	1023
Colurs	32768
Weight	70 oz. (2 Kg.)
Approvals	CE, UL

Technical Specifications

Digital DC Inputs		
Input Voltage Range	12VDC/24VDC	
Absolute Max. Voltage	35VDC Max.	
Input Impedance	10kΩ	
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	8VDC	
Min. Lower Threshold	3VDC	
Time Response Off to ON / ON to OFF	1 ms	
HSC Max. Switching Rate	10kHz Totalizer / Pulse, Edges 5kHz Frequency / Pulse, Width 2.5kHz Quadrature	

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 i3 ground	1000VAC
Max. Voltage Drop at Rated Current	0.5V
Expected Life at No load	5,000,000
at Rated load	100,000
Max. Switched Rate at no load	300 CPM
at rated load	20 CPM
Type	Mechanical Contact
Response Time	One update per ladder scan plus 10ms

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 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 Outputs	
Output Range	0-10V, 0-20mA
Nominal Resolution	12 bits
Maximum Load at 20mA	500 Ohms
Minimum Load at 10V	1000 Ohms
Maximum Error at 25°C	0.10%
Additional Error for Temp. other than 25°C	0.01 / 1°C

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: 100Ω Voltage Mode: 500kΩ
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 Temp. other than 25°C	TBA

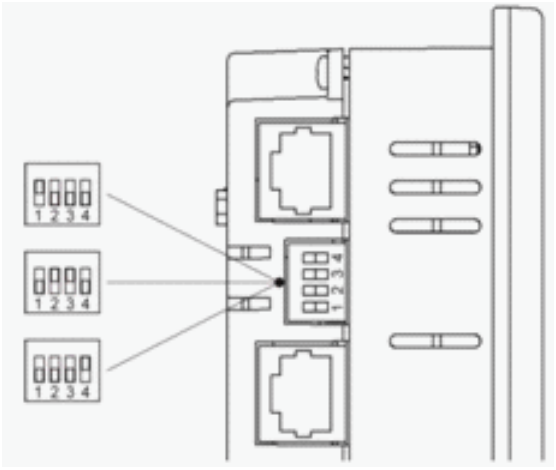
Analogue Inputs - High Resolution	
Input Ranges	0 - 10VDC 0 - 20mA 100mV 4 - 20mA J,K,N,T,E,R,S,B Thermocouples PT100 RTD
Safe input voltage range	10VDC: -0.5V to +12V 20mA : -0.5V to +15V RTD/TC : +/- 24VDC
Nominal Resolution	10V, 20mA, 100mV : 14 Bits RTD. Thermocouples : 16 Bits
Input Impedance	Current Mode : 100W, 35mA Max Voltage Mode : 500kW, 35mA Max
%AI full scale	10V,20mA,100mV -32,000 counts 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 Mode Range	+/-10V
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 channels converted	10V, 20mA, 10mV : 30 Times/Second RTD, Thermocouple : 7.5 Times/Second
Conversion time per channel	10V, 20mA, 100mV : 30 Times/Second RTD, Thermocouple : 66.7ms
RTD Excitation Current	250mA

i^3D Intelligent Control Station

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

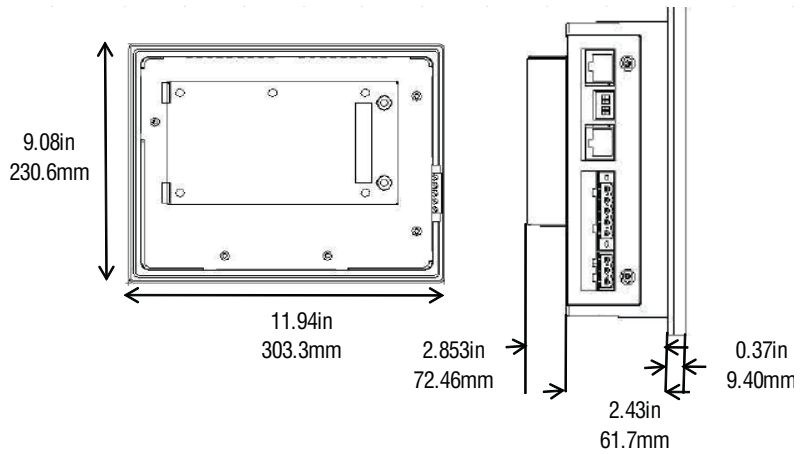
Communication Ports		
MJ2 Serial Port Pin Assignments		
Pin	Signal	Signal Description
8	TD1	RS-232 Transmit Data
7	RD1	RS-232 Receive Data
6	0V	Ground
5	+5	+5 VDC 60mA max
4	TX-	RS-485 Transmit Negative
3	TX+	RS-485 Transmit Positive
2	RX-	RS-485 Receive Negative
1	RX+	RS-485 Receive Positive

External Jumper Configuration

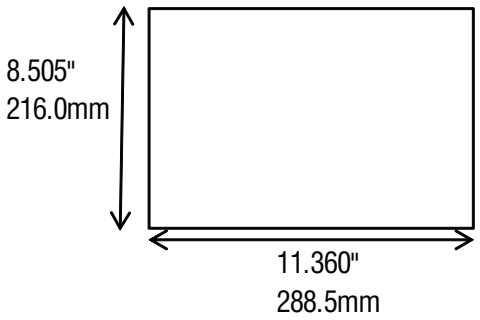


SW 1 ON - MJ2 RS 485 Termination On (121Ω)
SW 2 & 3 ON - MJ2 RS 485 in Half Duplex mode
SW 2 & 3 OFF - MJ2 RS 485 in Full Duplex mode
SW 4 ON - MJ1 RS 485 Termination On (121Ω)

Dimension



Cut Out Details



i3D Intelligent Control Station

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 recieve 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 chose from (including IMO products, Mitsubishi, Allen Bradley and Siemens), Part No. IMO-OPC-Server.

3. Panel Point SCADAlite - 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 chose from (including IMO products, Mitsubishi, Allen Bradley, Simens), Part No. PANELPOINT (Developer) - Part No. PANELPOINT (Runtime)

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

5. 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

i3H Series Models:

i3H08/00000-SEOL - 8" display model
i3H10/00000-SEOL - 10" display model
i3H12/00000-SEOL - 12" display model

INTRODUCTION

i3H provides:

- ❑ *Powerful Standard Features* in *one* unit including
- ✓ *Controller*
- ✓ *Network*
- ✓ *Operator Interface*
- ✓ *Highly Visual Display Screen*

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Standard Features on i3H			
Base Model	**Network**	**Screen Type**	**Standard Features**
i3H08	On-Board Ethernet 100BaseT	8.4" TFT SVGA with 32,768 colors	CompactFlash 3 Serial Ports Ethernet
i3H10		10.4" TFT SVGA with 32,768 colors	
i3H12		12.1" TFT SVGA with 32,768 colors	

2 Specifications / Product Descriptions

Table 2 – i3H Base Specifications			
Base Models	**i3H08 (8-inch) (SVGA)**	**i3H10 10-inch) (SVGA)**	**i3H12 (12-inch) (SVGA)**
Display Type (LCD with backlight)	800 x 600 TFT	800 x 600 TFT	800 x 600 TFT
Display Size	8.4"	10.4"	12.1"
Display Screen Dimensions	6.7"W x 5"H (170 x 128 mm)	8.3"W x 6.2"H (211 x 159 mm)	9.7"W x 7.3"H (246 x 185 mm)
Display Memory	8 MBytes		
User Keys	7 configurable keys + System Key		
Screens Supported	1,023 screens (300 objects per screen)		
Number of Colors	32,768		

Base Models	**i3H08** (8-inch)	**i3H10** 10-inch)	**i3H12** (12-inch)
Primary Power	**Voltage:** 24 VDC (+/-10%) **Steady State Current:** 0.625 A @ 24 VDC **Inrush Current:** (25 A @ 24 VDC) for 0.7 ms	**Voltage:** 24 VDC (+/-10%) **Steady State Current:** 1.25 A @ 24 VDC **Inrush Current:** (30 A @ 24 VDC) for 1 ms	**Voltage:** 24 VDC (+/-10%) **Steady State Current:** 1.25 A @ 24 VDC **Inrush Current:** (30 A @ 24 VDC) for 1 ms
i3H Dimensions See *Panel Cut-outs and Dimensions* for complete details (Section 3.2)			
Base Models	**i3H08 (8-inch)**	**i3H10 10-inch)**	**i3H12 (12-inch)**
Height	7.0" (178 mm)	9.09" (230.9 mm)	10.25" (260.4 mm)
Width	9.17" (233 mm)	11.95" (303.5 mm)	12.87" (326.9 mm)
Mounting Depth	2.35" (59.70 mm)	2.52" (64 mm)	2.52" (64 mm)
Keypad Material	Faceplate made of Lexan® HP92 by GE Plastics. The material is resistant to most corrosive substances found in industrial environments. The material also holds up well in most industrial conditions.		
Serial Ports	3 RS-232 / RS-485 Ports. Software Selectable.		
Network Options	On-board Ethernet 100BaseT		
Control Memory	256K Ladder Memory plus 32KB Register Space		
Control Scan Rate	0.2mS / K Ladder Logic (typical)		
Portable Memory	Compact FLASH (CF) slot		
Temperature & Humidity	32 - 122°F (0 - 50°C), 5 to 95% Non-condensing		
UL	Please contact IMO for certificate information		
CE			

3 INSTALLATION

Note: Prior to mounting, observe requirements for the panel layout design and adequate clearances in the **I3 Hardware Manual**. A handy checklist is provided in the *Installation* chapter.

3.1 Installation Procedures

a. i3H Base Installation

1. Per specifications of the I3H model you are using, carefully prepare the panel cutout. Make sure the corners of the cutout are square and free from burrs. (Locate the panel cut-outs and dimensions that pertain to your I3H model as shown in this document.)
2. Cut the host panel
3. Insert the i3H (base unit only) through the panel cutout from the front. The gasket material needs to lie between the host panel and the I3H.
   Caution: Do not force the I3H into the panel cutout. An incorrectly sized panel cutout damages the I3H screen.
4. Install and tighten the mounting clips (provided with the I3H) until the gasket material forms a tight seal.
   Caution: Do not over-tighten. Over-tightening damages the case.
5. Connect cables as needed such as communications, programming, power and fiber optic cables to the I3H ports using the provided connectors.
6. As a final step before using, carefully remove the protective, plastic sheet from the front of the unit. The protective, transparent sheet is used to protect the display window.
7. Begin configuration procedures for the I3H.

3.2 Panel Cut-Out and Dimensions

3.2.1 i3H08 (8-inch)

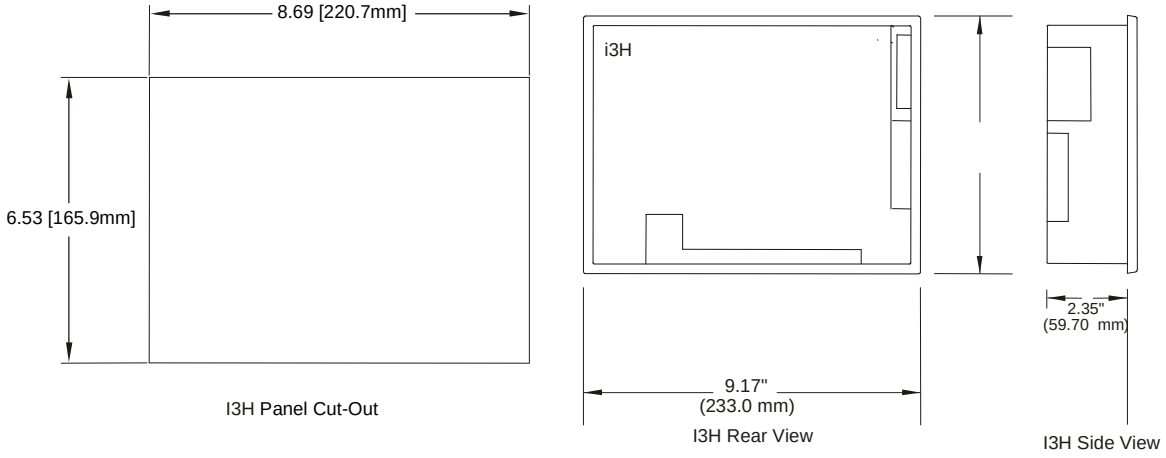

Figure 2 – Panel Cut-out and Dimensions 8-inch

3.2.2 i3H10 (10-inch)

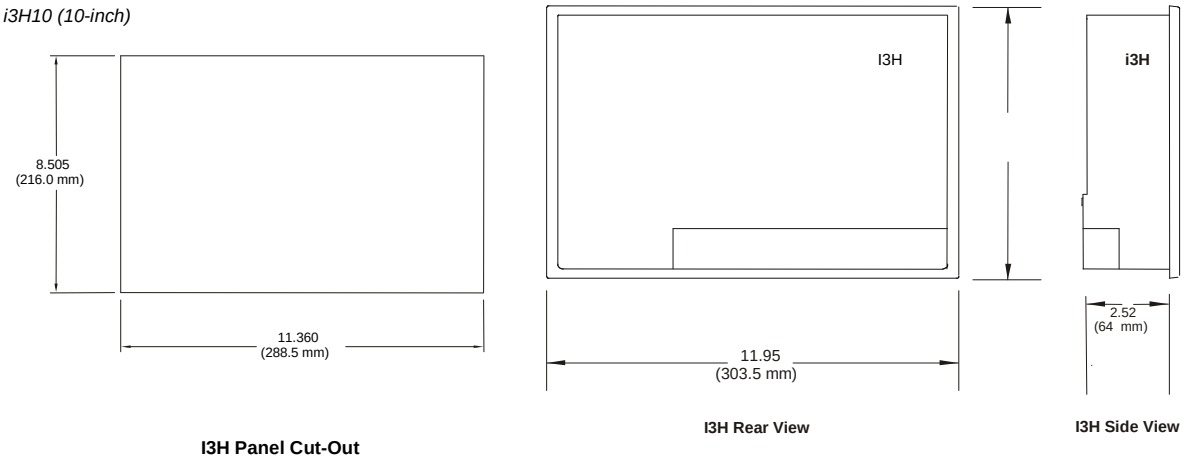

Figure 3– Panel Cut-out and Dimensions 10-inch

3.2.2 i3H12 (12-inch)

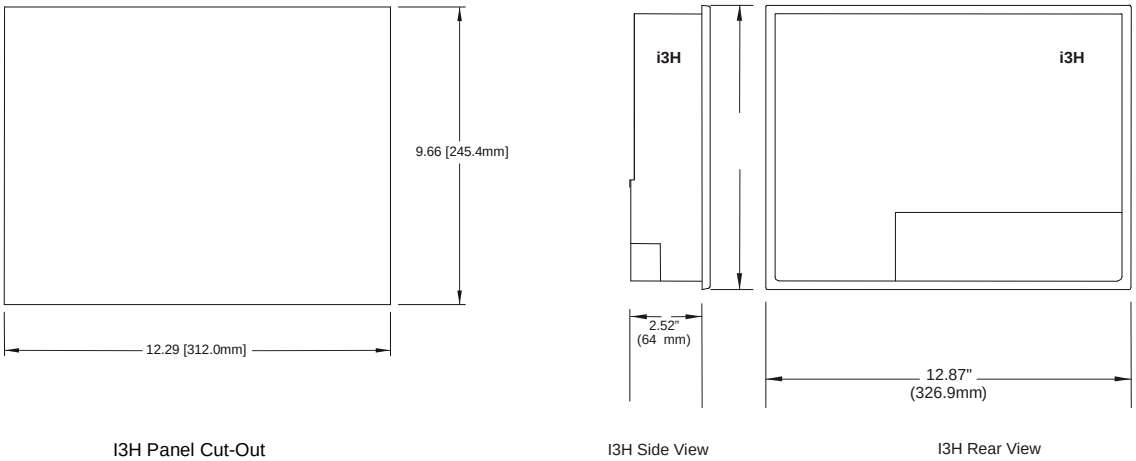

Figure 4 – Panel Cut-out and Dimensions 12-inch

3.3 i3H Base Ports and Connectors

The I3H base has power, network, programming and fiber optic ports. Three RS-232 and RS-485 ports are available. (Default programming port is MJ1)

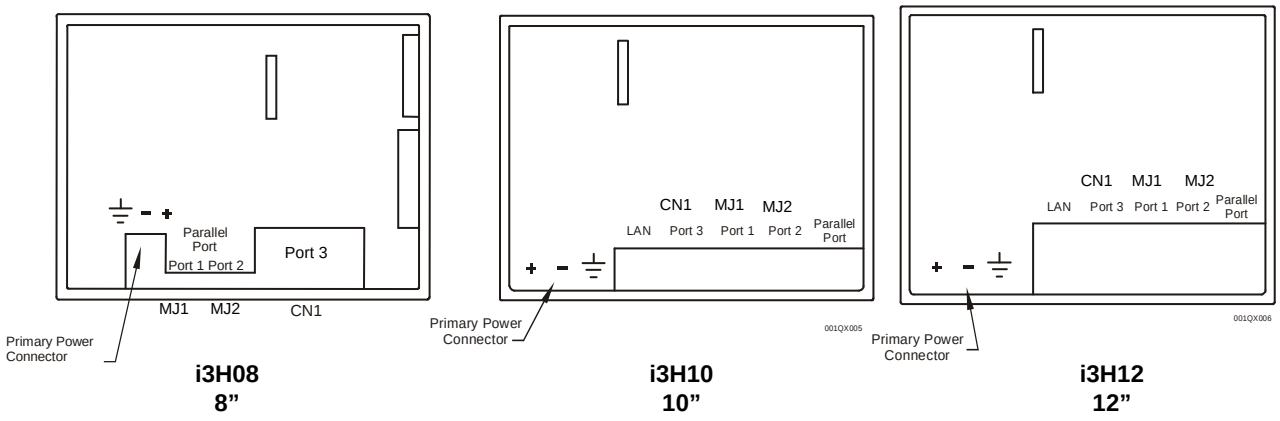

Figure 5 – I3H Base Ports and Connectors

3.3.1 *Primary Power Port / Grounding*

Table 4 – Primary Power Port Pins	
Signal Pin	**Description**
V+	Input power supply voltage
V-	Input power supply ground
⏚	Frame Ground

Note**: Power Supply Voltage Range is from 24VDC ±10%.**

3.3.2 *RS-232 Port / RS-485 Port*

There are a variety of ways to connect to the RS-232 and RS-485 ports; You can use two modular jacks (MJ1 and MJ2) or the 25-pin Dsub connector (CN1).

Table 5 – Ports and Functions (Port 1, 2, and 3)			
Functions	**Port 1 (MJ1)**	**Port 2 (MJ2)**	**Port 3 (CN1)**
RS-232	✓	✓	✓
RS-485	✓	✓	✓
Hardware Handshaking			✓
Programming	✓		
Ladder Function Controlled	✓	✓	✓
Modem	✓*	✓*	✓
* Not supported by i3 Config Modem Function Blocks			

a. Port 1 (MJ1) / Port 2 (MJ2) Modular Jacks

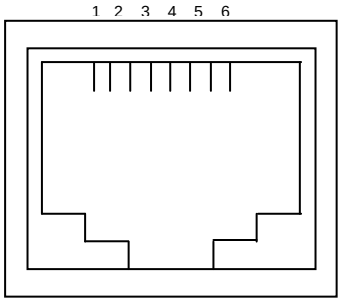

Table 6 – Port 1 (MJ1) / Port 2 (MJ2) Pins	
Pin	**Signal**
1	+SD/RD
2	-SD/RD
3	+5V
4	+5V
5	0V
6	0V
7	RXD
8	TXD
Output power supply: Max. 150mA	

Figure 6 – Close-up of Port 1 (MJ1) / Port 2 (MJ2) (RS-232 and RS-485)

b. Port 3 (CN1) Connector

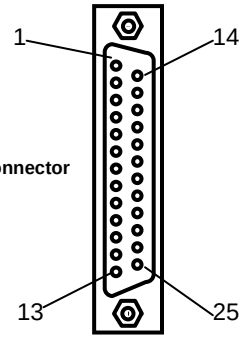

Table 7– Port 3 (CN1) Pins			
Pin #	**Signal**	**Pin #**	**Signal**
1	FG	**14**	I3H451, 551, 651: +RTS
2	TXD	**15**	Not Used
3	RXD	**16**	Not Used
4	RTS	**17**	I3H451, 551, 651: -RTS
5	CTS	**18**	-CTS
6	Not Used	**19**	+CTS
7	SG	**20**	Not Used
8	Not Used	**21**	Not Used
9	+5V	**22**	Not Used
10	0V	**23**	Not Used
11	Not Used	**24**	+RD
12	+SD	**25**	-RD
13	-SD		

Figure 7 – Port 3 (CN1) RS-232 / RS-485 Connector

3.3.3 DIP-Switch

The DIP switch is used for setting the terminating resistance of the RS-485 signal line at the CN1, MJ1, or MJ2 connector.

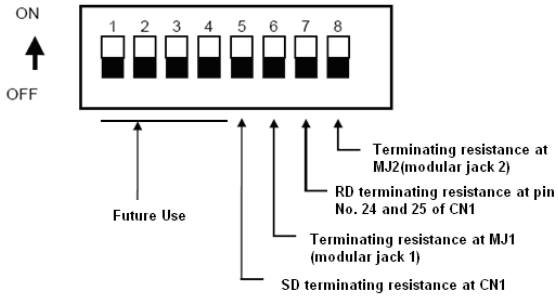

Figure 7 – DIP Switch

(1) Set DIPSW 8 to ON position when termination is required on MJ2.

(2) Set DIPSW 7 at the terminating station of the i3H units to the ON position when connecting PLCs through RS-422/485.

(3) Set DIPSW 6 to ON position when termination is required on MJ1.

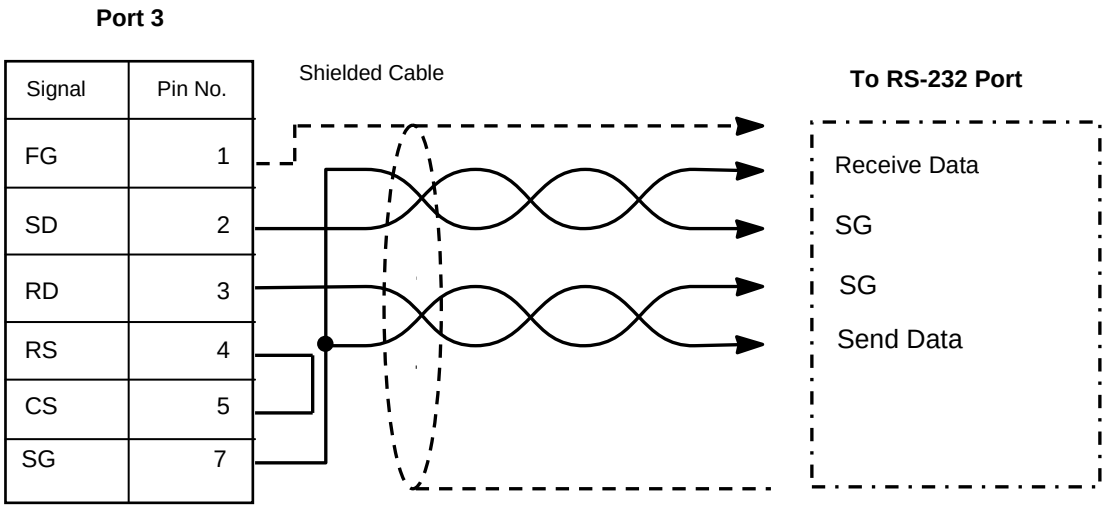

Figure 8 - Port 3 (CN1) RS-232 Port

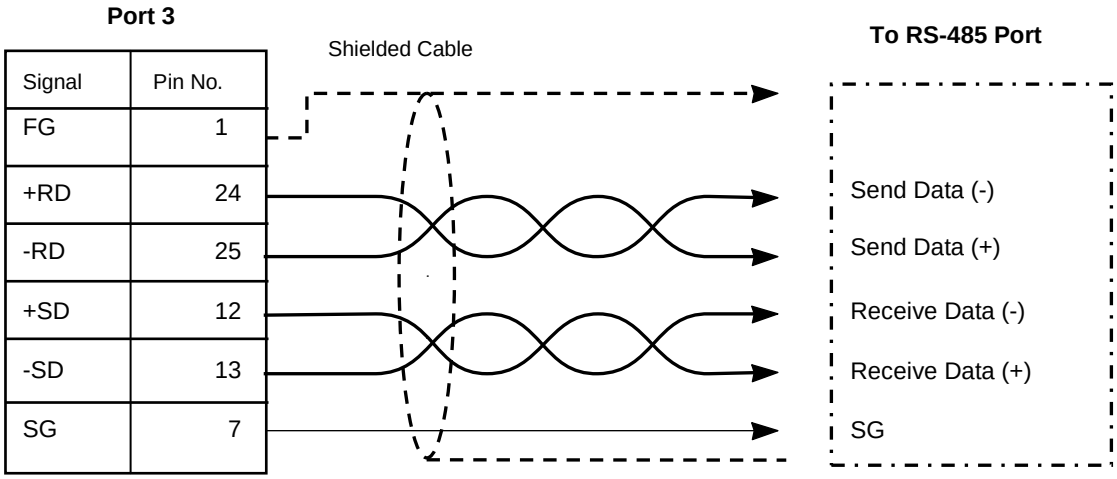

Figure 9 – Port 3 (CN1) RS-485 Port

3.5 Quick Start Instructions

1. Download i3 Configurator V9.0 (or better) from the IMO website and install, following on-screen instructions.
2. Connect a suitable 24Vdc supply to the screw terminals as shown in Figure 5, and power up.

Serial Programming:

Requirements: i3-PC45 programming cable (optional part: PC501 - USB to Serial Converter for PC's without serial port), PC with Windows XP or better.

1. Connect the RJ45 connector of the i3-PC45 cable to the i3H port MJ1 and connect the 9-pin D-type connector to the PC and open i3 Configurator.
2. Select Tools->Application Settings->Communications->Configure->Com Port (or USB if convertor used). Input the required com port number then press OK.
3. If the connection is successful, then the status of the i3 should no longer be grayed out and display as shown .
4. To get started with the programming download the i3 Basic Tutorial from the IMO website.

Ethernet Programming:

Requirements: Ethernet cross-over patch cable, PC with Windows XP or better.

1. Set up the PC to have a fixed IP and Subnet of 192.168.254.1/ 255.255.255.0 (for in-depth instruction on how to do this please download the i3 Ethernet tutorial.pdf).
2. Connect the RJ45 connector of the patch cable to the i3H LAN port and to the PC LAN port and open i3 Configurator.
3. Select Tools->Application Settings->Communications->Configure->Ethernet. Then enter IP address 192.168.254.128, select mode iNX/i3Ce then press OK.
4. If the connection is successful, then the status of the i3 should no longer be grayed out and display as shown .
5. To get started with the programming download the i3 Basic Tutorial from the IMO website.

4 Safety

When found on the product, the following symbols specify:

Warning: Electric Shock hazard

Warning: Consult user documentation.

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
AVERTISSEMENT - 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.

For detailed installation and a handy checklist that covers panel box layout requirements and minimum clearances, refer to the hardware manual.

- All applicable codes and standards need to be followed in the installation of this product.

Adhere to the following safety precautions whenever any type of connection is made to the module.

- Connect the green safety (earth) ground first before making any other connections.
- When connecting to electric circuits or pulse-initiating equipment, open their related breakers. Do not make connections to live power lines.
- Make connections to the module first; then connect to the circuit to be monitored.
- Route power wires in a safe manner in accordance with good practice and local codes.
- Wear proper personal protective equipment including safety glasses and insulated gloves when making connections to power circuits.
- Ensure floor, hands and shoes are dry before making any connection to a power line.
- Make sure the unit is turned OFF before making connection to terminals. Make sure all circuits are de-energized before making connections.
- Before each use, inspect all cables for breaks or cracks in the insulation. Replace immediately if defective.

5 Technical support

Please contact automation@imopc.com

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