

D-term position controller, damping

Translation of the "Original Dokumentation"

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Name: FKT_D_Anteil_Lageregler_Daempfung_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)	AE-R05/R06 V1.13 2015/21 (205700)
	KW-R07 (O807)	
	KW-R16 (O872)	
	KW-R17 (O873)	
	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 V1.07 2015/17 (205688)
	iX(-R3) / iC(-R3) / iDT5(-R3) /	iX V2.08 2015/46 (206017)
	ihX	ihX V1.00 2015/06 (205440)

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1 D-term position controller, damping

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

On applications with inert masses, low-frequency control oscillations (following errors, actual speed value and torque) can occur. On possibility for damping these oscillations is a D term in the position controller

The D term is a component of the speed feed-forward controls and is not formed in the position controller. For successful damping, the oscillation of following errors and actual speed value must be in phase or offset by 180 °.

The D term of the control with feed-forward control can be parameterized with the ID33174 'Damping factor position'.

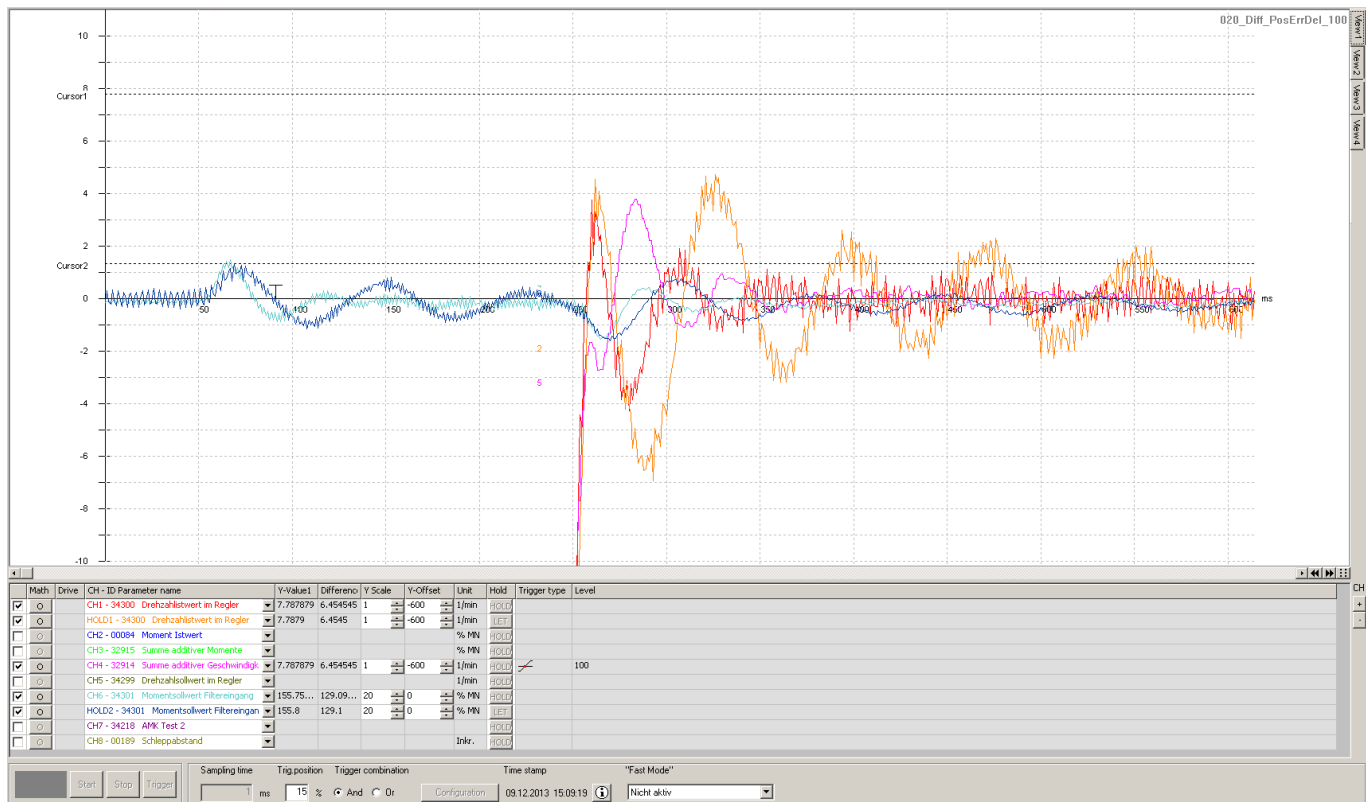
1.1 Example measurement

Considered are:

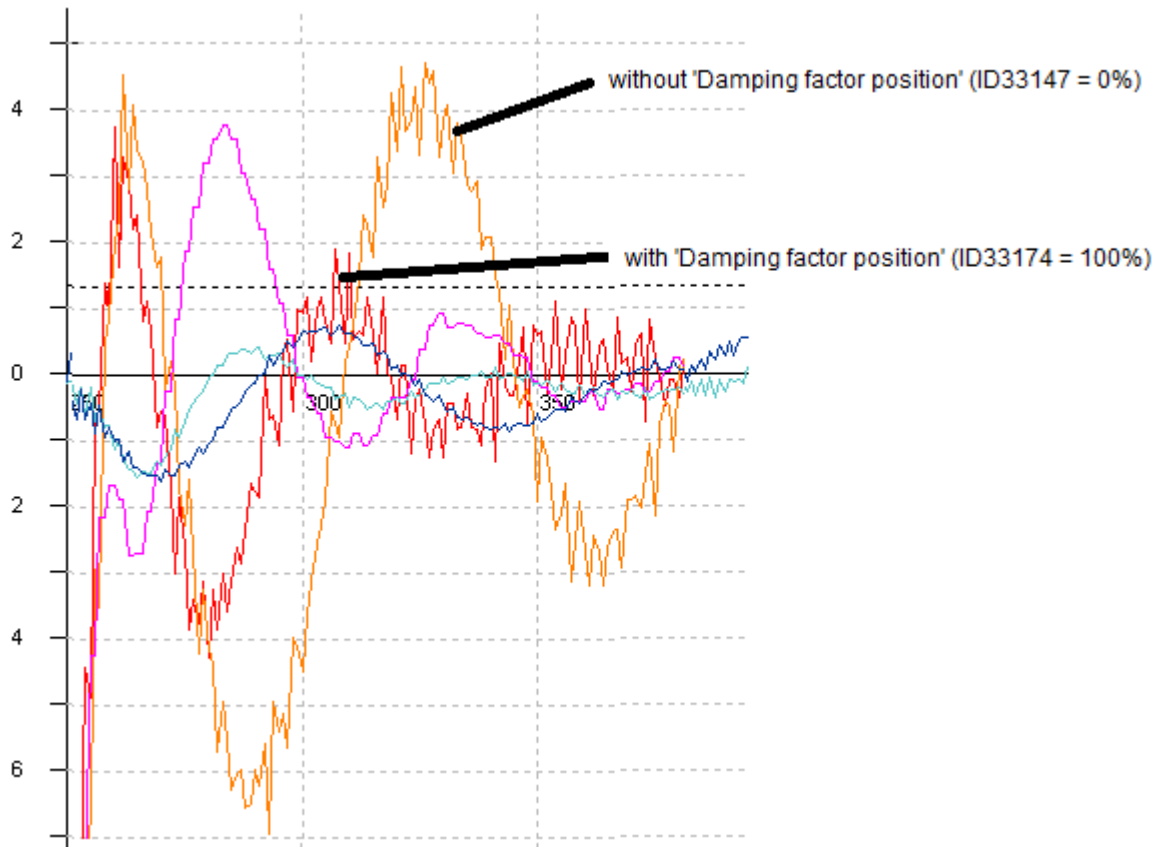
- Actual speed value (Ch1)
- Sum add. speed (Ch4)
- Torque to the Dz controller output (Ch6)

Hold values: Are without damping (ID33174 = 0%) (orange)

Current values: Damping ID33174 = 100.0% (red)



Zoom example measurement:



1.2 Relevant parameters

Parameter	Parameter description	Setting	Meaning
ID34225	'Mode feed forward control'	Bit 5 = 1	Damping factor active
ID33174	'Damping factor position'		[0.1 %]