USER GUIDE

ANP115

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M213157EN-A

User Guide

Vaisala Analog Input Probe

ANP115



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Vaisala Oyj
Vanha Nurmijärventie 21, FI-01670 Vantaa, Finland
P.O. Box 26, FI-00421 Helsinki, Finland
+358 9 8949 1
vaisala.com
docs.vaisala.com

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1. About this document

1.1 Version information

This document provides instructions for configuring, installing, and using the Vaisala Analog Input Probe ANP115.

Table 1 Document versions (English)

Document code	Date	Description
M213157EN-A	April 2026	First version

1.2 Related manuals



For the latest versions of these documents, see docs.vaisala.com.

Table 2 Related manuals

Document code	Name
M212938EN	Vaisala VDL200 Data Logger User Guide
M213202EN	Vaisala ANP115 Analog Input Probe Quick Guide
B212908EN	Vaisala ANP115 Analog Input Probe Datasheet

1.3 Documentation conventions



WARNING! Alerts you to a hazardous situation that, if not avoided, could result in death or serious injury.



CAUTION! Alerts you to a hazardous situation that, if not avoided, could result in minor or moderate injury.



NOTICE! Alerts you to a situation that, if not avoided, could result in the product to be damaged, or important data to be lost.



Highlights important information on using the product.



Lists the tools needed to perform the task.

1.4 Trademarks

Vaisala® is a registered trademark of Vaisala Oyj.

Windows® is either a registered trademark or trademark of Microsoft Corporation in the United States and other countries.

All other product or company names that may be mentioned in this publication are trade names, trademarks, or registered trademarks of their respective owners.

2. Product overview

2.1 Vaisala Analog Input Probe ANP115



Figure 1 ANP115 analog input probe, open wires model

Connect a wide range of analog sensors through ANP115 Analog Input Probe to VDL200 data logger. ANP115 converts current, voltage, or contact input to VDL200-compatible digital format. This enables recording the data to your Vaisala monitoring system.

Expand your monitoring capability

ANP115 is a simple solution for integrating more parameters to your Vaisala monitoring system. Add measurements such as differential pressure, flow, fluid level, electrical properties, gas concentrations, and many more.

ANP115 provides several installation options. The standard ANP115 model has open wires and an M8 field connector kit is available. A door switch model is also available and requires no configuration.

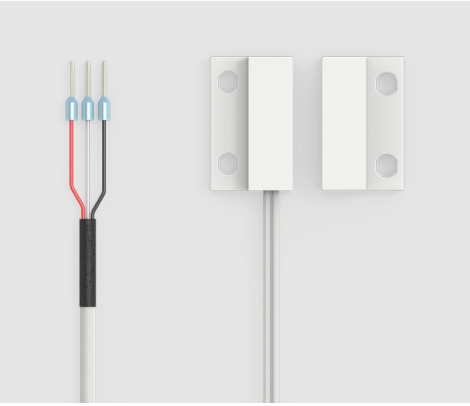


Figure 2 ANP115 open wires model and door switch model

Versatile configuration

Easily configure ANP115 to match the properties of your analog sensor using Vaisala Insight PC software.

Based on the analog sensor, choose from a wide selection of parameters and measurement units. You can freely set the scaling of the analog signal.

ANP115 also supports a wide range of passive and active contacts.

ANP115 can also be configured to supply operating power to the analog sensor.

More information

- Specifications (page 39)

2.2 Probe structure

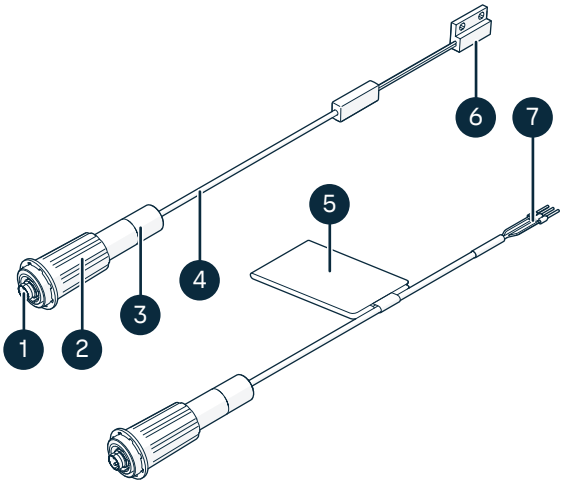


Figure 3 Probe parts for ANP115 door switch model and ANP115 open wires model

1. Probe connector
2. Probe nut
3. Probe body
4. Probe cable
5. Wiring sticker
6. Magnetic reed switch
7. Open wires

2.3 Basic features and options

- Converts one current, voltage, or contact input to digital output
- Compatible with Vaisala VDL200 data logger
- Easy configuration with Insight PC software
- Preconfigured door switch model available
- Optional M8 field connector kit
- Traceable to SI units through national metrology institutes

2.4 Configuration and installation overview

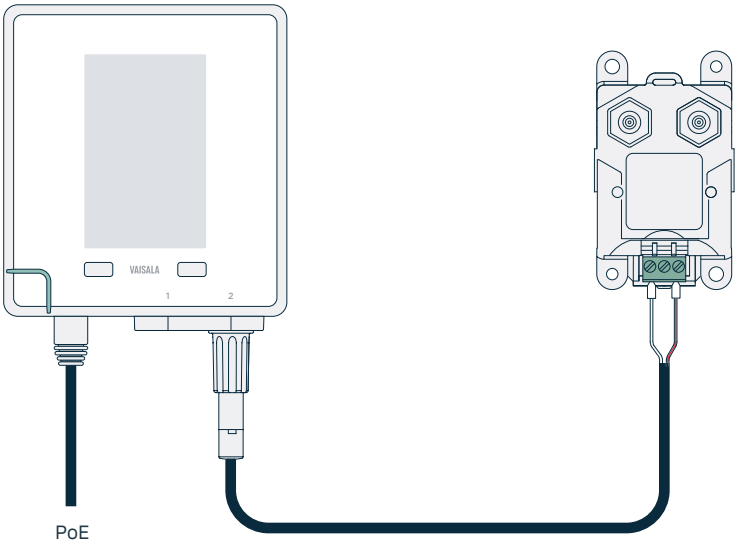


Figure 4 Vaisala ANP115 Analog Input Probe installed to Vaisala PDT101 Differential Pressure Transmitter, and connected to Vaisala VDL200 Data Logger.

The **ANP115 open wires model** configuration and installation steps are as follows:

1. Configure the ANP115 probe using Vaisala Insight PC software.
2. Install the ANP115 probe to the sensor.
3. Connect the ANP115 probe to a host device, such as VDL200 Data Logger.

For instructions on connecting probes to host devices, such as transmitters and data loggers, see the user documentation of the corresponding host device. For instructions on connecting ANP115 Analog Input Probe to VDL200 Data Logger, see Vaisala VDL200 Data Logger User Guide.

The **ANP115 door switch model** is already preconfigured. Install the door switch to the door and connect ANP115 to a host device, such as VDL200.

2.5 Safety

If any instructions in this document conflict with your local or state legislation or regulations, always follow the local or state legislation or regulations.

Consult local authorities and electricity professionals on decisions that relate to grounding, safe installation, and power supply.

If the product is used in a manner not specified by Vaisala, the protection provided by the product may be impaired. Follow the instructions.

NOTICE! Modification of the product can damage the product. Do not modify the product or substitute parts unless instructed to do so. Improper modification voids your warranty.

Failure to comply with the warnings and cautions in these instructions violates safety standards of design, manufacture, and intended use of the product. Vaisala assumes no liability for the failure to comply with these requirements.

2.5.1 ESD protection

Electrostatic discharge (ESD) can damage electronic circuits. Vaisala products are adequately protected against ESD for their intended use. However, it is possible to damage the product by delivering electrostatic discharges when touching, removing, or inserting any objects in the equipment housing.

To avoid delivering high static voltages to the product:

- Handle ESD-sensitive components on a properly grounded and protected ESD workbench or by grounding yourself to the equipment chassis with a wrist strap and a resistive connection cord.
- If you are unable to take either precaution, touch a conductive part of the equipment chassis with your other hand before touching ESD-sensitive components.
- Hold component boards by the edges and avoid touching component contacts.

3. Vaisala Insight PC software

3.1 Insight PC software overview

Vaisala Insight PC software is a configuration and calibration software for Vaisala devices. Insight is available for the Windows operating system (64-bit only). For a full list of supported operating system versions, see vaisala.com/insight.

To ensure support for your device, download the latest version of Insight at vaisala.com/insight.

ANP115 probe supports Insight from probe software version 1.3.0 onwards.

With ANP115 probe connected to Insight, you can:

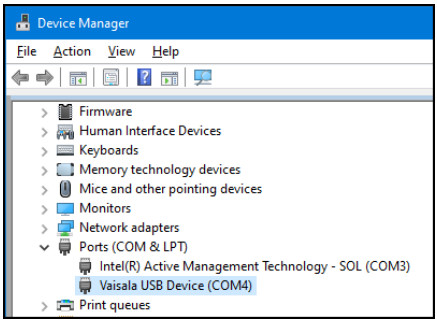
- See probe information
- Configure probe settings
- See real-time measurement data
- Set a configuration reminder

3.2 Installing driver for USB service cable

Only Windows® operating systems are supported by the driver of the USB service cable.

1. Connect the USB service cable to a USB port on your computer. Windows detects the new device and installs the appropriate driver.
2. Open **Device Manager** from the Windows **Start** menu. Use search to find it if necessary (search for "device").

3. Locate the cable in the list of devices:
   - If the device is listed as **Vaisala USB Device** with a COM port number in brackets, the cable is ready for use.
   - If the device is listed as **Vaisala USB Instrument Cable** without a COM port number listed, you must install the driver manually.



4. To install the driver manually:
   a. Disconnect the USB service cable from the computer.
   b. Download the Vaisala USB driver at vaisala.com/software (select the appropriate USB Instrument Driver Setup for your cable).
   c. Extract the driver zip file and run the USB driver installation program ***`Vaisala USB Device Driver Setup.exe`***. Accept the installation defaults.
   d. Go back to step 1 and verify that the driver installation works as expected.

3.3 Connecting to Insight PC software

- Computer with a Microsoft Windows® operating system (64-bit version), Vaisala Insight PC Software, and Vaisala USB Device driver installed
- M8-4F USB service cable (Vaisala item code 219690)

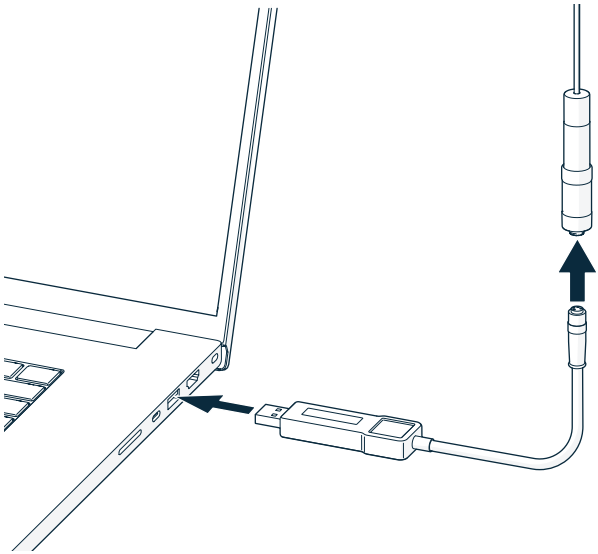


Figure 5 Connecting ANP115 probe to Insight PC software with cable 219690

1. Open the Insight software on your computer.
2. Connect the probe to the USB cable.
3. Connect the USB cable to a free USB port on the computer.
4. Wait for the Insight software to detect the probe.

4. Configuration

4.1 Configuration overview

Configuration of the ANP115 open wires model depends on the sensor type. Go to one of the following configuration instructions depending on what sensor you have:

- Configuring ANP115 for sensors with preconfigured template (page 17), including a list of sensors that have preconfigured templates.
- Configuring ANP115 for current sensor (page 18)
- Configuring ANP115 for voltage sensor (page 21)
- Configuring ANP115 for boolean input (page 24), for example, for a dry contact switch, or an active binary signal.



- Computer with a Microsoft Windows® operating system (64-bit version), Vaisala Insight PC Software, and Vaisala USB Device driver installed
- M8-4F USB service cable (Vaisala item code 219690)

4.2 Configuring ANP115 for sensors with preconfigured template

Vaisala Insight PC software provides configuration templates for the following sensors:

- **Door switch (normally open):** select this option when you want to connect the ANP115 probe to your door switch.
- **PDT101-P4V (±60 Pa, 0-5 V):** select this option when you want to connect the ANP115 probe to your Vaisala Differential Pressure Transmitter PDT101-P4V.
- **PDT101-W4V (±0.25 inH_2O, 0-5 V):** select this option when you want to connect the ANP115 probe to your Vaisala Differential Pressure Transmitter PDT101-W4V.
- **PDT101-P4C (±60 Pa, 4-20 mA):** select this option when you want to connect the ANP115 probe to your Vaisala Differential Pressure Transmitter PDT101-P4C.
- **PDT101-W4C (±0.25 inH_2O, 4-20 mA):** select this option when you want to connect the ANP115 probe to your Vaisala Differential Pressure Transmitter PDT101-W4C.

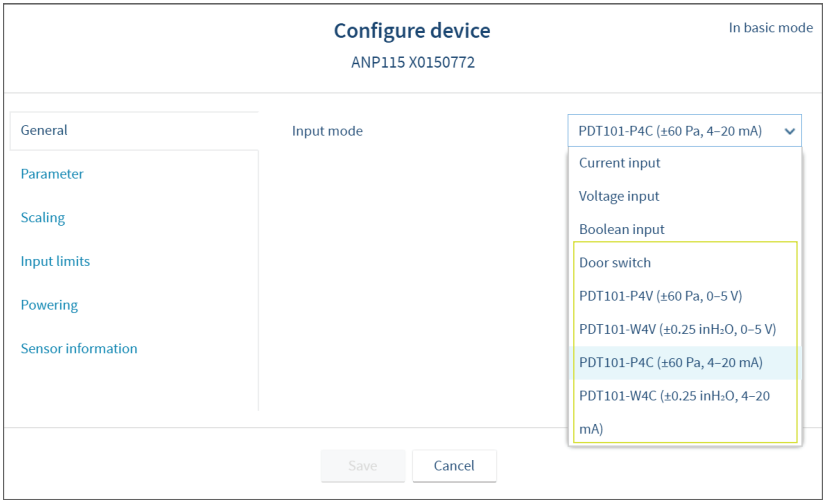


If you are not sure what sensor you have, check the sensor's type label.

When you select one of these templates, Insight selects the required configurations. If necessary, you can modify some values according to your requirements, or if you use the configuration template for a similar sensor.

1. Open the Insight software on your computer.
2. Connect the probe to the USB cable.
3. Connect the USB cable to a free USB port on the computer.

4. Wait for the Insight software to detect the probe.
5. Select ⚙ and open the **Configure device** menu.
6. Select the **General** tab.
7. For **Input mode**, select the template that matches your sensor or door switch.



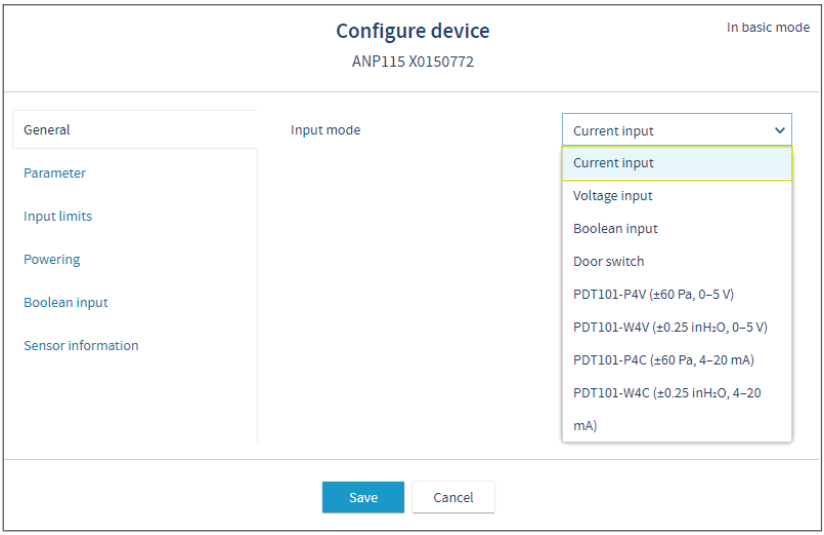
8. Select **Save**.

   Insight restarts the probe and updates the configuration settings for the template. You can see the settings by selecting ⚙ **> Configure device**. If necessary, you can change the settings in **Scaling** and **Input limits**. You can add sensor information to the ANP115 probe in **Sensor information**.
9. Close Insight and disconnect the USB service cable from the USB port on the computer.
10. Disconnect the probe from the USB cable.

4.3 Configuring ANP115 for current sensor

1. Open the Insight software on your computer.
2. Connect the probe to the USB cable.
3. Connect the USB cable to a free USB port on the computer.
4. Wait for the Insight software to detect the probe.
5. Select ⚙ and open the **Configure device** menu.
6. Select the **General** tab.

7. For **Input mode**, select **Current input**.



8. Select **Save**.

   Insight restarts the probe.

9. Select ⚙ and open the **Configure device** menu.
10. Select the **Parameter** tab.
    a. Select the output parameter from the drop-down list.
    b. Add a description. Adding a description is optional.
11. Select **Save**.
12. A pop-up window appears at the top of the screen that prompts you to restart the device. Restart the device to apply the configuration settings.
13. Select ⚙ and open the **Configure device** menu.

14. Select the **Scaling** tab.
    a. Set **Input low end** and **Input high end**.

       Input low end and **Input high end** correspond to the lowest and highest input from the sensor.
       Since the selected input mode is current, the unit is already set to mA.
       For example, if the sensor's input range is 4–20 mA, set **Input low end** to 4 and **Input high end** to 20.

    b. Set **Output low end** and **Output high end**.

       Output low end and **Output high end** correspond to the lowest and highest measurement values of the digital output. For example, if the selected input parameter is **Relative humidity**, set **Output low end** to 0 and **Output high end** to 100.

    c. Select the preferred unit of measurement.

       This field applies only to certain units, for example, for temperature.

    d. Select the number of decimals that are shown on the graph scale.
15. Select **Save**.
16. Select the **Input limits** tab.
    a. Set **Low clipping limit** and **High clipping limit**.

       Clipping limits ensure that readings are not affected by inaccuracies that happen close to the limits. For example, if **Input low end** is set to 4 mA and **Input high end** is set to 20 mA, set **Low clipping limit** to 3.8 mA, and **High clipping limit** to 20.5 mA. The clipped reading will be considered noise and it will be adjusted to **Input low end** and **Input high end**.

    b. Set **Low error limit** and **High error limit**.

       Readings that cross the error limits will not be shown in VDL200 Data Logger. The log will show an error for these readings. You can set error limits for readings that are outside of the defined clipping limits. For example, if **Low clipping limit** is set to 3.8 mA, and **High clipping limit** is set to 20.5 mA, set **Low error limit** to 3.7 mA and **High error limit** to 20.6 mA.

       If the sensor current exceeds the maximum allowed input current by ANP115 (22.5 mA), an error is shown even if **High error limit** has been cleared (no user-set limit).

17. Select **Save**.
18. Select the **Powering** tab.
19. For **Sensor powering**, select the source of the power supply for the sensor.
    - If the sensor requires max. 15 V operating voltage and max. 24 mA current, select **Powered from ANP115**. Power is supplied by the host device VDL200 Data Logger.
    - If the sensor requires more than 15 V operating voltage or more than 24 mA current, select **Powered separately**. Make sure that the sensor has a suitable power supply.

20. In **Sensor warm-up time**, set how many seconds it takes for the sensor to warm up before each measurement can be taken.

    Sensor warm-up time is only relevant if you selected **Powered from ANP115**.

    VDL200 records measurements once per minute. To make sure that the sensor is powered-up continuously without switching off, set the warm-up time to be at least 1 min.

21. Select the **Sensor information** tab.

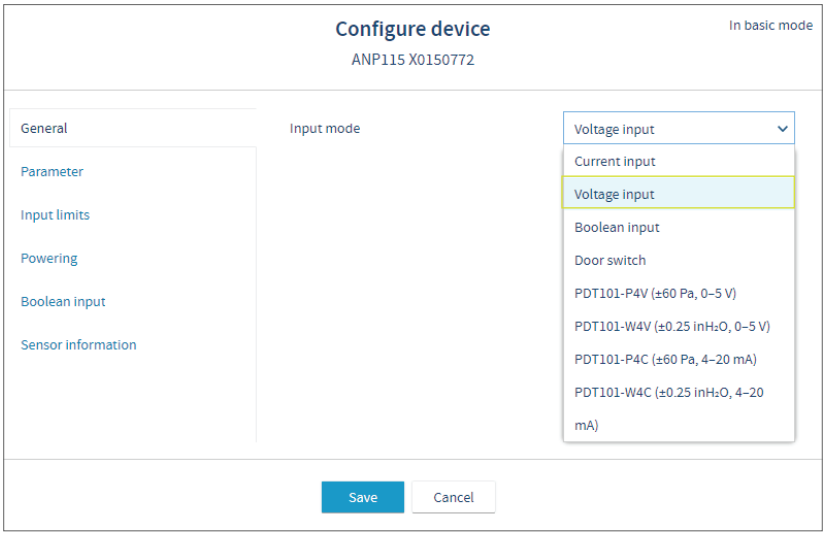
    You can add information related to the sensor that is connected to this ANP115 probe.

22. Select **Save**.
23. A pop-up window appears at the top of the screen that prompts you to restart the device. Restart the device to apply the configuration settings.
24. Close Insight and disconnect the USB service cable from the USB port on the computer.
25. Disconnect the probe from the USB cable.

4.4 Configuring ANP115 for voltage sensor

1. Open the Insight software on your computer.
2. Connect the probe to the USB cable.
3. Connect the USB cable to a free USB port on the computer.
4. Wait for the Insight software to detect the probe.
5. Select and open the **Configure device** menu.
6. Select the **General** tab.

7. For **Input mode**, select **Voltage input**.



8. Select **Save**.

   Insight restarts the probe.

9. Select ⚙ and open the **Configure device** menu.
10. Select the **Parameter** tab.
    a. Select the output parameter from the drop-down list.
    b. Add a description. Adding a description is optional.
11. Select **Save**.
12. A pop-up window appears at the top of the screen that prompts you to restart the device. Restart the device to apply the configuration settings.
13. Select ⚙ and open the **Configure device** menu.

14. Select the **Scaling** tab.
    a. Set **Input low end** and **Input high end**.

       Input low end and **Input high end** correspond to the lowest and highest input from the sensor.
       Since the selected input mode is voltage, the unit is already set to V.
       For example, if the sensor's input range is 0–10 V, set **Input low end** to 0 and **Input high end** to 10.

    b. Set **Output low end** and **Output high end**.

       Output low end and **Output high end** correspond to the lowest and highest measurement values of the digital output. For example, if the selected input parameter is **Relative humidity**, set **Output low end** to 0 and **Output high end** to 100.

    c. Select the preferred unit of measurement.

       This field applies only to certain units, for example, for temperature.

    d. Select the number of decimals that are shown on the graph scale.
15. Select **Save**.
16. Select the **Input limits** tab.
    a. Set **Low clipping limit** and **High clipping limit**.

       Clipping limits ensure that readings are not affected by inaccuracies that happen close to the limits. For example, if **Input low end** is set to 0 V and **Input high end** is set to 10 V, set **Low clipping limit** to 0 V, and **High clipping limit** to 10.5 V. The clipped reading will be considered noise and it will be adjusted to **Input low end** and **Input high end**.

    b. Set **Low error limit** and **High error limit**.

       Readings that cross the error limits will not be shown in VDL200 Data Logger. The log will show an error for these readings. You can set error limits for readings that are outside of the defined clipping limits. For example, if **Low clipping limit** is set to 0 V, and **High clipping limit** is set to 10.5 V, set **Low error limit** to 0 V and **High error limit** to 10.6 mA.
17. Select **Save**.
18. Select the **Powering** tab.
19. For **Sensor powering**, select the source of the power supply for the sensor.
    - If the sensor requires max. 15 V operating voltage and max. 24 mA current, select **Powered from ANP115**. Power is supplied by the host device VDL200 Data Logger.
    - If the sensor requires more than 15 V operating voltage or more than 24 mA current, select **Powered separately**. Make sure that the sensor has a suitable power supply.

20. In **Sensor warm-up time**, set how many seconds it takes for the sensor to warm up before each measurement can be taken.

    Sensor warm-up time is only relevant if you selected **Powered from ANP115**.

    VDL200 records measurements once per minute. To make sure that the sensor is powered-up continuously without switching off, set the warm-up time to be at least 1 min.

21. Select the **Sensor information** tab.

    You can add information related to the sensor that is connected to this ANP115 probe.

22. Select **Save**.
23. A pop-up window appears at the top of the screen that prompts you to restart the device. Restart the device to apply the configuration settings.
24. Close Insight and disconnect the USB service cable from the USB port on the computer.
25. Disconnect the probe from the USB cable.

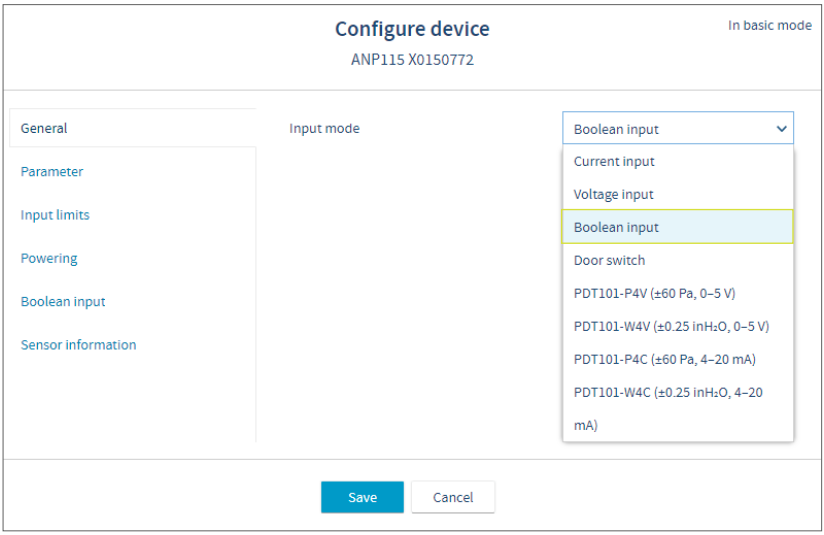
4.5 Configuring ANP115 for boolean input

Follow these instructions if you are configuring ANP115 for a sensor that provides one of the following:

- binary input
- dry contact switch, such as a door switch
- active binary signal

1. Open the Insight software on your computer.
2. Connect the probe to the USB cable.
3. Connect the USB cable to a free USB port on the computer.
4. Wait for the Insight software to detect the probe.
5. Select and open the **Configure device** menu.
6. Select the **General** tab.

7. For **Input mode**, select **Boolean input**.



8. Select **Save**.

   Insight restarts the probe.

9. Select ⚙ and open the **Configure device** menu.
10. Select the **Parameter** tab.
    a. Select the output parameter from the drop-down list.
    b. Add a description. Adding a description is optional.
11. Select **Save**.
12. A pop-up window appears at the top of the screen that prompts you to restart the device. Restart the device to apply the configuration settings.
13. Select ⚙ and open the **Configure device** menu.
14. Select the **Input limits** tab.
    a. Set **Low error limit** and **High error limit**.

       Readings that cross the error limits will not be shown in VDL200 Data Logger. The log will show an error for these readings.
15. Select **Save**.
16. Select the **Powering** tab.

17. For **Sensor powering**, select the source of the power supply for the sensor.
    - If the sensor requires max. 15 V operating voltage and max. 24 mA current, select **Powered from ANP115**. Power is supplied by the host device VDL200 Data Logger.
    - If the sensor requires more than 15 V operating voltage or more than 24 mA current, select **Powered separately**. Make sure that the sensor has a suitable power supply.
18. In **Sensor warm-up time**, set how many seconds it takes for the sensor to warm up before each measurement can be taken.

    Sensor warm-up time is only relevant if you selected **Powered from ANP115**.

    VDL200 records measurements once per minute. To make sure that the sensor is powered-up continuously without switching off, set the warm-up time to be at least 1 min.

    To minimize the logger's backup battery consumption when using a potential-free boolean signal, for example a dry contact switch, set **Sensor warm-up time** to 0.

19. Select **Save**.
20. Select the **Boolean input** tab.
    a. Set **Threshold level**.

       The threshold level defines the transition between low state to high state.

    b. Select the values for **Output when below** and **Output when above**.

       Options are, for example, high-low, open-closed, on-off.
21. Select **Save**.
22. Select the **Sensor information** tab.

    You can add information related to the sensor that is connected to this ANP115 probe.
23. Select **Save**.
24. A pop-up window appears at the top of the screen that prompts you to restart the device. Restart the device to apply the configuration settings.
25. Close Insight and disconnect the USB service cable from the USB port on the computer.
26. Disconnect the probe from the USB cable.

4.6 Setting calibration reminder

The ANP115 probe is fully calibrated and adjusted as shipped from the factory.

Depending on your requirements, you can add a calibration reminder for the ANP115 setup using the Insight PC software.

The calibration expiry date does not affect the functionality of the sensor or the ANP115 probe.

1. Open the Insight software on your computer.
2. Connect the probe to the USB cable.
3. Connect the USB cable to a free USB port on the computer.
4. Wait for the Insight software to detect the probe.
5. Select **> Calibrate > Yes** to open the calibration menu and switch the probe to calibration mode.
6. In **Calibration text**, you can add relevant information.
7. Set the **Calibration expiry date**.

   Typical calibration interval is one year, but depending on the application it may be necessary to check the accuracy more frequently.
   When adjustment is necessary, have Vaisala calibrate and adjust the probe.
   Factory calibration leads to highest accuracy and lowest uncertainty. After factory calibration the instrument performs as new. For up-to-date information about calibration points and offering, visit store.vaisala.com.
8. Select **Close** to exit the calibration mode.
9. Close the Insight software and disconnect the USB service cable from the USB port on the computer.
10. Disconnect the probe from the USB cable.

5. Installation

5.1 Installation overview

After you have configured the ANP115 probe, proceed with installing the probe to the sensor.

ANP115 is available in two models:

- **ANP115 open wires model:** This model can be installed to a wide variety of analog sensors. A separate **M8 field connector kit** is available to provide better protection in harsh conditions, in which an ordinary screw terminal cannot be used.
- **ANP115 door switch model:** A door switch is attached to the analog input probe. This model is preconfigured.



- Small flat head screwdriver for opening the screw terminal block screws

Install the ANP115 open wires model to the sensor by selecting a suitable wiring option. Selecting the suitable wiring option depends on the output voltage and output capability requirements of the sensor. For more information, see Wiring options (page 29). Once the ANP115 is installed to the sensor, connect the ANP115 probe to a host device, such as VDL200 Data Logger.



Before wiring ANP115 to the sensor, make sure to slide the probe nut onto the probe. You cannot put the probe nut in place once the probe has already been installed to the sensor.

If you have the ANP115 door switch model, install the door switch to the door and connect the analog input probe to the host device, such as VDL200 Data Logger.

More information

- Wiring options (page 29)

5.2 Wiring safety



WARNING! Electricity hazard
Incorrect electrical installation can cause serious injury or death. Only licensed experts may install electrical components.

Consult local authorities and electricity professionals on decisions that relate to grounding, safe installation, and power supply.

5.3 Sensor power supply

Depending on requirements, the sensor can be powered either from ANP115, or by an external power supply:

- If the sensor requires max. 15 V operating voltage and max. 24 mA current, it can be powered from ANP115 by the host device.
- If the sensor requires more than 15 V operating voltage or more than 24 mA current, it must be powered by an external power supply.

The supply voltage range that is required for ANP115 is 5–30 V DC. The output voltage of ANP115 is the same as the supply voltage. ANP115 limits the output current to 24 mA.

The host device supplies the voltage to ANP115. When ANP115 is connected to the host device VDL200 Data Logger, the maximum supply voltage is 15 V. This limits the output voltage to 15 V. If the sensor needs a supply voltage that is higher than 15 V, an external power supply is required.

Check the electrical specifications of the sensor.

Always choose a power supply unit that conforms to the local standards and requirements.

5.4 Wiring options

There are three wires on the analog input:

- Red (RED): Sensor power output
- White (WHT): Signal input
- Black (BLK): Ground

Connect the sensor power output, signal input, and ground wiring according to the requirements of your sensor.

A wiring sticker is included with ANP115 open wires model.

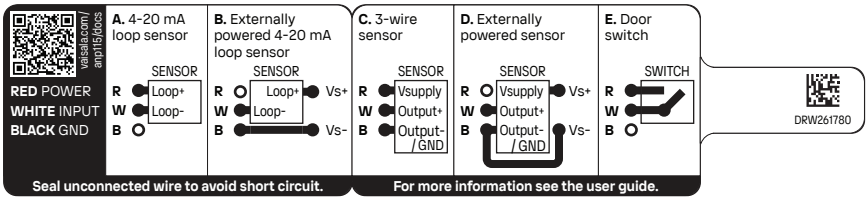


Figure 6 ANP115 wiring sticker

The sticker shows five wiring options, labeled A-E. These wiring options are described in this guide, in addition to a sixth one, option F.

The following table shows the wiring options for sensors that have preconfigured templates in Insight. For more information, see Configuring ANP115 for sensors with preconfigured template (page 17).

Table 3 Wiring options for sensors that have preconfigured templates

Input mode, preconfigured templates	Wiring option
Door switch (normally open)	Option E: Wiring for dry contact (page 32)
PDT101-P4V (±60 Pa, 0-5 V)	Option C: Wiring for 3-wire sensor (page 32)
PDT101-W4V (±0.25 inH2O, 0-5 V)	Option C: Wiring for 3-wire sensor (page 32)
PDT101-P4C (±60 Pa, 4-20 mA)	Option A: Wiring for 4–20 mA loop sensor (page 31)
PDT101-W4C (±0.25 inH2O, 4-20 mA)	Option A: Wiring for 4–20 mA loop sensor (page 31)

The following table shows which wiring options can be used depending on the selected analog input mode during configuration.

Table 4 Wiring options for current sensors, voltage sensors, and boolean input

Input mode	Wiring options
Current input See Configuring ANP115 for current sensor (page 18).	Option A: Wiring for 4–20 mA loop sensor (page 31) Option B: Wiring for externally powered, 4–20 mA loop sensor (page 31) Option C: Wiring for 3-wire sensor (page 32) Option D: Wiring for externally powered, 3-wire sensor (page 32)
Voltage input See Configuring ANP115 for voltage sensor (page 21).	Option C: Wiring for 3-wire sensor (page 32) Option D: Wiring for externally powered, 3-wire sensor (page 32)
Boolean input See Configuring ANP115 for boolean input (page 24).	Option E: Wiring for dry contact (page 32) Option F: Wiring for active binary signal (page 33)



If you want to use the M8 field connector, make sure that you do the wiring according to the provided options.

The following wiring diagrams show wiring based on different sensors, output voltage and output capability.

More information

- Installation overview (page 28)

5.4.1 Option A: Wiring for 4–20 mA loop sensor

This wiring option is marked as A on the wiring sticker.

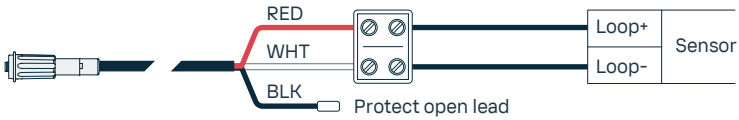


Figure 7 Wiring for 4–20 mA loop sensor

Use this wiring option with a loop-powered 4–20 mA sensor that gets enough output voltage from the host device, such as a VDL200 Data Logger.

Check that the output voltage from the host device fulfills the requirements of the analog sensor. If the output voltage is not enough, connect the wiring according to Option B: Wiring for externally powered, 4–20 mA loop sensor (page 31).

5.4.2 Option B: Wiring for externally powered, 4–20 mA loop sensor

This wiring option is marked as B on the wiring sticker.

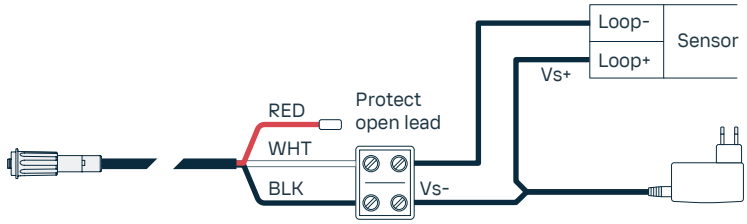


Figure 8 Wiring for externally powered, 4–20 mA loop sensor

Use this wiring option with a loop-powered 4–20 mA sensor that does not get enough output voltage from the host device, such as a VDL200 Data Logger.

Provide an external power supply for the sensor.

5.4.3 Option C: Wiring for 3-wire sensor

This wiring option is marked as C on the wiring sticker.

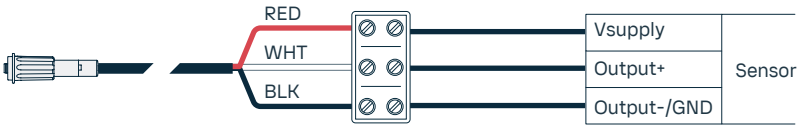


Figure 9 Wiring for 3-wire sensor

Use this wiring option with an analog sensor (V or mA) when the output voltage of the host device, such as a VDL200 Data Logger, fulfills the sensor's requirements.

Check that the output voltage from the host device fulfills the requirements of the analog sensor. If the output voltage is not enough, connect the wiring according to option: Option D: Wiring for externally powered, 3-wire sensor (page 32).

5.4.4 Option D: Wiring for externally powered, 3-wire sensor

This wiring option is marked as D on the wiring sticker.

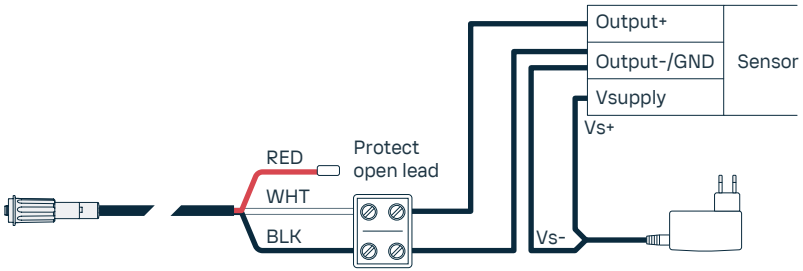


Figure 10 Wiring for externally powered, 3-wire sensor

Use this wiring option with an analog sensor (V or mA) when the output voltage of the host device, such as a VDL200 Data Logger, does not fulfill the sensor's requirements.

Provide an external power supply for the sensor.

5.4.5 Option E: Wiring for dry contact

This wiring option is marked as E on the wiring sticker.

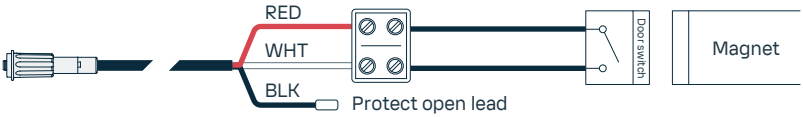


Figure 11 Wiring for door contact switch

Use this wiring option with a dry contact, for example, with a fridge door switch.

5.4.6 Option F: Wiring for active binary signal

This wiring option is not shown on the wiring sticker.

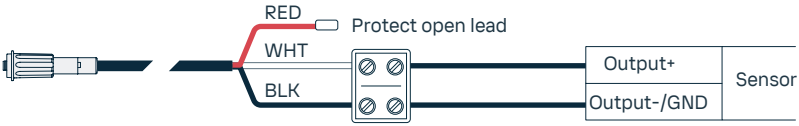


Figure 12 Wiring for active binary signal

Use this wiring option with an active binary signal. An active binary signal supplies signal voltage.

5.5 Installing M8 field connector

An optional M8 field connector kit is available for the ANP115 open wires model. You can install the M8 field connector to the open wires. The M8 field connector provides better protection in harsh conditions, in which an ordinary screw terminal cannot be used. Connect the wires according to one of the wiring options A–F.

5.6 Testing configuration and installation

Before mounting the sensor to the measurement location, make sure that ANP115 configuration and installation have been done correctly.

1. Check that ANP115 is wired correctly according to the sensor type.
2. Check that ANP115 is configured correctly. You can use Vaisala Insight PC software to view the measurements.

3. Check that the host device, such as a VDL200 Data Logger, displays the measurements correctly.

More information

- Problem situations (page 36)

6. Maintenance

6.1 Cleaning

- Instrument air
- Lint-free cloth
- Isopropyl alcohol (70 %)

Do not spray anything directly on the probe.
Do not use acetone as the cleaning agent as it may damage the plastic parts.
Do not use abrasive sponges or scrape the surface of the devices.
Do not immerse the probe in liquid.

1. Blow instrument air on the probe to remove any dust and loose debris.
2. Moisten some lint-free cloth with isopropyl alcohol (70 %).
3. Wipe the probe cable.

   To avoid pulling on the cable, hold the cable while wiping along the length of it.
4. Wipe the probe body and the probe nut that is holding it (if not connected by a cable).

7. Troubleshooting

7.1 Problem situations

Table 5 Troubleshooting table

Problem	Possible cause	Solution
ANP115 is not detected in Vaisala Insight PC software.	USB service cable is not properly connected.	Make sure that the USB cable for PC connection (item 219690) is securely attached. Try using a different USB port.
	Vaisala USB Device driver is not installed.	Install the required **Vaisala USB Device driver** on the PC. Restart the computer. For more information, see Installing driver for USB service cable (page 14).
Sensor does not power on.	No power from the host device (VDL200) or external power supply.	Make sure that the host device provides **5-28 V DC** (or **15 V from VDL200**). Measure the voltage with a multimeter.
	Incorrect wiring.	Check that the power is connected correctly. Check the wiring. For more information, see Wiring options (page 29).

Problem	Possible cause	Solution
The host device does not show sensor readings.	The wiring configuration does not match the input type of the sensor.	Check wiring diagrams for the selected input type: **Current input**, **Voltage input**, **Boolean input**. For more information, see Wiring options (page 29).
	The powering voltage is insufficient.	Check that the sensor receives enough voltage. If needed, use an external power supply. Make sure that the voltage is greater than 15 V.
	The sensor cable is damaged.	Inspect the cable for physical damage. Replace the cable if necessary.
	The current from the current sensor exceeds 22.5 mA.	Make sure that the current sensor operates in a 0-20 mA or a 4-20 mA range.
	Sensor signal exceeds the configured **Low error limit**or **High error limit**.	Check that the sensor is working properly. If yes, check that the configured error limits match the sensor specification.
Sensor values appear incorrect or fluctuating.	Wrong scaling settings.	Verify that the scale low end and scale high end are configured correctly in Vaisala Insight software according to sensor specs.
Intermittent or unstable readings.	Loose connections or wire damage.	Inspect and reconnect wires securely. Measure the voltage with a multimeter.
	The value for **Sensor warm-up time** is too small.	Check the sensor specification for its stabilization time after power-up and set **Sensor warm-up time** accordingly.
	Sensor powered from ANP115 consumes more than 24 mA.	Use an external power supply for the sensor and change the wiring and ANP115 configuration accordingly.
Door switch does not trigger.	Sensor contact misalignment.	Check that the magnetic reed switch is within 15 mm (0.59 in) of the magnet for a closed state.

More information

- Testing configuration and installation (page 33)

7.2 Troubleshooting checklist

When troubleshooting, check the questions listed in Technical support (page 43) before contacting Vaisala technical support.

7.3 Product returns

If the product is faulty, these steps help to speed up the return process and avoid extra costs.

1. Read the warranty information.
2. Contact Vaisala technical support and request a Return Material Authorization (RMA) and shipping instructions.

   Always request the RMA before returning any faulty material.
   Provide the failure report as requested.

3. Make sure any returned material is safe to handle and does not require special handling or cleaning precautions. Do not return any material that may be contaminated by substances or chemicals that are harmful to humans.

8. Technical data

8.1 Specifications

Table 6 ANP115 operating environment

Property	Description/Value
Operating environment	Indoor use
Use in wet location	No
Operating humidity	0–100 %RH, non-condensing
IP rating of probe body	IP65: Dust-tight. Protected from water jets from any direction.
Operating temperature	
Open wires model	−40 ... +60 °C (−40 ... +140 °F)
Door switch model [1)]	−20 ... +60 °C (−4 ... +140 °F)

1) Magnetic reed switch wires must be fixed in place.

Table 7 ANP115 powering

Property	Description/Value
Operating voltage [1)]	5-28 V DC
Powering from VDL200 Data Logger	
Operating voltage	15 V DC
Output voltage	15 V DC
Current consumption	max. 24 mA

1) This table shows the powering provided to the analog sensor by Vaisala host devices. If additional power is needed, an external powering device is needed for the analog sensor.

Table 8 ANP115 inputs and outputs

Property	Description/Value
Digital output	RS-485 2-wire half duplex, supports Modbus RTU
PC interface	Vaisala Insight PC software, version 1.3.0 or newer [1)]
Open wires model [2)]	

Property	Description/Value
Current input:	
Available ranges	4-20 mA, 0-20 mA, scalable
Resolution	300 nA
Accuracy of current input at +23 °C (+73.4 °F)	0.03 mA
Temperature dependence	±0.015 % / °C full scale
Input impedance	50 Ω
Voltage input:	
Available ranges	0-5 V, 0-10 V, scalable
Resolution	200 µV
Accuracy of voltage input at +23 °C (+73.4 °F)	0.015 V
Temperature dependence	±0.005 % / °C full scale
Input impedance	40 kΩ
Overload protection	30 V (reverse polarity protected)
Boolean input:	
Functions	Supports both passive and active contacts, can be configured to normally open or normally closed.
Preconfigured door switch model	
Open	Distance from magnet > 15 mm (0.59 in)
Closed	Distance from magnet < 15 mm (0.59 in)

1) *Vaisala Insight PC software is available for download at vaisala.com/insight.*
2) *Configurable to current input, voltage input, or boolean input.*

Table 9 ANP115 compliance

Property	Description/Value
EU directives and regulations	EMC Directive (2014/30/EU) RoHS Directive (2011/65/EU) as amended by 2015/863
Electromagnetic compatibility (EMC)	IEC/EN 61326-1, industrial environment EN 61000-6-2 EN 61000-6-4 FCC part 15 B, Class B CAN ICES-3(B)/NMB-3(B)

Property	Description/Value
Compliance marks	CE, China RoHS, KC, RCM

Table 10 ANP115 mechanical specifications

Property	Description/Value
Weight	25 g (0.88 oz)
Materials	
Probe body	PC/ABS blend
Cable jacket	Polyurethane (PU)
Connectors	
Probe connector	4-pin male M8 (IEC 60947-5-2)
Analog input connection	Open wires or 4-pin male M8 (IEC 60947-5-2)
Door switch	Magnetic reed switch wire connections

Table 11 Accessories

System or software	Version
USB cable for PC connection	219690

More information

- Vaisala Analog Input Probe ANP115 (page 9)

8.2 Dimensional drawings

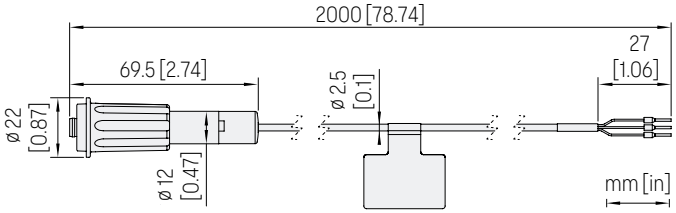


Figure 13 ANP115 open wires model dimensions

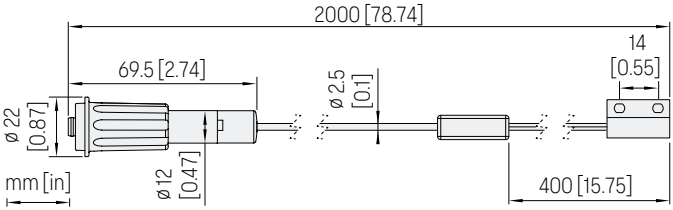


Figure 14 ANP115 door switch model dimensions

9. Vaisala services

9.1 Service centers

Vaisala offers comprehensive customer care throughout the life cycle of our products. Our service centers offer maintenance, calibration, upgrade, and repair services. All the services are provided worldwide with fast deliveries. For more information, go to vaisala.com/services.

The services are available from:

- Vaisala Online Store, store.vaisala.com
- Vaisala Services, helpdesk@vaisala.com

The provided services vary product by product.

9.2 Technical support



You can contact Vaisala technical support at vaisala.my.site.com/myvaisala or helpdesk@vaisala.com. You can find all our support channels at vaisala.com/support.

When contacting technical support, provide the following as applicable:

- Product name, model, and serial number
- Software/Firmware version
- Name and location of the installation site
- Name and contact information of a technical person who can provide further information
- Diagnostics package for the application

If applicable, also provide the following details:

- What failed (what worked / did not work)?
- Where did it fail (location and environment)?
- When did it fail (date, immediately / after a while / periodically / randomly)?
- How many failed (only one defect / other same or similar defects / several failures in one unit)?
- What was done when the failure was noticed?
- What was connected to the product and to which connectors?
- What is the input power source type, voltage, and what else (such as lighting, heaters, and motors) was connected to the same power output?
- Are all parts connected and grounded properly? Take a photo to help the troubleshooting.

9.3 Warranty

For warranty terms and conditions and the warranty claim process, see vaisala.com/warranty.

Note that warranty coverage may not apply if the product is damaged due to normal wear and tear, exceptional operating conditions, negligent handling or installation, or unauthorized modifications. See the applicable supply contract or Conditions of Sale for details of the warranty for each product.

Appendix A. Recycling instructions

These recycling instructions guide you on the end-of-life treatment of this Vaisala product. As waste regulations and infrastructure vary in each country, these instructions only indicate the different components to be separated and common ways to handle them. Always follow local requirements when disposing of the product. Vaisala encourages to use the best available recycling practices to minimize related environmental impacts.



Vaisala is committed to meeting the requirements of the EU Waste Electrical and Electronic Equipment (WEEE) Directive. This directive aims to minimize the impact of electrical and electronic goods on the environment, by increasing reuse and recycling, and reducing the amount of WEEE going to landfill. This symbol indicates that the product should be collected separately from other waste streams and treated appropriately.

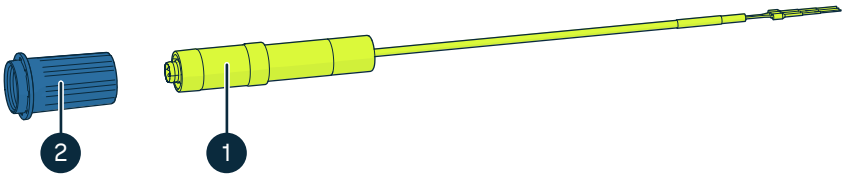


Figure 15 Materials for recycling

Recycling	Part	Material
Electrical and electronic waste	1	Various
Plastic waste	2	PC/ABS blend

Appendix B. Regulatory statements

Korean conformity information

Company name: Vaisala Oyj

Name of equipment: ANP115 Analog Input Probe

Country of manufacture: Finland

Link to RRA registration information: https://www.rra.go.kr/selform/rws-ANP115/

FCC Part 15 compliance statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that the interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

CAUTION! Changes or modifications to this equipment not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

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