VAISALA

Origo10 Series Transmitters

Modular measurement solutions for HVAC applications

Features

- Modular transmitters with interchangeable measurement probes
- Humidity, temperature, carbon dioxide, and dew point measurements as per connected probe
- Wall and duct mounting options
- Analog, Modbus® RTU, and BACnet® MS/TP output options
- Optional display with up to four parameters
- IP65-rated enclosure
- Compatible with Vaisala Insight PC software
- Cleanroom compatible

Vaisala Origo10 Series Transmitters comprise a versatile selection of HVAC transmitters with exceptionally high reliability and excellent long-term stability of measurement. These modular, multipurpose devices are the ideal choice for buildings and critical spaces where precise and reliable control of HVAC systems are priorities.

Versatile transmitter selection

The Origo10 series includes humidity, temperature, carbon dioxide and dew point transmitters with easily interchangeable measurement probes. The selection contains duct and wall mounted transmitter models with cable options, as well as a multitude of installation accessories for various measurement locations.

Measurement options

- **Humidity and temperature:** XMP10 series probes, HMP60 and HMP110 series probes
- **Temperature:** XMP10 series probes, TMP115 wide-range temperature probe, TMM10 temperature measurement module
- **Carbon dioxide:** GMP250 series probes
- **Dew point:** DMT143 transmitter

Variety of output options

Origo10 transmitters are available as two main models with several output options:

- **Origo10A** configuration for RH, T, CO_2, and T_d
  - 3 analog outputs (3-wire)
  - Modbus® RTU or BACnet® connectivity
  - Optional relay output
- **Origo10L** configuration for RH and T
  - 2 loop-powered analog outputs (2-wire)

The analog outputs are delivered preconfigured, so the transmitter is ready to transmit analog signals right after connecting a probe.

The transmitter settings can also be easily configured with the Vaisala Insight PC software any time.

Modular transmitter with interchangeable probes

Origo10 transmitters include fully interchangeable measurement probes as required by the application. The probes can be removed and replaced with a new factory-calibrated one for quick and effortless recalibration.

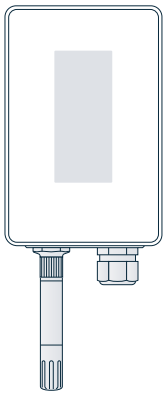
The transmitter and its probes can also be configured, calibrated, and adjusted on-site by connecting the transmitter to the Insight PC software via the USB-C service port. Alternatively, you can configure, calibrate, and adjust the probes by connecting them to the Vaisala Indigo80 handheld indicator with a cable. For more information, see vaisala.com/insight and vaisala.com/indigo80.

Origo10 transmitter selection

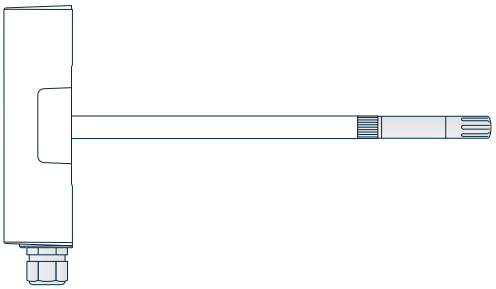
Transmitter model on order form	Output options and special features	Mounting options	Measurement option examples [1]
Origo10A	3 × AO: 4–20 mA (3-wire) 3 × AO: 0–5 V (3-wire) 3 × AO: 0–10 V (3-wire) Modbus RTU BACnet MS/TP Optional relay output (DIO10) Optional binary input Optional display Splitter cable option	Wall-mounted transmitter, probe without cable	RH+T: XMP10 T: XMP10
		Wall-mounted transmitter, probe with cable	RH+T: XMP10 RH+T: HMP110 T: XMP10 T: TMP115 T: TMM10 CO_2: GMP251 CO_2: GMP252 T_d: DMT143
		Wall-mounted transmitter, probe with cable and duct installation accessory	RH+T: XMP10 RH+T: HMP110 T: XMP10 CO_2: GMP251 CO_2: GMP252
		Wall-mounted transmitter with splitter cable and two probes	T and T RH+T and RH+T RH+T and T CO_2 and T CO_2 and RH+T
		Duct-mounted transmitter	RH+T: XMP10 T: XMP10
Origo10L	2 × AO: 4–20 mA loop-powered (2-wire) Optional display	Wall-mounted transmitter, probe without cable	RH+T: XMP10 T: XMP10
		Wall-mounted transmitter, probe with cable	RH+T: XMP10 RH+T: HMP110 T: XMP10 T: TMP115 T: TMM10
		Wall-mounted transmitter, probe with cable and duct installation accessory	RH+T: XMP10 RH+T: HMP110 T: XMP10
		Duct-mounted transmitter	RH+T: XMP10 T: XMP10

1) See device datasheets at docs.vaisala.com for detailed specifications.

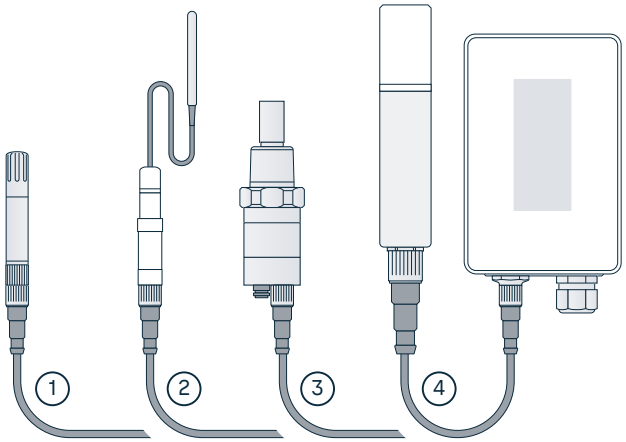
Examples of Origo10 transmitter selection



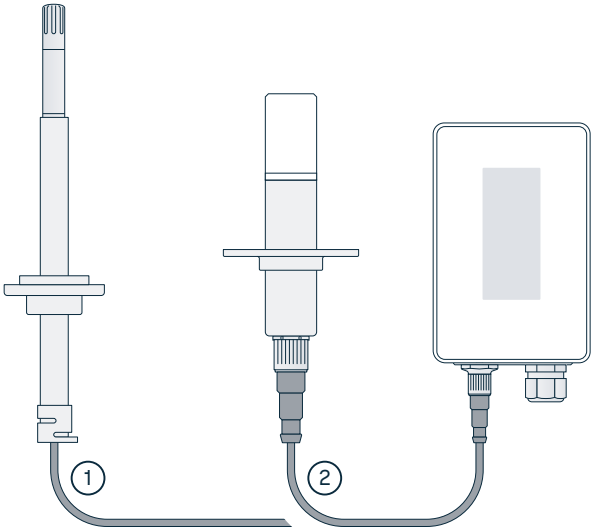
Origo10 wall mount with XMP10 probe (RH+T / T)



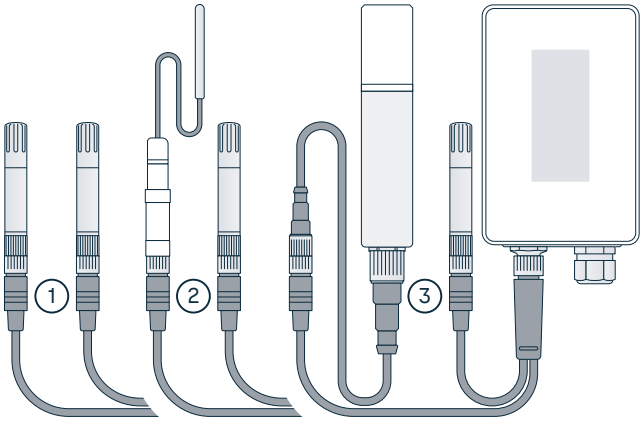
Origo10 duct mount with XMP10 probe (RH+T / T)



Origo10 wall mount with examples of cable-attached probes. **(1)** XMP10 (RH+T / T), **(2)** TMP115 (T), **(3)** DMT143 (T_d), **(4)** GMP252 (CO_2).



Origo10 wall mount with examples of cable-attached probes and duct installation accessory. **(1)** XMP10 (RH+T / T), **(2)** GMP252 (CO_2).



Origo10 wall mount with examples of the splitter cable option. Combination **(1)**: XMP10 + XMP10 (RH+T / T). Combination **(2)**: TMP115 (T) + XMP10. Combination **(3)**: GMP252 (CO_2) + XMP10.

Origo10 technical data

Compatible devices

Measurement	Transmitter model	Compatible devices [1]
Humidity and temperature	Origo10L, Origo10A	XMP10 [2], HMP60, HMP63, HMP110, HMP113
Temperature	Origo10L, Origo10A	XMP10, HMP63T, HMP110T, TMP115, TMM10
Carbon dioxide	Origo10A	GMP251, GMP252
Dew point	Origo10A	DMT143
Output		
Relay output + optional binary input	Origo10A	DIO10

1) *See device datasheets at docs.vaisala.com for detailed specifications.*
2) *%RH measurement performance of XMP10 with a plastic probe body may be reduced in environments with strong electromagnetic interference. Once interference is removed, performance returns to normal.*

Operating environment

Operating environment	Indoor use
Operating temperature	−40 ... +60 °C (−40 ... +140 °F) (no display) −20 ... +60 °C (−4 ... +140 °F) (with display)
Operating humidity	0–100 %RH, non-condensing
Pollution degree	Pollution degree 2
IP rating	IP65
Maximum operating altitude	2000 m (approx. 6500 ft)
Storage temperature	−40 ... +70 °C (−40 ... +158 °F)
Storage humidity	0–100 %RH, non-condensing

Powering, Origo10A

Operating voltage	18–30 V DC 24 V AC, ±10 %, 50/60 Hz
Nominal voltage	24 V
Power consumption	Typical: [1] 0.3 W for Origo10A transmitters with XMP10 probe and Modbus or BACnet outputs Maximum: 4 W [2]
Overvoltage category	I

1) *For the power consumption of the connected measurement devices, see the device datasheet at docs.vaisala.com.*
2) *With DMT143*

Powering , Origo10L

Operating voltage	20–30 V DC with ≤ 500 Ω loop resistance
Nominal voltage	24 V
Overvoltage category	I

Digital communication

Interface	RS-485, isolated, line termination [1]
Protocol	Modbus RTU or BACnet MS/TP
Default serial settings	19200 bps N 8 1

1) *RS-485 interface is available for Origo10A devices.*

Analog outputs

Selectable output types	For Origo10L devices: 2 × 4–20 mA (2-wire), loop powered For Origo10A devices: 3 × 4–20 mA (3-wire), 0–5 V, or 0–10 V
External loads	V_{out}: R_L > 10 kΩ I_{out}: R_L < 500 Ω

Relay output / binary input

Relay	DIO10 relay output module + optional binary input [1]
Relay type	Bistable SPST
Max. switching power	30 W, 1 A, 40 V DC / 28 V AC
Connectors on module	Screw terminals
Wire size	0.5–1.5 mm^2 (20 AWG–15 AWG)
Optional binary input	On/Off

1) *DIO10 relay output module is available for Origo10A devices.*

Compliance

EU directives and regulations	EMC, REACH, RoHS
EMC immunity	IEC/EN 61326-1, industrial environment
EMC emissions	CISPR 11 / EN 55011, Class B FCC part 15 B, Class B ICES-3 / NMB-3 (Class B)
Safety	IEC/EN 62368-1
Compliance marks	CE, China RoHS, RCM, KC [1]

1) *www.rra.go.kr/selform/rws-ORIGO10*

Mechanical specifications

Enclosure dimensions	130 × 85 × 37 mm (5.12 × 3.35 × 1.46 in)
Enclosure weight (no probes, modules or duct pipe)	Wall model: 250 g (8.82 oz) Duct model: 270 g (9.52 oz)
Connectors on main component boards	Push-in spring terminals
Wire size	0.5–1.5 mm^2 (20 AWG–15 AWG)
Probe interface	4-pin female M8 connector
Service port connection	USB-C connection to Vaisala Insight PC software
Materials	
Enclosure, duct pipe, adapter plate	PC + GF
Display window	PMMA (acrylic)
Enclosure color	RAL 9003 (white)
Material fire rating	V 0

Spare parts

Cable gland, M16×1.5, 4.0–11.0 mm (0.16–0.43 in)	284773SP
Cable gland, hygienic for cleanrooms, M16×1.5, 7.0–9.0 mm (0.27–0.35 in)	ASM216275
Conduit fitting NPT1/2"	210675
TMM10 gland with 1 hole	285207SP
TMM10 gland with 2 holes	285206SP
Plugs for unused cable lead-throughs	ASM216492SP
Duct fastening flange	ASM210771SP
Transmitter cover, with display window	DRW261413SP
Transmitter cover, no display window	DRW261414SP
Display panel	ASM216491SP

Accessories

Adapter plate	ASM216493SP
DIN rail adapter	284769SP
Magnetic bracket	ASM215638SP

Selected probe-specific accessories

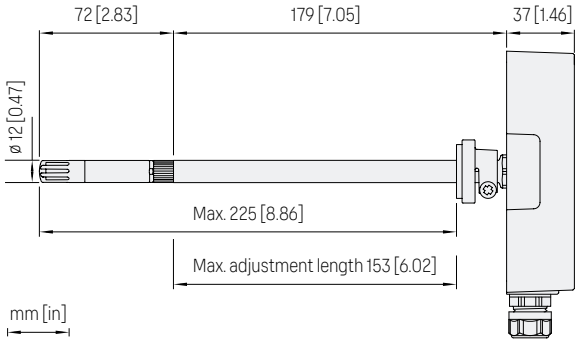
Description [1]	Compatible probes	Item code
Duct installation kit	XMP10	ASM216258SP
Radiation shield	XMP10, HMP60 and HMP110 series	DTR504A
Probe mounting clamp	XMP10, HMP60 and HMP110 series	225501SP
Probe holder (5 pcs)	XMP10, HMP60 and HMP110 series	ASM213382SP
Probe mounting flange	XMP10, HMP60 and HMP110 series	226061
Probe mounting flange	GMP251, GMP252	243261SP
Probe holder assembly	GMP251, GMP252	ASM213582
Mounting bracket	DMT143	ASM216087SP

1) See probe datasheets at docs.vaisala.com for more accessories.

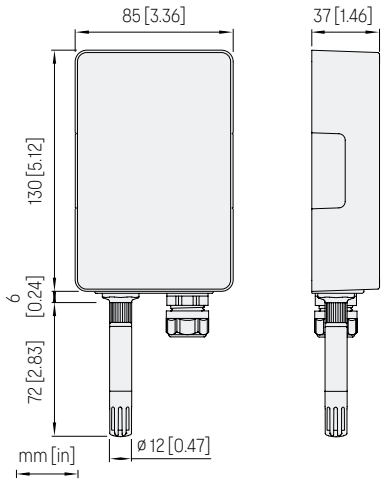
Probe connection cables

Probe connection cable (M8-M8), 1.2 m	284313
Probe connection cable (M8-M8), 3 m	284310
Probe connection cable (M8-M8), 5 m	284311
Probe connection cable (M8-M8), 10 m	284312
Probe connection cable (M8-M8), 20 m	284630
Probe connection cable (M8-M12), 1.2 m	279222SP
Flat probe connection cable, M8-M8, 3 m	CBL211292SP
Flat probe connection cable, M8-M12, 3 m	CBL211291SP
High-temperature cable, M8-M8, 1 m [1]	271039SP
Splitter cable, M8 → M8-M8	284332

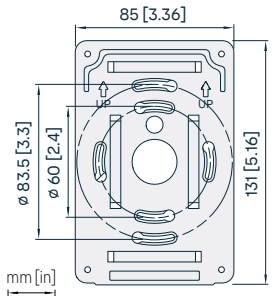
1) High-temperature cables tolerate −20 … +180 °C (−4 … +356 °F) temperatures and can remain inside an incubator during a typical heat sterilization cycle. Due to heat conduction, leave half of the cable in ambient temperature when installed.



Dimensions, duct mount



Dimensions, wall mount



Adapter plate dimensions

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