

'E' Range of Electro - Hydraulic
Linear and Rotary Actuators

Technical Specification



Basic Design Concept

Please note this brochure is purely an overview of our product range.

The Advanced Actuators range of electro-hydraulic actuators have been used throughout industry for over 40 years. The flexibility and versatility of hydraulics gives Advanced Actuators the opportunity to offer solutions to most actuation requirements.

The Actuators come in two main formats

- SELF-CONTAINED

This is where the actuator comes complete with its own oil reservoir/electric motor/ hydraulic pump and controls.

- RING MAIN

With this type the customer or end user provide the supply of hydraulic oil from a central pumping unit.

These two formats are then split down into two further choices, these being

- LINEAR

OR

- QUARTER TURN

Our Actuator ranges have key features which lead to low maintenance, reliability & long life.

- They are fully sealed and do not “breath”
- There is little or no hydraulic pipe work on the actuators
- We only use tried and tested quality components



The Actuators

GENERAL

The following main features apply to both the linear and quarter turn actuators

- Modulating or isolating duty
- Fail last, fail closed or open EEXD or IS Format
- Standard weatherproof (IP65 or NEMA4X) to zone 1 hazardous area rating (Zone 1 IIB T3, or Class 1 Div1)
- Most electrical supplies covered
- All mounting attitudes catered for
- – 50 to +50 degrees centigrade ambient working temperature
- CE Marked
- Atex Certified
- Motor Sizes 30 watts to 75kw

Specific Information

LINEAR

Min thrust – 50kg
Max thrust – 80,000kg
Min speed – 1mm/sec
Max speed – 1200mm/sec
Min stroke – 10mm
Max stroke – 8000mm

QUARTER TURN

Min torque – 50NM
Max torque – 1,200,000NM
Min speed – 0.25° degree/sec
Max speed – 5.5 Milliseconds/degree
Angle of rotation 0 – 90°



Linear Self-contained Modulation Actuator



ADVANCED
ACTUATORS LIMITED

Technical Information

Electrical Controls

All our actuators can be offered for either modulating or isolating duty.

For the self-contained versions we can design and supply the electrical motor starter panel, be it in weatherproof or hazardous area format.

For modulating duty actuators we offer a variety of solutions with our range of position controllers.

Option 1: Standard command input
signal 4 -20mA

Option 2: Controller with HART protocol

Option 3: Controller with Foundation Fieldbus

All the above are available in either Explosion-proof or Intrinsically safe format.

The electrical housing for our controllers is available in either copper free aluminium or 316L stainless steel.

There is also the optional feature of infrared controls on these controllers, making life easier to set the units up out in the field.

Basic Principles

The modulating actuator will have one of the above controllers either built onto the actuator or it can be mounted remotely.

a transducer or potentiometer is built in to the actuator it is directly linked to the actuator so we get a true position of its travel.

This feedback signal is wired in to the controller along with a 24vdc supply.

Two solenoid valves used to control the actuator movement in either direction are wired in to the controller.

The controller compares the feedback signal with the command signal and if different will energise the correct solenoid valve, such that the actuator moves to the position where both feedback and command signal are equal. The controller is constantly monitoring the two signals and energizing the solenoids according thus giving modulating movement.

For full details of accuracies, hysteresis etc for the controllers please contact advanced for more information.



**Position controller
with HART protocol**

OPTIONAL FEATURES

Electro-hydraulic actuators offer many options that can quite easily be built in to the basic unit, these include:

- Hand pump for manual operation
- Limit switches
- Pressure switches or transmitters
- Temperature switches or transmitters
- Oil level switches or transmitters
- Solar power operation
- Dual speed
- Mounting packages
- Sunshades
- Motor starter panels
- Different fluid types
- Partial stroking with SIL rated option
- Various materials of construction
- IP68 fully submerged versions available
- Sil 2 Rating

This is by no means the full list of options we can offer – please contact Advanced Actuators to see if we can meet your requirements



Act Actuators are repeatedly supplied to the following sectors

- Power Generation – Oil and Gas –Water Processing – Chemical Industry
- Most control valve applications
- Ball and butterfly control
- Penstocks
- Knife gate valves
- Dampers
- Fan Blade Controls

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Other Products

Z Actuators

A range of self-contained linear electro-hydraulic actuators, which are both versatile and extremely robust. These actuators have fully adjustable thrust and speed controls. No external pipe work and completely sealed against ingress of contaminants means little or no maintenance. Ideal for on/off applications.

Electric Actuators

Modular in design, both multi and 1/4 turn available offering compact solutions. For modulating or isolating duty with options of foundation field bus and HART. Other features include double sealing of the enclosure, standard ISO5211 mounting, local or remote control and manual operation are a few of the options with these actuators.

Pneumatic Actuators

Quarter turn scotch yoke design in both single and double acting formats. Anodised outer surface with double coating on the cylinder bore. Mountings for both ISO 5211 and DIN3337. Optional features include limit switches, position controllers, integrally mounted solenoid controls and valve/actuator mounting brackets.

Hydraulic Cylinders

Complete range of heavy-duty high quality fully serviceable (i.e. can be rebuilt) metric hydraulic cylinders to CETOP/R10H.

S Type Actuators

Primarily for choke valve control, the Advanced Stepping Actuator Range comes in either pneumatic or hydraulic formats. As with all Advanced Actuators they come with a number of optional features.



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