JetMove 105

Version Update

from V2.09.0.0 to V2.10.0.0

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Table of Contents

TOC Introduction

Overview of Version Updates				
Version	**Function**		**New**	**Fixed**
V. 2.09.0.0	DC motor control		✓	
	2-phase stepper motor control		✓	
	Resolver optimizing			✓
V. 2.10.0.0	Triggering to float registers		✓	
	Incremental encoder		✓	
	Dead time compensation for trigger input		✓	
	Trailing indicator for tracking error		✓	
	Command 14		✓	
	R432 CamChange Type		✓	
	DC motor control		✓	
	Holding current for torque deactivation		✓	
	2-phase stepper motor control		✓	
	Torque-controlled shut-off			✓
	Negative leading axis difference in the table			✓
	Referencing with MC gantry axis			✓
	Reference position with decimal places			✓
	Commutation finding			✓
	Resolver optimizing			✓
	Overvoltage error			✓
	Machine referencing to the reference switch,			✓
	Referencing towards zero pulse			✓
	Current reduction			✓
	Hold flag			✓
	Capture mode			✓
	Virtual encoder			✓
	Osci trigger			✓

1 New Features

1.1 Osci: Triggering to float registers

Until now, it has not been possible to trigger the osci function where the signal to be used for triggering is a float value.

As of version 2.09.0.01, the trigger function is also available for float registers.

1.2 Incremental encoder

As of version 2.09.0.01, an incremental encoder can be used as a feedback system.

1.3 Trigger input

As of version 2.09.0.04, the trigger input can be used for the Capture functions of the JM-2xx series and for referencing on the fly. The following register is for setting hardware delay.

Register 527: Dead Time Correction	
Function	**Description**
Read / Write	Dead time correction
Type / unit	Float / [ms]
Value range	0.0 ms – 5.0 ms
Value after reset	0.025 ms

1.4 Trailing indicator for tracking error

As of version 2.09.0.04, the following registers can be used to read out the maximum and minimum value for the position controller tracking error.

Register 538: Trailing Indicator for Pos. Tracking Error	
Function	**Description**
Read / Write	Read access: Return value is the maximum value of the trailing indicator. Write: Reset the trailing indicator to 0.0.
Type / unit	Float / [mm, °]
Value range	0.0 – MaxFloat
Value after reset	0.0

Register 539: Trailing Indicator for Neg. Tracking Error	
Function	**Description**
Read / Write	Read: The return value is the minimum value of the trailing indicator.
	Write: Reset the trailing indicator to 0.0.
Type / unit	Float / [mm, °]
Value range	0.0 – MinFloat
Value after reset	0.0

1.5 New command 14

As of version 2.09.0.04, command 14 on register 100 can be used to clear the R101.0 = "Home position set" flag.

1.6 New R432 CamChangeType

Until now, the master and slave axes have been subject to modulo treatment when switching from the currently used table to a new table. This, however, is not always desirable. The R432 CamChangeType register enables the user to make the right selection for any given application.

Register 432: CamChangeType	
Function	**Description**
Read / Write	Current / new value for CamChangeType
Type / unit	Int/[-]
Value range	0 - 3
Value after reset	0

0	Modulo treatment for master and slave (default)
1	Modulo treatment for master only
2	Modulo treatment for slave only
3	No modulo treatment

1.7 DC motor control

As of version 2.09.0.05, the JetMove 105 can be connected to a brushed DC motor and an encoder feedback device.

The description of connections can be found in the user manual.

1.8 Holding current for torque deactivation

As of version 2.09.0.06, the holding current for torque deactivation can be set separately.

Register 607: Holding Current	
Function	**Description**
Read / Write	Holding current after torque deactivation
Type / unit	Float/[Aeff]
Value range	0.0 to R502 (maximum value for output current from devices)
Value after reset	0.0

After the axis has been stopped by torque deactivation, the holding current moves the axis against the obstacle until the user program switches off the axis, for example.

Note:
- The holding current can only be set as an amount of current.
- Motor constant K_T [Nm/A] can be used to convert holding torque into torque **developed by the motor**.
- This approach is only recommended for mode 2.
- If the holding current has a value of 0.0, the current for the cut-off threshold is used as the holding current (compatible with former versions).

1.9 2-phase stepper motor control

As of version 2.10.0.0, the JetMove 105 can be connected to a 2-phase stepper motor with or without an encoder feedback device.

The description of connections can be found in the user manual.

2 Corrections

2.1 Torque-controlled shut-off

Command 29 was not always effective when used to end torque deactivation. In the event of an error, it was no longer possible to position the axis.

As of version 2.09.0.01, torque deactivation can be ended without any problems.

2.2 Negative leading axis difference in the table

Until now, a table starting with a negative leading axis difference was capable of crashing JetMove communication. A negative leading axis difference always occurs if the leading axis position of the final point in a table is less than or equal to the leading axis position of the initial point in a table.

As of version 2.09.0.01, this problem has been resolved.

2.3 Referencing with MC gantry axis

Since the first version, reference runs for MC gantry axes have been interrupted with the 5800 or 6800 error message "Gantry: synchronization window exceeded".

As of version 2.09.0.01, this problem has been resolved.

2.4 Reference positions with decimal places

Until now, it has not been possible to set reference positions with decimal places for modulo axes. For example, the system would set the reference position to 10.0° if anyone attempted to set a value of 10.5°.

As of version 2.09.0.01, this problem has been resolved.

2.5 Commutation finding

At commutation finding, values greater than 360° could appear.

As of version 2.09.0.02, this problem has been resolved.

2.6 Resolver optimizing

Optimizing didn't function with some resolvers. As a result, an encoder error was displayed, while the axis could not be enabled.

As of version 2.09.0.02, this problem has been resolved.

2.7 Overvoltage error

As of the first version, the overvoltage error F04 was not monitored.
On the other hand, monitoring the maximum DC link voltage F21 functioned correctly causing the axis to decelerate, which could lead to a higher DC link voltage.

As of version 2.09.0.03, this problem has been resolved.

2.8 Machine referencing to the reference switch, one-phase

The JM-105 uses the R164 "Max. Distance Switch Search" register to monitor the maximum distance, even though, as is also the case with the MC, the R167 "Max. Distance Reference Search" register should be used.
As of version 2.09.0.03, this problem has been resolved.

2.9 Referencing towards zero pulse

As of the first version, referencing towards zero pulse without a reference switch can only be completed when a reference switch is actually activated. It will then behave as if referencing to K0 with a reference switch had been selected.

As of version 2.09.0.03, this problem has been resolved.

2.10 Current reduction

As of the first version, current reduction for stepper motors did not function correctly.
When an attempt was made to switch back to normal operating current after the motor current had been reduced, the reduced setpoint value for the current continued to apply.

As of version 2.09.0.04, this problem has been resolved.

2.11 Hold flag

Up to version 2.09.0.04, it had been possible for relative positions with a distance differential of 0 in relation to the actual position value to remain locked in the "Maximum speed" state. The "Hold" flag was not set in such situations.

2.12 SinCos encoder selection

As of version 2.09.0.01, selecting a SinCos encoder caused the JetMove 105 to fail.

As of version 2.09.0.04, this problem has been resolved.

2.13 Capture mode

All results of the capture mode were written to the outdated register 187.

As of version 2.09.0.01, the results are written to registers 521 through 524.
As of version 2.09.0.04, the result of the reference input is also written to the correct register.

2.14 Virtual encoder

As of the first version, the virtual encoder could have an overflow and cause wrong commutation.

As of version 2.09.0.05, this problem has been resolved.

2.15 Osci trigger

As of the first version, the tracking error (register 119) has not been processed correctly as an osci trigger.

As of version 2.10.0.0, this problem has been solved.