SIPOS AKTORIK

Electric Rotary Actuators For Nuclear Applications

Series S-SIWI-C and R-SIWI-C

for open-loop and closed-loop control equipment

Catalogue MP 35.1 • 2011

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The production and testing of these products is regularly audited by the following authorities:

> TÜV CERT, NIS ZERT
> KKW Philippsburg (EnBW) as Partners of the VGB
> AREVA NP GmbH

Fig. 1 : Electric rotary actuators for nuclear applications
S - SIWI - CAS series

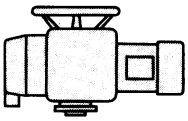
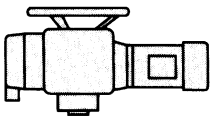
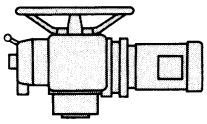
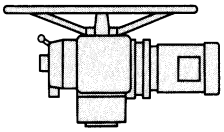
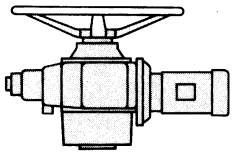
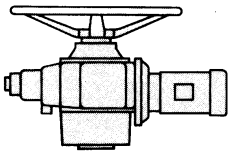
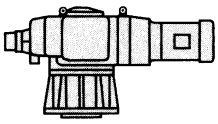
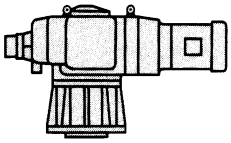
Delivery program

	Series	Type range	Design
for open-loop control equipment	S-SIWI-C	M76361	Standard design
	S-SIWI-CD	M76361	Small leakage
	S-SIWI-CAS	M76371	Large leakage
for closed-loop control equipment	R-SIWI-C	M76362	Standard design
	R-SIWI-CD	M76362	Small leakage
	R-SIWI-CAS	M76372	Large leakage

for use in nuclear plants Type PWR
with 3-ph AC motor 3/PEN AC 50 Hz 380 V
with connecting flange and output shaft, design A, B, C, D or E according to DIN 3210

or alternatively
with connecting flange according to EN ISO 5210, Part 1, and output shaft,
design A, B1 or B3 according to EN ISO 5210, Part 3,
or design C according to DIN 3338, Dec. 1987
or design D according to factory standard

Overview

Electric rotary actuators				
Series S - SIWI – C / - CD Type	**M76361 - C**	**M76361 - E**	**M76361 - F**	**M76361 - G**
Series S – SIWI - CAS Type	**M76371 - C**	**M76371 - E**	**M76371 - F**	**M76371 - G**
Adjustable tripping torque minimum	10 Nm	30 Nm	60 Nm	100 Nm
maximum	60 Nm	120 Nm	250 Nm	500 Nm
Output speed in steps from .. to ..	5 to 180 rpm	5 to 180 rpm	5 to 180 rpm	5 to 180 rpm
Size acc. to DIN 3210 / EN ISO 5210	0 / F10	0 / F10	1 / 2 / F14	3 / F16
Series R - SIWI – C / - CD Type	**M76362 - C**	**M76362 - E**	**M76362 - F**	**M76362 - G**
Series R – SIWI - CAS Type	**M76372 - C**	**M76372 - E**	**M76372 - F**	**M76372 - G**
Tripping torque [1)] Series R-SIWI-C	20 and 30 Nm	50 and 80 Nm	120 and 180 Nm	250 Nm
Series R-SIWI-CD / -CAS	20 und 30 Nm	60 Nm	120 Nm	200 Nm
Output speed in steps from .. to ..	5 to 40 rpm	5 to 40 rpm	5 to 40 rpm	5 to 40 rpm
Size acc. to DIN 3210 / EN ISO 5210	0 / F10	0 / F10	1 / 2 / F14	3 / F16
				
Series S - SIWI – C / - CD Type	**M76361 - M**	**M76361 - N**	**M76361 - S**	**M76361 - U**
Series S – SIWI - CAS Type	**M76371 - M**	**M76371 - N**	**M76371 - S**	**M76371 - U**
Adjustable tripping torque minimum	200 Nm	300 Nm	500 Nm	1000 Nm
maximum	900 Nm	1250 Nm	1800 Nm	4000 Nm
Output speed in steps from .. to ..	5 to 180 rpm	5 to 180 rpm	5 to 60 rpm	5 to 60 rpm
Size acc. to DIN 3210 / EN ISO 5210	3 / F16	4 / F25	4 / F25	5 / F30
Series R - SIWI – C / - CD Type	**M76362 - M**	**M76362 - N**	**M76362 - S**	**M76362 - U**
Series R – SIWI - CAS Type	**M76372 - M**	**M76372 - N**	**M76372 - S**	**M76372 - U**
Tripping torque [1)] Series R-SIWI-C	400 Nm	750 Nm	1500 Nm	3000 Nm
Series R-SIWI-CD / -CAS	400 Nm	600 Nm	1000 Nm	2000 Nm
Output speed in steps from .. to ..	5 to 40 rpm	5 to 40 rpm	5 to 15 rpm	5 to 10 rpm
Size acc. to DIN 3210 / EN ISO 5210	3 / F16	4 / F25	4 / F25	5 / F30

[1)] : Tripping torque, not adjustable

Meaning of abbreviations
used to identify the series

S	Open-loop control equipment
R	Closed-loop control equipment
SIWI	Important for safety reasons (open-loop control)
C	Letter for actuators for use in nuclear applications, e.g. nuclear power plants of the block type WWER
D	with a pressure-resistant housing for switching and signalling equipment
AS	Designed DBE [2)] - resistant

Application

The most important components for the functionality of the electric actuators of the series S / R-SIWI-C, S / R-SIWI-CD and S / R SIWI-CAS (type range M76361/62 and M76371/72, see delivery program, page 2) are identical to the actuators of the S- and R-SIWI as well as S- and R-SIWI-AS series, which have successfully been used in nuclear power plants for several years now. Compared to the S- and R-SIWI as well as the S- and R-SIWI-AS series, the technical variants have been expanded.

Their continuous operation capability is one of the outstanding characteristics of the actuators of these series. They are predominantly used for the operation of valves that are essential for the safe operation of nuclear power plants.

The rotary actuators of the series S-SIWI-CD and R-SIWI-CD (designed for “small leakage”) as well as the series S-SIWI-CAS and R-SIWI-CAS (designed for “large leakage”) have to operate safely under DBE conditions such as those described in the specification for nuclear power plants of the block type WWER.

For the operating conditions of the “major breakdown”, rotary actuators are designed in such a way that they continue to function for at least one day or - in the “long-term operation capability” version - at least one year following the occurrence of DBE conditions. The full function under DBE conditions is ensured by sizing and design and was proven for the rotary actuators of the S- and R-SIWI as well as S- and R-SIWI-AS series by experimental qualification.

The qualification was obtained according to the German standard KTA 3504, edition 11 / 2006. The standard KTA 3504 conforms with regards of the test sequence and the test conditions at least to the American IEEE [1)] Std. 382 –1980 ”IEEE Standard for Qualification of Safety-Related Valve Actuators“, which applies in many countries. In addition, standard KTA 3504 requires – even for those actuators used outside containment – theoretical tests such as strength calculations for actuator parts within the direct flux of force as well as data required for the interaction with the valve. This includes, e.g. the indication of overtorques, rigidity of valves and delay time.

Versions

The rotary actuators of the S-SIWI and S-SIWI - AS series are further developments of the proven rotary actuators of the standard S and R (type range M76341 / 42) series.
The main differences between rotary actuators of the S- and R-SIWI-C, S- and R-SIWI-CD as well as the S- and R-SIWI-CAS series and those rotary actuators qualified according to standard KTA 3504 are the extended torque ranges and special versions for ”small leakage“ (series S- and R-SIWI-CD). The requirements for these special versions are not included in DIN 44834. Rotary actuators designed for “small leakage” as well as those designed for “large leakage” (series S- and R-SIWI-CAS) have a pressure-resistant housing for the switching and signalling unit and for the electric connection.
Actuators of the S- and R-SIWI-CAS series (type range M76371 / 72) for “large leakage” are equipped with elements resistant to strains such as pressure, temperature, humidity and radiation that may occur under DBE conditions.

1): IEEE means “Institute of Electric and Electronic Engineers“.
2): DBE means “Design Basis Events”

Design and mode of operation

Motor

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

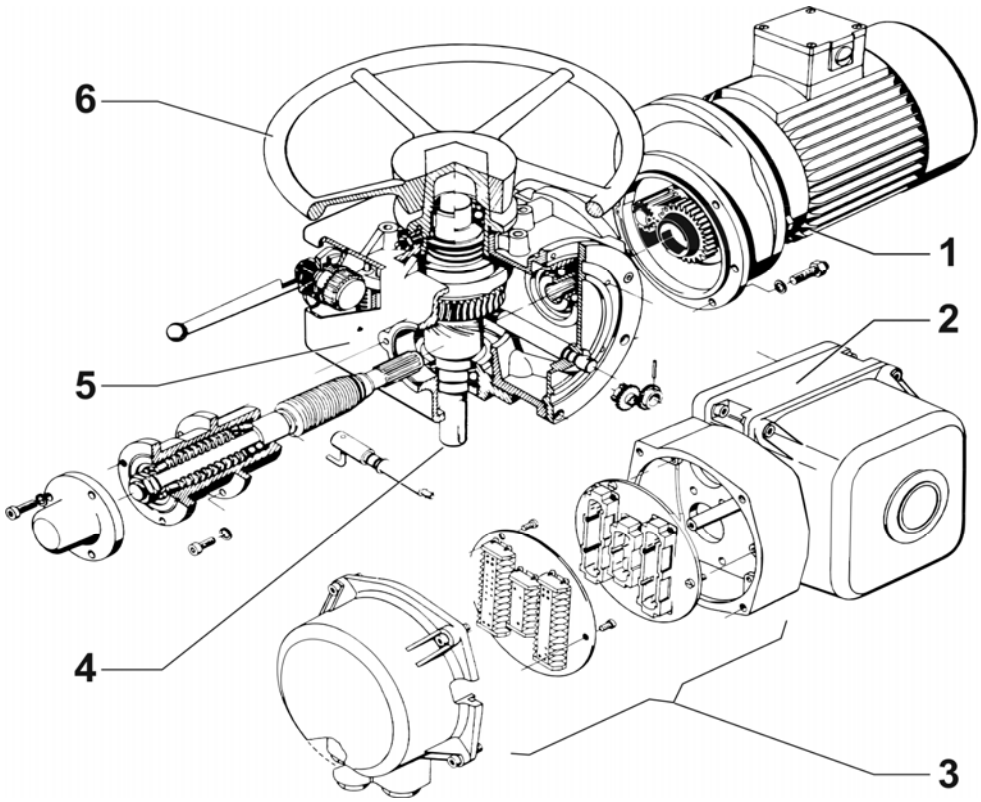
Gear unit

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. 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. In order to obtain the same maximum tripping torque for all output speeds of a given size, motors of different output ratings are assigned to actuators of one size.
The worm shaft is kept in a central position in relation to the worm wheel by means of pre-tensioned 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 during motorized operation. By pressing a switching lever, the actuator motor is disconnected 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 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.



1 Motor
2 Signalling and gear unit
3 Electric connection via plug
4 Output shaft
5 Gear unit
6 Handwheel

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

Flange connection dimensions and output shaft designs

The electric rotary actuators listed in this catalogue can be supplied with flange connection dimensions and output shaft versions according to the following standards:

> DIN 3210 (invalid since 1984)
> EN ISO 5210
> DIN 3338

EN ISO 5210 basically replaces the formerly applicable standard DIN 3210.
EN ISO 5210 serves as standard for the following:

> Part 1 : Flange dimensions
> Part 2 : Torques and thrusts
> Part 3 : Coupling dimensions for stem nut
Insert with bore and featherkey

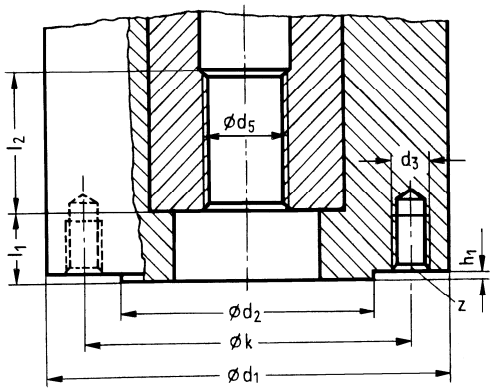


Fig. 3 : Output shaft A (hollow shaft with stem nut) with flange dimensions

Comparison

Old and new designations for the output drive designs of the actuators

	Designation according to		
	DIN 3210	EN ISO 5210	DIN 3338
Size or flange size	0	F10	F10
	½	F14	F14
	3	F16	F16
	4	F25	F25
	5	F30	F30
	6	F35	F35
	7	F40	F40

	Designation according to		
	DIN 3210	EN ISO 5210	DIN 3338
Output shaft versions:			
Hollow shaft with			
stem nut	A	A	--
insert	B	B 1	--
claw coupling	C	--	C
Free shaft	D	--	1)
Bore with featherkey	E	B 3	--

1) : According to DIN 3210, flange dimensions according to EN ISO 5210.

Important dimensions (in mm) according to DIN 3210 and EN ISO 5210, see figure 3

Column I DIN 3210 Column II : EN ISO 5210		I	II	I	II	I	II	I	II	I	II
Size	Flange size	0	F10	½	F14	3	F16	4	F25	5	F30
Flange	d_1	125		175		210		300		350	
	d_2	60	70	100		130		160	200	180	230
	$h_{1\,max}$	3		4		5		5		5	
	k	102		140		165		254		300	298
	z No. of threads	4		4		4		8		8	
	d_3	M 10		M 16		M 20		M 16		M 20	
Output shaft design **A**	Spindle thrust in kN 1)	40 /30	60/40	85 / 60		110/85	200/130	250/150	300/200	400/250	
	d_5	26	30	50		50	65	65	60	70	
	l_1	1	3	2		2	2	2	48	48	
	l_2	45	58	80		80	92	92	92	110	
	Actuator type	- C / - E		- F		- G / - M		-N / - S		- U	

The dimensions of the output shaft versions B1, B3, C and D are identical to the dimensions stipulated in DIN 3210.

1) max. spindle thrust in end position CLOSED for standard / modulating duty

DIN 3338, issue 12.1987, defines the dimensions for the output shaft version C “Hollow shaft with claw coupling” (without flange dimensions). They are taken from the formerly applicable standard DIN 3210. The respective flange dimensions are included in EN ISO 5210, Part 1.
The output shaft version D “free shaft end with featherkey” is still available. The shaft dimensions are taken from DIN 3210, the flange dimensions either from DIN 3210 or EN ISO 5210, Part 1.

Switching and signalling unit

The switching and signalling unit is fitted in a housing which is identical for all actuators of a series. For actuators of the S- und R-SIWI-CD and S- and R-SIWI-CAS series designed for small and large leakage this housing is pressure-tight (angular with round cover) and thus differs from the housing of the standard design actuators, S- and R-SIWI-C series.

The switching and signalling unit can accommodate the following elements:

> Torque switches (max. 4 pcs.)

> Travel switches, operated via
- roller-type counting and switching mechanism (max. 2 pcs.), only for more than 5 rotations per travel (order no. additions F to S at data position 12, see operating data, section 4, page 27); for 5 and less rotations per travel (order no. additions A to E), a cam-type counting and switching mechanism is used.
- Cam-type counting and switching mechanism (max. of 5 switches)

> Position transmitter
- Mechanical position indicator
- Potentiometer

> Blinker switch (blinking contact) for running indication

> Space heater

> Reduction gear unit for reducing the revolutions per stroke (rev/stroke) to a swing angle of approx. 250° for the operation of the cam switching mechanism and the position transmitters

Electric connection

Upon delivery, the motor and the modules of the switching and signalling unit are completely wired to a plug or via the respective terminals.
All plugs or terminal inserts are accommodated in a common housing (figures 4, 5).
The cables are inserted using pre-assembled metal screwed glands with conduit thread and have to be sealed by the customer.

Local control station

An integrated local control station with pivot switches for the positions OPEN – STOP – CLOSE or an additional selector switch for the positions LOCAL – OFF – REMOTE makes it possible to control the actuators either via a central control room or directly at the controls, if required.

The local control station can be connected to any kind of actuator via terminal or plug connection.

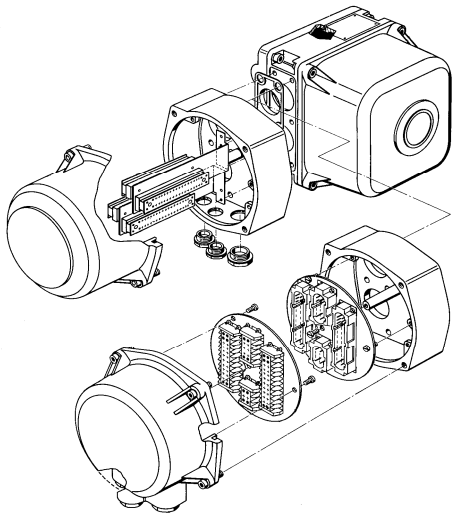


Figure 4 : Terminal connection (top) and plug connection (bottom)

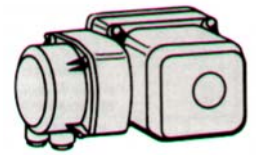
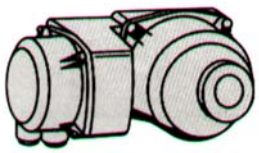
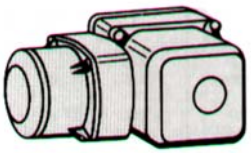
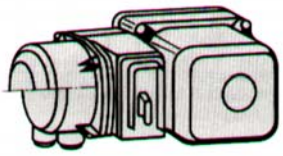
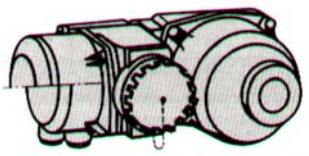
Electric connection	Electric actuators standard design, series S-SIWI-C and R-SIWI-C	Electric actuators for small leakage series S-SIWI-CD and R-SIWI-CD for large leakage series S-SIWI-CAS and R-SIWI-CAS
via plug		
via terminals		
Local control station with connection via terminals via plug		

Fig. 5 : Types of electric connection

Qualification of the rotary actuators

Manufacture
Rotary actuators are manufactured according to strict quality assurance measures. The quality of the actuators conforms to standard KTA 3504, edition 11/2006.

Type test
according to standard KTA 3504, edition 11/2006

The findings of the type test performed for the S- and R-SIWI as well as S- and R-SIWI-AS rotary actuator series can be transferred to actuators of the series S- and R-SIWI-C, S- and R-SIWI-CD as well as S- and R-SIWI-CAS series.

The goal of the type test was to show the function of the actuators of a series both under normal operating conditions and under DBE conditions.

The test level, the test sequence and the required documentation of the qualification are specified in national und international rules and regulations. The practical testing of an actuator according to the standard KTA 3504, edition 11/2006, is shown in figures 6 to 8.

Special attention should be paid to the ageing of the actuators. Within the framework of the type test, the condition of the actuators after 40 years (time-lapsed) of operational load such as temperature, humidity, radiation and vibration during operation was simulated. The time-lapsed simulation, by means of excessive operational load is in part defined in the applicable rules and regulations and is backed up at AREVA NP GmbH by means of comparative data gathered from power plants after more than 15 years of operation.

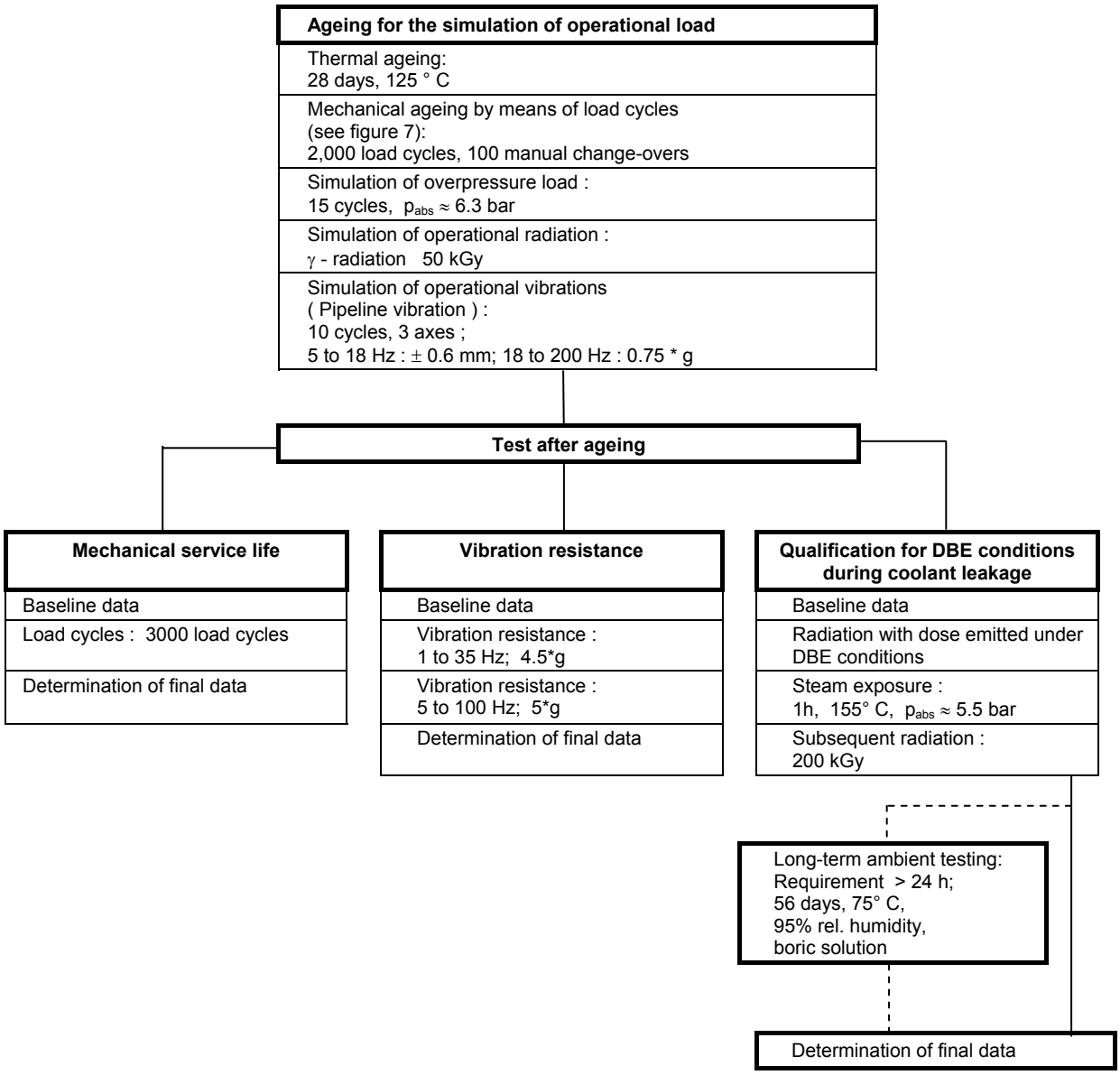


Fig. 6 : Flow chart of the practical testing according to standard KTA 3504, edition 11/2006

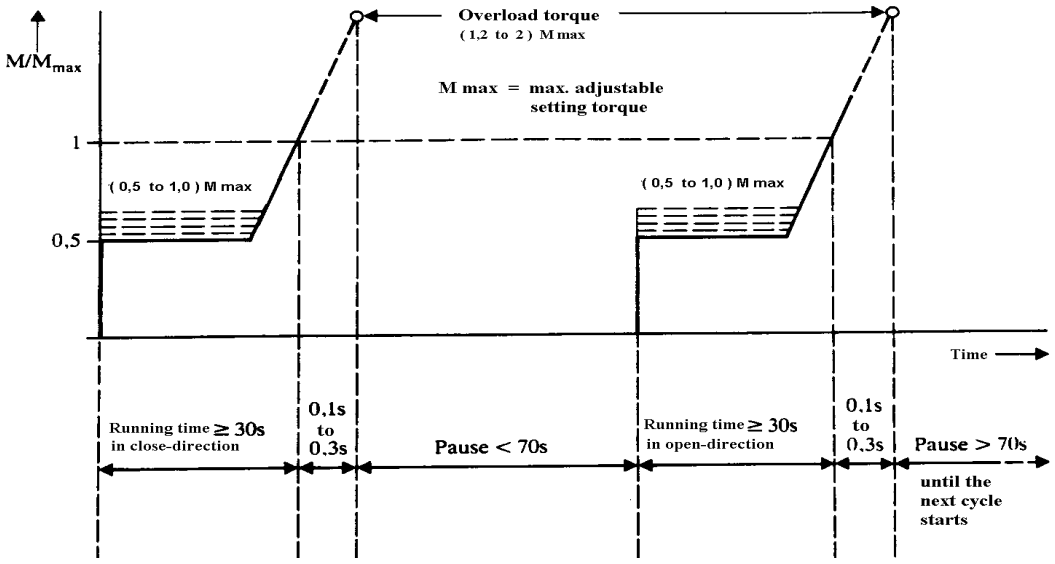
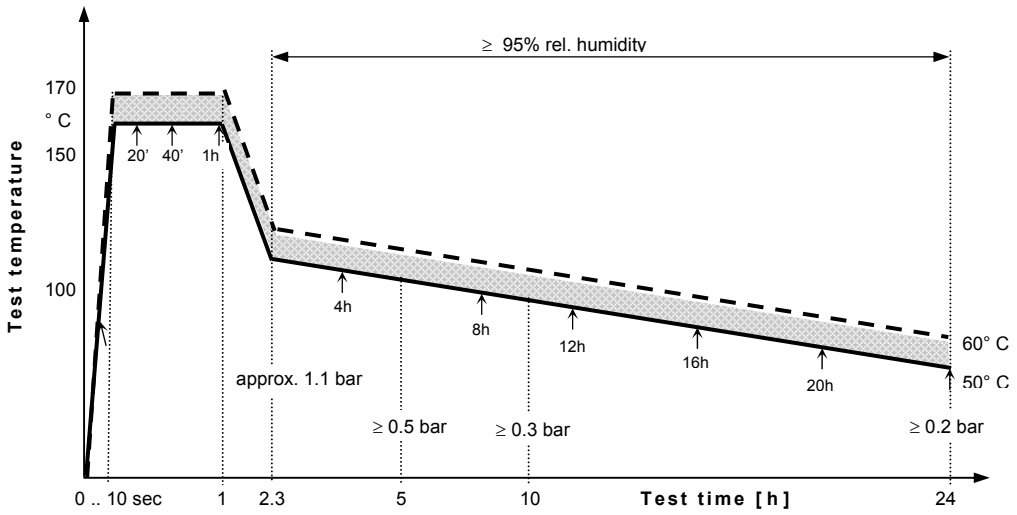


Fig 7 :Program for the load cycle of a rotary actuator for open-loop control equipment



Tolerance band of the test temperature

All pressure indications show the overpressure

↑ These are the points where measurements and tests at the actuator are performed during the test procedure. The following is measured or tested: e.g.: insulation resistance in the control circuit, load torque, motor efficiency, motor phase current, service voltage, function of the limit switches.

Fig. 8 : Conditions for the steam exposure when testing the qualification for coolant leakage under DBE conditions

The following tests are included in the type test :

- **Strength**

The strength of parts located in the direct flux of forces has been proven according to KTA rule 3504, edition 11/2006, by means of calculation based on the recognized methods with the required safety factors. The safety factors which are based on the torque ranges with the ordering number additions 7 and 8 (data position 11, see ordering data, section 3, pages 25 to 27) are comparatively low, but they are still higher than the safety factors of the rotary actuators of the basic series S and R which have proven their reliability for decades.

In the calculation, the current specifications, regulations and standards for the manufacture of machines and gear units are taken into account.

- **Service life**

A service life of at least 5000 load cycles is guaranteed for the rotary actuators under following test conditions (fig. 7):

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 at least 50% of the maximum adjustable tripping torque

c) A minimum overtorque of 1.2 times of the maximum tripping torque must available during switch-off

- **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
S - and R - SIWI – C	50 kGy (= 5* 10^6 rad)
S - and R - SIWI – CD	50 kGy (= 5* 10^6 rad)
S - and R - SIWI – CAS	250 kGy (= 25* 10^6 rad)

Technical data

Series

Permissible pressure and ambient temperature

Electric actuators for open-loop control equipment		for closed-loop control equipment		Additional order code (order no.)	Operating conditions	Max. permissible abs. pressure bar	Max. permissible ambient temperature
Series	Type range	Series	Type range				
S - SIWI – C	M76361	R - SIWI – C	M76362	**N.N**	Stand. design	1.2	60° C
S - SIWI – CD	M76361	R - SIWI – CD	M76362	**N.K**	Small leakage	1.7	90° C
S - SIWI – CAS	M76371	R - SIWI – CAS	M76372	**N.H**	Large leakage	5.5	155° C

Sizes and torques :

The various sizes of the rotary actuators have been defined according to the max. tripping torque :

Electric rotary actuator,	**Type M7636. / 7.** -							
	- C	**- E**	**- F**	**- G**	**- M**	**- N**	**- S**	**- U**
Size according to DIN 3210	0	0	1 / 2	3	3	4	4	5
Flange size certified according to EN ISO 5210	F10	F10	F14	F16	F16	F25	F25	F30
Max. tripping torque for rotary actuators for open-loop control equipment Nm	60	120	250	500	900	1250	1800	4000
Tripping torque for rotary actuators for closed-loop control equipment Nm	20/30	50/80	120/180	250	400	750	1500	3000
Series R-SIWI-CD and – CAS Nm	20/30	60	120	200	400	600	1000	2000
Internal diameter of hollow shaft (gear unit opening) and tolerance [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 **1**)
							83 : 1	100 : 1 **2**)
Design II			13 : 1		18.5 : 1			

1) : self-locking worm gear (up to 15 rpm) **2**) : non self-locking worm gear (from 20 rpm)

Handwheel reduction :

Design I (basic design) : Handwheel acts directly on the output shaft in rotary actuators M763.. - C .. to - N;
Handwheel gear reducer fitted as standard in rotary actuators M763.. – S and - 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 η	0.45	0.6	0.6	0.6	0.32	0.32

Self-locking

Rotary actuators for open-loop control equipment

Rotary actuators of the series S-SIWI-C, -CD and –CAS are not self-locking for higher speeds of the output shaft (see ordering data). If there is a permanent contact available, the switch-off command of the torque switch has to be maintained by means of an auxiliary contactor (position of the auxiliary contactor : see basic wiring according to data sheet)

Rotary actuators for closed-loop control equipment

These rotary actuators (series R-SIWI-C, -CD and –CAS) are self-locking for all output speeds.

Motor

Rotary actuators for open-loop control equipment

Rotary actuators, series	Operating conditions	Operating mode to EN60034 – 1	Insulation class
S – SIWI – C	Standard	Short-term operation S2 - 10 min	H
S - SIWI - CD	Small leakage	Short-term operation S2 - 10 min	H
S - SIWI - CAS	Large leakage	Short-term operation S2 - 10 min, under DBE conditions S2 – 1.5 min	H

Detailed motor data : see pages 33 to 38

Rotary actuators for closed-loop control equipment

The following applies to all series (R-SIWI-C, -CD and –CAS) and therefore to all operating conditions :
The motor is designed in insulation class H (brake motor: insulation class H / F (motor / brake)) and is equipped with a PTC thermistor (response temperature : 170 °C).
A suitable PTC tripping device is to be provided in the switchgear system.

Operating mode to EN 60034-1 :

> Rotary actuator with brake motor (only for series R-SIWI-C) : Intermittent operation S 4 – 25 % duty cycle - .... c/h
> Rotary actuator without brake motor : Intermittent operation S 5 – 5 ... 25 % duty cycle - .... c/h

with
- 1200 c / h for motor < 2,2 kW
- 1000 c / h for motor 2,2 to 3 kW
- 600 c / h for motor > 3 kW or
- 30 c / h – 50% duty cycle for all motors when switching on manually (e. g. during commissioning or when adjusting the switching and signalling unit) and when controlling the actuator while the running torque must not exceed a max. of 50 % of the tripping torque..

To guarantee the motor running up, the pulse duration at the switch output must be longer than 50 ms for thyristor reversing mode or 150 ms for brake motors. Shorter pulses worsen the control quality.
In order to avoid torque and current overloads, a minimum interpulse period at the output of switch has to be observed :
- 80 ms for braking with thyristor reversing switches
- 180 ms for braking with brake motor

Motor data from page 46 onwards

Electric connection

Switching and signalling unit :

Connection via plugs :

two 24-pin plug inserts	silver-plated or gold-plated sockets and pins	
> series S- and R-SIWI-C	with screwed connections,	cross-section : 2.5 mm²
> series S- and R-SIWI-CD and – CAS	with crimp connections,	cross-section : 2.5 mm²

Connection via terminals :

max. 48-pole terminal inserts;	cross section : 2.5 mm²

Motor plug :

Connection voltage 3/PEN AC 50 Hz 380 V according to EN 60034

Connection via plugs :

6 - pin plug insert 35 A with screw terminals,	silver-plated sockets and pins cross section : max. 6 mm²

Connection via terminals :

6 - pole terminal insert;	cross section : max. 6 mm²

The following applies to the connection of motors in rotary actuators for open-loop control equipment, series S-SIWI-C, -CD and –CAS:
In the case of motors (open-loop control) with rated powers > 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 contacts, e.g. 1 and 4 for outer conductor L1 are connected together in the bottom part of the plug or in the terminal insert by jumpers (Fig. 9).

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 :

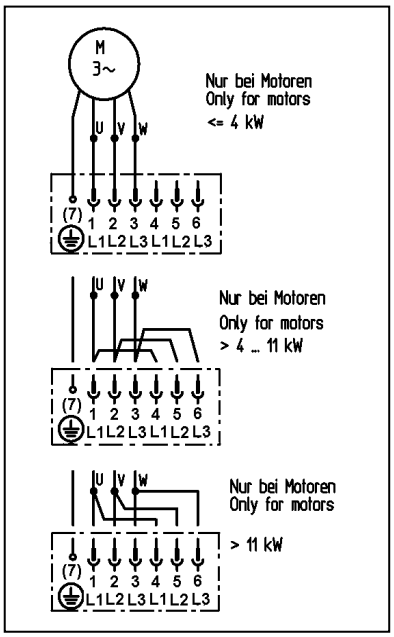
If not agreed otherwise, the cables are introduced to the actuator via metal screwed glands with conduit thread to DIN 46 320. The screwed glands are inserted leak-tight into the housing on delivery and closed by screw plugs.

Please indicate the following when ordering :
1. Type or manufacture of the screwed gland
2. Size of the screwed gland or diameter of the connecting cables used in the plant
3. Number of screwed glands

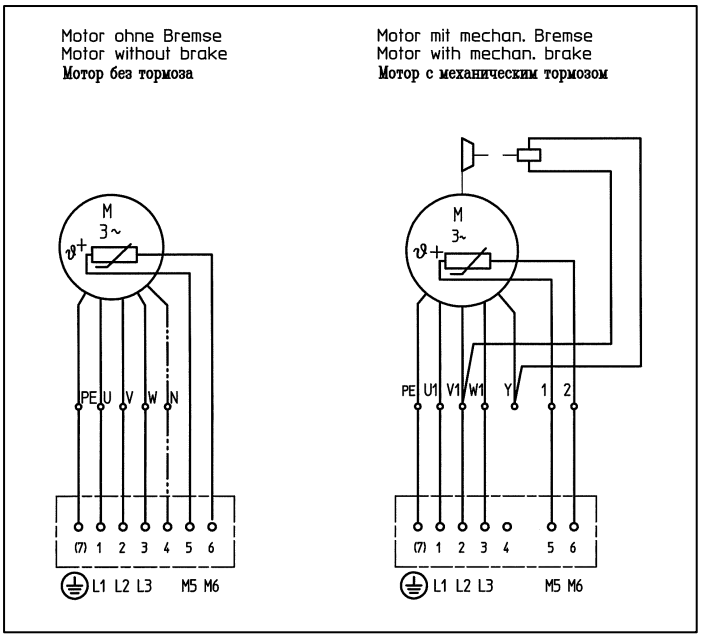
Alternatively metric cable glands to EN 50262 can also be provided.

Connection diagram

The connection diagram (fig. 9) shows the max. possible equipment of the switching and signalling unit according to the specifications for the nuclear power plant block WWER.
Depending on the individual plant, the equipment may vary. The connection diagram indicated in the data sheets of the quotation and glued to the actuator on delivery is binding.



Connection – on-off actuator



Connection – modulating actuator [1)]

Figure 9 a Connection diagram (motor)

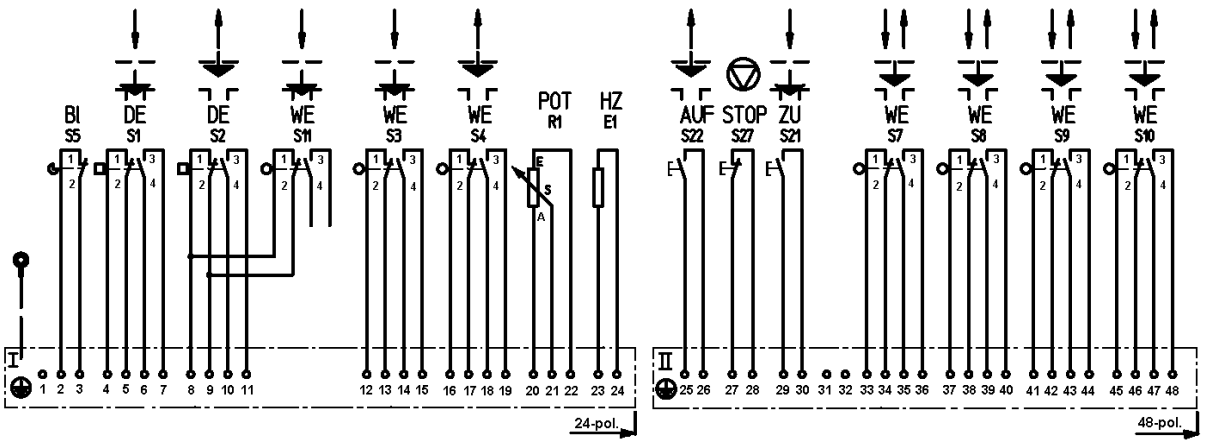
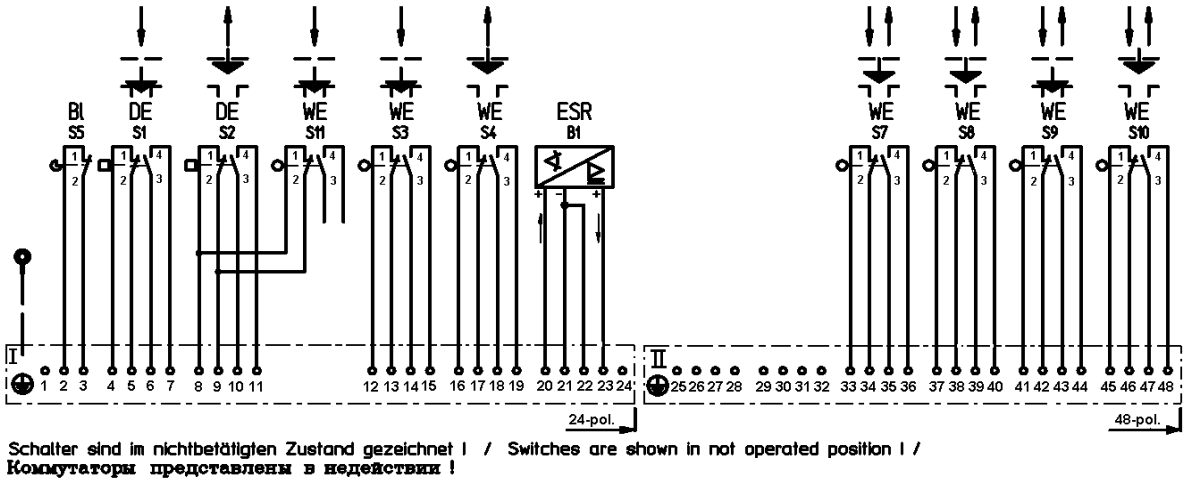


Figure 9 b Wiring diagram of the switching elements (basic wiring with potentiometer)

[1] : Wiring of brake motore is only valid for power supply 380V .. 415V.



Schalter sind im nichtbetätigten Zustand gezeichnet ! / Switches are shown in not operated position ! /
Коммутаторы представлены в недействии !

The connection diagram glued to the inside the actuator is binding.

BI	Blinker switch	WE	Travel switch	ESR	Electronic position transmitter
DE	Torque switch	POT	Potentiometer	OPEN-STOP-CLOSE :	Local control station
HZ	Space heater				

Fig. 9 c Wiring diagram of the switching elements (basic wiring with electronic position transmitter)

Permissible switch loading

The torque and travel switches used are micro-switches with silver-plated or gold-plated contacts.

Contact material : **Ag**			Contact material : **Au**		
AC current			DC current		
AC Voltage V	Resistive load, NC / NO contact A	Service life, no. of operations	DC Voltage V	Resistive load, NC / NO contact A	Service life, no. of operations
210 to 230	≤ 5	$0{,}8 * 10^6$	24 to 48	0,003 - 0,8	$0{,}8 * 10^6$

Attention : At NC / NO contact only use the same potential !

Electronic position transmitter

(Correct functioning under fault conditions as in Fig. 8 not proven)

Supply voltage (U)	DC 18 to 30 V These 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

	2-wire connection	**4 / 3 -wire connection**
Max. load (R_L)	$R_L = 50 * (U - 12) \Omega$	$R_L = 50 * (U – 2.5) \Omega$
Output signal	Load-independent direct current	
	4 to 20 mA	0 or 4 to 20 mA
Current consumption	max. 30 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	approx. 0.1 Ncm
Linearity error (tolerance band setting) for a measuring span of 270°	≤ 1 %
Influence for a measuring span of 270°	
- on the supply voltage	≤ 0.1 % over the whole range
- on the load	≤ 0.1 % over the whole range
- on the 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. 8 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

Corrosion protection

The decontaminable corrosion protection of the rotary actuators consists of a base coat and a decontaminable top coat. The total thickness of the entire paint amounts to at least 120 µm.

EMC – Compatibility

The electric actuators fulfil the requirements concerning the EMC-compatibility to the generic standards EN 61000-6-2 and EN 61000-6-4. In an additional test actuator specific requirements to GOST R 50476 – 2000 which are not in the scope of EN standards were tested for TE Design Group III. ' Quality criteria A ' was fulfilled.

Degree of protection according to DIN EN 60529

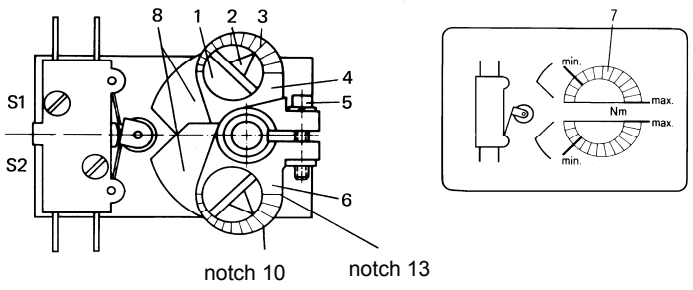
Gear unit housing
Housing of the switching and signalling unit
Electric connection
Local control station
} IP 65

Motor for

> series S-SIWI-C, -CD and -CAS	IP 65	
> series R-SIWI-C without brake	IP 67,	with brake IP 55
> series R-SIWI-CD and -CAS	IP 67	

Torque setting on delivery

The tripping torque required for the operation of the valve (shortly called "tripping torque" in the ordering data) is set as follows in the factory: the setting pointer (2, figure 10) is set to notch 11 of the scale of the clamping piece (4).
If necessary, the torque can be subsequently increased by 15% by turning the adjustment knob (1) to notch 13.
The tripping torque for clockwise and counter-clockwise rotation required at the valve which set to notch 11 as well as the torque which can still be set to notch 13 are entered in the label (7) glued into the switching unit.
The tripping torque which can be set to notch 13 will not exceed the maximum torque of the torque range assigned to the actuator (refer to data position 11 of the order no.). If this should nevertheless occur, the required torque is set from notch 11 to notch 12 or even 13.



1 Adjustment knob
2 Setting pointer
3 Scale
4 Clamping piece
5 Screw
6 Clamping piece
7 Auxiliary scale
8 Cam disc

Fig. 10 : Torque switch mechanism

Mounting position

The rotary actuators can be mounted in any position.

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 identical to half the maximum tripping torque. The actual loading of a rotary actuator during positioning will always be smaller than the maximum permissible positioning torque, or at the most 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.

Overtorque

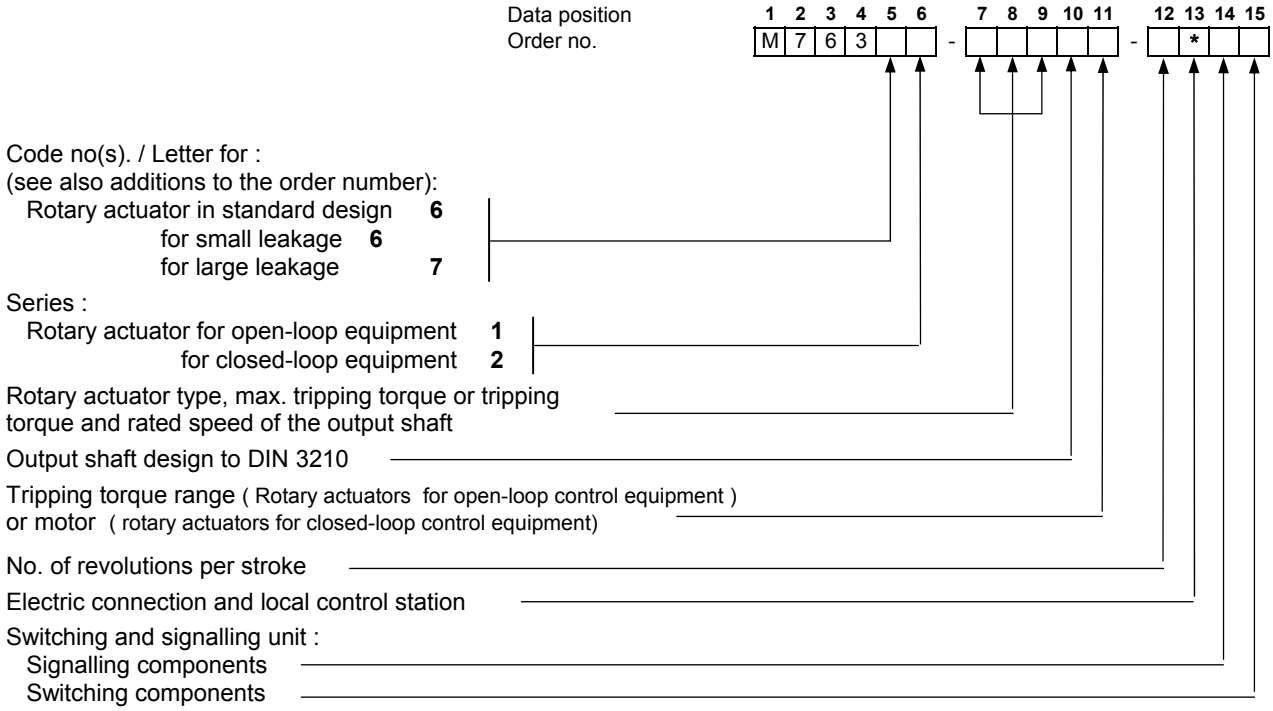
In case of torque-dependent cut-off in the end positions or a fault in an intermediate position, the actuator may create torques at the drive shaft which exceed the set tripping torques. The dimension of such an overtorque depends on the following:

- tripping torque between tripping of the torque switch in the actuator and disconnection of the motor from the mains,
- rigidity of the valve,
- speed of the actuator,
- setting of the torque switch

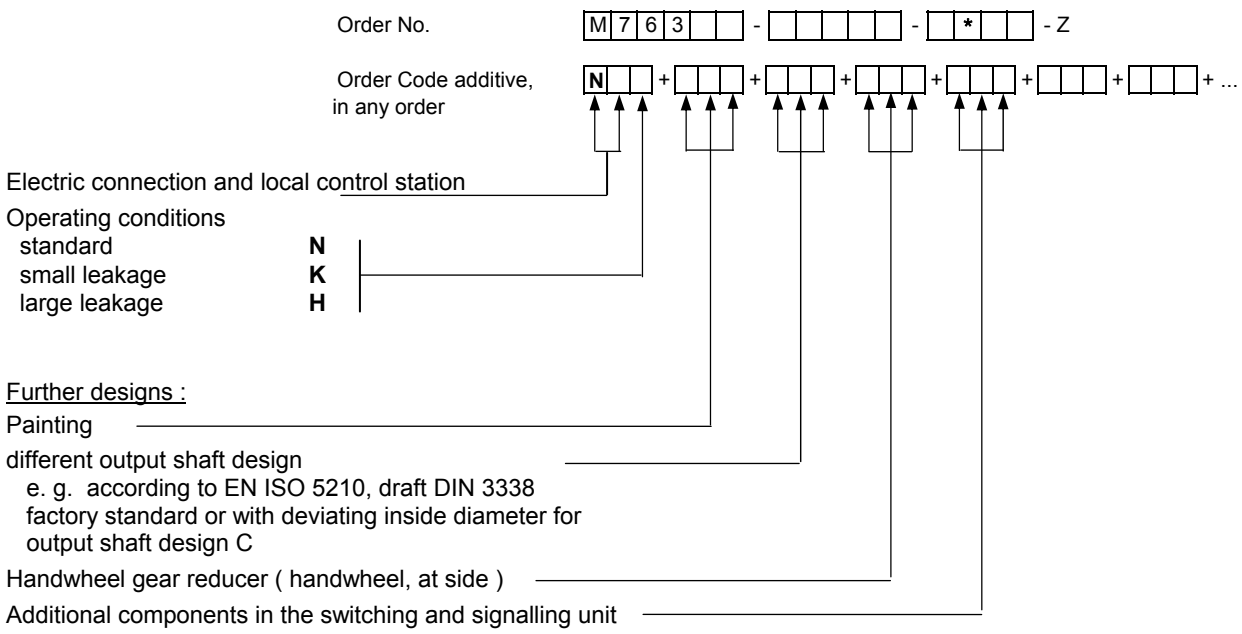
Compared to standard motors, the motors specially designed for the use in nuclear power plants have the advantage that the overtorques will be considerably reduced after torque-dependent cut-off of the motor in one of the end positions of the valve as the motor speed depends on the load.

Order information

Configuration of the order no.



Additions to the order no.



Data sheet

The data sheet is the basis for any order and the processing in the manufacturer's plant (fig. 11, page 17). The data sheet is issued when processing the quotation and may be subject to changes until the technical details of the order have been settled. The data sheet contains all plant-specific information, which, in addition to the order details, is essential for the correct delivery of the actuators.

The data sheet consists of the following sheets :

Sheet 1 : Valve data, service conditions

Sheet 2 : Electric actuator, connection with Pg thread, weight, dimension sheet

Sheet 3 : Motor, electric data

Sheet 4 : Documents, e.g. center of gravity data, connection wiring diagram etc.

The quotation number shown in the data sheet must be indicated when ordering and on any other correspondence.

Fig. 11, sheet 1

Kunde : Customer / Заказчик	Anfrage Nr. : Inquiry No. / Но. запроса	Kommissions Nr. : Commission No./Коммиссионный Но.	Werks -Nr. : Serial No./
Anlage / Spezifikation : Project/Specification/ Проект спец.	Angebots-Nr. : Quotation No./ Но. офферты	Bestell Nr. : Order No./Но. заказа	Blatt page/страница 1 von of/из 1 Blättern / pages/страниц

Gruppe Group / Группа	Kunden-Pos. Customer-Pos. Заказчик поз.	Liefer-Pos. Factory-Pos. Поставщик поз.	Hersteller Manufacturer Изготовитель	**Armatur** **Valve / Арматура** PN [bar] [бар]	DN	Drehmoment Torque / Крутящий момент Schließen Closing / Закрытие [Nm] / [Нм]	Drehmoment Öffnen Opening / Открытие [Nm] / [Нм]	Spindeldaten Stemdata / Данные шпинделя Durchmesser / Dia / Диаметр [mm] / [мм]	max. Schub max. Thrust / макс. тяга [kN] / [kH]	U / Stellweg Rev./Stroke Об./рабочий путь	Stellzeit Closing time Время установки [s] [sec] / [c]	Einsatzbedingungen / Ambient conditions / Условия эксплуатации Normal Normal/Нормальные	Kleine Havarie Small leckage/ Малые аварии	Große Havarie/ Large leckage/Большие аварии

Stand Rev. / Рев.	Mitteilung Notice / Сообщение	Datum Date / Дата	Name Name / Фамилия		prep. by	appr. by
				Date :		
				Name :		
				SIPOS Aktorik GmbH		

Fig. 11, sheet 2

Kunde : Customer / Заказчик	Anfrage Nr. : Inquiry No. / Но. запроса	Kommissions Nr. : Commission No. / Коммиссионный Но.	Werks - Nr. : Serial No. / Серия Но. 0
Anlage / Spezifikation : Project/Specification Проект/Спецификация	Angebots-Nr. : Quotation No./ Но. офферты Order No.	Bestell Nr. : 0 Order No. / Но заказа	Blatt page/страница 1 von of/из Blättern / pages/страниц 1

Gruppe Group / Группа	Kunden - Pos. Customer-Pos. Заказчик-поз.	Liefer - Pos. Factory-Pos. Поз. поставки	**Elektrischer Stellantrieb** **Electric Actuator/Электрический сервопривод** Stellantriebs - Typ Actuator type / Тип сервопривода	Drehzahl [U/min] Output Speed [rpm] Число оборотов [об/мин]	Anschlußart Electrical connections/Электрические присоединения Klemme Terminal strip / клемма	Stecker Plug / Штекер	Pg 16	Pg 21	Pg 29	Pg 36	ca. Gewicht [kg] Approx. Weight [kg] Прибл. вес [kr]	Maßbild / Dimensions / Габариты	

Fig. 11, sheet 3 :

Kunde : Customer / Заказчик	Anfrage Nr. : Inquiry No. / Но. запроса	Kommissions Nr. : Commission No./Коммиссионный Но.	Werks - Nr. : 0 Serial No./Серия Но.
Anlage / Spezifikation : Project/Specification Проект/Спецификация	Angebots-Nr. : Quotation No./Но. офферты	Bestell Nr. : Order No./Но. заказа	Blatt page/страница 1 von of/из Blättern / pages/страниц 1

Gruppe Group / Группа	Kunden - Pos. Customer-Pos. Заказчик-поз.	Liefer - Pos. Factory-Pos. Поз. поставки	**Motor** **Motor/Двигатель** Siemens - Typ Siemens - type Сименс-тип	Nenndrehzahl [1/min] Shaft speed [rpm] Номин. число оборотов [1/мин]	Nennleistung / Rating power / Номинальная мощность [kW] / [кВт]	Nennstrom / Nominal current / Номинальный ток [A]	Anlaufstrom Starting current Пусковой ток [A]	cos ϕ cos ϕ кос ϕ	Isolierstoff Klasse / Insulation class / Класс изоляции	Baugröße n. DIN 42673 / Size to DIN 42673 / Размер согл. ДИН 42673

Fig. 11, sheet 4 :

Kunde : Customer / Заказчик	Anfrage Nr. : Inquiry No. / Но. запроса	Kommissions Nr. : Commission No. / Коммиссионный Но.	Werks - Nr. : Serial No./Серия Но.
Anlage / Spezifikation : Project/Specification Проект/Спецификация	Angebots-Nr. : Quotation No./ Но. офферты	Bestell Nr. : Order No./Но. заказа	Blatt page/страница 1 von of/из Blättern / pages/страниц 1

Gruppe Group/Группа	Kunden - Pos. Customer-Pos. Заказчик-поз.	Liefer - Pos. Factory-Pos. Поз. поставки	Schwerpunkt / Center of Gravity / Центр тяжести X, Y, Z [mm] [mm] [мм]	Anschlußschaltbild / Wiring diagramm / Схема присоединений	Katalog / Catalogue / Каталог	Betriebsanleitung / Operating Instructions / Руководство по эксплуатации	Ersatzteilliste / Spare parts / Быстроизнашивающиеся детали	Normteile / Standard parts / Стандартные детали	Werkstoffliste / List of material / Список материалов	Schmierstoffliste / List of lubricants / Список смазки

Ordering data

Electric rotary actuator, series S-SIWI-C

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

Basic design :

- Motor three-phase system 3/PEN AC 50 Hz 380 V (L1, L2, L3), without PTC thermistor, without brake, insulation class F
- 2 torque-dependent switches for clockwise and anti-clockwise rotation,
- 2 travel-dependent switches and 1 blinking-contact,
- output shaft design B to DIN 3210,
- rating plate, labelled in German/Russian,
- painted with decontaminable top coat

Motor and switching and signalling unit are completely wired on plugs or terminals.

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

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

Add. order no. for the data positions 10 to 15 : see pages 24 to 28

Max. tripping torque (adjustable)	Rated speed of output shaft	Order no., data positions 7, 8 and 9		Gear reducer	Actuator self-locking	size to		Only for output shaft design **A**	
						DIN 3210	EN ISO 5210	max. spindle Ø	Permissible axial load
Nm	1/min	□□□		i				mm	kN
	5	**C52**		267,7					
	7,5	**C53**		182,2					
	10	**C54**		124,7 (63,7) **1)**					
	15	**C55**		93,3					
	20	**C56**		67,7	yes				
60	30	**C57**		93,3		0	F 10	26	40
	40	**C58**		67,7					
	60	**C59**		47,5					
	80	**C60**		33,7					
	120	**C61**		23,3 (11,9) **1)**	no				
	180	**C62**		15,9					
	5	**E52**		258 (509) **1)**					
	7,5	**E53**		74,3 (83,1) **1)**					
	10	**E54**		137,8					
	15	**E55**		83,1					
	20	**E56**		63,2	yes				
120	30	**E57**		38		0	F 10	35	60
	40	**E58**		63,2					
	60	**E59**		46,4					
	80	**E60**		36,2					
	120	**E61**		11,6	no				
	180	**E62**		15,8					
	5	**F52**		280,4					
	7,5	**F53**		164,4					
	10	**F54**		128,9					
	15	**F55**		86,9					
	20	**F56**		62,2	yes				
250	30	**F57**		43		1/2	F 14	51	85
	40	**F58**		70,8					
	60	**F59**		43					
	80	**F60**		35,9					
	120	**F61**		10,7	no				
	180	**F62**		15,5					
	5	**G52**		280,4					
	7,5	**G53**		164,4					
	10	**G54**		128,9					
	15	**G55**		86,9	yes				
	20	**G56**		62,2					
500	30	**G57**		43		3	F 16	51	110
	40	**G58**		70,8					
	60	**G59**		43					
	80	**G60**		15,5					
	120	**G61**		10,7	no				
	180	**G62**		15,5					

1) values in ( ) are valid for tripping torque ranges with order no. **8** at data position 11 (section 3)

Ordering data

Electric rotary actuator, series S-SIWI-C

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

Basic design :

- Motor three-phase system 3/PEN AC 50 Hz 380 V (L1, L2, L3), without PTC thermistor, without brake, insulation class F
- 2 torque-dependent switches for clockwise and anti-clockwise rotation,
- 2 travel-dependent switches and 1 blinking-contact,
- output shaft design B to DIN 3210,
- rating plate, labelled in German/Russian,
- painted with decontaminable top coat

Motor and switching and signalling unit are completely wired on plugs or terminals.

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

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

Add. order no. for the data positions 10 to 15 : see pages 24 to 28

Max. tripping torque (adjustable) Nm	Rated speed of output shaft 1/min	Order no., data positions 7, 8 and 9 □□□		Gear reducer i	Actuator self-locking	size to DIN 3210	size to EN ISO 5210	Only at output shaft design **A** max. spindle Ø mm	Only at output shaft design **A** Permissible axial load kN
900	5	**M52**		124,4	yes	3	F 16	65	200
	7,5	**M53**		84,8					
	10	**M54**		64					
	15	**M55**		84,8					
	20	**M56**		64					
	30	**M57**		49,2					
	40	**M58**		36,1					
	60	**M59**		49,2					
	80	**M60**		17,9	no				
	120	**M61**		12,3					
	180	**M62**		16,6 (16,0) **1)**					
1250	5	**N52**		124,2	yes	4	F 25	65	250
	7,5	**N53**		84,8					
	10	**N54**		64					
	15	**N55**		84,8					
	20	**N56**		64					
	30	**N57**		49,2					
	40	**N58**		36,1					
	60	**N59**		23,9 (21,2) **2)**	no				
	80	**N60**		17,8 (16,6) **3)**					
	120	**N61**		12,3					
	180	**N62**		16,6					
1800	5	**S52**		272,9	yes	4	F 25	60	300
	7,5	**S53**		184,5					
	10	**S54**		134,6					
	15	**S55**		184,5					
	20	**S56**		68,2	no				
	30	**S57**		46,2					
	40	**S58**		33,6					
	60	**S59**		46,1					
4000	5	**U52**		281,3	yes	5	F 30	70	400
	7,5	**U53**		191,5					
	10	**U54**		281,3					
	15	**U55**		191,5					
	20	**U56**		70,3	no				
	30	**U57**		47,9					
	40	**U58**		36,5					
	60	**U59**		47,9					

1) values in ( ) are valid for tripping torque ranges with order no. **2, 3** and **4** of data position 11 (section 3)
2) values in ( ) are valid for tripping torque ranges with order no. **7** and **8** of data position 11 (section 3)
3) values in ( ) are valid for tripping torque ranges with order no. **8** of data position 11 (section 3)

Ordering data

Electric rotary actuator, series S-SIWI-CD

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

Basic design :

- motor three-phase system 3/PEN AC 50 Hz 380 V (L1, L2, L3), without PTC thermistor, without brake, insulation class H
- 2 torque-dependent switches for clockwise and anti-clockwise rotation,
- 2 travel-dependent switches and 1 blinking-contact,
- output shaft design B to DIN 3210,
- rating plate, labelled in German/Russian,
- painted with decontaminable top coat

Motor and switching and signalling unit are completely wired on plugs or terminals.

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

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

Add. order no. to the data positions 10 to 15 : see pages 24 to 28

Max. tripping torque (adjustable)	Rated speed of output shaft	Order no., data positions 7, 8 and 9		Gear reducer	Actuator self-locking	size to		Only at output shaft design **A**	
						DIN 3210	EN ISO 5210	max. spindle Ø	Permissible axial load
Nm	1/min	□□□		i				mm	kN
	5	**C12**		267,7					
	7,5	**C13**		182,2					
	10	**C14**		124,7 (63,7) **1)**					
	15	**C15**		93,3					
	20	**C16**		67,7	yes				
60	30	**C17**		93,3		0	F 10	26	40
	40	**C18**		67,7					
	60	**C19**		47,5					
	80	**C20**		33,7					
	120	**C21**		23,3 (11,9) **1)**	no				
	180	**C22**		15,9					
	5	**E12**		258 (509) **1)**					
	7,5	**E13**		74,3 (83,1) **1)**					
	10	**E14**		137,8					
	15	**E15**		83,1					
	20	**E16**		63,2	yes				
120	30	**E17**		38		0	F 10	35	60
	40	**E18**		63,2					
	60	**E19**		46,4					
	80	**E20**		36,2					
	120	**E21**		11,6	no				
	180	**E22**		15,8					
	5	**F12**		280,4					
	7,5	**F13**		164,4					
	10	**F14**		128,9					
	15	**F15**		86,9					
	20	**F16**		62,2	yes				
250	30	**F17**		43		1/2	F 14	51	85
	40	**F18**		70,8					
	60	**F19**		43					
	80	**F20**		35,9					
	120	**F21**		10,7	no				
	180	**F22**		15,5					
	5	**G12**		280,4					
	7,5	**G13**		164,4					
	10	**G14**		128,9					
	15	**G15**		86,9	yes				
	20	**G16**		62,2					
500	30	**G17**		43		3	F 16	51	110
	40	**G18**		70,8					
	60	**G19**		43					
	80	**G20**		15,5					
	120	**G21**		10,7	no				
	180	**G22**		15,5					

1) values in ( ) are valid for tripping torque ranges with order no. **8** of data position 11 (section 3)

Ordering data

Electric rotary actuator, series S-SIWI-CD

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

Basic design :

- motor three-phase system 3/PEN AC 50 Hz 380 V (L1, L2, L3), without PTC thermistor, without brake, insulation class H
- 2 torque-dependent switches for clockwise and anti-clockwise rotation,
- 2 travel-dependent switches and 1 blinking-contact,
- output shaft design B to DIN 3210,
- rating plate, labelled in German/Russian,
- painted with decontaminable top coat

Motor and switching and signalling unit are completely wired on plugs or terminals.

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

Order no. 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
M 7 6 3 6 1 - [ ][ ][ ][ ][ ] - [ ][ ][ ][ ] - Z [ ][ ][ ] + ...

Add. order no. for the data positions 10 to 15 : see pages 24 to 28

Max. tripping torque (adjustable) Nm	Rated speed of output shaft 1/min	Order no., data positions 7, 8 and 9 [ ][ ][ ]		Gear reducer i	Actuator self-locking	size to DIN 3210	size to EN ISO 5210	Only at output shaft design **A** max. spindle Ø mm	Only at output shaft design **A** Permissible axial load kN
900	5	**M12**		124,4	yes	3	F 16	65	200
	7,5	**M13**		84,8					
	10	**M14**		64					
	15	**M15**		84,8					
	20	**M16**		64					
	30	**M17**		49,2					
	40	**M18**		36,1					
	60	**M19**		49,2					
	80	**M20**		17,9	no				
	120	**M21**		12,3					
	180	**M22**		16,6 (16,0) **1)**					
1250	5	**N12**		124,2	yes	4	F 25	65	250
	7,5	**N13**		84,8					
	10	**N14**		64					
	15	**N15**		84,8					
	20	**N16**		64					
	30	**N17**		49,2					
	40	**N18**		36,1					
	60	**N19**		23,9 (21,2) **2)**	no				
	80	**N20**		17,8 (16,6) **3)**					
	120	**N21**		12,3					
	180	**N22**		16,6					
1800	5	**S12**		272,9	yes	4	F 25	60	300
	7,5	**S13**		184,5					
	10	**S14**		134,6					
	15	**S15**		184,5					
	20	**S16**		68,2	no				
	30	**S17**		46,2					
	40	**S18**		33,6					
	60	**S19**		46,1					
4000	5	**U12**		281,3	yes	5	F 30	70	400
	7,5	**U13**		191,5					
	10	**U14**		281,3					
	15	**U15**		191,5					
	20	**U16**		70,3	no				
	30	**U17**		47,9					
	40	**U18**		36,5					
	60	**U19**		47,9					

1) values in ( ) are valid for tripping torque ranges with order no. **2, 3** and **4** of data position 11 (section 3)
2) values in ( ) are valid for tripping torque ranges with order no. **7** and **8** of data position 11 (section 3)
3) values in ( ) are valid for tripping torque ranges with order no. **8** of data position 11 (section 3)

Ordering data

Electric rotary actuator, series S-SIWI-CAS **Order No.:** 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
M 7 6 3 7 1 - □□□□□ - □□□□ - Z

Basic design :

- motor three-phase system 3/PEN AC 50 Hz 380 V (L1, L2, L3), without PTC thermistor, without brake, insulation class H
- 2 torque-dependent switches for clockwise and anti-clockwise rotation,
- 2 travel-dependent switches and 1 blinking-contact,
- output shaft design B to DIN 3210,
- rating plate, labelled in German/Russian,
- painted with decontaminable top coat

Motor and signalling and switching unit are completely wired on plugs or terminals.

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

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

Add. order code to the data positions 10 to 15 : see pages 24 to 28

Max. tripping torque (adjustable)	Rated speed of output shaft	Order no., data positions 7, 8 and 9		Gear reducer	Actuator self-locking	size to		Only at output shaft design **A**	
						DIN 3210	EN ISO 5210	max. spindle Ø	Permissible axial load
Nm	1/min	□□□		i				mm	kN
60	5	**C12**		267,7	yes	0	F 10	26	40
	7,5	**C13**		182,2					
	10	**C14**		124,7 (63,7) **1)**					
	15	**C15**		93,3					
	20	**C16**		67,7					
	30	**C17**		93,3					
	40	**C18**		67,7					
	60	**C19**		47,5					
	80	**C20**		33,7					
	120	**C21**		23,3 (11,9) **1)**	no				
	180	**C22**		15,9					
120	5	**E12**		258 (509) **1)**	yes	0	F 10	35	60
	7,5	**E13**		74,3 (83,1) **1)**					
	10	**E14**		137,8					
	15	**E15**		83,1					
	20	**E16**		63,2					
	30	**E17**		38					
	40	**E18**		63,2					
	60	**E19**		46,4					
	80	**E20**		36,2					
	120	**E21**		11,6	no				
	180	**E22**		15,8					
250	5	**F12**		280,4	yes	1/2	F 14	51	85
	7,5	**F13**		164,4					
	10	**F14**		128,9					
	15	**F15**		86,9					
	20	**F16**		62,2					
	30	**F17**		43					
	40	**F18**		70,8					
	60	**F19**		43					
	80	**F20**		35,9					
	120	**F21**		10,7	no				
	180	**F22**		15,5					
500	5	**G12**		280,4	yes	3	F 16	51	110
	7,5	**G13**		164,4					
	10	**G14**		128,9					
	15	**G15**		86,9					
	20	**G16**		62,2					
	30	**G17**		43					
	40	**G18**		70,8					
	60	**G19**		43					
	80	**G20**		15,5	no				
	120	**G21**		10,7					
	180	**G22**		15,5					

1) values in ( ) are valid for tripping torque ranges with add. order no. **8** of data position 11 (section 3)

Ordering data

Electric rotary actuator, series S-SIWI-CAS

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

Basic design :

- motor three-phase system 3/PEN AC 50 Hz 380 V (L1, L2, L3), without PTC thermistor, without brake, insulation class H
- 2 torque-dependent switches for clockwise and anti-clockwise rotation,
- 2 travel-dependent switches and 1 blinking-contact,
- output shaft design B to DIN 3210,
- rating plate, labelled in German/Russian,
- painted with decontaminable top coat

Motor and signalling and switching unit are completely wired on plugs or terminals.

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

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

Add. order no. for the data positions 10 to 15 : see pages 24 to 28

Max. tripping torque (adjustable) Nm	Rated speed of output shaft 1/min	Order no., data positions 7, 8 and 9 □□□		Gear reducer i	Actuator self-locking	size to DIN 3210	size to EN ISO 5210	Only at output shaft design **A** max. spindle Ø mm	Only at output shaft design **A** Permissible axial load kN
900	5	**M12**		124,4	yes	3	F 16	65	200
	7,5	**M13**		84,8					
	10	**M14**		64					
	15	**M15**		84,8					
	20	**M16**		64					
	30	**M17**		49,2					
	40	**M18**		36,1					
	60	**M19**		49,2					
	80	**M20**		17,9	no				
	120	**M21**		12,3					
	180	**M22**		16,6 (16,0) **1)**					
1250	5	**N12**		124,2	yes	4	F 25	65	250
	7,5	**N13**		84,8					
	10	**N14**		64					
	15	**N15**		84,8					
	20	**N16**		64					
	30	**N17**		49,2					
	40	**N18**		36,1					
	60	**N19**		23,9 (21,2) **2)**	no				
	80	**N20**		17,8 (16,6) **3)**					
	120	**N21**		12,3					
	180	**N22**		16,6					
1800	5	**S12**		272,9	yes	4	F 25	60	300
	7,5	**S13**		184,5					
	10	**S14**		134,6					
	15	**S15**		184,5					
	20	**S16**		68,2	no				
	30	**S17**		46,2					
	40	**S18**		33,6					
	60	**S19**		46,1					
4000	5	**U12**		281,3	yes	5	F 30	70	400
	7,5	**U13**		191,5					
	10	**U14**		281,3					
	15	**U15**		191,5					
	20	**U16**		70,3	no				
	30	**U17**		47,9					
	40	**U18**		36,5					
	60	**U19**		47,9					

1) values in ( ) are valid for tripping torque ranges with order no. **2, 3** and **4** of data position 11 (section 3)
2) values in ( ) are valid for tripping torque ranges with order no. **7** and **8** of data position 11 (section 3)
3) values in ( ) are valid for tripping torque ranges with order no. **8** of data position 11 (section 3)

Ordering data

2. Output shaft designs to DIN 3210

Order no. **M 7 6 3 * 1 -** [*][*][*][ ][ ] **-** [ ][ ][ ][ ] **- Z** [ ][ ][ ] **+ ...**

(positions 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15)

Output shaft design	Order no., data position 10	
A : hollow shaft with threaded bush [1)] B : hollow shaft with insert bush C : hollow shaft with claw coupling D : free shaft end with featherkey [1)] E : bore with featherkey slot [1)]	**1** **2** **3** **4** **5**	
A : B : with stem protection tube, in standard length [1)] C :	**7** **8** **9**	
Other stem protection tube lengths on request		Standard length of the stem protection tube for M76361 - und M76371 -
Further output shaft designs : Pages 28 and 29, sections 8, 9 and 10	as above; additional order no. required	-C -E: 125 mm; -F -G: 250 mm; -M -N -S -U: 500 mm

3. Adjustable tripping torque ranges

Add. order no. **M 7 6 3 * 1 -** [*][*][*][*][ ] **-** [ ][ ][ ][ ] **- Z** [ ][ ][ ] **+ ...**

(positions 1 2 3 4 5 6 7 8 9 10 110 12 13 14 15)

Rated speed of output shaft [1/min] (incl. order no.)	Tripping torque adjustable from min. ... to max. ... Nm for rotary actuator series M76361- and M76371-																Order no., data position 11
	- C				**- E**				**- F**				**- G**				
	min.	max. for series S-SIWI-			min.	max. for series S-SIWI-			min.	max. for series S-SIWI-			min.	max. for series S-SIWI-			
		-C	-CD	-CAS		-C	-CD	-CAS		-C	-CD	-CAS		-C	-CD	-CAS	
5 (.52 / .12)	25	--	60	60	40	--	120	120	100	--	250	250	150	--	500	490	**8**
	25	60	56	52	40	120	109	100	100	250	245	215	150	500	420	385	**7**
	25	52	--	--	40	106	--	--	100	220	--	--	150	380	--	--	**1**
	15	--	45	43	30	--	90	85	60	--	180	180	100	--	300	300	**1**
	--	--	--	--	40	106	--	--	--	--	--	--	--	--	--	--	**2**
	15	39	35	33	30	--	72	67	60	165	151	140	100	280	250	234	**2**
	--	--	--	--	30	65	58	53	60	145	127	117	100	220	202	182	**3**
	--	--	--	--	--	--	--	--	60	115	103	91	--	--	--	--	**4**
7,5 (.53 / .13)	25	60	60	55	--	--	--	--	100	250	250	225	150	500	460	420	**8**
	--	--	--	--	40	108	100	93	100	--	195	180	150	440	375	330	**7**
	25	58	--	--	40	99	--	--	100	225	--	--	150	380	--	--	**1**
	15	--	45	45	30	--	90	85	60	--	180	180	100	--	300	300	**1**
	--	--	--	--	--	--	--	--	--	--	--	--	150	305	--	--	**2**
	15	46	41	38	30	84	76	70	60	165	146	137	100	--	268	243	**2**
	15	35	32	29	30	67	62	57	60	130	118	107	100	225	209	189	**3**
	10	27	24	22	30	57	52	47	--	--	--	--	--	--	--	--	**4**
10 (.54 / .14)	25	--	60	55	40	120	120	106	100	250	250	225	--	--	--	--	**8**
	25	60	52	48	40	--	105	105	100	--	195	180	150	440	365	335	**7**
	25	51	--	--	40	107	--	--	100	240	--	--	150	345	--	--	**1**
	15	--	45	41	30	--	90	90	60	--	180	180	100	--	300	280	**1**
	15	40	35	32	30	81	74	69	60	175	164	148	100	300	264	245	**2**
	10	31	28	26	30	72	62	57	60	130	115	107	100	240	210	191	**3**
	10	24	22	20	30	56	51	45	--	--	--	--	--	--	--	--	**4**
	10	18	16	15	--	--	--	--	--	--	--	--	--	--	--	--	**5**
15 (.55 / .15)	25	60	60	56	40	120	120	113	100	250	250	225	150	500	500	460	**8**
	--	--	--	--	40	--	98	90	100	--	200	180	150	490	395	365	**7**
	25	55	--	--	40	112	--	--	100	235	--	--	150	345	--	--	**1**
	15	--	45	45	30	--	90	90	60	--	180	180	100	--	300	280	**1**
	15	48	42	39	30	83	74	69	60	160	142	128	100	295	264	241	**2**
	15	38	34	30	30	64	60	54	60	120	110	100	100	235	214	190	**3**
	10	29	26	24	--	--	--	--	--	--	--	--	--	--	--	--	**4**
	10	23	21	19	--	--	--	--	--	--	--	--	--	--	--	--	**5**
	10	18	16	15	--	--	--	--	--	--	--	--	--	--	--	--	**6**
20 (.56 / .16)	25	--	60	60	40	120	120	111	100	--	250	250	150	--	500	500	**8**
	25	60	59	52	40	--	97	90	100	250	210	185	150	500	435	405	**7**
	25	52	--	--	40	117	--	--	100	210	--	--	150	350	--	--	**1**
	15	--	45	44	30	--	90	90	60	--	180	175	100	--	300	280	**1**
	15	40	36	34	30	85	80	72	60	165	153	135	100	245	224	200	**2**
	15	35	30	28	30	63	56	52	60	145	127	118	100	210	189	172	**3**
	10	27	25	22	--	--	--	--	60	115	101	92	--	--	--	--	**4**
	10	21	19	17	--	--	--	--	--	--	--	--	--	--	--	--	**5**
	10	17	15	14	--	--	--	--	--	--	--	--	--	--	--	--	**6**

1) Strength not proven with the safety factors required by the standard standard KTA 3504.

Ordering data

3. Adjustable tripping torque ranges

Order no. **M 7 6 3 * 1 -** [1 2 3 4 5 6] [7 8 9 10 11] **-** [12 13 14 15] **- Z** [ ] **+ ...**

Rated speed of output shaft [1/min] (incl. order no.)	Tripping torque adjustable from min. ... to max. ... Nm for rotary actuator series M76361- and M76371-																Order no., data position 11
	- C				**- E**				**- F**				**- G**				
	min.	max. for series S-SIWI-			min.	max. for series S-SIWI-			min.	max. for series S-SIWI-			min.	max. for series S-SIWI-			
		-C	-CD	-CAS		-C	-CD	-CAS		-C	-CD	-CAS		-C	-CD	-CAS	☐
30 (.57 / .17)	25	--	60	60	40	--	120	113	100	250	250	230	150	500	500	490	**8**
	25	60	51	49	40	120	107	97	100	--	200	185	150	440	385	350	**7**
	25	58	--	--	40	102	--	--	100	240	--	--	150	355	--	--	**1**
	15	--	45	45	30	--	90	82	60	--	180	180	100	--	300	300	**1**
	25	52	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**2**
	15	--	42	39	30	88	78	72	60	170	155	138	100	300	269	245	**2**
	15	38	34	31	30	70	62	56	60	145	130	119	100	240	212	195	**3**
	10	33	28	26	--	--	--	--	60	115	106	93	--	--	--	--	**4**
	10	24	21	19	--	--	--	--	--	--	--	--	--	--	--	--	**5**
	10	20	17	16	--	--	--	--	--	--	--	--	--	--	--	--	**6**
40 (.58 / .18)	25	--	60	60	40	--	120	120	100	250	250	245	150	--	500	500	**8**
	25	60	58	53	40	120	108	103	100	--	195	180	150	500	410	395	**7**
	25	58	--	--	40	108	--	--	100	230	--	--	150	350	--	--	**1**
	15	--	45	45	30	--	90	87	60	--	180	180	100	--	300	300	**1**
	--	--	--	--	--	--	--	--	100	195	--	--	150	315	--	--	**2**
	15	42	38	36	30	83	74	68	60	--	173	157	100	--	286	263	**2**
	15	38	30	28	30	65	58	54	60	155	134	124	100	240	212	193	**3**
	10	28	24	22	--	--	--	--	60	120	107	98	--	--	--	--	**4**
	10	24	20	19	--	--	--	--	--	--	--	--	--	--	--	--	**5**
	10	18	15	14	--	--	--	--	--	--	--	--	--	--	--	--	**6**
60 (.59 / .19)	25	--	60	60	40	--	120	117	100	250	250	245	150	500	500	500	**8**
	25	60	50	47	40	120	105	95	--	--	--	--	150	430	400	385	**7**
	25	49	--	--	40	101	--	--	100	215	--	--	150	305	--	--	**1**
	15	--	45	40	30	--	90	82	60	--	180	180	100	--	300	300	**1**
	--	--	--	--	--	--	--	--	100	190	--	--	150	305		--	**2**
	15	41	37	34	30	79	70	64	60	--	173	160	100	--	280	261	**2**
	10	29	27	25	30	61	54	50	60	145	129	117	100	265	253	238	**3**
	10	26	21	19	--	--	--	--	60	115	105	95	100	215	195	183	**4**
	10	19	17	15	--	--	--	--	--	--	--	--	--	--	--	--	**5**
80 (.60 / .20)	25	--	60	60	40	120	120	113	100	--	240	235	150	500	500	500	**8**
	25	60	58	55	40	--	98	90	100	250	210	200	150	445	425	405	**7**
	25	57	--	--	40	116	--	--	100	225	--	--	150	360	--	--	**1**
	15	--	45	45	30	--	90	90	60	--	180	180	100	--	300	280	**1**
	--	--	--	--	40	99	--	--	100	180	--	--	--	--	--	--	**2**
	15	44	39	36	30	--	88	80	60	--	163	153	100	290	249	225	**2**
	15	34	31	28	30	78	68	64	60	160	145	133	100	235	195	181	**3**
	10	29	26	24	30	61	55	50	60	120	107	98	--	--	--	--	**4**
	10	21	19	17	--	--	--	--	--	--	--	--	--	--	--	--	**5**
120 (.61 / .21)	25	60	60	60	40	--	120	120	100	--	250	250	150	500	500	500	**8**
	--	--	--	--	40	--	106	98	100	--	230	215	150	--	385	370	**7**
	25	56	--	--	40	120	--	--	100	250	--	--	150	410	--	--	**1**
	15	--	45	45	30	--	90	90	60	--	180	180	100	--	300	300	**1**
	--	--	--	--	--	--	--	--	100	200	--	--	150	305	--	--	**2**
	15	44	39	36	30	85	77	69	60	--	172	155	100	--	263	250	**2**
	15	37	33	30	30	73	64	60	60	165	135	125	100	245	208	192	**3**
	10	26	24	22	--	--	--	--	60	140	111	101	--	--	--	--	**4**
	10	24	19	17	--	--	--	--	--	--	--	--	--	--	--	--	**5**
180 (.62 / .22)	25	--	60	60	40	--	120	120	100	250	250	250	150	500	500	500	**8**
	25	60	54	51	40	120	112	108	100	--	205	200	150	440	410	390	**7**
	25	50	--	--	40	98	--	--	100	205	--	--	150	370	--	--	**1**
	15	--	45	40	30	--	90	80	60	--	180	180	100	--	300	300	**1**
	--	--	--	--	--	--	--	--	100	200	--	--	--	--	--	--	**2**
	15	38	34	31	30	79	71	64	60	--	167	156	100	285	259	249	**2**
	10	30	27	25	30	63	55	51	60	180	151	142	100	220	186	176	**3**
	10	25	22	21	--	--	--	--	60	145	117	110	--	--	--	--	**4**
	10	18	16	15	--	--	--	--	--	--	--	--	--	--	--	--	**5**

Ordering data

3. Adjustable tripping torques

Order no. **M 7 6 3 * 1 -** [*][*][*][*][ ] **-** [ ][ ][ ][ ] **- Z** [ ][ ][ ] **+ ...**

(1 2 3 4 5 6 7 8 9 10 11 12 13 14 15)

Rated speed of output shaft [1/min] (incl. order no.)	Tripping torque adjustable from min. ... to max. ... Nm for rotary actuator series M76361- and M76371-																Order no., data position 11
	- M				**- N**				**- S**				**- U**				
	min.	max. for series S-SIWI-			min.	max. for series S-SIWI-			min.	max. for series S-SIWI-			min.	max. for series S-SIWI-			
		-C	-CD	-CAS		-C	-CD	-CAS		-C	-CD	-CAS		-C	-CD	-CAS	
	300	900	900	890	--	--	--	--	800	1800	1800	1770	1800	--	4000	4000	**8**
	300	--	700	660	400	1250	1160	1080	--	--	--	--	1800	4000	3850	3650	**7**
5	300	730	--	--	400	1000	--	--	750	1750	--	--	1800	3240	--	--	**1**
(.52 / .17)	200	--	600	600	300	--	900	900	500	--	1500	1440	100	--	3000	2800	**1**
	200	600	565	520	300	730	710	660	500	1400	1240	1140	1000	2650	2500	2250	**2**
	200	460	425	400	300	600	565	520	500	1000	900	810	1000	2150	1950	1800	**3**
	300	900	900	890	400	1250	1250	1250	800	1800	1800	1800	1800	--	4000	4000	**8**
	300	860	790	740	--	--	--	--	--	--	--	--	1800	4000	3800	3600	**7**
7,5	300	690	--	--	400	1000	--	--	750	1730	--	--	1800	3700	--	--	**1**
(.53 / .13)	200	--	600	600	300	--	900	900	500	--	1500	1500	1000	--	3000	3000	**1**
	200	500	480	450	300	860	795	740	500	1410	1290	1190	1000	2750	2600	2450	**2**
	200	410	385	355	300	690	645	610	500	1180	1060	970	1000	2200	2050	1900	**3**
	300	900	900	900	--	--	--	--	800	1800	1800	1750	1800	--	4000	4000	**8**
	300	750	710	670	400	1150	1120	1040	--	--	--	--	1800	4000	3750	3550	**7**
10	300	650	--	--	--	--	--	--	550	1550	--	--	1800	3350	--	--	**1**
(.54 / .14)	200	--	600	570	300	--	900	900	500	--	1455	1350	1000	--	3000	3000	**1**
	200	520	485	460	300	750	715	675	500	1270	1200	1080	1000	2600	2600	2500	**2**
	200	375	365	340	300	650	600	560	500	1040	940	870	1000	2000	1850	1750	**3**
	300	900	900	900	400	1250	1250	1190	800	1800	1800	1800	1800	4000	4000	4000	**8**
	300	860	820	740	400	1060	990	920	800	1690	1710	1650	--	--	--	--	**7**
15	300	710	--	--	--	--	--	--	750	1750	--	--	1800	3200	--	--	**1**
(.55 / .15)	200	--	600	600	300	--	900	900	500	--	1500	1500	1000	--	3000	3000	**1**
	200	590	530	485	300	860	820	740	500	1300	1225	1160	1000	2700	2550	2400	**2**
	200	475	420	385	300	710	645	595	500	1210	1100	1030	1000	2300	2250	2250	**3**
	--	--	--	--	--		--	--	500	1060	100	940	1000	1750	1750	1700	**4**
	300	900	900	900	400	1250	1240	1190	800	1800	1800	1800	1800	4000	4000	3850	**8**
	300	800	740	690	--	--	--	--	--	--	--	--	--	--	--	--	**7**
20	300	650	--	--	400	1000	--	--	700	1680	--	--	1800	3250	--	--	**1**
(.56 / .16)	200	--	600	560	300	--	900	900	500	--	1500	1500	1000	--	3000	3000	**1**
	200	535	485	450	300	800	745	690	500	1350	1260	1165	1000	2500	2400	2250	**2**
	200	445	400	365	300	650	620	560	500	1100	1040	940	1000	2300	2200	2050	**3**
	300	900	900	900	400	1250	1250	1250	800	1800	1800	1800	1800	4000	4000	4000	**8**
	300	760	720	680	400	1100	1060	1000	--	--	--	--	--	--	--	--	**7**
30	--	--	--	--	400	1000	--	--	650	1650	--	--	--	--	--	--	**1**
(.57 / .17)	200	--	600	600	300	--	900	900	500	--	1500	1500	1000	2950	2940	2900	**1**
	200	610	575	530	300	760	730	690	500	1520	1450	1360	1000	2800	2700	2600	**2**
	200	500	475	430	--	--	--	--	500	1130	1080	1025	1000	2250	2150	2050	**3**
	200	410	370	345	--	--	--	--	--	--	--	--	--	--	--	--	**4**
	300	900	900	900	400	1250	1250	1240	800	1800	1800	1800	--	--	--	--	**8**
	300	750	700	670	400	1060	1040	980	--	--	--	--	1800	--	3200	3200	**7**
40	--	--	--	--	--	--	--	--	600	1570	--	--	1800	3200	--	--	**1**
(.58 / .18)	200	--	600	600	300	--	900	900	500	--	1500	1440	1000	--	3000	3000	**1**
	200	560	535	510	300	810	785	740	500	1200	1150	1090	1000	2350	2300	2300	**2**
	200	450	420	390	300	755	720	675	500	1110	1060	990	1000	2150	2050	1950	**3**
	200	370	350	315	--	--	--	--	300	850	785	750	--	--	--	--	**4**
	300	900	900	860	400	1250	1250	1250	--	--	--	--	--	--	--	--	**8**
	300	760	710	670	400	1070	1040	980	--	--	--	--	1800	--	3350	3350	**7**
60	300	640	--	--	400	920	--	--	--	--	--	--	1800	3300	--	--	**1**
(.59 / .19)	200	--	600	600	300	--	900	820	--	--	--	--	1000	--	3000	3000	**1**
	200	495	495	475	300	680	650	620	500	1330	1320	1320	1000	2550	2500	2400	**2**
	200	380	355	335	--	--	--	--	500	1130	1050	1000	1000	2000	2000	1950	**3**
	300	900	900	890	400	--	1250	1210									**8**
	300	740	710	670	400	1250	1170	1130									**7**
80	300	680	--	--	400	970	--	--									**1**
(.60 / .20)	200	--	600	600	300	--	900	900									**1**
	200	510	485	460	300	740	710	670									**2**
	200	410	380	355	300	680	655	610									**3**

Ordering data

3. Adjustable tripping torques

Order no. **M 7 6 3 * 1 -** [*][*][*][*][■] **-** [ ][ ][ ][ ] **- Z** [ ][ ][ ] **+ ...**

(1 2 3 4 5 6 7 8 9 10 11 12 13 14 15)

Rated speed of output shaft [1/min] (incl. order no.)	Tripping torque adjustable from min. ... to max. ... Nm for rotary actuator series M76361- and M76371-								Order no., data position 11
	- M				**- N**				
	min.	max. for series S-SIWI-			min.	max. for series S-SIWI-			
		-C	-CD	-CAS		-C	-CD	-CAS	■
120 (.61 / .21)	300	900	900	900	400	1250	1250	1250	**8**
	300	840	800	770	--	--	--	--	**7**
	300	670	--	--	400	920	--	--	**1**
	200	--	600	600	300	--	900	900	**1**
	200	510	490	465	300	840	815	780	**2**
	200	475	450	420	300	670	655	615	**3**
	200	355	335	320	--	--	--	--	**4**
180 (.62 / .22)	300	900	900	900	400	1250	1250	1250	**8**
	300	780	760	740	400	1040	1000	980	**7**
	300	690	--	--	--	--	--	--	**1**
	200	--	600	600	300	--	900	900	**1**
	200	540	530	530	300	820	810	795	**2**
	200	455	425	405	300	690	685	660	**3**
	200	385	380	375	--	--	--	--	**4**

4. Number of revolutions per stroke

Order no. **M 7 6 3 * 1 -** [*][*][*][*][*] **-** [■][ ][ ][ ] **- Z** [ ][ ][ ] **+ ...**

(1 2 3 4 5 6 7 8 9 10 11 12 13 14 15)

Revolutions / stroke (U/Hub) up to	Order no., data position 12 ■
0,25	**A**
0,5	**B**
1	**C**
2,5	**D**
5	**E**
7,5	**F**
10	**H**
15	**J**
30	**K**
60	**L**
120	**N**
250	**P**
500	**Q**
1000	**R**
2000	**S**

5. Electrical connection and local control station

(cable entry see data sheet)

Order no. **M 7 6 3 * 1 -** [*][*][*][*][*] **-** [*][*][ ][ ] **- Z** [■][■][■] **+ ...**

(1 2 3 4 5 6 7 8 9 10 11 12 13 14 15)

Local control station with pivot switches 'OPEN-STOP-CLOSE', without or with selector switch 'LOCAL-OFF-REMOTE'		Electrical connection via	Order no., data position 13 ■	Rotary actuators: in standard design series S-SIWI-C type : M76361-.. ■■■		for small leakage series S-SIWI-CD type : M76361-.. ■■■		for large leakage series S-SIWI-CAS type : M76371-.. ■■■	
Without local control station		terminals	*	**N1N**		**N1K**		**N1H**	
		plug	*	**N2N**		**N2K**		**N2H**	
With local control station	without selector switch	terminals	*	**N3N**		**N3K**		**N3H**	
		plug	*	**N4N**		**N4K**		**N4H**	
	with selector switch	terminals	*	**N5N**		**N5K**		**N5H**	
		plug	*	**N6N**		**N6K**		**N6H**	

Ordering data

6. Switching and signalling unit: signalling components

Order no. **M 7 6 3 * 1 -** [1 2 3 4 5 6] [7 8 9 10 11] **-** [12 13 14 15] **- Z** [ ] **+ ...**

Signalling component (s)	Order no., data position 14	Rotary actuators type : M76361-..	Rotary actuators type : M76371-..
Without signalling components	**0**		
ESR electronic position transmitter	**1**		
POT potentiometer 100 Ω	**2**		
SA mechanical position indicator	**3**		
ESR and SA	**4**		
POT and SA	**5**		

7. Switching and signalling unit: switching components

Order no. **M 7 6 3 * 1 -** [1 2 3 4 5 6] [7 8 9 10 11] **-** [12 13 14 15] **- Z** [ ] **+ ...**

Micro-switch (connected via 4 pins)			Order no., data position 15	Rotary actuators	
Design	Torque switches	Travel switches		type : M76361-..	type : M76371-..
silver-plated	2DE	4 WE	**1**		
		6 WE	**2**		
gold-plated	2DE	4 WE	**3**		
		6 WE	**4**		
Further designs :	on request				

Additional features

Order no. **M 7 6 3 * 1 -** [ ] **-** [ ] **- Z**

Order code additive [ ] **+** [ ] **+** [ ] **+ ...**

Any sequence

Plain text (if necessary) .....

8. Output shaft designs to EN ISO 5210 or DIN 3338

(flange connecting dimensions to EN ISO 5210, part 1)

Order no. **M 7 6 3 * 1 -** [ ] **-** [ ] **- Z**

Order code additive [ ] **+** [ ] **+ ...**

Output shaft design		Standard	Order no., data position 10 (section 2)	Order code	
design	A : hollow shaft with threaded bush	EN ISO 5210, part 3	**1**	**A32**	
	B1: with insert bush	EN ISO 5210, part 3	**2**	**A33**	
	C : claw coupling	DIN 3338	**3**	**A34**	
	D : free shaft end with featherkey[1)]	[2)]	**4**	**A35**	
	B3 : bore with featherkey slot [1)]	EN ISO 5210, part 3	**5**	**A36**	
design	A with stern protection tube	EN ISO 5210, part 3	**7**	**A37**	
	B1 in standard length to	EN ISO 5210, part 3	**8**	**A38**	
	C page 24, section 2	DIN 3338	**9**	**A39**	

[1)] : Strength not proven with the safety factors required by standard KTA 3504

[2)] : Dimensions of the shaft output according to DIN 3210, but flange connecting dimensions to EN ISO 5210, part 1

Ordering data

9. Output shaft design C (hollow shaft with claw coupling) to DIN 3210

Order no. **M 7 6 3 * 1 -** [*][*][*][*][*] **-** [*][✱][*][*] **- Z**

Order code additive [*][*][*] **+** [ ][ ][ ] **+ ...**

Maximum internal diameter d_4	for rotary actuators M76361 - und M76371 -	Order no., data position 10	Order code [ ][ ][ ]	
--	- C	**3** or **9**	**--**	
36	- E	**3** or **9**	**A20**	
53	- F and - G	**3** or **9**	**A20**	
65	- M	**3** or **9**	**A21**	
70	- N	**3** or **9**	**A21**	
--	- S and - U	**3** or **9**	**--**	

10. Handwheel gear reducer (handwheel mounted at side; design not qualified to DIN 44834)

Order no. **M 7 6 3 * 1 -** [*][*][*][*][*] **-** [*][✱][*][*] **- Z**

Order code additive [*][*][*] **+** [ ][ ][ ] **+ ...**

Reduction ratio handwheel/output shaft	For rotary actuators M76361 - und M76371 -	For output shaft design to DIN 3210		Order code [ ][ ][ ]	
13 : 1	- F and - G	A, B or C	without stern protection tube	**A81**	
		A, B or C	with stern protection tube	**A82**	
		D or E		**A83**	
18,5 : 1	- M and - N	A, B, C or D	without stern protection tube	**A86**	
		A, B or C	with stern protection tube	**A87**	

11. Additional components in the switching and signalling unit

Order no. **M 7 6 3 * 1 -** [*][*][*][*][*] **-** [*][✱][*][*] **- Z**

Order code additive [*][*][*] **+** [ ][ ][ ] **+ ...**

Component (s)	Order code [ ][ ][ ]	Rotary actuators type : M76361-..	Rotary actuators type : M76371-..
1 WE (travel switch) add. for bypass of torque switch	**A01**		
1 WE (see order code A01) and POT 100 Ω as second potentiometer	**A02**		
1 POT 100 Ω as second potentiometer	**A03**		
Space heater : AC 220 V	**A22**		
AC 110 V	**A23**		
AC 24 V	**A24**		

12. Customer plate

Order no. **M 7 6 3 * 1 -** [*][*][*][*][*] **-** [*][✱][*][*] **- Z**

Order code additive [*][*][*] **+** [ ][ ][ ] **+ ...**

	Order code [ ][ ][ ]	
Customer position plate	**B03**	

13. Painting

Order no. **M 7 6 3 * 1 -** [*][*][*][*][*] **-** [*][✱][*][*] **- Z**

Order code additive [*][*][*] **+** [ ][ ][ ] **+ ...**

Decontaminable painting	Order code [ ][ ][ ]	
Painting consists of a base coat and a decontaminable top coat (entire thickness: min 120µm, colour RAL 7030)	**L18**	

Ordering data

Note :

In the following boards (to page 32), consecutive numbers are assigned to the motors of the actuators for open-loop control.
From the pages 33 to 38 the data of the motors are indicated for the assigned motors numbers.

Rated speed of output shaft 1/min (inc. order no.)	Order no. for the tripping torque range, (order no., data position 11, see ordering data)	Rotary actuators M76361- und M76371- - C			- E			- F			- G		
		Motor consecutive No. for series		Actuator weight	Motor consecutive No. for series		Actuator weight	Motor consecutive No. for series		Actuator weight	Motor consecutive No. for series		Actuator weight
		- C and - CD	- CAS	appr. kg	- C and - CD	- CAS	appr. kg	- C and - CD	- CAS	appr. kg	- C and - CD	- CAS	appr. kg
5 (.52 / .12)	8	22	22	28	18	18	38	56	56	72	80	80	79
	7	8	8	28	32	32	39	54	54	72	76	76	79
	1	4	4	28	24	24	38	42	42	71	56	56	77
	2	2	2	28	22	22	38	40	40	71	54	54	77
	3	--	--	--	8	8	37	30	30	69	42	42	76
	4	--	--	--	--	--	--	20	20	69	--	--	--
7,5 (.53 / .13)	8	24	24	28	--	--	--	76	76	74	104	104	80
	7	--	--	--	102	102	44	56	56	72	96	96	80
	1	22	22	28	102	102	44	56	56	72	80	80	79
	2	8	8	28	86	86	42	54	54	72	76	76	79
	3	4	4	28	84	84	42	42	42	71	56	56	77
	4	2	2	28	62	62	40	--	--	--	--	--	--
10 (.54 / .14)	8	86	86	35	58	58	41	82	82	74	--	--	--
	7	32	32	28	58	58	41	76	76	74	104	104	80
	1	24	24	28	46	46	40	76	76	74	96	96	80
	2	22	22	28	44	44	40	56	56	72	80	80	79
	3	8	8	27	32	32	37	54	54	72	76	76	79
	4	4	4	27	24	24	37	--	--	--	--	--	--
	5	2	2	27	--	--	--	--	--	--	--	--	--
15 (.55 / .15)	8	46	46	30	78	78	42	104	104	72	132	132	84
	7	--	--	--	60	60	40	96	96	72	130	130	84
	1	44	44	30	60	60	40	96	96	72	122	122	81
	2	32	32	28	58	58	40	76	76	71	104	104	78
	3	24	24	28	46	46	39	56	56	72	96	96	78
	4	22	22	28	--	--	--	--	--	--	--	--	--
	5	8	8	27	--	--	--	--	--	--	--	--	--
	6	4	4	27	--	--	--	--	--	--	--	--	--
20 (.56 / .16)	8	60	60	31	82	82	42	130	130	79	154	154	91
	7	58	58	31	78	78	42	122	122	76	152	152	91
	1	46	46	30	78	78	42	104	104	73	130	130	84
	2	44	44	30	60	60	40	96	96	72	122	122	81
	3	32	32	28	58	58	40	80	80	71	104	104	78
	4	24	24	28	--	--	--	76	76	71	--	--	--
	5	22	22	28	--	--	--	--	--	--	--	--	--
	6	8	8	27	--	--	--	--	--	--	--	--	--
30 (.57 / .17)	8	52	52	31	124	124	47	132	132	79	174	174	100
	7	64	64	30	100	100	43	130	130	79	154	154	91
	1	38	38	30	98	98	43	130	130	79	152	152	91
	2	28	28	28	82	82	42	122	122	76	132	132	84
	3	26	26	28	78	78	42	104	104	73	130	130	84
	4	18	18	28	--	--	--	96	96	72	--	--	--
	5	16	16	28	--	--	--	--	--	--	--	--	--
	6	6	6	27	--	--	--	--	--	--	--	--	--
40 (.58 / .18)	8	50	50	31	92	92	45	118	118	76	172	172	100
	7	48	48	31	74	74	44	116	116	76	128	128	86
	1	52	52	31	72	72	44	116	116	76	126	126	86
	2	38	38	30	50	50	40	88	88	73	118	118	82
	3	28	28	28	48	48	39	70	70	73	90	90	78
	4	26	26	28	--	--	--	68	68	73	--	--	--
	5	18	18	28	--	--	--	--	--	--	--	--	--
	6	16	16	28	--	--	--	--	--	--	--	--	--
60 (.59 / .19)	8	72	72	35	94	94	45	128	128	80	190	190	130
	7	50	50	31	92	92	45	--	--	--	172	172	100
	1	48	48	30	74	74	44	126	126	80	170	170	100
	2	52	52	31	72	72	44	118	118	76	128	128	85
	3	38	38	30	50	50	40	90	90	73	148	148	97
	4	28	28	28	--	--	--	88	88	73	126	126	85
	5	26	26	28	--	--	--	--	--	--	--	--	--
80 (.60 / .20)	8	92	92	36	136	136	47	170	170	95	176	176	104
	7	74	74	35	120	120	47	128	128	80	174	174	104
	1	72	72	35	120	120	47	148	148	92	164	164	96
	2	50	50	31	92	92	44	126	126	80	154	154	99
	3	48	48	30	74	74	44	118	118	76	152	152	91
	4	52	52	31	72	72	44	90	90	73	--	--	--
	5	38	38	30	--	--	--	--	--	--	--	--	--

Note :

Ordering data

In the following boards (to page 32), consecutive numbers are assigned to the motors of the actuators for open-loop control.
From the pages 33 to 38 the data of the motors are indicated for the assigned motors numbers.

Rated speed of output shaft 1/min (inc. order no.)	Order no. for the tripping torque range, (order no., data position 11, see ordering data)	Rotary actuators M76361- und M76371- - C			- E			- F			- G		
		Motor consecutive no. for series		Actuator weight	Motor consecutive no. for series		Actuator weight	Motor consecutive no. for series		Actuator weight	Motor consecutive no. for series		Actuator weight
		- C and - CD	- CAS	appr. kg	- C and - CD	- CAS	appr. kg	- C and - CD	- CAS	appr. kg	- C and - CD	- CAS	appr. kg
120 (.61 / .21)	8	100	100	36	140	140	49	174	174	95	196	196	130
	7	--	--	--	134	134	49	164	164	91	176	176	104
	1	50	50	31	134	134	49	164	164	91	176	176	104
	2	48	48	30	124	124	47	154	154	94	174	174	104
	3	52	52	31	100	100	44	152	152	86	164	164	96
	4	38	38	30	--	--	--	132	132	79	--	--	--
	5	28	28	28	--	--	--	--	--	--	--	--	--
180 (.62 / .22)	8	92	92	36	138	138	49	172	172	95	202	202	135
	7	74	74	35	136	136	47	170	170	95	200	200	135
	1	72	72	35	94	94	44	170	170	95	190	190	130
	2	50	50	31	92	92	44	128	128	80	172	172	104
	3	48	48	30	74	74	44	148	148	92	150	150	98
	4	52	52	31	--	--	--	126	126	80	--	--	--
	5	38	38	30	--	--	--	--	--	--	--	--	--

Rated speed of output shaft 1/min (inc. order no)	Order no. for the tripping torque range, (order no., data position 11, see ordering data)	Rotary actuators M76361- und M76371- - M			- N			- S			- U		
		Motor consecutive no. for series		Actuator weight	Motor consecutiv. no. for series		Actuator weight	Motor consecutive no. for series		Actuator weight	Motor consecutive no. for series		Actuator weight
		- C and - CD	- CAS	appr. kg	- C and - CD	- CAS	appr. kg	- C and - CD	- CAS	appr. kg	- C and - CD	- CAS	appr. kg
5 (.52 / .12)	8	178	178	177	--	--	--	152	152	146	176	176	212
	7	166	166	167	180	180	185	--	--	--	174	174	212
	1	166	166	167	178	178	185	132	132	130	164	164	204
	2	158	158	164	166	166	175	130	130	130	154	154	207
	3	156	156	164	158	158	172	122	122	128	152	152	200
7,5 (.53 / .13)	8	198	198	206	204	204	215	164	164	143	196	196	237
	7	180	180	177	--	--	--	--	--	--	192	192	237
	1	178	178	177	198	198	208	154	154	146	176	176	212
	2	166	166	167	180	180	185	152	152	138	174	174	212
	3	158	158	164	178	178	185	132	132	130	164	164	204
10 (.54 / .14)	8	204	204	210	--	--	--	174	174	151	202	202	245
	7	198	198	206	204	204	215	--	--	--	200	200	245
	1	180	180	177	204	204	215	164	164	143	190	190	237
	2	178	178	177	198	198	208	154	154	146	172	172	212
	3	166	166	167	180	180	185	152	152	138	150	150	206
15 (.55 / .15)	8	164	164	169	174	174	186	190	190	185	226	226	305
	7	154	154	165	164	164	177	172	172	151	--	--	--
	1	152	152	165	164	164	177	188	188	185	202	202	241
	2	132	132	159	154	154	181	150	150	145	200	200	241
	3	130	130	159	152	152	173	128	128	132	190	190	237
	4	--	--	--	--	--	--	148	148	144	172	172	212
20 (.56 / .16)	8	174	174	178	176	176	186	176	176	151	194	194	241
	7	164	164	169	--	--	--	--	--	--	--	--	--
	1	154	154	172	174	174	186	174	174	151	196	196	241
	2	152	152	165	164	164	177	164	164	143	192	192	241
	3	132	132	159	154	154	181	154	154	146	176	176	212
30 (.57 / .17)	8	176	176	178	196	196	208	196	196	190	224	224	320
	7	174	174	178	192	192	208	--	--	--	--	--	--
	1	174	174	178	176	176	186	192	192	190	216	216	300
	2	164	164	169	174	174	186	176	176	151	194	194	241
	3	154	154	172	--	--	--	174	174	151	196	196	241
	4	152	152	165	--	--	--	--	--	--	--	--	--
40 (.58 / .18)	8	196	196	196	194	194	208	194	194	190	--	--	--
	7	176	176	178	196	196	208	--	--	--	224	224	320
	1	176	176	178	196	196	208	196	196	190	224	224	320
	2	174	174	178	192	192	208	192	192	190	218	218	296
	3	164	164	169	176	176	186	176	176	151	194	194	242
	4	154	154	172	--	--	--	174	174	151	--	--	--

Ordering data

Rated speed of output shaft 1/min (inc. order no.)	Order no. for the tripping torque range, (order no., data position 11, see ordering data)	Rotary actuators M76361- und M76371- - M			- N			- S			- U		
		Motor consecutive no. for series		Actuator weight	Motor consecutive no. for series		Actuator weight	Motor consecutive no. for series		Actuator weight	Motor consecutive no. for series		Actuator weight
		- C and - CD	- CAS	appr. kg	- C and - CD	- CAS	appr. kg	- C and - CD	- CAS	appr. kg	- C and - CD	- CAS	appr. kg
60 (.59 / .19)	8	202	202	206	194	194	208	--	--	--	--	--	--
	7	200	200	206	196	196	208	--	--	--	222	222	325
	1	190	190	196	176	176	186	--	--	--	222	222	325
	2	172	172	178	174	174	186	202	202	190	220	220	325
	3	150	150	171	--	--	--	200	200	190	212	212	296
80 (.60 / .20)	8	196	196	200	218	218	271						
	7	192	192	200	194	194	208						
	1	176	176	178	196	196	208						
	2	174	174	178	192	192	208						
	3	164	164	170	176	176	186						
120 (.61 / .21)	8	218	218	263	224	224	299						
	7	194	194	200	--	--	--						
	1	196	196	200	218	218	271						
	2	192	192	200	194	194	209						
	3	176	176	178	196	196	208						
	4	174	174	178	--	--	--						
180 (.62 / .22)	8	220	220	290	222	222	299						
	7	226	226	275	220	220	299						
	1	214	214	263	220	220	299						
	2	202	202	200	212	212	271						
	3	200	200	200	214	214	271						
	4	190	190	195	--	--	--						

Additional weights

for	Rotary actuators M76361 - and M76371 - - C	- E	- F	- G	- M	- N	- S	- U
	Additional weight appr. kg							
Output shaft, design **A**	2	2,5	3	4	6	6	10	12
Handwheel gear reducer	--	--	20	20	13	13	--	--
Local control equipment	3,5							

Additional weight between version S-SIWI-**C** and S-SIWI-**CD** : **3 kg**
Additional weight between version S-SIWI-**C** and S-SIWI-**CAS** : **4 kg**

Motor consecutive no..	Order no. of motor	Add. order code	Rated power kW	no. of poles	Rated speed min^{-1}	Effi-ciency η %	Power factor cos φ	Power factor cos φ during start-up	Rated current at 380 V A	Starting current factor	Rated torque Nm	Starting torque KT 10 Nm	Starting torque KT60+ΔT Nm	Starting torque KT155 + ΔT Nm	Break down torque KT 10 Nm	Current at 145% U_N/ 30 sec A	Size to DIN EN 50347	Flange shape to DIN EN 60034-7 IM	Flange size to DIN EN 50347	Flange size to DIN 42948	Weight appr. kg
2 2 / LZ	OL 56 L / 4 / 050-B14 /	Q18 Q31	0,06	4	1245	46	0,84	0,87	0,24	2,60	0,47	0,80	0,71	0,66	0,71	0,36	56	B14	FT 65	C 80	3,7
4 4 / LZ	OL 56 L / 4 / 050-B14 /	Q21 Q33	0,07	4	1335	51	0,73	0,86	0,29	2,90	0,45	1,25	1,1	1	1,1	0,45	56	B14	FT 65	C 80	3,9
6 6 / LZ	OL 56 S / 2 / 053-B14 /	Q21 Q33	0,14	2	2700	50	0,75	0,91	0,59	3,15	0,49	1,35	1,2	1	1,25	1,6	56	B14	FT 65	C 80	3,5
8 8 / LZ	OL 56 L / 4 / 053-B14 /	Q18 Q31	0,09	4	1270	50	0,76	0,86	0,36	2,6	0,68	1,32	1,2	1,1	1,08	0,5	56	B14	FT 65	C 80	3,9
16 16 / LZ	OL 63 S / 2 / 060-B14 /	Q18 Q31	0,18	2	2565	53	0,88	0,89	0,60	3,5	0,65	1,65	1,45	1,3	1,25	0,80	63	B14	FT 75	C 90	4,5
18 18 / LZ	OL 63 L / 2 / 060-B14 /	Q19 Q32	0,3	2	2620	61	0,90	0,89	0,84	3,65	1,10	1,95	1,68	1,58	1,9	3	63	B14	FT 75	C 90	4,7
20 20 / LZ	OL 63 S / 4 / 060-B 5 /	Q21 Q33	0,13	4	1345	57	0,66	0,83	0,50	2,9	0,92	2,15	1,94	1,74	1,80	0,61	63	B 5	FF 115	A140	4,6
22 22 / LZ	OL 63 S / 4 / 060-B14 /	Q18 Q31	0,12	4	1300	51	0,75	0,85	0,48	2,6	0,89	1,64	1,49	1,34	1,47	0,68	63	B14	FT 75	C 90	4,6
24 24 / LZ	OL 63 S / 4 / 060-B14 /	Q21 Q33	0,13	4	1345	57	0,66	0,83	0,50	2,9	0,92	2,15	1,94	1,74	1,80	0,61	63	B14	FT 75	C 90	4,6
26 26 / LZ	OL 63 L / 2 / 063-B14 /	Q18 Q31	0,25	2	2730	62	0,81	0,89	0,80	4,3	0,95	2,4	2,1	1,9	2,6	1,4	63	B14	FT 75	C90	5,0
28 28 / LZ	OL 63 L / 2 / 063-B14 /	Q19 Q32	0,37	2	2645	63	0,82	0,90	1,15	3,75	1,45	3,2	2,85	2,55	2,75	2,3	63	B14	FT 75	C 90	5,0
30 30 / LZ	OL 63 L / 4 / 063-B 5 /	Q18 Q31	0,18	4	1350	61	0,68	0,86	0,69	3,15	1,34	3,15	2,7	2,55	2,95	1,05	63	B 5	FF 115	A140	5,0
32 32 / LZ	OL 63 L / 4 / 063-B14 /	Q18 Q31	0,18	4	1350	61	0,68	0,86	0,69	3,15	1,34	3,15	2,7	2,55	2,95	1,05	63	B14	FT 75	C 90	5,0
38 38 / LZ	OL 71 S / 2 / 070-B14 /	Q18 Q31	0,37	2	2850	65	0,72	0,87	1,25	5,0	1,28	3,55	3,2	2,9	3,48	4,48	71	B 14	FT 85	C105	6,5
40 40 / LZ	OL 71 S / 4 / 070-B 5 /	Q18 Q31	0,25	4	1365	65	0,77	0,77	0,78	3,5	1,76	3,1	2,82	2,54	3,2	1,3	71	B 5	FF 130	A160	6,5
42 42 / LZ	OL 71 S / 4 / 070-B 5 /	Q21 Q33	0,28	4	1385	66	0,72	0,81	0,90	3,8	1,94	4,2	3,80	3,40	3,35	1,9	71	B 5	FF 130	A160	6,5
44 44 / LZ	OL 71 S / 4 / 070-B14 /	Q18 Q31	0,25	4	1365	65	0,77	0,77	0,78	3,5	1,76	3,1	2,82	2,54	3,2	1,3	71	B14	FT 85	C105	6,5
46 46 / LZ	OL 71 S / 4 / 070-B14 /	Q21 Q33	0,28	4	1385	66	0,72	0,81	0,90	3,8	1,94	4,2	3,80	3,40	3,35	1,9	71	B 5	FF 130	A160	6,5

Motor consecutive no..	Order no. of motor	Add. order code	Rated power kW	no. of poles	Rated speed min^{-1}	Effi-ciency η %	Power factor cos φ	Power factor cos φ during start-up	Rated current at 380 V A	Starting current factor	Rated torque Nm	Starting torque KT 10 Nm	Starting torque KT60+ΔT Nm	Starting torque KT155 + ΔT Nm	Break down torque KT 10 Nm	Current at 145% U_N/ 30 sec A	Size to DIN EN 50347	Flange shape to DIN EN 60034-7 IM	Flange size to DIN EN 50347	Flange size to DIN 42948	Weight appr. kg
48 48 / LZ	OL 71 L / 2 / 073-B14 /	Q18 Q31	0,55	2	2835	73	0,75	0,85	1,58	5,8	1,87	5,55	5,0	4,5	5,5	5,20	71	B14	FT 85	C105	6,5
50 50 / LZ	OL 71 L / 2 / 073-B14 /	Q19 Q32	0,75	2	2795	71	0,77	0,85	2,15	4,8	2,6	7,2	6,5	5,8	7,0	6,9	71	B14	FT 85	C105	7,5
52 52 / LZ	OL 71 L / 2 / 073-B14 /	Q21 Q33	0,43	2	2840	72	0,77	0,82	1,20	6,25	1,55	5,25	4,7	4,2	5,15	3,25	71	B 14	FT 85	C105	7,5
54 54 / LZ	OL 71 L / 4 / 073-B 5 /	Q18 Q31	0,37	4	1385	67	0,71	0,78	1,2	3,85	2,6	5,4	4,85	4,35	5,8	2,7	71	B 5	FF 130	A160	7,5
56 56 / LZ	OL 71 L / 4 / 073-B 5 /	Q21 Q33	0,41	4	1410	68	0,63	0,78	1,45	4,35	2,78	7,4	6,7	6	6,95	4,65	71	B 5	FF 130	A160	7,5
58 58 / LZ	OL 71 L / 4 / 073-B14 /	Q18 Q31	0,37	4	1385	67	0,71	0,78	1,2	3,85	2,6	5,4	4,85	4,35	5,8	2,7	71	B14	FT 85	C105	7,5
60 60 / LZ	OL 71 L / 4 / 073-B14 /	Q21 Q33	0,41	4	1410	68	0,63	0,78	1,45	4,35	2,78	7,4	6,7	6	6,95	4,65	71	B14	FT 85	C105	7,5
62 62 / LZ	OL 71 L / 8 / 073-B14 /	Q18 Q31	0,12	8	700	41	0,50	0,75	0,95	2,25	1,70	4,4	4	3,6	4,8	2,05	71	B14	FT 85	C105	7,0
64 64 / LZ	OL 71 S / 2 / 070-B14 /	Q19 Q32	0,54	2													71	B14	FT 85	C105	6,5
68 68 / LZ	OL 80 S / 2WU / 080-B 5 /	Q18 Q31	0,75	2	2730	69	0,75	0,83	2,2	4,50	2,60	9,2	8,3	7,45	5,8	7,4	80	B 5	FF 165	A200	11
70 70 / LZ	OL 80 S / 2WU / 080-B 5 /	Q19 Q32	0,90	2	2700	66	0,67	0,84	3,2	3,9	3,2	11,2	10	9,1	6,9	13,4	80	B 5	FF 165	A200	11
72 72 / LZ	OL 80 S / 2WU / 080-B14 /	Q18 Q31	0,75	2	2730	69	0,75	0,83	2,2	4,50	2,60	9,2	8,3	7,45	5,8	7,4	80	B14	FT 100	C120	11
74 74 / LZ	OL 80 S / 2WU / 080-B14 /	Q19 Q32	0,90	2	2700	66	0,67	0,84	3,2	3,9	3,2	11,2	10	9,1	6,9	13,4	80	B14	FT 100	C120	11
76 76 / LZ	OL 80 S / 4WU / 080-B 5 /	Q18 Q31	0,55	4	1275	65	0,77	0,77	1,68	3,2	4,15	9,35	8,45	7,6	6,65	3,9	80	B 5	FF 165	A200	10
78 78 / LZ	OL 80 S / 4WU / 080-B14 /	Q18 Q31	0,55	4	1275	65	0,77	0,77	1,68	3,2	4,15	9,35	8,45	7,6	6,65	3,9	80	B14	FT 100	C120	10
80 80 / LZ	OL 80 S / 4WU / 080-B 5 /	Q21 Q33	0,59	4	1310	66	0,69	0,74	1,95	3,5	4,30	12	10,8	9,7	8	6,1	80	B 5	FF 165	A200	10
82 82 / LZ	OL 80 S / 4WU / 080-B14 /	Q21 Q33	0,59	4	1310	66	0,69	0,74	1,95	3,5	4,30	12	10,8	9,7	8	6,1	80	B14	FT 100	C120	10
84 84 / LZ	OL 80 S / 8WU / 080-B14 /	Q18 Q31	0,18	8	605	49	0,70	0,78	0,85	3,3	3,1	5,1	4,6	4,1	3,9	1,2	80	B14	FT 100	C120	10
86 86 / LZ	OL 80 S / 8WU / 080-B14 /	Q21 Q33	0,20	8	625	47	0,62	0,79	1,1	2,0	3,0	6,5	5,8	5,2	3,45	1,8	80	B14	FT 100	C120	10

Electric rotary actuators for open-loop control, series S-SIWI-C, -CD and -CAS

Motor data, consecutive numbers 88 to 140, size 80 to 90

Motor con-sec-utive no..	Order no. of motor	Add. order code	Rated power	no. of poles	Rated speed	Effi-ciency	Power factor		Rated current	Starting current factor	Rated torque	Starting torque			Break down torque	Current at	Size	Flange shape	Flange size		Weight
							cos φ	cos φ during start-up	at 380 V			KT 10	KT60+ΔT	KT155 + ΔT	KT 10	145% U_N/ 30 sec	to DIN EN 50347	to DIN EN 60034-7	to DIN EN 50347	to DIN 42948	
			kW		min^{-1}	η %			A		Nm	Nm	Nm	Nm	Nm	A		IM			appr. kg
88 88 / LZ	OL 80 L / 2WU / 083-B 5 /	Q18 Q31	1,1	2	2650	73	0,81	0,84	2,85	4,6	4	14,1	12,8	11,5	11,8	8,3	80	B 5	FF 165	A200	11
90 90 / LZ	OL 80 L / 2WU / 083-B 5 /	Q19 Q32	1,3	2	2700	71	0,72	0,84	4,1	4,5	4,7	18,1	16,3	14,5	15,5	16,7	80	B 5	FF 165	A200	11
92 92 / LZ	OL 80 L / 2WU / 083-B14 /	Q18 Q31	1,1	2	2650	73	0,81	0,84	2,85	4,6	4	14,1	12,8	11,5	11,8	8,3	80	B14	FT 100	C120	11
94 94 / LZ	OL 80 L / 2WU / 083-B14 /	Q19 Q32	1,3	2	2700	71	0,72	0,84	4,1	4,5	4,7	18,1	16,3	14,5	15,5	16,7	80	B14	FT 100	C120	11
96 96 / LZ	OL 80 L / 4WU / 083-B 5 /	Q18 Q31	0,75	4	1320	70	0,72	0,77	2,25	3,70	5,35	16,0	14	12,9	10,7	5,6	80	B 5	FF 165	A200	11
98 98 / LZ	OL 80 L / 4WU / 083-B14 /	Q18 Q31	0,75	4	1320	70	0,72	0,77	2,25	3,70	5,35	16,0	14	12,9	10,7	5,6	80	B14	FT 100	C120	11
100 100/LZ	OL 80 L / 4WU / 083-B14 /	Q21 Q33	0,83	4	1355	71	0,63	0,77	2,75	3,90	5,80	19,3	18	15,8	11,6	6,9	80	B14	FT 100	C120	11
102 102/LZ	OL 80 L / 8WU / 083-B14 /	Q18 Q31	0,25	8	595	51	0,68	0,78	1,15	2,1	4	7,8	7,0	6,3	5,6	1,65	80	B14	FT 100	C120	11
104 104/LZ	OL 80 L / 4WU / 083-B 5 /	Q21 Q33	0,83	4	1355	71	0,63	0,77	2,75	3,90	5,80	19,3	18	15,8	11,6	6,9	80	B 5	FF 165	A200	11
116 116/LZ	OL 90 S / 2WU / 090-B 5 /	Q18 Q31	1,5	2	2750	74	0,82	0,78	3,8	5,4	5,2	17,6	15,9	14,3	16	11,5	90 S	B 5	FF 165	A200	15
118 118/LZ	OL 90 S / 2WU / 090-B 5 /	Q19 Q32	1,75	2	2770	71	0,66	0,79	6	4,75	6,4	25,6	23,2	20,8	22,1	24,2	90 S	B 5	FF 165	A200	15
120 120/LZ	OL 90 S / 2WU / 090-B14 /	Q18 Q31	1,5	2	2750	74	0,82	0,78	3,8	5,4	5,2	17,6	15,9	14,3	16	11,5	90 S	B14	FT 115	C140	15
122 122/LZ	OL 90 S / 4WU / 090-B 5 /	Q18 Q31	1,1	4	1345	73	0,75	0,78	3,1	3,95	7,85	20,9	18,95	17	16,7	7,5	90 S	B 5	FF 165	A200	15
124 124/LZ	OL 90 S / 4WU / 090-B14 /	Q18 Q31	1,1	4	1345	73	0,75	0,78	3,1	3,95	7,85	20,9	18,95	17	16,7	7,5	90 S	B14	FT 115	C140	15
126 126/LZ	OL 90 L / 2aWU / 096-B 5 /	Q18 Q31	2,2	2	2740	77	0,84	0,80	5,2	5,7	7,7	26,5	24	21,6	20,5	14,3	90 L	B 5	FF 165	A200	18
128 128/LZ	OL 90 L / 2aWU / 096-B 5 /	Q19 Q32	2,6	2	2815	79	0,70	0,82	7,3	6,0	9,1	41,5	38,5	35	32	17,9	90 L	B 5	FF 165	A200	18
130 130/LZ	OL 90 L / 4WU / 096-B 5 /	Q18 Q31	1,5	4	1300	72	0,80	0,72	3,95	3,75	11	28,6	26	23,3	19	7,2	90 L	B 5	FF 165	A200	16
132 132/LZ	OL 90 L / 4WU / 096-B 5 /	Q21 Q33	1,68	4	1365	73	0,67	0,80	5,3	4,3	11,9	41,5	37	33	29,5	19,7	90 L	B 5	FF 165	A200	17
134 134/LZ	OL 90 L / 4WU / 096-B14 /	Q18 Q31	1,5	4	1300	72	0,80	0,72	3,95	3,75	11	28,6	26	23,3	19	7,2	90 L	B14	FT 115	C140	17
136 136/LZ	OL 90 S / 2WU / 090-B14 /	Q19 Q32	1,75	2	2770	71	0,66	0,79	6	4,75	6,4	25,6	23,2	20,8	22,1	24,2	90 S	B14	FT 115	C140	15
138 138/LZ	OL 90 L / 2aWU / 096-B14 /	Q18 Q31	2,2	2	2740	77	0,84	0,80	5,2	5,7	7,7	26,5	24	21,6	20,5	14,3	90 L	B14	FT 115	C140	18
140 140/LZ	OL 90 L / 4WU / 096-B14 /	Q21 Q33	1,68	4	1365	73	0,67	0,80	5,3	4,3	11,9	41,5	37	33	29,5	19,7	90 L	B14	FT 115	C140	17

Motor con-sec-utive no..	Order no. of motor	Add. order code	Rated power	no. of poles	Rated speed	Effi-ciency	Power factor		Rated current	Starting current factor	Rated torque	Starting torque			Break down torque	Current at	Size	Flange shape	Flange size		Weight
							cos φ	cos φ during start-up	at 380 V			KT 10	KT60+ΔT	KT155 + ΔT	KT 10	145% U_N/ 30 sec	to DIN EN 50347	to DIN EN 60034-7	to DIN EN 50347	to DIN 42948	appr. kg
			kW		min^{-1}	η %			A		Nm	Nm	Nm	Nm	Nm	A		IM			
148 148/LZ	**OL 100 L / 2aWU / 106-B 5 /**	**Q18 Q31**	**2,6**	**2**	**2815**	**80**	**0,88**	**0,74**	**5,70**	**7,3**	**9,10**	**35,2**	**31,5**	**28,5**	**28,7**	**10,4**	**100 L**	**B 5**	**FF215**	**A250**	**30**
150 150/LZ	**OL 100 L / 2aWU / 106-B 5 /**	**Q19 Q32**	**3,2**	**2**	**2740**	**81**	**0,87**	**0,79**	**7,1**	**6,2**	**11,5**	**43,9**	**41**	**36,5**	**24,3**	**25,1**	**100 L**	**B 5**	**FF215**	**A250**	**30**
152 152/LZ	**OL 100 L / 4WU / 106-B 5 /**	**Q18 Q31**	**2,2**	**4**	**1375**	**74**	**0,72**	**0,76**	**6,4**	**4,6**	**15,1**	**48,1**	**43,6**	**39**	**41,2**	**24,2**	**100 L**	**B 5**	**FF215**	**A250**	**24**
154 154/LZ	**OL 100 L / 4aWU / 106-B 5 /**	**Q21 Q33**	**2,5**	**4**	**1385**	**79**	**0,76**	**0,74**	**6,5**	**5,25**	**17,1**	**58**	**52,5**	**47**	**51**	**19**	**100 L**	**B 5**	**FF215**	**A250**	**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	A250	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	A250	23
164 164/LZ	**OL 100 L / 4aWU / 107-B 5 /**	**Q18 Q31**	**3,0**	**4**	**1380**	**79**	**0,73**	**0,77**	**8,0**	**4,9**	**20,80**	**70**	**60,7**	**56**	**49,3**	**24,2**	**100 L**	**B 5**	**FF215**	**A250**	**28**
166 166/LZ	**OL 100 L / 8aWU / 107-B 5 /**	**Q18 Q31**	**1,1**	**8**	**645**	**67**	**0,66**	**0,73**	**3,90**	**3,15**	**16,4**	**34,3**	**31**	**28**	**24,4**	**9,75**	**100 L**	**B 5**	**FF215**	**A250**	**26**
170 170/LZ	**OL 112M / 2WU / 113-B 5 /**	**Q18 Q31**	**4,0**	**2**	**2800**	**80**	**0,84**	**0,71**	**9,4**	**6,5**	**14,2**	**46,9**	**42,5**	**38**	**43,7**	**24,8**	**112 M**	**B 5**	**FF215**	**A250**	**33**
172 172/LZ	**OL 112M / 2WU / 113-B 5 /**	**Q19 Q32**	**5,5**	**2**	**2830**	**85**	**0,87**	**0,73**	**11,9**	**6,8**	**19,1**	**65**	**58**	**53**	**63,5**	**25,4**	**112 M**	**B 5**	**FF215**	**A250**	**37**
174 174/LZ	**OL 112M / 4WU / 113-B 5 /**	**Q18 Q31**	**4,0**	**4**	**1380**	**78**	**0,83**	**0,74**	**9,25**	**5,5**	**27,7**	**85**	**78,5**	**72,5**	**81**	**21**	**112 M**	**B 5**	**FF215**	**A250**	**37**
176 176/LZ	**OL 112M / 4aWU / 113-B 5 /**	**Q19 Q32**	**4,8**	**4**	**1410**	**82**	**0,78**	**0,75**	**11,5**	**5,9**	**32,5**	**118**	**109**	**100**	**98,5**	**38**	**112 M**	**B 5**	**FF215**	**A250**	**37**
178 178/LZ	OL 112M / 8WU / 113-B 5 /	Q18 Q31	1,5	8	600		0,71		5,0	2,7	22,9	46					112 M	B 5	FF215	A250	35
180 180/LZ	**OL 112M / 8WU / 113-B 5 /**	**Q21 Q33**	**1,6**	**8**	**675**	**72**	**0,61**	**0,67**	**5,7**	**3,3**	**23,1**	**57**	**51,5**	**46**	**39,7**	**11,3**	**112 M**	**B 5**	**FF215**	**A250**	**35**

Motor consec-utive no..	Order no. of motor	Add. order code	Rated power	no. of poles	Rated speed	Effi-ciency	Power factor		Rated current	Starting current factor	Rated torque	Starting torque			Break down torque	Current at	Size	Flange shape	Flange size		Weight
												KT 10	KT60+ΔT	KT155 + ΔT	KT 10	145% U_N/ 30 sec	to DIN EN 50347	to DIN EN 60034-7	to DIN EN 50347	to DIN 42948	
			kW		min^{-1}	η %	cos φ	cos φ during start-up	at 380 V A		Nm	Nm	Nm	Nm	Nm	A		IM			appr. kg
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**	**56,3**	**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**	**62,3**	**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**	**97**	**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**	**176**	**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**	**121**	**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**	**55,3**	**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**	**85,4**	**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**	**101,5**	**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
206 206/LZ	OL 132M / 4WU / 133-B 5 /	Q18 Q31	7,5	4							51,5	198	183	174			132 M	B 5	FF 265	A300	77
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**	**145**	**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**	**130**	**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**	**226**	**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**	**241**	**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**	**178**	**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**	**223**	**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**	**320**	**111**	**160 L**	**B 5**	**FF 300**	**A350**	**145**
226 226/LZ	OL 160M / 2WU / 164-B 5 /	Q18 Q31	15	2							50	140	132	128			160 M	B 5	FF 300	A350	125

xx xx/LZ	**OL xxx**

The motor data were measured during factory workshop test of first manufactured motor.

Deviation of voltage and frequency :	- Voltage range :	- 20 % + 10%	for running time : at least 60 sec
	- Frequency :	- 6 % + 3 %	(The deviation shall not have opposite signs simultaneously!)

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
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
Operating mode to DIN EN 60034 - 1 :	**S2 – 10 min**	under normal conditions
	S2 – 1,5 min	under fault conditions

Ordering data

Electric rotary actuator, series R-SIWI-C

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

Basic design :

- Motor three-phase system 3/PEN AC 50 Hz 380 V (L1, L2, L3), with 3 PTC thermistors, without brake and insulation class H or with brake and insulation class F
- 2 torque-dependent switches for clockwise and anti-clockwise rotation,
- 2 travel-dependent switches and 1 blinking-contact,
- output shaft design B to DIN 3210,
- rating plate, labelled in German/Russian,
- painted with decontaminable top coat

Actuator is self-locking. Motor and switching and signalling unit are completely wired on plugs or terminals.

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

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

Add. order no. for the data positions 10 to 15 : see pages 43 to 44

Tripping torque (not adjustable)	Rated speed of output shaft	Order no., data position 7, 8 and 9		Gear reducer	Consecutive number for motor		Weight of the actuator with motor		size to	
					without brake	with brake	without brake	with brake	DIN 3210	EN ISO 5210
Nm	1/min	□□□		i			appr. kg	appr. kg		
	5	**C52**		267,7	3	2	28	30		
	7,5	**C53**		182,2	3	2	28	30		
	10	**C54**		124,8	6	5	27	29		
20	15	**C55**		87,2	12	11	28	30	0	F 10
	20	**C56**		63,6	15	14	28	30		
	30	**C57**		44,8	24	23	29	31		
	40	**C58**		33,6	30	29	30	32		
	5	**C72**		267,7	3	2	28	30		
	7,5	**C73**		182,2	6	5	28	30		
	10	**C74**		124,8	12	11	28	30		
30	15	**C75**		87,2	15	14	28	30	0	F 10
	20	**C76**		63,6	24	23	30	31		
	30	**C77**		44,8	30	29	30	32		
	40	**C78**		33,6	39	38	33	36		
	5	**E52**		258	6	5	36	38		
	7,5	**E53**		172	12	11	38	40		
	10	**E54**		137,6	15	14	38	41		
50	15	**E55**		93	24	23	39	41	0	F 10
	20	**E56**		63,2	30	29	39	41		
	30	**E57**		38	39	38	42	44		
	40	**E58**		31,1	48	47	44	46		
	5	**E72**		258	12	11	38	40		
	7,5	**E73**		172	15	14	38	40		
	10	**E74**		137,6	24	23	39	41		
80	15	**E75**		93	30	29	39	41	0	F 10
	20	**E76**		63,2	39	38	42	44		
	30	**E77**		38	48	47	44	46		
	40	**E78**		36,2	60	59	47	50		
	5	**F52**		243,1	19	20	72	74		
	7,5	**F53**		186,5	27	26	72	74		
	10	**F54**		128,8	36	35	74	77		
120	15	**F55**		87	36	35	74	76	½	F 14
	20	**F56**		62,2	45	44	74	77		
	30	**F57**		42,9	54	53	78	80		
	40	**F58**		35,9	57	56	79	82		
	5	**F72**		243,1	27	26	72	74		
	7,5	**F73**		164,3	36	35	74	77		
	10	**F74**		128,8	36	35	74	77		
180	15	**F75**		87	54	53	78	80	½	F 14
	20	**F76**		62,2	57	56	81	83		
	30	**F77**		42,9	63	62	88	90		
	40	**F78**		35,9	63	62	88	90		

Ordering data

Electric rotary actuator, series R-SIWI-C

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

Basic design :

- Motor three-phase system 3/PEN AC 50 Hz 380 V (L1, L2, L3), with 3 PTC thermistors, without brake and insulation class H or with brake and insulation class F
- 2 torque-dependent switches for clockwise and anti-clockwise rotation,
- 2 travel-dependent switches and 1 blinking-contact,
- output shaft design B to DIN 3210,
- rating plate, labelled in German/Russian,
- painted with decontaminable top coat

Actuator is self-locking. Motor and switching and signalling unit are completely wired on plugs or terminals.

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

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

Add. order no. for the data positions 10 to 15 : see pages 43 to 44

Tripping torque (not adjustable)	Rated speed of output shaft	Order no., data position 7, 8 and 9		Gear reducer	Consecutive number for motor		Weight of the actuator with motor		size to	
					without brake	with brake	without brake	with brake	DIN 3210	EN ISO 5210
Nm	1/min	□□□		i			appr. kg	appr. kg		
	5	**G52**		243,1	36	35	79	81		
	7,5	**G53**		164,3	45	44	81	82		
	10	**G54**		128,8	45	44	81	82		
250	15	**G55**		87	57	56	84	86	3	F 16
	20	**G56**		62,2	63	62	93	98		
	30	**G57**		42,9	72	71	96	102		
	40	**G58**		35,9	72	71	96	102		
	5	**M52**		124,4	69	68	172	176		
	7,5	**M53**		84,8	75	74	166	168		
	10	**M54**		124,4	57	56	158	161		
400	15	**M55**		84,8	63	62	167	171	3	F 16
	20	**M56**		64	72	71	169	174		
	30	**M57**		49,2	81	80	178	182		
	40	**M58**		36,2	87	86	201	211		
	5	**N52**		124,4	75	74	174	178		
	7,5	**N53**		124,4	66	65	178	182		
	10	**N54**		124,4	72	71	176	182		
750	15	**N55**		84,8	81	80	185	189	4	F 25
	20	**N56**		64	87	86	208	218		
	30	**N57**		49,2	90	89	222	231		
625	40	**N58**		36,2	90	89	222	231		
	5	**S52**		272,9	72	71	143	148		
	7,5	**S53**		184,5	81	80	152	157		
1500	10	**S54**		134,7	87	86	191	201	4	F 25
	15	**S55**		92,7	90	89	204	215		
3000	5	**U52**		281,4	87	86	243	253		
	7,5	**U53**		191,6	90	89	257	266	5	F 30
2140	10	**U54**		133,8	90	89	257	266		

Ordering data

Electric rotary actuator, series R-SIWI-CD

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

Basic design :

- Motor three-phase system 3/PEN AC 50 Hz 380 V (L1, L2, L3), with 3 PTC thermistors, without brake, insulation class H
- 2 torque-dependent switches for clockwise and anti-clockwise rotation,
- 2 travel-dependent switches and 1 blinking-contact,
- output shaft design B to DIN 3210,
- rating plate, labelled in German/Russian,
- painted with decontaminable top coat

Actuator is self-locking. Motor and switching and signalling unit are completely wired on plugs or terminals.

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

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

Add. order no. for the data positions 10 to 15 : see pages 43 to 44

Tripping torque (not adjustable) Nm	Rated speed of output shaft 1/min	Order no., data position 7, 8 and 9 □□□		Gear reducer i	Consecutive number for motor	Weight of the actuator appr. kg	size to DIN 3210	size to EN ISO 5210
	5	**C12**		267,7	3	31		
	7,5	**C13**		182,2	3	31		
	10	**C14**		124,8	6	30		
20	15	**C15**		87,2	12	31	0	F 10
	20	**C16**		63,6	15	31		
	30	**C17**		44,8	24	32		
	40	**C18**		33,6	30	35		
	5	**C32**		267,7	3	31		
	7,5	**C33**		182,2	6	31		
	10	**C34**		124,8	12	31		
30	15	**C35**		87,2	15	31	0	F 10
	20	**C36**		63,6	24	33		
	30	**C37**		44,8	30	33		
	40	**C38**		33,6	39	36		
	5	**E12**		258	12	41		
	7,5	**E13**		172	15	41		
	10	**E14**		137,6	15	41		
60	15	**E15**		93	30	42	0	F 10
	20	**E16**		63,2	39	45		
	30	**E17**		38	48	47		
	40	**E18**		31,1	48	47		
	5	**F12**		243,1	19	75		
	7,5	**F13**		186,5	27	75		
	10	**F14**		128,8	36	77		
120	15	**F15**		87	36	77	½	F 14
	20	**F16**		62,2	45	77		
	30	**F17**		42,9	54	81		
	40	**F18**		35,9	57	82		
	5	**G12**		243,1	27	82		
	7,5	**G13**		164,3	36	82		
	10	**G14**		128,8	45	84		
200	15	**G15**		87	54	84	3	F 16
	20	**G16**		62,2	57	87		
	30	**G17**		42,9	63	96		
	40	**G18**		35,9	63	97		
	5	**M12**		124,4	69	175		
	7,5	**M13**		84,8	75	169		
	10	**M14**		124,4	57	161		
400	15	**M15**		84,8	63	170	3	F 16
	20	**M16**		64	72	172		
	30	**M17**		49,2	81	181		
	40	**M18**		36,2	87	204		
	5	**N12**		124,4	75	177		
	7,5	**N13**		124,4	66	181		
	10	**N14**		124,4	63	177		
600	15	**N15**		84,8	72	179	4	F 25
	20	**N16**		64	81	188		
	30	**N17**		49,2	87	211		
	40	**N18**		36,2	90	225		
	5	**S12**		272,9	57	131		
	7,5	**S13**		184,5	63	143		
1000	10	**S14**		134,7	72	146	4	F 25
	15	**S15**		92,7	87	194		
	5	**U12**		281,4	72	208		
2000	7,5	**U13**		191,6	87	246	5	F30
	10	**U14**		133,8	90	260		

Ordering data

Electric rotary actuator, series R-SIWI-CAS

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

Basic design :

- Motor three-phase system 3/PEN AC 50 Hz 380 V (L1, L2, L3), with 3 PTC thermistors, without brake, insulation class H
- 2 torque-dependent switches for clockwise and anti-clockwise rotation,
- 2 travel-dependent switches and 1 blinking-contact,
- output shaft design B to DIN 3210,
- rating plate, labelled in German/Russian,
- coated with decontaminable primer

Actuator is self-locking. Motor and switching and signalling unit are completely wired on plugs or terminals

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

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

Add. order no. for the data positions 10 to 15 : see pages 43 to 44

Tripping torque (not adjustable) Nm	Rated speed of output shaft 1/min	Order no., data position 7, 8 and 9 □□□		Gear reducer i	Consecutive number for motor	Weight of the actuator about kg	size to DIN 3210	size to EN ISO 5210
	5	**C12**		267,7	3	33		
	7,5	**C13**		182,2	3	33		
	10	**C14**		124,8	6	32		
20	15	**C15**		87,2	12	33	0	F 10
	20	**C16**		63,6	15	33		
	30	**C17**		44,8	24	34		
	40	**C18**		33,6	30	37		
	5	**C32**		267,7	6	33		
	7,5	**C33**		182,2	6	33		
	10	**C34**		124,8	15	33		
30	15	**C35**		87,2	15	33	0	F 10
	20	**C36**		63,6	30	35		
	30	**C37**		44,8	30	35		
	40	**C38**		33,6	39	38		
	5	**E12**		258	12	43		
	7,5	**E13**		172	15	43		
	10	**E14**		137,6	24	43		
60	15	**E15**		93	30	45	0	F 10
	20	**E16**		63,2	39	47		
	30	**E17**		38	48	49		
	40	**E18**		31,1	48	49		
	5	**F12**		243,1	27	77		
	7,5	**F13**		186,5	27	77		
	10	**F14**		128,8	36	79		
120	15	**F15**		87	45	79	½	F 14
	20	**F16**		62,2	45	79		
	30	**F17**		42,9	54	83		
	40	**F18**		35,9	57	85		
	5	**G12**		243,1	36	84		
	7,5	**G13**		164,3	36	84		
	10	**G14**		128,8	45	86		
200	15	**G15**		87	54	86	3	F 16
	20	**G16**		62,2	57	89		
	30	**G17**		42,9	63	98		
	40	**G18**		35,9	63	99		
	5	**M12**		124,4	69	177		
	7,5	**M13**		84,8	75	171		
	10	**M14**		124,4	57	163		
400	15	**M15**		84,8	63	172	3	F 16
	20	**M16**		64	72	174		
	30	**M17**		49,2	81	183		
	40	**M18**		36,2	87	206		
	5	**N12**		124,4	75	179		
	7,5	**N13**		124,4	66	183		
	10	**N14**		124,4	63	179		
600	15	**N15**		84,8	72	181	4	F 25
	20	**N16**		64	81	190		
	30	**N17**		49,2	87	213		
	40	**N18**		36,2	90	227		
	5	**S12**		272,9	57	133		
	7,5	**S13**		184,5	63	145		
1000	10	**S14**		134,7	72	148	4	F 25
	15	**S15**		92,7	87	196		
	5	**U12**		281,4	72	210		
2000	7,5	**U13**		191,6	87	248	5	F30
	10	**U14**		133,8	90	262		

Ordering data

2. Output shaft designs to DIN 3210

Order no. **M 7 6 3 * 2 -** [*][*][*][ ][ ] **-** [ ][ ][ ][ ] **- Z** [ ][ ][ ] **+ ...**

(positions 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15)

Output shaft design	Order no., data position 10	
B : hollow shaft with insert bush	**2**	
C : hollow shaft with claw coupling	**3**	
D : free shaft end with featherkey[1)]	**4**	
E : bore with featherkey slot [1)]	**5**	
Further output shaft designs pages 44 and 45, sections 8, 9 and 10	See above; Add. order no. required	

[1)] Strength is not proven with the safety factors required by standard KTA 3504.

3. Motor

Order no. **M 7 6 3 * 2 -** [*][*][*][*][*] **-** [ ][ ][ ][ ] **- Z** [ ][ ][ ] **+ ...**

(positions 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15)

Motor three-phase 3/PEN AC 50 Hz 380 V with 3 PTC thermistors	Order no., data position 11 [ ]
Without brake	**1**
With brake, only for actuators in standard design series R-SIWI-C	**2**

4. Number of Revolutions per stroke

Order no. **M 7 6 3 * 2 -** [*][*][*][*][*] **-** [ ][ ][ ][ ] **- Z** [ ][ ][ ] **+ ...**

(positions 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15)

Revolutions / Stroke (U/Hub) up to	Order no., data position 12 [ ]
0,25	**A**
0,5	**B**
1	**C**
2,5	**D**
5	**E**
7,5	**F**
10	**H**
15	**J**
30	**K**
60	**L**
120	**N**
Higher values see page 27, section 4	

5. Electrical connection and local control station

(cable entry: see data sheet)

Order no. **M 7 6 3 * 2 -** [*][*][*][*][*] **-** [*][*][ ][ ] **- Z** [ ][ ][ ] **+ ...**

(positions 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15)

Local control station with pivot switches 'OPEN-STOP-CLOSE', without or with selector switch 'LOCAL-OFF-REMOTE'		Electrical connection via	Order no., data position 13 [ ]	Rotary actuators: In standard design series R-SIWI-C type : M76362-.. [ ][ ][ ]		For small leakage series R-SIWI-CD type : M76362-.. [ ][ ][ ]		For large leakage series R-SIWI-CAS type : M76372-.. [ ][ ][ ]	
Without local control station		Terminals	*	**N1N**		**N1K**		**N1H**	
		Plugs	*	**N2N**		**N2K**		**N2H**	
With local control station	Without selector switch	Terminals	*	**N3N**		**N3K**		**N3H**	
		Plugs	*	**N4N**		**N4K**		**N4H**	
	With selector switch	Terminals	*	**N5N**		**N5K**		**N5H**	
		Plugs	*	**N6N**		**N6K**		**N6H**	

Ordering data

6. Switching and signalling unit : signalling components

Order no. **M 7 6 3 * 2 -** [*][*][*][*][*] **-** [*][*][ ][ ] **- Z** [ ][ ][ ] **+ ...**

Signalling component (s)	Order no., data position 14	Rotary actuators type : M76362-..	Rotary actuators type : M76372-..
Without signalling component	**0**		
ESR electronic position transmitter	**1**		
POT potentiometer 100 Ω	**2**		
SA mechanical position indicator	**3**		
ESR and SA	**4**		
POT and SA	**5**		

7. Switching and signalling unit: switching components

Order no. **M 7 6 3 * 2 -** [*][*][*][*][*] **-** [*][*][*][ ] **- Z** [ ][ ][ ] **+ ...**

Micro-switch (connected via 4 pins) design	Torque switches	Travel switches	Order no., data position 15	Rotary actuators type : M76362-..	Rotary actuators type : M76372-..
silver-plated	2DE	4 WE	**1**		
		6 WE	**2**		
gold-plated	2DE	4 WE	**3**		
		6 WE	**4**		
Further designs	On request				

Additional features

Order no. **M 7 6 3 * 2 -** [*][*][*][*][*] **-** [*][*][*][*] **- Z**

Order code additive [*][*][*] **+** [ ][ ][ ] **+** [ ][ ][ ] **+ ...**

Any sequence

Plain text (if necessary) .....

8. Output shaft designs to EN ISO 5210 or DIN 3338

Order no. **M 7 6 3 * 2 -** [*][*][*][*][*] **-** [*][*][*][*] **- Z**

Order code additive [*][*][*] **+** [ ][ ][ ] **+ ...**

Output shaft (flange connecting dimensions to EN ISO 5210, part 1)		Standard	Order no., data position 10 (section 2)	Order code	
Design	B1 : hollow shaft with insert bush	EN ISO 5210, part 3	**2**	**A33**	
	C : hollow shaft with claw coupling	draft DIN 3338	**3**	**A34**	
	D : free shaft end with featherkey[1)]	[2)]	**4**	**A35**	
	B3 : bore with featherkey slot [1)]	EN ISO 5210, part 3	**5**	**A36**	

1) : Strength is not proven with the safety factors required by standard KTA 3504.

2) : Dimensions of the shaft output according to DIN 3210, but flange connecting dimensions to EN ISO 5210, part 1

Ordering data

9. Output shaft design C (hollow shaft with claw coupling) to 3210 with maximum inside diameter

Order no. **M 7 6 3 * 2 -** [*][*][*][*][*] **-** [*][✱][*][*] **- Z**

Order code additive [*][*][*] **+** [ ][ ][ ] **+ ...**

Maximum internal diameter d_4	For rotary actuators M76362 - and M76372 -	Order no., data position 10	Order code [ ][ ][ ]	
--	- C	**3** or **9**	**--**	
36	- E	**3** or **9**	**A20**	
53	- F and - G	**3** or **9**	**A20**	
65	- M	**3** or **9**	**A21**	
70	- N	**3** or **9**	**A21**	
--	- S and - U	**3** or **9**	**--**	

10. Handwheel – gear reducer (handwheel mounted at side; design **not** qualified to standard KTA 3504)

Order no. **M 7 6 3 * 2 -** [*][*][*][*][*] **-** [*][✱][*][*] **- Z**

Order code additive [*][*][*] **+** [ ][ ][ ] **+ ...**

Reduction ratio handwheel / output shaft	For rotary actuators M76362 - und M76372 -	For output shaft designs to DIN 3210	Order code [ ][ ][ ]	
13 : 1	- F and - G	A, B or C without stern protection tube A, B or C with stern protection tube D or E	**A81** **A82** **A83**	
18,5 : 1	- M and - N	A, B, C or D without stern protection tube A, B oder C with stern protection tube	**A86** **A87**	

11. Additional components in the signalling and switching unit

Order no. **M 7 6 3 * 2 -** [*][*][*][*][*] **-** [*][✱][*][*] **- Z**

Order code additive [*][*][*] **+** [ ][ ][ ] **+ ...**

Component (s)		Order code [ ][ ][ ]	Rotary actuators type : M76362-..	Rotary actuators type : M76372-..
1 WE (travel switch) add. for bypass of torque switch		**A01**		
1 WE (see order code A01) and POT 100 Ω as 2. potentiometer		**A02**		
1 POT 100 Ω as 2. potentiometer		**A03**		
Space heater :	AC 220 V	**A22**		
	AC 110 V	**A23**		
	AC 24 V	**A24**		

12. Customer plate

Order no. **M 7 6 3 * 2 -** [*][*][*][*][*] **-** [*][✱][*][*] **- Z**

Order code additive [*][*][*] **+** [ ][ ][ ] **+ ...**

	Order code [ ][ ][ ]	
Customer position plate	**B03**	

13. Painting

Order no. **M 7 6 3 * 2 -** [*][*][*][*][*] **-** [*][✱][*][*] **- Z**

Order code additive [*][*][*] **+** [ ][ ][ ] **+ ...**

Decontaminable painting	Order code [ ][ ][ ]	
Painting consists of a base coat and a decontaminable top coat (entire thickness: min 120µm, colour RAL 7030)	**L18**	

Motor consecutive no.	Order no. of motor [1]	Add. order code	Rated power kW	no. of poles	Rated speed 1/min	Efficiency %	Power factor cos φ	Power factor cos φK during start-up	Rated current at 380 V A	Starting current factor	Rated torque Nm	Starting torque at KT10 Nm	Starting torque at KT60 + ΔT Nm	Starting torque at KT155 + ΔT 2) Nm	Break down torque KT10 Nm	Current at 145% UN / 30 sec A	Size to DIN EN 50347	Flanges hape to DIN EN 60034-7 IM	Flange size to DIN EN 50 347	Flange size to DIN 42948	Weight appr. kg
2	OLB 56 S / 4 / 050-B14 /	Q28	0,06	4	1235	43	0,81	0,88	0,26	2,25	0,46	0,75	0,69	0,62	0,72	0,34	56	B 14	FT 65	C 80	5,5
3	OL 56 S / 4 / 050-B14 /	Q29																			3,5
5	OLB 56 L / 4 / 053-B14 /	Q28	0,09	4	1270	50	0,76	0,86	0,36	2,6	0,67	1,3	1,2	1,1	1,1	0,48	56	B 14	FT 65	C 80	5,5
6	OL 56 L / 4 / 053-B14 /	Q29																			3,6
11	OLB 63 S / 4 / 060-B14 /	Q28	0,12	4	1300	51	0,75	0,88	0,48	2,4	0,89	1,63	1,47	1,32	1,50	0,68	63	B 14	FT 75	C 90	6,5
12	OL 63 S / 4 / 060-B14 /	Q29																			4,1
14	OLB 63 L / 4 / 063-B14 /	Q28	0,18	4	1310	56	0,75	0,85	0,65	3,0	1,30	3,1	2,63	2,38	2,14	1,06	63	B 14	FT 75	C 90	7
15	OL 63 L / 4 / 063-B14 /	Q29																			4,5
20	OLB 71 S / 4 / 070-B 5 /	Q28	0,25	4	1350	63	0,77	0,76	0,80	3,4	1,85	3,2	2,8	2,5	3,5	1,3	71	B 5	FF 130	A 160	8
19	OL 71 S / 4 / 070-B 5 /	Q29																			6
23	OLB 71 S / 4 / 070-B14 /	Q28	0,25	4	1350	63	0,77	0,76	0,80	3,4	1,85	3,2	2,8	2,5	3,5	1,3	71	B 14	FT 85	C 105	8
24	OL 71 S / 4 / 070-B14 /	Q29																			6
26	OLB 71 L / 4 / 073-B 5 /	Q28	0,37	4	1385	70	0,77	0,78	1,06	3,95	2,6	5,2	4,6	4,3	5	2,7	71	B 5	FF 130	A 160	9
27	OL 71 L / 4 / 073-B 5 /	Q29																			6,5
29	OLB 71 L / 4 / 073-B14 /	Q28	0,37	4	1385	70	0,77	0,78	1,06	3,95	2,6	5,2	4,6	4,3	5	2,7	71	B 14	FT 85	C 105	9
30	OL 71 L / 4 / 073-B14 /	Q29																			6,5
35	OLB 80 S / 4WU / 080-B 5 /	Q28	0,55	4	1260	65	0,78	0,78	1,7	3,2	4,2	9,3	8,35	7,5	6,45	3,95	80	B 5	FF 165	A 200	11,5
36	OL 80 S / 4WU / 080-B 5 /	Q29																			9,5
38	OLB 80 S / 4WU / 080-B14 /	Q28	0,55	4	1260	65	0,78	0,78	1,7	3,2	4,2	9,3	8,35	7,5	6,45	3,95	80	B 5	FF 165	A 200	11,5
39	OL 80 S / 4WU / 080-B14 /	Q29																			9,5
44	OLB 80 L / 4WU / 083-B 5 /	Q28	0,75	4	1330	70	0,72	0,76	2,3	3,85	5,4	13,6	12,3	11	9,7	7,0	80	B 5	FF 165	A 200	13
45	OL 80 L / 4WU / 083-B 5 /	Q29																			11
47	OLB 80 L / 4WU / 083-B14 /	Q28	0,75	4	1330	70	0,72	0,76	2,3	3,85	5,4	13,6	12,3	11	9,7	7,0	80	B 14	FT 100	C 120	13
48	OL 80 L / 4WU / 083-B14 /	Q29																			11
53	OLB 90 S / 4WU / 090-B 5 /	Q28	1,1	4	1300	70	0,80	0,79	3	3,75	8,1	19,1	17,3	15,5	14,9	6,4	90S	B 5	FF 165	A 200	17
54	OL 90 S / 4WU / 090-B 5 /	Q29																			13,5
56	OLB 90 L / 4WU / 096-B 5 /	Q28	1,5	4	1320	75	0,79	0,79	4	4,25	11,1	31,1	27	25	19,4	7,2	90L	B 5	FF 165	A 200	19
57	OL 90 L / 4WU / 096-B 5 /	Q29																			16
59	OLB 90 S / 4WU / 090-B14 /	Q28	1,1	4	1300	70	0,80	0,79	3	3,75	8,1	19,1	17,3	15,5	14,9	6,4	90S	B14	FT 115	C 140	17
60	OL 90 S / 4WU / 090-B14 /	Q29																			13,5

1) : Motor with order no. **OL...-** are motors without mechanical brake; Motor with order no. **OLB....-** are motors with mechanical brake.

Motor consecutive no.	Order no. of motor 1)	Add. order code	Rated power kW	no. of poles	Rated speed 1/min	Efficiency %	Power factor cos φ	Power factor cos φK during start-up	Rated current at 380 V A	Starting current factor	Rated torque Nm	Starting torque at KT10 Nm	Starting torque at KT60 + ΔT Nm	Starting torque at KT155 + ΔT 2) Nm	Break down torque KT10 Nm	Current at 145% UN / 30 sec A	Size to DIN EN 50347	Flanges hape to DIN EN 60034-7 IM	Flange size to DIN EN 50 347	Flange size to DIN 42948	Weight appr. kg
62	**OLB100 L / 4WU / 106-B 5 /**	**Q28**	**2,2**	**4**	**1355**	**75**	**0,79**	**0,77**	**5,65**	**4,6**	**15,5**	**43,2**	**39,7**	**36,7**	**38**	**17,4**	**100L**	**B 5**	**FF 215**	**A 250**	**28**
63	**OL 100 L / 4WU / 106-B 5 /**	**Q29**																			**24**
65	OLB100 L / 6WU / 106-B 5 /	Q28	1,5	6	865		0,79		4,2	4,1	16,6	46					100L	B 5	FF 215	A 250	30
66	OL 100 L / 6WU / 106-B 5 /	Q29																			26
68	OLB100 L / 8WU / 106-B 5 /	Q28	0,68	8	650		0,65		2,75	3,0	11	24,7					100L	B 5	FF 215	A 250	32
69	OL 100 L / 8WU / 106-B 5 /	Q29	0,75																		28
71	**OLB100 L / 4aWU / 107-B 5 /**	**Q28**	**3,0**	**4**	**1375**	**78**	**0,78**	**0,75**	**7,5**	**5,05**	**20,9**	**65,7**	**59,5**	**53,5**	**46,5**	**24,5**	**100L**	**B 5**	**FF 215**	**A 250**	**32**
72		**Q29**																			**27**
74	**OLB100 L / 8WU / 107-B 5 /**	**Q28**	**1,1**	**8**	**645**	**58**	**0,59**	**0,74**	**5**	**2,65**	**16,2**	**40**	**36**	**32,5**	**28,5**	**19,6**	**100L**	**B 5**	**FF 215**	**A 250**	**28**
75	**OL 100 L / 8WU / 107-B 5 /**	**Q29**																			**23**
80	**OLB112 M / 4WU / 113-B 5 /**	**Q28**	**4,0**	**4**	**1400**	**80**	**0,82**	**0,72**	**9,1**	**5,8**	**27,3**	**88,6**	**80,2**	**72,1**	**73,1**	**19,7**	**112M**	**B 5**	**FF 215**	**A 250**	**40**
81	**OL 112 M / 4WU / 113-B 5 /**	**Q29**																			**36**
86	**OLB132 S / 4WU / 130-B 5 /**	**Q28**	**5,5**	**4**	**1410**	**79**	**0,81**	**0,71**	**13**	**4,8**	**37,2**	**99**	**96**	**92**	**89**	**22,5**	**132S**	**B 5**	**FF 265**	**A 300**	**76**
87	**OL 132 S / 4WU / 130-B 5 /**	**Q29**																			**66**
89	**OLB132 M / 4WU / 133-B 5 /**	**Q28**	**7,5**	**4**	**1350**	**78**	**0,85**	**0,71**	**17**	**5,0**	**52,6**	**127**	**122,8**	**120**	**120,6**	**52,6**	**132M**	**B 5**	**FF 265**	**A 300**	**88**
90	**OL 132 M / 4WU / 133-B 5 /**	**Q29**																			**79**

1) : Motor with order no. **OL...-** are motors without mechanical brake; Motor with order no. **OLB....-** are motors with mechanical brake.

xx	**OL xxx**
xx/LZ	

The motor data were measured during factory workshop test of first manufactured motor.

Deviation of voltage and frequency : - Voltage range : - 20 % + 10%
- Frequency : - 6 % + 3 %

for running time : at least 60 sec
(The deviation shall not have opposite signs simultaneously!)

Subject index

Order – No. / Page index

Condition of Sale and Delivery

Subject to the General Conditions of supply and delivery for Products and Services of the Electrical and Electronics Industry and to any other conditions agreed with the recipients of catalogues.
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