

# Electric Rotary Actuators For Nuclear Plants

**S-SIWI and S-SIWI-AS**

**for Open-Loop Control Equipment**



**Catalog MP 35.2 • 2011 / EM**

# Electric Rotary Actuators for Nuclear Plants

## S-SIWI and S-SIWI-AS Series for Open-Loop Control Equipment

Catalog MP 35.2 • 2011 / EM

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The production and testing of these electric actuators are inspected and approved regularly by the following authorities :

- > TÜV CERT, NIS ZERT
- > NPP Philippsburg ( EnBW ) as partner of VGB
- > AREVA NP GmbH

## Electric rotary actuators for nuclear plants S – SIWI and S – SIWI – AS series for open – loop control equipment



Fig. 1 Electric rotary actuator for nuclear plants,  
S - SIWI - AS series

### Delivery program

Electric rotary actuator for open-loop control equipment for use in nuclear plants

S - SIWI series  
S-SIWI-AS series

' Important for safety reasons '  
' Important for safety reasons and designed-fault resistant ', also in ' long-term availability ' version

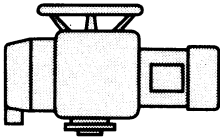
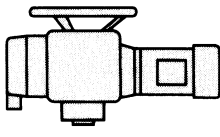
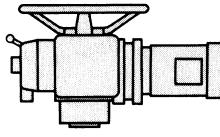
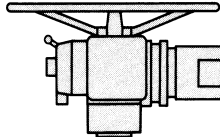
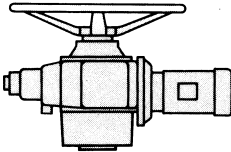
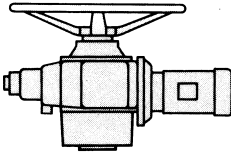
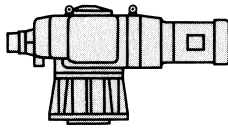
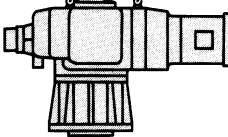
With three-phase motor  
For short-term conditions operation

3/PEN AC 50 Hz 380 V  
S2 - 10 min under normal  
S2 - 1,5 min under fault conditions to VDE 0530, Part 1 § 8c

Connection flange and output shaft

Design B, C, D or E to DIN 3210  
Design B1 or B3 to DIN ISO 5210

### Summary

Electric rotary actuators					
<b>S - SIWI series</b> <b>S – SIWI - AS series</b>	Type Type	<b>M76361 - C</b> <b>M76371 - C</b>	<b>M76361 - E</b> <b>M76371 - E</b>	<b>M76361 - F</b> <b>M76371 - F</b>	<b>M76361 - G</b> <b>M76371 - G</b>
Adjustable tripping torque	min. max.	10 and 15 Nm 45 Nm	30 Nm 90 Nm	60 Nm 180 Nm	100 Nm 300 Nm
Output speed in steps from .. to ..		5 to 180 rpm	5 to 180 rpm	5 to 180 rpm	5 to 180 rpm
Size to DIN 3210 / DIN ISO 5210		0 / F10	0 / F10	1 / 2 / F14	3 / F16
Ordering data		page 11 and 12	page 13	page 14	page 15
					
<b>S - SIWI series</b> <b>S – SIWI – AS series</b>	Type Type	<b>M76361 - M</b> <b>M76371 - M</b>	<b>M76361 - N</b> <b>M76371 - N</b>	<b>M76361 - S</b> <b>M76371 - S</b>	<b>M76361 - U</b> <b>M76371 - U</b>
Adjustable tripping torque	min. max.	200 Nm 600 Nm	300 Nm 900 Nm	500 Nm 1500 Nm	1000 Nm 3000 Nm
Output speed in steps from .. to ..		5 to 180 rpm	5 to 180 rpm	5 to 60 rpm	5 to 60 rpm
Size to DIN 3210 / DIN ISO 5210		3 / F16	4 / F25	4 / F25	5 / F30
Ordering data		page 16	page 17	page 18	page 19

## Meaning of abbreviations

used to identify the series

S	Open-loop control equipment
SIWI	Important for safety reasons
AS	Designed - fault resistant

## Application

The electric rotary actuator of the S-SIWI and S-SIWI-AS series are actuators for open loop control equipment in nuclear plants. The rotary actuators of S-SIWI series, type range M76361, are used to actuate units which are particularly important for plants safety, e.g. for the safe operation of a nuclear reactor and for maintaining the emergency cooling and after-cooling. The rotary actuators of S-SIWI-AS series, type range M76371, are 'important for safety reasons' and 'designed-fault resistant', i. e. they must operate correctly under fault conditions agreed upon during the design of a nuclear plant ( designed fault ). They are designed such that they continue to function for at least one day or - in the 'long-term availability' version - at least one year following the occurrence of a designed fault.

## Versions

The rotary actuators of the SIWI and SIWI - AS series are further developments of the proven rotary actuators of the standard S series. Higher safety factors were taken into account for the strength calculation of all parts in the flux of force than with the S series. The tripping torques have therefore been reduced compared to those of the rotary actuators of the standard S series.

## Design and mode of operation

### Motor

A three - phase asynchronous motor is used as the drive.

### Gear Unit

The flux of force in all rotary actuators is from the motor to the output shaft via a spur-type transmission gear and a worm gear ( Fig. 2 ). The rotary actuators M763..-S and M763..-U also have a planetary gear following this combination of units. A stepped range of drive speeds from 5 up to 180 rpm is achieved using different numbers of poles for the motor and different gear ratios. The worm shaft is kept in a central position in relation to the worm wheel by means of tension plate springs and can move in both axial directions ( travelling worm ). If a load torque occurs on the output shaft which is greater than the torque set by the tension of the plate springs, the worm shaft is pressed out of its central position by the peripheral force on the worm wheel. A torque switch is then activated via a lever system and switches off the motor via the associated control equipment ( e. g. reversing starter switch ).

The gear unit is filled with a high -pressure lubricant and sealed by gaskets in all directions. All gearing shafts move in anti-friction bearings.

## Manual operation

If necessary, the actuators can be operated by means of a handwheel which is inoperative in the case of motorized operation. By pressing a switching lever, the actuator motor is switched off and the handwheel is connected to the output shaft. This position is engaged by a special mechanism. The handwheel is automatically disconnected without danger for the operator when the motor starts up and the motor is connected again. Motorized operation always has priority over manual operation. The rotary actuators M763..-F, -G, -M, and -N can also be supplied with a gear reducer for the handwheel where the handwheel shaft is offset by 90° with respect to the output shaft. A qualification according to the German standard KTA 3504, edition 11/2006 is not present for this version, especially with respect to the resistance to vibration. The rotary actuators M763..-S and -U are always fitted with a handwheel gear reducer.

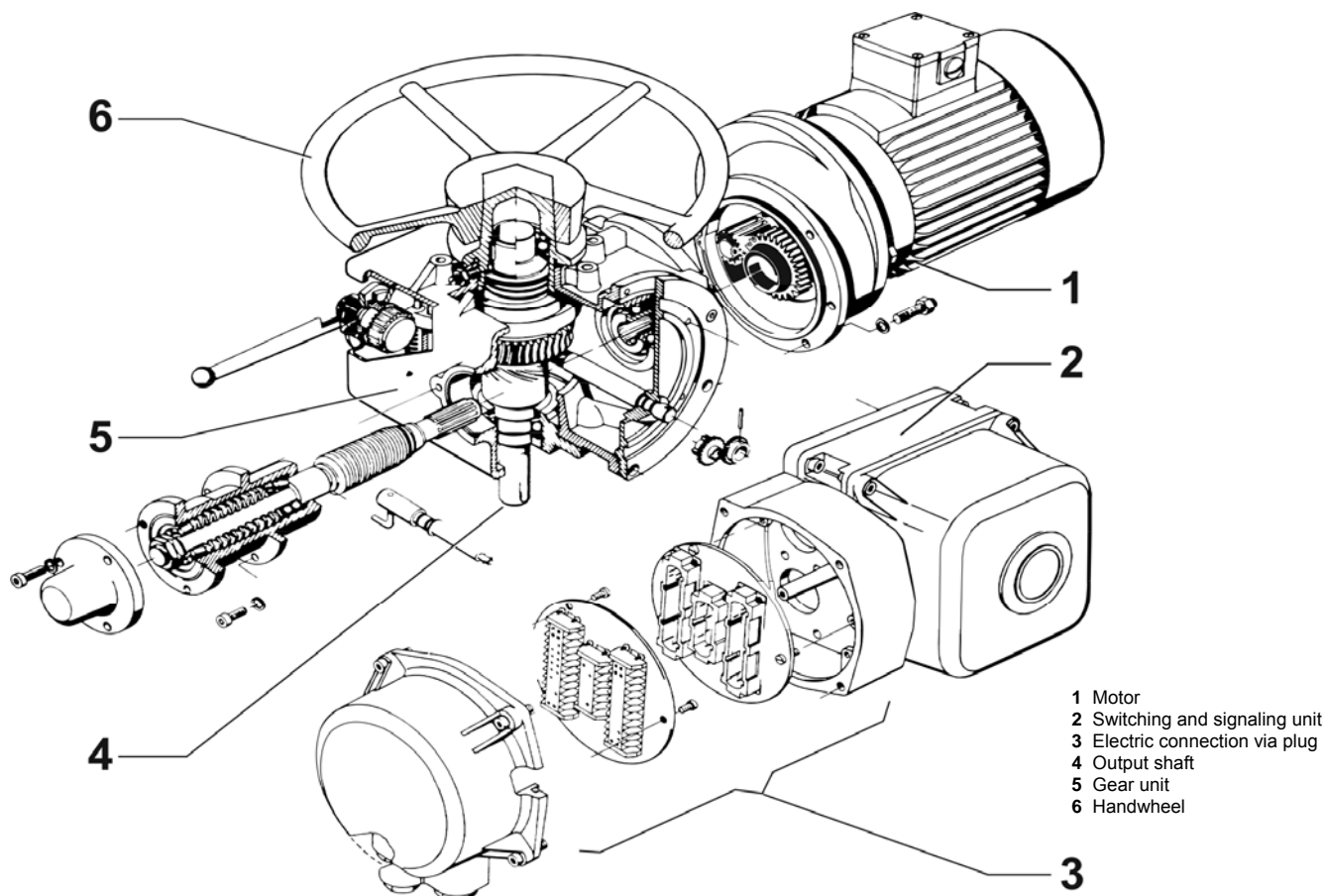


Fig. 2: Parts of an electric rotary actuators, S-SIWI series

### Flange connection dimensions and output shaft designs

The forms of the rotary actuators at the connection point to the final control element are according to DIN 3210 or DIN ISO 5210. These standards define the shape and dimensions of the connection flange and the various designs of the output shaft.

DIN 3210 has the following meanings :

Design B :	hollow shaft with insert bush
Design C :	hollow shaft with claw coupling
Design D :	free shaft end ( with featherkey ) / not qualified
Design E :	Bore with featherkey slot / not qualified

Rotary actuators with flange connection dimensions and output shafts designs according to DIN 3338 are available on request.

### Switching and signaling unit

The switching signaling unit is fitted in a housing which is the same for all actuators of a series. This housing is pressure-tight ( angular with round cover ) in the actuators of the S-SIWI-AS series and thus differs from the housing of the S-SIWI-series. The switching and signaling unit consists of assemblies for activating the torque and travel switches, a mechanical position indicator, a remote transmitter ( electronic position transmitter or potentiometer for position indication ) and the associated gear reducer. See the Ordering data for the possible combinations of the switching and signaling unit. A space heater can also be fitted.

### Mounting position

The rotary actuators can be mounted in any position.

## Electric connection

The motor and the switching and signaling unit are connected via plugs.

Either one or two 24-way plug assemblies for the switching and signaling unit and one 6-way plug assembly (10-way plug assembly / close loop control ) for the motor are used depending on the required number of conductors. Crimp sockets for the top parts of the plugs are supplied loose.

In the case of motors ( open loop control ) with rated powers above 4 kW up to 11 kW, 2 cores can be connected to 2 plug contacts for each outer conductor in order to increase the total cross-section of the cables. Associated plug contacts, e. g. 1 and 4 for outer conductor L1 are connected together in the bottom part of the plug by jumpers ( Fig. 4 ).

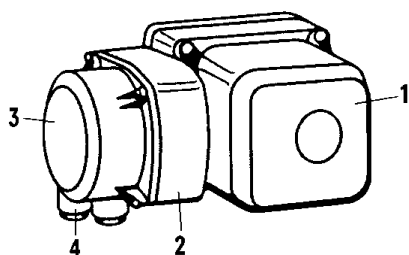
Two cores and two plug contacts must always be used for each outer conductor in the case of motors with a rated power above 11kW

All plug assemblies are accommodated in a common housing ( compact plug, see Fig. 3 ).

The top part of the plug housing can be removed and rotated in steps of 90°. The cables are inserted into the housing via metal screwed glands with a conduit thread or metric thread.

Qualified cable inlets must be used for the rotary actuators of the S-SIWI-AS series depending on the plant.

The following accessories are available: parking socket and protective cover ( page 22, dimensions on page 42 ).



- 1 Housing for switching and signaling unit
- 2 Bottom part of plug
- 3 Top part of plug, removable
- 4 Metal screwed glands with conduit thread for cable inlet

Fig. 3: Housing for switching and signaling unit and plug housing ( design for S - SIWI series )

## Technical data

### Series, Design, Sizes

#### Series :

Series	Type	Explanation
S-SIWI	M76361	Important for safety reasons ( open-loop control )
S-SIWI-AS	M76371	Important for safety reason and designed-fault resistant ( open-loop control )

#### Design : Rotary Actuators

#### Sizes :

Rotary actuator, Series SIWI / SIWI-AS	Type M76361 / 71							
	- C	- E	- F	- G	- M	- N	- S	- U
Size to DIN 3210	0	0	1 / 2	3	3	4	4	5
Size to DIN ISO 5210	F10	F10	F14	F16	F16	F25	F25	F30
Max. tripping torque in Nm	45	90	180	300	600	900	1500	3000
Internal diameter of hollow shaft ( gear unit opening ) and tolerance in mm	27,8 +0,2	36 +0,2	53 +0,2	53 +0,2	71,5 +0,5	71,5 +0,5	63 + 1	74 + 1
Handwheel reduction, Design I	1 : 1	1 : 1	1 : 1	1 : 1	1 : 1	1 : 1	332 : 1	401 : 1
							83 : 1	100 : 1
Design II			13 : 1		18,5 : 1			

1)

2)

1 ) : self - locking worm gear

2 ) : not self - locking worm gear

**Handwheel reduction :**

Design I ( basic design ) : Handwheel acts directly on the output shaft in rotary actuators M763.. - C .. N  
Handwheel gear reducer fitted as standard in rotary actuators M763.. - S, - U

Design II ( further design ) : Worm gear attachment with handwheel at side as handwheel gear reducer in rotary actuators M763.. - F to N

**Efficiencies of handwheel gear reducers**

Reduction ratio, handwheel / output shaft	13 : 1	18,5 : 1	83 : 1	100 : 1	332 : 1	401 : 1
Efficiency $\eta$	0,45	0,6	0,6	0,6	0,32	0,32

**Motor**

Motor for three-phase 4-wire system 3/PEN AC 50 Hz 380 V to EN 60034

Operating mode, insulation class and motor protection

Rotary actuators, series	Operating mode to EN 60034	Insulation class	Motor protection
S - SIWI	Short-term operation S2 - 10 min	H	to be arranged by I&C / customer / site, e.g. motor protecting switch
S - SIWI - AS	Short-term operation S2 - 10 min under normal conditions, short-term operation S2 - 1,5 min in case of designed fault	H	
S - SIWI - AS long-term available	as S – SIWI – AS	H	

See pages 23 to 27 for detailed motor data

**Output shaft speeds of the rotary actuators :**

The rated speeds of the output shaft as specified in the ordering data and on the rating plates of the rotary actuators are achieved with a deviation of up to +/- 15% at the maximum permissible positioning torque, which is the same half the maximum tripping torque. The actual loading of a rotary actuator during positioning is always smaller than the maximum permissible positioning torque, or at the greatest equal to it. The output shaft speed which then results is therefore in the range between the no - load speed of the actuator and the speed at the maximum permissible positioning torque.

**Electric connection ( see Fig. 4 ):**Plugs for switching and signaling unit :

1 or 2      24 - way plug assemblies with crimp connections,      gold-plated sockets and pins  
conductor cross-section : 0,5 mm<sup>2</sup>

Motor plug :

1            6 - way plug assembly with screw terminals,      silver-plated sockets and pins  
max. conductor cross-section : 6 mm<sup>2</sup>

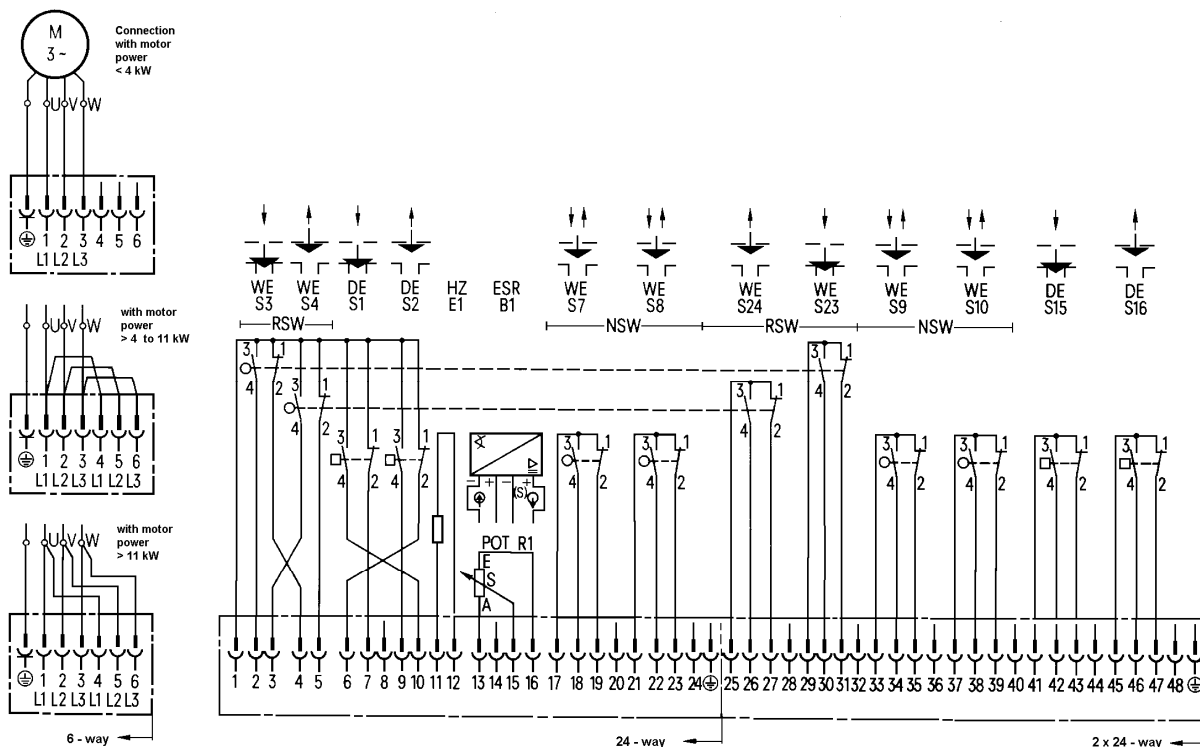
In the case of motors with a rated power > 4 kW up to 11 kW, 2 cores can be connected to 2 plug contacts for each outer conductor in order to increase the total cross-section of the cables; plug contacts associated with one another are connected in the bottom part of the plug by jumpers.

In the case of motors with a rated power > 11 kW, 2 cores and 2 plug contacts must always be used for each outer conductor.

**Cable inlets :**

In the basic design of the rotary actuators, the cables are introduced to the actuator via metal screwed glands with conduit thread to DIN 46320 or alternatively with metric thread to EN 50262. The screwed glands are inserted leak-tight into the housing on delivery and closed by screw plugs.

Qualified cable inlets must be used for the rotary actuators of the SIWI - AS series depending on the plant.



The switches are shown in the non-operated state.

The connection diagram adheres inside the actuator is binding.

- |    |               |     |                                 |     |                                              |
|----|---------------|-----|---------------------------------|-----|----------------------------------------------|
| WE | Travel switch | ESR | Electronic position transmitter | RSW | Roller-type counting and switching mechanism |
| DE | Torque switch | POT | Potentiometer                   | NSW | Cam-type counting and switching mechanism    |
| HZ | Space heater  |     |                                 |     |                                              |

Fig. 4 : Connection diagram

**Degree of protection to EN 60529**

Gear unit	IP 65
Housing for switching and signaling unit and plug housing with rotary actuators	
> S-SIWI and S-SIWI-AS series with cable inlet via metal screwed glands to DIN 46320 / EN 50262	IP 65
> S-SIWI-AS series with qualified cable inlets	IP 68
Motor	
with rotary actuators	
> S-SIWI series	IP 65
> S-SIWI-AS series	IP 65 / IP 44 *)
> S-SIWI-AS series in the version 'long-term availability'	IP 67

**Operating Mode**

See section 'Motor'

\*) : IP 44 after opening the condensation drain holes on the motor ( see instructions )

**Permissible switch loading**

The torque and travel switches used are microswitches with gold-plated contacts.

Direct current ( at NO and NC only use same potentials ! )

Voltage V	Resistive load, NC / NO contact A	Service life, number of operations
20 to 60	0,003 to 0,8	10 <sup>6</sup>

**Electronic position transmitter**

( Correct functioning under fault conditions as in Fig. 5 not proven )

Supply voltage ( U )

DC 18 to 30 V

This limits must not be violated by superimposed ripple.

Power supply, e.g. with

Power supply unit, type STEP-PS/1AC/24DC/0.75 ( order no. 2868635 ),  
Com. Phoenix Contact GmbH & Co. for rail mounting

	Two-wire connection	Four / Three-wire connection
Max. load (R <sub>L</sub> )	$R_L = 50 * ( U - 12 ) \Omega$	$R_L = 50 * ( U - 2,5 ) \Omega$
Output signal	Load-independent direct current	
Current consumption	4 to 20 mA max. 30 mA	0 or 4 to 20 mA max. 30 mA

Version

without restoring spring, can be turned

Measuring range

0 to 340 °

Minimal span

80 °

Maximal span

340 °

Torque on drive

appr. 0,1 Ncm

Linearity error ( tolerance band setting )  
for am measuring span of 270°

≤ 1 %

Influence for a measuring span of 270°

- of supply voltage

≤ 0,1 % over the whole range

- of load

≤ 0,1 % over the whole range

- of ambient temperature

≤ 0,3 % / 10K

Permissible ambient temperature

- 25° to + 80° C

**Potentiometer** 100 Ω ± 10% for position indication

( Correct functioning under fault conditions as in Fig. 5 not proven )

Characteristic

linear

Rated Load

up to 2,5 W

**Space heater**

Supply voltage

AC 220 V, 110 V or 24 V

Power

8 to 10 W

## Qualification

### ➤ **Manufacture**

The rotary actuators are manufactured using strict quality assurance measures.  
The qualification of the actuators corresponds to the German standard KTA 3504, edition 11 / 2006  
( KTA means ' Nuclear Commission ' ).

### ➤ **Corrosion protection**

The rotary actuators are painted with a decontaminable primer which can be covered by a decontaminable multi-layer paint.  
Thickness per layer at least 120 µm.

### ➤ **Strength**

The strength of the parts in the direct flux of force is calculated according to recognized methods. The calculation takes into consideration the current specifications, regulations and standards for the manufacture of machines and gear units.

### ➤ **Service life**

A service life of at least 5000 load cycles is guaranteed for the rotary actuators under following test conditions :

- a) Sequence of load cycle :
  - Start from an end position
  - 30 s running time
  - Torque switch-off at maximum adjustable tripping torque
  - Pause < 70 s
  - Start in opposite direction
  - 30 s running time
  - Torque switch-off
- b) Torque during the running time greater than 50% of the maximum adjustable tripping torque
- c) An overshoot of at least 1,2 to 2 times the maximum adjustable tripping torque must occur during switch-off procedure

### ➤ **Vibration resistance**

The rotary actuators are vibration-resistant to forces and torques which occur during normal operation as well as induced shocks as a result of earthquake ( 4,5\*g ) or a plane crash ( 5\*g ).  
The strength of the connection flange with respect to shocks has been proven; a constant acceleration of 5\*g acting at the center of gravity is taken into consideration.

### ➤ **Permissible radiation**

Electric rotary actuators, Series	Permissible energy dose
SIWI	50 kGy ( = $5 \cdot 10^6$ rad )
SIWI - AS	250 kGy ( = $25 \cdot 10^6$ rad )

### ➤ **Permissible ambient temperature and permissible pressure**

Rotary actuators, S - SIWI series :

Permissible ambient temperature : - 5° to +60° C at 95 % relative humidity  
( A space heater is recommended for 100% humidity and changes in temperature )

Continous temperature for design : + 35° C

Worst case design temperature : + 10° C



# Electric rotary actuators M76361-C (SIWI) and M76371-C (SIWI-AS)

Tripping torques 10 to 45 Nm, size 0 to DIN 3210

## S series

### Ordering data

Order no.: M 7 6 3 6 1 -       -       - Z  
 M 7 6 3 7 1 -       -       - Z

See page 20

### Basic design:

- Motor three-phase system 3/PEN AC 50 Hz 380 V (L1, L2, L3),
- 2 torque-dependent switches for clockwise and anti-clockwise rotation,
- 4 travel-dependent switches,
- output shaft design B to DIN 3210,
- electric connection via 6-way motor plug and 24-way plug for switching and signalling unit,
- cable inlets via metal screwed glands with conduit thread to DIN 46320,
- rating plate without customer position plate, labelled in German/English,
- coated with decontaminable primer

### 1. Type of rotary actuator, rated speed of output shaft and tripping torque range

Rated speed of output shaft min <sup>-1</sup>	Actuator self-locking Gear ratio i	Tripping torques to be set ( see page 21, section 7 ) selectable in range			Three phase motor 3/PEN AC 50 Hz 380 V ( further data : see from page 23 onwards )					Weight for M76361-.. (M76371-.. s. p. 21) appr. kg	C 1 2 1 C 1 2 2 C 1 3 1 C 1 3 2 C 1 3 3 C 1 3 4 C 1 4 1 C 1 4 2 C 1 4 3 C 1 4 4 C 1 4 5 C 1 5 1 C 1 5 2 C 1 5 3 C 1 5 4 C 1 5 5 C 1 5 6 C 1 6 1 C 1 6 2 C 1 6 3 C 1 6 4 C 1 6 5 C 1 6 6 C 1 7 1 C 1 7 2 C 1 7 3 C 1 7 4 C 1 7 5 C 1 7 6	appr. kg <sup>2)</sup>
		Minimum Nm	Maximum with M76361-   M76371- Nm		Rated power kW	Rated speed min <sup>-1</sup>	Consecutive number for motor of type M763.. 61-   71-   71- / R99					
5	yes / 267,7	15	45	43	0,07	1335	4	4	4 / LZ	28	C 1 2 1 C 1 2 2	27
			36	33	0,06	1245	2	2	2 / LZ	28		
7,5	yes / 182,2	15	45	45	0,12	1300	22	22	22 / LZ	28	C 1 3 1 C 1 3 2	28
			41	38	0,09	1270	8	8	8 / LZ	28		
		10	32	29	0,07	1335	4	4	4 / LZ	28	C 1 3 3 C 1 3 4	27
			24	22	0,06	1245	2	2	2 / LZ	28		
10	yes / 124,7	15	45	41	0,13	1345	24	24	24 / LZ	28	C 1 4 1 C 1 4 2	27
			35	32	0,12	1300	22	22	22 / LZ	28		
		10	28	26	0,09	1270	8	8	8 / LZ	27	C 1 4 3 C 1 4 4	27
			22	20	0,07	1335	4	4	4 / LZ	27		
15	yes / 93,3	15	45	45	0,25	1365	44	44	44 / LZ	30	C 1 5 1 C 1 5 2	29
			42	39	0,18	1350	32	32	32 / LZ	28		
		10	34	30	0,13	1345	24	24	24 / LZ	28	C 1 5 3 C 1 5 4	27
			26	24	0,12	1300	22	22	22 / LZ	28		
20	yes / 67,7	15	45	44	0,28	1385	46	46	46 / LZ	30	C 1 5 5 C 1 5 6	27
			36	34	0,25	1365	44	44	44 / LZ	30		
		10	30	28	0,18	1350	32	32	32 / LZ	28	C 1 6 1 C 1 6 2	29
			25	22	0,13	1345	24	24	24 / LZ	28		
30	yes / 93,3	15	45	45	0,37	2850	38	38	38 / LZ	30	C 1 6 3 C 1 6 4	28
			42	39	0,37	2645	28	28	28 / LZ	28		
		10	34	31	0,25	2730	26	26	26 / LZ	28	C 1 6 5 C 1 6 6	27
			28	26	0,3	2620	18	18	18 / LZ	28		
40 - 180	see page 12	15	21	19	0,18	2565	16	16	16 / LZ	28	C 1 7 1 C 1 7 2 C 1 7 3	28
			19	17	0,12	1300	22	22	22 / LZ	28		
			17	16	0,14	2700	6	6	6 / LZ	27		

**x x x** : Inertia of motor has increased

**mmm** : Weight of motor- / actuator has increased

### 2. Output shaft design to DIN 3210

Output shaft design		Add. weight [ appr. kg ]
A : hollow shaft with threaded bush <sup>1)</sup>	1	on request
B : hollow shaft with insert bush	2	---
C : hollow shaft with claw coupling	3	---
D : free shaft end with featherkey <sup>1)</sup>	4	-1
E : bore with featherkey slot <sup>1)</sup>	5	-1,5
DD : with free shaft at both ends <sup>1)</sup>	6	on request
B : with stem protection tube 125 mm long <sup>1)</sup>	8	on request
C : with stem protection tube 125 mm long <sup>1)</sup>	9	on request

<sup>1)</sup> Design not qualified to KTA 3504, edition 11/2006; Strength with safety factors required by this standard not proven.

<sup>2)</sup> Weight of actuator of type M76361-C with Siemens motor for comparison

# Electric rotary actuators M76361-C (SIWI) and M76371-C (SIWI-AS)

Tripping torques 10 to 45 Nm, size 0 to DIN 3210

## S series

### Ordering data

Order No.: M 7 6 3 6 1 -       -       - Z  
 M 7 6 3 7 1 -       -       - Z

See page 20

### Basic design:

- Motor three-phase system 3/PEN AC 50 Hz 380 V (L1, L2, L3),
- 2 torque-dependent switches for clockwise and anti-clockwise rotation,
- 4 travel-dependent switches,
- output shaft design B to DIN 3210,
- electric connection via 6-way motor plug and 24-way plug for switching and signalling unit,
- cable inlets via metal screwed glands with conduit thread to DIN 46320,
- rating plate without customer position plate, labelled in German/English,
- coated with decontaminable primer

### 1. Type of rotary actuator, rated speed of output shaft and tripping torque range

Rated speed of output shaft min <sup>-1</sup>	Actuator self-locking Gear ratio i	Tripping torques to be set ( see page 21, section 7 ) selectable in range			Three phase motor 3/PEN AC 50 Hz 380 V ( further data : see from page 23 onwards )					Weight for M76361-.. (M76371-.. s. p. 21) appr. kg	appr. kg <sup>2)</sup>	
		Minimum Nm	Maximum with M76361- M76371- Nm Nm		Rated power kW	Rated speed min <sup>-1</sup>	Consecutive number for motor of type M763.. 61- 71- 71- / R99					
5 - 30		see page 11										
40	yes / 67,7	15	45	45	0,43	2840	52	52	52 / LZ	31	C 1 8 1	30
			38	36	0,37	2850	38	38	38 / LZ	30	C 1 8 2	28
40	yes / 67,7	10	24	22	0,25	2730	26	26	26 / LZ	28	C 1 8 3	28
			20	19	0,30	2620	18	18	18 / LZ	28	C 1 8 4	28
60	yes / 47,5	15	45	40	0,55	2835	48	48	48 / LZ	30	C 1 9 1	30
			37	34	0,43	2840	52	52	52 / LZ	31	C 1 9 2	30
60	yes / 47,5	10	27	25	0,37	2850	38	38	38 / LZ	30	C 1 9 3	28
			21	19	0,37	2645	28	28	28 / LZ	28	C 1 9 4	28
80	yes / 33,7	15	45	45	0,75	2730	72	72	72 / LZ	35	C 2 0 1	32
			39	36	0,75	2795	50	50	50 / LZ	31	C 2 0 2	30
80	yes / 33,7	10	26	24	0,43	2840	52	52	52 / LZ	31	C 2 0 3	30
			19	17	0,37	2850	38	38	38 / LZ	30	C 2 0 4	30
120	no / 23,3	15	45	45	0,75	2795	50	50	50 / LZ	31	C 2 1 1	30
			39	36	0,55	2835	48	48	48 / LZ	30	C 2 1 2	30
120	no / 23,3	10	24	22	0,37	2840	52	52	52 / LZ	31	C 2 1 3	30
			19	17	0,37	2645	28	28	28 / LZ	28	C 2 1 4	28
180	no / 15,9	15	45	40	0,75	2730	72	72	72 / LZ	35	C 2 2 1	32
			34	31	0,75	2795	50	50	50 / LZ	31	C 2 2 2	30
180	no / 15,9	10	27	25	0,55	2835	48	48	48 / LZ	30	C 2 2 3	30
			22	21	0,43	2840	52	52	52 / LZ	31	C 2 2 4	30
			16	15	0,37	2850	38	38	38 / LZ	30	C 2 2 5	28

**xxx** : Inertia of motor has increased

**mmm** : Weight of motor- / actuator has increased

### 2. Output shaft design to DIN 3210

Output shaft design		Add. weight [ appr. kg ]
A : hollow shaft with threaded bush <sup>1)</sup>	1	on request
B : hollow shaft with insert bush	2	---
C : hollow shaft with claw coupling	3	---
D : free shaft end with featherkey <sup>1)</sup>	4	-1
E : bore with featherkey slot <sup>1)</sup>	5	-1,5
DD : with free shaft at both ends <sup>1)</sup>	6	on request
B : with protection tube 125 mm long <sup>1)</sup>	8	on request
C : with protection tube 125 mm long <sup>1)</sup>	9	on request

<sup>1)</sup> Design not qualified to KTA 3504, edition 11/2006; Strength with safety factors required by this standard not proven.

<sup>2)</sup> Weight of actuator of type M76361-C with Siemens motor for comparison



# Electric rotary actuators M76361-F (SIWI) and M76371-F (SIWI-AS)

Tripping torques 60 to 180 Nm, size ½ to DIN 3210

## S series

### Ordering data

Order No.: M 7 6 3 6 1 -       - Z  
 M 7 6 3 7 1 -       - Z

See page 20

### Basic design:

- Motor three-phase system 3/PEN AC 50 Hz 380 V (L1, L2, L3),
- 2 torque-dependent switches for clockwise and anti-clockwise rotation,
- 4 travel-dependent switches,
- output shaft design B to DIN 3210,
- electric connection via 6-way motor plug and 24-way plug for switching and signalling unit,
- cable inlets via metal screwed glands with conduit thread to DIN 46320,
- rating plate without customer position plate, labelled in German/English,
- coated with decontaminable primer

### 1. Type of rotary actuator, rated speed of output shaft and tripping torque range

Rated speed of output shaft min <sup>-1</sup>	Actuator self-locking Gear ratio i	Tripping torques to be set ( see page 21, section 7 ) selectable in range			Three phase motor 3/PEN AC 50 Hz 380 V ( further data : see from page 23 onwards )					Weight for M76361-.. (M76371-.. s. p. 21) appr. kg	F 1 2 F 1 2 F 1 2 F 1 2 F 1 3 F 1 3 F 1 3 F 1 3 F 1 4 F 1 4 F 1 4 F 1 4 F 1 5 F 1 5 F 1 5 F 1 6 F 1 6 F 1 6 F 1 6 F 1 7 F 1 7 F 1 7 F 1 7 F 1 8 F 1 8 F 1 8 F 1 8 F 1 9 F 1 9 F 1 9 F 1 9 F 2 0 F 2 0 F 2 0 F 2 0 F 2 1 F 2 1 F 2 1 F 2 1 F 2 2 F 2 2 F 2 2 F 2 2	appr. kg <sup>2)</sup>
		Minimum Nm	Maximum with M76361- Nm	Maximum with M76371- Nm	Rated power kW	Rated speed min <sup>-1</sup>	Consecutive number for motor of type M763.. 61- 71- 71- / R99					
5	yes / 280,4	60	180	180	0,28	1385	42	42	42 / LZ	71	1	71
			151	140	0,25	1365	40	40	40 / LZ	71	2	71
			127	117	0,18	1350	30	30	30 / LZ	69	3	70
			103	91	0,13	1345	20	20	20 / LZ	69	4	70
7,5	yes / 164,4	60	180	180	0,41	1410	56	56	56 / LZ	72	1	73
			146	137	0,37	1385	54	54	54 / LZ	72	2	73
			118	107	0,28	1385	42	42	42 / LZ	71	3	71
10	yes / 128,9	60	180	180	0,55	1275	76	76	76 / LZ	74	1	74
			164	148	0,41	1410	56	56	56 / LZ	72	2	73
			115	107	0,37	1385	54	54	54 / LZ	72	3	73
15	yes / 86,9	60	180	180	0,75	1320	96	96	96 / LZ	72	1	73
			142	128	0,55	1275	76	76	76 / LZ	71	2	71
			110	100	0,41	1410	56	56	56 / LZ	72	3	73
20	yes / 62,2	60	180	175	0,83	1355	104	104	104 / LZ	73	1	73
			153	135	0,75	1320	96	96	96 / LZ	72	2	73
			127	118	0,59	1310	80	80	80 / LZ	71	3	71
			101	92	0,55	1275	76	76	76 / LZ	71	4	71
30	yes / 43	60	180	180	1,5	1300	130	130	130 / LZ	79	1	79
			155	138	1,1	1345	122	122	122 / LZ	76	2	75
			130	119	0,83	1355	104	104	104 / LZ	73	3	73
			106	93	0,75	1320	96	96	96 / LZ	72	4	73
40	yes / 70,8	60	180	180	1,5	2750	116	116	116 / LZ	76	1	75
			173	157	1,1	2650	88	88	88 / LZ	73	2	73
			134	124	0,9	2700	70	70	70 / LZ	73	3	71
			107	98	0,75	2730	68	68	68 / LZ	73	4	71
60	yes / 43	60	180	180	2,2	2740	126	126	126 / LZ	80	1	79
			173	160	1,75	2770	118	118	118 / LZ	76	2	76
			129	117	1,3	2700	90	90	90 / LZ	73	3	73
			105	95	1,1	2650	88	88	88 / LZ	73	4	73
80	yes / 35,9	60	180	180	2,6	2815	148	148	148 / LZ	92	1	85
			163	153	2,2	2740	126	126	126 / LZ	80	2	79
			145	133	1,75	2770	118	118	118 / LZ	76	3	76
			107	98	1,3	2700	90	90	90 / LZ	73	4	73
120	no / 10,7	60	180	180	3,0	1380	164	164	164 / LZ	91	1	94
			172	155	2,5	1385	154	154	154 / LZ	94	2	91
			135	125	2,2	1375	152	152	152 / LZ	86	3	91
			111	101	1,68	1365	132	132	132 / LZ	79	4	79
180	no / 15,5	60	180	180	4,0	2800	170	170	170 / LZ	95	1	102
			167	156	2,6	2815	128	128	128 / LZ	80	2	79
			151	142	2,6	2815	148	148	148 / LZ	92	3	85
			117	110	2,2	2740	126	126	126 / LZ	80	4	79

**x x x** : Inertia of motor has increased

**mm** : Weight of motor- / actuator has increased

### 2. Output shaft design to DIN 3210

Output shaft design		1 2 3 4 5 6	8 9	Add. weight [ appr. kg ]
A : hollow shaft with threaded bush <sup>1)</sup>		1		on request
B : hollow shaft with insert bush		2		---
C : hollow shaft with claw coupling		3		---
D : free shaft end with featherkey <sup>1)</sup>		4		- 1,5
E : bore with featherkey slot <sup>1)</sup>		5		- 2
DD : with free shaft at both ends <sup>1)</sup>		6		on request
B : with protection tube 250 mm long <sup>1)</sup>			8	on request
C : with protection tube 250 mm long <sup>1)</sup>			9	on request

<sup>1)</sup> Design not qualified to KTA 3504, edition 11/2006; Strength with safety factors required by this standard not proven.

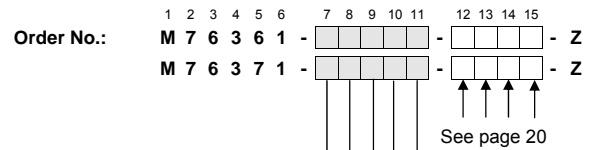
<sup>2)</sup> Weight of actuator of type M76361-F with Siemens motor for comparison

# Electric rotary actuators M76361-G (SIWI) and M76371-G (SIWI-AS)

Tripping torques 100 to 300 Nm, size 3 to DIN 3210

## S series

### Ordering data



### Basic design:

- Motor three-phase system 3/PEN AC 50 Hz 380 V (L1, L2, L3),
- 2 torque-dependent switches for clockwise and anti-clockwise rotation,
- 4 travel-dependent switches,
- output shaft design B to DIN 3210,
- electric connection via 6-way motor plug and 24-way plug for switching and signalling unit,
- cable inlets via metal screwed glands with conduit thread to DIN 46320,
- rating plate without customer position plate, labelled in German/English,
- coated with decontaminable primer

### 1. Type of rotary actuator, rated speed of output shaft and tripping torque range

Rated speed of output shaft min <sup>-1</sup>	Actuator self-locking Gear ratio i	Tripping torques to be set ( see page 21, section 7 ) selectable in range			Three phase motor 3/PEN AC 50 Hz 380 V ( further data : see from page 23 onwards )					Weight for M76361-.. (M76371-.. s. p. 21) appr. kg	Weight appr. kg <sup>2)</sup>		
		Minimum Nm	Maximum with M76361- M76371- Nm Nm		Rated power kW	Rated speed min <sup>-1</sup>	Consecutive number for motor of type M763.. 61- 71- 71- / R99				[ ]	[ ]	[ ]
5	yes / 280,4	100	300	300	0,41	1410	56	56	56 / LZ	77	G 1 2	1	76
			250	234	0,37	1385	54	54	54 / LZ	77	G 1 2	2	76
			202	182	0,28	1385	42	42	42 / LZ	76	G 1 2	3	75
7,5	yes / 164,4	100	300	300	0,59	1310	80	80	80 / LZ	79	G 1 3	1	78
			268	243	0,55	1275	76	76	76 / LZ	79	G 1 3	2	78
			209	189	0,41	1410	56	56	56 / LZ	77	G 1 3	3	76
10	yes / 128,9	100	300	280	0,75	1320	96	96	96 / LZ	80	G 1 4	1	79
			264	245	0,59	1310	80	80	80 / LZ	79	G 1 4	2	78
			210	191	0,55	1275	76	76	76 / LZ	79	G 1 4	3	78
15	yes / 86,9	100	300	280	1,1	1345	122	122	122 / LZ	81	G 1 5	1	78
			264	241	0,83	1355	104	104	104 / LZ	78	G 1 5	2	76
			214	190	0,75	1320	96	96	96 / LZ	78	G 1 5	3	76
20	yes / 62,2	100	300	280	1,5	1300	130	130	130 / LZ	84	G 1 6	1	82
			224	200	1,1	1345	122	122	122 / LZ	81	G 1 6	2	78
			189	172	0,83	1355	104	104	104 / LZ	78	G 1 6	3	76
30	yes / 43	100	300	300	2,2	1375	152	152	152 / LZ	91	G 1 7	1	94
			269	245	1,68	1365	132	132	132 / LZ	84	G 1 7	2	82
			212	195	1,5	1300	130	130	130 / LZ	84	G 1 7	3	82
40	yes / 70,8	100	300	300	2,2	2740	126	126	126 / LZ	86	G 1 8	1	83
			286	263	1,75	2770	118	118	118 / LZ	82	G 1 8	2	80
			212	193	1,3	2700	90	90	90 / LZ	78	G 1 8	3	77
60	yes / 43	100	300	300	4,0	2800	170	170	170 / LZ	100	G 1 9	1	105
			280	261	2,6	2815	128	128	128 / LZ	85	G 1 9	2	82
			253	238	2,6	2815	148	148	148 / LZ	97	G 1 9	3	90
80	no / 15,5	100	300	280	3,0	1380	164	164	164 / LZ	96	G 2 0	1	97
			249	225	2,5	1385	154	154	154 / LZ	99	G 2 0	2	94
			195	181	2,2	1375	152	152	152 / LZ	91	G 2 0	3	94
120	no / 10,7	100	300	300	4,8	1410	176	176	176 / LZ	104	G 2 1	1	110
			263	250	4,0	1380	174	174	174 / LZ	104	G 2 1	2	110
			208	192	3,0	1380	164	164	164 / LZ	96	G 2 1	3	97
180	no / 15,5	100	300	300	6,5	2845	190	190	190 / LZ	130	G 2 2	1	124
			259	249	5,5	2830	172	172	172 / LZ	104	G 2 2	2	105
			186	176	3,2	2740	150	150	150 / LZ	98	G 2 2	3	94

xxx : Inertia of motor has increased

mmm : Weight of motor- / actuator has increased

### 2. Output shaft design to DIN 3210

Output shaft design		Weight [ appr. kg ]	Add. weight [ appr. kg ]
A : hollow shaft with threaded bush <sup>1)</sup>	1	---	on request
B : hollow shaft with insert bush	2	---	---
C : hollow shaft with claw coupling	3	---	---
D : free shaft end with featherkey <sup>1)</sup>	4	- 2	---
E : bore with featherkey slot <sup>1)</sup>	5	- 3	---
DD : with free shaft at both ends <sup>1)</sup>	6	---	on request
B : with protection tube 250 mm long <sup>1)</sup>	8	---	on request
C : with protection tube 250 mm long <sup>1)</sup>	9	---	on request

<sup>1)</sup> Design not qualified to KTA 3504, edition 11/2006; Strength with safety factors required by this standard not proven.

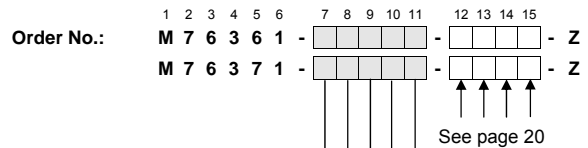
<sup>2)</sup> Weight of actuator of type M76361-G with Siemens motor for comparison

# Electric rotary actuators M76361-M (SIWI) and M76371-M (SIWI-AS)

Tripping torques 200 to 600 Nm, size 3 to DIN 3210

## S series

### Ordering data



### Basic design:

- Motor three-phase system 3/PEN AC 50 Hz 380 V (L1, L2, L3),
- 2 torque-dependent switches for clockwise and anti-clockwise rotation,
- 4 travel-dependent switches,
- output shaft design B to DIN 3210,
- electric connection via 6-way motor plug and 24-way plug for switching and signalling unit,
- cable inlets via metal screwed glands with conduit thread to DIN 46320,
- rating plate without customer position plate, labelled in German/English,
- coated with decontaminable primer

### 1. Type of rotary actuator, rated speed of output shaft and tripping torque range

Rated speed of output shaft min <sup>-1</sup>	Actuator self-locking Gear ratio i	Tripping torques to be set ( see page 21, section 7 ) selectable in range			Three phase motor 3/PEN AC 50 Hz 380 V ( further data : see from page 23 onwards )					Weight for M76361-.. (M76371-.. s. p. 21) appr. kg					appr. kg <sup>3)</sup>
		Minimum Nm	Maximum with M76361- M76371- Nm		Rated power kW	Rated speed min <sup>-1</sup>	Consecutive number for motor of type M763.. 61- 71- 71- / R99								
5	yes / 124,2	200	600	600	1,1	645	166	166	166 / LZ	167	M 1 2	1		166	
			565	520	0,86	605	158	158	158 / LZ	164	M 1 2	2		163	
			425	400	0,7	640	156	156	156 / LZ	164	M 1 2	3		163	
7,5	yes / 84,8	200	600	600	1,5	600	178	178	178 / LZ	177	M 1 3	1		175	
			480	450	1,1	645	166	166	166 / LZ	167	M 1 3	2		166	
			385	355	0,86	605	158	158	158 / LZ	164	M 1 3	3		163	
10	yes / 64	200	600	570	1,6	675	180	180	180 / LZ	177	M 1 4	1		175	
			485	460	1,5	600	178	178	178 / LZ	177	M 1 4	2		175	
			365	340	1,1	645	166	166	166 / LZ	167	M 1 4	3		166	
15	yes / 84,8	200	600	600	2,2	1375	152	152	152 / LZ	165	M 1 5	1		167	
			530	485	1,68	1365	132	132	132 / LZ	159	M 1 5	2		156	
			420	385	1,5	1300	130	130	130 / LZ	159	M 1 5	3		156	
20	yes / 64	200	600	560	2,5	1385	154	154	154 / LZ	172	M 1 6	1		167	
			485	450	2,2	1375	152	152	152 / LZ	165	M 1 6	2		167	
			400	365	1,68	1365	132	132	132 / LZ	159	M 1 6	3		156	
30	yes / 49,2	200	600	600	4,0	1380	174	174	174 / LZ	178	M 1 7	1		184	
			575	530	3,0	1380	164	164	164 / LZ	169	M 1 7	2		171	
			475	430	2,5	1385	154	154	154 / LZ	172	M 1 7	3		168	
40	ja / 36,1	200	600	600	4,8	1410	176	176	176 / LZ	178	M 1 8	1		184	
			535	510	4,0	1380	174	174	174 / LZ	178	M 1 8	2		184	
			420	390	3,0	1380	164	164	164 / LZ	169	M 1 8	3		171	
60	yes / 49,2	200	600	600	6,5	2845	190	190	190 / LZ	195	M 1 9	1		190	
			495	475	5,5	2830	172	172	172 / LZ	178	M 1 9	2		179	
			355	335	3,2	2740	150	150	150 / LZ	171	M 1 9	3		168	
80	no / 17,9	200	600	600	4,8	1410	176	176	176 / LZ	178	M 2 0	1		184	
			485	460	4,0	1380	174	174	174 / LZ	178	M 2 0	2		184	
			380	355	3,0	1380	164	164	164 / LZ	170	M 2 0	3		171	
120	no / 12,3	200	600	600	6,2	1410	196	196	196 / LZ	200	M 2 1	1		190	
			490	465	5,5	1410	192	192	192 / LZ	200	M 2 1	2		190	
			450	420	4,8	1410	176	176	176 / LZ	178	M 2 1	3		184	
180	no / 16,0 <sup>2)</sup>	200	600	600	12,0	2850	214	214	214 / LZ	263	M 2 2	1		258	
			530	530	10,0	2820	202	202	202 / LZ	200	M 2 2	2		200	
			425	405	7,5	2880	200	200	200 / LZ	200	M 2 2	3		200	
			380	375	6,5	2845	190	190	190 / LZ	195	M 2 2	4		190	

xxx : Inertia of motor has increased

mmm : Weight of motor- / actuator has increased

### 2. Output shaft design to DIN 3210

Output shaft design		Add. weight [ appr. kg ]
A : hollow shaft with threaded bush <sup>1)</sup>	1	on request
B : hollow shaft with insert bush	2	---
C : hollow shaft with claw coupling	3	---
D : free shaft end with featherkey <sup>1)</sup>	4	+ 11
E : bore with featherkey slot <sup>1)</sup>	5	+ 8
DD : with free shaft at both ends <sup>1)</sup>	6	on request
B : with protection tube 500 mm long <sup>1)</sup>	8	on request
C : with protection tube 500 mm long <sup>1)</sup>	9	on request

<sup>1)</sup> Design not qualified to KTA 3504, edition 11/2006; Strength with safety factors required by this standard not proven.

<sup>2)</sup> For M76361-M22\*1 and M76371-M22\*1 is i=16,6

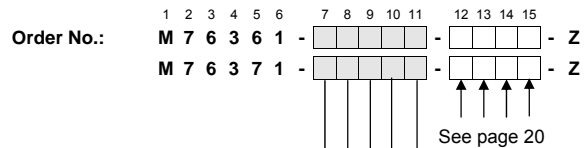
<sup>3)</sup> Weight of actuator of type M76361-M with Siemens motor for comparison

# Electric rotary actuators M76361-N (SIWI) and M76371-N (SIWI-AS)

Tripping torques 300 to 900 Nm, size 4 to DIN 3210

## S series

### Ordering data



### Basic design:

- Motor three-phase system 3/PEN AC 50 Hz 380 V (L1, L2, L3),
- 2 torque-dependent switches for clockwise and anti-clockwise rotation,
- 4 travel-dependent switches,
- output shaft design B to DIN 3210,
- electric connection via 6-way motor plug and 24-way plug for switching and signalling unit,
- cable inlets via metal screwed glands with conduit thread to DIN 46320,
- rating plate without customer position plate, labelled in German/English,
- coated with decontaminable primer

## 1. Type of rotary actuator, rated speed of output shaft and tripping torque range

Rated speed of output shaft min <sup>-1</sup>	Actuator self-locking Gear ratio i	Tripping torques to be set ( see page 21, section 7 ) selectable in range			Three phase motor 3/PEN AC 50 Hz 380 V ( further data : see from page 23 onwards )					Weight for M76361-.. (M76371-.. s. p. 21) appr. kg	Output shaft design			appr. kg <sup>2)</sup>
		Minimum Nm	Maximum with M76361-   M76371- Nm		Rated power kW	Rated speed min <sup>-1</sup>	Consecutive number for motor of type M763.. 61-   71-   71- / R99				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
5	yes / 124,2	300	900	900	1,5	600	178	178	178 / LZ	185	N 1 2	1	181	
			710	660	1,1	645	166	166	166 / LZ	175	N 1 2	2	172	
			565	520	0,86	605	158	158	158 / LZ	172	N 1 2	3	169	
7,5	yes / 84,8	300	900	900	2,2	620	198	198	198 / LZ	208	N 1 3	1	193	
			795	740	1,6	675	180	180	180 / LZ	185	N 1 3	2	181	
			645	610	1,5	600	178	178	178 / LZ	185	N 1 3	3	181	
10	yes / 64	300	900	900	3,0	640	204	204	204 / LZ	215	N 1 4	1	204	
			715	675	2,2	620	198	198	198 / LZ	208	N 1 4	2	193	
			600	560	1,6	675	180	180	180 / LZ	185	N 1 4	3	181	
15	yes / 84,8	300	900	900	3,0	1380	164	164	164 / LZ	177	N 1 5	1	177	
			820	740	2,5	1385	154	154	154 / LZ	181	N 1 5	2	174	
			645	595	2,2	1375	152	152	152 / LZ	173	N 1 5	3	174	
20	yes / 64	300	900	900	4,0	1380	174	174	174 / LZ	186	N 1 6	1	190	
			745	690	3,0	1380	164	164	164 / LZ	177	N 1 6	2	177	
			620	560	2,5	1385	154	154	154 / LZ	181	N 1 6	3	174	
30	yes / 49,2	300	900	900	4,8	1410	176	176	176 / LZ	186	N 1 7	1	190	
			730	690	4,0	1380	174	174	174 / LZ	186	N 1 7	2	190	
40	yes / 36,1	300	900	900	6,2	1410	196	196	196 / LZ	208	N 1 8	1	196	
			785	740	5,5	1410	192	192	192 / LZ	208	N 1 8	2	196	
			720	675	4,8	1410	176	176	176 / LZ	186	N 1 8	3	190	
60	no / 23,9	300	900	820	4,8	1410	176	176	176 / LZ	186	N 1 9	1	190	
			650	620	4,0	1380	174	174	174 / LZ	186	N 1 9	2	190	
80	no / 17,9	300	900	900	6,2	1410	196	196	196 / LZ	208	N 2 0	1	196	
			710	670	5,5	1410	192	192	192 / LZ	208	N 2 0	2	196	
			655	610	4,8	1410	176	176	176 / LZ	186	N 2 0	3	190	
120	no / 12,3	300	900	900	10,5	1425	218	218	218 / LZ	271	N 2 1	1	258	
			815	780	7,5	1400	194	194	194 / LZ	209	N 2 1	2	196	
			655	615	6,2	1410	196	196	196 / LZ	208	N 2 1	3	196	
180	no / 16,0	300	900	900	18,5	2890	220	220	220 / LZ	299	N 2 2	1	273	
			810	795	18,0	2850	212	212	212 / LZ	271	N 2 2	2	264	
			685	660	12,0	2850	214	214	214 / LZ	271	N 2 2	3	264	

**x x x x** : Inertia of motor has increased

**mm** : Weight of motor- / actuator has increased

## 2. Output shaft design to DIN 3210

Output shaft design		Output shaft design	Add. weight [ appr. kg ]
A : hollow shaft with threaded bush <sup>1)</sup>	<input type="checkbox"/>	1	on request
B : hollow shaft with insert bush	<input type="checkbox"/>	2	---
C : hollow shaft with claw coupling	<input type="checkbox"/>	3	---
D : free shaft end with featherkey <sup>1)</sup>	<input type="checkbox"/>	4	+ 2
E : bore with featherkey slot <sup>1)</sup>	<input type="checkbox"/>	5	---
DD : with free shaft at both ends <sup>1)</sup>	<input type="checkbox"/>	6	on request
B : with protection tube 500 mm long <sup>1)</sup>	<input type="checkbox"/>	8	on request
C : with protection tube 500 mm long <sup>1)</sup>	<input type="checkbox"/>	9	on request

<sup>1)</sup> Design not qualified to KTA 3504, edition 11/2006; Strength with safety factors required by this standard not proven.

<sup>2)</sup> Weight of actuator of type M76361-N with Siemens motor for comparison

# Electric rotary actuators M76361-S (SIWI) and M76371-S (SIWI-AS)

Tripping torques 500 to 1500 Nm, size 4 to DIN 3210

## S series

### Ordering data

Order No.: M 7 6 3 6 1 - [ ] [ ] [ ] [ ] - Z  
 M 7 6 3 7 1 - [ ] [ ] [ ] [ ] - Z

See page 20

### Basic design:

- Motor three-phase system 3/PEN AC 50 Hz 380 V (L1, L2, L3),
- 2 torque-dependent switches for clockwise and anti-clockwise rotation,
- 4 travel-dependent switches,
- output shaft design B to DIN 3210,
- electric connection via 6-way motor plug and 24-way plug for switching and signalling unit,
- cable inlets via metal screwed glands with conduit thread to DIN 46320,
- rating plate without customer position plate, labelled in German/English,
- coated with decontaminable primer

### 1. Type of rotary actuator, rated speed of output shaft and tripping torque range

Rated speed of output shaft min <sup>-1</sup>	Actuator self-locking Gear ratio i	Tripping torques to be set ( see page 21, section 7 ) selectable in range			Three phase motor 3/PEN AC 50 Hz 380 V ( further data : see from page 23 onwards )					Weight for M76361-.. (M76371-.. s. p. 21) appr. kg	S 1 2 1 S 1 2 2 S 1 2 3 S 1 3 1 S 1 3 2 S 1 3 3 S 1 4 1 S 1 4 2 S 1 4 3 S 1 5 1 S 1 5 2 S 1 5 3 S 1 5 4 S 1 6 1 S 1 6 2 S 1 6 3 S 1 7 1 S 1 7 2 S 1 7 3 S 1 8 1 S 1 8 2 S 1 8 3 S 1 9 2 S 1 9 3	appr. kg <sup>2)</sup>
		Minimum Nm	Maximum with M76361-   M76371- Nm		Rated power kW	Rated speed min <sup>-1</sup>	Consecutive number for motor of type M763.. 61-   71-   71- / R99					
5	yes / 272,9	500	1500	1440	1,68	1365	132	132	132 / LZ	130	S 1 2 1 S 1 2 2 S 1 2 3 S 1 3 1 S 1 3 2 S 1 3 3 S 1 4 1 S 1 4 2 S 1 4 3 S 1 5 1 S 1 5 2 S 1 5 3 S 1 5 4 S 1 6 1 S 1 6 2 S 1 6 3 S 1 7 1 S 1 7 2 S 1 7 3 S 1 8 1 S 1 8 2 S 1 8 3 S 1 9 2 S 1 9 3	128 128 125 141 141 128 144 141 141 179 141 129 135 157 144 141 179 157 157 181 179 157 189 189
			1240	1140	1,5	1300	130	130	130 / LZ	130		
			900	810	1,1	1345	122	122	122 / LZ	128		
7,5	yes / 184,5		1500	1500	2,5	1385	154	154	154 / LZ	146		
			1290	1190	2,2	1375	152	152	152 / LZ	138		
			1060	970	1,68	1365	132	132	132 / LZ	130		
10	yes / 134,6		1455	1350	3,0	1380	164	164	164 / LZ	143		
			1200	1080	2,5	1385	154	154	154 / LZ	146		
			940	870	2,2	1375	152	152	152 / LZ	138		
15	yes / 184,5		1500	1500	5,5	2790	188	188	188 / LZ	185		
			1225	1160	3,2	2740	150	150	150 / LZ	145		
			1100	1030	2,6	2815	128	128	128 / LZ	132		
			1000	940	2,6	2815	148	148	148 / LZ	144		
20	yes / 68,2		1500	1500	4,0	1380	174	174	174 / LZ	151		
			1260	1165	3,0	1380	164	164	164 / LZ	143		
		1040	940	2,5	1385	154	154	154 / LZ	146			
30	no / 46,1	1500	1500	5,5	1410	192	192	192 / LZ	190			
		1450	1360	4,8	1410	176	176	176 / LZ	151			
		1080	1025	4,0	1380	174	174	174 / LZ	151			
40	no / 33,7	1500	1440	6,2	1410	196	196	196 / LZ	190			
		1150	1090	5,5	1410	192	192	192 / LZ	190			
		1060	990	4,8	1410	176	176	176 / LZ	151			
60	no / 46,1	1320	1320	10,0	2820	202	202	202 / LZ	190			
		1050	1000	7,5	2880	200	200	200 / LZ	190			

xxx : Inertia of motor has increased

mmm : Weight of motor- / actuator has increased

### 2. Output shaft design to DIN 3210

Output shaft design		1 2 3 4 5 6 8 9	Add. weight [ appr. kg ]
A : hollow shaft with threaded bush <sup>1)</sup>	on request	1	on request
B : hollow shaft with insert bush		2	---
C : hollow shaft with claw coupling		3	+ 4
D : free shaft end with featherkey <sup>1)</sup>		4	- 2,5
E : bore with featherkey slot <sup>1)</sup>		5	+ 5
DD : with free shaft at both ends <sup>1)</sup>		6	on request
B : with protection tube 500 mm long <sup>1)</sup>		8	on request
C : with protection tube 500 mm long <sup>1)</sup>		9	on request

<sup>1)</sup> Design not qualified to KTA 3504, edition 11/2006; Strength with safety factors required by this standard not proven.

<sup>2)</sup> Weight of actuator of type M76361-S with Siemens motor for comparison

# Electric rotary actuators M76361-U (SIWI) and M76371-U (SIWI-AS)

Tripping torques 1000 to 3000 Nm, size 5 to DIN 3210

## S series

### Ordering data

Order No.: M 7 6 3 6 1 - [ ] [ ] [ ] [ ] [ ] [ ] - Z  
 M 7 6 3 7 1 - [ ] [ ] [ ] [ ] [ ] [ ] - Z

See page 20

### Basic design:

- Motor three-phase system 3/PEN AC 50 Hz 380 V (L1, L2, L3),
- 2 torque-dependent switches for clockwise and anti-clockwise rotation,
- 4 travel-dependent switches,
- output shaft design B to DIN 3210,
- electric connection via 6-way motor plug and 24-way plug for switching and signalling unit,
- cable inlets via metal screwed glands with conduit thread to DIN 46320,
- rating plate without customer position plate, labelled in German/English,
- coated with decontaminable primer

### 1. Type of rotary actuator, rated speed of output shaft and tripping torque range

Rated speed of output shaft min <sup>-1</sup>	Actuator self-locking Gear ratio i	Tripping torques to be set ( see page 21, section 7 ) selectable in range			Three phase motor 3/PEN AC 50 Hz 380 V ( further data : see from page 23 onwards )					Weight for M76361-.. (M76371-.. s. p. 21) appr. kg	U 1 2 1 U 1 2 2 U 1 2 3 U 1 3 1 U 1 3 2 U 1 3 3 U 1 4 1 U 1 4 2 U 1 4 3 U 1 5 1 U 1 5 2 U 1 5 3 U 1 5 4 U 1 6 1 U 1 6 2 U 1 6 3 U 1 7 1 U 1 7 2 U 1 7 3 U 1 8 1 U 1 8 2 U 1 8 3 U 1 9 1 U 1 9 2 U 1 9 3	appr. kg <sup>2)</sup>
		Minimum Nm	Maximum with M76361-   M76371- Nm   Nm		Rated power kW	Rated speed min <sup>-1</sup>	Consecutive number for motor of type M763.. 61-   71-   71- / R99					
5	yes / 281,3	1000	3000	2800	3,0	1380	164	164	164 / LZ	204	U 1 2 1 U 1 2 2 U 1 2 3	204
			2500	2250	2,5	1385	154	154	154 / LZ	207		201
			1950	1800	2,2	1375	152	152	152 / LZ	200		201
7,5	yes / 191,5	1000	3000	3000	4,8	1410	176	176	176 / LZ	212	U 1 3 1 U 1 3 2 U 1 3 3	218
			2600	2450	4,0	1380	174	174	174 / LZ	212		218
			2050	1900	3,0	1380	164	164	164 / LZ	204		205
10	yes / 281,3	1000	3000	3000	6,5	2845	190	190	190 / LZ	237	U 1 4 1 U 1 4 2 U 1 4 3	229
			2600	2500	5,5	2830	172	172	172 / LZ	212		213
			1850	1750	3,2	2740	150	150	150 / LZ	206		202
15	yes / 191,5	1000	3000	3000	10	2820	202	202	202 / LZ	241	U 1 5 1 U 1 5 2 U 1 5 3 U 1 5 4	239
			2550	2400	7,5	2880	200	200	200 / LZ	241		239
			2250	2250	6,5	2845	190	190	190 / LZ	237		229
			1750	1700	5,5	2830	172	172	172 / LZ	212		213
20	no / 70,3	1000	3000	3000	6,2	1410	196	196	196 / LZ	241	U 1 6 1 U 1 6 2 U 1 6 3	231
			2400	2250	5,5	1410	192	192	192 / LZ	241		229
			2200	2050	4,8	1410	176	176	176 / LZ	212		218
30	no / 47,9	1000	2940	2900	11	1410	216	216	216 / LZ	300	U 1 7 1 U 1 7 2 U 1 7 3	285
			2700	2600	7,5	1400	194	194	194 / LZ	241		229
			2150	2050	6,2	1410	196	196	196 / LZ	241		231
40	no / 36,5	1000	3000	3000	15	1440	224	224	224 / LZ	320	U 1 8 1 U 1 8 2 U 1 8 3	295
			2300	2300	10,5	1425	218	218	218 / LZ	296		285
			2050	1950	7,5	1400	194	194	194 / LZ	242		229
60	no / 47,9	1000	3000	3000	25	2900	222	222	222 / LZ	325	U 1 9 1 U 1 9 2 U 1 9 3	300
			2500	2400	18,5	2890	220	220	220 / LZ	325		300
			2000	1950	18	2850	212	212	212 / LZ	296		291

xxx : Inertia of motor has increased

mmm : Weight of motor- / actuator has increased

### 2. Output shaft design to DIN 3210

Output shaft design			U 1 2 1 U 1 2 2 U 1 2 3 U 1 3 1 U 1 3 2 U 1 3 3 U 1 4 1 U 1 4 2 U 1 4 3 U 1 5 1 U 1 5 2 U 1 5 3 U 1 5 4 U 1 6 1 U 1 6 2 U 1 6 3 U 1 7 1 U 1 7 2 U 1 7 3 U 1 8 1 U 1 8 2 U 1 8 3 U 1 9 1 U 1 9 2 U 1 9 3	Add. weight [ appr. kg ]
A : hollow shaft with threaded bush <sup>1)</sup>	on request	1	on request	
B : hollow shaft with insert bush		2	---	
C : hollow shaft with claw coupling		3	+ 7	
D : free shaft end with featherkey <sup>1)</sup>		4	+ 3	
E : bore with featherkey slot <sup>1)</sup>		5	+ 9,5	
DD : with free shaft at both ends <sup>1)</sup>		6	on request	
B : with protection tube 500 mm long <sup>1)</sup>		8		
C : with protection tube 500 mm long <sup>1)</sup>		9	on request	

<sup>1)</sup> Design not qualified to KTA 3504, edition 11/2006; Strength with safety factors required by this standard not proven.

<sup>2)</sup> Weight of actuator of type M76361-U with Siemens motor for comparison



**S series**

**Ordering data**

Order No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Note		
	M	7	6	3	6	1	-						-					Z
	M	7	6	3	7	1	-						-					Z

**Order codes and plain text**

( Suffixes to order no. )

<b>7. Tripping torques to be set</b>		
	<b>Klartext</b>	
The tripping torques specified in plain text are set in the factory as maximum values. Setting to another tripping torque must be carried out using a test set-up.	<b>Tripping torque . . . Nm for open / counter-clockwise</b> <b>. . . Nm for close / clockwise</b>	<b>Y 0 1</b>

<b>8. Cable inlets</b>			<b>Add. weight</b> [ appr. kg ]	
			S-SIWI M76361-	S-SIWI-AS M76371-
Via metal screwed glands with conduit thread to DIN 46 320		<b>R 0 4</b>	---	<b>3</b>
Qualified cable inlets >> <b>only for actuators, S-SIWI-AS series, M76371</b> - ... <<				
For motor Max. conductor cross-section 4mm <sup>2</sup> (external)	For switching and signalling unit Conductor cross-section 0.5 mm <sup>2</sup> (external)			
7-way cable	24-way cable	<b>R 0 8</b>	---	<b>6</b>
	2 x 24- way cable	<b>R 0 9</b>	---	<b>7</b>

<b>9. Other rating plate</b>			
Rating plate	Labelling (Standard: German / English)		
Without customer position plate	Spanish / Portuguese	<b>B 0 6</b>	
	German / French	<b>B 0 7</b>	
	German / Russian	<b>B 0 8</b>	
With customer position plate	German / English	<b>B 0 0</b>	
	Spanish / Portuguese	<b>B 0 1</b>	
	German / French	<b>B 0 2</b>	
	German / Russian	<b>B 0 3</b>	

<b>10. Other varnish</b>			
Decontaminable coating ( complete ) Varnish consisting of base coat and decontaminable top coat (entire thickness: min 120µm, colour RAL 7030 )		<b>L 1 8</b>	

**S series**

**Ordering data**

Order No. :      1 2 3 4 5 6    7 8 9 10 11    12 13 14 15    Note  
 M 7 6 3 6 1 -       -       - Z     
 M 7 6 3 7 1 -       -       - Z

**Order codes and plain text**

( Suffixes to order no. )

<b>11. Space heater</b> for switching and signalling unit			
Power supply	AC	220 V	A 2 2
		110 V	A 2 3
		24 V	A 2 4

<b>12. Output shaft design to DIN ISO 5210 or DIN 3338</b> ( dimensions of langes to EN ISO 5210, part 1, see page 38 )			
	Standard	Bestell-Nr.-Ergänzung, Datenstelle 10	
Design	A : hollow shaft with threaded bush <sup>1)</sup>	DIN ISO 5210, part 3	1
	B1 : with insert bush	DIN ISO 5210, part 3	2
	C : with claw coupling	DIN 3338	3
	B3 : bore with featherkey slot <sup>1)</sup>	DIN ISO 5210, part 3	5

<sup>1)</sup>: Strength with safety factors required by KTA 3504, edition 11/2066, not proven.

<b>13. Handwheel gear reducer</b> Handwheel mounted at side; design not qualified to KTA 3504; dimensions on page 36				
For rotary actuators M76361- and M76371-	Reduction ratio Handwheel / Output shaft	Add. weight, [ appr. kg ]	Output shaft design to DIN 3210 / DIN ISO 5210	
-F and -G	13 : 1	13	B / B1 or C without stem protect. tube	A 8 1
			B / B1 or C with stem protect. tube	A 8 2
			D or E / B3	A 8 3
-M and -N	18,5 : 1	3	B / B1, C, D, E / B3 without stem p. t.	A 8 6
			B / B1 or C with stem protection tube	A 8 7

<b>14. Long-term availability version</b> >> only for rotary actuators, S-SIWI-AS series, M76371-... << These actuators retain their function for at least one year following the occurrence of a designed fault. Only qualified cable inlets must be used (see section 8)		
Design		
Long-term availability electric rotary actuator, S-SIWI-AS series, with motor in long-term availability version	M76371 - C	R 9 9
	M76371 - E	
	M76371 - F	
	M76371 - G	
	M76371 - M	
	M76371 - N	
	M76371 - S	
M76371 - U		

<b>15. Connection with metric thread to EN 50262</b> ( only with order suffix R04 possible )		
Thread in plug hood	2x M20 x 1,5 / 1x M25 x 1,5	P 0 7

<b>16. Alternative motor supply</b>		
Three phase motor with voltage	3/PEN AC 50 Hz 400 V	M 5 0

**Accessories :** see page 42

Insulation class : **H** with motors with order code : Q18, Q19, Q21 and Q31, Q32, Q33  
 (for rotary actuators, type M76361 -, S-SIWI series and  
 for rotary actuators, type M76371 -, S-SIWI-AS / SIWI-AS-LZ series )

Degree of protection to DIN EN 60529 : IP 65 / 44 with motors with order code : Q18, Q19, Q21  
 IP 67 with motors with order code : Q31, Q32, Q33  
 Operating mode to DIN EN 60034 - 1 : S2 – 10 min under normal conditions  
 S2 – 1,5 min under fault conditions

Motor con-sec-utive no.	Order no. of motor	Rated power kW	no. of poles	Rated speed min <sup>-1</sup>	Effi- ciency η %	Power factor cos φ during start-up	Rated current at 380 V A	Starting current factor	Rated torque Nm	Starting torque Nm	Break down torque Nm	Current at 145% U <sub>N</sub> /30 sec A	Size to DIN EN 60034-7	Flange shape to DIN EN 60034-7	Flange size to DIN EN 50347	Weight appr. kg	
2 / LZ	OL 56 L / 4 / 050-B14 / Q18 Q31	0,06	4	1245	46	0,84	0,24	2,60	0,47	0,80	0,71	0,36	56	B14	FT 65	C 80	3,7
4 / LZ	OL 56 L / 4 / 050-B14 / Q31 Q33	0,07	4	1335	51	0,73	0,29	2,90	0,45	1,25	1,1	0,45	56	B14	FT 65	C 80	3,9
6 / LZ	OL 56 S / 2 / 053-B14 / Q21 Q33	0,14	2	2700	50	0,75	0,59	3,15	0,49	1,35	1,2	1,6	56	B14	FT 65	C 80	3,5
8 / LZ	OL 56 L / 4 / 053-B14 / Q18 Q31	0,09	4	1270	50	0,76	0,36	2,6	0,68	1,32	1,2	0,5	56	B14	FT 65	C 80	3,9
16 / LZ	OL 63 S / 2 / 060-B14 / Q18 Q31	0,18	2	2565	53	0,88	0,60	3,5	0,65	1,65	1,45	0,80	63	B14	FT 75	C 90	4,5
18 / LZ	OL 63 L / 2 / 060-B14 / Q19 Q32	0,3	2	2620	61	0,90	0,84	3,65	1,10	1,95	1,68	3	63	B14	FT 75	C 90	4,7
20 / LZ	OL 63 S / 4 / 060-B 5 / Q21 Q33	0,13	4	1345	57	0,66	0,50	2,9	0,92	2,15	1,94	0,61	63	B 5	FF 115	A140	4,6
22 / LZ	OL 63 S / 4 / 060-B14 / Q18 Q31	0,12	4	1300	51	0,75	0,48	2,6	0,89	1,64	1,49	0,68	63	B14	FT 75	C 90	4,6
24 / LZ	OL 63 S / 4 / 060-B14 / Q21 Q33	0,13	4	1345	57	0,66	0,50	2,9	0,92	2,15	1,94	0,61	63	B14	FT 75	C 90	4,6
26 / LZ	OL 63 L / 2 / 063-B14 / Q18 Q31	0,25	2	2730	62	0,81	0,80	4,3	0,95	2,4	2,1	1,4	63	B14	FT 75	C90	5,0
28 / LZ	OL 63 L / 2 / 063-B14 / Q19 Q32	0,37	2	2645	63	0,82	1,15	3,75	1,45	3,2	2,85	2,3	63	B14	FT 75	C 90	5,0
30 / LZ	OL 63 L / 4 / 063-B 5 / Q18 Q31	0,18	4	1350	61	0,68	0,69	3,15	1,34	3,15	2,7	1,05	63	B 5	FF 115	A140	5,0
32 / LZ	OL 63 L / 4 / 063-B14 / Q18 Q31	0,18	4	1350	61	0,68	0,69	3,15	1,34	3,15	2,7	1,05	63	B14	FT 75	C 90	5,0
38 / LZ	OL 71 S / 2 / 070-B14 / Q18 Q31	0,37	2	2850	65	0,72	1,25	5,0	1,28	3,55	3,2	4,48	71	B14	FT 85	C105	6,5
40 / LZ	OL 71 S / 4 / 070-B 5 / Q18 Q31	0,25	4	1365	65	0,77	0,78	3,5	1,76	3,1	2,82	1,3	71	B 5	FF 130	A160	6,5
42 / LZ	OL 71 S / 4 / 070-B 5 / Q21 Q33	0,28	4	1385	66	0,72	0,90	3,8	1,94	4,2	3,80	1,9	71	B 5	FF 130	A160	6,5
44 / LZ	OL 71 S / 4 / 070-B14 / Q18 Q31	0,25	4	1365	65	0,77	0,78	3,5	1,76	3,1	2,82	1,3	71	B14	FT 85	C105	6,5
46 / LZ	OL 71 S / 4 / 070-B14 / Q21 Q33	0,28	4	1385	66	0,72	0,90	3,8	1,94	4,2	3,80	1,9	71	B 5	FF 130	A160	6,5

Insulation class : **H** with motors with order code : Q18, Q19, Q21 and Q31, Q32, Q33  
 (for rotary actuators, type M76361 -, S-SIWI series and  
 for rotary actuators, type M76371 -, S-SIWI-AS / SIWI-AS-LZ series )

Degree of protection to DIN EN 60529 : IP 65 / 44 with motors with order code : Q18, Q19, Q21  
 IP 67 with motors with order code : Q31, Q32, Q33  
 Operating mode to DIN EN 60034 - 1 : S2 – 10 min under normal conditions  
 S2 – 1,5 min under fault conditions

Motor con-sec-utive no.	Order no. of motor	Rated power kW	no. of poles	Rated speed min <sup>-1</sup>	Effi-ciency η %	Power factor cos φ during start-up	Rated current at 380 V A	Starting current factor	Rated torque Nm	Starting torque Nm	Break down torque Nm	Current at 145% U <sub>N</sub> /30 sec A	Size to DIN EN 50347	Flange shape to DIN EN 60034-7	Flange size to DIN EN 50347 to DIN 42948	Weight appr. kg	
48 / LZ	OL 71 L / 2 / 073-B14 / Q18 / Q31	0,55	2	2835	73	0,75	1,58	5,8	1,87	5,55	5,5	5,20	71	B14	FT 85	C105	6,5
50 / LZ	OL 71 L / 2 / 073-B14 / Q19 / Q32	0,75	2	2795	71	0,77	2,15	4,8	2,6	7,2	7,0	6,9	71	B14	FT 85	C105	7,5
52 / LZ	OL 71 L / 2 / 073-B14 / Q21 / Q33	0,43	2	2840	72	0,77	1,20	6,25	1,55	5,25	5,15	3,25	71	B 14	FT 85	C105	7,5
54 / LZ	OL 71 L / 4 / 073-B 5 / Q18 / Q31	0,37	4	1385	67	0,71	1,2	3,85	2,6	5,4	5,8	2,7	71	B 5	FF 130	A160	7,5
56 / LZ	OL 71 L / 4 / 073-B 5 / Q21 / Q33	0,41	4	1410	68	0,63	1,45	4,35	2,78	7,4	6,95	4,65	71	B 5	FF 130	A160	7,5
58 / LZ	OL 71 L / 4 / 073-B14 / Q18 / Q31	0,37	4	1385	67	0,71	1,2	3,85	2,6	5,4	5,8	2,7	71	B14	FT 85	C105	7,5
60 / LZ	OL 71 L / 4 / 073-B14 / Q21 / Q33	0,41	4	1410	68	0,63	1,45	4,35	2,78	7,4	6,95	4,65	71	B14	FT 85	C105	7,5
62 / LZ	OL 71 L / 8 / 073-B14 / Q18 / Q31	0,12	8	700	41	0,50	0,95	2,25	1,70	4,4	4,8	2,05	71	B14	FT 85	C105	7,0
68 / LZ	OL 80 S / 2WU / 080-B 5 / Q18 / Q31	0,75	2	2730	69	0,75	2,2	4,50	2,60	9,2	5,8	7,4	80	B 5	FF 165	A200	11
70 / LZ	OL 80 S / 2WU / 080-B 5 / Q19 / Q32	0,90	2	2700	66	0,67	3,2	3,9	3,2	11,2	6,9	13,4	80	B 5	FF 165	A200	11
72 / LZ	OL 80 S / 2WU / 080-B14 / Q18 / Q31	0,75	2	2730	69	0,75	2,2	4,50	2,60	9,2	5,8	7,4	80	B14	FT 100	C120	11
74 / LZ	OL 80 S / 2WU / 080-B14 / Q19 / Q32	0,90	2	2700	66	0,67	3,2	3,9	3,2	11,2	6,9	13,4	80	B14	FT 100	C120	11
76 / LZ	OL 80 S / 4WU / 080-B 5 / Q18 / Q31	0,55	4	1275	65	0,77	1,68	3,2	4,15	9,35	6,65	3,9	80	B 5	FF 165	A200	10
78 / LZ	OL 80 S / 4WU / 080-B14 / Q18 / Q31	0,55	4	1275	65	0,77	1,68	3,2	4,15	9,35	6,65	3,9	80	B14	FT 100	C120	10
80 / LZ	OL 80 S / 4WU / 080-B 5 / Q21 / Q33	0,59	4	1310	66	0,69	1,95	3,5	4,30	12	8	6,1	80	B 5	FF 165	A200	10
82 / LZ	OL 80 S / 4WU / 080-B14 / Q21 / Q33	0,59	4	1310	66	0,69	1,95	3,5	4,30	12	8	6,1	80	B14	FT 100	C120	10
84 / LZ	OL 80 S / 8WU / 080-B14 / Q18 / Q31	0,18	8	605	49	0,70	0,85	3,3	3,1	5,1	3,9	1,2	80	B14	FT 100	C120	10
86 / LZ	OL 80 S / 8WU / 080-B14 / Q21 / Q33	0,20	8	625	47	0,62	1,1	2,0	3,0	6,5	3,45	1,8	80	B14	FT 100	C120	10

Insulation class : **H** with motors with order code : Q18, Q19, Q21 and Q31, Q32, Q33  
 (for rotary actuators, type M76361 -, S-SIWI series and  
 for rotary actuators, type M76371 -, S-SIWI-AS / SIWI-AS-LZ series )

Degree of protection to DIN EN 60529 : IP 65 / 44 with motors with order code : Q18, Q19, Q21  
 IP 67 with motors with order code : Q31, Q32, Q33  
 Operating mode to DIN EN 60034 - 1 : S2 – 10 min under normal conditions  
 S2 – 1,5 min under fault conditions

Motor con-sec-utive no.	Order no. of motor	Rated power kW	no. of poles	Rated speed min <sup>-1</sup>	Effi- ciency η %	Power factor cos φ during start-up	Rated current at 380 V A	Starting current factor	Rated torque Nm	Starting torque Nm	Break down torque Nm	Current at 145% U <sub>N</sub> /30 sec A	Size to DIN EN 50347	Flange shape to DIN EN 60034-7	Flange size to DIN EN 50347 to DIN 42948	Weight appr. kg
88 / LZ	OL 80 L / 2WU / 083-B 5 / Q18 Q31	1,1	2	2650	73	0,81	2,85	4,6	4	14,1	11,8	8,3	80	B 5	FF 165 A200	11
90 / LZ	OL 80 L / 2WU / 083-B 5 / Q19 Q32	1,3	2	2700	71	0,72	4,1	4,5	4,7	18,1	15,5	16,7	80	B 5	FF 165 A200	11
92 / LZ	OL 80 L / 2WU / 083-B14 / Q18 Q31	1,1	2	2650	73	0,81	2,85	4,6	4	14,1	11,8	8,3	80	B14	FT 100 C120	11
94 / LZ	OL 80 L / 2WU / 083-B14 / Q19 Q32	1,3	2	2700	71	0,72	4,1	4,5	4,7	18,1	15,5	16,7	80	B14	FT 100 C120	11
96 / LZ	OL 80 L / 4WU / 083-B 5 / Q18 Q31	0,75	4	1320	70	0,70	2,30	3,70	5,35	16,0	10,7	5,6	80	B 5	FF 165 A200	11
98 / LZ	OL 80 L / 4WU / 083-B14 / Q18 Q31	0,75	4	1320	70	0,70	2,30	3,70	5,35	16,0	10,7	5,6	80	B14	FT 100 C120	11
100 / LZ	OL 80 L / 4WU / 083-B14 / Q21 Q33	0,83	4	1355	71	0,63	2,75	3,90	5,80	19,3	11,6	6,9	80	B14	FT 100 C120	11
102 / LZ	OL 80 L / 8WU / 083-B14 / Q18 Q31	0,25	8	595	51	0,68	1,15	2,1	4	7,8	5,6	1,65	80	B14	FT 100 C120	11
104 / LZ	OL 80 L / 4WU / 083-B 5 / Q21 Q33	0,83	4	1355	71	0,63	2,75	3,90	5,80	19,3	11,6	6,9	80	B 5	FF 165 A200	11
116 / LZ	OL 90 S / 2WU / 090-B 5 / Q18 Q31	1,5	2	2750	74	0,82	3,8	5,4	5,2	17,6	16	11,5	90 S	B 5	FF 165 A200	15
118 / LZ	OL 90 S / 2WU / 090-B 5 / Q19 Q32	1,75	2	2770	71	0,66	6	4,75	6,4	25,6	22,1	24,2	90 S	B 5	FF 165 A200	15
120 / LZ	OL 90 S / 2WU / 090-B14 / Q18 Q31	1,5	2	2750	74	0,82	3,8	5,4	5,2	17,6	16	11,5	90 S	B14	FT 115 C140	15
122 / LZ	OL 90 S / 4WU / 090-B 5 / Q18 Q31	1,1	4	1345	73	0,75	3,1	3,95	7,85	20,9	16,7	7,5	90 S	B 5	FF 165 A200	15
124 / LZ	OL 90 S / 4WU / 090-B14 / Q18 Q31	1,1	4	1345	73	0,75	3,1	3,95	7,85	20,9	16,7	7,5	90 S	B14	FT 115 C140	15
126 / LZ	OL 90 L / 2aWU / 096-B 5 / Q18 Q31	2,2	2	2740	77	0,84	5,2	5,7	7,7	26,5	20,5	14,3	90 L	B 5	FF 165 A200	18
128 / LZ	OL 90 L / 2aWU / 096-B 5 / Q19 Q32	2,6	2	2815	79	0,70	7,3	6,0	9,1	41,5	32	17,9	90 L	B 5	FF 165 A200	18
130 / LZ	OL 90 L / 4WU / 096-B 5 / Q18 Q31	1,5	4	1300	72	0,80	3,95	3,75	11	28,6	19	7,2	90 L	B 5	FF 165 A200	16
132 / LZ	OL 90 L / 4WU / 096-B 5 / Q21 Q33	1,68	4	1365	73	0,67	5,3	4,3	11,9	41,5	29,5	19,7	90 L	B 5	FF 165 A200	17
134 / LZ	OL 90 L / 4WU / 096-B14 / Q18 Q31	1,5	4	1300	72	0,80	3,95	3,75	11	28,6	19	7,2	90 L	B14	FT 115 C140	17

Degree of protection to DIN EN 60529 : IP 65 / 44 with motors with order code : Q18, Q19, Q21 and Q31, Q32, Q33  
 IP 67 with motors with order code : Q31, Q32, Q33  
 Operating mode to DIN EN 60034 - 1 : S2 – 10 min under normal conditions  
 S2 – 1,5 min under fault conditions

Insulation class : **H** with motors with order code : Q18, Q19, Q21 and Q31, Q32, Q33  
 ( for rotary actuators, type M76361 -, S-SIWI series and  
 for rotary actuators, type M76371 -, S-SIWI-AS / SIWI-AS-LZ series )

Motor con-secutive no.	Order no. of motor	Rated power kW	no. of poles	Rated speed min <sup>-1</sup>	Efficiency η %	Power factor cos φ during start-up	Rated current at 380 V A	Starting current factor	Rated torque Nm	Starting torque Nm	Break down torque Nm	Current at 145% U <sub>N</sub> /30 sec A	Size to DIN EN 60034-7	Flange shape to DIN EN 60034-7	Flange size to DIN EN 50347 to DIN 42948	Weight appr. kg
148 148/LZ	OL 100 L / 2aWU / 106-B 5 / Q18 Q31	2,6	2	2815	80	0,88	5,70	7,3	9,10	35,2	28,7	10,4	100 L	B 5	FF215	30
150 150/LZ	OL 100 L / 2aWU / 106-B 5 / Q19 Q32	3,2	2	2740	81	0,87	7,1	6,2	11,5	43,9	24,3	25,1	100 L	B 5	FF215	30
152 152/LZ	OL 100 L / 4WU / 106-B 5 / Q18 Q31	2,2	4	1375	74	0,72	6,4	4,6	15,1	48,1	41,2	24,2	100 L	B 5	FF215	24
154 154/LZ	OL 100 L / 4aWU / 106-B 5 / Q21 Q33	2,5	4	1385	79	0,76	6,5	5,25	17,1	58	51	19	100 L	B 5	FF215	32
156 156/LZ	OL 100 L / 8WU / 106-B 5 / Q18 Q31	0,7	8	640		0,68	2,50	2,8	10,45	21			100 L	B 5	FF215	23
158 158/LZ	OL 100 L / 8WU / 106-B 5 / Q21 Q33	0,86	8	605		0,66	3,15	2,85	13,6	26,9			100 L	B 5	FF215	23
164 164/LZ	OL 100 L / 4aWU / 107-B 5 / Q18 Q31	3,0	4	1380	79	0,73	8,0	4,9	20,80	70	49,3	24,2	100 L	B 5	FF215	28
166 166/LZ	OL 100 L / 8aWU / 107-B 5 / Q18 Q31	1,1	8	645	67	0,66	3,90	3,15	16,4	34,3	24,4	9,75	100 L	B 5	FF215	26
170 170/LZ	OL 112M / 2WU / 113-B 5 / Q18 Q31	4,0	2	2800	80	0,84	9,4	6,5	14,2	46,9	43,7	24,8	112 M	B 5	FF215	33
172 172/LZ	OL 112M / 2WU / 113-B 5 / Q19 Q32	5,5	2	2830	85	0,87	11,9	6,8	19,1	65	63,5	25,4	112 M	B 5	FF215	37
174 174/LZ	OL 112M / 4WU / 113-B 5 / Q18 Q31	4,0	4	1380	78	0,83	9,25	5,5	27,7	85	81	21	112 M	B 5	FF215	37
176 176/LZ	OL 112M / 4aWU / 113-B 5 / Q19 Q32	4,8	4	1410	82	0,78	11,5	5,9	32,5	118	98,5	38	112 M	B 5	FF215	37
178 178/LZ	OL 112M / 8WU / 113-B 5 / Q18 Q31	1,5	8	660	72	0,65	5,0	3,1	22,3	45	43	8	112 M	B 5	FF215	35
180 180/LZ	OL 112M / 8WU / 113-B 5 / Q21 Q33	1,6	8	675	72	0,61	5,7	3,3	23,1	57	39,7	11,3	112 M	B 5	FF215	35

Insulation class : **H** with motors with order code : Q18, Q19, Q21 and Q31, Q32, Q33  
 (for rotary actuators, type M76361 -, S-SIWI series and  
 for rotary actuators, type M76371 -, S-SIWI-AS / SIWI-AS-LZ series )

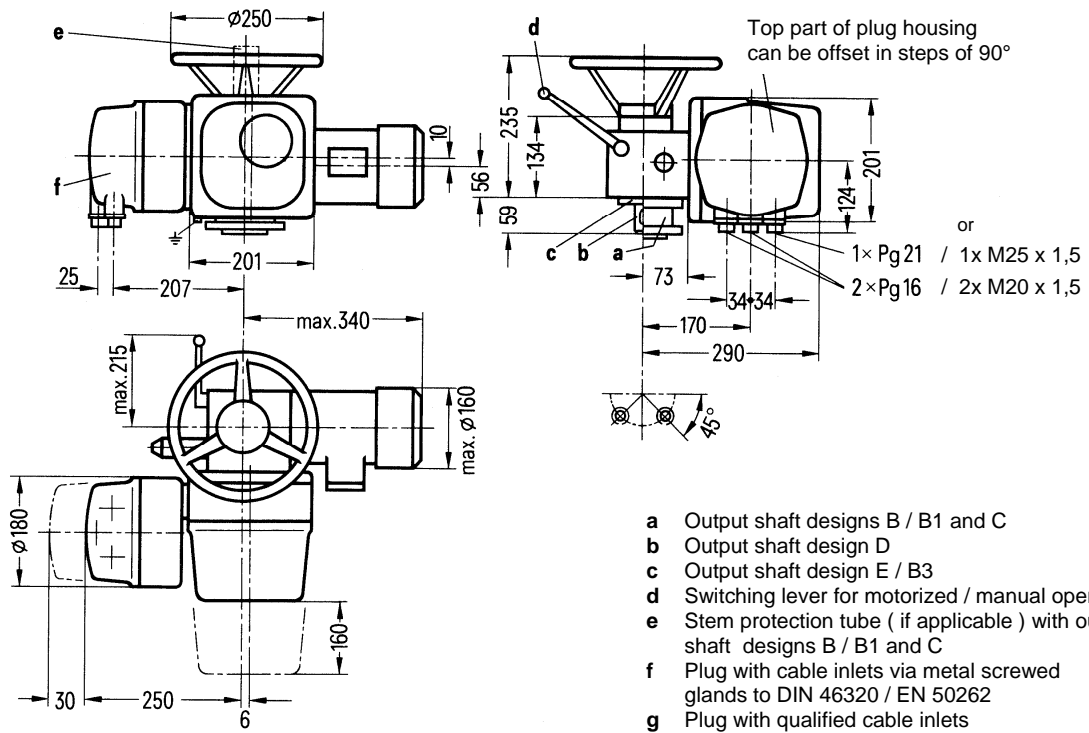
Degree of protection to DIN EN 60529 : IP 65 / 44 with motors with order code : Q18, Q19, Q21  
 IP 67 with motors with order code : Q31, Q32, Q33  
 Operating mode to DIN EN 60034 - 1 : S2 – 10 min under normal conditions  
 S2 – 1,5 min under fault conditions

Motor con-secutive no.	Order no. of motor	Rated power kW	no. of poles	Rated speed min <sup>-1</sup>	Efficiency η %	Power factor		Rated current at 380 V A	Starting current factor	Rated torque Nm	Starting torque Nm		Break down torque KT 10 Nm	Current at 145% U <sub>N</sub> /30 sec A	Size to DIN EN 60034-7 JM	Flange shape to DIN EN 60034-7	Flange size to DIN EN 50347 to DIN 42948	Weight appr. kg
						cos φ	cos φ during start-up				KT 10	KT155 + ΔT						
188 188/LZ	OL 132S / 2WU / 130-B 5 / Q18 Q31	5,5	2	2790	75	0,85	0,71	13,0	4,8	19,1	53,7	52	50,8	19,2	132 S	B 5	FF 265 A300	61
190 190/LZ	OL 132S / 2WU / 130-B 5 / Q19 Q32	6,5	2	2845	75	0,77	0,73	17,6	4,75	21,8	70,4	68	66,5	49,6	132 S	B 5	FF 265 A300	61
192 192/LZ	OL 132S / 4WU / 130-B 5 / Q18 Q31	5,5	4	1410	85	0,76	0,66	13,0	5,7	37,3	125	121	117	43	132 S	B 5	FF 265 A300	65
194 194/LZ	OL 132S / 4WU / 130-B 5 / Q19 Q32	7,5	4	1400	74	0,68	0,78	22	4,4	50,5	190	184	180	50,5	132 S	B 5	FF 265 A300	66
196 196/LZ	OL 132S / 4WU / 130-B 5 / Q21 Q33	6,2	4	1410	78	0,72	0,75	17	4,9	42	151,5	146,4	143	42	132 S	B 5	FF 265 A300	66
198 198/LZ	OL 132S / 8WU / 130-B 5 / Q18 Q31	2,2	8	630	66	0,81	0,72	6,3	2,7	31,5	60,5	58	56	6,7	132 S	B 5	FF 265 A300	61
200 200/LZ	OL 132S / 2aWU / 131-B 5 / Q18 Q31	7,5	2	2880	80	0,83	0,71	17,4	6,4	25,1	87	84	82	44	132 S	B 5	FF 265 A300	66
202 202/LZ	OL 132S / 2aWU / 131-B 5 / Q19 Q32	10,0	2	2820	77	0,78	0,83	25	4,85	33,9	102,6	99	97	33,9	132 S	B 5	FF 265 A300	66
204 204/LZ	OL 132M / 8WU / 133-B 5 / Q18 Q31	3,0	8	640		0,81		7,6	3,4	44,7	103				132 M	B 5	FF 265 A300	72
212 212/LZ	OL 160M / 2WU / 163-B 5 / Q19 Q32	18	2	2850	83	0,86	0,63	38,5	5,1	60	146	141	138	78	160 M	B 5	FF 300 A350	120
214 214/LZ	OL 160M / 2WU / 163-B 5 / Q21 Q33	12	2	2870	83	0,86	0,62	25,5	6,4	40,1	125	120	115	47,8	160 M	B 5	FF 300 A350	120
216 216/LZ	OL 160M / 4WU / 163-B 5 / Q18 Q31	11	4	1440	84	0,77	0,63	26	5,8	74,5	210	203	196	63	160 M	B 5	FF 300 A350	125
218 218/LZ	OL 160M / 4WU / 163-B 5 / Q19 Q32	10,5	4	1440	84	0,75	0,60	25	6,3	69,5	225	217	210	62	160 M	B 5	FF 300 A350	120
220 220/LZ	OL 160L / 2WU / 166-B 5 / Q18 Q31	18,5	2	2890	85	0,89	0,64	37	7,7	61,2	193	187	183	75	160 L	B 5	FF 300 A350	147
222 222/LZ	OL 160L / 2WU / 166-B 5 / Q19 Q32	25	2	2900	87	0,88	0,70	50	5,8	83,1	226	219	215	175	160 L	B 5	FF 300 A350	149
224 224/LZ	OL 160L / 4WU / 166-B 5 / Q18 Q31	15	4	1440	86	0,78	0,62	34	5,8	99,3	304	292	281	111	160 L	B 5	FF 300 A350	145

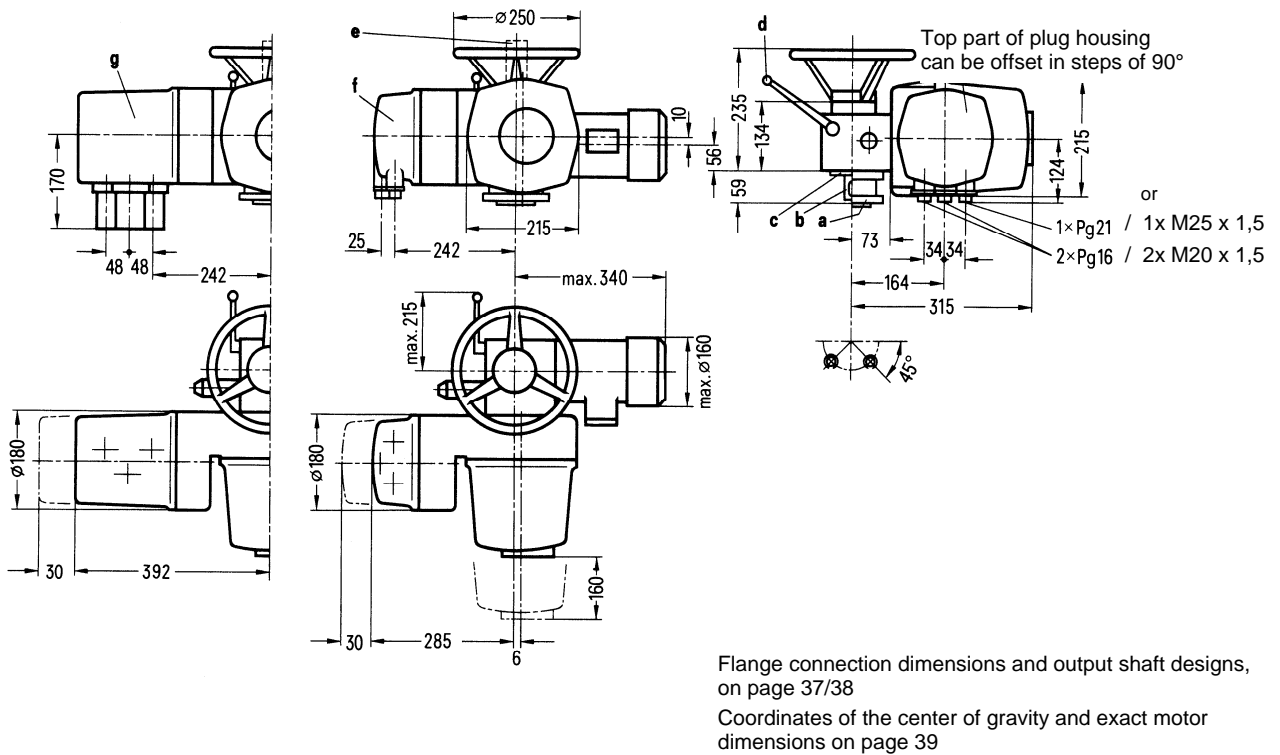
xx xx/LZ	OL xxx
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The motor data were measured during factory workshop test of first manufactured motor.

**Rotary actuator M76361 – C, S – SIWI series**



**Rotary actuator M76371 – C, S – SIWI – AS series**

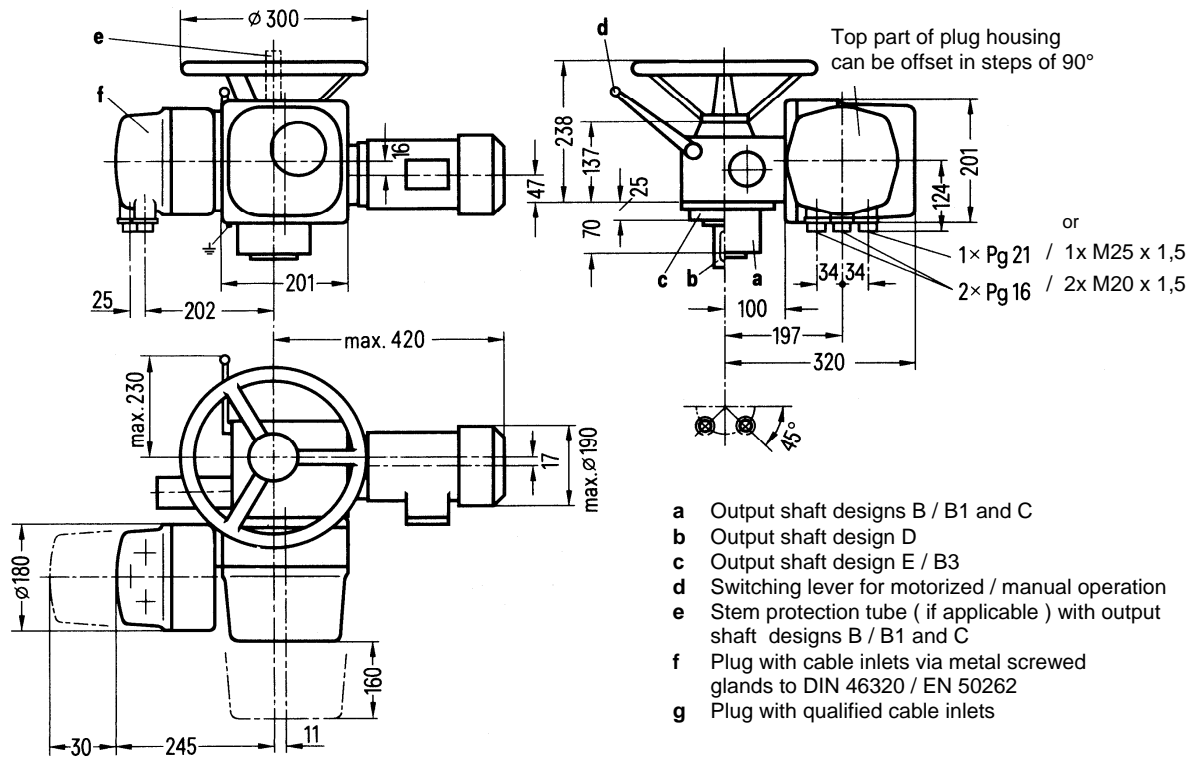


Flange connection dimensions and output shaft designs,  
 on page 37/38  
 Coordinates of the center of gravity and exact motor  
 dimensions on page 39

Fig. 6 Electric rotary actuators M76361 – C and M76371 – C, size 0 to DIN 3210 / F10 to DIN ISO 5210

**Dimensions of the electric rotary actuators**  
**M76361 – E and M76371 – E**  
 Size 0 to DIN 3210 / F10 to DIN ISO 5210

**Rotary actuator M76361 - E, S – SIWI series**



**Rotary actuator M76371 - E, S – SIWI – AS series**

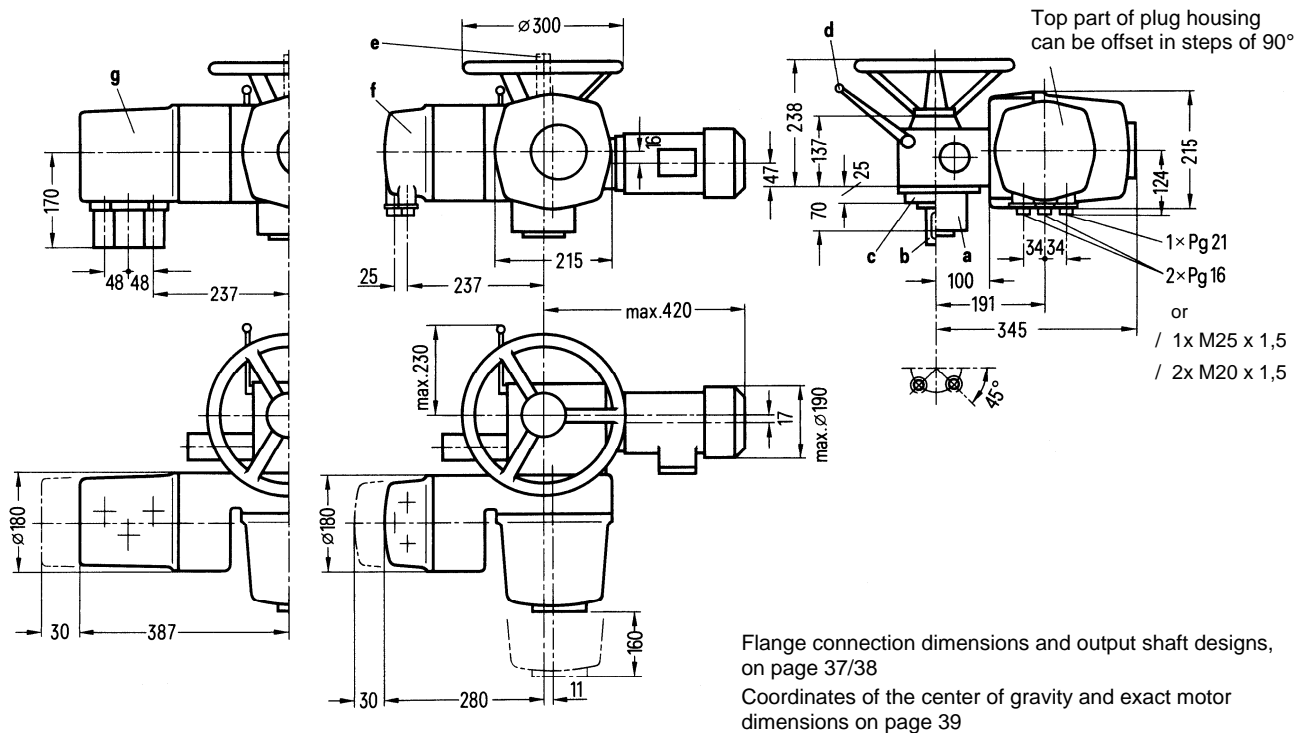
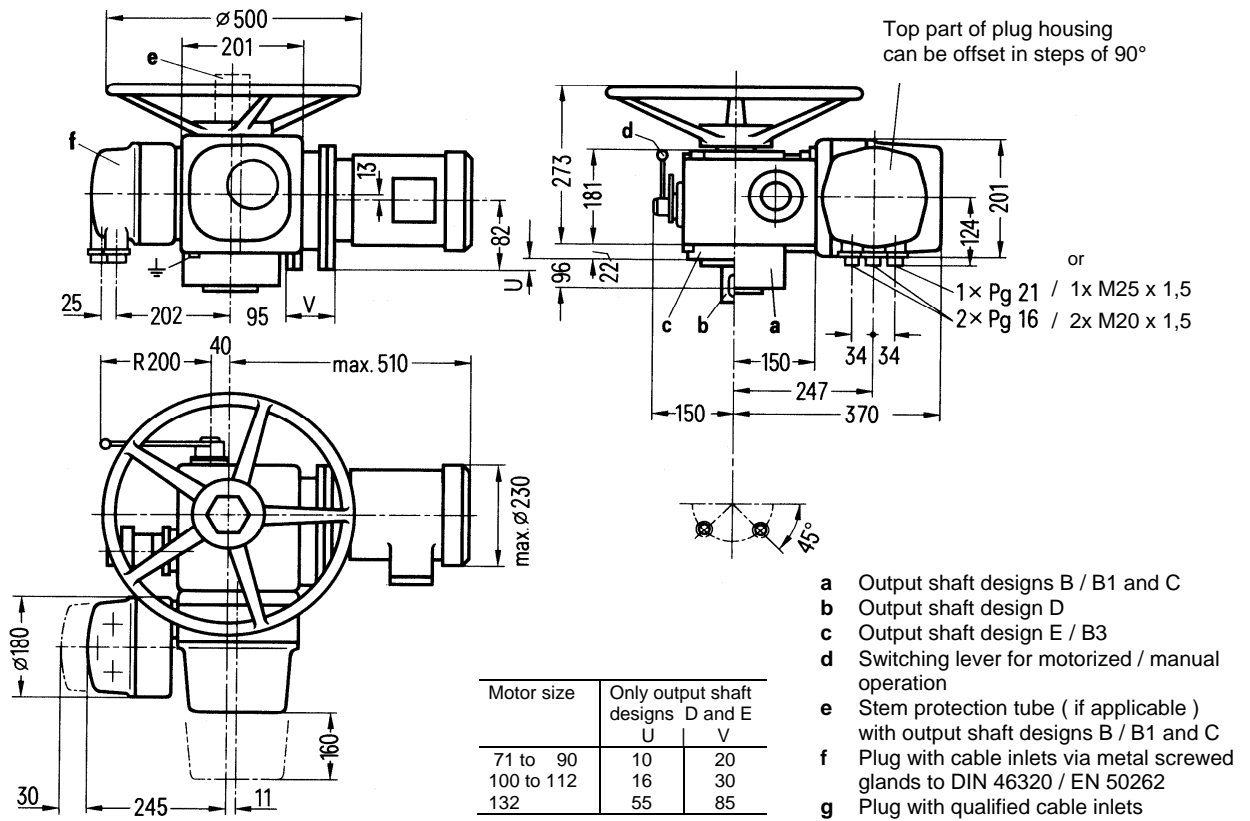


Fig. 7 Electric rotary actuators M76361 – E and M76371 – E, size 0 to DIN 3210 / F10 to DIN ISO 5210

**Dimensions of the electric rotary actuators**  
**M76361 – F and M76371 – F**  
 Size 1/2 to DIN 3210 / F14 to DIN ISO 5210

**Rotary actuator M76361 – F, S – SIWI series**



**Rotary actuator M76371 – F, S – SIWI – AS series**

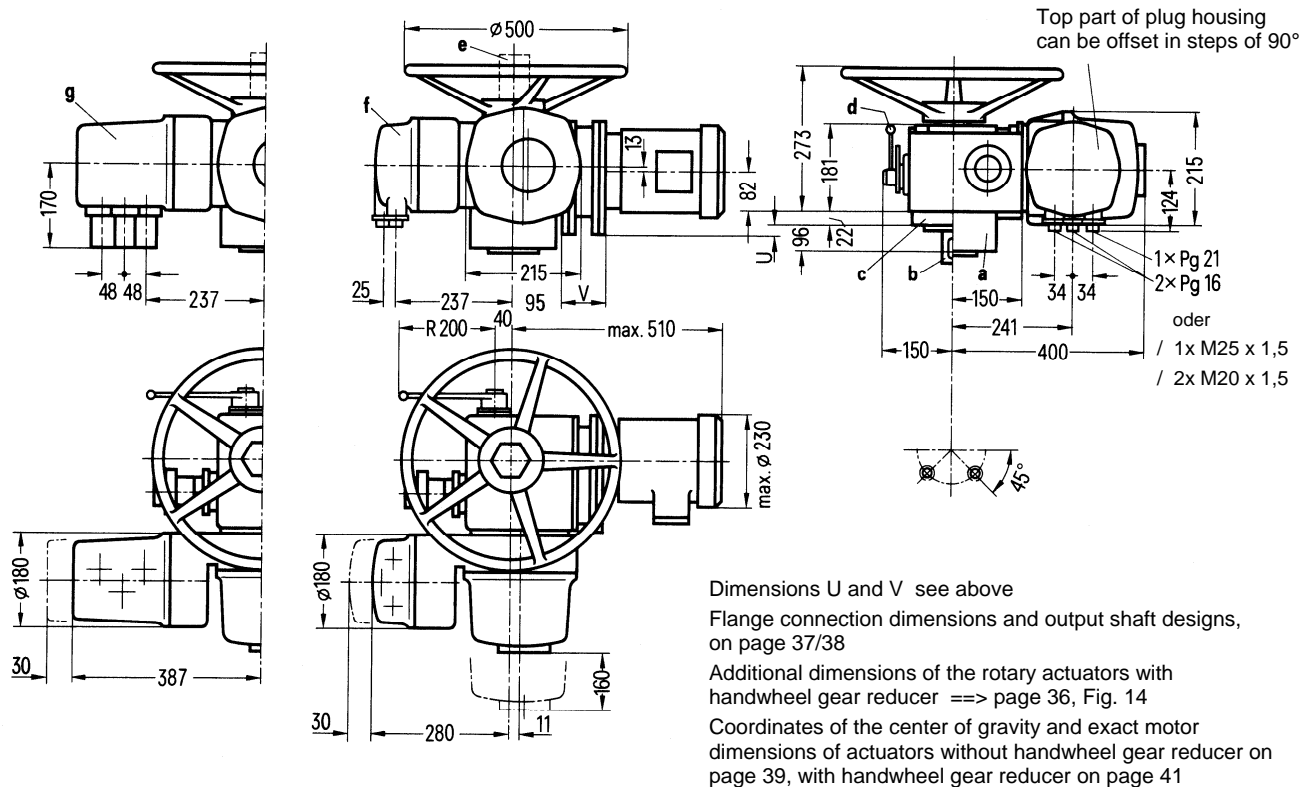
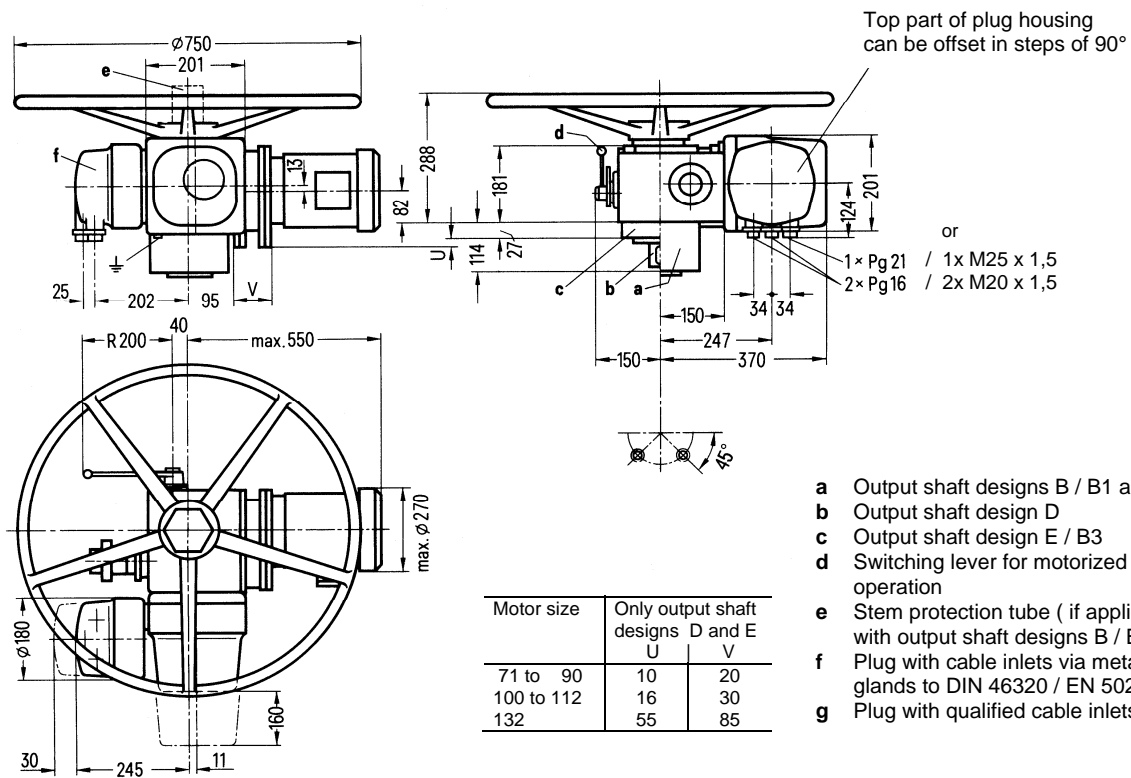


Fig. 8 Electric rotary actuators M76361 – F and M76371 – F, size 1/2 to DIN 3210 / F14 to DIN ISO 5210

**Dimensions of the electric rotary actuators**  
**M76361 – G and M76371 – G**  
 Size 3 to DIN 3210 / F16 to DIN ISO 5210

**Rotary actuator M76361 – G, S – SIWI series**



**Rotary actuator M76371 – G, S – SIWI – AS series**

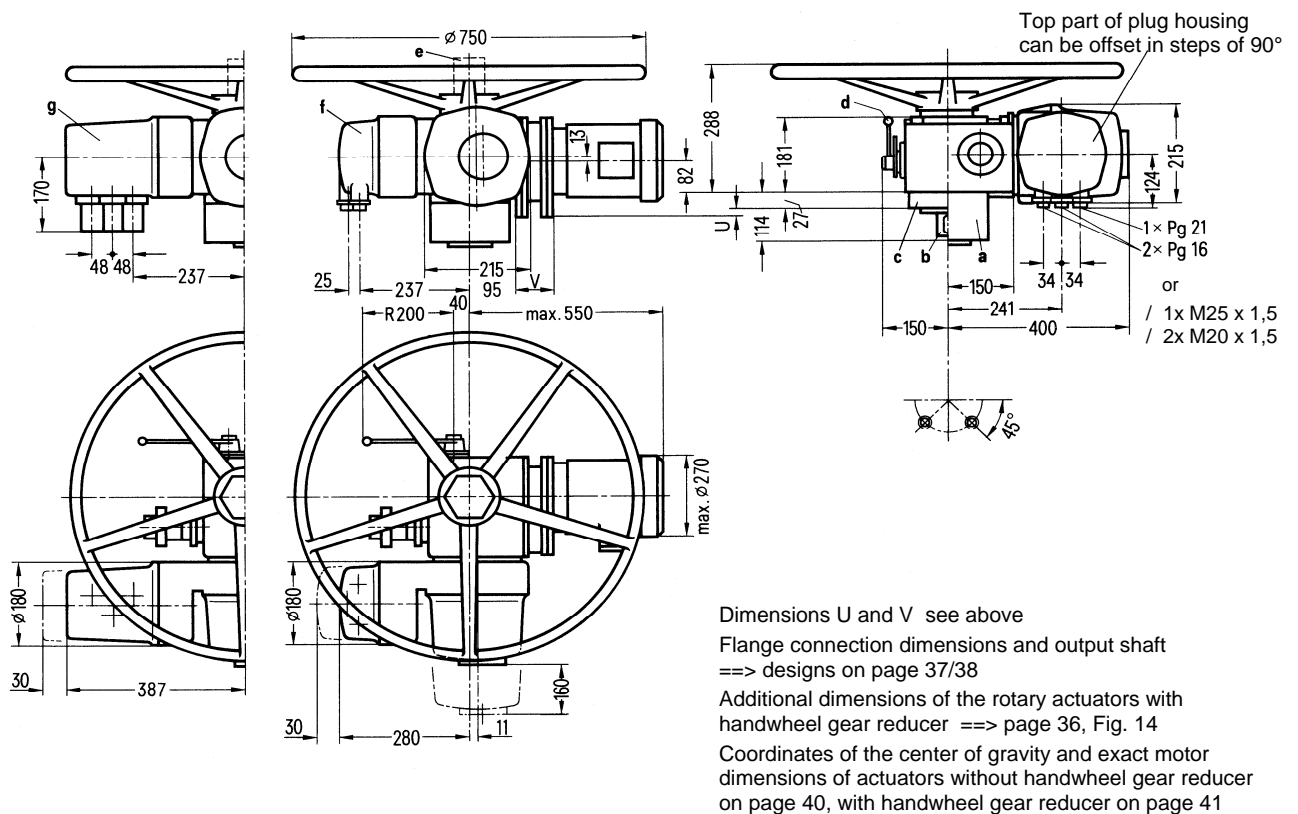
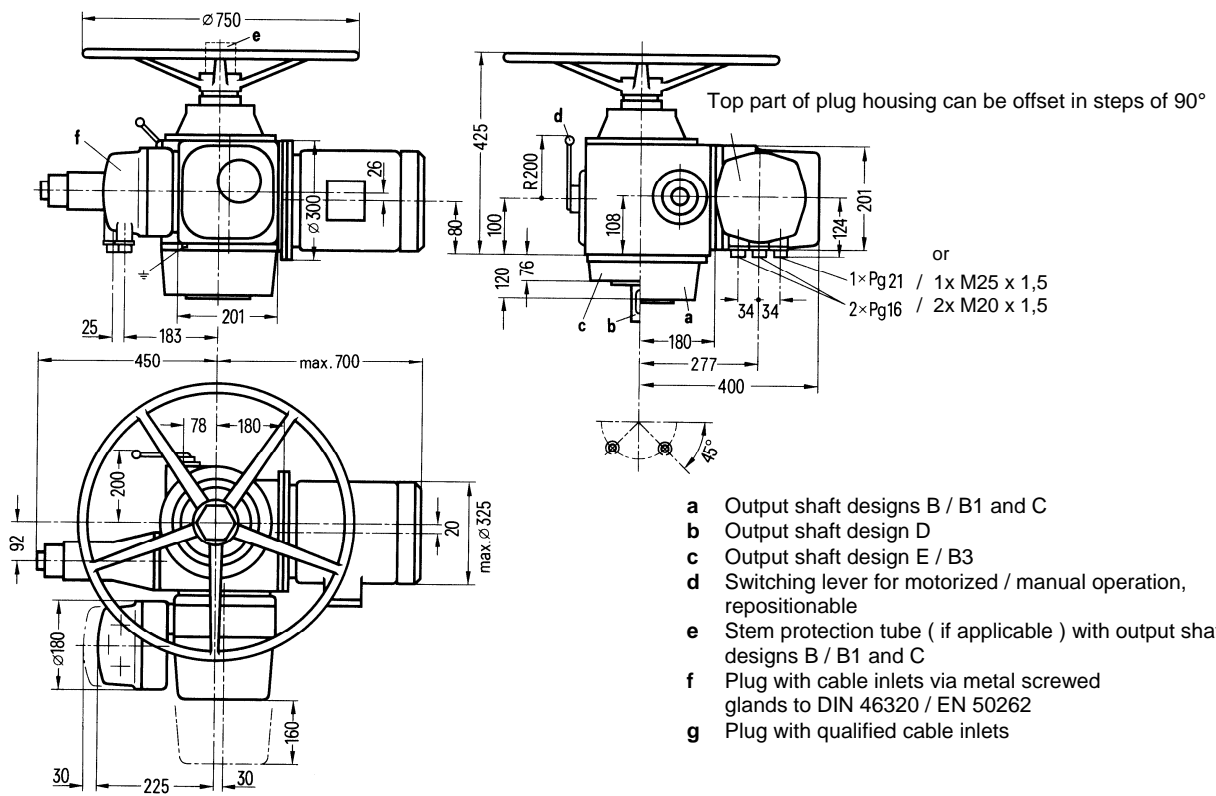


Fig. 9 Electric rotary actuators M76361 – G and M76371 – G, size 3 to DIN 3210 / F16 to DIN ISO 5210

**Rotary actuator M76361 – M, S – SIWI series**



**Rotary actuator M76371 – M, S – SIWI – AS series**

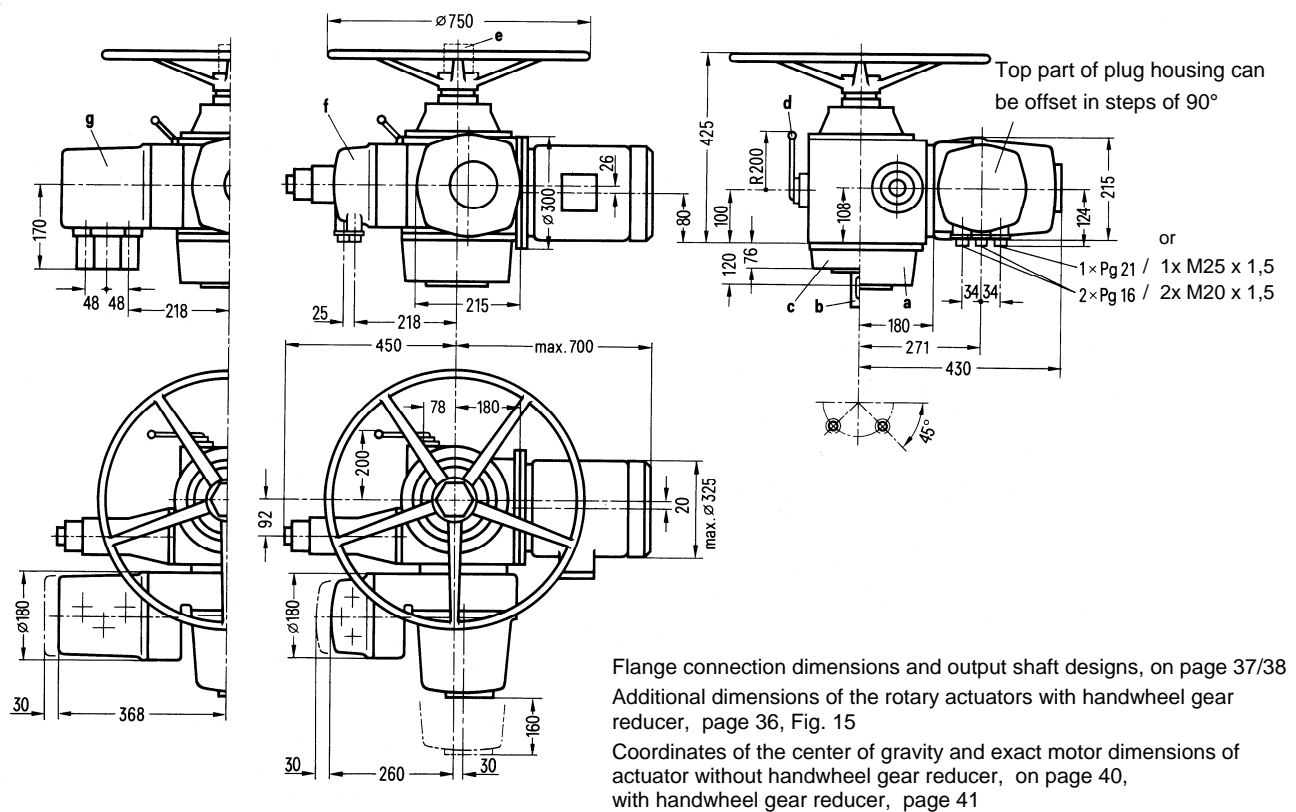
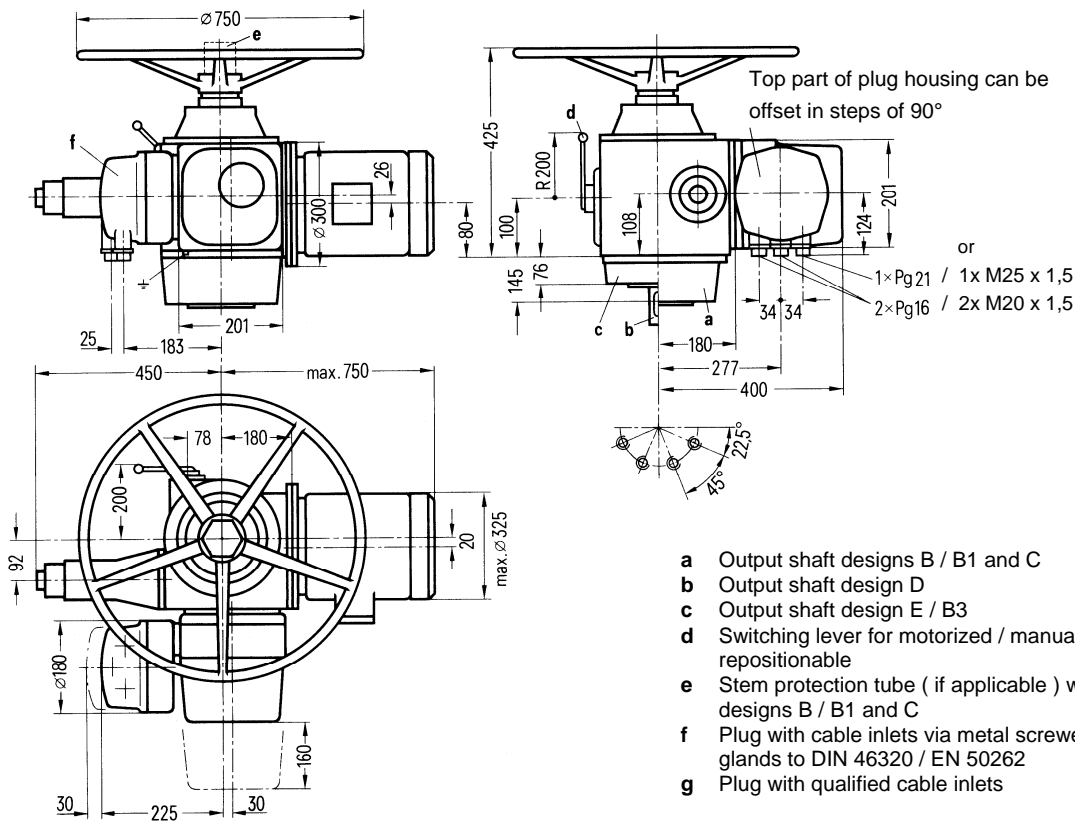


Fig. 10 Electric rotary actuators M76361 – M and M76371 – M, size 3 to DIN 3210 / F16 to DIN ISO 5210

**Rotary actuator M76361 – N, S – SIWI series**



**Rotary actuator M76371 – N, S – SIWI – AS series**

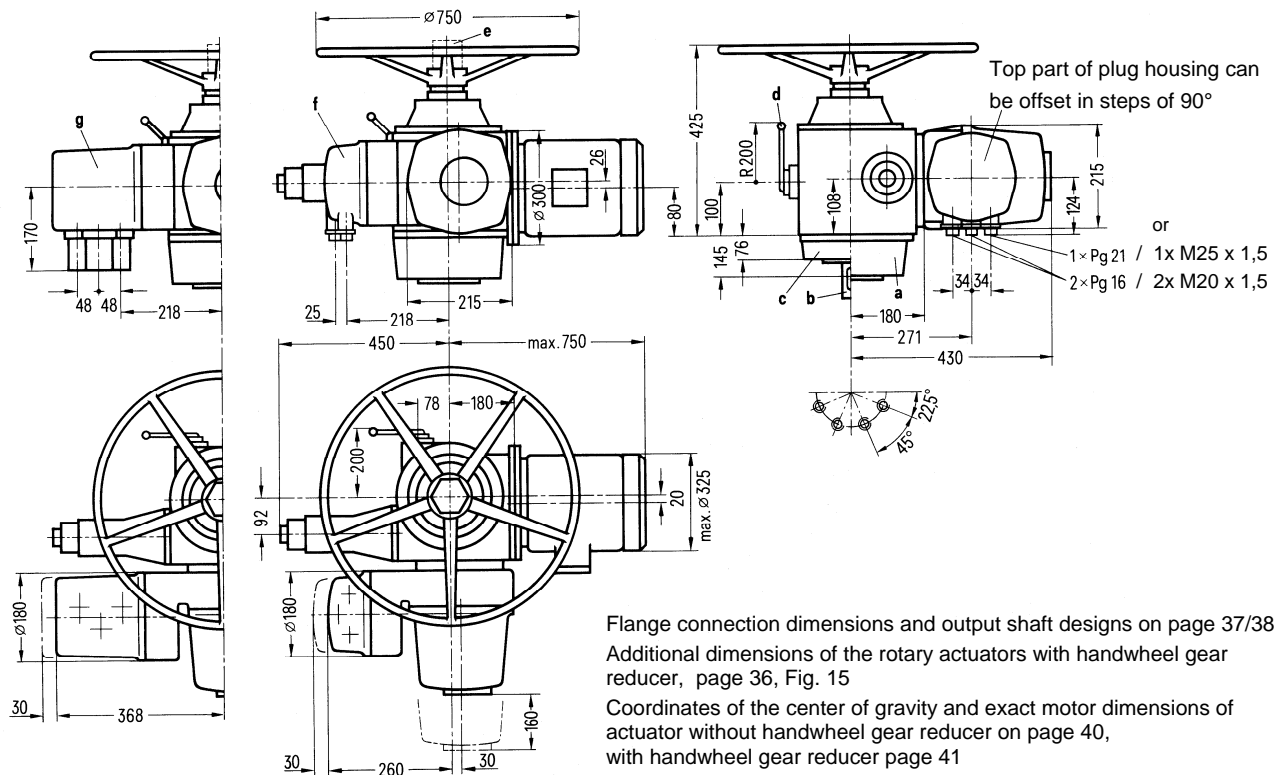
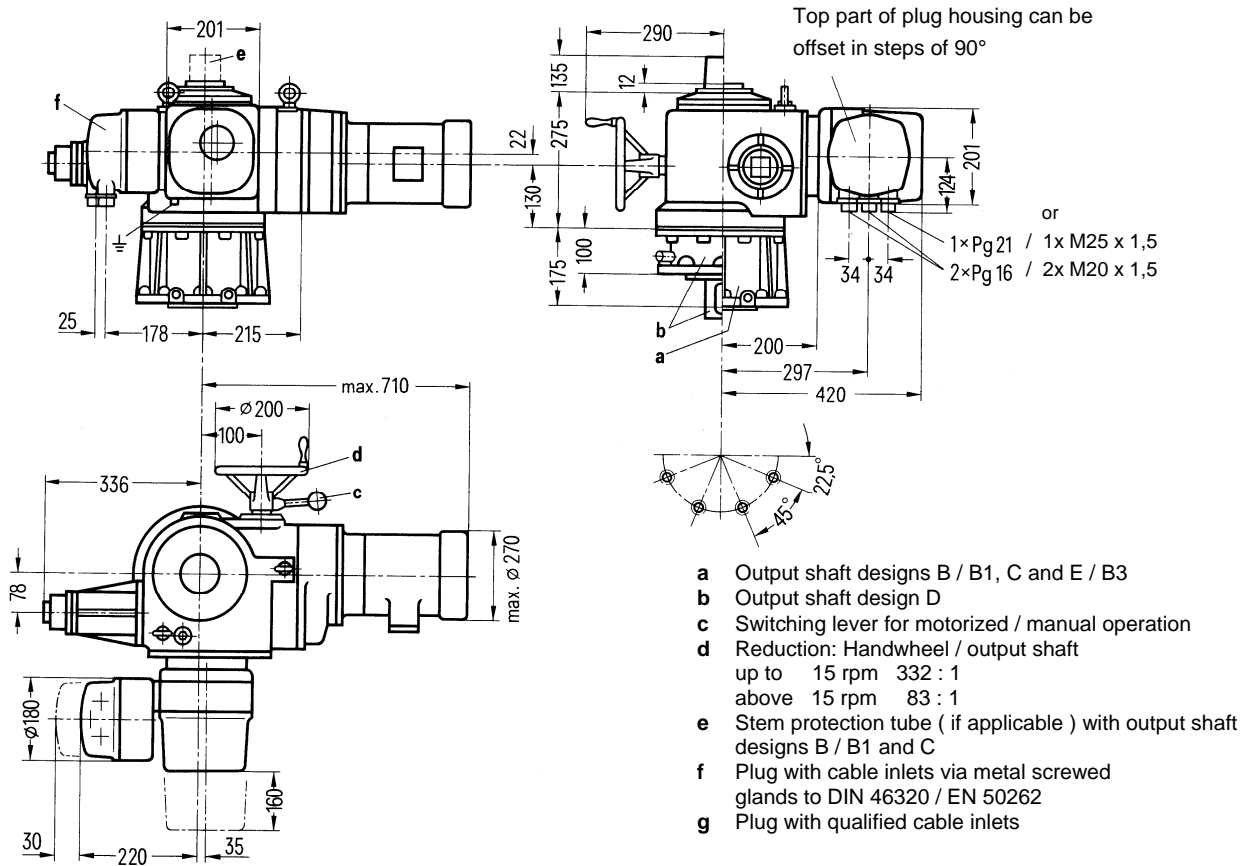


Fig. 11 Electric rotary actuators M76361 – N and M76371 – N, size 4 to DIN 3210 / F25 to DIN ISO 5210

**Dimensions of the electric rotary actuators**  
**M76361 – S and M76371 – S**  
 Size 4 to DIN 3210 / F25 to DIN ISO 5210

**Rotary actuator M76361 – S, S – SIWI series**



**Rotary actuator M76371 – S, S – SIWI – AS series**

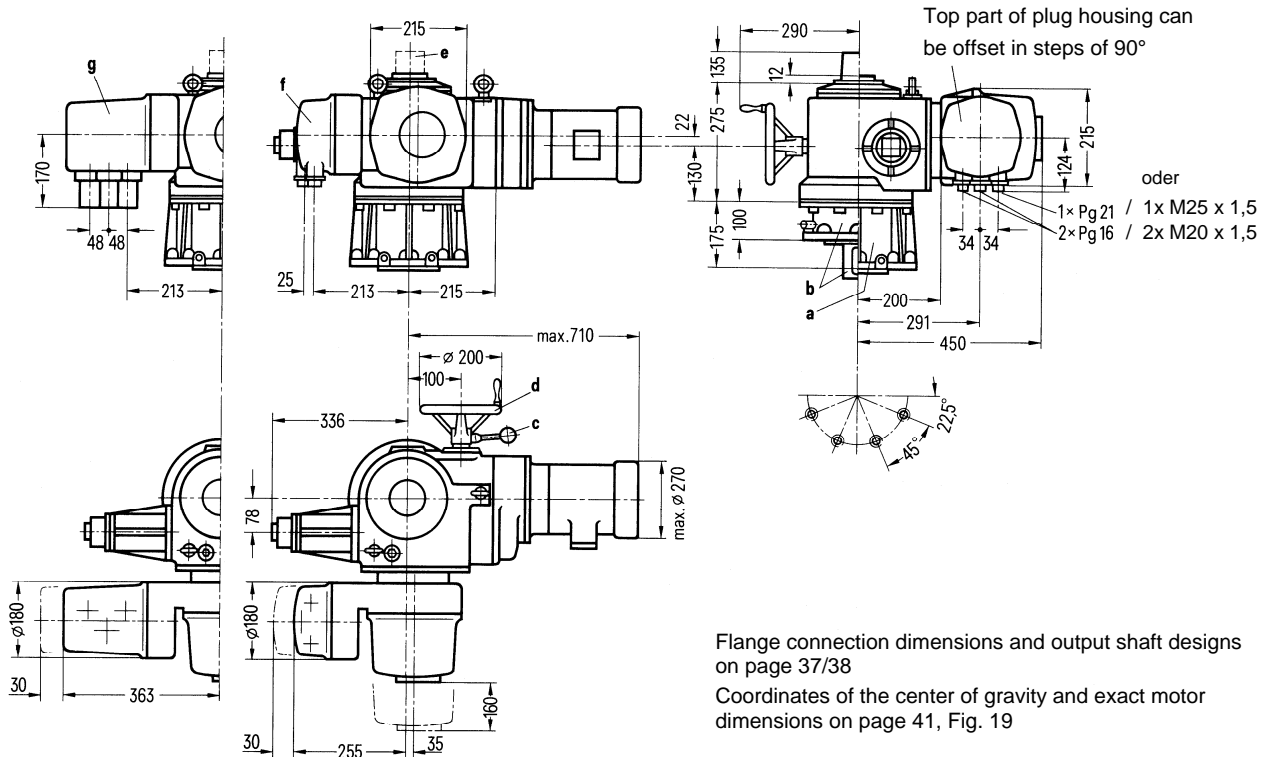
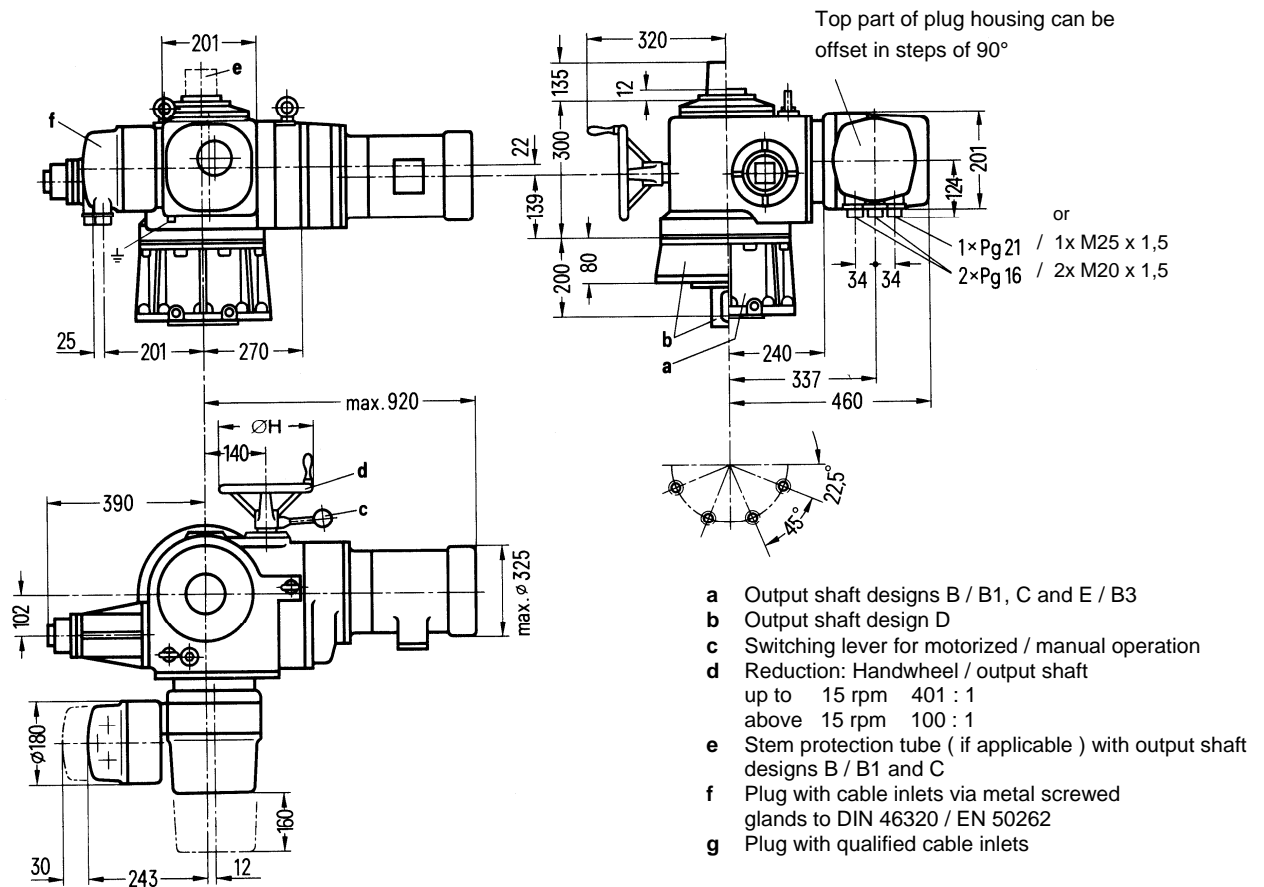


Fig. 12 Electric rotary actuators M76361 – S and M76371 – S, size 4 to DIN 3210 / F25 to DIN ISO 5210

**Dimensions of the electric rotary actuators**  
**M76361 – U and M76371 – U**  
 Size 5 to DIN 3210 / F30 to DIN ISO 5210

**Rotary actuator M76361 – U, S – SIWI series**



**Rotary actuator M76371 – U, S – SIWI – AS series**

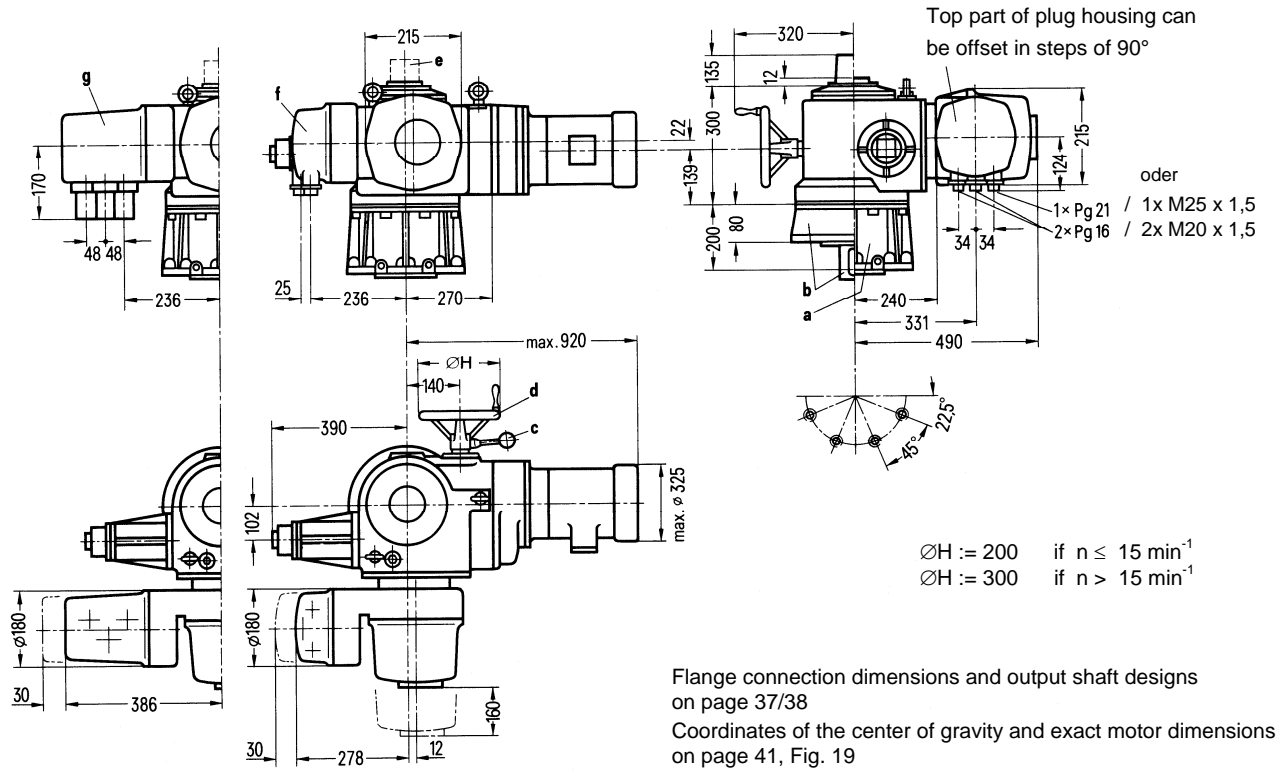


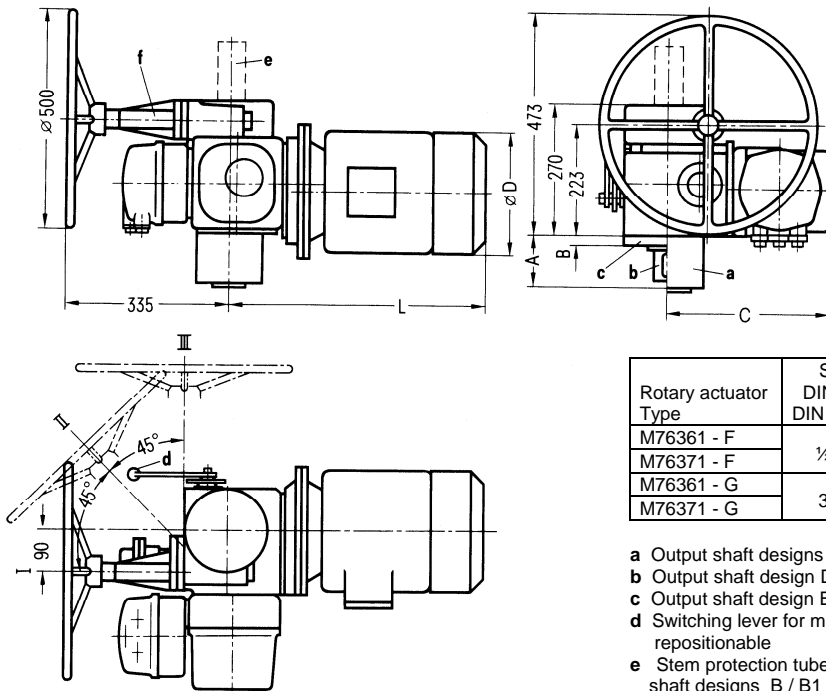
Fig. 13 Electric rotary actuators M76361 – U and M76371 – U, size 5 to DIN 3210 / F30 to DIN ISO 5210

## Dimensions of the electric rotary actuators with handwheel gear reducer M76361 – F to N and M76371 – F to N

The Figs. below contain the dimensions applicable to the handwheel gear reducer and a few other dimensions.  
Other dimensions of the rotary actuators on page 30 to 33.

Flange, connection dimensions and output shaft designs on page 37 / 38.  
Coordinates of center of gravity and exact motor dimensions on page 41.

### Rotary actuator M76361 – F, - G, S-SIWI series and M76371 – F, - G, S-SIWI-AS series with handwheel gear reducer ( repositionable; possible positions : I, II and III )



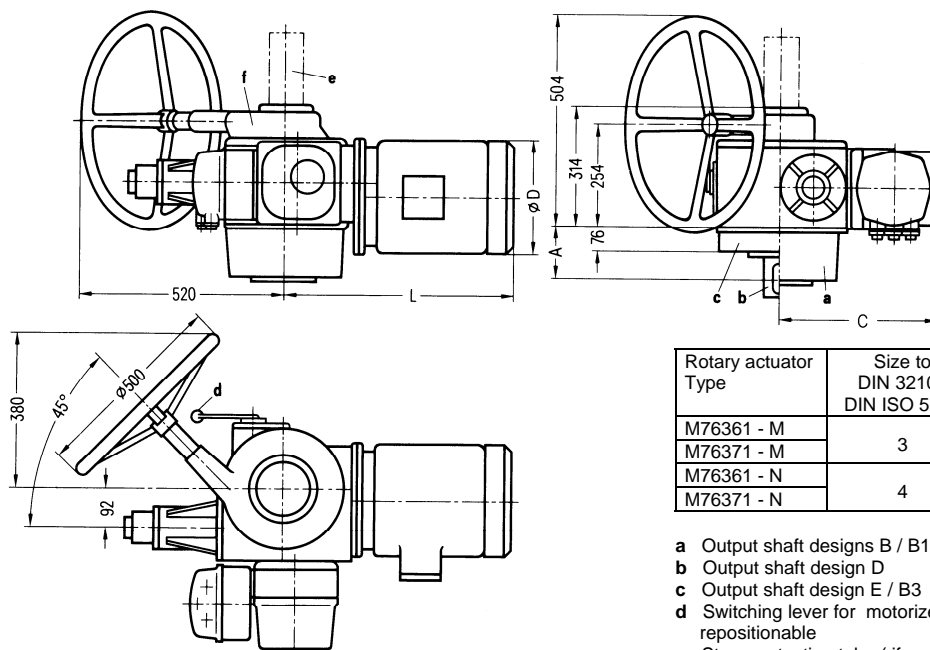
Reduction ratio  
Handwheel to output shaft = 13 : 1  
Gear efficiency  $\eta = 0,45$

Rotary actuator Type	Size to DIN 3210 / DIN ISO5210	A	B	C	D max.	L max.
M76361 - F	1/2 / F14	96	22	370	230	510
M76371 - F				400		
M76361 - G	3 / F16	114	27	370	270	550
M76371 - G				400		

- a Output shaft designs B / B1 and C
- b Output shaft design D
- c Output shaft design E / B3
- d Switching lever for motorized / manual operation repositionable
- e Stem protection tube ( if applicable ) with output shaft designs B / B1 and C
- f Handwheel gear reducer

Fig. 14 Electric rotary actuators M76361 – F, - G and M76371 – F, - G with handwheel gear reducer

### Rotary actuator M76361 – M, - N, S-SIWI series, and M76371 – M, - N, S-SIWI-AS series with handwheel gear reducer ( not repositionable )



Reduction ratio  
Handwheel to output shaft = 18,5 : 1  
Gear efficiency  $\eta = 0,6$

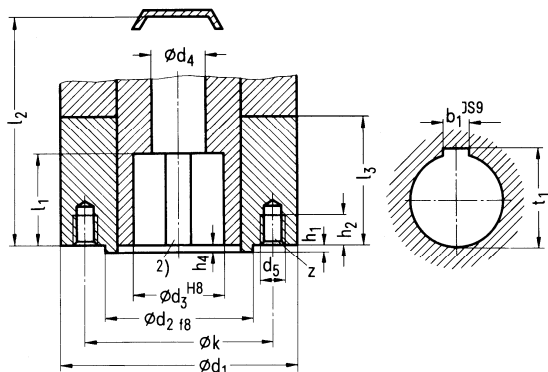
Rotary actuator Type	Size to DIN 3210 / DIN ISO 5210	A	C	D max.	L max.
M76361 - M	3	120	400	325	700
M76371 - M			430		
M76361 - N	4	145	400	325	750
M76371 - N			430		

- a Output shaft designs B / B1 and C
- b Output shaft design D
- c Output shaft design E / B3
- d Switching lever for motorized / manual operation repositionable
- e Stem protection tube ( if applicable ) with output shaft designs B / B1 and C
- f Handwheel gear reducer

Fig. 15 Electric rotary actuators M76361 – M, - N and M76371 – M, - N with handwheel gear reducer

See design B for missing dimensions in designs C, D and E

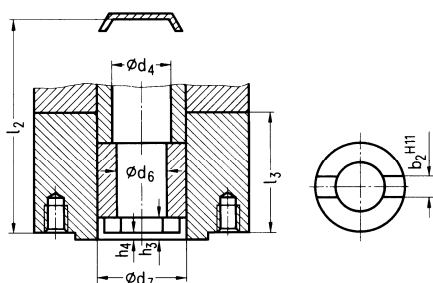
**Design B : Hollow shaft with insert bush**



Rotary actuator type M76361 - M76371 -	Size	$d_1$	$k$	$d_2$	$d_3$	$d_4$	$d_5$	$z^{1)}$	$h_1$	$h_2$	$h_4$	$l_1$	$l_2$	$l_3$	$b_1$	$t_1$
- C	0	125	102	60	42	28	M10	4	3	15	3	45	195	58	12	45,3
- E	$\frac{1}{2}$	175	140	100	60	36	M16	4	4	22	2	64	320	96	18	64,4
- G	3	205	165	130	80	53	M20	4	4	28	2	78	340	114	22	85,4
- M	3	205	165	130	80	72	M20	4	5	30	4	89	480	120	22	85,4
- N	3	205	165	130	80	72	M20	4	5	30	4	89	480	120	22	85,4
- S	4	300	254	160	100	64	M16	8	5	24	1	116	450	175	28	106,2
- U	5	350	300	180	120	75	M20	8	5	30	1	130	500	200	32	127,1

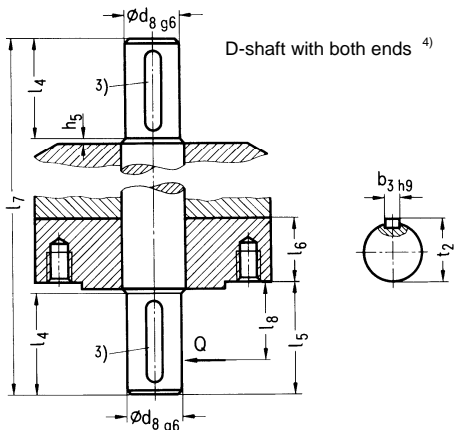
- 1) Number of threaded bores  $d_5$ ; arrangement to DIN 2501, sheet 1
- 2) Groove for featherkey A DIN 6885, sheet 1

**Design C : Hollow shaft with claw coupling**



Type M76361 - M76371 -	Size	$d_4$	$d_6$	$d_7$	$h_3$	$h_4$	$l_2$	$l_3$	$b_2$
- C	0	28	28	42	10	3	195	58	14
- E	$\frac{1}{2}$	36	28	55	12	2	320	96	20
- F	$\frac{1}{2}$	53	38	74	15	2	340	114	24
- G	3	53	53	104	18	4	480	120	30
- M	3	72	50	80	21	4	505	145	30
- N	3	72	64	100	16	1	450	175	30
- S	4	64	63	100	18	1	500	200	40
- U	5	75	74	120	18	1	500	200	40

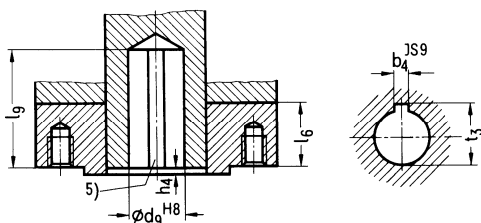
**Design D : Free shaft end with featherkey**



Type M76361 - M76371 -	Size	$d_8$	$h_5$	$l_4$	$l_5$	$l_6$	$l_7$	$l_8$	$b_3$	$t_2$	Q [kN]
- C	0	20	2	50	55	0	262	40	6	22,5	1,5
- E	$\frac{1}{2}$	30	4	70	76	25	288	60	8	33	2,5
- F	$\frac{1}{2}$	30	4	70	76	22	412	60	8	33	7
- G	3	40	5	90	96	27	458	80	12	43	12
- M	3	40	-	90	96	76	-	80	12	43	12
- N	3	40	-	90	96	76	-	80	12	43	12
- S	4	50	2	110	117	100	609	100	14	53,5	15
- U	5	60	2	120	127	80	644	110	18	64,2	18

- 3) Featherkey A DIN 6885, sheet 1
- 4) Not with rotary actuators M76361-M, -N and M76371-M, -N
- Q Maximum permissible transverse load

**Design E : Bore with featherkey slot**



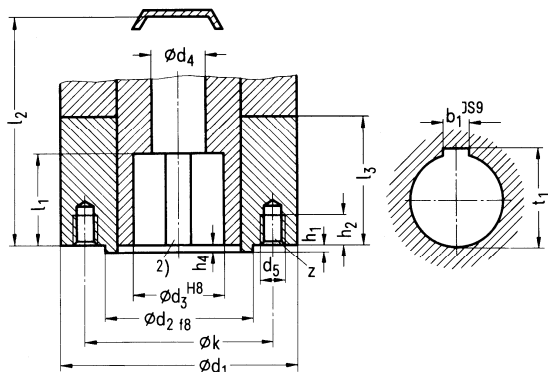
Type M76361 - M76371 -	Size	$d_9$	$h_4$	$l_6$	$l_9$	$b_4$	$t_3$
- C	0	20	2	0	55	6	22,8
- E	$\frac{1}{2}$	30	2	22	74	8	33,3
- F	$\frac{1}{2}$	30	2	22	74	8	33,3
- G	3	40	2	27	95	12	43,3
- M	3	40	2	76	112	12	43,3
- N	3	40	2	76	120	14	53,8
- S	4	50	1	175	107	14	53,8
- U	5	60	1	200	118	18	64,4

- 5) Slot for featherkey A DIN 6885, sheet 1

Fig. 16 / a Flange connection dimensions and output shaft designs to DIN 3210

See design B for missing dimensions in designs C, D and B3

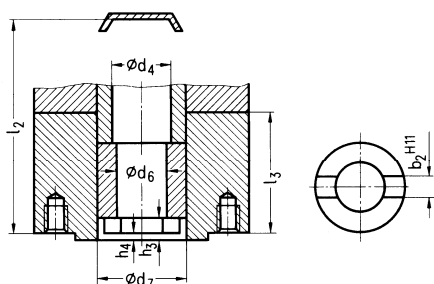
**Design B1 : Hollow shaft with insert bush**



Rotary actuator type M76361 - M76371 -	Size	$d_1$	$k$	$d_2$	$d_3$	$d_4$	$d_5$	$z^{1)}$	$h_1$	$h_2$	$h_4$	$l_1$	$l_2$	$l_3$	$b_1$	$t_1$
- C	F10	125	102	70	42	28	M10	4	3	15	3	45	195	58	12	45,3
- E	F14	175	140	100	60	36	M16	4	4	22	2	64	210	70	18	64,4
- G	F16	205	165	130	80	53	M20	4	4	28	2	78	340	114	22	85,4
- M	F16	205	165	130	80	72	M20	4	5	30	4	89	480	120	22	85,4
- N	F16	205	165	130	80	72	M20	4	5	30	4	89	480	120	22	85,4
- S	F25	300	254	200	100	64	M16	8	5	24	1	116	450	175	28	106,2
- U	F30	350	298	230	120	75	M20	8	5	30	1	130	500	200	32	127,1

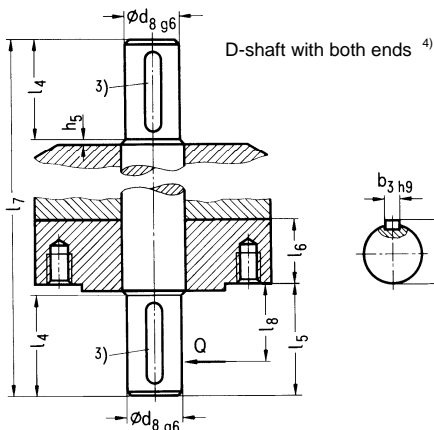
3) Number of threaded bores  $d_5$ ; arrangement to DIN 2501, sheet 1  
4) Groove for featherkey A DIN 6885, sheet 1

**Design C : Hollow shaft with claw coupling**



Type M76361 - M76371 -	Size	$d_4$	$d_6$	$d_7$	$h_3$	$h_4$	$l_2$	$l_3$	$b_2$
- C	F10	28	28	42	10	3	195	58	14
- E	F10	36	28	55	10	3	210	70	14
- F	F14	53	38	74	12	2	320	96	20
- G	F16	53	53	104	15	2	340	114	24
- M	F16	72	50	80	18	4	480	120	24
- N	F16	72	50	80	18	4	480	120	24
- S	F25	72	64	100	21	1	505	145	30
- U	F30	75	63	100	16	1	450	175	30
- U	F30	75	74	120	18	1	500	200	40

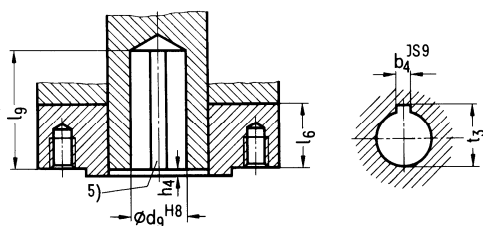
**Design D : Free shaft end with featherkey**



Type M76361 - M76371 -	Size	$d_8$	$h_5$	$l_4$	$l_5$	$l_6$	$l_7$	$l_8$	$b_3$	$t_2$	Q [kN]
- C	F10	20	2	50	55	0	262	40	6	22,5	1,5
- E	F10	20	2	50	55	25	288	40	6	22,5	2,5
- F	F14	30	4	70	76	22	412	60	8	33	7
- G	F16	40	5	90	96	27	458	80	12	43	12
- M	F16	40	5	90	96	76	-	80	12	43	12
- N	F16	40	5	90	96	76	-	80	12	43	12
- S	F25	50	2	110	117	100	609	100	14	53,5	15
- U	F30	60	2	120	127	80	644	110	18	64,2	18

3) Featherkey A DIN 6885, sheet 1  
4) Not with rotary actuators M76361-M, -N and M76371-M, -N  
Q Maximum permissible transverse load

**Design B3 : Bore with featherkey slot**

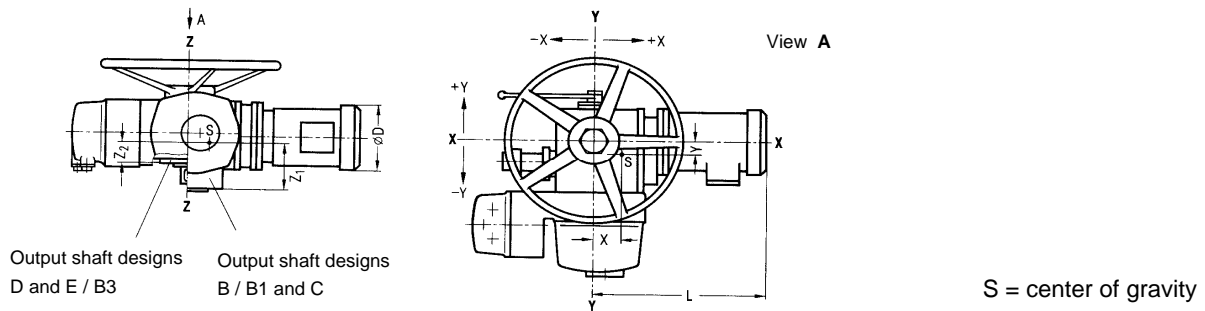


Type M76361 - M76371 -	Size	$d_9$	$h_4$	$l_6$	$l_9$	$b_4$	$t_3$
- C	F10	20	2	0	55	6	22,8
- E	F10	20	2	25	55	6	22,8
- F	F14	30	2	22	74	8	33,3
- G	F16	40	2	27	95	12	43,3
- M	F16	40	2	76	112	12	43,3
- N	F16	40	2	76	112	12	43,3
- S	F25	50	1	175	107	14	53,8
- U	F30	60	1	200	118	18	64,4

6) Slot for featherkey A DIN 6885, sheet 1

Fig. 16 / b Flange connection dimensions and output shaft designs to DIN ISO 5210

**Coordinates of center of gravity and motor dimensions**  
of the electric rotary actuators M76361 - C to F and M76371 - C to - F (without handwheel gear reducer)



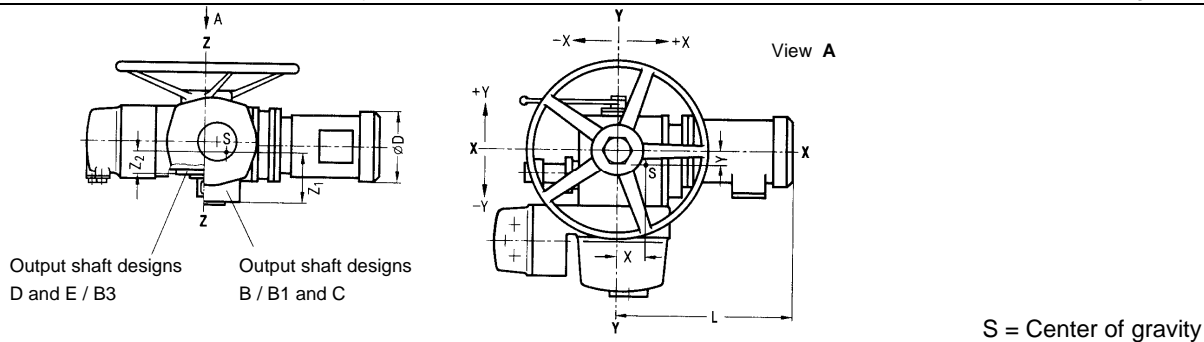
S = center of gravity

xxx : measured value      yyy : calculated value <sup>1)</sup> (Index <sup>1)</sup> : see page 40 )

Actuator type			Center of gravity												Motor dimension D    L	
			M76361- ... - Z R04				M76371 - ... - Z R04				M76371 - ... - Z R08 / R09					
			X	Y	Z1	Z2	X	Y	Z1	Z2	X	Y	Z1	Z2		
C12*1	C13*2	C13*4	25	-60	125	75									110	265
C12*2	C13*3														125	280
C13*1																
C14*3	C15*5	C17*6														
C14*4	C15*6		20	-50	125	75	10	-65	125	75	-20	-70	125	75	110	250
C14*5	C16*6															
C14*1	C16*4	C18*6														
C14*2	C16*5		25	-55	125	75	15	-60	120	70	-20	-70	125	80	125	260
C15*3	C17*4															
C15*4	C17*5															
C15*2	C17*3	C19*4														
C16*3	C18*3		30	-65	130	80	25	-60	120	70	-10	-75	125	80	125	260
C17*2	C18*4															
C15*1	C17*1	C20*5														
C16*1	C18*2		40	-60	125	75	30	-60	125	75	-10	-70	125	75	140	275
C16*2	C19*3															
	C22*5															
C18*1	C20*3	C21*3														
C19*1	C20*4															
C19*2	C21*1		40	-60	125	75	35	-65	125	75	-10	-65	125	75	140	275
C20*2	C21*2															
C20*1	C22*1		65	-50	125	75	55	-55	125	75	30	-55	125	75	160	310
E12*1	E12*2						20	-70	130	90	-5	-75	135	95	125	300
E12*3							25	-60	130	90	-10	-65	130	90	110	290
E14*3	E14*4														125	280
E13*4	E15*2	E18*3														
E14*1	E15*3		35	-50	135	95	35	-55	140	100	20	-70	135	95	140	300
E14*2	E16*2															
E15*1	E16*3															
E13*1	E17*2	E20*3														
E13*2	E17*3		55	-50	135	95	50	-55	135	95	40	-65	135	95	160	335
E13*3	E18*1															
E16*1	E19*1															
E17*1	E21*3	E22*2													160	335
E20*2	E22*1															
E20*1	E21*2		80	-50	135	95	65	-55	140	100	45	-65	135	95	180	370
E21*1			90	-50	135	95	75	-55	140	100	60	-65	135	95	180	370
F12*3	F12*4														125	370
F12*1	F13*2	F14*3														
F12*2	F13*3		40	-60	200	140	40	-65	180	120	35	-70	175	115	140	380
F13*1	F14*2															
F14*1			55	-45	200	140	45	-65	180	120	40	-70	175	115	160	400
F15*3			60	-20	200	140	50	-35	200	140	40	-40	200	135	140	370
F15*1	F16*4	F19*3														
F15*2	F17*3		50	-45	200	140	45	-50	190	130	35	-60	185	125	160	370
F16*1	F17*4															
F16*2	F18*2															
F16*3	F18*3															
F17*2	F19*2															
F18*1	F20*3		60	-40	200	140	55	-50	200	140	35	-65	190	130	180	410
F17*1	F20*2	F22*2														
F19*1	F21*4		80	-40	200	140	65	-50	200	140	50	-55	190	130	180	410
F20*1	F21*2	F22*3													205	430
F21*1	F21*3						100	-40	180	120	80	-50	200	135	205	430
F22*1							125	-40	205	140	110	-45	200	135	220	450

Fig. 17 Coordinates of center of gravity and motor dimensions of the electric rotary actuators M76361 - C to - F and M76371 - C to - F (without handwheel gear reducer)

**Coordinates of center of gravity and motor dimensions**  
of the electric rotary actuators M76361 - G to N and M76371 - G to N (without handwheel gear reducer)



S = Center of gravity

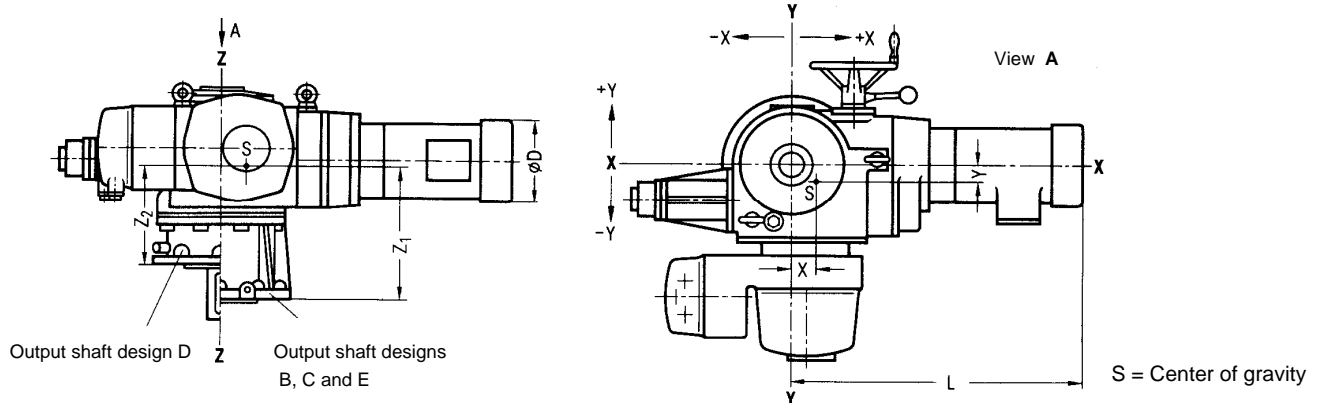
xxx : measured value      yyy : calculated value <sup>1)</sup>

Actuator type			Center of gravity												Motor dimension	
			M76361- ... - Z R04				M76371 - ... - Z R04				M76371 - ... - Z R08 / R09					
			X	Y	Z1	Z2	X	Y	Z1	Z2	X	Y	Z1	Z2	D	L
G12*1	G12*2	G12*3	40	-55	205	135									140	380
G13*1	G14*1	G14*3					40	-65	200	135	35	-75	200	135	160	400
G13*2	G14*2															
G15*2	G16*3															
G15*3	G18*3		50	-40	210	150	30	-60	200	135	20	-65	200	135	160	370
G15*1	G16*2	G18*2									35	-60	190	125	180	410
G16*1	G17*3	G19*2														
G17*2	G18*1	G19*4	65	-45	205	140	55	-50	200	130	45	-60	200	130	180	410
G17*1	G20*2	G22*3														
G19*3	G20*3														205	430
G20*1	G21*3														205	430
G19*1							100	-50	200	130	90	-55	195	125	220	450
G21*1	G21*2	G22*2					110	-50	210	140	100	-55	200	130	220	450
G22*1							165	-35	210	140	155	-40	205	135	260	515
M15*2	M15*3	M16*3					15	-50	250	205	15	-50	260	215	180	450
M12*1	M14*3	M17*4														
M12*2	M15*1	M18*4														
M12*3	M16*1	M19*3	70	-55	240	195	70	-60	270	225	65	-65	270	225	205	470
M13*2	M16*2															
M13*3	M17*3															
M17*2	M18*3	M20*3					60	-30	250	215	60	-35	260	215	205	470
M13*1																
M14*1	M14*2	M19*2													220	485
M17*1	M20*1	M21*3														
M18*1	M20*2	M21*4	60	-40	235	190	90	-50	240	195	85	-50	240	195	220	485
M18*2																
M19*1	M21*1	M22*4													260	530
	M21*2														260	530
M22*2	M22*3														320	620
M22*1																
N12*2	N15*2	N16*2	65	-55	240	185	65	-55	280	220	65	-55	285	225	205	470
N12*3	N15*3	N16*3														
N15*1																
N12*1	N13*2	N14*3													220	485
	N13*3															
N16*1	N18*3	N20*3														
N17*1	N19*1		65	-45	225	165	85	-45	250	190	80	-45	250	190	220	485
N17*2	N19*2															
N13*1	N18*1	N20*2														
N14*2	N18*2	N21*2	105	-40	230	170	110	-45	275	215	105	-50	280	220	260	530
	N20*1	N21*3														
N14*1															260	530
N21*1	N22*2	N22*3													320	620
N22*1							230	-20	250	190	225	-20	250	190	320	670

Fig. 18 Coordinates of center of gravity and motor dimensions of the electric rotary actuators M76361 – G to N and M76371 – G to N without handwheel gear reducer

<sup>1)</sup> : In the valve calculation the coordinates of center of gravity have to be considered with an additional factor of 1.1 !

**Coordinates of center of gravity and motor dimensions**  
of the electric rotary actuators M76361 – S, - U and M76371 – S, - U



xxx : measured value

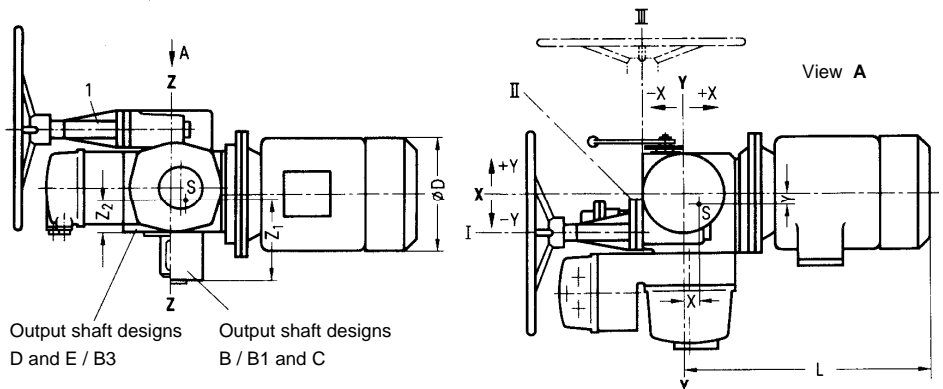
yyy : calculated value <sup>1)</sup>

Actuator type			Center of gravity												Motor dimension	
			M76361- ... - Z R04				M76371 - ... - Z R04				M76371 - ... - Z R08 / R09					
			X	Y	Z1	Z2	X	Y	Z1	Z2	X	Y	Z1	Z2	D	L
S12*1	S12*3	S15*3	110	-40	270	190	105	-45	270	190	100	-50	270	190	180	535
S13*1	S14*2	S15*4	195	-35	270	190	135	-40	270	190	130	-40	270	190	205	565
S13*2	S14*3	S16*2														
S14*1	S15*2	S16*3														
S16*1	S17*2	S18*3	160	-30	275	195	170	-60	275	195	150	-60	275	195	220	585
S17*1	S17*3															
S15*1	S17*1	S18*1	220	-20	300	225	220	-25	300	225	210	-25	300	225	260	680
S18*2																
S19*2	S19*3														260	680
U12*1	U12*3	U13*3	110	-35	275	180	105	-40	275	180	100	-45	275	180	205	640
U12*2		U14*3														
U13*1	U14*2	U16*3	120	-35	280	185	115	-40	280	185	110	-45	280	185	220	660
U13*2	U15*4															
U14*1	U16*1	U17*2	175	-30	285	190	170	-35	285	190	165	-40	285	190	260	740
U15*3	U16*2	U17*3														
U18*3	U18*3															
U15*1	U15*2														260	740
U17*1	U18*2		270	-30	300	200	265	-35	300	200	260	-40	300	200	320	810
U19*3															320	810
U18*1	U19*1	U19*2	310	-25	300	205	305	-30	300	205	300	-35	300	205	320	865

Fig. 19 Coordinates of center of gravity and motor dimensions of the electric rotary actuators M76361 – S, - U and M76371 – S, - U

<sup>1)</sup> : In the valve calculation the coordinates of center of gravity have to be considered with an additional factor of 1.1 !

**Coordinates of center of gravity and motor dimensions**  
of the electric rotary actuators M76361 - F to N and M76371 - F to N with handwheel gear reducer



With the rotary actuators M76361 - F, - G and M76371 - F, - G the handwheel gear reducer can be repositioned into positions I, II and III ( position I shown ).

With the rotary actuators M76361 - M, - N and M76371 - M, - N the gear reducer cannot be repositioned; Only position II is possible ( see Fig. 15, page 36 ).

1 Handwheel gear reducer  
S Center of gravity

**On request**

## Dimensions of the parking socket and the protective cover

Accessories		Order – no.	
<b>Parking socket</b>	unpainted, to protect and secure the removed top part of the plug	<b>R540621</b>	
<b>Protective cover</b>	unpainted, to protect the plug assemblies on the actuator with the top part of the plug removed	<b>R540485</b>	

### Parking socket R54 0621

( C79106 - A3001 - C 434 )

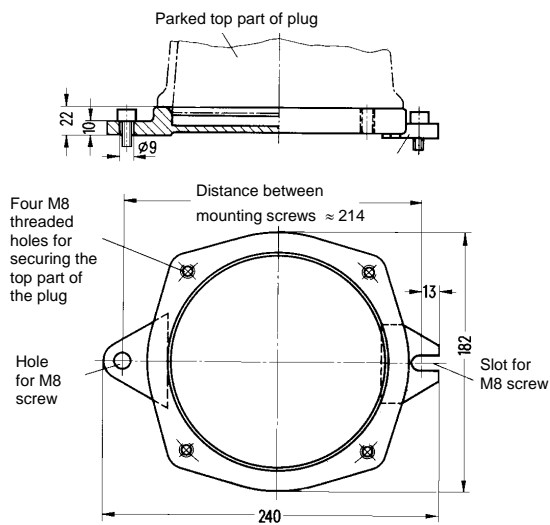


Fig. 20 Parking socket for protecting and securing the removed top part of the plug

### Protective cover R54 0485

( C79106 - A3003 - B270 )

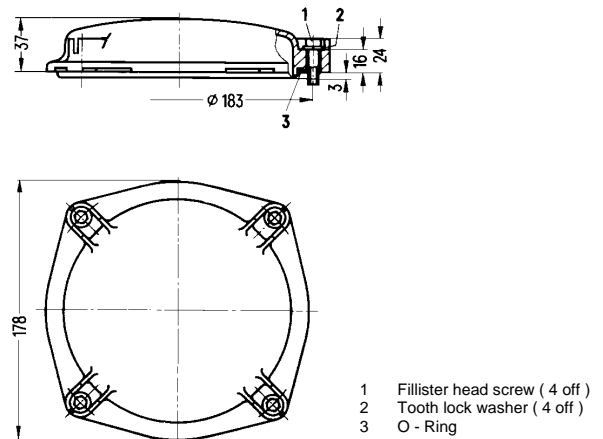


Fig. 21 Protective cover to protect the plug assemblies on the actuator with the top of the plug removed

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## Condition of Sale and Delivery

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