

Technical Data Electrical Actuator TPS60.1 - 60 Nm



Fig. 1 Actuator 60 Nm

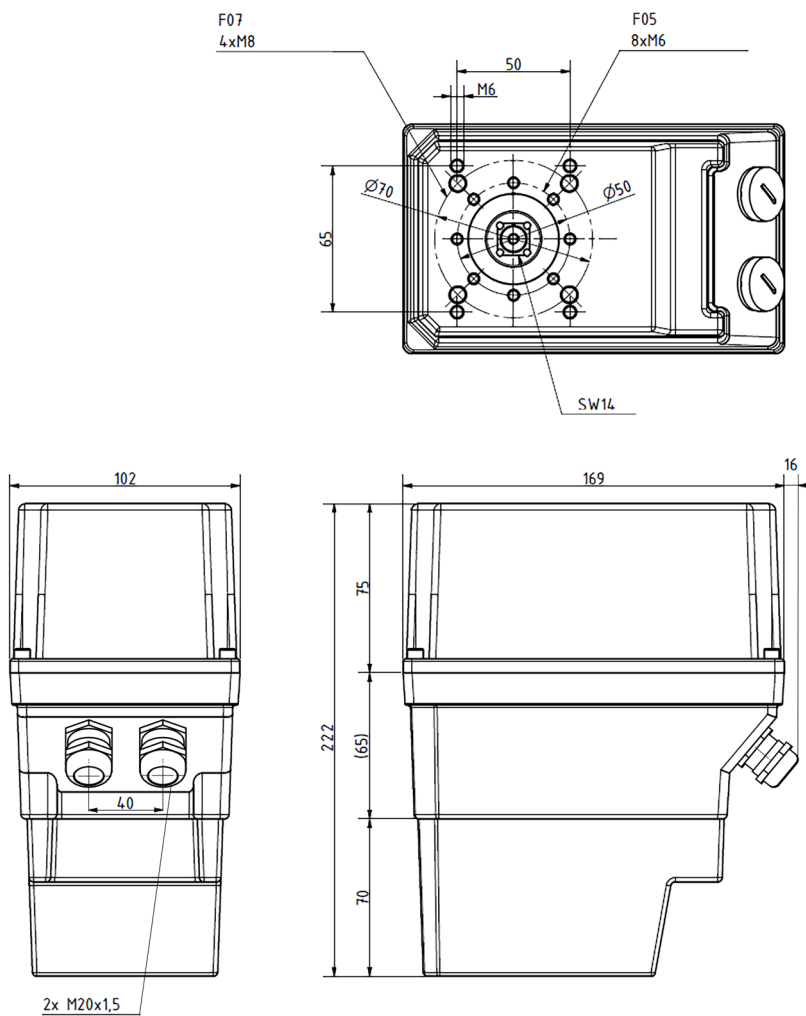


Fig. 2 Dimensional drawing 60 Nm actuator with cable entry point and screwed cable gland (dimensions in mm)

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Dimensions

Dimensions (H x W x D)	169 x 102 x 222 mm 6.65 x 4.02 x 8.74" in
Weight	4 kg 8.82 lb (the weight may differ depending on the configuration)
Material cover	Die-cast 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 668M2060-1 - 60 Nm

		Optional:
Power supply (A15)	230 VAC	120 VAC
Power consumption	31 mA	65 mA
Capacitor	0,27 μ F / 600 V	1,5 μ F / 400 V
Input power synchronous motor	7 W	7,8 W
Output power	5,1 W	5,7 W

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 Ω 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 Ω 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°
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)

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Technical specifications	
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 ² ... 1.5 mm ² 0.30 ... 0.14" in, 21 ... 16 AWG
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 ² ... 2.5 mm ² 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 ² ... 2.5 mm ² 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 ² ... 2.5 mm ² 0.39" in, 21 ... 14 AWG

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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

Storage		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 %
Transport		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 %
Operation		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 %
Degree of protection	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 60 Nm

Description/Type	Order no.
Electrical actuator 60 Nm, TPS, position feedback potentiometer 5 kΩ, conductive plastic, 2 end position switches to limit the actuator, electric hand feed, IP65	668M2060-1...
A05 "NOMINAL TORQUE"	
Description/Type	Selection
NOMINAL TORQUE 60 Nm	60NM*
A10 "FORM OF OUTPUT SHAFT"	
Description/Type	Selection
SQUARE HOLLOW SHAFT 14 x 14 mm 0.55 x 0.55" in	IVK14*
Round shaft 20 x 50 mm 0.79 x 1.97" in, with feather key 6 x 6 x 32 mm 0.25 x 0.24 1.26" in	20x50
Round shaft 12 x 40 mm 0.47 x 1.57" in, with feather key 4 x 4 x 20 mm 0.16 x 0.16 0.79" in	12x40
A15 "POWER SUPPLY VOLTAGE"	
Description/Type	Selection
120 VAC/50 Hz	120 V
230 VAC/50 Hz	230 VAC*
A20 "RUNNING TIME / ANGLE OF ROTATION"	
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
A25 "POSITION FEEDBACK"	
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
A30 "DIRECTION OF ROTATION" (view onto the shaft, parallel key at 12.00 o'clock)	
Description/Type	Selection
CLOCKWISE (12.00 TO 3.00 O'CLOCK)	R*
ANTI CLOCKWISE (12.00 TO 9.00 O'CLOCK)	L
A40 "ADAPTION"	
Description/Type	Selection
FLANGE FIXINIG IN ACCORDANCE TO ISO5211	F05F07*
– F05 Ø50 mm 1.97" in, 8x M6	
– F07 Ø70 mm 2.76" in, 4 x M8	
– 65 x 50 mm 2.56 x 1.97" in, 4 x M6	
ADAPTION IN ACCORDANCE TO CUSTOMER SPECIFICATION	

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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	POS1

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 information in this publication is subject to technical changes.



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