

Technical Data Electrical Actuator TPS4.2 - 4,5 Nm

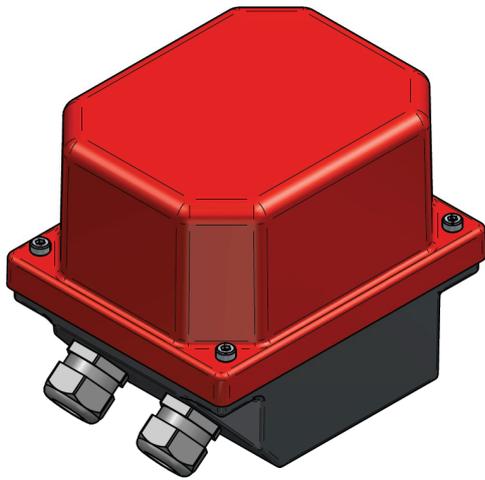


Fig. 1 Without position indicator

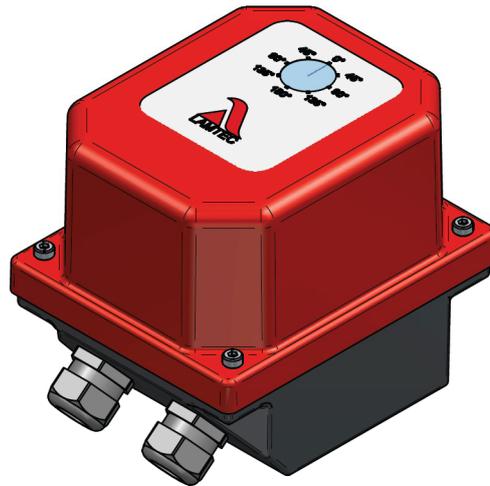


Fig. 2 With position indicator

Dimensions actuator with cable entry via cable glands

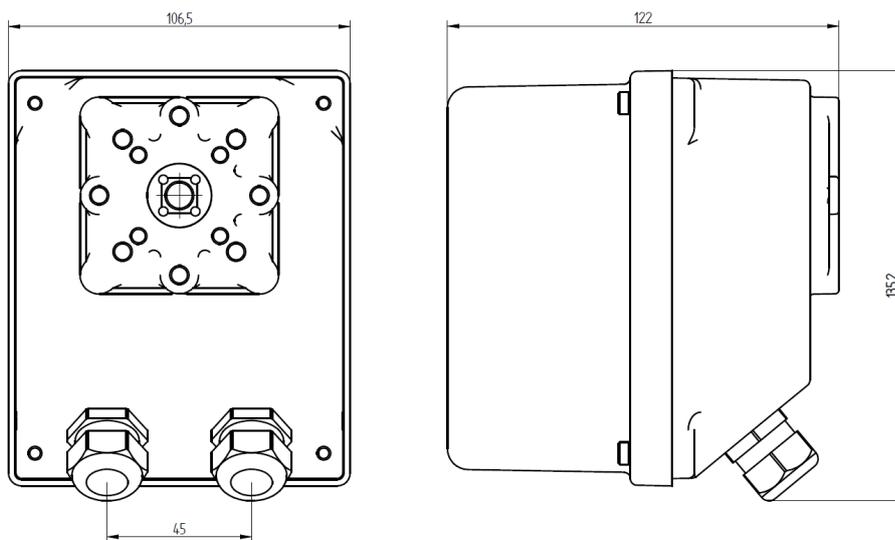


Fig. 3 Dimensioned drawing actuator with cable entry via cable glands

Dimension with standard adaption
F05F07 (H x W x D)

122 x 106,5 x 135,2 mm | 4.8 x 4.19 x 5.32" in

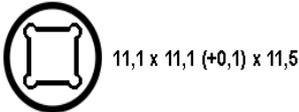
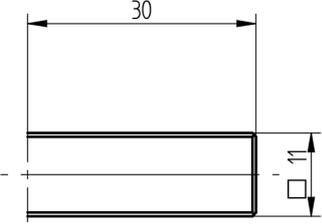
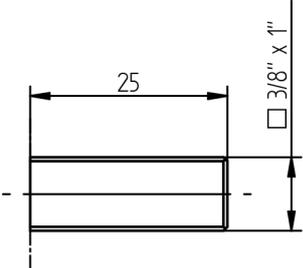
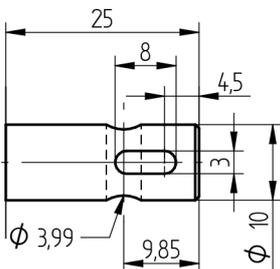
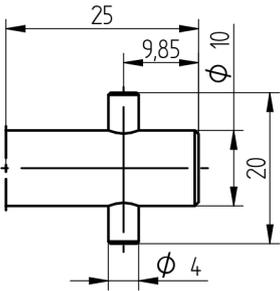
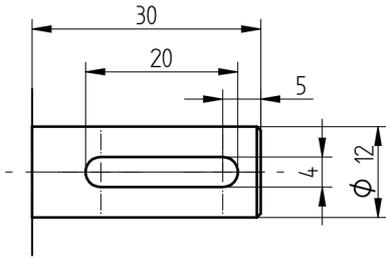
Additional space required to open the cover (H)

85 mm | 3.35" in

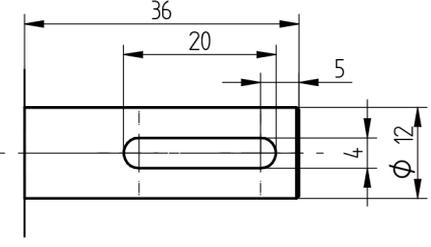
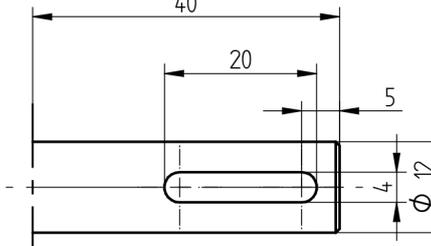
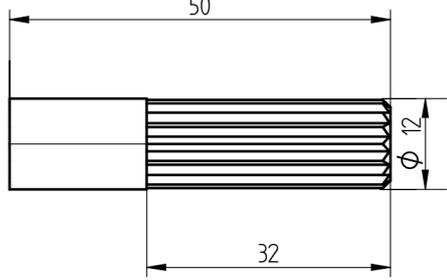
NOTICE

Depending on the cable entry, the length may vary.

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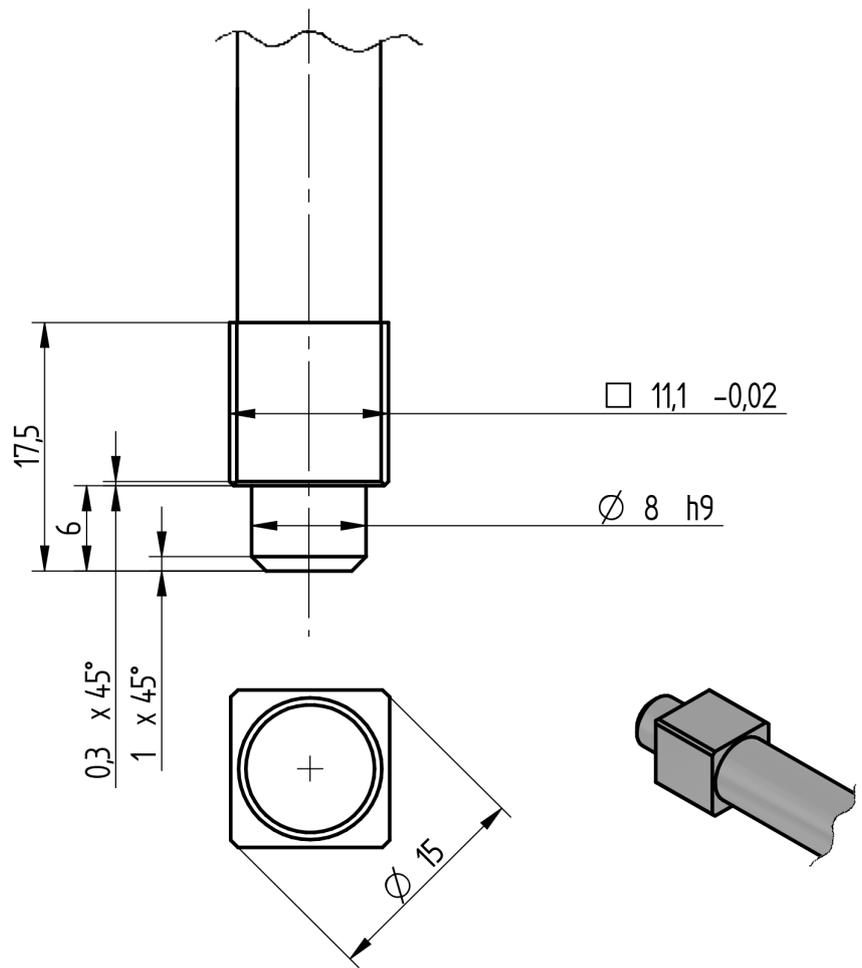
<p>Form of output shaft (IVK11) Internal square 11.1 x 11.1 x 11.5 mm 0.44 x 0.44 x 0.45" in</p>		
<p>Form of output shaft (VK11 x 11) Square 11 x 11 x 30 mm 0.43 x 0.43 x 1.18" in</p>		
<p>Form of output shaft (VK38 x 1) Square 3/8" x 1"</p>		
<p>Form of output shaft (10 x 25) Round 10 x 25 mm 0.39 x 0.98" in with feather key 3 x 3 x 8 mm 0.12 x 0.12 x 0.31" in and cross drilling Only available for 6 Nm and 20 Nm</p>		
<p>Form of output shaft (10 x 25 V) Round 10 x 25 mm 0.39 x 0.98" in with cross bolt 4 x 20 mm 0.16 x 0.79" in in vertical position Only available for 6 Nm and 20 Nm</p>		
<p>Form of output shaft (12 x 30) Round 12 x 30 mm 0.47 x 1.18" in with feather key 4 x 4 x 20 mm 0.16 x 0.16 x 0.79" in</p>		

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<p>Form of output shaft (12 x 36) Round 12 x 36 mm 0.47 x 1.41" in with feather key 4 x 4 x 20 mm 0.16 x 0.16 x 0.79" in</p>	
<p>Form of output shaft (12 x 40) Round 12 x 40 mm 0.47 x 1.57" in with feather key 4 x 4 x 20 mm 0.16 x 0.16 x 0.79" in</p>	
<p>Form of output shaft (KVZD2) Round 12 x 50 mm 0.47 x 1.97" in with spline 10/12 in according to DIN5481</p>	

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Shape of the pluggable square of the output shafts (actuator side)

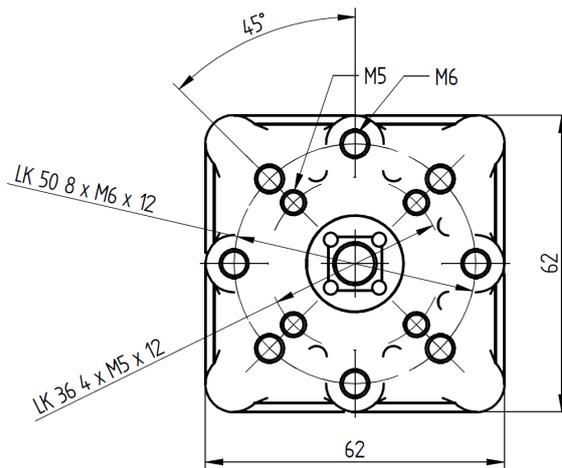


Adaption (Standard)
(F05F03)

Flange fixing in according to ISO5211

F03: $\varnothing 36$ mm | 1.42" in
4 x 90° M5 / 4 x M5

F05: $\varnothing 50$ mm | 1.97" in
8 x 45° M6



Technical Data Electrical Actuator TPS4.2 - 4,5 Nm

Dimensions Actuator 668M2004	
Dimensions (H x W x D)	122 x 106,5 x 135,2 mm 4.8 x 4.19 x 5.32" in
Weight	1,4 kg 3.09 lb (The weight may vary slightly depending on the configuration)
Material Cover	Die-cast aluminium, powder-coated RAL 3020 traffic red (other colours on request)

Eingangsdaten 668M2004 – 4,5 Nm		
Standard	Line voltage	120 VAC
	Current consumption (A15)	11 mA
	Capacitor	0,15 µF/500 V
	Input power synchronous motor	1,2 W
	Output power	0,2 W
668M2004 – 4,5 NM Nominal torque max. (A05)	4,5 Nm	Holding torque 2,25 Nm

NOTICE

The peak torque can briefly be 50 to 100% higher than the nominal torque.

The mechanical connection downstream of the shaft must be designed for this.

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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 kΩ 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 kΩ 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)
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	150 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

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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, 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
Cable entry (A70-NPT12)	optional Conduit-Adapter 2x ½" NPT, metal, cable Ø max. 9,5 mm 0.37" 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	-10 °C ... +60 °C 14 °F ... 140 °F with additional case heating -30 °C ... +60 °C -22 °F ... 140 °F
	relative air humidity	< 95 %
	Pollution Degree	4
Degree of protection	according to DIN EN 60529	IP65

EU Declaration of Conformity

2014/35/EU	Low Voltage Directive (in preparation)
2014/30/EU	EMC Directive (in preparation)

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.

Description/Type	Order no.
Electrical actuator 4,5 Nm, TPS, position feedback potentiometer 5 kΩ, conductive plastic, 2 end position switches to limit the actuator, electric hand feed, degree of protection IP65	668M2004-2
A05 „NOMINAL TORQUE“	
A05 „NOMINAL TORQUE“	Selection
NOMINAL TORQUE 4,5 Nm	4,5NM*
A10 „FORM OF OUTPUT SHAFT“	
A10 „FORM OF OUTPUT SHAFT“	Selection
INTERNAL SQUARE 11 x 11 mm 0.44 x 0.44" in	IVK11*
SQUARE SHAFT 11 x 11 mm 0.44 x 0.44" in	VK11
SQUARE SHAFT 3/8" x 1"	VK38x1
ROUND SHAFT 10 x 25 mm 0.39 x 0.98" in, WITH PARALLEL KEY 3 x 3 x 8 mm 0.12 x 0.12 x 0.31" in	10x25
ROUND SHAFT 12 x 30 mm 0.47 x 1.18" in, WITH PARALLEL KEY 4 x 4 x 20 mm 0.16 x 0.16 x 0.79" in	12x30
ROUND SHAFT 12 x 36 mm 0.47 x 1.41" in, WITH PARALLEL KEY 4 x 4 x 20 mm 0.16 x 0.16 x 0.79" in	12x36
ROUND SHAFT 12 x 40 mm 0.47 x 1.57" in, WITH PARALLEL KEY 4 x 4 x 20 mm 0.16 x 0.16 x 0.79" in	12x40
ROUND SHAFT 12 x 40 mm 0.47 x 1.97" in, SERRATION 10/12, IN ACC. TO DIN5481 DIN5481	KVZD2
D-SHAFT d1=10 0.39 x d2=8.5 0.33 x L=25 mm 0.98" in, INCL. ADAPTER PLATE for VKP-VALVE SIEMENS	D10x25
A15 „POWER SUPPLY VOLTAGE“	
A15 „POWER SUPPLY VOLTAGE“	Selection
120 VAC/50 Hz	120 VAC
A20 “RUNNING TIME / ANGLE OF ROTATION”	
A20 “RUNNING TIME / ANGLE OF ROTATION”	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“	
A25 „POSITION FEEDBACK“	Selection
1x POTENTIOMETER 5 kΩ CONTELEC CONDUCTIVE PLASTIC, APPROVED IN ACCORDANCE TO EN12067-2, FORM CLOSURE CONSTRUCTION, FREE OF BACKLASH, Position feedback for CMS	1PO*
2x POTENTIOMETER 5 kΩ CONDUCTIVE PLASTIC, APPROVED IN ACCORDANCE TO EN12067-2, FORM CLOSURE CONSTRUCTION, FREE OF BACKLASH, Position feedback for CMS	2PO
A30 “DIRECTION OF ROTATION” (view onto the shaft, parallel key at 12.00 o'clock)	
A30 “DIRECTION OF ROTATION” (view onto the shaft, parallel key at 12.00 o'clock)	Selection
CLOCKWISE (12.00 TO 3.00 O'CLOCK)	R*
ANTI CLOCKWISE (12.00 TO 9.00 O'CLOCK)	L
A40 „ADAPTION“	
A40 „ADAPTION“	Selection
FLANGE FIXINIG IN ACCORDANCE TO ISO5211 – F05 Ø50 mm 1.97" in, 4 x 45° M5 / 4 x 45° M6 – F07 Ø70 mm 2.76" in, 4 x 90° M8	F05F07*

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A45 „COLOUR“	Selection
COVER RED RAL3020	RT*
COVER BLACK RAL9005	SW
COVER ANTHRACITE RAL7016	AZ
CORROSION PROTECTION CATEGORY C4 ² COVER and CORPUS RAL7035 LIGHT GREY	C4
Further colours on request	

A50 “CUSTOMER“	Selection
LAMTEC TYPE	S*

A55 „POSITION INDICATOR“	Selection
WITHOUT	POS0*
POSITION INDICATOR3 IN THE COVER ⁴	POS1

4 Only possible with CONTELEC potentiometer.

A60 “HOUSING HEATING”	Selection
WITHOUT DOWN TO -10 °C 14 °F	HEAT0*

A70 “CABLE ENTRY”	Selection
2x CABLE GLAND M16 METAL ⁶	M16
2x CABLE GLAND M20 METAL ⁶	M20*
2x CABLE GLAND M20 PLASTIC BLACK ⁵	M20KS
2x CABLE GLAND M25 METAL ⁶	M25
CONDUIT ADAPTER 2x ½“ NPT ⁶	NPT12
CABLE GLAND IN ACCORDANCE TO CUSTOMER SPECIFICATION ⁶	

A90 “ADDITIONAL SWITCH” ¹	Selection
WITHOUT	0

A99 “SPECIAL CONFIGURATION”	Selection
WITHOUT	SO0*

The information in this publication is subject to technical changes.



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