

STANDARD

MT 3

STANDARD EQUIPMENT:

- Voltage 230 V AC, 3x400 V AC
- Terminal board connection
- Motor's thermal protection PTO ¹⁾
- 2 thrust switches
- 2 position switches
- 2 additional position switches
- Space heater with thermal switch
- Mechanical connection - pillars
- Mechanical position indicator
- Thrust switches blocking in limit position
- Manual control
- Protection code IP 55 ²⁾



Specification table MT 3

Order code

52 403. 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
			IP 55	9
Arctic	-60°C...+60°C	C3	IP 67	8

Electric connection	Electric motor supply voltage and frequency ²⁵⁾		Wiring diagram	
Na svorkovnicu	Y/Δ 380/220 V AC	50 Hz	Z279c	0
	Y/Δ 400/230 V AC	50 Hz	Z279c	1
	Y/Δ 380/220 V AC - with reversing unit	50 Hz	Z297b	2
	Y/Δ 400/230 V AC - with reversing unit	50 Hz	Z297b	3
	230 V AC	50 Hz	Z295	9
	220 V AC	50 Hz	Z295	L
Na konektor ²¹⁾	Y/Δ 380/220 V AC	50 Hz	ZK279c	5
	Y/Δ 400/230 V AC	50 Hz	ZK279c	6
	Y/Δ 380/220 V AC - with reversing unit	50 Hz	ZK297b	4
	Y/Δ 400/230 V AC - with reversing unit	50 Hz	ZK297b	7
	230 V AC	50 Hz	ZK295	8
	220 V AC	50 Hz	ZK295	P

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Switching-off torque ³¹⁾	Max. load torque		Operating time	Min. stroke	Electric motor 3x400 V, 50Hz ³⁴⁾				
	ON - OFF duty ³²⁾	Modulating duty ³³⁾			Power	Speed	Current		
8 - 12.5 kN	7.5 kN	5,0 kN	32 mm/min	10 mm	180 W	800 min ⁻¹	0.84 A	A	
			50 mm/min		250 W	1 365 min ⁻¹	0.80 A	B	
			80 mm/min	16 mm	250 W	1 365 min ⁻¹	0.80 A	C	
			125 mm/min		250 W	1 365 min ⁻¹	0.80 A	D	
16 - 25 kN	15.0 kN	10.0 kN	32 mm/min	10 mm	180 W	800 min ⁻¹	0.84 A	E	
			50 mm/min		250 W	1 365 min ⁻¹	0.80 A	F	
			80 mm/min	16 mm	250 W	1 365 min ⁻¹	0.80 A	G	
			125 mm/min		250 W	1 365 min ⁻¹	0.80 A	H	
			250 mm/min ³⁶⁾		370 W	1 350 min ⁻¹	1.08 A	N	
25 - 36 kN ³⁵⁾	21.5 kN	14.5 kN	50 mm/min	16 mm	180 W	800 min ⁻¹	0.84 A	P	
			80 mm/min		250 W	1 365 min ⁻¹	0.80 A	J	
			125 mm/min		370 W	1 350 min ⁻¹	1.08 A	K	
			180 mm/min		370 W	1 350 min ⁻¹	1.08 A	L	
					Electric motor 230 V, 50Hz			▼	▼
12 - 20 kN	12.0 kN	8.0 kN	32 mm/min	10 mm	60 W	2 770 min	0.7 A	9	A
			50 mm/min	16 mm	60 W	2 770 min	0.7 A		B
9.6 - 16 kN	9.6 kN	6.4 kN	63 mm/min		60 W	2 770 min	0.7 A	L 8 p	M
7.5 - 12.5 kN	7.5 kN	5.0 kN	80 mm/min		60 W	2 770 min	0.7 A		C
4.8 - 8 kN	4.8 kN	3.2 kN	125 mm/min			60 W	2 770 min	0.7 A	

Control board version	Switches	Revolutions ⁴⁴⁾		Wiring diagram	
		Without transmitter	With potentiometer		
Electromechanical control with step counter unit, position unit and thrust unit	S1/S2 S3/S4 and DUO switches S5/S6	10	10 mm	Z403a+Z41a ZK403a+ZK41a	0
		(10) 16 - 16	16 mm		1
		(10) 16 - 20	20 mm		2
		(10) 16 - 25	25 mm		3
		(10) 16 - 32	32 mm		4
		(10) 16 - 40	40 mm		5
		(10) 16 - 50	50 mm		6
		(10) 16 - 64	64 mm		7
		(10) 16 - 80	80 mm		8
Electromechanical control with step counter unit, position unit and thrust unit	S1/S2, S3/S4, with TANDEM switches S13/S14	(10) 16 - 100	100 mm	Z461f+Z41a ZK461f+ZK41a	9
		(10) 16 - 16	16 mm		B
		(10) 16 - 25	25 mm		D
		(10) 16 - 32	32 mm		E
		(10) 16 - 40	40 mm		F
		(10) 16 - 50	50 mm		G
		(10) 16 - 64	64 mm		H
		(10) 16 - 80	80 mm		J
		(10) 16 - 100	100 mm		K

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52 403. 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	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
	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	Connecting height/ Max. stroke / Mounting holes		Thread of stem ⁶²⁾	Dimensional drawing ⁶³⁾			
				1 ~ motor	3 ~ motor,≤25kN	3 ~ motor,36kN	
Pillars	30/100/-			P-1403a/A	P-1400a/A	P-1405a/A	A
	74/100/-			P-1403a/B	P-1400a/B	P-1405a/B	B
	130/100/-			P-1403a/C	P-1400a/C	P-1405a/C	C
	50/40/-			-	P-1400a/D	-	D
	60/60/-			-	P-1400a/E	P-1405a/E	E
Flange	112/100/ Ø80; 4XØ13		M20x1,5	P-1401a/A	P-1402a/A	-	L
	110/100/ Ø65.15			P-1401a/B	P-1402a/B	-	M
	110/100/ Ø70		M16x1,5	-	P-1402a/C	-	N
	110/100/ Ø85		M14x2	-	P-1402a/D	-	P
	130/100/ Ø88 - 25 kN	130/80/ Ø88 - 36 kN	M10x1 ⁶¹⁾	P-2042/A	P-2044/C	P-2044/A	3
	150/100/ Ø88 - 25 kN	150/80/ Ø88 - 36 kN		P-2042/B	P-2044/D	P-2044/B	4
Flange and 4 pillars	30/100/-		7/8-UN-9	P-2020/A	P-2019/A	P-2019/F	K
	74/100/-		1.1/8" UNC	P-2020/B	P-2019/B	P-2019/G	Q
	130/100/-		1.1/2" UNC	P-2020/C	P-2019/C	P-2019/H	R
	50/40/-			-	P-2019/D	-	S
	60/60/-			-	P-2019/E	P-2019/I	T
	110/100/ Ø65.15			P-2021/A	P-2022/A	P-2022/E	U
	110/100/ Ø70			P-2021/B	P-2022/B	P-2022/F	V
	110/100/ Ø80			P-2021/C	P-2022/C	P-2022/G	W
	110/100/ Ø85			P-2021/D	P-2022/D	P-2022/H	Y
	70/100/-		M48x3	P-2018	P-2017	-	Z

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Order code		52 403. X - X X X X X / X X			
Additional equipment		Wiring diagrams			
	No additional equipment. Adjusted to max. switching-off torque of chosen range and 3 or 34 operating revolutions	-			
B	Switching-off torque adjustment to the required value	-	0	1	
C	Adjustment of revolutions to the required value	-	0	3	
F	Electric motor with thermal protection 3PTC, 150 °C.	Z279h / ZK279h Z297g / ZK297g	1	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					

- Notes:
- 1) Cut-off temperature 150°.

2) Electric actuator with 1-phase motor has enclosure IP 67 as standard

10) Climate resistance according to ISO 9223 / EN ISO 12944-2.

25) Different voltages after agreement with producer (3x500; 3x480; 3x415 V AC).

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. The starting thrust equals minimally 1.3 times the maximum switch-off thrust of the chosen 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.

35) For thrust range 25-36 kN is valid stroke max. 80 mm.

36) Valid for ON/OFF duty only.

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 - capacitive transmitter, DCPT 3M - contactless transmitter.

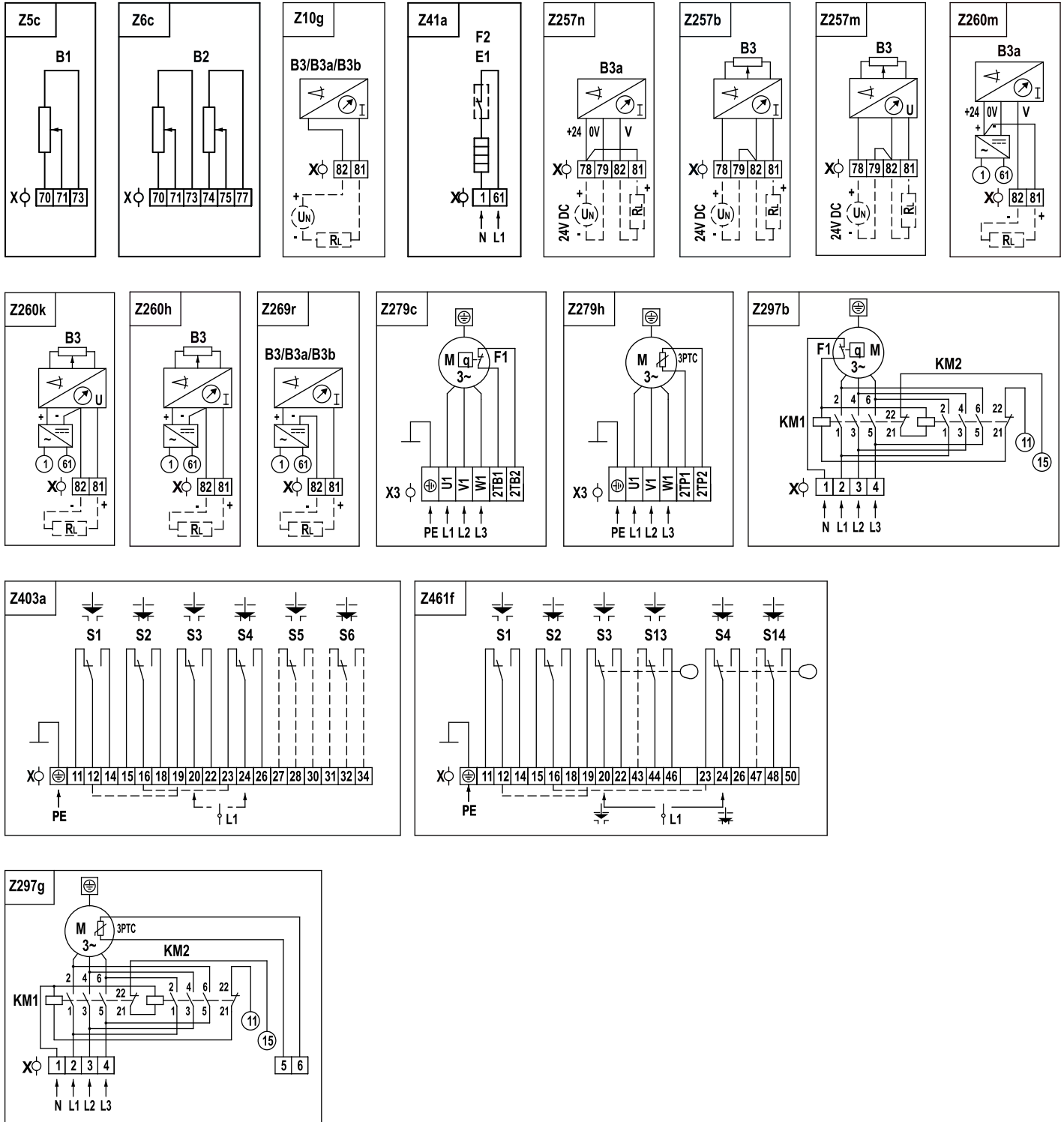
61) Up to switching-off thrust of 25 kN.

62) Thread in the coupling must be specified in the order bywords.

63) Dimensions of MT 3 with local control are according to P-2xxx.

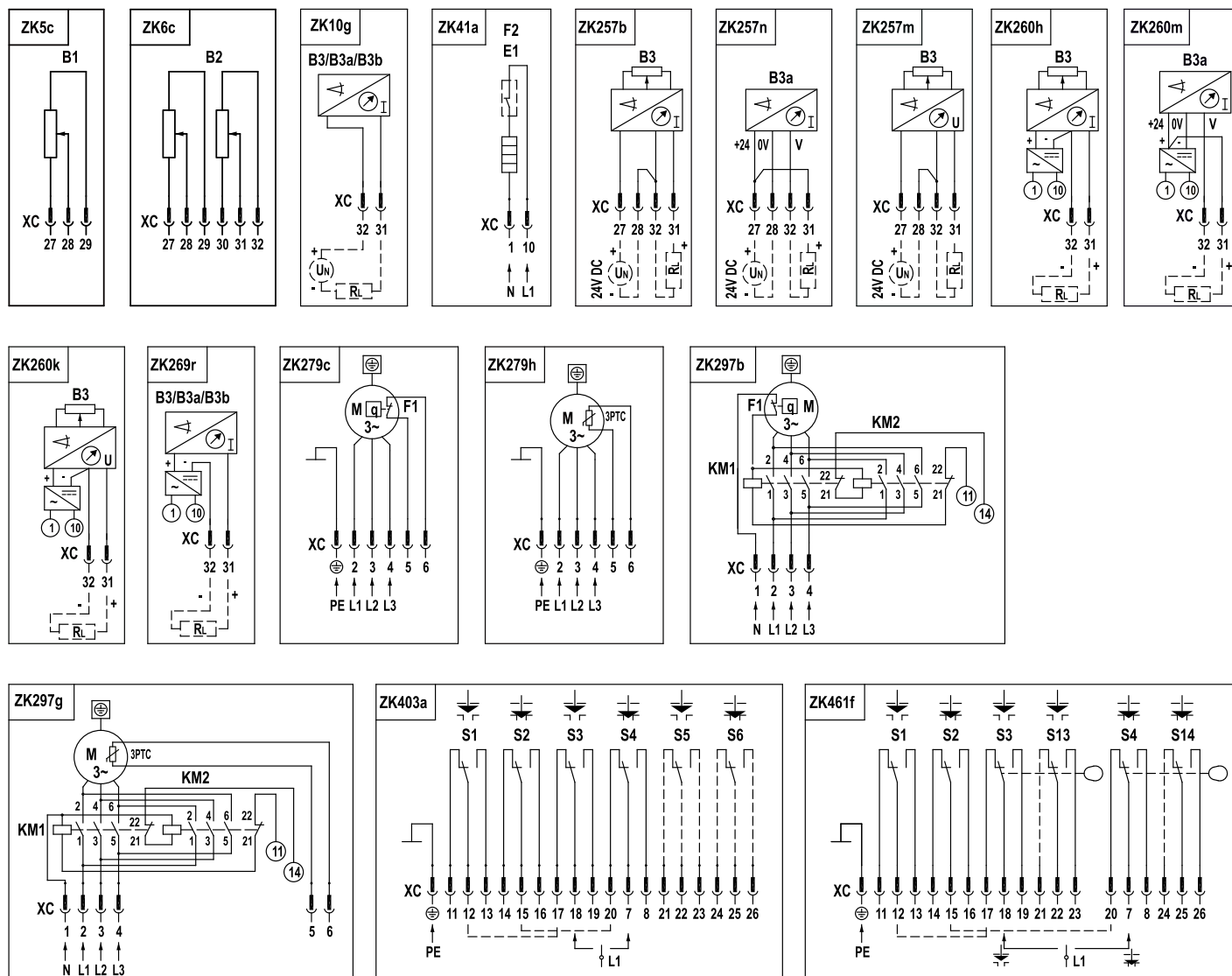
Wiring diagrams

Terminal board connection



Wiring diagrams

Connector connection



Elektrické pripojenie servopohonu na svorkovnice:

- a) control board: via 2 cable glands M25x1.5 for cable diameter 12.5 to 19 mm, to terminal block (X) with max. 32 terminals with connecting conductor cross-section max. 2.5 mm² for versions without reverse contactors or max. 24 terminals with connecting wire cross section max. 2.5 mm² and max. 6 terminals with connecting conductor cross section max. 1.5 mm² for versions with built-in reverse contactors.
- b) 3-phase electric motor: without reverse contactors: via M25x1.5 cable glands for cable diameter 12.5 to 19 mm to motor terminal box.

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 0.5mm²
- 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

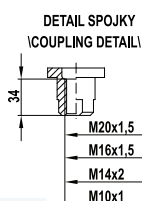
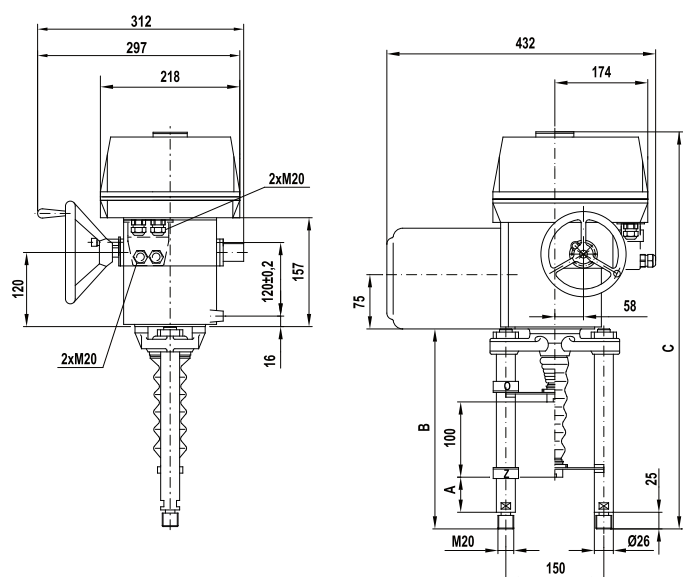
Legenda:

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
 Z295/ZK295.....1-phase electric motor with thermal protection
 Z297b/ZK297b.....3-phase electric motor with reverse contactors and thermal protection PTO
 Z297g/ZK297g.....3-phase electric motor with reverse contactors and thermal protection PTC
 Z403a/ZK403a.....connection of torque and position switches
 Z461f/ZK461f.....connection of torque and tandem position switches

Legenda:

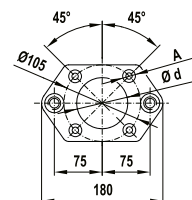
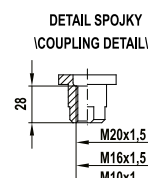
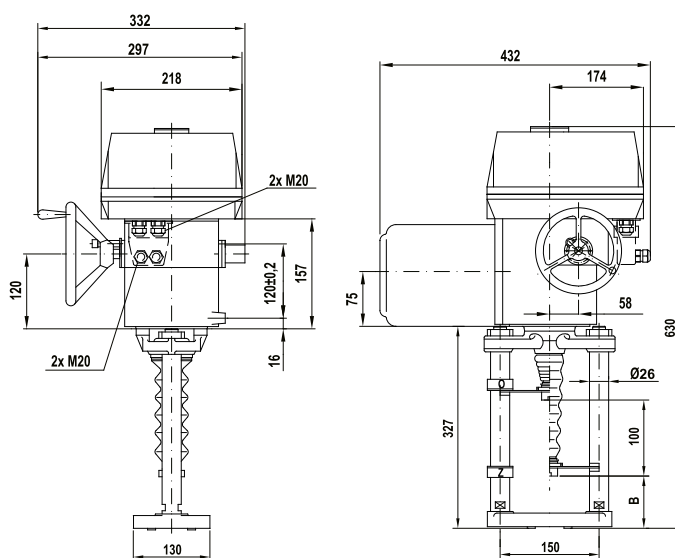
B1.....single potentiometer
 B2.....double potentiometer
 B3.....CPT or electronic position transmitter
 B3a.....capacitive current transmitter (CPT)
 B3b.....DCPT current transmitter
 S1.....torque switch „open“
 S2.....torque switch „closed“
 S3.....position switch „open“
 S4.....position switch „closed“
 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 MT 3



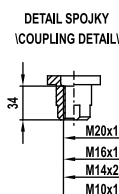
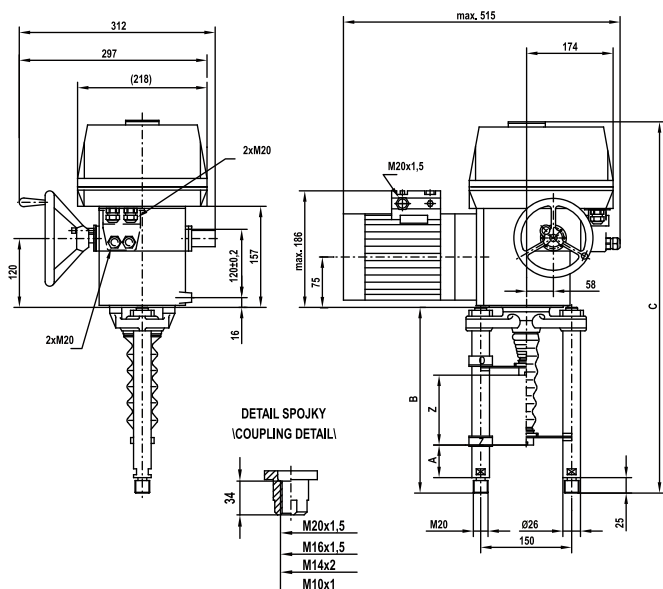
P-1403a/C	130	400	710
P-1403a/B	74	320	630
P-1403a/A	30	276	586
Version	A	B	C

P-1403a



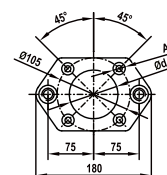
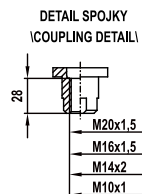
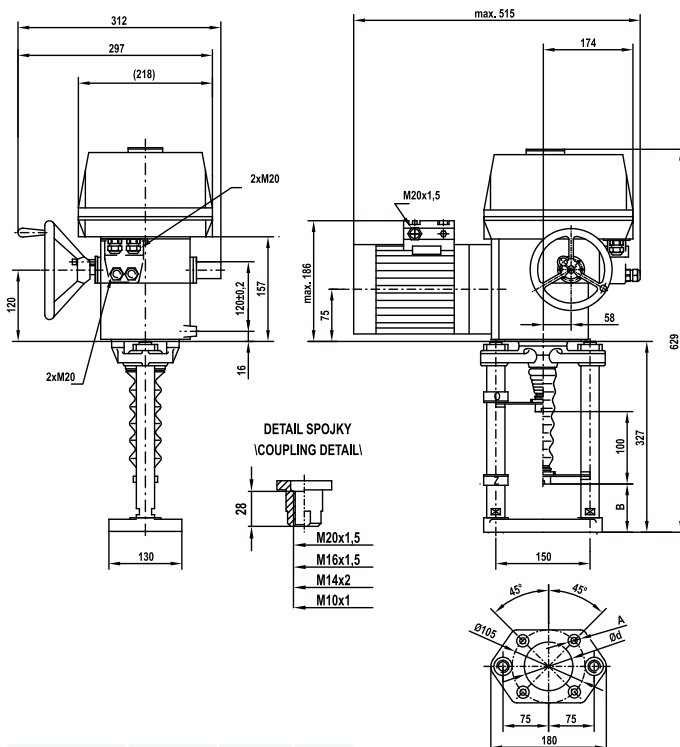
P-1401a/B	65.15 H7	-	110
P-1401a/A	80 H8	4xØ13	112
Version	Ød	A	B

P-1401a



P-1400a/E	60	276	551	60
P-1400a/D	50	276	551	40
P-1400a/C	130	400	686	100
P-1400a/B	74	320	630	100
P-1400a/A	30	276	586	100
Version	A	B	C	Z

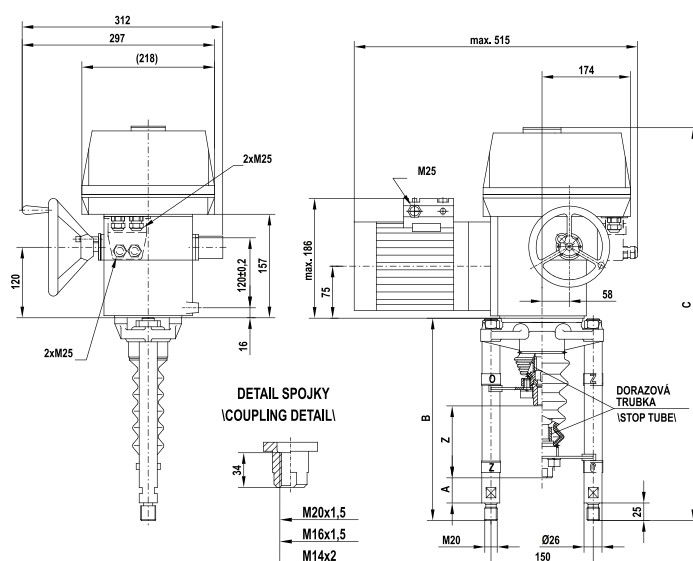
P-1400a



P-1402a/D	85 H12	-	110
P-1402a/C	70 H12	-	110
P-1402a/B	65.15 H7	-	110
P-1402a/A	80 H8	4xØ13	112
Version	Ød	A	B

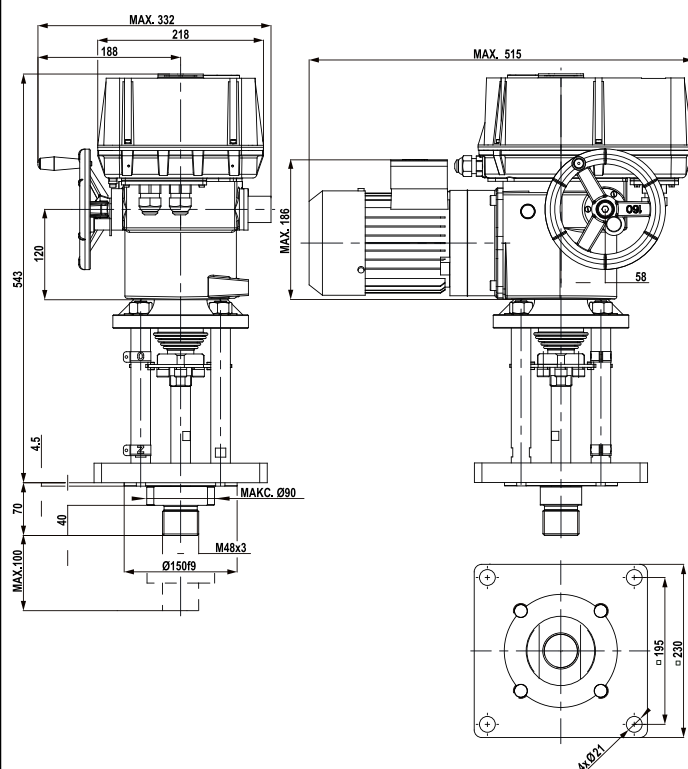
P-1402a

Dimensional drawing MT 3

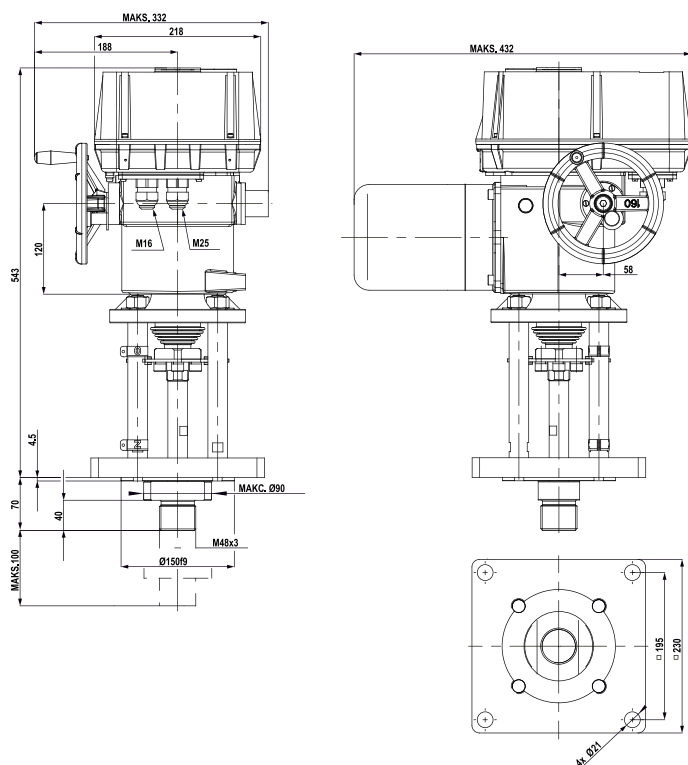


P-1405a/E	60	286	567	60
P-1405a/C	130	376	692	80
P-1405a/B	74	320	636	80
P-1405a/A	30	276	591	80
Version	A	B	C	Z

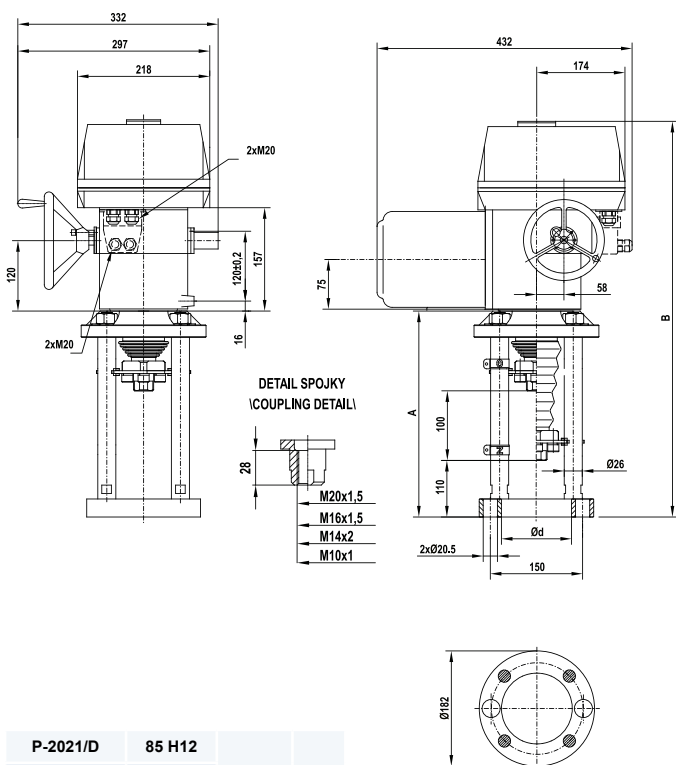
P-1405a



P-2017



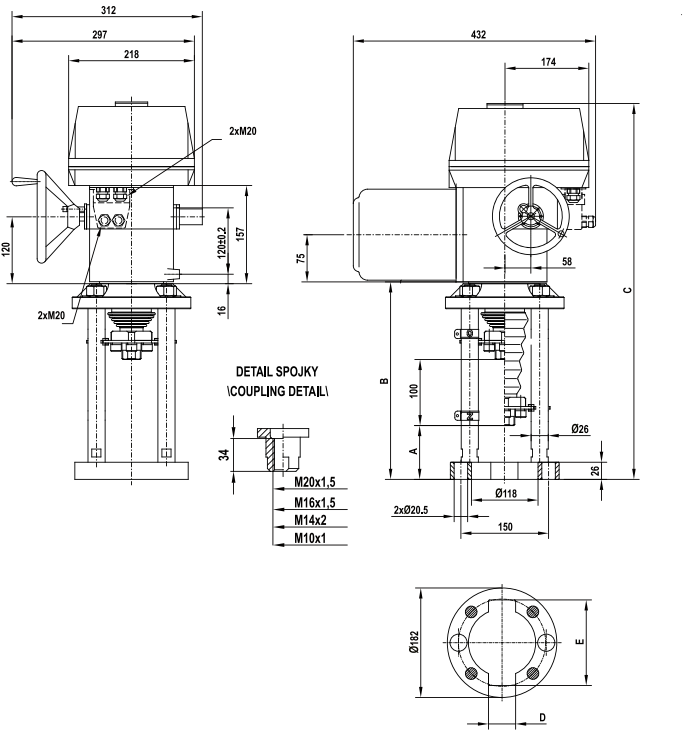
P-2018



P-2021/D	85 H12		
P-2021/C	80 H12	327	629
P-2021/B	70 H12		
P-2021/A	65.15 H7		
Version	Ød	A	B

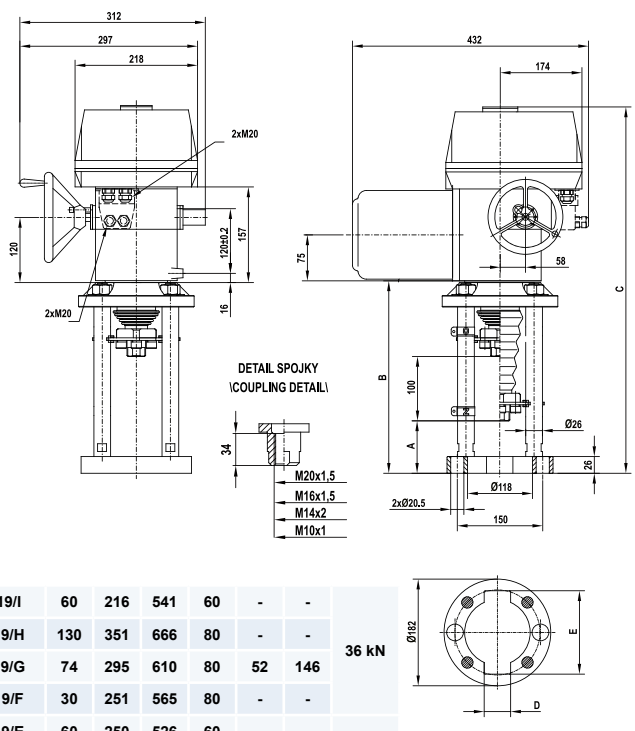
P-2021

Dimensional drawing MT 3



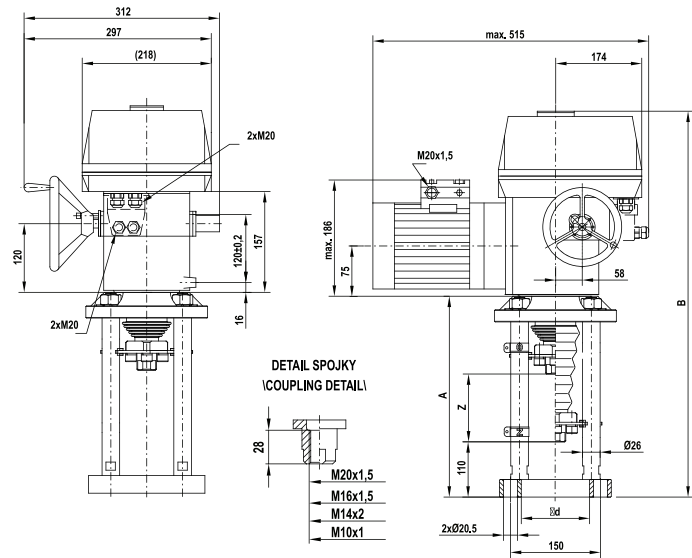
P-2020/C	130	315	685	-	-
P-2020/B	74	605	605	52	146
P-2020/A	30	561	561	-	-
Version	A	B	C	D	E

P-2020



P-2019/I	60	216	541	60	-	-	36 kN
P-2019/H	130	351	666	80	-	-	
P-2019/G	74	295	610	80	52	146	
P-2019/F	30	251	565	80	-	-	
P-2019/E	60	250	526	60	-	-	25 kN
P-2019/D	50	250	526	40	-	-	
P-2019/C	130	350	660	100	-	-	
P-2019/B	74	294	605	100	52	146	
P-2019/A	30	250	561	100	-	-	
Version	A	B	C	Z	D	E	Notes

P-2019



P-2022/H				85 H12	36 kN
P-2022/G	328	644	80	80 H12	
P-2022/F				70 H12	
P-2022/E				65.15 H7	25 kN
P-2022/D				85 H12	
P-2022/C	327	629	100	80 H12	
P-2022/B				70 H12	
P-2022/A				65.15 H7	
Version	A	B	Z	Ød	Notes

P-2022

P-2xxx

P-2042

P-2044