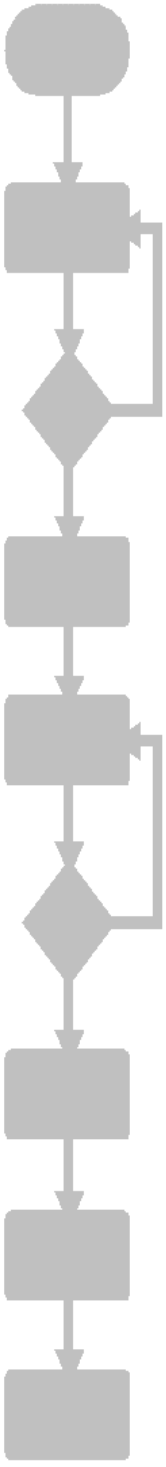

JetMove 1xx
Version Update
from V2.12 to V2.13

Jetter

Revision 1.01

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V. 2.13.0.0	3-phase space vector modulation	✓	
	Time-controlled positioning	✓	
	Emergency stop within an acceleration ramp		✓
	New target position during acceleration		✓
	Earth fault message during operation of a 2-phase		✓
	Encoder initialization		✓
	Step change in the case of "MotionStop" at a		✓
	Controller enable/disable with current pre-control activated		✓

1 Enhancements

1.1 Sine modulation, replaced by 3-phase space vector modulation

(#1389) As of version 2.12.0.04, sine modulation has been replaced by 3-phase space vector modulation. Dadurch ergibt sich eine ca. 15 % höhere Ausgangsspannung.

1.2 Time-controlled positioning in triangular mode

(# 1452) As of version 2.13.0.0, command 21 "Time-controlled absolute positioning in triangular mode" is available for command register R101.
For this command the following new registers have been added:

Register 226: Ratio of Ramps	
Function	**Description**
Read	As-is ratio of ramps
Write	New ratio of ramps
Type / unit	Float / [%]
Value range	0.001 ... 99.999 [%]
Value after reset	50.0 [%]

Ratio of ramps defines the acceleration/deceleration ratio of a positioning motion. A ratio of 50 % means that acceleration and deceleration times are the same.

Description:
Command 21 triggers a positioning motion in triangular mode. The motion consists of acceleration and deceleration only. In triangular mode, there is no constant velocity.

Before command 21 is executed, parameters must be entered into the following registers:

- R102 Target Position
- R104 Positioning Time
- R226 Ratio of Ramps

Once value 21 has been entered into command register R101, the following registers are calculated:

- R103 Set Speed
- R105 Acceleration
- R106 Deceleration

Note: The results of these calculations will not be verified. It's the user's responsibility to choose the input parameters such that the resulting positioning motion does not exceed any of the maximum values specified during axis definition (Reg. 184 Max. Speed, Reg. 180 Max. Acceleration, Reg. 181 Max. Jerk).

After these settings have been made, a normal absolute positioning will be started, just as entering command 10 into R101.

The following calculations will be carried out:

Taccel = R104 Positioning Time * R226 Ratio of Ramps / 100.0

Tdecel = R104 Positioning Time –Taccel

S = abs(R102 Target Position – R130 Set Position)

R103 Set Speed= 2 * S / R104 Positioning Time

R105 Acceleration = pi * R103 Set Speed / (2 * Taccel)

R106 Deceleration = 2 * R103 Set Speed / Tdecel

2 Corrections

2.1 Emergency stop within an acceleration ramp

(# 1183) The acceleration ramp of a non-linear positioning movement can only be exited by starting a new positioning movement.

So far, for modulo axes this limitation resulted in the following effect:
If the braking distance is not sufficient to reach the new target position, JetMove aborts the movement with constant deceleration. The axis is then located in front of or behind the target position. Therefore, the JetMove moves the axis to the original target position.

This behavior is not acceptable for emergency stop applications and has been changed as of revision 2.12.0.01. This change includes the following:
Depending on the required or available braking distance the setpoint generator adds further modulo turns in the direction of movement. This way, the axis comes to a halt exactly at the target position.

2.2 New target position during acceleration

(# 1286) If during an acceleration a new, significantly shorter target position is set, it can happen that the velocity reduces to very low values and the axis crawls to the target position extremely slowly.

As of version 2.12.0.02, this problem has been solved.

2.3 Earth fault message during operation of a 2-phase stepper motor

(# 1288) At first enable of the motor, a check for earth fault is carried out. Since implementing the 2-phase stepper motor control, this had not functioned properly.

As of version 2.12.0.02, this problem has been resolved.

2.4 Encoder initialization

(# 1396) The JetMove automatically recognizes resolvers when it is powered up. If another type of encoder was used, JetMove failed to reliably initialize it along with the motion commands "MotionClearError" and "MotionLoadParameter".

As of version 2.12.0.04, this problem has been resolved.

2.5 Step change in the case of "MotionStop" at a modulo break

(# 1454) So far, for modulo axes the following phenomenon could occur:
If in operating mode "electronic gearbox" a "MotionStop" command is issued exactly at the modulo break, a step change occurs which may cause the tracking error monitoring system to disable the axis.

As of version 2.13.0.0, this problem has been resolved.

2.6 Controller enable/disable with current pre-control activated

(# 1532) So far, under the condition that current pre-control is activated and the command is issued while the axis is moving, controller enable/disable could cause the axis to move stepwise.

As of version 2.12.0.05, this problem has been resolved.