STANDARD
SP 0.1

SPECIFICATION TABLE

- Voltage 230 V AC
- Terminal board connection
- 2 position switches
- Mechanical connection - flange ISO 5211
- Mechanical position indicator
- Enclosure Protection IP 65

Specification table SP 0.1

Order code **331. 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
Tropical dry and Dry	-25°C ... +55°C	C3	IP 67	6
Sea	-25°C ... +55°C	C4	IP 67	7

Electric Connection	Voltage	Wiring Diagram	
To terminal board	230 V AC	Z19a	0
	220 V AC		L
	24 V AC		3
To connector	230 V AC	ZK19a	5
	220 V AC		P
	24 V AC		8

Max. Load Torque [33]	Operating Time	Electric Motor	
16 Nm	10 s/90°	7.3 W	A
20 Nm (10 Nm) [30]		7.3 W	B
32 Nm	20 s/90°	7.3 W	C
	40 s/90°	4.7 W	D
	80 s/90°	2.75 W	F
50 Nm [31]	40 s/90°	7.3 W	J
	60 s/90°	4.7 W	K
	120 s/90°	2.75 W	M

Operating Angle [41]		
Without stop ends	60°	A
	90°	B
	120°	C
	360°	D
With stop ends [42]	90°	F

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Order code **331. 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	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		0 - 10 V	Z260k / ZK260k	R
Current [51] [52] CPT	Passive	2-wire	4 - 20 mA	Z10g / ZK10g	I
	Active	2-wire	4 - 20 mA	Z269r / ZK269r	J
Current [51] [52] DCPT 3M	Passive	2-wire	4 - 20 mA	Z10g / ZK10g	2
	Active		4 - 20 mA	Z269r / ZK269r	3

Mechanical Connection		Coupling Shape		Dimensional Drawing	
		ISO	Dimension		
Flange (ISO 5211)	F03 [61]	D-9	9x9	P-1234a	A
		L-9	9x9		1
		H-9	9x14		B
		SL-11	11x11		C
	F04	H-8	8x13		D
		D-11	11x11		E
		L-11	11x11		2
		H-11	11x18		F
		SL-11	11x11		G
		SV-22	Ø22		H
	F05	D-11	11x11		3
		L-11	11x11		4
		D-14	14x14		J
		L-14	14x14		5
		SL-11	11x11		K
		SV-22	Ø22		L
		H-14	14x18		N
Bracket (ISO 5211)	F07	V-12	Ø12	P-1493	6
		D-14	14x14		I
		L-14	14x14		7
		H-14	14x18		M
		H-8	8x13		P
		V-16	Ø16		8
		V-20	Ø20		9
Stand + Small lever [61]		-	-	P-1235a/A	R
Stand + Small lever + Pull-rod TV 160 [61]		-	-	P-1235a/A, P-0100	S
Stand + Large level		-	-	P-1235a/B	T
Stand + Large lever + Pull-rod TV 360		-	-	P-1235a/B, P-0210	U
Stand+Shaft		SL-11	11x11	P-1235a/C	V
Stand, Output shaft, Key		SV-22	Ø22		W

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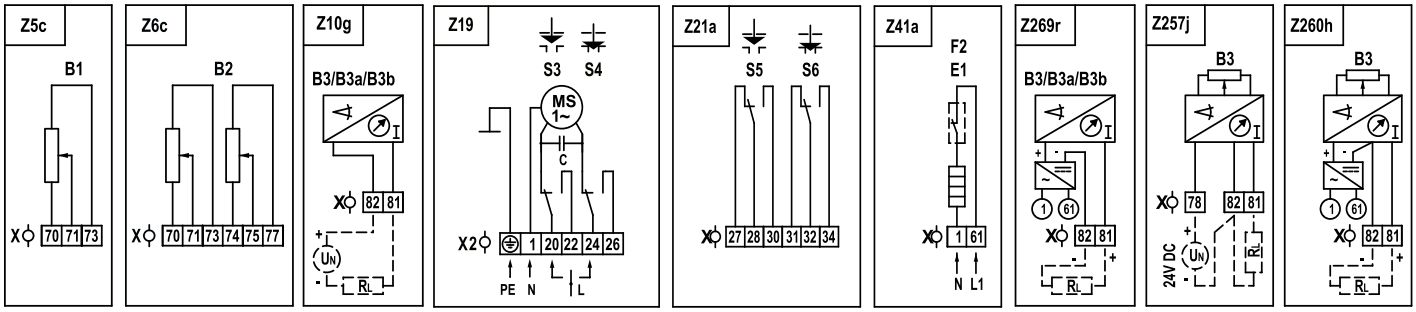
Order code **331. X - X X X X X / X X**

	Additional Equipment	Wiring Diagram		
A	**Disengagement without manual control** [70]	-	0	0
B	**Manual control** [71]	-	0	1
C	**2 additional position switches**	Z21a	0	2
D	**Space heater with thermal switch**	Z41a	0	3
E	**Space heater without thermal switch**	Z41a	0	4
H	**Gold coated contacts of microswitches, details after consultation with producer**	-	4	0
Permitted combination code: A+C=10, A+D=11, B+C=12, B+D=13, A+C+D=14, B+C+D=15, C+D=16, A+E=17, B+E=18, A+C+E=19, B+C+E=20, C+E=21				

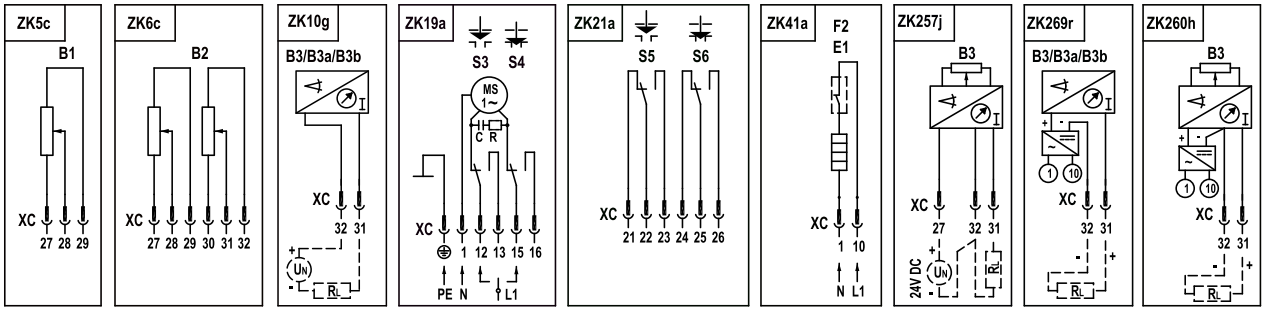
Notes:
10) Climate resistance according to ISO 9223 / EN ISO 12944-2.
11) IP 68-10 m/48 hours.
30) Actuators are self-locking up to the torque value stated in brackets.
31) For torque of 50 Nm mechanical connections marked A, 1, B, C, R or S cannot be specified.
33) The actuator can be loaded with this torque under duty cycle S2 – 10 min, or S4 – 25%, 6–90 cycles per hour.
For duty cycle S4 – 25%, 90–1200 cycles per hour, the maximum load torque must be multiplied by 0.8.
41) The version without any transmitter can have its operating angle adjusted from 0° up to max. angle.
42) Actuator does not have torque switching, therefore it must not run into stop ends.
51) Not valid for temperatures bellow -60°C.
52) CPT - capacitive transmitter, DCPT 3M - electronic contactless transmitter.
61) Load torque can be specified as 32 Nm only.
70) After disengagement of the gear with a button (on the side) the actuator can be operated with a lever or with a pull-rod (it does not contain any handwheel).
71) After disengagement of the gear with a button (on the side) the actuator can be operated with a lever or with a pull-rod (it does not contain any handwheel).

Wiring diagrams

Terminal board connection



Connector connection



Electric connection:

terminal board with 23 terminals, wire-cross section 2.5 mm², using 3 cable glands: 2x M16x1.5 for diameter 6 to 10.5 mm and 1x M20x1 .5 for cable diameter 8 to 14.5mm.

Notes:

1. The number of terminals is limited to a maximum of 23.
2. Alternative actuator wiring options are possible upon agreement with the producer.

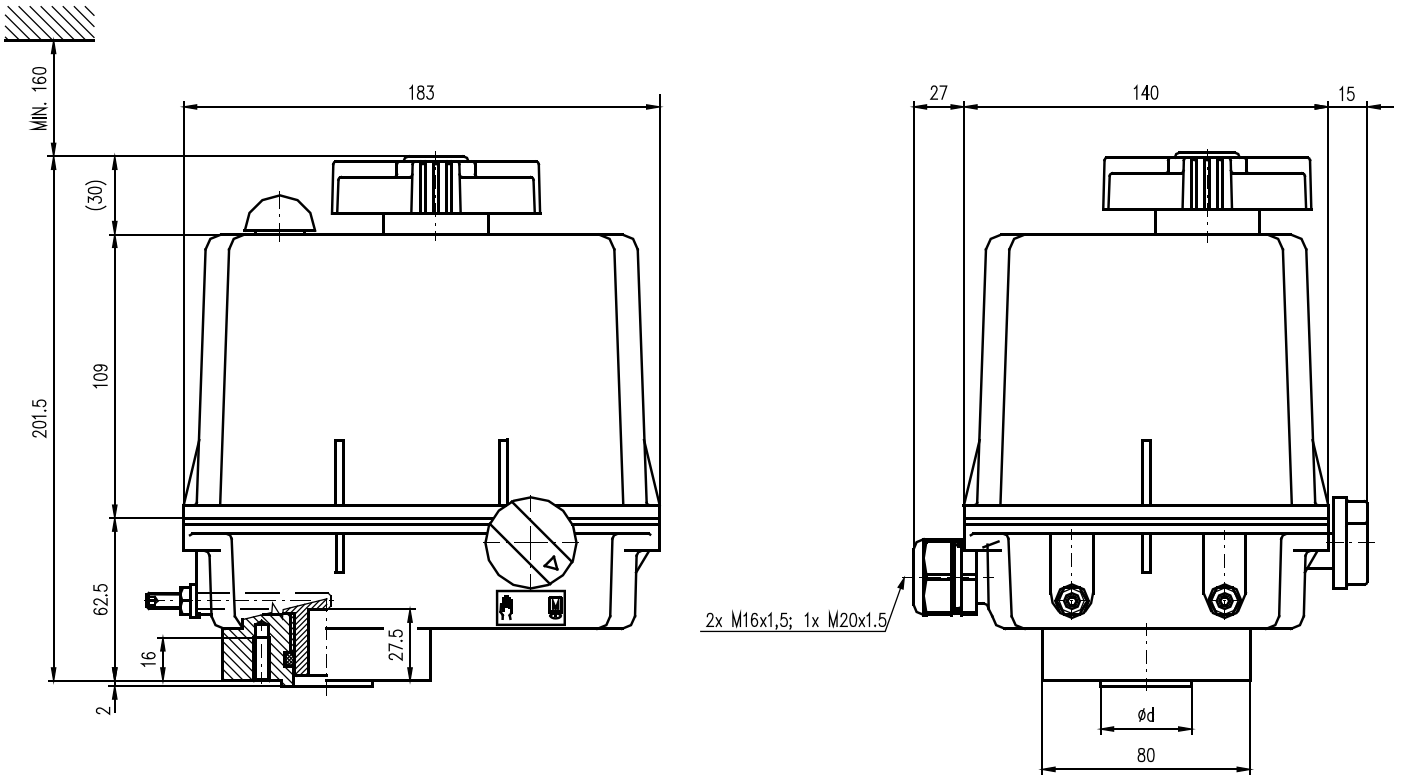
Legend:

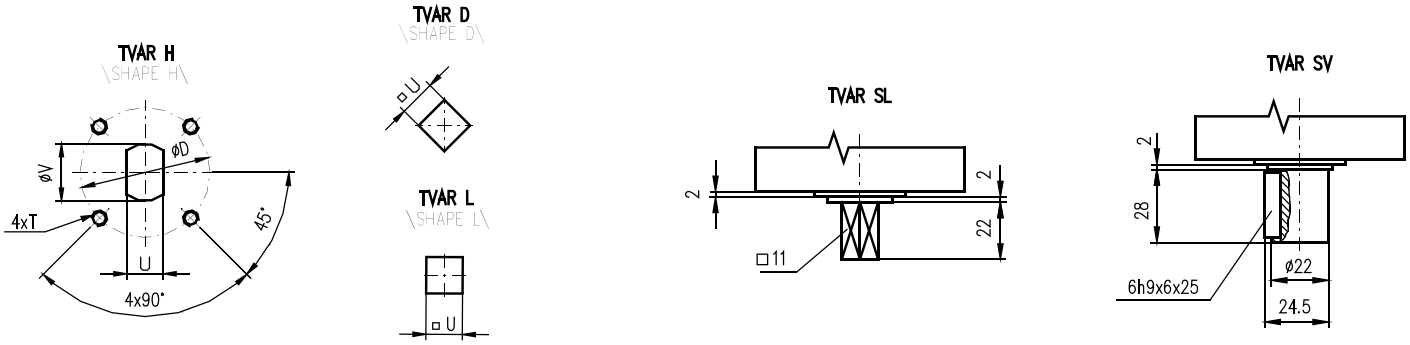
Z5c/ZK5c.....connection of single potentiometer
Z6c/ZK6c.....connection of double potentiometer
Z10g/ZK10g.....connection of CPT or electronic position transmitter - 2 - wire, passive
Z21a/ZK21a.....connection of additional position switches
Z41a/ZK41a.....connection of space heater with the thermal switch
Z257j/ZK257j.....connection of electronic position transmitter - 3 - wire, passive
Z260h/ZK260h....connection of electronic position transmitter - 3 - wire, active
Z269r/ZK269r.....connection of CPT or electronic position transmitter - 2 wire, active

Legend:

B1.....single potentiometer
B2.....double potentiometer
B3.....CPT or electronic position transmitter
B3a.....capacitive current transmitter (CPT)
S3.....position switch „open”
S4.....position switch „closed”
S5.....additional position switch „open”
S6.....additional position switch „closed”
MS.....1-phase electric motor
C.....capacitor
E1.....space heater
F2.....pace heater thermal switch – not valid for this EA version
I.....output current signal
R.....reducing resistor
R_L.....loading resistor
X, X2.....terminal board

Dimensional drawing SP 0.1

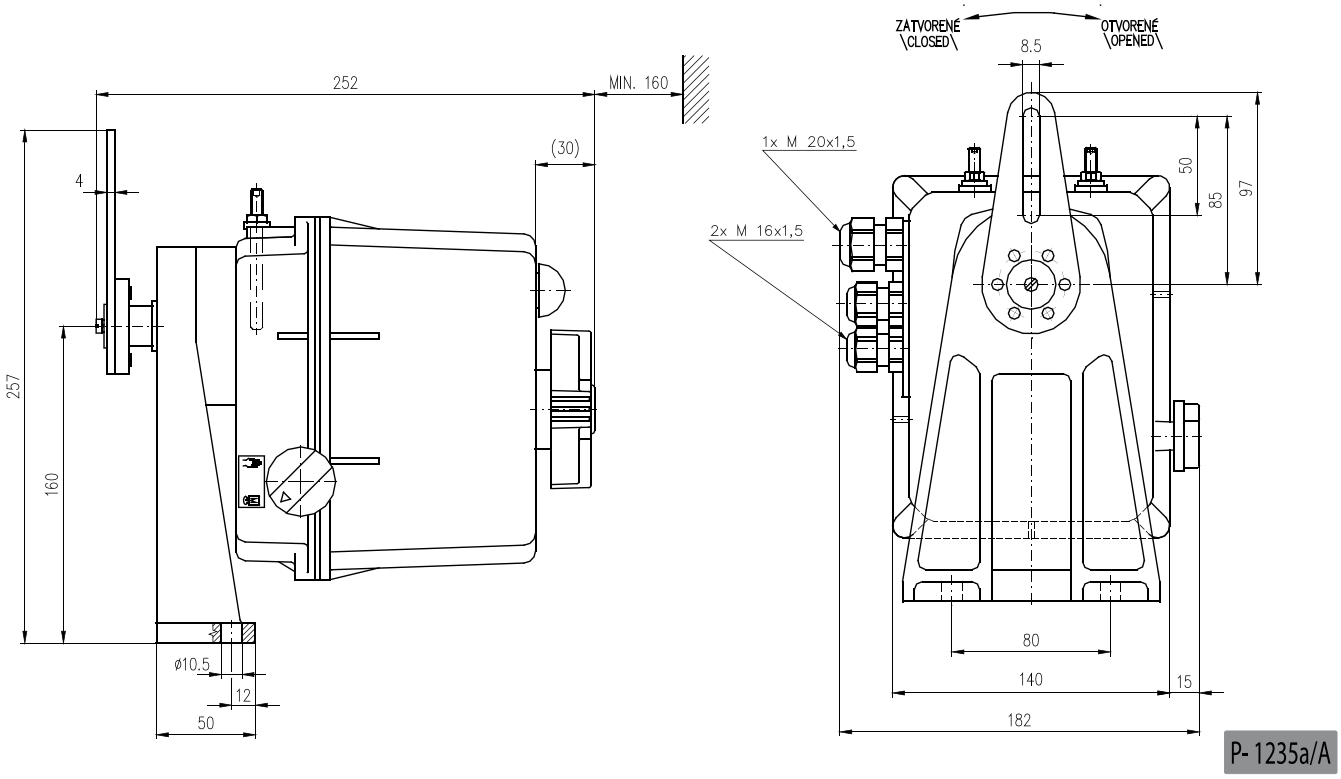




Flange Size	ØD	Ød	T	U	ØV	Coupling Shape
F05	50	35	M6	14	18	D, L, H, SV
F05	50	35	M6	11	-	D, L, SL
F04	42	30	M5	8	13	H
F04	42	30	M5	11	18	D, L, H, SL, SV
F03	36	25	M5	9	14	D, H, SL

P- 1234a

Dimensional drawing SP 0.1



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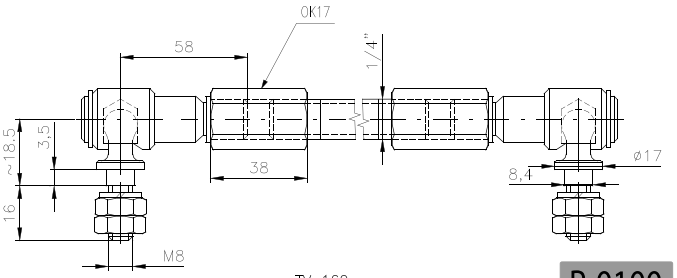

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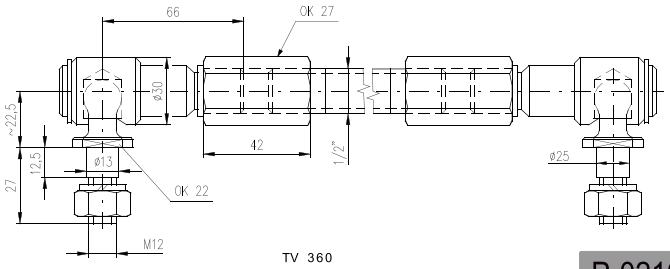

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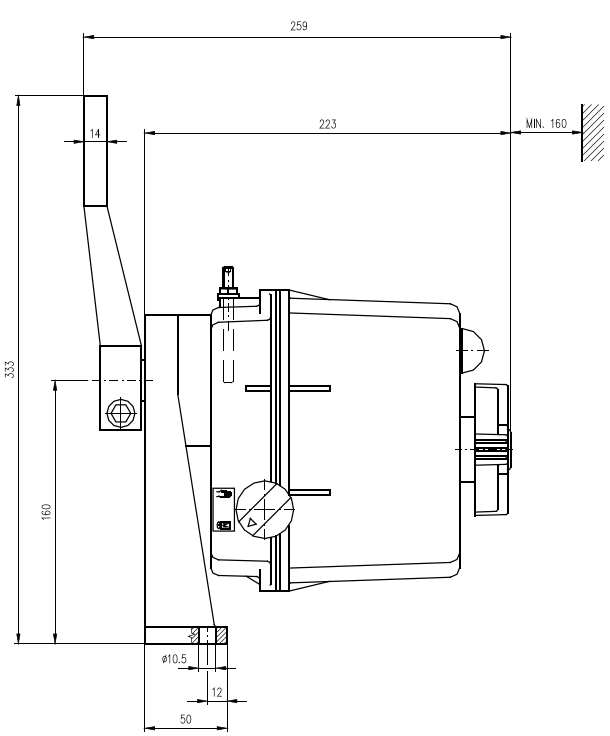
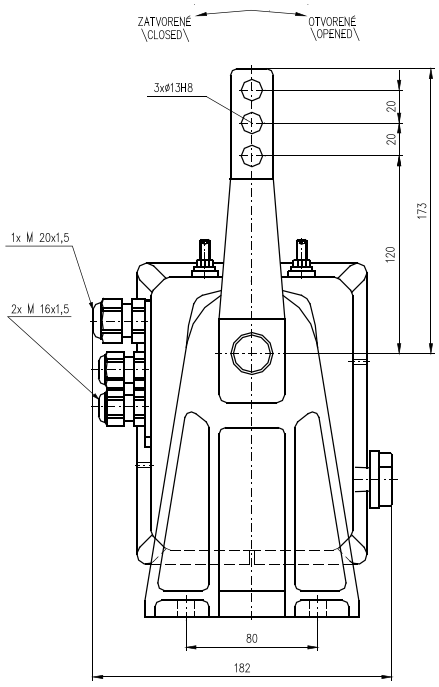
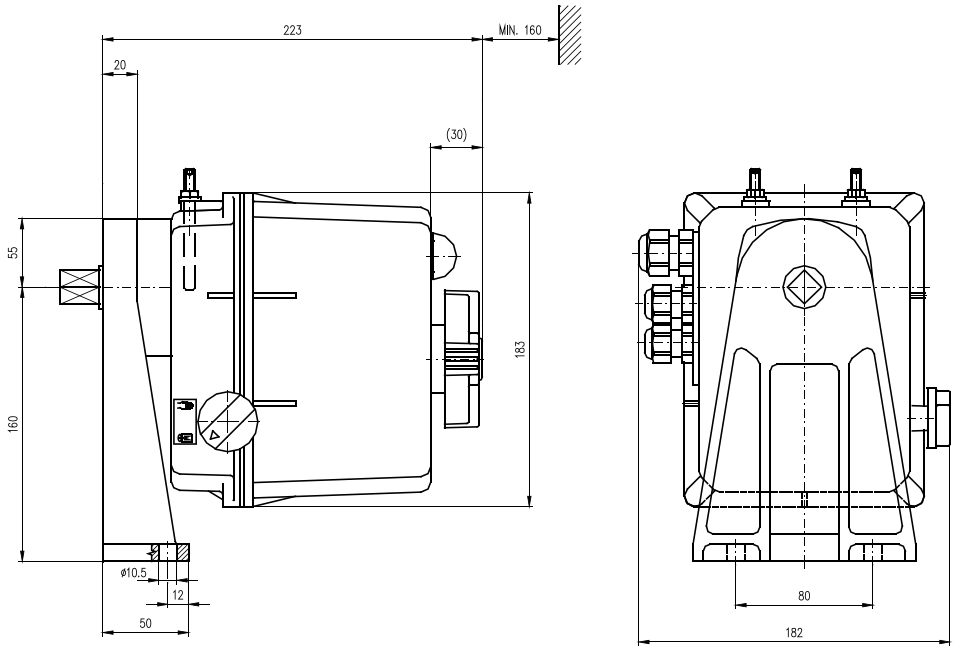




P-1235a/B

Dimensional drawing SP 0.1



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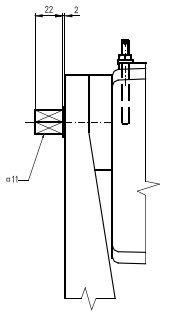
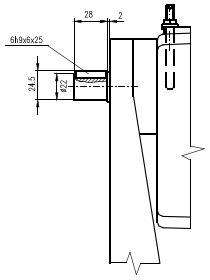
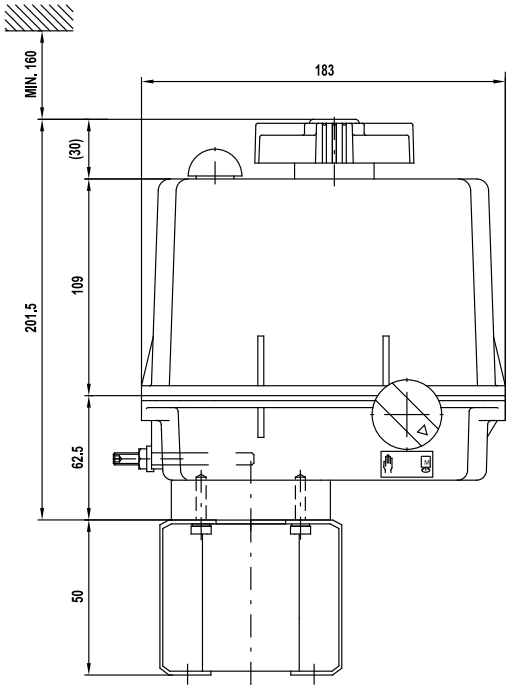
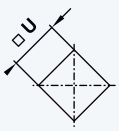
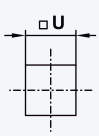
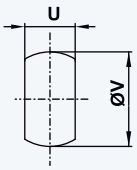
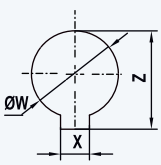


Tvar \ Shape\ SV



P-1235a/C



Coupling Shape										
D-xx		L-xx		H-xx			V-xx			
										
ISO	Dimension	ISO	Dimension	ISO	Dimension		ISO	Dimension		
D-xx	U	L-xx	U	H-xx	U	V	V-xx	W	Z	X
D-14	14	L-14	14	H-14	14	18	V-12	12	13.6	4.0
				H-8	8	13	V-16	16	18.1	5.0
							V-20	20	22.5	6.0

P-1493