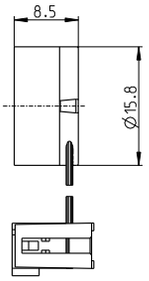
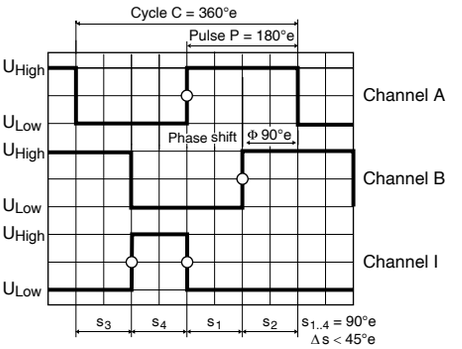
Encoder 16 EASY 128–1024 CPT, 3 channels, with line driver RS 422

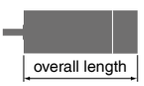


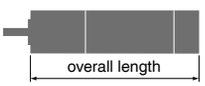


Direction of rotation cw (definition cw p. 78)

Stock program
Standard program
Special program (on request)

Part Numbers	499356	499357	499358	499359	499360	499361
Type (provisional)						
Counts per turn	128	256	500	512	1000	1024
Number of channels	3	3	3	3	3	3
Max. operating frequency (kHz)	1600	1600	1600	1600	1600	1600
Max. speed (rpm)	30000	30000	30000	30000	30000	30000
Phase shift Φ (°e)	90 ± 45	90 ± 45	90 ± 60	90 ± 45	90 ± 80	90 ± 70
Index pulse width (°e)	90 ± 45	90 ± 45	90 ± 60	90 ± 45	90 ± 80	90 ± 70





maxon Modular System

+ Motor	Page	+ Gearhead	Page	+ Brake	Page	Overall length [mm] / • see Gearhead					
EC-4pole 22, 90 W	257					60.8	60.8	60.8	60.8	60.8	60.8
EC-4pole 22, 90 W	257	GP 22, 2.0 - 3.4 Nm	387			•	•	•	•	•	•
EC-4pole 22, 90 W	257	GP 32, 1.0 - 6.0 Nm	398			•	•	•	•	•	•
EC-4pole 22, 90 W	257	GP 32 S	426-433			•	•	•	•	•	•
EC-4pole 22, 120 W	258					78.2	78.2	78.2	78.2	78.2	78.2
EC-4pole 22, 120 W	258	GP 22, 2.0 - 3.4 Nm	387			•	•	•	•	•	•
EC-4pole 22, 120 W	258	GP 32, 1.0 - 6.0 Nm	398			•	•	•	•	•	•
EC-4pole 22, 120 W	258	GP 32 S	426-433			•	•	•	•	•	•
EC-4pole 30, 100 W	259					60.9	60.9	60.9	60.9	60.9	60.9
EC-4pole 30, 100 W	259	GP 32, 1.0 - 6.0 Nm	398			•	•	•	•	•	•
EC-4pole 30, 100 W	259	GP 32, 4.0 - 8.0 Nm	400			•	•	•	•	•	•
EC-4pole 30, 100 W	259	GP 42, 3.0 - 15.0 Nm	406			•	•	•	•	•	•
EC-4pole 30, 100 W	259	GP 32 S	426-433			•	•	•	•	•	•
EC-4pole 30, 100 W	259			AB 20	532	97.3	97.3	97.3	97.3	97.	97.3
EC-4pole 30, 100 W	259	GP 32, 1.0 - 6.0 Nm	398	AB 20	532	•	•	•	•	•	•
EC-4pole 30, 100 W	259	GP 32, 4.0 - 8.0 Nm	400	AB 20	532	•	•	•	•	•	•
EC-4pole 30, 100 W	259	GP 42, 3.0 - 15.0 Nm	406	AB 20	532	•	•	•	•	•	•
EC-4pole 30, 100 W	259	GP 32 S	426-433	AB 20	532	•	•	•	•	•	•
EC-4pole 30, 200 W	261					77.9	77.9	77.9	77.9	77.9	77.9
EC-4pole 30, 200 W	261	GP 32, 1.0 - 6.0 Nm	398			•	•	•	•	•	•
EC-4pole 30, 200 W	261	GP 32, 4.0 - 8.0 Nm	400			•	•	•	•	•	•
EC-4pole 30, 200 W	261	GP 42, 3.0 - 15.0 Nm	406			•	•	•	•	•	•
EC-4pole 30, 200W	261	GP 32 S	426-433			•	•	•	•	•	•
EC-4pole 30, 200 W	261			AB 20	532	114.3	114.3	114.3	114.3	114.3	114.3
EC-4pole 30, 200 W	261	GP 32, 1.0 - 6.0 Nm	398	AB 20	532	•	•	•	•	•	•
EC-4pole 30, 200 W	261	GP 32, 4.0 - 8.0 Nm	400	AB 20	532	•	•	•	•	•	•
EC-4pole 30, 200 W	261	GP 42, 3.0 - 15.0 Nm	406	AB 20	532	•	•	•	•	•	•
EC-4pole 30, 200 W	261	GP 32 S	426-433	AB 20	532	•	•	•	•	•	•

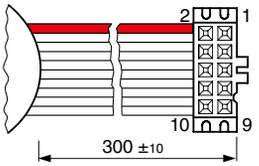
Technical Data

Supply voltage V_{CC}	5 V ± 10%
Typical current draw	22 mA
Output signal	EIA Standard RS 422
Operating temperature range	-40...+100°C
Moment of inertia of code wheel	≤ 0.09 gcm²
Output current per channel	± 20 mA
Hysteresis	0.17 °m
Min. state duration s	125 ns
Signal rise and fall times (typically, at C_L = 200 pF, R_L = 100 Ω)	20 ns

The angle value 0 is matched to the commutation phase of winding 1 (in acc. with Hall 1 signal on motors with Hall sensors, block commutation), see p. 56.

Additional information can be found in the maxon online shop under downloads.
The index signal I is synchronized with channel A or B.

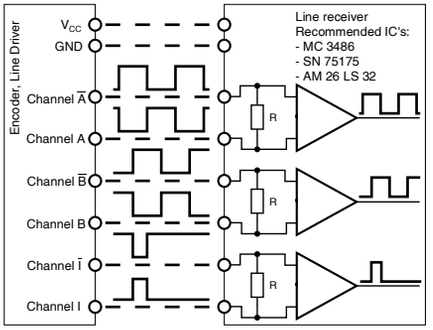
Pin Allocation



1 N.C.
2 V_{CC}
3 GND
4 N.C.
5 Channel $\overline{A}$
6 Channel A
7 Channel $\overline{B}$
8 Channel B
9 Channel $\overline{I}$ (Index)
10 Channel I (Index)

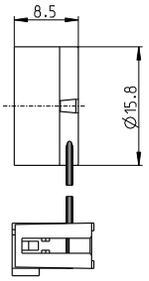
DIN Connector 41651/
EN 60603-13
flat band cable AWG 28

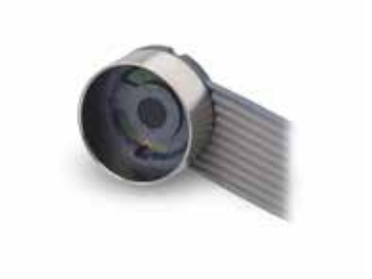
Connection example

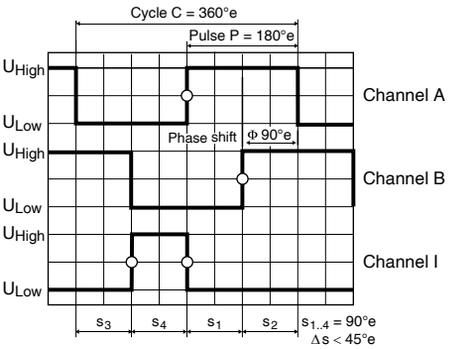


Opt. terminal resistance R = typical 120 Ω

Encoder 16 EASY 128–1024 CPT, 3 channels, with line driver RS 422





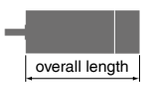


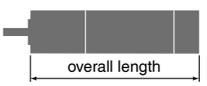
Direction of rotation cw (definition cw p. 78)

sensor

Stock program
Standard program
Special program (on request)

Part Numbers	499356	499357	499358	499359	499360	499361
Type (provisional)						
Counts per turn	128	256	500	512	1000	1024
Number of channels	3	3	3	3	3	3
Max. operating frequency (kHz)	1600	1600	1600	1600	1600	1600
Max. speed (rpm)	30000	30000	30000	30000	30000	30000
Phase shift Φ (°e)	90 ± 45	90 ± 45	90 ± 60	90 ± 45	90 ± 80	90 ± 70
Index pulse width (°e)	90 ± 45	90 ± 45	90 ± 60	90 ± 45	90 ± 80	90 ± 70





maxon Modular System

+ Motor	Page	+ Gearhead	Page	+ Brake	Page	Overall length [mm] / ● see Gearhead					
EC-i 30, 30 W	268					53.7	53.7	53.7	53.7	53.7	53.7
EC-i 30, 30 W	268	GP 32, 1.0 - 6.0 Nm	398			●	●	●	●	●	●
EC-i 30, 30 W	268	GP 32 S	426-433			●	●	●	●	●	●
EC-i 30, 45 W	269					53.7	53.7	53.7	53.7	53.7	53.7
EC-i 30, 45 W	269	GP 32, 1.0 - 6.0 Nm	398			●	●	●	●	●	●
EC-i 30, 45 W	269	GP 32 S	426-433			●	●	●	●	●	●
EC-i 30, 50 W	270					75.7	75.7	75.7	75.7	75.7	75.7
EC-i 30, 50 W	270	GP 32, 1.0 - 6.0 Nm	398			●	●	●	●	●	●
EC-i 30, 50 W	270	GP 32 S	426-433			●	●	●	●	●	●
EC-i 30, 75 W	271					75.7	75.7	75.7	75.7	75.7	75.7
EC-i 30, 75 W	271	GP 32, 1.0 - 6.0 Nm	398			●	●	●	●	●	●
EC-i 30, 75 W	271	GP 32 S	426-433			●	●	●	●	●	●
EC-i 40, 50 W	272-273					37.7	37.7	37.7	37.7	37.7	37.7
EC-i 40, 50 W	272	GP 32, 1.0 - 6.0 Nm	398			●	●	●	●	●	●
EC-i 40, 50 W	272	GP 32 S	426-433			●	●	●	●	●	●
EC-i 40, 50 W	272-273	GP 42, 3.0 - 15.0 Nm	405			●	●	●	●	●	●
EC-i 40, 70 W	274-275					47.7	47.7	47.7	47.7	47.7	47.7
EC-i 40, 70 W	274	GP 32, 1.0 - 6.0 Nm	398			●	●	●	●	●	●
EC-i 40, 70 W	274	GP 32 S	426-433			●	●	●	●	●	●
EC-i 40, 70 W	274-275	GP 42, 3.0 - 15.0 Nm	405			●	●	●	●	●	●
EC-i 40, 100 W	276					67.7	67.7	67.7	67.7	67.7	67.7
EC-i 40, 100 W	276	GP 42, 3.0 - 15.0 Nm	405			●	●	●	●	●	●
EC-i 40, 130 W	277					102.5	102.5	102.5	102.5	102.5	102.5
EC-i 40, 130 W	277	GP 42, 3.0 - 15.0 Nm	405			●	●	●	●	●	●
EC-i 52, 180 W	278					93.7	93.7	93.7	93.7	93.7	93.7
EC-i 52, 180 W	278	GP 52, 4.0 - 30.0 Nm	410			●	●	●	●	●	●
EC-i 52, 200 W	279					123.7	123.7	123.7	123.7	123.7	123.7
EC-i 52, 200 W	279	GP 52, 4.0 - 30.0 Nm	410			●	●	●	●	●	●
EC-i 52, 250 W	280					93.7	93.7	93.7	93.7	93.7	93.7
EC-i 52, 420 W	281					93.7	93.7	93.7	93.7	93.7	93.7

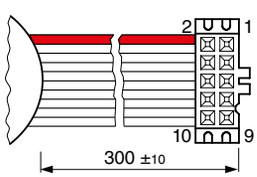
Technical Data

Supply voltage V_{CC}	5 V ± 10%
Typical current draw	22 mA
Output signal	EIA Standard RS 422
Operating temperature range	-40...+100 °C
Moment of inertia of code wheel	≤ 0.09 gcm²
Output current per channel	± 20 mA
Hysteresis	0.17 °m
Min. state duration s	125 ns
Signal rise and fall times (typically, at C_L = 200 pF, R_L = 100 Ω)	20 ns

The angle value 0 is matched to the commutation phase of winding 1 (in acc. with Hall 1 signal on motors with Hall sensors, block commutation), see p. 56.

Additional information can be found in the maxon online shop under downloads.
The index signal I is synchronized with channel A or B.

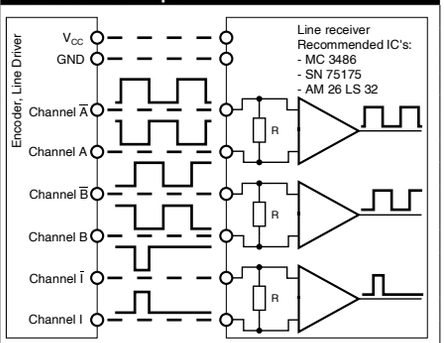
Pin Allocation



1 N.C.
2 V_{CC}
3 GND
4 N.C.
5 Channel $\overline{A}$
6 Channel A
7 Channel $\overline{B}$
8 Channel B
9 Channel $\overline{I}$ (Index)
10 Channel I (Index)

DIN Connector 41651/
EN 60603-13
flat band cable AWG 28

Connection example



Opt. terminal resistance R = typical 120 Ω