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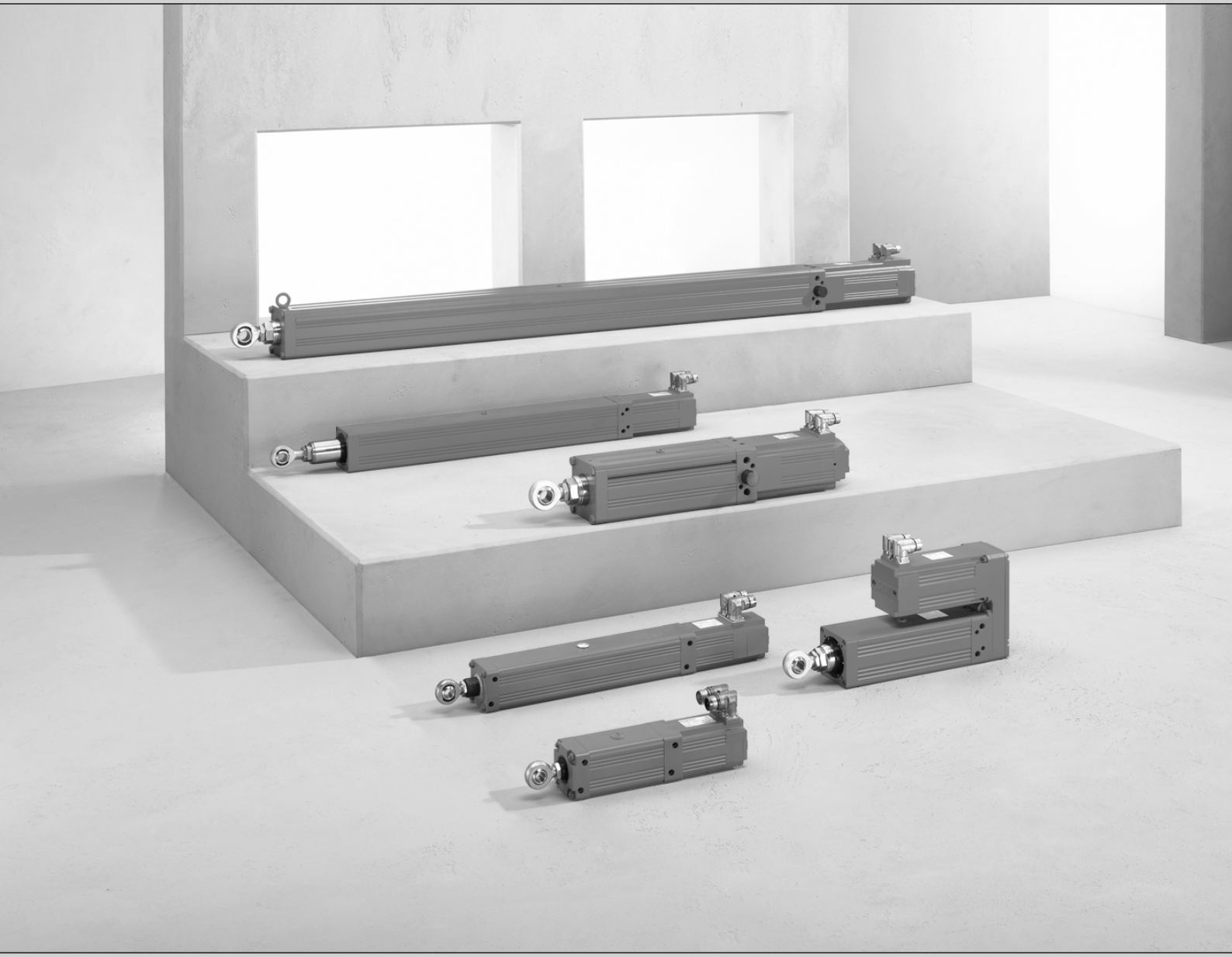
Revision



Electric Cylinders (Standard and Modular)

CMS..50 – 71, CMSM..50 – 71

Edition 11/2016

23068914/EN

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1 Revision

INFORMATION

This addendum describes amendments to the "Electric Cylinders CMS..50 – 71" and the "Modular Electric Cylinders CMS..50 – 71" operating instructions. The following chapters of the operating instructions have been complemented/revised:

- 7.3 Lubricant for recirculating ball screws and planetary roller screw drives for CMS50 and CMS71 ("Electric Cylinders" operating instructions)
- 6.2 Oil bath lubrication for CMSMB50 – 71 ("Modular Electric Cylinders" operating instructions)
- 4.6.2 Installation situation and stroke range CMSB50/63/71, CMSMB50/63/71 ("Electric Cylinders" operating instructions)
- 4.2.2 Installation situation and stroke range CMSB50/63/71, CMSMB50/63/71 ("Modular Electric Cylinders" operating instructions)

→ In addition, the temperature sensor /KY is replaced by the temperature sensor /PK

1.1 Lubricant for recirculating ball screws and planetary roller screw drives for CMS50 and CMS71

CMS.. electric cylinders are filled with the lubricant Fuchs RENOLIT CX-TOM15 as standard.

Instead, you can order the CMS.. motor with food-grade lubricant CASSIDA GREASE GTS2 from Bremer & Leguil.

INFORMATION

Only the lubricant specified on the nameplate may be used for relubrication:

- Do not mix the lubricant with others.

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1.2 Oil bath lubrication for CMSMB50 – 71

The CMSMB50 – 71 modular electric cylinders are equipped with an oil bath lubrication with little maintenance requirements. The only required maintenance measure is a regular visual check for leaks. The oil need not be changed in usual applications.

An oil change might make sense for applications with the following higher requirements:

- Travel cycles with a cyclic duration factor > 60% and an operational performance of > 1 km/hour.
- Working strokes < 10 mm with stroke frequencies > 5 Hz
- Expected service life > 10000 hours of nominal operation

Contact SEW-EURODRIVE if necessary.

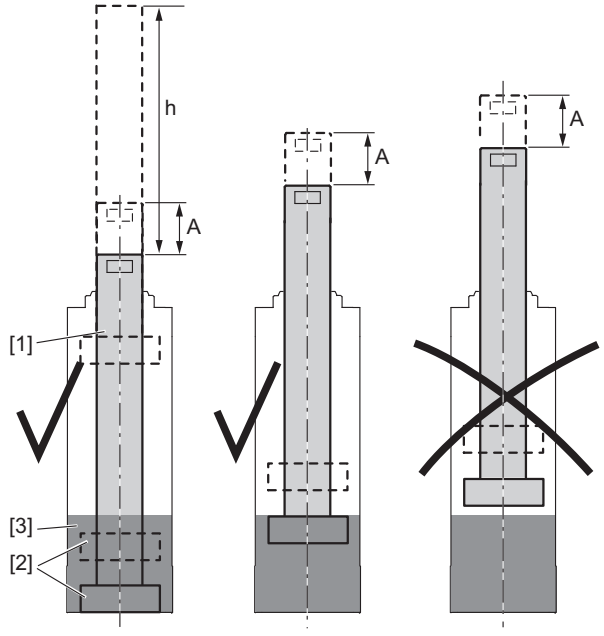
As standard, CMSMB50 – 71 modular electric cylinders are filled with the lubricant Mobil SHC630 at the plant. This lubricant is used for recirculating ball screws and planetary roller screws.

As an alternative, you can order CMSMB50 – 71 with Klüber food-grade Klübersynth UH1 6-220 N from SEW-EURODRIVE.

1.3 Installation situation and stroke range for CMSB50 – 71, CMSMB50 – 71

1.3.1 Installation with piston rod pointing upwards

When mounting the electric cylinder, note that the spindle nut is not lubricated in case of incorrect stroke setting. With short working strokes [A] from the retracted position of the piston rod, the end position of the spindle nut [2] must be smaller than half the stroke length [1/2 h] -25 mm of the total stroke [h] of the electric cylinder.



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[1] Piston rod
[2] Spindle nut
[3] Oil

1.4 New temperature sensor /PK

The temperature sensor /PK replaces the previous temperature sensor /KY.

INFORMATION

Make sure the used inverter has the relevant evaluation electronics for the PK (PT1000) temperature sensor.

1.4.1 Type designation

/PK

1.4.2 Description

Thermal motor protection in combination with the corresponding evaluation electronics prevents the motor from overheating and consequently from being damaged. A temperature sensor provides only indirect protection as only one sensor value is determined.

The /PK design consists of a platinum sensor PT1000 installed in one of the three motor windings. Unlike the /KY semiconductor sensor, the platinum sensor has an almost linear characteristic curve and is more accurate. The frequency inverter can take on the function of motor protection via the /PK, when it is used in combination with a frequency inverter containing the thermal motor model.

1.4.3 Technical data

The PT1000 temperature sensor continuously detects the motor temperature.

	PT1000
Connection	red – black
Total resistance at 20 – 25 °C	1050 Ω < R < 1150 Ω
Test current	< 3 mA

INFORMATION

The temperature sensor is unipolar which means that interchanging the incoming cables does not change the measurement result.

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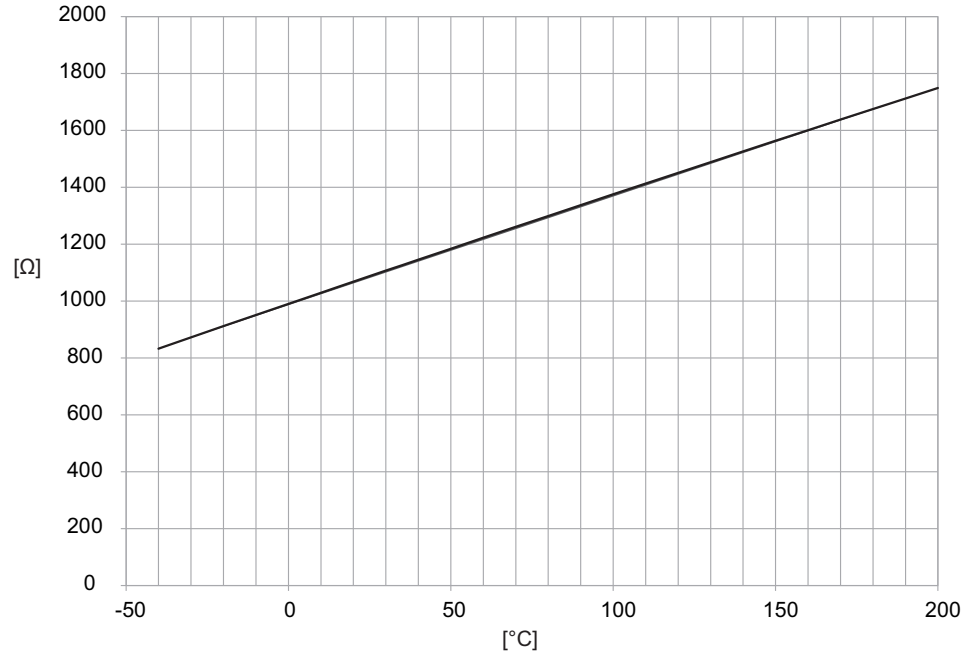
Typical characteristic curve of PT1000, F0.6



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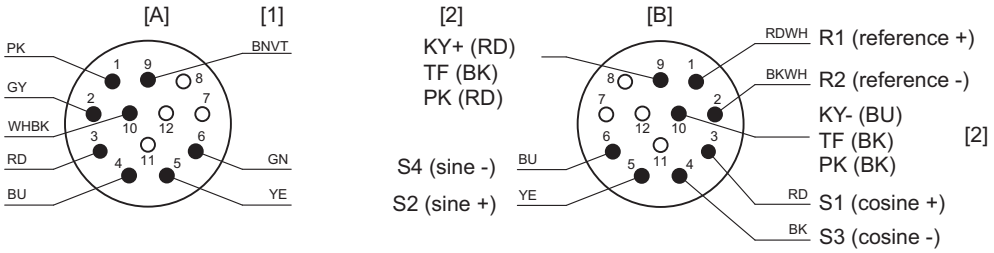
1.5 Electrical installation

1.5.1 Connecting the motor and the encoder system via plug connector SM. / SB.

Wiring diagrams of plug connectors

Wiring diagram for RH1M resolver signal plug connectors

Wiring diagram



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[1] Shield connected to the metal housing of the connector. Color code according to SEW-EURODRIVE cable
[2] KY+ (RD), KY- (BU), optional TF (BK), optional PK (RD/BK)

Pin assignment of plug connector lower part [B]

Pin	Color code	Connection
1	RD/WH	R1 (reference +)
2	BK/WH	R2 (reference -)
3	RD	S1 (cosine +)
4	BK	S3 (cosine -)
5	YE	S2 (sine +)
6	BU	S4 (sine -)
7	–	–
8	–	–
9	BK	KY+/TF/PK
10	BK	KY-/TF/PK
11	–	–
12	–	–

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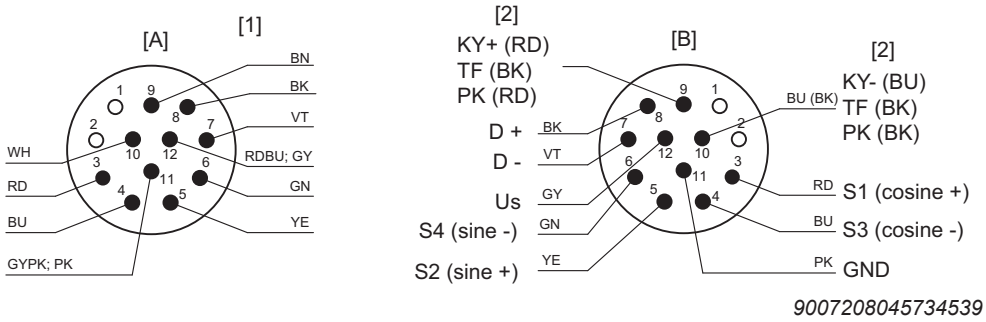
Connection of signal plug connector encoder AK0H, EK0H, AK1H, EK1H

Wiring diagram



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[1] Shield connected to the metal housing of the connector. Color code according to SEW-EURODRIVE cable
[2] KY+ (RD), KY-(BU), optional TF (BK), optional PK (RD/BK)

Pin assignment of plug connector lower part [B]

Pin	Color code	Connection
1	–	–
2	–	–
3	RD	S1 (cosine +)
4	BU	S3 (cosine -)
5	YE	S2 (sine +)
6	GN	S4 (sine -)
7	VT	D -
8	BK	D +
9	BK	KY+/TF/PK
10	BK	KY-/TF/PK
11	PK	Voltage reference (GND)
12	GY	Supply voltage Vs

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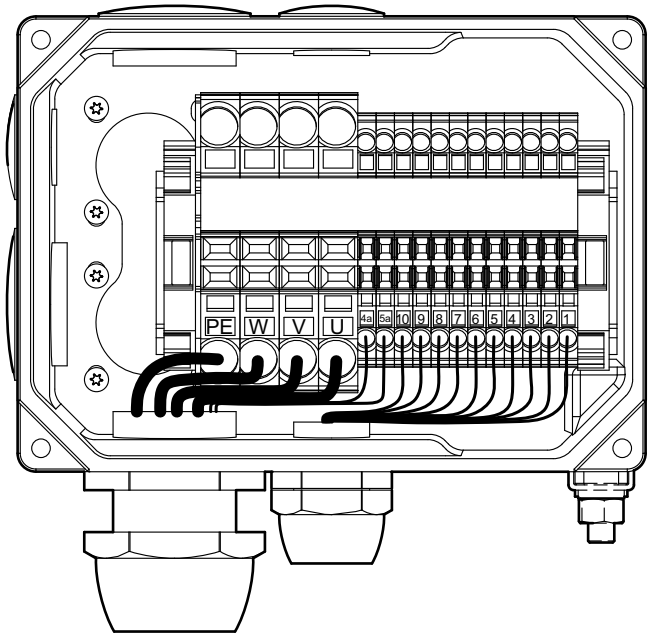
1.5.2 Connecting motor and encoder system via KK/KKS terminal box to CMSMB50/63/71

Connecting CMSMB50/63



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Signal

Resolver			Encoder		
1	ref +	Reference	1	cos +	Cosine
2	ref -		2	ref cos	Reference
3	cos +	Cosine	3	sin+	Sine
4	cos -		4	ref sin	Reference
5	sin+	Sine	5	D -	DATA
6	sin -		6	D +	DATA
7	–	–	7	GND	Ground
8	–	–	8	Us	Supply voltage
9	KY+/PK/TF	Motor protection	9	KY+/PK/TF	Motor protection
10	KY-/PK/TF		10	KY-/PK/TF	

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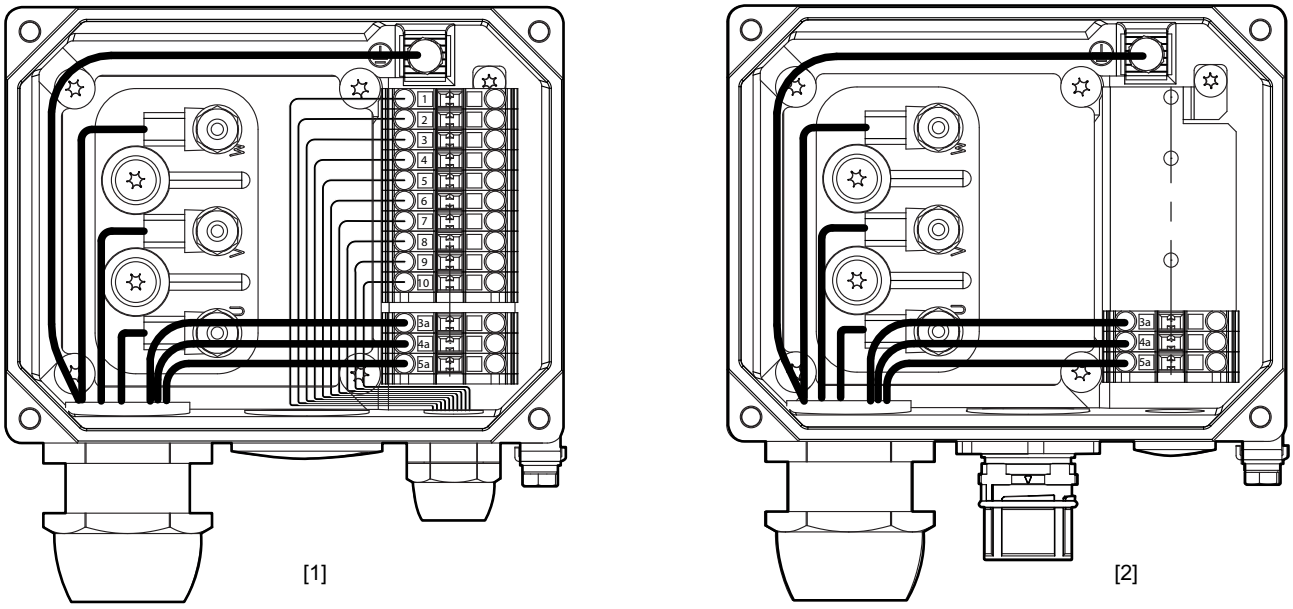
Connecting CMSMB71

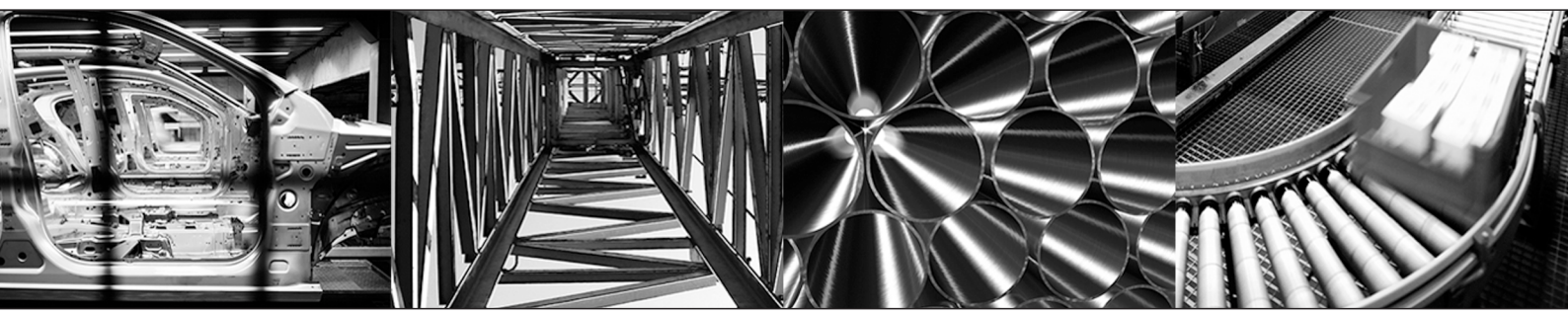


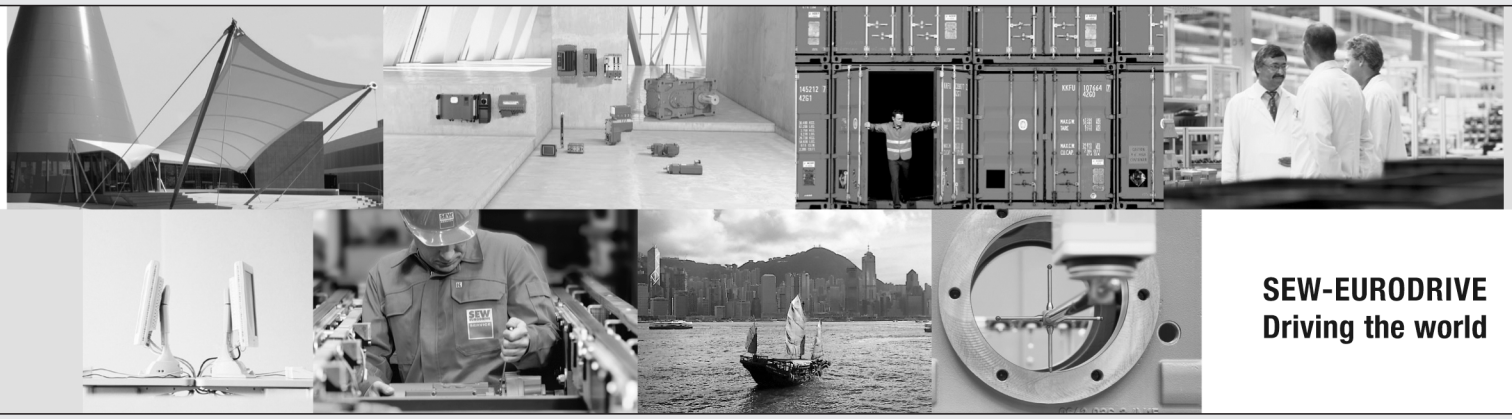
[1] KK terminal box

[2] KKS terminal box

Signal

Resolver			Encoder		
1	ref +	Reference	1	cos +	Cosine
2	ref -		2	ref cos	Reference
3	cos +	Cosine	3	sin+	Sine
4	cos -		4	ref sin	Reference
5	sin+	Sine	5	D -	DATA
6	sin -		6	D +	DATA
7	–	–	7	GND	Ground
8	–	–	8	Us	Supply voltage
9	KY+/PK/TF	Motor protection	9	KY+/PK/TF	Motor protection
10	KY-/PK/TF		10	KY-/PK/TF	





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