

Control of DC bus voltage by torque limitation

Translation of the "Original Dokumentation"

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Name: FKT_Ueberwachung_UZ_Momentbegrenzung_en

Version:

Version: 2019/45	
Change	Letter symbol
• Controller card KW-R27 added	STL

Previous version: 2018/44

Product version:

Product (AMK part no.)	Firmware Version (AMK part no.)
KW-R06 (O835) KW-R07 (O807) KW-R16 (O872) KW-R17 (O873)	AE-R05/R06 V1.10 2013/15 (204486)
KW-R24 (O901)	AE-R24 V2.03 2015/06 (205587)
KW-R24-R (O954)	AE-R24-R V2.11 2016/46 (206643)
KW-R25 (O902)	AE-R25 V2.03 2015/06 (205588)
KW-R26 (O903)	AE-R26 V2.03 2015/06 (205589)
KW-R27 (O957)	AE-R26 V2.12 2018/40 (207284)
iX / iC / iDT5 /	iX V1.03 2013/18 (204515)
iX(-R3) / iC(-R3) / iDT5(-R3) /	iX V2.08 2015/46 (206017)
ihXT	ihX V1.00 2015/06 (205440)

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1 Control of DC bus voltage by torque limitation

Supported hardware: KW-R06 / KW-R16 / KW-R07 / KW-R17 / KW-R24 / KW-R24-R / KW-R25 / KW-R26 / KW-R27 / iX / iC / iDT5 / iX(-R3) / iC(-R3) / iDT5(-R3) / ihXT /

If using power supply modules without feedback mode (KENxx) in combination with a high-impedance brake resistor or a weakly dimensioned brake transistor, the DC bus voltage increases in generator mode. This can cause a shutdown of the converter with Diagnostic message 1059 'DC bus overvoltage'.

The limit of the DC bus voltage is adjusted in SEEP and cannot be changed.

2 Relevant parameters

Parameter	Name	Meaning
		See document 'Parameter description' (AMK part no. 203704)
ID82 ¹⁾	'Positive torque limit'	Limitation of maximum torque in positive direction
ID83 ¹⁾	'Negative torque limit'	Limitation of maximum torque in negative direction
ID32773 ¹⁾	'Service bits'	Bit 18: activate reduced DC bus voltage increase See 'ID32773 'Service bits' bit 18' on page 5.

1) The parameter value must be set specific to the application

3 Startup instructions

ID82 'Positive torque limit'**ID83 'Negative torque limit'**

To avoid the DC bus voltage exceeding a certain threshold, the values of ID82 'Positive torque limit' and ID83 'Negative torque limit' are reduced.

Appendix

ID32773 'Service bits' bit 18

Bit no.	Condition	Meaning
18	0	Reduced DC bus voltage increase inactive
	1	Reduced DC bus voltage increase When braking the motor, the torque is automatically reduced so that the shutdown threshold of the DC bus voltage is not reached and the error message 1059 'DC bus overvoltage' is not generated. In the U/f control the slope of the speed ramp is changed linear depending on the DC bus voltage. The derating increases linear beginning at a DC bus voltage of 650 VDC. Up from 780 VDC bus level the ramp is stopped completely.