



Indigo510 Transmitter

For Vaisala Indigo-compatible probes



Features

- Touchscreen display (optional non-display model with LED indicator also available)
- Data logging of all measurement parameters
- IP66 and NEMA 4 rated metal enclosure
- 2 configurable galvanically isolated analog outputs
- Ethernet connection with web interface for remote access
- Modbus® TCP/IP protocol
- Protective extra-low voltage powering
- UL Listed in USA and Canada

Vaisala Indigo510 transmitter is an industrial-grade, robust transmitter that accommodates 1 Vaisala Indigo-compatible probe for humidity, temperature, dew point, carbon dioxide, hydrogen peroxide, and moisture in oil measurements. The transmitter can display measurements on the spot as well as transmit them to automation systems through analog signals or Modbus TCP/IP protocol.

Variety of probe options

Indigo500 Series transmitters are the most versatile option for use with Indigo-compatible probes.

- HMP Series humidity and temperature probes
- DMP Series dew point probes
- GMP250 Series carbon dioxide probes
- HPP270 Series vaporized hydrogen peroxide probes
- MMP8 moisture in oil probe

The probes are interchangeable, self-contained measurement instruments that are easily detachable from the transmitter for calibration and maintenance. The probes are connected using a cable that can be extended with a standard instrumentation cable to allow up to 30 m (98 ft) distance between the transmitter and the probe.

Indigo500 Series transmitters can be connected to the MHT410 transmitter for display of measurement data and automation system connectivity. Indigo500 Series transmitters can also be connected to the portable diagnostics tool Indigo80 handheld indicator.

For more information on the Indigo product family, see www.vaisala.com/indigo.

Analog and digital interfaces

The Indigo510 transmitter has 2 analog channels that can be configured to mA or voltage type. Any of the output parameters from the connected probe can be assigned to control the analog channels.

The digital output protocol is Modbus TCP/IP over Ethernet. The Ethernet connection also provides a web interface and cybersecurity that meets modern standards.

Robust design

The transmitter has a wide operating temperature range, an IP66-rated corrosion-resistant metal enclosure, and an optional touchscreen display made of strengthened (IK08) glass. The transmitter withstands commonly used cleaning chemicals, such as isopropanol and liquid H₂O₂ (30 %), and performs even in the harshest conditions.

The standard mounting options include mounting on a wall and on a DIN rail. With an adapter plate, the transmitter can be installed to replace an HMT330, DMT340, and MMT330 series transmitter. A pole mounting kit is also available as an accessory.

Technical data

Indigo-compatible probes

| Measurement type | Probe models |
|-----------------------------|--|
| Humidity and temperature | HMP1, HMP3, HMP4, HMP5, HMP7, HMP8, HMP9 |
| Temperature | TMP1 |
| Dew point | DMP5, DMP6, DMP7, DMP8 |
| Carbon dioxide | GMP251, GMP252 |
| Vaporized hydrogen peroxide | HPP271, HPP272 |
| Moisture in oil | MMP8 |

Other compatible devices

| Device or series | Models |
|---|----------|
| MHT410 Moisture, Hydrogen and Temperature Transmitter | MHT410 |
| Indigo80 Handheld Indicator | Indigo80 |

Transmitter options

| | |
|----------|---|
| Display | <ul style="list-style-type: none">Capacitive touchscreen displayNo display (indicator LED) ¹⁾ |
| Powering | Protective extra-low voltage (11 ... 35 V DC, 24 V AC ± 15% 50/60 Hz) |

¹⁾ Recommended when the transmitter is exposed to direct UV light, and for outdoor installations and high-humidity environments.

User interfaces

| | |
|--------------------------------------|--|
| User interfaces | Web interface for remote use, optional touchscreen display |
| Supported languages | English, Chinese, French, German, Japanese, Spanish |
| Optional display | 5 in capacitive touchscreen |
| Integrated data logging capabilities | Non-volatile memory, at least 10 years' storage with 24 h interval logging |

Mechanical specifications

| | |
|---|---|
| UL 50E (NEMA) rating | NEMA 4 |
| Housing classification | IK08, DIN EN ISO 11997-1: Cycle B (VDA 621-415) |
| Housing material | AlSi10Mg (DIN 1725) |
| Display window material | Strengthened glass (IK08) |
| Weight | 1.5 kg (3.3 lb) |
| Dimensions (H × W × D) | 142 × 182 × 67 mm (5.63 × 7.17 × 2.64 in) |
| Cable diameters for cable glands | |
| M20×1.5 glands | 5.0 ... 9.0 mm (0.20 ... 0.31 in) |
| M20×1.5 glands with split bushing | 7 mm (0.28 in) |
| M16×1.5 glands | 2.0 ... 6.0 mm (0.08 ... 0.24 in) |

Operating environment

| | |
|------------------------------|----------------------------------|
| For use in wet locations | Yes |
| Operating humidity | 0 ... 100 %RH |
| Maximum operating altitude | 4000 m (13 123 ft) |
| IP rating | IP66 ¹⁾ |
| Operating temperature | |
| With display | -20 ... +60 °C (-4 ... +140 °F) |
| Without display | -40 ... +60 °C (-40 ... +140 °F) |
| Storage temperature | |
| With display | -30 ... +60 °C (-22 ... +158 °F) |
| Without display | -40 ... +60 °C (-40 ... +140 °F) |

¹⁾ Evaluated by Eurofins, not by UL.

Inputs and outputs

| | |
|---|---|
| Operating power | |
| Protective extra-low voltage (PELV) | 11 ... 35 V DC, 24 V AC ±15 % 50/60 Hz, max. current 2 A (power supply is galvanically isolated) Fuse size for power supply: 3 A Isolation voltage: 500 V AC, 1000 V DC |
| PELV power cable temp. rating | ≥ +80 °C (+176 °F) |
| Typical current consumption at +20 °C (+68 °F) (U_{in} 24 V DC ¹⁾ | |
| Base consumption (no display, analog outputs or communication) | 50 mA |
| With display | + 60 mA |
| With voltage analog output | < 2 mA per channel |
| With current analog output | + 21 mA per channel |
| With Ethernet cable connected | + 15 mA |
| Analog outputs | |
| Number of analog outputs | 2 |
| Isolation | Isolated from power supply |
| Selectable voltage output types | 0 ... 1 V, 0 ... 5 V, 0 ... 10 V, scalable |
| Selectable current output types | 4 ... 20 mA, 0 ... 20 mA, scalable |
| Max. wire size | 2.5 mm ² (14 AWG) |
| Accuracy of analog outputs at +20 °C (+68 °F) | ±0.05 % full scale |
| Temperature dependence | ±0.005 % / °C full scale |
| External loads: | |
| Current outputs | R _L < 500 Ω |
| 0 ... 1 V output | R _L > 2 kΩ |
| 0 ... 5 V and 0 ... 10 V outputs | R _L > 10 kΩ |
| Ethernet interface | |
| Supported standards | 10BASE-T, 100BASE-TX |
| Connector | 8P8C (RJ45) |
| Supported protocols | Modbus TCP/IP (port 502), HTTPS (port 8443) |

¹⁾ For the current consumption of the connected measurement device, see the device's documentation, available at docs.vaisala.com.

Compliance

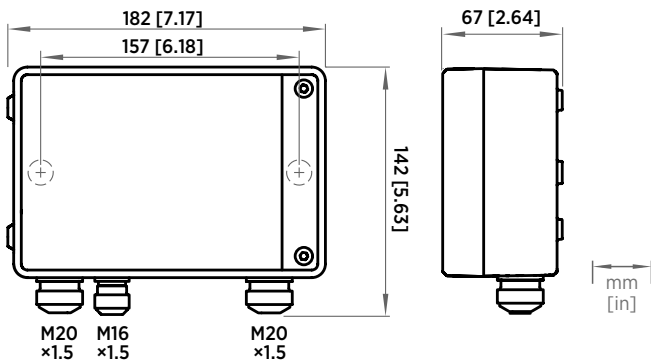
| | |
|-------------------------------|---|
| EU directives and regulations | EMC Directive (2014/30/EU) RoHS Directive (2011/65/EU) amended by 2015/863 |
| EMC compatibility | IEC/EN 61326-1, industrial environment CISPR 32 / EN 55032, Class B |
| Electrical safety | IEC/EN 61010-1 |
| Type approvals | DNV GL certificate no. TAA000032M |
| Compliance marks | CE, China RoHS, FCC, RCM, UKCA |
| Listing marks | UL Listed (USA and Canada) |
| FCC compliance | FCC Part 15, Class B |



Accessories

| | |
|--|-----------------|
| Adapter plate | DRW252186SP |
| Installation kit for pole or pipeline | 215108 |
| Installation kit with weather shield | 215109 |
| Indigo500 Spatter guard | |
| Probe connection cables | |
| Probe connection cable, 0.3 m (approx. 12 in), open end ¹⁾ | CBL210896-03MSP |
| Probe connection cable, 1 m (approx. 3 ft 3 in), open end ¹⁾ | CBL210896-1MSP |
| Probe connection cable, 3 m (approx. 9 ft 10 in), open end ¹⁾ | CBL210896-3MSP |
| Probe connection cable, 5 m (approx. 16 ft 5 in), open end ¹⁾ | CBL210896-5MSP |
| Probe connection cable, 10 m (approx. 32 ft 10 in), open end ¹⁾ | CBL210896-10MSP |

¹⁾ The usable length outside of the transmitter enclosure is approx. 0.1 m (4 in) shorter than the total length of the cable.

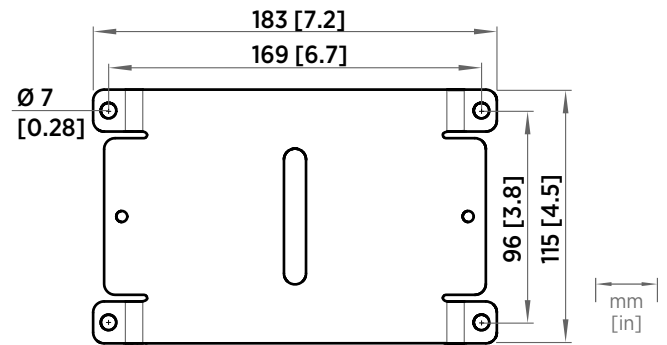


Indigo510 dimensions and lead-through sizes

Spare parts

| | |
|---|-------------|
| Cable gland, M20×1.5, 5.0 ... 9.0 mm (0.20 ... 0.35 in) | ASM213670SP |
| Cable gland with split bushing, M20×1.5 ¹⁾ | 262632SP |
| Cable gland, M16×1.5, 2.0 ... 6.0 mm (0.08 ... 0.24 in) | ASM213671SP |
| Conduit fitting, M20×1.5 for NPT1/2" conduit | 214780SP |

¹⁾ With 7-mm (0.28 in) hole for cable and 14-mm (0.55 in) hole for 8P8C (RJ45) connector to pass through.



Indigo500 adapter plate dimensions



www.vaisala.com

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