

Vaisala Barometric Pressure Transfer Standard PTB330TS

Technical data

These specifications apply when MI70, PTB330 and HMP155 are used together in the PTB330TS product. For individual specifications, please refer to the product documentation and brochures of the PTB330 and HMP155.

General

| | |
|--|--|
| Operating temperature range | -10 ... +40 °C (+14 ... +104 °F) |
| Operating humidity range | non-condensing |
| Maximum pressure limit | 5000 hPa abs. |
| Power supply | Rechargeable NiMH battery pack with AC-adaptor or 4xAA-size alkalines, type IEC LR6 |
| Operation time (using rechargeable battery pack) | |
| Continuous use with PTB330 | 11 h typical at +20 °C (+68 °F) |
| Datalogging use | up to 30 days |
| Menu languages | English, Chinese, French, Spanish, German, Russian, Japanese, Swedish, Finnish |
| Display | LCD with backlight, graphic trend display of any parameter, character height up to 16 mm |
| Data logging capacity | 2700 points |
| Alarm | audible alarm function |

PTB330TS is in conformity with the following EU directives:
 - EMC Directive (2004/108/EC) Complies with the EMC product family standard EN61326-1, Electrical equipment for measurement control and laboratory use - Basic immunity test requirements.
 - Low Voltage Directive (2006/95/EC)
 - ROHS Directive (2002/95/EC)

Performance

Barometric pressure (PTB330)

| | |
|---|------------------|
| Measurement range | 500 ... 1100 hPa |
| Linearity* | ±0.05 hPa |
| Hysteresis* | ±0.03 hPa |
| Repeatability* | ±0.03 hPa |
| Calibration uncertainty** | ±0.07 hPa |
| Accuracy at +20 °C (+68 °F) *** | ±0.10 hPa |
| Temperature dependence**** | ±0.1 hPa |
| Total accuracy -40...+60 °C (-40...+140 °F) | ±0.15 hPa |
| Long-term stability | ±0.1 hPa/year |
| Settling time at power-up (one sensor) | 4 s |
| Response time (one sensor) | 2 s |
| Acceleration sensitivity | negligible |

* Defined as ±2 standard deviation limits of endpoint nonlinearity, hysteresis or repeatability error.

** Defined as ±2 standard deviation limits of inaccuracy of the working standard including traceability to NIST.

*** Defined as the root sum of the squares (RSS) of endpoint non-linearity, hysteresis error, repeatability error and calibration uncertainty at room temperature.

**** Defined as ±2 standard deviation limits of temperature dependence over the operating temperature range.



Relative humidity (HMP155)

| | |
|---|---|
| Measurement range | 0 ... 100 %RH |
| Accuracy (incl. non-linearity, hysteresis and repeatability) at +15 ... +25 °C (+59 ... +77 °F) | ±1 %RH (0 ... 90 %RH) ±1.7 %RH (90 ... 100 %RH) |
| -10 ... +40 °C (-4 ... 104 °F) | ±(1.0 + 0.008 x reading) %RH |
| Factory calibration uncertainty (+20 °C / +68 °F) | ±0.6 %RH (0 ... 40 %RH)* ±1.0 %RH (40 ... 97 %RH)* |
| Humidity sensor | HUMICAP180R HUMICAP180RC |

| | |
|--|------|
| Response time at +20 °C in still air with a sintered PTFE filter | |
| 63 % | 20 s |
| 90 % | 60 s |

* Defined as ±2 standard deviation limits. Small variations possible, see also calibration certificate.

Temperature (HMP155)

| | |
|-------------------|------------------------------------|
| Measurement range | -10 ... +40 °C (+14 ... +104 °F) |
| Accuracy | |
| -10 ... +20 °C | ±(0.176 - 0.0028 x temperature) °C |
| +20 ... +40 °C | ±(0.07 + 0.0025 x temperature) °C |

Accuracy over temperature range (see graph overleaf)

Temperature sensor Pt100 RTD 1/3 Class B IEC 751

| | |
|---|-------|
| Response time with additional temperature probe in 3 m/s air flow | |
| 63 % | <20 s |
| 90 % | <35 s |

Technical data

Available Parameters

| | |
|-------------------------------------|-----------------------|
| Pressure parameters | P, P3h, HCP, QFE, QNH |
| Humidity and temperature parameters | RH, T, Tdf, Td, x, Tw |

Inputs and outputs

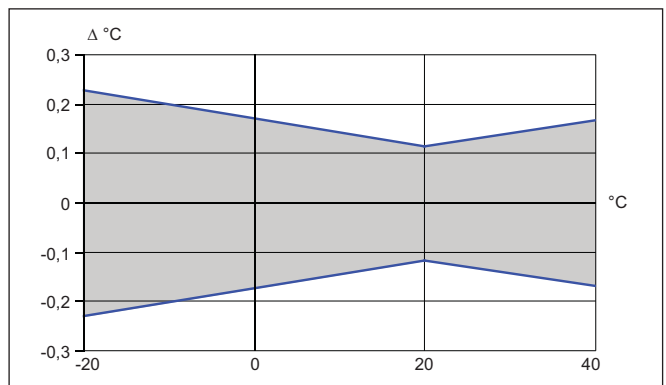
| | |
|------------------------------|---|
| MI70 probe ports | 2 |
| MI70 data interface | RS-232 (accessible only with MI70 Link software) |
| PTB330 supply voltage | 10 ... 35 VDC (if not powered by MI70) |
| PTB330 data interface | RS-232C |
| PTB330 serial I/O connectors | RJ45 (service port) Male 8-pin M12 (user port) |
| HMP155 data interface | RS-485 |
| HMP155 serial I/O connector | Male 8-pin M12 |

Mechanics

| | |
|---|---|
| PTB330 | |
| Housing material | G-AlSi 10 Mg (DIN 1725) |
| Housing classification | IP65 |
| Pressure connector | M5 (10-32) internal thread |
| Pressure fitting | barbed fitting for 1/8" I.D. tubing or quick connector with shutoff valve for 1/8" hose |
| HMP155 | |
| Housing material | PC |
| Housing classification | IP66 |
| Additional Tprobe cable length | 2 m |
| Cable material | PUR |
| Sensor protection | Sintered PTFE |
| MI70 MEASUREMENT INDICATOR | |
| Housing classification | IP54 |
| Housing material | ABS/PC blend |
| TRANSPORT CASE | |
| Housing classification (when closed) | IP67 |
| Plastic parts | TTX01®, PP+SEBS, POM |
| Metal parts | stainless steel AISI303 |
| Interior foam material | PE and polyether |
| Weight with all instruments and typical accessories | 5.9 kg |
| Exterior dimensions (LxWxH) | 405x330x165 mm (15.94x12.99x6.50) inch |

Accessories

| | |
|--|-------------|
| PTB330 | |
| MI70 – PTB330 Spiral Cable | 223235SP |
| USB-RJ45 serial connection cable | 219685 |
| Serial connection cable | 19446ZZ |
| Barbed fitting 1/8" | 19498SP |
| Quick Connector 1/8" | 220186 |
| Transport case with interior foams and tabletop casing for PTB330 | 224068SP |
| Tabletop casing for PTB330 | 224064SP |
| MI70 | |
| USB cable for MI70, includes MI70 Link software | 219687 |
| MI70 Link software | MI70LINK |
| MI70 connection cable to HMT330, MMT330, DMT340, HMT100, PTB330 | 211339 |
| MI70 battery pack | 26755 |
| variety of AC adapters available | |
| HMP155 | |
| HMP155 – MI70 connection cable | 221801 |
| Protection set for HMP155 calibration buttons: protective cover, 2 O-rings and protective plug | 221318 |
| USB cable for HMP155 | 221040 |
| Sintered teflon filter + O-ring | 219452SP |
| Humidity sensor | HUMICAP180R |
| Humidity Calibrator | HMK15 |



Accuracy of HMP155 temperature measurement over temperature range

VAISALA

For more information, visit www.vaisala.com or contact us at sales@vaisala.com

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