

STANDARD

UL 1

STANDARD EQUIPMENT

- Voltage 230 V AC
- Terminal board connection
- 2 thrust switches
- 2 position switches
- 2 additional position switches
- Mechanical connection - pillars
- Manual control
- Mechanical position indicator
- Space heater with thermal switch
- Protection code IP 66 / IP 68



Specification table UL 1

Order code

541. X - X X X X X / X X

Climate resistance	Ambient temperature	Corrosivity category ¹⁰⁾	Enclosure	
Standard	-25°C...+55°C	C3	IP 66/68 ¹¹⁾	1
Tropics and Wet	-25°C...+55°C	C4		2
Cold	-50°C...+40°C	C3		3
Tropical dry and Dry	-25°C... +55°C	C3		6
Sea	-50°C...+40°C	C4		7
Arctic	-60°C...+40°C	C3		8

Electric connection	Electric motor supply voltage and frequency		Wiring diagram	
To terminal board	230 V AC	50 Hz	Z404t	0
	220 V AC	50 Hz	Z404t	L
	3x400 V AC	50 Hz	Z78s	1
	3x380 V AC	50 Hz	Z78s	M
	24 V AC	50 Hz	Z626f, Z634h	A
	24 V DC	-		
	24 V AC	60 Hz ²⁴⁾		
	110 V AC	60 Hz ²⁴⁾	Z404t	B
	120 V AC	60 Hz ²⁴⁾	Z404t	T
	240 V AC	60 Hz ²⁴⁾	Z404t	V

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Switching-off thrust ³¹⁾	Max. load thrust ³²⁾		Max. load thrust ³³⁾		Operating speed		
					50 Hz	60 Hz	
7 500 - 12 500 N	ON - OFF duty	10 000 N	Modulating duty	5 000 N	10 mm/min	12 mm/min	A
					20 mm/min	24 mm/min	B
6 300 - 10 000 N		8 000 N		4 000 N	10 mm/min	12 mm/min	H
					20 mm/min	24 mm/min	J
					40 mm/min	48 mm/min	C
4 800 - 8 000 N		6 300 N		3 200 N	10 mm/min	12 mm/min	M
					20 mm/min	24 mm/min	R
					40 mm/min	48 mm/min	P
					80 mm/min	96 mm/min	D
2 800 - 4 800 N		4 000 N		2 000 N	10 mm/min	12 mm/min	K
					20 mm/min	24 mm/min	F
					40 mm/min	48 mm/min	G
					80 mm/min	96 mm/min	Q
1 400 - 2 100 N		1 700 N		800 N	10 mm/min	12 mm/min	L
					20 mm/min	24 mm/min	N
					40 mm/min	48 mm/min	S
					80 mm/min	96 mm/min	E

Control board version	Switches	Pracovní zdvih ⁴¹⁾		Wiring diagram	
		Without transmitter	With potentiometer		
Mechanical control board	S1/S2, S3/S4, S5/S6	10 ÷ 80	10; 20; 40; <u>80</u>	Z403b, Z626f	A
		12 ÷ 48	12; 24; <u>48</u>		B
		15 ÷ 60	15; 30; <u>60</u>		C
		12,5 ÷ 50	12,5; 25; <u>50</u>		E
		16 ÷ 64	16; 32; <u>64</u>		F

Transmitter		Connection	Output	Wiring diagram	
Without transmitter		-	-	-	A
Potentiometer	Single	-	1 x 100 Ω	Z5c	B
			1 x 2 000 Ω		F
	Double	-	2 x 100 Ω	Z6c	K
			2 x 2 000 Ω		P
Electronic position transmitter ⁵¹⁾	Passive	2-wire	4 - 20 mA	Z10g	S
		3-wire	0 - 20 mA	Z257j	T
			4 - 20 mA		V
			0 - 5 mA		Y
	Active ⁵⁹⁾	2-wire	4 - 20 mA	Z269r	Q
		3-wire	0 - 20 mA	Z260h	U
			4 - 20 mA		W
			0 - 5 mA		Z
Electronic voltage ⁵¹⁾	Passive	3-wire	0 - 10 V	Z257k	D
	Active ⁵⁹⁾		0 - 10 V	Z260k	R
Current ^{51) 52)} CPT	Passive	2-wire	4 - 20 mA	Z10g	I
	Active ⁵⁹⁾			Z269r	J
Current ^{51) 52)} DCPT 3M	Passive	2-wire	4 - 20 mA	Z10g	2
	Active ⁵⁹⁾			Z269r	3

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Mechanical connection		Flange shape	Operating stroke	Connecting height	Thread of stem ⁶²⁾	Dimensional drawing	
Direct - Flange	ISO 5210	F07 (Y/55) ⁶¹⁾	40 mm	50 mm	M16x1.5-25	P-2055/A	A
		F10 (Y/70) ⁶¹⁾	60 mm	55 mm	M20x1.5-30	P-2055/B	B
Flange + 2 pillars			80 mm	103/65H12	M10x1-28	P-2054/J	H
				110/65H12		P-2054/F	4
				112/80H8		P-2054/K	Q
				92/57,15H8		P-2054/G	G
				102/57,15H		P-2054/H	Z
				94/58,1H8		P-2054/L	Y
				50/45H12		P-2054/D	F
				75/45H12		P-2054/C	E
				90/45H12		P-2054/A	C
				100/45H12		P-2054/B	D
				85/65H12		P-2054/E	3
		Pillars		A		127/110	M12x1,25-20
B	42/110			P-2053/B	L		
C	80/110			P-2053/C	M		
D	27/100			P-2053/D	N		
E	57/100			P-2053/E	P		
F	110/100			M12-28	P-2053/F	R	
Flange + 4 pillars				103/65H12	M12-28	P-2057/J	J
				110/65H12	M16X1,5-28	P-2057/F	1
				112/80H8	UN 7/8"-9	P-2057/K	2
				92/57,15H8		P-2057/G	6
				102/57,15H		P-2057/H	7
				94/58,1H8		P-2057/L	8
				50/45H12		P-2057/D	9
				75/45H12		P-2057/C	X
				90/45H12		P-2057/A	5
				100/45H12		P-2057/B	V
				85/65H12		P-2057/E	X
				127/110		P-2056/A	T
				42/110		P-2056/B	U
				80/110		P-2056/C	S
				27/100		P-2056/D	W
				57/100		P-2056/E	X
				110/100		P-2056/F	X

Additional equipment		Wiring diagrams		
	No additional equipment; Set on maximum switching-off thrust. Operating stroke adjusted to max within the range	-		
A	Adjustment of operating stroke for required value	-	0	1
B	Adjustment of switch-off thrust to required value	-	0	3
G	Electric local controls (only till - 60 °C)	Z635f, Z634h	1	5
H	Gold coated contacts of microswitches, details after consultation with the manufacturer		4	0
Allowed combination and code: A+B=04; A+G=17; A+H=41; B+G=16; B+H=42; A+B+G=19; A+B+H=44; A+G+H=47; B+G+H=48;				

Notes:

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

11) IP 68-10 m/96 hours

24) At a frequency of 60 Hz, the specified torques must be reduced by a factor of 0.8.

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) By this torque is possible to load the actuator under duly 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.

41) Position switches S3, S4 are being set to specified operating stroke. If it is not stated in the order, they will be set to maximum value. When required settings are out of values listed in table, ohmic value of potentiometer will be reduced accordingly.

51) Not valid for temperatures of -60°C.

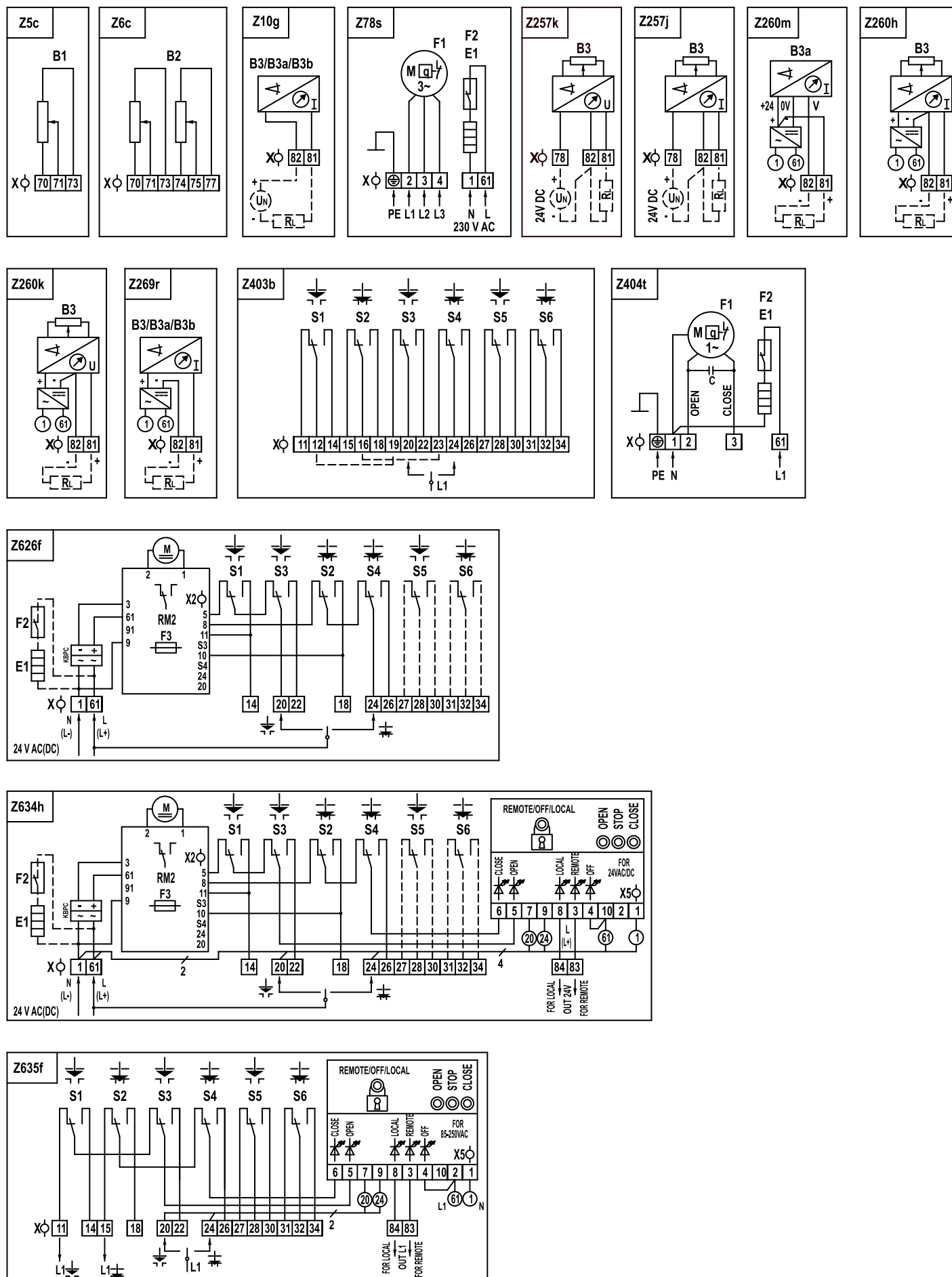
52) CPT - capacitive transmitter, DCPT 3M - electronic contactless transmitter.

61) Y/55, Y/70 - centring shoulder to the valve.

62) Thread in the coupling must be specified in the order by words.

Wiring diagrams

Terminal board connection



Electric connection:

to terminal board with 32 terminals, wire cross section max. 2,5 mm².

Notes:

1. The thermal protection of the electric motors (F1) is built-in inside the electric motors as standard. See wiring diagrams Z404t and Z78s.
2. Torque switching is not fitted with mechanical interlocking device.

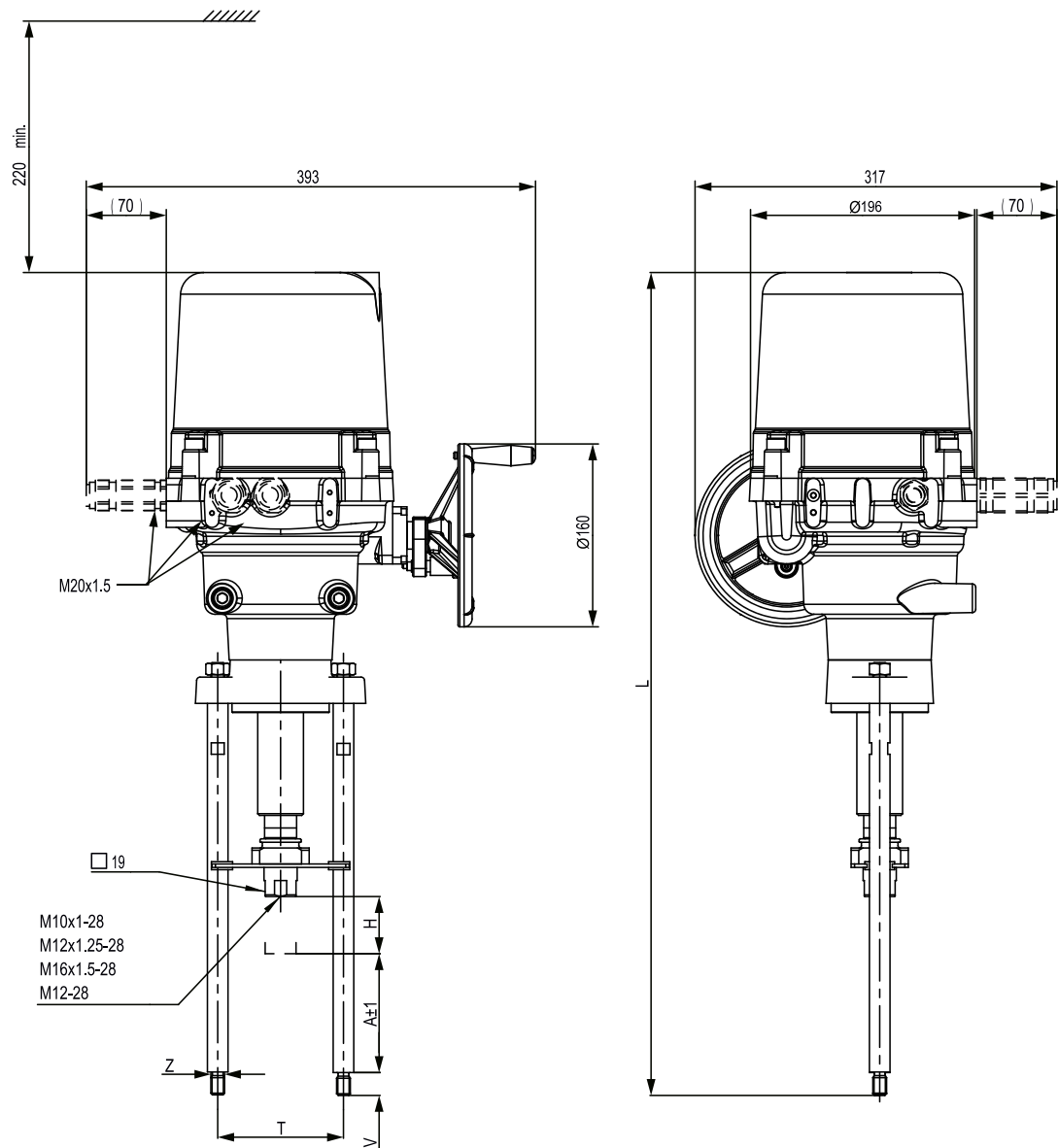
Legend:

Z5c.....	connection of single potentiometer
Z6c.....	connection of double potentiometer
Z10g.....	CPT, DCPT 3M or electronic transmitter, 2-wire, passiv
Z78s.....	connection of 3-phase electric motor and space heater
Z257j.....	connection of electronic position transmitter - 3 - wire, passive
Z257k.....	connection of electronic position transmitter - 3 - wire, passive
Z260k.....	connection of electronic position transmitter - 3 - wire, active
Z260h.....	connection of electronic position transmitter - 3 - wire, active
Z260m.....	position transmitter CPT, 3-wire, active
Z269r.....	connection of CPT or electronic position transmitter - 2 wire - active
Z403b.....	connection of thrust and position switch
Z404t.....	connection of 1-phase electric motor
Z626f.....	connection of reverse board, torque switches, position switches and additional position switches
Z634h.....	connection of reverse board, torque switches, position switches, additional position switches and local control unit
Z635f.....	connection of torque switches, position switches, additional position switches and local control unit

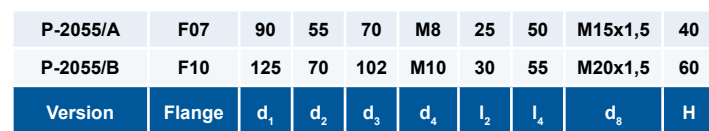
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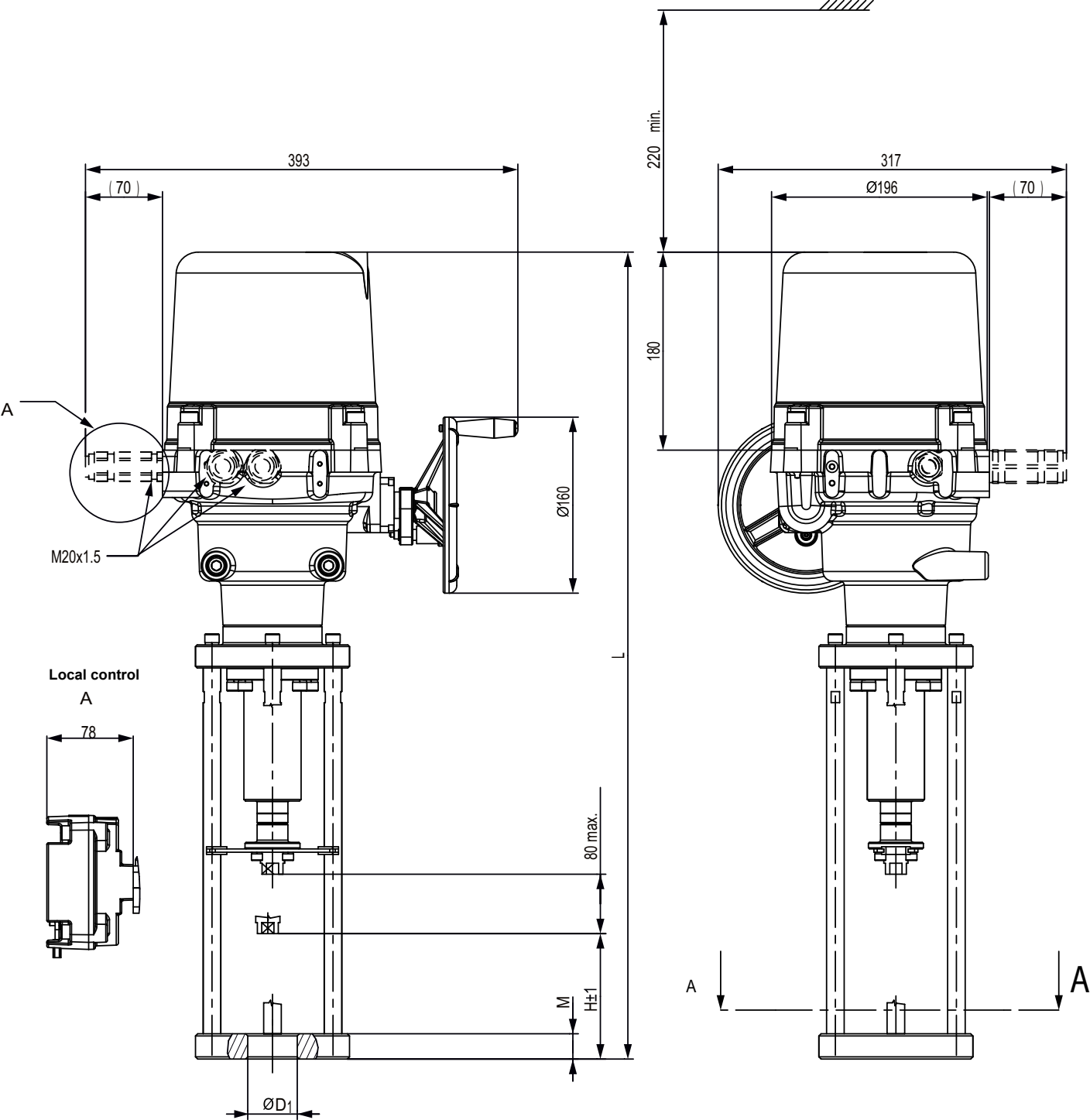
B1.....	single potentiometer
B2.....	double potentiometer
B3.....	CPT or electronic position transmitter
B3a.....	capacitive current transmitter (CPT)
B3b.....	DCPT - current position transmitter (magnetic)
E1.....	space heater
F1.....	motor's thermal protection
F2.....	space heater's thermal switch
I / U.....	current/ voltage output signal
M.....	electric motor
R _L	loading resistor
S1.....	power switch „open“
S2.....	power switch „closed“
S3.....	position switch „open“
S4.....	position switch „closed“
S5.....	additional position switch „open“
S6.....	additional position switch „closed“
X.....	terminal board
X2.....	reversing board terminal block
X5.....	local control terminal block
RM2.....	reversing board 24 V
F3.....	reversing board fuse
U _N	supply voltage of the transmitter source
OPEN/STOP/CLOSE.....	local control buttons
REMOTE/OFF/LOCAL.....	local control selection button

Dimensional drawing UL 1



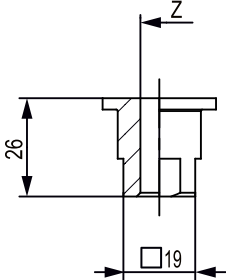
P-2053/A	127	max. 50 (80)	110	M12	20	743
P-2053/B	42		110	M12	20	658
P-2053/C	80		110	M12	32	696
P-2053/D	27		100	M16	16	643
P-2053/E	57		100	M16	16	673
P-2053/F	110		100	M16	16	726
Version	A	H	T	Z	V	L





Coupling dimensions

P-2057/A	45 H12	90	736	23	G
P-2057/B	45 H12	100	746	23	
P-2057/C	45 H12	75	721	17	
P-2057/D	45 H12	50	696	17	
P-2057/E	65.15 H7	85	731	23	D
P-2057/F	65.15 H7	110	756	30	
P-2057/G	57.15 H7	92	738	30	E
P-2057/H	57.15 H7	102	748	30	
Version	D ₁	H	L	M	



M8-6H
M10x1-28
M10x1.5-28
M12-28
M12x1,25
M12x1.5-6H
M14-28
M16x1.5-28
7/8"-9UN
z

A-A

