PRODUAL

PART OF BEMSIQ GROUP

RTX-D touchscreen room transmitter

QUICK GUIDE

Made in Finland

5 years warranty

MANAGEMENT SYSTEM CERTIFICATION DNV ISO 9001 • ISO 14001 Finland

Contents

1 Introduction

The RTX-D transmitters are very versatile room transmitters that can be equipped with several measurements. All transmitters are equipped with temperature measurement and 2.8" multicolour touchscreen display. You can use the touchscreen for viewing measurement information, adjusting setpoints and using VAV forcing function. The following options are also available:

- Humidity measurement (-RH models)
- CO_2 concentration measurement (-CO2 models)
- VOC (Volatile Organic Compounds) measurement (-VOC models)
- Occupancy detection (-PIR models)
- Relay output (-R models)
- Modbus RTU communication (-MOD models)

You can commission these transmitters using the MyProdual smartphone application and the MyTool Connect dongle. You can also configure all settings via bus in -MOD models.

1.1 About this quick guide

This quick guide contains important information about the installation, wiring and commissioning of the product. Read this guide carefully before you install the product, connect the wires, or operate the product. Make sure that you fully understand all instructions before you start work. If you are not sure what the instructions mean, contact the seller or the manufacturer.

This document gives you basic instructions for getting started with the device. Please see the user guide for detailed information on using and maintaining this device.

Follow all instructions in this quick guide carefully. Always obey the applicable local rules and regulations.

The original instructions were written in English. If there are differences between the English instructions and the translations, refer to the English instructions.

If you find a mistake in the English instructions or in the translations, please send the details to the manufacturer.

1.2 Intended use

RTX-D room transmitters are intended to be used for measuring and controlling temperature, humidity, CO_2 and VOC in room environment.

These transmitters are intended to be connected to building automation systems in the HVAC/R industry.

2 Safety precautions

The product is developed, manufactured and tested according to high quality standards. However, instructions for safe use must be followed when installing, using or disposing the product or parts of product.

Read this quick guide carefully before you commission, use or service this device. To avoid any kind of damage to people or property, follow the instructions carefully. Produal is not liable for any hazards, injury to people, or damage to property caused by incorrect installation or misuse of the device.

To avoid electrical shock or damage to equipment, disconnect power before you install or service the product. Use only proper wiring that is rated for the full operating voltage and maximum current in the system. The wiring must also withstand fault conditions.

To avoid fire and/or explosion, do not use the product in potentially flammable or explosive atmosphere.

Make sure that the product is not damaged before installation. Do not drop the product or use excessive force during installation. Do not use the product if you can see any damages.

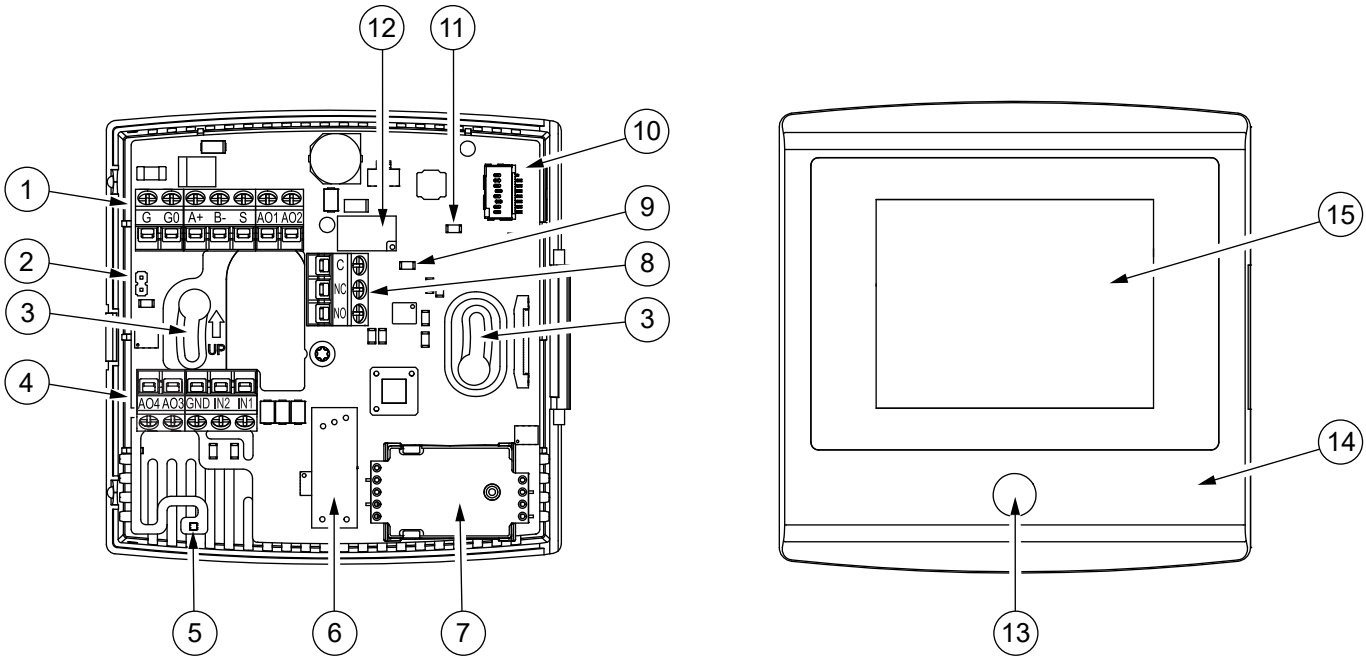
After installation, the product will be part of a system whose specifications and performance characteristics are not designed or controlled by Produal. Refer to national and local authorities to ensure that the installation is functional and safe.

The product should only be used in professionally designed applications. Unauthorised modifications are not allowed. The product must not be used in relation with any equipment that in case of a failure may threaten, directly or indirectly, human health or life or result in danger to human beings, animals or property.

In this document, there are different warnings and notes. The warning and note types are defined in the following table.

Sign	Description
WARNING:	The warning symbol indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.
CAUTION:	The caution symbol indicates a potentially hazardous situation which, if not avoided, could result in minor or moderate injury.
Important:	The important symbol indicates a potentially hazardous situation which, if not avoided, could result in damage to the device or property.
Note:	The note symbol indicates a useful tip or a recommended way to complete a task. These notes also provide information that is useful but not critical to the user.

3 Main components



1	Terminal block for power supply, Modbus (-MOD models) and outputs 1 and 2	2	Communication bus termination jumper (-MOD models)
3	Mounting point	4	Terminal block for inputs 1 and 2 and outputs 3 and 4
5	Temperature sensor / temperature and humidity sensor (-RH models)	6	VOC sensor (-VOC models)
7	CO_2 sensor (-CO2 models)	8	Terminal block for relay (-R models)
9	Power supply indicator light	10	MyTool Connect dongle connector
11	Communication indicator light (-MOD models)	12	Relay (-R models)
13	Occupancy sensor lens (-PIR models)	14	Cover
15	Touchscreen display		

4 Commissioning

4.1 Mounting the device

WARNING: Handle the product with care. Dropping the product can damage it internally and cause unwanted functions in the connected system.

1. Check that the product is not damaged during transportation.
2. Select the mounting position.

   WARNING: Do not install this product near a life support equipment. This device may cause harmful interference to nearby life support equipment.

   WARNING: Do not install this product into environment containing flammable or explosive substances.

   CAUTION: Place the device outside the reach of children and animals.

   Mount the device in dry surroundings (IP20) with pollution degree 1 or 2. The recommended mounting height is 150...180 cm.

   Select the mounting position carefully. If possible, eliminate all the error factors that can affect the measurements. Typical measurement error factors include:

   - direct sunlight
   - occupant proximity
   - airflow coming from windows or doors
   - airflow coming from ventilation nozzles
   - airflow coming from the flush mounting box
   - differential temperature caused by an external wall

   Important: Only install this device in a location where the ambient conditions meet the operating condition requirements.

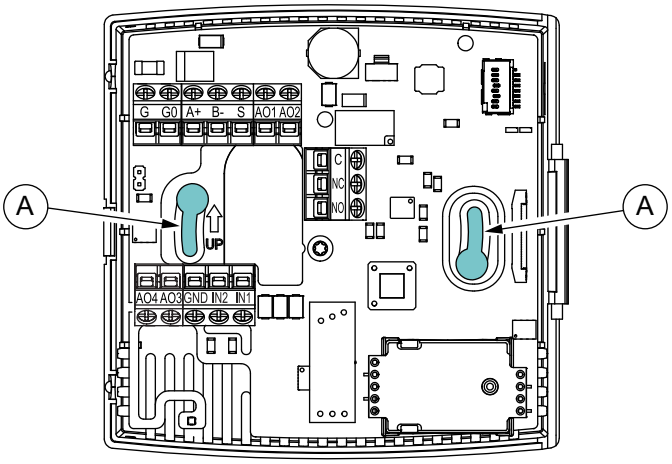
   Operating conditions

Temperature	0...60 °C
Temperature (-R models)	0...50 °C
Humidity	0...95 %rH (non-condensing)

3. Open the cover.
   Cover opens from the left side. The hinge of the cover is on the right side of the housing.

   Important: Do not remove the cover. The cover opening angle is 135°.

4. Mount the device using the mounting points.



A. Mounting points

The maximum screw diameter is 3 mm.

Important: Do not use excessive force when you tighten the mounting screws.

5. Connect the wires.
See chapter Wiring on page 7 for instructions.
6. Close the cover carefully.

4.2 Wiring

WARNING: Only connect wires and commission the device if you are qualified for electrical work and familiar with building automation products. Risk of electric shock and damage to the device.

WARNING: Always commission the device in a de-energised electricity network. Risk of electric shock.

WARNING: Protect the external power sources and power wiring with a fuse or circuit breaker. The maximum rating for the external circuit breaker is 16 A.

WARNING: Use an external power source that can provide at least 170 VA / 170 W to ensure proper operation of the device's internal fusing in case of a failure condition. If the power source cannot fulfill this requirement, the system's total power consumption should be less than 15 W also in the failure condition.

WARNING: Connect this device to SELV (separated extra low voltage) electricity network only. This device is appliance class III product according to IEC 60664-1.

WARNING: Protect the relay port with an external slow blow fuse with maximum current rating of 1 A. Alternatively, you can limit the power consumption of the connected external circuitry to less than 15 W in both normal operation and failure condition. The relay port is not protected internally against overload.

WARNING: Only connect the relay port to SELV (separated extra low voltage) circuitry.

WARNING: The maximum loop resistance of supply power wiring is 3 Ω.

Important: This product cannot detect an abnormal condition of input or output ports. External supervising (automated/human) can be necessary depending on the application where this product is used.

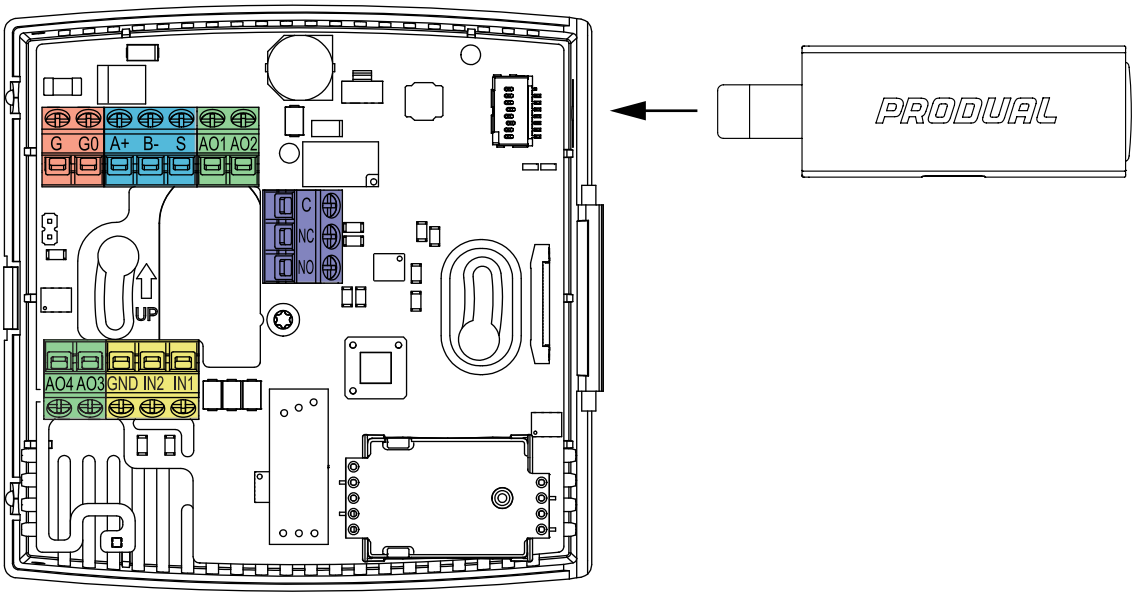
CAUTION: Connect the device only to overvoltage category I, II or III electricity network according to IEC 60664-1.

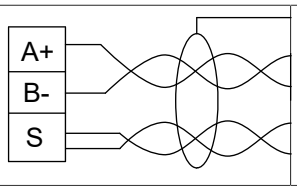
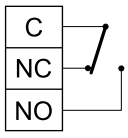
1. Open the cover.
   Cover opens from the left side. The hinge of the cover is on the right side of the housing.

   Important: Do not remove the cover. The cover opening angle is 135°.

2. Connect the wires to the screw terminal block according to the table below.

Important: Do not use cable ferrules.



G	Supply, 24 Vac/dc, < 1 VA
G0	0 V
A+ *B-* *S*	 Modbus RTU, RS-485 (-MOD models). **Note:** You can use the *S* connector only to chain the cable shielding.
AO1	Voltage output 1, 0...10 Vdc, < 2 mA (freely scalable within this range).
AO2	Voltage output 2, 0...10 Vdc, < 2 mA (freely scalable within this range).
C *NC* *NO*	 Relay output, 24 Vac, 1 A res. (-R models).
AO4	Voltage output 4, 0...10 Vdc, < 2 mA (freely scalable within this range).
AO3	Voltage output 3, 0...10 Vdc, < 2 mA (freely scalable within this range).
GND	Ground.
IN2	Input 2, digital / resistance / NTC 10.
IN1	Input 1, digital / resistance / 0...10 Vdc / NTC 10 / PT 1000.

The nominal tightening torque for wiring terminal screws is 0.4 Nm.

Important: Do not use excessive force when you tighten the wiring terminal screws.

CAUTION: Make sure that all covers are closed before you connect the supply voltage to the device. Do not open the covers when the supply voltage is connected.

3. Make sure that the cables or wires do not touch the display or get in between the cover and housing.
4. Close the cover.

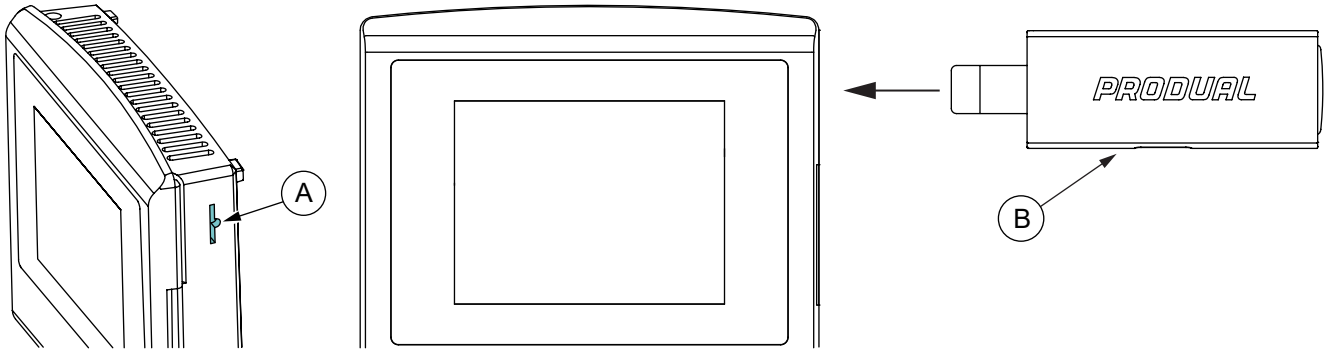
Make sure that all device functions operate correctly after the wiring is complete and the power supply is on.

4.3 Configuring transmitter using the MyProdual application

To configure the device, you first need to connect it to the MyProdual application. When the device is connected to the application, you can make changes to the configuration.

Note: You need the MyTool Connect dongle to connect the MyProdual application to the device.

1. Connect the supply power to the device.
2. Insert the MyTool Connect dongle to the connector.

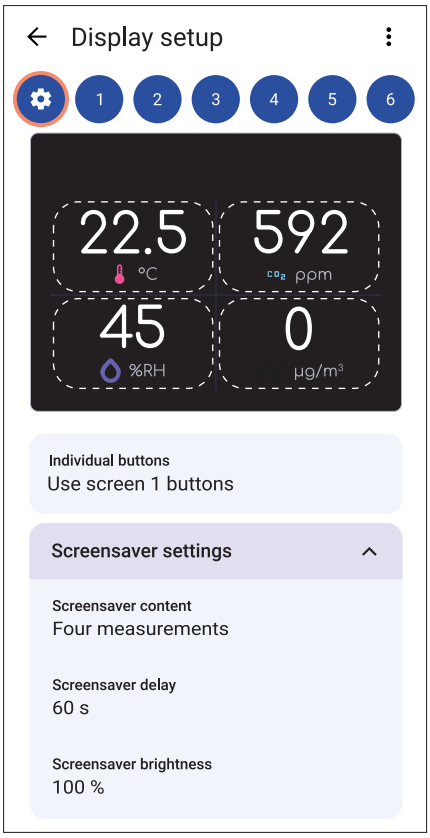


A. MyTool Connect dongle connector
B. MyTool Connect dongle

The indicator light on the MyTool Connect dongle flashes when the Bluetooth is ready for connecting.

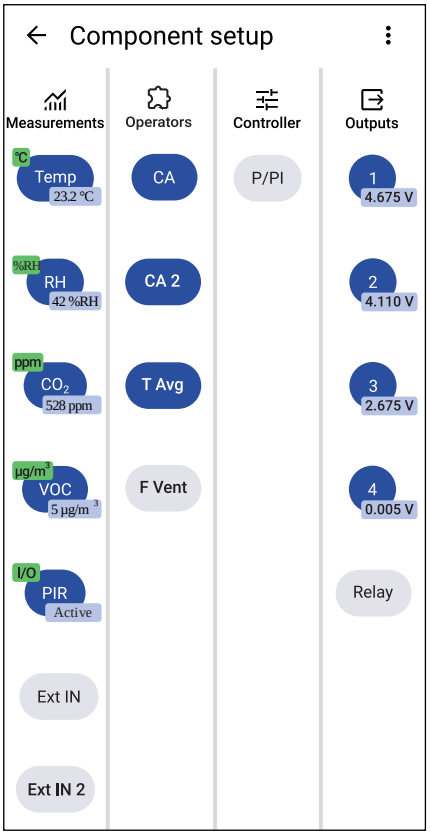
3. Start the MyProdual application.
4. Tap the *Quick access* button.
5. Tap the *Bluetooth connection* button.
   The device list shows the devices that have Bluetooth activated.
6. Tap a device on the list to connect.
   The indicator light on the MyTool Connect dongle is on when the MyProdual application is connected to the device.
   In addition, a gear wheel icon is shown on the bottom section of the device's display.
7. Tap the *Configuration* button.

8. Tap the *Display setup* button.



9. Configure the display settings.

10. Tap the *Component setup* button.



The *Component setup* page is divided in sections:

Measurements	Set up measurements and inputs.
Operators	Set up condensation functions, temperature average calculations and ventilation forcing function.
Controller	Set up the controller.
Outputs	Set up outputs.

11. Make the changes to the configuration.
12. In -MOD models, tap the *General communication settings* button to configure the communication settings.
13. Tap the *Install to device* button to write the changes to the device.

Note: You can also tap the *Save* button on each configuration page to save the changes to the device.

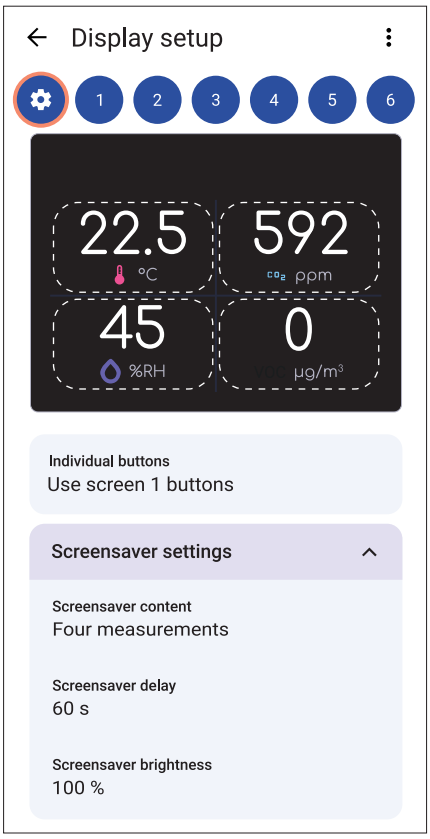
14. Tap the ← button.
15. Tap the connection info button to disconnect the device.

16. Remove the MyTool Connect dongle.

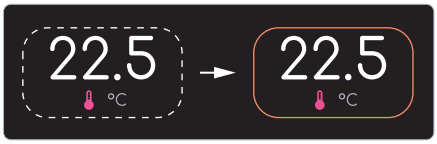
4.3.1 Configuring display settings

1. Tap the *Display setup* button on the *Configuration* page to open the *Display setup* page.

2. Configure the common settings for all screens.
   Tap a screen item in the live view section of the *Display setup* page.

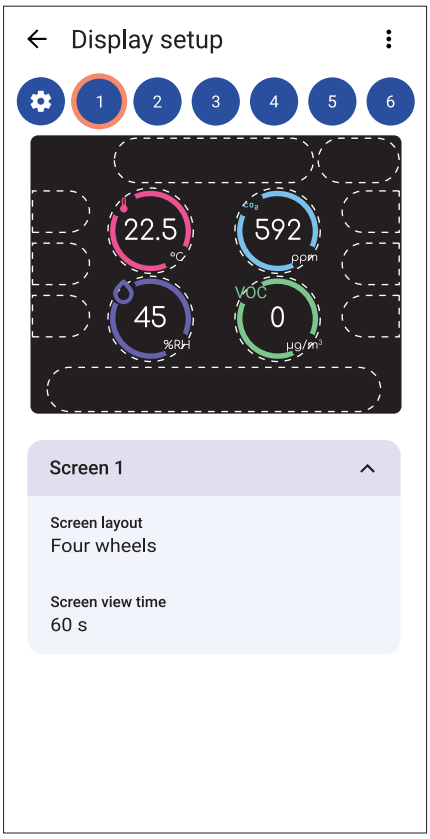


   Configurable screen items are marked with dotted lines. When you tap the item, the dotted line changes to a red line and you can change the settings.

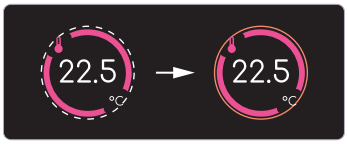


   In this view, you can configure screensaver and other common settings for all screens.

3. Tap the number of the screen you are going to configure or tap the gear wheel symbol to return to the common settings view.



Configurable screen items are marked with dotted lines. When you tap the item, the dotted line changes to a red line and you can change the settings.



4. Configure all required screens and save the settings to the device.

4.3.2 Configuring measurement and input settings

All device models include temperature measurement. Other measurements available for configuration depend on the model.

1. Tap the *Component setup* button on the *Configuration* page to open the *Component setup* page.

2. Tap a button in the *Measurements* column for the measurement you want to configure.

   The *Measurements* column can have the following measurement settings available depending on the device model:

Temp	Set up temperature measurement settings.
RH	Set up relative humidity measurement settings. Available for -RH models.
CO2	Set up CO_2 measurement settings. Available for -CO2 models.
VOC	Set up settings for volatile organic compounds measurement. Available for -VOC models.
PIR	Set up occupancy detection settings. Available for -PIR models.
Ext IN	Set up external input 1 settings.
Ext IN 2	Set up external input 2 settings.

4.3.3 Configuring condensation contact, average temperature and ventilation forcing settings

1. Tap the *Component setup* button on the *Configuration* page to open the *Component setup* page.
2. Tap a button in the *Operators* column for the measurement you want to configure.

   The *Operators* column has the following measurement settings available:

CA	Set up condensation contact 1 settings.
CA 2	Set up condensation contact 2 settings.
T Avg	Set up temperature average calculation settings.
F Vent	Set up ventilation forcing setting.

4.3.4 Configuring controller settings

1. Tap the *Component setup* button on the *Configuration* page to open the *Component setup* page.
2. Tap the *P/PI* button in the *Controller* column to open the P/PI controller settings.

4.3.5 Configuring output settings

1. Tap the *Component setup* button on the *Configuration* page to open the *Component setup* page.
2. Tap a button in the *Outputs* column for the output you want to configure.

   The *Outputs* column can have the following measurement settings available depending on the device model:

1	Output 1 settings.
2	Output 2 settings.
3	Output 3 settings.
4	Output 4 settings.
Relay	Relay output settings.

3. Tap the *Output type* field.

   Note: Relay output setting does not have output type selection.

4. Select the output type and tap the *Ok* button.
   The following output types are available:

Off	Not in use.
Analog	Analogue output.
Digital	Digital output.

5. Configure the settings for the output.

4.3.6 Configuring communication settings

1. Tap the *General communication settings* button on the *Configuration* page to open the *Communication settings* page.
2. Tap a parameter on the list to change its value.

4.3.7 Saving and uploading configurations

If you have several devices to configure, you can save the configuration and then upload it to other devices. Configurations are model-specific.

You can save configurations to MyCloud cloud service or locally to your smartphone.

4.3.7.1 Saving the configuration to

1. After you have configured the settings, tap the three dots in the upper right corner of the *Configuration* page.
2. Tap *Save to MyCloud* to save the new configuration to MyCloud.
3. Enter a name for the configuration in the *Configuration name* field.
4. If necessary, enter an optional description in the *Description* field.
5. Tap *Next* to select the saving location.
6. Select *Personal workspace* or *Shared workspace*, if your company has a shared workspace.
7. Tap *Save* to save the configuration.

4.3.7.2 Uploading a saved configuration to a transmitter from

1. Tap the cloud icon on top of the *Configuration* page.
2. Tap a saved configuration on the *Open configurations* page to select it.
3. Tap the *Open* button in the top right corner.
4. Select the settings you want to import in the *Import settings* popup.
5. Tap the *Open* button to open the configuration settings.
6. Tap the *Install to device* button at the bottom of the *Configuration* page to upload the settings to the device.

4.3.7.3 Saving the configuration locally

You can save configurations locally to your smartphone.

1. After you have configured the settings, tap the three dots in the upper right corner of the *Configuration* page.
2. Tap *Save configuration locally* to save the configuration to the smartphone MyProdual is installed in.
3. Enter a name for the configuration in the *Configuration name* field.
4. If necessary, enter an optional description in the *Description* field.

5. Tap *Next* to select the saving location.
6. Navigate to the correct folder.
   a. In Android, tap the Save button to save the configuration file.
   b. In iOS, tap Open to save the configuration file.

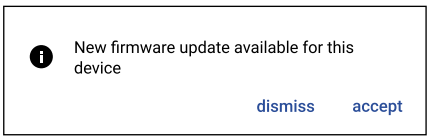
4.3.7.4 Uploading a locally saved configuration to a transmitter

1. Tap the three dots in the upper right corner of the *Configuration* page.
2. Tap *Open local file* in the menu.
3. Tap a saved configuration to select it.
4. Select the settings you want to import in the *Import settings* popup.
5. Tap the *Open* button to open the configuration settings.
6. Tap the *Install to device* button at the bottom of the *Configuration* page to upload the settings to the device.

4.4 Updating device firmware

You can update the device firmware when the MyProdual application notifies you about the update.

1. Start the MyProdual application.
2. Connect the device to the MyProdual application.
3. Tap the *Accept* button on the update notification.



4. Review the update details and tap the *Install* button to start the update.
5. Wait for the firmware installation process to complete.

   Important: Keep the smartphone near the device to keep the Bluetooth connection active. If the connection is lost, the firmware update process cannot complete.

6. Tap the *Ok* button in the firmware update completion dialog.
7. Tap the *Close* button.
8. Tap the connection info button to disconnect the device.

9. Remove the MyTool Connect dongle.

5 Disposal

This device is considered as electrical and electronic equipment for disposal in terms of the applicable European Directive. At the end of life, the product must enter the recycling system at an appropriate collection point.

- The device must be disposed through channels provided for this purpose.
- The disposal must be completed according to the local and currently applicable laws and regulations.

Generally all metals can be recycled as material. Plastics and cardboard packaging material can be used in energy recovery. Printed circuit boards need selective treatment according to IEC 62635 guidelines. To aid recycling, plastic parts are marked with an appropriate identification code. Contact your local Produal distributor for further information on environmental aspects and recycling instructions for professional recyclers.