STANDARD
ST 2

STANDARD EQUIPMENT

- Voltage 230 V AC
- Terminal board connection
- 2 thrust switches
- 2 position switches
- Mechanical connection - pillars
- Mechanical position indicator
- Manual control
- Protection code IP 65

Specification table ST 2

Order code **492. X - X X X X X / X X**

Climate resistance	Ambient temperature	Corrosivity category [10]	Enclosure	
Standard	-25°C...+55°C	C3	IP 65	0
	-25°C...+55°C	C3	IP 67	1
	-25°C...+55°C	C3	IP 68 [11]	5
Tropics and Wet	-25°C...+55°C	C4	IP 67	2
Cold	-50°C...+40°C	C3	IP 67	3
Tropical dry and Dry	-25°C...+55°C	C3	IP 67	6
Sea	-50°C...+40°C	C4	IP 67	7
Arctic	-60°C...+40°C	C3	IP 67	8

Electric Connection	Voltage and frequency		Wiring Diagram	
To terminal board	230 V AC	50 Hz	Z1a + Z11a	0
	220 V AC	50 Hz		L
	3x400 V AC	50 Hz	Z78y + Z12a [22]	9
	3x400 V AC [28]	50 Hz	Z303p + Z12a [22]	2
	3x380 V AC	50 Hz	Z78y + Z12a [22]	M
	3x380 V AC [28]	50 Hz	Z303p + Z12a [22]	N
	24 V AC	50 Hz	Z626f	A
	24 V DC	-		
	24 V AC	60 Hz		
	120 V AC	60 Hz	Z1a + Z11a	T
	110 V AC	60 Hz	Z1a + Z11a	B
	240 V AC	60 Hz	Z1a + Z11a	V
To connector [21]	230 V AC	50 Hz	ZK1a + ZK11a	5
	220 V AC	50 Hz		P
	3x400 V AC	50 Hz	ZK78y + ZK12a	7
	3x400 V AC [28]	50 Hz	ZK303p + ZK12a	6
	3x380 V AC	50 Hz	ZK78y + ZK12a	R
	3x380 V AC [28]	50 Hz	ZK303p + ZK12a	S
	24 V AC	50 Hz	ZK626f	C
	24 V DC	-		
	24 V AC	60 Hz		
	120 V AC	60 Hz	ZK1a + ZK11a	Z
	110 V AC	60 Hz	ZK1a + ZK11a	D
	240 V AC	60 Hz	ZK1a + ZK11a	W

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Order code **492. X - X X X X X / X X**

Switching-off torque [31) 35)]	Max. load torque		Operating speed [34) 35)]	Electric motor				
				50 Hz		60 Hz *	AC/DC	
	ON - OFF duty [32)]	Modulating duty [33)]		230 V 220 V 24 V	3x400 V 3x380 V	240 V 120 V 110 V 24 V	24 V	
19 000 - 25 000 N	21 500 N	17 200 N	10 mm/min	•	-	•	•	A
			20 mm/min	•	•	•	•	B
			32 mm/min	•	•	•	•	M
			40 mm/min	•	•	•	•	C
			50 mm/min	-	•	-	-	S
			60 mm/min	-	•	-	-	D
15 000 - 20 000 N	17 000 N	13 600 N	10 mm/min	•	-	•	•	H
			20 mm/min	•	•	•	•	K
			32 mm/min	•	•	•	•	N
			40 mm/min	•	•	•	•	Q
			50 mm/min	•	-	•	•	S
				-	•	-	-	T
			60 mm/min	•	-	•	•	D
				-	•	-	-	V
			80 mm/min	-	•	-	-	E
			100 mm/min	-	•	-	-	F
12 000 - 16 000 N	14 000 N	11 200 N	10 mm/min	•	-	•	•	J
			20 mm/min	•	•	•	•	L
			32 mm/min	•	•	•	•	P
			40 mm/min	•	•	•	•	R
			50 mm/min	•	-	•	•	T
				-	•	-	-	U
			60 mm/min	•	-	•	•	V
				-	•	-	-	W
			80 mm/min	•	-	•	•	E
				-	•	-	-	Y
			100 mm/min	-	•	-	-	Z
9 000 - 12 500 N	10 500 N	8 400 N	120 mm/min	-	•	-	-	G

Operating stroke			
without transmitter [41)]	with transmitter	combined strokes - with potentiometer only	
10 mm	8 mm	-	A
	10 mm	-	B
16 mm	12.5 mm	-	C
	16 mm	-	D
32 mm	20 mm	-	E
	25 mm	-	F
	32 mm	-	G
64 mm	40 mm	-	H
	50 mm	-	I
	64 mm	-	J
80 mm	80 mm	-	K
100 mm	100 mm	-	L
-	-	80 - 85 mm	W

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Notes:

10) Climate resistance according to ISO 9223/ EN ISO 12944-2.
11) IP 68 -10 m / 48 hours. Dimensional drawings on request.
21) The version with connector in -40° C only.
22) Version 3x400 V (380 V) with additional position switches and double transmitter in agreement with the producer.
31) Required switch-off thrust must be stated in the order. If not specified it is adjusted to the maximum thrust of the chosen range.
32) With this torque, it is possible to load the actuator under duty cycle S2-10 min, or S4-25 %, 6-90 cycles per hour.
33) By this torque is possible to load the actuator under duly cycle S4-25 %, 90- 1 200 cycles per hour.
34) The deviation of the operating speed of the DC electric motor ranges from -50% to +30%, depending on the load.
35) For frequency 60 Hz, the operating speed increases 1.2 times and the max. torque decreases 0.8 time.
41) The version without any transmitter can have its stroke adjusted from 0 up to maximum stroke (10 mm, 32 mm, 80 mm, 100 mm).
51) Not valid for temperatures of -60°C.
52) CPT - capacitive transmitter, DCPT 3M - electronic contactless transmitter.
59) Active position transmitter for the 24 V AC/DC version is available only upon agreement with the producer.
62) Thread in the coupling must be specified in the order bywords.
66) Local control diagram for -60°C on request from the manufacturer.

Order code **492. 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 1000 Ω		E
			1 x 2 000 Ω		F
	Double	-	2 x 100 Ω	Z6c / ZK6c	K
			2 x 1000 Ω		N
			2 x 2 000 Ω		P
Electronic position transmitter [51]	Passive	2-wire	4 - 20 mA	Z10g / ZK10g	S
		3-wire	0 - 20 mA	Z257j / ZK257j	T
			4 - 20 mA		V
			0 - 5 mA		Y
	Active [59]	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 voltage [51]	Passive	3-wire	0 - 10 V	Z257k / ZK257k	D
	Active [59]		0 - 10 V	Z260k / ZK260k	R
Current [51] [52] CPT	Passive	2-wire	4 - 20 mA	Z10g / ZK10g	I
	Active [59]	2-wire	4 - 20 mA	Z269r / ZK269r	J
Current [51] [52] DCPT 3M	Passive	2-wire	4 - 20 mA	Z10g / ZK10g	2
	Active [59]		4 - 20 mA	Z269r / ZK269r	3

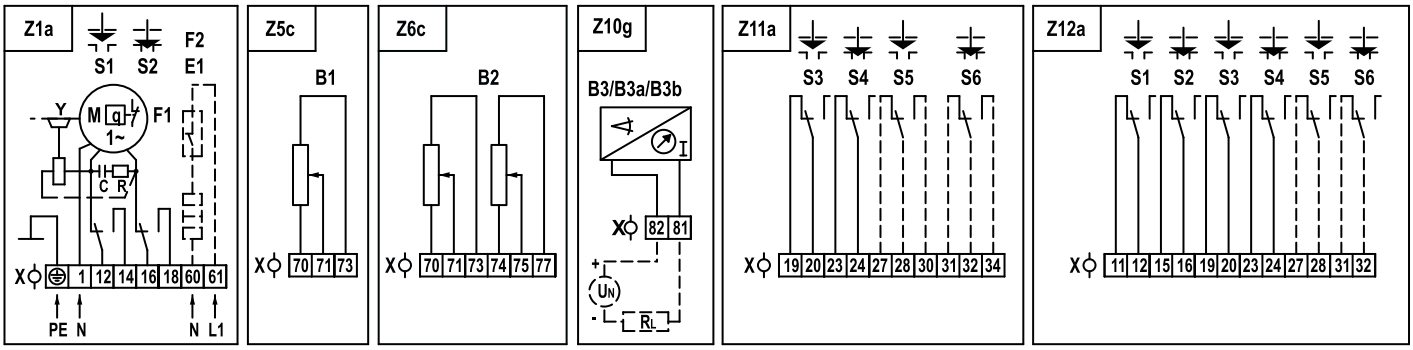
Mechanical connection		Operating stroke	Connecting height	Thread of stem [62]	Dimensional drawing	
Direct / flange ISO 5210	F07	40 mm	50 / -	M16x1.5-25	P-1245/A	A
	F10	60 mm	55 / -	M20x1.5-30	P-1245/B	B
Flange		80 / 100 mm	110 / Ø 65 H12	M20x1.5-34 M16x1.5-34 M14x2-34 7/8"-UN-9	P-1246a/A	D
			112 / Ø 80 H12		P-1246a/B	E
			125 / Ø 68		P-1246a/C	3
Flange + 4-pillars			110 / Ø 65 H12		P-2000a/A	F
			112 / Ø80; 4x Ø13		P-2000a/B	G
Pillars		80 / 100 mm	92 / -		P-1247a/A	J
			30 / -		P-1247a/B	K
			74 / -		P-1247a/C	L
			126 / -		P-1247a/D	M
		max. 80 mm	70 / -		P-1247a/E	7
Flange + 4-pillars		80 / 100 mm	92 / 2xM16		P-2001a/A	N
			30 / 2x M20		P-2001a/B	P
			74 / 2x M20		P-2001a/C	Q
			126 / 2x M20		P-2001a/D	R

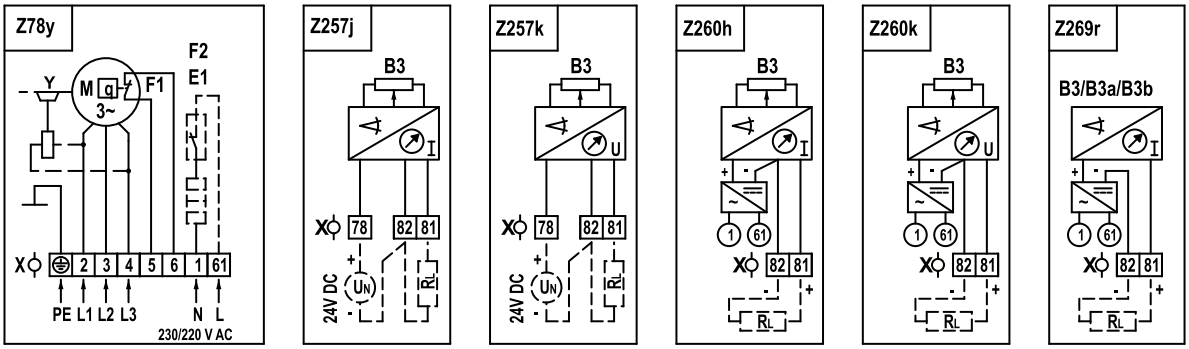
Additional equipment		Wiring diagrams					
		230 V AC	3x400 V AC	24 V AC	24 V DC		
A	2 addilional position switches [22]	Z11a/ZK11a Z633/ZK633	Z12a/ZK12a Z632c/ZK632c Z632b/ZK632b	Z626f/ZK626f Z634h/ZK634h		0	0
E	Space heater with thermal switch	Z1a/ZK1a Z633/ZK633	Z78y/ZK78y Z632c/ZK632c Z632b/ZK632b Z303p/ZK303p	Z626f/ZK626f Z634h/ZK634h		0	2
C	Space heater with thermal switch	Z633/ZK633	Z632c/ZK632c Z632b/ZK632b	Z634h/ZK634h		0	7
D	Space heater	Z1a/ZK1a Z633/ZK633	Z78y/ZK78y Z632c/ZK632c Z632b/ZK632b Z303p/ZK303p	Z626f/ZK626f Z634h/ZK634h		1	5
G	Adjustment of switch-off thrust to required value					2	5
H	Gold coated contacts of microswitches, details after consultation with producer					4	0

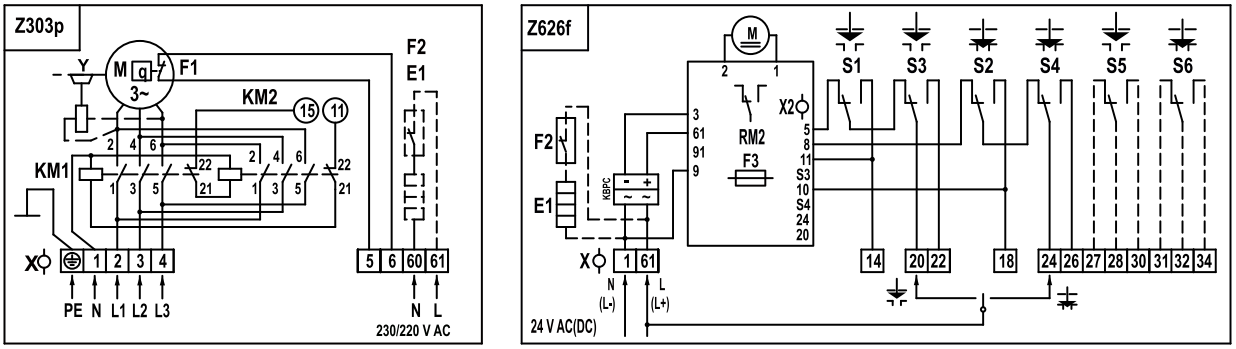
Allowed combination and code: A+E=04, A+C=08, C+E=10, A+C+E=12, A+D=16, C+D=17, A+C+D=18, A+G=26, E+G=27, C+G=28, D+G=29, A+E+G=30, A+C+G=31, A+D+G=32, C+E+G=33,C+D+G=34, A+D+E+G=35, A+C+D+G=36

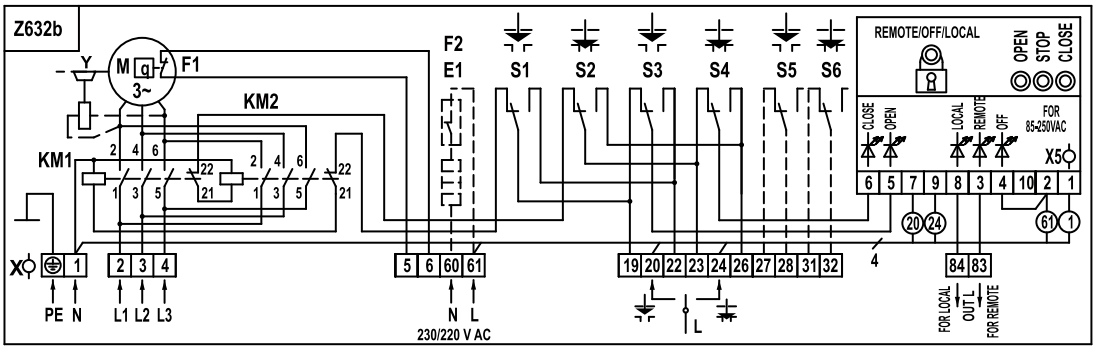
Wiring diagrams

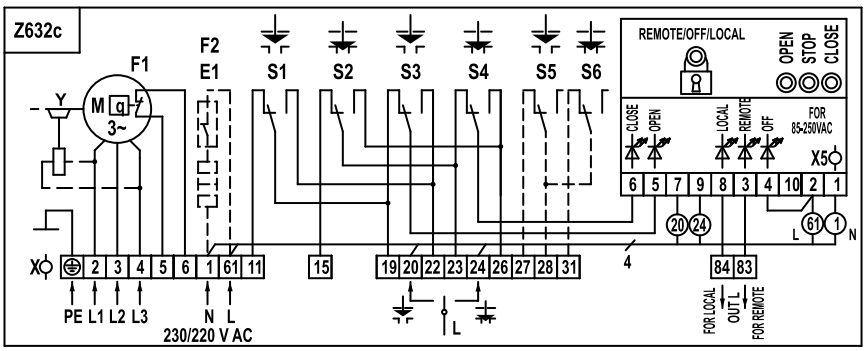
Terminal board connection

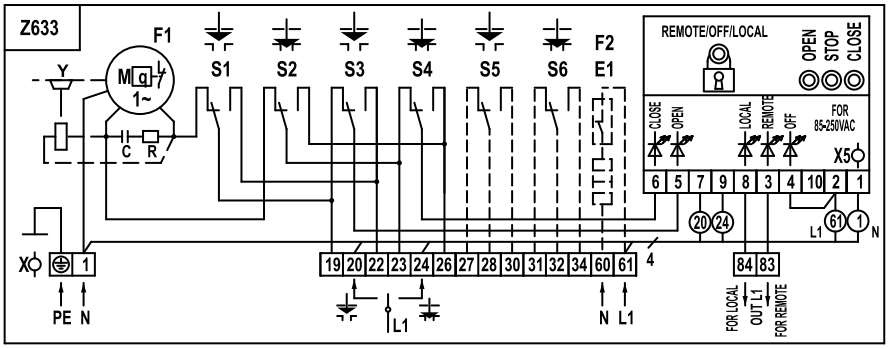


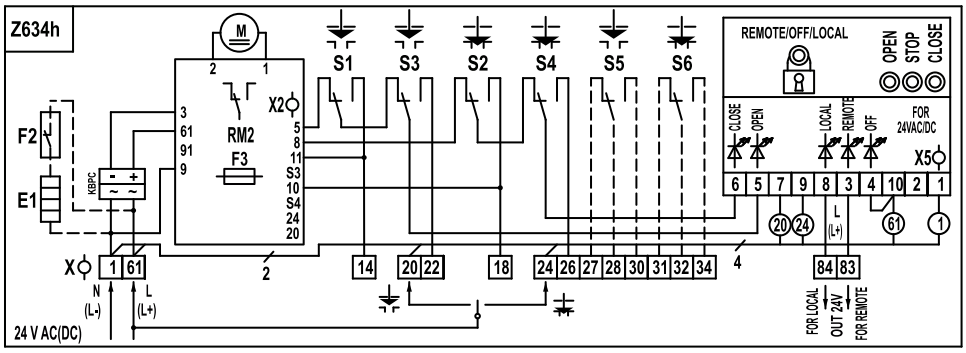




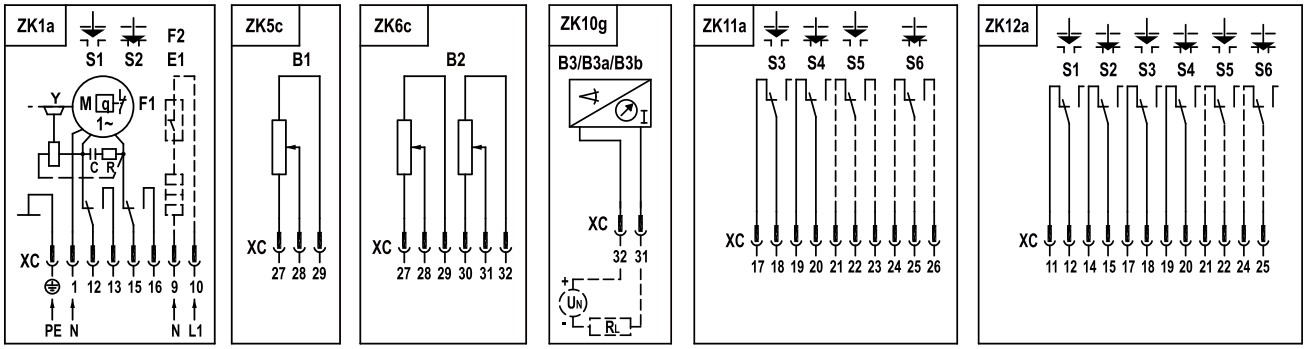


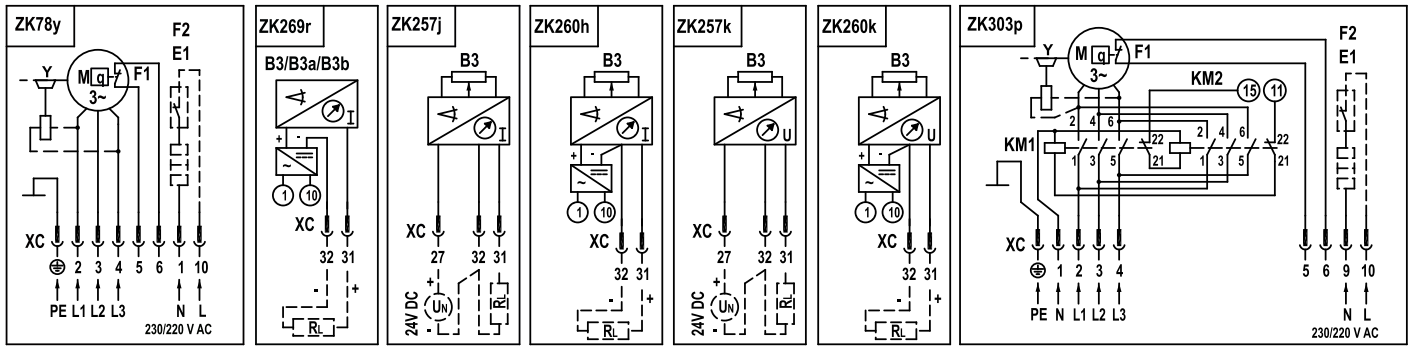


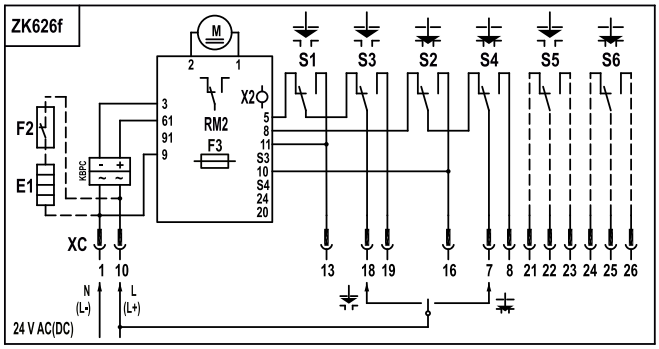




Connector connection

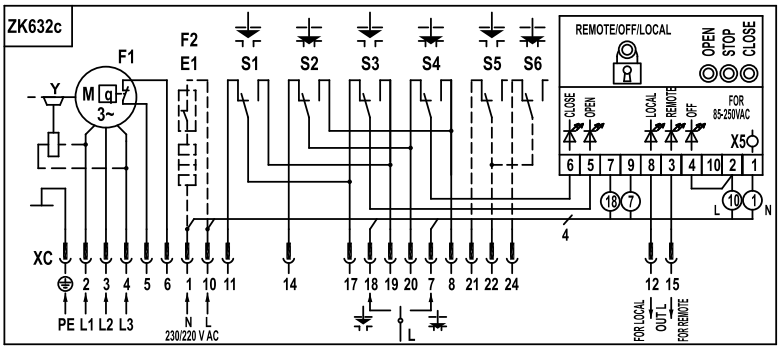


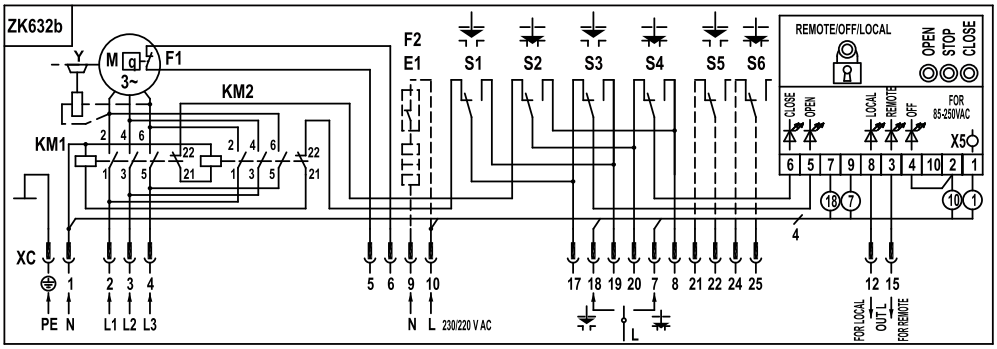


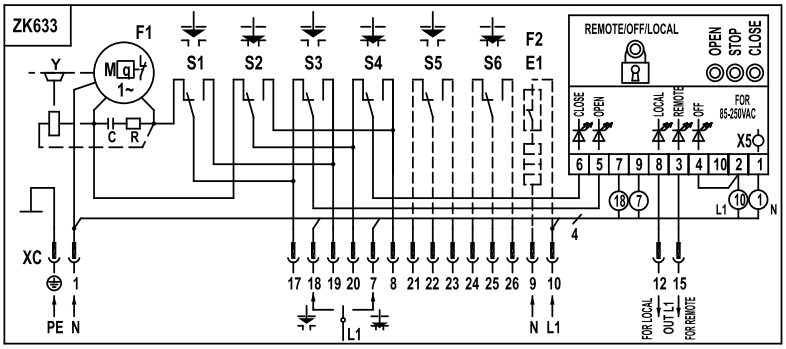


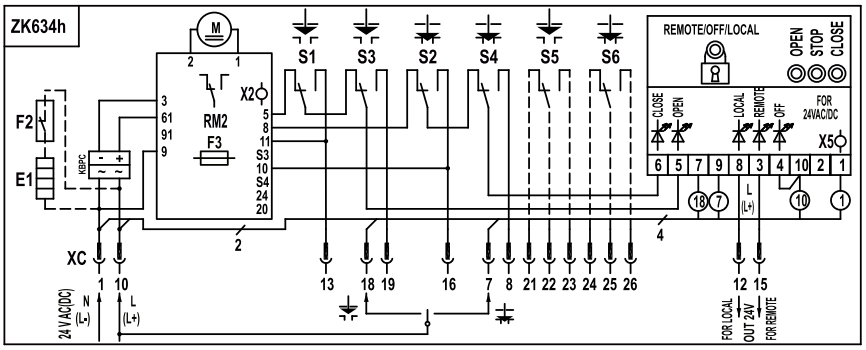
Wiring diagrams

Connector connection









Electric connection:

- to terminal board with 24 clamps, wire cross section 1.5 mm ^{2}
- cez 3 káblové vývodky: - M20x1,5 for cable diameter 8 až 14,5 mm (1 pes) *
- M16x1,5 for cable diameter 6 až 10,5 mm (2 pes) *

* cable diameters may vary depending on the heat resistance of the gland

Notes:

1. Wiring connection is limited by max. number of 24 terminals.
2. Electric motors are typically equipped with thermal protection.
3. Other servo drive connections not listed in the catalog are possible upon agreement with the manufacturer.

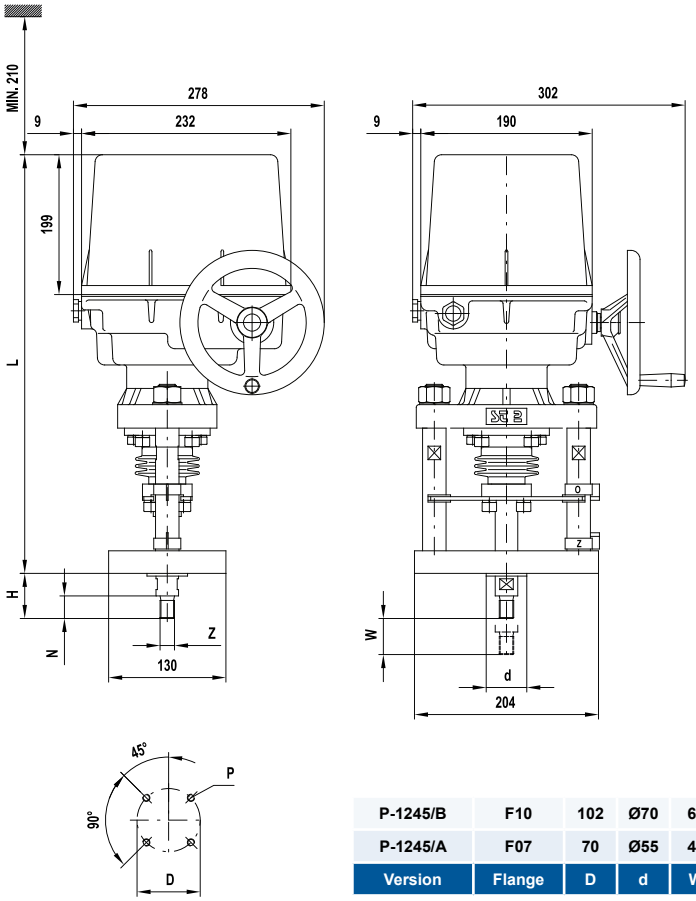
Legend:

Z1a/ZK1a.....connection of 1-phase electric motor
Z5c/ZK5c.....connection of single potentiometer
Z6c/ZK6c.....connection of double potentiometer
Z10g/ZK10g.....connection of CPT or electronic position transmitter - 2 - wire, passive
Z11a/ZK11a.....connection of position switches for 1-phase electric motor
Z12a/ZK12a.....zapojenie momentových a polohových spínačov a prídavných polohových spínačov pre 3-fázový elektromotor
Z78y/ZK78y.....connection of 3-phase electric motor
Z257j/ZK257j.....connection of electronic position transmitter - 3 - wire, passive
Z257k/ZK257k...connection of electronic position transmitter - 3 - wire, passive
Z260k/ZK260k...connection of electronic position transmitter - 3 - wire, active
Z260h/ZK260h...connection of electronic position transmitter - 3 - wire, active
Z269r/ZK269r.....connection of CPT or electronic position transmitter - 2 wire - active
Z303p/ZK303p....connection of 3 -phase electric motor with reverse contactor
Z626f/ZK626f.....connection of electromotor 24 V AC/DC, reverse board 24 V, thrust switches, position switches, and additional position switches
Z632b/ZK632b...connection of 3-phase electromotor, reverse contactors, thrust switches, position switches, additional position switches and local control unit
Z632c/ZK632c...connection of 3-phase electromotor, thrust switches, position switches, additional position switches and local control unit
Z633/ZK633.....connection of electromotor, thrust switches, position switches, additional position switches and local control unit
Z634h/ZK634h...connection of electromotor 24 V AC/DC, reverse board 24 V, thrust switches, position switches, additional position switches and local control unit

Legend:

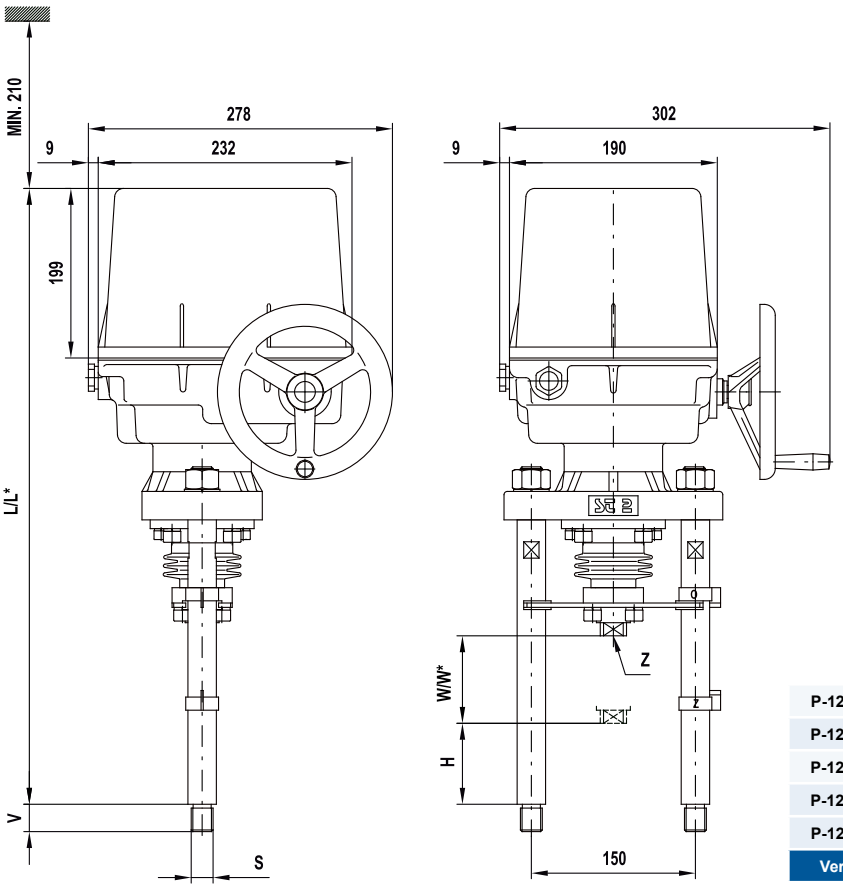
B1.....single potentiometer
B2.....double potentiometer
B3.....CPT or electronic position transmitter
B3a.....capacitive current transmitter (CPT)
B3b.....DCPT current transmitte
S1.....torque switch „open”
S2.....torque switch „closed”
S3.....position switch „open”
S4.....position switch „closed”
S5.....additional position switch „open”
S6.....additional position switch „closed”
M.....electric motor
C.....capacitor
E1.....space heater
F1.....motor’s thermal protection
F2.....space heater’s thermal switch
F3.....reversing board fuse
X.....terminal board
X2.....reversing board terminal block
X5.....local control terminal block
R.....reducing resistor
R_L.....loading resistor
I.....output current signal
RM2.....reversing board 24 V
U_N.....supply voltage of the transmitter source
KM1, KM2.....reversing contactors
Y.....motor’s brake
OPEN/STOP/CLOSE.....local control buttons
REMOTE/OFF/LOCAL....local control selection button

Dimensional drawing ST 2



Version	Flange	D	d	W	L	H	N	P	Z
P-1245/B	F10	102	Ø70	60	535	55	30	M10	M20x1.5
P-1245/A	F07	70	Ø55	40	515	50	25	M8	M16x1.5

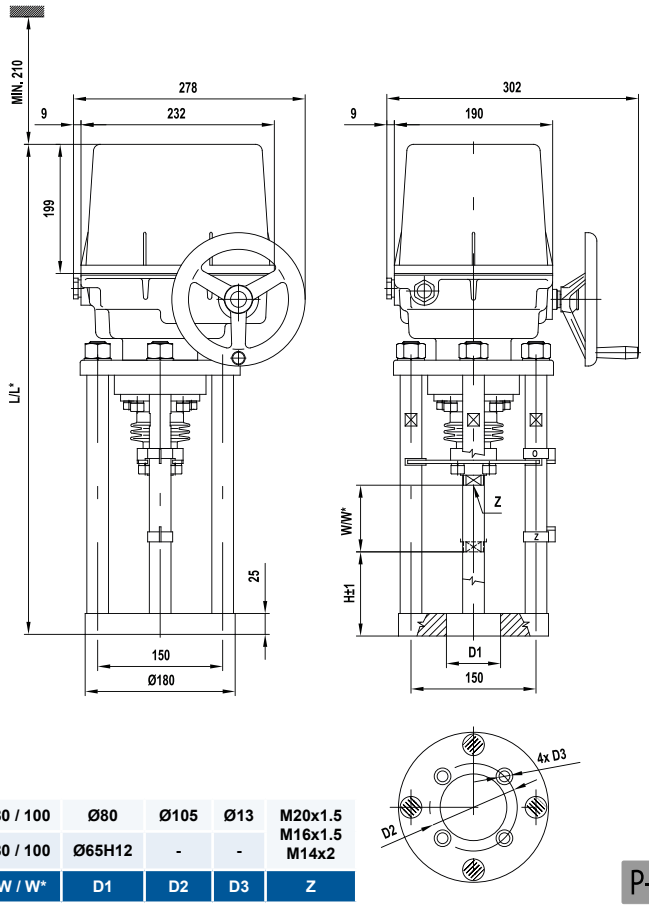
P-1245



Version	H	L / L*	S	V	W / W*	Z
P-1247a/E	70	614	M20	25	max. 80	M20x1.5 M16x1.5
P-1247a/D	126	666 / 686	M20	25	max. 80 / 100	
P-1247a/C	74	614 / 634	M20	25	max. 80 / 100	
P-1247a/B	30	569 / 589	M20	25	max. 80 / 100	
P-1247a/A	92	632 / 652	M16	40	max. 80 / 100	

P-1247a

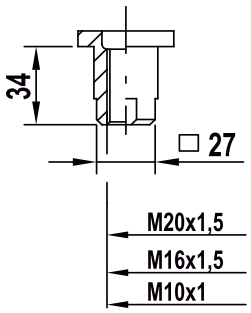
Dimensional drawing ST 2

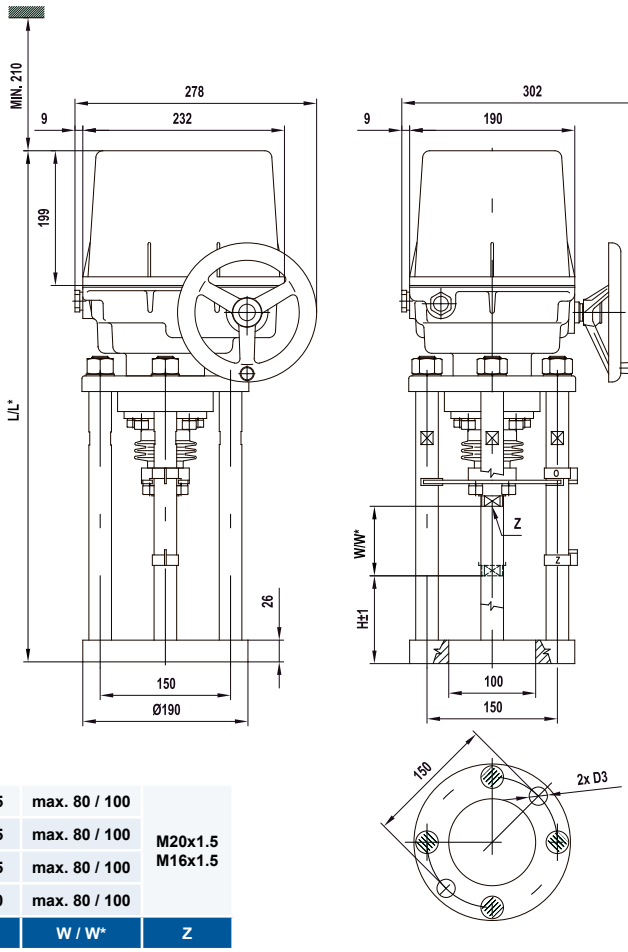


Version	L / L*	H	W / W*	D1	D2	D3	Z
P-2000a/B	653 / 673	112	80 / 100	Ø80	Ø105	Ø13	M20x1.5 M16x1.5 M14x2
P-2000a/A	653 / 673	110	80 / 100	Ø65H12	-	-	

P-2000a

Rozmery spojky

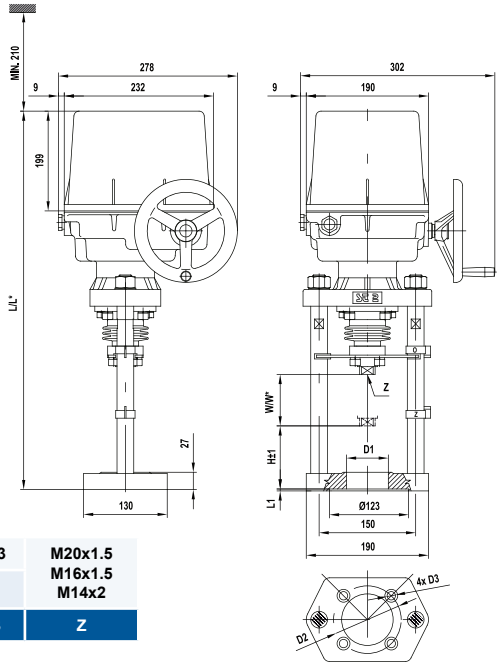




Version	H	L / L*	D3	V	W / W*	Z
P-2000a/D	126	666 / 686	Ø20.5	25	max. 80 / 100	M20x1.5 M16x1.5
P-2000a/C	74	614 / 634	Ø20.5	25	max. 80 / 100	
P-2000a/B	30	570 / 590	Ø20.5	25	max. 80 / 100	
P-2000a/A	92	632 / 652	Ø16.5	40	max. 80 / 100	

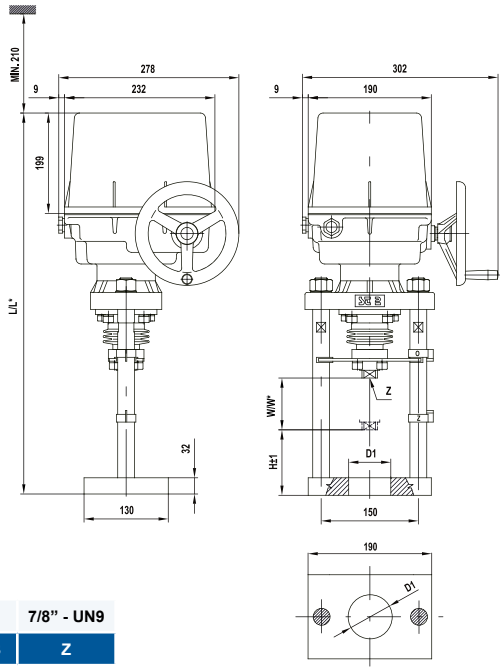
P-2001a

Dimensional drawing ST 2



P-1246a/B	653 / 673	2	112	80 / 100	Ø80	Ø105	Ø13	M20x1.5 M16x1.5 M14x2
P-1246a/A	653 / 673	3	110	80 / 100	Ø65H12	-	-	
Version	L / L*	L1	H	W / W*	D1	D2	D3	Z

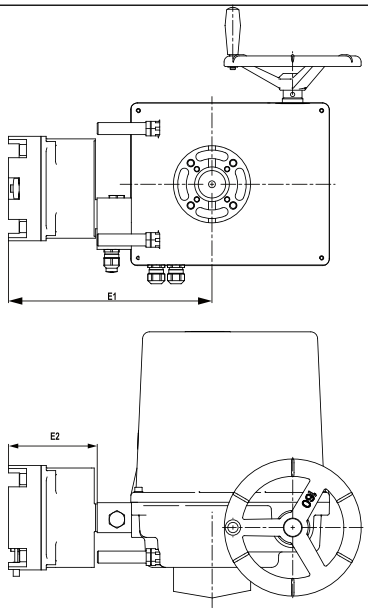
P-1246a/A,B



P-1246a/C	665 / -	-	32	125	80 / -	Ø68	-	-	7/8" - UN9
Version	L / L*	L1	M	H	W / W*	D1	D2	D3	Z

P-1246a/C

Vyhotovenie ST 2 s miestnym ovládaním



ST 2	P-2148/H	198	103.5
Type	Version	E1	E2

P-2148/H