OPTCO

Valve Automation

Operator Focused Benefits

OPTCO

VALVE AUTOMATION

CUSTOM FABRICATION

WATERWORKS SPECIALTIES

THREE MAIN BUSINESS UNITS

What is an Electric Actuator?

An electric valve actuator is a device that uses an electric motor to move a valve shaft or stem, opening, closing, or positioning the valve to control the flow of a fluid (liquid or gas). It converts electrical energy and control signals into mechanical motion and typically includes a motor, gearing for torque and speed reduction, limit or position switches, and often feedback (position sensors) and control electronics.

Bernard Controls

A global industrial company driven by Research and Development in order to deliver innovations to contribute to the balance of climate and the safeguard of biodiversity.

Global

The world is our field of action, offering us the invaluable richness of diversity. We view this diversity as both an opportunity to embrace and a resource to protect and nurture.

Industrial company

Our industrial heritage is rooted in the vision of Lucien Bernard since 1936, who developed economic ties as a means of promoting peace. This heritage was enriched by Étienne Bernard, who anchored the company in the industrial world through innovation in nuclear applications and created “Societal Natives” to frame the Group's identity.

Research and Development

Research and Development drives everything Bernard Controls does. Their expertise lies in electric actuators, often referred to as the "muscles" of digital intelligence. BC products enable the automation of valves, and other critical components across key sectors such as energy (e.g., nuclear power plants) and environmental applications (e.g., water treatment facilities).

⊕ Founded in 1936

⊕ Global presence

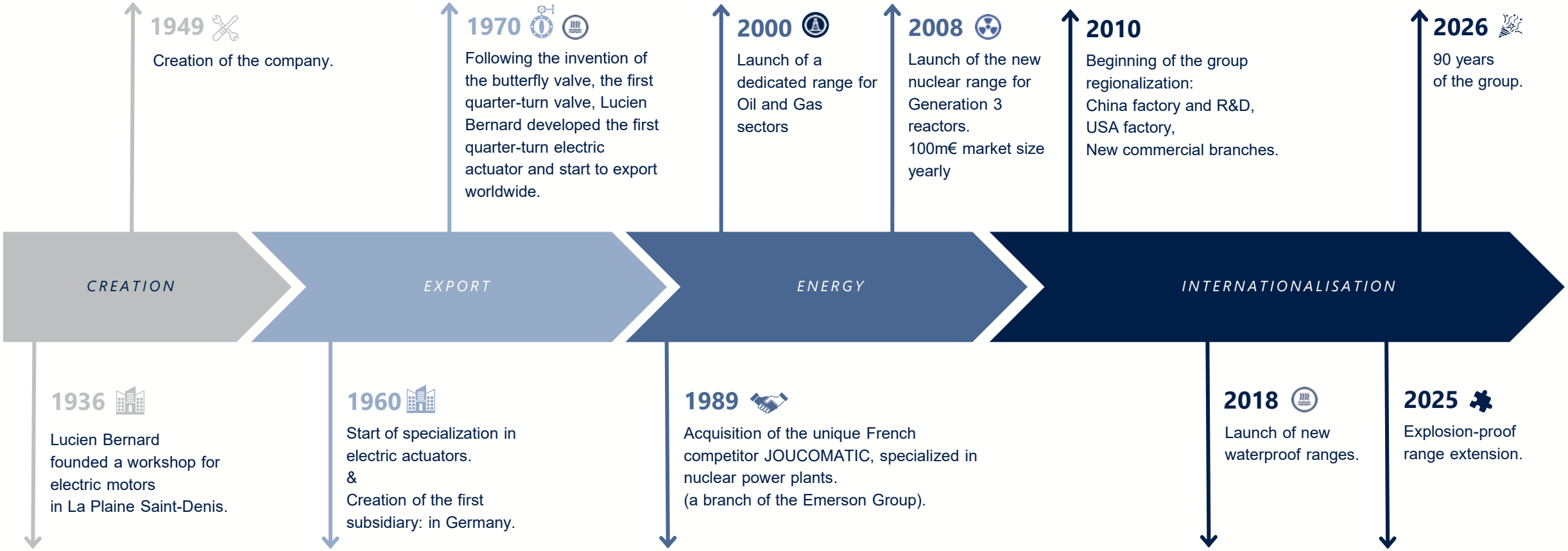
Headquarters in Paris, North American Factory in Houston

⊕ Focus on R&D

Innovation, efficiency, industrialization

#1 Global Brand in the Nuclear Industry with a Complete Range for Water

Bernard Controls HISTORY - Since 1936



WATER

A reliable water supply is essential for all, and OPTCO delivers advanced flow control solutions tailored to the water industry. Ensuring safety and efficiency in water plant operations, our actuators stand out for their precision, dependability, and seamless integration with digital systems.

Backed by decades of expertise, Bernard Controls & OPTCO support every phase—from planning to maintenance — by prioritizing cost efficiency, durability, and ease of use.

Our digital solutions enhance monitoring, control, and automation, addressing the industry's evolving demands in an increasingly connected world.

BT RANGE
Weatherproof Multi-turn
Electric Actuators

AQ RANGE
Weatherproof Part-turn
Electric Actuators

AT RANGE
Weatherproof Multi-turn
Electric Actuators

Why Choose Electric Valve Actuation?

- Reliable, repeatable valve control
- Precise positioning for process stability
- Lower maintenance vs. pneumatic/manual
- Easy integration with plant automation

Actuator Basics

- Actuator: device that moves the valve
- Torque: turning force; must match valve & process requirements
- IP rating: enclosure protection (dust/water) explosion proof?
- Fail-safe mechanism required? Spring return & battery back-up
- Manual override mechanism

OPTCO

Common Models for Water & Wastewater

AQ Series

Reliable, compact & optimized design for quarter turn applications. 14 user friendly and intuitive models from 50Nm to 10,000Nm. CSA, AWWA C542

BT Series

Multi-turn or ¼ turn. Intelligent design with wide torque range and speed control, advanced diagnostics and monitoring functions. 12Nm to 500Nm direct. CSA, AWWA C542

- LARGE LCD DISPLAY
- DECLUTCH-FREE HANDWHEEL
- WIDE STEM ACCEPTANCES
- USER FRIENDLY WIRING
- MULTI-TURN & QUARTER TURN
- IP68 INGRESS PROTECTION
- WIDE RANGE OF SPEED TO 180 RPM
- HIGH RESOLUTION MODULATING CLASS III+
- S4 MOTOR SERVICE DUTY
- EASY TO COMISSION AND TROUBLE SHOOT
- BLUETOOTH APPLICATION FOR CONTROL AND SERVICE
- MODBUS AND OTHER FIELDBUS OPTIONS FOR SYSTEM INTEGRATION

Specialty Models for Water & Wastewater

SQX & STX Ranges

Explosion Proof ¼ Turn and Multi-Turn Models

IECEX/ATEX certified Qualified for gas and dust protection

Gas: Zone 1 & 2, up to IIC

Dust: Zone 21 & 22, up to IIIC

FQ Range

Spring Return Fail-Safe

Fast spring return clockwise or counterclockwise spring action. No need for external power supply

No resetting of the spring is required after emergency operation: fail-safe function is continuously available

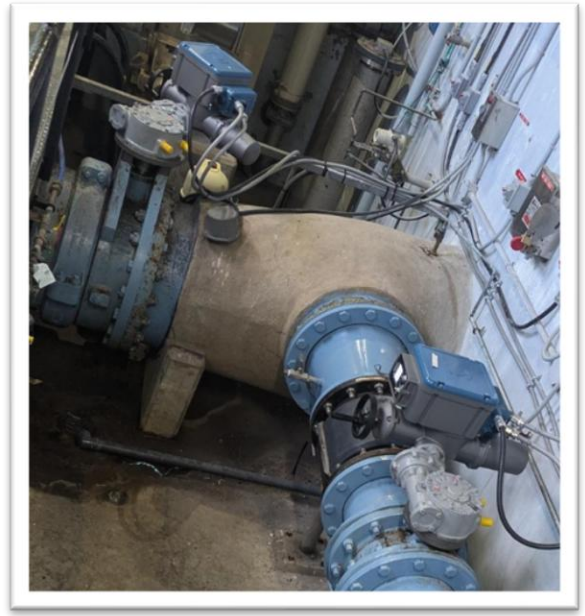
Potentially Hazardous Locations

- Headworks / Influent Channels
- Primary Clarifiers & Sludge Collection Areas
- Sludge Thickening & Storage Tanks
- Anaerobic Digesters (One of the highest-risk areas)
- Biogas Handling Systems
- Chemical Storage & Dosing Areas
- Dewatering Buildings (Centrifuges, Belt presses)
- Wet Wells & Pumping Stations
- Enclosed or Poorly Ventilated Spaces Anywhere

Utilities Kingston

CASE STUDY
KING STREET WATER TREATMENT PLANT, KINGSTON ON

- **37 actuators total from 4” on/off to 24” modulating butterfly valves & multi-turn slide gates**
- **MODBUS RTU to Ethernet/IP through gateway**
- **OPTCO offered the best technical package, best lead-time, & saved the utility SIGNIFICANT capital expense**



Case Study: Ravensview Wastewater Treatment Plant

Large Diameter “Splitter Gate” Used for Bypass During Rain Events. Previously Operated by Hand, or Manual Valve Turner

Design Build Solution by OPTCO Featuring Master & Slave SAMBO Gearboxes with Linkage. 208V 3pH Power. Can be Controlled Remotely VIA Bluetooth or with Local Controls

OPTCO

Problem: **Can we enable safe remote open/close operation of an electrically actuated valve using cellular IoT without SCADA?**

THE ANSWER IS YES:

- Bernard Controls on/off actuator (use its dry-contact or 24V control input)
- Industrial cellular I/O gateway (isolated relay outputs + digital input)
- Include fused power supply and surge protection
- Wire gateway relay outputs to actuator open/close dry contacts
- Wire actuator position feedback to gateway digital input (limit switch)
- Keep mains and signal wiring separate; ground properly

Network & cloud

- Cellular gateway connects outbound to managed MQTT or HTTPS cloud broker
- Device publishes status (open/closed, fault) and subscribes to command topic
- Operator uses simple web/mobile dashboard to send open/close commands

Basic Troubleshooting & Maintenance

Visual Inspection (Routine – monthly/quarterly)

- Check for water ingress, corrosion, or condensation inside the enclosure
- Inspect cable glands, seals, and conduit entries (critical for IP68-rated units)
- Look for paint breakdown or coating damage (especially in corrosive environments like wastewater plants with H_2S)
- Verify nameplate and labeling are still legible
- Inspect and replace O-rings, gaskets, and double seals
- Tighten and inspect terminal connections (loose terminals = heat + failure)

Case Study: Leamington, ON Lift Station

ROI & Next Steps

- Lower labor and reduced unplanned shutdowns
- Extended valve life and fewer emergency repairs
- Improved process control yields operational savings

OPTCO can help!

- Site surveys, specification & sizing
- Installation, commissioning, training
- Spare parts and long-term support

CASE STUDY: BT Series on Knife Gate Valves at St. Mary's Cement, Bowmanville ON


THANK YOU