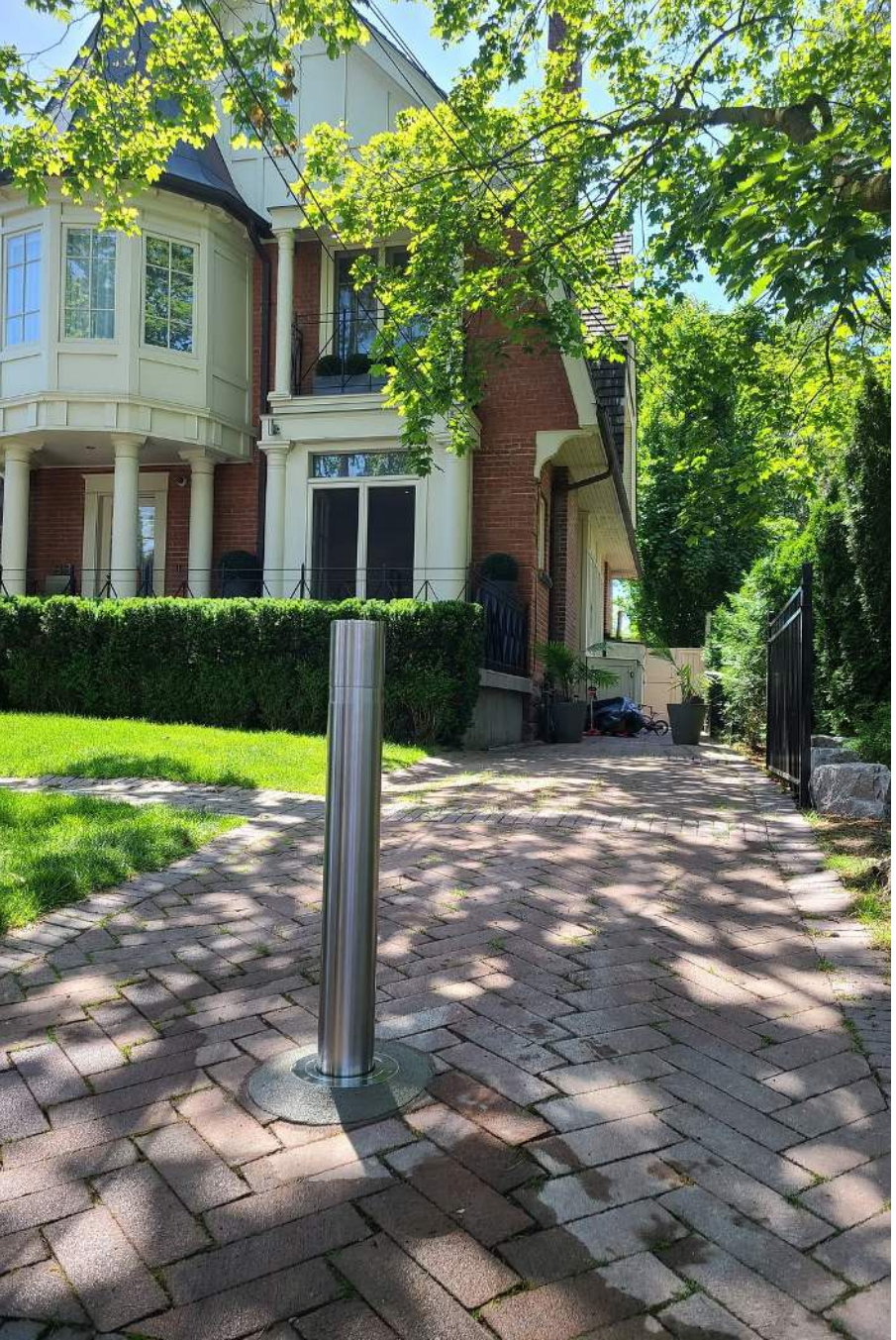

AE4536RTSS — Automated retractable Bollard Installation & Wiring Guide

This guide covers mounting the control panel, connecting power, receiver and antenna setup, conduit runs, excavation and setting, actuator and heater wiring, thermostat and battery setup, multi-bollard wiring, app configuration, commissioning, and maintenance.

Overview and Components

Included Components

- AE4536RTSS retractable bollard(s)
- Control panel
- Receiver module with external antenna and two transmitters
- (Optional) Two 12V 5.2Ah SLA batteries (W/ 20A fused jumper)
- Thermostat
- (Optional) Back up UPS module

Wiring Specifications

Direct Burial 14/2 round cable

- 2×14 AWG actuator
- 2×14 AWG heaters
- 2×14 AWG thermostat

Fuses: 5A per actuator (+ −), 2.5A per heater (+)

Mounting the Enclosure and Main Power

Mounting

Remove the (4) 13mm nuts securing the component panel backing plate. Carefully remove component backing plate and set aside. Fasten panel shell using appropriate anchors. Reinstall component mounting plate and tighten the 13mm nuts.

Main Power

Internal components are pre-wired. Connect supply voltage to the primary breaker according to local building code.

Hot

Breaker (black)

Neutral

Neutral bar (white)

Ground

Ground bar (green)

Receiver and External Antenna

The receiver is pre-programmed to the transmitter remotes. Receiver uses (2) N/O timed relays to control movement. Receiver LED lights will illuminate upon receiving a command from the transmitters to raise or lower, then turn off after 16 seconds. **To stop a command in case of emergency, press the same command button again and bollard movement will stop.** Bollard can now have the opposite command button pressed to reverse movement.

Antenna Installation

01

Trim antenna coax to length

Strip the jacket and separate the shield from the inner copper

02

Connect wiring

Shield → Terminal #9, Inner copper antenna → Terminal #10 on the receiver

03

Mount receiver

Mount the receiver securely using the provided double sided tape inside the control panel once wiring is complete

Conduit and Cable Runs

> **Important:** See bollard removal instruction prior to installing conduit and cable. Bollard must be removed for ease of installation. To ensure correct function, each bollard removed is to be reinstalled in the same corresponding receiver.

Install 1" conduit from each bollard either directly to the panel, or to a nearby junction connected to the control panel.

Pull the following cables per bollard

- **Actuator:** (1) Direct burial round cable 2×14 AWG
- **Heaters:** (1) Direct burial round cable 2×14 AWG

Bollard connections are prewired and installed inside bollard housing. All wiring should sit inside the rectangular housing.

- Connect the 14/2 cable to the L and N inputs of the supplied connector for the heater
- Connect the 14/2 cable to L and N inputs of the supplied connector for the actuator

Inputs are labelled for simplicity. Use L for Positive + and N for Negative -

After connections are made, reinstall the bollard and top plates.

Options

Number of Poles	2Pin	3Pin

Excavation, Drainage, and Placement

CRITICAL: It is crucial for proper performance and longevity to ensure adequate drainage prior to installation. Bollards are designed to limit rain water entry but are not completely sealed. Drainage holes in the bottom of bollard foundations allow for any entering water or condensation to escape. In the event of present ground water, drainage holes can be plugged. This creates a sealed system with no place for minor rainwater or condensation to escape. Bollard pits must be monitored for water levels and vacuumed to remove standing water.

> **ACTUATOR MOTORS ARE IP69 AND ARE NOT DESIGNED TO BE SUBMERGED FOR EXTENDED PERIODS OF TIME.**

Excavate

Core or saw cut a 14" hole per bollard. This allows the clearance for the bollard installation as well as the pouring of the concrete surrounding. Excavate hole to a depth of approximately 60". Test the drainage by pouring 5 liters of water down, ensuring water dissipates in an appropriate amount of time. If drainage is adequate, add 12 in of clear stone to the base of hole.

Installation Steps

1

Place the Unit

Set the housing in the hole. Bollard top plate should sit ¼" above finished grade

2

Level and Power

Place a level on the bollard top plate, ensuring the bollard is plum in both directions. It is recommend to connect all electrical prior to pouring the concrete. This allows the bollards to be raised, and minor levelling and placement adjustments to be made. Alternatively, bollards can be raised using a 24v power source

3

Gravel Lock

Backfill 16–24 in of clear gravel around the housing to hold in place

4

Concrete Pour

Pour concrete equally around bollards ensuring level is maintained

Optional Ground-Water Setup

Contact for plug and gasket kit. This kit prevents ground water entry and reduces rainwater entry. Install (3) (#8) plugs after removing the bollard and actuator. Install upper gasket seal. Reassemble and reinstall. Check frequently and service as required.

UPS and Backup Batteries

UPS is designed for emergency movement in the event of a main power failure. It allows up to 40 movements in either direction. The UPS **does not** supply power to the heaters. **Bollards should not be operated repeatedly in cold temperatures without functioning heaters.**

Installation

- Install two 12V 5.2Ah SLA batteries in series
- **Wiring:** Connect the supplied red wire to the Positive spade terminal on one battery. Connect the Black wire to the Negative spade terminal on the other battery. Install the fused jumper between the 2 batteries
- Batteries float-charge during normal operation and automatically take over on power loss
- **Expected life:** 4 Years

Wiring

Please refer to electrical diagrams for end connections. Digital control panel is for technicians use only and should not be used by end users.

Mobile App Configuration & Commissioning

Mobile App Configuration

Follow the provided setup manual; support is available if needed.

Commissioning Checklist

- **Mechanical Limits:** Factory-set; minor top play is normal and protects the actuator
- **Motion Test:** Confirm smooth up/down operation via panel, app, and remote
- **Heater:** Turn thermostat to maximum and confirm warmth; then set thermostat back down to 5 °C. (40f)

Routine Maintenance

On bollards with adequate drainage, service should be completed every 6 to 12 months. Spring and Fall is recommended.

For bollards with ground water issues, inspect monthly til water entry can be predicted. Then 3-6 months as necessary.

1 Clear debris and water

Clear debris and water from around the receiver and bollard

2 Clean bollard body

Wipe the bollard body and flange collar with stainless cleaner. Teflon based coatings can be also be applied

3 Vacuum receiver base

Vacuum receiver base and ensure drain holes are open

4 Lubricate actuator

Pump a small amount of light viscosity grease into the zerk fitting at the top of the actuator

5 Inspect connections

Inspect connections for any corrosion or water entry

6 Test heater function

Test heater function

7 Clean guides and wipers

Clean guides and wipers, inspect for wear, and replace if needed

8 Check UPS and battery

Disconnect Line Voltage. Check UPS function. Check Battery Voltage

Routine service ensures smooth performance and longer life.