

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

## Universal Temperature & Process Input (Model "i")

**Accuracy:**  $\pm 0.5^{\circ}\text{C}$  temp; 0.03% reading process

**Resolution:**  $1^{\circ}/0.1^{\circ}$ ; 10  $\mu\text{V}$  process

**Temperature Stability:**

1) RTD:  $0.04^{\circ}\text{C}/^{\circ}\text{C}$

2) TC @  $25^{\circ}\text{C}$  ( $77^{\circ}\text{F}$ ):  $0.05^{\circ}\text{C}/^{\circ}\text{C}$  - Cold Junction Compensation

3) Process: 50 ppm/ $^{\circ}\text{C}$

**NMRR:** 60 dB

**CMRR:** 120 dB

**A/D Conversion:** Dual slope

**Reading Rate:** 3 samples per second

**Digital Filter:** Programmable

**Display:** 4-digit 9-segment LED

21 mm (0.83"): i8

10.2 mm (0.40"): i32, i16, i16D, i8DV

10.2 mm (0.40") and 21 mm (0.83"): i8DH

red, green and amber programmable colors for process variable, set point and temperature units

**Input Types:** Thermocouple, RTD, Analog Voltage, Analog Current

**Thermocouple Lead Resistance:**

100 ohm max

**Thermocouple Type (ITS 90):** J, K, T, E, R, S, B, C, N, L

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

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

**Input Impedance:** 10 Mohm for 100 mV  
1 Mohm for 1 or 10 Vdc

**Current Input:** 0 to 20 mA (5 ohm load)

**Configuration:** Single-ended

**Polarity:** Unipolar

**Step Response:** 0.7 sec for 99.9%

**Decimal Selection:** None, 0.1 for temperature. None, 0.1, 0.01 or 0.001 for process

**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 & Process Input (Model "iS")

**Accuracy:** 0.03% reading

**Resolution:** 10/1  $\mu\text{V}$

**Temperature Stability:** 50 ppm/ $^{\circ}\text{C}$

**NMRR:** 60 dB

**CMRR:** 120 dB

**A/D Conversion:** Dual slope

**Reading Rate:** 3 samples per second

**Digital Filter:** Programmable

**Input Types:** Analog Voltage, Analog Current

**Voltage Input:** 0 to 100 mVdc,

-100 mVdc to 1 Vdc, 0 to 10 Vdc

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

**Current Input:** 0 to 20 mA (5 ohm load)

**Linearization Points:** Up to 10

Linearization Points

**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;

10Vdc@60mA

## Control

**Action:** Reverse (heat) or direct (cool)

**Modes:** Time and Amplitude Proportional Control Modes; selectable Manual or Auto PID, Proportional, Proportional with Integral, Proportional with Derivative with Anti-reset Windup and ON/OFF

**Rate:** 0 to 399.9 seconds

**Reset:** 0 to 3999 seconds

**Cycle Time:** 1 to 199 seconds; set to 0 for ON/OFF operation

**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 & 2

**Relay:** 250 Vac or 30 Vdc @ 3 A (Resistive Load); configurable for on/off, PID and Ramp and Soak

**Output 1:** SPDT type, can be configured as Alarm 1 output

**Output 2:** SPDT type, can be configured as Alarm 2 output

**SSR:** 20-265 Vac @ 0.05 - 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  $\Omega$  max

## Network and Communications (Optional -C24, -C4EI, -EI)

**Ethernet:** Standards Compliance

IEEE 802.3 10Base-T

**Supported Protocols:**

TCP/IP, ARP, HTTPGET

**RS-232/RS-422/RS-485:** selectable from menu; both ASCII and Modbus protocol selectable from menu. Programmable 300 to 19.2 K baud; complete programmable setup capability; program to transmit current display, alarm status, min/max, actual measured input value and status

**RS-485:** Addressable from 0 to 199

**Connection:** Screw terminals

## Alarm 1 & 2 (programmable)

**Type:** Same as Output 1 & 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  $\Omega$  max (Output 1 only). Accuracy is  $\pm 1\%$  of FS when following conditions are satisfied.

- 1) Input is not scaled below 1% of Input FS.
- 2) Analog Output is not scaled below 3% of Output FS.

## General

**Power:** 90-240 Vac  $\pm 10\%$ , 50-400 Hz\*, 110-375 Vdc, equivalent voltage

**Low Voltage Power Option:** 24 Vac\*\*, 12 - 36 Vdc, power for i8, i8C, i16, i32; 20 - 36 Vdc, power for i8DH, i8DV, i16D from qualified safety approved source

## Insulation

**Power to Input/Output:**

2300 Vac per 1 minute test

1500 Vac per 1 minute test

(For Low Voltage Power Option)

**Power to Relays/SSR Outputs:**

2300 Vac per 1 minute test

**Relays/SSR to Relay/SSR Outputs:**

2300 Vac per 1 minute test

**RS-232/485 to Input/Outputs:**

500 Vac per 1 minute test

## Environmental Conditions:

90% RH non-condensing

All models: 0 to  $55^{\circ}\text{C}$  ( $32$ - $131^{\circ}\text{F}$ )

i8DV, i8DH, i16D: 0 to  $50^{\circ}\text{C}$  ( $32$  to  $122^{\circ}\text{F}$ ) for UL only

## Protection:

NEMA-4 (IP65) front bezel

**Approvals:** FM, UL, C-UL,

CE per EN61010-1:2001

## 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"), 1/8 DIN

**i/16 Series:** 45 mm (1.772") square, 1/16 DIN

**i/32 Series:** 22.5 H x 45 mm W (0.886" x 1.772"), 1/32 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 24Vac power, but no certification for CE/UL are claimed

**iSeries**  
**change color**  
at any  
set point\*

Totally  
Programmable  
Color Displays

RED  
AMBER  
GREEN