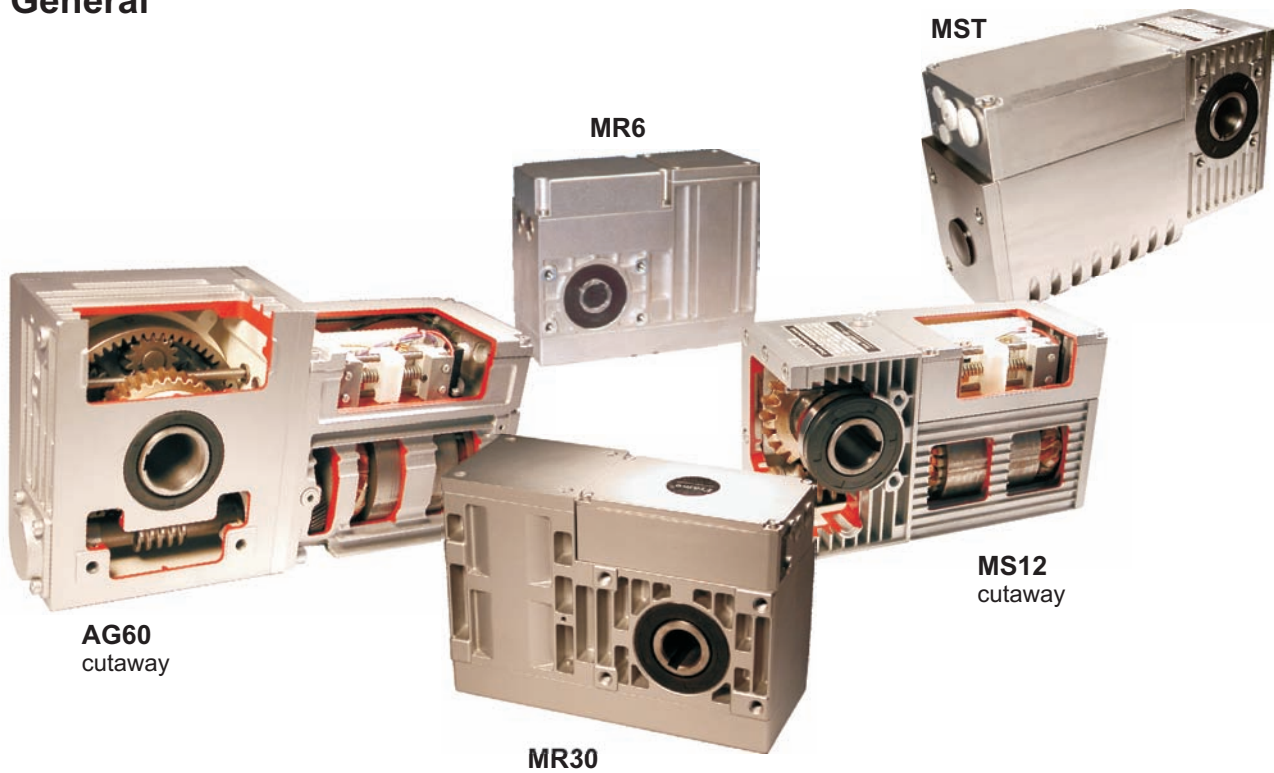


# Slip-on geared motors Compacta



**General**



**Compacta**

Compacta slip-on geared motors with integrated limit switches (figure 1) are ideal drives for reversing tasks (figure 2).

The compact dimensions and the low weight are achieved by using a spur and worm gear transmission, combined with performance optimized motors. The Compacta's are particular suitable for applications with a limited amount of space.

A wide range of options allows the customisation to a variety of tasks. Starting from material handling system up to the use in clean rooms for the semi-conductor industry.

Further customisation is possible.

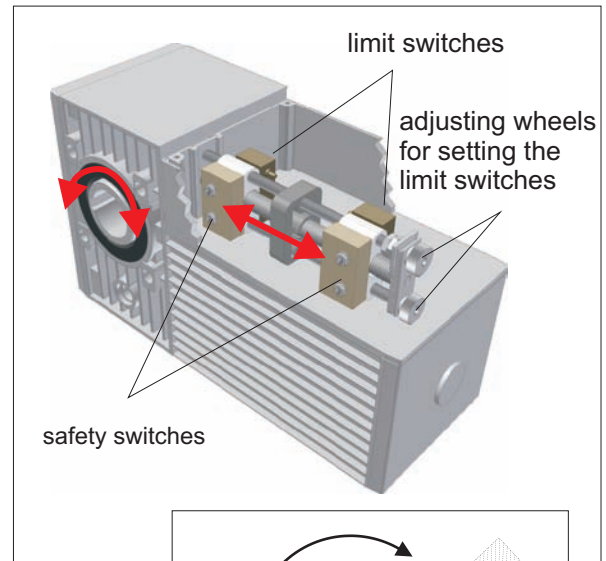


Figure 1

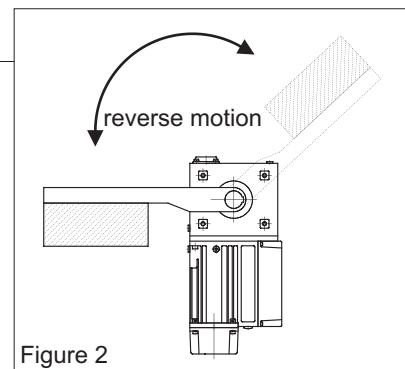
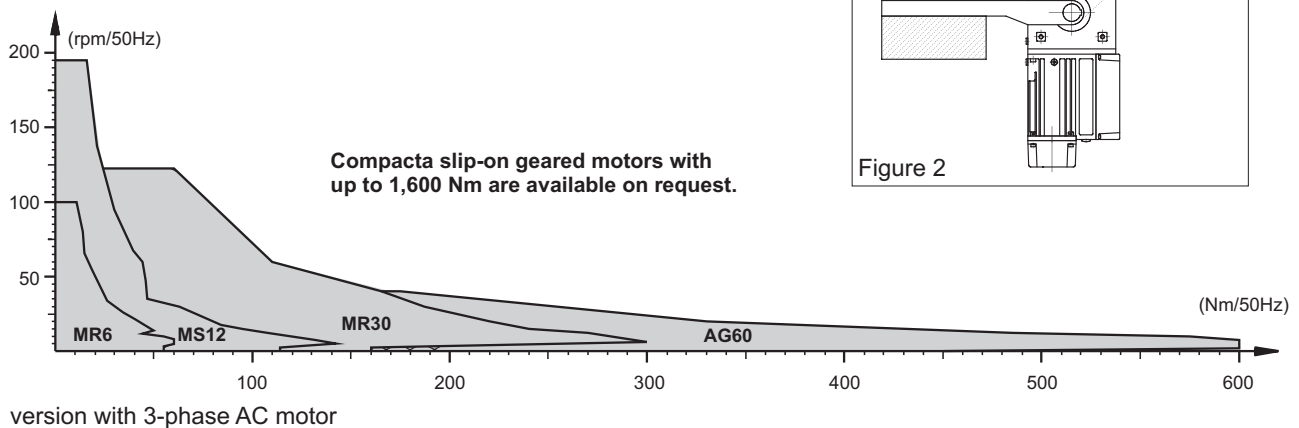


Figure 2

**Torque - speed - curve**



version with 3-phase AC motor

Figure 3

## Application examples

### Sheet metal forming



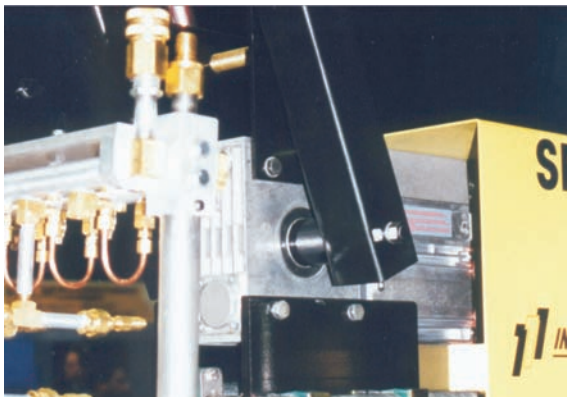
The Compacta precisely adjusts the crowning die unit of press brakes.

### Automotive



Stoppers of a blank loader are shifted by Compacta drives for the production of car body panels.

### Metal machining and processing



A spray system swivels dynamically at 120°. The required ramp-up is done by limit switch version 3 (p. 13), enabling the Compacta to speed up and to slow down the movement.

## Benefits at a glance:

### Economically

- easy installation (stand-alone)
- dynamic self-locking
- low-maintenance
- long durability
- all options integrated
- 5 sizes for every task

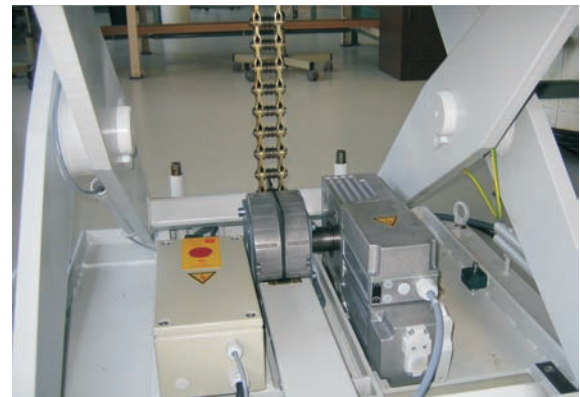
### Operation reliability

- reliable under extreme conditions like heat, dust, moisture
- thermally protected motor
- integrated safety switch
- adjustable slip clutch for overload protection

### Design freedom

- reverse motion
- low noise level
- lightweight construction
- quick adjustment of the actuation range with integrated safety switch
- wide range of the transmission ratios
- many options in modular design
- large variety of three phase, alternating and direct current motors
- Explosion-proof according to ATEX 95
- jet water protected (IP65)
- customisation possible
- reliable integration in control processes

### Lifting-table



The Compacta here in combination with the Framo LinearChain allows a minimum height in the lower position of the lift table.

## Output table MR6

### 3-phase AC motors - 3x 230/400V-50Hz

Output speed $n_2$ [rpm]	Output torque [Nm] (30% duty cycle)	Transmission ratio	Motor speed $n_1$ [rpm]	Motor output [kW]	Self locking	Max limit switch range Output rotation
100	10,5	27:1	2700	0,22	So	275 (207*)
80	13	34:1	2700	0,22	So	275 (207*)
67	15	40:1	2700	0,22	So	184 (140*)
54	19	50:1	2700	0,22	So	184 (140*)
34	26	80:1	2700	0,22	So	92 (70*)
27	33	100:1	2700	0,22	So	92 (70*)
17	40	160:1	2700	0,22	Ss	46 (35*)
14	50	200:1	2700	0,22	Ss	46 (35*)
12	44	224:1	2700	0,22	Sd	33 (25*)
10	55	280:1	2700	0,22	Sd	33 (25*)
8	60	160:1	1300	0,15	Ss	46 (35*)
6	60	224:1	1300	0,15	Sd	33 (25*)
4,8	60	280:1	1300	0,15	Sd	33 (25*)
3,6	55	360:1	1300	0,15	Sd	21 (15,5*)
2,9	55	450:1	1300	0,15	Sd	21 (15,5*)

\* Option with potentiometer

### Single phase AC motors - 1x 230V-50Hz

Output speed $n_2$ [rpm]	Output torque [Nm] <sup>2)</sup> (15% duty cycle)	Transmission ratio	Motor speed $n_1$ [rpm]	Motor output [kW]	Self locking <sup>1)</sup>
100	6,0	27:1	2700	0,09	So
80	7,5	34:1	2700	0,09	So
67	8,5	40:1	2700	0,09	So
54	10,5	50:1	2700	0,09	So
34	14,5	80:1	2700	0,09	So
27	18,0	100:1	2700	0,09	So
17	21,0	160:1	2700	0,09	Ss
14	26,5	200:1	2700	0,09	Ss
12	22,0	224:1	2700	0,09	Sd
10	27,5	280:1	2700	0,09	Sd
8	33,5	160:1	1300	0,07	Ss
6	35,0	224:1	1300	0,07	Sd
4,8	43,5	280:1	1300	0,07	Sd
3,6	54,0	360:1	1300	0,07	Sd
2,9	55,0	450:1	1300	0,07	Sd

\* Option with potentiometer

### 24V DC permanent magnet motor

Output speed $n_2$ [rpm]	Output torque [Nm]	Self locking <sup>1)</sup>	Transmission ratio
65	7	So	27 : 1
51,5	8,75	So	34 : 1
44	10	So	40 : 1
35	12	So	50 : 1
22	16,5	So	80 : 1
17,5	20,5	So	100 : 1
11	24,5	So	160 : 1
9	30,5	Ss	200 : 1
8	25	Ss	224 : 1
6	31	Ss	280 : 1
5	38,5	Sd	360 : 1
4	47,5	Sd	450 : 1

P = 0,12 kW  
I<sub>N</sub> = 10,5 A  
20% duty cycle

The output speed of Compacta gear motors with DC motors varies with the output torque.

#### Additional output tables information:

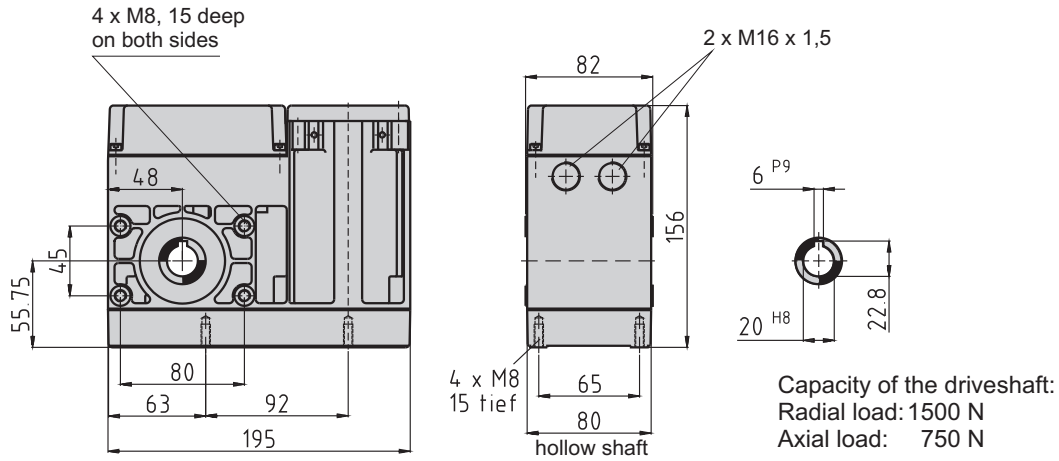
- 1) So = no self locking; Ss = static self locking; Sd = dynamic self locking
- 2) The stated single phase torques are operational torques. The starting torque may be only 66% of the stated catalogue torque. Please contact the manufacturer in case max. torque is required.

#### Please note:

The gearmotor can be overloaded by 50% for brief periods. Single-phase AC- and DC motors may stall.

**Dimensions, options, limit switches MR6**

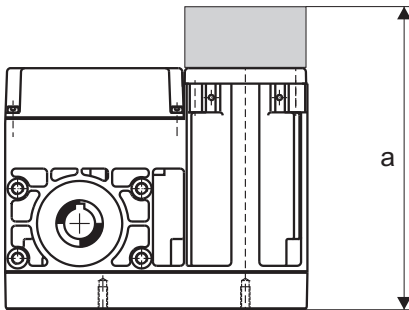
All dimensions in mm



Weight: approx. 5 kg

Capacity of the driveshaft:  
Radial load: 1500 N  
Axial load: 750 N

**MR6 options**

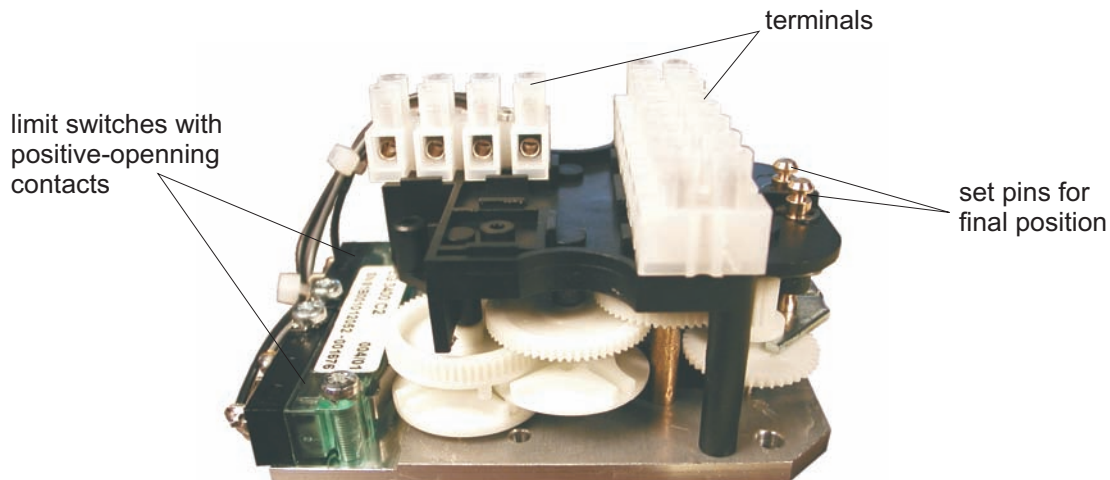


Dimension with options	a
Motor disc brake	210
Hand crank	289,5
DC motor	200
Single or double-ended stub shaft	(x)

(x) Please refer to the datasheets for additional or missing dimensions

**Limit switches for Compacta MR6**

The Compacta MR6 limit switches are based on a Geneva-gear mechanism. The installation and setup is very simple. A potentiometer can be integrated for accurate positioning.



**Please contact the manufacturer in case of the following operating conditions:**

- Temperatures below 0°C (single phase AC and DC motors: below 10°C)
- Temperatures above 40°C
- Strong vibrations

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Options (fold out page 44)

AC

DC

3xAC

ESA

6

6P

B

set pins for final position

SS

✖

Compacta

## Output table MS12

### 3-phase AC motors - 3x 230/400V-50Hz

Output speed $n_2$ [rpm]	Output torque [Nm] <sup>3)</sup>			Transmission ratio	Motor speed $n_1$ [rpm]	Motor output [kW] <sup>3)</sup>			Self locking <sup>1)</sup>	Max. limit switch range; output rotation
	d.c. 40%	d.c. 60%	d.c. 100%			d.c. 40%	d.c. 60%	d.c. 100%		
193	16	12		14,2:1	2750	0,4	0,3		So	275
137,5	21	15,7		20:1	2750	0,4	0,3		So	275
94,8	30	22,5		29:1	2750	0,4	0,3		So	275
68	39,5	29,5		40,5:1	2750	0,4	0,3		So	275
61	44	33		45:1	2750	0,4	0,3		So	275
47,6	45,5	34		29:1	1380	0,3	0,23		So	275
43,6	44	33		63:1	2750	0,4	0,3		So	275
36,7	47	35		75:1	2750	0,4	0,3		So	275
32,7	59	44		84:1	2750	0,4	0,3		Ss	275
30,5	63	47		90:1	2750	0,4	0,3		Ss	275
24,1	72	54		114:1	2750	0,4	0,3		Ss	275
21,9	66	49		63:1	1380	0,3	0,23		So	275
18,3	84	63		150:1	2750	0,4	0,3		Sd	275
16,4	88	66		84:1	1380	0,3	0,23		Ss	275
15,3	94,5	71		90:1	1380	0,3	0,23		Ss	275
12,1	107,5	80,5		114:1	1380	0,3	0,23		Ss	275
9,2	126	94,5		150:1	1380	0,3	0,23		Sd	275
7,7	132	99		180:1	1380	0,3	0,23		Sd	275
6,1	142	106,5		225:1	1380	0,3	0,23		Sd	275
4,5	88	66		150:1	680	0,12	0,09		Sd	275
3,8	92	68		180:1	680	0,12	0,09		Sd	275
3	100	75		225:1	680	0,12	0,09		Sd	275

### Single phase AC motors - 1x 230V-50Hz

Output speed $n_2$ [rpm]	Output torque [Nm] <sup>2)</sup> (20% duty cycle)	Transmission ratio	Motor speed $n_1$ [rpm]	Motor output [kW]	Self locking <sup>1)</sup>
193,0	10,0	14,2:1	2750	0,28	So
137,5	13,0	20,0:1	2750	0,28	So
94,8	18,0	29,0:1	2750	0,28	So
68,0	23,9	40,5:1	2750	0,28	So
61,0	26,0	45,0:1	2750	0,28	So
47,6	27,0	29,0:1	1380	0,25	So
43,6	26,0	63,0:1	2750	0,28	So
36,7	28,0	75,0:1	2750	0,28	So
32,7	35,0	84,0:1	2750	0,28	Ss
30,5	38,0	90,0:1	2750	0,28	Ss
24,1	43,0	114,0:1	2750	0,28	Ss
21,9	40,0	63,0:1	1380	0,25	So
18,3	49,8	150,0:1	2750	0,28	Sd
16,4	53,0	84,0:1	1380	0,25	Ss
15,3	56,9	90,0:1	1380	0,25	Ss
12,1	65,0	114,0:1	1380	0,25	Ss
9,2	75,9	150,0:1	1380	0,25	Sd
7,7	79,0	180,0:1	1380	0,25	Sd
6,1	84,9	225,0:1	1380	0,25	Sd

### 24V DC permanent magnet motor

Output speed $n_2$ [rpm]	Output torque [Nm]	Self locking <sup>1)</sup>	Transmission ratio
140	16	So	14,2 : 1
100	21	So	20 : 1
69	30	So	29 : 1
49	40	So	40,5 : 1
44	45	So	45 : 1
32	45	So	63 : 1
27	48	So	75 : 1
24	60	Ss	84 : 1
22	65	Ss	90 : 1
17,5	73	Ss	114 : 1
13	88	Sd	150 : 1
11	91	Sd	180 : 1
8,9	96	Sd	225 : 1

P = 0,3 kW  
I<sub>N</sub> = 25 A  
30% duty cycle (d.c.)

The output speed of Compacta gear motors with DC motors varies with the output torque.

### Please contact the manufacturer in case of the following operating conditions:

- Temperatures below 0°C (single phase AC and DC motors: below 10°C)
- Temperatures above 40°C
- Strong vibrations



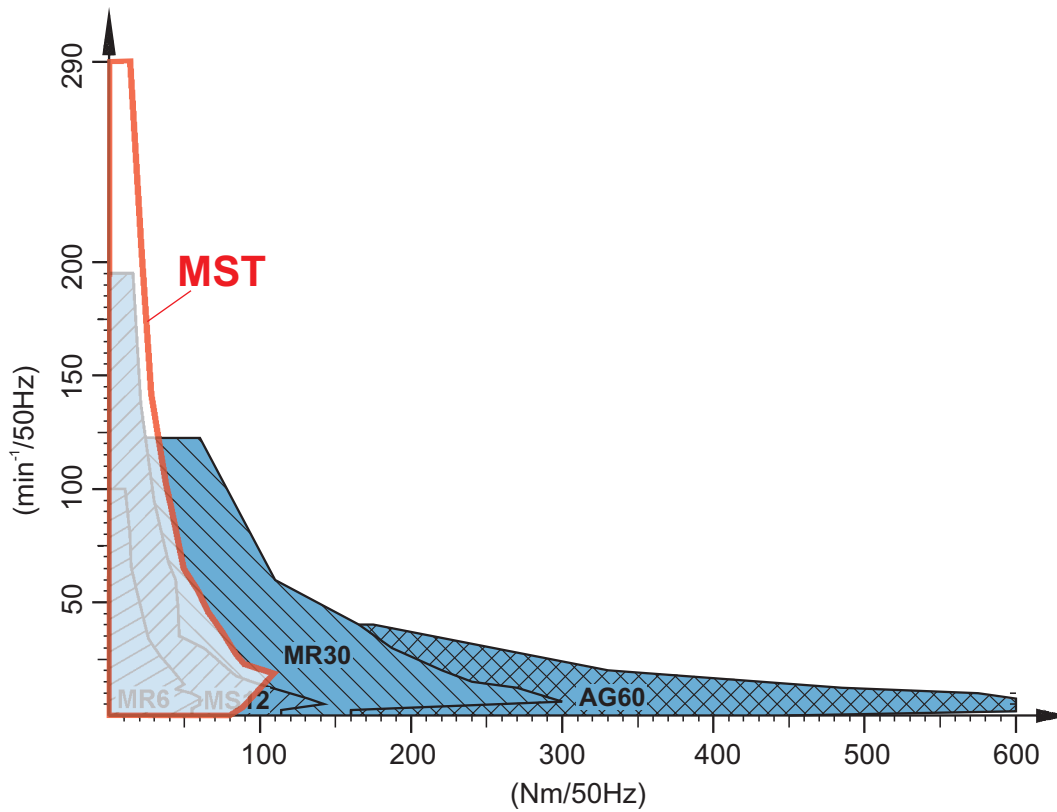
**Output table MS12**

3-phase AC motors - 3x 230/400V-50Hz

Speed n2 [min <sup>-1</sup> ]	Torque Mt2 [Nm]	Duty cycle [%]	Motor power P [W]	Motor speed n1 [min <sup>-1</sup> ]	Transmission ratio i	Self locking	Maximum limit switch range [Output rotations]
290,5	15	20	650	1380	4,75	So	275
206,9	21	20	650	1380	6,67	So	275
142,7	29	20	650	1380	9,67	So	275
102,2	38	20	650	1380	13,5	So	275
92,0	42	20	650	1380	15	So	275
65,7	51	20	650	1380	21	So	275
55,2	59	20	650	1380	25	So	275
49,3	58	20	650	1380	28	Ss	275
46,0	66	20	650	1380	30	Ss	275
36,3	76	20	650	1380	38	Ss	275
27,6	84	20	650	1380	50	Sd	275
23,0	90	20	650	1380	60	Sd	275
18,4	110	20	650	1380	75	Sd	275

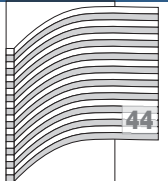
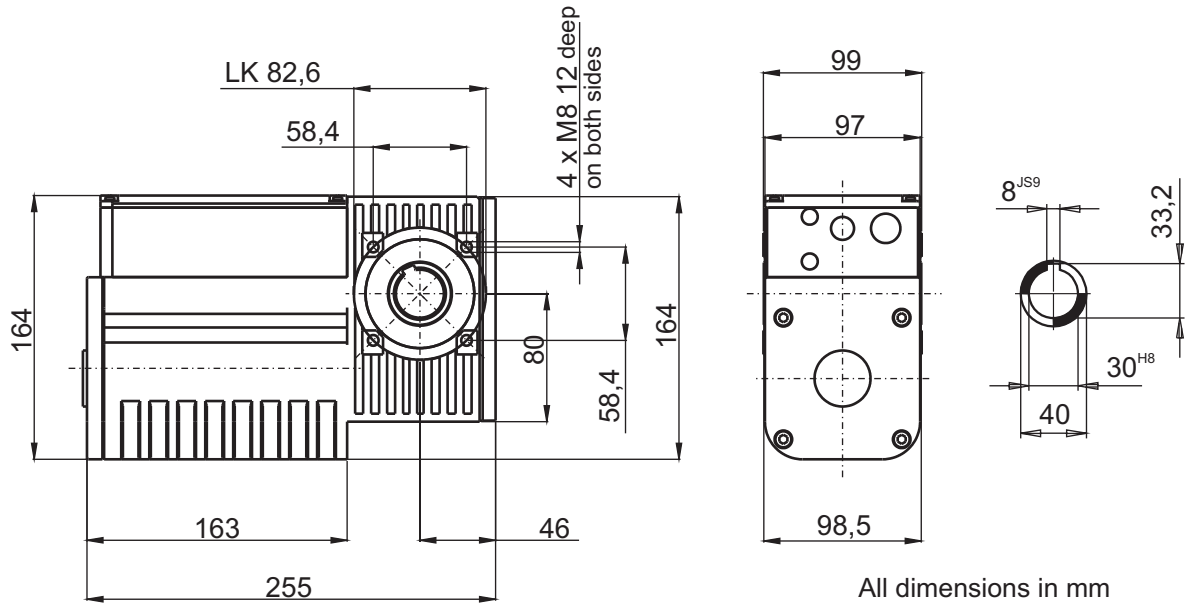
So = no self locking; Ss = static self locking; Sd = dynamic self locking  
Further motor versions on request.

**Torque- / Speed diagram**



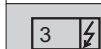
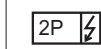
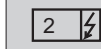
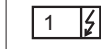
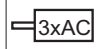
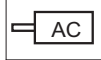


**Dimensions & Options**



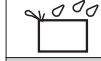
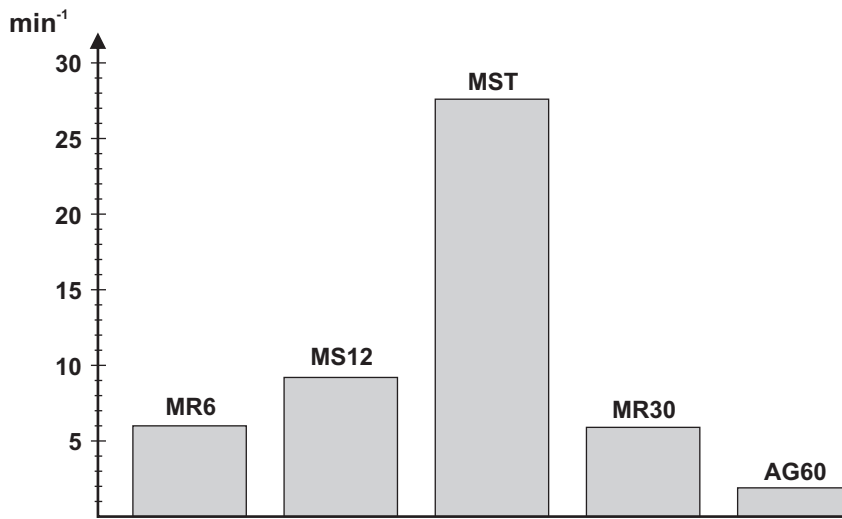
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**Options**  
(fold out page 44)



Compacta

**Dynamic self locking at speed**



## Output table MR30

### 3-phase AC motors - 3x 230/400V-50Hz

Output speed $n_2$ [rpm]	Output torque [Nm]		Transmission ratio	Motor speed $n_1$ [rpm]	Motor output [kW]	Self locking <sup>1)</sup>	Max. limit switch range; output rotation	
	d.c. 40%	d.c. 60%					standard	long
123,4		60	22,7:1	2800	1,1	So	260	430
61,6		112	45,4:1	2800	1,1	So	130	215
39		165	71,8:1	2800	1,1	So	85	135
30,8		125	45,4:1	1400	0,6	So	130	215
28,4		187	98,3:1	2800	1,1	So	60	100
21,8		220	128,5:1	2800	1,1	Ss	47	77
19,5		180	71,8:1	1400	0,6	So	85	135
15,4		240	181,4:1	2800	1,1	Ss	32	55
14,2		206	98,3:1	1400	0,6	So	60	100
11,8		270	238,1:1	2800	1,1	Sd	25	42
10,6		250	264,6:1	2800	1,1	Sd	23	38
7,7		267	181,4:1	1400	0,6	Ss	32	55
5,9		300	238,1:1	1400	0,6	Sd	25	42
5,3		278	264,6:1	1400	0,6	Sd	23	38
3,8	148		181,4:1	700	0,23	Ss	32	55
2,9	170		238,1:1	700	0,23	Sd	25	42
2,6	160		264,6:1	700	0,23	Sd	23	38

### Single phase AC motors - 1x 230V-50Hz

Output speed $n_2$ [rpm]	Output torque [Nm] (40% duty cycle)	Transmission ratio	Motor speed $n_1$ [rpm]	Motor output [kW]	Self locking <sup>1)</sup>
123,4	36,0	22,7:1	2800	0,66	So
61,6	67,2	45,4:1	2800	0,66	So
39,0	99,0	71,8:1	2800	0,66	So
30,8	73,3	45,4:1	1400	0,36	So
28,4	112,2	98,3:1	2800	0,66	So
21,8	132,0	128,5:1	2800	0,66	Ss
19,5	108,0	71,8:1	1400	0,36	So
15,4	144,0	181,4:1	2800	0,66	Ss
14,1	122,3	98,3:1	1400	0,36	So
11,8	162,0	238,1:1	2800	0,66	Sd
10,9	144,0	128,5:1	1400	0,36	Ss
10,6	150,0	264,6:1	2800	0,66	Sd
7,7	157,1	181,4:1	1400	0,36	Ss
5,9	176,7	238,1:1	1400	0,36	Sd
5,3	163,4	264,6:1	1400	0,36	Sd

### 24V DC shunt-wound motor

Output speed $n_2$ [rpm]	Output torque [Nm]	Self locking <sup>1)</sup>	Transmission ratio
66	52	So	22,7 : 1
33	97	So	45,4 : 1
21	141	So	71,8 : 1
15	162	So	98,3 : 1
11,5	190	Ss	128,5 : 1
8	205	Ss	181,4 : 1
6,5	220	Sd	238,1 : 1
5,5	200	Sd	264,6 : 1

P = 0,5 kW  
I<sub>N</sub> = 30 A  
40% duty cycle (d.c.)

The output speed of Compacta gear motors with DC motors varies with the output torque.

#### Additional output tables information:

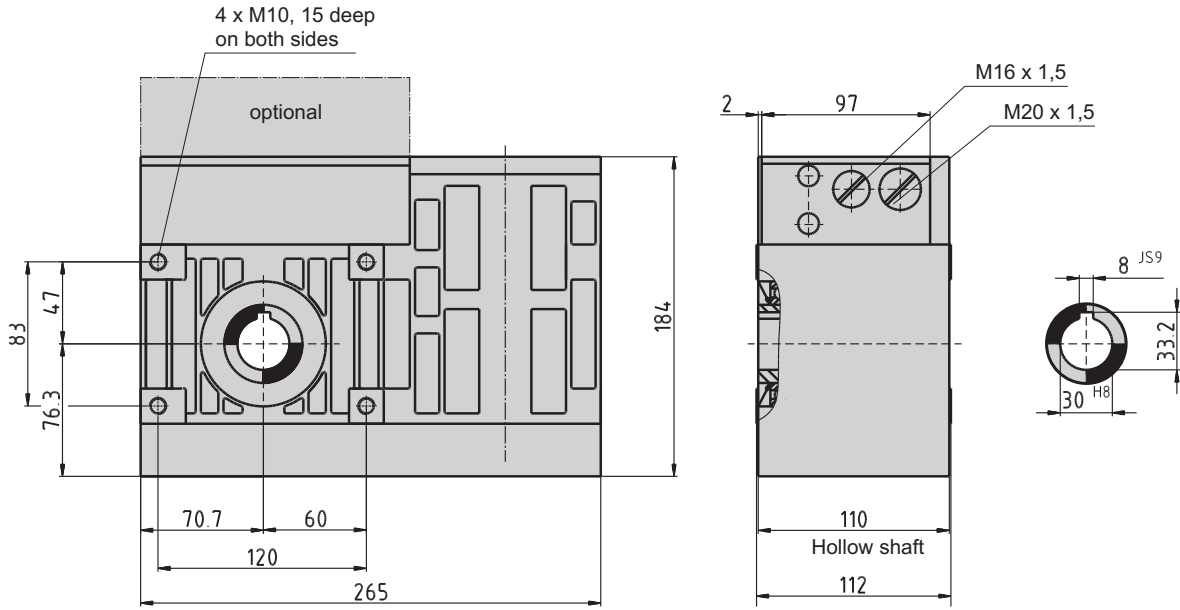
- 1) So = no self locking; Ss = static self locking; Sd = dynamic self locking
- 2) The stated single phase torques are operational torques. The starting torque may be only 66% of the stated catalogue torque. Please contact the manufacturer in case max. torque is required.

#### Please note:

The gearmotor can be overloaded by 50% for brief periods. Single-phase AC- and DC motors may stall.

**Dimensions & Options**

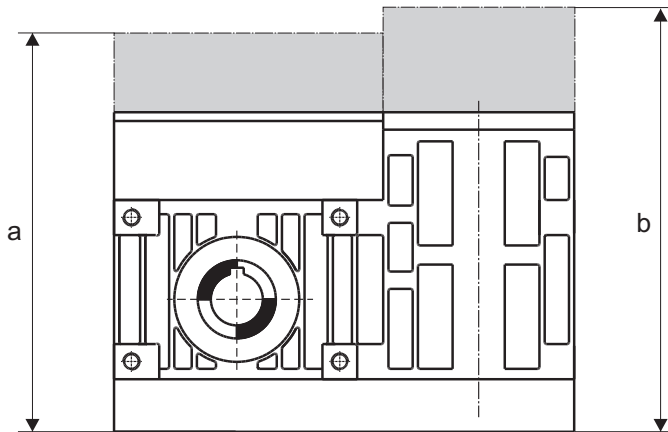
All dimensions in mm



Weight: approx. 12 kg

Capacity of the driveshaft:  
Radial load: 2000 N  
Axial load: 1000 N

**MR30 options**



Dimensions with options	a	b
Motor disc brake		244
Hand crank		380
DC motors		239
Limit switch version 1 / 3 / 2P	218	
Single or double-ended stub shaft	(x)	(x)
Mounting plate (torque support)	(x)	(x)
Mounting angle	(x)	(x)

(x) Please refer to the datasheets for additional or missing dimensions

**Please contact the manufacturer in case of the following operating conditions:**

- Temperatures below 0°C (single phase AC and DC motors: below 10°C)
- Temperatures above 40°C
- Strong vibrations

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**Options**  
(fold out page 44)

- AC
- DC
- 3xAC
- ESA
- 1
- 2
- 2P
- 3
- 
- 
- 
- 
- 
- 
- 
- 
- 

Compacta

## Output table AG60

### 3-phase AC motors - 3x 230/400V-50Hz

Output speed $n_2$ [rpm]	Output torque [Nm]		Transmission ratio	Motor speed $n_1$ [rpm]	Motor output [kW]	Self locking <sup>1)</sup>	Max. limit switch range; output rotation
	d.c. 40%	d.c. 60%					
40		175	69,7:1	2800	1,1	So	275
20		330	139,5:1	2800	1,1	So	275
13		485	220,8:1	2800	1,1	So	275
9,3		575	302,2:1	2800	1,1	So	275
7		600	395,2:1	2800	1,1	Ss	275
5		600	558:1	2800	1,1	Ss	275
3,8		600	732,4:1	2800	1,1	Sd	275
2,5		600	558:1	1400	0,6	Ss	275
1,9		600	732,4:1	1400	0,6	Sd	275
0,9	450		732,4:1	700	0,23	Sd	275

### Single phase AC motors - 1x 230V-50Hz

Output speed $n_2$ [rpm]	Output torque [Nm] <sup>2)</sup>	Transmission ratio	Motor speed $n_1$ [rpm]	Motor output [kW]	Self locking <sup>1)</sup>
40	95	69,7:1	2800	0,66	So
20	176	139,5:1	2800	0,66	So
13	262	220,8:1	2800	0,66	So
9,3	310	302,2:1	2800	0,66	So
7	374	395,2:1	2800	0,66	Ss
5	427	558:1	2800	0,66	Ss
3,8	500	732,4:1	2800	0,66	Sd
2,5	463	558:1	1400	0,36	Ss
1,9	543	732,4:1	1400	0,36	Sd

### 24V DC shunt-wound motor

Output speed $n_2$ [rpm]	Output torque [Nm]	Self locking <sup>1)</sup>	Transmissio ratio
27	108	So	69,7 : 1
14	193	So	139,5 : 1
9	282	So	220,8 : 1
6	365	So	302,2 : 1
5	404	Ss	395,2 : 1
3,5	466	Ss	558,0 : 1
2,6	562	Sd	732,4 : 1

P = 0,45 kW  
I<sub>N</sub> = 28 A  
30% duty cycle (d.c.)

The output speed of Compacta gear motors with DC motors varies with the output torque.

#### Additional output tables information:

- 1) So = no self locking; Ss = static self locking; Sd = dynamic self locking
- 2) The stated single phase torques are operational torques. The starting torque may be only 66% of the stated catalogue torque. Please contact the manufacturer in case max. torque is required.

#### Please note:

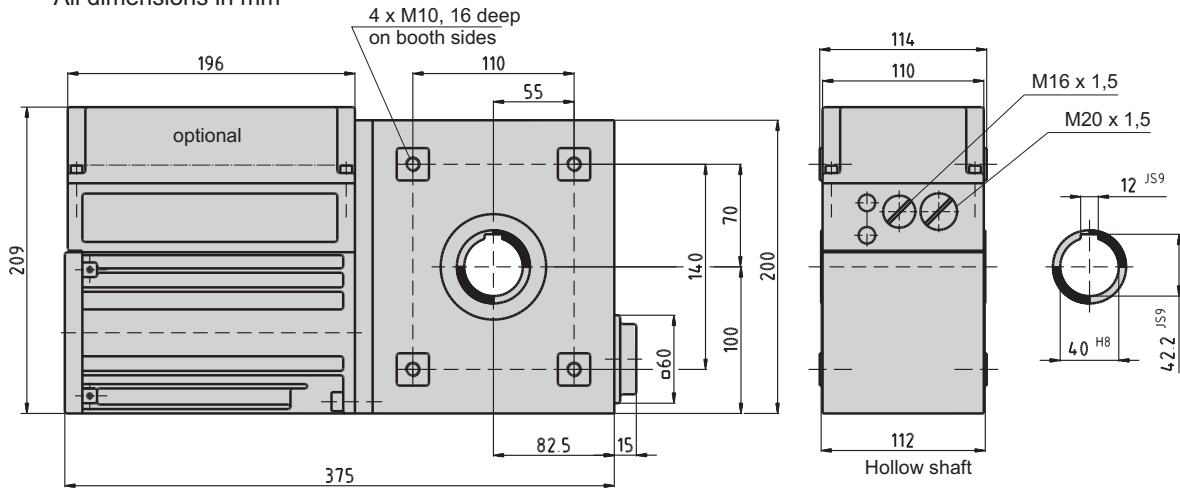
The gearmotor can be overloaded by 50% for brief periods. Single-phase AC- and DC motors may stall.

#### Please contact the manufacturer in case of the following operating conditions:

- Temperatures below 0°C (single phase AC and DC motors: below 10°C)
- Temperatures above 40°C
- Strong vibrations

**Dimensions & Options**

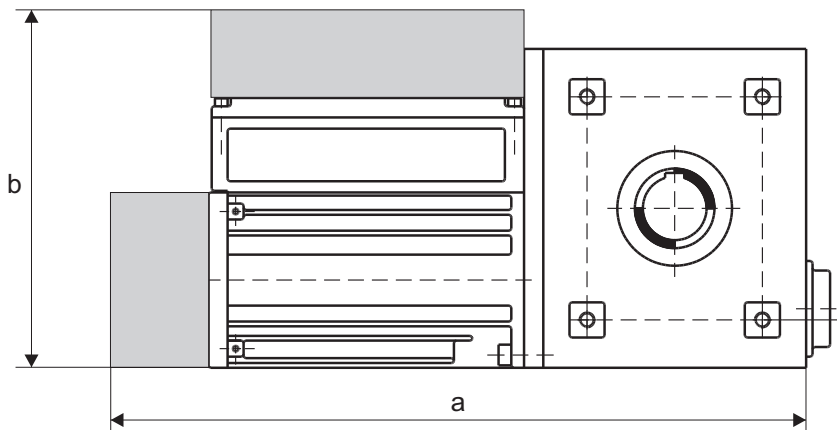
All dimensions in mm



Weight: approx. 19 kg

Capacity of the driveshaft:  
Radial load: 2000 N  
Axial load: 1000 N

**AG60 options**



Dimensions with options	a	b
Motor disc brake	435	
Hand crank	486	
DC motor	430	
DC motor + motor disc brake		
Limit switch version 1 / 3 / 2P		209
Single-ended stub shaft	(x)	(x)

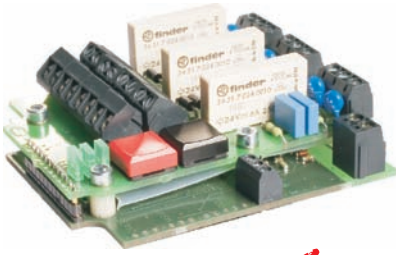
(x) Please refer to the datasheets for additional or missing dimensions

Options (fold out page 44)

- AC
- DC
- 3xAC
- ESA
- 1
- 2
- 2P
- 3
- B
- B
- 
- 
- 
- 
- 
- 
- 

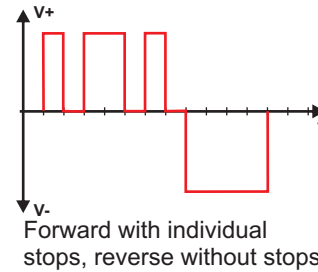
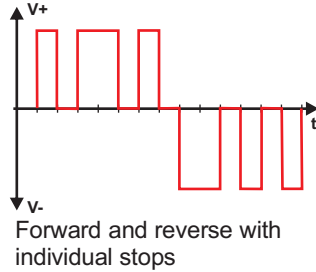
Compacta

**ESA - Electronic limit switches for MR6, MS12, MST, MR30, AG60**



- Up to 10 set points and 2 end positions
- Simple programming with teach-in aid
- Precise set-point positioning and repeatability
- Ideal for most PLC control systems (0-30V)
- Integral 24V power supply
- Applicable with frequency inverters
- The internal incremental encoder signal can be brought-out with A/B rotation direction.

**NEW**

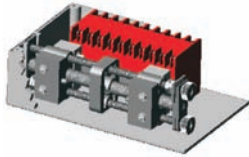
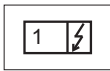


Klappseite

**Limit switches MS12, MR30, AG60.**

For applications with defined stops in both directions (CW and CCW), protected by 2 safety switches

Limit switch version 1

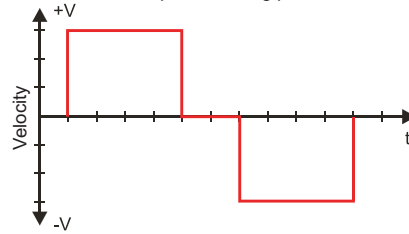


**With internal power relays (red)**

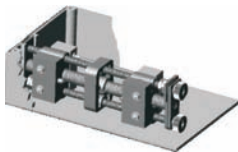
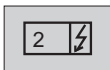
**Advantages**

- Stand-alone solution
- excellent for mobile applications
- micro inch operation and self-latching

Example for driving profile



Limit switch version 2

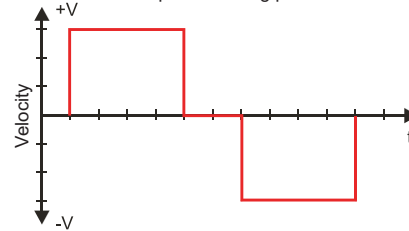


**Basic version**

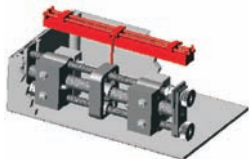
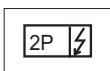
**Advantages**

- end position easy to adjust
- easy setup

Example for driving profile



Limit switch version 2P

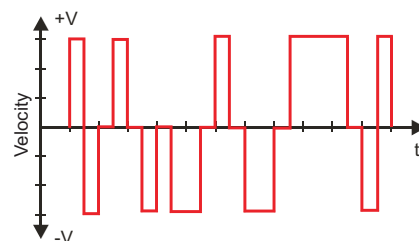


**Potentiometer signal for positioning (red)**

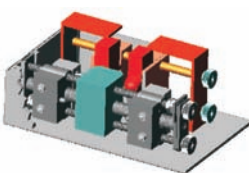
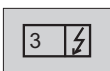
**Advantages**

- absolute valuator device
- ideal for positioning

Example for driving profile



Limit switch version 3

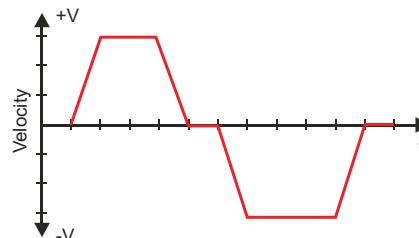


**For 1 intermediate position**

**Advantages**

- one intermediate position adjustable
- de- and accelerate sequences for frequency converter applications

Example for driving profile

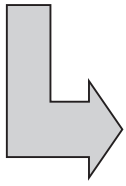


**Notes**

- The stopping accuracy depends on the output speed. A spring-actuated brake is necessary in case of high stopping accuracy.
- backlash of the output shaft about 0.4°.
- In case of high switching frequency we recommend external cooling.

# Explosion proof according to directive 94 / 9 / EG (ATEX 95)



























## EEx II 3D, bck II T5



EEx	- European Explosive proof
II	- Use in all Ex-atmospheres apart from mining
3D	- Zone 22 'D' for Dust, '3' for non-conductive
b	- Ignition monitoring (thermal protection)
c	- Design safeness (IP54-housing)
k	- Fluid enclosure
T5	- Temperature class (max. 100°C)

Klappseite

### Options

	Single phase AC motor
	DC motor
	3-phase AC motor
	Electronic switching action ESA
	Limit switch version 1: Limit switch and safety switch for CW and CCW rotation (4 switches total), with internal power relays
	Limit switch version 2: Limit switch and safety switch for CW and CCW rotation (4 switches total)
	Limit switch version 2P: Limit switch and safety switches for CW and CCW rotation with linear potentiometer for analog
	Limit switch version 3: Limit switch and safety switch for CW and CCW rotation, with 2 add. switches for 1 intermediate positioning
	Geneva-gear mechanism for Compacta MR6: Limit switch for CW and CCW rotation (no safety switches)
	Geneva-gear mechanism for Compacta MR6: (see above) plus rotary potentiometer for analog positioning
	Brake: spring-actuated brake, electrically released
	Cone brake: Mechanical cone brake, spring actuated. Only available for certain motor voltages
	Manual release for electric brake: Usually only in combination with hand-crank option.
	Slip clutch for overload protection.
	Hand crank for emergency operation in case of power failure
	Rotor fan for increased duty cycles. Certain motors allow 100% duty cycle in combination with a rotor fan.
	Electrically powered fan: Assures sufficient ventilation for slow-speed motors or low-frequency inverter-driven motors.
	Encoder option: Available with different resolutions for digital positioning (standard: 500 pulses/rotor-rev.)
	Potentiometer: Built-in rotary potentiometer without limit switches for analog positioning
	Pre-wired 10-pole female connector mounted on the terminal box for easy installation
	Stainless steel output shaft (Material: 1.4104)
	Humidity protection package: special sealant and rotor/stator coating
	Stub shaft: single or double ended stub shaft
	Mounting brackets or plates for easy installation
	Jet water protected (IP65)
	Explosion proof according to ATEX 95