

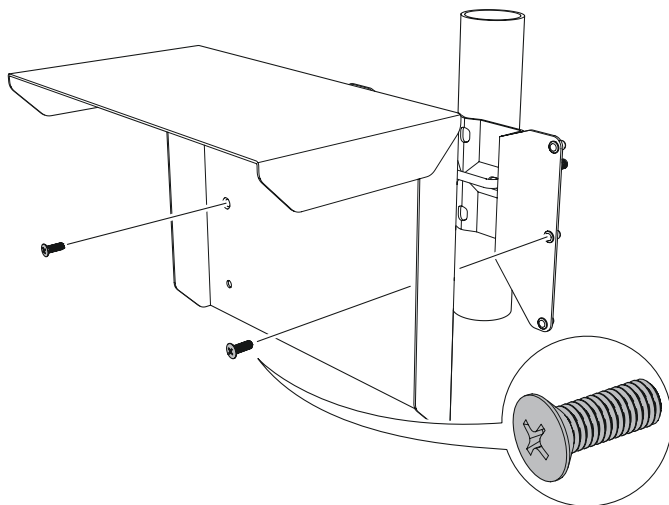
Preliminary

Quick Start Guide
00825-0100-4843, Rev AF
November 2023

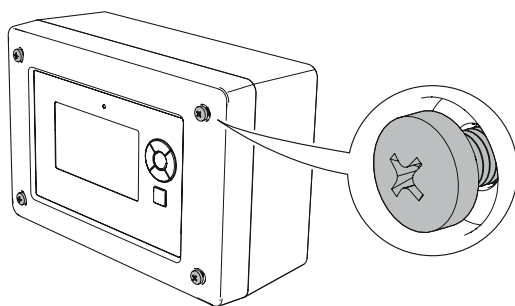
Rosemount™ 3490 Controller



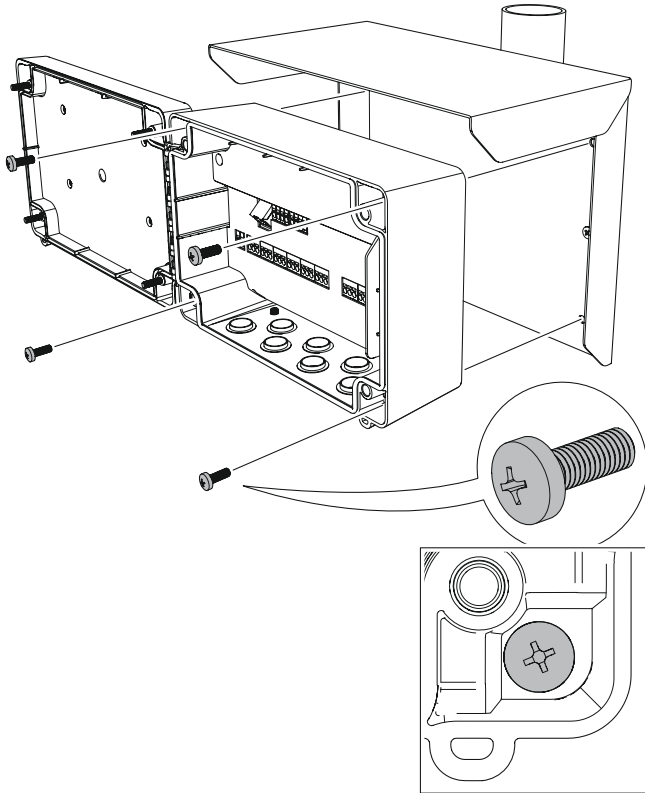
2. Mount the weather protection, using the enclosed screws.



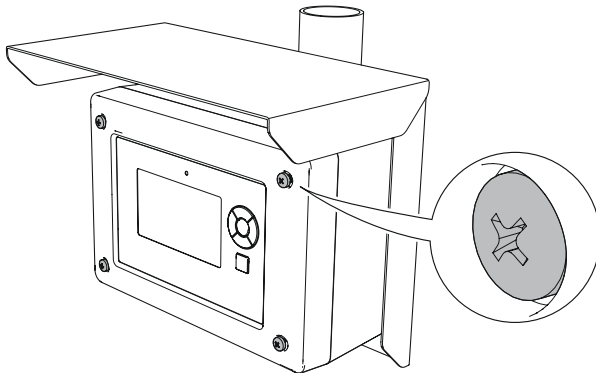
3. Loosen the four screws on the lid.



4. Mount the controller.



5. Close the lid and tighten the four screws to torque 0.7 lb-ft (1 Nm).



5 Prepare the electrical connections

5.1 Cable selection

The cable diameter must be suitable for the cable gland used to ensure the seal effect of the cable gland (IP protection).

5.2 Cable glands

The controller housing has seven entries for M20 cable glands.

Table 5-1: Tightening Torque for Cable Glands, lb-ft (Nm)

Item	Cable gland	Ethernet cable gland ⁽¹⁾
Cable gland	3.0 (4.0)	3.3 (4.5)
Top nut	2.2 (3.0)	3.3 (4.5)

(1) Only supplied with accessory gland kit.

Table 5-2: Cable Diameter for Glands, in. (mm)

	Cable gland	Ethernet cable gland ⁽¹⁾
Cable Ø	0.16-0.51 (4-13)	0.27 (6.9)

(1) Only supplied with accessory gland kit.

5.3 Conduit hubs

The controller can be installed with conduit hubs. The conduit hub must be installed with a M20 to ½ NPT adapter mounted to the support plate. The adapter is available as accessories.

Table 5-3: Tightening Torque for Adapter supplied by Emerson, lb-ft (Nm)

Item	Torque
Adapter, M20 thread	5.2 (7.0)

5.4 Terminal connection type

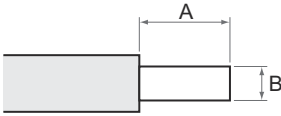
Spring loaded terminals

5.5 Conductors

Ensure that you use cables suitable for the terminal blocks.

Table 5-4: Cables Suitable for Rosemount 3490 Terminal Blocks

Conductor connection	Maximum (mm ²)	AWG
Solid	4	12
Flexible	2.5	13
Flexible, Ferrule with plastic collar	1.5	16

Figure 5-1: Conductor Stripping Length and Cross-Sectional Area

A. Stripping length: 0.4 in. (10 mm)

B. Cross-sectional area, see [Table 5-4](#)

5.6 Power supply

The Rosemount 3490 accepts supply voltage 100-240 Vac 50/60 Hz (-15% to +10%)

5.7 Power consumption

Maximum 12 W

5.8 Grounding

Make sure grounding is done according to national and local electrical codes. Failure to do so may impair the protection provided by the equipment. Grounding requirements are dependent on application type:

Shielded cables

- Connect cable shield to terminal 42 (terminal 71 for sensor input 2)
- Connect terminal 41 to instrument earth/ground point

Unshielded cables

Grounding is not necessary for unshielded sensor cables. Leave terminals 41, 42 and 71 unconnected.

5.9 Protective earth

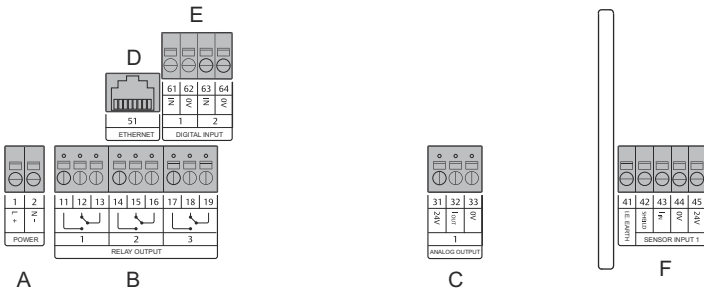
The metal support plate should always be grounded in accordance with national and local electrical codes. Failure to do so may impair the protection provided by the equipment. The most effective grounding method is direct connection to earth ground with minimal impedance. There is a grounding screw connection on the metal support plate.

5.10 Sensor wire cross-section

Appropriate cross-sectional area of wires must be used in order to prevent a too high voltage drop to the connected sensor. Use 0.75 mm² to 2.5 mm² (18 AWG to 13 AWG) in order to minimize the voltage drop.

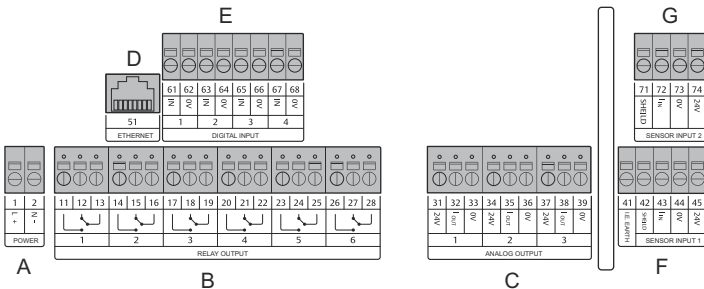
5.11 Terminal board and ports

Figure 5-2: Ports and Terminals - Rosemount 3490A



- A. Power supply
- B. Relay outputs
- C. Analog output
- D. Ethernet
- E. Digital inputs
- F. Sensor input 1

Figure 5-3: Ports and Terminals - Rosemount 3490C



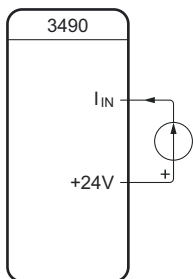
- A. Power supply
- B. Relay outputs
- C. Analog outputs
- D. Ethernet
- E. Digital inputs
- F. Sensor input 1
- G. Sensor input 2

5.12 Wiring diagrams

5.12.1 Sensor input connections

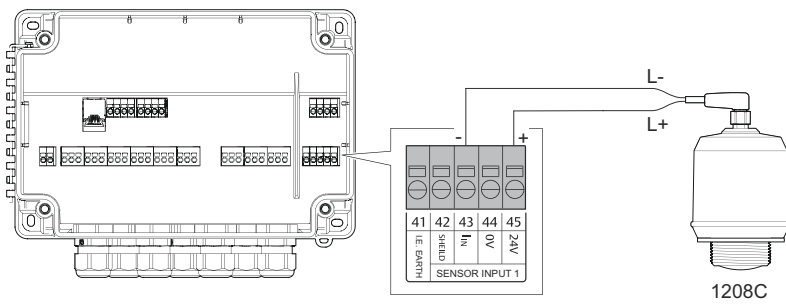
Loop-powered sensors are connected as shown in [Figure 5-4](#).

Figure 5-4: Sensor Input - Loop Powered



See [Figure 5-5](#) for an example where the Rosemount 1208C is connected to the Rosemount 3490C sensor input 1.

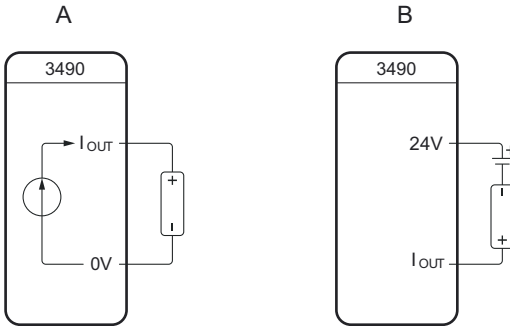
Figure 5-5: Example: 1208C Connected to 3490C Sensor Input 1



5.12.2 Analog output connections

The analog output may be connected in internally-powered or loop-powered mode. In loop-powered mode, an external power source is required.

Figure 5-6: Analog Output



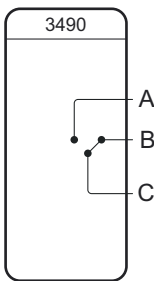
- A. Internal power
- B. Loop power

5.12.3 Relay output connections

The controller relay outputs are available for normally closed and normally open relay connections.

Limit range: 250 Vac 8 A/24 Vdc 8 A resistive load.

Figure 5-7: Relay Output

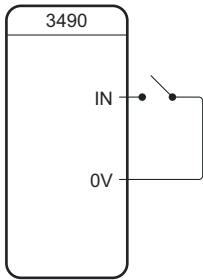


- A. Normally open
- B. Normally closed
- C. Common

5.12.4 Digital input connections

The digital potential-free contact inputs are connected as shown in [Figure 5-8](#). Limit range: Output voltage 14 V, Output current 6 mA.

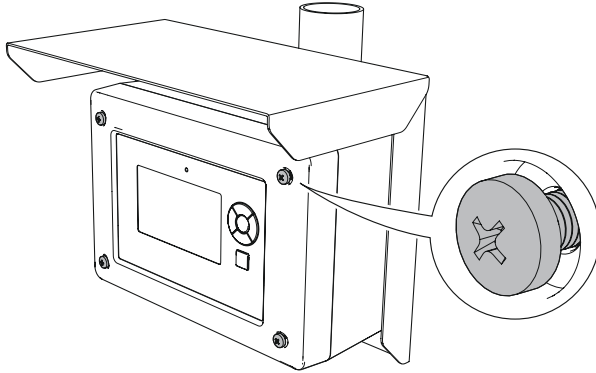
Figure 5-8: Digital Input



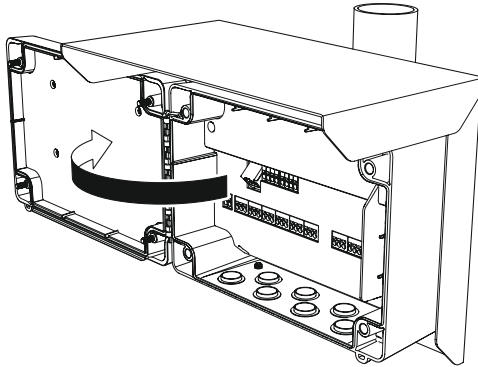
6 Connect wiring and power up

Procedure

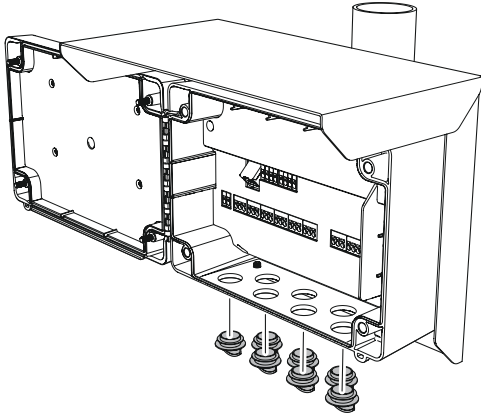
1. ⚠ Ensure the power supply is disconnected.
2. Unscrew the four screws on the lid.



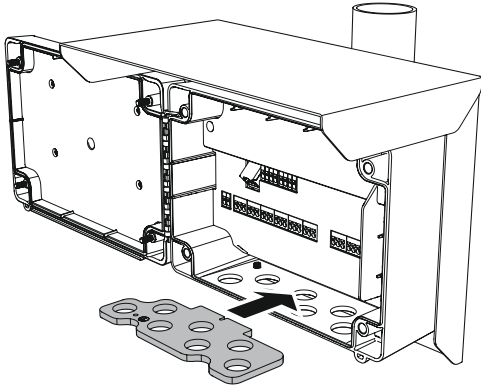
3. Open the lid.



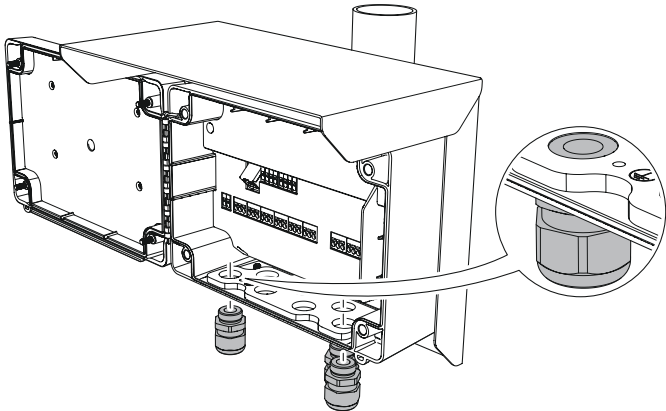
- 4. Remove the plastic plugs.



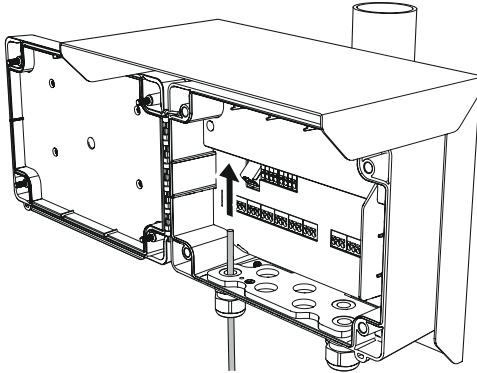
- 5. Place the support plate into position.



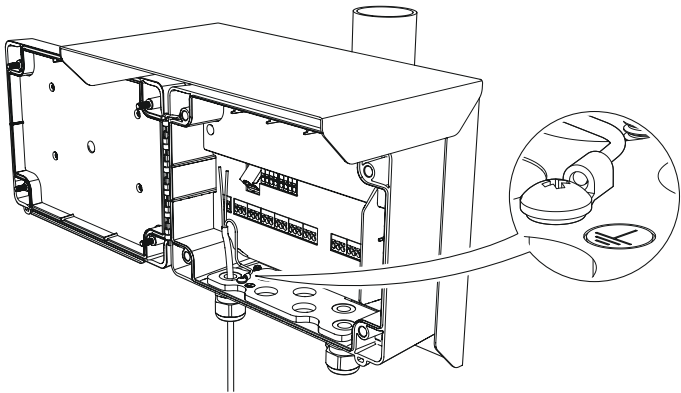
- 6. Mount the cable glands.



7. Pull the power cable through the cable gland.

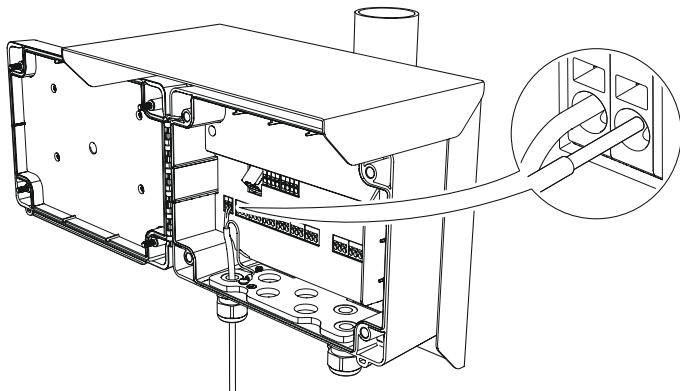


8. Connect the protective earth ground to the support plate with the ring terminal⁽²⁾ and grounding screw (M4) included in the delivery.



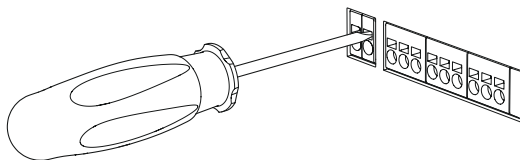
⁽²⁾ 14 AWG (2.1 mm²) or smaller wire.

9. Connect the power supply wires to the terminal compartment.

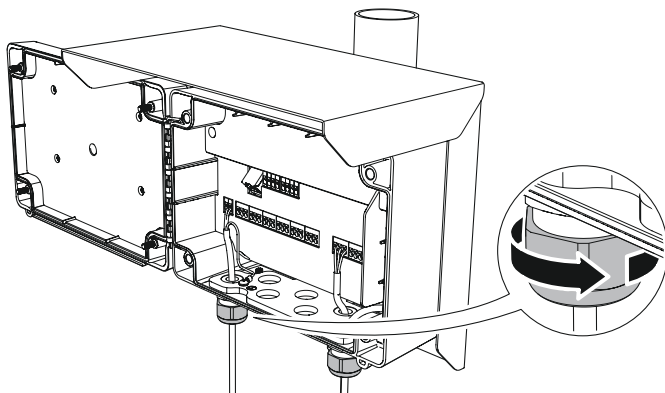


Note

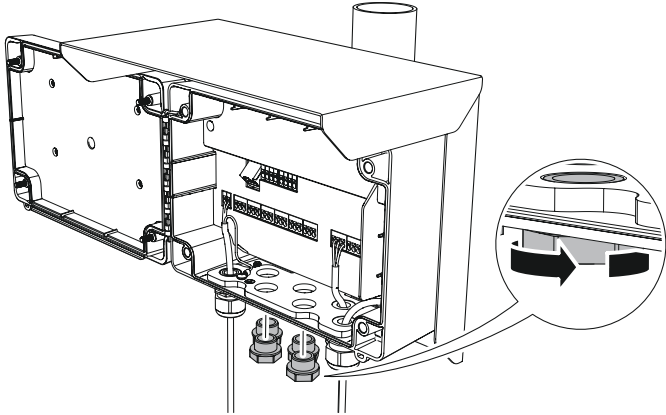
When connecting a flexible (stranded) conductor, use a small flat head screwdriver to press down and hold the terminal connection open.



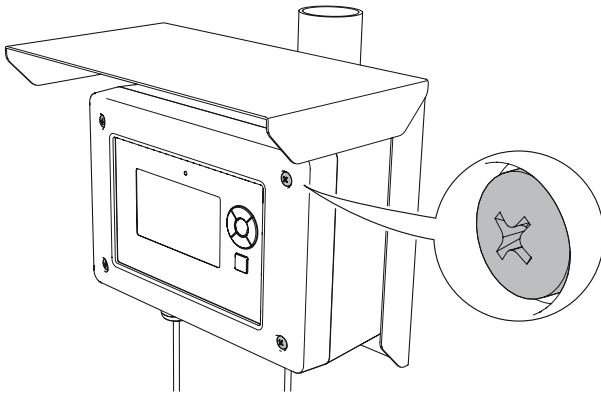
10. Connect the cables to the terminal compartments suitable for your application (see [Prepare the electrical connections](#)).
11. Ensure proper grounding (see [Grounding](#)).
12. Tighten the cable glands.



- 13. Seal any unused port with the enclosed plugs.

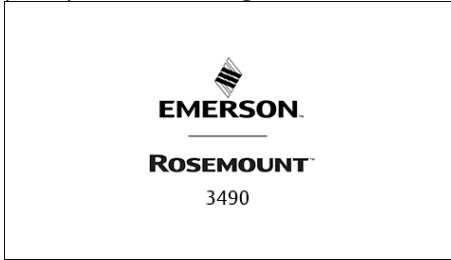


- 14. Close the lid and tighten the four screws to torque 0.7 lb-ft (1 Nm).

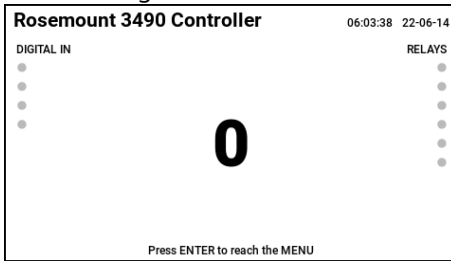


- 15. Connect the power supply.

During start-up, approximately 30 seconds, the display prompts the following screen:



Once the start-up procedure is finished, the display prompts the following screen:



Postrequisites

The controller is now ready to be configured.

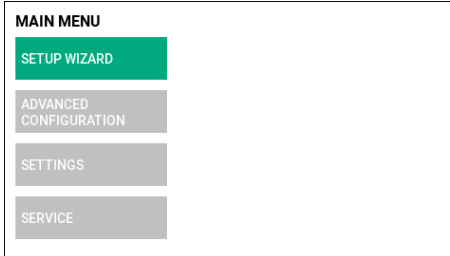
7 Configure controller

The Rosemount 3490 can easily be configured using the controllers display and keypad.

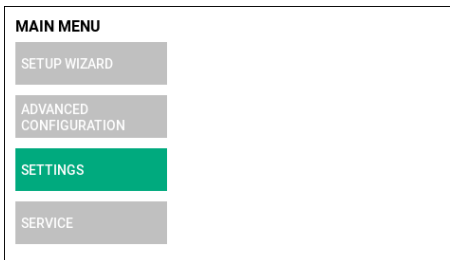
7.1 Set up controller

Procedure

1. Press the enter key button to access the main menu.



2. From the **Main menu**, select **Settings**.



3. From the **Settings menu**, select desired settings option and follow the on-screen instructions.

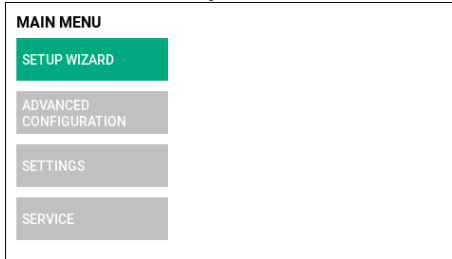
Option	Description
Date/Time	Select date format and set date/time
Display	Set screen saver timeout and display brightness
IP setting	Set device IP address
Pin security	Set pin codes for device and web interface access
Remote services	Settings for remote services access

7.2 Run application setup wizard

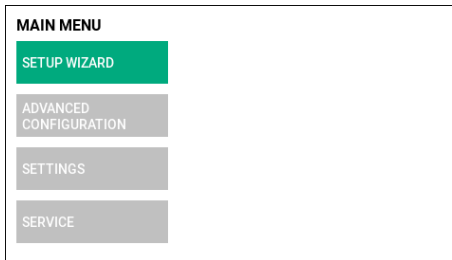
The application setup wizard is the recommended tool to configure the controller. The four setup wizards provide detailed guidance for each application type.

Procedure


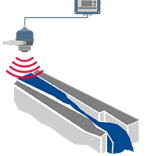
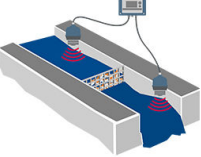

1. Press the enter key button to access the main menu.



2. From the **Main menu**, select **Setup wizard**.



- From the **Select application** menu, select appropriate application:

Option	Application
Level and pump control	<div data-bbox="564 261 948 475"> <p>SELECT APPLICATION</p> <p>LEVEL AND PUMP CONTROL</p> <p>OPEN CHANNEL FLOW</p> <p>DIFFERENTIAL LEVEL</p> <p>TANK VOLUME</p>  </div>
Open channel flow	<div data-bbox="564 527 948 742"> <p>SELECT APPLICATION</p> <p>LEVEL AND PUMP CONTROL</p> <p>OPEN CHANNEL FLOW</p> <p>DIFFERENTIAL LEVEL</p> <p>TANK VOLUME</p>  </div>
Differential level (3490C only)	<div data-bbox="564 764 948 979"> <p>SELECT APPLICATION</p> <p>LEVEL AND PUMP CONTROL</p> <p>OPEN CHANNEL FLOW</p> <p>DIFFERENTIAL LEVEL</p> <p>TANK VOLUME</p>  </div>
Tank volume	<div data-bbox="564 1031 948 1245"> <p>SELECT APPLICATION</p> <p>LEVEL AND PUMP CONTROL</p> <p>OPEN CHANNEL FLOW</p> <p>DIFFERENTIAL LEVEL</p> <p>TANK VOLUME</p>  </div>

- Follow the on-screen instructions to configure the controller according to your application.

8 Web interface

The Rosemount 3490 has a web-based graphical user interface that provides the following functions:

- Firmware upgrade
- Managing log files

Figure 8-1: Web Interface Menus



Refer to the Rosemount 3490 [Reference Manual](#) for detailed information about the web interface service functions.

8.1 Access the web interface

To access the controller's web interface:

Procedure

1. Connect a laptop to the controller's Ethernet port.
2. Set your laptop Ethernet port to a static IP address on the same subnet as the controller.
3. Enter the controller's IP address into your web browser.
IP address from factory: 192.168.4.10
4. Enter the requested pin code.
Pin code from factory: 0000
5. Once you are logged in, the web interface appears with a number of service menus.

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