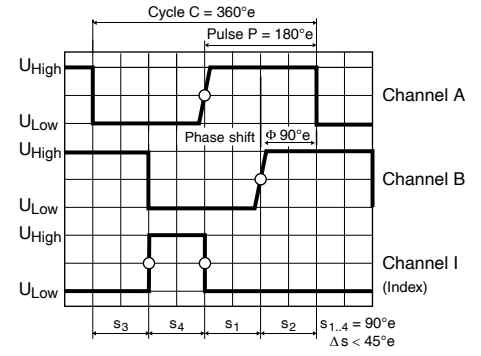
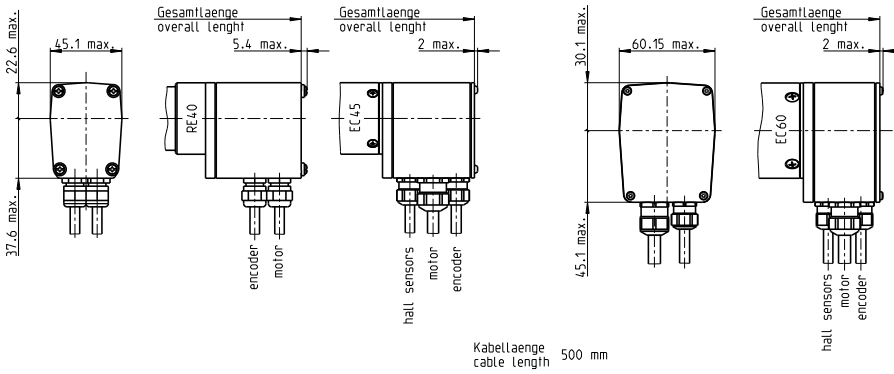


Encoder HEDL 9140 500 CPT, 3 Channels, with Line Driver RS 422

sensor



Direction of rotation cw (definition cw p. 68)

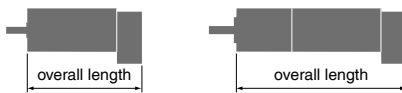
- Stock program
- Standard program
- Special program (on request)

Part Numbers

137959

Type

Counts per turn	500
Number of channels	3
Max. operating frequency (kHz)	100
Max. speed (rpm)	12000



maxon Modular System

+ Motor	Page	+ Gearhead	Page	+ Brake	Page	Overall length [mm] / • see Gearhead
RE 40, 150 W	141					125.1
RE 40, 150 W	141	GP 42, 3 - 15 Nm	396			•
RE 40, 150 W	141	GP 52, 4 - 30 Nm	401			•
RE 40, 150 W	141			AB 28	520	135.6
RE 40, 150 W	141	GP 42, 3 - 15 Nm	396	AB 28	520	•
RE 40, 150 W	141	GP 52, 4 - 30 Nm	401	AB 28	520	•
EC 45, 150 W	230					126.8
EC 45, 150 W	230	GP 42, 3 - 15 Nm	396			•
EC 45, 150 W	230	GP 52, 4 - 30 Nm	401			•
EC 45, 150 W	230			AB 28	520	135.6
EC 45, 150 W	230	GP 42, 3 - 15 Nm	396	AB 28	520	•
EC 45, 150 W	230	GP 52, 4 - 30 Nm	401	AB 28	520	•
EC 45, 250 W	231					159.6
EC 45, 250 W	231	GP 42, 3 - 15 Nm	397			•
EC 45, 250 W	231	GP 52, 4 - 30 Nm	401			•
EC 45, 250 W	231	GP 62, 8 - 50 Nm	403			•
EC 45, 250 W	231			AB 28	520	168.4
EC 45, 250 W	231	GP 42, 3 - 15 Nm	396	AB 28	520	•
EC 45, 250 W	231	GP 52, 4 - 30 Nm	401	AB 28	520	•
EC 45, 250 W	231	GP 62, 8 - 50 Nm	403	AB 28	520	•
EC 60, 400 W	232					177.3
EC 60, 400 W	232	GP 81, 20 - 120 Nm	404			•
EC 60, 400 W	232			AB 41	523	214.9
EC 60, 400 W	232	GP 81, 20 - 120 Nm	404	AB 41	523	•

Technical Data

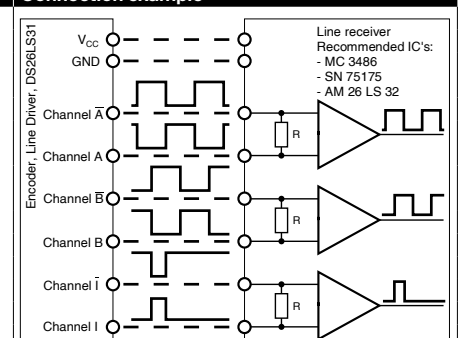
Supply voltage V_{CC}	$5 V \pm 10\%$
Typical current draw	55 mA
Output signal	EIA Standard RS 422
driver used:	DS26LS31
Phase shift ϕ	$90^\circ e \pm 45^\circ e$
Signal rise time	180 ns
(typically, at $C_L = 25 \text{ pF}$, $R_L = 11 \text{ k}\Omega$, 25°C)	
Signal fall time	40 ns
(typically, at $C_L = 25 \text{ pF}$, $R_L = 11 \text{ k}\Omega$, 25°C)	
Index pulse width	$90^\circ e$
Operating temperature range	$-40 \dots +85^\circ\text{C}$
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	$\pm 20 \text{ mA}$

Pin Allocation

Cable white	=	2 V_{CC} 5 VDC
Cable brown	=	3 GND
Cable green	=	5 Channel \bar{A}
Cable yellow	=	6 Channel A
Cable grey	=	7 Channel \bar{B}
Cable pink	=	8 Channel B
Cable blue	=	9 Channel \bar{I} (Index)
Cable red	=	10 Channel I (Index)

Cable size $8 \times 0.25 \text{ mm}^2$

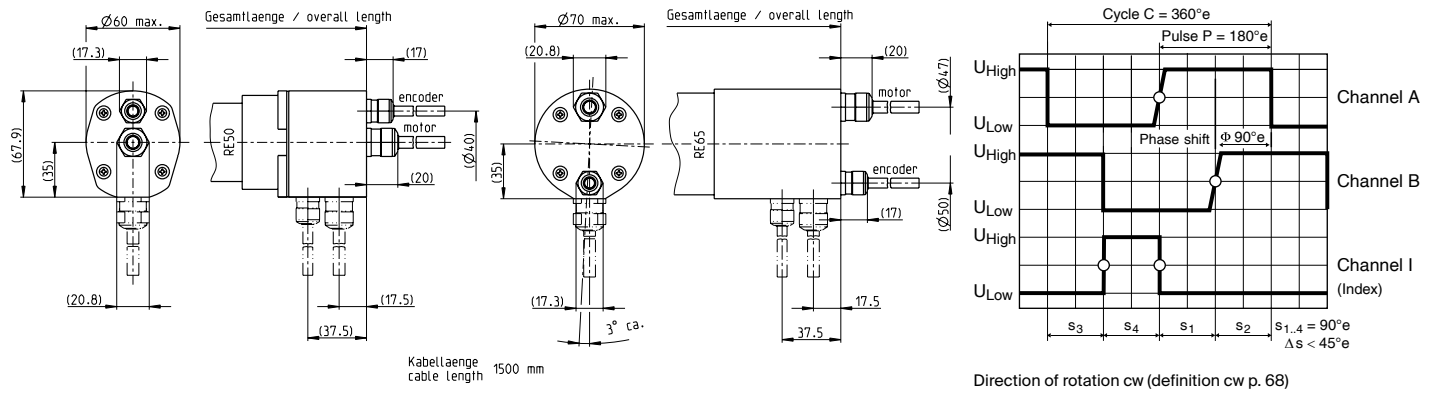
Connection example



Terminal resistance $R = \text{typical } 120 \Omega$

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

Encoder HEDL 9140 500 CPT, 3 Channels, with Line Driver RS 422



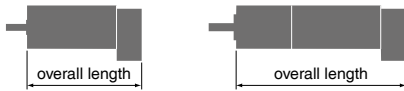
sensor

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

Part Numbers

cable outlet axial	386051	386001
cable outlet radial	386053	386002

Type		
Counts per turn	500	500
Number of channels	3	3
Max. operating frequency (kHz)	100	100
Max. speed (rpm)	12 000	12 000



maxon Modular System

+ Motor	Page	+ Gearhead	Page	+ Brake	Page	Overall length [mm] / • see Gearhead
RE 50, 200 W	142					170.4
RE 50, 200 W	142	GP 52, 4 - 30 Nm	401			•
RE 50, 200 W	142	GP 62, 8 - 50 Nm	403			•
RE 50, 200 W	142			AB 44	524	183.4
RE 50, 200 W	142	GP 52, 4 - 30 Nm	401	AB 44	524	•
RE 50, 200 W	142	GP 62, 8 - 50 Nm	403	AB 44	524	•
RE 65, 250 W	143					187.5
RE 65, 250 W	143	GP 81, 20 - 120 Nm	404			•
RE 65, 250 W	143			AB 44	524	205.5
RE 65, 250 W	143	GP 81, 20 - 120 Nm	404	AB 44	524	•

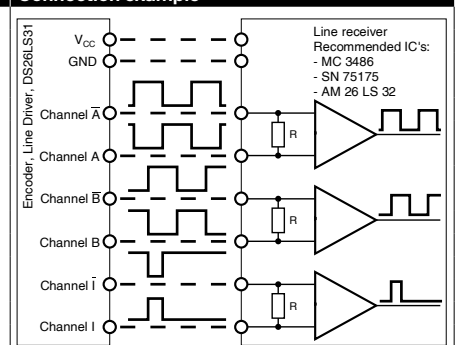
Technical Data

Supply voltage V_{CC}	$5 V \pm 10\%$
Typical current draw	55 mA
Output signal driver used:	EIA Standard RS 422 DS26LS31
Phase shift Φ	$90^\circ e \pm 45^\circ e$
Signal rise time (typically, at $C_L = 25 \text{ pF}$, $R_L = 11 \text{ k}\Omega$, 25°C)	180 ns
Signal fall time (typically, at $C_L = 25 \text{ pF}$, $R_L = 11 \text{ k}\Omega$, 25°C)	40 ns
Index pulse width	$90^\circ e$
Operating temperature range	$-40 \dots +85^\circ\text{C}$
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	$\pm 20 \text{ mA}$
Protection to	IP54

Pin Allocation

Encoder	
Cable white	= $V_{CC} 5 \text{ VDC}$
Cable brown	= GND
Cable green	= Channel A
Cable yellow	= Channel B
Cable grey	= Channel I (Index)
Cable pink	= Channel A
Cable blue	= Channel I (Index)
Cable red	= Channel I (Index)
Cable size $8 \times 0.25 \text{ mm}^2$	
Motor	
Cable white	= Motor +
Cable brown	= Motor -
Cable size $2 \times 1.0 \text{ mm}^2$	

Connection example



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

Terminal resistance R = typical 120 Ω