

# Technical Data Electrical Actuator TPS100.1 - 100 Nm



Fig. 1 Actuator 100 Nm/200 Nm

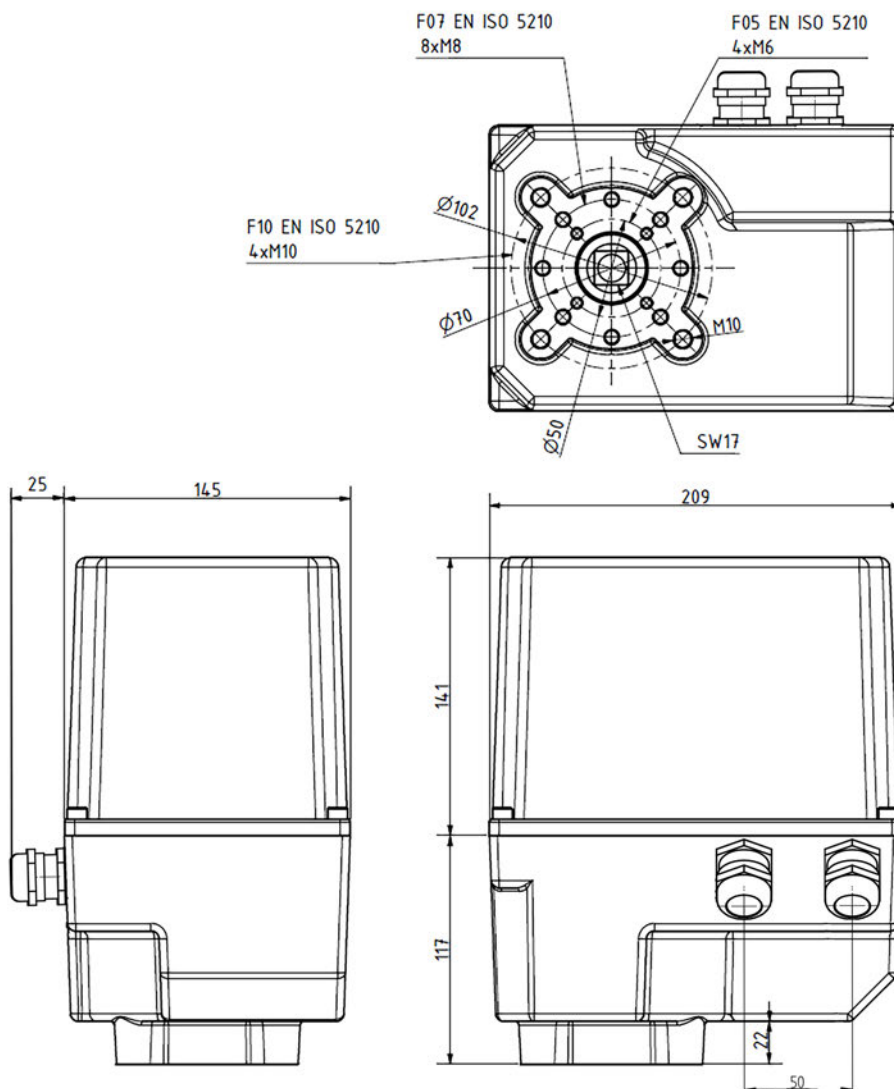


Fig. 2 Dimensional drawing actuator 100 Nm/200 Nm

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Dimensions	
Dimensions (H x W x D)	209 x 145 x 258 mm   8.23 x 5.71 x 10.16" in
Weight	9.5 kg   20.94 lb (the weight may differ depending on the configuration)
Material cover	Aluminium

Technical conditions		
Motor insulation class	E	
Operating mode according to IEC 34-1	S1 – 100 %	
Motor protection	Standard	blocking resistant
Limit position switch-off	for OPEN and CLOSE position	
Control	Standard	3-point step control

### Input Data 668M20100-1 - 100 Nm

Standard	Mains voltage	230 VAC
	Power consumption (A15)	80 mA
	Capacitor	0.5 $\mu$ F / 500 V
	Input power synchronous motor	18 VA
Optional	Mains voltage	120 VAC
	Power consumption (A15)	160 mA
	Capacitor	2 $\mu$ F / 250 V
	Input power synchronous motor	18 VA

### Technical specifications

Overload protection	none
Running time / angel of rotation (A20-6090)	60 s/90° at 50 Hz (48 s/90° at 60 Hz)
Running time / angel of rotation (A20-90135)	optional 90 s/135° at 50 Hz (72 s/135° at 60 Hz)
Running time / angel of rotation (A20-120180)	optional 120 s/180° at 50 Hz (96 s/180° at 60 Hz)
Position feedback (A25-1PO)	Potentiometer 5 k $\Omega$ CONTELEC, conductive plastic according to EN12067-2: 2004 annex C Connection to output shaft positive and free of backlash according to EN12067-2: 2004 paragraph 6.2.2) Max. angle of rotation angle 180°
Position feedback (A25-2PO)	optional Additional position feedback Potentiometer 5 k $\Omega$ CONTELEC, conductive plastic according to EN12067-2: 2004 annex C Connection to output shaft positive and free of backlash according to EN12067-2: 2004 paragraph 6.2.2) Max. angle of rotation angle 180°

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Technical specifications	
Position feedback (A25-1NOVO)	optional Potentiometer 5 kΩ NOVOTEC, conductive plastic according to EN12067-2: 2004 annex C Connection to output shaft positive and free of backlash according to EN12067-2: 2004 paragraph 6.2.2) Max. angle of rotation angle 90° With NOVOTEC potentiometers, a position indicator or a 2nd potentiometer is not possible.
Direction of rotation (A30-R)	rotation to the right (clockwise 12.00 to 3.00 o'clock with view onto the shaft).
Direction of rotation (A30-L)	optional rotation to the left (anti-clockwise 12.00 to 9.00 o'clock with view onto the shaft)
Option Position indicator (A55-POS1)	optional Position indicator in housing cover (Only possible with CONTELEC potentiometer and for safe area)
Repeatability	0,2°
Radial bearing force	400 N
Damage pattern by mech. overload	Gear unit defect
Board gear	
Gear wheels/backlash	Spur toothed /max. 1°
Bearing	plain bearing/ball bearing, free of maintenance

### Housing Heating

Option housing heating (A60-HEAT1)	optional housing heating 230 VAC, down to -30 °C   -22 °F ambient temperature
Option housing heating (A60-HEAT2)	optional housing heating 120 VAC, down to -30 °C   -22 °F ambient temperature

### Cable Entry

Cable entry (A70-M20)	2x cable gland M20 x 1,5, metal, cable Ø min. 8,0 mm,   0.31" in, max. 13,0 mm   0.51" in
Cable entry (A70-M20KS)	optional 2x cable gland M20 x 1,5, plastic cable Ø min. 6,0 mm   0.24", max. 12,0 mm   0.47" in
Cable entry (A70-M25)	optional 2x cable gland M25 x 1,5, metal, cable Ø min. 14,0 mm   0.55" in, max. 20,0 mm   0.79" in
Cable entry (A70-M16)	optional 2x cable gland M16 x 1,5, metal, cable Ø min. 5,0 mm   0.20" in, max. 9,0 mm   0.35" in
Connecting cable for position feedback	3-pins, shielded 0.52 ... 1.52 (AWG20 ... 14) stripping length 7.5 ... 8.5 mm, 0.5 mm <sup>2</sup> ... 1.5 mm <sup>2</sup> 0.30 ... 0.14" in, 21 ... 16 AWG

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Cable Entry		
Connecting cable for line voltage Controlling without manual adjusting	4-pins (3+PE) 0.52 ... 2.52 (PE / N / AUF / ZU) length 10 mm, 0.5 mm <sup>2</sup> ... 2.5 mm <sup>2</sup> 0.39" in, 21 ... 14 AWG	
Connecting cable for line voltage Controlling with manual adjusting	5-pins (4+PE) 0.52 ... 2.52 (PE / N / L / AUF / ZU) stripping length 10 mm, 0.5 mm <sup>2</sup> ... 2.5 mm <sup>2</sup> 0.39" in, 21 ... 14 AWG	
Connecting cable for line voltage, controlling, case heating, with/without manual adjusting	5-pins (4+PE) 0.52 ... 2.52 (PE / N / L / AUF / ZU) stripping length 10 mm, 0.5 mm <sup>2</sup> ... 2.5 mm <sup>2</sup> 0.39" in, 21 ... 14 AWG	
Operating Condition		
Life time	The actuators exceed the service life requirements of EN 15714-2 Class C 'Modulation'. 250'000 starts in OPEN/CLOSED direction. (Detailed information on request).	
Mounting position	any, but not hanging downwards	
Positioning accuracy	< 1 %	
Installation height	≤ 2,000 m   6,561.68 ft above sea level > 2,000 m   6,561.68 ft above sea level on request	
Environmental conditions		
<b>Storage</b>	In according to DIN EN 60721-3-1, class IE12	
	relative temperature range	-25 °C ... +55 °C   -13 °F ... 131 °F
	relative air humidity	< 95 %
<b>Transport</b>	In according to DIN EN 60721-3-2, class IE23	
	relative temperature range	-25 °C ... +60 °C   -13 °F ... 140 °F
	relative air humidity	< 95 %
<b>Operation</b>	Class IE36 in according to DIN EN 60721-3-2	
	relative temperature range	-20 °C ... +60 °C   -4 °F ... 140 °F with additional case heating -30 °C ... +60 °C   -22 °F ... 140 °F
	relative air humidity	< 95 %
<b>Degree of protection</b>	according to DIN EN 60529	IP65

### NOTICE

The limits of the technical data must be strictly adhered to.

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## Order Information

### NOTICE

All options marked with \* correspond to the standard selection.

### Electrical Actuator 100 Nm

Description/Type	Order no.
Electrical actuator 100 Nm, TPS, position feedback potentiometer 5 kΩ, conductive plastic, 2 end position switches to limit the actuator, electric hand feed, IP65	668M20100-1...
<b>A05 "TORQUE"</b>	
Description/Type	Selection
TORQUE 100 Nm	100NM*
<b>A10 "FORM OF OUTPUT SHAFT"</b>	
Description/Type	Selection
SQUARE HOLLOW SHAFT 17 x 17 mm   0.67 x 0.67" in	IVK17*
ROUND SHAFT 20 x 50 mm   0.79 x 1.97" in, WITH FEATHER KEY 6 x 6 x 32 mm   0.24 x 0.24 x 1.26" in	20x50
<b>A15 POWER SUPPLY VOLTAGE</b>	
Description/Type	Selection
120 VAC/50 Hz	120 VAC
230 VAC/50 Hz	230 VAC*
<b>A20 "RUNNING TIME / ANGLE OF ROTATION"</b>	
Description/Type	Selection
60 SECONDS/90° (60 SEC./50 HZ/48 SEC./60 HZ)	6090*
90 SECONDS/135° (90 SEC./50 HZ/72 SEC./60 HZ)	90135
120 SECONDS/180° (120 SEC./50 HZ/96 SEC./60 HZ)	120180
<b>A25 "POSITION FEEDBACK"</b>	
Description/Type	Selection
1 x POTENTIOMETER 5 kΩ CONTELEC, CONDUCTIVE PLASTIC, APPROVED IN ACCORDANCE TO EN12067-2, FORM CLOSURE CONSTRUCTION, FREE OF BACKLASH, Position feedback only for CMS	1PO*
2 x POTENTIOMETER 5 kΩ CONTELEC, CONDUCTIVE PLASTIC, APPROVED IN ACCORDANCE TO EN12067-2, FORM CLOSURE CONSTRUCTION, FREE OF BACKLASH, Position feedback only for CMS	2PO
1x POTENTIOMETER 5 kΩ NOVOTEC, CONDUCTIVE PLASTIC, APPROVED IN ACCORDANCE TO EN12067-2, FORM CLOSURE CONSTRUCTION, FREE OF BACKLASH, Position feedback for ETAMATIC, FMS, VMS, CMS With NOVOTEC potentiometers, a position indicator or a 2nd potentiometer is not possible.	1NOVO
<b>A30 "DIRECTION OF ROTATION" (view onto the shaft, parallel key at 12.00 o'clock)</b>	
Description/Type	Selection
CLOCKWISE (12.00 TO 3.00 O'CLOCK)	R*
ANTI CLOCKWISE (12.00 TO 9.00 O'CLOCK)	L

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A40 "ADAPTION"	Selection
FLANGE FIXINIG IN ACCORDANCE TO ISO5211	F10*
– F05 Ø50 mm, 4 x 45° M6	
– F07 Ø70 mm, 8 x M8	
– F10 Ø102, 4 x 45° M10	
ADAPTION IN ACCORDANCE TO CUSTOMER SPECIFICATION	

A45 "COLOUR"	Selection
COVER RED RAL3020	RT*
Further colours on request	

A50 "CUSTOMER"	Selection
LAMTEC TYPE	S*

A55 "POSITION INDICATOR"	Selection
WITHOUT	POS0*
POSITION INDICATOR IN THE COVER <sup>1</sup>	POS1

1 Only possible with CONTELEC potentiometer.

A60 "HOUSING HEATING"	Selection
WITHOUT	HEAT00*
HOUSING HEATING 230 V, DOWN TO -30 °C	HEAT1
HOUSING HEATING 120 V, DOWN TO -30 °C	HEAT2

A70 "CABLE ENTRY"	Selection
2x CABLE GLAND M16 METAL	M16
2x CABLE GLAND M20 METAL	M20*
2x CABLE GLAND M20 PLASTIC BLACK	M20KS
2x CABLE GLAND M25 METAL	M25
CABLE GLAND IN ACCORDANCE TO CUSTOMER SPECIFICATION	

A99 "SPECIAL CONFIGURATION"	Selection
WITHOUT	SO0*

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The limits of the technical data must be strictly adhered to.

The information in this publication is subject to technical changes.



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