Vaisala DRYCAP® Dewpoint Transmitters DMT345 and DMT346 are designed for humidity measurement in industrial drying applications with particularly high temperatures.

Both transmitters incorporate the Vaisala DRYCAP® sensor, which is accurate, reliable, and stable. The sensor is condensation-resistant and is immune to particulate contamination, oil vapor, and most chemicals. The DRYCAP® sensor is notable for its swift response time and rapid recovery after getting wet.

Measure Humidity Directly in Hot Processes

The DMT345 and DMT346 are built for direct measurement in hot processes. Therefore, there is no need for sampling systems and trace heating. As a result, high measurement accuracy and constancy are maintained.

The accuracy and stability of the DMT345 and the DMT346 are due to their unique auto-calibration function, developed by Vaisala. This feature allows the transmitter to perform calibration and adjustment by itself while the measured process is running. If the measurement accuracy is not confirmed, corrections are made automatically. The procedure is so quick and corrections so minor that it causes no disruption, ensuring easy maintenance and high performance. In normal conditions, it is recommended to have a traceable calibration performed once a year.

DMT345: Accurate in Hot and Dry Environments

The DMT345 is designed for accurate humidity measurement in hot and dry conditions. This model provides unmatched dry-end measurement accuracy at temperatures up to 140 °C; however, it can operate safely at temperatures up to 180 °C.

Features/Benefits

- The DMT345 measures humidity at temperatures up to 180 °C (356 °F)
- The DMT346 measures humidity at temperatures up to 350 °C (+662 °F)
- Dew point accuracy ±2 °C (+3.6 °F)
- Vaisala DRYCAP® sensor provides accurate and reliable measurement with excellent long-term stability and fast response time
- Condensation-resistant
- Unique auto-calibration feature
- NIST traceable calibration (certificate included)
- Graphical display and keypad for convenient operation
- Optional alarm relays and mains power supply module
- Analog outputs, RS232/485, WLAN/LAN
- MODBUS protocol support (RTU/TCP)

The large graphical display allows the user to check data at a glance.
The stainless steel probe is especially designed for high temperatures and has an optional installation flange for easy adjustment of the probe’s installation depth and, therefore, more precise positioning.

**DMT346: Reliable in Very Hot Processes**

The DMT346 provides the best measurement performance at process temperatures between 140 °C and 350 °C. The DMT346 includes a cooling set as standard. The cooling effect can be regulated by adding the cooling fins, or they can be removed from the set for optimal measurement performance.

The cooling system has no moving parts, and requires no additional power or cooling utilities, so there is no risk of sensor damage due to mechanical cooling failure. Additionally, sensor warming minimizes the risk of condensation accumulating on the sensor. In low humidity conditions the combination of auto-calibration and DRYCAP® ensures accurate measurement.

**Graphical Display of Measurement Data and Trends for Convenient Operation**

The DMT345 and DMT346 transmitters feature a large numerical and graphical display with a multilingual menu and keypad. It allows users to easily monitor operational data, measurement trends, and access measurement history for the past 12 months.

### Technical Data

**Measured Variables DMT345**

<table>
<thead>
<tr>
<th>Sensor</th>
<th>Vaisala DRYCAP® 180S</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Measurement range</strong></td>
<td>0...+180 °C (-40...+356 °F) Td</td>
</tr>
<tr>
<td><strong>Temperature</strong></td>
<td>±2 °C (±3.6 °F) Td</td>
</tr>
</tbody>
</table>

See the accuracy graph below

**Dew point accuracy vs. measurement conditions**

Response time 63% [90%] flow rate 1 l/min and 1 bar pressure
- from dry to wet: 5 s [10 s]
- from wet to dry including auto-calibration: 45 s [5 min]

The optional data logger, with real-time clock, makes it possible to generate over four years of measurement history and zoom in on any desired time or time frame. The display alarm allows tracking of any measured parameter, with freely configurable low and high limits.

**Versatile Outputs and Data Collection**

DMT345 and DMT346 transmitters can support up to three analog outputs; an isolated galvanic power supply and relay outputs are also available.

For serial interface the USB connection, RS232, and RS485 can be used.

DMT345 and DMT346 are also capable of applying the MODBUS communication protocol and, together with an appropriate connection option, provide either MODBUS RTU (RS485) or MODBUS TCP/IP (Ethernet) communication.

The data logger, with real-time clock and battery backup, guarantees reliable logging of measurement data for over four years. The recorded data can be viewed on the local display or transferred to a PC with Microsoft Windows® software. The transmitter can also be connected to a network with an optional (W)LAN interface, which enables a (wireless) Ethernet connection. A USB service cable makes it easy to connect the DMT345/346 to a PC via the service port.

Units are delivered installation-ready.
Technical Data

Measured Variables DMT346

<table>
<thead>
<tr>
<th>Sensor</th>
<th>Vaisala DRYCAP®180S</th>
</tr>
</thead>
<tbody>
<tr>
<td>Measurement range</td>
<td>-25 ... +100 °C (-13 ... +212 °F) Td</td>
</tr>
<tr>
<td>Accuracy</td>
<td>±2 °C (±3.6 °F) Td</td>
</tr>
</tbody>
</table>

See the accuracy graph below.

Temperature dependence of analog outputs ± 0.005%/°C full scale

External loads
- current outputs $R_i < 500$ ohm
- 0 ... 1V output $R_i > 2$ kohm
- 0 ... 5V and 0 ... 10V outputs $R_i > 10$ kohm

Max. wire size 0.5 mm² (AWG 20) stranded wires recommended

Digital outputs RS232, RS485 (optional)

Protocols ASCII commands, MODBUS RTU

Service connection RS232, USB

Relay outputs 2+2 pcs (optional) 0.5 A, 250 VAC, SPDT

Ethernet interface (optional)
- Supported standards 10BASE-T, 100BASE-TX
- Connector 8P8C (RJ45)
- IPv4 address assignment DHCP (automatic), static
- Protocols Telnet, MODBUS TCP/IP

WLAN interface (optional)
- Supported standards 802.11b
- Connector RP-SMA
- IPv4 address assignment DHCP (automatic), static
- Protocols Telnet, MODBUS TCP/IP

Security WEP 64/128, WPA WPA2/802.11i

Authentication / Encryption (WLAN)
- Open / no encryption
- Open / WEP
- WPA Pre-shared key / TKIP
- WPA Pre-shared key / CCMP (a.k.a. WPA2)

Optional data logger with real-time clock
- Logged parameters max. four with trend/min/max values
- Logging interval 10 sec. (fixed)
- Max. logging period 4 years, 5 months
- Logged points 13.7 million points per parameter
- Battery lifetime min. 5 years
- Display LCD with backlight, graphical trend display
- Menu languages English, Chinese, Finnish, French, German, Japanese, Russian, Spanish, Swedish

Inputs and Outputs, DMT345 and DMT346

<table>
<thead>
<tr>
<th>Operating voltage</th>
<th>10 ... 35 VDC, 24 VAC ±20%</th>
</tr>
</thead>
<tbody>
<tr>
<td>with optional power supply module</td>
<td>100 ... 240 VAC 50/60 Hz</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Default start-up time</th>
<th>3 s</th>
</tr>
</thead>
<tbody>
<tr>
<td>initial reading after power-up</td>
<td>about 6 min</td>
</tr>
<tr>
<td>full operation after sensor purge and autocalibration</td>
<td></td>
</tr>
</tbody>
</table>

Power consumption @ 20 °C ($U_i = 24$ VDC)

<table>
<thead>
<tr>
<th>$U_{out}$ 2x0 ... 1V/0 ... 5V/0 ... 10V</th>
<th>max. 25 mA</th>
</tr>
</thead>
<tbody>
<tr>
<td>$I_i$ 2x0 ... 20mA</td>
<td>max. 60 mA</td>
</tr>
<tr>
<td>RS232</td>
<td>max. 25 mA</td>
</tr>
<tr>
<td>display and backlight</td>
<td>+ 20 mA</td>
</tr>
<tr>
<td>during sensor purge</td>
<td>max. + 110 mA</td>
</tr>
</tbody>
</table>

Analog outputs
- (2 standard, 3rd optional)
- current output 0 ... 20 mA, 4 ... 20 mA
- voltage output 0 ... 1 V, 0 ... 5 V, 0 ... 10 V

Accuracy of analog outputs at 20 °C ± 0.05% full scale

Mechanics, DMT345 and DMT346

<table>
<thead>
<tr>
<th>Cable bushing</th>
<th>M20x1.5 for cable diameter 8 ... 11mm/0.31 ... 0.43”</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conduit fitting (optional)</td>
<td>1/2”NPT</td>
</tr>
<tr>
<td>User cable connector (optional)</td>
<td>M12 series 8-pin (male)</td>
</tr>
<tr>
<td>option 1</td>
<td>female plug with 5 m (16.4 ft.) black cable</td>
</tr>
<tr>
<td>option 2</td>
<td>female plug with screw terminals</td>
</tr>
<tr>
<td>USB-RJ45 Serial Connection Cable</td>
<td>21968S</td>
</tr>
<tr>
<td>Probe cable diameter</td>
<td>5.5 mm</td>
</tr>
<tr>
<td>Standard probe cable lengths</td>
<td>2 m, 5 m or 10 m</td>
</tr>
</tbody>
</table>

(Additional cable lengths available, please see order forms for details)

Housing material GA1Si 10 Mg (DIN 1725)

Housing classification IP 66

Weight depending on selected probe, cable, and modules 1.0 – 3.0 kgs
Technical Data

Dimensions
Dimensions in mm (inches)

DMT345 and DMT346 transmitter housing

DMT345 probe and mounting flange

DMT346 cooling set

DMT346 probe

Stainless steel grid

DRYCAP® is a registered trademark of Vaisala.

Please contact us at

www.vaisala.com

Scan the code for more information