

COMBIVERT ACCESSORIES

INSTRUCTIONS FOR USE | **INSTALLATION RESOLVER ADAPTER
GENERATION 6**



Preface

The hardware and software described in this document are products of KEB. The information contained in this document is valid at the time of publishing. KEB reserves the right to update this document in response to misprints, mistakes or technical changes.

Signal words and symbols

Certain procedures within this document can cause safety hazards during the installation or operation of the device. Refer to the safety warnings in this document when performing these procedures. Safety signs are also located on the device where applicable. A safety warning is marked by one of the following warning signs:

DANGER	Dangerous situation, which will cause death or serious injury if this safety warning is ignored.
WARNING	Dangerous situation, which may cause death or serious injury if this safety warning is ignored.
CAUTION	Dangerous situation, which may cause minor injury if this safety warning is ignored.
NOTICE	Situation, which can cause damage to property if this safety warning is ignored.

RESTRICTION

Used when the following statements depend on certain conditions or are only valid for certain ranges of values.



Used for informational messages or recommended procedures.

More symbols

- ▶ This arrow starts an action step.
- / - Enumerations are marked with dots or indents.
- => Cross reference to another chapter or another page.



Note to further documentation.
www.keb.de/service/downloads



Laws and guidelines

KEB Automation KG confirms with the EC declaration of conformity and the CE mark on the device nameplate that it complies with the essential safety requirements.

The EC declaration of conformity can be downloaded on demand via our website.

Warranty and liability

The warranty and liability on design, material or workmanship for the acquired device is given in the general sales conditions.



Here you will find our general sales conditions.
www.keb.de/terms-and-conditions



Further agreements or specifications require a written confirmation.

Support

Although multiple applications are referenced, not every case has been taking into account. If you require further information or if problems occur which are not referenced in the documentation, you can request the necessary information via the local KEB agency.

The use of our units in the target products is outside of our control and therefore lies exclusively in the area of responsibility of the customer.

The information contained in the technical documentation, as well as any user-specific advice in spoken and written and through tests, are made to best of our knowledge and information about the intended use. However, they are regarded as being only informal and changes are expressly reserved, in particular due to technical changes. This also applies to any violation of industrial property rights of a third-party. Selection of our units in view of their suitability for the intended use must be done generally by the user.

Tests can only be done within the intended end use of the product (application) by the customer. They must be repeated, even if only parts of hardware, software or the unit adjustment are modified.

Copyright

The customer may use the instructions for use as well as further documents or parts from it for internal purposes. Copyrights are with KEB and remain valid in its entirety.

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Table of Contents

Preface	3
Signal words and symbols	3
More symbols.....	3
Laws and guidelines.....	4
Warranty and liability.....	4
Support	4
Copyright.....	4
Table of Contents	5
List of Figures	6
List of Tables	6
1 Basic Safety Instructions	7
1.1 Target group.....	7
1.2 Validity of these instructions.....	7
2 Product Description	8
2.1 Intended use	8
2.2 Ordering instructions.....	8
2.3 Block diagram.....	9
3 Operating conditions	10
3.1 General technical data	10
3.2 Electrical data	10
4 Function overview	11
5 Connections	12
5.1 D-Sub 26-pole to X3A	12
5.2 D-Sub 9-pole	12
5.3 Cable motor temperature sensor	13
6 Revision History	14

List of Figures

Figure 1:	Block diagram	9
Figure 2:	Function overview	11

List of Tables

Table 1:	Ordering instructions	8
Table 2:	General technical data	10
Table 3:	Electrical data	10
Table 4:	Assignment D-Sub 26-pole	12
Table 5:	Assignment D-Sub 9-pole	12
Table 6:	Assignment cable motor temperature sensor	13

1 Basic Safety Instructions

The products has been developed and built in accordance with the state of the art and recognised safety regulations. Nevertheless, the function of the machine may cause danger to life and limb of the user or third parties or damage to the machine and other property.

The following safety instructions have been created by the manufacturer for the area of electrical drive technology. They can be supplemented by local, country or application-specific safety regulations. They do not claim to be exhaustive. Non-observance of the safety instructions by the customer, user or other third parties leads to the loss of all claims against the manufacturer caused by this.

NOTICE



Dangers and risks due to ignorance.

- ▶ Read the instructions for use!
- ▶ Observe the safety and warning instructions!
- ▶ If you are not sure, please ask!

1.1 Target group

These instructions for use are intended for use by qualified electricians only. Qualified electricians as defined in this manual must have the following qualifications:

- Knowledge and understanding of safety instructions.
- Skills for installation and assembly.
- Start-up and operation of the product.
- Understanding of the function in the used machine.
- Recognition of dangers and risks of electrical drive technology.
- Knowledge of *DIN IEC 60364-5-54*.
- Knowledge of national safety regulations (e.g. *DGUV Vorschrift 3*).

1.2 Validity of these instructions

This Gebrauchsanleitung describes the resolver adapter for the COMBIVERT Generation 6. This Gebrauchsanleitung

- contains only supplementary safety instructions.
- is only valid in conjunction with the "Installation" instructions for use of the corresponding COMBIVERT.

2 Product Description

The resolver adapter for KEB COMBIVERT devices of generation 6 provides the required higher signal quality for safety applications.

The resolver adapter provides an adaptation from 26-pole connection of the control terminal block X3A (S6 or F6) to a 9-pole D-Sub connector.

2.1 Intended use

The KEB resolver adapter of generation 6 is exclusively for operation with KEB drive controllers. Operation with other electrical consumers is prohibited and can lead to the destruction of the devices.

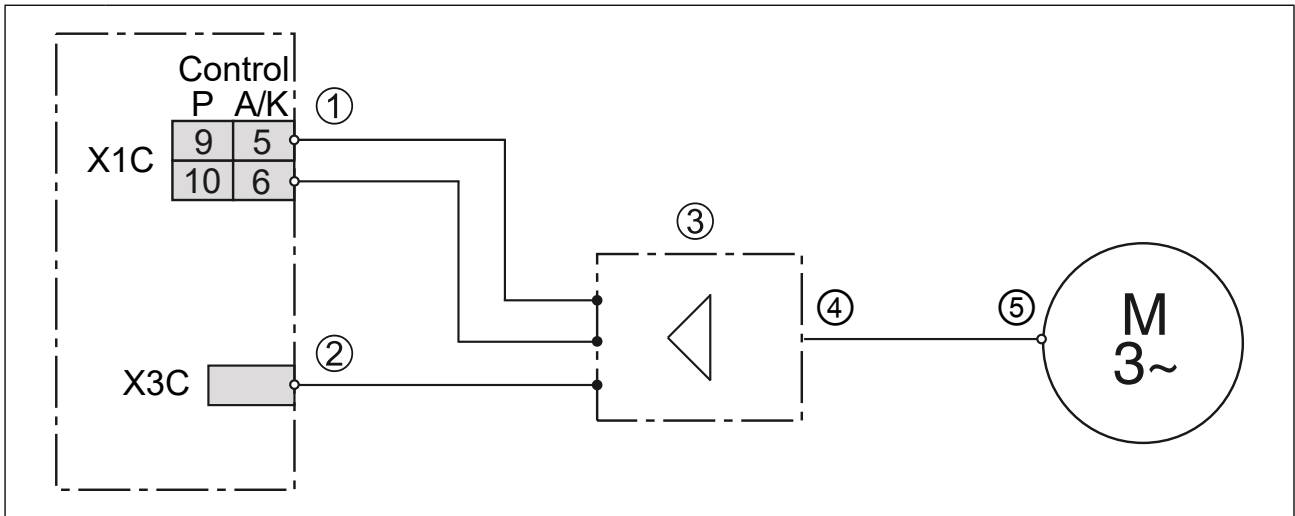
The used semiconductors and components of KEB Automation KG are developed and dimensioned for the use in industrial products. If the product is used in machines, which work under exceptional conditions or if essential functions, life-supporting measures or an extraordinary safety step must be fulfilled, the necessary reliability and security must be ensured by the machine builder.

The operation of our products outside the limit values specified in the technical data will result in the loss of any claims for damages.

2.2 Ordering instructions

Description	Material number
Resolver adapter for F6 with A / K control	00S6L50-B001 D-Sub 26-pole 45° angled
Resolver adapter for S6 with A / K control	00S6L50-B002 D-Sub 26-pole 90° angled
<i>Table 1: Ordering instructions</i>	

2.3 Block diagram



Legend

X1C	Input temperature detection at the drive controller
X3A	Input resolver (D-Sub 26-pole) at the drive controller
1	Output temperature detection at the resolver
2	Output D-Sub 26-pole at the resolver adapter
3	Resolver adapter
4	Input D-Sub 9-pole at the resolver adapter
5	Output D-Sub 9-pole at the resolver

Figure 1: Block diagram

3 Operating conditions

3.1 General technical data

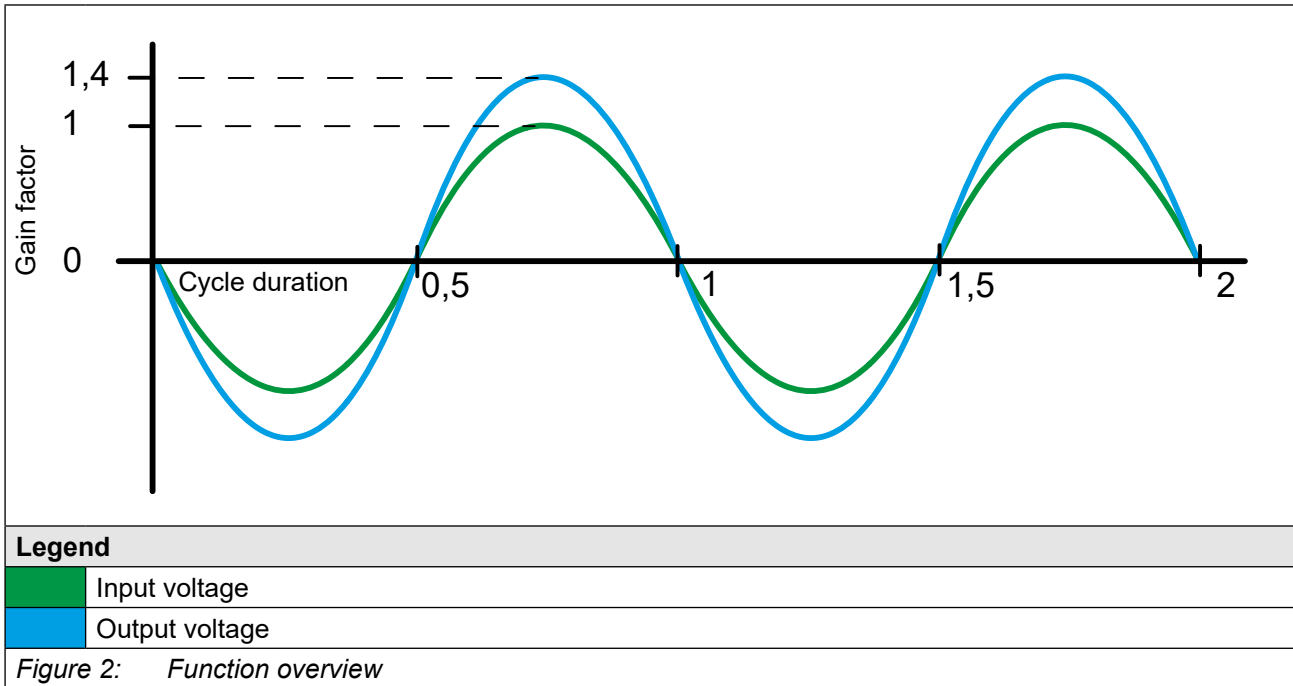
Description	
Construction and degree of protection according to EN 60529	IP20
Ambient temperature according to EN 60721-3-3	5...40 °C (extended to -10...45 °C)
<i>Table 2: General technical data</i>	

3.2 Electrical data

Description		
Input voltage range	U_{in} / V	$24 \pm 20 \%$
Max. input current	I_{in_max} / mA	60
Max. excitation current output	I_{eff_max} / mA	± 30
Gain factor excitation voltage		1.4
Max. excitation voltage output	U_{out} / V	$U_{eff} = 3.54$
		$U_{ss} = 10 \pm 5 \%$
<i>Table 3: Electrical data</i>		

4 Function overview

The resolver adapter amplifies the excitation voltage generated by the control board by factor 1.4. This gain enables the operation of a resolver at COMBIVERT devices of generation 6.



5 Connections

The resolver adapter is connected via the 26-pole D-Sub connector on the control board (X3A) and with the 9-pole D-Sub connector at the resolver.

The motor temperature sensor is output by 2 cables from the 9-pole D-Sub.

5.1 D-Sub 26-pole to X3A

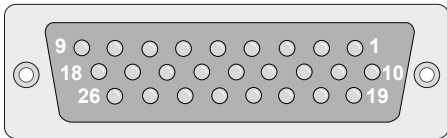
Pin	Signal	Description	D-Sub 26-pole connector
1-9	—	Not connected	
10	Cos+	Directly connected with D-Sub-9	
11	Cos-		
12	Sin+		
13	Sin-	Excitation voltage / input	
14	Excitation+		
15	Excitation-	Not connected	
16	—	—	
17	GND	—	
18	24V	—	
19-26	—	Not connected	
Housing	Shield	Connected with D-Sub 9-pole	

Table 4: Assignment D-Sub 26-pole

5.2 D-Sub 9-pole

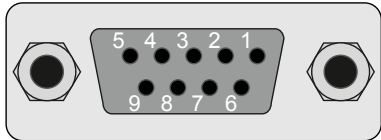
Pin	Signal	Description	D-Sub 9-pole socket
1	Excitation+	Excitation voltage / supply resolver	
2	Excitation-		
3	—	Not connected	
4	Cos+	Directly connected with D-Sub-26	
5	Cos-		
6	Sin+		
7	Sin-		
8	PTC-	Motor temperature sensor Input	
9	PTC+		
Housing	Shield	Connected with D-Sub 26-pole	

Table 5: Assignment D-Sub 9-pole

NOTICE

Cables from the motor temperature sensor inside the motor cable only permissible with double shielding !

5.3 Cable motor temperature sensor

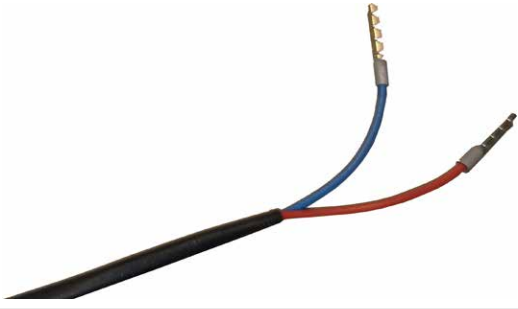
Pin	Signal	Cross-section	Description	Cable motor temperature sensor
Blue	PTC-	0.2mm ² / AWG24	Motor temperature sensor output (connection to X1C of the control board)	
Red	PTC+			

Table 6: Assignment cable motor temperature sensor

6 Revision History

Version	Date	Description
00	2021-09	Completion pre-series
01	2021-10	Completion series version

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