### Humidity and Temperature Controllers

**DPiTH Series**
- **Output 1:** Humidity, **Output 2:** Temperature
- **High Accuracy ±0.5°C and ±2% RH**
- **4 Popular DIN Sizes**
- **Ethernet and Serial Communications (Optional)**
- **User-Friendly, Simple to Configure**
- **Full Autotune PID Control**
- **Choice of Relays, SSR, DC Pulse, Analog Voltage and Current**
- **Programmable Ramp and Soak for Humidity and/or Temperature**
- **RH/Temperature Probe Included**
- **RoHS 2 Compliant**

The OMEGA® 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 OMEGA’s award-winning iSeries technology, uncompromising accuracy, backed by an extended 5-year warranty.

The OMEGA 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 single output control for 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 true DIN sizes: the ultra compact 1/8 DIN; the popular midsize 1/4 DIN square bezel with dual display; the 1/8 DIN vertical, and the 1/8 DIN horizontal with the big bright 21 mm (0.87”) digits.

### 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

<table>
<thead>
<tr>
<th>Alarm 1 and 2 (Programmable):</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Alarms are used for color changing sequence of alarm status (visual alarm)</td>
</tr>
</tbody>
</table>

| Outputs | Two Physical Outputs: Output 1 = RH, output 2 = temperature; functions are set up as outputs (PID or ON/OFF), or alarms |
|-----------------------------|

<table>
<thead>
<tr>
<th>Ordering Outputs Choices:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relay: 250 Vac @ 3 A or 30 Vdc @ 3 A (resistive load); Form C SPDT SSR: 20 to 265 Vac @ 0.05 to 0.5 A (resistive load); continuous DC Pulse: Non-isolated; 10 Vdc @ 20 mA (used with external SSR) Analog Output (Output 1 Only): Non-isolated, control or retransmission 0 to 10 Vdc or 0 to 20 mA, 500Ω maximum, ±1% of full scale accuracy</td>
</tr>
</tbody>
</table>

| 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 |

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

### Autotune: Operator initiated from front panel for 1 input at a time only
2) Alarm functions are active, in addition to the color changing functions, if output 1 and 2 are (menu) disabled.
3) If alarms are disabled, output menus (PID or ON/OFF) are active; color change is still active.

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

**-AL Limit Alarm Version:** Output 1 and 2 submenus used for PID are eliminated from menu; color sequence based on alarm setpoints is still available.

**Input**

**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°F for 41 to 113°F); up to ±1.5°C for -40° to 5°C and 45° to 124°C (up to ±2.7°F 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 seconds, tau 63% for RH; 5 to 30 seconds, tau 63% for temperature.

*Note:* Extended temperature range is for industrial probe only, the controller’s operating temperature is 0 to 50°C.

**Network and Serial Communications**

(For Options -C24, -C4EIT, -EIT)

**Ethernet:** Standards compliance IEEE 802.3 10Base-T

**Supported Protocols:** TCP/IP, ARP, HTTP/GERT

**RS232/RS422/RS485:** 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.

**RS485:** Addressable from 0 to 199

**Connection:** Screw terminals

**General**

**A/D Conversion:** 12-bit RH and 14-bit temp

**Reading Rate:** 2 samples per sec max

**Digital Filter:** Programmable

**Decimal Selection:** None, 0.1 for temperature and humidity

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

- **i32:** 16D mm (0.83”)
- **i16D:** 10.2 mm (0.40”)
- **i32:** 21 mm (0.83”)
- **i8DH:** 10.2 mm (0.40”) and 21 mm (0.83”)
- **RED, GREEN and AMBER**

**Programmable colors for process variable, setpoint and temp units**

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

**Protection:**
- **i32, i16D:** NEMA 4X (IP65) front bezel
- **i8DH, i8DV:** NEMA 1 (IP23) front bezel

**Power:** Refer to ordering guide

---

**Network Options**

- **-EIT:** Ethernet with Embedded Web Server**
- **-C24:** Isolated RS322 and RS485/422, 300 to 19.2k baud
- **-C4EIT:** Ethernet with Embedded Web Server + Isolated RS485/422 hub for up to 31 devices**

**Accessories**

**Software**

- **OPC-SERVER LICENSE:** OPC server/driver software license (requires network option)
- **IThP-2:** 51 mm (2”) replacement probe for iTH with 1 m (3’) cable
- **IThP-5:** 127 mm (5”) replacement probe for iTH with 3 m (10’) cable

---

---

---