STANDARD
SP 2.3

STANDARD EQUIPMENT

- Voltage 230 V AC
- Terminal board connection
- 2 torque switches
- 2 position switches
- Mechanical stop ends
- Mechanical connection - flange ISO 5211
- Mechanical position indicator
- Manual control
- Enclosure protection IP 67

Specification table SP 2.3

Order code **283. X - X X X X X / X X**

Climate Resistance	Ambient Temperature	Corrosivity Category [10]	Enclosure	
Standard	-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

Next page

Order code **283. X - X X X X X / X X**

Switching-off Torque	Max. Load Torque		Electric Motor 230 V, 220 V AC		Electric Motor 3x380, 3x400 V AC		24 V DC	
	ON - OFF Duty [32]	Modulating Duty [33]	Operating Time	[W]	Operating Time [34]	AC [W]	DC [W]	
290 Nm	250 Nm	200 Nm	20 s/90°	60	20 s/90°	90	93	0
			40 s/90°		40 s/90°			1
			80 s/90°	20	80 s/90°			2
			160 s/90°		-			3

Operating Angle		
With Stop Ends	60°	A
	90°	B
	120°	C
	160°	D
Without Stop Ends	60°	K
	90°	L
	120°	M
	160°	N
	360°	P
	> 0° ≤ 360° [41]	Z

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

Next page

Order code **283. X - X X X X X / X X**

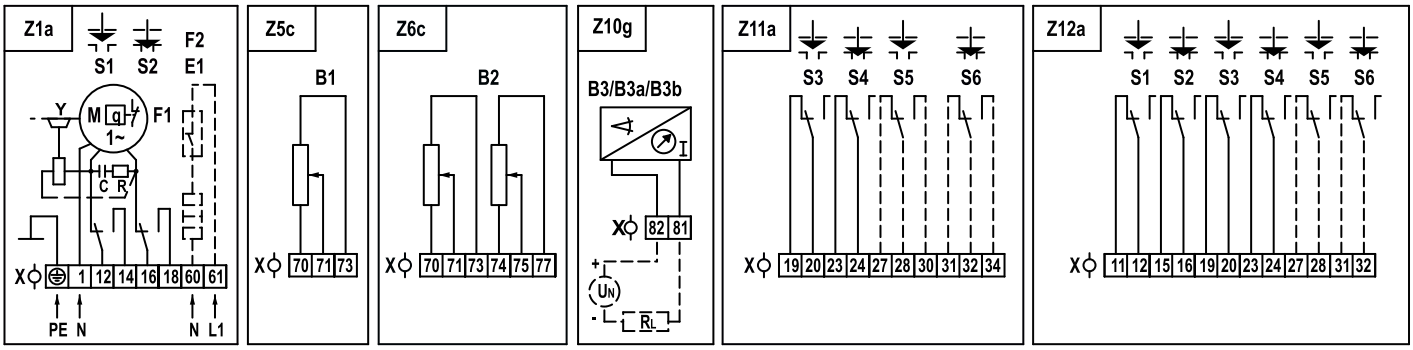
Mechanical Connection		Coupling Shape ISO	Coupling Shape Dimension	Dimensional Drawing	
Flange ISO 5211	F05/07 [61]	D-22	22x22	P-1147 P-2148/F	A
		L-22			B
		D-17	17x17		E
		L-17			F
		H-13	13x19 [62]		N
		H-17	17x25 [62]		G
		V-20	Ø20 [62]		9
		V-28	Ø28 [62]		H
		-	- [65]		M
		V-45.5	Ø45.4 [63]		V
	F10	H-22	22x32 [62]		C
		V-42	Ø42 [62]		D
Stand, Output shaft, Key		E03	Ø40	P-1395, P-1413/A P-2148/F	J
Stand + Level		-	-		K
Stand + Lever + Pull-rod TV 40-1/20		-	-		L

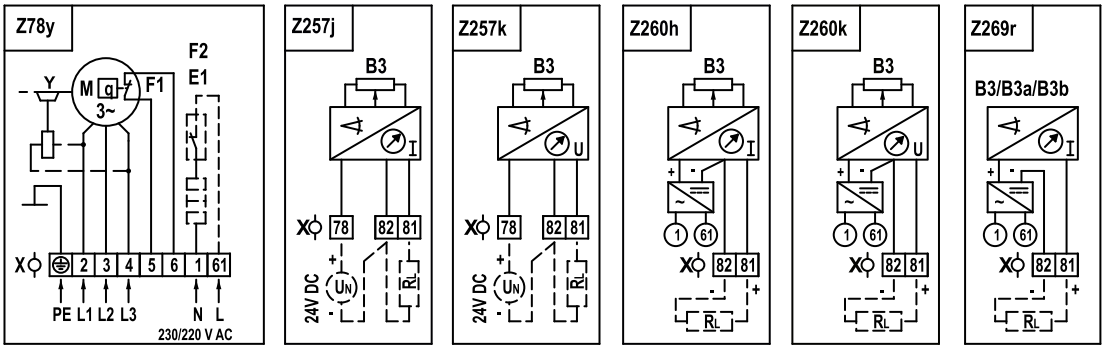
Additional Equipment		Wiring Diagrams 230 V AC	3x400 V AC	24 V AC	24 V DC		
A	2 additional position switches [22]	Z11a/ZK11a Z633/ZK633	Z12a/ZK12a Z632b/ZK632b Z632c/ZK632c	Z626f/ZK626f Z634h/ZK634h		0	0
E	Space heater with thermal switch	Z1a/ZK1a Z633/ZK633	Z78y/ZK78y Z303p/ZK303p Z632b/ZK632b Z632c/ZK632c	Z626f/ZK626f Z634h/ZK634h		0	2
C	Electric local controls [66]	Z633/ZK633	Z632b/ZK632b Z632c/ZK632c	Z634h/ZK634h		0	7
D	Space heater	Z1a/ZK1a Z633/ZK633	Z78y/ZK78y Z303p/ZK303p Z632b/ZK632b Z632c/ZK632c	Z626f/ZK626f Z634h/ZK634h		1	5
H	Gold coated contacts of microswitches, details after consultation with the manufacturer					4	0
Permitted combination code: A+E=04, A+C=08, E+C=10, A+E+C=12, A+D=16, C+D=17, A+C+D=18							

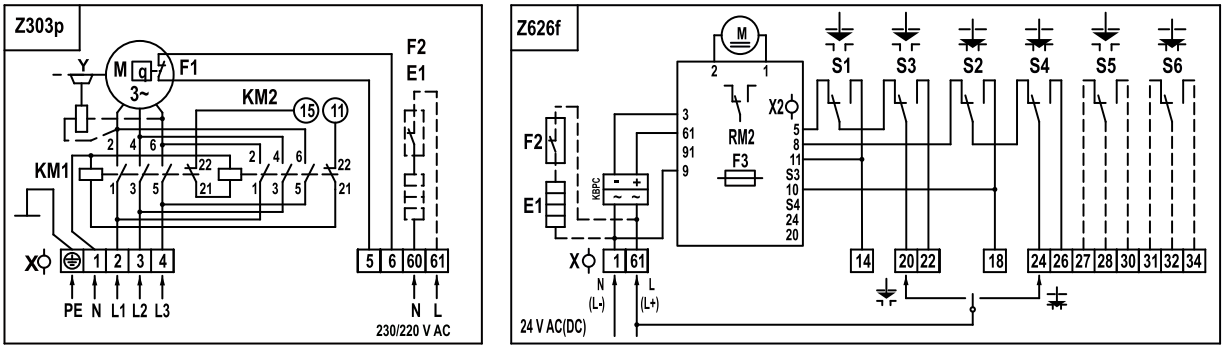
Notes:
10) Climate resistance according to ISO 9223 / EN ISO 12944-2.
11) IP 68-10 m / 48 hours.
21) The version with connector in -40° C only.
22) Version 3x400 V (380 V) with additional position switches and double transmitter in agreement with the manufacturer.
28) Version with reversing contactors.
32) The actuator can be loaded with this torque under duty cycle S2 – 10 min, or S4 – 25%, 6–90 cycles per hour.
33) The actuator can be loaded with this torque under duty cycle S4 – 25 %, 90–1 200 cycles per hour.
34) Deviation of operating speed for the DC electric motor is from -50% up to +30% depending on load. For other voltages the deviation is ± 10%.
35) For frequency 60 Hz, the operating speed increases 1.2 times and the max. torque decreases 0.8 time.
41) Valid for version without transmitter only
51) Not valid for temperatures bellow -60°C.
52) CPT - capacitive transmitter, DCPT 3M - electronic contactless transmitter.
59) Active position transmitterfor version 24 V AC/DC only after agreement with producer.
61) Recommended load torque for F10-max. 500 Nm.
62) Connection bore directly within output shaft (without replaceable insert).
63) Bore for replaceable insert
65) Interchangeable insert. The shape of the opening of the connecting part as agreed.
66) Local control diagram for -60°C on request from the manufacturer.

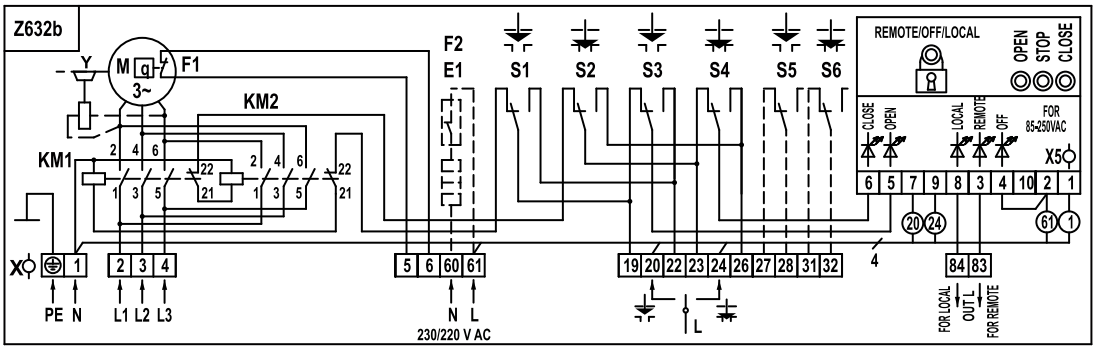
Wiring diagrams

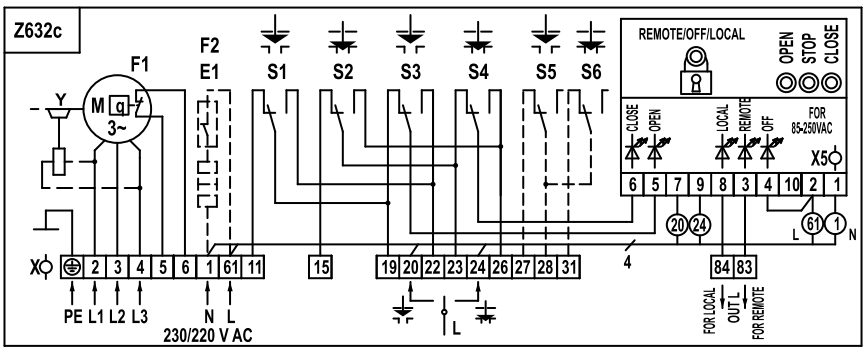
Terminal board connection

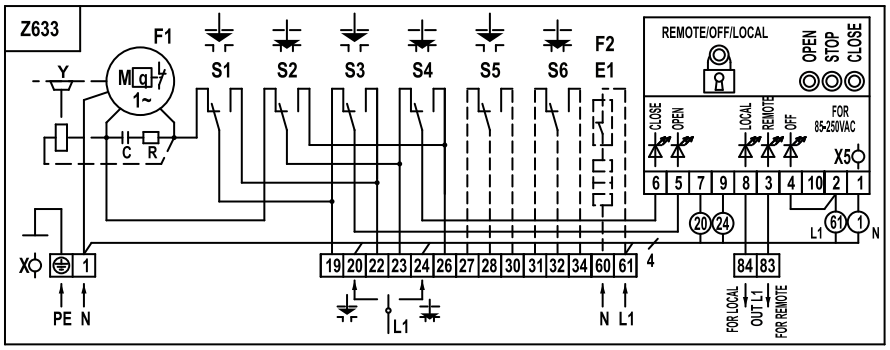


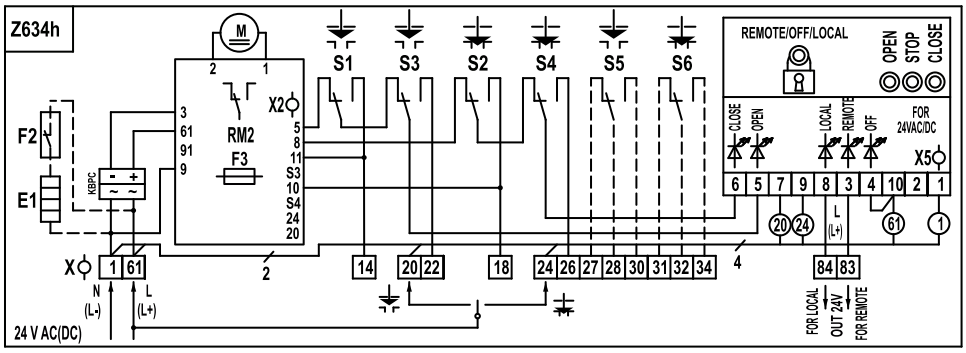




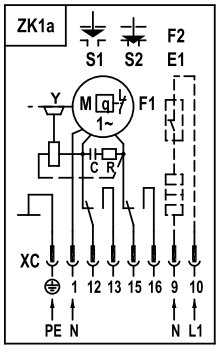


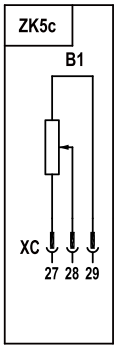


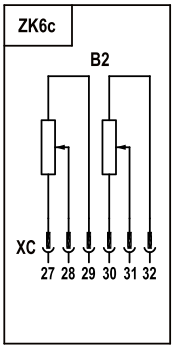


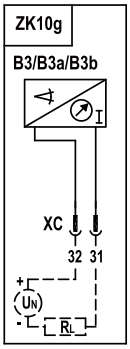


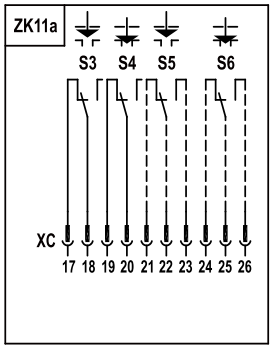
Connector connection

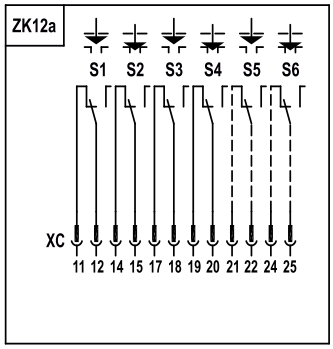


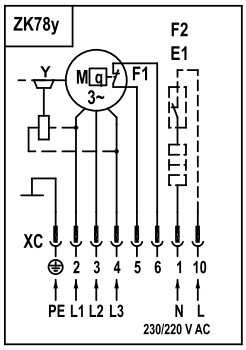


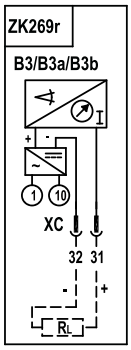


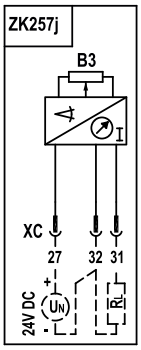


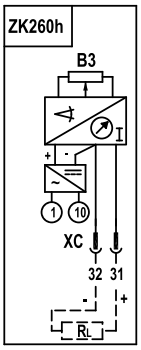


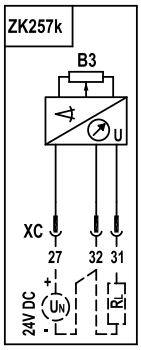


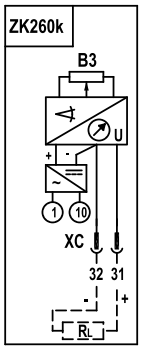


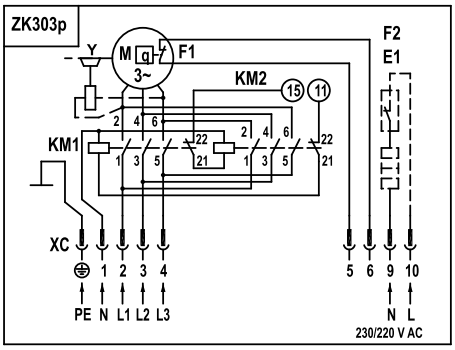


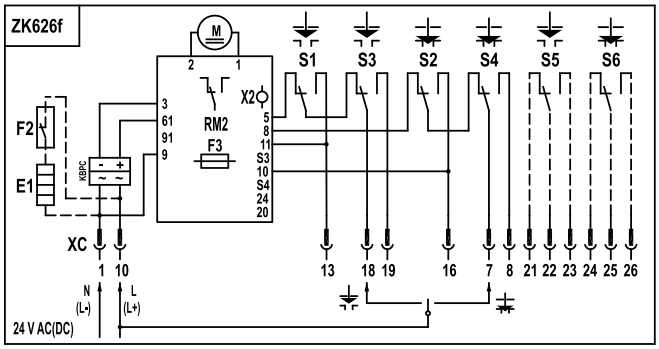






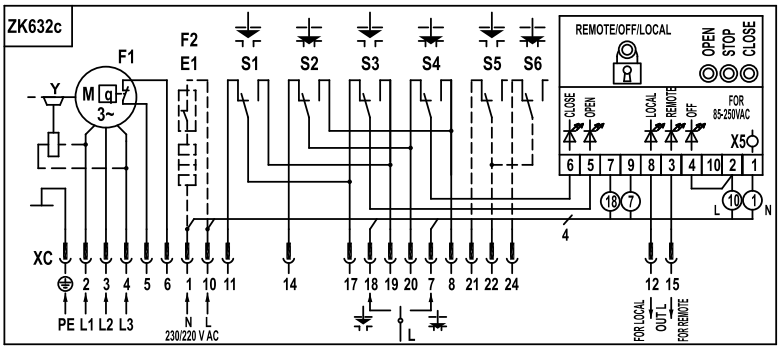


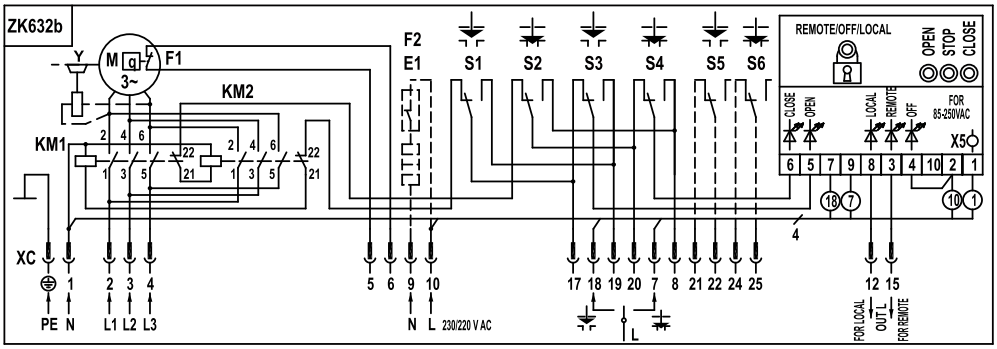


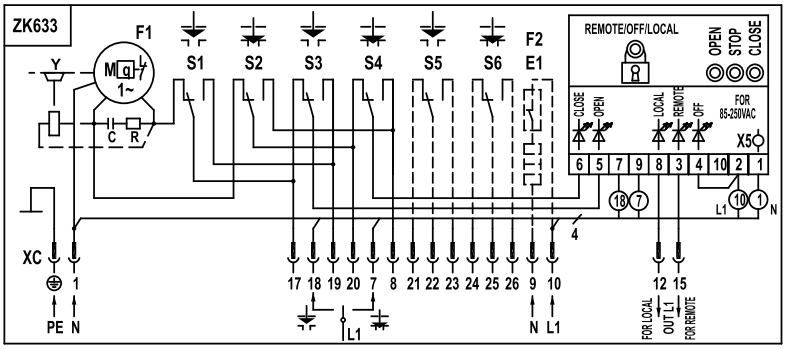


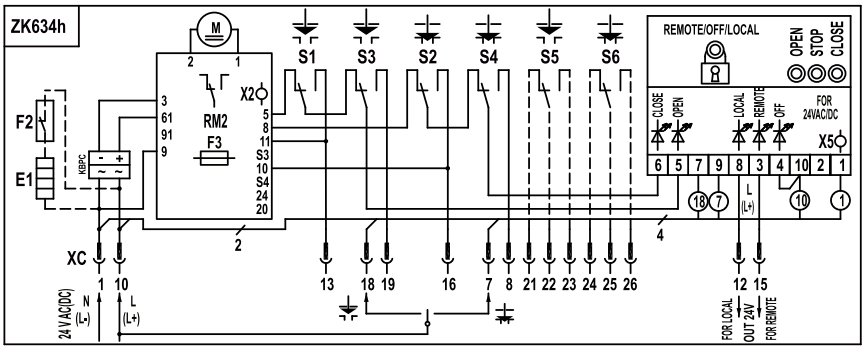
Wiring diagrams

Connector connection









Electric connection:

- to terminal board with 24 clamps, wire cross section 2.5 mm^2
- via 3 cable glands: - M20x1 .5 for cable diameter 8 to 14 .5 mm (1 piece)*
  - M16x1 .5 for cable diameter6 to 10.5 mm (2 pes.)*
- connector max. 32 terminals
- cross-section of the connecting wire 0.5 mm^2

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

Notes:

1. The connection is limited by the number of terminals 24 on the actuator terminal block.
2. The electric motors are equipped with thermal protection as standard..
3. Other connections of servo drives than those listed in the catalog are possible after agreement with the manufacturer.

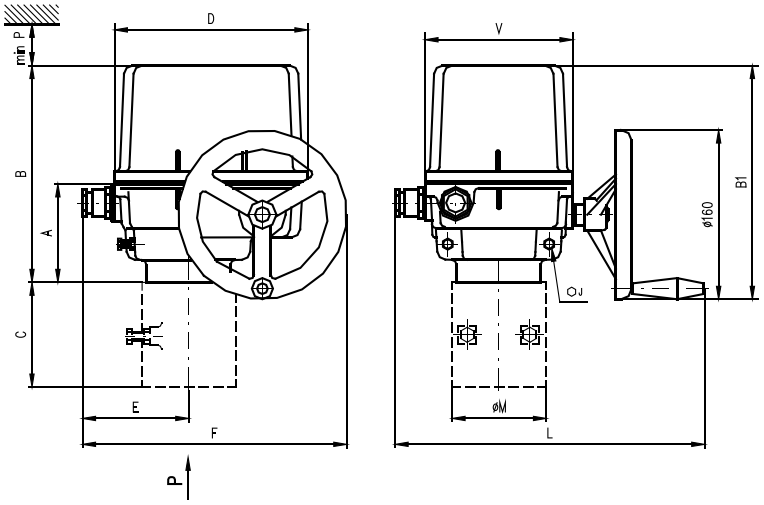
Legend:

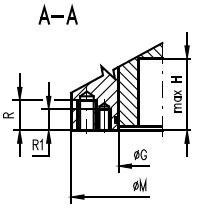
Z1a/ZK1a.....connection of 1-phase electric motor
Z5c/ZK5c.....connection of single potentiometer
Z6c/ZK6c.....connection of double potentiometer
Z10g/ZK10g.....connection of CPT or electronic position transmitter - 2 - wire, passive
Z11a/ZK11a.....connection of position switches for 1-phase electric motor
Z12a/ZK12a.....connection of torque, position, and additional position switches for 3-phase electric motor
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
Z626f/ZK262f....connection of 24 V AC/DC electric motor, torque switches, position switches, and additional position switches
Z632c/ZK632c...connection of 3-phase electric motor, torque switches, position switches, additional position switches and local control unit
Z632b/ZK632b...connection of 3-phase electric motor, reversing contactors, torque switches, position and additional position switches and local control unit
Z633/ZK633.....connection of 1-phase electric motor, torque switches, position switches, additional position switches and local control unit
Z634h/ZK634h...connection of 24 V DC electric motor, reversing board, torque switches, position switches, additional position switches and local control unit

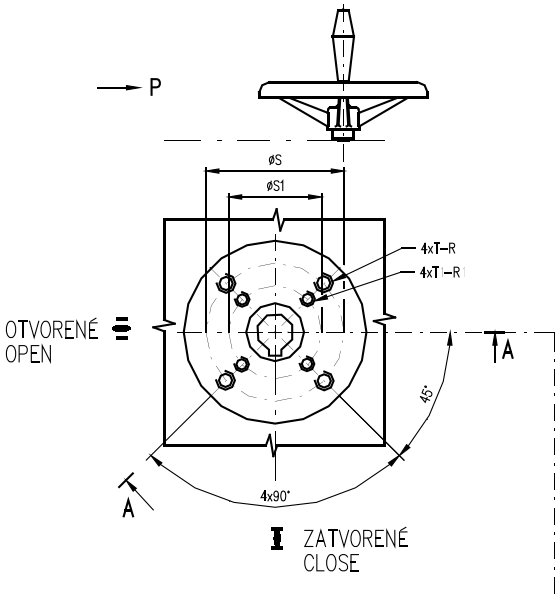
Legend:

B1.....single potentiometer
B2.....double potentiometer
B3.....CPT or electronic position transmitter
B3a.....capacitive current transmitter (CPT)
B3b.....DCPT current 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”
M.....electric motor
C.....capacitor
E1.....space heater
F1.....motor thermal protection
F2.....thermal switch of the space heater
F3.....reversing board fuse
X.....terminal board
X2.....reversing board terminal board
X5.....local control terminal board
R.....reducing resistor
R_L.....loading resistor
I.....output current signal
RM2.....24 V reversing board
U_N.....transmitter power supply voltage
Y.....motor brake
OPEN/STOP/CLOSE....local control buttons
REMOTE/OFF/LOCAL..local control selection button

Dimensional drawing SP 2.3







Main dimensions

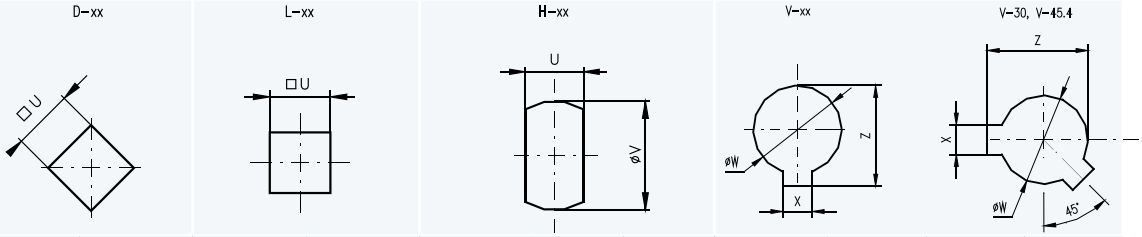
Type	A	B	B1	C	D	E	F	J	L	M	P	V
SP 2.3	117	316	323	112	232	119	294	22	330 446*	125	210	190

** valid for version with a connector*

Flange dimensions

Type	G	H	R	R1	S	S1	T	T1	Flange Size
SP 2.3	55	56	25	17	102	70	M10	M8	F10/F07

Coupling Shape

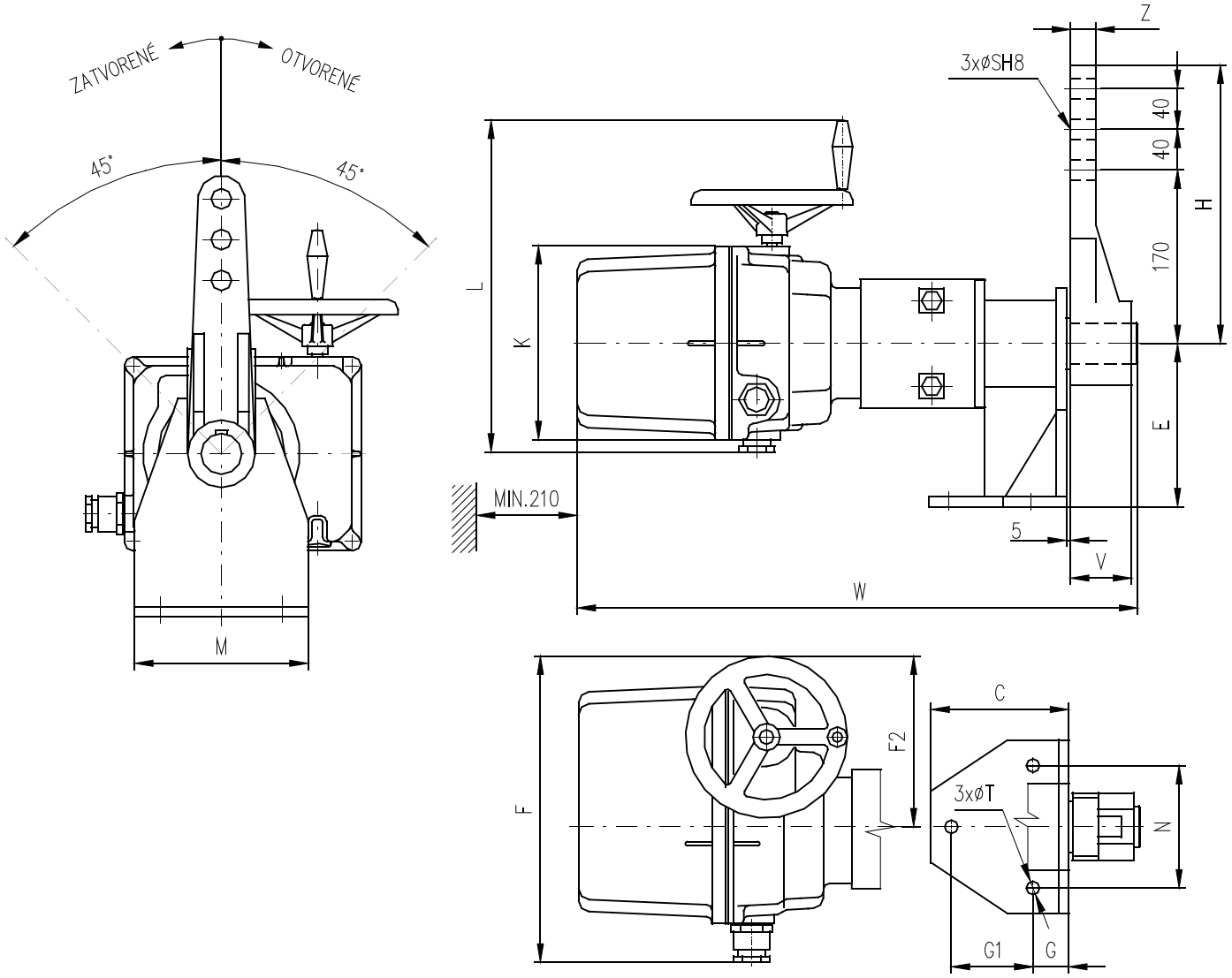


ISO	Dimension	ISO	Dimension	ISO	Dimension		ISO	Dimension		
D-xx	U	L-xx	U	H-xx	U	V	V-xx	W	Z	X
D-11	11	L-11	11	H-8	8	13	V-12	12	13.6	4.0
D-14	14	L-14	14	H-10	10	16	V-14	14	16.1	5.0
D-16	16	L-16	16	H-11	11	18	V-16	16	18.1	5.0
D-17	17	L-17	17	H-12	12	18	V-17	17	19.5	6.0
D-22	22	L-22	22	H-13	13	19	V-18	18	20.5	6.0
D-27	27	L-27	27	H-14	14	22	V-20	20	22.5	6.0
				H-16	16	22	V-22	22	24.5	6.0
				H-17	17	25	V-28	28	30.9	8.0
				H-19	19	28	V-30	30	32.5*	8.0
				H-22	22	32	V-32.2	32.2	35	6.5
				H-27	27	48	V-42	42	45.1	12.0
							V-45.4	45.4	48.8	10.0
							V-50	50	53.5	14.0

* The dimension has been adjusted to match the replaced component and may deviate from standard specifications.

P-1147

Dimensional drawing SP 2.3



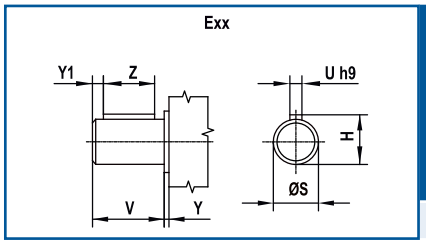
Main dimensions

Type	C	E	F	F2	G	G1	H	W	K	L	M	N	S	T	V	Z
SP 2.3	135	160	294	175	35	80	278	584	190	330 446*	170	120	20	13	56	20

** valid for version with a connector*

Version SP 2.3 with stand and free shaft

Coupling shape E

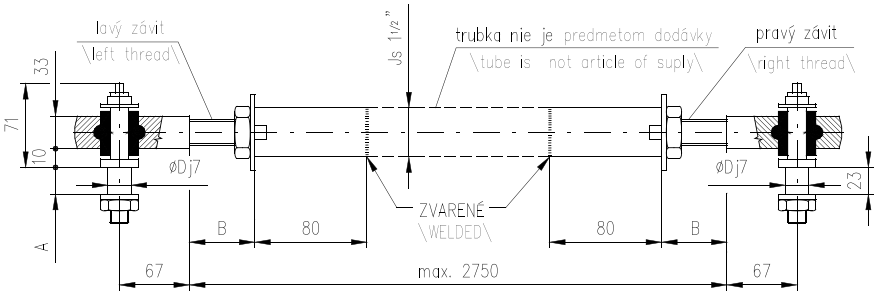


Type	H	S	U	V	Z	Y	Y1	Coupling Shape
SP 2.3	43.1	40	12	66	56	4	7	E03

P-1395

Rozmerové náčrty SP 2.3

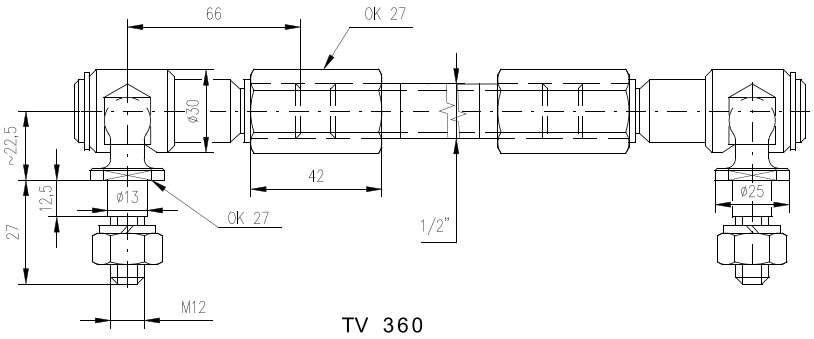
Pull-rod TV 40-1/20 and TV 50-1/25



P-1413/A	SP 2.3	TV 40-1/20	23	Min.30 Max.50	20
Version	Type	Pull-rod Version	A	B	D

P-1413

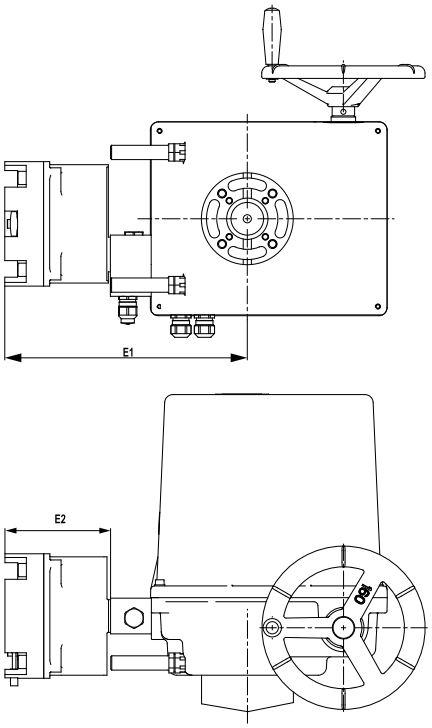
Pull-rod TV 360



TV 360

P-0210

Version of SP 2.3 actuators with electric local control



SP 2.3	198	103.5
Type	E1	E2

Other dimensions according to basic dimensional drawings

P-2148