

Motomate





Products and specifications subject to change without notice.



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MOTOMATE brushless with integrated programmable micro-controller

Right angle gearboxes

Gearbox		Torque max (Nm)			1	
Direct motors						
Power usable (w)	Torque nominal (mN.m)	Speed nominal (tr.mn)	Voltage supply (V)	Motor type dimensions (mm)		
30	240	3250	24	▶ p.68 80 080 57x57 		▶ p.68 80 081 

Planetary gearboxes

Gearbox		Torque max (mN)			1	
Direct motors						
Power usable (w)	Torque nominal (mN.m)	Speed nominal (rpm)	Voltage supply (V)	Motor type dimensions (mm)		
30	240	3250	24	▶ p.68 80 080 57x57 		▶ p.68 80 089 





Gearbox selection based upon mechanical constraint



Right angle	Perpendicular output quietness (<53 dB) Irreversibility when Ratio = 30+
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Planetary	Centered output shaft High efficiency Reversible
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1.7	2.9	3.4	3.5
▶ p.68	▶ p.68	▶ p.68	▶ p.68
80 081	80 081	80 081	80 081
			
325 rpm	163 rpm	65 rpm	108 rpm

4.5	20
▶ p.68	▶ p.68
80 089	80 089
	
120 rpm	23 rpm

Selection of a geared motor

This choice is based upon the desired usable power at the gearbox output shaft.

$$\text{Power} = \frac{2\pi}{60} C n$$

(W) (Nm) (tr.mn)

A geared motor must have usable power equal to or greater than the power required to rotate the load desired. It is selected by checking that the point corresponding to the required operating conditions (torque and speed output) is higher than the nominal torque versus speed curve of the geared motor. The required torque output of a geared motor must be within its maximum recommended torque for continuous duty.

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Motomate - Brushless motor with integrated logic controller

→ Motomate 80 watts

- Movement control for simple mechanisms
- All-in-one solution for quick integration
- Compact with high performance
- Intuitive programming with graphical function blocks
- Adapted for severe environments



Specifications

Type	Ratio	Max. speed (RPM)	Available torque (N.m)	Code
Motor direct drive	-	3 250	0.2	80 080 005
Right angle gearbox	5	650	1	80 081 001
	10	325	1.7	80 081 002
	20	163	2.9	80 081 003
	30	108	3.5	80 081 004
	50	65	3.4	80 081 006
Planetary gearboxes	5	650	1	80 089 704
	27	120	4.5	80 089 705
	139	23	20	80 089 706

Accessories

Designation	Code
Programming cable PC/Motomate - serial port	79 294 791
Programming cable PC/Motomate - USB	79 294 790
Programming software on CD ROM	79 294 792

General characteristics

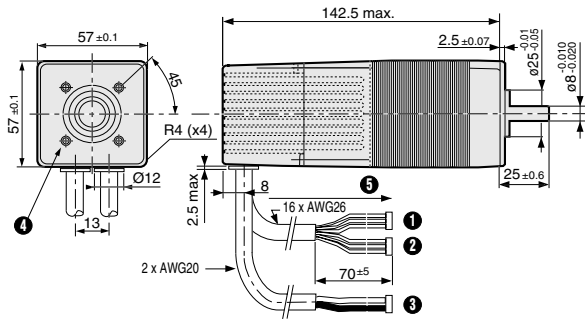
General characteristics	
Supply voltage (V)	24 (20 → 37)
Max. current (A)	6
Immunity from micro power cuts (ms)	1
Operating temperature (°C)	-20 → +40
Protection index	IP 54
Programming	
Inputs / outputs	
Programming method	Function blocks / SFC
Program size	128
Program memory	Flash EEPROM
Program cycle time (ms)	10
Real-time clock	No
Logic inputs	
Max. number	4 (I1 → I4)
Input impedance (kΩ)	> 10
Logic 1 voltage threshold (V)	> 15
Logic 0 voltage threshold (V)	< 5
Response time (ms)	10
High speed inputs	
Max. number	2 (I1 → I2)
Max. frequency (KHz)	4
Analogue input	
Max. number	2 (I3 → I4)
Measurement range	0-Vdc / 0-10 V
Resolution	8 bits
Accuracy	± 5 %
Logic outputs / PWM	
Max. number	4 (O1 → O4)
Type of output	PNP
Insulation	
Max. current (mA)	250
Leakage current (mA)	< 0.1
Response time (ms)	10
PWM frequency (KHz)	0.11 → 1.8
PWM precision at 120 Hz	5 %

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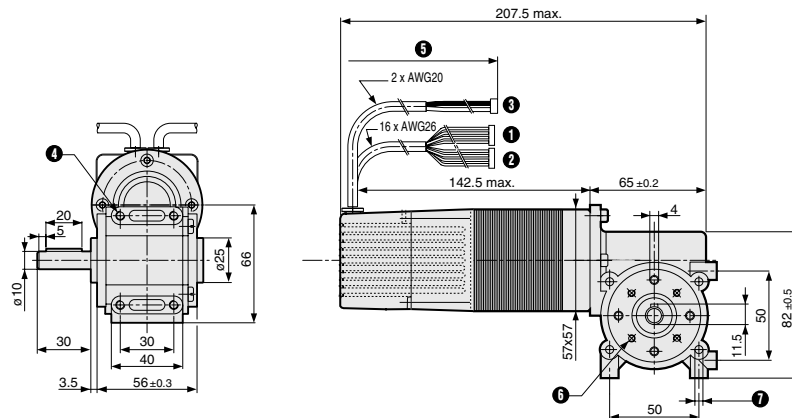
Dimensions

Direct drive



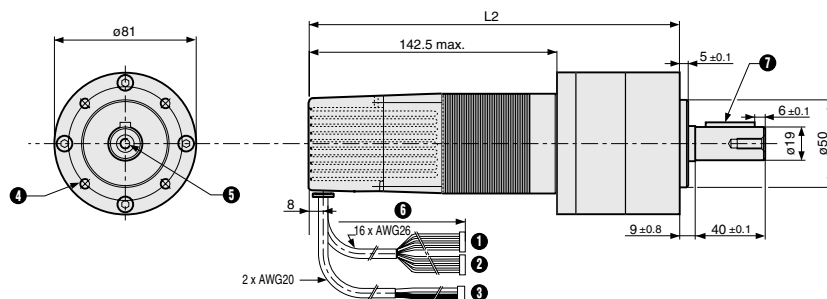
- B Connector 6 way Programming motomate
- C Connector 10 way Inputs/outputs motomate
- D Connector 2 way Power supply
- E 4 holes M5 at 90° on $\varnothing 40$ depth 4.5 mini
- F Cable length : 500 ± 15 mm

Right angle gearbox



- B Connector 6 way Programming motomate
- C Connector 10 way Inputs/outputs motomate
- D Connector 2 way Power supply
- E 4 x M5 depth 8 mm
- F Cable length 500 ± 5 mm
- G 4 x M4 on $\varnothing 36$ depth 8 mm
- H 4 x M5 depth 8 mm
- Radial load max. = 150 N
- Axial load max. = 100 N

Planetary gearboxes




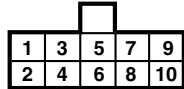

- B Connector 6 way Programming motomate
- C Connector 10 way Inputs/outputs motomate
- D Connector 2 way Power supply
- E 4 holes M6 on $\varnothing 65$ depth 12 mm
- F Fixing hole M6 x 16
- G Cable length : 500 ± 15 mm
- H Key A6 x 6 x 28 according to DIN 6885

- L2 Ratio 5 : 212.8 mm max.
- L2 Ratio 27 : 234.7 mm max.
- L2 Ratio 139 : 256.8 mm max.
- Radial load max. = 200/300/500 N
- Axial load max. = 80/120/200 N
- (according to no. of stages)

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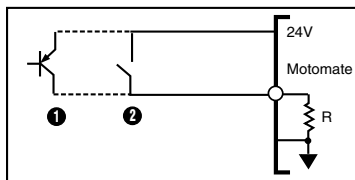
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Connections

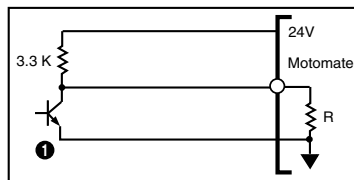
Comment	Legend	Pin N°	Wire color	Motomate connector	Application connector	
*a	+24V	1	Brown	1 power connector Molex 2-way (Ref. 51144-0200)	PCB side top view  Ref. 53520-0220	
*a	GND	2	Black			
	IN1	1	Brown		1 I/O connector Molex 10-way 2.54 mm spacing (Ref. 90142-0010)	PCB side top view  Ref. 90130-1110
*b	OUT1	2	Blue			
	IN2	3	Orange			
*b	OUT2	4	Purple			
	IN3	5	Yellow			
*b	OUT3	6	Grey			
	IN4	7	Green			
*b	OUT4	8	White			
*a	GND	9	Black			
*a	+24V	10	Red			
*a	+5V	1	White-Red	1 programming connector Molex 6-way 2.54 mm spacing (Ref. 90142-0006)	PCB side top view  Ref. 90130-1106	
*a	GND	2	White-Black			
	SCL	3	White-Yellow			
	SDA	4	White-Green			
	RX	5	White-Brown			
	TX	6	White-Orange			

Applications

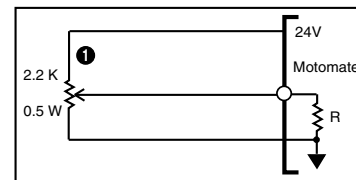
Examples of input connections



B Sensor output PNP
or
C Contact

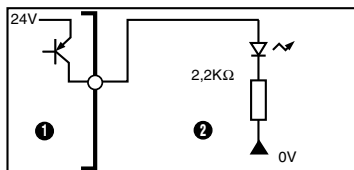


B Sensor output NPN

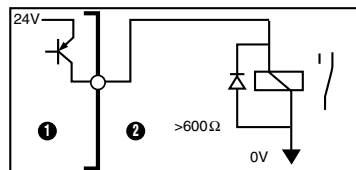


B Potentiometer

Example of output connections

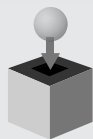


B Motor
C Load LED



B Motor
C Load relay

Products adaptations, available on request



- Special output shaft
- Special supply voltage
- Special cable length
- Customized electronics
- Special connectors
- Special gear ratios
- Special pinion materials
- Special mounting plate

Using information

- *a) Never reverse the polarity of the supply
- *b) Do not short-circuit the outputs O1 to O4 to earth
- Do not use the motor as a generator
- For more details on the geared motors, consult the brushless catalogue

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