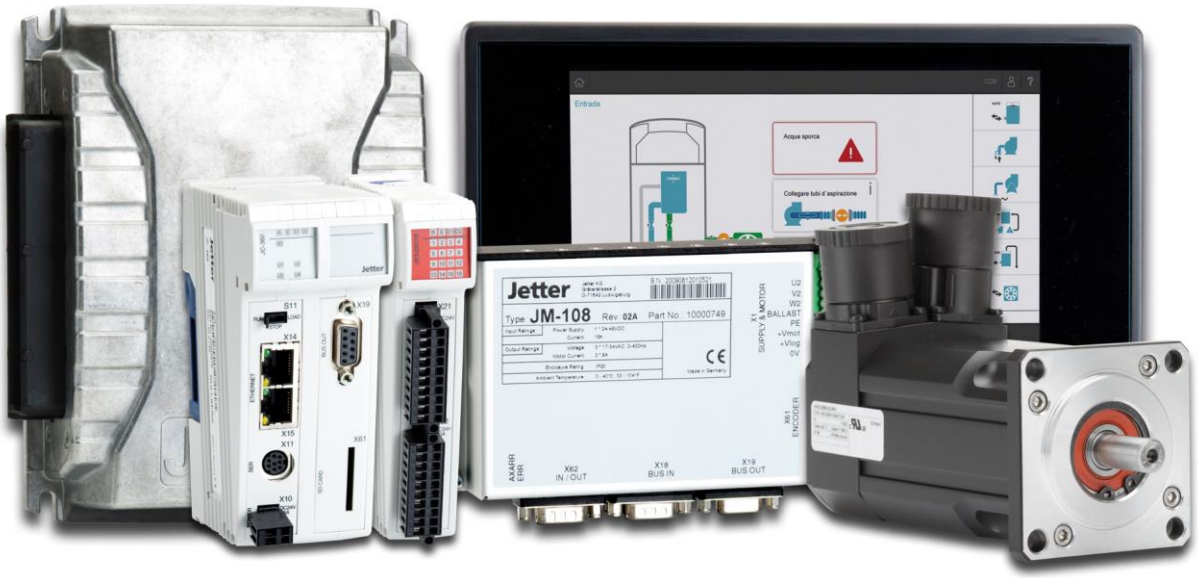
Jetter automation



JetMove 2xx

Version update from V. 2.16 to V. 2.18

We automate your success.

Version 1.00
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Table of Contents

1 Introduction

Overview - Version 2.17

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

Version	Function	New	Advanced	Fixed
V2.16.0.01	Synchronization			✓
V2.16.0.02	Synchronization			✓
	External thermal sensor on EnDat encoder		✓	
V2.16.0.03	Hold time evaluation at torque shut-off			✓
V2.16.0.04	Rotary HIPERFACE encoder with ‘extended type plate’		✓	
V2.16.0.05	Rotary HIPERFACE encoder with ‘extended type plate’		✓	
V2.16.0.06	Rotary HIPERFACE encoder with ‘extended type plate’		✓	
	Overcurrent error following motor cable test			✓
	First-to-second encoder relation			✓
V2.16.0.07	Synchronization			✓
V2.16.0.08	CAN diagnosis		✓	
V2.16.0.10	Faulty display of the phase error F02 in case of undervoltage			✓
V2.17.0.01	Emergency stop function			✓

2 New Features

Introduction

Jetter AG are continuously striving to add new features and functions to the JetMove 2xx servo drives. By updating your OS you will take advantage of newly added features. To do so, you need the following:

- an OS file
- the JetSym software tool
- 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 2.17.0.00, 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

External thermal sensor on EnDat encoder

Introduction

(#4665) When using a linear EnDat encoder, the sensor can now also be connected to the motor winding in addition to the encoder.

Revision

This enhancement allows for a separate thermal sensor with analog data transfer to JetMove to be connected to the EnDat encoder in addition to an internal and/or external thermal sensor.

Configuration

To select the thermal resistor type, set R609 TempSensorType accordingly.

R609

TempSensorType

Value	Description
0	Thermostat; display 0 °C, respectively 155 °C
1	KTY83-110; temperature display in °C
4	No thermal sensor
10	Internal thermal sensor on EnDat encoder
11	External thermal sensor on EnDat encoder

Availability

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

OS version	JetMove 2xx JetMove D203 JetMove 1xx	2.16.0.02 not available not available

Rotary HIPERFACE encoder with ‘extended type plate’

Introduction

(#5462) Now supporting HIPERFACE encoders with extended nameplate (e.g. SEM70 or SEM90).

Availability

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

OS version	JetMove 2xx JetMove D203 JetMove 1xx	2.16.0.06 2.17.0.00 not available

CAN diagnosis

Introduction

(#7655) Showing CAN diagnosis results in new registers.

R470

CAN error register and status register (read-only):

Register 470: CAN error register and status register	
Function	**Description**
Read	Actual CAN error or CAN status
Write access	None
Variable type	Integer
Value range	0 … 255
Value after reset	0

Bit #	Message	Bit state	Description
8	FE		Form error flag
		1	A form error has occurred on the bus. This means that one or several fixed-form bit fields were detected to have an incorrect value on the bus.
		0	No form error has been detected; transmit and receive operations on the CAN module are performed correctly.
7	BE		Bit error flag
		1	The bit received does not match the bit sent outside of the arbitration field; or a dominant bit was sent while a recessive bit was received during transfer of the arbitration field.
		0	No bit error has been detected.
6	SA1		Stuck at dominant error: Following a hardware or software reset or a *bus off* state, the SA1 bit is always 1. This bit will be cleared if the CAN module detects a recessive bit on the bus.
		1	The CAN module has not detected a recessive bit.
		0	The CAN module has detected a recessive bit.
5	CRCE		CRC error
		1	The CAN module has received an incorrect CRC.
		0	The CAN module has not received an incorrect CRC.
4	SE		Stuff error
		1	A bit stuffing error has occurred.
		0	No bit stuffing error has occurred.
3	ACKE		Acknowledgment error

Bit #	Message	Bit state	Description
		1	The CAN module has not received an acknowledgment error.
		0	All notifications have been acknowledged correctly.
2	BO		*Bus off* state: The CAN module is in *bus off* state.
		1	Error rate is abnormally high on the CAN bus. This state is flagged, if the transmit error counter (CANTEC) has reached the 256 limit. While in *bus off* state, the module cannot receive or send notifications.
		0	Normal operation
1	EP		Error passive state
		1	The CAN module is in error passive state. CANTEC has reached 128.
		0	The CAN module is in error active state.
0	R&D		Alarm status
		1	Either one of the error counters (CANREC or CANTEC) has reached alarm level 96.
		0	The values on both error counters (CANREC or CANTEC) are less than 96.

R471

CAN transmit error register

Register 471: CAN transmit error	
Function	**Description**
Read	Number of CAN transmit errors
Write access	None
Variable type	Integer
Value range	0 … 255
Value after reset	0

R472

CAN receive error register

Register 472: CAN receive error	
Function	**Description**
Read	Number of CAN receive errors
Write access	None
Variable type	Integer
Value range	0 … 255
Value after reset	0

Error, alarm	F44	CAN error passive state
	F45	CAN bus off state
	W10	CAN alarm state

Availability

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

OS version	JetMove 2xx	2.16.0.08
	JetMove D203	2.15.0.00
	JetMove 1xx	2.15.0.00

3 Fixed Software Bugs

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

Synchronization

Error description

(#4646) While Ethernet communication was interrupted, incorrect set position values have been applied.

Revision

Correct behavior, if telegrams come in delayed:

- Set position values are applied only if they are correct in terms of time.
- Set position values that are not correct in terms of time are dismissed and properly counted.

Affected versions/revisions

The following versions/revisions are affected by this bug:

OS version	JetMove 2xx	< 2.16.0.07
	JetMove D203	Not relevant
	JetMove 1xx	Not relevant

Error handling

This bug has been fixed starting from the following versions/revisions:

OS version	JetMove 2xx	2.16.0.07
	JetMove D203	Not relevant
	JetMove 1xx	Not relevant

Hold time evaluation at torque shut-off

Error description

(# 4731)
Error 1: Failed to evaluate peak speed during hold time for JetMove 2xx.
Error 2: When using the global reversal of rotation direction, the calculated current average value used to be too low.

Affected versions/revisions

The following versions/revisions are affected by this bug:

Software version	JetMove 2xx JetMove-D203 JetMove 1xx	2.11.0.04 2.11.0.02 2.11.0.02

Remedy / workaround

None

Error handling

This bug has been fixed starting from the following versions/revisions:

OS version	JetMove 2xx JetMove D203 JetMove 1xx	2.16.0.03 2.16.0.01 2.16.0.01

Overcurrent following motor cable test

Error description

(#7291) Upon initial powering up of an axis, an occasional F05 overcurrent error was reported.

Affected versions/revisions

The following versions/revisions are affected by this bug:

OS version	JetMove 2xx JetMove D203 JetMove 1xx	< 2.16.0.06 Not relevant Not relevant

Remedy / workaround

Acknowledge error, re-power axis

Error handling

This bug has been fixed starting from the following versions/revisions:

OS version	JetMove 2xx JetMove D203 JetMove 1xx	2.16.0.06 Not relevant Not relevant

First-to-second encoder relation

Error description

(#7185) A tracking error occurred where the resolution of the second encoder fell significantly short of the resolution of the first encoder.

Affected versions/revisions

The following versions/revisions are affected by this bug:

OS version	JetMove 2xx JetMove D203 JetMove 1xx	< 2.16.0.06 Not relevant < 2.17.0.00

Remedy / workaround

None.

Error handling

This bug has been fixed starting from the following versions/revisions:

OS version	JetMove 2xx JetMove D203 JetMove 1xx	2.16.0.06 Not relevant 2.17.0.00

Faulty display of the phase error F02 in case of undervoltage

Error description

(#8343) If the supply voltage fell well below the nominal voltage of 400V and at the same time the DC Link Voltage was increased by generator operation, a phase error F02 could be displayed even though all phases were present.

Affected versions/revisions

The following versions/revisions are affected by this bug:

OS version	JetMove 2xx JetMove D203 JetMove 1xx	< 2.16.0.10 Not relevant Not relevant

Remedy / workaround

None.

Error handling

This bug has been fixed starting from the following versions/revisions:

OS version	JetMove 2xx JetMove D203 JetMove 1xx	2.16.0.10 Not relevant Not relevant

Emergency stop function

Error description

(#8731) The emergency stop function failed to trigger.
There are two options in order to use the emergency stop function:

1. MotionStop(<axis name>, quick stop, quickstop ramp);
   <axis name>.Power.Quickstop();
   Fault reaction with path groups

   Faulty reaction:
   The 7-segment display prompts “7” permanently.
   The motor brake remains open.
   The axis does not stop and travels beyond the target position.
   The axis cannot be shut down using MotionPower (axis, lock)
   or <axis name>.Power.Disable().
2. Fault reaction C caused by the following errors:
   F16 mains power supply overcurrent
   F20 U_{DC}, min trigger point
   F21 U_{DC}, max trigger point
   F23 tracking error
   F40 engine brake overload
   F41 encoder supply overload
   F42 malfunction 2. encoder
   F43 bus receive error
   F44 CAN error passive state
   F45 CAN bus OFF sate

   Faulty reaction, only if no MotionController is used:
   The 7-segment display prompts “E” permanently.
   The motor brake remains open.
   The axis does not stop and travels beyond the target position.
   The axis can be shut down using MotionPower (<axis name>, lock) or
   <axis name>.Power.Disable().
   After the error reaction interval (R558 = 10 s) has expired, the axis is shut down.

Bug fix result

The emergency stop function delay uses the emergency stop ramp (R549) again.

Affected versions/revisions

The following versions/revisions are affected by this bug:

OS version	JetMove 2xx	≥ 2.16.0.06
	JetMove D203	Not relevant
	JetMove 1xx	Not relevant

Error handling

This bug has been fixed starting from the following versions/revisions:

OS version	JetMove 2xx	2.17.0.01
	JetMove D203	Not relevant
	JetMove 1xx	Not relevant

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