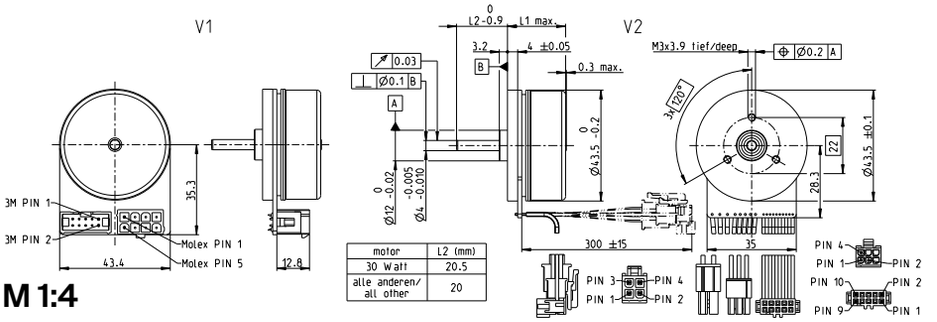
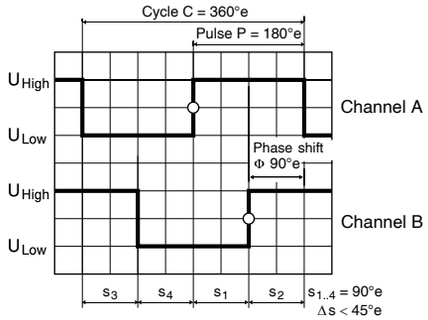
Encoder MILE 256–2048 CPT, 2 channels, with line driver

Integrated into motor

sensor



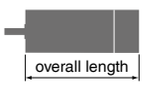
M 1:4

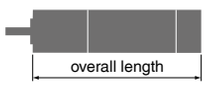


Direction of rotation cw (definition cw p. 78)

Stock program
Standard program
Special program (on request)

	Article Numbers			
V1 with connector	673024	673025	673026	673027
V2 with cable and connector	673028	673029	673030	673031
Type				
Counts per turn	256	512	1024	2048
Number of channels	2	2	2	2
Max. operating frequency (kHz)	1000	1000	1000	1000
Max. speed (rpm)	10 000	10 000	10 000	10 000





maxon Modular System						Overall length L1 max. [mm] / • see Gearhead			
+ Motor	Page	+ Gearhead	Page	+ Brake	Page				
EC 45 flat, 30 W, A	295					18.6	18.6	18.6	18.6
EC 45 flat, 30 W, A	295	GP 32, 0.75 - 4.5 Nm	394			•	•	•	•
EC 45 flat, 30 W, A	295	GP 32, 1.0 - 6.0 Nm	398			•	•	•	•
EC 45 flat, 30 W, A	295	GP 42, 3.0 - 1.05 Nm	407			•	•	•	•
EC 45 flat, 30 W, A	295	GS 45, 0.5 - 2.0 Nm	409			•	•	•	•
EC 45 flat, 50 W, A	296					22.6	22.6	22.6	22.6
EC 45 flat, 50 W, A	296	GP 32, 0.75 - 4.5 Nm	394			•	•	•	•
EC 45 flat, 50 W, A	296	GP 32, 1.0 - 6.0 Nm	398			•	•	•	•
EC 45 flat, 50 W, A	296	GP 42, 3.0 - 15.0 Nm	407			•	•	•	•
EC 45 flat, 50 W, A	296	GS 45, 0.5 - 2.0 Nm	409			•	•	•	•
EC 45 flat, 60 W, A	297					22.8	22.8	22.8	22.8
EC 45 flat, 60 W, A	297	GP 32, 0.75 - 4.5 Nm	394			•	•	•	•
EC 45 flat, 60 W, A	297	GP 32, .1.0 - 6.0 Nm	398			•	•	•	•
EC 45 flat, 60 W, A	297	GP 42, 3.0 - 15.0 Nm	407			•	•	•	•
EC 45 flat, 60 W, A	297	GS 45, 0.5 - 2.0 Nm	409			•	•	•	•
EC 45 flat, 90 W, A	298					28.8	28.8	28.8	28.8
EC 45 flat, 90 W, A	298	GP 32, 0.75 - 4.5 Nm	394			•	•	•	•
EC 45 flat, 90 W, A	298	GP 32, 1.0 - 6.0 Nm	398			•	•	•	•
EC 45 flat, 90 W, A	298	GP 42, 3.0 - 15.0 Nm	407			•	•	•	•
EC 45 flat, 90 W, A	298	GS 45, 0.5 - 2.0 Nm	409			•	•	•	•

Technical Data

Supply voltage V_{CC}	5 B ± 10%
Typical current draw	15 mA
Output signal	CMOS compatible
State length s_n 90°e (1000 rpm)	45...135°e
Signal rise time (typically, at C_L = 25 pF, R_L = 1 kΩ, 25 °C)	100 ns
Signal fall time (typically, at C_L = 25 pF, R_L = 1 kΩ, 25 °C)	100 ns
Operating temperature range	-40...+100 °C
Moment of inertia of code wheel	≤ 3.5 gcm²
Output current per channel	max. 4 mA
Open collector output of the Hall sensors with integrated pull-up resistor	10 kΩ ± 20%
Wiring diagram for Hall sensors see p. 59	

Additional information can be found under 'Downloads' in the maxon online shop.

Pin Allocation

Connection V1
Motor + Sensors
Pin 1 Hall sensor 1
Pin 2 Hall sensor 2
Pin 3 V_{Hall} 4.5...18 VDC
Pin 4 Motor winding 3
Pin 5 Hall sensor 3
Pin 6 GND
Pin 7 Motor winding 1
Pin 8 Motor winding 2

Encoder
Pin 1 N.C.
Pin 2 V_{CC}
Pin 3 GND
Pin 4 N.C.
Pin 5 Channel $\overline{A}$
Pin 6 Channel A
Pin 7 Channel $\overline{B}$
Pin 8 Channel B
Pin 9 Do not connect
Pin 10 Do not connect

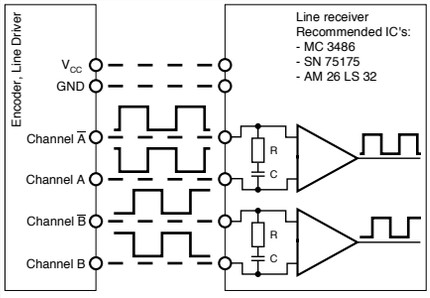
Pin type:
39-28-1083 Molex
DIN 41651/EN 60603-13

Connection V2
Sensors (AWG 24)
Pin 1 Hall sensor 1
Pin 2 Hall sensor 2
Pin 3 Hall sensor 3
Pin 4 GND
Pin 5 V_{Hall} 4.5...18 VDC
Pin 6 N.C.
Motor (AWG 22)
Pin 1 Motor winding 1
Pin 2 Motor winding 2
Pin 3 Motor winding 3
Pin 4 Not connected

Encoder (AWG 28)
Pin 1 N.C.
Pin 2 V_{CC}
Pin 3 GND
Pin 4 N.C.
Pin 5 Channel $\overline{A}$
Pin 6 Channel A
Pin 7 Channel $\overline{B}$
Pin 8 Channel B
Pin 9 Do not connect
Pin 10 Do not connect

43025-600 Molex
39-01-2040 Molex
DIN 41651/EN 60603-13

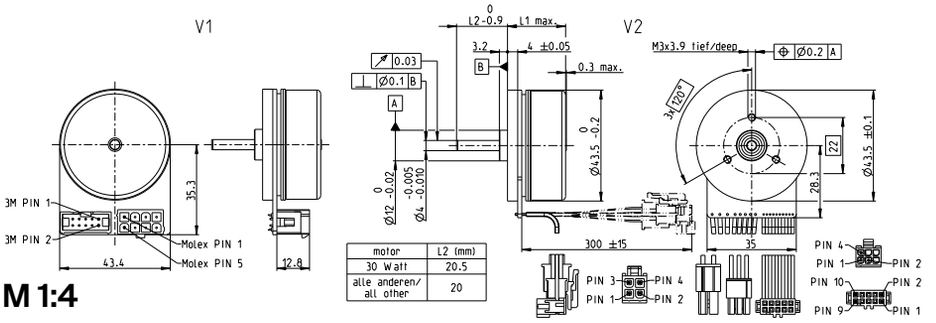
Pin Allocation



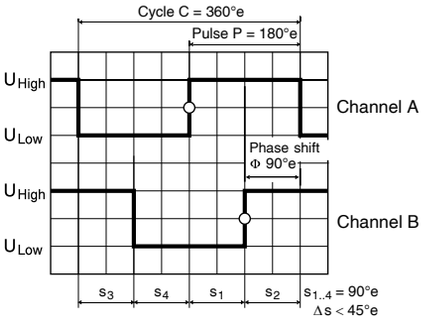
Opt. terminal resistance R = typical 120 Ω
Capacitor C ≥ 0.1 nF per m line length

Encoder MILE 256–2048 CPT, 2 channels, with line driver

Integrated into motor



M 1:4



Direction of rotation cw (definition cw p. 59)

Stock program
Standard program
Special program (on request)

	Article Numbers			
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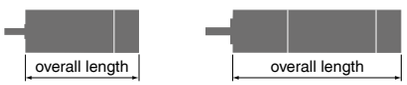
Counts per turn	256	512	1024	2048
Number of channels	2	2	2	2
Max. operating frequency (kHz)	1000	1000	1000	1000
Max. speed (rpm)	10 000	10 000	10 000	10 000



maxon Modular System						Overall length L1 max. [mm] / • see Gearhead			
+ Motor	Page	+ Gearhead	Page	+ Brake	Page				
EC 45 flat, 70 W, A	299					28.4	28.4	28.4	28.4
EC 45 flat, 70 W, A	299	GP 32, 0.75 - 4.5 Nm	394			•	•	•	•
EC 45 flat, 70 W, A	299	GP 32, 1.0 - 6.0 Nm	398			•	•	•	•
EC 45 flat, 70 W, A	299	GP 42, 3.0 - 15.0 Nm	407			•	•	•	•
EC 45 flat, 70 W, A	299	GS 45, 0.5 - 2.0 Nm	409			•	•	•	•
EC 45 flat, 80 W, A	300					27.8	27.8	27.8	27.8
EC 45 flat, 80 W, A	300	GP 32, 0.75 - 4.5 Nm	394			•	•	•	•
EC 45 flat, 80 W, A	300	GP 32, 1.0 - 6.0 Nm	398			•	•	•	•
EC 45 flat, 80 W, A	300	GP 42, 3 - 15 Nm	407			•	•	•	•
EC 45 flat, 80 W, A	300	GS 45, 0.5 - 2.0 Nm	409			•	•	•	•
EC 45 flat, 120 W, A	301					33.8	33.8	33.8	33.8
EC 45 flat, 120 W, A	301	GP 32, 0.75 - 4.5 Nm	394			•	•	•	•
EC 45 flat, 120 W, A	301	GP 32, 1.0 - 6.0 Nm	398			•	•	•	•
EC 45 flat, 120 W, A	301	GP 42, 3 - 15 Nm	407			•	•	•	•
EC 45 flat, 120 W, A	301	GS 45, 0.5 - 2.0 Nm	409			•	•	•	•

Technical Data

Supply voltage V_{CC}	5 B ± 10%
Typical current draw	15 mA
Output signal	CMOS compatible
State length s_n 90°e (1000 rpm)	45...135°e
Signal rise time (typically, at C_L = 25 pF, R_L = 1 kΩ, 25 °C)	100 ns
Signal fall time (typically, at C_L = 25 pF, R_L = 1 kΩ, 25 °C)	100 ns
Operating temperature range	-40...+100 °C
Moment of inertia of code wheel	≤ 3.5 gcm²
Output current per channel	max. 4 mA
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Pin 4 Motor winding 3
Pin 5 Hall sensor 3
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Encoder
Pin 1 N.C.
Pin 2 V_{CC}
Pin 3 GND
Pin 4 N.C.
Pin 5 Channel $\overline{A}$
Pin 6 Channel A
Pin 7 Channel $\overline{B}$
Pin 8 Channel B
Pin 9 Do not connect
Pin 10 Do not connect

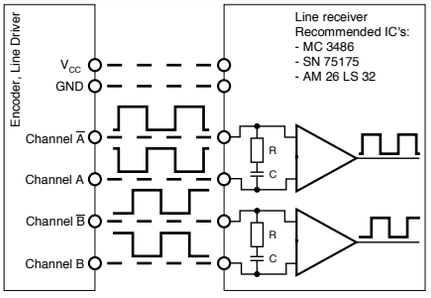
Pin type:
39-28-1083 Molex
DIN 41651/EN 60603-13

Connection V2
Sensors (AWG 24)
Pin 1 Hall sensor 1
Pin 2 Hall sensor 2
Pin 3 Hall sensor 3
Pin 4 GND
Pin 5 V_{Hall} 4.5...18 VDC
Pin 6 N.C.
Motor (AWG 22)
Pin 1 Motor winding 1
Pin 2 Motor winding 2
Pin 3 Motor winding 3
Pin 4 Not connected

Encoder (AWG 28)
Pin 1 N.C.
Pin 2 V_{CC}
Pin 3 GND
Pin 4 N.C.
Pin 5 Channel $\overline{A}$
Pin 6 Channel A
Pin 7 Channel $\overline{B}$
Pin 8 Channel B
Pin 9 Do not connect
Pin 10 Do not connect

43025-600 Molex
39-01-2040 Molex
DIN 41651/EN 60603-13

Pin Allocation



Opt. terminal resistance R = typical 120 Ω
Capacitor C ≥ 0.1 nF per m line length