

Humidity + Temperature Controllers

NEWPORT®

iSeries



- ✓ **Dual Loop Control**
- ✓ **Humidity + Temperature**
- ✓ **High Accuracy $\pm 0.5^{\circ}\text{C}$ and $\pm 2\%$ RH**
- ✓ **4 Popular DIN Sizes**
- ✓ **Ethernet and Serial Communications (optional)**
- ✓ **2 Control or Alarm Outputs (optional)**
- ✓ **Choice of Relays, SSR, DC Pulse, Analog Voltage and Current**
- ✓ **RH/Temperature Probe included**
- ✓ **Full Autotune PID Control**
- ✓ **Programmable Ramp and Soak for Humidity and/or Temperature**

The **NEWPORT® iTH Series** instruments monitor and control both temperature and relative humidity.

All meters and controllers in the series are high quality, highly accurate instruments featuring Newport's award-winning **iSeries** technology, uncompromising accuracy, and Made in the U.S.A. quality, backed by an extended 5-year warranty.

The instruments are simple to configure and use, while providing tremendous versatility and a wealth of powerful features.

The **NEWPORT® iTH Series** instruments are available either as monitors or controllers. The monitors are extremely accurate programmable digital panel meters displaying humidity, temperature, or dew point. The controllers also provide dual loop control for both humidity and temperature and are easily programmed for any control or alarming requirement from simple on-off to full autotune PID control.

The **iTH** family of meters and controllers are available in four DIN sizes: the ultra compact 1/32 DIN (the world's smallest dual loop Humidity + Temperature controller); the popular midsize 1/16 DIN square bezel with dual display; the 1/8 DIN vertical, and the 1/8 DIN horizontal with the big bright 21mm digits.

The **NEWPORT® iTH Series** LED displays can be programmed to change color between Green, Amber, and Red at any set point or alarm point.

The **iTH** controller models offer a choice of two control or alarm outputs in almost any combination: solid state relays (SSR); Form "C" SPDT (Single Pole Double Throw) relays; pulsed 10 Vdc output for use with an external SSR; or Analog Output selectable for control or retransmission of the process value.

The Networking and Communications options (highly recommended) include direct Ethernet LAN connectivity with an Embedded Web Server, and serial communications. The **-C24** serial communications option includes both RS-232 and RS-485. Protocols include both MODBUS and a straightforward ASCII protocol. The **-C4EI** option includes both Ethernet and RS-485 ASCII/MODBUS on one device.

The **iTH Series** meters and controllers are designed for easy integration with popular industrial automation, data acquisition and control programs as well as Microsoft Visual Basic and Excel. **NEWPORT®** provides free configuration software which makes it fast and easy to get up and running. Available on CD-ROM and for download off the web.

SPECIFICATIONS

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 for one input at a time only

CONTROL OUTPUT 1 & 2

Relay: 250 Vac or 30 Vdc @ 3A (resistive load); configurable for on/off, PID, 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 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 10Vdc or 0 to 20mA; 500Ω max

ALARM 1 & 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, 500Ω 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 Out is not scaled below 3% of Output FS.

SENSOR SPECIFICATIONS

Relative Humidity Accuracy/Range:

±2% for 10 to 90%

±3% for 5 to 10% and 90 to 95%

±4% for 0 to 5% and 95 to 100%

Hysteresis: ±1% RH; **Non-Linearity:** ±3%

Temperature Accuracy/Range*:

±0.5°C for 5 to 45°C (±1° for 41 to 113°F);

up to ±1.5°C for -40 to 5°C and 45 to 124°C;

(up to ±2.7° for -40 to 41°F and 113 to 255°F)

Resolution: 0.1%, 12 bit for RH;

0.1°C, 14 bit for Temperature

Response Time: 8 sec, tau 63% for RH; 5 to 30 sec, tau 63% for Temp

*Note: extended temperature range is for Industrial Probe only, the controller's operating temp. is 0 to 50 °C.

NETWORK AND SERIAL COMMUNICATIONS

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

Ethernet: Standards Compliance

IEEE 802.3 10Base-T

Connection: Screw terminals

GENERAL

A/D Conversion: 12 bit RH and 14 bit Temp.

Reading Rate: 2 samples per second max.

Digital Filter: Programmable

Display: 4-digit, 9-segment LED

• 10.2 mm (0.40"): i32, i16D, i8DV

• 10.2 mm (0.40") & 21 mm (0.83"): i8DH

red, green and amber programmable colors

Operating Temperature:

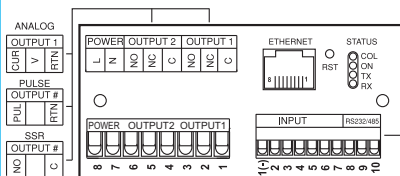
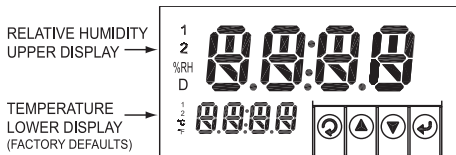
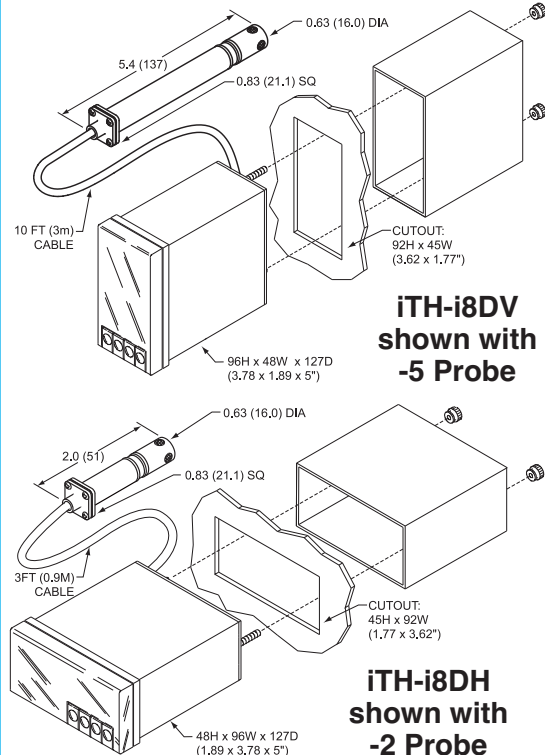
0 to 50°C (32 to 122°F), 90% RH non-condensing

Power: Refer to ordering guide below.

No CE compliance above 60 Hz

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

For other General Specifications, refer to the iSeries Common Specs page.



For other mechanical drawings refer to the iSeries Temperature/Process Controller pages. Dimensions shown in inches (mm)

To Order (*Specify Model No.)

Model Number	Description	Price
iTH-i8DH	(*) (*) Temperature and RH input 1/8 DIN dual display horizontal	
iTH-i8DV	(*) (*) Temperature and RH input 1/8 DIN dual display vertical	
iTH-i16D	(*) (*) Temperature and RH input 1/16 DIN dual display	
iTH-i32	(*) (*) Temperature and RH input 1/32 DIN single display *2	
0 0	Monitor version, no control outputs.	\$390
2 2	Two solid state relays (SSR's): 0.5 A @ 120/240 Vac continuous	490
2 3	SSR and relay: Form "C" SPDT 3A @ 120Vac, 3A @ 240Vac	
2 4	SSR and pulsed 10 Vdc @ 20 mA (for use with external SSR)	
3 3	2 Relays: Form "C" SPDT 3 A @ 120 Vac, 3 A @ 240 Vac	
4 2	Pulsed 10 Vdc @ 20 mA (for use with external SSR) and SSR	
4 3	Pulsed 10 Vdc @ 20 mA (for use with external SSR) and relay	
4 4	Two pulsed 10 Vdc @ 20 mA (for use with external SSR)	
5 2	Analog output selectable as either control or retransmission of process value; 0 to 10 Vdc or 0-20 mA @ 500 ohm max. & SSR	
5 3	Analog output 0 to 10 Vdc or 0-20 mA @ 500 ohm max & relay	N/C
5 4	Analog out 0 to 10Vdc or 0-20mA @ 500 ohm max & pulse 10Vdc	
	-AL Limit alarm version (simplified menu; No PID control)*1	N/C

RH/TEMPERATURE PROBE (must select one)		
-2	2" (51 mm) Probe for iTH with 3 ft (0.9 m) cable	N/C
-5	5" (137 mm) Probe for iTH with 10 ft (3m) cable	N/C

POWER SUPPLY		
*	Standard power input: 90 to 240 Vac ±10%, 50 to 400 Hz, 110 to 375 Vdc, equivalent voltage (*no entry required)	N/C
-DC	Low voltage power option: 20 to 36 Vdc, 24 Vac ±10%; 12-36Vdc, 24Vac ±10% for iTH-32	25

NETWORK OPTIONS		
-EI	Ethernet with embedded Web server	\$55
-C24	Isolated RS-232 and RS-485/422. 300 to 19.2 K baud	60
-C4EI	Ethernet with wmbded Web server + isolated RS-485/422 hub for up to 31 devices	115

SOFTWARE (Requires Network Option)		Price
OPC-SERVER LICENSE	OPC server/driver software License	\$295

*1 Analog Output (Option 5) is not available with -AL units.

*2 -C4EI or -EI option is not available on the 1/32 DIN. Refer to the iServer section for other ethernet devices that can connect to an iTH-i32xx-x-C24 .

ORDERING EXAMPLES: iTH-i8DH33-5-C4EI is a horizontal 1/8 DIN dual display with 2 Form C relays, a 5' probe and ethernet with embedded Web server \$490 + 115 = \$605