

Operating Manual for KSM Modules



Operating Manual (Vers. 1-20.12.2007)

Important Advice

Target audience of this operating manual:
maintenace, replacement, electricians, users

Definitions

The synonym KSM is used as generic term for all derivates of the KSM product line. If the manual points directly to a certain derivate, though the entire term will be used. (i.e. KSM 12)

The following term “safe” is used for safe function according to the EN 954-1 respectively according to EN 61508 in the particular category or level.

Safety Advice

Operating and Service

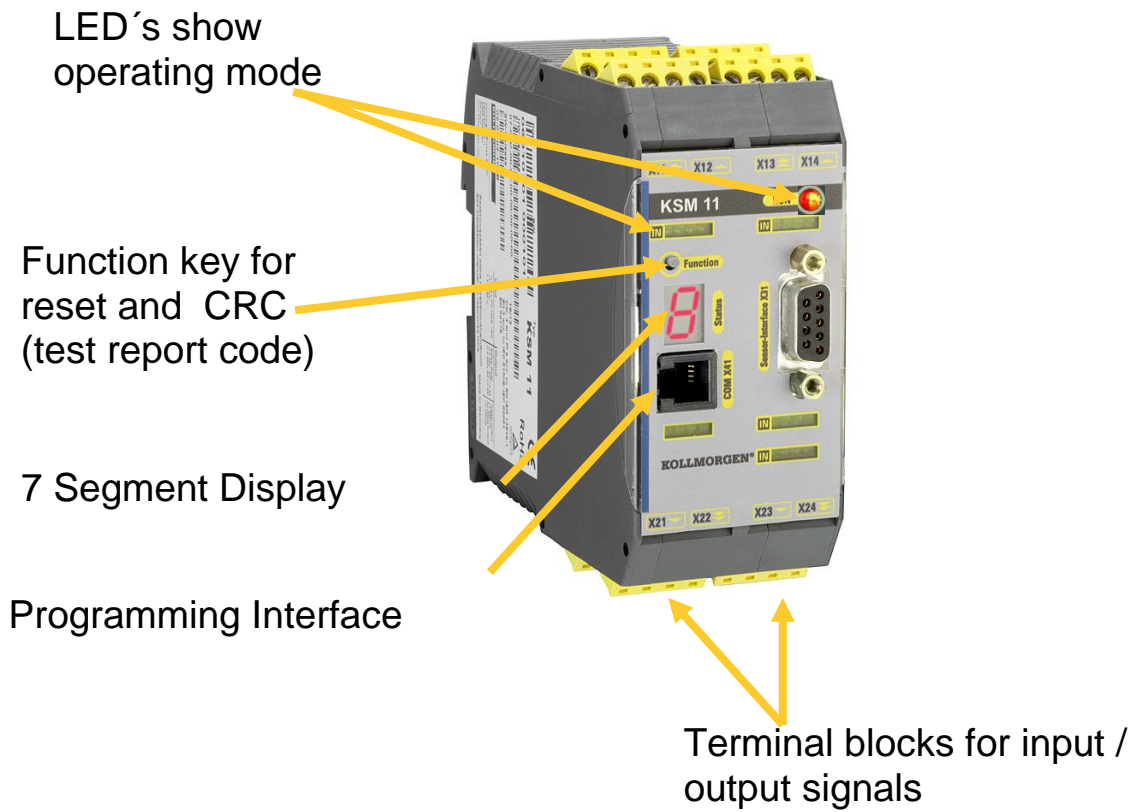
Before installation and demounting, or the disconnecting of signal- and power supply cables, the modules has to be de-energized.

It has to be avoided to get electrostatics at the terminal blocks and connectors during the dismounting of the KSM modules.

Guarantee and safety approval is void, if the modules has been manipulated. The KSM can only be operated in a temperature range between 0° and 50° C. Make sure that this temperature range will not exceeded.

Checking the Certification Code (CRC)

Before the normal operation of KSM at a machine or plant a safety audit has to be proceeded. As result a test report has to be existent. This report contains a certification code. This code assures that a KSM11 or KSM12 will be operated with the correct program. By pressing the key “Function” in the normal operation mode “RUN” (see underneath), the certification code is shown in the 7 – segment display. Compare these displayed numbers (i.e. C 56124) with the numbers of the test report of this particular machine or plant, that they are matching. If these numbers are different, the normal safe operation is not assured. In this case you have to stop the machine or plant at once and contact the company, who installed this machine.



Modification of an Installation

The commissioning or changing of an installation of KSM can only be achieved by qualified personnel! Contact the company, who did the safety related test report. By changing the configuration the safety function of the module can be lost.

Start-up Sequences

After a start up is initiated, the particular start up phases are shown in the display. If no errors are occurring, the following phases will be passed.

7 Segment Display	Mode	Description
„1“	STARTUP	Synchronization, check of configuration- /firmware data
„2“	SENDCONFIG	Synchronization, check of configuration- /firmware data zone check
„3“	STARTUP BUS	Activate bussystem
„4“	RUN	Normal operating status
„5“	STOP	Only for authorized personal available
„A“	ALARM	Alarm can be reset by pressing the „Function“ key
„F“	FAILURE	Failure can be reset by switching the KSM (power supply) OFF and ON

LED

Color	Mode	Description
green	„blinking“	System OK
yellow	„blinking“	Get in touch with authorized personal
rot	„blinking“	Alarm
rot	„continious“	Fatal Error – KSM power supply must be disconnected

Notice: Only the operating status 4 = RUN allows after a correct installation of the KSM to operate the machine or plant. All configured safety functions are active. If the KSM is in the mode “alarm” = A or in the mode “failure” = F all safety related outputs are deactivated.

Modification / Procedures with Changes at the Modules or Installation

Repair

Repair of a module can only be achieved by Kollmorgen.

Guarantee

By changing the KSM layout or opening the enclosure the guarantee and safety approval is lost

Mechanical Modification

Through modification of drives / mechanical transmission or changing the sensors (encoders) the safety function could be lost. Talk to the company who has installed or delivered the KSM modules, or to the person who has created the safety test report.

Electrical Modification

Through modification the cabling or wiring of the KSM modules the safety function could be lost. Talk to the company who has installed or delivered the KSM modules, or to the person who has created the safety test report.

Maintenance

Exchange of a KSM Modul

After a KSM module has been changed it has to be assured, that the spare module contains the same configuration. The test report code (check sum / CRC) can be shown in the 7 segment display. It has to be sure, that the these numbers are the same in the test report.

Follow the instructions by changing a KSM modul

- Disconnect the drive from the power supply
- Switch of the power supply of the KSM and disconnect ale cables and connections
- Loosen the connectors of the sensors and pull off
- Disconnect all further connections
- Get the KSM from the (DIN) rail and pack the KSM according to EMC prescriptions
- Install the new KSM at the (DIN) rail
- Rebuild all connections
- Switch on the drive
- Switch on the power supply

Note: Basically no pluggable connection of the KSM can be disconnected or connected during the voltage is on. Especially the connected speed and position sensors (encoders) could be destroyed.

Failure Modes of the KSM

In principle the KSM got two different failures according to the following relations:

Failure mode	Description	Result for the System	Reset Condition
Fatal Error	Fatal exceptional error in the internal program of the KSM. A cyclic program flow is not more possible. The last active process is to operate the segment display by system A. System B has stopped.	All outputs will be disconnected - shut down!	Only resettable by switching off the power supply of the KSM (POR).
Alarm	Functional failure, caused by an internal process. Both systems will still run in the cyclic process and handle all requirements of the communication interfaces.	All outputs will be disconnected - shut down!	Reset by the pre – defined reset input

Note: If an alarm or fatal error occurs often, contact the company who installed the machine or plant.

About Kollmorgen

Kollmorgen is a leading provider of motion systems and components for machine builders. Through world-class knowledge in motion, industry-leading quality and deep expertise in linking and integrating standard and custom products, Kollmorgen delivers breakthrough solutions that are unmatched in performance, reliability and ease-of-use, giving machine builders an irrefutable marketplace advantage.

For assistance with your application needs, visit www.kollmorgen.com or contact us at:

North America**Kollmorgen**

203A West Rock Road
Radford, VA 24141 USA

Web: www.kollmorgen.com
Mail: support@kollmorgen.com
Phone: 1-540-633-3545
Fax: 1-540-639-4162

Europe**Kollmorgen**

Pempelfurtstraße 1
40880 Ratingen, Germany

Web: www.kollmorgen.com
Mail: technik@kollmorgen.com
Phone: + 49-2102-9394-0
Fax: + 49 -2102-9394-3155

Asia**Kollmorgen**

Rm 2205, Scitech Tower, China
22 Jianguomen Wai Street

Web: www.kollmorgen.com
Mail: sales.asia@kollmorgen.com
Phone: + 86-400-666-1802
Fax: +86-10-6515-0263