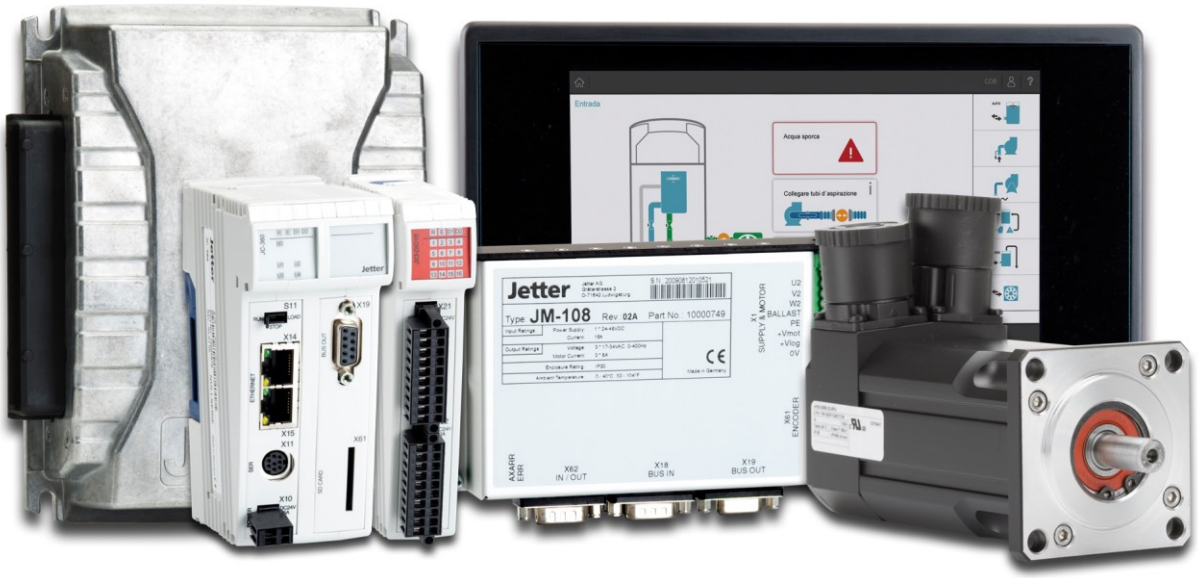
Jetter automation



JetMove D203

Version update from V. 2.15 to V. 2.16

We automate your success.

Revision 1.00
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Table of contents

1 Introduction

Overview - Version 2.16

The following table gives an overview of newly added or enhanced features and fixed software bugs:

Version	Function	New	Enhanced	Fixed
V. 2.15.0.01	Motor temperature warning threshold		✓	
V. 2.15.0.02	Torque-off with speed limitation		✓	
V. 2.15.0.05	Synchronization		✓	
V. 2.16.0.00	Synchronization		✓	
	Control of the brake			✓
	Encoder optimization with sin-cos encoders		✓	
	At a JC-940MC or JC-970MC, the axis cannot be enabled			✓
	Reading out capture values			✓

2 Enhancements

Introduction

Jetter AG are continuously striving to add new features and functions to the JetMove D203 servo drives. By updating your OS you are given the possibility to enhance the functionality of your servo drive. To do so, you need the following:

- an OS file
- the software tool JetSym
- a connection between PC and JetMove

Operating system of the controllers

Due to changes made to the sync offset when synchronizing an MC controller with the JetMoves, as of this OS version 2.16.0.00, only the controller OS versions of the following minimum version numbers may be applied:

Controller	Minimum OS version
JC-940MC	1.10.0.00
JC-360MC	1.28.0.00
JC-365MC	1.28.0.00

Motor temperature warning threshold

Introduction

(#3808) R602 - Motor temperature warning threshold is now writable and can be set according to the requirements.

R602

Register 602: Motor temperature - Warning	
Function	**Description**
Read access	Present motor temperature warning threshold
Write	New motor temperature warning threshold
Variable type	int16
Value range	0 … 255 [°C]
Value after reset	120 [°C]

Availability

The enhancement takes effect as of the following versions/revisions:

OS version	JetMove 2xx JetMove D203 JetMove 1xx	2.15.0.02 2.15.0.01 not available

Torque-off with speed limitation

Introduction

(#3833) Torque-off in mode 2, step 3, up to now caused the speed limitation to be completely undone after deactivating. Soft caps could cause the speed to be rapidly incremented during holding torque. This lead to negative screw-capping results.

Enhancement

658 Torque-off: Current setpoint filter

659 Torque-off: Speed limitation

R658

Register 658: Current setpoint filter for torque-off	
Function	**Description**
Read access	Present current setpoint filter
Write	New current setpoint filter
Variable type	Float
Value range	0.0 ... 4.0 [A]
Value after reset	0.0 [A]

For mode 2 only:

After recognition of the speed-controlled shut-off threshold, the current setpoint filter R497 is set to the value of this register. By means of this parameter, the rate of the next current increase can be reduced following the speed-controlled shut-off threshold. This filter behaves like a T1 controlling device.

R659

Register 659: Positive speed limitation for torque-off	
Function	**Description**
Read access	Present positive speed limitation
Write	New positive speed limitation
Variable type	int32
Value range	0 ... R118 * = 1.05 rpm
Value after reset	R118 * = 1.05 rpm

For mode 2 only:

After recognition of the speed-controlled shut-off threshold, the positive speed limit is set to the value of this register. This helps to prevent too high speed values during dwell time.

Note

If the registers named above are applied, the changed values of R128 (speed limit) and R497 (current setpoint filter) must be reset after torque-off.

Availability

The enhancement takes effect as of the following versions/revisions:

OS version	JetMove 2xx JetMove D203 JetMove 1xx	2.15.0.06 2.15.0.02 2.15.0.02

Synchronization

Introduction

(#4091) At data transfer from an external JetMove to a follower control, a sequencing ID is checked. If the ID has not changed at another cycle, the error count is incremented.

Enhancement

This register has now been released for JetMove D203 and JetMove 1xx.

R004

Register 004: Synchronization of the error count	
Function	**Description**
Read access	Synchronization of present error count
Write	Only clearing makes sense
Variable type	uint16
Value range	0 … 65,536
Value after reset	0

This register holds the number of the lost frames.

Availability

The enhancement takes effect as of the following versions/revisions:

OS version	JetMove 2xx	2.12.0.00
	JetMove D203	2.16.0.00
	JetMove 1xx	2.16.0.00

Synchronization

Introduction

(#4091) For synchronization of an external JetMove or of an MC controller, only acceptable sync frames are used for sync control. After a set instance, the present time is corrected.

Enhancement

The synchronization window and the correction limit can now be modified:

R005

Register 005: Synchronization window	
Function	**Description**
Read access	Present synchronization window
Write	New synchronization window
Variable type	uint16
Value range	0 ... 65536 [0.1 µs]
Value after reset	1 % of the synchronization interval R543 * 100 [0.1 µs]

The synchronization window defines the time range, during which sync frames are accepted.

R006

Register 006: Correction limit for synchronization	
Function	**Description**
Read access	Present correction limit
Write	New correction limit
Variable type	int16
Value range	0 ... 32,767 [0.1 µs]
Value after reset	0.25 % of the synchronization interval R543 * 100 [0.1 µs]

The correction limit defines the time range, from which a 0.1-µs correction of the current time is carried out.

Availability

The enhancement takes effect as of the following versions/revisions:

OS version	JetMove 2xx JetMove D203 JetMove 1xx	2.15.0.07 2.15.0.05 2.16.0.00

Encoder optimization with sin-cos encoders

Introduction

(#4422) For all encoder types which are equipped with a sin-cos interface, the analog values are optimized in JetMove. Encoders of a high number of periods per revolution may only be optimized, if only one change between quadrants per sampling interval has taken place.

Enhancement

After a multiple change of quadrants, recognition of the present quadrant was improved.

Availability

The enhancement takes effect as of the following versions/revisions:

OS version	JetMove 2xx	2.15.0.13
	JetMove D203	2.16.0.00
	JetMove 1xx	2.16.0.00

3 Fixed software bugs

Introduction

This chapter describes the software bugs which have been fixed in the new OS version.

Synchronization

Error description

(#4091 / 4249 / 4252) As of version 2.15.0.09, time synchronization between JetMove 1xx, 2xx and D203 or between MC controller and JetMove did not function reliably.

- Special value of the synchronization offset (R533) could not be set correctly at a synchronization cycle of 4 ms.
- In case of special constellations, faulty processing could lead to reading the resolver not functioninig any more.
- Various enhancements were made to synchronization control.

Affected versions/revisions

The following versions/revisions are affected by this bug:

Software version	JetMove 2xx JetMove-D203 JetMove 1xx	< 2.15.0.11 < 2.15.0.05 < 2.16.0.00

Remedy / workaround

Disabled

Remedy

Starting from the following versions/revisions this bug has been fixed:

OS version	JetMove 2xx JetMove D203 JetMove 1xx	2.15.0.11 2.15.0.05 2.16.0.00

Control of the brake

Error description

(#4129) The brake of a motor at a JetMove 2xx could get released, although the controller was not active.

This error occurs, if several motion systems are combined in one technology group, and if the command **Power enable** is to activate the control of all drives. Thus, if one of the drives is not ready for operation (no DC link voltage, Safe Standstill has been requested), it cannot activate the controller and therefore reports an error. This causes the MotionControl to immediately deactivate all drives being part of the group. If these drives have not got to the state **Power enabled** yet, the brake could remain released, although its control was not active.

Affected versions/revisions

The following versions/revisions are affected by this bug:

OS version	JetMove 2xx JetMove D203 JetMove 1xx	< 2.15.0.12 < 2.16.0.00 < 2.16.0.00

Remedy / workaround

Disabled

Remedy

Starting from the following versions/revisions this bug has been fixed:

OS version	JetMove 2xx JetMove D203 JetMove 1xx	2.15.0.12 2.16.0.00 2.16.0.00

At a JC-940 or JC-970, the axis cannot be enabled

Error description

(#4033/4126) Operating a JetMove is not always possible after launching the controller. Wrong values have been written to the variables for input current, DC link voltage, mains voltage, device temperature or ballast load.

Affected versions/revisions

The following versions/revisions are affected by this bug:

OS version	JetMove 2xx JetMove D203 JetMove 1xx	< 2.15.0.14 < 2.15.0.06 < 2.16.0.00

Remedy / workaround

Restart of the controller, new initializing of the system bus

Remedy

Starting from the following versions/revisions this bug has been fixed:

OS version	JetMove 2xx JetMove D203 JetMove 1xx	2.15.0.14 2.15.0.06 2.16.0.00

Reading out capture values

Error description

(#4076) The capture function (storing actual positions in case of a trigger being applied) lets you retrieve the store values from registers 521 through 524. Yet, this register access was not consistent, if, at the same time, data storage was being carried out. In this case, faulty value were read.

Affected versions/revisions

The following versions/revisions are affected by this bug:

OS version	JetMove 2xx JetMove D203 JetMove 1xx	< 2.15.0.15 < 2.16.0.00 < 2.16.0.00

Remedy / workaround

Do not read registers R521 through 524, before the capture event is reported to R513 (Capture status).

Remedy

Starting from the following versions/revisions this bug has been fixed:

OS version	JetMove 2xx JetMove D203 JetMove 1xx	2.15.0.15 2.16.0.00 2.16.0.00

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