The Vaisala DRYCAP® Dewpoint Transmitters DMT345 and DMT346 are designed to measure and control humidity especially in dry environments with high temperatures.

The 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 withstands condensation and is immune to particulate contamination, oil vapor and most chemicals. The DRYCAP® sensor stands out for its swift response time and rapid recovery after getting wet.

**Measure humidity directly in hot processes**

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

The accuracy and stability of the DMT345 and the DMT346 are due to the unique auto-calibration function, patented by Vaisala. This auto-calibration makes the transmitter perform a 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 are so minor that it will go unnoticed. This ensures low 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 in temperatures up to 140 °C, however the DMT345 can operate safely in temperatures up to 180 °C.

The stainless steel probe is especially designed for high temperatures and has an optional installation flange that allows an adjustable installation depth and therefore a precise positioning.

**Features/Benefits**

- The DMT345 measures humidity in temperatures up to 180°C (356 °F)
- The DMT346 measures humidity in temperatures up to 350 °C (+662 °F)
- Dewpoint accuracy ±2 °C (±3.6 °F)
- Vaisala DRYCAP® Sensor provides accurate, reliable measurement with excellent long-term stability and fast response
- Withstands condensation
- Unique auto-calibration feature
- Optional local display with keypad, mains power supply module and alarm relays
- NIST traceable calibration (certificate included)
- Analog outputs, WLAN/LAN

**DMT346, Reliable in very hot processes**

When process temperatures range between 140 °C to 350 °C, the DMT346 provides the best measurement performance.

The DMT346 comes with a cooling set as a standard feature. The cooling effect may be regulated by adding the cooling fins, or removing them from the set for the best measurement performance. The cooling system operates without moving parts, additional power or cooling utilities, thereby eliminating

The large and clear display allows the user to check data at a glance.
the risk of sensor damage due to a mechanical cooling failure. Additionally, sensor warming minimizes the risk of condensing on the sensor. In low humidity the combination of auto-calibration and DRYCAP® ensures accurate measurement.

**Graphical display**
The DMT345 and DMT346 transmitters can be ordered with a large numerical and graphical display, which allows the user to clearly monitor operational data, measurement trends and up to one-year measurement history.

The optional data logger with real-time clock makes it possible to generate more than four years of the measured history and zoom in on any desired time or time frame.

**Versatile outputs and (wireless) data collection**
The transmitter can be connected to a network with an optional (W)LAN interface, which enables a (wireless) Ethernet connection.

For serial interface also the USB connection, RS232 and RS485 can be used. Additionally an alarm relay option is available.

The transmitter can have up to three analog outputs. Galvanic isolation of supply power and analog outputs are also offered. The recorded measurement data can be viewed on the display or transferred to a PC with Microsoft Windows® software.

Units are delivered installation-ready and meet ROHS requirements.

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**Technical Data**

**Measured variables DMT345**

<table>
<thead>
<tr>
<th>Sensor</th>
<th>Vaisala DRYCAP®180S</th>
</tr>
</thead>
<tbody>
<tr>
<td>Measurement range</td>
<td>-40 ... +100 °C (-40 ... +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

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

**Temperature DMT345**
- Measurement range: 0 ... +180 °C (+32 ... +356°F)
- with sensor warming: upper range limited by humidity (at 80% RH warming is switched on and temperature not actual process temperature)
- Accuracy: ±0.4 °C at 100 °C
- Temperature sensor: Pt 100 IEC 751 1/3 class B

**Relative Humidity DMT345**
- Measurement range: 0 ... 100% RH
- with sensor warming: 0 ... 80% RH
- Accuracy: below 10% RH ±10% of reading
- above 10% RH ±1,5% RH + 1,5% of reading

**Mixing Ratio DMT345**
- Measurement range (typical): 0 ... 1000 g/kg (0 ... 7000 gr/lbs)
- Accuracy (typical): ±12% of reading

**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

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

**Temperature DMT346**
- Measurement range: 0 ... +180 °C (+32 ... +356°F)
- with sensor warming: upper range limited by humidity (at 80% RH warming is switched on and temperature not actual process temperature)
- Accuracy: ±0.4 °C at 100 °C
- Temperature sensor: Pt 100 IEC 751 1/3 class B

**Relative Humidity DMT346**
- Measurement range: 0 ... 100% RH
- with sensor warming: 0 ... 80% RH
- Accuracy: below 10% RH ±10% of reading
- above 10% RH ±1,5% RH + 1,5% of reading

**Mixing Ratio DMT346**
- Measurement range (typical): 0 ... 1000 g/kg (0 ... 7000 gr/lbs)
- Accuracy (typical): ±12% of reading

Vaisala products for humidity measurement in hot processes
Technical Data

**Operating Environment, both models**

Mechanical durability                              Up to +180 °C (+356 °F) for DMT345
for probes                                          Up to +350 °C (+662 °F) for DMT346
for transmitter body                                -40 ... +60 °C (-40 ... +140 °F)
with display                                         -55 ... +80 °C (-67 ... +176 °F)
Storage temperature range                          -55 ... +80 °C (-67 ... +176 °F)
Pressure range for probes                         slight pressure difference (~ 200 mbar)
Measured gases                                      non corrosive gases
Complies with EMC standard EN61326-1, Electrical equipment for measurement, control and laboratory use - EMC requirements; Industrial environment.

**Inputs and outputs, both models**

Operating voltage                                 10 ... 35 VDC, 24 VAC
with optional power supply module                  100 ... 240 VAC 50/60 Hz
Default start-up time                             3 s
initial reading after power-up                     full operation after sensor Purge and Autocal about 6 min
Power consumption @ 20 °C (Un=24 VDC)              max 25 mA
Un=2x0 ... 1V/0 ... 5V / 0 ... 10V
max 60 mA
RS-232, max 25 mA
display and backlight + 20 mA during sensor purge + 110 mA max
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
Temperature dependence of the analog outputs      ± 0.005 %/°C full scale
External loads                                      
  current outputs                                   R < 500 ohm
  0 ... 1 V output                                  R > 2 kohm
  0 ... 5V and 0 ... 10V outputs                    R > 10 kohm
Max wire size                                      0.5 mm2 (AWG 20) stranded wires recommended
Digital outputs                                    RS-232, RS-485 (optional)
Service connection                                 RS-232, USB
Relay outputs 2+2 pcs (optional)                   0.5 A, 250 VAC, SPDT
Ethernet interface (optional)
  Supported standards                              10/100Base-T
  Connector                                        RJ45
  Protocols                                        Telnet
  WLAN interface (optional)
    Supported standards                             Vaisala MI70 link
    Antenna connector type                          802.11b, 802.11g
    Antenna connector type                          RP-SMA
    Protocols                                        Telnet
    Security                                        WEP 64/128, WPA
    Software support                                 Vaisala MI70 link
  Authentication / Encryption                      
    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. three 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

**Mechanics, both models**

Cable bushing                                      M20x1.5 For cable diameter 8 ... 11mm/0.31 ... 0.43"
  Conduit fitting (optional)                        1/2" NPT
  User cable connector (optional)                   M12 series 8- pin (male)
    option 1                                         with plug (female) with 5 m / 16.4 ft black cable
    option 2                                         with plug (female) with screw terminals
  USB-RJ45 Serial Connection Cable                  part. no 219685
    Probe cable diameter                            5.5 mm
    Probe cable length                              2 m, 5 m or 10 m
    Housing material                                G-ALSi 10 Mg (DIN 1725)
    Housing classification                          IP 65 (NEMA 4X)
    Housing weight                                  1.2 kg

**Dimensions**

Dimensions in mm (inches)

- DMT345 and DMT346 Transmitter housing
  - Dimensions in mm (inches)
Technical Data

**Dimensions**

Dimensions in mm (inches)

DMT345 probe and mounting flange

![Diagram of DMT345 probe and mounting flange]

**DMT346 Cooling set**

![Diagram of DMT346 Cooling set]

**DMT346 Probe**

![Diagram of DMT346 Probe]