

1/8 DIN Ultra Compact Case, Temperature, Process and Strain PID Controllers

iSeries

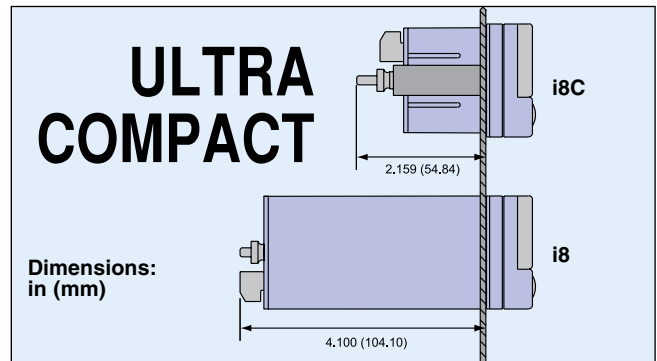
i8C Series



i8C33 shown smaller than actual size.

- ✓ Ultra Compact 1/8 DIN Controller
- ✓ Full Autotune PID Control
- ✓ Built-In Excitation
- ✓ NEMA 4 (IP65) Bezel
- ✓ RS232, RS422/485 or Modbus Communication, Menu Selectable

The ultra-compact i8C and i8S8C controllers are similar to the full size i8 in an ultra-compact enclosure. Only 51 mm (2") behind the panel.



Options

Ordering Suffix	Description
-AL	Limit alarm version (alarms only, no PID control) ²
-SM	Simplified menu (on/off control or alarms, no PID) ³
Networks Options	
-C24	Isolated RS232 and RS485/422, 300 to 19.2 Kb ¹
Power Supply	
	Standard power input: 90 to 240 Vac/dc, 50 to 400 Hz (no entry required)
-DC	12 to 36 Vdc, 24 Vac ¹
Factory Setup	
,FS	Factory setup and configuration
,FS(RTD-1N)	Customized "iS" Model for MIL-T-7990B nickel RTD input, 0 to 200°C (32 to 392°F)
,FS(RTD-2N)	Customized "iS" Model for MIL-T-7990B nickel RTD input, -40 to 300°C (-40 to 572°F)
Software (Requires Network Option)	
OPC-SERVER LICENSE	OPC server/driver software license

*1 "-DC" and "-C24" not available with excitation
 *2 Analog output is not available with "-AL" units.
 *3 "-SM" option not available on iS strain models.

To Order Visit newportUS.com/i8_short for Pricing and Details

Model No.	Output 1	Output 2
1/8 DIN Compact Case with 2 Control Outputs		
i8C33	Relay	Relay
i8C34	Relay	DC pulse
i8C44	DC pulse	DC pulse
i8C22	0.5 A SSR	0.5 A SSR
i8C23	0.5 A SSR	Relay
i8C24	0.5 A SSR	DC pulse
i8C53	Analog	Relay
i8C54	Analog	DC pulse
i8C52	Analog	0.5 A SSR
1/8 DIN Compact Case Strain/Process Input with 2 Control Outputs		
i8S8C33	Relay	Relay
i8S8C44	DC pulse	DC pulse
i8S8C43	DC pulse	Relay
i8S8C42	DC pulse	0.5 A SSR
i8S8C22	0.5 A SSR	0.5 A SSR
i8S8C23	0.5 A SSR	Relay
i8S8C24	0.5 A SSR	DC pulse
i8S8C53	Analog	Relay
i8S8C54	Analog	DC pulse
i8S8C52	Analog	0.5 A SSR

Comes with complete operator's manual.

Ordering Examples: i8C33, 1/8 DIN compact universal temperature process controller with 2 relay outputs.

iSeries Common Specifications (All i/8, i/16, i/32 DIN)

Universal Temperature and Process Input ("i" Models)

Accuracy: ±0.5°C temp; 0.03% rdg

Resolution: 1°/0.1°; 10 µV process

Temperature Stability:

RTD: 0.04°C/°C

TC @ 25°C (77°F): 0.05°C/°C

Cold Junction Compensation

Process: 50 ppm/°C

NMRR: 60 dB

CMRR: 120 dB

A/D Conversion: Dual slope

Reading Rate: 3 samples/s

Digital Filter: Programmable

Display: 4-digit 9-segment LED
10.2 mm (0.40"); i32, i16, i16D, i8DV
21 mm (0.83"); i8 10.2 mm (0.40") and
21 mm (0.83"); i8DH **RED, GREEN,**
and **AMBER** programmable colors
for process variable, setpoint and
temperature units

Input Types: Thermocouple, RTD,
analog voltage, analog current

Thermocouple Lead Resistance:
100 Ω max

Thermocouple Types (ITS 90):

J, K, T, E, R, S, B, C, N, L (J DIN)

RTD Input (ITS 68): 100/500/1000 Ω
Pt sensor, 2-, 3- or 4-wire; 0.00385 or
0.00392 curve

Voltage Input: 0 to 100 mV, 0 to 1V,
0 to 10 Vdc

Input Impedance: 10 MΩ for 100 mV
1 MΩ for 1 or 10 Vdc

Current Input: 0 to 20 mA (5 Ω load)

Configuration: Single-ended

Polarity: Unipolar

Step Response: 0.7 sec for 99.9%

Decimal Selection:

Temperature: None, 0.1

Process: None, 0.1, 0.01 or 0.001

Setpoint Adjustment:

-1999 to 9999 counts

Span Adjustment:

0.001 to 9999 counts

Offset Adjustment: -1999 to 9999

Excitation (Not Included with

Communication): 24 Vdc @ 25 mA
(not available for low-power option)

Universal Strain and Process Input ("iS" Models)

Accuracy: 0.03% reading

Resolution: 10/1 µV

Temperature Stability: 50 ppm/°C

NMRR: 60 dB

CMRR: 120 dB

A/D Conversion: Dual slope

Reading Rate: 3 samples/s

Digital Filter: Programmable

Input Types: Analog voltage and current

Voltage Input: 0 to 100 mVdc,
-100 mVdc to 1 Vdc, 0 to 10 Vdc

Input Impedance: 10 MΩ for 100 mV;
1 MΩ for 1V or 10 Vdc

Current Input: 0 to 20 mA (5 Ω load)

Linearization Points: Up to 10

Configuration: Single-ended

Polarity: Unipolar

Step Response: 0.7 sec for 99.9%

Decimal Selection: None, 0.1, 0.01
or 0.001

Setpoint Adjustment:

-1999 to 9999 counts

Span Adjustment: 0.001 to 9999 counts

Offset Adjustment: -1999 to 9999

Excitation (Optional In Place Of
Communication): 5 Vdc @ 40 mA;
10 Vdc @ 60 mA

Control

Action: Reverse (heat) or direct (cool)

Modes: Time and amplitude proportional
control; selectable manual or auto PID,
proportional, proportional with integral,
proportional with derivative and anti-reset
Windup, and on/off

Rate: 0 to 399.9 s

Reset: 0 to 3999 s

Cycle Time: 1 to 199 s; set to 0 for on/off

Gain: 0.5 to 100% of span; setpoints 1 or 2

Damping: 0000 to 0008

Soak: 00.00 to 99.59 (HH:MM), or OFF

Ramp to Setpoint:
00.00 to 99.59 (HH:MM), or OFF

Auto Tune: Operator initiated from
front panel

Control Output 1 and 2

Relay: 250 Vac or 30 Vdc @ 3 A (resistive
load); configurable for on/off, PID and ramp
and soak

Output 1: SPDT, can be configured as
alarm 1 output

Output 2: SPDT, can be configured as
alarm 2 output

SSR: 20 to 265 Vac @ 0.05 to 0.5 A
(resistive load); continuous

DC Pulse: Non-isolated; 10 Vdc @ 20 mA

Analog Output (Output 1 Only):
Non-isolated, proportional 0 to 10 Vdc or
0 to 20 mA; 500 Ω max

Output 3 Retransmission:

Isolated Analog Voltage and Current

Current: 10 V max @ 20 mA output

Voltage: 20 mA max for 0 to 10 V output

Network and Communications

Ethernet: Standards compliance
IEEE 802.3 10 Base-T

Supported Protocols:

TCP/IP, ARP, HTTPGET

RS232/RS422/RS485: Selectable from
menu; both ASCII and Modbus protocol
selectable from menu; programmable
300 to 19.2 Kb; complete programmable
setup capability; program to transmit
current display, alarm status, min/max,
actual measured input value and status

RS485: Addressable from 0 to 199
Connection: Screw terminals

Alarm 1 and 2 (Programmable)

Type: Same as output 1 and 2

Operation: High/low, above/below,
band, latch/unlatch, normally open/
normally closed and process/deviation;
front panel configurations

Analog Output (Programmable):

Non-isolated, retransmission 0 to 10 Vdc
or 0 to 20 mA, 500 Ω max (output 1 only);
accuracy is ±1% of FS when following
conditions are satisfied: input is not scaled
below 1% of input FS, analog output is not
scaled below 3% of output FS

General

Power: 90 to 240 Vac ±10%, 50 to 400Hz*,
110 to 375 Vdc, equivalent voltage

Low Voltage Power Option: 24 Vac**,
12 to 36 Vdc for i/iS; 20 to 36 Vdc for dual
display, ethernet, and isolated analog output
from qualified safety approved source

Isolation

Power to Input/Output: 2300 Vac
per 1 minute test

For Low Voltage Power Option:
1500 Vac per 1 minute test

Power to Relay/SSR Output:
2300 Vac per 1 minute test

Relay/SSR to Relay/SSR Output:
2300 Vac per 1 minute test

RS232/485 to Input/Output:
500 Vac per 1 minute test

Environmental Conditions:

All Models: 0 to 55°C (32 to 131°F)
90% RH non-condensing

Dual Display Models:
0 to 50°C (32 to 122°F), 90% RH
non-condensing (for UL only)

Protection:

i/iS32, 16, 16D, 8C:
NEMA 4X/Type 4 (IP65) front bezel

i/iS8, 8DH, 8DV:
NEMA 1/Type 1 front bezel

Approvals: UL, C-UL, CE per
EN61010-1:2001, FM (temperature
units only)

Dimensions

i/8 Series: 48 H x 96 W x 127 mm D
(1.89 x 3.78 x 5")

i/16 Series: 48 H x 48 W x 127 mm D
(1.89 x 1.89 x 5")

i/32 Series: 25.4 H x 48 W x 127 mm D
(1.0 x 1.89 x 5")

Panel Cutout

i/8 Series: 45 H x 92 mm W
(1.772 x 3.622"), ½ DIN

i/16 Series: 45 mm (1.772") square,
¼ DIN

i/32 Series: 22.5 H x 45 mm W
(0.886 x 1.772"), ⅜ DIN

Weight

i/8 Series: 295 g (0.65 lb)

i/16 Series: 159 g (0.35 lb)

i/32 Series: 127 g (0.28 lb)

* No CE compliance above 60 Hz.

** Units can be powered safely with 24 Vac
power, but no certification for CE/UL are claimed.