

ELECTRIC PART-TURN ACTUATORS type ESW-16-



- regulating type
- requirements acc. to PN-92/M-42011

THE ELECTRIC PART-TURN ACTUATORS TYPE ESW-16- (CONSTANT-SPEED) ARE DESIGNED FOR DRIVING OF CONTROL CLOSING COMPONENTS (VALVES, GATE VALVES, GATES) AND OTHER DEVICES WHEREIN LARGE FORCES ARE REQUIRED. THEY CAN BE USED AS FINAL CONTROL ELEMENTS IN REGULATING AND CONTROL CONTINUOUS TECHNOLOGICAL SYSTEMS.

TECHNICAL DATA

- power supply	230/400V +10%, -15%, f=50Hz
- rated torque	630 or 1000 or 1500 or 2000Nm
- angular velocity (positioning speed)	0.24 rpm
- rotation angle	90° or 120° or 150°
- ambient temperature during operation	-25°C...+55°C special version -40°C...+55°C
- protection degree	IP54, acc. to PN-EN60259..2002(U)
- duty type	S4 - 25%, 320c/h FI or S2 15 min, acc. to PN-92/M-42011
- lubrication	HIPOL 15 oil, semi-liquid grease, ALVANIA EP(LF), Shell make
- relative humidity	up to 80%
- vibrations	10...55Hz, vibration frequency should not exceed 7.1mm/s
- mass	~100kg

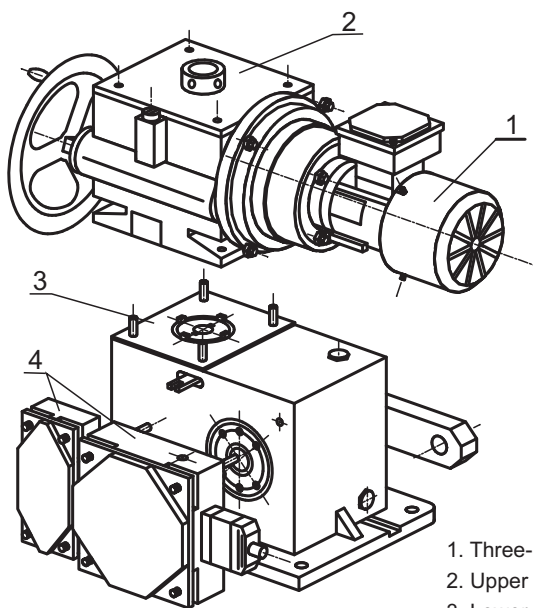
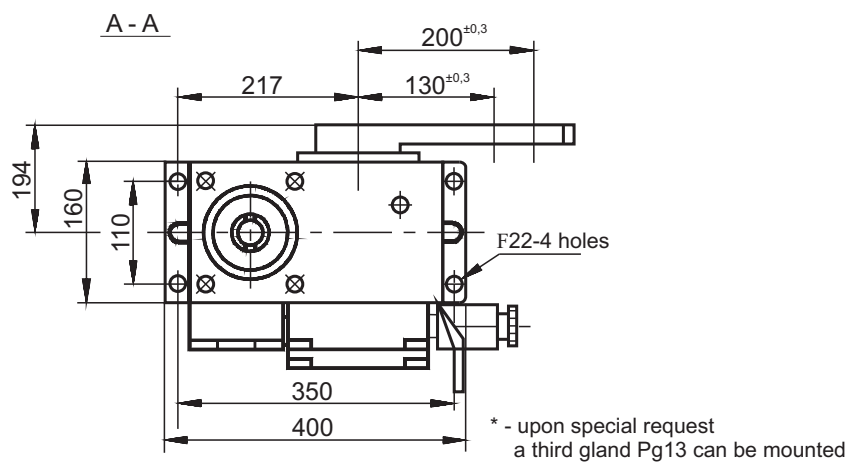
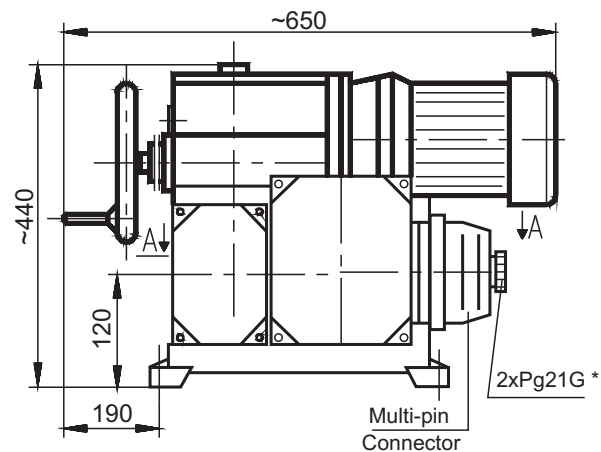
2-WIRE ANGULAR ENCODER:

- power supply	12...36V DC (recommended 24V DC)
- output signal	4...20mA
- range setting	50...100% (for analogue type angular encoders) 20...100% (for digital type angular encoders)
- maximum load resistance	for power supply 24V DC - 500Ω

MICROSWITCHES:

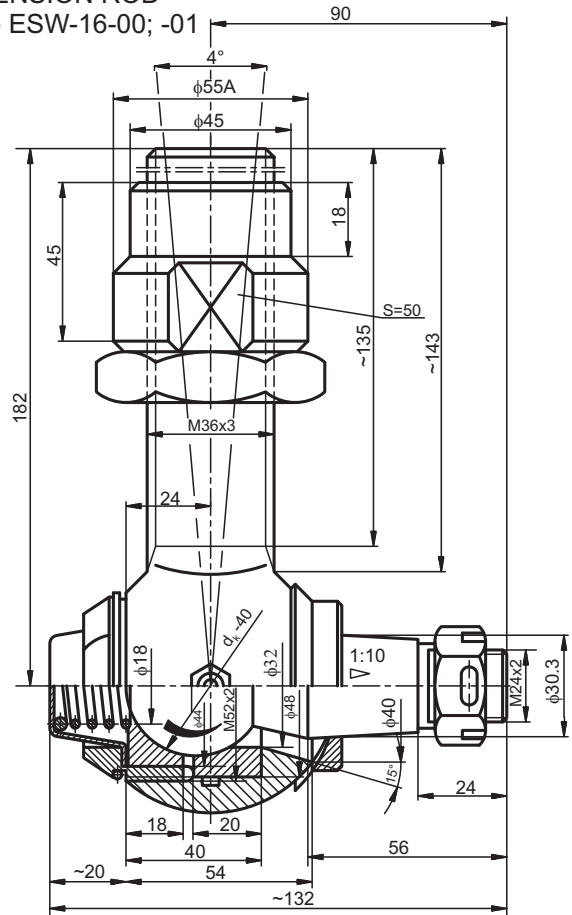
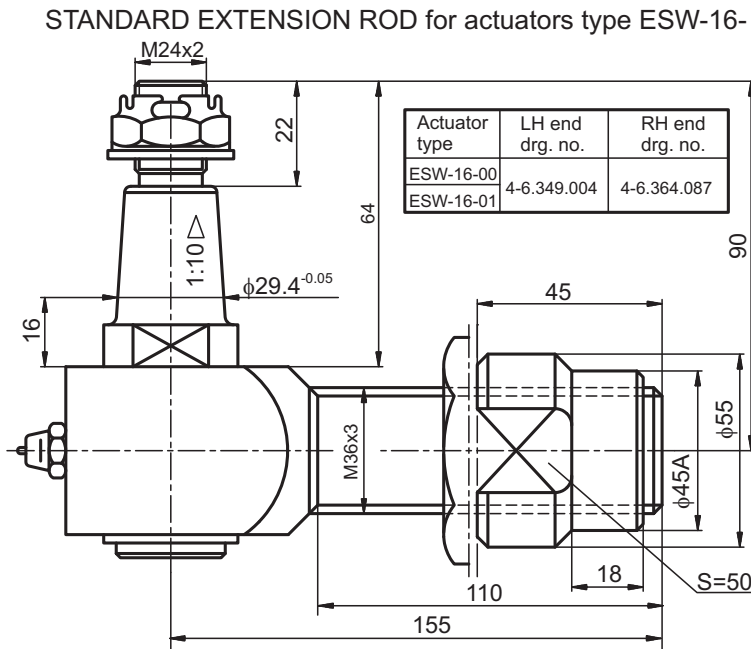
- rated power supply	Type: 83.132, 83.133
- rated switching current	250V, 50...60Hz or 30V DC
- rated thermal current	2.5A
- minimal switching voltage	11A
- minimal switching current	10V
	20mA

DIMENSIONED DRAWING

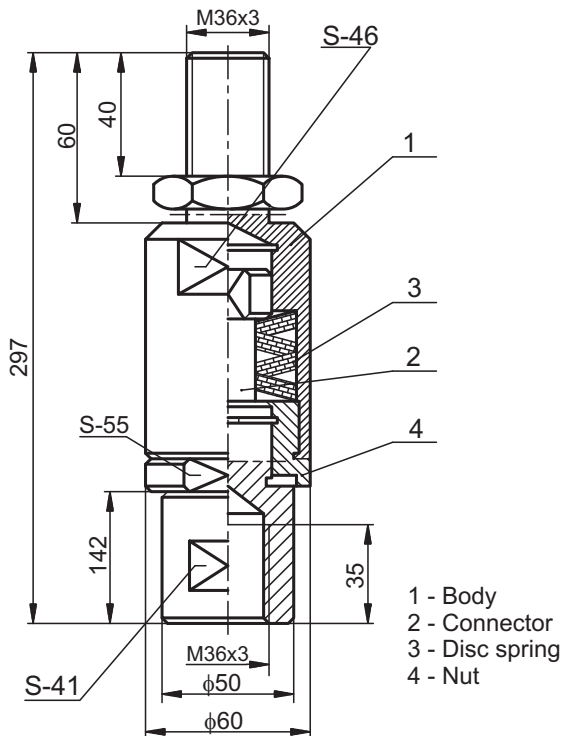


- 1. Three-phase motor
- 2. Upper reduction gear
- 3. Lower reduction gear (worm, worm wheel)
- 4. Control unit

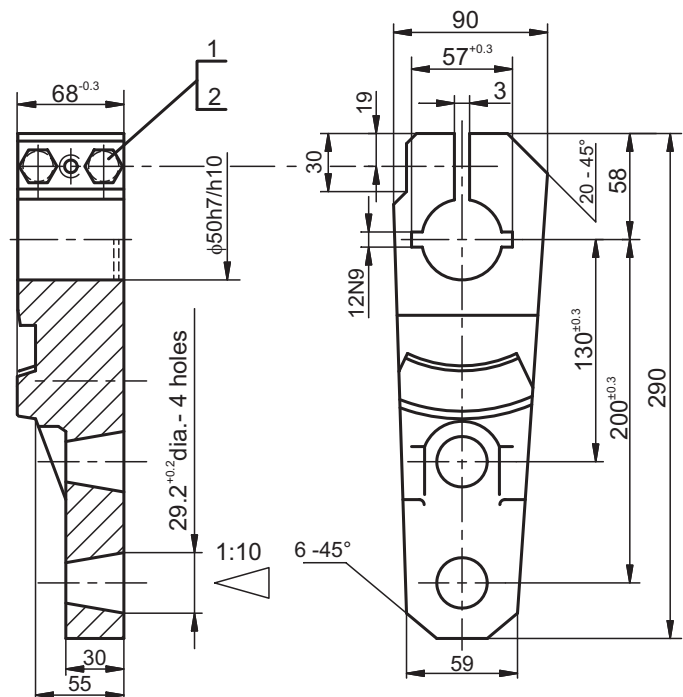
JOINED EXTENSION ROD
for actuators type ESW-16-00; -01



SHOCK ABSORBER
for actuators type ESW-16-

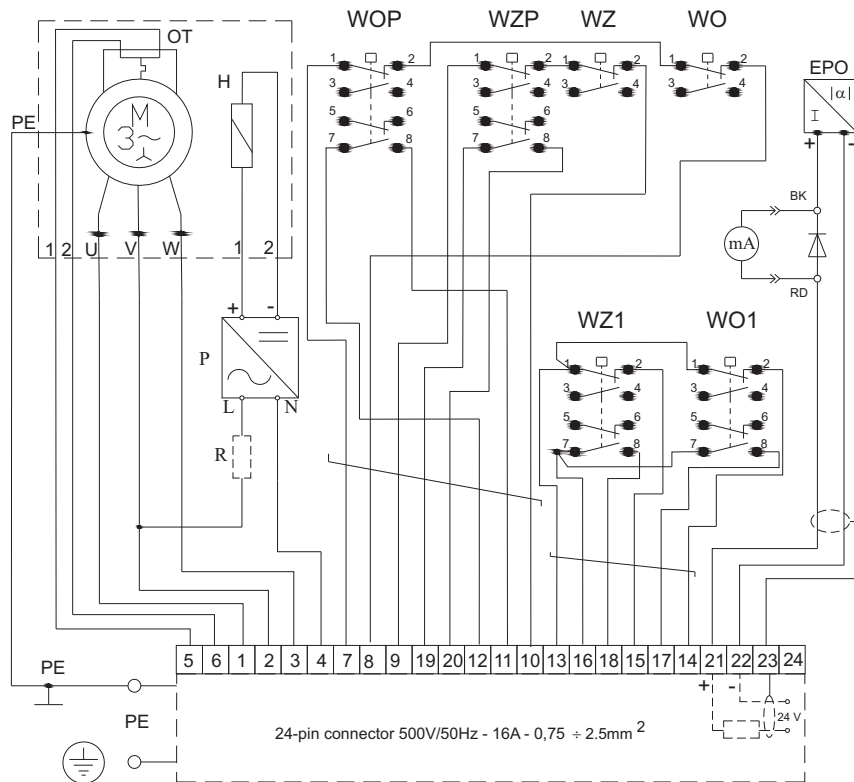


MOUNTING OF CRANK ON ACTUATOR OUTPUT SHAFT



item 1 - spring washer, 12,2 dia., acc. to PN-77/M-82008
item 2 - screw M12 x 70, acc. to PN-85/M-82105

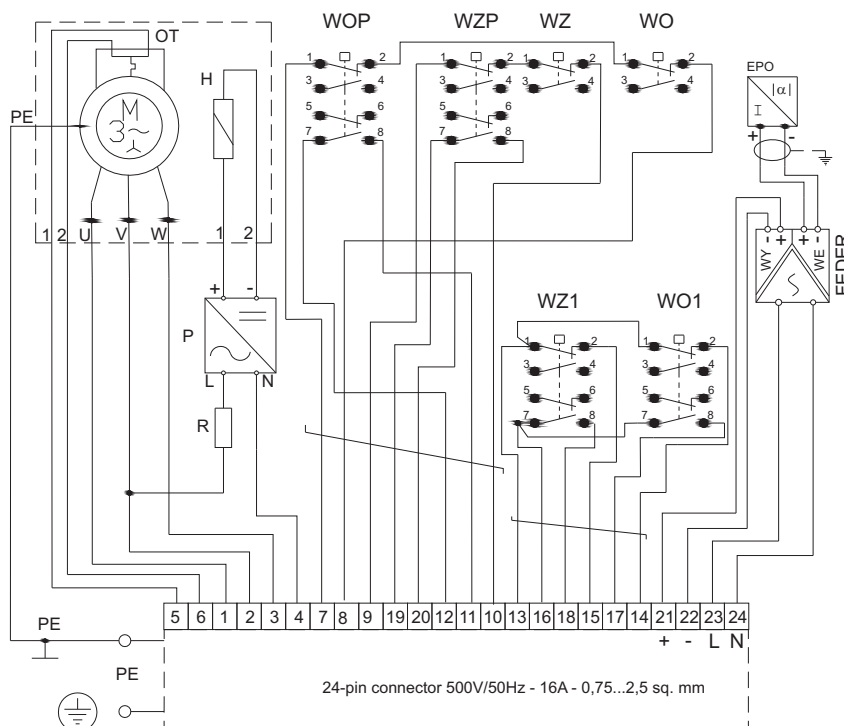
ELECTRIC CIRCUIT DIAGRAM OF ACTUATOR WITH 2-WIRE ANGULAR ENCODER



PE - Protective terminal
 WOP, WZP - Double overload switches
 M - Inductive motor with brake release H and temperature limiter OT
 WO, WZ - Main travel switches

P - Rectifier PCB (printed circuit board)
 WO1, WZ1 - Additional double travel switches
 R - Additional resistance for version 500V AC
 EPO - Angular encoder

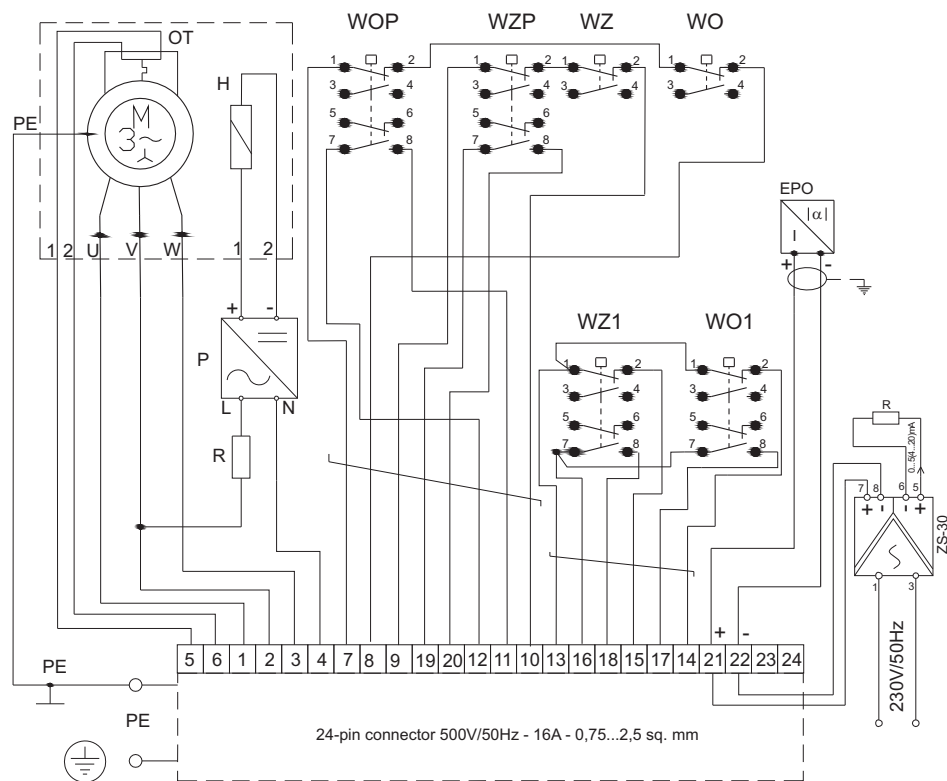
ELECTRIC CIRCUIT DIAGRAM OF ACTUATOR WITH 4-WIRE ANGULAR ENCODER



PE - Protective terminal
 M - Inductive motor with brake release H and temperature limiter OT
 P - Rectifier PCB (printed circuit board)
 R - Additional resistance RDC-210-1, 1kΩ -5% for version 500V AC

WOP, WZP - Double overload switches
 WO, WZ - Main travel switches
 WO1, WZ1 - Additional double travel switches
 EPO - Angular encoder
 Feeder - 230V AC/24V DC feeder with signal conversion

ELECTRIC CIRCUIT DIAGRAM OF ACTUATOR WITH 4-WIRE ANGULAR ENCODER
- FEERED OUTSIDE THE ACTUATOR



PE - Protective terminal
M - Inductive motor with brake release H and temperature limiter OT
P - Rectifier PCB (printed circuit board)
R - Additional resistance RDC-210-1, 1k Ω -5% for version 500V AC

WOP, WZP - Double overload switches
WO, WZ - Main travel switches
WO1, WZ1 -Additional double travel switches
EPO - Angular encoder
ZS-30 - 230V AC/24V DC feeder with signal conversion
R - Overload output resistance

ORDERING METHOD

TYPE	Rated torque	Rotation angle	Angular velocity
	Nm	°	rpm
ESW-16-00	630	90	0.24
ESW-16-01	1000	90	0.24
ESW-16-02	630	150 or 120	0.24
ESW-16-03	1000	150 or 120	0.24
ESW-16-04	1500	90	0.48
ESW-16-05	1500	90	0.24
ESW-16-06	1500	150 or 120	0.48
ESW-16-07	1500	150 or 120	0.24
ESW-16-08	2000	90	0.24
ESW-16-09	2000	150 or 120	0.24

Meaning of symbols of ESW-16-00-00-01-1-1-01:

ESW-16-00 - electric part-turn actuator of rated torque 630Nm, angular positioning speed of 0.24 rpm, and rotation angle of 90°
 -00 - standard version (non-explosionproof)
 -01 - temperate climate version
 -1 - without angular encoder
 -1 - with single travel switches
 -01 - without connectors

CODE1	PROTECTION TYPE
-00	standard version

CODE2	CLIMATIC VERSION
-01	version N2, acc. to PN-68/H-04650 (for temperate climate zone, outdoor under roof operation on land)
-02	version N/2 acc. to PN-68/H-04650 (outdoor under roof operation on land) to temperature -40°C...+55°C*

CODE3	EQUIPMENT
-1	without angular encoder
-2	angular encoder type EPO-01; 0...5mA analog potentiometric (4-wire)**
-3	angular encoder type EPO-01; 0...20mA analog potentiometric (4-wire)**
-4	angular encoder type EPO-01; 4...20mA analog potentiometric (4-wire)**
-5	angular encoder type EPO-02; 4...20mA digital un-contacting (2-wire)
-6	angular encoder type EPO-03; 4...20mA digital un-contacting (2-wire)
-7	angular encoder type EPO-01; 4...20mA analog potentiometric (2-wire)

CODE4	TRAVEL ADJUSTMENT
-1	single travel-dependent switches
-2	double travel-dependent switches (version - recommended)

CODE5	CONNECTORS
-01	without connecting elements
-02	standard extension rod end
-03	joined extension rod end
-04	shock absorber
-05	stiff extension rod end + shock absorber
-06	joined extension rod end + shock absorber
-07	standard extension rod end (2 pcs)
-08	joined extension rod end (2 pcs)
-09	standard extension rod end (2 pcs) + shock absorber
-10	joined extension rod end (2 pcs) + shock absorber

ESW-16-00-00-01-1-1-01 EXAMPLE OF ACTUATOR TYPE DENOTATION

* It doesn't apply to the actuator in version with angular encoder (digital un-contacting, 2-wire) (CODE3, version -6)

** with 2-wire angular encoder + feeder with signal conversion;
 the network feeder separator type ZS-30 or equivalent to this one - for assembly outside the actuator;
 the feeder might be assembled inside the actuator on special client's request

The right of introducing design changes in the product, without deteriorating of its operation parameters, is reserved.