

Technical Note

Incubator Setup of Indigo80 Indicator with GMP251 and HMP110 Probes

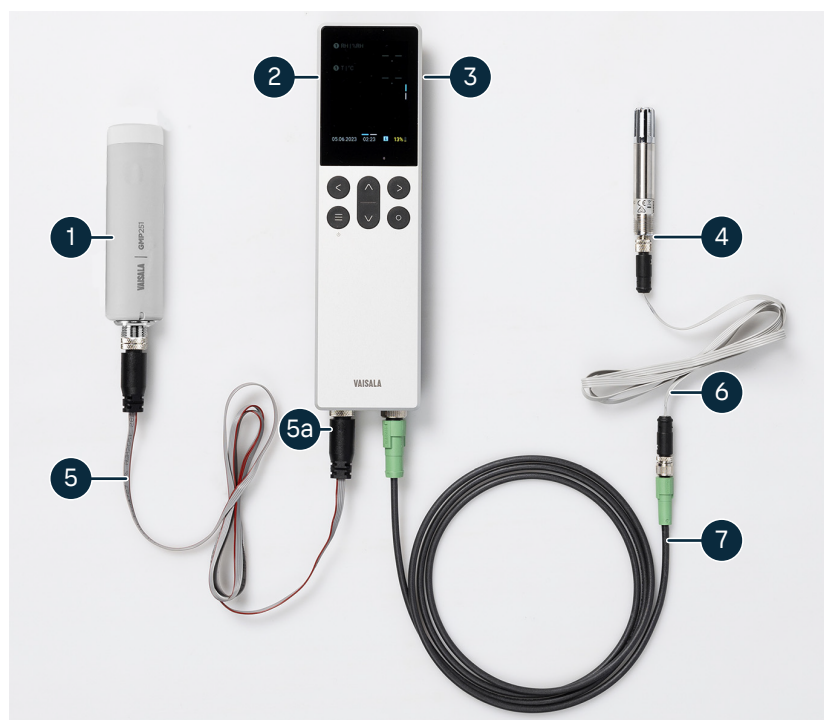
This technical note describes the recommended use of Vaisala Indigo80 Handheld Indicator together with Vaisala GMP251 CARBOCAP® CO₂ Probe, HMP110 HUMICAP® Humidity and Temperature Probe, and flat cables for measurements in incubators. ¹⁾

The Indigo80 indicator can be used as a display for viewing data from two measurement probes simultaneously. This is useful for field checking the accuracy of incubators. Indigo80 can also be used to log data, which can be later downloaded to a PC using Vaisala Insight PC software (available at www.vaisala.com/insight).

Before starting measurements, use the following resources to familiarize yourself with the devices. See also section [Environmental compensation factors \(page 2\)](#) in this document.

- [Indigo80 User Guide \(M212722EN\)](#) and the product page at www.vaisala.com/indigo80
- [GMP251 User Guide \(M211799EN\)](#) and the product page at www.vaisala.com/gmp251
- [HMP60 and HMP110 Series User Guide \(M211060EN\)](#) and the product page at www.vaisala.com/hmp110.

Overview of incubator setup



- 1 GMP251 CO₂ probe
- 2 Indigo80 indicator
- 3 Magnetic hanger at the back of Indigo80 (item code **ASM214318SP**)
- 4 HMP110 RH&T probe
- 5 Flat cable for CO₂ probes (item code **CBL210493SP**)
- 5a Optional connection cable **272075SP** can be used with flat cable **CBL210493SP** to extend the total length of cabling from Indigo80 to GMP251
- 6 Flat cable for HMP110 probes (item code **CBL210649SP**)
- 7 Connection cable for HMP110 to Indigo80 (item code **262195SP**)

¹⁾ GMP251 probes with firmware version 1.3.6 (or newer) and HMP110 probes with firmware version 2.6.3 (or newer) are compatible with Indigo80.



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If needed, a flat cable extension can be added between the probes and Indigo80 connection cables. The flat cables are useful as they allow the user to close the door of an incubator with the probes inside and indicator outside, minimizing air leakage through the door seal.

Vaisala item codes of the flat cables:

- Flat cable for connecting GMP251 to (optional) cable 272075SP: **CBL210493SP**
- Flat cable for connecting HMP110 to cable 262195SP: **CBL210649SP**

See [Spare parts and accessories \(page 3\)](#) for images of the cables and links to store.vaisala.com.

Recommended product configurations

For use in CO₂ incubators, below are the recommended configurations for the Indigo80 indicator and the GMP251 and HMP110 probes.

- Indigo80 handheld indicator
- GMP251 CO₂ probe: **GMP251 B2BOCON1**
- HMP110 humidity and temperature probe: **HMP110 V00E0C1A0**

Power supply options for Indigo80 with GMP251 & HMP110 probe combination

The following power supply options are available for using the Indigo80 indicator with GMP251 and HMP110 probes:

- Euro AC adapter
- UK AC adapter
- US AC adapter
- AUS AC adapter

A fully charged Indigo80 battery can power the Indigo80 - HMP110 - GMP251 combination for a few hours. It is recommended to use an AC adapter or a USB-C cable to power Indigo80 during long-term measurement and logging. Measurement capabilities will function the same while charging.

For technical requirements of a compatible third-party AC adapter, see [Indigo80 Safety Guide \(M212872EN\)](#).

Environmental compensation factors

When you are using the Indigo80 indicator to power GMP251 and HMP110 probes, always keep Indigo80 powered on and disable the automatic power off function to ensure uninterrupted power supply for the probes, which is essential for measurement accuracy.

After the probes are connected and Indigo80 is switched on, a prompt will appear on the screen to adjust environmental settings. To achieve the most accurate measurements in conditions where the barometric pressure is not ambient (that is, below sea level or in a high-rise building), you must set the actual atmospheric pressure value to Indigo80. The pressure range is given in the units of hPa or bar. Note that GMP251 probes should not be used above 1.5 bar, and are only recommended for use in the compensated range of 500 ... 1100 hPa.






It is necessary to allow output measurements to stabilize to environmental conditions. For example, probes that are moved from ambient conditions into incubator conditions (that is, 37 °C (98 °F) and 93 %RH) require time to stabilize to the correct measurement output.

Spare parts and accessories

For accessories, spare parts, and calibration and repair products, visit store.vaisala.com or send an enquiry through the [Online store contact form](#).

Table 1 Spare parts and accessories

Description	Item code	
HMP110 to Indigo80 connection cable (M12-M8), 1.5 m (4 ft 11 in)	262195SP	
GMP251 to Indigo80 connection cable (M12-M12), 1.5 m (4 ft 11 in)	272075SP	
Extension cable (M12-M12), 10 m (32 ft 10 in)	INDIGOCABLE10M	
Flat cable for GMP251 (M12-M12), 1 m (3 ft 3 in)	CBL210493SP	
Flat cable for HMP110 (M8-M8), 1 m (3 ft 3 in) <ul style="list-style-type: none"> Requires also cable 262195SP for connecting to Indigo80 	CBL210649SP	
Probe mounting kit <ul style="list-style-type: none"> Allows mounting of CO₂ probe and HMP110 together 	ASM214253SP	

Description	Item code	
Weatherproof carrying case for Indigo80 and HMP80 and DMP80 series probes	ASM214759	
Light carrying case for HM40S or Indigo80 indicator and a compatible probe ¹⁾	230245SP	
Magnetic hanger for indicator	ASM214318SP	

1) For example, DMP80, HMP80N, or GMP252 probe with handle accessory, with a max. 1.5-m (4 ft 11 in) probe connection cable.