

STANDARD

MO 3.4

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 3.4

Order code

105. X - X X X X X / X X

Climate resistance	Ambient temperature	Corrosivity category 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 ²⁵⁾		Wiring diagram	
To terminal board	Y/Δ380/220 V AC	50 Hz	Z279c	0
	Y/Δ400/230 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/Δ380/220 V AC	50 Hz	ZK279c	5
	Y/Δ400/230 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

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Order code

105. 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	
100 - 180 Nm	108 Nm	72 Nm	16 min ⁻¹	370 W	1 350 min ⁻¹	1.08 A	D
100 - 150 Nm	90 Nm	60 Nm	25 min ⁻¹	370 W	1 350 min ⁻¹	1.08 A	J
100 - 170 Nm	102 Nm	68 Nm	40 min ⁻¹	750 W	1 385 min ⁻¹	1.85 A	V
100 - 150 Nm	90 Nm	60 Nm	63 min ^{-1 36)}	1 100 W	2 840 min ⁻¹	2.45 A	R
150 - 200 Nm	120 Nm	80 Nm	16 min ⁻¹	550 W	900 min ⁻¹	1.68 A	E
			25 min ⁻¹	550 W	900 min ⁻¹	1.68 A	K
			40 min ⁻¹	750 W	1 385 min ⁻¹	1.85 A	P
			80 min ^{-1 36)}	1 100 W	2 840 min ⁻¹	2.45 A	T
200 - 250 Nm	150 Nm	100 Nm	16 min ⁻¹	550 W	900 min ⁻¹	1.68 A	F
			25 min ⁻¹	550 W	900 min ⁻¹	1.68 A	L
			80 min ^{-1 36)}	1 500 W	2 830 min ⁻¹	3.15 A	U
200 - 300 Nm	180 Nm	120 Nm	10 min ⁻¹	370 W	1 350 min ⁻¹	1.08 A	B
			40 min ⁻¹	1 500 W	2 830 min ⁻¹	3.15 A	Q
			63 min ^{-1 36)}	1 500 W	2 830 min ⁻¹	3.15 A	S
250 - 350 Nm	210 Nm	140 Nm	10 min ⁻¹	370 W	1 350 min ⁻¹	1.08 A	C
			16 min ⁻¹	550 W	900 min ⁻¹	1.68 A	G
			25 min ⁻¹	750 W	1 385 min ⁻¹	1.85 A	M

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	1.3 ÷ 4.4	1.3; 2.4; <u>4.4</u>	Z403a+Z41a ZK403a+ZK41a	1
		8 ÷ 285	8; <u>14.5</u> ; 26; 48; 85; 155; 285		2
	S1/S2, S3/S4, with tandem switches S13/S14	1.3 ÷ 4.4	1.3; 2.4; <u>4.4</u>	Z461f+Z41a ZK461f+ZK41a	K
		8 ÷ 285	8; <u>14.5</u> ; 26; 48; 85; 155; 285		L
Electromechanical control board with step counter unit with local controls	S1/S2, S3/S4, S5/S6	1.3 ÷ 4.4	1.3; 2.4; <u>4.4</u>	Z635g+Z41a ZK635g+ZK41a	5
		8 ÷ 285	8; <u>14.5</u> ; 26; 48; 85; 155; 285		6
	S1/S2, S3/S4, with tandem switches S13/S14	1.3 ÷ 4.4	1.3; 2.4; <u>4.4</u>	Z636d+Z41a ZK636d+ZK41a	U
		8 ÷ 285	8; <u>14.5</u> ; 26; 48; 85; 155; 285		V

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, orS4-25%, 6-90 cycles per hour.

33) Duty cycle S4-25%, 90-1200 cycles per hour.

34) For 60 Hz, the operating speed increases 1.2 times and the max. torque decreases 0.8 time.

36) Do not use for operation mode S4-25%, 90-1200 cycles/ hour. It can only be used with an additional gearbox.

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 then 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.

Order code

105. X - X X X X X / X X

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
		3-wire	0 - 20 mA	Z257b/ZK257b	T
			4 - 20 mA		V
			0 - 5 mA		Y
	Active	2-wire	4 - 20 mA	Z269r/ZK269r	Q
		3-wire	0 - 20 mA	Z260h/ZK260h	U
			4 - 20 mA		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 ^{51) 52)} CPT	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

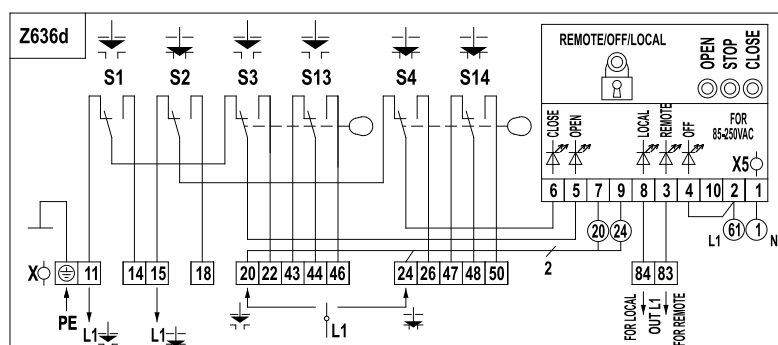
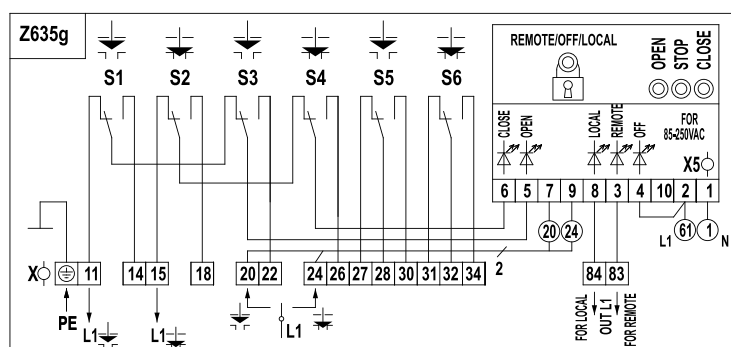
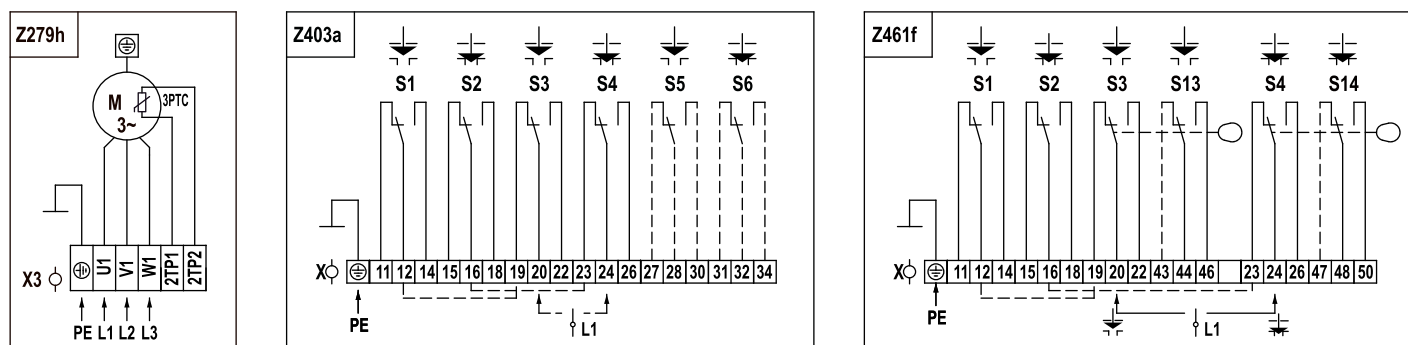
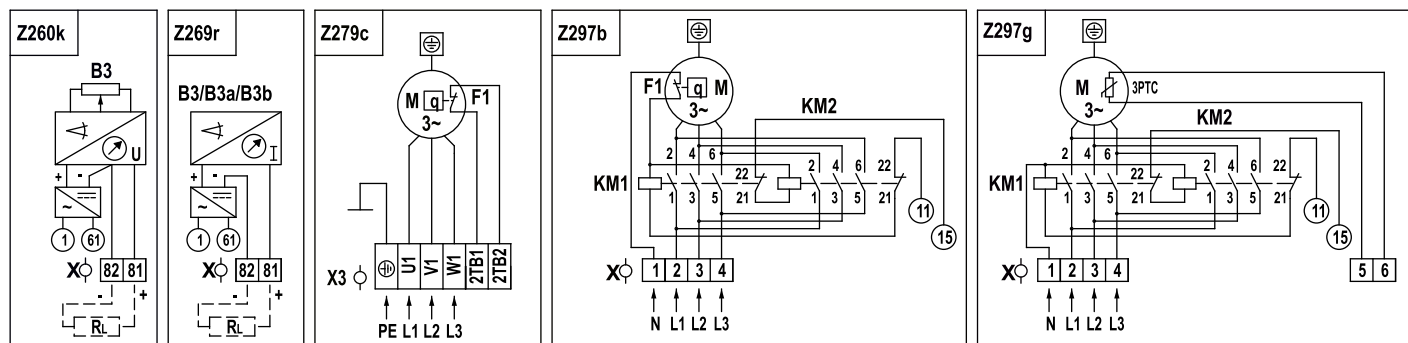
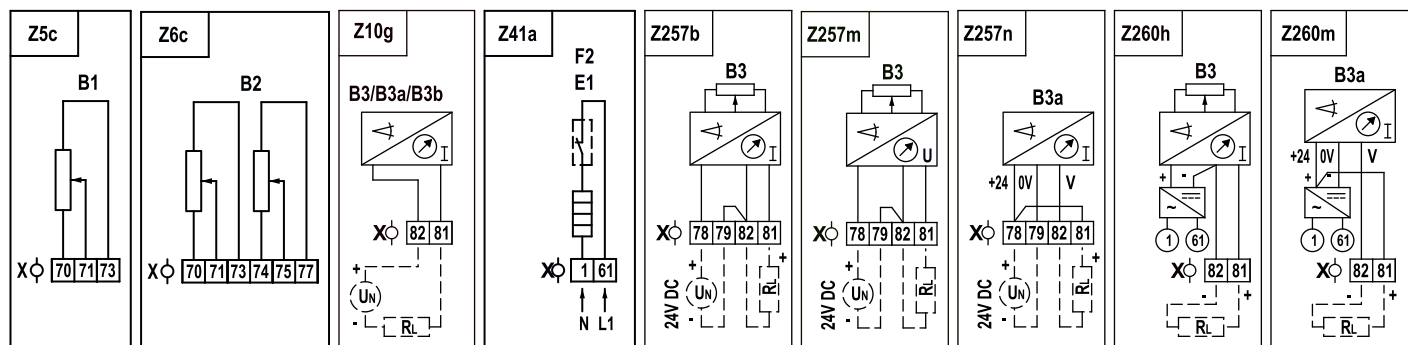
Mechanical connection		Flange	Coupling shape		Dimensional drawing		
Without connect adapter	ISO 5210	F14	C	20/Ø45/Ø60	P-1431c	P-1435	C
			D	Ø30		P-1437	D
			B3	Ø30		P-1438/L	B
			B2	Ø45		P-1438/N	2
With connect adapter	ISO 5210	F14	A	Max. TR42		P-1471/V	A
			B1	Ø60/Ø45/65		P-1463	1
	ГОСТ P 55510	Ø135/4xØ13	Б (B)	5 tooth Ø45/Ø58		P-1436	G

Additional equipment				Wiring diagrams		
	No additional equipment. Set to max. switching-off torque of the selected range and to a stroke of 4.4 or 14.5 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; B+H=41; B+C+H=44; C+H=42; C+F=08; B+C+F=09

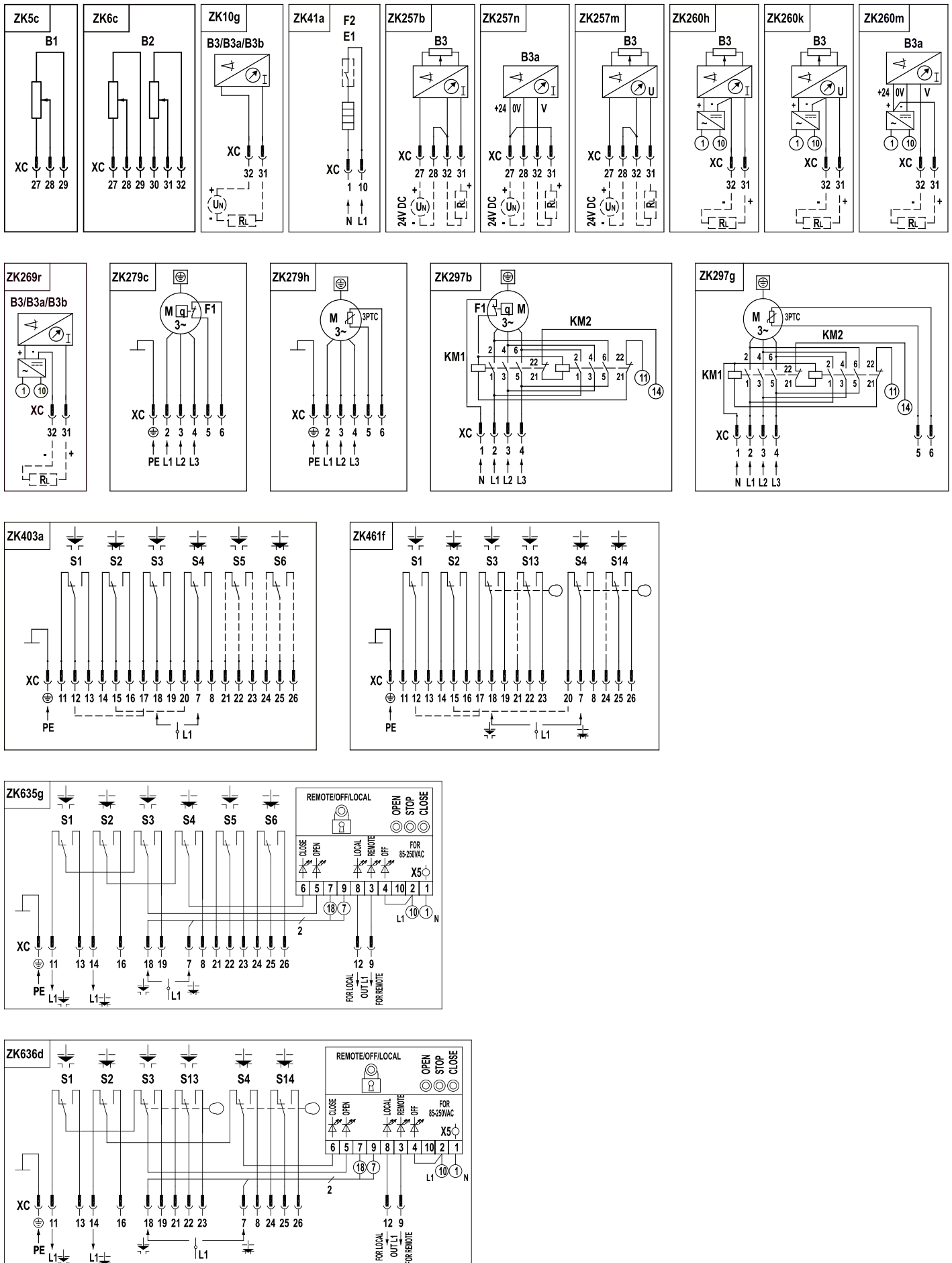
Wiring diagrams

Terminal board connection



Wiring diagrams

Connector connection



Electric connection of actuator to terminal board:

- max. 32 terminals
- max. wire cross-section 2,5 mm²
- 2 cable glands M25x1.5 out of control board for cable diameter 12.5 to 19 mm
- 1 cable gland M25x1,5 out of electromotor for cable diameter 12.5 to 19 mm

Electric connection of actuator to connector:

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

- max. 32 terminals
- max. wire cross-section 0,5 mm²
- 1 cable gland M20x1.5 out of connector for cable diameter 8 to 14.5 mm
- 1 cable gland M20x1.5 out of connector for cable diameter 12.5 to 19 mm

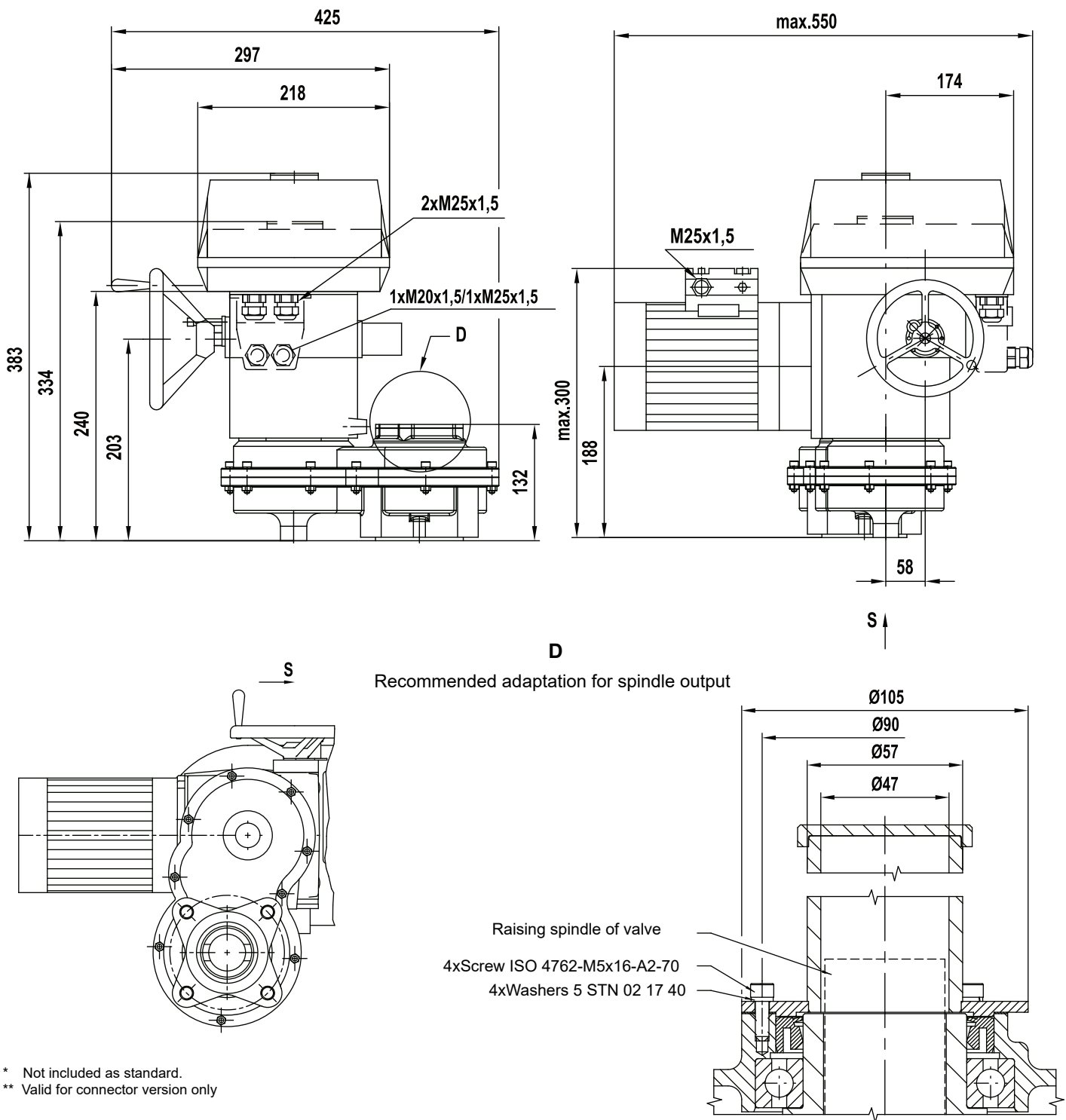
Legend:

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

Legend:

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 3.4



P-1431c

Dimensional drawing MO 3.4

Shape A

Notes:
Thread diameter to be specified
in an order.

P-1471/V	Max. TR 2
Version	A

P-1471/V

Shape B1

P-1463

Shape B2/B3

P-1438/N	B2	45	40	14	48.6
P-1438/L	B3	30	-	8	33.3
Version	Shape	dyH9	d5	b4Js9	t3

P-1438

Shape C

P-1435

Shape D

P-1437

Shape E
ГОСТ P 55510

P-1436