

JC-350

Version Update from V. 1.12 to V. 1.14



Version Update

Jetter

Revision 1.01

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1 Introduction

Introduction	This chapter shows the history of OS versions for the controller JC-350.						
Operating System Update - Why?	<p>An OS update allows you to:</p> <ul style="list-style-type: none">▪ add new functions to your controller▪ fix software bugs▪ make sure your controller is working with a definite OS version, for example, if a definite OS version has been released for a certain customer						
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Operating System Update

OS File for Updating the Operating System

For updating the OS the following file is needed:

OS File	Description
JC-350_1.14.0.00.os	OS file for JC-350 with version 1.14

Downloading the OS File

Jetter AG make operating system files available for download from their **homepage at <http://www.jetter.de>**. OS files can be found in the support area or on the page of the JC-350 controller via quicklink.

Operating System Update by means of JetSym

To update your OS proceed as follows:

Step	Action
1	Download the OS file from www.jetter.de
2	Establish a connection between PC and controller
3	In JetSym: Select menu item "Build -> Update OS" or Click on the button "OS Update" in the CPU window of the hardware manager
4	Select the OS File
5	Initiate the OS update by clicking OK
6	Result: Following Power OFF / Power ON the new OS is launched.

Minimum Requirements

For programming a JC-350 with version 1.14 JetSym 4.3.1 or higher is required.

JC-350 Version Update - Overview

V 1.04

The following table gives an overview of newly added features and fixed software bugs in OS version 1.04:

Description	New	Fixed
JX2 system bus:		
Register overlaying for digital inputs/outputs	✓	
Support of JX-SIO modules and third-party CANopen® devices	✓	
JX3 system bus:		
Register overlaying for digital inputs/outputs	✓	
System bus special registers for status and control	✓	
Operating System Update:		
Via FTP: On completion notification the OS has actually been stored.		✓
Updating a JX2 slave module while registers are being accessed blocks communication		✓
Application program:		
Task switch could fail to happen		✓
Error signal in case of invalid file "/app/start.ini"		✓
Display commands:		
Redirection to JX2-SER1 works only if JX2-PRN1 has been configured, too		✓

V 1.05

The following table gives an overview of newly added features and fixed software bugs in OS version 1.05:

Description	New	Fixed
JX2 system bus: V1.05.0.00		
AS interface gateway BWU1821 is supported	✓	
Frequency inverter 8200 vector is supported	✓	
JetMove 1xx is not detected during boot process		✓
Automatic baud rate recognition does not work reliably for some of the baud rates and configurations of IP67 modules.		✓
Repetition counter does not work when polling I/O modules		✓
AutoCopy function:		
Automatic Copying of Controller Data		
Application program:	✓	
Pending cyclic tasks are started immediately after Taskunlock	✓	
For function pow(x,y) a floating point number can be entered as exponent	✓	
Cyclic tasks can be debugged	✓	

Description	New	Fixed
Length of project and program names > 39 characters		✓
Restart of an elapsed timer		✓
The value returned by DateTimeDecode() was always 1 day short of the actual day.		✓
DateTimeEncode and -IsValid might return the value TRUE irrespective of an invalid date		✓
User registers:		
The register type can be set up without having to start the application program	✓	
Displays and HMI:		
A floating point value can be used as default for UserInput	✓	
The default value for UserInput is not displayed correctly		✓
It is not possible to enter LED register numbers		✓

V 1.08

The following table gives an overview of newly added features and fixed software bugs in OS version 1.08:

Description	New	Fixed
System configuration:		
System rights for configuration file	✓	
JX2 system bus: V1.11.0.00		
Timeout after CAN-PRIM message		✓
Registers of LJX7-CSL modules		✓
Write access to analog outputs of CANopen® modules		✓
State of digital inputs when the controller is powered on		✓
Digital outputs on JX-SIO or CANopen® modules		✓
Input/output 64 on JX-SIO or CANopen® modules		✓
User-Programmable CAN Interface		✓
Application program:		
NetCopyList Functions	✓	
StrCopy()		✓
Crash in the case of "invalid" application program		✓
NetCopyVarFromReg()		✓
JX3 system bus:		
Module registers for digital I/Os	✓	
Displays and HMI:		
UserInput()		✓

V 1.09

The following table gives an overview of newly added features and fixed software bugs in OS version 1.09:

Description	New	Fixed
System:		
System command register	✓	
JX2 system bus: V1.13.0.00		
Status change of inputs on JX2-ID8		✓
Status change of fast inputs		✓
Application program:		
FTP client	✓	
Axis instructions		✓
Taskrestart in the case of Delay()		✓
Crash in the case of missing library		✓
Floating-point number registers in data files		✓
NetCopyVarToReg with floating-point number registers		✓
JX3 system bus:		
Dummy Modules	✓	
AutoCopy:		
FTP commands	✓	
Serial interface:		
Initialization after booting		✓

V 1.10

The following table gives an overview of newly added features and fixed software bugs in OS version 1.10:

Description	New	Fixed
System:		
LED registers		✓
SD memory card		✓
JX2 system bus: V1.17.0.00		
Additional modules	✓	
CAN-PRIM	✓	
Application program:		
Task commands with variable parameters	✓	
UserInput()		✓
NetCopyListSend()		✓
Task status register		✓

Description	New	Fixed
Real-time clock:		
Additional register for milliseconds	✓	
User-programmable IP Interface:		
More connections	✓	

V 1.12

The following table gives an overview of newly added features and fixed software bugs in OS version 1.12:

Description	New	Fixed
System:		
System command register	✓	
JX2 system bus: V1.21.0.00		
Initialization		✓
CAN-PRIM		✓
CANopen® sync intervall		✓
CANopen® application registers		✓
CANopen® type string		✓
Write access to CANopen® output		✓
CANopen® version number		✓
WAGO 750		✓
JX3 system bus:		
Register accesses		✓
Application program:		
Program Control	✓	✓
Assigning Structures	✓	
Sorting Data	✓	
Displaying values in JetSym		✓
HTTP server:		
New data type	✓	
Serial interface:		
Error Detection		✓

1 Introduction

V 1.14

The following table gives an overview of newly added features and fixed software bugs in OS version 1.14:

Description	New	Fixed
JX2 system bus: V1.22.0.00		
OS Update		✓
Application program:		
New instructions	✓	

2 New Features

Introduction

This chapter describes the features which have been added or enhanced in the new software release.

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2.1 Various New Features and Modifications

Introduction

This chapter covers the new features and modifications

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New Functions: TaskGetInfo() and TaskGetNum()

Introduction

This is the first OS version of the controller JC-350 that supports the STX functions `TaskGetInfo()` and `TaskGetNum()`.

Prerequisites

JetSym programming environment version 4.4.0 or higher must be installed to be able to use these functions.

Declaration

Type

```
TaskFlags : Bits (bSleep,
                  bActive,
                  bStopped,
                  bStartup,
                  bCancelled);

TaskInfo  : Struct
            nId      : Int;
            nFlags    : TaskFlags;
            nPriority  : Int;
            nCycleTime : Int;
            nStackSize : Int;
            nStackFree : Int;
            nModule    : Int;
            nBlock     : Int;
            nAddr      : Int;
            End_Struct;
```

End_Type;

```
Function TaskGetNum() : Int;
```

```
Function TaskGetInfo(nTaskId: Int := -1) : TaskInfo;
```

Reference:

For more information on these functions refer to JetSym online help.

3 Fixed Software Bugs

Introduction	This chapter describes the software bugs which have been fixed in the new operating system release.	
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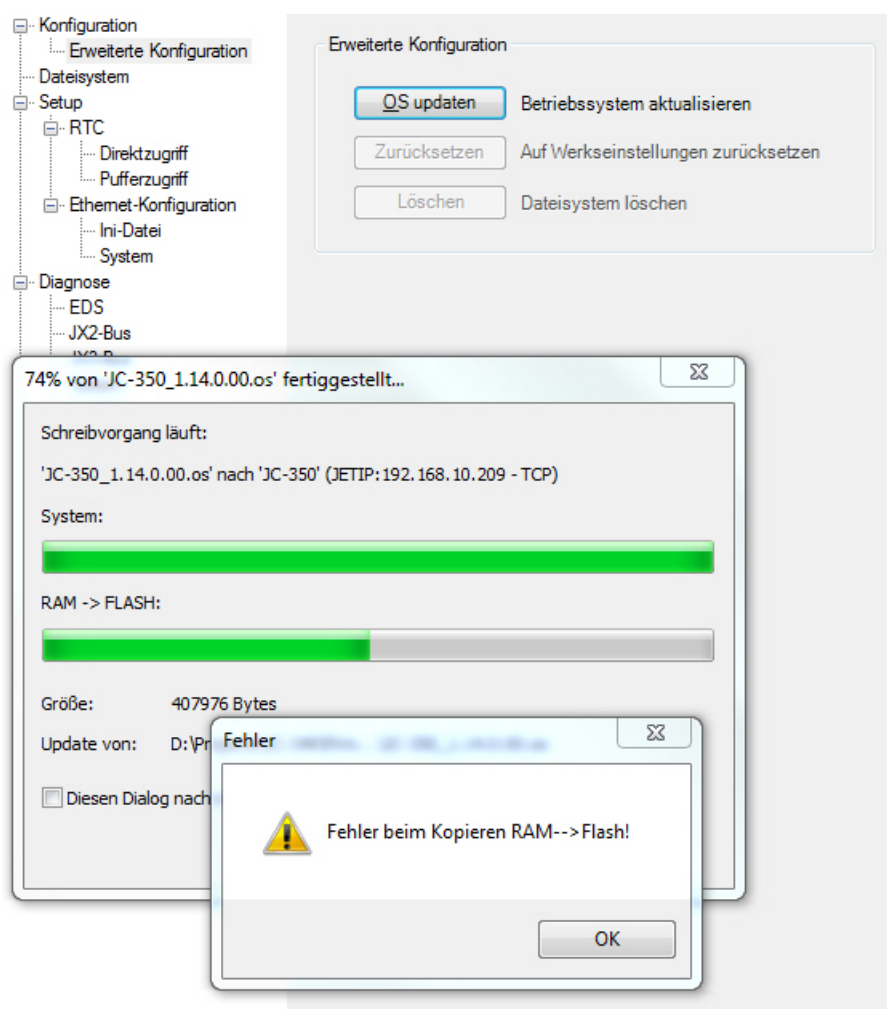
Program Termination During OS Update

Appearance of the Error

When the OS is updated, the update function terminates in the middle of the process "RAM -> FLASH" and produces an error message. Once the controller is rebooted, the updated OS is active, but the JX2 system bus software is still the old version.

This problem occurs only if no modules are connected to the JX2 system bus.

Screenshot:



Affected Versions/Revisions

The following versions/revisions are affected by this bug:

OS version	1.12.0.0
Hardware revision	not relevant
Configuration or operating mode	without modules on the JX2 system bus

Remedy / Workaround

Connect a JX2 or CANopen® module to the JX2 system bus.

3 Fixed Software Bugs

Fixed Versions

In the following versions/revisions this bug has been fixed:

OS version	Any version except for 1.12.0.0
Hardware revision	not relevant
Configuration or operating mode	not relevant

4 Quick Reference - JC-3xx

Matching OS Versions

This quick reference gives an overview of registers and flags used in connection with the controllers JC-340, JC-350 with OS release 1.14.0.00, and JC-360 with OS release 1.12.0.00, as well as of the connector assignment.

General Overview - Registers

100000 ... 100999	Electronic Data Sheet (EDS)
101000 ... 101999	Configuration
102000 ... 102999	Real-time clock (RTC)
103000 ... 103999	Serial interface
104000 ... 104999	Ethernet
107000 ... 107499	SD memory card
107500 ... 107599	Flash disk
108000 ... 108999	CPU/backplane
200000 ... 209999	General system registers
210000 ... 219999	Application program
220000 ... 229999	HMI control
230000 ... 239999	Networking via JetIP
240000 ... 249999	JetSync
250000 ... 259999	Ethernet system bus
260000 ... 269999	Remote scan
270000 ... 279999	Modbus/TCP
290000 ... 299999	E-mail
310000 ... 319999	File system / data files
320000 ... 324999	FTP client
350000 ... 359999	User-programmable IP interface
380000 ... 389999	Error history
390000 ... 399999	I/O networking
1000000 ... 1001999	JC-340: Application registers (remanent; Int/Float)
1000000 ... 1019999	JC-340: Application registers (remanent; Int/Float) with option -SD
1000000 ... 1029999	JC-350: Application registers (remanent; Int/Float)
1000000 ... 1059999	JC-360: Application registers (remanent; Int/Float)
1000000 ... 1119999	JC-360: Application registers (remanent; Int/Float) with option -R
100mm0000 ... 100mm9999	JX3 modules (mm: 02 ... 17)
200002000 ... 200029999	JX2 system bus
1GNN020000 ... 1GNN999999	Network registers (GNN: 000 .. 399)

I/Os - General Overview

20001 ... 36000	Virtual I/Os for RemoteScan
10000mm01 ... 10000mm16	JX3-Module (mm: 02 ... 17)
20000mm01 ... 20000mm16	JX2 modules (mm: 02 ... 24)
1000010101 ... 1399023216	Network

General Overview - Flags

0 ... 255	Application flags (remanent)
256 ... 2047	overlaid by registers 1000000 through 1000055
2048 ... 2303	Special flags

Electronic Data Sheet (EDS)

100500	Interface (0 = CPU, 1 = JX3 modules)
100501	Module number (2 ... 17)
The EDS entries are shown below:	

[Identification]

100600	Internal version number
100601	Module ID
100602 ... 100612	Module name (register string)
100613	PCB revision
100614	PCB options

[Production]

100700	Internal version number
100701 ... 100707	Serial number (register string)
100708	Day
100709	Month
100710	Year
100711	TestNum.
100712	TestRev.

[Features]

100800	Internal version number
100801	Diagnostic configuration
100802	Digital inputs
100803	Digital inputs, inverted
100804	Digital outputs
100805	Digital outputs, inverted
100806	Cyclic inputs
100807	Cyclic outputs
100808	Features
100809	Diagnostics mask

[Features]

100800	JX3-BN-ETH/JC-3xx
100800	Internal version number
100801	MAC Address (Jetter)
100802	MAC Address (device)
100803	Serial interface
100804	Switch
100805	STX
100806	Remanent registers
100807	JX3 bus
100808	CAN bus
100809	SD memory card
100810	Motion control
100811	Intelligent slave modules
100812	HTTP / e-mail
100813	Modbus/TCP
100815	LED for SD memory card
100816	User-defined LEDs
100817	RTC

Configuration

From file /system/ config.ini

101100	IP address
101101	Subnet mask
101102	Default gateway
101103	DNS server
101132	Host name suffix type
101133 ... 101151	Host name (register string)
101164	JetIP port number
101165	STX debugger port number
Used by the system	
101200	IP address
101201	Subnet mask
101202	Default gateway
101203	DNS server
101232	Host name suffix type
101233 ... 101251	Host name (register string)
101264	JetIP port number
101265	STX debugger port number
101908	CRC of ModConfig.da

4 Quick Reference - JC-3xx

Real-time Clock (RTC)

Direct access	
102910	Milliseconds
102911	Seconds
102912	Minutes
102913	Hours
102914	Weekday (0 = Sunday)
102915	Day
102916	Month
102917	Year
Buffer access	
102920	Milliseconds
102921	Seconds
102922	Minutes
102923	Hours
102924	Weekday (0 = Sunday)
102925	Day
102926	Month
102927	Year
102928	Read/write trigger

Serial Interface

103000	Error state (bit-coded) Bit 14 = 1: framing error Bit 13 = 1: parity error Bit 12 = 1: overflow
103001	Protocol 1: System logger 2: PRIM 3: pcomX
103002	Baud rate (1200 ... 115200)
103003	Bits per character (5 ... 8)
103004	Stop bits (1, 2)
103005	Parity 0: none 1: odd 2: even 3: 1 4: 0
103006	0 = RS-232, 1 = RS-422, 3 = RS-485/2
103010	Transmit buffer
103011	Transmit buffer filling level
103012	Receiving buffer (without immediate clearing)
103013	Receiving buffer (with immediate clearing)
103014	Receive buffer filling level
103015	Receive buffer, 16-bit, little endian
103016	Receive buffer, 16-bit, big endian
103017	Receive buffer, 32-bit, little endian
103018	Receive buffer, 32-bit, big endian
103019	Error counter

Ethernet

Ethernet	
104100 ... 104156	MIB counter
ARP	
104200	Sent requests
104201	Received requests
104202	Sent responses
104203	Received responses
104204	Dynamic entries
104205	Static entries
104206	Obsolete entries
104250	Enforce request
IP	
104500	Sent packets
104501	Sent bytes
104502	Received packets
104503	Received bytes
104504	Invalid packets
104505	Discarded received packets
104506	Checksum error at reception
104507	Discarded transmit packets
104508	Sent fragments

104509	Received fragments
104531	Current IP address (rw)
104532	Current subnet mask (rw)
104533	Current default gateway (rw)
TCP	
104800	Sent packets
104801	Sent bytes
104802	Received packets
104803	Received bytes
104804	Invalid packets
104805	Discarded received packets
104806	Checksum error
104807	Connections
104808	Disconnections
104809	Discarded connections
104810	Repeated transmit packets
UDP	
104900	Sent packets
104901	Sent bytes
104902	Received packets
104903	Received bytes
104904	Invalid packets
104905	Discarded received packets
104906	Checksum error

SD Memory Card

107000	Bit 0 = 1: Card installed Bit 1 = 1: Card is ready
107001	1 = Card is write-protected (only valid if REG 107000 = 3)
107002	Size in MBytes

Flash Disk

107500	Status
107501	Command 30: Read statistics
Sector statistics	
107510	Total
107511	Used
107512	Blocked
107513	Unassigned
Byte statistics	
107520	Total
107521	Used
107522	Blocked
107523	Unassigned

CPU/Backplane

108002	All LEDs on/off (bit-coded) Bit 0: "R" LED Bit 1: "E" LED Bit 2: "D1" LED Bit 3: "D2" LED
108003	"R" LED 0 = OFF 1 = Blinking slowly 2 = Blinking fast 3 = ON
108004	"E" LED 0 = OFF 1 = Blinking slowly 2 = Blinking fast 3 = ON
108005	"D1" LED 0 = OFF 1 = Blinking slowly 2 = Blinking fast 3 = ON
108006	"D2" LED 0 = OFF 1 = Blinking slowly 2 = Blinking fast 3 = ON
108007	"SD" LED

108008	0 = OFF 3 = ON LEDs U1 ... U4 on/off (bit-coded) Bit 0: LED U1 Bit 1: LED U2 Bit 2: LED U3 Bit 3: LED U4	202936	0xd364e64d: Formatting the SD Card 0x2c9b3c94: Checking SD card Control register - File System 0xc4697a4b: Formatting the flash disk 0xd364e64d: Formatting the SD Card 0x2c9b3c94: Checking SD card
108010	DIP switch - all switches	202960	Password for system command register (0x424f6f74)
108011	DIP switch - address	202961	System command register
108012	DIP switch - mode		102: Restart the controller
108015	Mode selector 1 = LOAD 2 = RUN 3 = STOP		104: Reset remanent parameters
108020	Backplane revision		122: Wait for communication - OFF
108021	CPU revision		123: Wait for communication - ON
108099	Clear EEPROM (0x12345678)		160: Task switch on I/O access - OFF
108100 ...	EEPROM registers on backplane		161: Task switch on I/O access - ON
108227			310: Load configuration files
			311: Load ModConfig.da
			312: Load configuration for Ethernet system bus
			313: Stop Ethernet system bus
			330: JetIPScan client - OFF
			331: JetIPScan client - ON
			System status register
			Bit 0 = 1: Task switch on I/O access
			Bit 1 = 1: Without waiting for communication
			Bit 2 = 1: JetIPScan client is ON
			Error history: Number of entries
			Error history: Index
			Interface monitoring: JetIP
			Interface monitoring: SER
			Interface monitoring: Debug server
			32-bit overlaying - Flag 0 ... 255
			16-bit overlaying - Flag 0 ... 255
			32-bit overlaying - Flag 2048 ... 2303
			16-bit overlaying - Flag 2048 ... 2303
			System logger: Global enable
			Enabling system components
General System Registers			
200000	OS version (major * 100 + minor)	202962	System status register
200001	Application program is running (bit 0 = 1)		Bit 0 = 1: Task switch on I/O access
200008	Error register 1 (identical with 210004) Bit 1: Error on JX3 bus Bit 2: Error on JX2 bus Bit 3: Error on Ethernet system bus Bit 7: At least 1 bit in error register 2 is set Bit 8: Illegal jump Bit 9: Illegal call Bit 10: Illegal index Bit 11: Illegal opcode Bit 12: Division by 0 Bit 13: Stack overflow Bit 14: Stack underflow Bit 15: Illegal stack Bit 16: Error when loading application program Bit 24: Timeout - cycle time Bit 25: Timeout - task lock Bit 31: Unknown error	202980 202981	Error history: Number of entries Error history: Index
200009	Error Register 2 Bit 3: Error in ModConfig.da	203000 203001 203005	Interface monitoring: JetIP Interface monitoring: SER Interface monitoring: Debug server
200168	Bootloader version (IP format)	203100 ... 203107 203108 ... 203123 203124 ... 203131 203132 ... 203147	32-bit overlaying - Flag 0 ... 255 16-bit overlaying - Flag 0 ... 255 32-bit overlaying - Flag 2048 ... 2303 16-bit overlaying - Flag 2048 ... 2303
200169	OS version (IP format)		
200170	Controller type (340/350/360)		
200300	Currently available heap	209700	System logger: Global enable
200301	Available heap at system launch	209701 ...	Enabling system components
200302	Available heap before application program	209739	
Application Program			
201000	Runtime register in milliseconds (rw)	210000	Application program is running (bit 0 = 1) 0 / 2: Stop program
201001	Runtime register in seconds (rw)		1: Start program
201002	Runtime register in register 201003 Units (rw)		2: Continue program
201003	* 10 ms units for register 201002 (rw)		
201004	Runtime registers in milliseconds (ro)	210001 210004	JetVM version Error register (bit-coded) Bit 1: Error on JX3 bus Bit 2: Error on JX2 bus Bit 3: Error on Ethernet system bus Bit 7: At least 1 bit in error register 2 is set Bit 8: Illegal jump Bit 9: Illegal call Bit 10: Illegal index Bit 11: Illegal opcode Bit 12: Division by 0 Bit 13: Stack overflow Bit 14: Stack underflow Bit 15: Illegal stack Bit 16: Error when loading application program Bit 24: Timeout - cycle time
202930	Web status (bit-coded) Bit 0 = 1: FTP server available Bit 1 = 1: HTTP server available Bit 2 = 1: E-mail available Bit 3 = 1: Data file function available Bit 4 = 1: Modbus/TCP has been licensed Bit 5 = 1: Modbus/TCP available Bit 6 = : Reserved Bit 7 = 1: FTP client available		
202936	Control register - File System 0xc4697a4b: Formatting the flash disk		

4 Quick Reference - JC-3xx

	Bit 25: Timeout - task lock
	Bit 31: Unknown error
210006	Highest task number
210007	Minimum program cycle time
210008	Maximum program cycle time
210009	Current program cycle time
210011	Current task number
210050	Current program position within a execution unit
210051	ID of the execution unit being processed
210056	Desired total cycle time in μ s
210057	Calculated total cycle time in μ s
210058	Maximum time slice per task in μ s
210060	Task ID (for register 210061)
210061	Task priority for the task [reg. 210060]
210063	Length of scheduler table
210064	Index in scheduler table
210065	Task ID in scheduler table
210070	Task ID (for register 210071)
210071	Timer number (0 ... 31)
210072	Manual triggering of a timer event (bit-coded)
210073	End of cyclic task (task ID)
210074	Command for cyclic tasks
210075	Number of timers
210076	Timer number (for register 210077)
210077	Timer value in milliseconds
210100 ...	Task state (bit-coded)
210199	Bit 0 = 1: Task is waiting for an event. Bit 1 = 1: No task break condition Bit 2 = 1: Task was stopped (debugger) Bit 3 = 1: Task is being started Bit 4 = 1: Aborted by exception Bit 5 = 1: Exception (debugger) Bit 6 = 1: Indirection (debugger) Bit 8 = 1: Motion semaphore (Motion API) Bit 9 = 1: Break Pending (Motion API) Bit 10 = 1: Restart Pending (Motion API)
210400 ...	Task - program address
210499	
210600	Task ID of a cyclic task (for register 210601)
210601	Processing time of a cyclical task in per mil figure
210609	Task lock timeout in ms -1: Monitoring disabled
210610	Timeout (bit-coded, bit 0 -> timer 0, etc.)

HMI Control

222804	Total number of display characters
222805	Number of characters per line
222806	Text selection (DisplayText2)
222808	Number of decimal places (UserInput)
222810	Number of decimal places (DisplayValue)
222811	Max. number of decimal places (UserInput)
222812	Field length (DisplayValue)
222813	Field length (UserInput)
222814	Indirect cursor position
222815	Default value for UserInput (integer/float)
222816	Displaying signs
222817	Status UserInput
222818	Enable/disable monitor functions
222819	Display text - monitor function
222820	Switching over to monitor display
222821	Dialog language
222824	Indirect buffer number
	Multi-Display Mode
222825	Text buffer for display 1
222826	Text buffer for display 2
222827	Text buffer for display 3
222828	Text buffer for display 4
222829	Basic flag number for display 1
222830	Basic flag number for display 2
222831	Basic flag number for display 3

222832	Basic flag number for display 4
222833	Register number - LED display 1
222834	Register number - LED display 2
222835	Register number - LED display 3
222836	Register number - LED display 4
222837	Module number of PRN (display redirection)
222838	Module number of SER (display redirection)
222839	Character code for "Delete Screen"
222840	Character code for "Delete to end of line"

Networking via JetIP

230000	JetIP/TCP Server: Number of open connections
230001	JetIP/TCP server: Mode
230002	JetIP/TCP server: Time
232708	Timeout in milliseconds
232709	Response time in milliseconds
232710	Quantity of network errors
232711	Error code of last access 0 = No error 1 = Timeout 3 = Error message of the remote station 5 = Invalid network address 6 = Invalid amount of registers 7 = Invalid interface number
232717	Max. number of retries
232718	Number of retries

Network registers

235000 ...	IP addresses
235399	
235400 ...	Port numbers
235799	
236000 ...	Indirect register numbers
236199	

Ethernet System Bus

Subscriber

250000	Status (bit-coded) Bit 0 = 1: no CRC Bit 1 = 1: Timeout Bit 7 = 1: Subscriber is running
250001	Command 102: Restart 105: Stop 110: Acknowledge timeout
250002	Subscription ID of the last error
250003	Number of subscriptions
250004	CRC of configuration file
250010	Selection via command
250011	Selection via ID Subscription
250020	Status
250021	Mode
250022	Number of elements
250023	Multicast group
250024	Hash
250025	Current sequence number
250026	Size (bytes)
250027	Timeout
250028	Number of received publications
250029	Number of timeout errors
250030	Number of sequence number errors
250100 ...	9 more subscriber register blocks
250999	

Publisher	
255000	Status (bit-coded) Bit 0 = 1: no CRC Bit 1 = 1: Timeout Bit 7 = 1: Subscriber is running
255001	Command 102: Restart 105: Stop 110: Acknowledge timeout
255002	Publication ID of the last error
255003	Number of publications
255004	CRC of configuration file
255010	Selection via command
255011	Selection via ID Publication
255020	Status
255021	Mode
255022	Number of elements
255023	Multicast group
255024	Hash
255025	Current sequence number
255026	Size (bytes)
255027	Cycle time
255028	Number of publications sent
255029	Number of retries
255030	Number of transmit errors
255100 ... 255999	9 more publisher register blocks

RemoteScan

262965	Protocol type
262966	Number of configuration blocks
262967	Status

Modbus/TCP

272702	Register offset
272704	Input offset
272705	Output offset
278000 ...	16-bit I/O registers overlaid by virtual I/Os 20001 ...
278999	36000

E-mail

292932	IP address of SMTP server
292933	IP address of POP3 server
292934	Port number of SMTP server
292935	Port number of POP3 server
292937	Status of e-mail processing
292938	Task ID - e-mail

File System / Data File Function

312977	Status of file operation
312978	Task ID

FTP Client

320000	Number of open connections
320001	Command
320002	Timeout
320003	Server port
320004	Selection via number
320005	Selection via handle
320006	Server socket: IP address
320007	Server socket: Port
320008	Server socket: IP address
320009	Server socket: Port
320100	Access status

320101	Task ID
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User-programmable IP Interface**Reading out the connection list**

350000	Last result (-1 = no connection established)
350001	1 = Client; 2 = Server
350002	1 = UDP; 2 = TCP
350003	IP address
350004	Port number
350005	Connection state
350006	Number of sent bytes
350007	Number of received bytes

Error History

380000	Status Bit 0 = 1: Recording Bit 1 = 1: Stop if buffer is full Bit 2 = 1: Stop on error code Bit 3 = 1: Remanent memory
380001	Command 1: Clear error log 2: Start error log 3: Stop error log 4: Stop if error buffer is full 5: Circular buffer 6: Stop on error code ON 7: Stop on error code OFF 10: Remanent memory 11: Dynamic memory
380002	Buffer length
380003	Maximum buffer length
380004	Number of error entries
380005	Index to error list
380006	Error entry
380007	Error stop code
380008	Number of codes until stop
380029	Group index to error list
380030 ... 380093	64 error entries

I/O Networking**Status register**

390000 + node * 10	JetSync status
390001 + node * 10	Subscriber status
390002 + node * 10	Subscriber error number
390003 + node * 10	Error register

Control register

395000 + node * 10	Command
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Application Registers

1000000 ... 1001999	JC-340: 32-bit integer or floating point number (permanent)
1000000 ... 1019999	JC-340: 32-bit integer or floating point number (permanent); with option -SD
1000000 ... 1029999	JC-350: 32-bit integer or floating point number (permanent)
1000000 ... 1059999	JC-360: 32-bit integer or floating point number (permanent)

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1000000 ... JC-360: 32-bit integer or floating point number
1119999 (permanent); with option -R

JX3 System Bus Registers

100002000 JX3 system bus revision
100002008 Errors (bit-coded)
Bit 3: Error

100002011 Module number in case of error
100002013 Number of detected JX3 modules
100002015 Index to module array
100002016 Module array
100002023 Dummy I/O module
100002034 Number of retries
100002111 Register number in case of error
100002764 Timeout for register access [ms]

100003mm0 ... Registers on I/O modules
100003mm9 (compatibility mode)
mm: Module number - 2 (00 ... 15)

100004000 Inputs/outputs mapped to registers
... (see below)
100004367

100mm0000 Registers on I/O modules
... (direct access)
100mm9999 mm: Module number (02 ... 17)

JX2 System Bus Registers

200002000 Version of JX2 system bus driver (IP)
200002008 Errors (bit-coded)
Bit 3: I/O or CANopen® module timeout
Bit 4: JX2-Slave module timeout
Bit 9: Error of I/O module periphery
Bit 13: Error during JX2 system bus initialization
Bit 14: System registers timeout

200002011 I/O Module number with timeout
200002012 JX2-Slave module number with timeout
200002013 Amount of connected I/O modules
200002014 Amount of connected JX2-Slave modules
200002015 Index to module array
200002016 Module array
200002023 Dummy I/O module
200002024 JX2-Slave dummy modules
200002028 Monitoring interval for I/O modules [10 ms]
200002029 Baud rate of JX2 system bus
200002032 ON delay
200002039 I/O module where a peripheral fault has occurred (bit-coded)

200002070 Number of CANopen® modules
200002071 Actual I/O sum of modules on the JX2 system bus
200002072 Version of JX2 system bus driver (IP)
200002073 Timeout for register access to CANopen® modules
200002074 CANopen® sync intervall [ms]
200002077 Enabling JX2 system bus special functions
Bit 2: CAN-PRIM
Bit 3: only CAN-PRIM

200002080 CANopen® module index for JX2 system bus application registers
200002085 SysBus application regs: Register number (65-89)
200002086 SysBus application regs: Object number
200002087 SysBus application regs: Subindex
200002088 SysBus application regs: Length

200002760 Max. number of I/O update retries
200002761 Index to array of I/O retry counters
200002762 Array of I/O retry counters
200002763 Timeout for I/O update of I/O modules [ms]
200002764 Timeout for register access to I/O modules [ms]
200002765 Timeout for register access to JX2-Slave modules [ms]

200002995 Bootloader version of JX2 system bus interface

200003mm0 ... Registers on I/O modules
200003mm9 mm: I/O module number - 2 (00 ... 22)

200004000 Inputs/outputs mapped to registers
... (see below)
200004367
200005m00 I/O registers: CANopen® / JX-SIO
... m: I/O module number - 70 (0...9)
200006m99
200007m00 Configuration registers: CANopen® / JX-SIO
... m: I/O module number - 70 (0...9)
200007m99
2000mm100 ... JX2-Slave registers
2000mm999 mm: JX2-Slave number + 10

CAN-PRIM Registers

200010500 Status registers
Bit 1 = 1: CAN message received

Bit 2 = 0: 11-bit CAN ID
Bit 2 = 1: 29-bit CAN ID

200010501 Command registers
7 = clear FIFO

8 = Set CAN ID to 11 bits
9 = Set CAN ID to 29 bits

10 = Check boxes for received messages

200010503 FIFO buffer occupancy
200010504 FIFO data
200010506 Global receiving mask
200010507 Global receive ID
200010509 CAN-PRIM version (IP)

200010530 + Box status register
box * 20
200010531 + Box configuration register
box * 20
200010532 + CAN ID
box * 20
200010533 + Number of data bytes
box * 20
200010534 ... Data bytes
200010541 +
box * 20
200010542 + CAN ID mask
box * 20
200010543 + Box command register
box * 20
200010544 + Received CAN ID
box * 20

Inputs/Outputs

20001 ... 36000 Virtual I/Os for RemoteScan
10000mm01 ... JX3 modules (mm: 02 ... 17)
10000mm16
20000mm01 ... JX2 modules (mm: 02 ... 24)
20000mm16
1GNN01mm01 Network (GNN: 000 ... 399
... mm: 02 ... 24)
1GNN01mm16

32 Combined Inputs

JX3 system bus: + 100000000
JX2 system bus: + 200000000
Network: + 1GNN910000

4000	101..108	109..116	201..208	209..216
4001	109..116	201..208	209..216	301..308
4002	201..208	209..216	301..308	309..316
4003	209..216	301..308	309..316	401..408
4004	301..308	309..316	401..408	409..416
4005	309..316	401..408	409..416	501..508
4006	401..408	409..416	501..508	509..516

4007	409..416	501..508	509..516	601..608
4008	501..508	509..516	601..608	609..616
4009	509..516	601..608	609..616	701..708
4010	601..608	609..616	701..708	709..716
4011	609..616	701..708	709..716	801..808
4012	701..708	709..716	801..808	809..816
4013	709..716	801..808	809..816	901..908
4014	801..808	809..816	901..908	909..916
4015	809..816	901..908	909..916	1001..1008
4016	901..908	909..916	1001..1008	1009..1016
4017	909..916	1001..1008	1009..1016	1101..1108
4018	1001..1008	1009..1016	1101..1108	1109..1116
4019	1009..1016	1101..1108	1109..1116	1201..1208
4020	1101..1108	1109..1116	1201..1208	1209..1216
4021	1109..1116	1201..1208	1209..1216	1301..1308
4022	1201..1208	1209..1216	1301..1308	1309..1316
4023	1209..1216	1301..1308	1309..1316	1401..1408
4024	1301..1308	1309..1316	1401..1408	1409..1416
4025	1309..1316	1401..1408	1409..1416	1501..1508
4026	1401..1408	1409..1416	1501..1508	1509..1516
4027	1409..1416	1501..1508	1509..1516	1601..1608
4028	1501..1508	1509..1516	1601..1608	1609..1616
4029	1509..1516	1601..1608	1609..1616	1701..1708
4030	1601..1608	1609..1616	1701..1708	1709..1716
4031	1609..1616	1701..1708	1709..1716	1801..1808
4032	1701..1708	1709..1716	1801..1808	1809..1816
4033	1709..1716	1801..1808	1809..1816	1901..1908
4034	1801..1808	1809..1816	1901..1908	1909..1916
4035	1809..1816	1901..1908	1909..1916	2001..2008
4036	1901..1908	1909..1916	2001..2008	2009..2016
4037	1909..1916	2001..2008	2009..2016	2101..2108
4038	2001..2008	2009..2016	2101..2108	2109..2116
4039	2009..2016	2101..2108	2109..2116	2201..2208
4040	2101..2108	2109..2116	2201..2208	2209..2216
4041	2109..2116	2201..2208	2209..2216	2301..2308
4042	2201..2208	2209..2216	2301..2308	2309..2316
4043	2209..2216	2301..2308	2309..2316	2401..2408
4044	2301..2308	2309..2316	2401..2408	2409..2416

16 Combined Inputs

JX3 system bus: + 100000000
JX2 system bus: + 200000000
Network: + 1GNN910000

4060	101..108	109..116
4061	109..116	201..208
4062	201..208	209..216
4063	209..216	301..308
4064	301..308	309..316
4065	309..316	401..408
4066	401..408	409..416
4067	409..416	501..508
4068	501..508	509..516
4069	509..516	601..608
4070	601..608	609..616
4071	609..616	701..708
4072	701..708	709..716
4073	709..716	801..808
4074	801..808	809..816
4075	809..816	901..908
4076	901..908	909..916
4077	909..916	1001..1008
4078	1001..1008	1009..1016
4079	1009..1016	1101..1108
4080	1101..1108	1109..1116
4081	1109..1116	1201..1208
4082	1201..1208	1209..1216
4083	1209..1216	1301..1308
4084	1301..1308	1309..1316
4085	1309..1316	1401..1408
4086	1401..1408	1409..1416
4087	1409..1416	1501..1508
4088	1501..1508	1509..1516
4089	1509..1516	1601..1608
4090	1601..1608	1609..1616
4091	1609..1616	1701..1708
4092	1701..1708	1709..1716
4093	1709..1716	1801..1808
4094	1801..1808	1809..1816
4095	1809..1816	1901..1908

4096	1901..1908	1909..1916
4097	1909..1916	2001..2008
4098	2001..2008	2009..2016
4099	2009..2016	2101..2108
4100	2101..2108	2109..2116
4101	2109..2116	2201..2208
4102	2201..2208	2209..2216
4103	2209..2216	2301..2308
4104	2301..2308	2309..2316
4105	2309..2316	2401..2408
4106	2401..2408	2409..2416

8 Combined Inputs

JX3 system bus: + 100000000
JX2 system bus: + 200000000
Network: + 1GNN910000

4120	101..108
4121	109..116
4122	201..208
4123	209..216
4124	301..308
4125	309..316
4126	401..408
4127	409..416
4128	501..508
4129	509..516
4130	601..608
4131	609..616
4132	701..708
4133	709..716
4134	801..808
4135	809..816
4136	901..908
4137	909..916
4138	1001..1008
4139	1009..1016
4140	1101..1108
4141	1109..1116
4142	1201..1208
4143	1209..1216
4144	1301..1308
4145	1309..1316
4146	1401..1408
4147	1409..1416
4148	1501..1508
4149	1509..1516
4150	1601..1608
4151	1609..1616
4152	1701..1708
4153	1709..1716
4154	1801..1808
4155	1809..1816
4156	1901..1908
4157	1909..1916
4158	2001..2008
4159	2009..2016
4160	2101..2108
4161	2109..2116
4162	2201..2208
4163	2209..2216
4164	2301..2308
4165	2309..2316
4166	2401..2408
4167	2409..2416

32 Combined Outputs

JX3 system bus: + 100000000
JX2 system bus: + 200000000
Network: + 1GNN910000

4200	101..108	109..116	201..208	209..216
4201	109..116	201..208	209..216	301..308
4202	201..208	209..216	301..308	309..316
4203	209..216	301..308	309..316	401..408
4204	301..308	309..316	401..408	409..416
4205	309..316	401..408	409..416	501..508
4206	401..408	409..416	501..508	509..516
4207	409..416	501..508	509..516	601..608

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4208	501..508	509..516	601..608	609..616
4209	509..516	601..608	609..616	701..708
4210	601..608	609..616	701..708	709..716
4211	609..616	701..708	709..716	801..808
4212	701..708	709..716	801..808	809..816
4213	709..716	801..808	809..816	901..908
4214	801..808	809..816	901..908	909..916
4215	809..816	901..908	909..916	1001..1008
4216	901..908	909..916	1001..1008	1009..1016
4217	909..916	1001..1008	1009..1016	1101..1108
4218	1001..1008	1009..1016	1101..1108	1109..1116
4219	1009..1016	1101..1108	1109..1116	1201..1208
4220	1101..1108	1109..1116	1201..1208	1209..1216
4221	1109..1116	1201..1208	1209..1216	1301..1308
4222	1201..1208	1209..1216	1301..1308	1309..1316
4223	1209..1216	1301..1308	1309..1316	1401..1408
4224	1301..1308	1309..1316	1401..1408	1409..1416
4225	1309..1316	1401..1408	1409..1416	1501..1508
4226	1401..1408	1409..1416	1501..1508	1509..1516
4227	1409..1416	1501..1508	1509..1516	1601..1608
4228	1501..1508	1509..1516	1601..1608	1609..1616
4229	1509..1516	1601..1608	1609..1616	1701..1708
4230	1601..1608	1609..1616	1701..1708	1709..1716
4231	1609..1616	1701..1708	1709..1716	1801..1808
4232	1701..1708	1709..1716	1801..1808	1809..1816
4233	1709..1716	1801..1808	1809..1816	1901..1908
4234	1801..1808	1809..1816	1901..1908	1909..1916
4235	1809..1816	1901..1908	1909..1916	2001..2008
4236	1901..1908	1909..1916	2001..2008	2009..2016
4237	1909..1916	2001..2008	2009..2016	2101..2108
4238	2001..2008	2009..2016	2101..2108	2109..2116
4239	2009..2016	2101..2108	2109..2116	2201..2208
4240	2101..2108	2109..2116	2201..2208	2209..2216
4241	2109..2116	2201..2208	2209..2216	2301..2308
4242	2201..2208	2209..2216	2301..2308	2309..2316
4243	2209..2216	2301..2308	2309..2316	2401..2408
4244	2301..2308	2309..2316	2401..2408	2409..2416

16 Combined Outputs

JX3 system bus: + 100000000
JX2 system bus: + 200000000
Network: + 1GNN910000

4260	101..108	109..116
4261	109..116	201..208
4262	201..208	209..216
4263	209..216	301..308
4264	301..308	309..316
4265	309..316	401..408
4266	401..408	409..416
4267	409..416	501..508
4268	501..508	509..516
4269	509..516	601..608
4270	601..608	609..616
4271	609..616	701..708
4272	701..708	709..716
4273	709..716	801..808
4274	801..808	809..816
4275	809..816	901..908
4276	901..908	909..916
4277	909..916	1001..1008
4278	1001..1008	1009..1016
4279	1009..1016	1101..1108
4280	1101..1108	1109..1116
4281	1109..1116	1201..1208
4282	1201..1208	1209..1216
4283	1209..1216	1301..1308
4284	1301..1308	1309..1316
4285	1309..1316	1401..1408
4286	1401..1408	1409..1416
4287	1409..1416	1501..1508
4288	1501..1508	1509..1516
4289	1509..1516	1601..1608
4290	1601..1608	1609..1616
4291	1609..1616	1701..1708
4292	1701..1708	1709..1716
4293	1709..1716	1801..1808
4294	1801..1808	1809..1816
4295	1809..1816	1901..1908
4296	1901..1908	1909..1916

4297	1909..1916	2001..2008
4298	2001..2008	2009..2016
4299	2009..2016	2101..2108
4300	2101..2108	2109..2116
4301	2109..2116	2201..2208
4302	2201..2208	2209..2216
4303	2209..2216	2301..2308
4304	2301..2308	2309..2316
4305	2309..2316	2401..2408
4306	2401..2408	2409..2416

8 Combined Outputs

JX3 system bus: + 100000000
JX2 system bus: + 200000000
Network: + 1GNN910000

4320	101..108
4321	109..116
4322	201..208
4323	209..216
4324	301..308
4325	309..316
4326	401..408
4327	409..416
4328	501..508
4329	509..516
4330	601..608
4331	609..616
4332	701..708
4333	709..716
4334	801..808
4335	809..816
4336	901..908
4337	909..916
4338	1001..1008
4339	1009..1016
4340	1101..1108
4341	1109..1116
4342	1201..1208
4343	1209..1216
4344	1301..1308
4345	1309..1316
4346	1401..1408
4347	1409..1416
4348	1501..1508
4349	1509..1516
4350	1601..1608
4351	1609..1616
4352	1701..1708
4353	1709..1716
4354	1801..1808
4355	1809..1816
4356	1901..1908
4357	1909..1916
4358	2001..2008
4359	2009..2016
4360	2101..2108
4361	2109..2116
4362	2201..2208
4363	2209..2216
4364	2301..2308
4365	2309..2316
4366	2401..2408
4367	2409..2416

Special Flags - Network

2075	Error in networking via JetIP
2080	Ethernet system bus error in R 200008
2081	Ethernet system bus error

Special Flags - Interface Monitoring

2088	OS flag - JetIP
2089	User flag - JetIP
2090	OS flag - SER
2091	User flag - SER
2098	OS flag - debug server
2099	User flag - debug server

Special Flags - HMI

does not apply to LCD 27

2160	Key "0"
2161	Key "1"
2162	Key "2"
2163	Key "3"
2164	Key "4"
2165	Key "5"
2166	Key "6"
2167	Key "7"
2168	Key "8"
2169	Key "9"
2170	Key "Shift + 0"
2171	Key "Shift + 1"
2172	Key "Shift + 2"
2173	Key "Shift + 3"
2174	Key "Shift + 4"
2175	Key "Shift + 5"
2176	Key "Shift + 6"
2177	Key "Shift + 7"
2178	Key "Shift + 8"
2179	Key "Shift + 9"
2181	Key "Shift + F1"
2182	Key "Shift + F2"
2183	Key "Shift + F3"
2184	Key "Shift + F4"
2185	Key "Shift + F5"
2186	Key "Shift + F6"
2187	Key "Shift + F7"
2188	Key "Shift + F8"
2189	Key "Shift + F9"
2190	Key "Shift + F10"
2191	Key "Shift + F11"
2192	Key "Shift + F12"
2193	Key "Shift + ←"
2194	Key "Shift + →"
2195	Key "Shift + R"
2196	Key "Shift + I/O"
2197	Key "Shift + ="
2198	Key "Shift + C"
2199	Key "Shift + ENTER"
2200	Key "Shift"
2201	Key "F1"
2202	Key "F2"
2203	Key "F3"
2204	Key "F4"
2205	Key "F5"
2206	Key "F6"
2207	Key "F7"
2208	Key "F8"
2209	Key "F9"
2210	Key "F10"
2211	Key "F11"
2212	Key "F12"
2213	Key "→"
2214	Key "←"
2215	Key "R"
2216	Key "I/O"
2217	Key "='"
2218	Key "C"
2219	Key "ENTER"
2220	Key "._"
2221	Key "Shift + -"
2222	Key "._"
2223	Key "Shift + ."
2224	LED of key "F1"
2225	LED of key "F2"
2226	LED of key "F3"

2227	LED of key "F4"
2228	LED of key "F5"
2229	LED of key "F6"
2230	LED of key "F7"
2231	LED of key "F8"
2232	LED of key "F9"
2233	LED of key "F10"
2234	LED of key "F11"
2235	LED of key "F12"

Special Flags for HMI LCD 27

2209	Key "↑"
2210	Key "↓"
2211	Key "C"
2212	Key "ENTER"

Special Flags for HMI NUM 25

2186	Key "Shift + S1"
2187	Key "Shift + S2"
2188	Key "Shift + S3"
2189	Key "Shift + S4"
2190	Key "Shift + S5"
2206	Key "S1"
2207	Key "S2"
2208	Key "S3"
2209	Key "S4"
2210	Key "S5"

32 Combined Flags

203100	0 ... 31
203101	32 ... 63
203102	64 ... 95
203103	96 ... 127
203104	128 ... 159
203105	160 ... 191
203106	192 ... 223
203107	224 ... 255

16 Combined Flags

203108	0 ... 15
203109	16 ... 31
203110	32 ... 47
203111	48 ... 63
203112	64 ... 79
203113	80 ... 95
203114	96 ... 111
203115	112 ... 127
203116	128 ... 143
203117	144 ... 159
203118	160 ... 175
203119	176 ... 191
203120	192 ... 207
203121	208 ... 223
203122	224 ... 239
203123	240 ... 255

32 Combined Special Flags

203124	2048 ... 2079
203125	2080 ... 2111
203126	2112 ... 2143
203127	2144 ... 2175
203128	2176 ... 2207
203129	2208 ... 2239
203130	2240 ... 2271
203131	2272 ... 2303

16 Combined Special Flags

203132	2048 ... 2063
203133	2064 ... 2079
203134	2080 ... 2095
203135	2096 ... 2111
203136	2112 ... 2127
203137	2128 ... 2143

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203138	2144 ... 2159
203139	2160 ... 2175
203140	2176 ... 2191
203141	2192 ... 2207
203142	2208 ... 2223
203143	2224 ... 2239
203144	2240 ... 2255
203145	2256 ... 2271
203146	2272 ... 2287
203147	2288 ... 2303


Overlaid Application Registers/Flags

1000000	256 ... 287
1000001	288 ... 319
1000002	320 ... 351
1000003	352 ... 383
1000004	384 ... 415
1000005	416 ... 447
1000006	448 ... 479
1000007	480 ... 511
1000008	512 ... 543
1000009	544 ... 575
1000010	576 ... 607
1000011	608 ... 639
1000012	640 ... 671
1000013	672 ... 703
1000014	704 ... 735
1000015	736 ... 767
1000016	768 ... 799
1000017	800 ... 831
1000018	832 ... 863
1000019	864 ... 895
1000020	896 ... 927
1000021	928 ... 959
1000022	960 ... 991
1000023	992 ... 1023
1000024	1024 ... 1055
1000025	1056 ... 1087
1000026	1088 ... 1119
1000027	1120 ... 1151
1000028	1152 ... 1183
1000029	1184 ... 1215
1000030	1216 ... 1247
1000031	1248 ... 1279
1000032	1280 ... 1311
1000033	1312 ... 1343
1000034	1344 ... 1375
1000035	1376 ... 1407
1000036	1408 ... 1439
1000037	1440 ... 1471
1000038	1472 ... 1503
1000039	1504 ... 1535
1000040	1536 ... 1567
1000041	1568 ... 1599
1000042	1600 ... 1631
1000043	1632 ... 1663
1000044	1664 ... 1695
1000045	1696 ... 1727
1000046	1728 ... 1759
1000047	1760 ... 1791
1000048	1792 ... 1823
1000049	1824 ... 1855
1000050	1856 ... 1887
1000051	1888 ... 1919
1000052	1920 ... 1951
1000053	1952 ... 1983
1000054	1984 ... 2015
1000055	2016 ... 2047

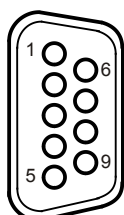
System Functions

4	BCD to HEX conversion
5	HEX to BCD conversion
20	Square root
21	Sine
22	Cosine
23	Tangent
24	Arc Sine
25	Arc cosine

26	Arc tangent
27	Exponential function
28	Natural logarithm
29	Absolute value
30	Separation of digits before and after the decimal point
50	Sorting register values
60	CRC generation for Modbus RTU
61	CRC check for Modbus RTU
65/67	Reading register block via Modbus/TCP
66/68	Writing register block via Modbus/TCP
80/85	Initializing RemoteScan
81	Starting RemoteScan
82	Stopping RemoteScan
90	Writing data file
91	Appending data file
92	Reading data file
96	Deleting data file
110	E-mail feature
150	Configuring NetCopyList
151	Deleting NetCopyList
152	Sending NetCopyList

Pin Assignment of Female MiniDIN Connector X11


Pin	Signal	Function
1	RDA	RS-422; receive data inverted
2	GND	Reference potential
3	RDB	RS-422; receive data not inverted
4	RxD	RS-232; receive data
5	SDB	RS-422; transmit data not inverted
6	DC24V	RS-485; transmit/receive data not inverted HMI supply voltage
7	SDA	RS-422; transmit data inverted RS-485; transmit/receive data inverted
8	TxD	RS-232; transmit data

Pin Assignment of Female SUB-D Connector X19


Pin	Signal	Function
1	CMODE0	Commissioning
2	CL	Data signal
3	GND	Reference potential
4	CMODE1	Commissioning
5	Unused	
6	Unused	
7	CH	Data signal
8	Unused	
9	Unused	