



**SEW**  
**EURODRIVE**

## Revision



### Synchronous Servomotors **CMP40 – CMP112, CMPZ71 – CMPZ100**



## 1 Revision



### INFORMATION

This addendum describes amendments to the "Synchronous Servomotors CMP40 – CMP112, CMPZ71 – CMPZ100" operating instructions.

- Additional chapter 5.4 "Brake controls with functional control input"
  - New temperature sensor /PK
-

## 1.1 Brake controls with functional control input

In addition to the voltage supply, the optional brake controls of the BMK., BMKB. and BMV. series offer a control input for a DC 24 V signal with which the brakes can be switched via a PLC.

It is a purely functional input that is not "functionally safe" with respect to safety technology.

Due to their operating principle, fault statuses may occur with these devices that lead to unintentional ongoing brake release, even if the control voltage has been switched off.



### **⚠ WARNING**

Unintentional ongoing brake release due to unrecognized malfunction of the brake control.

Severe or fatal injuries, e.g. due to falling hoist or extended coasting.

- Always disconnect all poles of the supply and control voltage for hoists and hoist-like applications.
  - Ensure that a malfunction of the control input can be detected through additional, suitable diagnostic measures e.g. by monitoring the braking current to meet high safety and reliability requirements.
  - Use the BST.. brake control for functional safety applications.
  - If you have any questions regarding the handling of the control input, contact SEW-EURODRIVE.
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## 1.2 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.

#### 1.2.1 Type designation

/PK

#### 1.2.2 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.

### 1.2.3 Technical data

The PT1000 temperature sensor continuously detects the motor temperature.

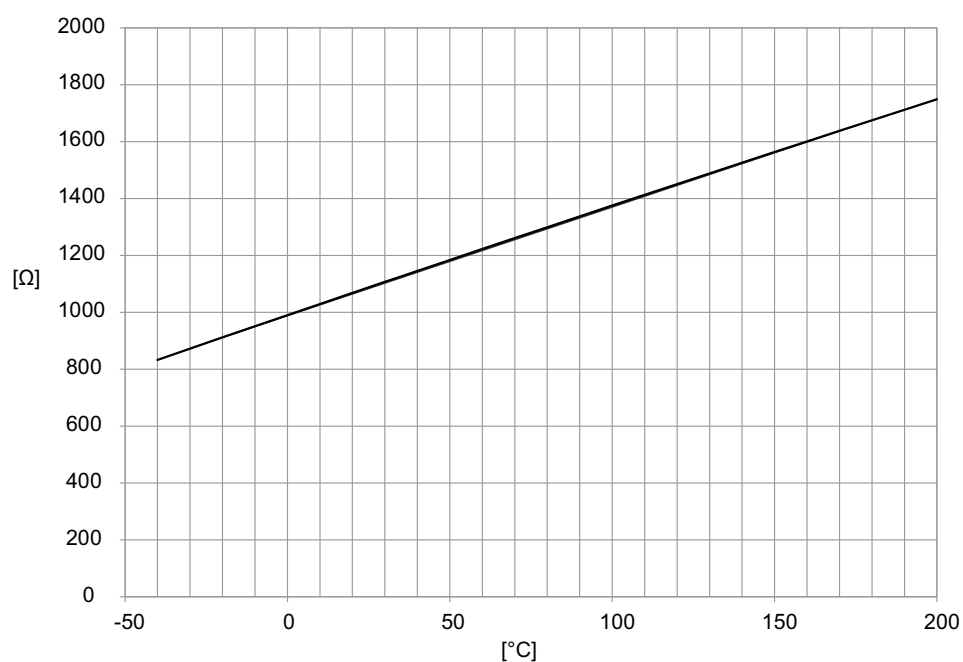
	PT1000
Connection	red – black
Total resistance at 20 – 25 °C	$1050\ \Omega < R < 1150\ \Omega$
Test current	< 3 mA

## INFORMATION



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

Typical characteristic curve of PT1000, F0.6



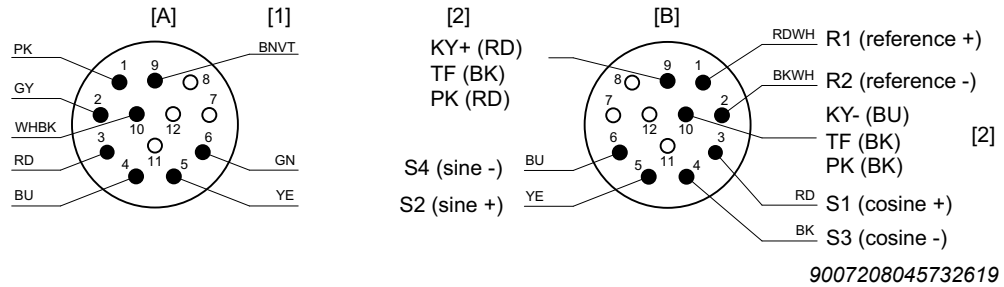
## 1.2.4 Electrical installation

### 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



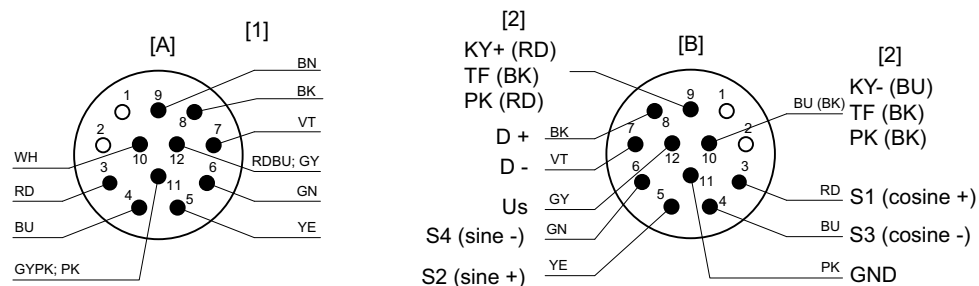
- [1] Shield connected to the metal housing of the connector. Color code according to SEW-EURODRIVE cable
- [2] KY+ (RD), KY- (BU), optional TF (BK), optional PK (RD/BK)

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	—	—

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]

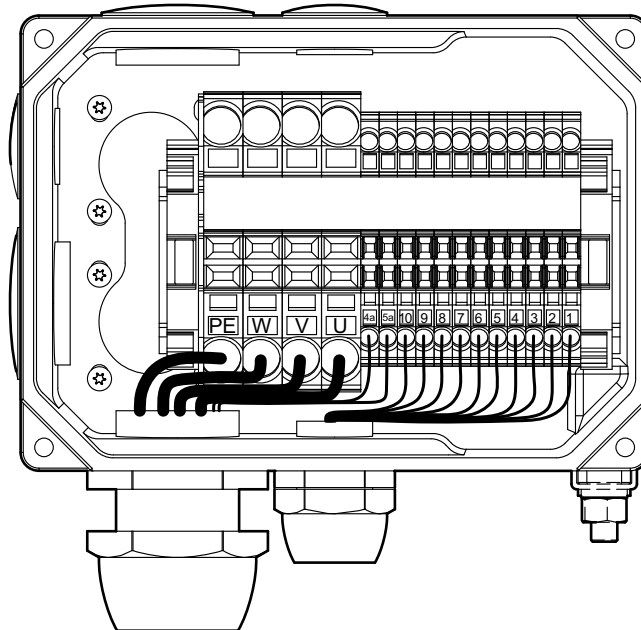
Pin	Color code	Connection
1	—	—
2	—	—
3	RD	S1 (cosine +)
4	BU	S3 (cosine -)
5	YE	S2 (sine +)
6	GN	S4 (sine -)
7	VT	D -
8	BK	D +
9	BK	KY+/TF/PK
10	BK	KY-/TF/PK
11	PK	Voltage reference (GND)
12	GY	Supply voltage Us



## Connecting the motor and encoder system via KK / KKS terminal box

- Check the cable cross sections.
- Screw on the connections and PE conductors.
- Check the winding connections in the terminal box and tighten them, if necessary.
- You have to use an EMC screw fitting for the signal cable entry in order to ensure a flawless shielding.

### Connection of CMP50 and CMP63

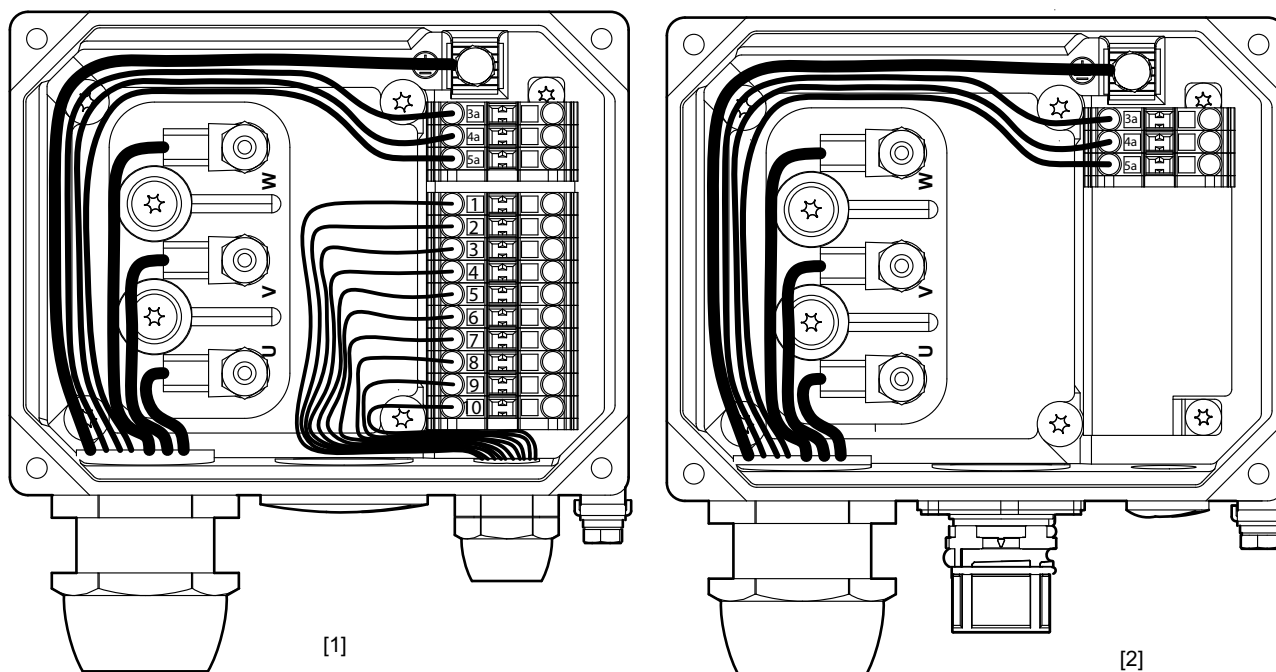


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### Signal

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	

## CMP71 – CMP112 connection



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[1]

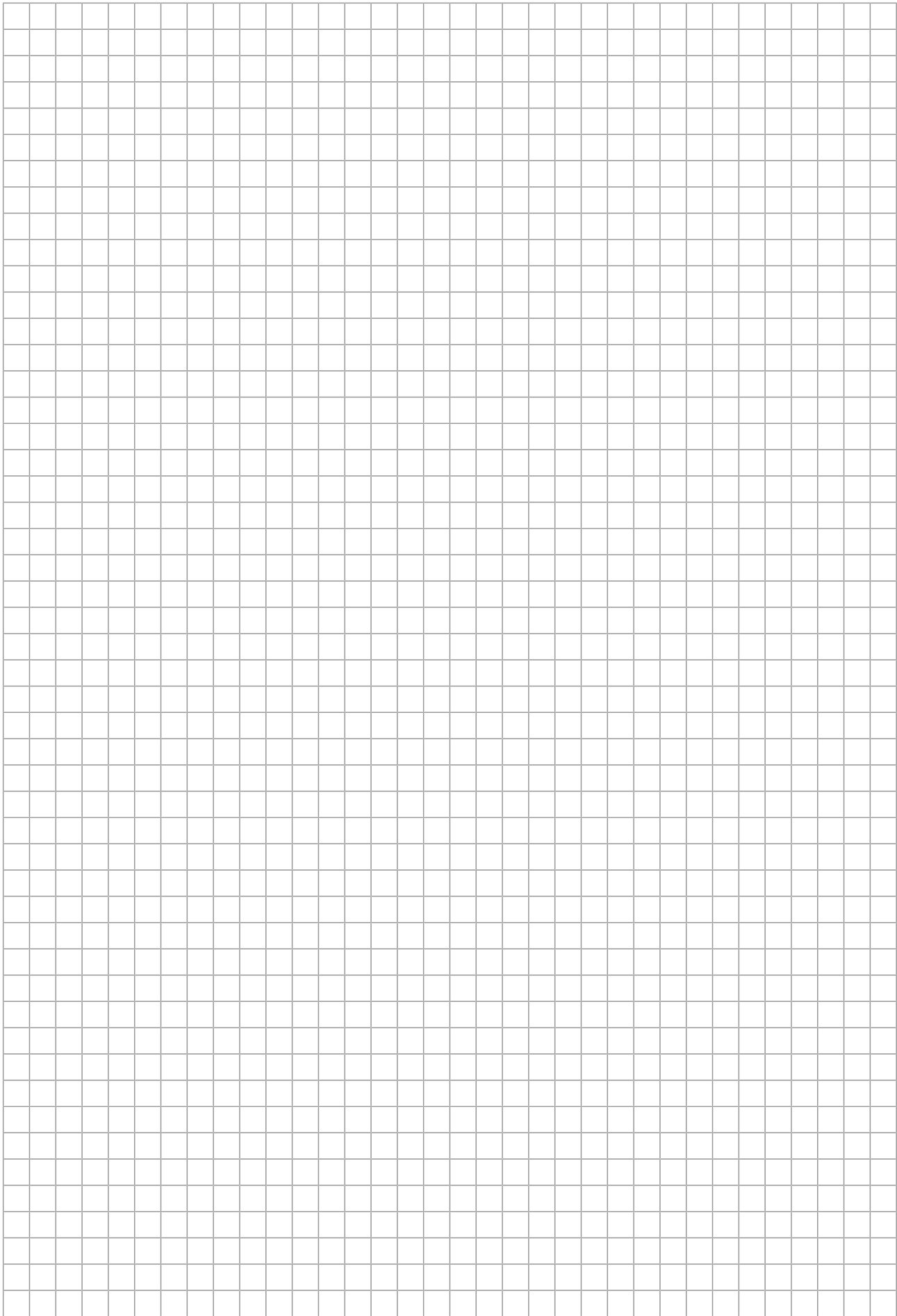
KK terminal box

[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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Driving the world

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