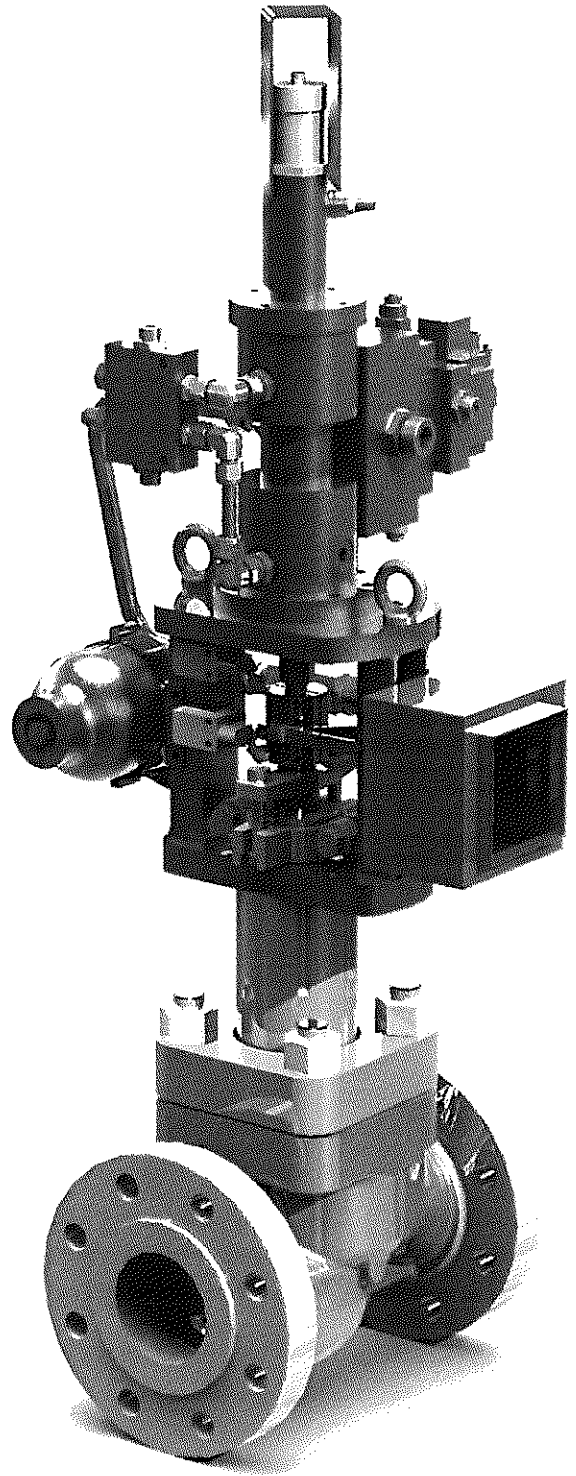


**ADVANCED**  
**ACTUATORS LIMITED**

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

Technical Specification



[www.advanced-actuators.com](http://www.advanced-actuators.com)

# 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

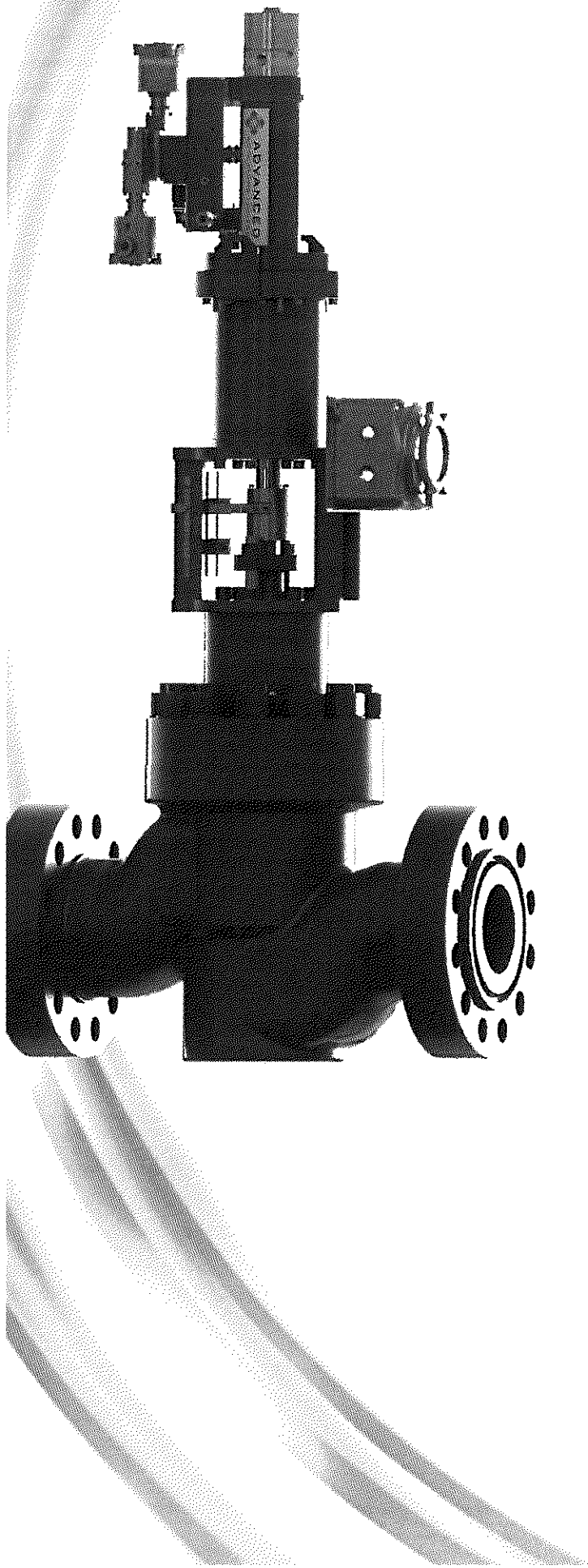
- LINEAR

OR

- QUARTER TURN

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

- They are fully sealed and do not "breathe"
- 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

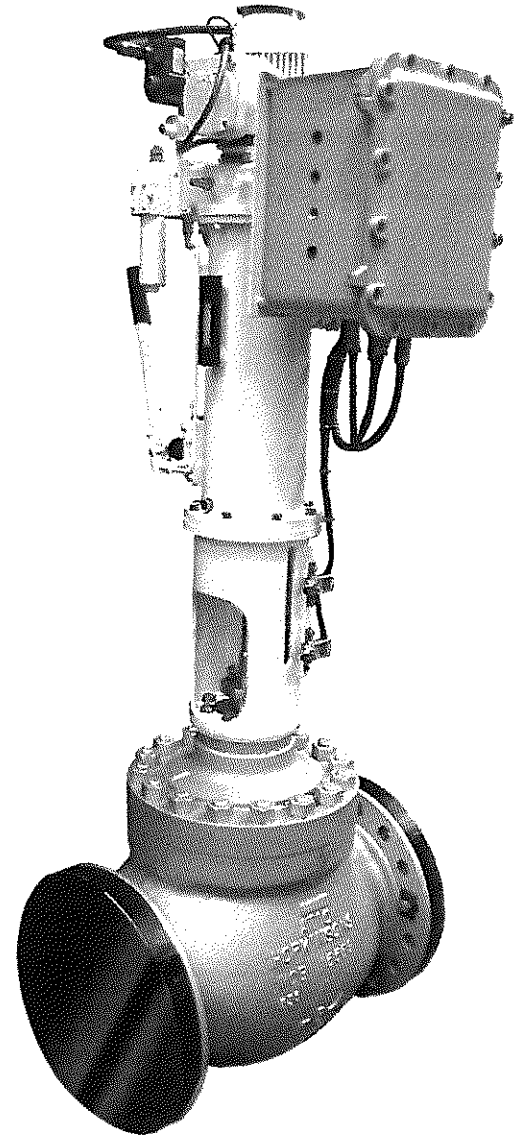
## Specific Information

### LINEAR

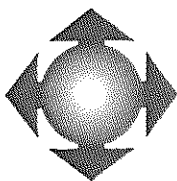
- Min thrust – 50kg
- Max thrust – 80,000kg
- Min speed – 1mm/sec
- Max speed – 1200mm/sec
- Min stroke – 10mm
- Max stroke – 8000mm

### 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 Principals

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

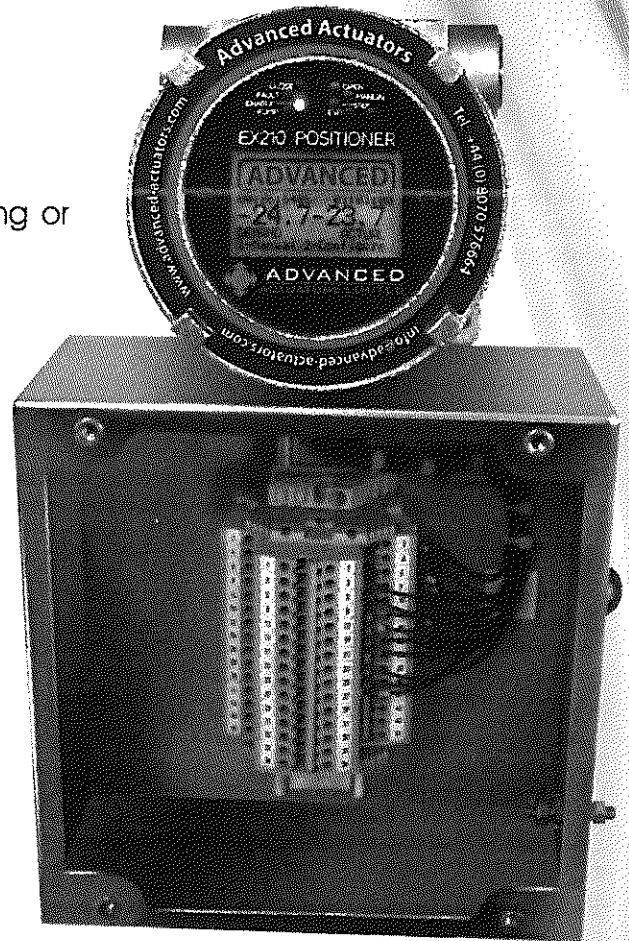
a transducer or potentiometer is built in to the actuator it is directly linked to the actuator so we get a true position of its travel.

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.



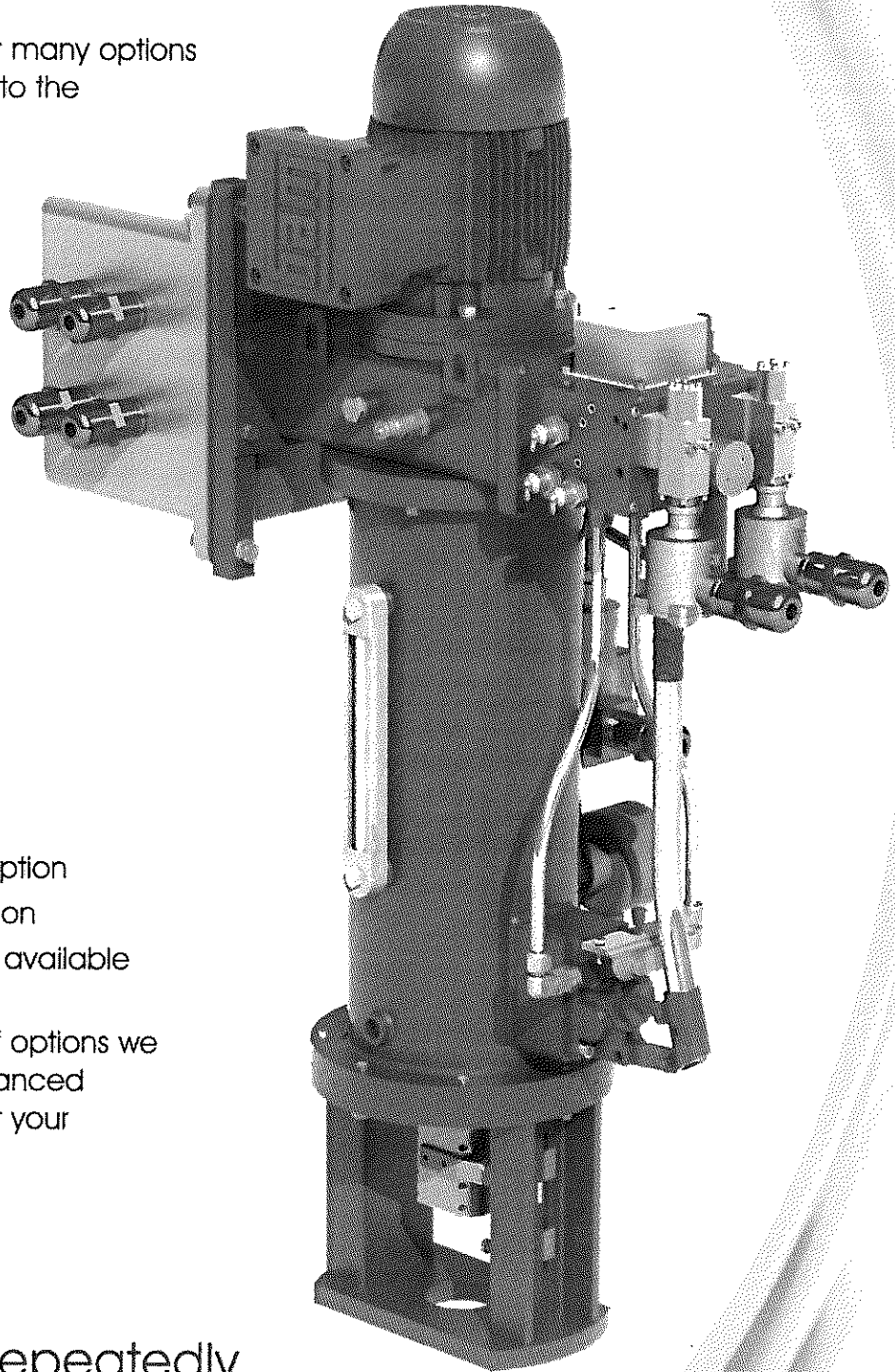
**Position controller  
with HART protocol**

# 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