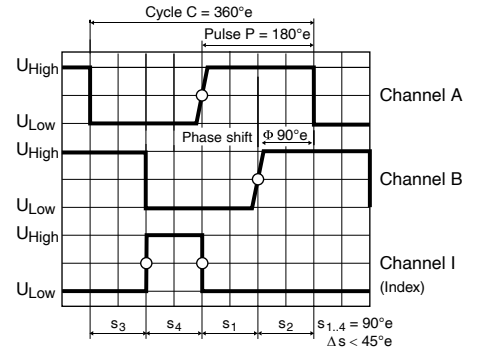
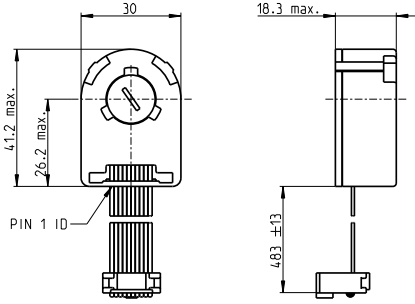


# Encoder HEDL 5540 500 CPT, 3 channels, with line driver RS 422

sensor



Direction of rotation cw (definition cw p. 78)

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

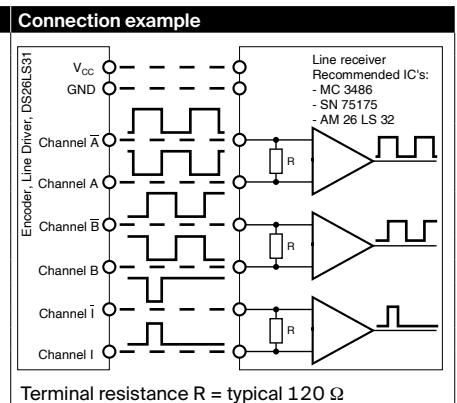
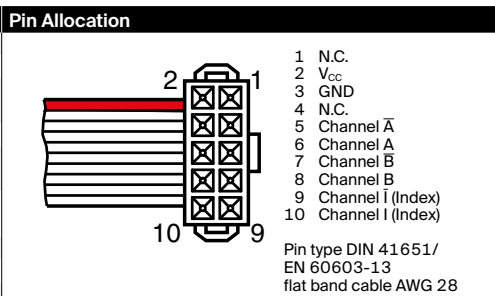
Part Numbers				
110512	110514	110516	110518	X drives

Type	110512	110514	110516	110518	X drives
Counts per turn	500	500	500	500	500
Number of channels	3	3	3	3	3
Max. operating frequency (kHz)	100	100	100	100	100
Max. speed (rpm)	12000	12000	12000	12000	12000
Shaft diameter (mm)	3	4	6	8	2-4

## maxon Modular System

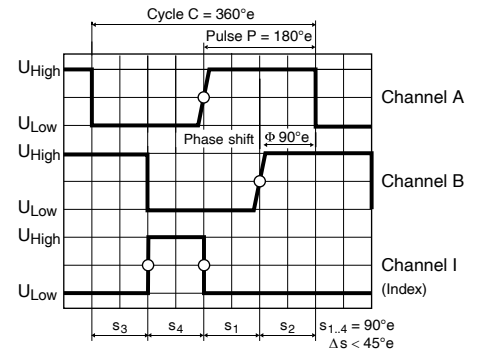
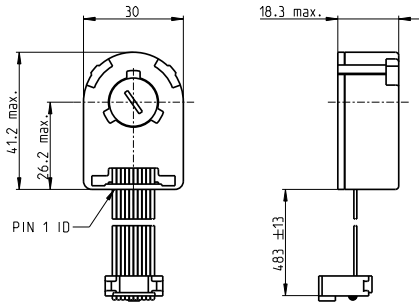
+ Motor	Page	+ Gearhead	Page	+ Brake	Page	Overall length [mm] / • see Gearhead
RE 25	144/146					75.3
RE 25	144/146	GP 26/GP 32	390/392			•
RE 25	144/146	KD 32, 1.0 - 4.5 Nm	403			•
RE 25	144/146	GP 32, 0.75 - 6.0 Nm	393/396			•
RE 25	144/146	GP 32 S	426-433			•
RE 25, 20 W	145					63.8
RE 25, 20 W	145	GP 22, 0.5 Nm	384			•
RE 25, 20 W	145	GP 26/GP 32	390/392			•
RE 25, 20 W	145	KD 32, 1.0 - 4.5 Nm	403			•
RE 25, 20 W	145	GP 32, 0.75 - 6.0 Nm	393/396			•
RE 25, 20 W	145	GP 32 S	426-433			•
RE 25, 20 W	145			AB 28	535	94.3
RE 25, 20 W	145	GP 26/GP 32	390/392	AB 28	535	•
RE 25, 20 W	145	KD 32, 1.0 - 4.5 Nm	403	AB 28	535	•
RE 25, 20 W	145	GP 32, 0.75 - 6.0 Nm	393/396	AB 28	535	•
RE 25, 20 W	145	GP 32 S	426-433	AB 28	535	•
RE 25, 20 W	146			AB 28	535	105.8
RE 25, 20 W	146	GP 26/GP 32	390/392	AB 28	535	•
RE 25, 20 W	146	KD 32, 1.0 - 4.5 Nm	403	AB 28	535	•
RE 25, 20 W	146	GP 32, 0.75 - 6.0 Nm	393/396	AB 28	535	•
RE 25, 20 W	146	GP 32 S	426-433	AB 28	535	•
RE 30, 15 W	147					88.8
RE 30, 15 W	147	GP 32, 0.75 - 4.5 Nm	394			•
RE 30, 60 W	148					88.8
RE 30, 60 W	148	GP 32, 0.75 - 6.0 Nm	392-399			•
RE 30, 60 W	148	KD 32, 1.0 - 4.5 Nm	403			•
RE 30, 60 W	148	GP 32 S	426-433			•
RE 35, 90 W	149					91.7
RE 35, 90 W	149	GP 32, 0.75 - 8.0 Nm	392-400			•
RE 35, 90 W	149	GP 42, 3.0 - 15.0 Nm	405			•
RE 35, 90 W	149	GP 32 S	426-433			•
RE 35, 90 W	149			AB 28	535	124.3
RE 35, 90 W	149	GP 32, 0.75 - 8.0 Nm	392-400	AB 28	535	•
RE 35, 90 W	149	GP 42, 3.0 - 15.0 Nm	405	AB 28	535	•
RE 35, 90 W	149	GP 32 S	427-433	AB 28	535	•

Technical Data	
Supply voltage V <sub>CC</sub>	5 V ± 10%
Typical current draw	55 mA
Output signal driver used:	EIA Standard RS 422 DS26LS31
Phase shift φ	90°e ± 45°e
Signal rise time (typically, at C <sub>L</sub> = 25 pF, R <sub>L</sub> = 2.7 kΩ, 25 °C)	180 ns
Signal fall time (typically, at C <sub>L</sub> = 25 pF, R <sub>L</sub> = 2.7 kΩ, 25 °C)	40 ns
Index pulse width	90°e
Operating temperature range	-40...+100 °C
Moment of inertia of code wheel	≤ 0.6 gcm <sup>2</sup>
Max. angular acceleration	250 000 rad s <sup>-2</sup>
Output current per channel	± 20 mA



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

# Encoder HEDL 5540 500 CPT, 3 channels, with line driver RS 422



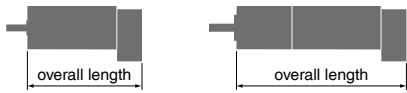
Direction of rotation cw (definition cw p. 78)

sensor

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

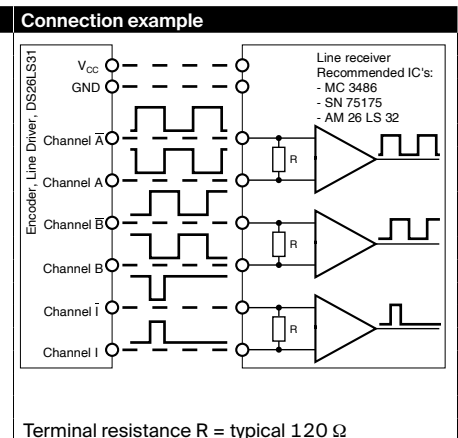
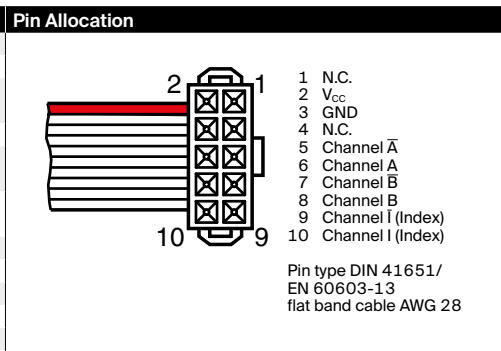
Part Numbers				
110512	110514	110516	110518	X drives

Type	110512	110514	110516	110518	X drives
Counts per turn	500	500	500	500	500
Number of channels	3	3	3	3	3
Max. operating frequency (kHz)	100	100	100	100	100
Max. speed (rpm)	12000	12000	12000	12000	12000
Shaft diameter (mm)	3	4	6	8	2-4



maxon Modular System						
+ Motor	Page	+ Gearhead	Page	+ Brake	Page	Overall length [mm] / • see Gearhead
RE 40, 25 W	150					91.7
RE 40, 150 W	151					91.7
RE 40, 150 W	151	GP 42, 3.0 - 15.0 Nm	405			•
RE 40, 150 W	151	GP 52, 4.0 - 30.0 Nm	410			•
RE 40, 150 W	151			AB 28	535	124.3
RE 40, 150 W	151	GP 42, 3.0 - 15.0 Nm	405	AB 28	535	•
RE 40, 150 W	151	GP 52, 4.0 - 30.0 Nm	410	AB 28	535	•
RE 50, 200 W	152					128.7
RE 50, 200 W	152	GP 52, 4.0 - 30.0 Nm	411			•
RE 50, 200 W	152	GP 62, 6.2 - 38.5 Nm	412			•
RE 65, 250 W	153					157.3
RE 65, 250 W	153	GP 81, 15.4 - 92.3 Nm	413			•
A-max 26	171-174					63.1
A-max 26	171-174	GP 26, 0.75 - 4.5 Nm	390			•
A-max 26	171-174	GS 30/GP 32	391/394			•
A-max 26	171-174	GP 32, 0.75 - 6.0 Nm	393/396			•
A-max 26	171-174	GS 38, 0.1 - 0.6 Nm	404			•
A-max 26	171-174	GP 32 S	426-433			•
A-max 32	176					82.3
A-max 32	176	GP 32, 0.75 - 6.0 Nm	392-398			•
A-max 32	176	GS 38, 0.1 - 0.6 Nm	404			•
A-max 32	176	GP 32 S	426-433			•
EC 32, 80 W	238					78.4
EC 32, 80 W	238	GP 32, 0.75 - 6.0 Nm	392-399			•
EC 32, 80 W	238	GP 32 S	426-433			•
EC 40, 170 W	239					103.4
EC 40, 170 W	239	GP 42, 3.0 - 15.0 Nm	405			•
EC 40, 170 W	239	GP 52, 4.0 - 30.0 Nm	410			•

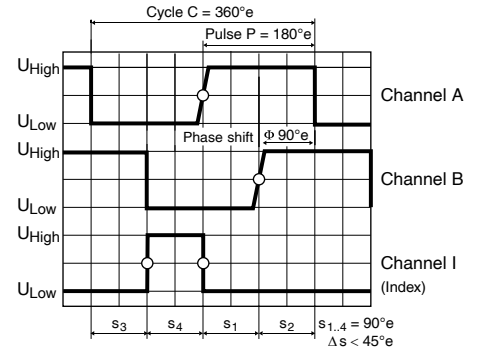
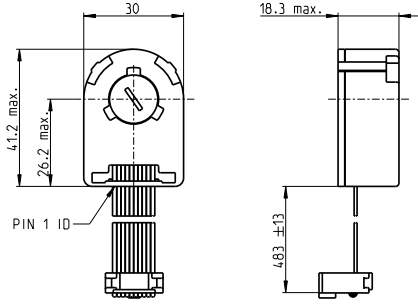
Technical Data	
Supply voltage $V_{CC}$	$5 V \pm 10\%$
Typical current draw	55 mA
Output signal	EIA Standard RS 422
driver used:	DS26LS31
Phase shift $\phi$	$90^\circ e \pm 45^\circ e$
Signal rise time (typically, at $C_L = 25 \text{ pF}$ , $R_L = 2.7 \text{ k}\Omega$ , $25^\circ C$ )	180 ns
Signal fall time (typically, at $C_L = 25 \text{ pF}$ , $R_L = 2.7 \text{ k}\Omega$ , $25^\circ C$ )	40 ns
Index pulse width	$90^\circ e$
Operating temperature range	$-40 \dots +100^\circ C$
Moment of inertia of code wheel	$\leq 0.6 \text{ gcm}^2$
Max. angular acceleration	$250\,000 \text{ rad s}^{-2}$
Output current per channel	$\pm 20 \text{ mA}$



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

# Encoder HEDL 5540 500 CPT, 3 channels, with line driver RS 422

sensor

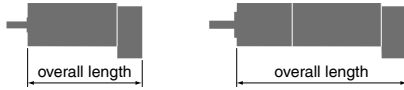


Direction of rotation cw (definition cw p. 78)

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

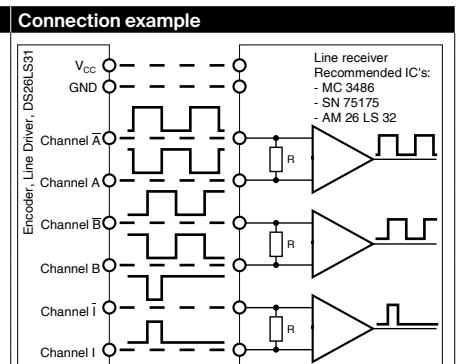
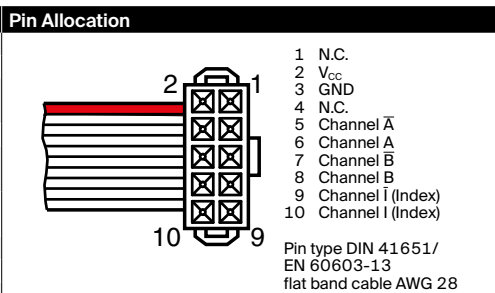
Part Numbers				
110512	110514	110516	110518	X drives

Type	110512	110514	110516	110518	X drives
Counts per turn	500	500	500	500	500
Number of channels	3	3	3	3	3
Max. operating frequency (kHz)	100	100	100	100	100
Max. speed (rpm)	12000	12000	12000	12000	12000
Shaft diameter (mm)	3	4	6	8	2-4



maxon Modular System						
+ Motor	Page	+ Gearhead	Page	+ Brake	Page	Overall length [mm] / • see Gearhead
EC-max 30, 40 W	250					62.7
EC-max 30, 40 W	250	GP 32, 0.75 - 4.5 Nm	394			•
EC-max 30, 40 W	250	GP 32, 1.0 - 8.0 Nm	398/400			•
EC-max 30, 40 W	250	KD 32, 1.0 - 4.5 Nm	403			•
EC-max 30, 40 W	250	GP 32 S	426-433			•
EC-max 30, 40 W	250			AB 20	532	98.2
EC-max 30, 40 W	250	GP 32, 0.75 - 4.5 Nm	394	AB 20	532	•
EC-max 30, 40 W	250	GP 32, 1.0 - 8.0 Nm	398/400	AB 20	532	•
EC-max 30, 40 W	250	KD 32, 1.0 - 4.5 Nm	403	AB 20	532	•
EC-max 30, 40 W	250	GP 32 S	426-433	AB 20	532	•
EC-max 30, 60 W	251					84.7
EC-max 30, 60 W	251	GP 32, 0.75 - 4.5 Nm	394			•
EC-max 30, 60 W	251	GP 32, 1.0 - 8.0 Nm	398/400			•
EC-max 30, 60 W	251	KD 32, 1.0 - 4.5 Nm	403			•
EC-max 30, 60 W	251	GP 42, 3.0 - 15.0 Nm	406			•
EC-max 30, 60 W	251	GP 32 S	426-433			•
EC-max 30, 60 W	251			AB 20	532	120.2
EC-max 30, 60 W	251	GP 32, 0.75 - 4.5 Nm	394	AB 20	532	•
EC-max 30, 60 W	251	GP 32, 1.0 - 8.0 Nm	398/400	AB 20	532	•
EC-max 30, 60 W	251	KD 32, 1.0 - 4.5 Nm	403	AB 20	532	•
EC-max 30, 60 W	251	GP 42, 3.0 - 15.0 Nm	406	AB 20	532	•
EC-max 30, 60 W	251	GP 32 S	426-433	AB 20	532	•
EC-max 40, 70 W	252					81.4
EC-max 40, 70 W	252	GP 42, 3.0 - 15.0 Nm	406			•
EC-max 40, 70 W	252			AB 28	534	110.7
EC-max 40, 70 W	252	GP 42, 3.0 - 15.0 Nm	406	AB 28	534	•
EC-max 40, 120 W	253					111.4
EC-max 40, 120 W	253	GP 42, 3.0 - 15.0 Nm	406			•
EC-max 40, 120 W	253	GP 52, 4.0 - 30.0 Nm	411			•
EC-max 40, 120 W	253			AB 28	534	140.7
EC-max 40, 120 W	253	GP 42, 3.0 - 15.0 Nm	406	AB 28	534	•
EC-max 40, 120 W	253	GP 52, 4.0 - 30.0 Nm	411	AB 28	534	•

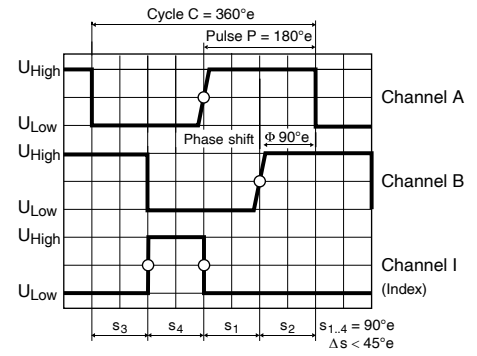
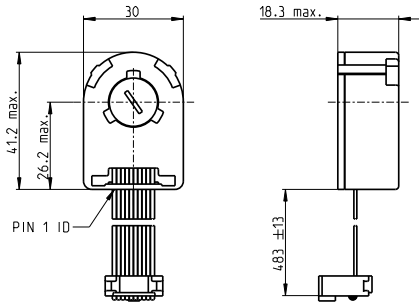
Technical Data	
Supply voltage $V_{CC}$	5 V ± 10%
Typical current draw	55 mA
Output signal	EIA Standard RS 422
driver used:	DS26LS31
Phase shift $\Phi$	90°e ± 45°e
Signal rise time	
(typically, at $C_L = 25$ pF, $R_L = 2.7$ k $\Omega$ , 25 °C)	180 ns
Signal fall time	
(typically, at $C_L = 25$ pF, $R_L = 2.7$ k $\Omega$ , 25 °C)	40 ns
Index pulse width	90°e
Operating temperature range	-40...+100 °C
Moment of inertia of code wheel	≤ 0.6 gcm <sup>2</sup>
Max. angular acceleration	250 000 rad s <sup>-2</sup>
Output current per channel	± 20 mA



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

Terminal resistance R = typical 120  $\Omega$

# Encoder HEDL 5540 500 CPT, 3 channels, with line driver RS 422



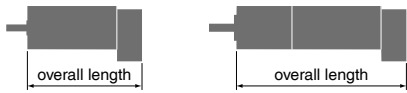
Direction of rotation cw (definition cw p. 78)

sensor

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

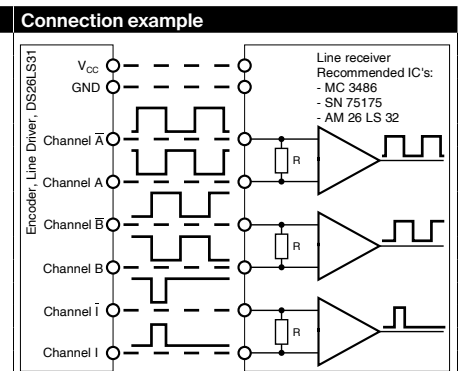
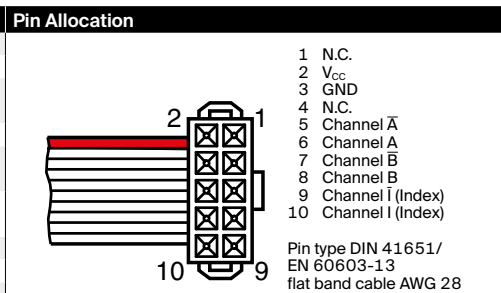
Part Numbers					
110512	110514	110516	110518	X drives	

Type	110512	110514	110516	110518	X drives
Counts per turn	500	500	500	500	500
Number of channels	3	3	3	3	3
Max. operating frequency (kHz)	100	100	100	100	100
Max. speed (rpm)	12000	12000	12000	12000	12000
Shaft diameter (mm)	3	4	6	8	2-4



maxon Modular System						
+ Motor	Page	+ Gearhead	Page	+ Brake	Page	Overall length [mm] / • see Gearhead
EC-4pole 22, 90 W	257					70.1
EC-4pole 22, 90 W	257	GP 22/GP 32	387/398			•
EC-4pole 22, 90 W	257	GP 32 S	426-433			•
EC-4pole 22, 120 W	258					87.5
EC-4pole 22, 120 W	258	GP 22/GP 32	387/398			•
EC-4pole 22, 120 W	258	GP 32 S	426-433			•
EC-4pole 30, 100 W	259					67.6
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 - 15 Nm	406			•
EC-4pole 30, 100 W	259	GP 32 S	426-433			•
EC-4pole 30, 100 W	259			AB 20	532	104.0
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 - 15 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					84.6
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 - 15 Nm	406			•
EC-4pole 30, 200 W	261	GP 32 S	426-433			•
EC-4pole 30, 200 W	261			AB 20	532	121.0
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 - 15 Nm	406	AB 20	532	•
EC-4pole 30, 200 W	261	GP 32 S	426-433	AB 20	532	•

Technical Data	
Supply voltage $V_{CC}$	$5 V \pm 10\%$
Typical current draw	55 mA
Output signal driver used:	EIA Standard RS 422 DS26LS31
Phase shift $\phi$	$90^\circ e \pm 45^\circ e$
Signal rise time (typically, at $C_L = 25 \text{ pF}$ , $R_L = 2.7 \text{ k}\Omega$ , $25^\circ \text{C}$ )	180 ns
Signal fall time (typically, at $C_L = 25 \text{ pF}$ , $R_L = 2.7 \text{ k}\Omega$ , $25^\circ \text{C}$ )	40 ns
Index pulse width	$90^\circ e$
Operating temperature range	$-40 \dots +100^\circ \text{C}$
Moment of inertia of code wheel	$\leq 0.6 \text{ gcm}^2$
Max. angular acceleration	$250000 \text{ rad s}^{-2}$
Output current per channel	$\pm 20 \text{ mA}$

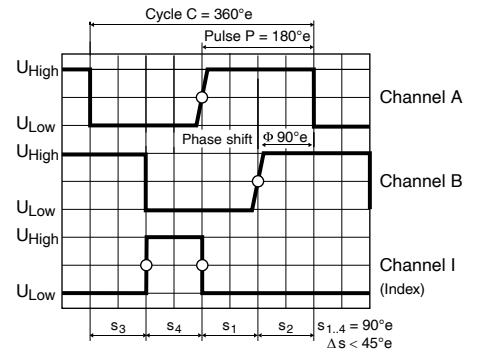
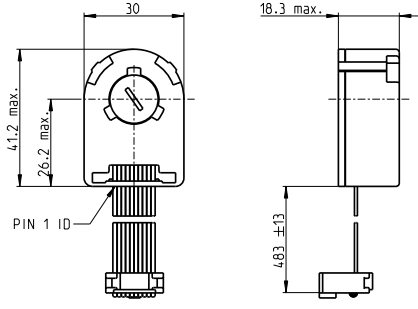


The index signal I is synchronized with channel A or B.

Terminal resistance R = typical 120  $\Omega$

# Encoder HEDL 5540 500 CPT, 3 channels, with line driver RS 422

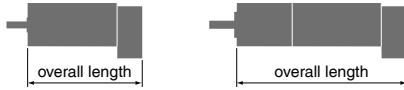
sensor



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

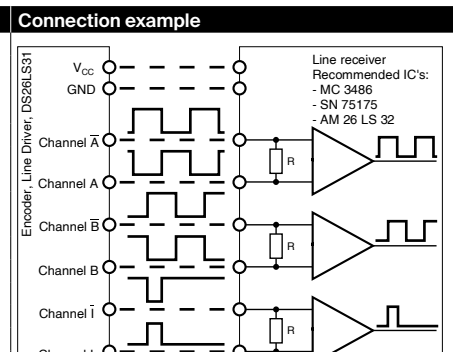
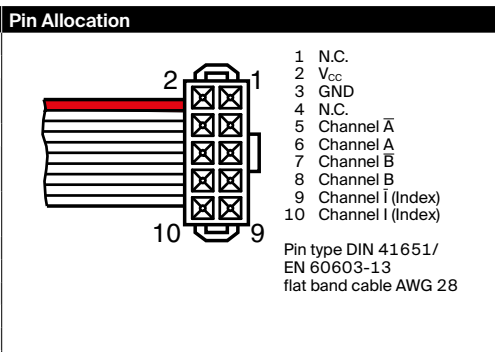
Part Numbers				
110512	110514	110516	110518	X drives

Type	110512	110514	110516	110518	X drives
Counts per turn	500	500	500	500	500
Number of channels	3	3	3	3	3
Max. operating frequency (kHz)	100	100	100	100	100
Max. speed (rpm)	12000	12000	12000	12000	12000
Shaft diameter (mm)	3	4	6	8	2-4



maxon Modular System						Overall length [mm] / • see Gearhead
+ Motor	Page	+ Gearhead	Page	+ Brake	Page	
EC-i 30, 30 W	268					62.7
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					62.7
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					84.7
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					84.7
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					49.0
EC-i 40, 50 W	272	GP 32, 1.0 - 6.0 Nm	398			•
EC-i 40, 50 W	272/273	GP 42, 3.0 - 15.0 Nm	406			•
EC-i 40, 50 W	272	GP 32 S	426-433			•
EC-i 40, 70 W	274/275					59.0
EC-i 40, 70 W	274	GP 32, 1.0 - 6.0 Nm	398			•
EC-i 40, 70 W	274/275	GP 42, 3.0 - 15.0 Nm	406			•
EC-i 40, 70 W	274	GP 32 S	426-433			•
EC-i 40, 100 W	276					79.0
EC-i 40, 100 W	276	GP 42, 3.0 - 15.0 Nm	406			•
EC-i 40, 130 W	277					113.8
EC-i 40, 130 W	277	GP 42, 3.0 - 15.0 Nm	406			•
EC-i 52, 180 W	278					100.7
EC-i 52, 180 W	278	GP 52, 4.0 - 30.0 Nm	410			•
EC-i 52, 200 W	279					130.7
EC-i 52, 200 W	279	GP 52, 4.0 - 30.0 Nm	410			•
DCX 22 S	99-102					online
DCX 22 L	101-102					online
DCX 26 L	103-104					online
DCX 32 L	105					online
DCX 35 L	106					online

Technical Data	
Supply voltage V <sub>CC</sub>	5 V ± 10%
Typical current draw	55 mA
Output signal driver used:	EIA Standard RS 422 DS26LS31
Phase shift $\phi$	90°e ± 45°e
Signal rise time (typically, at C <sub>L</sub> = 25 pF, R <sub>L</sub> = 2.7 k $\Omega$ , 25 °C)	180 ns
Signal fall time (typically, at C <sub>L</sub> = 25 pF, R <sub>L</sub> = 2.7 k $\Omega$ , 25 °C)	40 ns
Index pulse width	90°e
Operating temperature range	-40...+100 °C
Moment of inertia of code wheel	≤ 0.6 gcm <sup>2</sup>
Max. angular acceleration	250 000 rad s <sup>-2</sup>
Output current per channel	± 20 mA



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