

Electric butterfly valve actuator type ESW-30

- ✓ Used for driving of the ball-type valves and throttling valves
- ✓ Fixing connector, according to the ISO 5211 standard (connectors F05, F07 and F10)
- ✓ Compact design and modular construction
- ✓ Protection degree IP67



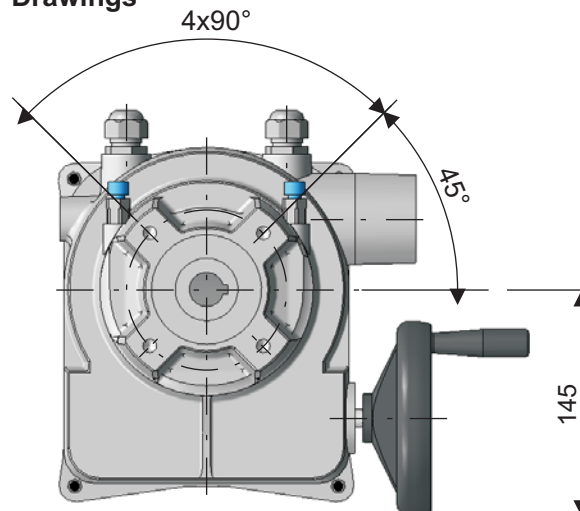
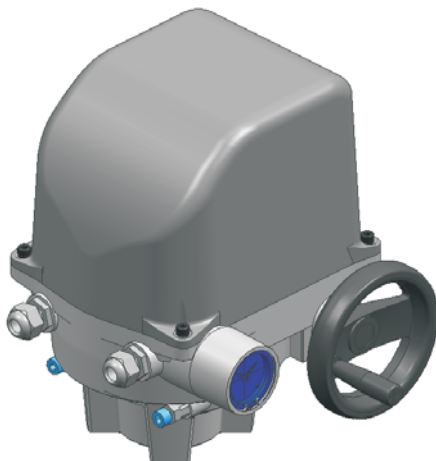
Application

The Electric Butterfly Valve Actuator type ESW-30 is designed for driving of ball valves and throttling valves and other devices for which the rotational shift is required. The drives are adapted for direct mounting on the ball valves and throttling valves, equipped with flange connectors being in accordance with the ISO 5211 Standard (type series of connectors F05, F07 and F10).

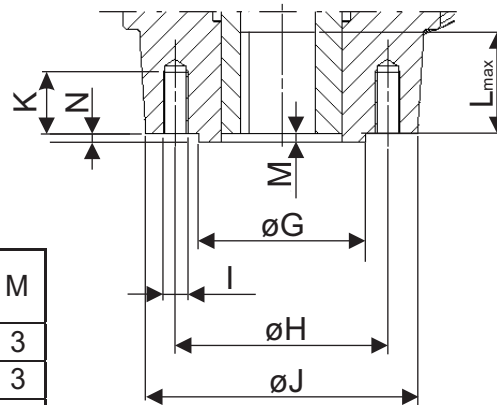
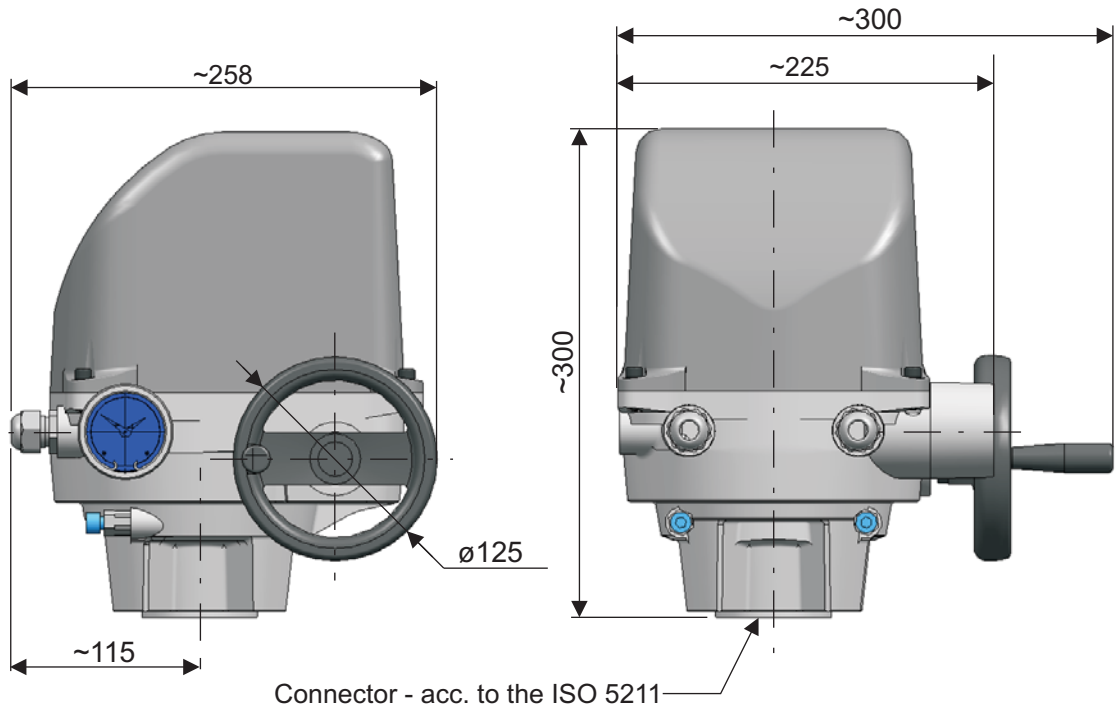
Technical Data

Power supply	230 V AC ^{10%} _{-15%} , 50 Hz
Rated torque	125 Nm; 250 Nm
Operating time	20s/90°; 40s/90°; 60s/90°
Angle of rotation	90°; 180°
Duty type	S4-25% maximum 630c/h
Control signal	supply voltage three-term control signal
Position indication signal	4...20 mA or 100 Ω
Protection degree	IP67
Working temperature	od -25°C...+70°C (Normal) od -40°C...+55°C (Low temperatures)
Working position	arbitrary
Vibrations	<7,1mm/s
Relative humidity	up to 95%, with short-term condensation
Mass	approx. 12 kg
Microswitches	type 83.133 54ER14.1
- usage category AC-15	2,5A- with U _e =230 V 50 do 60 Hz
- usage category AC-13	0,3A- with U _e =230 V DC
	Minimum voltage and switching current; 10 V, 20 mA

Dimensioned Drawings



Dimensioned Drawings - continued

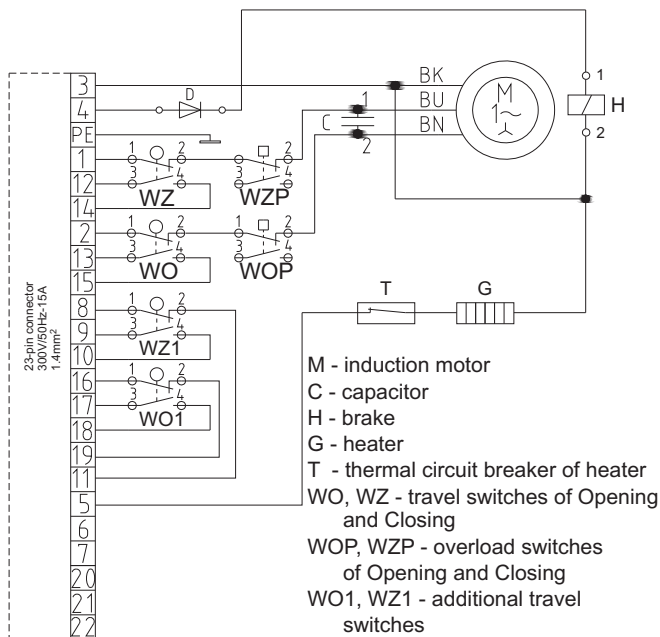


Connectors

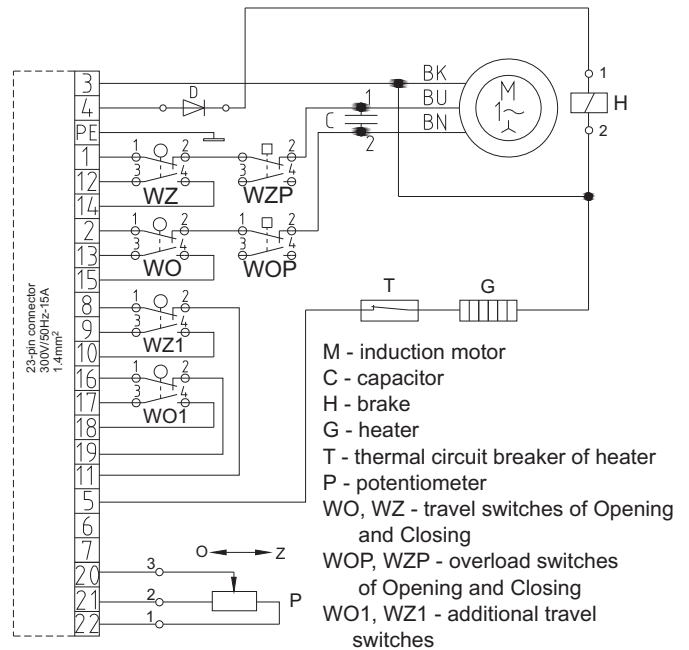
Flange Type	G f8	H	Ix4	J	K	N	M
F05	35	50	M6	65	9	3	3
F07	55	70	M8	90	12	3	3
F10	70	102	M10	125	15	3	3

Connector shape			Type A					Type B					Type C				
Actuator type	Rotation torque	Flange type	AH9					B H11					C H11				
			12	14	18	22	28	11	14	17	19	22	11	14	17	19	22
ESW-30-21	125Nm	F05	A1	A2	A4	A6	-	B0	B2	-	-	-	C0	C2	-	-	-
ESW-30-22			-	A2	A4	A6	A7	B0	B2	B3	-	-	C0	C2	C3	-	-
ESW-30-23		250Nm	F10	-	-	A4	A6	A7	-	B2	B3	B5	B6	-	C2	C3	C5
ESW-30-31	L _{max}			50					40					40			
ESW-30-32		5	5	6	8	8	14	18	22	25	28						
ESW-30-33		DN9					E										
		14,3	16,3	20,8	25,3	31,3											
			F														

Electric circuit diagram of actuator ESW-30 without equipment



Electric circuit diagram of actuator ESW-30 with potentiometer



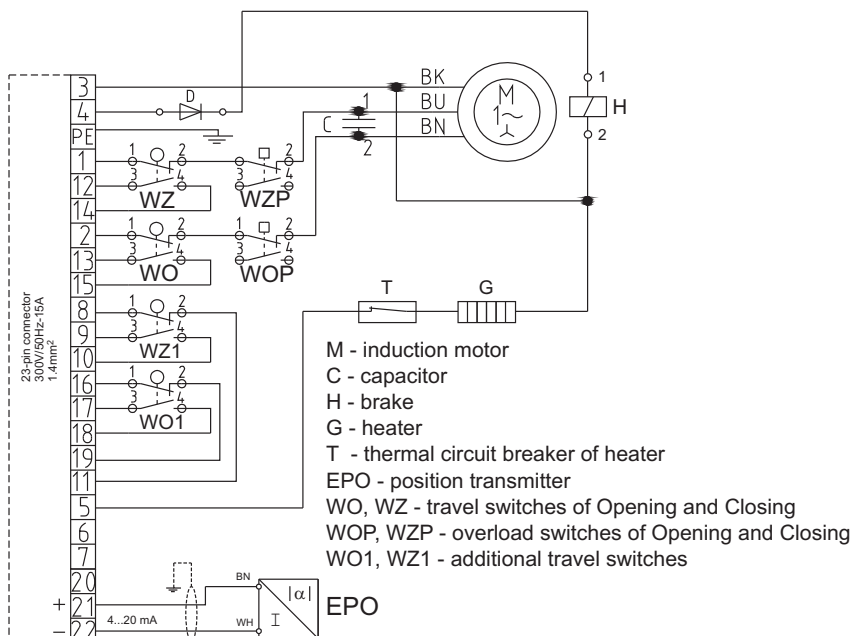
REMARKS:

1. Power supply 230V,50Hz between the terminals 3 and (2+4) causes the actuator movement, which corresponds to "Opening".
2. Power supply 230V,50Hz between the terminals 3 and (1+4) causes the actuator movement, which corresponds to "Closing".
3. P..Electric shock protection is provided with connecting the protective earthing terminal (PE) to the external electric shock protection system.

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3. Electric shock protection is provided with connecting the protective earthing terminal (PE) to the external electric shock protection system.
4. Position indication of the actuator final control element is given by means of the potentiometer P.

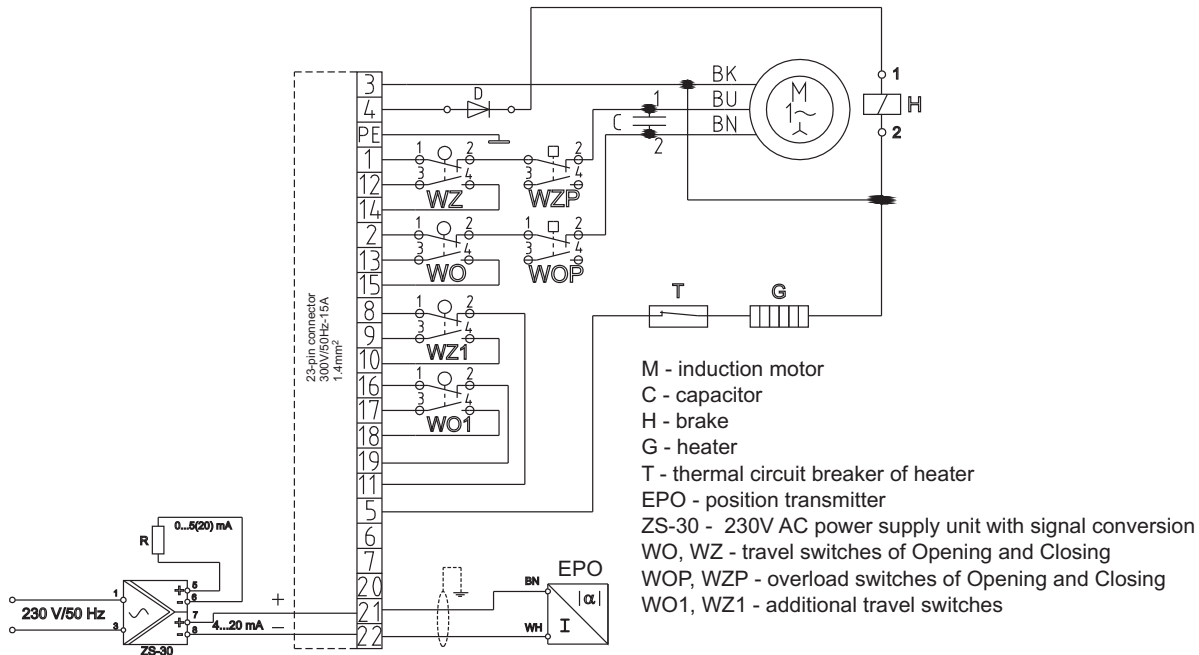
Electric circuit diagram of actuator ESW-30 with position transmitter EPO



REMARKS:

1. Power supply 230 V, 50 Hz between the terminals 3 and (2+4) causes the actuator movement, which corresponds to „Opening”.
2. Power supply 230 V, 50 Hz between the terminals 3 and (1+4) causes the actuator movement, which corresponds to „Closing”.
3. Electric shock protection is provided with connecting the protective earthing terminal (PE) to the external electric shock protection system.
4. Position indication of the actuator output element is given by means of the position transmitter EPO.

Electric circuit diagram of actuator ESW-30 with position transmitter EPO and power supply unit



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1. Power supply 230 V, 50 Hz between the terminals 3 and (2+4) causes the actuator movement, which corresponds to „Opening”.
2. Power supply 230 V, 50 Hz between the terminals 3 and (1+4) causes the actuator movement, which corresponds to „Closing”.
3. Electric shock protection is provided with connecting the protective earthing terminal (PE) to the external electric shock protection system.
4. Position indication of the actuator output element is given by means of the position transmitter EPO.

Flow control system: actuator + throttling valve

Application

Flow control systems are designed for changing the flow rate of a medium, keeping the required flow characteristics.

Design

The control system consists of the flap valve or throttling valve in order to change the resistance for a flowing medium and actuators designed for supply of mechanical energy necessary for their shifting.

Selection of throttling valve

Designing of the flow control system should be started from selecting the throttling valve. One can apply here the throttling valves produced by the “Zakład Automatyki POLNA S.A.” type PRS. In order to correctly choose a throttling valve, one should specify the following parameters:

Parameters of throttling valve selection	
Nominal diameter DN	
Nominal pressure PN	
Temperature of the medium	
Kind of the medium	
Connecting flange type	

According to the given temperature and kind of the medium one chooses the sealing insert.

Technical parameters of throttling valves type PRS	
Nominal diameters	DN 40...300
Nominal pressures	PN 6...20
Ambient temperature (dependent of the sealing insert material)	TN - 40°...180°C

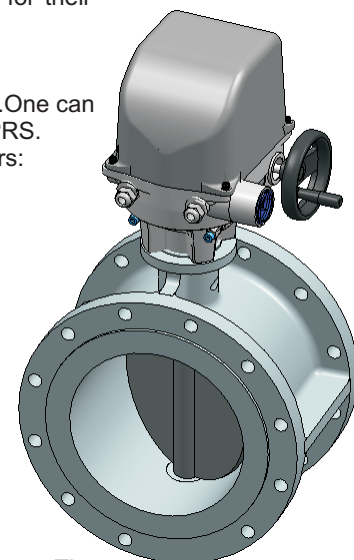
After a throttling valve is selected, depending on necessary torque, one selects the actuator. The actuator equipment and mechanical plus electric connectors can be a subject of separate agreements.

Ordering

The throttling valve can be specified by the customer, or selected on the basis of determined parameters.

The actuator is to be specified according to the Ordering Table.

When ordering the throttling valve and actuator, we make the actuator connections and settings, which guarantees a correct and reliable operation of the system.



Ordering table

Electric butterfly valve actuator		E	S	W	-	3	0	-	X	X	-	A	X	-	X	X	-	X	-	X	X	X	X	-	X	
TORQUE		OPERATING TIME																								
125Nm	20s/90°	2	1																							
250Nm		3	1																							
125Nm	40s/90°	2	2																							
250Nm		3	2																							
125Nm	60s/90°	2	3																							
250Nm		3	3																							
ANGLE OF ROTATION																										
90°		A	0																							
180°		A	1																							
Other angle in the range of 30° up to 180° - after agreement		A	2																							
CLIMATIC VERSION																										
Normal version -25°C...up to 70°C																										
* Low temperatures -40°C...up to 55°C																										
EQUIPMENT																										
No equipment																										
Position transmitter EPO-01 (analogue potentiometric 4...20mA, two-wire)																										
Position transmitter EPO-02 (contactless digital 4...20mA, two-wire)																										
Position transmitter EPO-03 (contactless digital 4...20mA, two-wire, with display)																										
Potentiometer 100Ω																										
ELECTRIC CONNECTORS																										
Glands + terminal strip																									5	
MECHANICAL CONNECTORS																										
Acc. to client's order - after agreement																										
Flange connector F05 acc. to ISO 5211 Standard																										
For torques 125Nm - the output shaft acc. to drawing A1																									**	
For torques 125Nm, 250Nm - the output shaft acc. to drawing A2																										
For torques 125Nm, 250Nm - the output shaft acc. to drawing A4																										
For torques 125Nm, 250Nm - the output shaft acc. to drawing A6																										
For torques 125Nm, 250Nm - the output shaft acc. to drawing A7																										
For torques 125Nm, 250Nm - the output shaft acc. to drawing B0																										
For torques 125Nm, 250Nm - the output shaft acc. to drawing B2																										
For torques 125Nm, 250Nm - the output shaft acc. to drawing B3																										
For torques 125Nm, 250Nm - the output shaft acc. to drawing C0																										
For torques 125Nm, 250Nm - the output shaft acc. to drawing C2																										
For torques 125Nm, 250Nm - the output shaft acc. to drawing C3																										
Flange connector F10 acc. to ISO 5211 Standard																										
For torques 250Nm - the output shaft acc. to drawing A4I																									**	
ADDITIONAL EQUIPMENT																										
Without additional equipment																									0	
Power supply unit with signal conversion (switched mode, four-wire). For building on the actuator exterior																										1

* - For low temperatures: -40°C...55°C - one can apply the equipment with symbol from A, B, C and P

** - Remaining versions acc. to table connectors

Example: Electric Butterfly Valve Actuator type ESW-30 with torque of 125 Nm, operating time 20s/90°, normal climatic version with position transmitter EPO-03, electric connector, terminal strip, and mechanical connector F05, shape of output shaft type A - dimensions: φ22H9 end key 8N9.

ESW-30-21-1D-5-05A6