VAISALA

Indigo520 Transmitter

For Vaisala Indigo-compatible probes



Features

- Supports any combination of 2 detachable measurement devices simultaneously
- Data logging of all measurement parameters
- 2-wire current loop analog input that enables use of third party analog measurement devices
- IP66 rated metal enclosure
- Ethernet connection with web interface and optional Viewlinc™ Cloud Suite connectivity for remote monitoring
- Displays measurements on the spot and transmits them to automation systems through analog signals, relays, or Modbus TCP protocol
- 4 configurable galvanically isolated analog outputs

Vaisala Indigo520 Transmitter is an industrial-grade, robust transmitter that accommodates 1 or 2 Vaisala Indigo-compatible probes for humidity, temperature, dew point, carbon dioxide, hydrogen peroxide, and moisture in oil measurements. The transmitter can measure barometric pressure with an additional module.

Options

- Multiple powering options: Power over Ethernet, protective extra-low voltage, and AC (mains) power
- Available with Vaisala BAROCAP® barometric pressure sensor known for its high accuracy and excellent long-term stability
- Optional non-display model with LED indicator
- Multiple software configuration options: standard software, support for Vaisala Polaris™ PR53 Process Refractometers for measuring liquid concentrations, or support for Viewlinc Cloud Suite connectivity for remote monitoring

Variety of probe options

The 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 Indigo500 Series transmitters can be connected to the MHT410 transmitter for display of measurement data and automation system connectivity.

Through the transmitter service port, the Indigo500 Series transmitters can also be connected to the free Vaisala Insight PC Software or Indigo80 Handheld Indicator.

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

Analog and digital interfaces

Indigo520 Transmitter has 4 analog channels that can be configured to mA or voltage type, and 2 configurable relays. Any of the output parameters from the connected probes can be assigned to control the analog channels and relays.

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

Technical data

Compatible devices

Device or series	Models
Probes	
Carbon Dioxide Probes	GMP251, GMP252
Dew Point and Temperature Probes	DMP1, DMP5, DMP6, DMP7, DMP8
Hydrogen Peroxide Probe	HPP271
Hydrogen Peroxide, Humidity and Temperature Probe	HPP272
MGP241 Multigas Probe	MGP241
MGP260 Series Multigas Probes	MGP261, MGP262
Moisture in Oil Probe	MMP8
Relative Humidity and Temperature Probes	HMP1, HMP3, HMP4, HMP5, HMP7, HMP8, HMP9
Temperature Probe	TMP1
Transmitters, handhelds, and refractometers	
Dew Point Transmitter	DMT153
Differential Pressure Transmitters [1]	PDT101, PDT102
Indigo80 Handheld Indicator	Indigo80
Moisture, Hydrogen and Temperature Transmitter MHT410	MHT410
Polaris Process Refractometers [2]	PR53AC, PR53AP, PR53GC, PR53GP, PR53M, PR53SD, PR53W

1) *PDT101 and PDT102 can be used through analog input.*
2) *Compatible with transmitters ordered with software configuration "L" for process refractometers.*

Transmitter options

Display	• Capacitive touchscreen display • No display (indicator LED) [1]
Powering	• Protective extra-low voltage (15–35 V DC, 24 V AC ± 20%) • AC (mains) power (100–240 V AC 50/60 Hz) • Power over Ethernet (no analog outputs, analog input, or relays)

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

Measurement performance

Barometric pressure (optional module)	
Pressure range	500–1100 hPa
Class A:	
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/year	±0.1 hPa
Response time (100 % response):	
One sensor	2 s
Pressure units	hPa, mbar, kPa, Pa, inHg, mmH20, mmHg, torr, psia

Mechanical specifications

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 (0.20–0.35 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

Operating environment	Outdoor use
Use in wet location	Yes
Operating humidity	0–100 %RH
Maximum operating altitude, AC (mains) power	3000 m (approx. 9800 ft)
Maximum operating altitude, protective extra-low voltage (PELV) and Power over Ethernet (PoE)	4000 m (approx. 13 100 ft)
IP rating	IP66 [1]
UL 50E rating	Type 4
Operating temperature	
With display	−20 … +55 °C (−4 … +131 °F)
Without display	−40 … +60 °C (−40 … +140 °F)
Without display with barometer module	−40 … +55 °C (−40 … +131 °F)
Storage temperature	
With display	−30 … +60 °C (−22 … +140 °F)
Without display	−40 … +60 °C (−40 … +140 °F)

1) *Evaluated by Eurofins, not by UL.*

Powering

Operating power [1]	
Protective extra-low voltage (PELV) version	15–35 V DC, 24 V AC ±20 % 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)
AC (mains) power version	100–240 V AC 50/60 Hz, max. current 1 A (power supply is galvanically isolated) Fuse size for power supply: 10 A Isolation voltage: 1500 V AC
AC (mains) power cable length	2.5 m (approx. 8 ft 2 in)
Power over Ethernet version	Power over Ethernet (PoE) IEEE 802.3at Type 2 Class 4 Max. current 600 mA, max. power consumption 25.5 W Isolation voltage: 500 V AC, 1000 V DC
Typical current consumption at +20 °C (+68 °F) (U_{in} 24 V DC) [2]	
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 relays	+ 9 mA per relay
With Ethernet cable connected	+ 15 mA
With barometer module	+ 5 mA

1) *The power supply option is selected when ordering the transmitter.*
2) *For the current consumption of the connected measurement device, see the device's documentation, available at docs.vaisala.com.*

User interfaces

User interfaces	Web interface, optional touchscreen display, optional Viewlinc Cloud Suite connectivity for remote monitoring [1]
Supported languages	English, Chinese (simplified), Chinese (traditional), French, German, Japanese, Spanish
Optional display	5″ capacitive touchscreen
Integrated data logging capabilities	Non-volatile memory, at least 10 years' storage with 24 h interval logging

1) *Available only for transmitters ordered with software configuration for Viewlinc Cloud Suite connectivity.*

Inputs and outputs

Transmitter service port connection	• Connection to Insight software with USB2 and cable 262195SP or with cable 219690 [1] • Connection to Indigo80 with cable 262195SP
Analog input [2]	
Available ranges	4–20 mA
Resolution	6 µA
Display resolution	0.01 mA
Accuracy	±0.05 mA
Input impedances	200 Ω
Isolation	Isolated from power supply
Overload protection	40 mA max. (reverse polarity protected)
Analog outputs [2]	
Number of analog outputs	4
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
Relay outputs [2]	
Number and type of relays	2 pcs, SPDT
Max. switching power, current, voltage	30 W, 1 A, 40 V DC / 28 V AC
Max. wire size in PELV version	2.5 mm^2 (14 AWG)
Max. wire size in AC (mains) version	1.5 mm^2 (16 AWG)
Ethernet interface	
Supported standards	10BASE-T, 100BASE-TX
Connector	8P8C (RJ45)
Supported protocols	Modbus TCP (port 502), HTTPS (port 8443)
Viewlinc Cloud Suite connectivity [3]	Requires outbound TCP port 443 and UDP port 123

1) *Vaisala Insight PC Software for Windows® available at vaisala.com/insight.*
2) *Not available in transmitters that are powered with Power over Ethernet (PoE).*
3) *Available only for transmitters ordered with software configuration for Viewlinc Cloud Suite connectivity.*

Compliance

EU directives and regulations	EMC Directive (2014/30/EU) Low Voltage Directive (2014/35/EU) RoHS Directive (2011/65/EU) as amended by 2015/863
Electromagnetic compatibility (EMC)	IEC/EN 61326-1, industrial environment CISPR 32 / EN 55032, Class B
Safety	IEC/EN 61010-1
Type approvals	DNV GL certificate no. TAA000032M EU RO Mutual Recognition certificate no. MRA000004F
Compliance marks	CE, China RoHS, FCC, RCM, UKCA
Listing marks	UL Listed (USA and Canada)
FCC compliance	FCC Part 15, Class B

c UL us LISTED

TYPE APPROVED PRODUCT DNV DNV.COM/AF

Spare parts

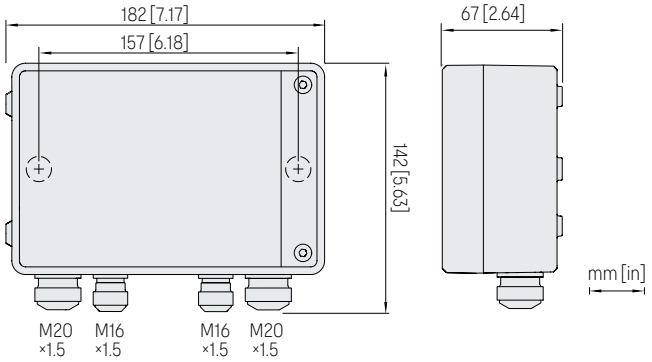
Cable gland, M20×1.5, 5.0–9.0 mm (0.20–0.35 in)	ASM213670SP
Cable gland, M20×1.5, 10.0–14.0 mm (0.39–0.55 in)	ASM215414
Cable gland with split bushing, M20×1.5 [1]	262632SP
Cable gland, M16×1.5, 2.0–6.0 mm (0.08–0.24 in)	ASM213671SP
Conduit fitting, M20×1.5 for NPT1/2" conduit	214780SP
Sintered filter (for barometer module)	DRW010335SP

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

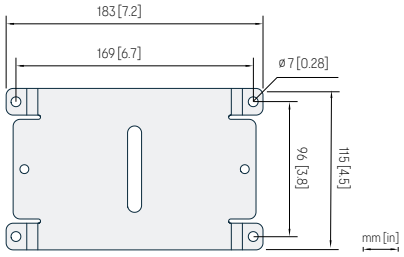
Accessories

Retrofit mounting plate	DRW252186SP
Installation kit for pole or pipeline	215108
Installation kit with weather shield	215109
Indigo500 spatter guard	ASM214526
M12 - M8 service cable 1.5 m (4.9 ft), for connecting to Indigo80	262195SP
Vaisala Indigo USB adapter and M12 - M8 service cable, for connecting to Insight software	USB2 and 262195SP
M8 - USB service cable, for connecting to Insight software	219690
Probe connection cables	
Probe connection cable, 0.3 m (approx. 12 in), open end 2	CBL210896-03MSP
Probe connection cable, 1 m (approx. 3 ft 3 in), open end 2	CBL210896-1MSP
Probe connection cable, 3 m (approx. 9 ft 10 in), open end 2	CBL210896-3MSP
Probe connection cable, 5 m (approx. 16 ft 5 in), open end 2	CBL210896-5MSP
Probe connection cable, 10 m (approx. 32 ft 10 in), open end 2	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.



Indigo520 Transmitter dimensions and lead-through sizes



Retrofit mounting plate dimensions

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