'Internal drive interpolator'

Translation of the "Original Dokumentation"
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Name: FKT_Antriebsinterner_Interpolator_IPO_en

Version:

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

Previous version: 2017/14

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 V1.05 2010/32 (203194)
KW-R24 (O901)	AE-R24 V2.02 2014/23 (205216)
KW-R24-R (O954)	AE-R24-R V2.11 2016/46 (206643)
KW-R25 (O902)	AE-R25 V2.02 2014/23 (205217)
KW-R26 (O903)	AE-R26 V2.02 2014/23 (205215)
KW-R27 (O957)	AE-R26 V2.12 2018/40 (207284)
iX / iC / iDT5	iX V1.00 2011/21 (203699)
iX(-R3) / iC(-R3) / iDT5(-R3) /	iX V2.08 2015/46 (206017)

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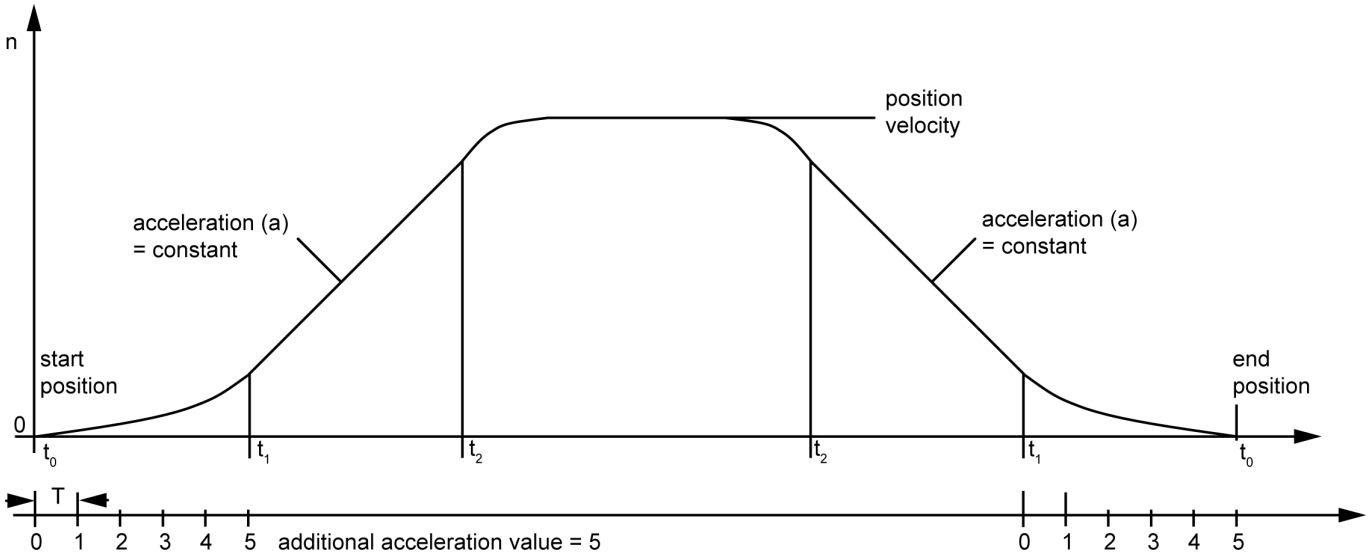
1 'Internal drive interpolator'

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

The 'Internal drive interpolator' (IPO) calculates setpoint values for a positioning process for the drive functions 'Homing cycle' and 'Drive moves into parking position'.

The 'Internal drive interpolator' (IPO) calculates setpoint values with the following variables:

- position setpoint
- positioning speed
- positioning acceleration
- positioning jerk



1.1 Relevant parameters

Function 'Homing cycle'

Parameter	Meaning
ID41 'Homing velocity'	Position velocity
ID42 'Homing acceleration'	Acceleration (a)
ID32956 'Additional acceleration value'	Additional acceleration value (jerk limiting)
ID33170 'IPO mode'	Code 0: Standard

See function description: FKT_Referenzpunktfahrt_en

Function 'Drive moves into parking position'

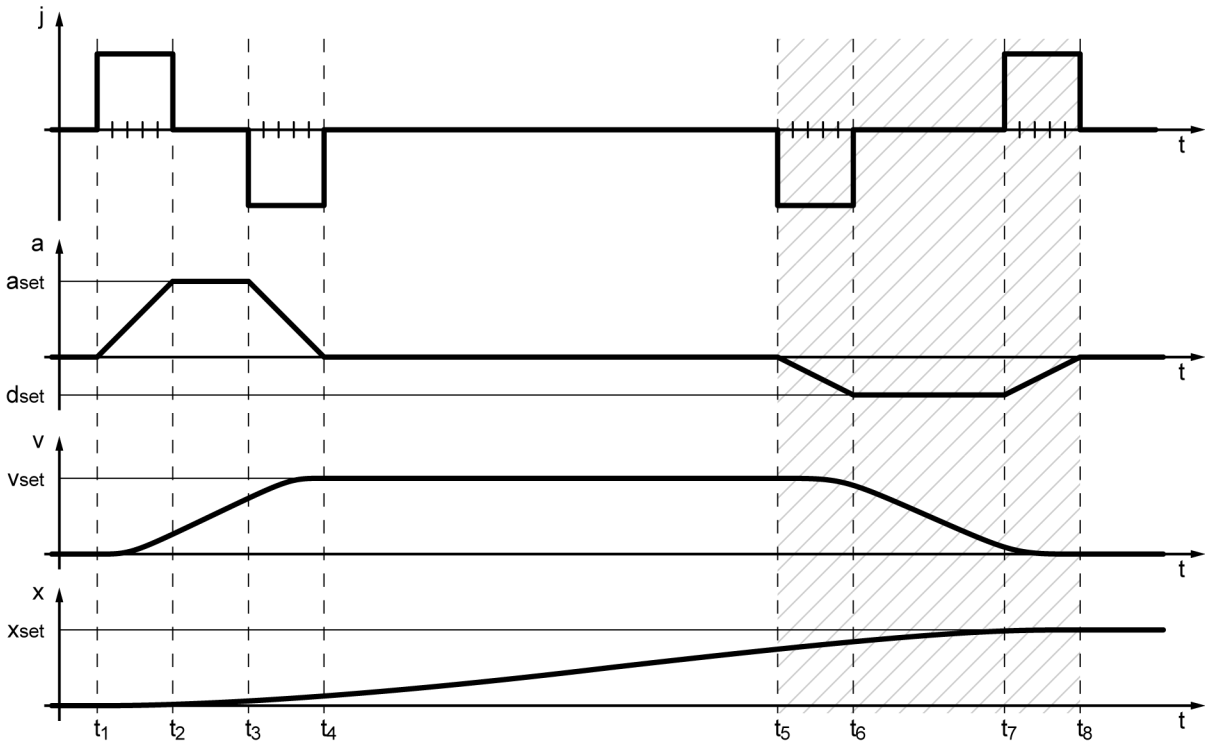
Parameter	Bedeutung / Hinweise
ID136 'Positive acceleration'	Acceleration positive (a)
ID137 'Negative acceleration'	Acceleration negative (a)
ID32887 'Park position'	End Position
ID32888 'Park velocity'	Position velocity
ID32956 'Additional acceleration value'	Additional acceleration value (jerk limiting)
ID33170 'IPO mode'	Code 0: Standard

See function description: FKT_Fahre_in_Park_Position_en

2 Development

The positioning process of interpolator 1 is divided into seven phases:

t1 ≤ t < t2	increase of acceleration up to ID42 eg. ID136 within n cycles acc. to ID32956
t2 ≤ t < t3	constant acceleration, velocity increases linearly
t3 ≤ t < t4	reduction of acceleration to 0 within n cycles
t4 ≤ t < t5	range of constant velocity
t5 ≤ t < t6	increase of deceleration up to ID42 eg. ID137 within n cycles acc. to ID32956
t6 ≤ t < t7	constant deceleration, velocity decreases linearly
t7 ≤ t < t8	reduction of deceleration to 0 within n cycles
t = t8	target position is reached



j		jerk
a		acceleration
a_{set}	ID42 / ID136	acceleration setpoint
d_{set}	ID42 / ID137	deceleration setpoint
v		velocity
v_{set}	ID41 / ID32888	velocity setpoint
x		position
x_{set}		position setpoint