

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

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

**Accuracy:** ±0.5°C temp; 0.03% reading process  
**Resolution:** 1°/0.1°; 10 µV process  
**Temperature Stability:**  
 1) RTD: 0.04°C/°C  
 2) TC @ 25°C (77°F): 0.05°C/°C - Cold Junction Compensation  
 3) Process: 50 ppm/°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 µV  
**Temperature Stability:** 50 ppm/°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 Ω 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 Ω max (Output 1 only). Accuracy is ± 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 ±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°C (32-131°F)  
 i8DV, i8DH, i16D: 0 to 50°C (32 to 122°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

