


Motor Feedback System

CFS50-AAZ0-S03


4,096 lines
Motor Feedback Systems

Deviation to standard CFS50:

- Stranded cable with strain relief not included in scope of delivery, please order separate (part no. 2051662)

Features

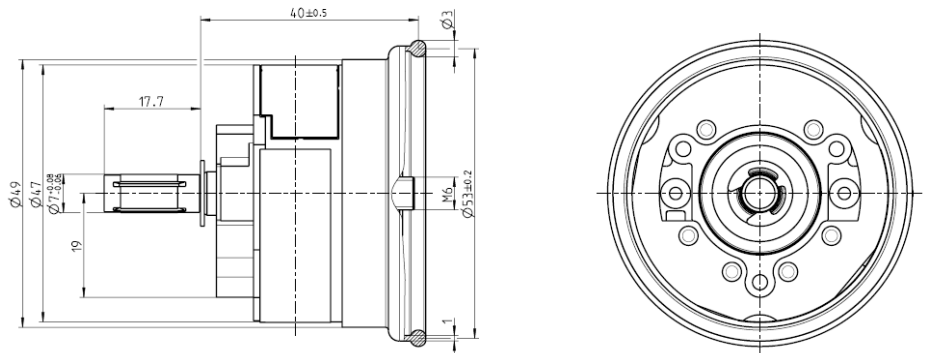
- 4,096 lines per revolution
- 4 pole pairs
- Output driver for incremental signals and commutation signals to EIA 422
- Two square-wave signals (90° offset) reference pulse and the respective inverted signals
- Commutation signals R,S,T

PIN- and wire allocation

PIN	Colour	Signal
1	blue	GND
2	red	Us
3	yellow	Z ₋
4	magenta	Z ₊
5	brown	A ₋
6	white	A ₊
7	black	B ₋
8	pink	B ₊
9	white/red	T ₋
10	white/grey	T ₊
11	white/blue	S ₋
12	white/yellow	S ₊
13	white/pink	R ₋
14	white/green	R ₊
15	grey	SET0



Dimensional drawing



Order information

Type	Part no.
CFS50-AAZ0-S03	1053271

Technical Data		CFS50- AAZ0- S03
Number of lines per revolution		4,096
Commutation signals		(See diagram, page 3) other commutation on request
Dimensions		mm (see dimensional drawing)
Mass		0.1 kg
Moment of inertia of the rotor		10 gcm ²
Measurement step		90°/number of lines
Reference signal	No. off Position	1 90° electr. logically linked with A and B
Error limits		± 0.05°
Measuring step deviation		± 0.01°
Max. output frequency		600 kHz
Max. operating speed		12,000 min ⁻¹
Working speed		6,000 min ⁻¹
Max. angular acceleration		0.2 x 10 ⁶ 1/s ²
Operating torque		0.2 Ncm
Starting torque		0.4 Ncm
Permissible shaft movement		
static	radial/axial	± 0.5 mm/ ± 0.75 mm
dynamic	radial/axial	± 0.1 mm/ ± 0.2 mm
Angular motion, perpendicular to the rotational axis		
static		± 0.005 mm/mm
dynamic		± 0.0025 mm/mm
Life of ball bearings		3.6 x 10 ⁹ revolutions
Working temperature range		- 20 ... +115 °C
Storage temperature range ¹⁾		-40 ... +125 °C
Permissible relative humidity ²⁾		90 %
Resistance		
to shocks ³⁾		100 g/6 ms
to vibration ⁴⁾		20 g/10...2000 Hz
Protection class to IEC 60529		IP 40
EMC ⁵⁾		
Operating voltage range		5 V ± 10%
Max. operating current, no load		60 mA
Interface details:		
Output driver		EIA standard RS422
Output signal sequence		See pulse diagram (page 3)

¹⁾ Without packaging

²⁾ Condensation not permissible

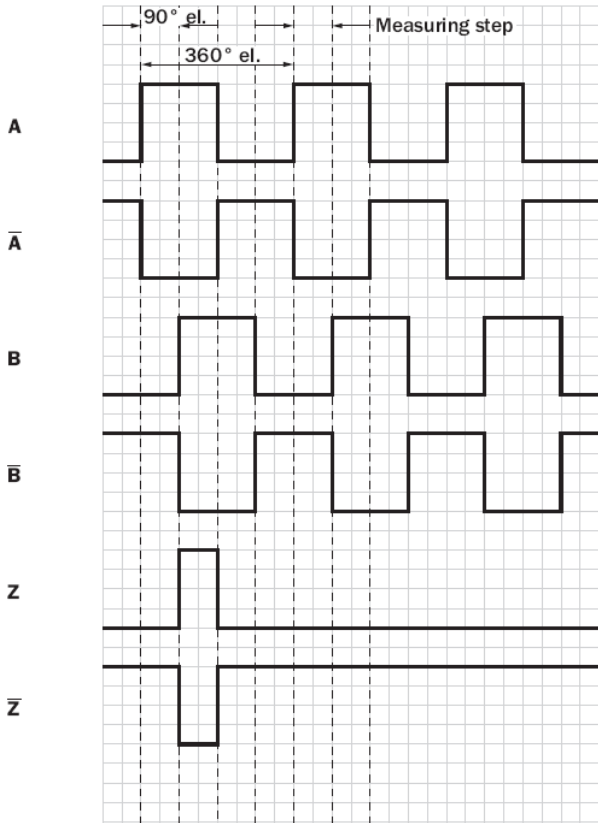
³⁾ According to EN 60068-2-27

⁴⁾ According to EN 60068-2-6

⁵⁾ According to EN 61000-6-2 and EN 61000-6-3

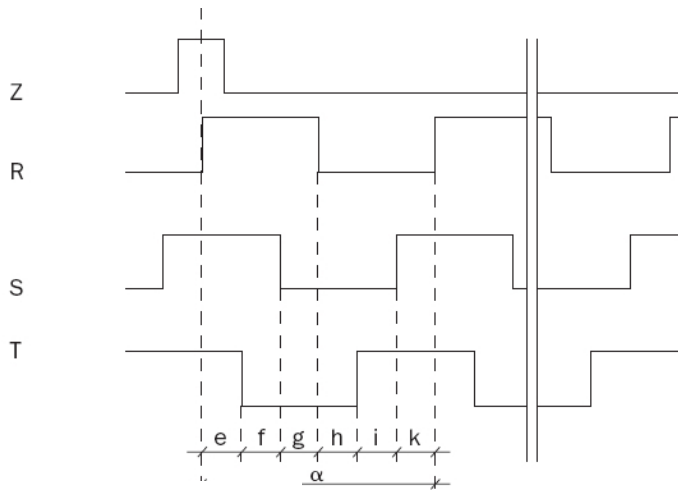
The EMC according to the standards quoted is achieved when the motor feedback system is mounted in an electrically conductive housing, which is connected to the central earthing point of the motor controller via a cable screen. This is also where the GND (0 V) connection of the supply voltage is linked to earth. Users must perform their own test when other screen designs are used.

Incremental signals



At constant speed, looking at the input shaft, and clockwise rotation.

Pulse-time diagram



Flank accuracy Signals R, S, T $\pm 1^\circ$

Pole pairs	Number of poles	e, f, g, h, i, k	α
4	8	15°	90°

The angular data is related to a mechanical shaft rotation.

Mounting instruction

Motor Feedback System with Plug-in Shaft and Rubber Support

Assembly

Block customer's drive shaft (1) to prevent rotation. Remove label (2) and insert connector with strain relief (3) volt-free, resp. Screw pressing tool onto the B-side encoder shaft end (6). Spray activator onto the encoder shaft (4) and into the hole of the drive shaft. Thinly apply adhesive onto the encoder shaft (4). Plug encoder shaft (4) in drive shaft (1) and continuously press, with the pressing tool, up to the stop (5);

Do not hit with a hammer or similar tool!!!

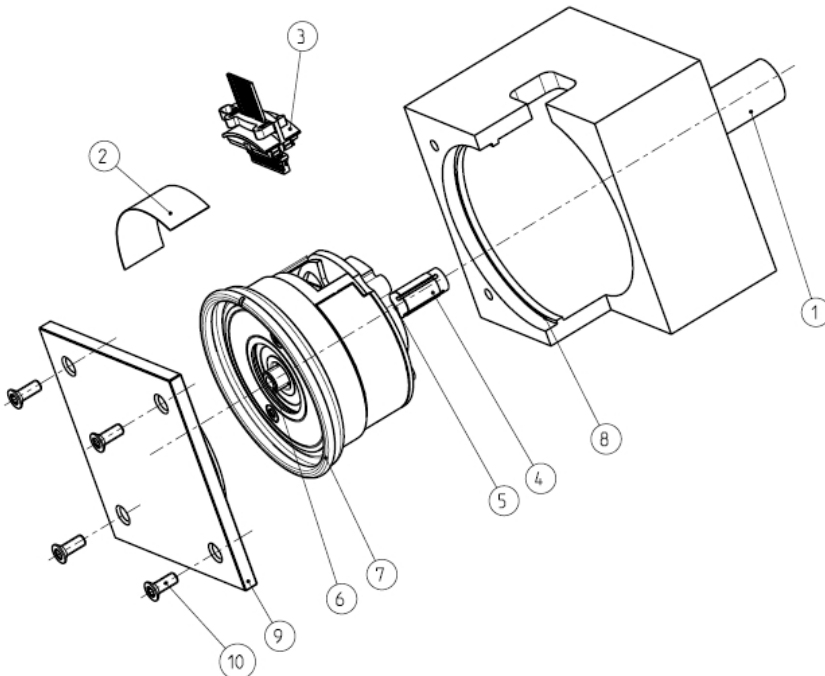
Pressing force required = 250 N - 500 N

Remove pressing tool.

Press housing collar (7) into customer's housing groove (8). Press housing cover (9) into the rubber housing and fix with screws (10). If the cover can only be pressed in with difficulty, the housing collar (7) can be lightly greased (use high temperature grease 160°C). Only test encoder function after the adhesive is fully cured (8 hours approx.) and, at this time, do not make any mechanical adjustments such as commutation.

Disassembly

Block customer's drive shaft (1) to prevent rotation. Undo electrical connection, volt-free. Remove housing cover (9) by undoing the screws (10). Attach the removal tool to the B-side encoder shaft end on the B-side (6) and pull the encoder off.



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