

LINEAR ELECTRIC ACTUATORS WITH FAIL-SAFE FUNCTION ELF

ADCATrol
STEAM EQUIPMENT

DESCRIPTION

The ADCATrol ELF series linear electric actuators are compact and cost-effective and designed for operation of control valves in modulating and on/off services in process engineering and industrial applications. The actuator is equipped as standard with positioner, active feedback function and automatic commissioning.

In case of power failure/interruption, the ELF actuator runs, spring driven, into its respective fail-safe position (stem extended or retracted).

MAIN FEATURES

Compact and cost-effective.

Mechanical fail-safe function via spring-return.

Brushless DC motor controller with integrated positioner function, status display and automatic commissioning.

Manual operation with push buttons and parameter setting via DIP switches.

24 V AC/DC and 100 to 240 V AC 50/60 Hz supply voltages.

IP 65 protection (IP 67 on request).

Mounting to valves made via yoke or mounting flange DIN 3358, enabling easy connection to all types of valves. Standard version is suitable for ADCATrol valves.

Mechanical stroke indication via anti-rotation bar.

Universally usable actuators due to control via 3-point-step controllers and analog input signals (0 to 10 V, 0(4) to 20 mA).

OPTIONS AND

ACCESSORIES:

- Additional limit switches.
- 100 to 230 V AC power supply module.
- Position signal relays.
- Heating resistor.
- IP 67 metal cover.

USE:

Actuation of ADCATrol control valves, or others on request.

AVAILABLE

MODELS:

ELF20, ELF20.1, ELF20.2.



TECHNICAL DATA

MODEL	ELF20	ELF20.1	ELF20.2
Maximum thrust	2 kN		
Operating speed	0,3 mm/s	0,9 mm/s	2 mm/s
Power consumption – 24 V AC a)	9 W	15 W	25 W
Rated current – 24 V DC	0,7 A	1,1 A	1,8 A
Maximum current – 24 V	0,7 A	1,1 A	1,8 A
Maximum stroke	40 mm		
Minimum stroke	5 mm		
Supply voltages	24 V AC/DC / 100 to 240 V AC		
Supply frequency	50 Hz / 60 Hz / continuous		
Type of duty acc. to IEC 60034-1	S2 30 min, S4 1200 c/h - 50% ED		
Cable entry	2 x M20 x 1,5 and 1 x M16 x 1,5		
Electrical connection	Terminal configuration according to the electric connection wiring diagram inside the actuator cover		
Binary input	24 to 230 V AC for On/Off service. Minimum duration of pulse: 1 second		
Analog position input	Selectable between 0(4) to 20 mA and 0(2) to 10 V		
Positioner function	Dead-band of 0.6% of set value range		
Automatic commissioning	Recognition of the end position(s) and autoscaling of set value and feedback according to the valve stroke		
Mounting position	As desired, except downward position		
Ambient temperature	- 10 °C to 60 °C		
Over-voltage category	II		
Position indicator	By anti-rotation bar		
Manual adjustment	Via push-buttons (mechanical with handwheel on request)		
Type of protection	IP 65 (IP 67 on request)		

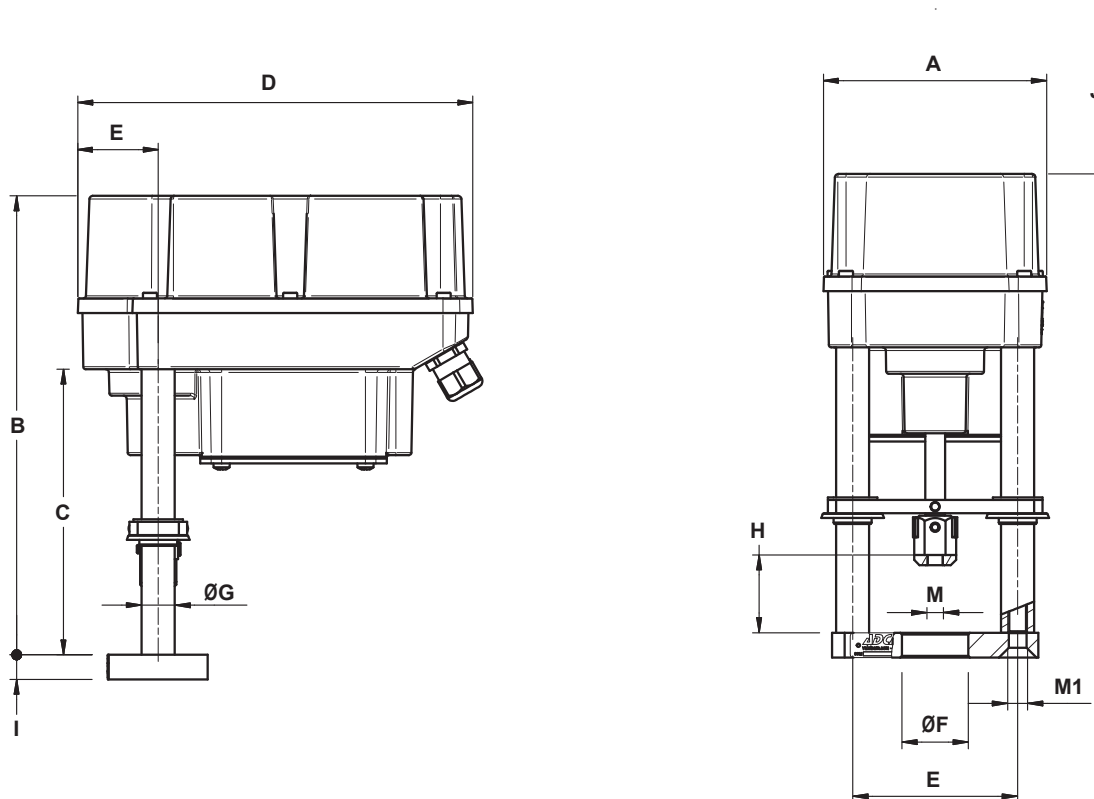
a) At maximum thrust. Data may vary depending on accessories.

OPTIONS AND ACCESSORIES

DESIGNATION	DESCRIPTION
2WE	Two additional limit switches for signaling end positions or intermediate positions, freely adjustable, with silver-plated contacts, 0,1 A to 5 A @ 230 V AC/DC
2WE-G	Two additional limit switches for signaling end positions or intermediate positions, freely adjustable, with gold-plated contacts for low voltage, 0,1 mA to 100 mA @ 5 to 24V AC/DC
2SR	Two position signal relays with change-over contacts, calibrated automatically to the valve stroke, 0,1 A to 10 A @ 230 V AC/DC. Switching point is adjustable between 0 and 100 % of the stroke using potentiometers.
FSP	100 to 240 V AC power supply module.
HR	Heating resistor. Supply voltage 12 to 36 V AC/DC or 110 to 250 V AC/DC.
BZS	High durability bronze spindle parts. Remark: Not retrofittable.
IP67	Higher IP 67 enclosure protection with metal cover.

ELECTRICAL CONNECTIONS		
BINARY INPUT	POWER SUPPLY	ANALOG INPUT/OUTPUT *
X1 1 2 3 ↑ L / + Open — N / - ↑ L / + Close	X2 PE 1 2 ↓ L / + ↑ N / - / GND * ⏏	X3 1 2 ↑ Set value + ↓ Feedback +

* Signal ground cable (-) should be connected to X2.1.



DIMENSIONS (mm)													
MODEL	A	B	C	D	E	Ø F	Ø G	H	I	J	M *	M1	WGT. ** (kg)
ELF20	135	278	175	239	100	40 / 45	20	54	30	80	M10	M12	5,6

* Depending on valve stem thread. Can be course or fine thread.

** Approximate weight without accessories and lower yoke flange.

Remark: Stem coupling, yoke dimensions, design and weight may vary depending on the ADCATrol control valve model. Consult the manufacturer.

ORDERING CODES ELF										
Group designation	ELF	20	6	X	E	5	X	A1		
ELF series linear electric actuator	ELF									
Actuator model										
ELF20		20								
ELF20.1		21								
ELF20.2		22								
Supply voltage										
24 V AC/DC			6							
100 to 240 V AC 50/60 Hz			7							
Limit switches										
Without additional limit switches				X						
Two additional limit switches 2WE				W						
Two additional limit switches with gold-plated contacts 2WE-G				G						
Fail-safe function										
Emergency fail-safe function via spring-return - stem extends					E					
Emergency fail-safe function via spring-return - stem retracts (non standard)					R					
Type of protection										
With standard IP 65 enclosure protection						5				
Higher IP 67 enclosure protection with metal cover						7				
Other options										
Without other options							X			
BZS bronze spindle parts (only for actuators with 1 to 4,5 kN)							Z			
Yoke design and coupling										
ADCATrol VPC26, V16/2 and series (1/2" to 2" – DN 15 to DN 50)								A1		
ADCAPure V926H, V926A (1/2" to 2 1/2") and V928 series (DN 15 to DN 50)								A3		
ADCATrol V16/2 series (2 1/2" to 4" – DN 65 to DN 100)								B1		
Other ADCATol valves a)								XX		
Special versions / Extras										
Full description or additional codes have to be added in case of a non-standard combination										
										E

a) Exact model and size must be specified – consult the manufacturer.

Remark: Options and accessories not mentioned in the ordering codes table must be requested separately, e.g.: ELF206XE5XA1 fitted with HR heating resistor.

How to size: For selection of suitable actuator to use with ADCATrol control valves, consult IS PV15.10 – Maximum permissible pressure drops for ADCATrol control valves – or consult the manufacturer.