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MANUAL

PRESIGO PDTN SERIES

REGIN

THANK YOU FOR CHOOSING REGIN!

Regin provides comprehensive solutions for building automation, including intuitive BMS-solutions, freely programmable and pre-programmed controllers, field devices and more.

Regin's offer, in combination with DEOS and Industrietechnik, empower system integrators, installers, and property owners with a powerful toolbox, setting them in a position to create building automation solutions that save both energy and engineering time. Today, versatile building management, optimized room control, and effective workflows have become the pillars for leading property owners in realizing significant energy savings in properties. Regin shares the clear goal of the group; to make this challenge easier on the way towards a sustainable future.

DISCLAIMER

The information in this manual has been carefully checked and is believed to be correct. Regin makes no warranties about the contents of this manual and users are requested to report errors and discrepancies to Regin, so that corrections may be made in future editions. The information in this document is subject to change without prior notification.

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Rev. A, 2026-02-24

PART OF
REGIN GROUP

Table of Contents

1 Introduction

1.1 About this manual

Special text formats used in the manual:

Note! This box, text, and symbol are used to highlight useful tips and tricks.

Caution! This box, text, and symbol are used to highlight cautions.

Warning! This box, text, and symbol are used to highlight warnings.

```
This box is used to show formulas and mathematical calculations
```

```
This box is used to
represent the display
window on the
controller
```

1.2 More information

- ✓ Presigo PDTN series - Product sheet
- ✓ Presigo PDTN... - Instruction
- ✓ Presigo PDTN... - Variable list
- ✓ Presigo PDTN... - Menu structure
- ✓ Presigo PDTN series - Manual (this document)

All the above documents are available for download from Regin's website, www.regincontrols.com

Note! All settings and configurations of the Presigo PDTN series room controllers should be done with the Regin:GO app or Application tool 2.

2 Information for the end user

2.1 Presigo PDTN

The PDTN... transmitter is a single or dual port pressure transmitter with one or two analogue outputs for 0…10 V or 4…20 mA (selectable). On PDTN..(-C)(D) the RS485 port can easily be configured for either EXOline, BACnet, or Modbus communication. The PDTN..(-C)(D) transmitter can be used as a slave unit in an EXOline, BACnet, or Modbus system.

The Presigo PDTN series transmitter has one or two sensor modules for general use with neutral gases. For PDTN... transmitters, the sensors are connected to pressure and flow outputs, where pressure (in Pa) is mapped towards voltage and current. For pressure, the output unit is selectable in Pa, kPa, PSI, mmH_2O, in H_2O or mBar. For flow, the output unit is selectable in l/s, CFM, m^3/s or m^3/h. The units feature a push button for zero-set calibration and factory reset.

2.2 Application

In heating, ventilation, and air conditioning systems, pressure transmitters help monitor and control air pressure to maintain optimal environmental conditions. The PDTN..(-C)(D) transmitter is especially well suited for air handling unit controllers. You can choose whether flow and/or volume data will be sent.

PDTN..(-C)(D) is designed for easy installation together with Regin's Corrigo 5.0 (or later) and EXOcompact controllers.

2.3 Communication

Presigo PDTN... models come with wireless and RS485 communication possibilities, for configuration. For more information, See section *Appendix B Model overview*.

For more information about communication, see section *3.1 Communication*

2.3.1 Bluetooth® Low Energy

Communication is also supported by Bluetooth® (Regin protocol compatible with the Regin:GO app).

The Presigo PDTN... transmitters can be connected to the Regin:GO app (iOS/Android) and a cloud back end via Bluetooth® Low Energy. For more information, see section *3.1.5 Bluetooth® Low Energy*, section *3.2 Regin:GO app* and section *3.4 Application tool 2*.

Caution! When you configure the device exclusively via RS485, it is recommended to disable Bluetooth® Low Energy (BLE) during setup. If BLE remains enabled, the device may still be accessed and reconfigured via Regin:GO using the default password. Note that this password can only be changed within the Regin:GO interface.

2.4 Display, LEDs and buttons

For models with display, the user interface consists of a display made up of a matrix of LEDs (25x11 pixels), in a plastic casing. The display can be seen through the plastic material.

The other HMI consists of three things, a push button, a rotary switch and an RGB LED. See section *2.4.2 HMI*.

2.4.1 Display

The display can show values on a single row, or two values on upper and lower dual rows, if two sensors are used. In Regin:GO, you can set display configurations in the **Display and menus** page. See section *3.2.3 Introduction Regin:GO app*.

Single row	Alternate between showing different channel values, this mode tries to make the digits as large as possible for better reading at a distance.
Dual row	Show values from both channels at the same time. Or, if only one sensor, it can show both pressure and flow at the same time.

For more information, see section *5.2.11 Toggling display mode*.

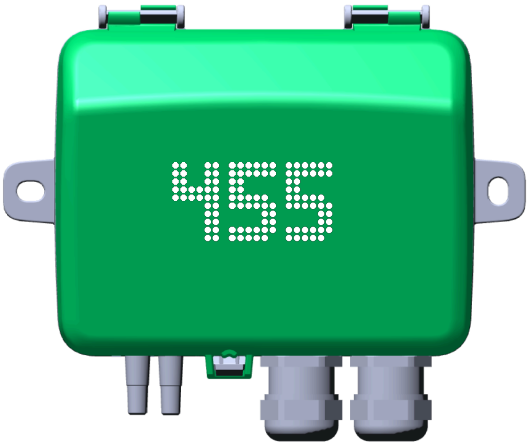


Figure 2-1 Display - Single row

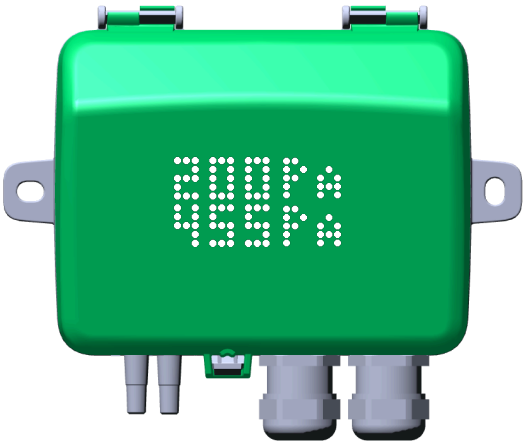


Figure 2-2 Display - Dual row

2.4.2 HMI

The device HMI consists of a push button, a rotary switch, and an RGB LED, located on the PCB (Printed Circuit Board). For models with display, a LED display is also present.

For more information, see sections *2.4 Display, LEDs and buttons* and *5 Commissioning*.

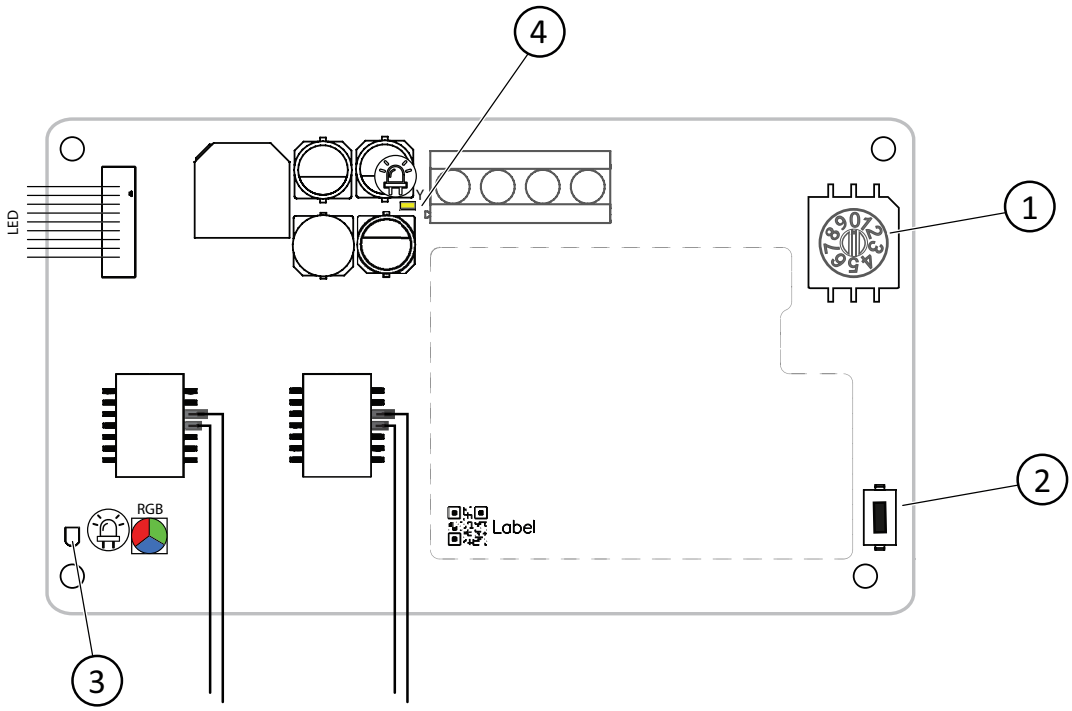


Figure 2-3 Printed Circuit Board (PCB)

① *Rotary switch*
② *Push button*
③ *RGB LED*
④ *Yellow LED (RS485 communication)*

Push button

The push button is located in the corner of the circuit board, to be used to configure device settings and configurations. For more information, see sections *2.4.2 HMI* and *Appendix C Terminal lists*.

There are three (3) defined ways of pressing the push button, as described below:

- ✓ **Short press**: Press between 0.05 and 1.5 seconds (s) and then release the push button, indicated by a short green RGB LED indication.
- ✓ **Mid press**: Press between 1.5 and 8 seconds and then release the push button, indicated by a short green RGB LED indication. This will trigger a zero calibration.
- ✓ **Long press**: Press longer than 8 seconds (≥ 8 s) and then release the push button. This is used for factory reset. See section Factory reset.

Rotary switch

The rotary switch is located on the PCB, to be used to configure device settings and configurations. For more information, see *Figure 2-3 Printed Circuit Board (PCB)*.

RGB LED

The RGB LED is located on the PCB, and is communicating setting and configuration actions and statuses. For more information, see *Figure 2-3 Printed Circuit Board (PCB)*.

2.5 Configuration

You use the Regin:GO app and the Application tool 2 as two ways to configure the PDTN..(-C)(D) transmitters. It is a matter of choice which application you use.

For more information, see sections *3.2 Regin:GO app* and *3.4 Application tool 2*.

3 Information for the specialist

3.1 Communication

3.1.1 Devices with communication

For more information about how to configure communication settings and commissioning, see section *5 Commissioning*.

3.1.2 RS485

The PDTN..(-C)(D) transmitters with communication have an RS485 communication port used for communication via BACnet, EXOline or Modbus. See section *Appendix C Terminal lists*.

Note! Use a shielded, twisted pair cable for RS485 communication. At high risks of interference, a 120 Ω terminating resistor should be mounted at each end of the communications circuit.

3.1.3 Networks, interfaces and protocols - Factory default

In *Table 3-1 Networks and interfaces, factory default status* and *Table 3-2 Protocols, factory default status* you find the supported network interfaces and protocols, including the factory default settings.

Table 3-1 Networks and interfaces, factory default status

Network/Interface	Status from factory default	Description
RS485	ON	Serial interface with differential signal levels, allowing for reliable data exchange between transmitters, sensors, and actuator over a bus with multiple other devices. Connection for SCADA configurations.
Bluetooth® Low Energy	ON at startup	The Bluetooth® Low Energy interface is a wireless interface used to temporarily connect to the device from a mobile phone, or tablet. The interface is used with the Regin:GO app for installation, configuration and maintenance of the device.

Caution! When you configure the device exclusively via RS485 using Application tool 2, it is recommended to disable Bluetooth® Low Energy (BLE) during setup. If BLE remains enabled, the device may still be accessed and reconfigured via Regin:GO using the default password. Note that this password can only be changed within the Regin:GO interface.

Table 3-2 Protocols, factory default status

Protocol	Status from factory default	Used in interface	Description
EXOline	ON	RS485	Regin specific protocol. EXOline is used for communication and reliable, real-time data exchange between transmitters, sensors, and other field devices within Regin's EXOsystem and SCADA. Here used for device configuration, system maintenance, communication with other devices, SCADA etc. The difference compared to Modbus and BACnet, is that EXOline allows more configuration and is used by Regin's own tools (such as, Application tool 2).
Modbus	OFF	RS485	Modbus standardized protocol. Used for communication with other devices and/or SCADA systems.
BACnet	OFF	RS485	BACnet standardized protocol. Used for communication with other devices and/or SCADA systems.

3.1.4 Communication settings

In the **Device - Communication** page, you can set port settings, change the communication protocol and Bluetooth® function settings.

The port 1 settings can be altered between the EXOline, Modbus, BACnet communication protocols, or be disabled.

For EXOline, you can set the PLA and ELA addresses (in Application tool 2 and Regin:GO) [1].

For the Modbus protocol, the Modbus address can be set here. And for BACnet the properties can be set. You can also change the Bluetooth® connection settings, for how and when the connection is made.

For more information, see *Table 3-3 Communication settings*.

Table 3-3 Communication settings

Setting values	Variable name	Description
Port 1 function	*RC_Port1Mode*	Setting of the port 1 function: **Disabled** **EXOline slave** (default) **Modbus slave** **EXOline/Modbus slave** **BACnet**
Port 1 baudrate	*RC_Port1Baud*	Setting of the port 1 baudrate: **9600** (default) **14400** **19200** **38400** **76800** **115200**
Port 1 parity	*RC_Port1Format*	Parity bit settings: **No parity, 1 stop bit** **Odd parity, 1 stop bit** (default) **Even parity, 1 stop bit** **No parity, 2 stop bits** **Odd parity, 2 stop bits** **Even parity, 2 stop bits**
PLA	*QSystem.PLA*	For EXOline, dual sensor transmitters use 242:1 as default address and single sensor transmitters use 242:3 as default address. [1]
ELA	*QSystem.ELA*	For EXOline, dual sensor transmitters use 242:1 as default address and single sensor transmitters use 242:3 as default address.
Modbus address	*QServices.ModbusUnitID*	The transmitter uses the address 1 (default).
BACnet MSTP address	*QServices.BACnetMstpMAC_Port_1*	Setting of the BACnet MSTP address. Default set to a number between 64 and 127 (default).
MSTP max master address	*QServices.BACnetMstpMax-MasterAddr_Port_1*	Setting of the MSTP max master address. (default = 127)
BACnet device ID	*QServices.BACnetDeviceID*	Setting of the BACnet Device ID. Set to the last 6 digits of the serial number (default).
BACnet device object name	*QServices. BACnetDeviceObjectName*	Setting of the BACnet device object name. Device name with the serial number appended to the end, “PDTN012509111234” (default).
Password	*QServices.BACnetPassword*	Setting of a BACnet password. Need to be set by user (default).
Bluetooth® function	*BleButtonMode*	Setting on when the Bluetooth® function is activated or inactivated: **Off** **Always on** **On after startup** (default)
Turn off after (s)	*BleButtonTimeout*	Setting of when the Bluetooth® connection is turned off. 1800 s (30 min) = default

1. Note! In Application tool 2, the EXOline PLA and ELA addresses are changed from the Tools menu, in Change transmitter address.

3.1.5 Bluetooth® Low Energy

The Presigo PDTN...transmitters have Bluetooth® functionality, which can be configured. See section *Bluetooth® activation*.

Bluetooth® activation

There are two settings that control the activation of Bluetooth®. The configuration of the Bluetooth® functions and the *Turn off after activation*, as described below.

Bluetooth® function

In *Table 3-4 Bluetooth® functions* the three (3) different Bluetooth® function activation settings are described, with the corresponding activation procedure.

Table 3-4 Bluetooth® functions

Function	Description
Off	Bluetooth® is disabled. Only serial line communication is possible.
Always On	Bluetooth® is always activated. LED indication is Off.
On after start up (default)	Bluetooth® is activated after power on for a configurable time. LED indication is On.

When Bluetooth® is temporarily activated (valid for the functions O*n after startup*, it is indicated with a blue LED flash every five (5) seconds. The Bluetooth® is activated for 30 minutes per default.

In Regin:GO, under the **Communication** page, you can adjust theBluetooth® Low Energy transmission power setting. The available options are High (default), Medium, and Low. Reducing the transmission power can help minimize interference and reduce the number of detected devices in environments with multiple Bluetooth® connections. See section *3.2.3 Introduction Regin:GO app*.

Turn off after activation

Turn Off after activation is only applicable for the Bluetooth® function options O*n after startup*, meaning the time in seconds that Bluetooth® should be activated. The permissible range for the setting value lies between 10 and 30000 seconds (default = 1800 s (30 min)).

3.2 Regin:GO app

The Presigo PDTN... transmitters are Bluetooth® compatible, and can be connected via the Regin:GO app. The Regin:GO app is available on Android and iOS. It is used for upgrading, configuring, and commissioning Presigo PDTN... transmitters. The Regin:GO app can also be used to upgrade the firmware.

You can get the Regin:GO app from *App store* (iPhone and iPad) or *Google play* (Android).

3.2.1 Language

The language setting is inherited from the handheld device settings.

3.2.2 Application data

Updated application data will be asked for automatically the first time the Regin:GO app starts, but it must be updated periodically to get the latest firmware and settings.

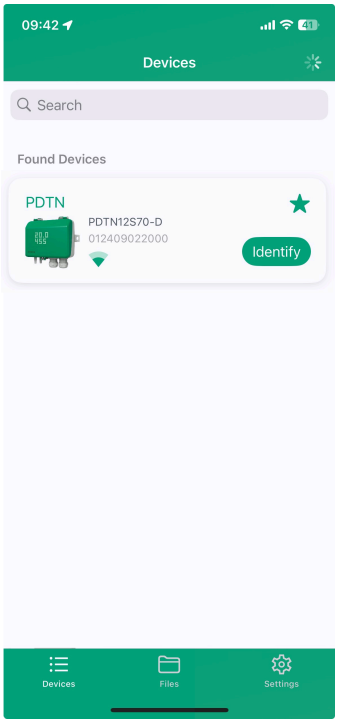
The app will prompt when there is available updates for download.

3.2.3 Introduction Regin:GO app

Below you find screenshots and short descriptions of some of the Presigo PDTN...basic functions of the menu pages in the Regin:GO app. To access and enable operations and settings in the Regin:GO app, see section *3.2.4 Accessing, operation, and settings in the Regin:GO app*.

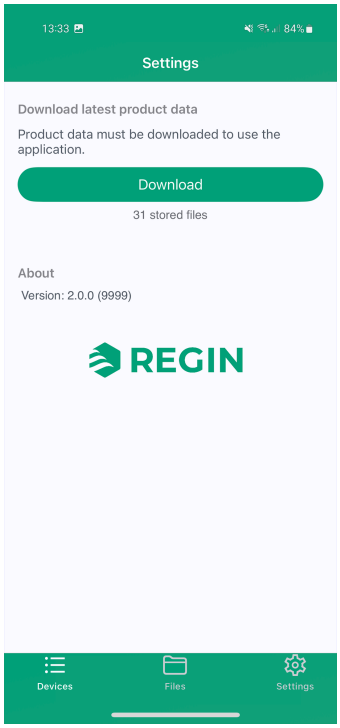
Note! Depending on your configuration, you will have different setting options.

Note! The language setting is inherited from the handheld device.



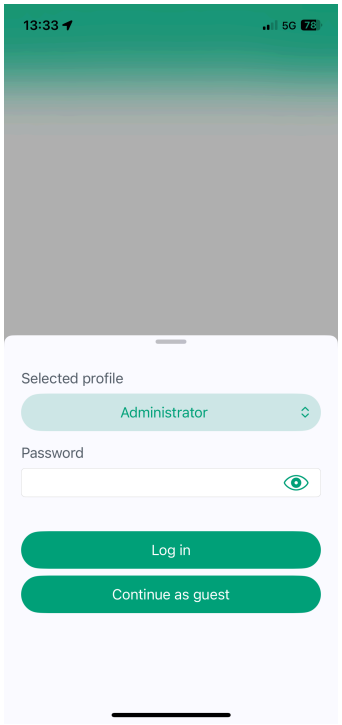
Devices page

This is the first page after the logo page. The *Devices* page lists all units found, with the possibility to identify new units and create favourites in a long list of units. The list presents a unit's name and serial number. When the **[Identify]** button is tapped in the Regin:GO app, the unit connection symbol is lit in blue for a few seconds and then turns blinking yellow to indicate which unit is selected.



Settings page

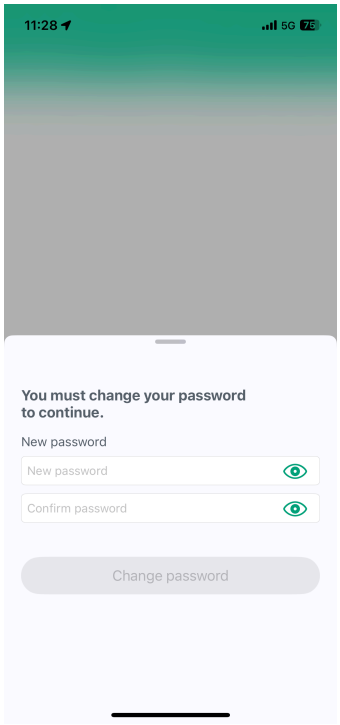
In this page it is possible to download the needed product data files. Tap **[Download]**.



Login pop up window

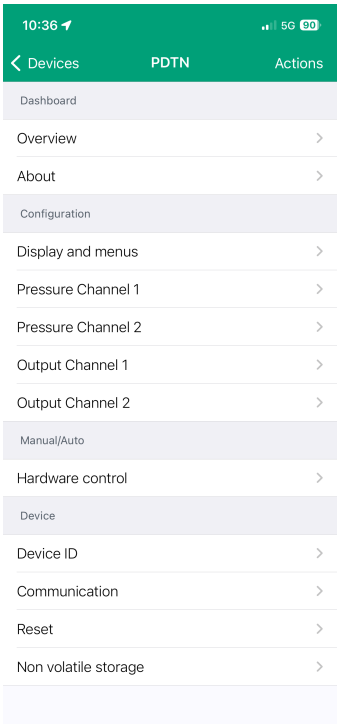
In the *Login* window you can choose the user login type, or to *Continue as guest*.

You need to be logged in as *Administrator* to change the unit name and address, backup and restore settings, as well as doing firmware updates.



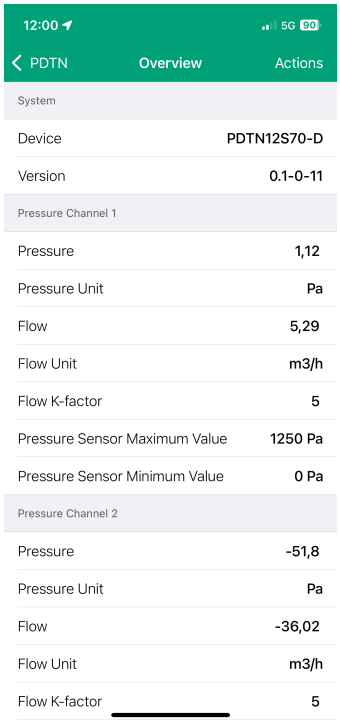
New password pop up window

Upon initial login to a device using an *Administrator* account, the *New password* dialogue prompts the user to create and confirm a new password.



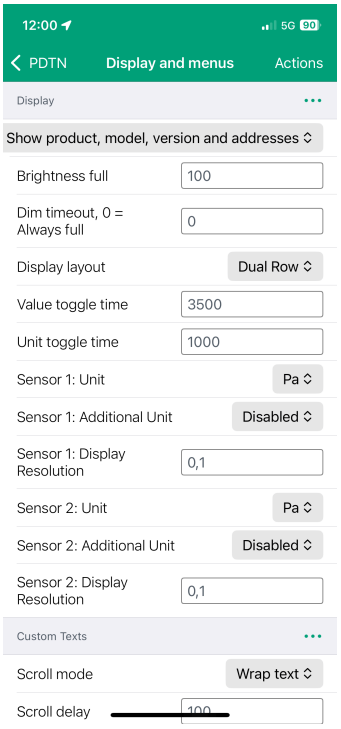
Menu page

This page is a menu page to navigate to other sub-menus, such as *Overview*, *Configuration*, and *Manual/Auto* etc.



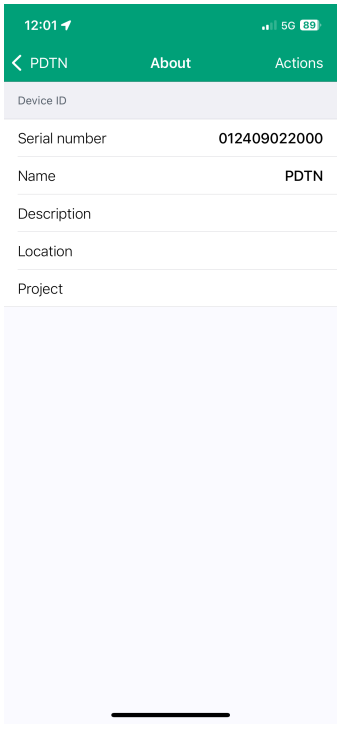
Overview page

This page is an overview page where you can see the actual values of *System* and *Pressure channel* settings.



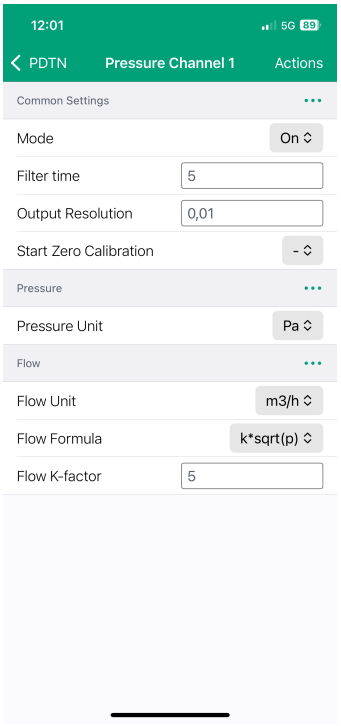
Display and menus page

This page is a settings page to configure the display and menus.

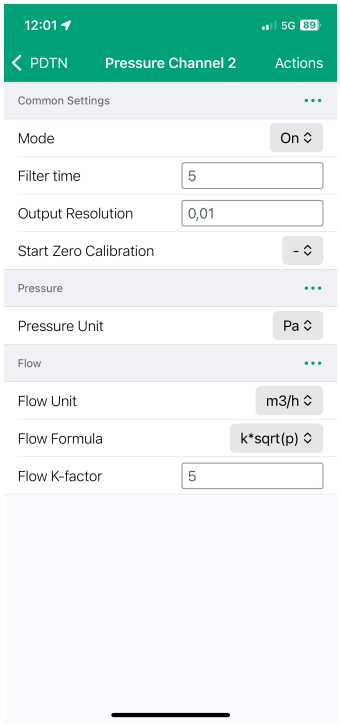


About page

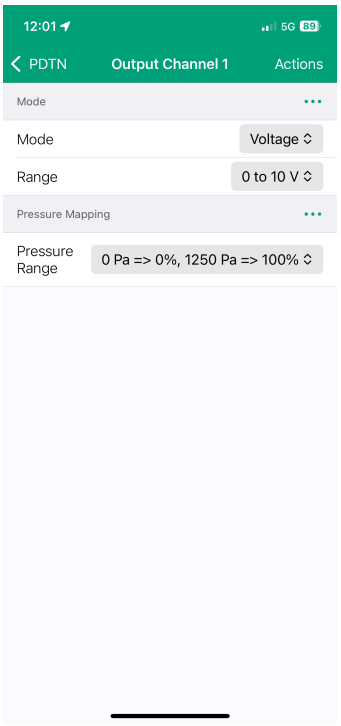
This page is an overview page where you can see the properties of the device.



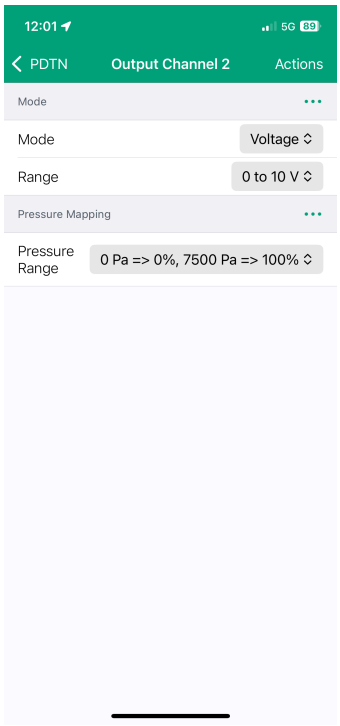
Pressure Channel 1 page
This page is a settings page to configure the*Pressure Channel 1*.



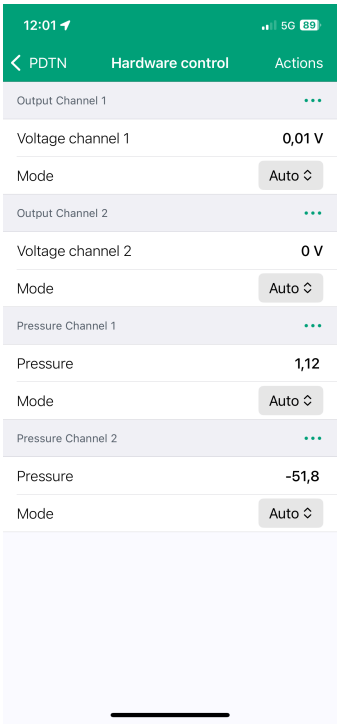
Pressure Channel 2 page
This page is a settings page to configure the*Pressure Channel 2*.



Output Channel 1 page
This page is a settings page to configure the*Output Channel 1*.

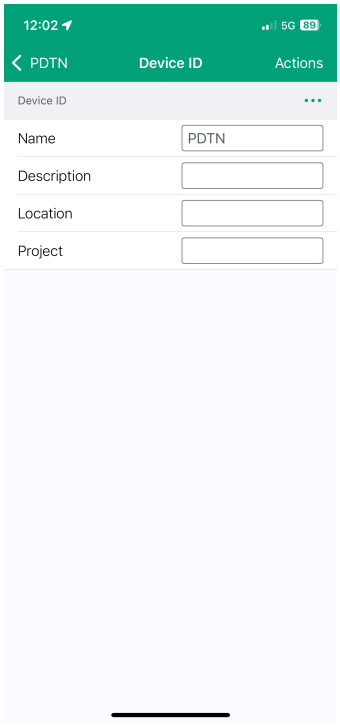


Output Channel 1 page
This page is a settings page to configure the*Output Channel 1*.



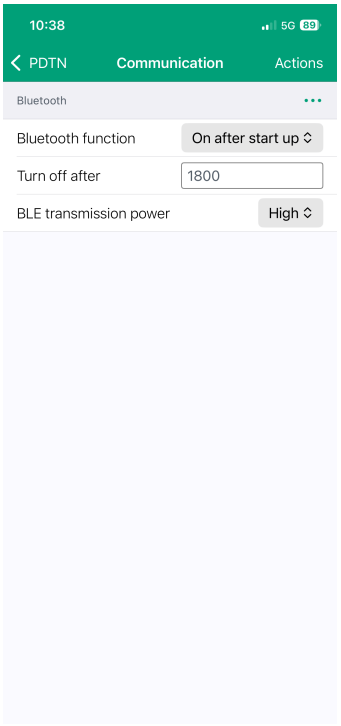
Hardware control page

This page is a settings page to configure the hardware (*Pressure channels*).



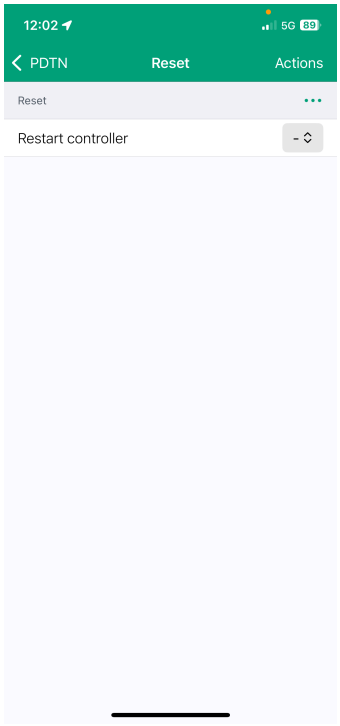
Device ID page

This page is a settings page to configure the properties of the device.



Communication page

This page is a settings page to configure the communication settings of the device.



Reset page

This page is a reset page to reset the device.

3.2.4 Accessing, operation, and settings in the Regin:GO app

To access and enable operations and settings in the Regin:GO app, a valid password is required. See the list of access rights below.

Access rights

Administrator - password: Admin

- ✓ Update firmware
- ✓ Reset to default values
- ✓ Save and import local configuration
- ✓ Change password
- ✓ Read and write all values that are possible to change, including all settings and configurations

Note! You will be prompted to change the default password after the first *Admin* login. See section *Password handling*.

Guest - password: N/A

- ✓ Read values decided by Regin:GO app.

Activating an identification notification in the Regin:GO app

If the device has Bluetooth® Low Energy support and Bluetooth® Low Energy is turned on, it is possible to activate an identification notification in the Regin:GO app.

To activate the identification notification:

1. On the **[Menu]** button, perform a short press (<1.5 seconds (s)) to activate the identification notification
2. Search for a device in the app
3. The device, with an active notification, will show on the top of the list with a blinking frame around it

Password handling

Upon initial login to a device with administrative privileges, the system will prompt the user to update their password. It is recommended to select a strong and unique password. The updated credentials will be temporarily cached within the application for a duration of 8 hours, and will be auto-filled during this period. See section *3.2.3 Introduction Regin:GO app*.

Connecting to a Presigo PDTN... pressure transmitter with the Regin:GO app

To connect to a Presigo PDTN... pressure transmitter with the Regin:GO app:

1. Make sure Bluetooth® Low Energy is On in the device, if not a power cycle device.
2. Open the Regin:GO app on your mobile device
3. In the **Search** field, in the **Devices** page (opens per default), type a device serial number or wait until the Regin:GO app populates the device by automatic detection
4. Tap the **Device** area on the desired identified device to connect to the device
5. In the **Log In** dialogue, tap the **Selected profile** list and select the desired profile type. Then tap and type the corresponding password in the **Password** field.
6. Tap the **[Login as...]** button
7. The Regin:GO app is now connecting to the device

You can now navigate the menu in the Regin:GO app to view values or make configuration changes. For more information, see sections *3.2.3 Introduction Regin:GO app* and *5 Commissioning*.

3.3 Regin:GO - Menu structure

The Regin:GO menu structure for the Presigo PDTN...application can be found in the PDTN - Menu Structure document, available at www.regincontrols.com.

3.4 Application tool 2

The Application tool 2 is a PC-based configuration software tool. It is used for upgrading, configuring, and commissioning one or several Presigo PDTN... transmitters.

Warning! Always disconnect the control unit from the power supply before connecting or disconnecting any connectors on the control unit.

3.4.1 Open Application tool 2

The Application tool 2 opens a dialogue at startup where you can create an offline project, open an existing project, or connect to a Presigo PDTN series transmitter via an RS485 serial connection.

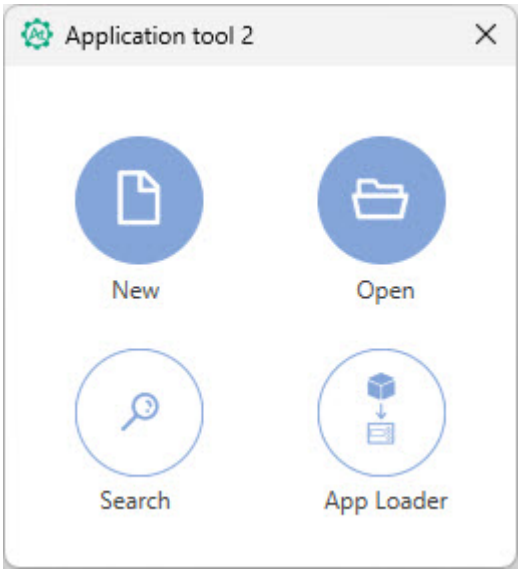


Figure 3-1 Application tool 2 start dialogue

To create and open a new offline project, click the **[New]** button.

To open an already existing project, click the **[Open]** button.

To search and connect to a device, click the **[Search]** button.

The *App Loader* function can be used when you just want to upload the application to the device. It is then not possible to configure the settings in the device. Just send the application to the device. Click the **[App Loader]** button, and upload the application to the device.

Serial search

The **Search** window can also be opened by pressing **[F7]** on your keyboard, or from the **Tools** menu, via **Search**. Select **Search** serial and choose the serial port to be used.

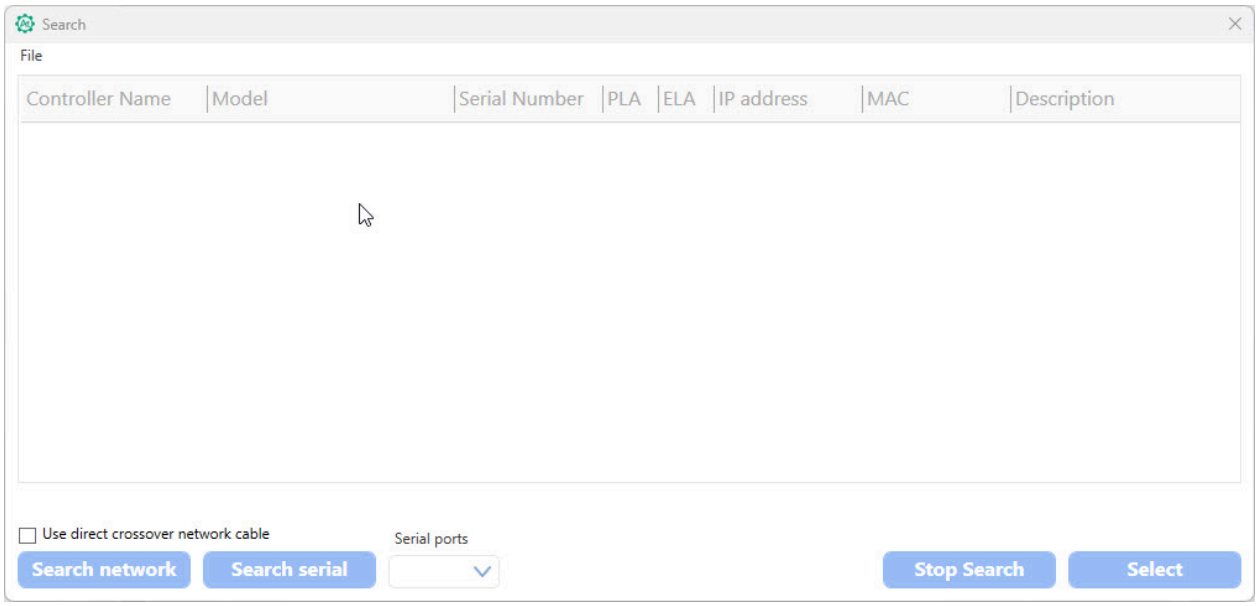
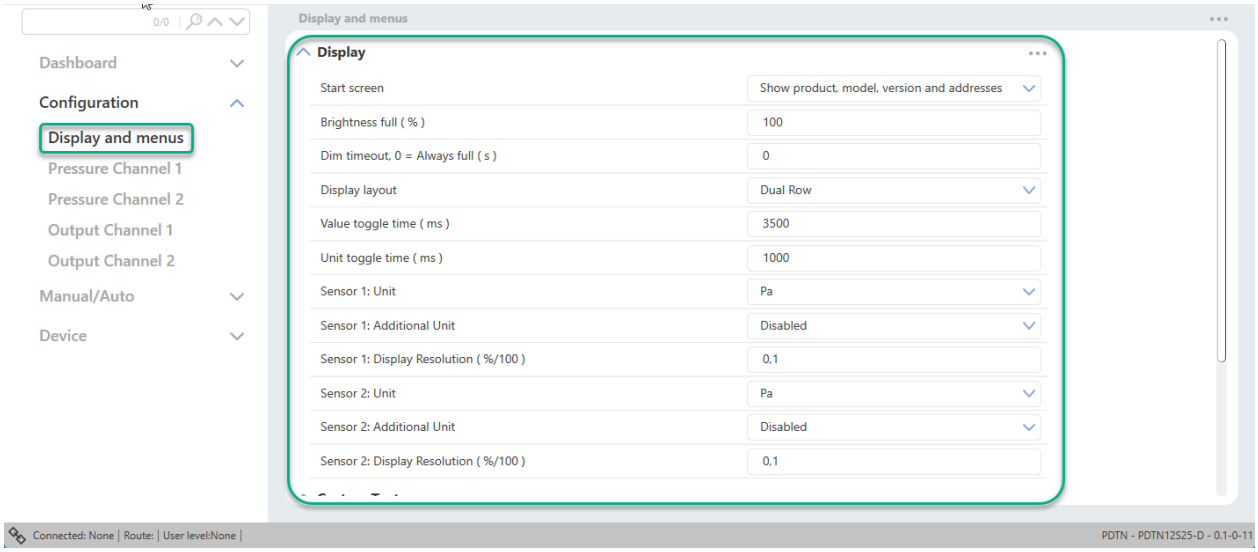


Figure 3-2 The Application tool 2 Search window

3.5 Configuration

3.5.1 Display and menus



Display settings

Table 3-5 Display settings list describes the display, LED brightness and time-out variables. You set the properties under **Display** in the **Display and menus** page in Regin:GO.

Table 3-5 Display settings list

Setting values	Variable name	Description
Start screen	*DisplayStartupMode*	Setting for what values are shown at start-up. The selectable values are: **No startup screen** **Show product** **Show product and model** **Show product, model and version** **Show product, model, version, and addresses**
Brightness full (%)	*Disp_BrightnessFull*	Setting of the brightness (in %) 0-100 (default value = 100)
Dim timeout, 0 = Always full	*Disp_TimeFull*	For how long after the last button event to let the display be fully turned on. The value is in seconds (s) and setting the value to 0 will result in always turned on display. When the time has elapsed the display will go into dimmed mode. Free value, 0 = Always full (s), (default value = 30)
Display layout	*PS_display_mode*	Select to show values from both channels at the same time, or in single row. Alternate between showing different channel values. See *Table 3-8 Display layout settings*.
Value toggle time (s)	*PS_display_value_time_ms*	This is the time in milliseconds that the value is shown in the display before alternating to the unit. Set to 0 not display this.
Unit toggle time (ms)	*PS_display_unit_time_ms*	This is the time in milliseconds that the unit is shown in the display before alternating to the value. Set to 0 not display this. See also*Table 3-6 Displayed value settings*.
Sensor 1: Unit	*PS_1_display_unit*	Select up to two (2) different values per channel (sensor 1) to be shown on the display. See also *Table 3-6 Displayed value settings*.
Sensor 1: Additional unit	*PS_1_display_extra_unit*	Set an additional value to be displayed for a channel (sensor 1). See also *Table 3-7 Additional value settings*.
Sensor 1: Display Resolution (%/100)	*PS_1_display_resolution*	Set the percentage of the sensor (sensor 1) range to use as rounding of the value shown on the display. (default = 0.1%, as that is greater then the sensor accuracy)

Table 3-5 Display settings list (continued)

Setting values	Variable name	Description
Sensor 2: Unit	*PS_2_display_unit*	Select up to two (2) different values per channel (sensor 2) to be shown on the display. See also *Table 3-6 Displayed value settings*.
Sensor 2: Additional unit	*PS_2_display_extra_unit*	Set an additional value to be displayed for a channel (sensor 2). See also *Table 3-7 Additional value settings*.
Sensor 2: Display Resolution (%/100)	*PS_2_display_resolution*	Set the percentage of the sensor (sensor 2) range to use as rounding of the value shown on the display. (default = 0.1%, as that is greater then the sensor accuracy)
Scroll delay (ms)	*PS_display_text_scroll_speed*	Time in milliseconds (ms) between scrolling one pixel. Decrease value to scroll faster.
Time to show custom text (ms)	*PS_display_text_time_ms*	Time in milliseconds (ms) to show the custom text in the display This variable will count down to 0. Set to any value to enable the custom text for that time.
Custom text channel 1	*PS_1_text_row*	String to show on in the display when the text timer is active. This is string is used as the top row in dual row mode and as the main string in single row mode. The string can be up to 64 characters (if special characters are used it might be less due to the UTF8 encoding). See also *Table 3-9 Display custom text variables*.
Custom text channel 2	*PS_2_text_row*	String to show as the second row in dual row mode. The string can be up to 64 characters (if special characters are used it might be less due to the UTF8 encoding). See also *Table 3-9 Display custom text variables*.

Values to display

You can select up to two (2) different values per channel to be shown on the display.

To set the primary displayed value in the display, see *Table 3-6 Displayed value settings*.

Table 3-6 Displayed value settings

Variable name	Value	Description
PS_x_display_unit	0	Do not show anything
	1	Pascal [Pa]
	2	Kilo pascal [kPa]
	3	Pounds per square inch [PSI]
	4	Millibar [mBar]
	5	Inches of water column [inch H_2O]
	6	Millimeters of water column [mm H_2O]
	7	Cubic meters per hour [m^3/h]
	8	Cubic meters per second [m^3/s]
	9	Liters per second [l/s]
	10	Cubic feet per minute [CFM]

To set an additional value to be displayed for a channel, see *Table 3-7 Additional value settings*.

Table 3-7 Additional value settings

Variable name	Value	Description
PS_x_display_extra_unit	0	Do not show anything
	1	Pascal [Pa]
	2	Kilo pascal [kPa]
	3	Pounds per square inch [PSI]
	4	Millibar [mBar]
	5	Inches of water column [inch H2O]
	6	Millimeters of water column [mm H_2O]
	7	Cubic meters per hour [m^3/h]
	8	Cubic meters per second [m^3/s]
	9	Liters per second [l/s]
	10	Cubic feet per minute [CFM]

Select to show values from both channels at the same time, or in single row. Alternate between showing different channel values. This mode tries to make the digits as large as possible for better reading at a distance.

Table 3-8 Display layout settings

Variable name	Value	Description
PS_display_mode	0	Dual row: Show values from both channels at the same time.
	1	Single row: Alternate between showing different channel values, this mode tries to make the digits as large as possible for better reading at a distance.

Display Custom text

You can configure display custom text variables to show your own custom text in the display. The below character map below is implemented in the device. See *Figure 3-3 Display character map, 5 px, 7 px and 10 px*.

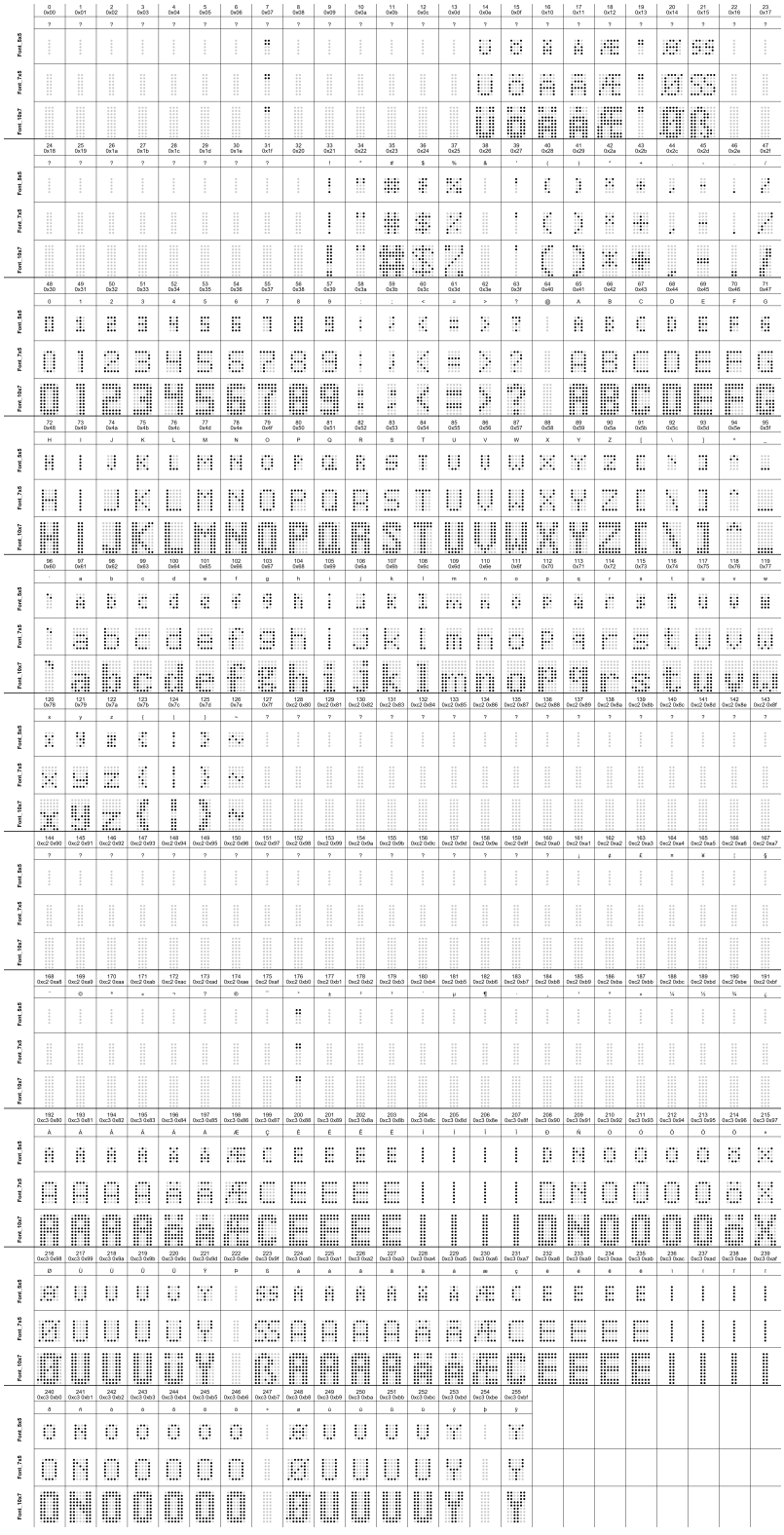


Figure 3-3 Display character map, 5 px, 7 px and 10 px

You can set the texts in the display by configure variables. The text string can be up to 64 characters in length. You can also set the visibility time and text scroll parameters, if needed.

The font used in dual row mode is always 5 px. However, the font size can also be set to a 7 px high or a 10 px high font, for single row.

Table 3-9 Display custom text variables

Variable name	Description
PS_display_text_font	The font to use in single row mode, dual row mode is always 5px. **0**=AUTO: Adapt font to fit on screen, use as large as possible, if it does not fit, use scrolling and smallest font **1**=5 px, 5 px high font. **2**=7 px, 7 px high font. **3**=10 px, 10 px high font
PS_display_text_scroll_mode	When to show the custom text **0=SCROLL_WRAP**: Scroll text if needed, wrap from end to beginning. **1=SCROLL_BOUNCE**, Bounce text in the end positions if needed **2=SCROLL_WRAP_SYNC**, Bounce text in the end positions if needed, sync row 1 and 2 **3=SCROLL_BOUNCE_SYNC,** Bounce text in the end positions if needed, sync row 1 and 2
PS_display_text_scroll_speed	Time in milliseconds (ms) between scrolling one pixel, decrease value to scroll faster.
PS_display_text_replace_chn_tag	If set to true, show custom text instead of "Chn 1/2" in single row display.

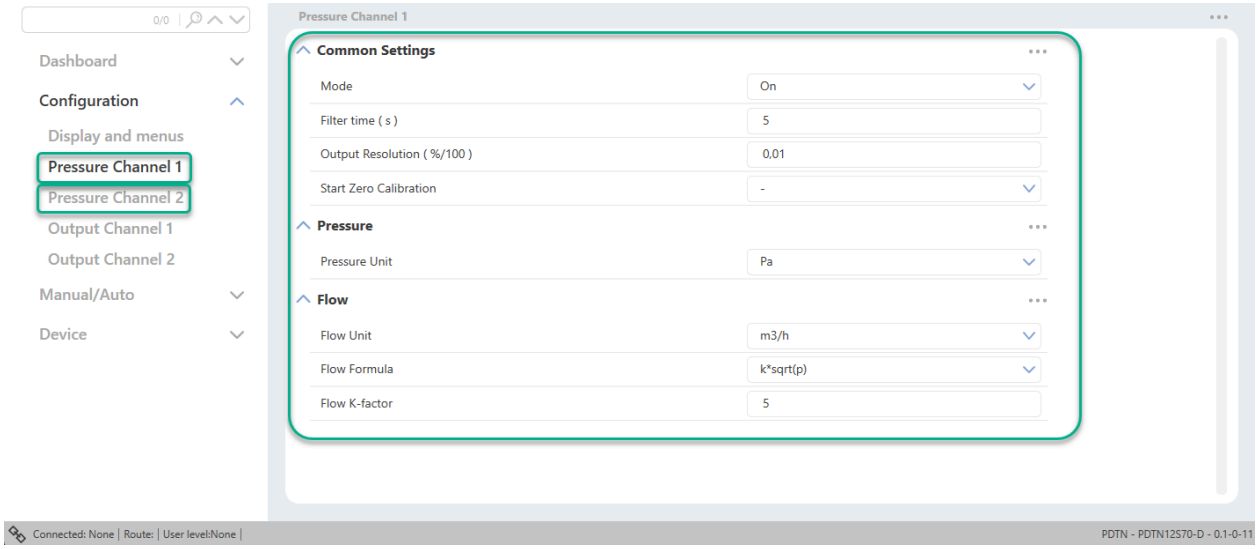
Special characters

There are some special character sequences that can be used to insert measurement values from the device into the custom text. See *Table 3-10 Special characters*.

Table 3-10 Special characters

Special string	Description
@00#	Device name
@01#	Device description
@02#	Device location
@03#	Device project
@04#	Model name
@05#	BACnet device object name
@06#	Modbus address
@07#	PLA
@08#	ELA
@09#	BACnet device id
@10#	BACnet MSTP MAC
@11#	PS1 Value (Selected by *PS_1_display_unit*)
@12#	PS1 Extra Value (Selected by *PS_1_display_extra_unit*)
@13#	PS2 Value (Selected by *PS_2_display_unit*)
@14#	PS2 Extra Value (Selected by *PS_2_display_extra_unit*)

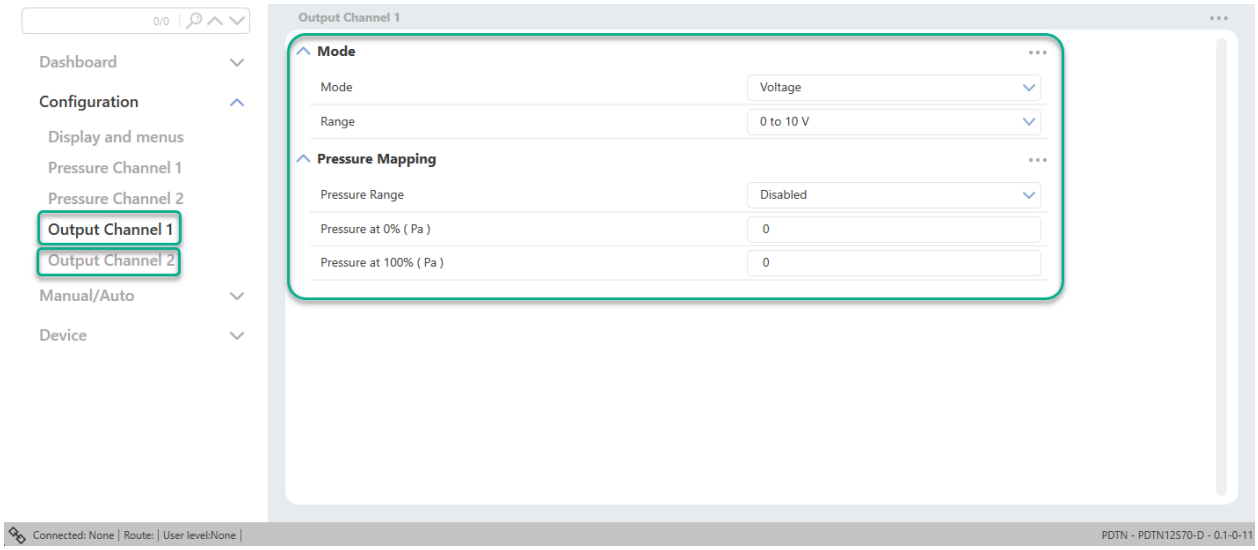
3.5.2 Pressure channel 1 and 2



In **Pressure Channel**, you can change common settings, pressure settings, and flow settings. Such as, channel mode, filter time, resolution and zero calibration. These settings are used for setting unit on signals. Such as, the pressure- and flow signal connected to the pressure sensor.

Configuration setting	Variable	Description
Mode	*IoAnaIn_x_mode*	Mode for input
Filter time	*IoAnaIn_x_filter*	Filter time (0 to 17200 seconds)
Output Resolution	*PS_x_resolution*	This variable contains the percentage of the sensor range to use as rounding of values, for communication. Default = 0.1%, as this is greater then the sensor accuracy.
Start Zero Calibration	*PS_x_set_zero*	If the value 1 is written to this register, a zero calibration of the current sensor will be performed. Make sure the *PS_x_value* is stable, and that no pressure is applied to the sensor, before writing to this register. The value will be reset to 0 automatically, when the zero calibration is done by the device.
Pressure Unit	*PS_x_unit*	Used to convert the pressure sensor output value to the preferred unit.
Flow Unit	*PS_x_flow_unit*	Used to convert the pressure sensor output value to the preferred unit.
Flow Formula	*PS_x_flow_formula*	This variable is used to set the formula used to calculate flow from pressure. The input value to the formula is always pressure in Pascal. See section *6.1 Calculation of fan unit air flow using Presigo PDTN....*
Flow K-factor	*PS_x_flow_k_factor*	This variable is used to set the k-factor used in the flow calculation. See section *6.1 Calculation of fan unit air flow using Presigo PDTN....*

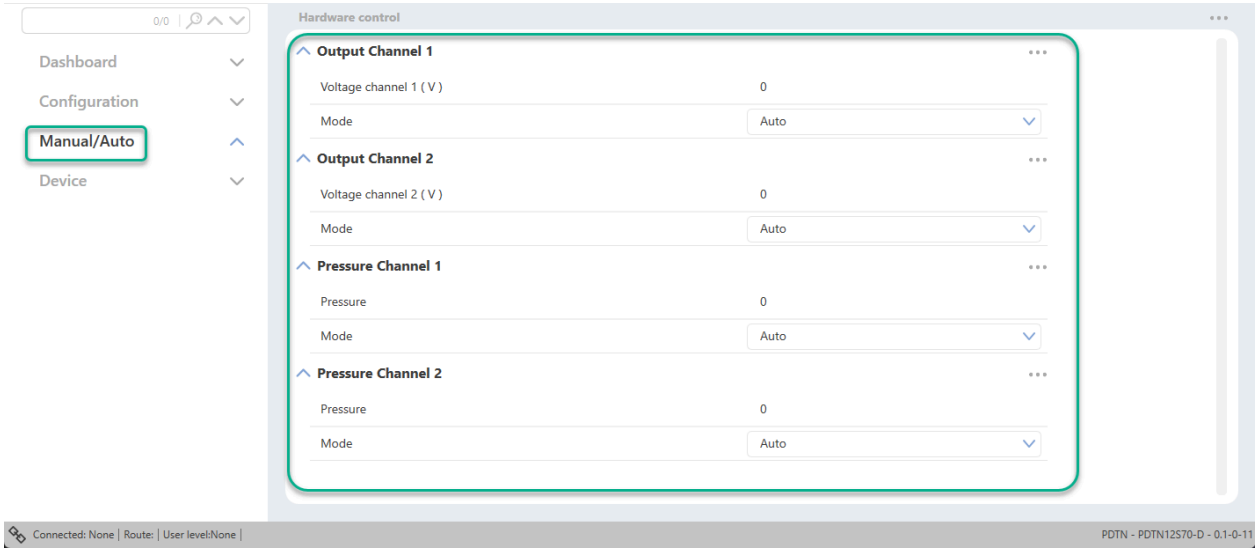
3.5.3 Output channel 1 and 2



You can change settings for the **Output channel(s)**. Such as, channel mode and range, pressure mapping etc.. These settings are used for mapping pressure towards a certain voltage or current on the output.

Configuration setting	Variable	Description
Mode	*IoAnaOut_x_mode*	Mode for output. Select to map pressure towards **Voltage** or **Current**. See the **Range** settings below.
Range	*IoAnaOut_x_unit*	Unit converter. You can set the range for **Voltage** mode to: 0 to 10 V, (0= 0 % = 0 V, 100% = 10 V) (default) 0 to 5 V, (1 = 0 % = 0 V, 100 % = 5 V) 2 to 10 V, (2 = 0 % = 2 V, 100 % = 10 V) 0 or 10 V, (5 = <50 % = 0 V, >5 0% = 10 V) 0 or 5 V, (6 = <50 % = 0 V, >50 % = 5 V) 10 to 0 V, (7 = 0 % = 10 V, 100 % = 0 V) 5 to 0 V, (8 = 0 % = 5 V, 100 % = 0 V) 10 to 2 V, (9 = 0 % = 10 V, 100 % = 2 V) You can set the range for **Current** mode to: 0 or 20 mA, (3 = 0 % = 0 mA, 100 % = 20 mA) (default) 4 to 20 mA, (4 = 0 % = 4 mA, 100 % = 20 mA)
Pressure Range	*PS_x_range*	This variable contains the mapping between the pressure sensor and the analogue output. The first value represents at what pressure the output is set to its minimum value, and the second value represents the maximum value and the values in between will be linearly mapped. The meaning of the value depends on the pressure sensor used. (default = Disabled) You can set **Pressure Range** to **Custom**, and there by indirectly choose the 50 % level.
Pressure at 0% (Pa)	*PS_x_MapMinPressure*	The pressure value used for when to output the minimum value, when in custom mapping mode.
Pressure at 100% (Pa)	*PS_x_MapMaxPressure*	The pressure value used for when to output the maximum value, when in custom mapping mode.

3.6 Manual/Auto



3.6.1 Output channel 1 and 2

You can manually override the *Auto* settings set the Output Channel 1 and/or Output Channel 2 value, between 0 - 100 (0 % - 100 %). This can be used for setting custom output or pressure values. Such as, if you want to suppress sensor values for troubleshooting etc.

Configuration setting	Variable	Description
Voltage channel N	*IoAnaOut_x_converted*	Actual value on the output pin in Volt or milliampere, 0 - 100. (Default = 0)
Mode	*IoAnaOut_x_override_en*	Auto, Manual - set value. (Default = Auto)

3.6.2 Pressure channel 1 and 2

You can manually override the *Auto* setting and set the Pressure Channel 1 and/or Pressure Channel 2 value, between -500...10000. This can be used for setting custom output or pressure values. Such as, if you want to suppress sensor values for troubleshooting etc.

Configuration setting	Variable	Description
Pressure	*PS_x_pressure*	-500...10000. (Default = 0). Contains the current pressure in the unit selected by the *PS_x_UNIT* variable. The value is filtered by the *PS_x_FILTER* setting. To enable the pressure sensor the *PS_x_mode* must be set to 128. The resolution can be limited by setting the *PS_x_resolution* variable, useful to get rid of small changes and noise.
Mode	*IoAnaIn_x_override_en*	Auto, Manual - set value. (Default = Auto)

3.7 Update software

When there is a software update available for the device, you will be prompted to update the software in Regin:GO and Application tool 2.

You can also manually update the device software in Regin:GO whenever you need through the **Action** menu, if you are connected to the device. See section *3.7.1 Updating the device software in Regin:GO*.

3.7.1 Updating the device software in Regin:GO

1. In the Regin:GO menu, tap the **[Actions]** button.
2. In the dropdown menu, tap **[Update software]**.
3. In the **Update software** page, tap **[Available software]**.
4. Select the desired software version.
5. Tap the **[Update software]** button.
6. In the **Update software** dialogue, choose **[Save settings]**, **[Continue with update]**, or **[Cancel]**.

Note! Regin recommend to save your settings before a software update. The update can cause the settings to be reset to default, and then you can use the saved file to restore your settings.

7. To continue with device software update, tap **[Continue with update]**. You will be prompted with the update process progression.

Note! Do not leave the **Update software** page during the update process.

8. When the software update is finished, in the **Update software** page, tap **[Return to device]** list.

3.8 Reset

In the **Device - Reset** page, you can set the variable *product_reset* to **Restart device**, **Reset application settings**, or **Factory reset**, in order to initiate a restart instantly. For more information, see *Table 3-11 Reset types*.

Table 3-11 Reset types

Reset type	Description
Restart device	Restart the device. Similar to a power cycle.
Reset application settings	Restart the device and set all parameters to the default factory state, except some communication settings such as: ELA, PLA, Modbus address, serial port settings (baud rate, mode, parity, timeouts) and BACnet configuration (Device ID, Device object name, password, MSTP MAC, time-outs)
Factory reset	Restart the device and set all parameters to the default factory state.

3.9 Factory reset

You can reset the Presigo PDTN...transmitter to factory settings with the use of the push button. To reset the device, follow the procedure *3.9.1 Resetting the device to factory settings*.

3.9.1 Resetting the device to factory settings

It is possible to reset the device to factory settings via the push button.

To reset the device:

1. Press and hold the push button for 10 seconds (s). The RGB LED will turn red.
2. Release the push button
3. Press the push button three (3) short presses (<1.5 seconds (s)), within 10 seconds (s)

4 Information for the installer

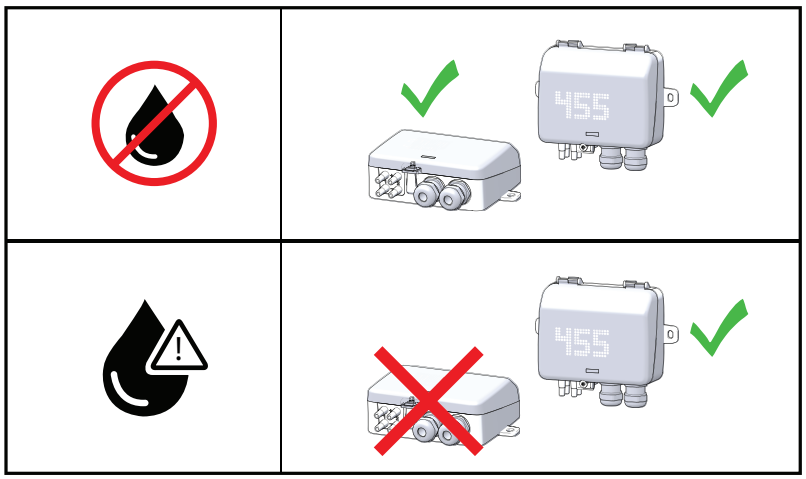
4.1 Installation preparations

See the Presigo PDTN... Instruction, to be found at www.regincontrols.com.

4.2 Installation

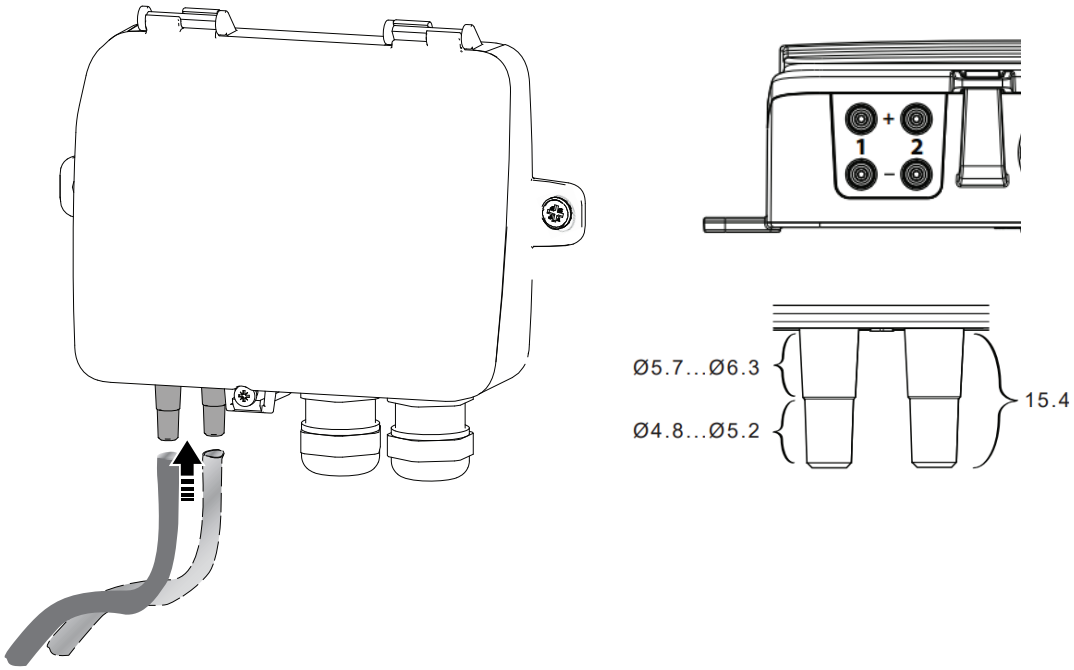
Note! Use a shielded, twisted pair cable for RS485 communication. At high risks of interference, a 120 Ω terminating resistor should be mounted at each end of the communications circuit.

1. Mount the Presigo PDTN... transmitter horizontally or vertically on a stable, vibration-free surface. If the unit is installed in a humid environment, install it vertically with the cable gland edge of the unit pointing down to allow moisture to escape. See the Presigo PDTN... Instruction, to be found at www.regincontrols.com.



2. For wiring, see diagram in chapter *4.3 Wiring*. Connect the communication cable to terminals 3(B) and 4(A). Use the leftmost cable gland for supply voltage and communication.
3. Commission with the desired settings using the rotary switch. See chapter *5 Commissioning*. For more information, see chapter *5 Commissioning*.
4. Power up the unit. Refer to the variable tables for information on how to access transmitter data. The Presigo PDTN... Variable list document can be found at www.regincontrols.com.
5. Let the unit warm up for 10 minutes, then perform a zero-set calibration by pressing the push button

6. Connect plastic tubes (accessories) from the ventilation duct to the pressure inlets



Note! A straight cut off nipple must be used for mounting in the ventilation duct.

For optimal measuring results, measuring points with turbulent air flow should be avoided. Preferably, measuring should be performed at least a distance of two (2) duct diameters before bends and branching and at least six (6) duct diameters after bends and branching.

4.3 Wiring

1. RS485 EXOline/Modbus/ BACnet "+ B"
2. RS485 EXOline/Modbus/ BACnet "- A"
3. G0 (-)
4. G (+)
5. Ch1
6. GND Ch1
7. Ch2
8. GND Ch2

Terminals 3, 6 and 8 are internally connected (GND/G0).

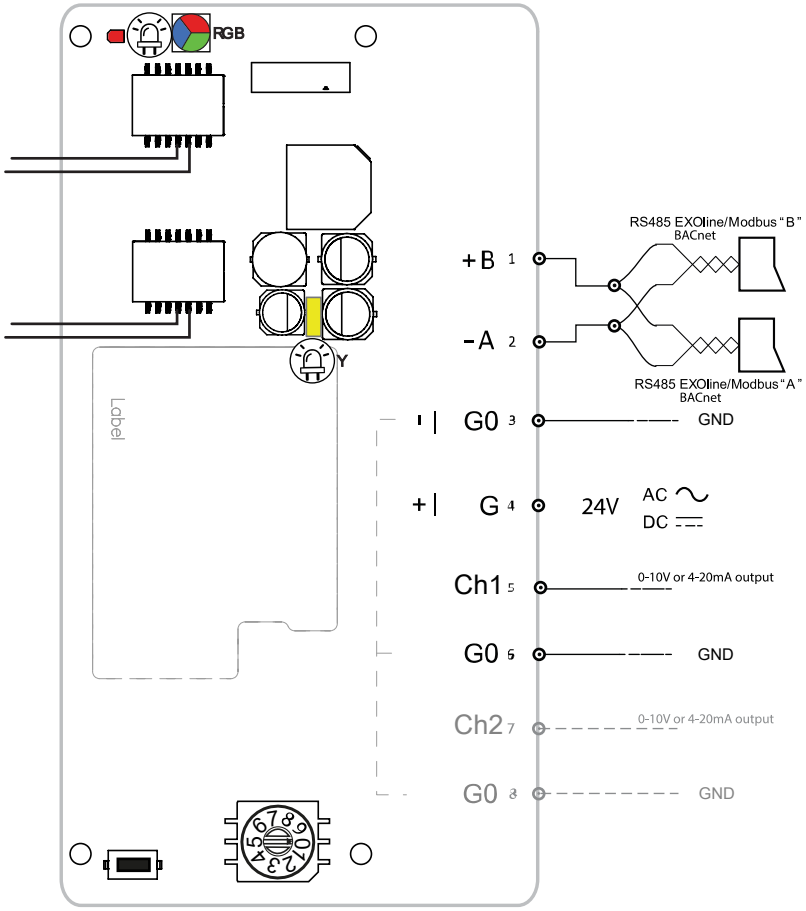


Figure 4-1 Wiring example - Generic

4.3.1 Wiring for models

The terminals and the wiring connections can differ in between product models. See *C.2 PDTN and PDTN-C wiring examples*.

5 Commissioning

The Presigo PDTN... transmitter can be configured either by using the rotary switch, via EXOline, BACnet, Modbus via RS485 (for models with communication), or via the Regin:GO app. The last configuration entered into the transmitter is always valid, regardless of whether it was performed using the rotary switch or via EXOline, BACnet, or Modbus.

5.1 Configuration via rotary switch

The Presigo PDTN... transmitter features a rotary switch for setting up suitable communication parameters. These settings can later be overridden by commands sent via the Regin:GO app, or via EXOline, BACnet or Modbus, if needed.

Note! When using the rotary switch, each sensor provides several preset output-to-measurement mapping ranges (typically 7–9 options). In contrast, the mobile application allows full customisation of the output signal mapping. For example, if the sensor range is –500 to +500 and you want the 0–10 V output to represent –100 (0 V) to +500 (10 V), this configuration can be easily achieved through the Regin:GO app.

If you configure the device using the rotary switch, the parameters changed takes effect when the setting sequence is confirmed in full in accordance with the rotary switch setting.

For more information, see sections *5.1.1 Diagram - Rotary switch configuration(devices with communication)*, *5.1.2 Diagram - Rotary switch configuration(devices without communication)*, and *5.2 Configuration - with communication*, *5.3 Configuration - without communication*.

5.1.1 Diagram - Rotary switch configuration (devices with communication)

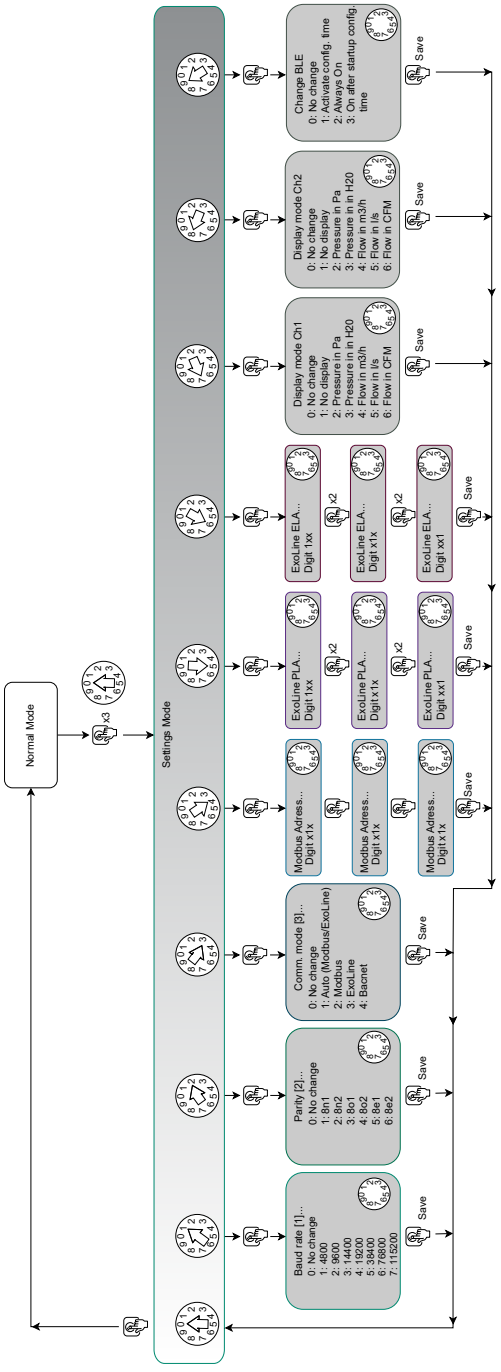


Figure 5-1 Scheme for rotary switch configuration, for devices with communication

Note! For rotary switch configuration on *Display toggle* mode, see section *5.2.11 Toggling display mode*)

For more information on procedures, see section *5.2 Configuration - with communication*.

5.1.2 Diagram - Rotary switch configuration (devices without communication)

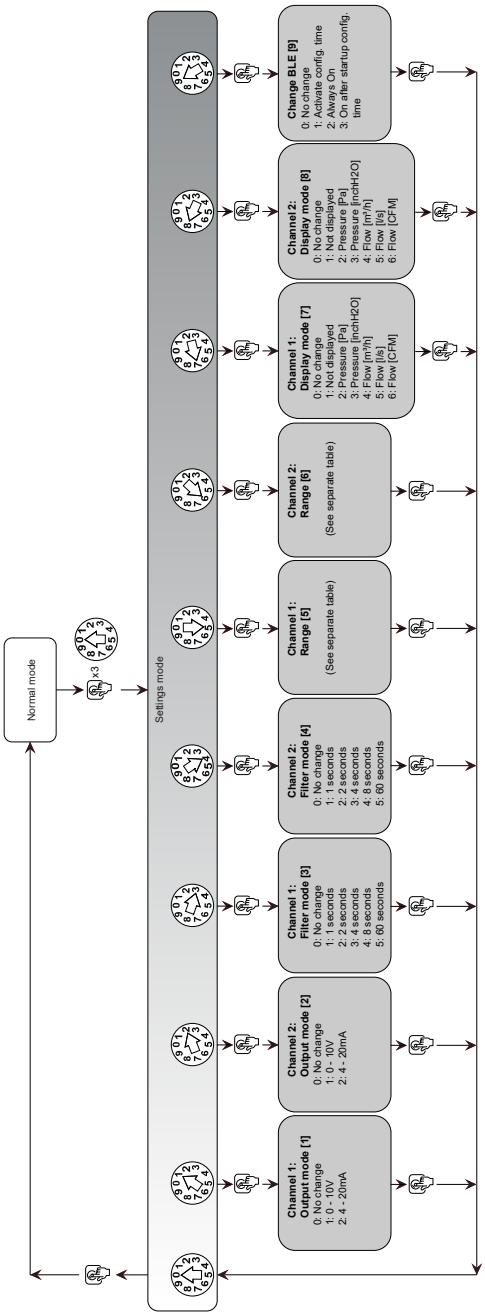


Figure 5-2 Scheme for rotary switch configuration, for devices without communication

Note! For rotary switch configuration on *Display toggle* mode, see section *5.2.11 Toggling display mode*.

For more information on procedures, see section *5.3 Configuration - without communication*.

See *Table 5-11 Channel ranges* for Channel 1 & 2 ranges.

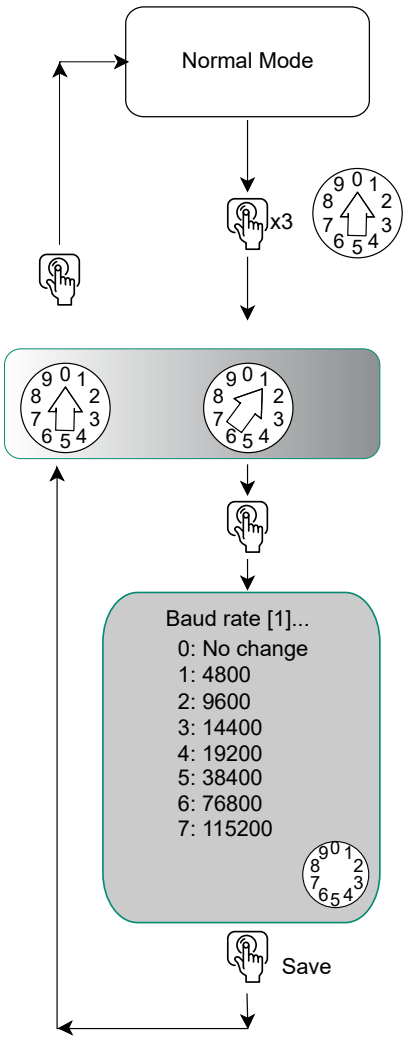
5.2 Configuration - with communication

5.2.1 Entering settings mode

To enter the settings mode, follow the procedure below:

1. Turn the rotary switch to position 0 and press the push button three (3) times (short press, < 1 s each, and max. 2 s between). The LED indication turns yellow and is then turned Off.
2. In position 0, press the push button once (1) (short press; <1.5 seconds (s)) to exit settings mode

5.2.2 Changing baud rate



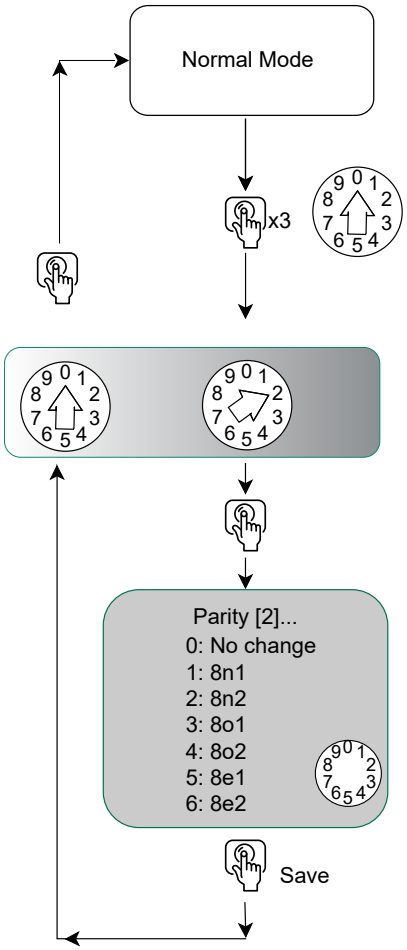
To change the baud rate, follow the procedure below:

1. In *Settings* mode, turn the rotary switch to position 1 and then press the push button once (1) (short press; <1.5 seconds (s)). You then enter *Change baud* mode as indicated by the LED. The LED is lit blue a number of short pulses corresponding to the saved mode, then it is Off for one (1) s and then restarts to indicate saved mode.
2. Turn the rotary switch to the desired baud rate position and press the push button once (1) (short press; <1.5 seconds (s))
3. Press only once (1), or wait for time-out or select position 0 to go back to *Settings* mode. The LED is lit green for two (2) seconds to indicate successful change.

Table 5-1 Baud rate switch positions

Switch position	Baud rate
0	No change
1	4800
2	9600
3	14400
4	19200
5	38400
6	76800
7	115200

5.2.3 Changing parity



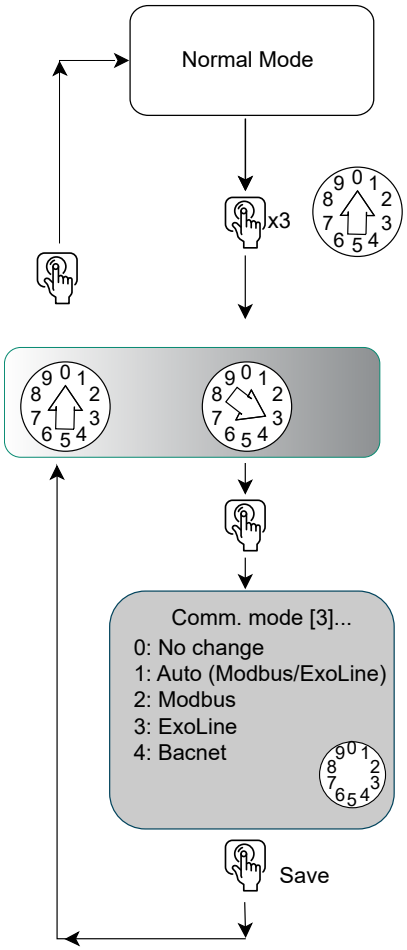
To change parity, follow the procedure below:

1. In *Settings* mode, turn the switch to position 2 and press the push button once (1) (short press; <1.5 seconds (s)). You will then enter *Change parity* mode as indicated by the LED. The LED flashes blue a number of short pulses corresponding to the saved mode, then it is Off for one (1) s and then restarts to indicate saved mode.
2. Turn switch to desired parity position and press the push button two times
3. Press only once (1), or wait for time-out or select position 0 to go back to *Settings* mode. The LED is lit green for two (2) s to indicate a successful change.

Table 5-2 Parity switch positions

Switch position	Stop bits	Parity
0	No change	No change
1	1	None
2	2	None
3	1	Odd
4	2	Odd
5	1	Even
6	2	Even

5.2.4 Changing communication mode



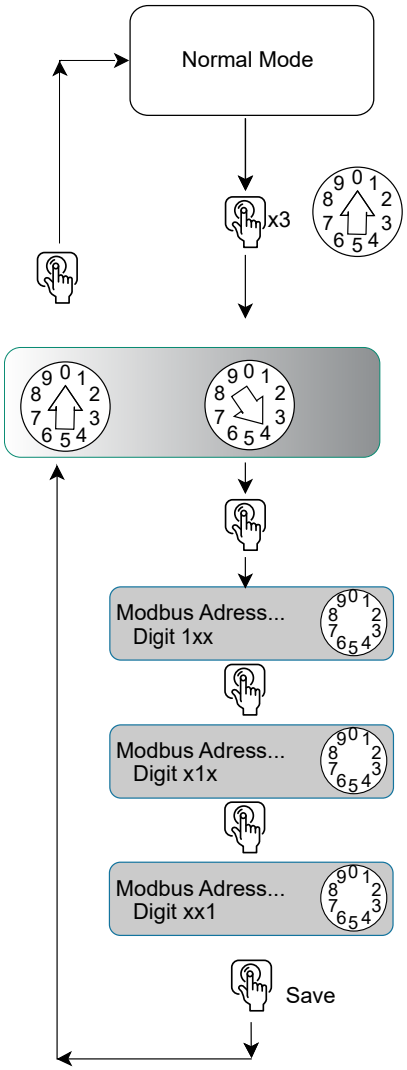
To change the *Communication* mode, follow the procedure below:

1. In *Settings* mode, turn the switch to position 3 and press the push button once (1) (short press; <1.5 seconds (s)). You will then enter *Change* mode as indicated by the LED. The LED flashes blue a number of short pulses corresponding to the saved mode, then it is Off for one (1) s and then restarts to indicate saved mode.
2. Turn the switch to the desired mode position and press the push button two (2) times (short presses; <1.5 seconds (s))
3. Press the push button only once (1), or wait for time-out, or select position 0 to go back to *Settings* mode. The LED is lit green for two (2) s to indicate a successful change.

Table 5-3 Communication mode switch positions

Switch position	Mode
0	No change
1	Auto (Modbus/EXOline)
2	Modbus
3	EXOline
4	BACnet

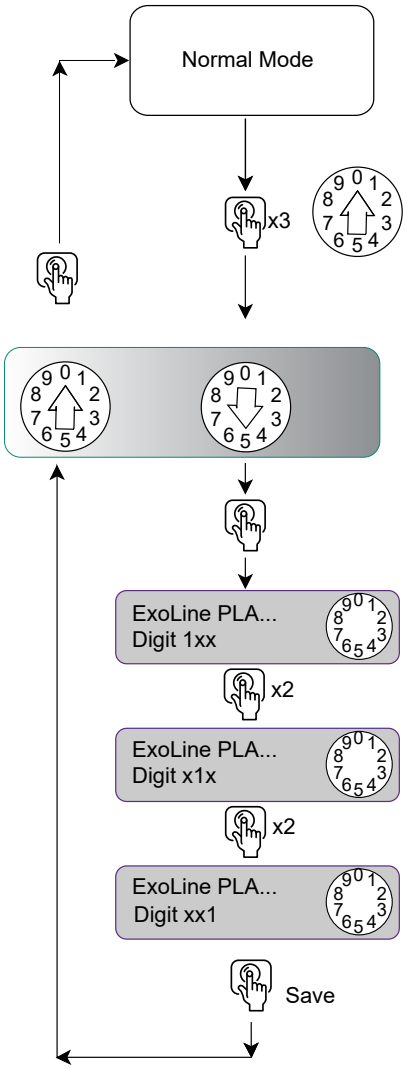
5.2.5 Changing Modbus address



To change Modbus address, follow the procedure below:

1. In *Settings* mode, turn the rotary switch to position 4 and press the push button once (1) (short press; <1.5 seconds (s)). You will then enter *Change Modbus address* mode as indicated by the LED. The LED flashes blue a number of short pulses corresponding to the saved digit, then it is Off for one (1) s and then restarts to indicate saved mode.
2. Turn the rotary switch to the desired first digit (the hundreds digit), and then press the push button twice (2) (short presses; <1.5 seconds (s)) to confirm. The LED is lit green for two (2) s to indicate a successful change, and lit red for two (2) s to indicate a not accepted value.
3. Turn the rotary switch to the desired second digit (the tens digit), and then press the push button twice (2) (short presses; <1.5 seconds (s)) to confirm. Indicated by the LED as in the previous step.
4. Turn the rotary switch to the desired last digit (the once digit), and then press the push button twice (2) (short presses; <1.5 seconds (s)) to confirm and save. Only values between 1 and 255 will be accepted. Indicated by the LED as in the previous step.

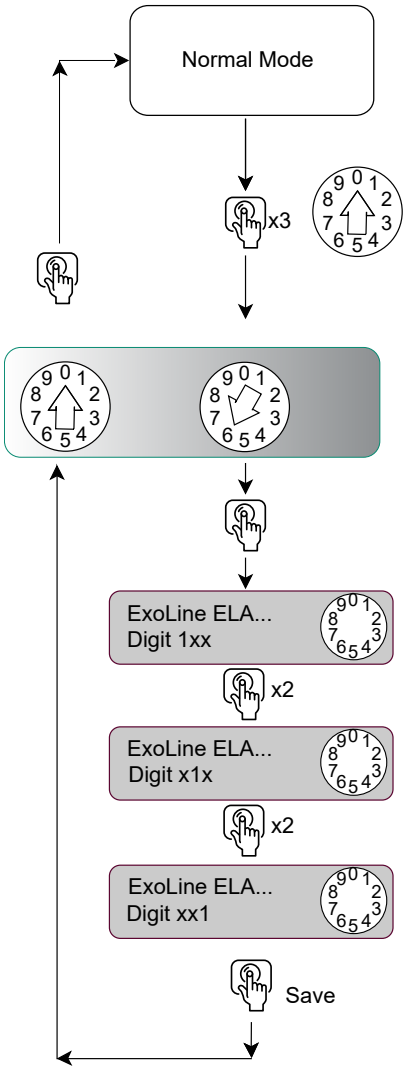
5.2.6 Changing EXOline PLA



To change the EXOline PLA, follow the procedure below:

1. In *Settings* mode, turn the rotary switch to position 5 and press the push button once (1) (short press; <1.5 seconds (s)). You will then enter *Change PLA address* as indicated by the LED. The LED flashes in blue a number of short pulses corresponding to the saved digit, then it is Off for one (1) s and then restarts to indicate saved mode.
2. Turn the rotary switch to the desired first digit (the hundreds digit), and then press the push button twice (2) (short presses; <1.5 seconds (s)) to confirm. The LED is lit in green for two (2) seconds to indicate successful change, and lit red for two (2) s to indicate a not accepted value.
3. Turn the rotary switch to the desired second digit (the hundred tens digit), and then press the push button twice (2) (short presses; <1.5 seconds (s)) to confirm. Indicated by the LED as in the previous step.
4. Turn the rotary switch to desired last digit (the once digit), and then press the push button once (1) (short presses; <1.5 seconds (s)) to confirm and save. Indicated by the LED as in the previous step. Only values between 1 and 255 will be accepted.

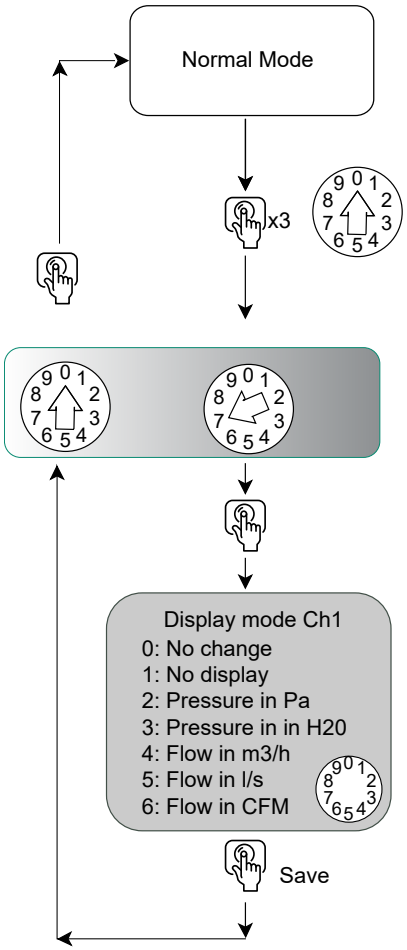
5.2.7 Changing EXOline ELA



To change the EXOline ELA, follow the procedure below:

1. In *Settings* mode, turn the rotary switch to position 6 and press the push button once (1) (short press; <1.5 seconds (s)). You will then enter *Change ELA address* as indicated by the LED. The LED flashes in blue a number of short pulses corresponding to the saved digit, then it is Off for one (1) s and then restarts to indicate saved mode.
2. Turn the rotary switch to the desired first digit (the hundreds digit), and then press the push button twice (2) (short presses; <1.5 seconds (s)) to confirm. The LED is lit in green for two (2) s to indicate a successful change, and is lit in red for two (2) s to indicate a not accepted value.
3. Turn the rotary switch to the desired second digit (the hundred tens digit), and then press the push button twice (2) (short presses; <1.5 seconds (s)) to confirm. Indicated by the LED as in the previous step.
4. Turn the rotary switch to the desired last digit (the once digit), and then press the push button once (1) (short presses; <1.5 seconds (s)) to confirm and save. Indicated by the LED as in the previous step. Only values between 1 and 255 will be accepted.

5.2.8 Changing display mode for channel 1



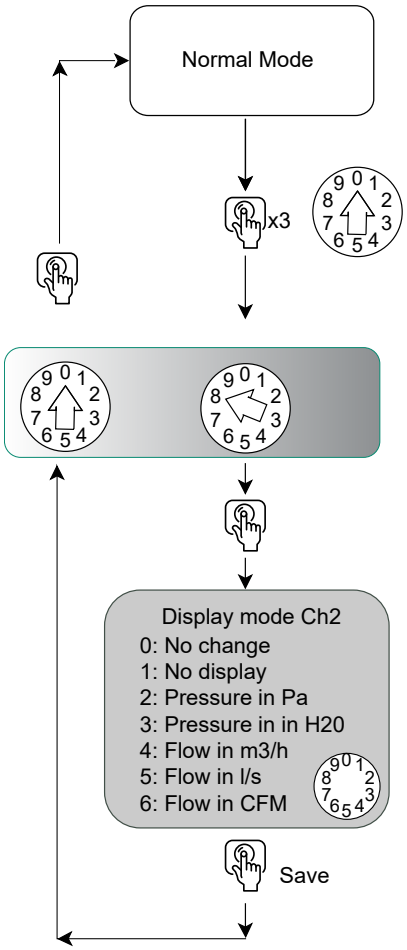
To change the display mode for channel 1, follow the procedure below:

1. In *Settings* mode, turn the rotary switch to position 7 and press the push button. You will then enter *Change display mode for CH1* as indicated by the LED. The LED blinks blue a number of short pulses corresponding to the saved mode, then it is Off for one (1) second and then restarts to indicate saved mode.
2. Turn the switch to desired mode and press the push button once (1) (short press; <1.5 seconds (s)) to confirm and save. The LED is lit green for two (2) seconds to indicate successful change.
3. Press the push button only once or wait for time-out.
4. Select position 0 to go back to *Settings* mode.

Table 5-4 Display mode - channel 1 switch positions

Switch position	Mode
0	No change
1	No display
2	Pressure in Pascal [Pa]
3	Pressure in inch of water column [in H_2O]
4	Flow in cubic meter per hour [m^3/h]
5	Flow in liters per second [l/s]
6	Flow in cubic feet per minute [CFM]

5.2.9 Changing display mode for channel 2



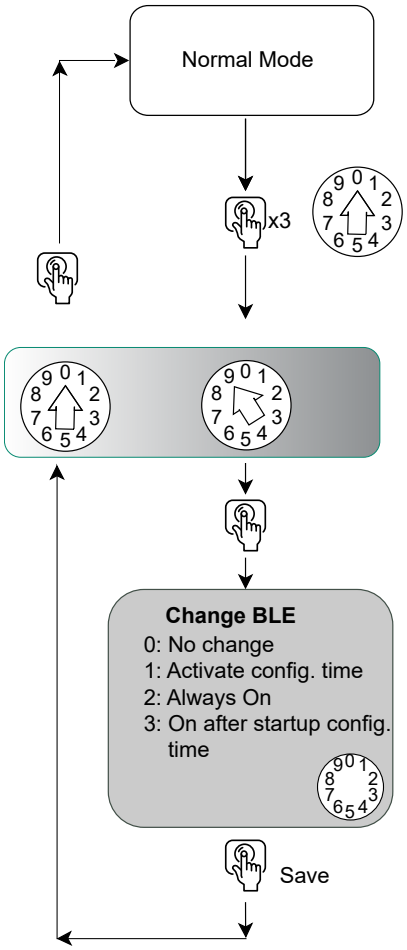
To change the display mode for channel 2, follow the procedure below:

1. In *Settings* mode, turn the rotary switch to position 8 and press the push button. You will then enter *Change display mode for CH2* as indicated by the LED. The LED blinks blue a number of short pulses corresponding to the saved mode, then it is Off for one (1) second and then restarts to indicate saved mode.
2. Turn switch to desired mode and press the push button once (1) (short press; <1.5 seconds (s)) to confirm and save. The LED is lit green for two (2) seconds to indicate successful change.
3. Press only once (1) or wait for time-out
4. Select position 0 to go back to *Settings* mode.

Table 5-5 Display mode - channel 2 switch positions

Switch position	Mode
0	No change
1	No display
2	Pressure in Pascal [Pa]
3	Pressure in inch of water column [in H_2O]
4	Flow in cubic meter per hour [m_3/h]
5	Flow in liters per second [l/s]
6	Flow in cubic feet per minute [CFM]

5.2.10 Changing Bluetooth® Low Energy mode



To change the Bluetooth® Low Energy mode, follow the procedure below:

1. In *Settings* mode, turn the rotary switch to position 9 and press the push button. You will then enter *Change BLE* mode as indicated by the LED. The LED blinks blue a number of short pulses corresponding to the saved mode, then it is Off for one (1) second and then restarts to indicate saved mode.
2. Turn the switch to the desired mode and press the push button once (1) (short press; <1.5 seconds (s)) to confirm and save. The LED is lit green for two (2) seconds to indicate successful change.
3. Press only once (1) or wait for time-out
4. Select position 0 to go back to *Settings* mode.

Table 5-6 BLE mode switch positions

Switch position	Mode
0	No change
1	Activate for configurable time. 1800 s (30 min) = default
2	Always On
3	On after startup for a configurable time. 1800 s (30 min) = default

5.2.11 Toggling display mode

To toggle the *Display* mode, follow the procedure below:

1. While **not** in *Settings* mode, turn the rotary switch to position 9 and press push button three (3) times (max. two (2) seconds in between). This will toggle between different display layouts.

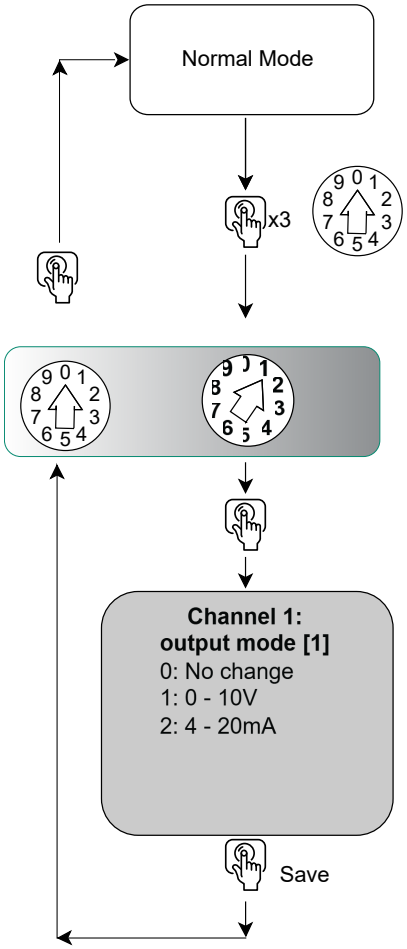
5.3 Configuration - without communication

5.3.1 Entering Settings mode

To enter the *Settings* mode, follow the procedure below.

1. Turn the rotary switch to position 0 and then press the push button three times (short presses, < 1.5 seconds (s) each and max. 2 seconds (s) between) to go into *Settings* mode. The LED indication turns yellow and is then turned Off.
2. In position 0, press the push button once (1) (short press; <1.5 seconds (s)) to exit *Settings* mode.

5.3.2 Changing Channel 1 output mode



To change the *Channel 1 output* mode, follow the procedure below.

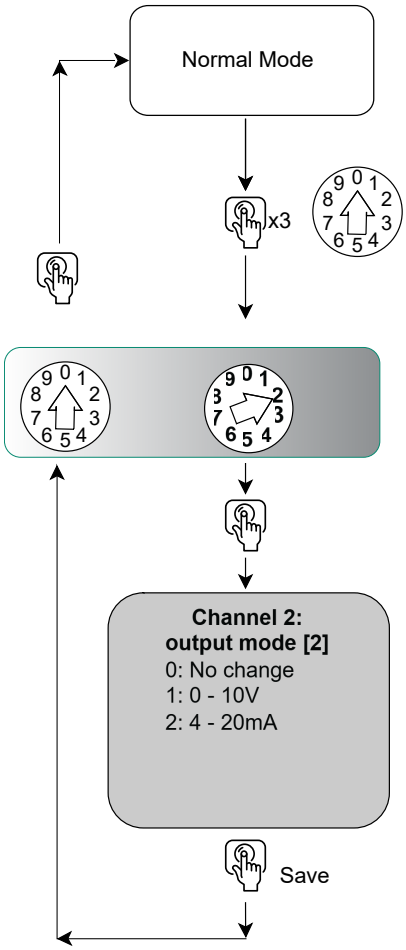
1. In *Settings* mode, turn switch to position 1 and press the push button once (1) (short press; <1.5 seconds (s)). You will then enter *Change output CH1* mode as indicated by the LED. The LED flashes blue a number of short pulses corresponding to the saved mode, then it is Off for one (1) second and then restarts to indicate saved mode.

2. Turn the rotary switch to desired mode and press the push button two (2) times (short presses; <1.5 seconds (s)). The LED is lit in green for two (2) s to indicate successful change.
3. Press the push button only once (1) (short press; <1.5 seconds (s)) or wait for time-out, or select position 0 to go back to *Settings* mode.

Table 5-7 Channel 1 output rotary switch positions

Switch position	Mode
0	No change
1	0-10 V
2	4...20 mA

5.3.3 Changing Channel 2 output mode



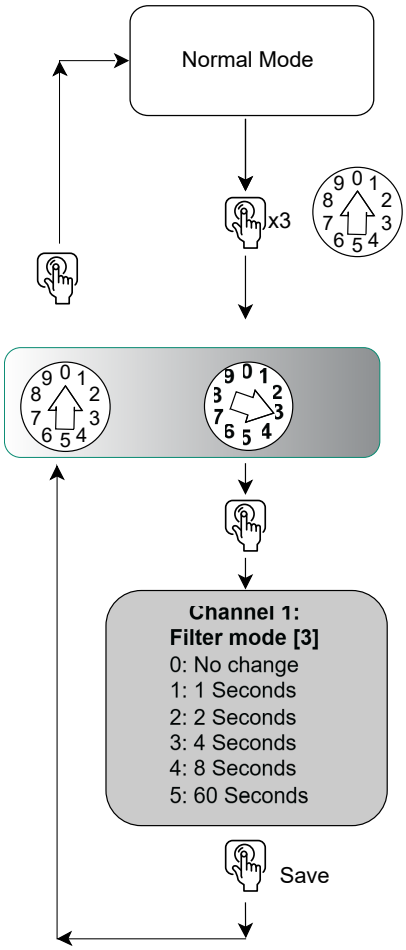
To change the *Channel 2 output* mode, follow the procedure below.

1. In *Settings* mode, turn the rotary switch to position 2 and press the push button once (1) (short press; <1.5 seconds (s)). You will then enter *Change output CH2* mode as indicated by the LED. The LED flashes in blue a number of short pulses corresponding to the saved mode, then it is Off for one (1) s and then restarts to indicate saved mode.
2. Turn the rotary switch to the desired mode and press the push button two (2) times short (short presses; <1.5 seconds (s)). The LED is lit in green for two (2) s to indicate successful change.
3. Press the push button only once (1) (short press; <1.5 seconds (s)) or wait for time-out, or select position 0 to go back to *Settings* mode.

Table 5-8 Channel 2 output rotary switch positions

Switch position	Mode
0	No change
1	0...10 V
2	4...20 mA

5.3.4 Changing Channel 1 filter mode



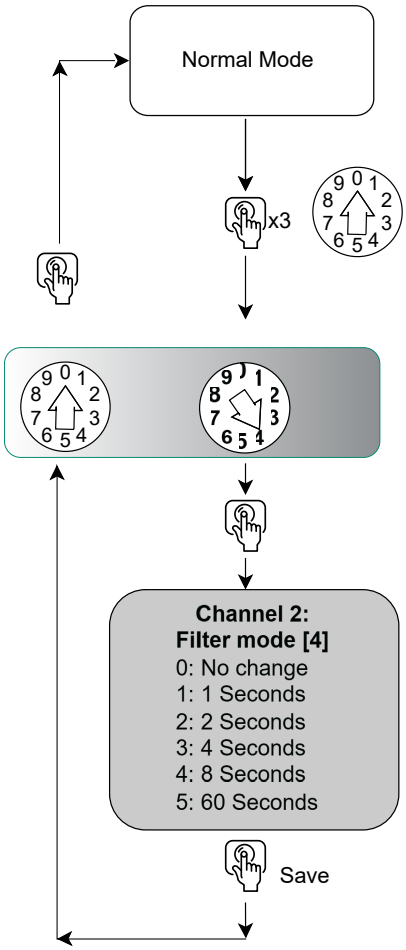
To change the *Channel 1 filter* mode, follow the procedure below.

1. In *Settings* mode, turn the rotary switch to position 3 and press the push button once (1) (short press; <1.5 seconds (s)). You will then enter *Change output CH1 Filter* mode as indicated by the LED. The LED flashes in blue a number of short pulses corresponding to the saved mode, then it is Off for one (1) s and then restarts to indicate saved mode.
2. Turn the rotary switch to desired mode and press the push button two (2) times (short press; <1.5 seconds (s)). The LED is lit in green for two (2) s to indicate successful change.
3. Press the push button only once (1) (short press; <1.5 seconds (s)) or wait for time-out, or select position 0 to go back to *Settings* mode.

Table 5-9 Channel 1 filter rotary switch positions

Switch position	Mode
0	No change
1	1 s
2	2 s
3	4 s
4	8 s
5	60 s

5.3.5 Changing Channel 2 filter mode



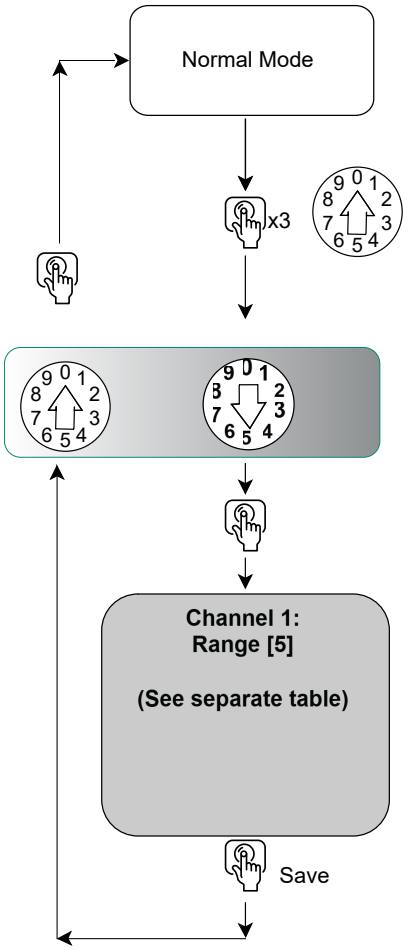
To change the *Channel 2 filter* mode, follow the procedure below.

1. In *Settings* mode, turn the rotary switch to position 4 and press the push button once (1) (short press; <1.5 seconds (s)). You will then enter *Change output CH2 Filter* mode as indicated by the LED. The LED flashes in blue a number of short pulses corresponding to the saved mode, then it is Off for one (1) s and then restarts to indicate saved mode.
2. Turn the rotary switch to desired mode and press the push button two (2) times (short press; <1.5 seconds (s)). The LED is lit in green for two (2) s to indicate successful change.
3. Press the push button only once (1) (short press; <1.5 seconds (s)) or wait for time-out, or select position 0 to go back to *Settings* mode.

Table 5-10 Channel 2 filter rotary switch positions

Switch position	Mode
0	No change
1	1 s
2	2 s
3	4 s
4	8 s
5	60 s

5.3.6 Changing Channel 1 range



To change the channel 1 range, follow the procedure below.

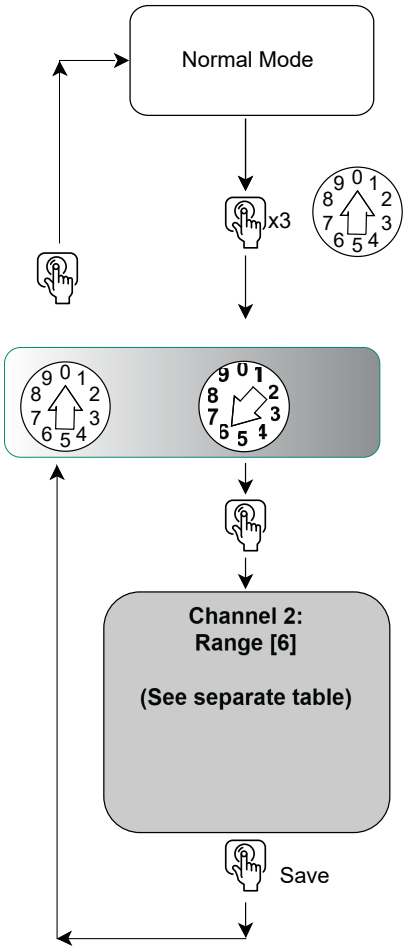
1. In *Settings* mode, turn the rotary switch to position 5 and press the push button once (1) (short press; <1.5 seconds (s)). You will then enter *Change CH1 range* as indicated by the LED. The LED flashes in blue a number of short pulses corresponding to the saved mode, then it is Off for one (1) s and then restarts to indicate saved mode.
2. See *Table 5-11 Channel ranges* for ranges depending on model. The range will map to either 0...10 V or 4...20 mA depending on mode.

3. Turn the rotary switch to the desired mode and press the push button two (2) times (short presses; <1.5 seconds (s)). The LED is lit in green for two (2) s to indicate successful change.
4. Press the push button only once (1) (short press; <1.5 seconds (s)) or wait for time-out, or select position 0 to go back to *Settings* mode.

Table 5-11 Channel ranges

Range Selection	Sensor: 500 Pa	Sensor: 1250 Pa	Sensor: 2500 Pa	Sensor: 7000 Pa
1	-25...25	0...50	0...100	0...1000
2	-50...50	0...100	0...300	0...2000
3	-100...100	0...300	0...500	0...3000
4	-150...150	0...500	0...1000	0...4000
5	0...25	0...700	0...1500	0...5000
6	0...50	0...1000	0...2000	0...6000
7	0...100	0...1250	0...2500	0...7000
8	0...150	-	-	-
9	0...500	-	-	-

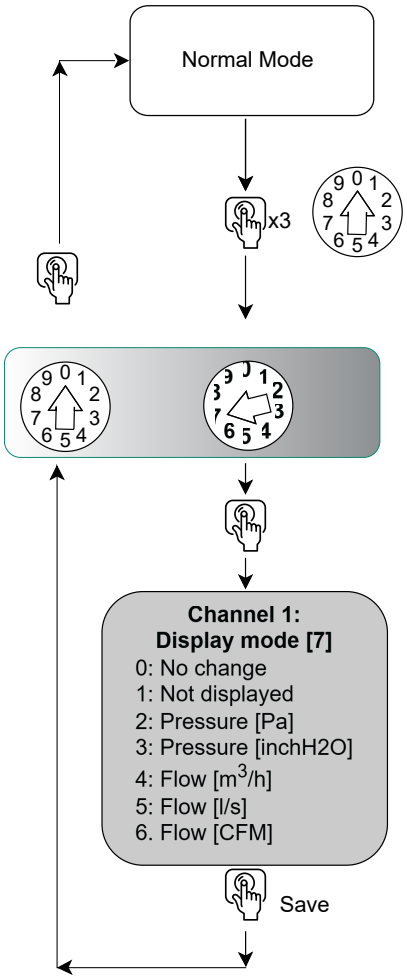
5.3.7 Changing Channel 2 range



To change the channel 2 range, follow the procedure below.

1. In *Settings* mode, turn the rotary switch to position 6 and press the push button once (1) (short press; <1.5 seconds (s)). You will then enter *Change CH2 range* as indicated by the LED. The LED flashes in blue a number of short pulses corresponding to the saved mode, then it is Off for one (1) s and then restarts to indicate saved mode.
2. See *Table 5-11 Channel ranges* for ranges depending on model. The range will map to either 0...10 V or 4...20 mA depending on mode.
3. Turn the rotary switch to the desired mode and press the push button two (2) times (short presses; <1.5 seconds (s)). The LED is lit in green for two (2) s to indicate successful change.
4. Press the push button only once (1) (short press; <1.5 seconds (s)) or wait for time-out, or select position 0 to go back to *Settings* mode.

5.3.8 Changing Display mode for Channel 1



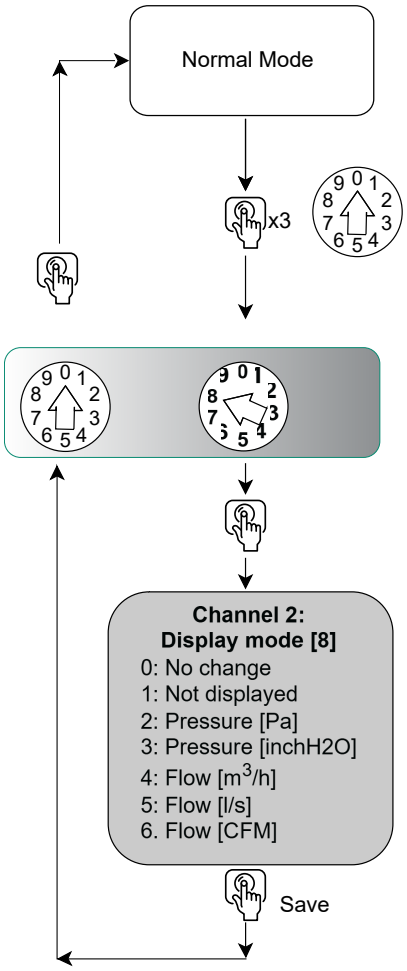
To change the *Display* mode for channel 1, follow the procedure below.

1. In *Settings* mode, turn switch to position 7 and press the push button. You will then enter *Change display mode for CH1* as indicated by the LED. The LED blinks blue a number of short pulses corresponding to the saved mode, then it is Off for one (1) second and then restarts to indicate saved mode.
2. Turn the switch to desired mode and press the push button once (1) (short press; <1.5 seconds (s)) to confirm and save. The LED is lit green for two (2) seconds to indicate successful change.
3. Press the push button only once (1) (short press; <1.5 seconds (s)) or wait for time-out, or select position 0 to go back to *Settings* mode.

Table 5-12 Channel 1 display mode switch positions

Switch position	Mode
0	No change
1	No display
2	Pressure in Pascal [Pa]
3	Pressure in inch of water column [in H_2O]
4	Flow in cubic meter per hour [m_3/h]
5	Flow in liters per second [l/s]
6	Flow in cubic feet per minute [CFM]

5.3.9 Changing Display mode for Channel 2



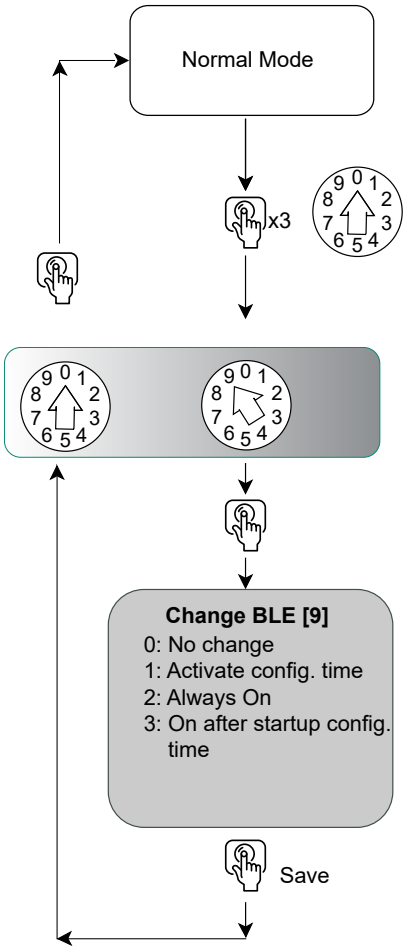
To change the *Display* mode for channel 1, follow the procedure below.

1. In *Settings* mode, turn switch to position 8 and press the push button. You will then enter *Change display mode for CH2* as indicated by the LED. The LED blinks blue a number of short pulses corresponding to the saved mode, then it is Off for one (1) second and then restarts to indicate saved mode.
2. Turn the switch to desired mode and press the push button once (1) (short press; <1.5 seconds (s)) to confirm and save. The LED is lit green for two (2) seconds to indicate successful change.
3. Press the push button only once (1) (short press; <1.5 seconds (s)) or wait for time-out or select position 0 to go back to *Settings* mode.

Table 5-13 Channel 2 display mode switch positions

Switch position	Mode
0	No change
1	No display
2	Pressure in Pascal [Pa]
3	Pressure in inch of water column [in H_2O]
4	Flow in cubic meter per hour [m_3/h]
5	Flow in liters per second [l/s]
6	Flow in cubic feet per minute [CFM]

5.3.10 Changing Bluetooth® Low Energy mode



To change the Bluetooth® Low Energy mode, follow the procedure below:

1. In *Settings* mode, turn the rotary switch to position 9 and press the push button. You will then enter *Change BLE* mode as indicated by the LED. The LED blinks blue a number of short pulses corresponding to the saved mode, then it is Off for one (1) second and then restarts to indicate saved mode.
2. Turn the switch to the desired mode and press the push button once (1) (short press; <1.5 seconds (s)) to confirm and save. The LED is lit green for two (2) seconds to indicate successful change.
3. Press only once (1) or wait for time-out
4. Select position 0 to go back to *Settings* mode.

Table 5-14 BLE mode switch positions

Switch position	Mode
0	No change
1	Activate for configurable time. 1800 s (30 min) = default
2	Always On
3	On after startup for a configurable time. 1800 s (30 min) = default
4	Off

5.3.11 Toggling display mode

See section *5.2.11 Toggling display mode*.

5.4 Zero calibration of pressure sensors

To calibrate the pressure sensors to zero:

1. Do a mid press (1.5 to 8 seconds) on the push button. See section *Push button*.
2. The RGB LED will indicate a successful zero calibration by flashing in white five (5) times

Note! Be sure to disconnect the pressure tubes before performing a pressure sensor calibration. Let the unit warm up for 10 minutes before attempting zero-set.

Note! A zero calibration can also be triggered via communication or in the app.

5.5 Fault indication

There are two types of fault indications, short pulse on the RED LED once per second and quick pulses (2.5 Hz) on the RED LED.

The flashing RED LED (1 Hz) indicates out of range error on a sensor and a blinking LED (2.5 Hz) some kind of internal fault.

The source of the error can be read in the *QPRODUCT_STATUS* register. This register is a 16-bit field, where multiple bits can be set.

Table 5-15 Fault indications

Bit	Indication	Description
0x0001	Blinking RED LED (2.5 Hz)	Internal error
0x0002	Blinking RED LED (2.5 Hz)	Calibration lost during start-up
0x0004	Blinking RED LED (2.5 Hz)	Calibration memory failed
0x0008	Blinking RED LED (2.5 Hz)	Faulty/Missing Pressure sensor 1
0x0010	Blinking RED LED (2.5 Hz)	Faulty/Missing Pressure sensor 2
0x0400	RED LED pulses	Pressure sensor 1 out of range
0x0800	RED LED pulses	Pressure sensor 2 out of range

6 Calculations

You can make different calculations in the Regin:GO app and the Application tool 2. Below you find an example of one calculation applicable, see *6.1 Calculation of fan unit air flow using Presigo PDTN....*

6.1 Calculation of fan unit air flow using Presigo PDTN...

Presigo PDTN... can be set to calculate flow based on the measured pressure from PS1 and/or PS2 . To calculate flow, it is necessary to first measure the pressure drop across the fan, the density of the medium (air), as well as the K-factor of the fan.

6.1.1 K-factor

The ability of the fan to move air is specified by the K-factor. A large fan will displace more air than a small one.

6.1.2 Air density

The flow will also be affected by air density. The density will, in turn, be affected by air temperature.

6.1.3 Complete formula for flow calculation

The formula for flow calculation is:

$$Q_v = K * \sqrt{\frac{2}{\rho}} * \sqrt{\Delta P_m}$$

Q_v = Calculated air flow
K = K-faktor (numeric value providing Qv in m^3 /h)
ρ = Air density at current temperature (often set to 20 °C where it is approx. 1.2 kg/m^3)
ΔP_m = The measured differential pressure in Pascal [Pa]

6.1.4 Compound K-factor (simplified)

The Presigo PDTN... transmitter will always use the pressure value in Pascal [Pa] for calculations, and it is important to always use that K-factor which results in m^3/h. It is then possible to select the flow unit in which the results should be presented by setting *QAnain.AIMode3* and *QAnain.AIMode4* to the desired mode. Choose between displaying cubic meters per hour (m^3/h), liters per second (l/s) or cubic feet per minute (CFM) when reading the variables *QAnain.AI3* and *QAnain.AI4*.

6.1.5 Simplified formula

The air density at 20 °C is often used since changes in air density are small in a limited temperature range and you only want to take the pressure difference into account. This often results in an approximate value that is sufficient, since most air handling units operate near this temperature. The manufacturer of the air handling unit always states the K-factor of a specific unit, of which air density will frequently be a part. Specifications for the K-factor should always be stated. Some manufacturers leave the density out altogether and you will have to factorize K with the $\sqrt{(2/\rho)}$ expression yourself using a temperature of your choosing.

If the K-factor already takes air density into account, this results in a simplified formula:

$$Q_v = K_{unit} * \sqrt{\Delta P_m}$$

K_{unit} = Composite K-factor (both K-factor and density at, for instance, 20 °C in the same figure)
ΔP_m = The measured differential pressure in Pascal [Pa]
Normally, the K-factor for a unit is given with different measuring units so it does not have to be recalculated for different resulting flow units such as: m^3/h, l/s, CFM, etc.

What formula that fit depends on how the K-factor you have is calculated, meaning different fans or valves may have calculated differently. You then have to choose a formula that match, unless you want to recalculate the K-factor.

6.1.6 Customised formulas

Depending on how the K-factor you have is calculated, for different fans and valves, you can select from three different customised formulas in Regin:GO and Application tool 2. You select a value for the variable PSx_FLOW_FORMULA. See *Table 6-1 Customised formulas - PSx_FLOW_FORMULA values*.

Table 6-1 Customised formulas - PSx_FLOW_FORMULA values

Formula	Value in tool
$K_{unit} * \sqrt{\Delta P}$	0
$K_{unit} * \sqrt{\frac{2 * \Delta P}{\rho}}$	1
$\frac{1}{K_{unit}} * \sqrt{\Delta P}$	2

Appendix A Technical data

A.1 General data

Supply voltage	24 V AC/DC ±15 %
Protection class	IP54
Power consumption	2.5 VA
Data transmission channel	Non-isolated RS485 (max. 300 m)
Damping (settable)	0…600 s
K-factor (settable)	1…1000
Ambient temperature	-25…+50 °C
Storage temperature	-25…+50 °C
Ambient humidity	max. 95 % RH (non-condensing)
Colour	**Lid**: RAL6032 (green) **Housing**: RAL7035 (grey) **Connection and cable glands**: RAL7035 (grey)
Overvoltage on any terminal	max. ±18 V (referenced to GND)
Accuracy, sensors	±1.5 % of full scale
Annual drift	max. ± 0,1% full scale
Mounting	Horizontal/Vertical (not upside down)

A.2 Pressure data

Media	Air, non-flammable and non-aggressive gas

A.3 Material

Material, lid	Polycarbonate (PC, Makrolon 2207)
Material, gasket	Ethylene Propylene Diene Monomer (EPDM)
Material, housing	Polycarbonate (PC)
Material, cable gland	Polyamide (PA6.6)

A.4 Pressure ranges (full scale)

Model	Pascal [Pa]	mBar	mmH_2O	inH_2O
PDTN5	-500...+500	-5.0...+5.0	-50...+50	-2.0... +2.0
PDTN5-C	-500...+500	-5.0...+5.0	-50...+50	-2.0... +2.0
PDTN5-D	-500...+500	-5.0...+5.0	-50...+50	-2.0... +2.0
PDTN5-CD	-500...+500	-5.0...+5.0	-50...+50	-2.0... +2.0
PDTN12	0…1250	0…12.5	0…125	0…5
PDTN12-C	0…1250	0…12.5	0…125	0…5
PDTN-12-D	0…1250	0…12.5	0…125	0…5
PDTN12-CD	0…1250	0…12.5	0…125	0…5
PDTN25	0…2500	0…25	0…250	0…10
PDTN25-C	0…2500	0…25	0…250	0…10
PDTN25-D	0…2500	0…25	0…250	0…10
PDTN25-CD	0…2500	0…25	0…250	0…10
PDTN70	0…7000	0…70	0…700	0…25
PDTN70-C	0…7000	0…70	0…700	0…25
PDTN70-D	0…7000	0…70	0…700	0…25
PDTN70-CD	0…7000	0…70	0…700	0…25
PDTN12S12-C	0…1250 / 0…1250	0…1250 / 0…1250	0…125 / 0…125	0…5 / 0…5
PDTN12S12-CD	0…1250 / 0…1250	0…1250 / 0…1250	0…125 / 0…125	0…5 / 0…5
PDTN12S25	0…1250 / 0…2500	0…12.5 / 0…25	0…125 / 0…250	0…5 / 0…10
PDTN12S25-C	0…1250 / 0…2500	0…12.5 / 0…25	0…125 / 0…250	0…5 / 0…10
PDTN12S25-D	0…1250 / 0…2500	0…12.5 / 0…25	0…125 / 0…250	0…5 / 0…10
PDTN25S25-C	0…2500 / 0…2500	0…25 / 0…25	0…250 / 0…250	0…10 / 0…10
PDTN25S25-CD	0…2500 / 0…2500	0…25 / 0…25	0…250 / 0…250	0…10 / 0…10

A.5 Inputs & outputs

Analogue outputs (AO)	0...10 V and/or 4...20 mA. 0...10 V: Load impedance min. 10 kΩ. Output impedance less than 35 Ω. 4...20 mA: Load impedance 40…500 Ω. Accuracy: better than 1 % of full scale. Short circuit protected.

A.6 Communication

Communication	**PDTN and PDTN..-C**:Bluetooth® Low Energy **PDTN-C only**: RS485 (EXOline or Modbus (with automatic detection/change-over), or BACnet. (EXOline: Regin applications only))
RS485	For EXOline (with automatic detection) (default), Modbus (with automatic detection), or BACnet.
Communication cable length, maximum	1200 m, with repeater
Bluetooth® Low Energy	Bluetooth® communication
Modbus, EXOline	8 bits, 1 (default) or 2 stop bits. Odd (FS), even, or no parity.
Communication speed Modbus, EXOline, BACnet	9600 (default), 14400, 19200, 38400 bps. 76800, 115200 bps (for update).
BACnet	MSTP B-ASC (based on the B-AAC stack)

Appendix B Model overview

B.1 Models

Article	Sensor 1 Pressure range	Sensor 2 Pressure range	0...10 V / 4...20 mA	Display	Communication RS485 EXOline / Modbus / BACnet
PDTN5	-500...+500	-	✓		
PDTN5-C	-500...+500	-			✓
PDTN5-D	-500...+500	-	✓	✓	
PDTN5-CD	-500...+500	-		✓	✓
PDTN12	0...1250	-	✓		
PDTN12-C	0...1250	-			✓
PDTN12-D	0...1250	-	✓	✓	
PDTN12-CD	0...1250	-		✓	✓
PDTN25	0...2500	-	✓		
PDTN25-C	0...2500	-			✓
PDTN25-D	0...2500	-	✓	✓	
PDTN25-CD	0...2500	-		✓	✓
PDTN70	0...7000	-	✓		
PDTN70-C	0...7000	-			✓
PDTN70-D	0...7000	-	✓	✓	
PDTN70-CD	0...7000	-		✓	✓
PDTN12S12-C	0…1250	0…1250			✓
PDTN12S12-CD	0…1250	0…1250		✓	✓
PDTN12S25	0...1250	0...2500	✓		
PDTN12S25-C	0...1250	0...2500			✓
PDTN12S25-D	0...1250	0...2500	✓	✓	
PDTN25S25-C	0…2500	0…2500			✓
PDTN25S25-CD	0…2500	0…2500		✓	✓

B.2 Accessories

Article	Description
ANS-1	2 m plastic tube and two pressure outlets (cut 60°)
ANS-20	2 m plastic tube and two pressure outlets (straight)

Appendix C Terminal lists

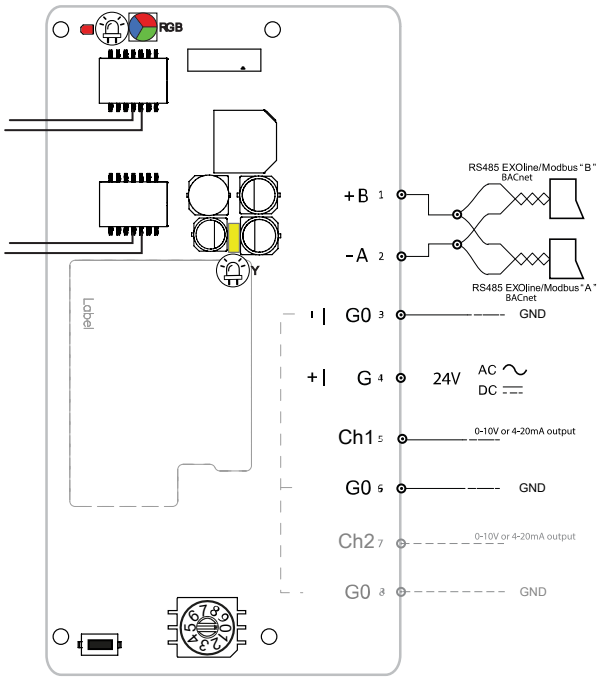


Figure C-1 Wiring example - Generic

C.1 Terminals and components

Terminal	I/O	Notes
1	RS485 EXOline/Modbus "B"	
2	RS485 EXOline/Modbus "A"	Terminals 3, 6 and 8 are internally connected (GND/G0).
3	Power supply G0–	
4	Power supply G+	
5	Channel 1	
6	Channel 1 GND	Terminals 3, 6 and 8 are internally connected (GND/G0).
7	Channel 2	
8	Channel 2 GND	Terminals 3, 6 and 8 are internally connected (GND/G0).

C.2 PDTN and PDTN-C wiring examples

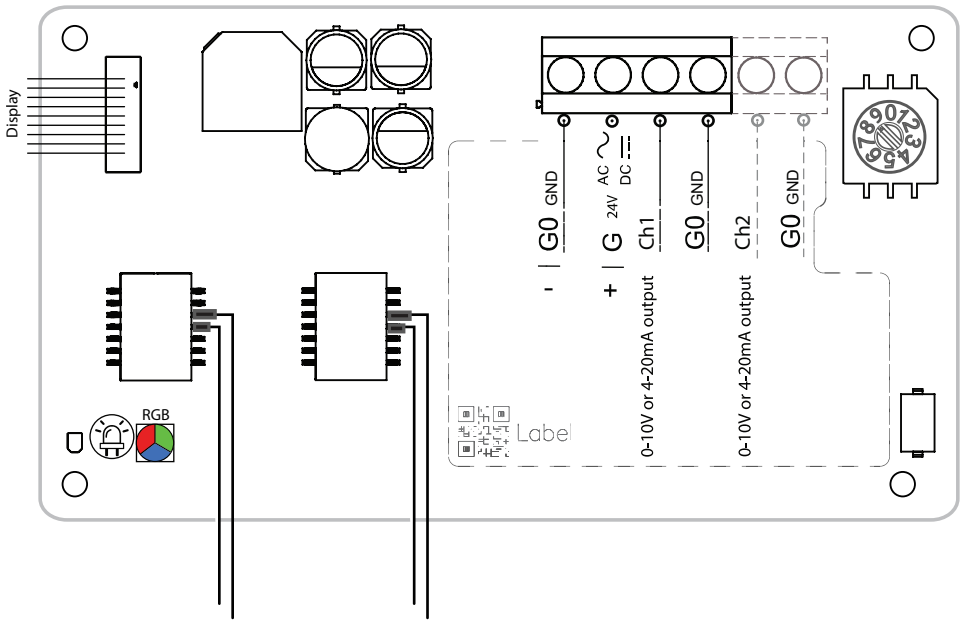


Figure C-2 Wiring example - PDTN

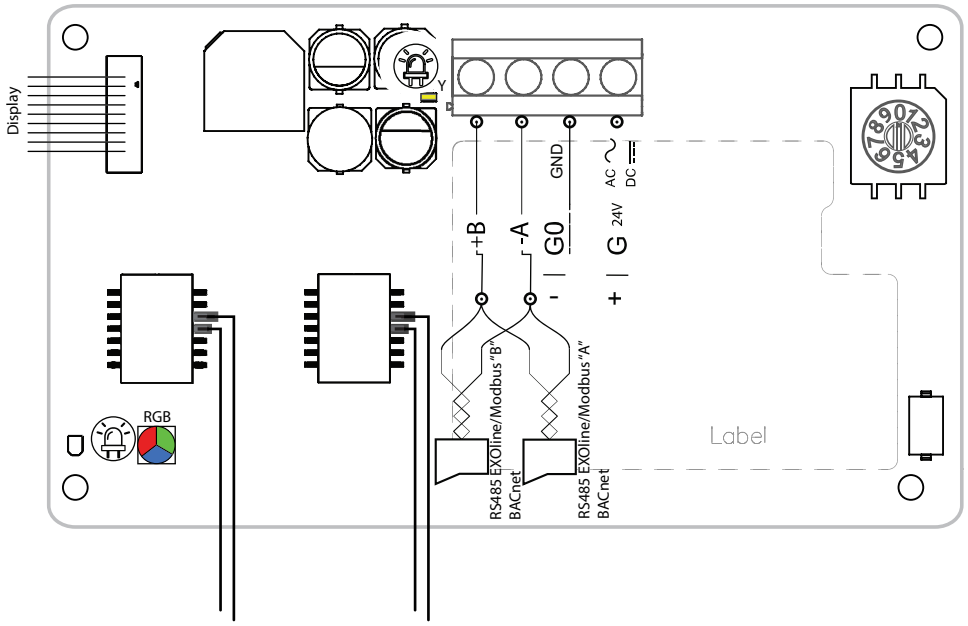


Figure C-3 Wiring example - PDTN-C

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