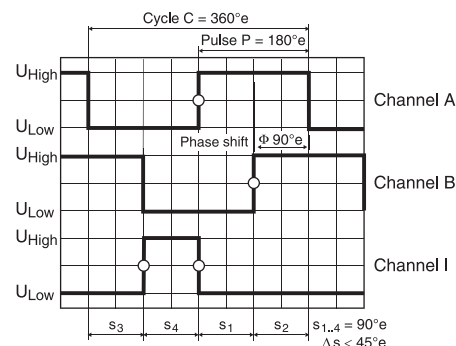


Encoder MR, Type M, 128 - 512 CPT, 2 / 3 Channels, with Line Driver



- ☒ Stock program
- ☐ Standard program
- ☐ Special program (on request)

Order Number

228179 228177 228181 228182 201937 201940

Type						
Counts per turn	128	128	256	256	512	512
Number of channels	2	3	2	3	2	3
Max. operating frequency (kHz)	80	80	160	160	320	320
Max. speed (rpm)	37500	37500	37500	37500	37500	37500



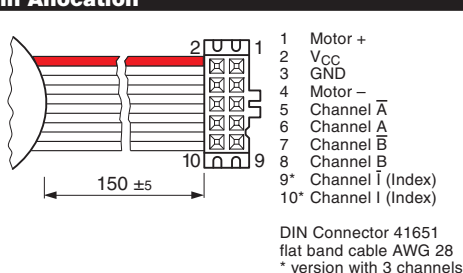
maxon Modular System

+ Motor	Page	+ Gearhead	Page	+ Brake	Page	Overall length [mm] / • see Gearhead					
RE 16, 2 W	72	GP 16, 0.06 - 0.18 Nm	217			28.0	28.0	28.0	28.0	28.0	28.0
RE 16, 2 W	72	GP 16, 0.1 - 0.3 Nm	218			•	•	•	•	•	•
RE 16, 3.2 W	74	GP 16, 0.06 - 0.18 Nm	217			45.4	45.4	45.4	45.4	45.4	45.4
RE 16, 3.2 W	74	GP 16, 0.1 - 0.3 Nm	218			•	•	•	•	•	•
RE 16, 4.5 W	76	GP 16, 0.06 - 0.18 Nm	217			48.4	48.4	48.4	48.4	48.4	48.4
RE 16, 4.5 W	76	GP 16, 0.1 - 0.3 Nm	218			•	•	•	•	•	•
A-max 16	94/96	GS 16, 0.01 - 0.1 Nm	213-215			30.4	30.4	30.4	30.4	30.4	30.4
A-max 16	94/96	GP 16, 0.06 - 0.18 Nm	217			•	•	•	•	•	•
A-max 16	94/96	GP 16, 0.1 - 0.3 Nm	218			•	•	•	•	•	•
A-max 19, 1.5 W	98	GP 19, 0.1 - 0.3 Nm	220			34.0	34.0	34.0	34.0	34.0	34.0
A-max 19, 1.5 W	98	GP 22, 0.5 - 2.0 Nm	224/225			•	•	•	•	•	•
A-max 19, 1.5 W	98	GS 24, 0.1 Nm	229			•	•	•	•	•	•
A-max 19, 1.5 W	98	GP 22 S	249/250			•	•	•	•	•	•
A-max 19, 2.5 W	100	GP 19, 0.1 - 0.3 Nm	220			35.8	35.8	35.8	35.8	35.8	35.8
A-max 19, 2.5 W	100	GS 20 0.06 - 0.25 Nm	221			•	•	•	•	•	•
A-max 19, 2.5 W	100	GP 22, 0.5 - 2.0 Nm	224/225			•	•	•	•	•	•
A-max 19, 2.5 W	100	GS 24, 0.1 Nm	229			•	•	•	•	•	•
A-max 19, 2.5 W	100	GP 22 S	249/250			•	•	•	•	•	•
A-max 22	102/104	GP 22, 0.1 - 0.6 Nm	222/223			36.9	36.9	36.9	36.9	36.9	36.9
A-max 22	102/104	GP 22, 0.5 - 2.0 Nm	224/225			•	•	•	•	•	•
A-max 22	102/104	GS 24, 0.1 Nm	229			•	•	•	•	•	•
A-max 22	102/104	GP 22 S	249/250			•	•	•	•	•	•
RE-max 17	124/126	GP 16, 0.06 - 0.18 Nm	217			30.4	30.4	30.4	30.4	30.4	30.4
RE-max 17	124/126	GP 16, 0.1 - 0.3 Nm	218			•	•	•	•	•	•

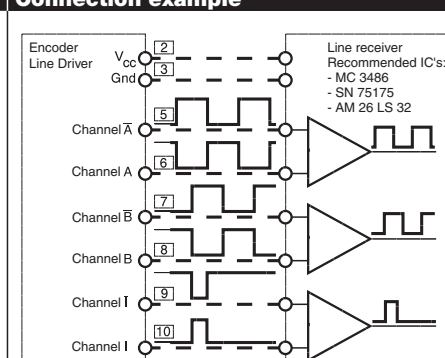
Technical Data

Supply voltage V _{CC}	5 V ± 5 %
Output signal	TTL compatible
Phase shift Φ	90° ± 45°
Index pulse width	90° ± 45°
Operating temperature range	-25 ... +85°C
Moment of inertia of code wheel	≤ 0.09 gcm ²
Output current per channel	max. 5 mA

Pin Allocation

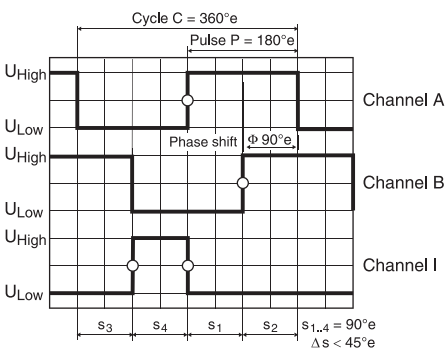


Connection example



The index signal I is synchronised with channel A or B.

Encoder MR, Type M, 128 - 512 CPT, 2 / 3 Channels, with Line Driver



- Stock program
- Standard program
- Special program (on request)

Order Number					
228179	228177	228181	228182	201937	201940

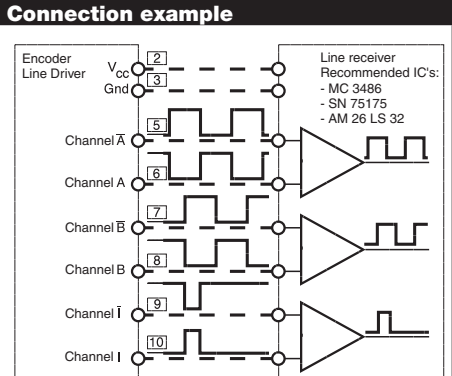
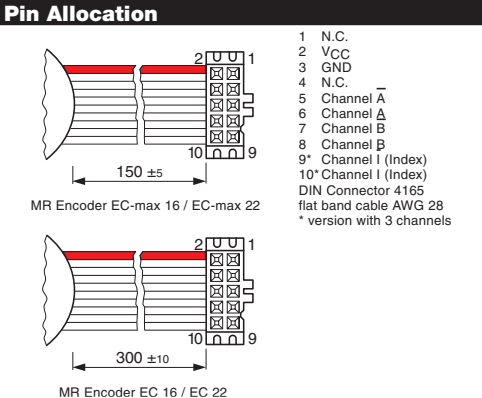
Type						
Counts per turn	128	128	256	256	512	512
Number of channels	2	3	2	3	2	3
Max. operating frequency (kHz)	80	80	160	160	320	320
Max. speed (rpm)	37500	37500	37500	37500	37500	37500



maxon Modular System

+ Motor	Page	+ Gearhead	Page	+ Brake	Page	Overall length [mm] / • see Gearhead					
RE-max 21, 3.5 W	128					34.0	34.0	34.0	34.0	34.0	34.0
RE-max 21, 3.5 W	128	GP 22, 0.5 - 2.0 Nm	224/225			•	•	•	•	•	•
RE-max 21, 3.5 W	128	GS 38, 0.1 - 0.6 Nm	239			•	•	•	•	•	•
RE-max 21, 3.5 W	128	GP 22 S	249/250			•	•	•	•	•	•
RE-max 21, 6 W	130					35.8	35.8	35.8	35.8	35.8	35.8
RE-max 21, 6 W	130	GP 22, 0.5 - 2.0 Nm	224/225			•	•	•	•	•	•
RE-max 21, 6 W	130	GS 38, 0.1 - 0.6 Nm	239			•	•	•	•	•	•
RE-max 21, 6 W	130	GP 22 S	249/250			•	•	•	•	•	•
RE-max 24	132/134					36.9	36.9	36.9	36.9	36.9	36.9
RE-max 24	132/134	GP 22, 0.5 - 2.0 Nm	225			•	•	•	•	•	•
RE-max 24	132/134	GS 38, 0.1 - 0.6 Nm	239			•	•	•	•	•	•
RE-max 24	132/134	GP 22 S	249/250			•	•	•	•	•	•
EC 16, 15 W	147					50.9	50.9	50.9	50.9	50.9	50.9
EC 16, 15 W	147	GP 16, 0.1 - 0.3 Nm	218			•	•	•	•	•	•
EC 16, 40 W	148					66.9	66.9	66.9	66.9	66.9	66.9
EC 16, 40 W	148	GP 22, 0.5 - 2.0 Nm	226			•	•	•	•	•	•
EC 16, 40 W	148	GP 22 S	249/250			•	•	•	•	•	•
EC 22, 20 W	150					50.5	50.5	50.5	50.5	50.5	50.5
EC 22, 20 W	150	GP 22, 0.5 - 2.0 Nm	226			•	•	•	•	•	•
EC 22, 20 W	150	GP 22 S	249/250			•	•	•	•	•	•
EC 22, 50 W	152					68.7	68.7	68.7	68.7	68.7	68.7
EC 22, 50 W	152	GP 22, 0.5 - 2.0 Nm	226			•	•	•	•	•	•
EC 22, 50 W	152	GP 22 S	249/250			•	•	•	•	•	•
EC-max 16, 5 W	165					31.3	31.3	31.3	31.3	31.3	31.3
EC-max 16, 5 W	165	GP 16, 0.1 - 0.3 Nm	218			•	•	•	•	•	•
EC-max 16, 8 W	167					43.3	43.3	43.3	43.3	43.3	43.3
EC-max 16, 8 W	167	GP 22, 0.5 - 2.0 Nm	226			•	•	•	•	•	•
EC-max 16, 8 W	167	GP 22 S	249/250			•	•	•	•	•	•
EC-max 22, 12 W	168					41.7	41.7	41.7	41.7	41.7	41.7
EC-max 22, 12 W	168	GP 22, 0.5 - 2.0 Nm	226/227			•	•	•	•	•	•
EC-max 22, 12 W	168	KD 32	238			•	•	•	•	•	•
EC-max 22, 12 W	168	GP 22 S	249/250			•	•	•	•	•	•
EC-max 22, 25 W	169					58.2	58.2	58.2	58.2	58.2	58.2
EC-max 22, 25 W	169	GP 22	227			•	•	•	•	•	•
EC-max 22, 25 W	169	GP 32, 1 - 6 Nm	236			•	•	•	•	•	•
EC-max 22, 25 W	169	GP 32 S	249/250			•	•	•	•	•	•

Technical Data	
Supply voltage V _{CC}	5 V ± 5 %
Output signal	TTL compatible
Phase shift φ	90°e ± 45°e
Index pulse width	90°e ± 45°e
Operating temperature range	-25 ... +85°C
Moment of inertia of code wheel	≤ 0.09 gcm ²
Output current per channel	max. 5 mA



The index signal I is synchronised with channel A or B.