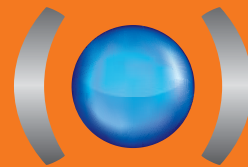


Simple
Sturdy
Economical



by



BERNARD[®]
CONTROLS

//////////////////// Invest in Confidence //////////////////////////////////

EZ

Weatherproof
Quarter-turn Actuators

EZ RANGE



Industrial actuation made easy

BERNARD CONTROLS, inventor of the industrial compact quarter turn actuator, brings to its customers valve actuation solutions supported by decades of experience.

Through discussions with users over the years, BERNARD CONTROLS has identified a demand for electric actuators that are both **simple and sturdy**. This demand is fulfilled with BERNARD CONTROLS' FIRST BC labelled products.

These actuators are well designed to work under **moderate environmental & operational conditions**.

This range has been developed without compromising on quality, applying the unique expertise and feedback that are the cornerstones of BERNARD CONTROLS' reputation.

Thus, the FIRST BC label is the guarantee of actuator solutions with a total cost of ownership (TCO) among the lowest in their category, thanks to **easy commissioning, proven reliability** and a **maintenance-free** design.

The EZ range products meet all criteria set by the FIRST BC label.



FIRST BC

2014 - What's new? EZ LOGIC

> Proven reliability with
new integrated control

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EZ range overview

SIMPLE, STURDY, ECONOMICAL

Weatherproof Quarter-turn Actuators

- Adaptation to all quarter-turn valves: torque range from 45 to 10,000 Nm
- IP67 / NEMA 6
- Type of operation:
 - > On/Off
 - > Positioning
- Type of controls:
 - > Switches - **EZ SWITCH** for On-Off applications
 - > Integrated control - **EZ LOGIC** for On-Off or Positioning applications



Compact, industrial design & Maintenance-free

> EZ SWITCH models



EZ4 to EZ15



EZ25 to EZ60



EZ100 to EZ1000

> EZ LOGIC models



EZ4 to EZ15



EZ25 to EZ60



EZ100 to EZ1000



Main features

FIRST BC features

FIRST BC labelled actuators are technically and economically optimized for their applications:

- > **Moderate environmental constraints**
(IP67 / NEMA 6 and ambient temperatures)
- > **Moderate operational constraints**
(limited operating service)

In order to address perfectly customers' demand for simple and sturdy actuators.

EZ actuators are:

- > **Easy to install** thanks to compactness, prewired product up to EZ60 for EZ SWITCH*, non intrusive settings for EZ LOGIC models,
- > **Easy to use** with local display and signaling by LED on EZ LOGIC models (integrated control),
- > **Easy to maintain** as EZ are maintenance-free.



EZ RANGE

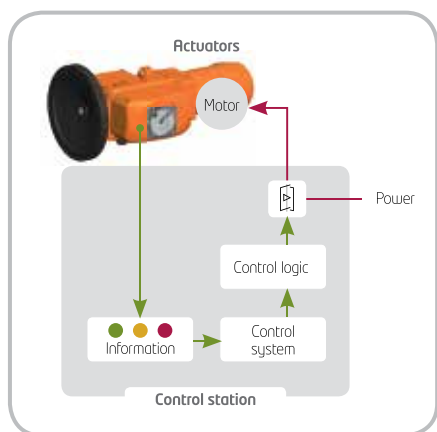
- Easy commissioning
- Proven reliability
- Maintenance-free

> EZ SWITCH, for On-Off applications

In this configuration, the control unit is designed by the customer and located in a remote cabinet.

All information sent by the actuator sensors (travel limit, torque limit, thermal overload, position feedback, ...) have to be processed by user's control logic. Power reversing starters are also housed in the remote cabinet.

As far as travel limitation adjustment is concerned, **BERNARD CONTROLS patented camblock system** allows to quickly set the cams' positions with a standard flat head screwdriver. Each single cam can be set independently from the others. The cams are automatically locked in their respective positions, once adjusted, and unaffected by vibrations.



SWITCH control



BC patented camblock

➤ EZ LOGIC, for On-Off or Positioning applications

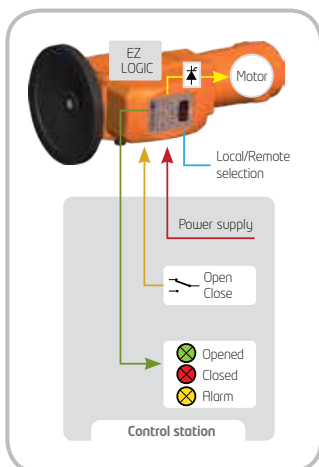
EZ actuators are available with integrated control for **extended control features and improved user-friendliness**:

- > **Easy commissioning**: non-intrusive simplified settings thanks to keys and menus on **local display**,
- > **Improved compactness** of integrated electronics.
- > **Local commands** with 4 keys and signaling on a 7-segment display, with position displayed in percentage of opening,

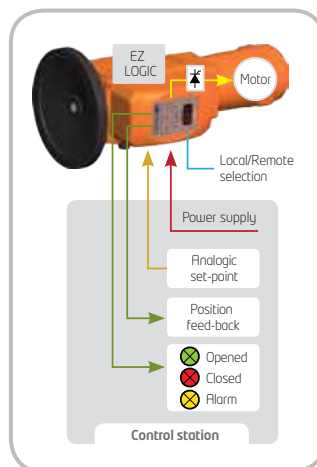


EZ LOGIC control board

BERNARD CONTROLS proposes EZ LOGIC actuators for **On-Off or Positioning applications** which allow **precise positioning** (better than 2%) with **position feedback**.



*EZ LOGIC integrated control
On-Off version*



*EZ LOGIC integrated control
Positioning version*



*EZ SWITCH actuators on Gas pumping station,
South Africa*



Product specifications

➤ General specifications

General	EZ actuators include TENV* motor, gear case, emergency handwheel, travel limit control, torque control (except EZ4 to EZ15) and output drive with removable socket (plain socket in standard)
Gear design	Gears are mechanically self-locking and are lubricated for product lifetime
Design life	<ul style="list-style-type: none"> • EZ4 to EZ60: 20,000 cycles (On-Off) / 300,000 starts (Positioning) • EZ100 to EZ1000: 10,000 cycles (On-Off) / 200,000 starts (Positioning) Tested according to EN15714-2 Class A & B
Enclosures	<ul style="list-style-type: none"> • Actuator housing in cast aluminum, polyuréthane paint Ral2010 complying with ISO 12944 (C2) • IP67 / NEMA 6
Motor technology	<ul style="list-style-type: none"> • Totally-enclosed, 3-phase or 1-phase asynchronous motor, class F insulation with integrated thermal overload protection • Totally-enclosed, 2-wire DC motor, class F insulation
Motor duty	• S4-25% motor duty rating to IEC 60034-1. 360 starts/hour in peak
Temperature range	-20 ... +60°C / -4 ... +140°F
Electrical connection	Screw-type terminals for controls and power supply. Internal earth grounding post
Compliance with Directives & Standards	Actuators comply with: EC directives 2004/108/EC, 2006/95/EC and standards EN 61000-6-4, EN 61000-6-2, EN 60034-1 and EN 60529
Other certifications available	<ul style="list-style-type: none"> • CSA certified models for Canada and the United States • Customs union certified models for Belarus, Kazakhstan and Russia

* Totally Enclosed & Not Ventilated

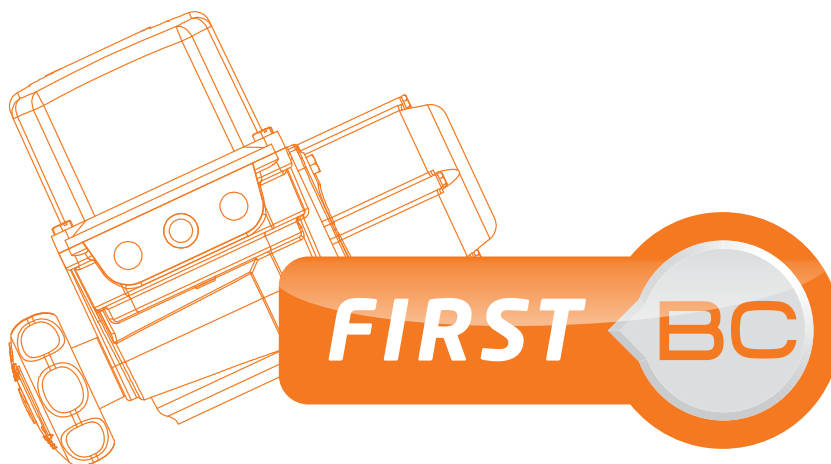
➤ EZ SWITCH specifications

Position indication	Mechanical position indicator
Cable entries	2 x M20 sealed by caps
Anti-condensation	Heater
Travel limit system	Camblock with 4 SPDT switches ; 250 VAC-16 A / 48 VDC-2,5 Amax. (resistive load)
Torque limiting system	<ul style="list-style-type: none"> • The torque limit switch gives a short duration contact. (except EZ4 to EZ15) • 2 contacts as standard; SPDT; 250VAC-16A / 48 VDC-2,5A max. (resistive load)
Remote position signal (option)	<ul style="list-style-type: none"> • 1000 Ω potentiometer, 0.3 W - wiper current = max. 1mA. • «TAM» position transmitter: 4-20 mA (12, 24 or 32VDC external supply for maximum acceptable load of 150, 750 or 1050 Ω)

➤ EZ LOGIC specifications

Operation	ON/OFF or POSITIONING with precision better than 2%
Commissioning	<ul style="list-style-type: none"> • Non-intrusive settings • Setting simplified by use of keys and menus on the display
Cable entries	3 x M20 sealed by caps
Anti-condensation	Included in the power board
Motor supply	Solid state relay (all voltages)
Protections	<ul style="list-style-type: none"> • Fuse protection: <ul style="list-style-type: none"> - At transformer primary: 1 fuse (not exchangeable) - At transformer secondary: 1 exchangeable fuse for each output. • Automatic phase correction (for 3-phase supply) • Reversal rotation protection • Alarm signaling (local and remote) • Protection against jamming • Torque limiter (from EZ25 to EZ1000) • Local command inhibition by local command

Remote command (ON/OFF)	<ul style="list-style-type: none"> • Isolated by optocouplers • by voltage: 10 to 250 V DC/AC • by dry contacts (use EZ LOGIC internal DC supply) • Minimum pulse duration: 100ms • Time of rotational direction change: 300ms
Analog input command (Positioning)	<ul style="list-style-type: none"> • Input signal and position signal are fully isolated • Standard input signal: 4-20 mA • Input signal: 0-20 mA (on request) • Input signal: 0-10 V (on request)
Analog inputs	<ul style="list-style-type: none"> • In current: impedance of 160 Ω • In voltage: impedance of 4000 Ω
Local command	4 keys : Local-remote selector/ Open / Close / Stop
Position signaling relays	<ul style="list-style-type: none"> • 1 latching relay* : 'valve opened' • 1 latching relay* : 'valve closed' • Switch configuration : Normally Opened • Minimum current 10mA at 5V • Max current: 5A at 250V AC or 5A at 30V DC max. (resistive load) <p><i>*Latching relay allows keeping the position in case of power cut.</i></p>
Alarm relay	<p>SPDT switch</p> <ul style="list-style-type: none"> • Minimum current 10mA at 5V • Max current: 5A at 250V AC or 5A at 30V DC max. (resistive load) <p>Fault reported:</p> <ul style="list-style-type: none"> • Power supply or fuse alarm • Loss a phase (with 3-phase supply) • Motor overheating • Maximum torque (from EZ25 to EZ1000) both direction • Motor jamming • Local command in 'local' mode • Loss of 4-20mA input signal (if configured with positioner and 4-20mA)
Local signaling	<ul style="list-style-type: none"> • Signaling by LED: <ul style="list-style-type: none"> - Setting (yellow LED): ON in 'set-up' mode - Alarm (red LED): ON if a fault appear - Local (green LED): ON in 'Local' mode - Opened (configurable red or green LED): ON when 'Opened' position reached. Flashing during operation. - Closed (configurable green or red LED): ON when 'Closed' position reached. Flashing during operation. • Menu & position: on 7-segment display
Analog position signal	<ul style="list-style-type: none"> • External DC supply (12 to 30VDC) • Output signal: 4-20mA if input signal is 4-20mA • Output signal: 0-20 mA if input signal is 0-20 mA • Output signal: 0-20 mA (0-10V using a 500Ω external resistor) if input signal is 0-10V
Max. output impedance	Maximum acceptable impedance of 750 Ohms with 24VDC (without 500 Ω resistor)



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