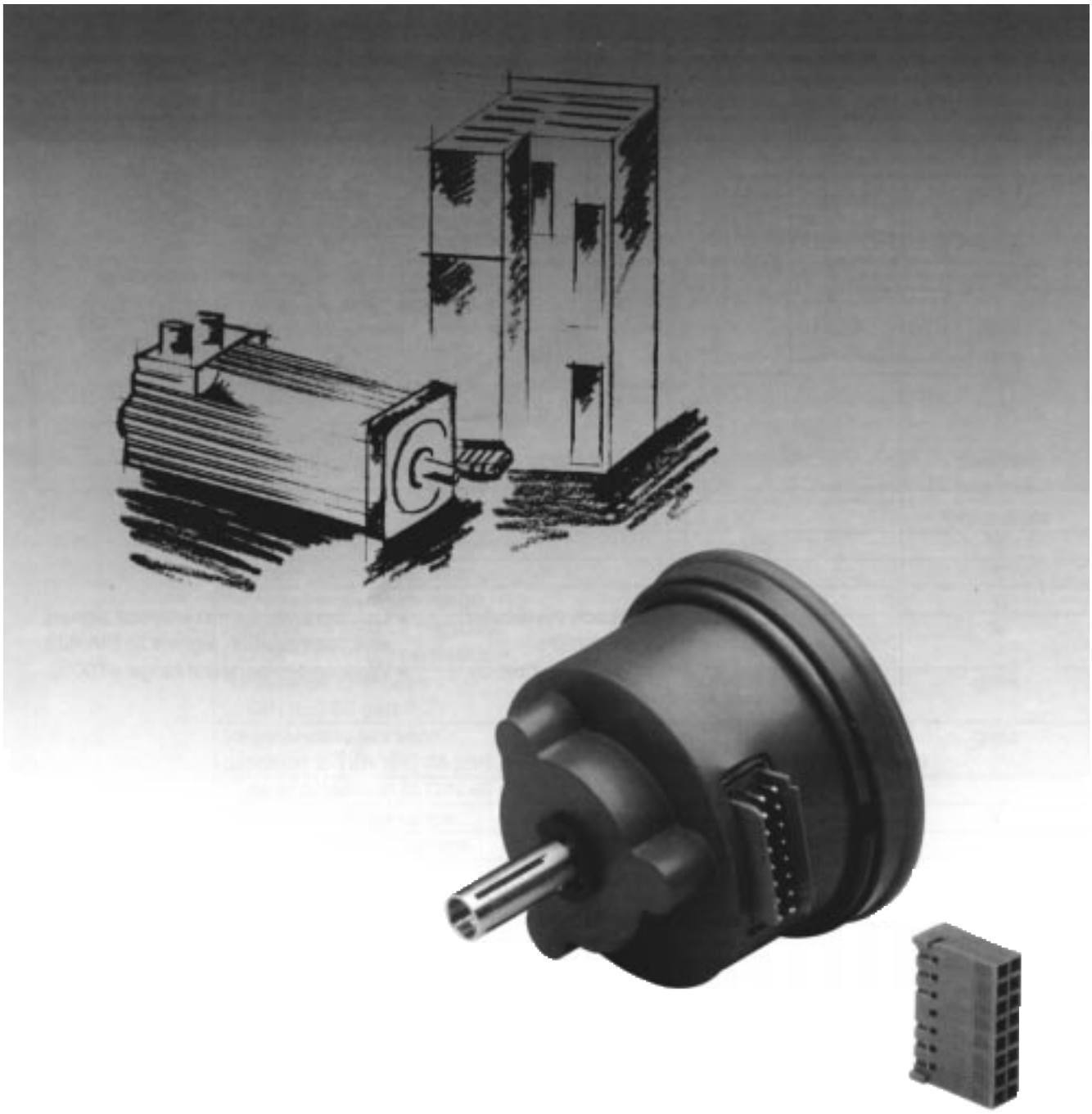
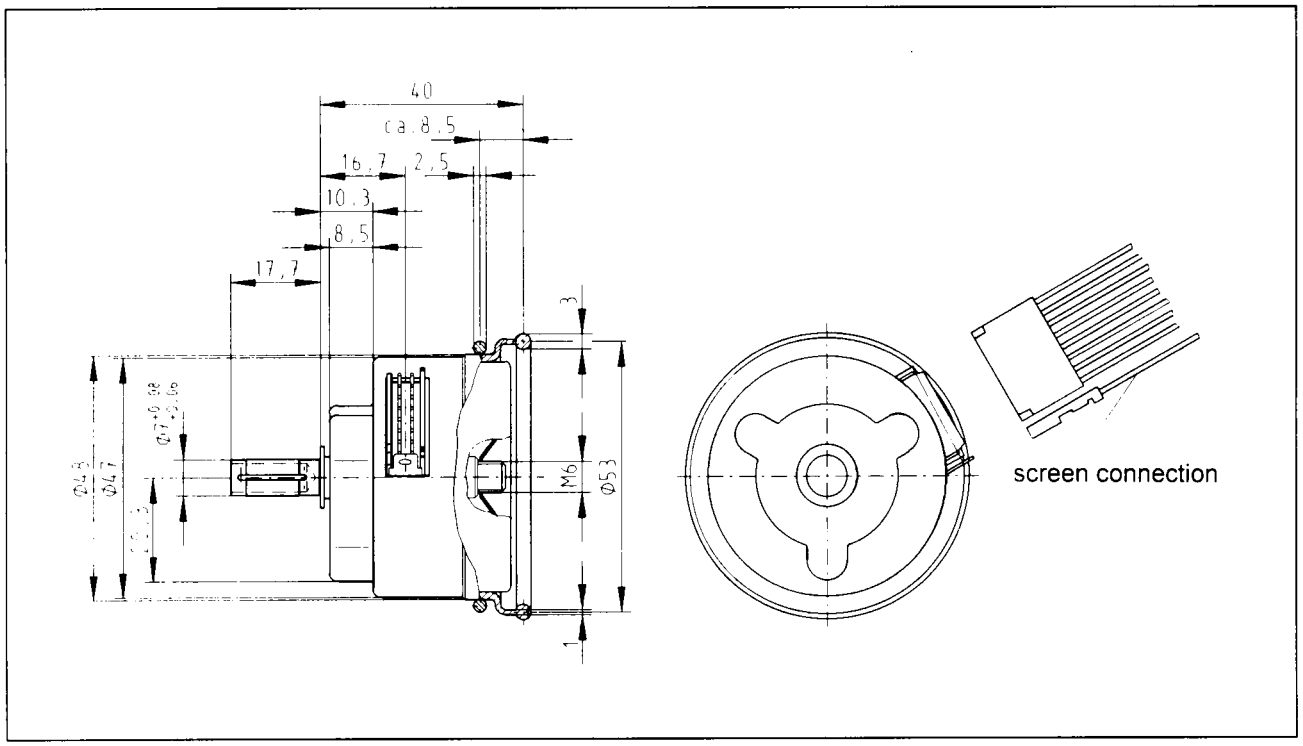
CDD 50
DiCoder Motor Feedback System



24-hour fax back 916-431-6545 • www.stegmann.com
Tel. 800-811-9110 • 937-454-1956 • Fax 937-454-1955 • E-mail sales@stegmann.com
7496 Webster Street • P.O. Box 13596 • Dayton, OH 45413-13596

CDD 50 Dimensional drawing and Features



- DiCoder motor feedback system for installation in electric motors
- Two square-wave signals, offset by 90°, reference pulse and the respectively inverted signals
- Commutation signals
- Output driver for incremental signals and commutation signals to EIA 422
- Working temperature range +100°C

24-hour fax back 916-431-6545 • www.stegmann.com
Tel. 800-811-9110 • 937-454-1956 • Fax 937-454-1955 • E-mail sales@stegmann.com
7496 Webster Street • P.O. Box 13596 • Dayton, OH 45413-13596

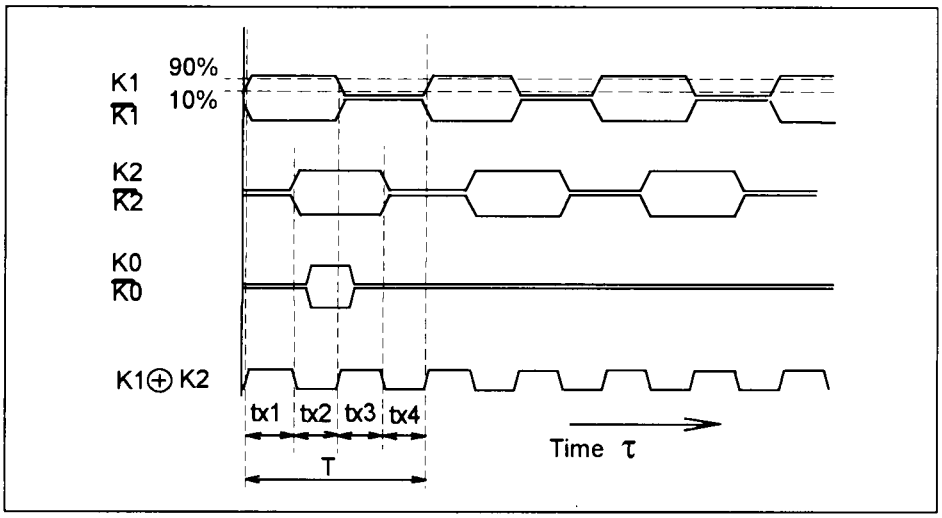
CDD 50 Technical data and Characteristics to DIN 32 878

			Units
Number of pulses (Z) per revolution		1024, 2048, 4096	
Commutation signals		6pole (see diagram) other commutation on request	
Dimensions		See dimensional drawing	
Mass		0.1	kg
Moment of inertia of the rotor		10	gcm2
Measurement step		90/ number of pulses	Degrees
Reference signal	Number	1	
	Position	90° electric, logically linked to K1 and K2	
Max. angular acceleration		300	kHz
Max. operating speed		9000	min^{-1}
Working speed		6000	min^{-1}
Max. angular acceleration		0.2×10^6	$1/s^2$
Operating torque		0.2	Ncm
Starting torque		0,4	Ncm
Permissible shaft movement			
- Radial movement	static	1	mm
	dynamic	0.1	mm
- Axial movement	static	1.5	mm
	dynamic	1	mm
- Angular movement perpendicular to axis of rotation	static	0.01	mm/mm
	dynamic	0.005	mm/mm
Bearing life		3.6×10^9	Revolutions
Working temperature range		0 .... +100	°C
Operating temperature range		-20 .... +125	°C
Storage temperature range		-40 .... +125	°C
Permissible relative humidity (condensation not permissible)		90	%
Resistance to shocks to DIN IEC 68 part 2-27		100/10	g/ms
Resistance to vibration condition to DIN IEC 68 part 2-6		20/0 ... 2000	g/Hz
Type of protection to DIN 40 050		IP 40	
Operating voltage range		5 ±10%	V
No-load operating current		50	mA
Information on interface: output driver		To DIN 66 259 Part 3 and EIA Standard RS 422	
Output signal train		See pulse timing diagram	
Signal tolerance tx1 ... $tx4_{max}$ bei 300 kHz		1.5 x ¼ T	

24-hour fax back 916-431-6545 • www.stegmann.com
Tel. 800-811-9110 • 937-454-1956 • Fax 937-454-1955 • E-mail sales@stegmann.com
7496 Webster Street • P.O. Box 13596 • Dayton, OH 45413-13596

Pulse timing diagrams

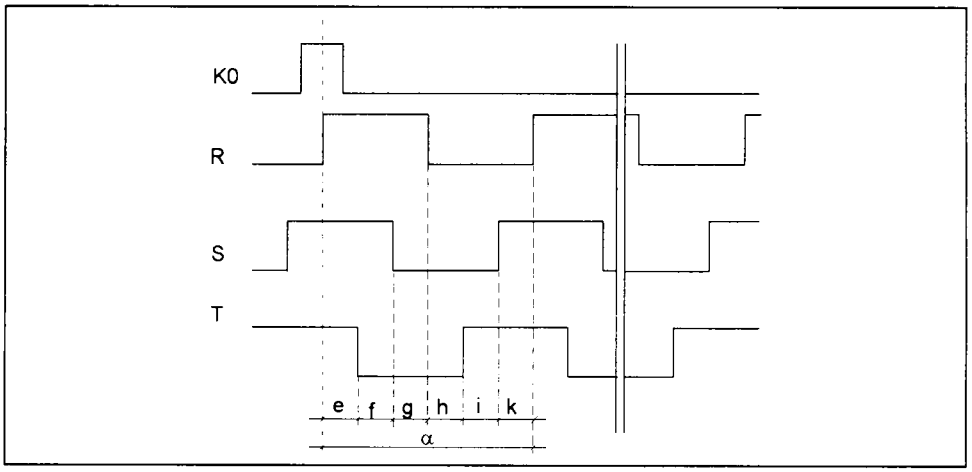
Incremental tracks
At constant rotational speed, viewed towards the input shaft and clockwise rotation



By linking the two signals K1 and K2 whose periods tx1 ... tx4 have different magnitudes, an output signal is produced.
The differences are determined:
1. by the mark/space ratio tolerance of the individual channels
2. by the tolerance in the 90° phase shift between K1 and K2
3. by the frequency

In the ideal case, the times tx1 ... tx4 would in each case have to be 1/4 of the period T. The typical output frequency of the encoder is defined such that the maximum time tx is smaller than 1.5 x T/4.

Pulse timing diagram
For 6-pole commutation (3 pole pairs) and 8-pole commutation (4pole pairs)

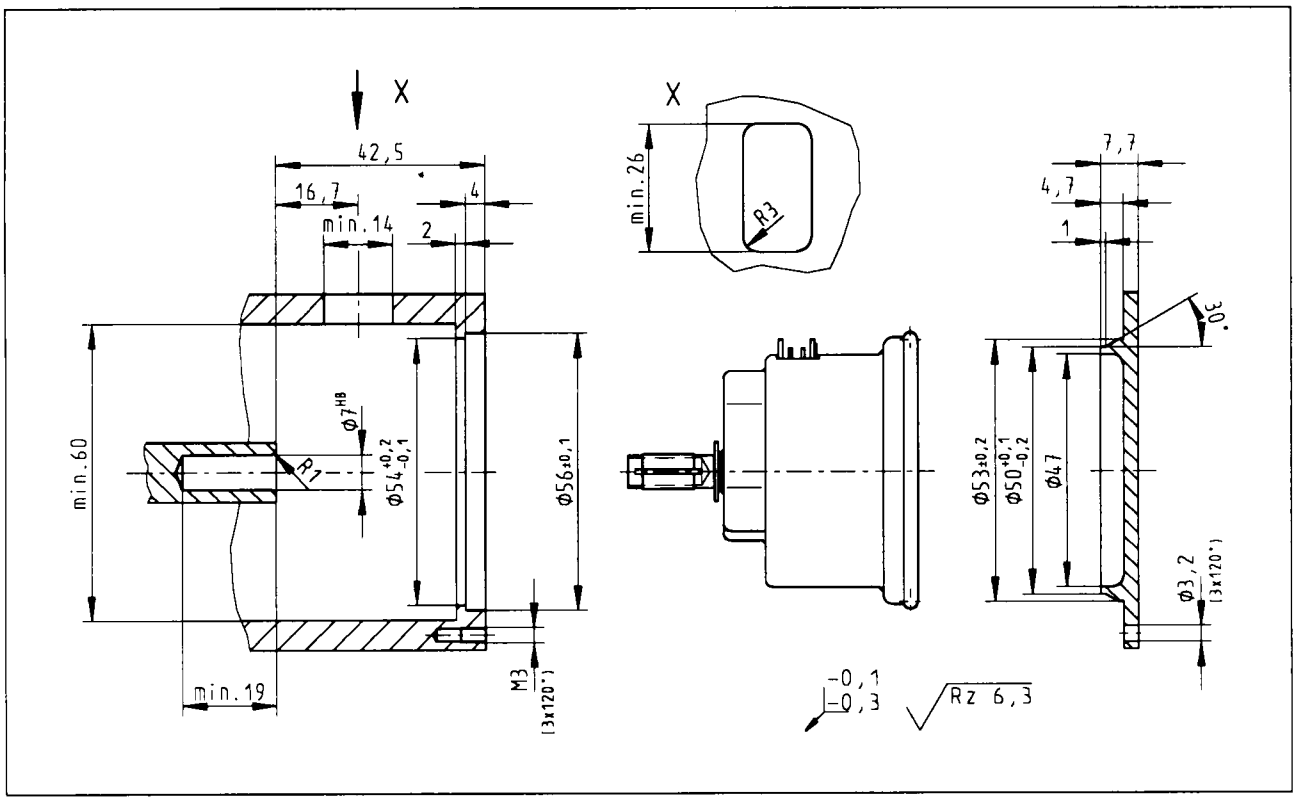


Number of poles	e, f, g, h, i, k	α
6	20°	120°
8	15°	90°

The angle values are mechanical degrees over one shaft revolution.
Flanc accuracy of the signals R, S, T ±1°

24-hour fax back 916-431-6545 • www.stegmann.com
Tel. 800-811-9110 • 937-454-1956 • Fax 937-454-1955 • E-mail sales@stegmann.com
7496 Webster Street • P.O. Box 13596 • Dayton, OH 45413-13596

CDD 50 Recommended installation



The removal of a fitting of the device should only be effected using the rear end of the encoder shaft.

Under no circumstances should you press against the encoder housing!

Refer to the Mounting Instructions!

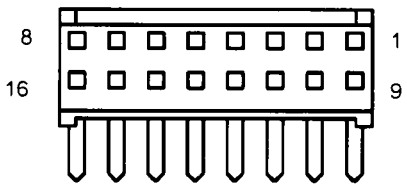
24-hour fax back 916-431-6545 • www.stegmann.com
Tel. 800-811-9110 • 937-454-1956 • Fax 937-454-1955 • E-mail sales@stegmann.com
7496 Webster Street • P.O. Box 13596 • Dayton, OH 45413-13596

Using 16-pole Berg/Dupont connector

Pin 16pol Berg/Dupont-connector	Colour	Signal	Explanation
1	blue	GND	Ground
2	white/green	R	Commutation signal
3	white/yellow	S	Commutation signal
4	white/grey	T	Commutation signal
5	violet	K0	Reference signal
6	pink	K2	Incremental signal
7	white	K1	Incremental signal
8	---	N. C.	
9	red	Us	Supply voltage 5 V ± 10%
10	white/pink	R	Inverted commutation signal
11	white/blue	S	Inverted commutation signal
12	white/red	T	Inverted commutation signal
13	yellow	K0	Inverted reference signal
14	black	K2	Inverted incremental signal
15	brown	K1	Inverted incremental signal
16	---	N. C.	

Please note! Pins which are designated by „N. C." must not be connected.

View on plug side

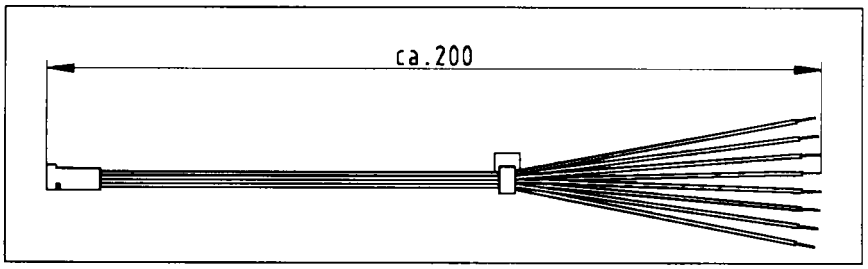


Notice! The encoder housing must be connected to the screen. The 200 mm long screen wire attached to the encoder is designed for this purpose.

Stranded cable

Item number
046 029 000 330

The stranded cable with Berg-Dubox-connection 2 x 8 is not included in the scope of delivery. Please order separately.



24-hour fax back 916-431-6545 • www.stegmann.com
Tel. 800-811-9110 • 937-454-1956 • Fax 937-454-1955 • E-mail sales@stegmann.com
7496 Webster Street • P.O. Box 13596 • Dayton, OH 45413-13596