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## ELECTRIC LINEAR ACTUATORS type ESL-14-

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- for heat engineering and air conditioning
- requirements acc. to standard PN-92/M-42011
- regulating type
- motor provided with brake

**THE ELECTRIC LINEAR ACTUATORS type ESL-14- (CONSTANT-SPEED) ARE DESIGNED FOR DRIVING OF CONTROL CLOSING COMPONENTS AND OTHER DEVICES IN CONTROL AND REGULATION SYSTEMS, IN AIR CONDITIONING AND HEAT ENGINEERING.**

### TECHNICAL DATA

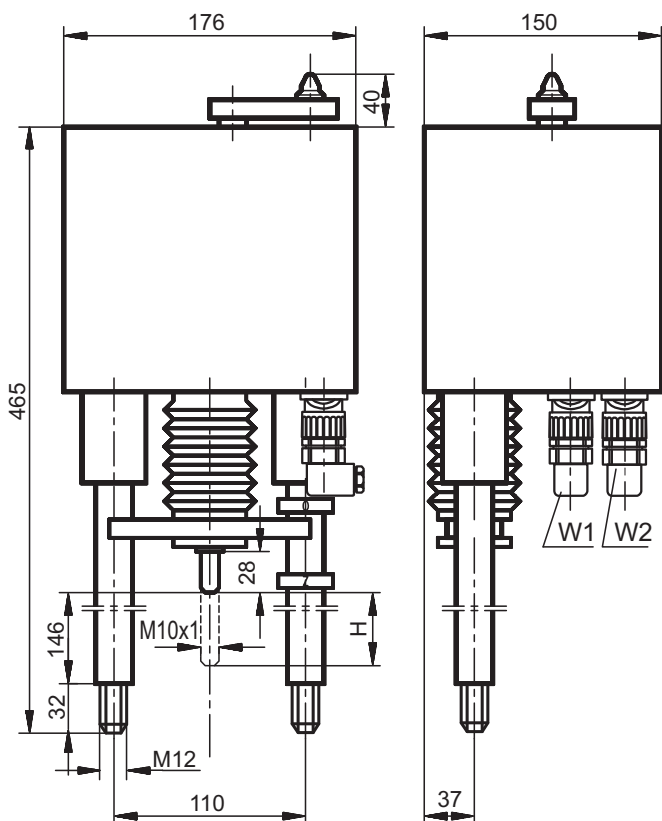
- power supply	230V +10%, -15%, f=50Hz
- rated force	2...8kN
- linear velocity (positioning speed)	16; 25 or 40mm/min
- stroke / travel	20; 25 or 40mm
- ambient temperature during operation	-25°C...+55°C
- protection degree	IP54 acc. to standard PN-EN60259..2002(U)
- duty type	S2 - 15min. and S4 - 25%, 1200 c/h acc. to standard PN-92/M-42011
- mass	~8kg

### MICROSWITCHES:

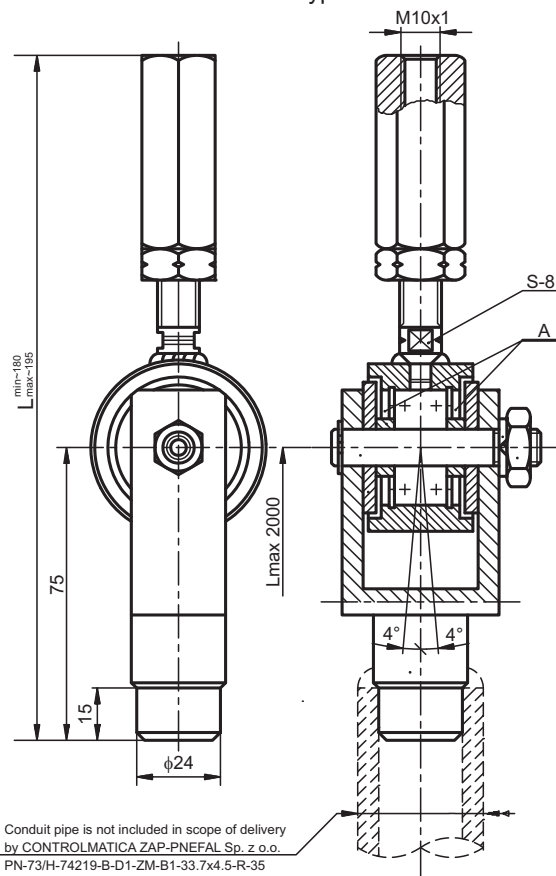
Type: 83.132, 54ER14.1

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

DIMENSIONED DRAWING



BALL-AND-SOCKET JOINT FOR ACTUATORS type ESL-14-

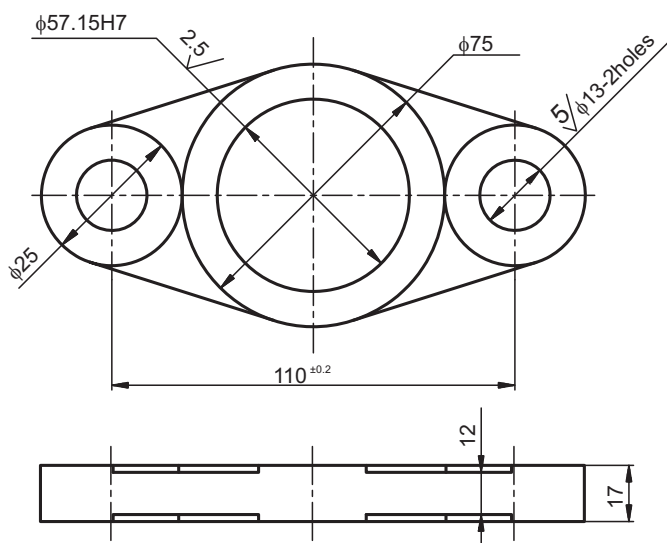


Conduit pipe is not included in scope of delivery by CONTROLMATICA ZAP-PNEFAL Sp. z o.o. PN-73/H-74219-B-D1-ZM-B1-33.7x4.5-R-35 or PN-73/H-74244-S-P-ZM-B1-33.7x4.5-R-35

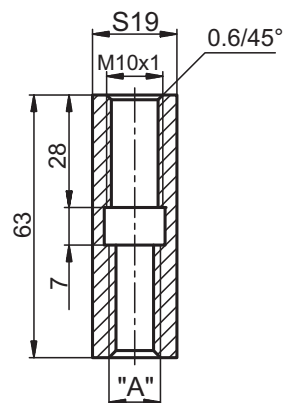
CODE5	Drawing no.	Connector
-06	ES3-0815	Ball-and-socket joint

CONNECTORS FOR ACTUATORS type ESL-14-

CONNECTING PLATE

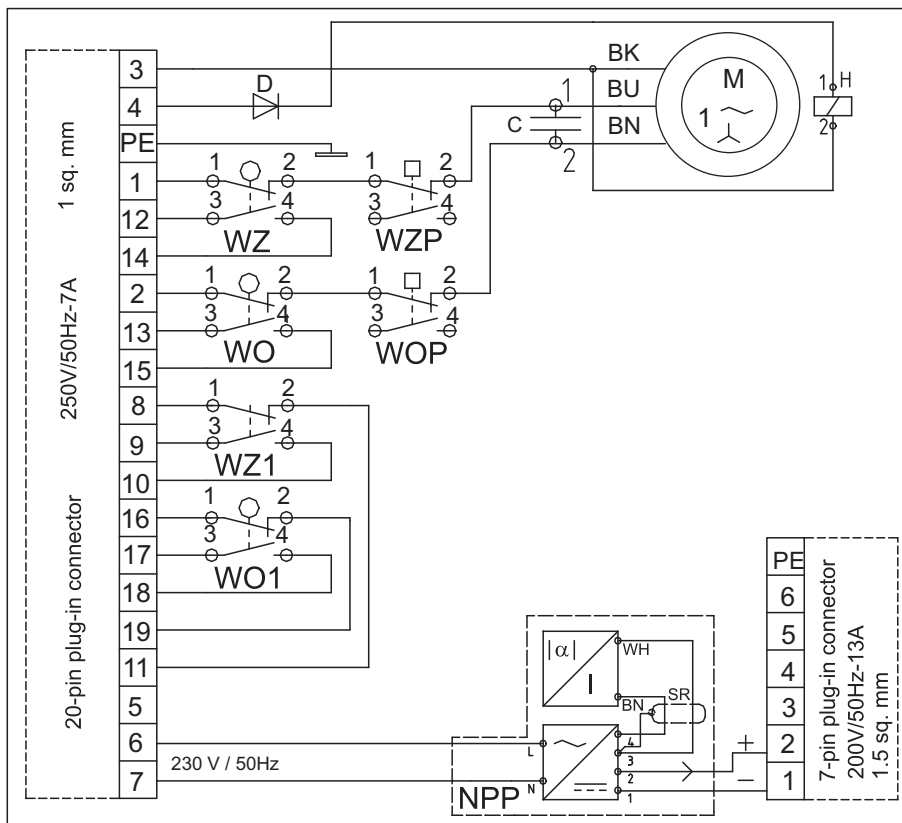


THREADED CONNECTOR



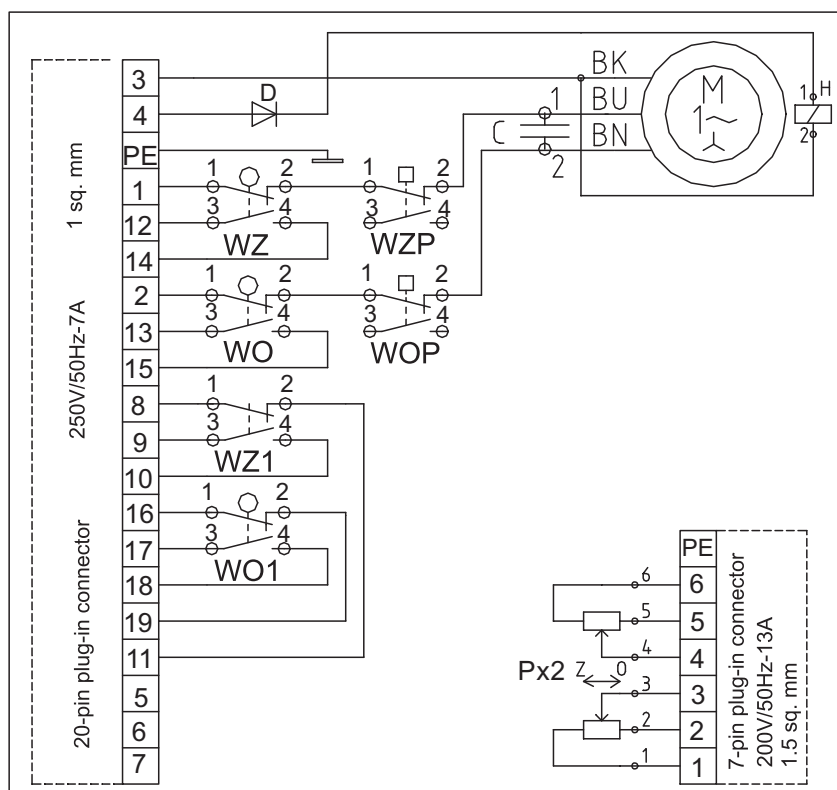
Drawing no.	CODE5	Ver-sion	"A" mm
ES1-0786-1	-03	-1	5/16" 24UNF3A
ES1-0786-2	-04	-2	3/8" 24UNF3A
ES1-0786-3	-05	-3	1/2" 20UNF3A
ES1-0786-4	-13	-4	M12 x1.25

ELECTRIC CIRCUIT DIAGRAM OF ACTUATOR WITH DOUBLE TRAVEL SWITCHES AND ANGULAR ENCODER



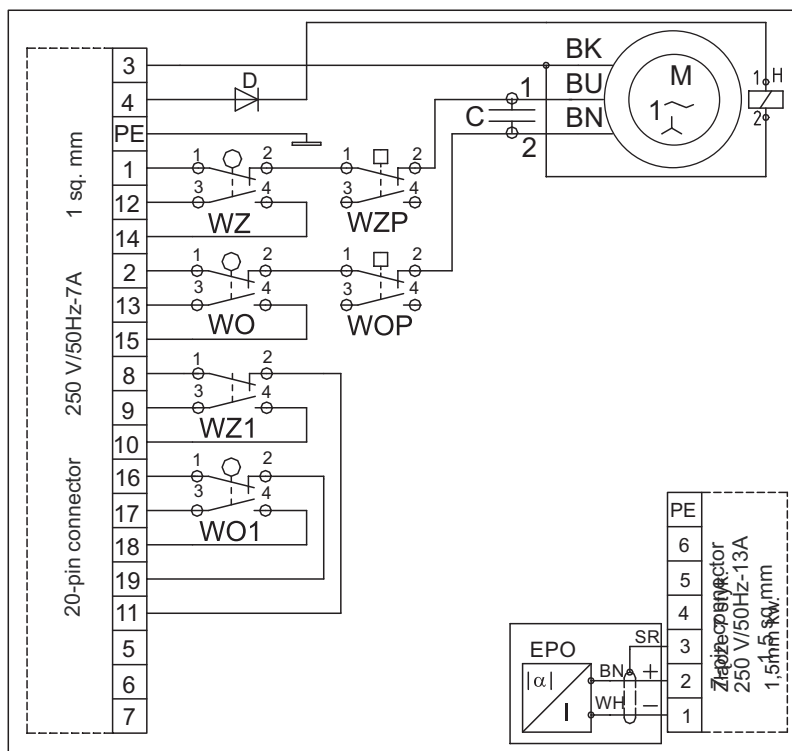
M - inductive motor  
 C - capacitor  
 WO, WZ - travel switch for opening and closing  
 WOP, WZP - overload switch for opening and closing  
 WO1, WZ1 - additional travel switch for opening and closing  
 EPO - angular encoder  
 ZS-30 - feeder 230V AC with signal conversion  
 R - overload output resistance

ELECTRIC CIRCUIT DIAGRAM OF ACTUATOR WITH DOUBLE TRAVEL SWITCHES AND DOUBLE POTENTIOMETER



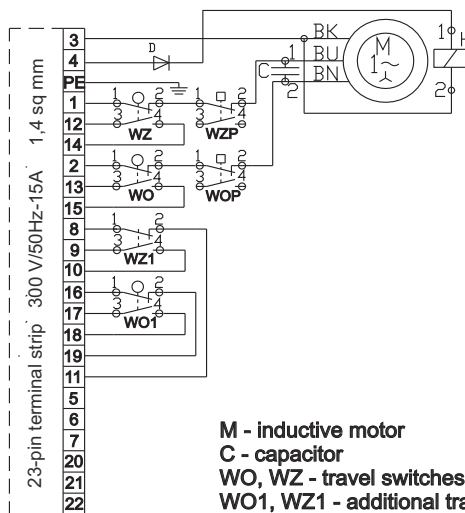
M - inductive motor  
 C - capacitor  
 WO, WZ - travel switch for opening and closing  
 WOP, WZP - overload switch for opening and closing  
 WO1, WZ1 - additional travel switch for opening and closing  
 H - brake  
 Px2 - double potentiometer

ELECTRIC CIRCUIT DIAGRAM OF ACTUATOR WITH DOUBLE TRAVEL SWITCHES AND TWO-WIRE ANGULAR ENCODER



- M - inductive motor
- C - capacitor
- WO, WZ - travel switches for opening and closing
- WOP, WZP - overload switches for opening and closing
- WO1, WZ1 - additional travel switches
- EPO - angular encoder
- H - brake

ELECTRIC CIRCUIT DIAGRAM OF ACTUATOR WITH TERMINAL STRIP

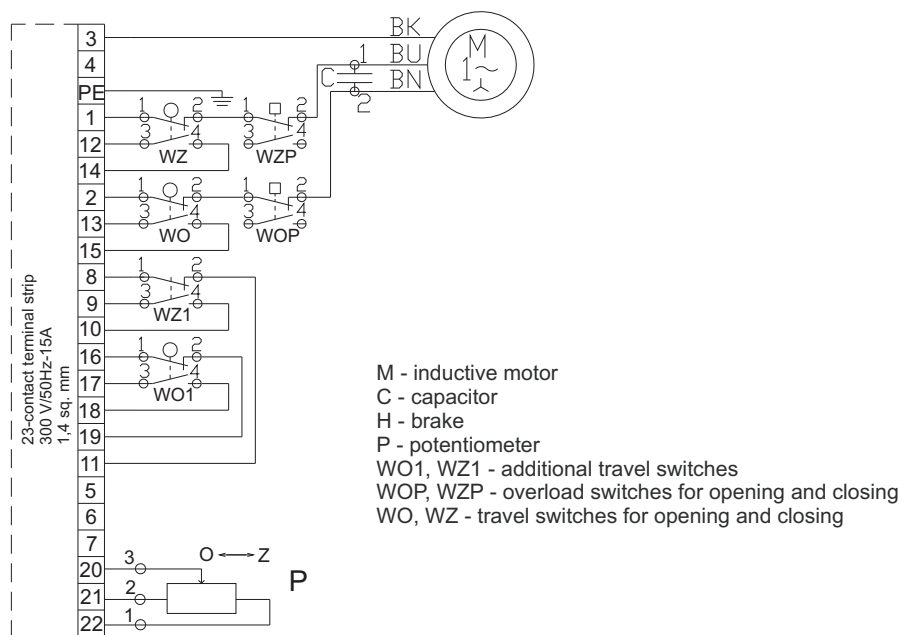


- M - inductive motor
- C - capacitor
- WO, WZ - travel switches for opening and closing
- WO1, WZ1 - additional travel switches
- WOP, WZP - overload switches for opening and closing
- H - brake

**ATTENTION:**

1. Power 230V, 50Hz of clamps no. 3 and 2+4 makes working of actuator for opening.
2. Power 230V, 50Hz of clamps no. 3 and 1+4 makes working of actuator for closing.
3. Back-electrocution protection is made by joining of protection strip PE for outside back-electrocution protection system.

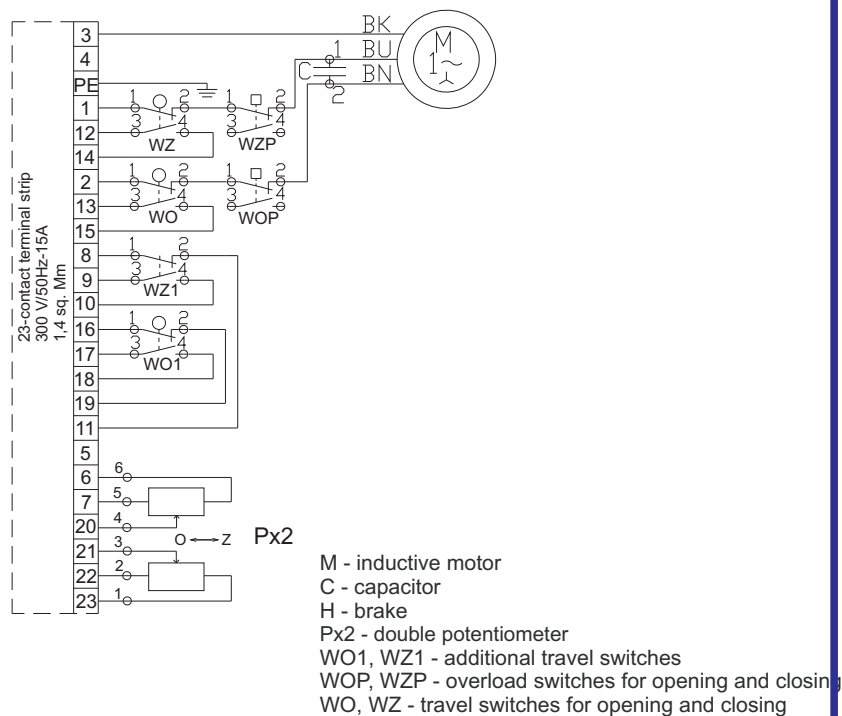
ELECTRIC CIRCUIT DIAGRAM OF ACTUATOR WITH TERMINAL STRIP AND POTENTIOMER



**ATTENTION:**

- 1.Power 230V, 50Hz of clamps no. 3 and 2 makes working of actuator for opening.
- 2.Power 230V, 50Hz of clamps no. 3 and 1 makes working of actuator for closing.
- 3.Back-electrocution protection is made by joining of protection strip PE for outside back-electrocution protection system.
- 4.Potentiometer P is used to position mapping of output actuator component.

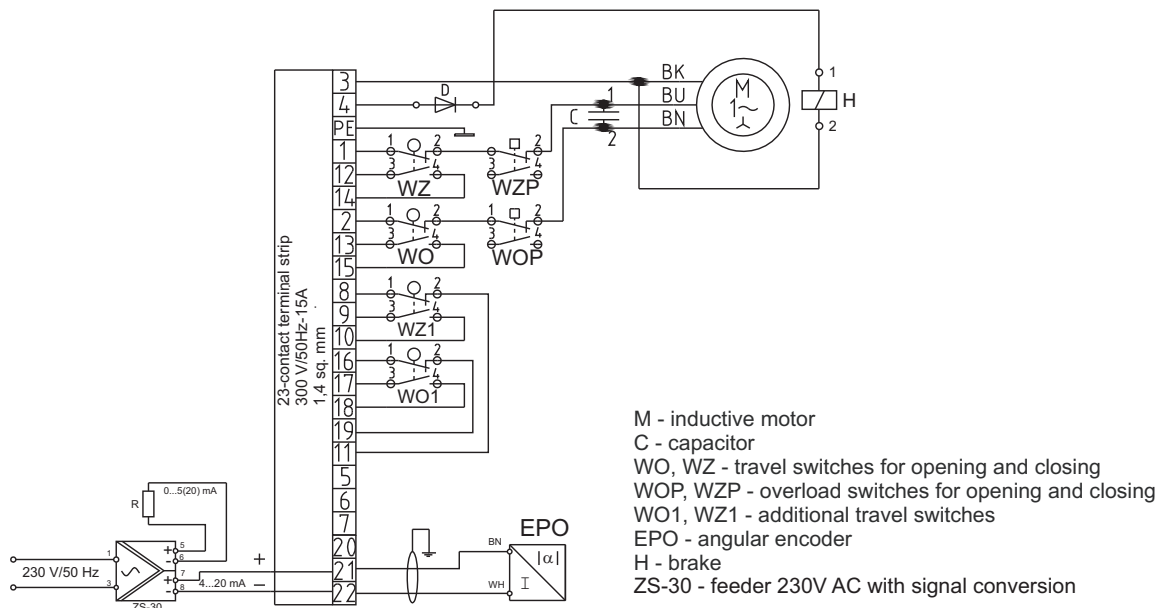
ELECTRIC CIRCUIT DIAGRAM OF ACTUATOR WITH TERMINAL STRIP AND TWO POTENTIOMETERS



**ATTENTION:**

- 1.Power 230V, 50Hz of clamps no. 3 and 2+4 makes working of actuator for opening.
- 2.Power 230V, 50Hz of clamps no. 3 and 1+4 makes working of actuator for closing.
- 3.Back-electrocution protection is made by joining of protection strip PE for outside back-electrocution protection system.
- 4.Potentiometer Px2 is used to position mapping of output actuator component.

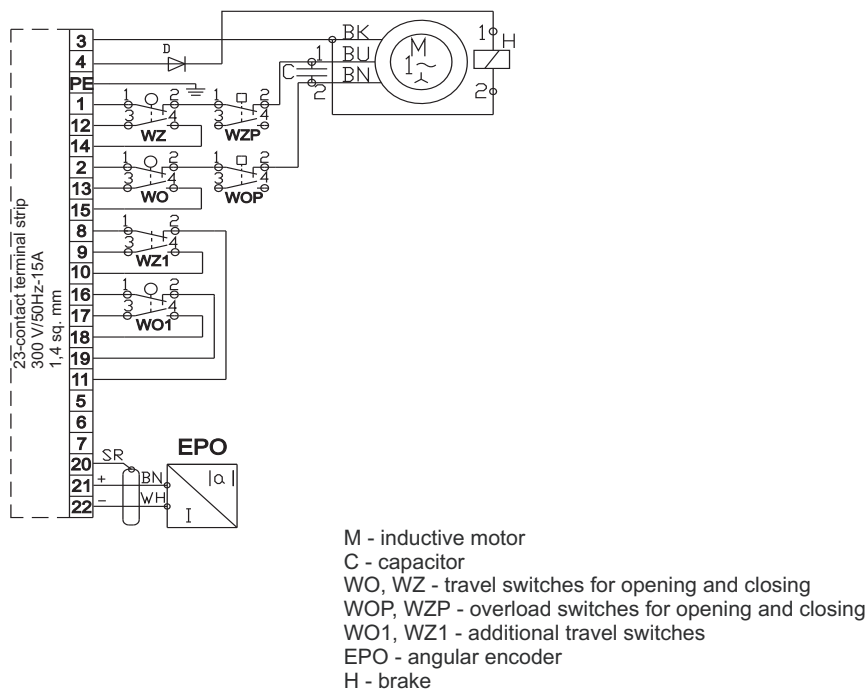
ELECTRIC CIRCUIT DIAGRAM OF ACTUATOR WITH TERMINAL STRIP AND 4-WIRE ANGULAR ENCODER



**ATTENTION:**

1. Power 230V, 50Hz of clamps no. 3 and 2 makes working of actuator for opening.
2. Power 230V, 50Hz of clamps no. 3 and 1 makes working of actuator for closing.
3. Back-electrocution protection is made by joining of protection strip PE for outside back-electrocution protection system.
4. Angular encoder EPO is used to position mapping of output actuator component.

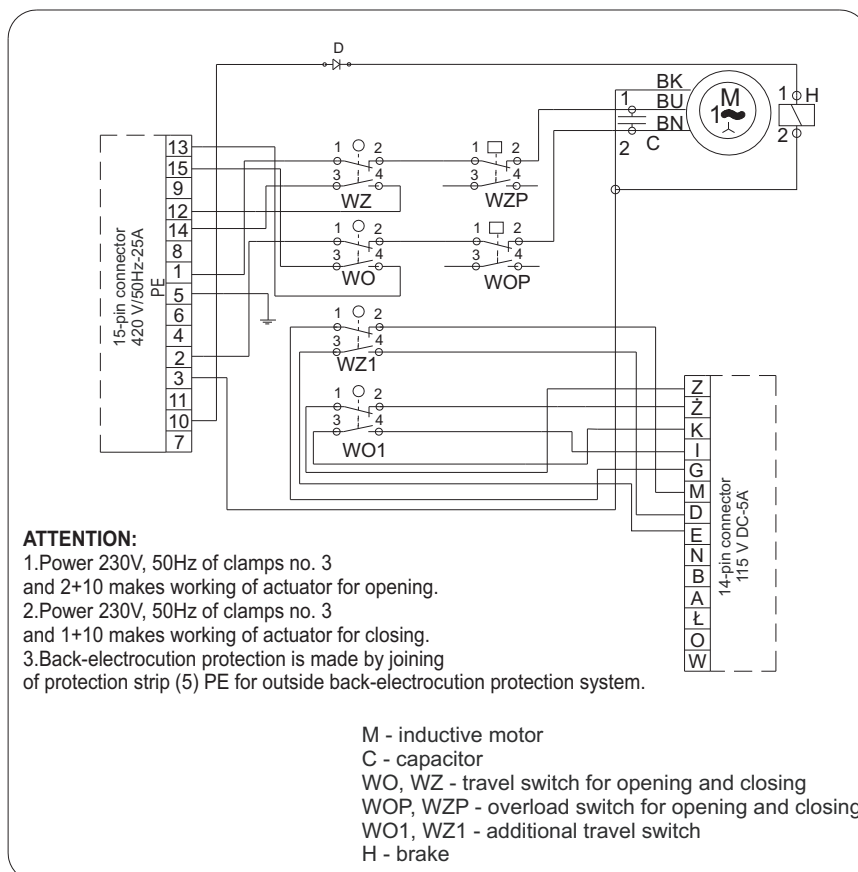
ELECTRIC CIRCUIT DIAGRAM OF ACTUATOR WITH TERMINAL STRIP AND 2-WIRE ANGULAR ENCODER



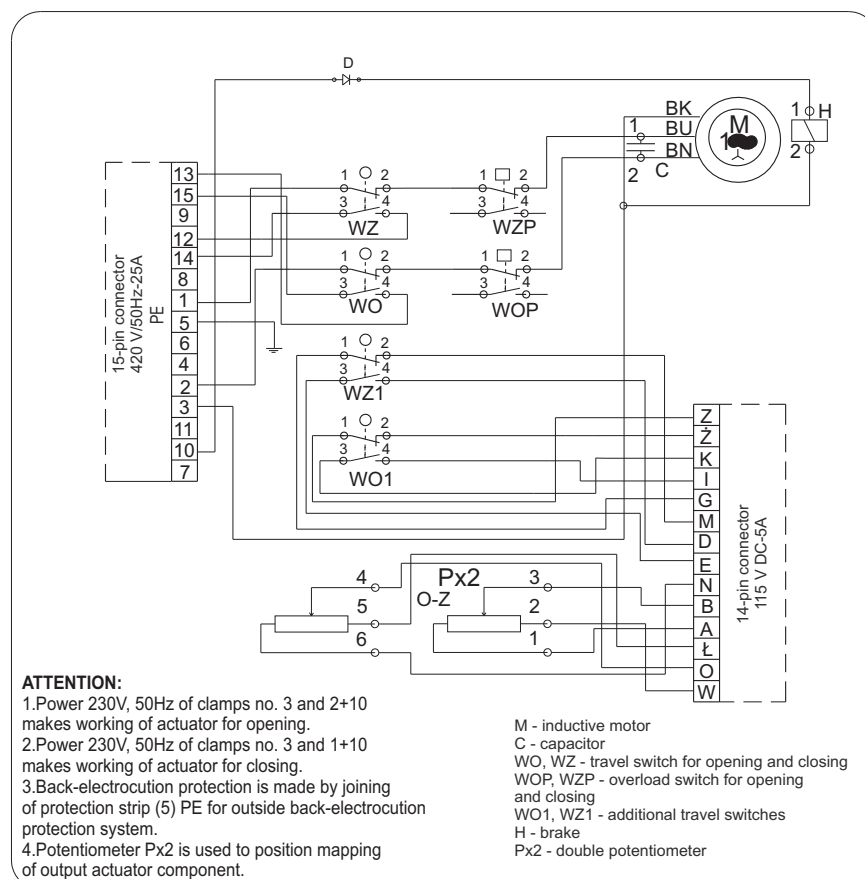
**ATTENTION:**

1. Power 230V, 50Hz of clamps no. 3 and 2+4 makes working of actuator for opening.
2. Power 230V, 50Hz of clamps no. 3 and 1+4 makes working of system of actuator for closing.
3. Back-electrocution protection is made by joining of protection strip PE for outside back-electrocution protection system.
4. Angular encoder EPO is used to position mapping of output actuator component.

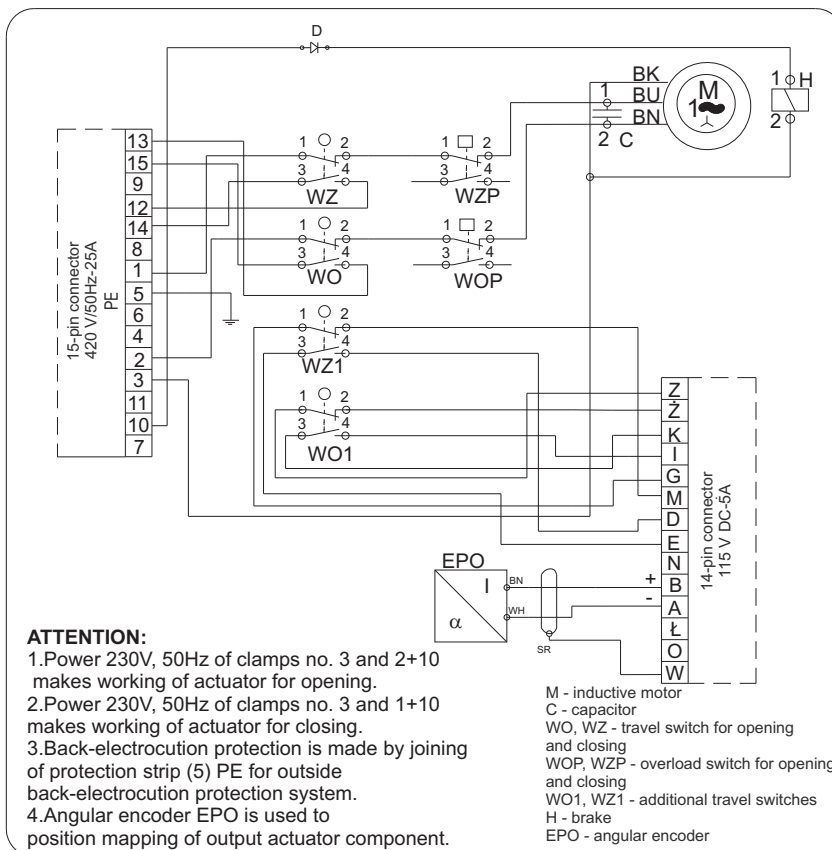
## ELECTRIC CIRCUIT DIAGRAM OF ACTUATOR WITH MULTI-CONTACT CONNECOTR TYPE Ssz



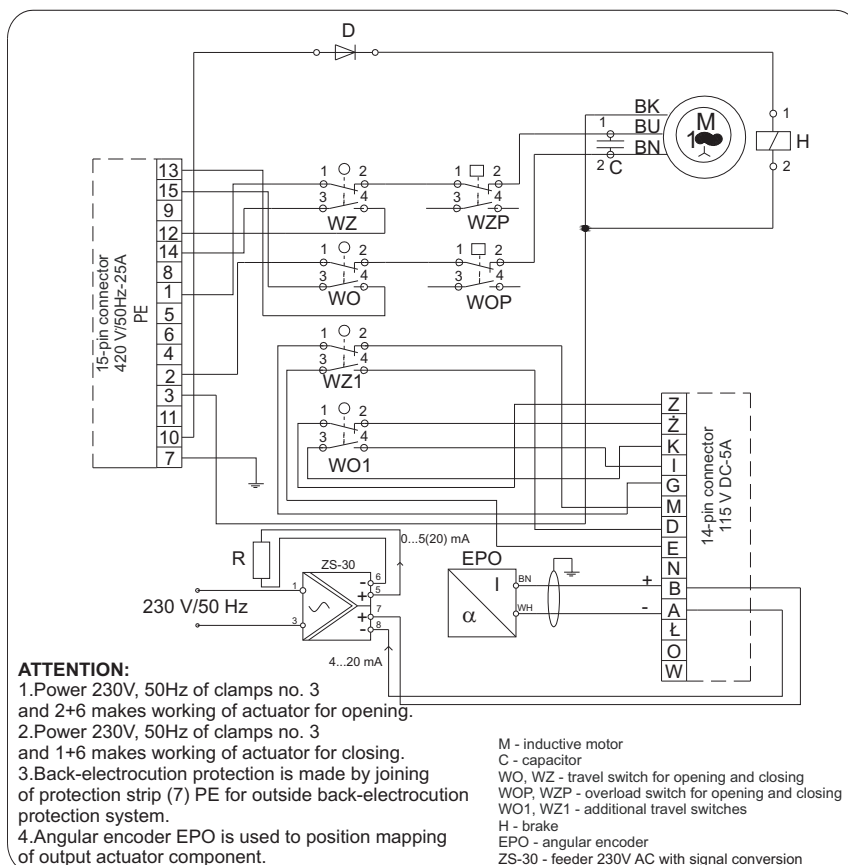
## ELECTRIC CIRCUIT DIAGRAM OF ACTUATOR WITH DOUBLE MICROSWITCHES AND DOUBLE POTENTIOMETER WITH MULTI-CONTACT CONNECOTR TYPE Ssz



ELECTRIC CIRCUIT DIAGRAM OF ACTUATOR WITH DOUBLE MICROSWITCHES AND 2-WIRE ANGULAR ENCODER WITH MULTI-CONTACT CONNECTOR TYPE SSz

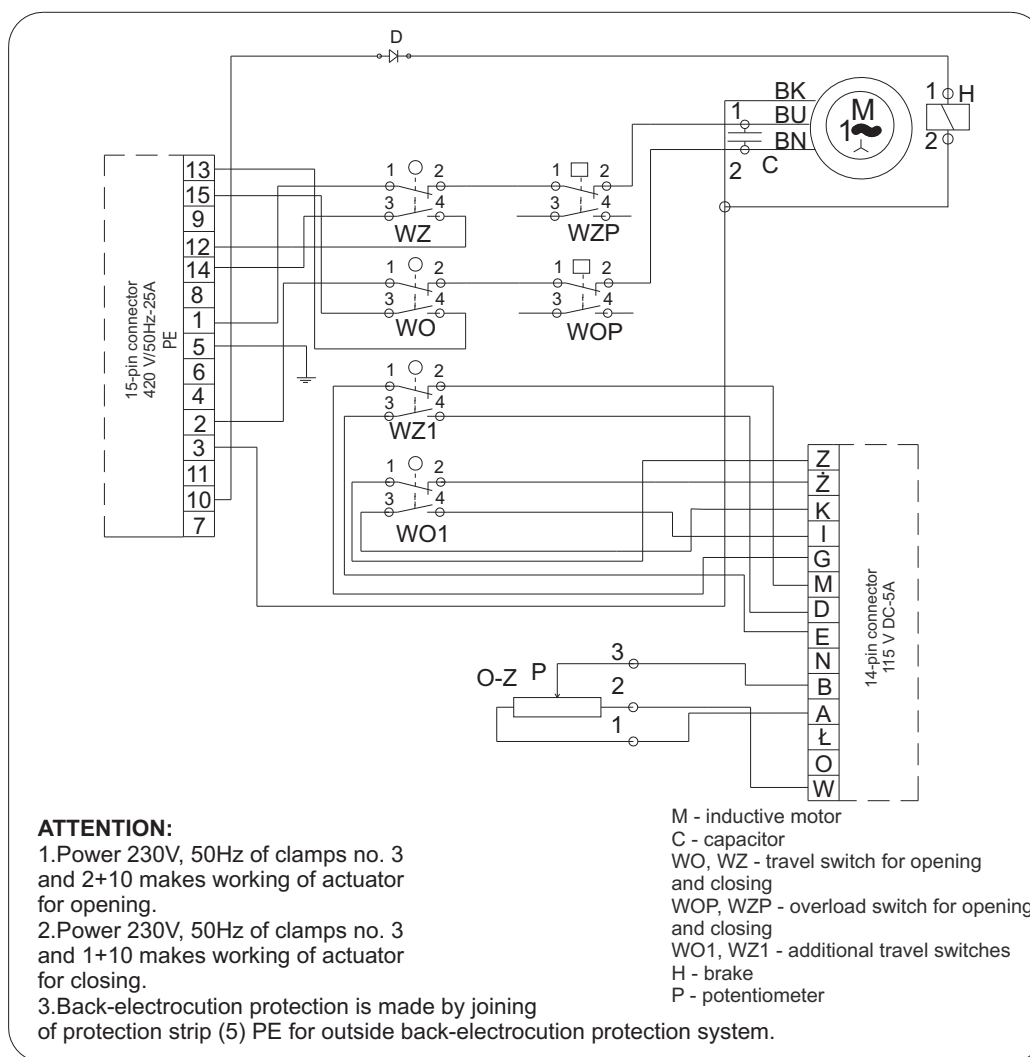


ELECTRIC CIRCUIT DIAGRAM OF ACTUATOR WITH DOUBLE MICROSWITCHES AND 4-WIRE ANGULAR ENCODER WITH MULTI-CONTACT CONNECTOR TYPE SSz





ELECTRIC CIRCUIT DIAGRAM OF ACTUATOR WITH DOUBLE MICROSWITCHES  
AND POTENTIOMETER  
WITH MULTI-CONTACT CONNECTOR TYPE SSz



## ORDERING

TYPE	Force	Linear positioning speed	Travel "H"
ESL-14-00	4kN	25mm/min	25mm
ESL-14-01	4kN	25mm/min	40mm
ESL-14-02	2kN	25mm/min	25mm
ESL-14-03	2kN	40mm/min	40mm
ESL-14-04	3.2kN	40mm/min	40mm
ESL-14-05	6.3kN	16mm/min	20mm
ESL-14-06	6.3kN	16mm/min	25mm
* ESL-14-07	6.3kN	16mm/min	40mm
ESL-14-08	6.3kN	25mm/min	20mm
ESL-14-09	6.3kN	25mm/min	25mm
ESL-14-10	6.3kN	25mm/min	40mm
ESL-14-11	8kN	16mm/min	20mm
ESL-14-12	8kN	16mm/min	25mm
* ESL-14-13	8kN	16mm/min	40mm
ESL-14-14	8kN	25mm/min	20mm
ESL-14-15	8kN	25mm/min	25mm
ESL-14-16	8kN	25mm/min	40mm

**Meaning of symbols ESL-14-00-00-01-5-1-09-1:**

ESL-14-00 small-size electric linear actuator of rated force F=4kN, travel h=25mm, linear positioning speed V=25mm/min  
 -00 standard version  
 -01 version for moderate climate  
 -5 with 100Ω potentiometer  
 -1 single travel switches  
 -09 with connector: plate and connector  
 -1 with Amphenol

CODE1	PROTECTION TYPE
-00	standard version

CODE2	CLIMATIC VERSION
-01	version N/2 acc. to PN-68/H-04650 (for moderate climate zone, outdoor under roof operation on land)

CODE3	EQUIPMENT
-0	Angular encoder type EPO-02 4...20Ma digital un-contacting(2-wire)
-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	Potentiometer 100Ω
-6	Potentiometer 2x100Ω
-10	Angular encoder type EPO-03 4...20mA digital un-contacting (2-wire)
-11	Angular encoder type EPO-01 4...20Ma analog potentiometric (2-wire)

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

CODE5	CONNECTORS
-00	without connecting elements
-02	plate R 110mm
-03	threaded connector 5/16" - 24UNF3A
-04	threaded connector 3/8" - 24UNF3A
-05	threaded connector 1/2" - 20UNF3A
-06	ball-and-socket joint
-07	plate + threaded connector 5/16" - 24UNF3A
-08	plate + threaded connector 3/8" - 24UNF3A
-09	plate + threaded connector 1/2" - 20UNF3A
-10	plate + threaded connector 5/16" - 24UNF3A + ball-and-socket joint
-11	plate + threaded connector 3/8" - 24UNF3A + ball-and-socket joint
-12	plate + threaded connector 1/2" - 20UNF3A + ball-and-socket joint
-13	M12 x 1.25 connector
-14	M12 x 1.25 connector + plate R 110mm

CODE6	ELECTRIC CONNECTORS
-1	Amphenol connector
-2	Terminal strip
-3	Multi-contact connector type Ssz

**ESL-14-00 - 00 - 01 - 5 - 1 - 09 - 1** EXAMPLE OF ACTUATOR TYPE DENOTATION

\*actuators type ESL-14-07 and ESL-14-13 with terminal strip aren't available in versions with equipment of -0 and -10 in CODE3

\*\*angular encoder + feeder with signal conversion; unit feeder separator type ZS-30 or other similar for mounting outside the actuator

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