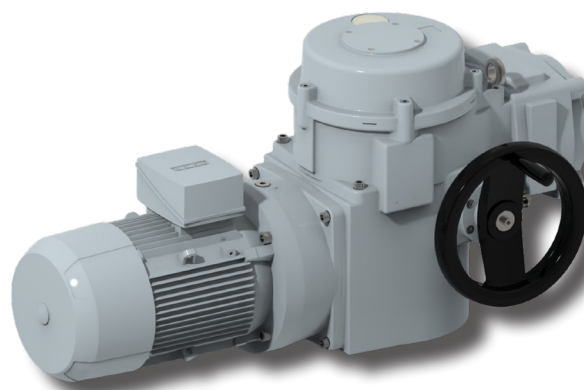


STANDARD

MO 5

STANDARD EQUIPMENT:

- Voltage 3x400 V AC
- Terminal board connection
- Motor's thermal protection PTO ¹⁾
- 2 torque switches
- 2 position switches
- 2 additional position switches
- Space heater with thermal switch
- Mechanical connection - flange
- Mechanical position indicator
- Torque switches blocking in limit position
- Manual control
- Protection code IP 55



Specification table MO 5

Order code

155. X - X X X X X / X X

Typ klimy	Okolité teplota	Korózna kategória ¹⁰⁾	Enclosure	
Standard	-25°C ... +60°C	C3	IP 55	0
			IP 67	1
Tropics and Wet	-25°C ... +60°C	C4	IP 67	2
Cold	-50°C ... +40°C	C3	IP 55	4
			IP 67	3
Tropical dry and Dry	-25°C ... +60°C	C3	IP 55	5
			IP 67	6
Sea	-50°C ... +40°C	C4	IP 67	7
Arctic	-60°C ... +40°C	C3	IP 55	9
			IP 67	8

Electric connection	Electric motor supply voltage and frequency ²⁹⁾		Wiring diagram	
To terminal board	Y/Δ380 V AC	50 Hz	Z279c	0
	Y/Δ400 V AC	50 Hz	Z279c	1
	Y/Δ380/220 V AC - with reversing unit	50 Hz	Z297b	2
	Y/Δ400/230 V AC - with reversing unit	50 Hz	Z297b	3
To connector ²¹⁾	Y/Δ380 V AC	50 Hz	ZK279c	5
	Y/Δ400 V AC	50 Hz	ZK279c	6
	Y/Δ380/220 V AC - with reversing unit	50 Hz	ZK297b	4
	Y/Δ400/230 V AC - with reversing unit	50 Hz	ZK297b	7

Next page

Order code

155. X - X X X X X / X X

Switching-off torque ³¹⁾	Max. load torque		Operating time	Electric motor 3x400 V, 50Hz ³⁴⁾			
	ON - OFF duty ³²⁾	Modulating duty ³³⁾		Power	Speed	Current	
300 ÷ 500 Nm	300 Nm	200 Nm	15 min ⁻¹	1.5 kW	700 min ⁻¹	4.65 A	C
			20 min ⁻¹	1.5 kW	925 min ⁻¹	3.9 A	F
			40 min ⁻¹	3.0 kW	1 425 min ⁻¹	6.3 A	J
			60 min ⁻¹ ³⁶⁾	3.0 kW	1 425 min ⁻¹	6.3 A	M
			100 min ⁻¹ ³⁶⁾	4.0 kW	1 435 min ⁻¹	8.2 A	Q
370 ÷ 630 Nm	380 Nm	250 Nm	15 min ⁻¹	1.5 kW	700 min ⁻¹	4.65 A	B
			20 min ⁻¹	1.5 kW	925 min ⁻¹	3.9 A	E
			40 min ⁻¹	3.0 kW	1 425 min ⁻¹	6.3 A	H
			60 min ⁻¹ ³⁶⁾	4.0 kW	1 435 min ⁻¹	8.2 A	L
			100 min ⁻¹ ³⁷⁾	5.5 kW	1 460 min ⁻¹	11.2 A	P
600 ÷ 1 000 Nm	600 Nm	400 Nm	15 min ⁻¹	1.5 kW	700 min ⁻¹	4.65 A	A
			20 min ⁻¹	2.2 kW	940 min ⁻¹	5.2 A	D
			40 min ⁻¹	4.0 kW	1 435 min ⁻¹	8.2 A	G
			60 min ⁻¹ ³⁶⁾ ³⁷⁾	5.5 kW	1 460 min ⁻¹	11.2 A	K

Control board version	Switches	Revolutions ⁴⁴⁾		Wiring diagram	
		Without transmitter	With potentiometer		
Electromechanical control board with step counter unit without local controls	S1/S2, S3/S4, S5/S6	1.25 ÷ 4	1.25; 2.3; <u>4</u>	Z403a+Z41a ZK403a+ZK41a	1
		4 ÷ 500	7.5; 14; <u>25</u> ; 45; 80; 150; 270; 500		2
	S1/S2, S3/S4, with tandem switches S13/S14	1.25 ÷ 4	1.25; 2.3; <u>4</u>	Z461f+Z41a ZK461f+ZK41a	K
		4 ÷ 500	7.5; 14; <u>25</u> ; 45; 80; 150; 270; 50		L
Electromechanical control board with step counter unit with local controls ⁴⁶⁾	S1/S2, S3/S4, S5/S6	1.25 ÷ 4	1.25; 2.3; <u>4</u>	Z635g+Z41a ZK635g+ZK41a	5
		4 ÷ 500	7.5; 14; <u>25</u> ; 45; 80; 150; 270; 50		6
	S1/S2, S3/S4, with tandem switches S13/S14	1.25 ÷ 4	1.25; 2.3; <u>4</u>	Z636d+Z41a ZK636d+ZK41a	U
		4 ÷ 500	7.5; 14; <u>25</u> ; 45; 80; 150; 270; 50		V

Transmitter		Connection	Output	Wiring diagram	
Without transmitter		-	-	-	A
Potentiometer	Single	-	1 x 100 Ω	Z5c / ZK5c	B
			1 x 2 000 Ω		F
	Double	-	2 x 100 Ω	Z6c / ZK6c	K
			2 x 2 000 Ω		P
Electronic position transmitter ⁵¹⁾	Passive	2-wire	4 - 20 mA	Z10g / ZK10g	S
			0 - 20 mA		T
		3-wire	4 - 20 mA	Z257b / ZK257b	V
			0 - 5 mA		Y
	Active	2-wire	4 - 20 mA	Z269r / ZK269r	Q
			0 - 20 mA		U
		3-wire	4 - 20 mA	Z260h / ZK260h	W
			0 - 5 mA		Z
Electronic position transmitter ⁵¹⁾	Passive	3-wire	0-10 V	Z257m / ZK257m	D
	Active		0-10 V	Z260k / ZK260k	R
Current CPT ⁵¹⁾ ⁵²⁾	Passive	2-wire	4 - 20 mA	Z10g / ZK10g	I
		3-wire	0 - 5 mA	Z257n / ZK257n	5
	Active	2-wire	4 - 20 mA	Z269r / ZK269r	J
		3-wire	0 - 5 mA	Z260m / ZK260m	6
Current ⁵¹⁾ ⁵²⁾ DCPT 3M	Passive	2-wire	4 - 20 mA	Z10g / ZK10g	2
	Active		4 - 20 mA	Z269r / ZK269r	3

Next page

Order code

155. X - X X X X X / X X

Mechanical connection		Flange	Coupling shape		Dimensional drawing	
Without connect adapter	ISO 5210	F16	B3	Ø40	P-2133c	P-1424/B B
	ISO 5210	F16	C	24/Ø55/Ø80		P-1424/C C
	ISO 5210	F16	D	Ø40		P-1424/D D
	ГОСТ P 55510	Ø220/4xM20	B (V)	Ø70/Ø85 - 5 tooth 35°/37°		P-1425/1 G
With connect adapter	ISO 5210	F16 ⁶¹⁾	A	Max. TR52		P-1424/A A

Additional equipment		Wiring diagram		
	No additional equipment. Adjusted to max. switching-off torque of chosen range and stroke to 4 or 25 revolutions	-	0	1
B	Switching-off torque adjustment to the required value	-	0	3
C	Adjustment of revolutions to the required value	-	0	4
F	Electric motor with thermal protection 3PTC, 150 °C.	Z279h / ZK279h Z297g / ZK297g	0	5
H	Gold coated contacts of microswitches, details after consultation with the manufacturer	-	4	0

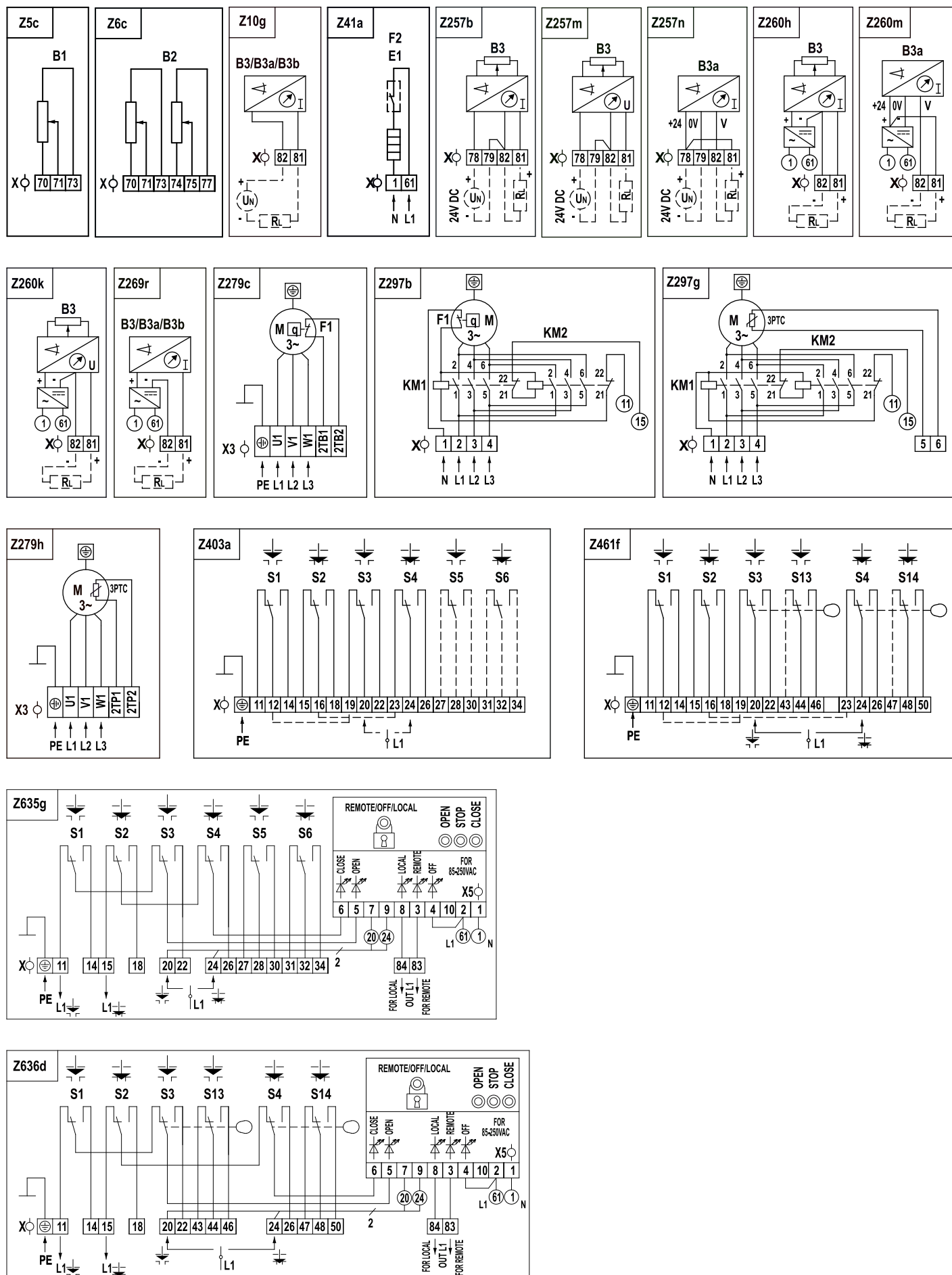
Allowed combinations and code of version: B+C=06; B+F=07; C+F=08; B+C+F=09; B+H=41; C+H=42; B+C+H=44

Notes:

- 1) Cut-off temperature 150 °C
- 10) Climate resistance according to ISO 9223 / EN ISO 12944-2
- 21) The version with connector in -40° C only.
- 25) Iné napätia po dohode s výrobcom (3x500 V; 3x480 V; 3x415V).
- 31) Specify the switching-off torque in your order by words. If not stated it is adjusted to the maximum rate of the chosen range.
The starting torque is at least 1.3 times the maximum closing torque of the selected range.
- 32) Duty cycle S2-15min, or S4-25%, 6-90 cycles per hour.
- 33) Duty cycle S4-25%, 90-1200 cycles per hour.
- 34) For 60 Hz, the operating speed increases by a factor of 1.2 and the max. torque decreases by a factor of 0.8.
- 36) Do not use for operation mode S4-25%, 90-1200 cycles/ hour. It can only be used with an additional gearbox.
- 37) Cannot be specified with reverse contactors.
- 44) Position switches S3, S4 are being set to specified number of revolutions. If it is not stated in the order, they will be set to 16 operating revolutions. When required settings are out of values listed in table, ohmic value of potentiometer will be reduced accordingly. If less than 75% of revolutions is required, value of output signals from electronic transmitter will be reduced accordingly as well.
- 51) Not valid for temperatures of -60°C.
- 52) CPT - kapacitný vysielateľ, DCPT 3M - elektronický bezkontaktný vysielateľ.
- 61) Up to switch-off torque of 700 Nm

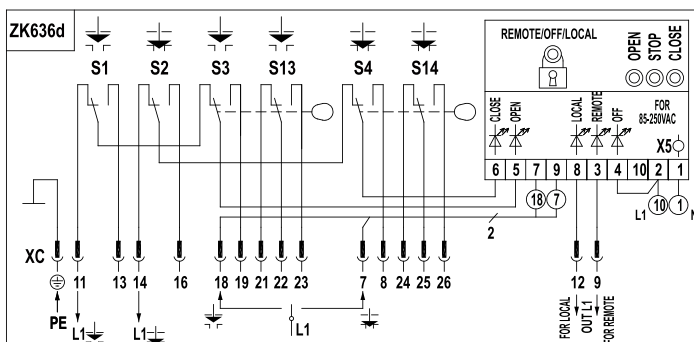
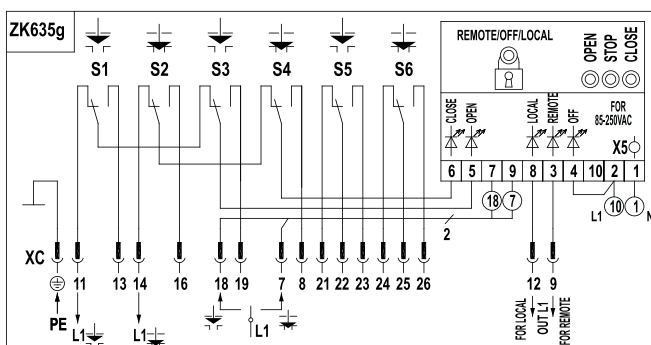
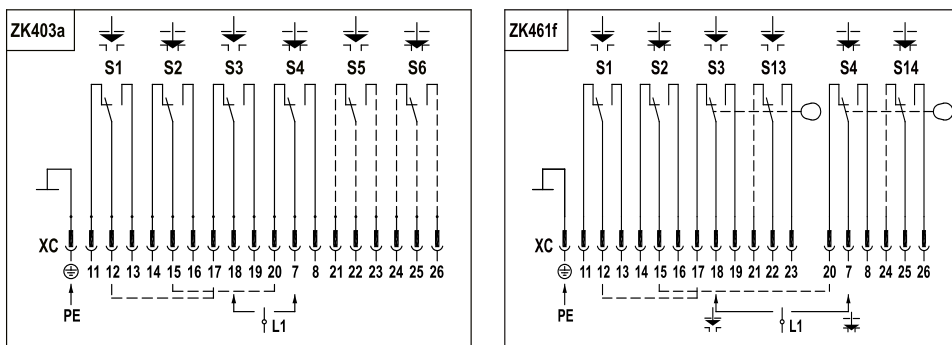
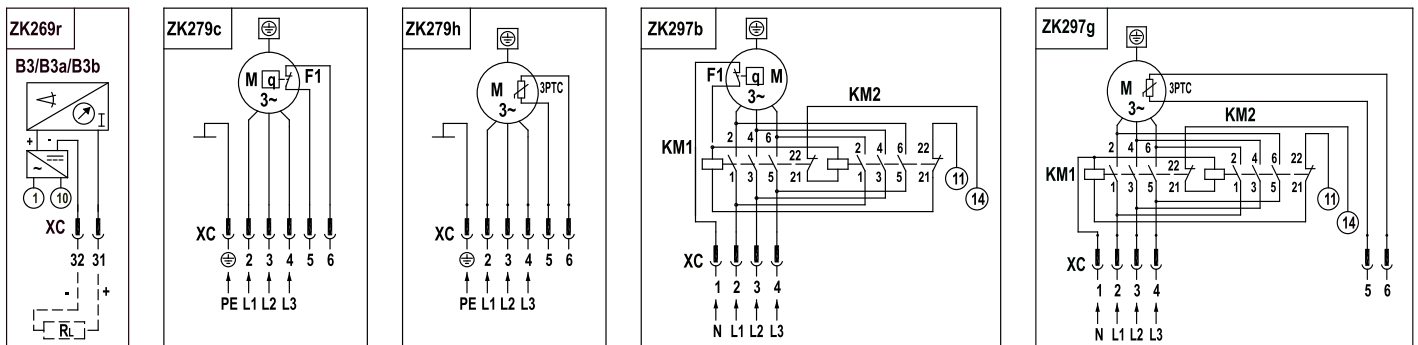
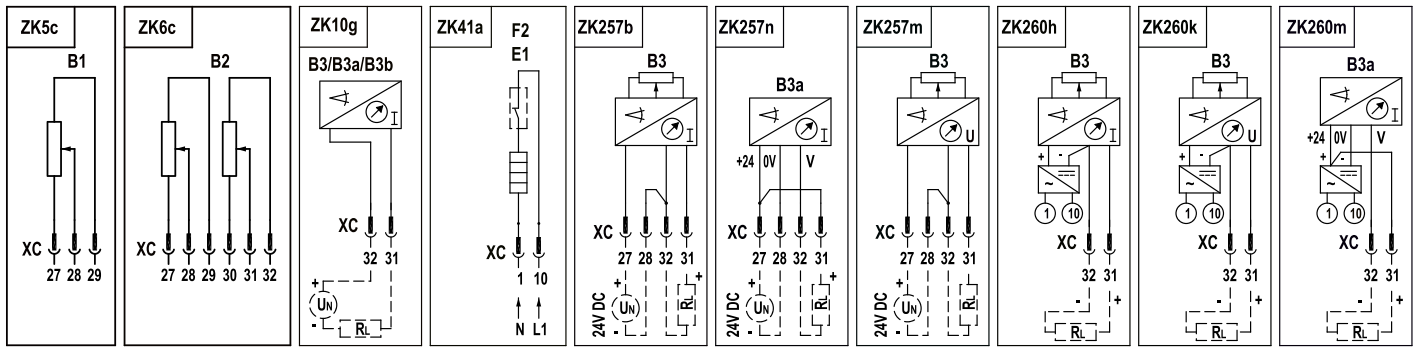
Wiring diagrams

Terminal board connection



Wiring diagrams

Connector connection



Electric connection of actuator to terminal board:

- a) control section to terminal board (X) with max. 32 terminals via:
- 2 cable glands M25x1.5 for cable diameter 12,5 až 19 mm
 - 1 cable gland M16x1,5 for cable diameter 6 to 10.5 mm, max. wire cross-section 2,5 mm²
- b) 3-phase electromotor in version without contactors:
- 1 cable gland M32x1.5 for cable diameter 15 to 21 mm to terminal board of electromotor (X3)

Electric connection of actuator to connector:

The control section and electromotor are connected to common connector (XC) with 32 terminals via:

- 1 cable gland M20x1.5 for cable diameter 8 to 14.5 mm, max. wire cross section 0,5 mm².
- 1 cable gland M25x1,5 for cable diameter 12.5 to 19 mm, max. wire cross-section 1,5 mm².

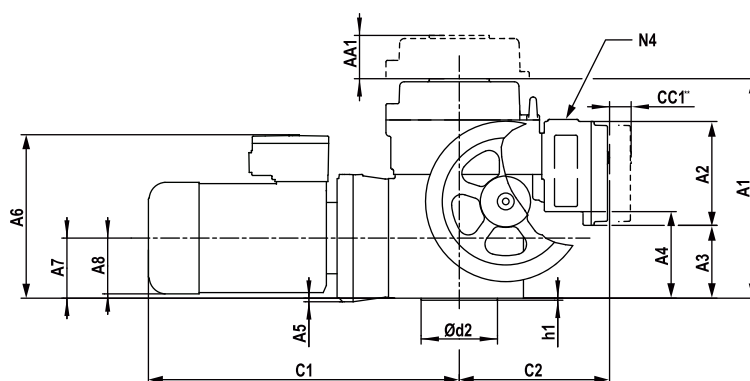
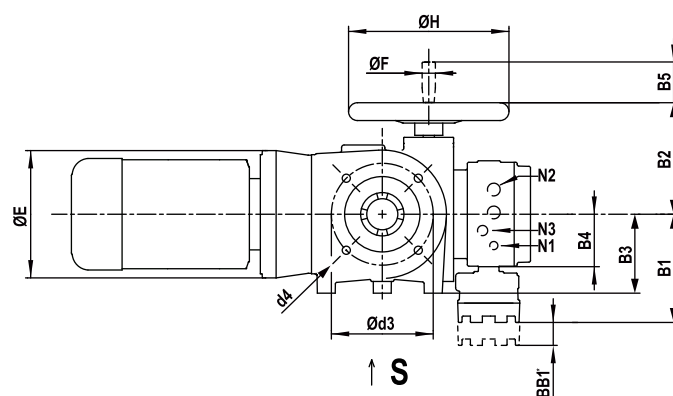
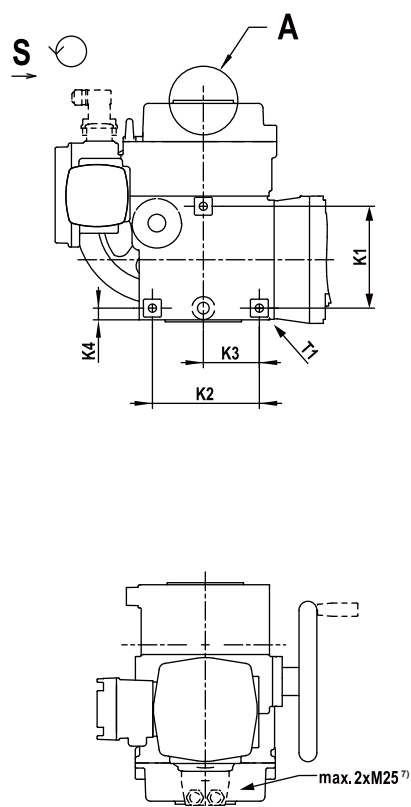
Legend:

Z5c/ZK5c.....	connection of single potentiometer
Z6c/ZK6c.....	connection of double potentiometer
Z10g/ZK10g.....	connection of CPT or electronic position transmitter - 2-wire, passive
Z41a/ZK41a.....	space heater and space heater's thermal switch
Z257b/ZK257b.....	current electronic position transmitter, 3-wire, passive
Z257m/ZK257m.....	electronic position transmitter 0 - 10 V, 3-wire, passive
Z257n/ZK257n.....	position transmitter CPT, 3-wire, passive
Z260h/ZK260h.....	current electronic position transmitter, 3-wire, active
Z260k/ZK260k.....	electronic position transmitter 0 - 10 V, 3-wire, active
Z260m/ZK260m.....	position transmitter CPT, 3-wire, active
Z269r/ZK269r.....	CPT, DCPT 3M or electronic transmitter, 2-wire, active
Z279c/ZK279c.....	3-phase electric motor with thermal protection PTO
Z279h/ZK279h.....	3-phase electric motor with thermal protection PTC
Z297b/ZK297b.....	connection of 3-phase electromotor with reverse contactors and thermal protection PTO
Z297g/ZK297g.....	connection of 3-phase electromotor with reverse contactors and thermal protection PTC
Z403a/ZK403a.....	connection of torque and position switches
Z461f/ZK461f.....	connection of torque and tandem position switches
Z635g/ZK635g.....	connection of torque switches, position switches, additional position switches and local control unit
Z636d/ZK636d.....	connection of torque switches, position switches, tandem position switches and local control unit

Legenda:

B1.....	single potentiometer
B2.....	double potentiometer
B3.....	CPT or electronic position transmitter
B3a.....	capacitive current transmitter (CPT)
B3b.....	DCPT current transmitter
S1.....	torque switch „open“
S2.....	torque switch „closed“
S3.....	position switch „open“
S4.....	position switch „closed“
S5.....	additional position switch „open“
S6.....	additional position switch „closed“
S13.....	tandem position switch „open“
S14.....	tandem position switch „closed“
E1.....	space heater
F1.....	motor's thermal protection
F2.....	space heater's thermal switch
I / U.....	current / voltage output signal
KM1, KM2.....	reversing contactors
M.....	electric motor
PTC/PTO.....	thermal protection of electric motor
R _L	loading resistor
X.....	terminal board
X3.....	electric motor's terminal board
XC.....	connector
OPEN/STOP/CLOSE.....	local control buttons
REMOTE/OFF/LOCAL.....	local control selection button

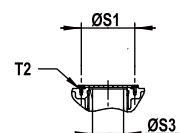
Dimensional drawing MO 5



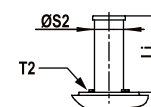
- 1) Access to local control
- 2) Access to terminal board
- 3) Valid for Profibus/Modbus
- 4) L 1 - lenght of tube on request
- 5) Access to control board
- 7) Connector

Detail A

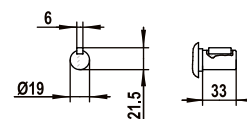
Version for non-rising stem



Protection tube for rising stem



Handwheel shaft

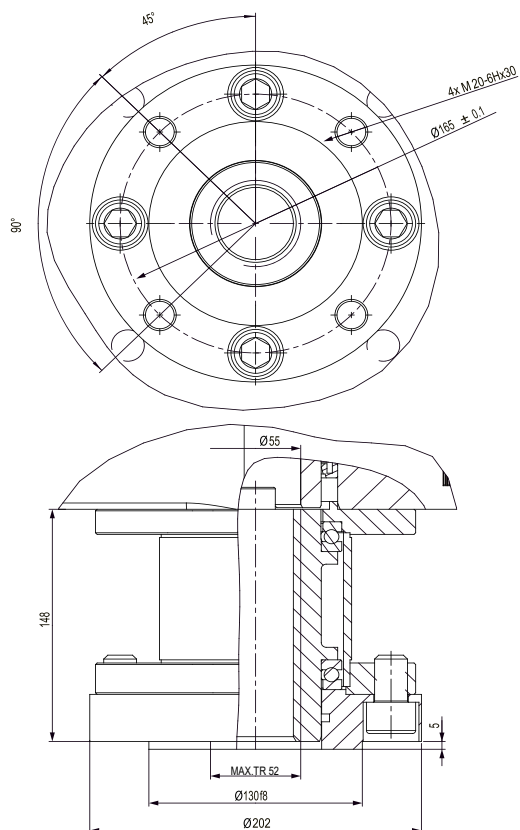


Dimensions		Dimensions	
A1	431	C2	295
AA1 min. ⁵⁾	600	ØE max.	250
A2	204	ØF	22
A3	143	ØH	315
A4	170	K1	200
A5 max.	7	K2	210
A6 max.	314	K3	110
A7	118	K4	23
A8 max.	111	L	-
B1	213	N1	M16x1.5
BB1 min. ¹⁾	600	N2	2x M25x1.5
B2	219	N3	M20x1.5
B3 max.	155	N4 ³⁾	4x M16x1.5
B4	103	S1	105
B5	90	S2	88.9x6.3
C1 max.	583	S3	70
C1 min. ²⁾	600	T1	3x M16-34
Flange	ISO	T2	3x M5-10
d2	130		
d3	165		
d4	4xM20		
h1	4		

P-2133c

Dimensional drawing MO 5

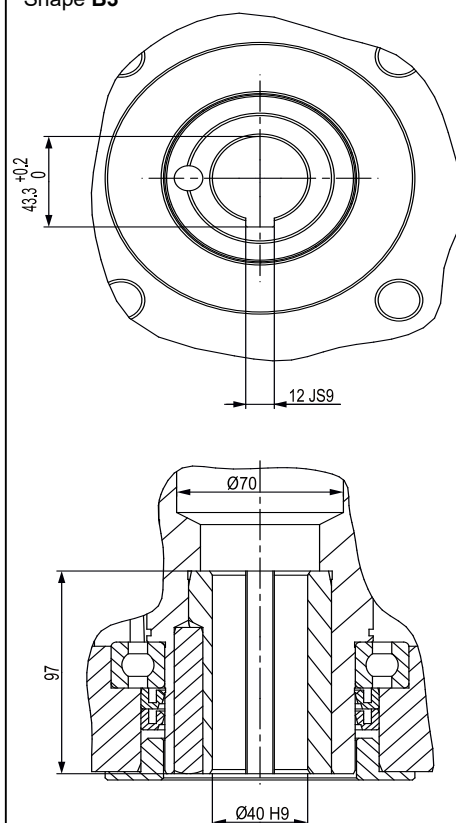
Shape A



Notes
Thread diameter to be specified in an order.

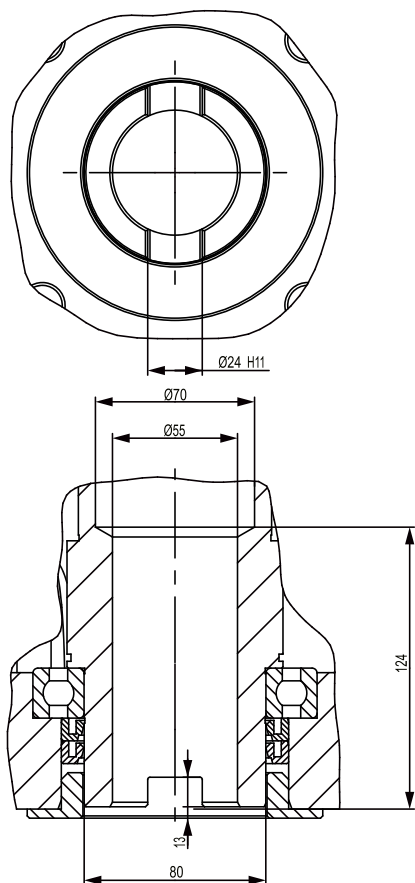
P-1424/A

Shape B3



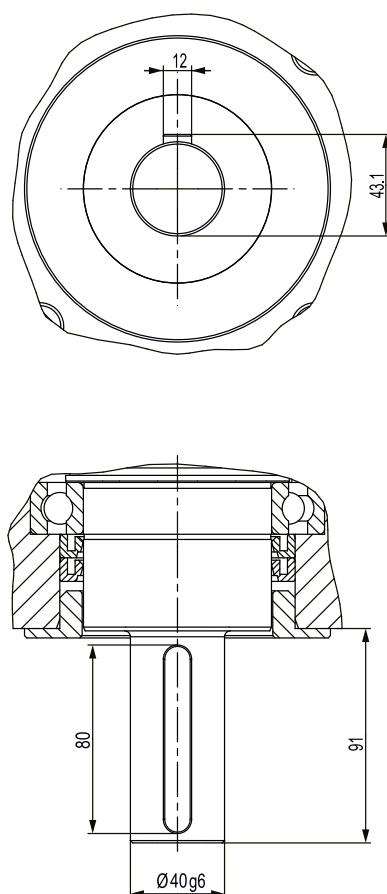
P-1424/B

Shape C



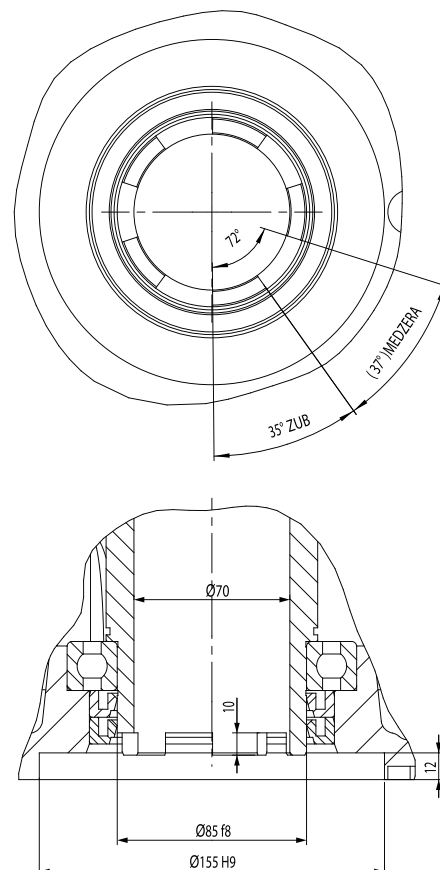
P-1424/C

Shape D



P-1424/D

Shape B (V)
ГОСТ P 55510



P-1425/1