

## Technical Data Electrical Actuator TPS40 - 40 Nm



Fig. 1 Without position indicator



Fig. 2 With position indicator

### Dimensions actuator with cable entry via cable glands

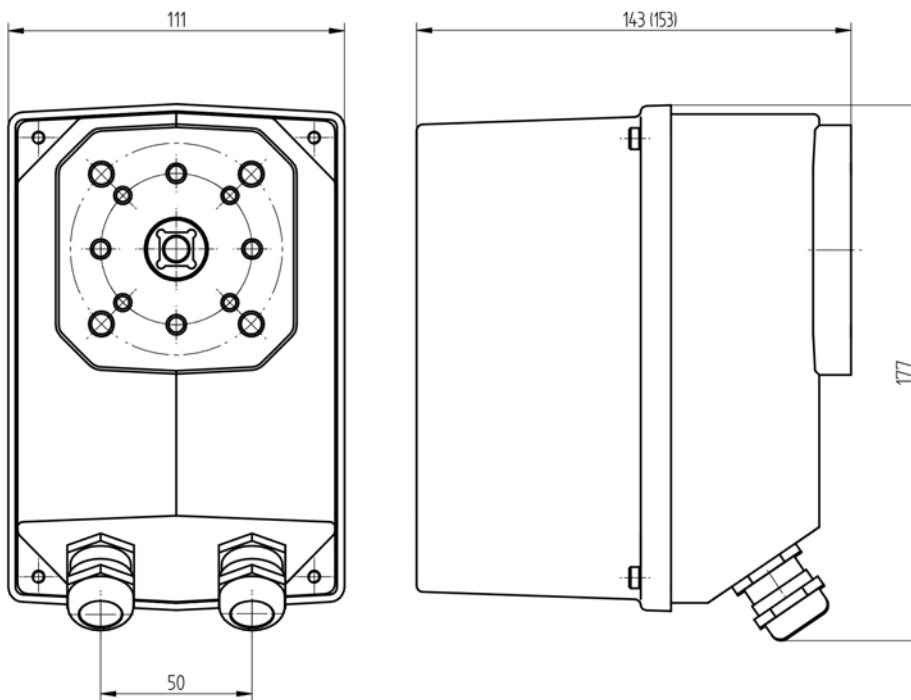


Fig. 3 Dimensioned drawing actuator with cable entry via cable glands

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

143 x 111 x 177 mm / 5.63 x 4.37 x 4.97" in

Dimension with  
Adaption 65 x 50 or  
Hole circuit 52 or 68 (H x W x D)

153 x 111 x 177 mm / 6.02 x 4.37 x 4.97" in

Additional space required to open the cover (H)

85 mm / 3.35" in

### NOTICE

Depending on the cable entry, the length may vary.

# Technical Data Electrical Actuator TPS40 - 40 Nm

## Dimensions actuator with cable entry via conduit adapter

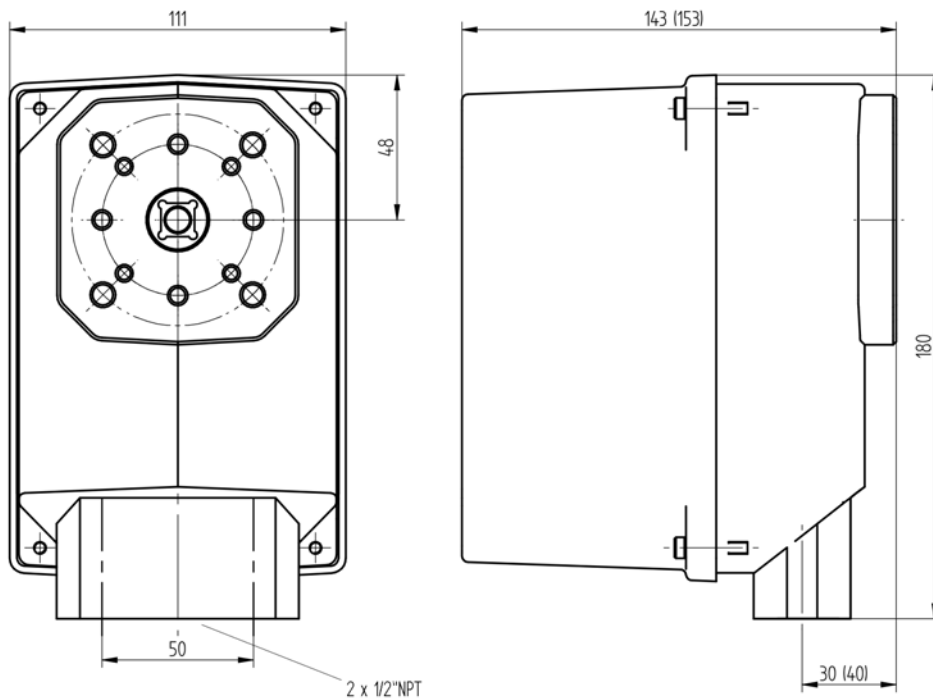


Fig. 4 Dimensions actuator with cable entry via conduit adapter

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

143 x 111 x 180 mm / 5.63 x 4.37 x 7.09" in

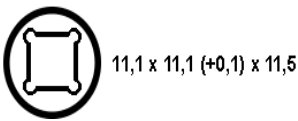
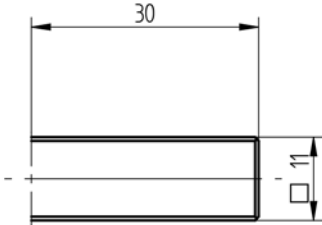
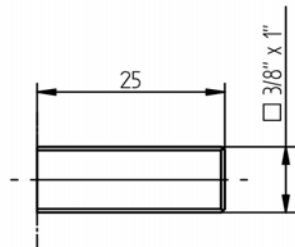
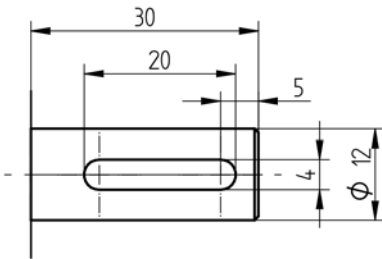

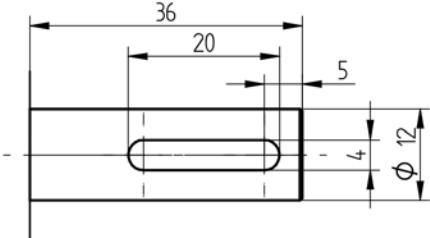
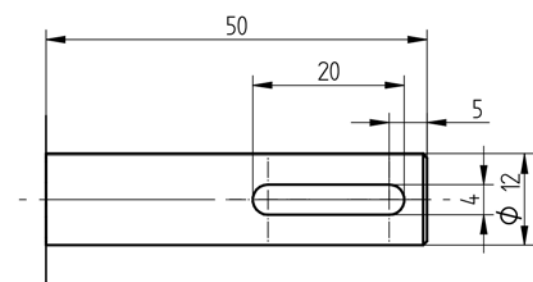
Dimension with  
Adaption 65 x 50 or  
Hole circuit 52 or 68 (H x W x D)

153 x 111 x 180 mm / 6.02 x 4.37 x 7.09" in

Additional space required to open the cover (H)

85 mm / 3.35" in

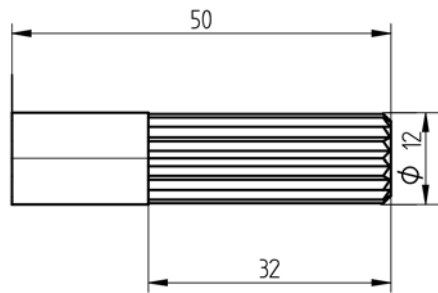
# Technical Data Electrical Actuator TPS40 - 40 Nm

<p>Form of output shaft (IVK11)</p> <p>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)</p> <p>Square          11 x 11 x 30 mm /          0.43 x 0.43 x 1.18" in</p>		
<p>Form of output shaft (VK38x1)</p> <p>Square 3/8" x 1"</p>		
<p>Form of output shaft (12 x 30)</p> <p>Round          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</p>		
<p>Form of output shaft (12 x 36)</p> <p>Round          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</p>		
<p>Form of output shaft (12 x 40)</p> <p>Round 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</p>		

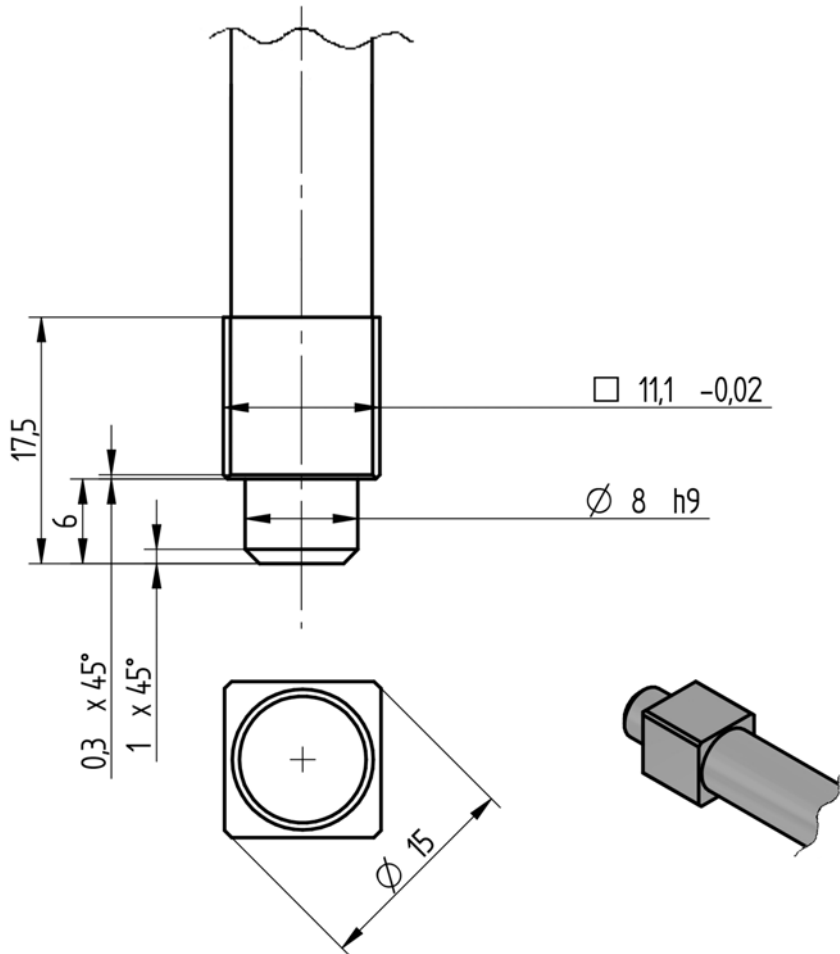
# Technical Data Electrical Actuator TPS40 - 40 Nm

Form of output shaft (KVZD2)

Round  
12 x 50 mm / 0.47 x 1.97" in  
with spline 10/12  
in according to DIN5481



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



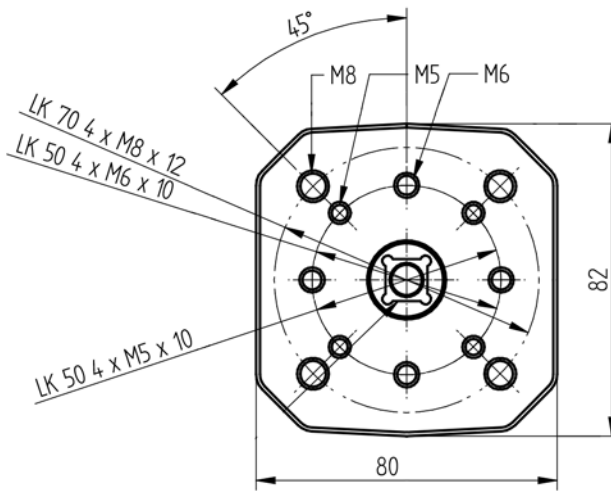
# Technical Data Electrical Actuator TPS40 - 40 Nm

Adaption (Standard)  
(F05F07)

Flange fixing in according to  
ISO5211

F05:  $\varnothing 50$  4 x 45° M5 / 4 x M6

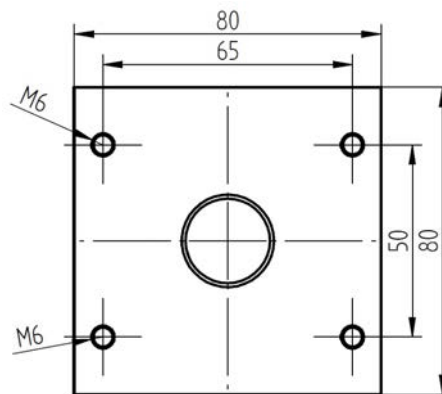
F07:  $\varnothing 70$  4 x 45° M8



Adaption via adapter plate (65 x 50)

Flange fixing  
4 x M6, 65 x 50 mm /  
2.56 x 1.97" in

This increases the height of the  
actuator by 10 mm / 0.39" in.

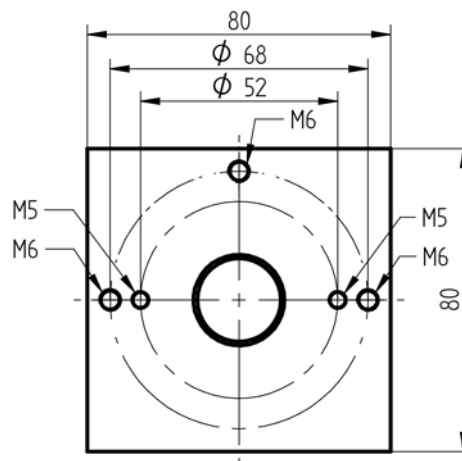


Adaption via adapter plate (LK52)

Flange fixing  
 $\varnothing 52$  mm / 2.05" in 2 x M5  
(LK68)

Flange fixing  
 $\varnothing 68$  mm / 2.68" in 3 x M6

This increases the height of the  
actuator by 10 mm / 0.39" in.



## Technical Data Electrical Actuator TPS40 - 40 Nm

### Dimensions Actuator 668M2040

Dimensions (H x W x D)	143 x 111 x 180 mm / 5.63 x 4.37 x 7.09" in
Weight	2,3 kg / 5.07 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)

### Input Data 668M2040 - 40 Nm

Standard	Mains voltage	230 VAC
	Power consumption (A15)	48 mA
	Capacitor	0.36 µF / 500 V
	Input power synchronous motor	11 W
	Output power	5.1 W
Optional	Mains voltage	120 VAC
	Power consumption (A15)	100 mA
	Capacitor	1.5 µF / 250 V
	Input power synchronous motor	11 W
	Output power	5.1 W

<b>668M2040 – 40NM Torque max. (A03)</b>	40 Nm	Holding torque 20 Nm
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### Technical specifications

Overload protection	none
Running time / angel of rotation (A20-6090)	60 seconds/90° at 50 Hz (48 seconds/90° at 60 Hz)
Running time / angel of rotation (A20-90135)	optional 90 seconds/135° at 50 Hz (72 seconds/135° at 60 Hz)
Running time / angel of rotation (A20-120180)	optional 120 seconds/180° at 50 Hz (96 seconds/180° at 60 Hz)
Position feedback (A25-1PO)	Potentiometer 5 kOhm 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 kOhm 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°

## Technical Data Electrical Actuator TPS40 - 40 Nm

### Technical specifications

Position feedback (A25-1NOVO)	optional Potentiometer 5 kOhm 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)
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/12 W, down to -30 °C / -22 °F ambient temperature
Option housing heating (A60- HEAT2)	optional housing heating 120 VAC/12 W, down to -30 °C / -22 °F ambient temperature

### Cable Entry

Cable entry (A70-00)	without cable gland, 2 x inner thread M20
Cable entry (A70-M20)	2 x 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 2 x 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 2 x 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 2 x cable gland M16 x1,5, metal, cable Ø min. 5,0 mm / 0.20" in, max. 9,0 mm / 0.35" in
Cable entry (A70-NPT12)	optional Conduit-Adapter 2 x 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 <sup>2</sup> ... 1.5 mm <sup>2</sup> / 0.30 ... 0.14" in, 21 ... 16 AWG

## Technical Data Electrical Actuator TPS40 - 40 Nm

### Cable Entry

Connecting cable for line voltage Controlling without manual adjusting	4-pins (3+PE) 0.52 ... 2.52 (PE / N / 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 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 is available 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	-10 °C ... +60 °C / 14 °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.



# Technical Data Electrical Actuator TPS40 - 40 Nm

## Order Information

### Electrical Actuator 40 Nm – configuration

Description/Type	Order no.
Electrical actuator 40 Nm, TPS, position feedback potentiometer 5 kohm, conductive plastic, 2 end position switches to limit the actuator, electric hand feed, IP65	668M2040
<b>A05 "TORQUE"</b>	
Description/Type	Selection
TORQUE 40 Nm	40NM*
<b>A10 "FORM OF OUTPUT SHAFT"</b>	
Description/Type	Selection
SQUARE HOLLOW SHAFT 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 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, SPLINE 10/12, IN ACC. TO DIN5481 DIN5481	KVZD2
<b>A15 POWER SUPPLY VOLTAGE</b>	
Description/Type	Selection
120 VAC/50 Hz	120VAC
230 VAC/50 Hz	230VAC*
<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 KOHM 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 KOHM CONTELEC, CONDUCTIVE PLASTIC, APPROVED IN ACCORDANCE TO EN12067-2, FORM CLOSURE CONSTRUCTION, FREE OF BACKLASH, Position feedback only for CMS	2PO
1 x POTENTIOMETER 5 KOHM 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

# Technical Data Electrical Actuator TPS40 - 40 Nm

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*
FLANGE FIXINIG Ø52 mm / 2.05" in, 2 x M5 <sup>1</sup>	LK52
FLANGE FIXINIG Ø68 mm / 2.68" in, 3 x M6 <sup>1</sup>	LK68
FLANGE FIXINIG 4 x M6, 65 x 50 mm / 2.56 x 1.97" in <sup>1</sup>	65x50
ADAPTION IN ACCORDANCE TO CUSTOMER SPECIFICATION	

<sup>1</sup> Adaptation via adapter plate. This increases the height of the actuator by 10 mm / 0.39" in.

A45 "COLOUR"	Selection
COVER RED RAL3020	RT*
COVER BLACK RAL9005	SW
COVER ANTHRACITE RAL7016	AZ
CORROSION PROTECTION CATEGORY C4 COVER and CORPUS RAL7035 LIGHT GREY	C4
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	HEAT0*
HOUSING HEATING 230V/12W, DOWN TO -30 °C	HEAT1
HOUSING HEATING 120V/12W, DOWN TO -30 °C	HEAT2

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

A99 "SPECIAL CONFIGURATION"	Selection
WITHOUT	SO0*

\* Default selection



only 120 V

The information in this publication is subject to technical changes.



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