



# Limitorque® Electric Actuation Training Courses



## Get practical, hands-on actuator training

High-voltage actuators have inherent dangers. Improper usage or maintenance can reduce performance, damage equipment, and even cause serious injury or death.

To ensure OEMs, distributors and end users are able to safely operate Limitorque actuation systems, the following training programs are available:

- MXA and QX Smart Actuators: Basic Maintenance and Setup
- L120 and SMB Electromechanical Actuators: Maintenance and Troubleshooting
- SMB Actuator Sizing and Applications Training

See page 2 for detailed descriptions of each course. Participants will receive a certificate of completion.

### Training benefits

#### Improve safety

Participants will learn the proper way to handle high-voltage equipment in a “safety-first” environment. This approach ensures your team will have the skills and tools to service the Limitorque electric actuators covered in each course.

#### Increase the efficiency of your operation

Training will familiarize your team members with the user interface used by Limitorque actuation systems. In addition

to minimizing opportunities for confusion, this training will enable students to collect diagnostic data that can enhance performance and help you prevent problems before they occur.

#### Reduce downtime and improve reliability

By ensuring proper preventive maintenance and other best practices are in place, you’ll improve your plant equipment availability, productivity and profitability.

#### Lower your cost of ownership

By improving equipment reliability, maintenance costs decrease and equipment lifespan increases, which results in a reduced total cost of ownership.





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## MXA and QX Smart Actuators: Basic Maintenance and Setup

**Course length: 3 days (24 hours total)**  
**Locations: On-site, Lynchburg and Houston**

Users of MXA and QX actuators will cover plant and actuator safety before diving into an overview of operational basics. These include the displays and LEDs used in Limitorque smart actuators, plus an overview of their mechanical and electronic assemblies. Hands-on mechanical teardown and reassembly are followed by an overview of the human-machine interface (HMI).

Students will learn alternative methods for setting actuator limits, plus details of remote-control wiring modes, standard and optional controls, and wire preparation and installation.

## L120 and SMB Electromechanical Actuators: Maintenance and Troubleshooting

**Course length: 3 days (24 hours total)**  
**Locations: On-site, Lynchburg and Houston**

This course includes an overview of plant and actuator safety and general information on how electromechanical actuators drive valves. Students will be trained in the mechanical operation, assembly, disassembly, inspection, reassembly and troubleshooting of the L120 and SMB actuators. Students will also cover limit switch adjustment procedures, general maintenance, electrical operation, plus electrical terms and symbols.

## SMB Actuator Sizing and Applications Training

**Course length: 2 to 2.5 days (16–20 hours total)**  
**Location: Lynchburg**

This course details SMB actuator selection and provides a step-by-step sizing process for multi-turn and quarter-turn applications. Students will learn: the basics of electric actuators; the relationship between valves and actuators; types of motors; types of actuator controls; and the design and operation of gearboxes. Sizing formulas and real-world examples of hand calculations will also be covered.

**Option:** A four-hour, hands-on session on SMB actuator disassembly and reassembly is available with this course.

## Price

\$1,850 per student; on-site training quoted separately.

## Training locations

Training is available at the following locations:

### Flowserve Limitorque Factory

5114 Woodall Road  
Lynchburg, VA 24502

### Houston Valve Automation Center

14219 Westfair West  
Houston, TX 77041

**On-site training:** On-site training is available on request. Courses can be customized to your organization's specific needs. Quoted separately.

## Registration

To register or for additional information, contact:

### Danny Payne

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