



Industrial Automation

Products and Services

We automate your success.

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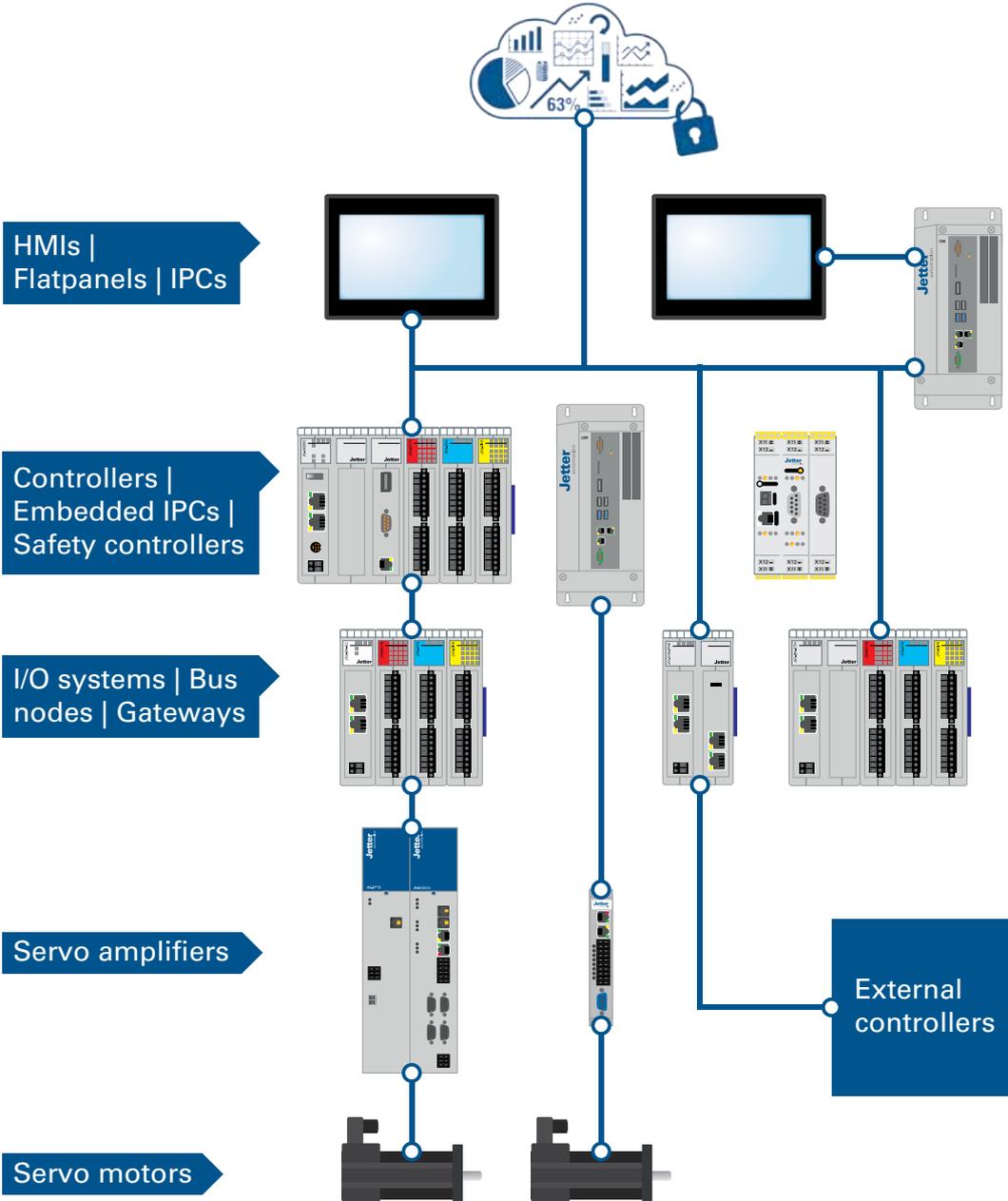
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Specifications are subject to change without notice. Errors and omissions excepted.

Jetter system landscape

Integration of all automation functions



Industrial Automation

Experience | Know-how | Made in Germany

For decades, the name Jetter AG has stood for the highest standards of automation solutions that are used in a wide range of industrial and mobile automation sectors.

Products and components by Jetter AG stand out thanks to their high degree of system integrity and diversity. Our in-house R&D departments (hardware and software), as well as our production plants in Germany allow us to always act in a quick and flexible manner. This, combined with a comprehensive range of Professional Services, enables us to put almost any customer request into practice.

In Industrial Automation Jetter AG is focusing on selected industries. Highly customized solutions contributing to decisive advantages in our customers' business environment put them into a position to produce state-of-the-art machines and plants.

In Mobile Automation Jetter AG develops and manufactures highly complex and robust automation concepts for controlling a wide variety of functions in municipal, fire-fighting, and agricultural vehicles. Thus, permanent availability of vehicles and implementations is ensured.

Radical changes in industry caused by Industry 4.0 and Internet of Things demand for future-proof solutions. Jetter AG is able to provide you with well-proven and safe systems, and to actively support you in implementing all process steps.

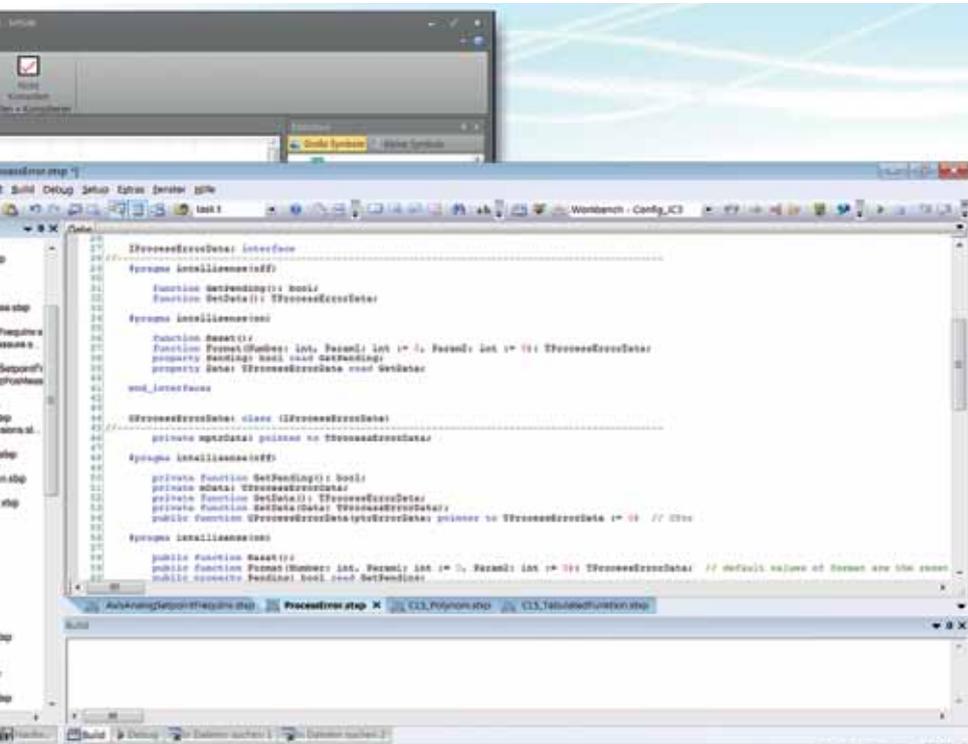
The product and networking philosophy at Jetter AG has always been based on seamless integration of all automation components into the production processes. Jetter AG was the first company in the world to rely on consistent networking with Ethernet TCP/IP and on using common Internet protocols. A great number of systems that already now meet all essential criteria of future demands on production processes has been applied for many years by renowned customers with great success.

The Jetter AG mission statement:

Jetter AG is a leading provider of automation systems. Understanding your application helps us find the perfect solution in terms of functionality, sustainability and efficiency.

Jetter software solutions for industrial applications

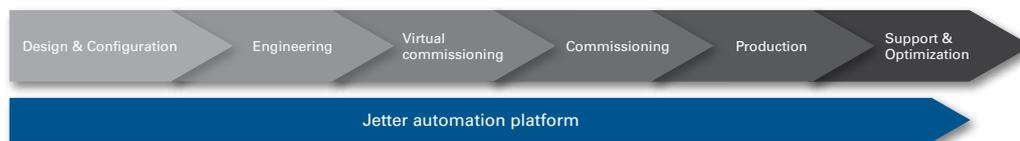
Jetter's automation platform offers perfectly matched software modules, covering all areas of an automation project for industrial applications. JetSymb is the convenient development environment and, with STX, has a very powerful programming language based



on the IEC-61131-3 standard. JetViewSoft is the comprehensive design tool for creating modern HMI designs, including support for current touch control concepts. JetSafe is the tool for the graphical programming of monitoring programs and enables easy deployment of secure automation applications up to PLe/EN 13849 | SIL3/EN 61508.

Automation platform

With increasing digitalization, machine manufacturers must make their machinery and plants more flexible, more productive and hence more competitive. It is therefore indispensable to count on powerful engineering software. Jetter AG's integrated automation platform optimizes engineering across all phases of the machine lifecycle and reduces costs.



Teamwork in automation

Automation projects are becoming increasingly complex and hence teamwork is becoming ever more important. The JetSym, JetViewSoft and JetSafe applications make up the Jetter Toolchain and are ideally suited to this requirement: whether they are engineers, programmers, HMI designers or support staff, they all can use the tool that is

perfectly tailored to their needs and therefore only have access to operating functions and information relevant to them. The deep integration between the individual tools thereby guarantees secure data exchange.

State-of-the-art, lean GUIs

Users are increasingly demanding high standards in terms of software user-friendliness. Jetter automation platform applications are characterized by clear GUIs and fully configurable window arrangements. The look-and-feel of the software can therefore be individually tailored to the various user groups.

Carefree software

Jetter designs and develops the majority of its software applications itself. This enables constant product development with short response times. Complemented by a central hotline with competent application specialists, Jetter AG is hence particularly close to the customer. Many well-known machine manufacturers therefore rely on Jetter software solutions to implement their automation and visualization projects.

Minimal system requirements

The combination of applications on the Jetter automation platform is perfectly matched. There is therefore absolutely no effort in maintaining interfaces. The individual tools can also be updated independently from each other – the functionality remains guaranteed. A further advantage is that our applications require minimal resources from the client's hardware.

JetSym – the programming environment

JetSym is Jetter AG's central programming environment and offers, in addition to writing pure program code, extensive support in the areas of configuration, debugging, diagnostics and commissioning a machine.

Flexible project configuration

JetSym enables any number of configurations of the same project to be created. Project configurations differ in the hardware used and their configuration. In this way, different machine versions can be created and tested, particularly during the commissioning phase of a machine.

Version management – tool connection

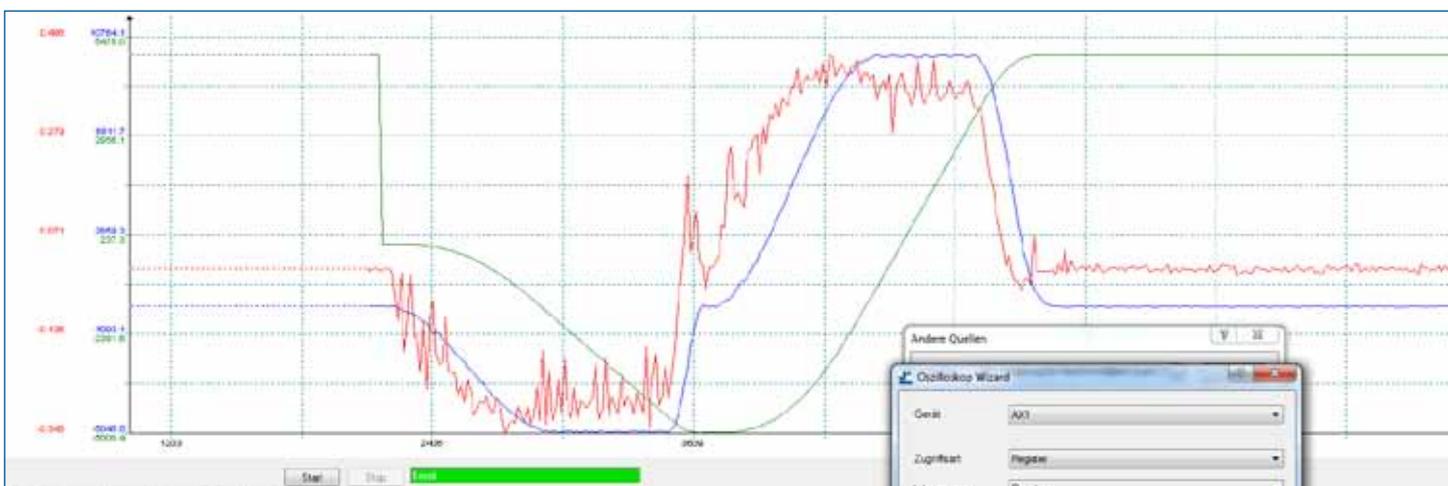
JetSym already provides seamless integration with popular version management tools, such as Apache Subversion (SVN), which allows entire automation projects or their individual components to be versioned independently. The user is informed visually of the current object status in the project overview.

Powerful debugger

JetSym's extensive debugging capabilities enhance inline monitoring of STX projects, making troubleshooting and commissioning easier. The program sequence can be interrupted by setting absolute or conditional breakpoints, and further program execution can be tracked in individual steps. At the same time, the setup window helps you to view and monitor selected symbol values during debugging.

Integrated oscilloscope

JetSym's integrated oscilloscope enables variable values to be recorded on the device in realtime and then displayed as a curve. Several values can be monitored at the same time. The value curves are placed over each other, making them visually comparable. Additional trigger functionality allows the value recording to start automatically when certain conditions occur.



Oscilloscope wizard for rapid visualization of motion data.

JetSym – the programming environment

Tracing and Monitoring

In addition to debugging, JetSym's tracing and monitoring function offers further assistance in programming and commissioning automation projects. The Trace function allows values or individual messages to be output without interrupting the program. Specific conditions can also be defined where the output of a trace message should appear. Further support is provided by JetSym's built-in monitoring function, which allows function parameters and variable values to be displayed at runtime simply by moving the cursor to the code location to be monitored.

Support for secure coding

JetSym greatly helps programmers in their everyday work. The integrated IntelliSense proposes meaningful attributes and methods while you type. Together with AutoComplete, programming speed and accuracy therefore increase. Navigating the code is also simplified by highlighting syntax and marking matching keywords.

Template management

Automation projects can be saved in JetSym as a new template at any time and are therefore then available as a template for future automation projects. The template includes not only the program code itself, but also the complete hardware settings and axis configurations, etc. This increases the reusability of projects and project components .

Multitasking

For Jetter controllers, multitasking takes place at the language level, not within the operating system. This ensures that the time response of the tasks is identical on different controller types. In addition, debugging is simplified by allowing individual tasks to be stopped or started separately thanks to multitasking.

Plug-and-play – expansion modules

Using Jetter AG's perfectly matched hardware and software components, automation projects can be set up very quickly and easily. JetSym recognizes newly connected modules immediately, and the basic configuration such as input/output addressing is handled automatically.

Overview of highlights

- Clear depiction of all files that are relevant to the project
- Flexible project configuration
- Connection to version management tools
- Powerful debugger
- Extensive tracing and monitoring
- Integrated oscilloscope
- Integrated multitasking
- Support for secure coding
- Simulator and soft PLC for commissioning without hardware
- Connection to Siemens SIMIT for virtual commissioning
- Support of all major fieldbus systems such as EtherCAT®
- Plug and play with expansion modules

STX – the programming language

STX is a language the syntax of which is based on IEC 61131-3 ST. Due to numerous enhancements, it meets all the requirements of modern programming in the automation environment. STX is characterized by two key features in program creation:

- The process-oriented approach makes direct mapping of real plant processes possible
- The object-oriented approach greatly reduces development and testing time

Process-oriented coding

The majority of programmable logic controllers on the market are cycle oriented. Accordingly, such a control program queries all values again for each program cycle, while STX only once queries the values necessary for the current program step. This results in some crucial differences:

Loop coding	Process-oriented coding
Individual processes are split into steps and implemented as state machines (sequences).	The programs are process-oriented, i.e. they run in chronological order.
The order of execution is defined by state changes and not by the order in the program as in traditional programming languages.	The structuring of the tasks is based much more on the actual running processes within the plant/machine.
Extensive functions and loops must be split into tasks to ensure cycle time compliance.	STX's When command allows the program to wait for feedback from various events within a task.
The structuring of the different tasks often has little to do with the actual processes within the plant/machine.	Extensive functions and loops can be implemented exactly where they are required.

Loop coding requires specially trained PLC programmers. In contrast, process-oriented coding can be learned very easily and quickly by mechanical engineers. There is another advantage: The structure of the programs is based much more on the program structure of modern high-level languages.

STX – the programming language

```
PROGRAM 00_EX_ST_004
VAR
  IState : INT := 0;
  GreenDelay : TON := ( PT := T40S );
  YellowDelay : TON := ( PT := T40S );
  RedDelay : TON := ( PT := T40S );
  YellowDelay : TON := ( PT := T40S );
END_VAR

GreenDelay(IN := Exercise_EX_ST_004.sSwitch AND Exercise_EX_ST_004.sGreen);
YellowDelay(IN := Exercise_EX_ST_004.sYellow);
RedDelay(IN := Exercise_EX_ST_004.sRed);
YellowDelay(IN := Exercise_EX_ST_004.sYellow);

LAD: IState ON
  004
  Exercise_EX_ST_004.sRed := FALSE;
  Exercise_EX_ST_004.sYellow := FALSE;
  Exercise_EX_ST_004.sGreen := TRUE;
  IF Exercise_EX_ST_004.sSwitch AND GreenDelay.Q THEN
    IState := 0;
  005
  Exercise_EX_ST_004.sRed := TRUE;
  Exercise_EX_ST_004.sYellow := FALSE;
  Exercise_EX_ST_004.sGreen := FALSE;
  IF YellowDelay.Q THEN
    IState := 0;
  006
  Exercise_EX_ST_004.sRed := TRUE;
  Exercise_EX_ST_004.sYellow := FALSE;
  Exercise_EX_ST_004.sGreen := FALSE;
  IF RedDelay.Q THEN
    IState := 0;
  007
  Exercise_EX_ST_004.sRed := TRUE;
  Exercise_EX_ST_004.sYellow := TRUE;
  Exercise_EX_ST_004.sGreen := FALSE;
  IF YellowDelay.Q THEN
    IState := 0;
  008
  END_LAD
END_PROGRAM
```

```
Var [export jde]
// Bool variables will be exported to Visu to switch the mask visibility
greenMask : Bool At SRL 1000001 := False;
yellowMask : Bool At SRL 1000002 := False;
redMask : Bool At SRL 1000003 := False;
End_Var;

Task myTask autorun
Loop
  // Signal light is green
  greenMask := False;
  yellowMask := True;
  redMask := True;
  Delay(T#2s);
  // Signal light will change to yellow
  greenMask := True;
  yellowMask := False;
  redMask := True;
  Delay(T#2s);
  // Signal light will change to red
  greenMask := True;
  yellowMask := True;
  redMask := False;
  Delay(T#2s);
  // Signal light will change to green
  greenMask := True;
  yellowMask := False;
  redMask := False;
  Delay(T#2s);
End_Loop;
End_Task;
```

Sample program: Loop coding of a state machine for traffic light control (left) as well as the same functionality with the process-oriented programming of Jetter (right).

Object orientation

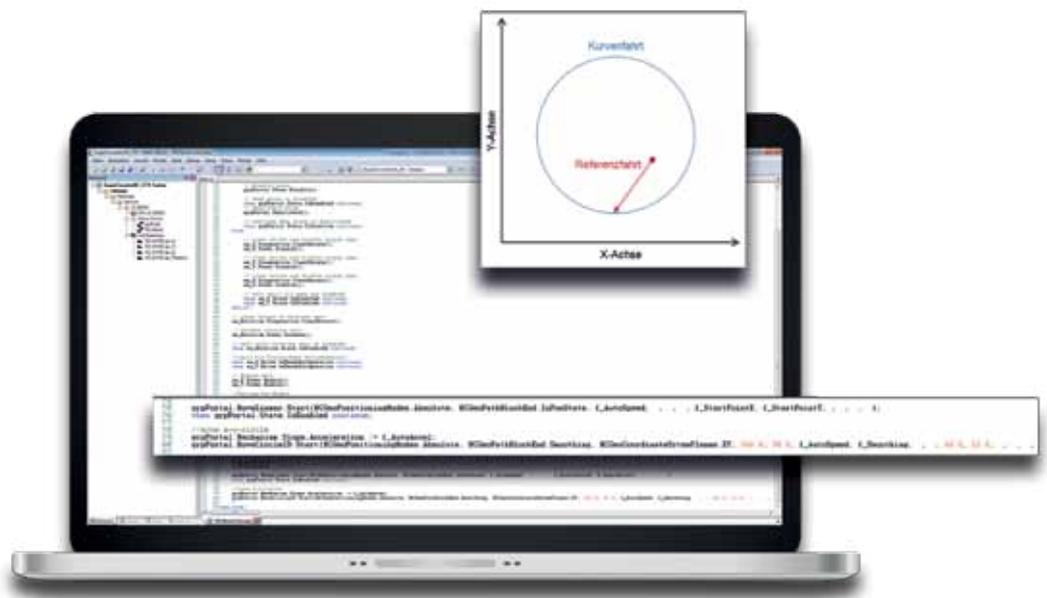
Automation programs are becoming increasingly powerful as part of Industrie 4.0, yet also more complex. With its consistent object-oriented programming approach, the programming language STX enables the development of modular programs, making the program code much more flexible with respect to customizations and expansions. Due to clearly defined interfaces between the code blocks, individual blocks can be modified or replaced at any time without risking undesirable side effects. This can significantly reduce development time and testing time.

Based on modern high-level languages

The structured programming language Structured Text, which is standardized in IEC-61131-3, forms the basis for STX, but the scope of the language has been significantly expanded. For example, objects and their properties can be conveniently addressed via dot notation. This improves the readability of the program code. STX also offers powerful commands for arithmetic, axis handling and user guidance. Integrated functions for character string processing and file operations further simplify controller programming.

Motion control

Seamless integration of Motion Control significantly reduces the effort involved in programming axis movements. With STX, even complicated movement patterns of, for example, cam disks and SCARA robots can be implemented very simple with a few program commands. Thus it is possible to create and test programs for complex machinery in the shortest time imaginable.



Sample program: Programming a circular motion on two axes in just a few lines thanks to Motion Control.

Predefined code libraries

Within predefined STX code libraries for different industry segments, the most important basic functions and behaviors of a machine type have already been programmed. Companies that opt for Jetter technology no longer need to start existing automation projects anew, but can rely immediately on an intelligently programmed code base. Only adjustments to individual requirements are required.

Minimal system requirements

Low memory and load times requirements distinguish application programming with STX. Compared to other system manufacturers' projects, Jetter AG's projects take up

a fraction of the free memory on the hard disk. Even complex projects can be loaded within a few seconds, and the user can begin programming immediately.

JetViewSoft – the design tool

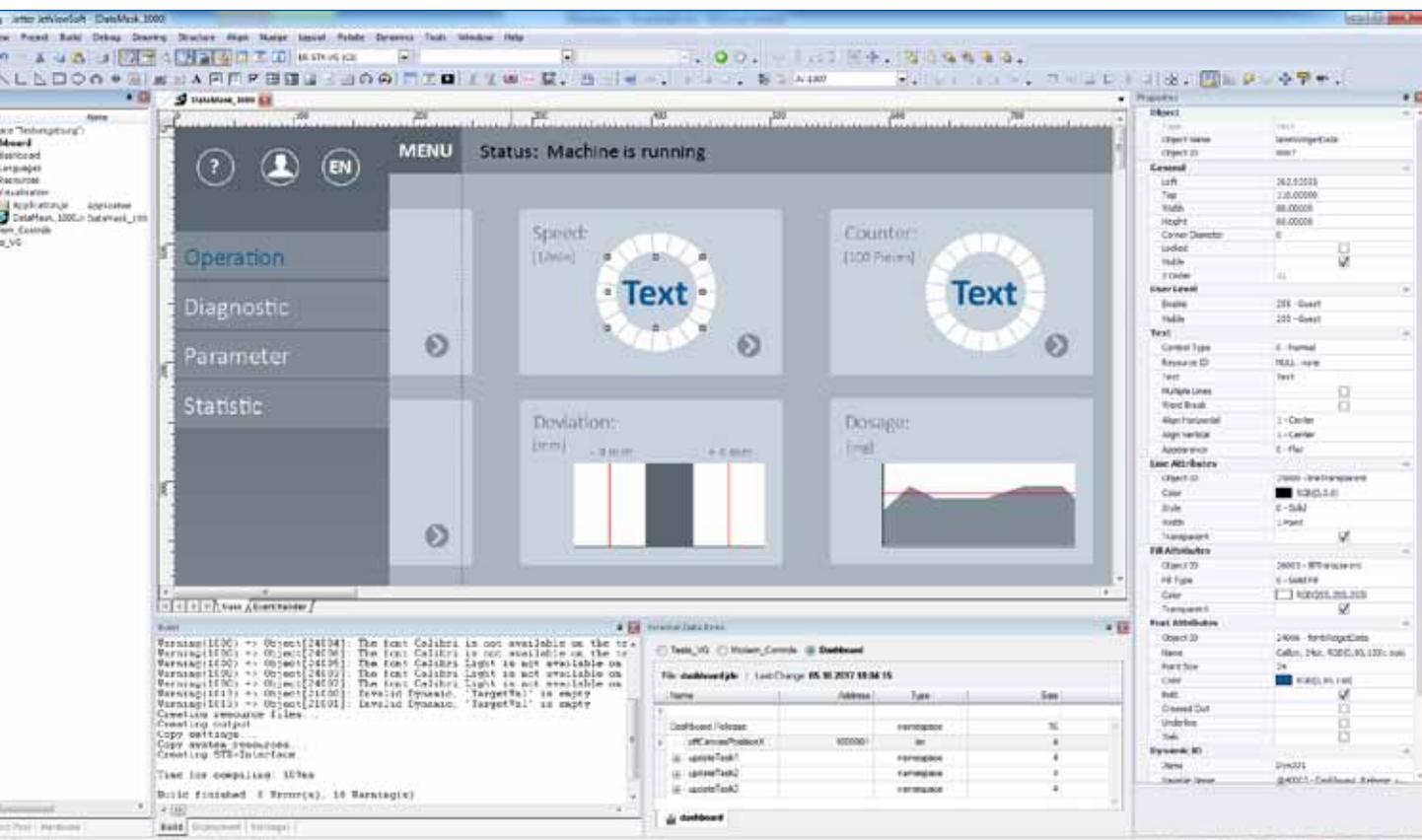
JetViewSoft is the design tool for state-of-the-art, professional HMI process visualization. The editor stands out for its high performance and functionality, while remaining very user friendly. Together with JetViewSoft's object-oriented approach, even extensive visualization projects can be implemented simply and efficiently.

Object-oriented and efficient

The object-oriented approach of JetViewSoft makes generating screens a lot easier. Objects such as buttons need to be defined only once before they can be used as often as they are needed. Making changes to an object property automatically takes effect wherever this object has been applied. Various visualization objects can dynamically be displayed or exchanged during runtime in the control program by means of pointers.

Configuring rather than programming GUIs

In JetViewSoft, all the important graphics objects such as buttons, sliders and tachometers are already predefined and can be easily dragged and dropped into place on a visualization device. All object properties can be displayed and configured centrally via a property grid, so even complex visualization tasks can be implemented simply and efficiently without programming knowledge.



JetViewSoft editor showing the object properties of a text label.

Vector graphics platform

The vector graphics technology of JetViewSoft allows for complete and lossless scalability of all objects (except for bitmap graphics). Projects or project parts that have been designed for a specific target resolution can therefore be displayed at a different resolution without loss of quality.

SVG import

JetViewSoft supports the graphics format SVG. Cumbersome conversion of CAD drawings into bitmap format is therefore a thing of the past. In addition, the foreground and background colors of SVG objects can be overridden directly within JetViewSoft. Different colors, for example of warning or error symbols, can thus be assigned directly. This greatly minimizes the graphic department's costs since corresponding icons only need to be provided and imported in a single color variant.

Built-in macro language

For simple processes, JetViewSoft offers configurable macro functions. More complex processes, calculations or programming of special functions can also be carried out with the integrated STX interpreter. The corresponding program code is implemented using STX in JetSym.

Simple internationalization

JetViewSoft allows multiple languages to be integrated, maintained and also translated very easily and conveniently. For this purpose, the language tags of the different languages can be managed on a clear user interface. Language tags lists can be exported and reimported in CSV format to facilitate working with translation agencies.

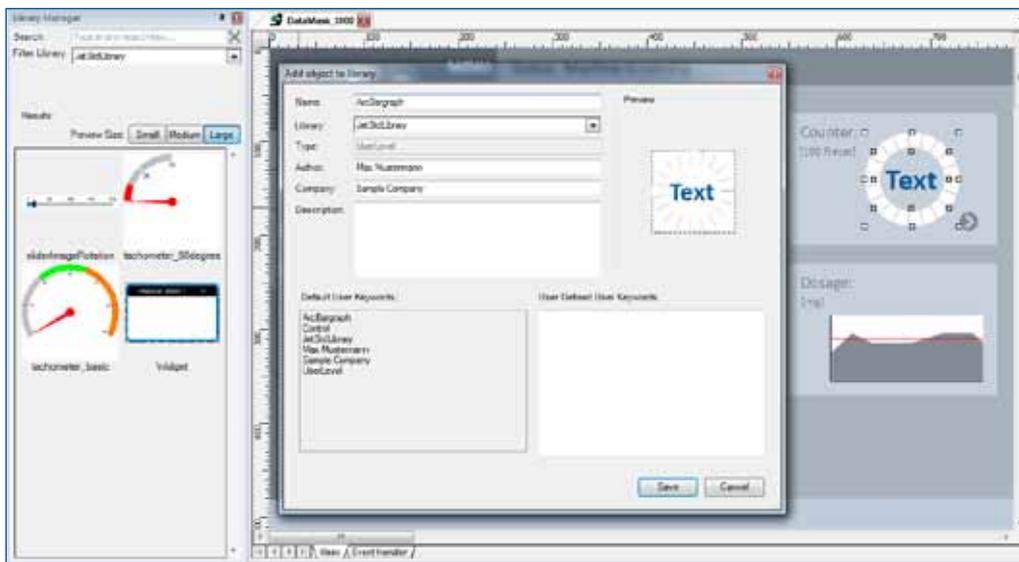
Dynamic IOs

Using dynamic IOs, graphics objects of the HMI can be updated at runtime without even writing a single line of program code. The corresponding values are continuously polled from the controller and the visualization updated accordingly.

JetViewSoft – the design tool

Object library

Individually created visualization objects (e.g., bar graphs) can be stored in JetViewSoft in an object library at any time, making them available as a template for further visualization projects in the future. The library objects can be deployed globally or across projects.



Graphics library for the reuse of frequently used objects.

Predefined icon libraries

Certain visualization functions, such as the navigation between different masks, often use the same symbols. In JetViewSoft, many of these icons are already available as predefined standard icons in SVG format and can be used immediately. JetViewSoft also includes as an option a set of icons for

the most important machine processes of specific industry segments. This greatly reduces the time required for the engineering of visualization projects.

Alarm service

JetViewSoft already provides predefined, important functions for alarm handling. A set of rules allows convenient and flexible setting of conditions for warnings or alarms. If a condition occurs, the corresponding warning or alarm message is automatically output on the HMI.

Integrated rights management

Integrated rights management enables secure access to certain control functions. To do this, JetViewSoft provides a user interface where different users, passwords and authorization levels can be managed. Each interaction object within the visualization may be individually assigned to a particular authorization level in order, for example, to make the basic configuration of a machine accessible only to certain groups of people.

Simulation

The appearance and behavior of a visualization can be tested early in the project phase with a simulator available in JetViewSoft. This is particularly useful when the visualization project should be started, but the specific display hardware is not yet available.

Modern HMIs and control concepts

JetViewSoft's extensive capabilities enable state-of-the-art HMI designs to be implemented. The user experience of industrial HMIs has reached a new level with JetViewSoft's built-in support for many touch gestures.

Highlights

- End-to-end object orientation
- Configuring rather than programming
- Support for vector graphics and SVG objects
- Built-in macro language
- Simple internationalization
- Object library with predefined icon libraries
- Dynamic IOs
- Rights management
- Alarm service
- Simulation



Simulation of visualization with realtime data.

JetSafe – programming safely

JetSafe is the tool of choice when it comes to creating safety-compliant control programs for the PLe/EN 13849 | SIL3/EN 61508 levels. JetSafe is perfectly matched to Jetter safety controllers.

Predefined devices and sensors

All major control devices and sensors used in safety technology, such as light curtains, door contacts, or emergency stop devices are already preconfigured in JetSafe and can be selected by clicking the corresponding icon. In the terminal diagram, these elements are automatically linked with the module to which they are connected physically. Based on the paradigm “configuring rather than programming”, creating a program for a safety controller is very simple.

Wiring diagram

Once the safety controller, as well as the sensors and actuators have been configured, the wiring diagram is automatically created.

Module management and device assignment

JetSafe’s clear user interface makes it particularly easy to assign the individual modules (IOs and axis monitors) to the sensors and functions of the machine, taking into account the required performance level.

Sequential function chart

Monitoring functions can be linked using logic operations. Speed, acceleration and position of several axes are monitored as regards their relation to each other. The documentation on all monitoring tasks can be set up individually.

Encoder configuration

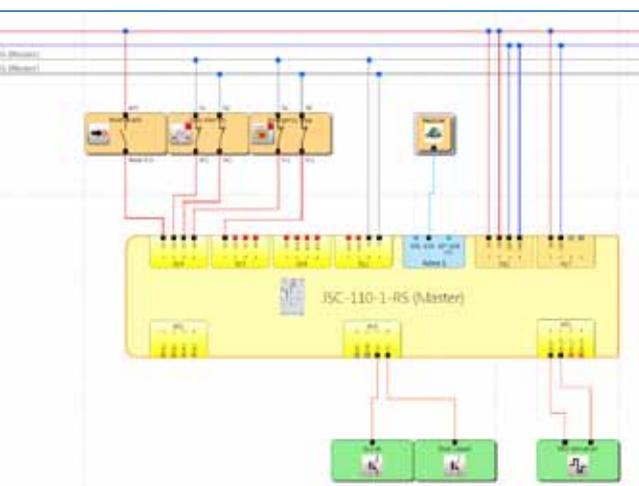
To be able to reliably capture speed or position information of axes combined to a group, one or several sensors are required. For this purpose, a convenient menu exists where you can configure the sensors and enter their technical parameters. This lets you easily verify whether input data are correct without any previous knowledge of the sensors.

Building blocks

A library holds already tested function modules to choose from. It lets you, of course, define modules of your own, protect them or save them to the library for future reuse.

Monitoring functions

A comprehensive range of motion monitoring functions is available, such as monitoring of speed, standstill, range, and direction. These functions can directly be parameterized in a context-oriented way.



Example of a wiring plan with JetSafe.

Industrie 4.0



The Jetter automation platform, together with the JetControl controller series, provides the ideal combination for an introduction to Industrie 4.0 since, within the firmware of the JetControl controllers, the establishment of safe communication con-

nections is already part of the basic system functionality. The software also provides all important functions to analyze, evaluate and visualize data from the controller.

Communication without gateways

Many production plants make use of gateways for transferring data from controllers to the Cloud. Technology by Jetter AG lets you do this without additional hardware. It has the production and process data transferred directly from the controller to the Cloud. Pre-processing of data such as averaging, projection of trends, etc. can already be carried out in the STX program which reduces the volume of the data packets to be transmitted. Another advantage of gateways not being needed: Less costs while reducing servicing effort at the same time.

Use of open standards

The latest generation of Jetter controllers and HMI displays features MQTT and OPC-UA, which are the two most important standard protocols when it comes to implementing IoT solutions. These two protocols allow for multisupplier data and information interchange from shop floor to production planning level.

Safety

Production data are actually the most sensitive data of your business. Particularly in the light of increasing networking, not only between machines, but also between production sites all around the world, secure transfer of data is playing an increasingly important role. Application of recognized security standards with secure authentication of communication partners and secure transfer of data thanks to end-to-end encryption are part of Jetter AG's essential security concept.

Controllers



Controllers of the JetControl series come in all performance classes - from micro-controllers to high-performance, high-end controllers for complex Motion Control applications.



Distinctive features common to all JetControl controllers:

- Seamless integration of axis control into the controller. This makes programming even of complex axis motions very easy
- Multitasking OS
- Commissioning and programming in STX - a high-level language to IEC-61131-3
- Extensibility and flexibility thanks to a host of interfaces
- Integrated web server as an option. This option lets you send e-mails and text messages from the application program

JetControl 340

Product brief

JetControl 340 is the optimum entry-level solution for basic automation tasks and offers ease of operation. It is most suitable for applications with no computing-intensive processes involved.

Features

- Supports up to 3 servo axes (point-to-point)
- 1 MB STX program/data memory
- 2,000 non-volatile registers
- 1 Ethernet port with integrated switch
- 1 CAN port
- 1 serial port
- Programming in STX - a high-level language to IEC-61131-3
- File system for data storage
- Easy servicing due to plug terminals and modular design

Options

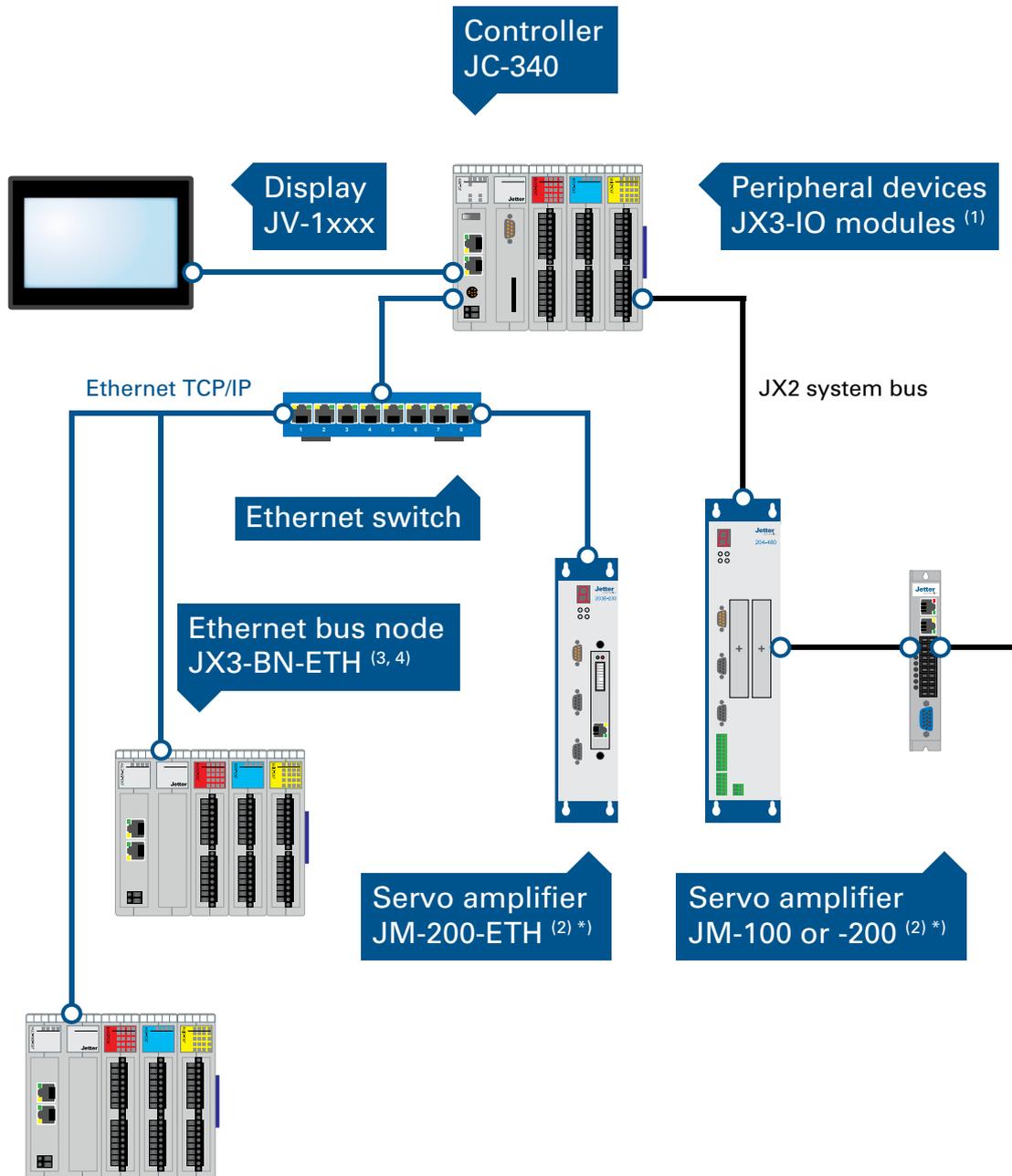
- SD memory card slot (-SD)
- Web and e-mail feature (-W)
- ModbusTCP (-M)



JetControl 340	
Non-volatile memory (NVRAM)	8,000 bytes (80,000 with option -SD) (2,000 registers (20,000 with option -SD))
STX program/data memory (SDRAM)	1 MB
Flash disk	4 MB
Number of expansion modules	16 max. (remote expansion modules are supported)
Number of axes (PtP)	0 (JC-340-0) or 3 (JC-340-3)
Number of axes (MC) (Motion Control/path control)	0
Ports and interfaces	1 serial port (RS232/422/485) 1 JX2 system bus port (CAN) 2 Ethernet ports (with integrated switch)
SD memory card slot	Option
Expandability	JX3, JX2
Realtime clock	Yes
Web server, e-mail feature	Option
ModbusTCP	Option
Rated input voltage	DC 24 V (-15 ... +20 %)
Input current	1.2 A
Dimensions (H x D x W)	131 x 100 x 50 mm
Degree of protection	IP20
Operating temperature	0 °C ... +50 °C
Storage temperature	-40 °C ... +70 °C
Air humidity	5 ... 95 %, non-condensing

Further details and order information are available on request.

System overview



(1) up to 16 JX3-IO modules directly connected to a JetControl 300/400

(2) up to 3 servo amplifiers **)

(3) up to 64 JX3-BN-ETH **)

(4) up to 16 JX3-IO modules per bus node JX3-ETH

*) The total number of axes must not exceed the maximum number of axes which can be connected to the controller.

**) The total number of modules connected to JX3-BN-ETH and JM-200-ETH must not exceed 64.

JetControl 350

Product brief

JetControl 350 combines high functionality with optimum performance. Thus, it is well equipped for a variety of applications.

Features

- Supports up to 8 servo axes (point-to-point)
- 2 MB STX program/data memory
- 30,000 non-volatile registers
- 1 Ethernet port with integrated switch
- SD memory card slot
- ModbusTCP
- 1 CAN port
- 1 serial port
- Programming in STX - a high-level language to IEC-61131-3
- File system for data storage
- Easy servicing due to plug terminals and modular design

Options

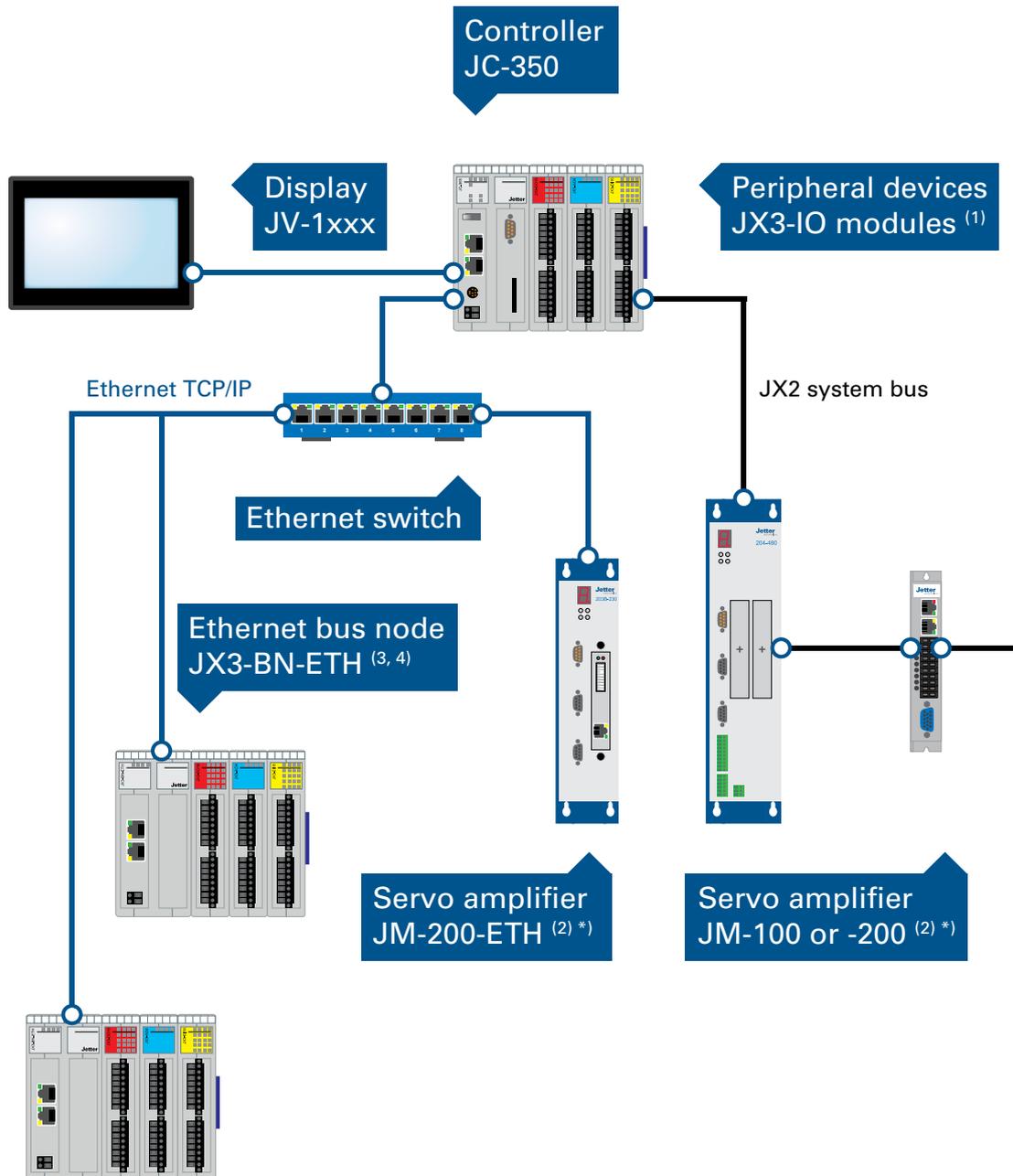
- Web and e-mail feature (-W)



JetControl 350	
Non-volatile memory (NVRAM)	120,000 bytes (30,000 registers)
STX program/data memory (SDRAM)	2 MB
Flash disk	4 MB
Number of expansion modules	16 max. (remote expansion modules are supported)
Number of axes (PtP)	4 (JC-350-4), 6 (JC-350-6) or 8 (JC-350-8)
Number of axes (MC) (Motion Control/path control)	0
Ports and interfaces	1 serial port (RS232/422/485) 1 JX2 system bus port (CAN) 2 Ethernet ports (with integrated switch)
SD memory card slot	Yes
Expandability	JX3, JX2
Realtime clock	Yes
Web server, e-mail feature	Option
ModbusTCP	Yes
Rated input voltage	DC 24 V (-15 ... +20 %)
Input current	1.2 A
Dimensions (H x D x W)	131 x 100 x 50 mm
Degree of protection	IP20
Operating temperature	0 °C ... +50 °C
Storage temperature	-40 °C ... +70 °C
Air humidity	5 ... 95 %, non-condensing

Further details and order information are available on request.

System overview



(1) up to 16 JX3-IO modules directly connected to a JetControl 300/400

(2) up to 3 servo amplifiers **)

(3) up to 64 JX3-BN-ETH **)

(4) up to 16 JX3-IO modules per bus node JX3-ETH

*) The total number of axes must not exceed the maximum number of axes which can be connected to the controller.

***) The total number of modules connected to JX3-BN-ETH and JM-200-ETH must not exceed 64.

JetControl 365 | 365MC

Product brief

JetControl 365 combines high performance with compact design. It is the optimum solution for CPU demanding and large applications. JetControl 365MC lets you enter into Motion Control (MC) functionality. It allows the programming of axis groups and complex path control applications.

Features

- Up to 16 point-to-point servo axes via CAN
- Unlimited number of axes via Ethernet (JetMove 200-ETH)
- Motion Control/path control of up to 12 axes (JetControl 365MC)
- 16 MB STX program/data memory
- 60,000 non-volatile registers
- 1 Ethernet port with integrated switch
- SD memory card slot
- ModbusTCP
- Integrated web and e-mail server
- Motion control/path control (JetControl 365MC)
- 2 CAN ports (1x JX2 system bus)
- 1 serial port
- Programming in STX - a high-level language to IEC-61131-3

Options

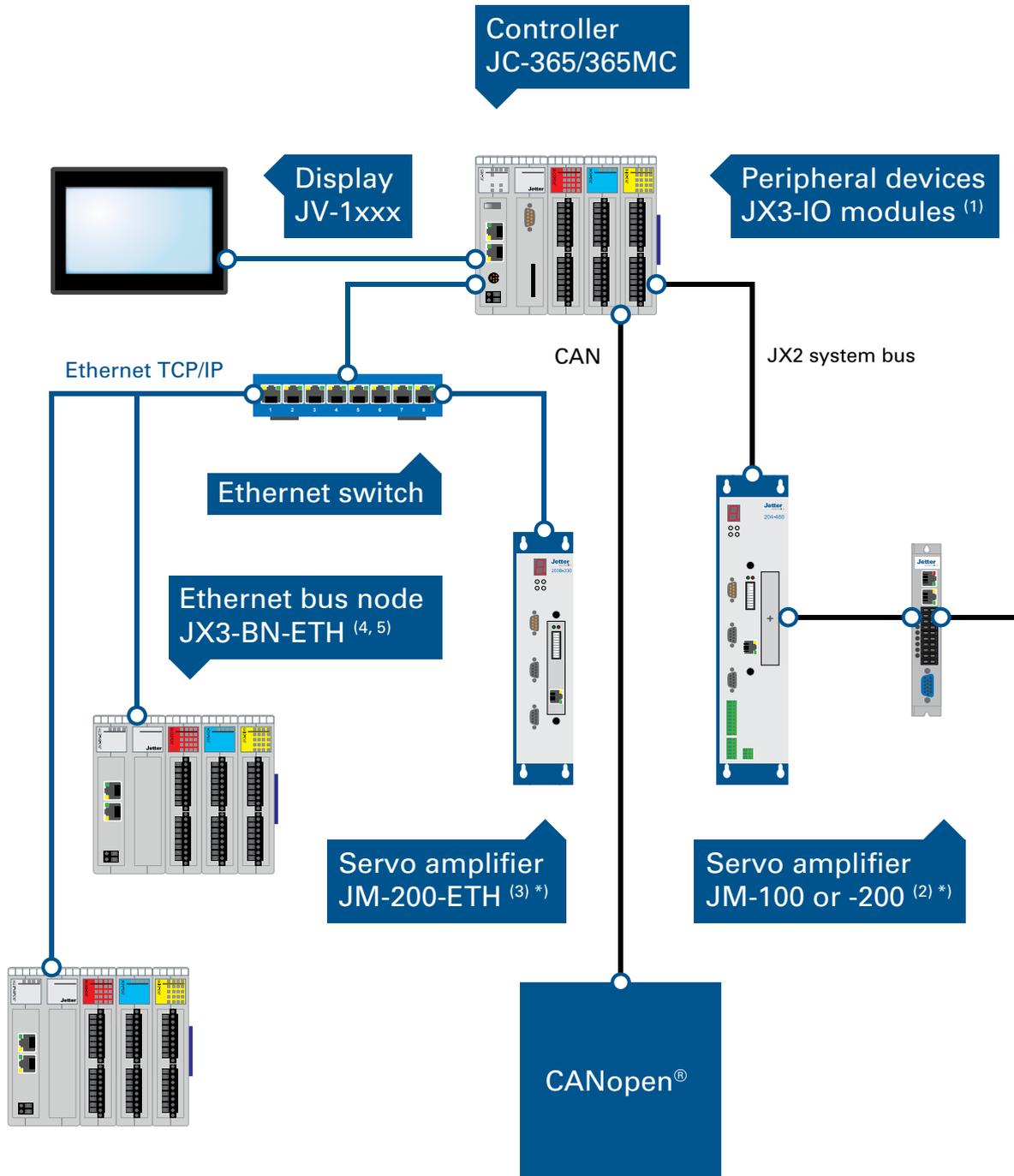
- Additional memory (120,000 non-volatile registers) (-R)



JetControl 365 365MC	
Non-volatile memory (NVRAM)	240,000 bytes (480,000 with option -R) (60,000 registers (120,000 with option -R))
STX program/data memory (SDRAM)	16 MB
Flash disk	24 MB
Number of expansion modules	16 max. (remote expansion modules are supported)
Number of axes (PtP)	0 (JC-365-0), 4 (JC-365-4), 8 (JC-365-8), no limitations (JC-365) 16 axes max. on the CAN bus
Number of axes (MC) (Motion Control/path control)	4 (JC-365MC-4), 8 (JC-365MC-8), 12 (JC-365MC) 8 axes max. on the CAN bus
Ports and interfaces	1 serial port (RS232/422/485) 1 JX2 system bus port (CAN) 2 Ethernet ports (with integrated switch)
SD memory card slot	Yes
Expandability	JX3, JX2, CANopen®
Realtime clock	Yes
Web server, e-mail feature	Yes
ModbusTCP	Yes
Rated input voltage	DC 24 V (-15 ... +20 %)
Input current	1.2 A
Additional memory (option)	120,000 non-volatile registers (total)
Dimensions (H x D x W)	131 x 100 x 50 mm
Degree of protection	IP20
Operating temperature	0 °C ... +50 °C
Storage temperature	-40 °C ... +70 °C
Air humidity	5 ... 95 %, non-condensing

Further details and order information are available on request.

System overview



(1) up to 16 JX3-IO modules directly connected to a JetControl 300/400

(2) up to 3 servo amplifiers **)

(3) up to 64 JX-BN-ETH **)

(4) up to 16 JX3-IO modules per bus node JX3-ETH

*) The total number of axes must not exceed the maximum number of axes which can be connected to the controller.

***) The total number of modules connected to JX3-BN-ETH and JM-200-ETH must not exceed 64.

JetControl 440 | 440MC

Product brief

JetControl 440(MC) combines high performance with compact design. It is the optimum solution for CPU demanding and large applications. JetControl 440(MC) lets you enter into Motion Control functionality in connection with servo amplifiers of the JetMove 1000/3000 series. It allows for easy programming of axis groups and complex path control applications.

Features

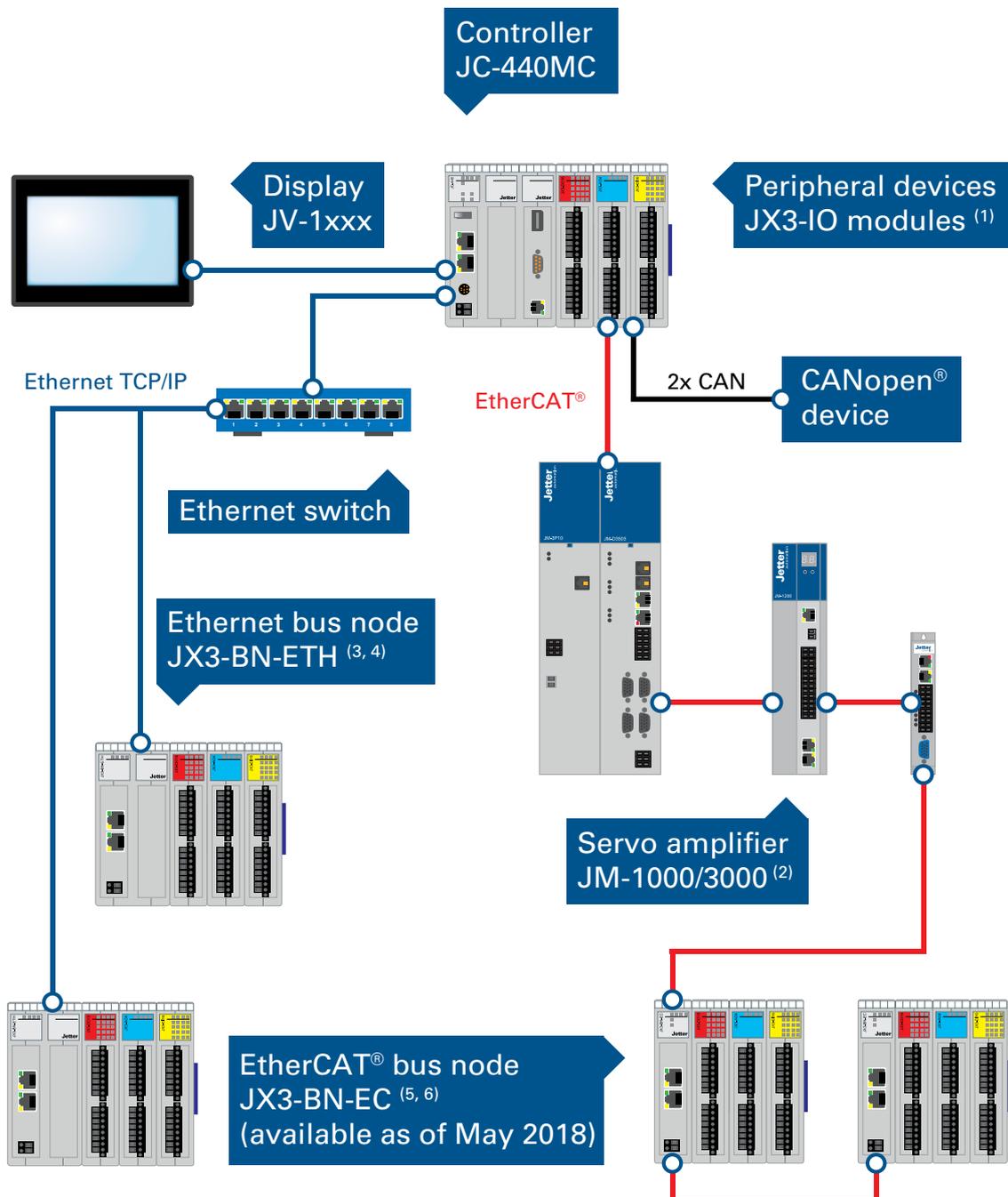
- Supports up to 12 axes
- Option: With motion control/path control (JetControl 440MC)
- Up to 256 local I/Os
(allows for expansion to > 65,000 I/Os)
- 32 MB STX program/data memory
- 480,000 bytes of non-volatile memory
- 1x Ethernet port with integrated switch
- 1x EtherCAT® (not for variant -0)
- 2x CANopen®
- 1 serial interface
- 1x USB 2.0 (for storage media)
- Web server
- E-mail client
- ModbusTCP
- Programming in STX - a high-level language to IEC-61131-3
- Multitasking
- File handling
- String processing



JetControl 440 440MC	
Non-volatile memory (NVRAM)	480,000 bytes (120,000 registers)
STX program/data memory (SDRAM)	32 MB (a maximum of 16 MB can be used as data memory)
Flash disk	32 MB
Number of expansion modules	16 JX3 local expansion modules (remote expansion modules are supported)
Number of axes (PtP)	0 (JC-440-0) 6 (JC-440-6) 12 (JC-440-12)
Number of axes (MC) (Motion Control/path control)	6 (JC-440MC-6) 12 (JC-440MC-12)
Ports and interfaces	1 serial port (RS232/422/485) 1 EtherCAT® 2 CANopen® 2 Ethernet ports (with integrated switch)
USB	2.0 (for storage media)
Expandability	JX3, JM-1000/3000 (EtherCAT®)
Realtime clock	Yes
Web server, e-mail feature	Yes
ModbusTCP	Yes
Rated input voltage	DC 24 V (-15 ... +20 %)
Input current	2.3 A @ DC 24 V
Dimensions (H x D x W)	approx. 131 x 100 x 75 mm
Degree of protection	IP20
Operating temperature	0 °C ... +50 °C
Storage temperature	-40 °C ... +70 °C
Air humidity	5 ... 95 %, non-condensing

Further details and order information are available on request.

System overview



- (1) up to 16 JX3-IO modules directly connected to a JetControl 300/400
- (2) up to 12 servo amplifiers
- (3) up to 64 JX3-BN-ETH
- (4) up to 16 JX3-IO modules per JX3-BN-ETH bus node
- (5) up to 100 JX3-BN-EC
- (6) up to 32 JX3-IO modules per JX3-BN-EC bus node

JetControl 940MC | 945MC

Product brief

The high-performance controller JetControl 940MC | 945MC is most suitable for applications requiring highest computing power and comprehensive motion control functions.

Features

- Motion Control/path control of up to 64 axes
- 32 MB STX program/data memory
- 120,000 non-volatile registers
- 3 Ethernet ports
- ModbusTCP
- Integrated web and e-mail server
- 4 USB ports
- Programming in STX - a high-level language to IEC-61131-3



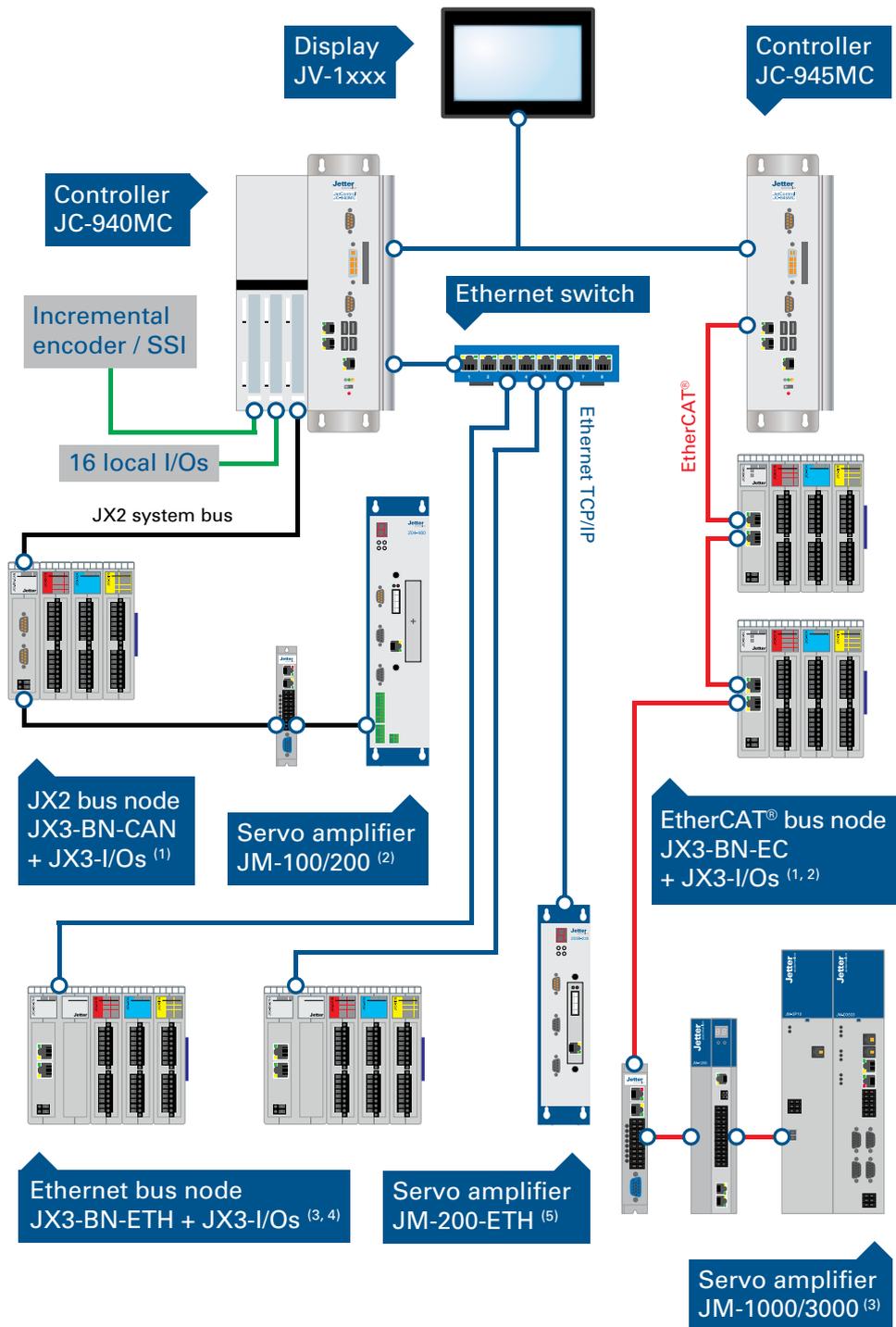
Options

- 3 PCI slots

JetControl 940MC 945MC	
Processor	1.86 GHz Celeron® (fanless)
Non-volatile memory (NVRAM)	480,000 bytes (120,000 registers)
STX program/data memory (SDRAM)	32 MB (a maximum of 16 MB can be used as data memory)
Flash disk	32 MB
Number of axes (PtP)	Unlimited (a maximum of 90 axes via JX2 bus)
Number of axes (MC) (Motion Control/path control)	64 (a maximum of 18 via JX2 bus)
Ports and interfaces	4 USB ports 3 PCI slots (option) 3x Ethernet ports (1x EtherCAT® JC-945MC only)
Expandability	JX3 (BN-ETH), JI-PCI-XXX JM-1000/3000 (JC-975MC), JM-100/200
Realtime clock	Yes
Web server, e-mail feature	Yes
ModbusTCP	Yes
Rated input voltage	DC 24 V (-15 ... +20 %)
Dimensions (H x D x W)	77 x 310 x 242 mm
Degree of protection	IP20
Operating temperature	0 °C ... +50 °C
Storage temperature	-40 °C ... +70 °C
Air humidity	5 ... 95 %, non-condensing

Further details and order information are available on request.

System overview



(1) up to 31 JX3-IO modules per JX2 system bus

(2) up to 15 servo amplifiers per JX2 system bus

(3) up to 64 JX3-BN-ETH *)

(4) up to 16 JX3-IO modules per JX3-ETH bus node

(5) up to 64 servo amplifiers *)

*) The total number of modules connected to JX3-BN-ETH and JM-200-ETH must not exceed 64.

(1) up to 100 JX3-BN-EC

(2) up to 32 JX3-IO modules per JX3-BN-EC bus node

(3) up to 64 servo amplifiers

(The maximum number of nodes on the EtherCAT® system bus is limited to 127.)

JetControl 970MC | 975MC

Product brief

The high-performance controller JetControl 970MC | 975MC is most suitable for applications requiring highest computing power, comprehensive motion control and PC functions.

Control and visualization combined in one device reduce the number of components in the control cabinet. Hypervisor technology keeps the applied operating systems strictly separated. The NVRAM + FLASH memory for non-volatile data is a standard feature. This means there is no extra cost for additional flash cards.

Supports local and remote peripheral devices for fast I/O processing in the order of sub-milliseconds. Remote access is possible via two separate Ethernet ports. This allows for remote maintenance of the device as a whole or of the controller section only.

An OS update of the controller that can easily be carried out via USB flash drive using the Auto Copy function, as well as direct access to databases via register interface, makes the JC-970MC | 975MC fit for Industrie 4.0.

Features

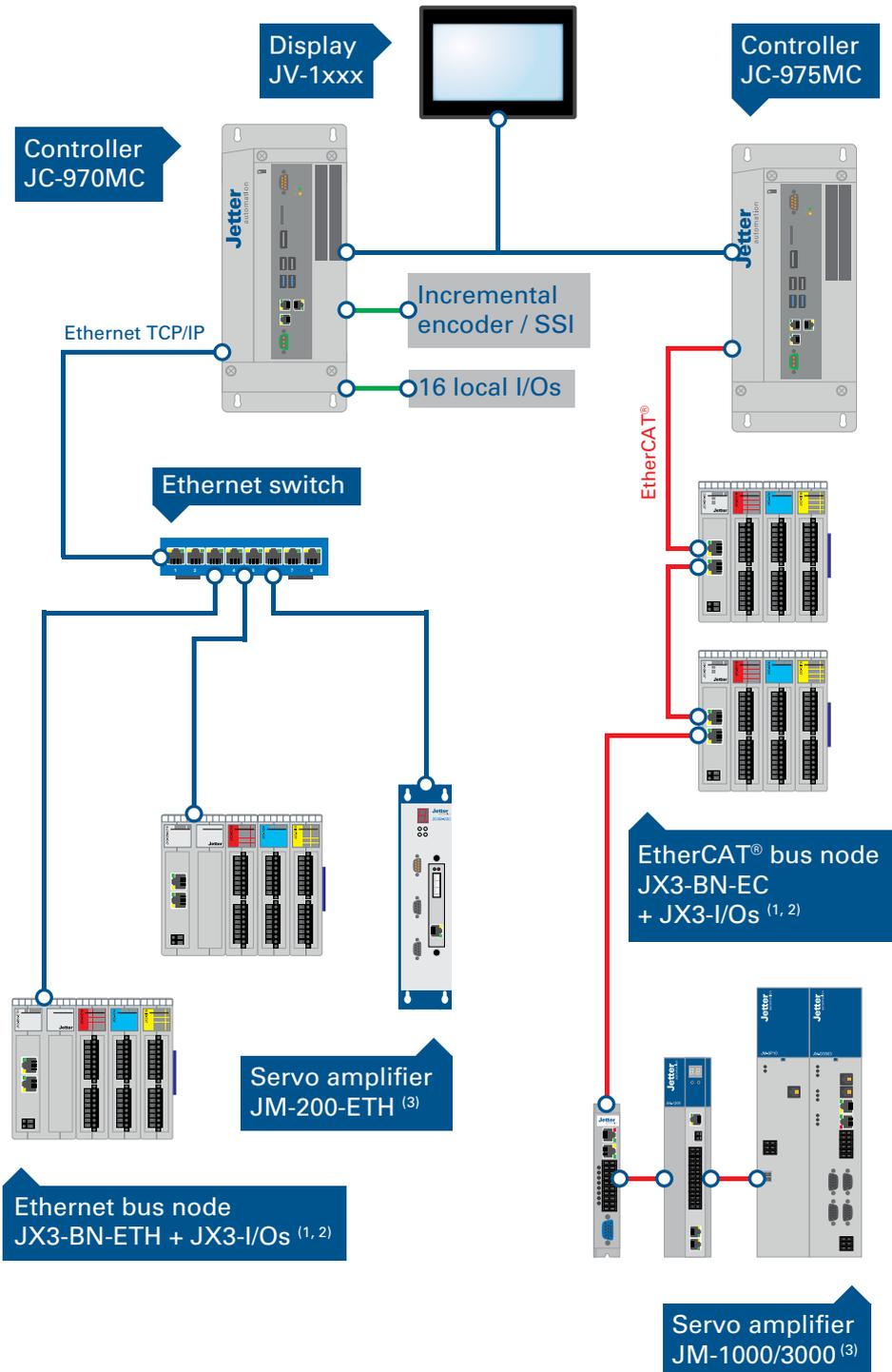
- Intel® i5 processor, dual-core
- Windows + hard realtime combined in a single piece of hardware
- Highest stability thanks to Hypervisor technology
- EtherCAT® (JetControl 975MC)
- PCI (Express) for JI-PCI(E) plug-in cards
- USB
- 2 Ethernet ports
- SD card
- DisplayPort
- AutoCopy function



JetControl 970MC 975MC	
Processor	Intel® i5 Dual Core™, 1.6 GHz
Non-volatile memory (NVRAM)	480,000 bytes (120,000 registers)
STX program/data memory (SDRAM)	32 MB (a maximum of 16 MB can be used as data memory)
Flash disk	32 MB
Local expansion modules	2x (JI-PCI-E-xxx via PCI Express)
Number of axes (PtP)	64
Number of axes (MC) (Motion Control/path control)	64
Interfaces for use by JetControl	1x Ethernet TCP/IP 1x USB 2.0 (for storage media) 1x EtherCAT® (JetControl 975MC)
Interfaces for use by Windows®	1x Ethernet TCP/IP 2x USB 3.0 1x RS-232 1x DisplayPort 1 SD card slot
Expandability	JX3 (BN-ETH, BN-EC (JC-975MC)), JI-PCIE; JM-1000/3000 (JC-975MC), JM-100/200 (JC-970MC)
Realtime clock	Yes
Web server, e-mail feature	Yes
Modbus TCP	Yes
Rated input voltage	DC 24 V (-15 ... +20%)
Input current	5 A @ DC 24 V max.
Physical dimensions (W x H x D)	310 x 210 x 155 mm
Degree of protection	IP20
Operating temperature	0 ... +50 °C
Storage temperature	-40 ... +70 °C
Air humidity	5 ... 95 % (non-condensing)

Further details and order information are available on request.

System overview



(1) up to 64 JX-BN-ETH *)

(2) up to 16 JX3-IO modules per JX3-ETH bus node

(3) up to 64 servo amplifiers *)

* The total number of modules connected to JX3-BN-ETH and JM-200-ETH must not exceed 64.

(1) up to 100 JX3-BN-EC

(2) up to 32 JX3-IO modules per JX3-BN-EC bus node

(3) up to 64 servo amplifiers

(The maximum number of nodes on the EtherCAT® system bus is limited to 127.)

JetControl 9xx - Accessories



Similar illustration

JI-PCI-E01 for JC-94x
JI-PCIE-E01 for JC-97x

PCI/PCI express add-on card for JC-9xxMC to connect 31 JX2 -/ JX3 modules max. and 15 JetMove 100/200 servo amplifiers max. via JX2 system bus



Similar illustration

JI-PCI-E02 for JC-94x
JI-PCIE-E02 for JC-97x

PCI/PCI express add-on card for JC-9xxMC to connect 62 JX2 -/ JX3 modules max. and 30 JetMove 100/200 servo amplifiers max. via 2 JX2 system buses



Similar illustration

JI-PCI-E03 for JC-94x
JI-PCIE-E03 for JC-97x

PCI/PCI express expansion card for JC-9xxMC to connect 31 JX2 -/ JX3 modules max. and 15 JetMove 100/200 servo amplifiers max. via JX2 system bus, as well as 16 local I/Os for quick processing of machine signals



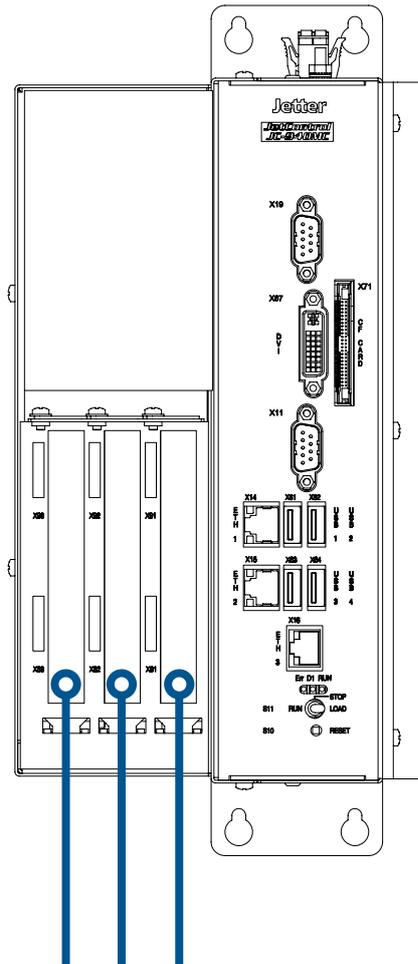
Similar illustration

JI-PCI-E04 for JC-94x
JI-PCIE-E04 for JC-97x

PCI/PCI express expansion card for JC-9xxMC to connect 31 JX2 modules max. and 15 JetMove 100/200 servo amplifiers max. via JX2 system bus, as well as a local connector for 1 incremental or SSI encoder

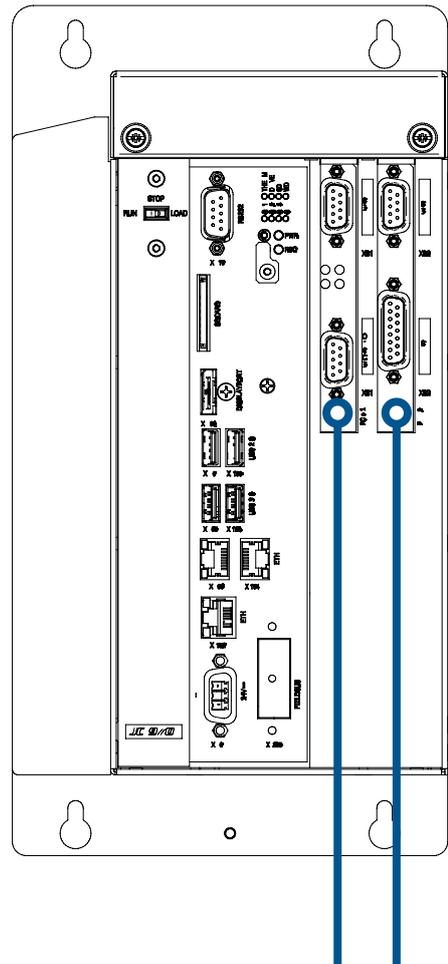
Further details and order information are available on request.

JC-940MC-XX-E03-3
JC-945MC-XX-E03-3



Expansion slots
for 3 JI-PCI-xxx max.

JC-970MC
JC-975MC



Expansion slots
for 2 JI-PCIE-xxx max.

Safety controllers



The JetSafeControl Series controllers meet all production and economic requirements of your machines and systems with a consistent safety concept.



Typical safety functions can very easily be implemented by using existing features. An extensive function library is available here especially for safe drive monitoring. The modular combination of functions via logic blocks lets you set up safety functionalities tailored to your needs.

JetSafeControl 110

Product brief

The scalable and modular design of Jet-SafeControl safety controllers makes them suitable for a multitude of applications in numerous industries. This is supported by predefined function modules which can be integrated into any application program if required.

These features let you implement specific demands posed on the safety concept for your plants and machinery in no time or adapt them just as quickly.

Features

- Up to PLe / EN 13849 | SIL3 / EN 61508
- Programming / parameterization via serial interface
- Expandability:
 - Up to 58 safe digital inputs
 - Up to 22 safe digital outputs
 - 1 safe relay output
 - Up to 6 signaling outputs



JetSafeControl 110	
Maximum number of add-on modules	2
Safe digital inputs	14
Safe digital IOs	-
Safe digital outputs p-p/p-n switching	2
Safe relay outputs	2
Signaling outputs	2
Clock outputs	2
Safe axis monitoring	-
Maximum number of axes	-
Encoder interfaces	-
Dimensions (H x D x W)	100 x 115 x 45 mm

Further details and order information are available on request.

JetSafeControl 110-1-RS

Product brief

The scalable and modular design of Jet-SafeControl safety controllers makes them suitable for a multitude of applications in numerous industries. This is supported by predefined function modules which can be integrated into any application program if required.

These features let you implement specific demands posed on the safety concept for your plants and machinery in no time or adapt them just as quickly.

Features

- Up to PLe / EN 13849 | SIL3 / EN 61508
- Programming / parameterization via serial interface
- Technological functions for monitoring one drive
- Expandability:
 - Up to 58 safe digital inputs
 - Up to 22 safe digital outputs
 - 1 safe relay output
 - Up to 6 signaling outputs



JetSafeControl 110-1-RS	
Maximum number of add-on modules	2
Safe digital inputs	14
Safe digital IOs	-
Safe digital outputs p-p/p-n switching	2
Safe relay outputs	2
Signaling outputs	2
Clock outputs	2
Safe axis monitoring	Yes
Maximum number of axes	1 (up to 2 encoders per axis)
Encoder interfaces	incl. TTL, SinCos, SSI, proximity switch, incr. TL, resolver
Dimensions (H x D x W)	100 x 115 x 67.5 mm

Further details and order information are available on request.

JetSafeControl 110-2-RS

Product brief

The scalable and modular design of Jet-SafeControl safety controllers makes them suitable for a multitude of applications in numerous industries. This is supported by predefined function modules which can be integrated into any application program if required.

These features let you implement specific demands posed on the safety concept for your plants and machinery in no time or adapt them just as quickly.



Features

- Up to PLe / EN 13849 | SIL3 / EN 61508
- Programming / parameterization via serial interface
- Technological functions for monitoring of up to 2 drives
- Expandability:
 - Up to 58 safe digital inputs
 - Up to 22 safe digital outputs
 - 1 safe relay output
 - Up to 6 signaling outputs

JetSafeControl 110-2-RS	
Maximum number of add-on modules	2
Safe digital inputs	14
Safe digital IOs	-
Safe digital outputs p-p/p-n switching	2
Safe relay outputs	2
Signaling outputs	2
Clock outputs	2
Safe axis monitoring	Yes
Maximum number of axes	2 (up to 2 encoders per axis)
Encoder interfaces	incl. TTL, SinCos, SSI, proximity switch, incr. TL, resolver
Dimensions (H x D x W)	100 x 115 x 112.5 mm

Further details and order information are available on request.

JSX1-DIO22

Product brief

The JSX1-DIO22 expansion module features 10 safe IOs, 12 safe inputs, and 2 signaling outputs. The IOs can be configured either as inputs, or outputs.

Features

- 10 safe IOs which can be configured either as inputs or outputs
- 12 safe inputs. 8 of them support OSSD
- 2 signaling outputs
- Monitoring for shorts between contacts
- External contactors allow for contact multiplication and increasing contact ratings. Combination with internal monitoring is also possible
- Firmware with integrated comprehensive diagnostic capabilities



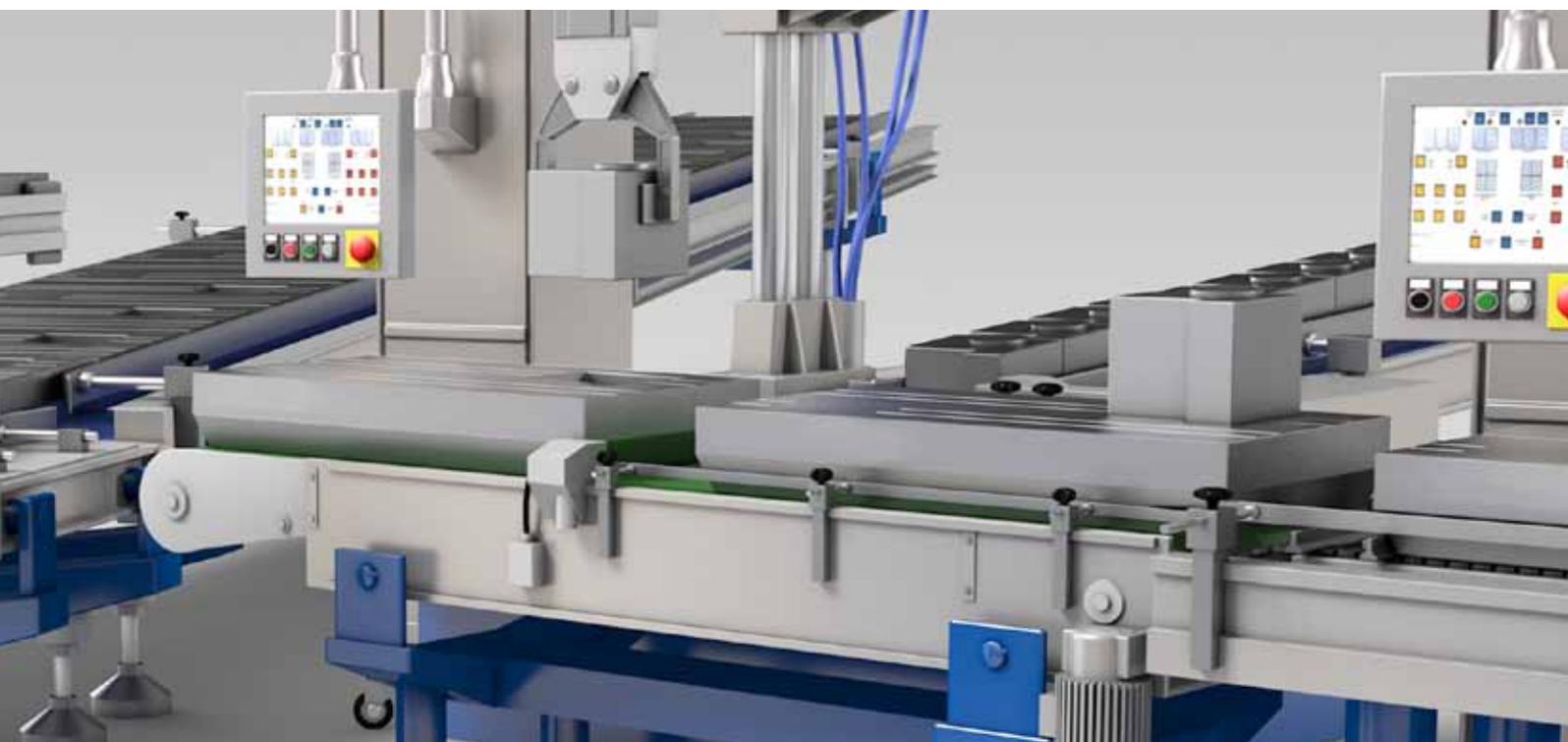
JSX1-DIO22	
Safe digital inputs	12
Safe digital IOs	10
Safe digital outputs p-p/p-n switching	-
Safe relay outputs	-
Signaling outputs	2
Clock outputs	2
Dimensions (H x D x W)	100 x 115 x 45 mm

Further details and order information are available on request.

Expansion modules



With our JX3 expansion modules you can customize JetControl controllers to suit any automation task. The host of expansion modules and virtually unlimited combination possibilities give you the freedom to create just the machinery or system you want.



Distinctive features common to all JX3 expansion modules:

- High-precision and fast signal acquisition ensuring reliable processing of signals and measuring data
- Status and diagnostic LEDs
- The module electronics and field wiring terminals are plug-gable, and can be supplied with either 1-wire - or 3-wire connections. All of this keeps installation effort and downtime to an absolute minimum.

JX3-BN-ETH

Product brief

The Ethernet bus node JX3-BN-ETH is for setting up remote I/O stations. This module allows synchronous communication between controllers and the remote I/O station via standard Ethernet.

Features

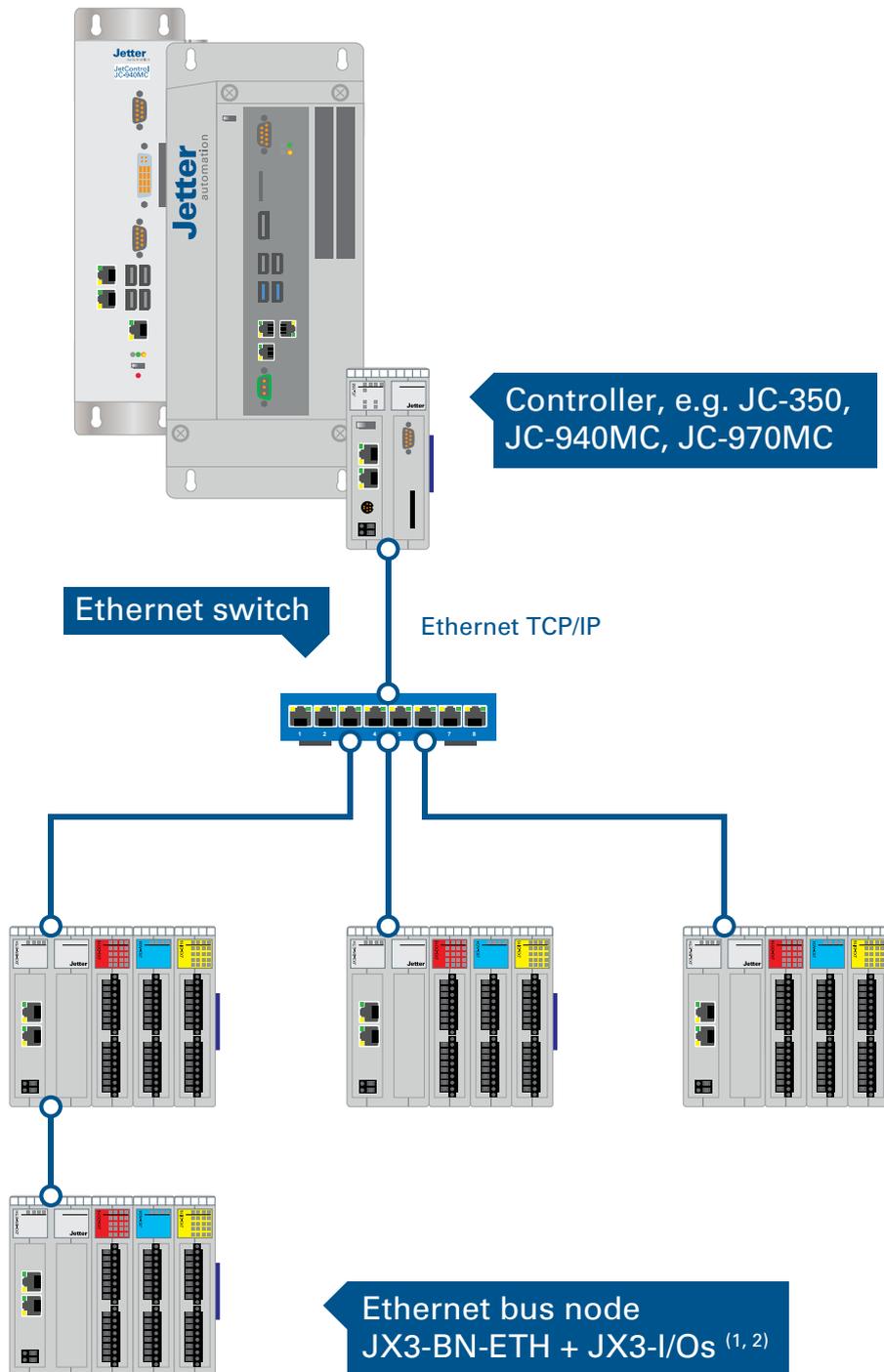
- Up to 16 JX3 expansion modules can be connected (corresponding to 256 I/O channels)
- Light-emitting diodes for monitoring communication and power supply
- Synchronous communication via Ethernet



JX3-BN-ETH	
LED membrane	RAL 7035, light gray
Degree of protection	IP20
Operating temperature	0 ... +50 °C
Storage temperature	-40 ... +70 °C
Air humidity	10 ... 95 % (non-condensing)
Mechanical installation	DIN rail to EN 50022 – 35 x 7.5 or EN 50022 – 35 x 15
Mounting orientation	Vertical
Labeling system	Standard terminal labels
Certifications	CE
Rated input voltage	DC 24 V (-15 ... +20 %)
Input current	0.5 A max.
Power consumption	12 W max.
Protection against polarity reversal	Integrated
Diagnostic LEDs	4
Ethernet connection	2x RJ45, auto-crossover, 10/100 Mbps full duplex (integrated switch)
Power supply terminal	2 pins, 3.5 mm, spring-cage connection
Dimensions (W x H x D)	50 x 131 x 101 mm

Further details and order information are available on request.

System overview



(1) up to 64 JX3-BN-ETH per controller
(2) up to 16 JX3-I/O modules per JX3-BN-ETH bus node

JX3-BN-EC

Product brief

The EtherCAT® bus node JX3-BN-EC is a gateway between an EtherCAT® master and JX3-I/O modules by Jetter.

JX3-BN-EC modules are used for the purpose of setting up distributed I/O stations. They enable synchronous communication between controller and distributed JX3 peripheral modules via EtherCAT®.

Features

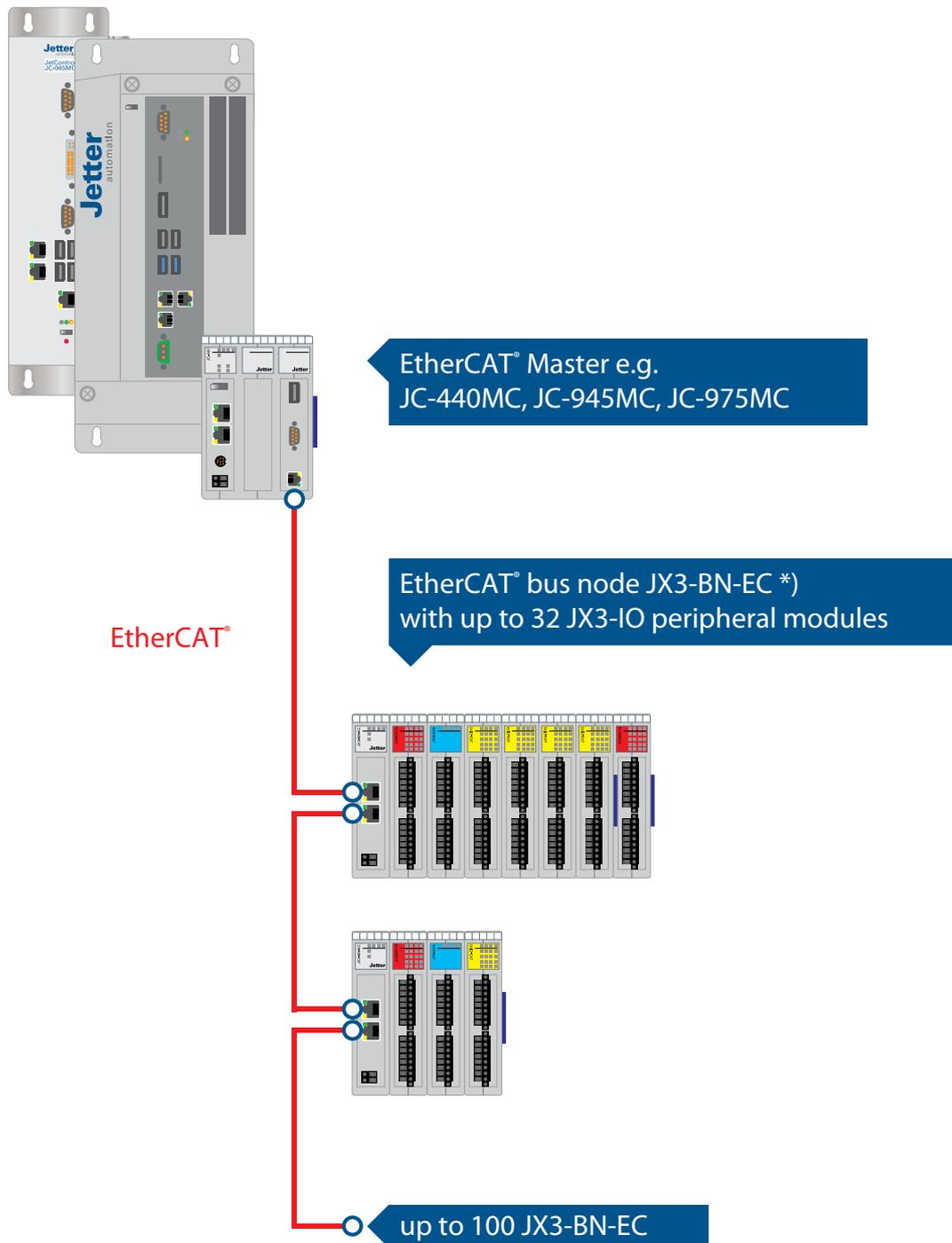
- Automatic addressing
- CoE (CAN application protocol over EtherCAT®) is supported
- Compliant with EtherCAT® Modular Device Profile
- Synchronous communication via Distributed Clocks (DC Sync)
- Up to 32 JX3 expansion modules can be connected (corresponding to 512 I/O channels)
- LEDs indicate the state of communication and supply voltage.



JX3-BN-EC	
LED membrane	RAL 7035, light gray
Degree of protection	IP20
Operating temperature	0 °C ... +50 °C
Storage temperature	-40 °C ... +70 °C
Air humidity	10 ... 95 %, non-condensing
Mechanical installation	DIN rail to EN 5002 – 35 x 7.5, or EN 50022 – 35 x 15
Mounting orientation	Vertical
Labeling system	Standard terminal labels
Certifications	CE
Rated input voltage	DC 24 V (-15 ... + 20 %)
Input current	1 A max. (incl. JX3 modules)
Power consumption	24 W max. (incl. JX3 modules)
Protection against polarity reversal	Integrated
Diagnostic LEDs	6
Ports and interfaces	EtherCAT®, JX3 system bus
Power supply terminal	2 pins, 3.5 mm, spring-cage connection
Dimensions (W x H x D)	25 x 131 x 101 mm

Further details and order information are available on request.

System overview



*) available as of May 2018

JX3-BN-CAN

Product brief

The CAN bus node JX3-BN-CAN is for setting up remote I/O stations. The module is equipped with two bus ports (BUS-IN and BUS-OUT) to connect up standard system bus cables by Jetter AG.

Features

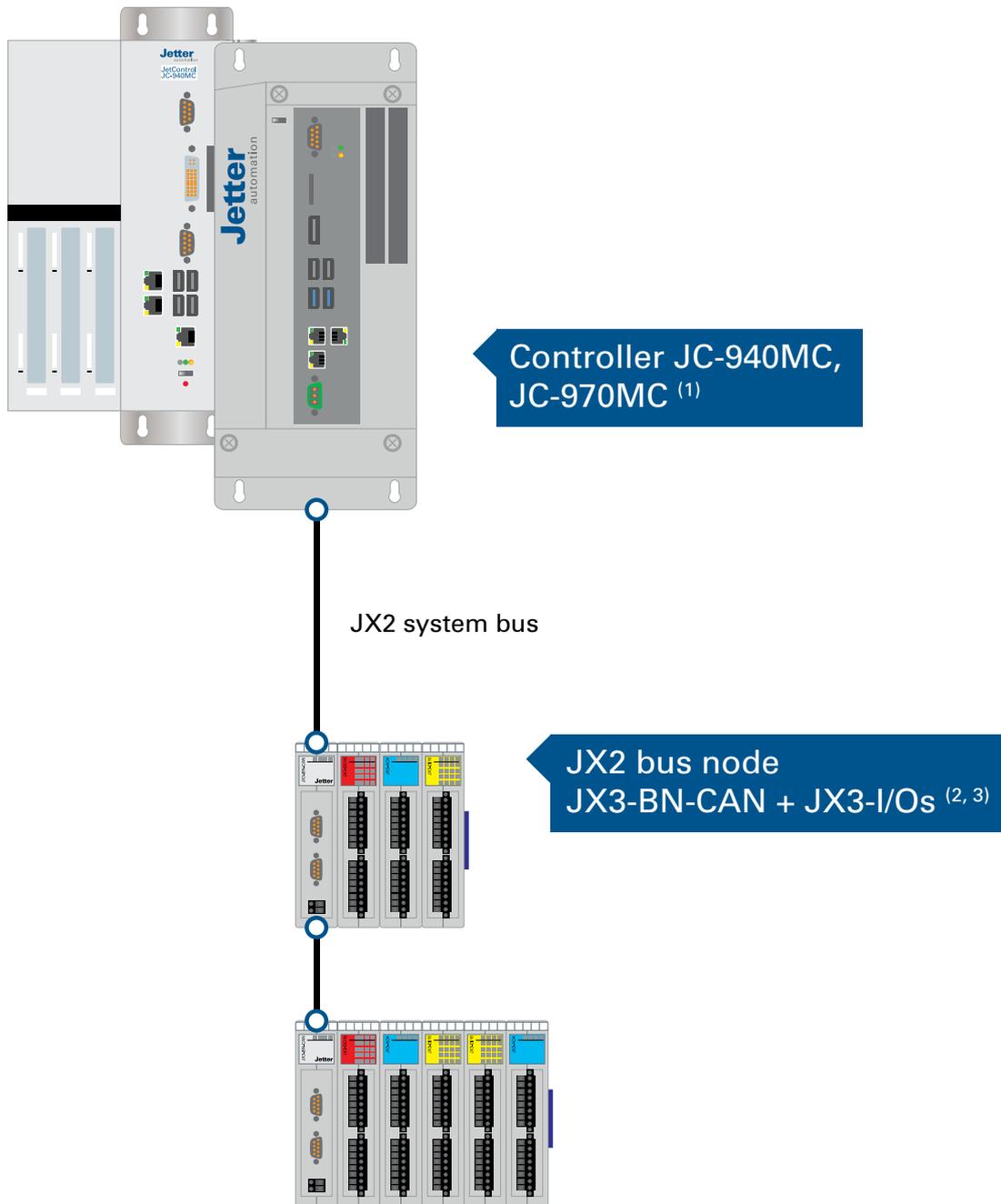
- Automatic addressing
- Automatic baud rate setting
- Automatic bus termination
- Up to 16 JX3 expansion modules can be connected (corresponding to 256 I/O channels)
- Light-emitting diodes for monitoring communication and power supply



JX3-BN-CAN	
LED membrane	RAL 7035, light gray
Degree of protection	IP20
Operating temperature	0 ... +50 °C
Storage temperature	-40 ... +70 °C
Air humidity	10 ... 95 % (non-condensing)
Mechanical installation	DIN rail to EN 50022 – 35 x 7.5 or EN 50022 – 35 x 15
Mounting orientation	Vertical
Labeling system	Standard terminal labels
Certifications	CE
Rated input voltage	DC 24 V (-15 ... +20 %)
Input current	0.5 A max.
Power consumption	12 W max.
Protection against polarity reversal	Integrated
Diagnostic LEDs	4
BUS-IN port	9-pin male Sub-D connector
BUS-OUT port	9-pin female Sub-D connector
Power supply terminal	2 pins, 3.5 mm, spring-cage connection
Dimensions (W x H x D)	25 x 131 x 101 mm

Further details and order information are available on request.

System overview



- ⁽¹⁾JI-PCIx-xxx add-on card with JX2 system bus interface required (e.g. JI-PCI-E01 for JC-940MC or JI-PCIE-E01 for JC-970MC)
⁽²⁾up to 31 JX3-IO modules per JX2 system bus
⁽³⁾up to 16 JX3-IO modules per JX3-BN-CAN bus node

JX3-DI16

Product brief

The JX3-DI16 module is an expansion module for connecting digital sensors.

Features

- 16 digital inputs
- Digital input filters
- Pulse stretching
- Counting feature
- Light-emitting diodes for monitoring communication and power supply
- Plug-in terminals

Options

- Pluggable field wiring terminals as 10-pin PUSH-IN terminal -(PI)



JX3-DI16	
LED membrane	RAL 1004, amber
Degree of protection	IP20
Operating temperature	0 ... +50 °C
Storage temperature	-40 ... +70 °C
Air humidity	10 ... 95 % (non-condensing)
Mechanical installation	DIN rail to EN 50022 – 35 x 7.5 or EN 50022 – 35 x 15
Mounting orientation	Vertical
Labeling system	Standard terminal labels
Certifications	CE
Rated input voltage	DC 24 V (-15 ... +20 %)
Input current, typical	3.6 mA, constant
Pulse stretching range	0 through 7.5 ms
Digital filter range	0.125 ms through 16 ms
Dimensions (W x H x D)	25 x 131 x 101 mm

Further details and order information are available on request.

JX3-DO16

Product brief

The JX3-DO16 module is an expansion module for connecting digital actuators.

Features

- Automatic addressing
- 16 digital outputs
- Pulse-width modulation (PWM)
- Light-emitting diodes for monitoring communication and power supply
- Plug-in terminals

Options

- Pluggable field wiring terminals as 10-pin PUSH-IN terminal -(PI)



JX3-DO16	
LED membrane	RAL 3020, red
Degree of protection	IP20
Operating temperature	0 ... +50 °C
Storage temperature	-40 ... +70 °C
Air humidity	10 ... 95 % (non-condensing)
Mechanical installation	DIN rail to EN 50022 – 35 x 7.5 or EN 50022 – 35 x 15
Mounting orientation	Vertical
Labeling system	Standard terminal labels
Certifications	CE
Rated voltage	DC 24 V (-15 ... +20 %)
Total current of all 16 outputs	4 A max.
Continuous rated output current	0.5 A/output
Protective circuits	Short-circuit, overload, polarity reversal, overvoltage, overtemperature, inductive load
Dimensions (W x H x D)	25 x 131 x 101 mm

Further details and order information are available on request.

JX3-DIO16

Product brief

The JX3-DIO16 is an expansion module for connecting of digital sensors and actuators.

Features

- 8 digital inputs and 8 digital outputs
- Outputs can also be used as inputs
- Digital input filters
- Pulse stretching
- Pulse-width modulation (PWM)
- Counting feature
- Light-emitting diodes for monitoring communication and power supply
- Plug-in terminals

Options

- Pluggable field wiring terminals as 10-pin PUSH-IN terminal -(PI)



JX3-DIO16	
LED membrane	RAL 3020, red
Degree of protection	IP20
Operating temperature	0 ... +50 °C
Storage temperature	-40 ... +70 °C
Air humidity	10 ... 95 % (non-condensing)
Mechanical installation	DIN rail to EN 50022 – 35 x 7.5 or EN 50022 – 35 x 15
Mounting orientation	Vertical
Labeling system	Standard terminal labels
Certifications	CE
Rated input voltage	DC 24 V (-15 ... +20 %)
Input current, typical	3.6 mA, constant
Total current	4 A
Protective circuits	Short-circuit, overload, overtemperature, inductive load
Pulse stretching range	0 through 7.5 ms
Digital filter range	0.125 ms through 16 ms
Dimensions (W x H x D)	25 x 131 x 101 mm

Further details and order information are available on request.

JX3-AI4

Product brief

The JX3-AI4 module is an expansion module for connecting analog sensors.

Features

- 4 analog inputs
- Selectable input signal per channel
- Resolution: 16 bits
- Averaging
- User-defined scaling
- Monitoring of upper/lower limit
- Oscilloscope function
- Light-emitting diodes for monitoring communication and power supply
- Plug-in terminals

Options

- Galvanic isolation (-EI)
- Pluggable field wiring terminals as 10-pin PUSH-IN terminal -(PI)



JX3-AI4	
LED membrane	RAL 6018, yellow-green
Degree of protection	IP20
Operating temperature	0 ... +50 °C
Storage temperature	-40 ... +70 °C
Air humidity	10 ... 95 % (non-condensing)
Mechanical installation	DIN rail to EN 50022 – 35 x 7.5 or EN 50022 – 35 x 15
Mounting orientation	Vertical
Labeling system	Standard terminal labels
Certifications	CE
Number of analog inputs	4
Voltage range	0 ... 10 V, -10 ... +10 V
Current range	0 ... 20 mA, 4 ... 20 mA
Resolution	16 bits
Accuracy	Better than 0.5 % across the whole operating temperature range
Conversion time	1 ms for all 4 channels (collective conversion)
Maximum input frequency	200 Hz
Electrical isolation	Option
Dimensions (W x H x D)	25 x 131 x 101 mm

Further details and order information are available on request.

JX3-AO4

Product brief

The JX3-AO4 module is an expansion module for connecting analog actuators.

Features

- 4 analog outputs
- Selectable output signal per channel
- Resolution: 16 bits
- User-defined scaling
- Monitoring of limit values
- Trailing indicator
- Capping
- Forcing function
- Oscilloscope function
- Table mode
- Light-emitting diodes for monitoring communication and power supply
- Plug-in terminals

Options

- Pluggable field wiring terminals as 10-pin PUSH-IN terminal -(PI)



JX3-AO4	
LED membrane	RAL 5015, sky blue
Degree of protection	IP20
Operating temperature	0 ... +50 °C
Storage temperature	-40 ... +70 °C
Air humidity	10 ... 95 % (non-condensing)
Mechanical installation	DIN rail to EN 50022 – 35 x 7.5 or EN 50022 – 35 x 15
Mounting orientation	Vertical
Labeling system	Standard terminal labels
Certifications	CE
Number of analog outputs	4
Voltage range	0 ... 10 V, -10 ... +10 V
Current range	0 ... 20 mA, 4 ... 20 mA
Resolution	16 bits
Accuracy	better than 0.5 % across the whole operating temperature range
Conversion time	1 ms for all 4 channels
Dimensions (W x H x D)	25 x 131 x 101 mm

Further details and order information are available on request.

JX3-THI2-RTD

Product brief

The expansion module JX3-THI2-RTD is equipped with two inputs for analog temperature sensors of the type Pt100 or Pt1000. The temperature sensors can be connected in 2-, 3- or 4-wire technology.

Features

- Temperature range: -50 ... +850 °C
- Resolution: 0.01 °C
- 1- to 64-fold averaging
- Monitoring of limit values
- Trailing indicator
- Oscilloscope function
- Potentiometer mode
- Forcing
- Light-emitting diodes for monitoring communication and power supply
- Plug-in terminals

Options

- Galvanic isolation (-EI)
- Pluggable field wiring terminals as 10-pin PUSH-IN terminal -(PI)



JX3-THI2-RTD	
LED membrane	RAL 6018, yellow-green
Degree of protection	IP20
Operating temperature	0 ... +50 °C
Storage temperature	-40 ... +70 °C
Air humidity	10 ... 95 % (non-condensing)
Mechanical installation	DIN rail to EN 50022 – 35 x 7.5 or EN 50022 – 35 x 15
Mounting orientation	Vertical
Labeling system	Standard terminal labels
Certifications	CE
Signal range	-50 ... 850 °C
Resolution	0.01 °C
Accuracy	0.5 ... 450 °C, 1 °C at 450 °C or higher (typically 0.1 % of the measured value + 0.0025 % of the measuring range)
Effective conversion time for both channels	Pt100: 90 to 150 ms slow mode, 8 to 15 ms fast mode Pt1000: 100 to 200 ms slow mode, 10 to 20 ms fast mode
Connection technology	2-, 3- and 4-wire technology
Electrical isolation	Option
Dimensions (W x H x D)	25 x 131 x 101 mm

Further details and order information are available on request.

JX3-THI2-TC

Product brief

The expansion module JX3-THI2-TC is equipped with two inputs for thermocouple-type temperature sensors. The following thermocouple types can be connected: J, K, B, E, N, R, S, T.

Features

- Temperature range to DIN 60584-1
- Resolution: 0.01 °C
- Integrated terminal temperature compensation
- 1- to 64-fold averaging
- Monitoring of limit values
- Trailing indicator
- Oscilloscope function
- Forcing
- Light-emitting diodes for monitoring communication and power supply
- Plug-in terminals

Options

- Galvanic isolation (-EI)
- Pluggable field wiring terminals as 10-pin PUSH-IN terminal -(PI)



JX3-THI2-TC	
LED membrane	RAL 6018, yellow-green
Degree of protection	IP20
Operating temperature	0 ... +50 °C
Storage temperature	-40 ... +70 °C
Air humidity	10 ... 95 % (non-condensing)
Mechanical installation	DIN rail to EN 50022 – 35 x 7.5 or EN 50022 – 35 x 15
Mounting orientation	Vertical
Labeling system	Standard terminal labels
Certifications	CE
Signal range	Depending on sensor type
Sensor types	J, K, B, E, N, R, S, T
Resolution	0.01 °C
Accuracy	To DIN EN 60584-2:1996
Effective conversion time for both channels	Approx. 10 ms (fast mode), approx. 100 ms (slow mode)
Electrical isolation	Option
Dimensions (W x H x D)	25 x 131 x 101 mm

Further details and order information are available on request.

JX3-DMS2

Product brief

The strain gage module JX3-DMS2 is an expansion module for measuring strain, force and pressure. This expansion module supports all strain gages working in accordance with the principle "Strain-resistance effect of electrical conductors". Strain gages are connected in 4-wire technology.

Features

- 2 inputs
- Adjustable measuring accuracy
- Trailing indicator
- User-defined scaling
- Oscilloscope function
- Forcing function for measured values
- Monitoring of limit values
- Light-emitting diodes for monitoring communication and power supply
- Plug-in terminals

Options

- Pluggable field wiring terminals as 10-pin PUSH-IN terminal -(PI)



JX3-DMS2	
LED membrane	RAL 6018, yellow-green
Degree of protection	IP20
Operating temperature	0 ... +50 °C
Storage temperature	-40 ... +70 °C
Air humidity	10 ... 95 % (non-condensing)
Mechanical installation	DIN rail to EN 50022 – 35 x 7.5 or EN 50022 – 35 x 15
Mounting orientation	Vertical
Labeling system	Standard terminal labels
Certifications	CE
Number of inputs	2
Connection technology	Differential signals in four-wire technology
Input signal range	1 mV/V to 400 mV/V
Resolution	16 bits + oversampling
Conversion time per channel	6 ms
Signal amplification (PGA)	0.5 ... 1050
Maximum current per channel	100 mA
Dimensions (W x H x D)	25 x 131 x 101 mm

Further details and order information are available on request.

JX3-CNT

Product brief

The JX3-CNT is a versatile counter module and supports the following modes: single-channel counter, dual-channel counter, and Synchronous Serial Interface (SSI).

Features

- Trailing indicator
- User-defined scaling
- Oscilloscope function
- Forcing of count values
- Monitoring of limit values
- Frequency measurement
- Period measurement
- Gating measurement
- 16-fold multi-strobe function
- Gate function
- Digital filters
- Reference
- Light-emitting diodes for monitoring communication and power supply
- Plug-in terminals

Options

- Pluggable field wiring terminals as 10-pin PUSH-IN terminal -(PI)



JX3-CNT	
LED membrane	RAL 9003, signal white
Degree of protection	IP20
Operating temperature	0 ... +50 °C
Storage temperature	-40 ... +70 °C
Air humidity	10 ... 95 % (non-condensing)
Mechanical installation	DIN rail to EN 50022 – 35 x 7.5 or EN 50022 – 35 x 15
Mounting orientation	Vertical
Labeling system	Standard terminal labels
Certifications	CE
Electrical isolation	None
Encoder supply 5 V	200 mA max. (short-circuit-proof)
Encoder supply 24 V	500 mA max. (short-circuit-proof)
Maximum counting rates	Single-channel counter (event counter) 24 V (I/O 1 ... I/O 4): 1 kHz Single-channel counter (event counter) 24 V (A, B, C): 100 kHz Dual-channel counter (incremental encoder 24 V): 500 kHz Dual-channel counter (incremental encoder 5 V): 2 MHz
Value range	32 bits
Supported SSI encoders	Single-turn, multi-turn or linear absolute encoders
SSI transmission rate	100 kHz, 200 kHz, 1 MHz
Dimensions (W x H x D)	25 x 131 x 101 mm

Further details and order information are available on request.

JX3-PS1

Product brief

The JX3-PS1 module provides power supply for JX3 peripheral modules.

Features

- Power supply for up to eight JX3 expansion modules
- Light-emitting diodes for monitoring the power supply



JX3-PS1	
LED membrane	RAL 7035, light gray
Degree of protection	IP20
Operating temperature	0 ... +50 °C
Storage temperature	-40 ... +70 °C
Air humidity	10 ... 95 % (non-condensing)
Mechanical installation	DIN rail to EN 50022 – 35 x 7.5 or EN 50022 – 35 x 15
Mounting orientation	Vertical
Labeling system	Standard terminal labels
Certifications	CE
Rated input voltage	DC 24 V (-15 ... +20 %)
Input current	0.5 A max.
Power consumption	12 W max.
Polarity reversal protection	Integrated
Diagnostic LEDs	1
Power supply terminal	2 pins, 3.5 mm, spring cage
Dimensions (W x H x D)	25 x 131 x 101 mm

Further details and order information are available on request.

JX3-COM

Product brief

The gateway module JX3-COM allows for communication with different field-bus systems. This module is available for EtherNet/IP™ and PROFINET®.

Features

- Implicit data communication
- Explicit data communication
- Light-emitting diodes for monitoring communication and power supply

Models

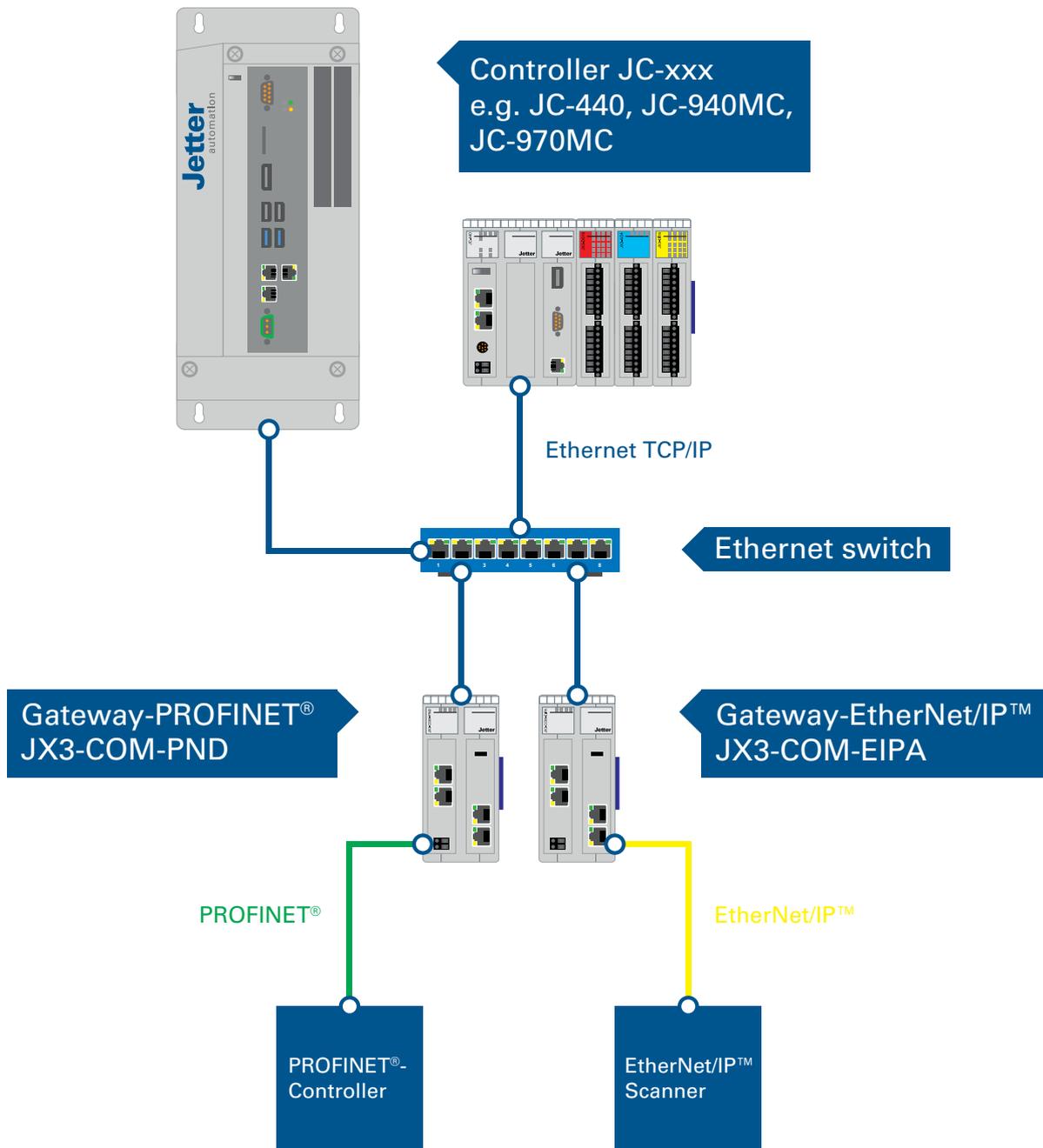
- EtherNet/IP™ adapter: JX3-COM-EIPA
- PROFINET® device: JX3-COM-PND



JX3-COM	
LED membrane	RAL 7035, light gray
Degree of protection	IP20
Operating temperature	0 ... +50 °C
Storage temperature	-40 ... +70 °C
Air humidity	10 ... 95 % (non-condensing)
Mechanical installation	DIN rail to EN 50022 – 35 x 7.5 or EN 50022 – 35 x 15
Mounting orientation	Vertical
Labeling system	Standard terminal labels
Certifications	CE
Rated input voltage	DC 24 V (-15 ... +20 %)
Input current	0.27 A max.
Power consumption	6.5 W max.
Protection against polarity reversal	Integrated
Diagnostic LEDs	4
Ethernet connection	2x RJ45, auto-crossover, 10/100 Mbps full duplex (integrated switch)
Power supply terminal	2 pins, 3.5 mm, spring-cage connection
Dimensions (W x H x D)	50 x 131 x 101 mm

Further details and order information are available on request.

System overview



JX3-MIX1

Product brief

The multi-purpose expansion module JX3-MIX1 provides you with a combination of commonly required I/O functions. This module is ideal for cost-sensitive applications.

Features

- Counter function
- Stepper motor controller
- 3 analog inputs
- 1 analog output
- 8 digital multi-purpose I/Os
- Light-emitting diodes for monitoring communication and power supply
- Plug-in terminals

Options

- Pluggable field wiring terminals as 10-pin PUSH-IN terminal -(PI)



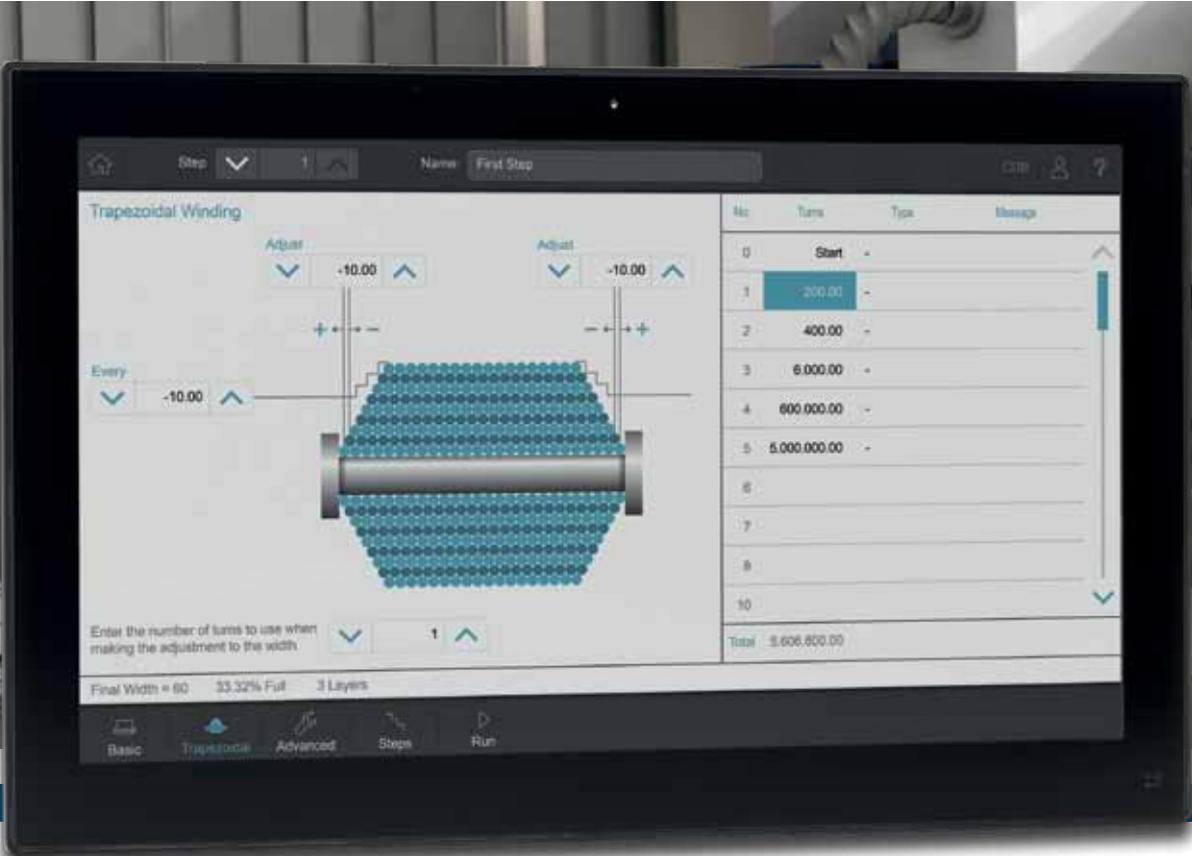
JX3-MIX1	
LED membrane	RAL 9003, signal white
Degree of protection	IP20
Operating temperature	0 ... +50 °C
Storage temperature	-40 ... +70 °C
Air humidity	10 ... 95 % (non-condensing)
Mechanical installation	DIN rail to EN 50022 – 35 x 7.5 or EN 50022 – 35 x 15
Mounting orientation	Vertical
Labeling system	Standard terminal labels
Certifications	CE
Counter	Either one dual-channel counter or two single-channel counters up to 50 kHz
Stepper motor controller	Output of STEP and DIR signals, 10 kHz max.
Analog inputs	3, 0 ... 10 V, resolution 12 bits
Analog outputs	1, 0 ... 10 V, resolution 12 bits
Multi-purpose IOs	8; can be used as digital input to IEC 61131-2, type 3, pnp transistor, or digital output to IEC 61131-2, 0.5 A, pnp transistor.
Dimensions (W x H x D)	25 x 131 x 101 mm

Further details and order information are available on request.

JX3 - Accessories

	BU_10_BLZF_F_SW_RM3.5	Plug-in connector, 10-pin, spring cage connection, black
	BU_02_BLZF_SW_RM3.5	Plug-in connector, 2-pin, spring cage connection, black
	BU_30_BL-I/O_F_RM3.5	Plug-in connector, 30-pin, PUSH-IN, spring connection, operating panel, black
	BU_10_BL-I/O_F_RM3.5	Plug-in connector, 10-pin, PUSH-IN, spring connection, operating panel, black
	DIV_DEK_5/5_MC-10_NEUT_WS	Labeling strips for JX3 modules (minimum purchasing quantity: 100 pcs.)
	DIV_BL_SL_3.5_KO_OR	Coding keys for JX3 connectors
	DIV_BL_3.5_ZE_8	Strain relief for plug-in connectors BU_10_BLZF_F_SW_RM3.5
	DIV_CLIPFIX_35	End clamp for DIN rail
	DIV_Schraubendreher_2,5*75	Screwdriver 2.5x75 to VDE (also apt for spring cage connections)
	SD card, 1 GB	SD memory card, 1 GB Industrial specification

HMIs | Industrial PCs



Jetter's new generation of JetView HMIs and industrial PCs excels in modern design, connectivity and performance.



JetView 1005 | 1007 | 1010

Product brief

The HMIs JetView 1005 |1007 | 1010 offer a universal widescreen display with Projected Capacitive Touchscreen (PCAP). Screen sizes range from 5" to 10". The HMI has two Ethernet ports with switch functionality and is ideal for integration into existing networks. It comes with a scratch-proof and dirt-repellent real glass surface.



Features

- Seamless glass front panel
- Widescreen
- Multi-touch
- WinCE operating system
- 2x Ethernet port
- USB port
- SD card slot
- Control function included

Options

- CANopen® via STX-API

JetView 1005	
Display	5" TFT color display, 16 bits color depth, widescreen
Resolution	800 x 480 (WVGA), 5:3
Brightness	200 cd/m ²
Front	Glass
Background lighting	LED
Input device	Touchscreen
Touchscreen	Capacitive (PCAP), multi-touch with WEC 2013
Function keys	-
Softkeys	-
Operating system	Windows® CE 6.0 R3 / Windows® EC 2013
Internal disk drives	-
Ports and interfaces	2x Ethernet 10/100 Mbits with integrated switch function, 1x USB, 1x multi-standard serial port, 1x SD card slot
Processor	ARM Cortex A8
Clock frequency	600 MHz
Memory	256 MB RAM, 128 MB flash
Operating voltage	DC 24 V (DC 18 ... 30 V), 0.6 A for DC 24 V
Operating temperature	0 ... 50 °C
Storage temperature	-20 ... +70 °C
Degree of protection	IP65 (front panel), IP20 (rear panel)
Housing	Aluminum
Weight	Approx. 1.0 kg
Dimensions (W x H x D)	147 x 107 x 64 mm
Certifications	CE, cULus is in preparation

Further details and order information are available on request.



	JetView 1007	JetView 1010
Display	7" TFT color display, 16 bits color depth, widescreen	10.1" TFT color display, 16 bits color depth, widescreen
Resolution	800 x 480 (WVGA), 5:3	1280 x 800 (WXGA), 8:5
Brightness	300 cd/m ²	300 cd/m ²
Front	Glass	Glass
Background lighting	LED	LED
Input device	Touchscreen	Touchscreen
Touchscreen	Capacitive (PCAP), multi-touch with WEC 2013	Capacitive (PCAP), multi-touch with WEC 2013
Function keys	-	-
Softkeys	-	-
Operating system	Windows® CE 6.0 R3 / Windows® EC 2013	Windows® CE 6.0 R3 / Windows® EC 2013
Internal disk drives	-	-
Ports and interfaces	2x Ethernet with integrated switch function, 2x USB, 1x multi-standard serial port, 1x SD card slot	2x Ethernet with integrated switch function, 2x USB, 1x multi-standard serial port, 1x SD card slot
Processor	ARM Cortex A8	ARM Cortex A8
Clock frequency	600 MHz	1 GHz
Memory	256 MB RAM, 256 MB flash	256 MB RAM, 256 MB flash
Operating voltage	DC 24 V (DC 18 ... 30 V), 0.6 A for DC 24 V	DC 24 V (DC 18 ... 30 V), 1 A for DC 24 V
Operating temperature	0 ... 50 °C	0 ... 50 °C
Storage temperature	-20 ... 70 °C	-20 ... 70 °C
Degree of protection	IP65 (front panel), IP20 (rear panel)	IP65 (front panel), IP20 (rear panel)
Housing	Aluminum	Aluminum
Weight	Approx. 1.3 kg	Approx. 1.7 kg
Dimensions (W x H x D)	187 x 147 x 55 mm	282 x 197 x 55 mm
Certifications	CE, cULus is in preparation	CE, cULus is in preparation

Further details and order information are available on request.

JetView 1004

Product brief

Besides its excellent performance, the HMI JetView 1004 impresses by its compact design and front panel sealing (up to IP66). This device can be easily integrated into existing networks thanks to its two Ethernet ports with integrated switch.

Features

- 4.3" resistive TFT touch screen
- 256 MB memory
- 2x Ethernet ports (with integrated switch)
- MMC or SD memory card slot
- IP66 (front panel)



JetView 1004	
Display	4.3" TFT color display, 16 bits color depth
Resolution	480 x 272, 16:9
Brightness	150 cd/m ²
Front	Plastic
Background lighting	LED
Input device	Touchscreen
Touchscreen	Resistive
Function keys	-
Softkeys	-
Operating system	Windows® CE 6.0 R3
Internal disk drives	-
Ports and interfaces	2x Ethernet 10/100 Mbits with integrated switch function, 1x USB, 1x multi-standard serial port, 1x SD card slot
Processor	ARM Cortex A8
Clock frequency	500 MHz
Memory	256 MB DDR, 128 MB flash
Operating voltage	DC 24 V (DC 18 ... 30 V), 0.55 A for DC 24 V
Operating temperature	0 ... 50 °C
Storage temperature	-20 ... +70 °C
Degree of protection	IP65 (front panel), IP20 (rear panel)
Housing	Aluminum
Weight	Approx. 1.0 kg
Dimensions (W x H x D)	147 x 107 x 60 mm
Certifications	CE, cULus is in preparation

Further details and order information are available on request.

JetView 1015

Product brief

The JetView 1015 is an industrial PC featuring a widescreen display equipped with a Projected Capacitive Touchscreen (PCAP). With its screen size of 15.6" it provides enough room for monitoring and operating mid-sized plants. It has a multi-core CPU which means that it can handle several applications at once. Thanks to its multitude of interfaces it can be perfectly adapted to suit individual requirements. It comes with a scratch-proof and dirt-repellent real glass surface.



Features

- Seamless glass front panel
- Widescreen (16:9) multi-touch display
- The memory medium contains no rotating parts
- SSD hard disk
- 2x Ethernet port
- 4x USB port
- 1x DisplayPort

Options

- RS232 | RS422 | RS485

JetView 1015	
Display	15.6" TFT color display, 24 bits color depth Widescreen
Resolution	1366 x 768 (WXGA), 16:9
Brightness	300 cd/m ²
Front	Glass
Background lighting	LED
Input device	Touchscreen
Touchscreen	Capacitive (PCAP) multi-touch
Function keys	-
Softkeys	-
Operating system	WES7® (default OS), Linux Embedded
Internal disk drives	1x SSD 60 GB
Ports and interfaces	4x USB 2.0, 2x LAN 10/100/1000, 1x DisplayPort, 1x RS-232
Processor	ATOM DualCore™
Clock frequency	2x 1.86 GHz
Memory	4 GB RAM
Operating voltage	DC 24 V (+-20%)/1.05 A/~32 W
Operating temperature	0 ... 50 °C
Storage temperature	-20 ... +60 °C
Degree of protection	IP65 (front panel), IP20 (rear panel)
Housing	Aluminum
Weight	Approx. 4.5 kg
Dimensions (W x H x D)	approx. 419 x 270 x 69 mm
Certifications	CE, cULus is in preparation

Further details and order information are available on request.

JetView 1022

Product brief

The JetView 1022 is an industrial PC featuring a widescreen display equipped with a Projected Capacitive Touchscreen (PCAP). With its screen size of 21.5" it provides enough room for monitoring and operating mid-sized plants. It has a multi-core CPU which means that it can handle several applications at once. Thanks to its multitude of interfaces it can be perfectly adapted to suit individual requirements. It comes with a scratch-proof and dirt-repellent real glass surface.



Features

- Seamless glass front panel
- Widescreen (16:9) multi-touch display
- HDD or SSD storage medium
- 8 GB RAM
- 3x Ethernet port
- 6x USB port
- 2x DisplayPort
- 1x PCIe slot

JetView 1022	
Display	21.5" TFT color display, 24 bits color depth Widescreen
Resolution	1920 x 1080 (HD 1080), 16:9
Brightness	300 cd/m ²
Front	Glass
Background lighting	CCFL
Input device	Touchscreen
Touchscreen	Capacitive (PCAP) multi-touch
Function keys	-
Softkeys	-
Operating system	WES7® (default OS) Windows® 7, Windows® 8 Linux Embedded
Internal disk drives	1x SATA HDD 320 GB or 128 GB SSD
Ports and interfaces	6x USB 2.0, 3x LAN 10/100/1000, 2x DisplayPort, 1x DVI-H, Audio Ports (Line out/Line in/Mic in)
Processor	Intel® Core™ i5
Clock frequency	2x 1.6 GHz
Memory	8 GB RAM
Operating voltage	AC 90-264 V/350W, built-in PSU
Operating temperature	0 ... 50 °C
Storage temperature	-20 ... +60 °C
Degree of protection	IP65 (front panel), IP20 (rear panel)
Housing	Aluminum
Weight	Approx. 13.3 kg
Dimensions (W x H x D)	approx. 544 x 342 x 111 mm
Certifications	CE, cULus is in preparation

Further details and order information are available on request.

JI-FP 1015 | 1022

Product brief

The industrial standard flat panel monitor JV-FP 1015 | JV-FP 1022 offers an extremely powerful widescreen display with Projected Capacitive Touchscreen (PCAP). Screen sizes range from 15.6" to 21.5". It comes with a scratch-proof and dirt-repellent real glass surface.



Features

- 15" and 22"
- Multi-touch
- 1x VGA
- 1x DVI
- 1x DisplayPort
- 300 cd/m²

	JI-FP 1015	JI-FP 1022
Display	15.6" TFT	21.5" TFT
Resolution	1366 x 768 pixels (16/9)	1920 x 1080 pixels (16/9)
Brightness		300 cd/m ²
Front		Glass, IP65
Background lighting		LED
Touchscreen		PCAP multi-touch
Ports and interfaces		1x VGA, 1x DVI, 1x DisplayPort
Certifications		CE, cULus is in preparation
Dimensions (W x H x D)	410 x 262 x 67 mm	544 x 342 x 67 mm
Mounting type		Front mounting or VESA

Further details and order information are available on request.

JI-PC 601

Product brief

The industrial PC JI-PC 601 combines a very compact design with optimum performance. It can reliably handle any automation task thanks to a large number of interfaces and scalable CPU performance. Expansion slots enable the connection of standard fieldbuses. The JI-PC 601 can be operated directly in the control cabinet thanks to its 24 V power supply.

Features

- Compact
- mPCIe (internal)
- 24 V power supply
- Fanless



JI-PC 601	
Processor	ATOM E38xx (Quad core)
Memory	4 GB
Graphics display resolution	Full HD (1920x1080)
Ports and interfaces	2 Ethernet ports 10/100/1000 2x USB 3.0 2x USB 2.0 2x RS-232 (option: RS422/485) 1x DisplayPort (option: VGA) 8x GPIO (4x IN/4x OUT, TTL Level)
Internal disk drives	1x 2.5 SATA SSD (Option: SD card) 1x mSATA
Operating voltage	DC 24 V
Expansion slot	2x mPCIe (internal)
Operating system	WES7®, Windows® 8.1 Ind.
Operating temperature	-20 ... 60 °C
Degree of protection	IP20
Dimensions (W x H x D)	210 x 65 x 140 mm

Further details and order information are available on request.

JI-PC 602 | 603

Product brief

The industrial PC JI-PC 602 | 603 combines compact design with optimum performance. It can reliably handle any automation task thanks to a large number of interfaces and scalable CPU performance. Expansion slots enable the connection of standard fieldbuses. The JI-PC 602 | 603 can be operated directly in the control cabinet thanks to its 24 V power supply.

Features

- Compact
- PCIe
- 24 V power supply
- Fanless (Intel® Core™ i5)



	JI-PC 602	JI-PC 603
Processor	Intel® Core™ i5, i7	Intel® Core™ i5, i7
Memory	8 GB	16 GB
Graphics display resolution	Full HD (1920x1080)	Full HD (1920x1080)
Ports and interfaces	3 Ethernet ports 10/100/1000 2x USB 3.0 2x USB 2.0 1x RS-232 1x DisplayPort	3 Ethernet ports 10/100/1000 2x USB 3.0 2x USB 2.0 1x RS-232 1x DisplayPort
Internal disk drives	2x mSATA 2x 2.5" SATA SSD/HDD 1 SD card slot	2x mSATA 2x 2.5" SATA SSD/HDD 1 SD card slot
Operating voltage	DC 24 V	DC 24 V
Expansion slot	2x PCIe 2x mPCIe (internal)	1x PCIe 2x mPCIe (internal)
Operating system	Windows® 7, WES7®, Windows® 8.1 Ind.	Windows® 7, WES7®, Windows® 8.1 Ind.
Operating temperature	0 ... 50 °C	0 ... 50 °C
Degree of protection	IP20	IP20
Dimensions (W x H x D)	155 x 324 x 210 mm	130 x 324 x 210 mm

Further details and order information are available on request.

Servo amplifiers



The JetMove series is available in various rated currents and supply voltages.



Common to all devices is the high level of positioning accuracy and the possibility to operate various motor types with different encoders.

The integrated motion GUI allows you to get your motion systems up and running quickly and easily using our JetSym programming software.

JetMove-1005 | 1008

Product brief

The JetMoves JM-1005 and JM-1008 are servo amplifiers for controlling motors from DC 24 ... 48 V up to 384 Watts with or without encoder in connection with Jetter controllers via EtherCAT® or CANopen®.

Features

- Compact design
- High positioning accuracy and quality of control
- Integrated safety technology
- Digital encoder interfaces for 1-cable technology
- Simple commissioning
- Quick installation and wiring

Options

- I4 = CANopen®
- TD = HDSL® Interface
- TL = LinMot® encoder (in preparation)
- TE = EnDat 2.2® (digital, in preparation)
- T6 = Analog output +/-10 V (in preparation)

A great number of features with Jetter JC ... MC

- Electronic gearbox
- Dynamically changeable cam discs
- Synchronizing of position and velocity
- Print-mark correction
- Winding function
- Flying saw
- Cross cutter
- Torque / force control

Application in many sectors, such as

- Packaging and filling
- Mounting and handling
- Glass and window building machines



Motor and encoder types

- Synchronous, asynchronous motors
- direct drives, linear motors
- BLDC, DC motors
- 2-phase stepper motors
- Resolver, incremental encoder, hall sensor (digital)
- HIPERFACE DSL®, EnDat 2.2®, LinMot®

	JetMove 1008	JetMove 1005
Cycle times for current, speed and position feedback control	62.5 µs, 125 µs, 250 µs	
Controller interfaces	EtherCAT® or CANopen®	
Diagnostics / status display of device and bus	via colored LEDs	
Address settings and bus termination of CANopen®	via address and DIP switch	
Motor types	Synchronous and asynchronous motors, direct drives, linear motors, BLDC-, DC -, 2-phase stepper motors	The same motors as JM-1008, resolver cannot be used as an encoder
Encoder types - Basics	Resolver; incremental encoder (RS422 max. 500 kHz or SinCos 1 Vpp max. 100 kHz, 5 V Udc); digital Hall sensor, level: 5 volts	Incremental encoder (RS-422 500 kHz max., or sin/cos 1 Vpp 100 kHz max, 5 V Udc); digital Hall encoder, level: 5 volts
Optional encoders	HIPERFACE DSL®, EnDat 2.2®; LinMot® (with option HDSL or LinMot no more resolver possible)	HIPERFACE DSL®, EnDat 2.2®, LinMot®
Thermal sensor, shutdown	Switch, PTC, KTY83-110, KTY84-130, PT-1000; I2t-shutdown	
Digital inputs	4, DC 24 V, 5 mA, to be freely configured, reaction time 250 µs	
Analog inputs	2, -10 ... +10 V, 12 bits, 1 ms sampling interval	
STO input	2, DC 24 V, 5 mA + 1 feedback relay (< 100 mA), Kat 3, PL "e"	
Brake output	1 relay, DC 24 V max., 500 mA (semiconductor)	
Ballast resistor	Option: external	
Supply voltage - logic circuit	DC 24 V (±20 %), 300 mA	
Supply voltage - power circuit	DC 24 ... 48 V (±20 %), 10 Ampere max.	
Rated current [A] at 16 kHz	8	5
Peak current [A] 16 kHz for a max. period of 8 seconds	16	10
Continuous power [kW]	0.384	0.24
Weight [kg]	0.41	0.4
Dimensions [H x W x D] in mm	26 x 142 x 95	
Color (Front)	Steel plate, galvanized	
Housing	Steel plate, galvanized	
EMC directive	EMC Directive 2014/30/EU	
Approvals	CE	
Conformity to RoHS	Yes	
Degree of protection	IP20	
Height of installation	Operation: 1,000 m max., higher upon request	
Shock/vibration – transport	2M2 to EN 60721-3-2: 1997	
Vibration - operation	Sine-shaped, 10 ... 57 Hz: 0.075 mm amplitude, 57 ... 150 Hz Acceleration 1 g	
Ambient temperature - operation / transport (warehouse)	0 °C ... +40 °C / -25 °C ... +70 °C (+55 °C)	
Ambient air humidity - operation / transport	5 %... 85 %, non-condensing / 5 % ... 95 %, non-condensing	
Maximum storage period	1 year without restrictions	

Further details and order information are available on request.

JetMove 1000 series

Product brief

The servo amplifier series JetMove 1000 series is a single-axis system. All of these devices are noted for their compact design, which means they take up very little space whether installed in the control cabinet or directly integrated into machinery. JetMove servo amplifiers are designed to provide a high level of continuous power and to guarantee highly dynamic acceleration processes through high rated currents and triple peak currents. Bus connection is via EtherCAT®.

Features

- Compact design
- High positioning accuracy
- EtherCAT® bus connection
- Integrated safety technology
- User-friendly features:
 - Autom. control loop optimization
 - Cogging compensation
 - Load cycle compensation
- Supported motor types:
 - Synchronous and asynchronous motors
 - Direct drives
 - Torque and linear motors
- Simple commissioning

Options

- HIPERFACE DSL®
- Braking resistor



JetMove 1206	
Type of connection	1-/3-phase, AC 230 V
Rated current at 8 kHz (A)	6/6
Peak current at 8 kHz (A)	12/18
Continuous power (kW)	1
Weight (kg)	1.5
Dimensions (W x H x D)	55 x 235 x 190 mm
Safety function S1 STO (SIL3, PL e)	Integrated
Controller interfaces	EtherCAT®
Motor encoder interfaces	Resolver, HIPERFACE®; SinCos; EnDat 2.1, 2.2; incremental encoder; SSI; option: HIPERFACE DSL®
Motor types	Synchronous and asynchronous motors, direct drives, torque and linear motors

Further details and order information are available on request.



	JetMove 1404	JetMove 1407	JetMove 1416	JetMove 1432
Type of connection	3-phase, AC 400 V	3-phase, AC 400 V	3-phase, AC 400 V	3-phase, AC 400 V
Rated current at 8 kHz (A)	3.5	6.5	16	32
Peak current at 8 kHz (A)	10.5	19.5	48	64
Continuous power (kW)	1.5	3	7	15
Weight (kg)	1.5	2.8	5.9	7.5
Dimensions (W x H x D)	55 x 235 x 190 mm	55 x 315 x 240 mm	90 x 315 x 240 mm	171 x 355 x 224 mm
Safety function S1 STO (SIL3, PL e)	Integrated			
Controller interfaces	EtherCAT®			
Motor encoder interfaces	Resolver, HIPERFACE®, SinCos; EnDat 2.1, 2.2; incremental encoder; SSI; option: HIPERFACE DSL®			
Motor types	Synchronous and asynchronous motors, direct drives, torque and linear motors			

Further details and order information are available on request.

JetMove 3000 series

Product brief

The servo amplifiers of the JetMove 3000 series can be built and expanded in a modular fashion. The amplifier modules are connected to the supply unit via a rail system. Any servo amplifier of the JetMove 3000 series is available with a choice of 1-, 2- or 3-axis modules. This allows the creation of an individual, high-performance, multi-axis coordinated motion system. High rated currents and triple peak currents guarantee highly dynamic acceleration processes. Bus connection is via EtherCAT®.

Features

- Modular design
- Flexible power bus system
- Compact design
- Up to three axis modules per device
- High positioning accuracy
- EtherCAT® bus connection
- User-friendly features:
 - Autom. control loop optimization
 - Cogging compensation
 - Load cycle compensation
- Integrated safety technology
- Supported motor types:
 - Synchronous and asynchronous motors
 - Direct drives
 - Linear motors
- Simple commissioning

Options

- HIPERFACE DSL®
- Cold plate cooling
- Braking resistor (supply unit)



	JetMove 3P10	JetMove 3P22
Type of connection	3-phase, AC 400 V	3-phase, AC 400 V
Continuous power (kW)	10	22
Peak power (kW)	20	44
Dimensions (W x H x D)	55 x 310 x 241 mm	110 x 310 x 241
Weight (kg)	2.6	5.2

Further details and order information are available on request.

	JetMove 3506	JetMove 3512	JetMove 3518	JetMove 3524	JetMove 3532
Type of connection	DC 565 V	DC 565 V	DC 565 V	DC 565 V	DC 565 V
Rated current at 4 kHz (A)	6	12	18	24	32
Peak current at 4 kHz (A)	18	36	48	72	100
Weight incl. STO (kg)	2.6	2.7	2.7	4.5	4.5
Dimensions (W x H x D)	55 x 310 x 241 mm	55 x 310 x 241 mm	55 x 310 x 241 mm	110 x 310 x 241 mm	110 x 310 x 241 mm
Safety function S1 STO (SIL3, PL e)	Integrated				
Controller interfaces	EtherCAT®				
Motor encoder interfaces	Resolver, HIPERFACE®, SinCos; EnDat 2.1, 2.2; incremental encoder; SSI; option: HIPERFACE DSL®				
Motor types	Synchronous and asynchronous motors, direct drives, torque and linear motors				

	JetMove D3503	JetMove D3506	JetMove D3512	JetMove D3516
Type of connection	DC 565 V	DC 565 V	DC 565 V	DC 565 V
Rated current at 8 kHz (A)	2x 3	2x 6	2x 12	2x 16
Peak current at 8 kHz (A)	2x 9	2x 18	2x 36	2x 48
Weight incl. STO (kg)	2.6	2.75	4.3	4.3
Dimensions (W x H x D)	55 x 310 x 241 mm	55 x 310 x 241 mm	110 x 310 x 241 mm	110 x 310 x 241 mm
Safety function S1 STO (SIL3, PL e)	Integrated			
Controller interfaces	EtherCAT®			
Motor encoder interfaces	Resolver, HIPERFACE®, SinCos; EnDat 2.1, 2.2; incremental encoder; SSI; option: HIPERFACE DSL®			
Motor types	Synchronous and asynchronous motors, direct drives, torque and linear motors			

	JetMove T3503	JetMove T3506	JetMove T3512
Type of connection	DC 565 V	DC 565 V	DC 565 V
Rated current at 8 kHz (A)	3x 3	3x 6	3x 12
Peak current at 8 kHz (A)	3x 9	3x 18	3x 36
Weight incl. STO (kg)	2.8	2.8	4.5
Dimensions (W x H x D)	55 x 310 x 241 mm	55 x 310 x 241 mm	110 x 310 x 241 mm
Safety function S1 STO (SIL3, PL e)	Integrated		
Controller interfaces	EtherCAT®		
Motor encoder interfaces	Resolver, HIPERFACE®, SinCos; EnDat 2.1, 2.2; incremental encoder; SSI; option: HIPERFACE DSL®		
Motor types	Synchronous and asynchronous motors, direct drives, torque and linear motors		

Further details and order information are available on request.

JetMove 200 series

Product brief

The servo amplifier series JetMove 200 covers the complete voltage range from 1-phase AC 230 V to 3-phase AC 400 V. They can handle currents of up to 25 A. The servo amplifiers support all major motor types and offer space-saving installation due to their compact design.

Features

- 1-phase, AC 230 V up to 3-phase, AC 400 V
- 3 ... 25 A
- Supported motor types:
 - Synchronous and asynchronous motors
 - 3-phase stepper motors
 - Direct drives
 - Linear motors
- Great number of integrated technological and special motion functions:
 - Electric gearbox
 - Table function/cam disc
 - Dynamically switchable tables
 - Position and speed synchronization
 - Print mark correction
 - etc.



	JetMove 203B	JetMove D203	JetMove 206B
Type of connection	1-/3-phase, AC 230 V	1-phase, AC 230 V	1-/3-phase, AC 230 V
Rated current (A)	3	2x 3	6
Peak current (A)	6	2x 6	12
Continuous power (kW)	0.5	2x 0.5	1.0
Ports and interfaces	JX2 system bus		
Safe torque off	Option	Option	-
Controller JC-310	or Ethernet 10/100 Mbit	-	or Ethernet 10/100 Mbit
Analog input	Option	-	Option
Counter input	Option	-	Option
Emulator	Option	-	Option
Weight incl. STO (kg)	1.6	2.5	3
Dimensions (W x H x D)	55 x 220 x 233 mm	87 x 310 x 203 mm	70 x 254 x 260 mm

Further details and order information are available on request.



	JetMove 204	JetMove 208	JetMove 215B	JetMove 225
Type of connection	3-phase, AC 400 V	3-phase, AC 400 V	3-phase, AC 400 V	3-phase, AC 400 V
Rated current (A)	4	8	15	25
Peak current (A)	8	16	30	50
Continuous power (kW)	2	4.5	5.5	7
Ports and interfaces	JX2 system bus			
Safe torque off	Option			
Controller JC-310	or Ethernet 10/100 Mbit			
Analog input	Option	Option	Option	Option
Counter input	Option	Option	Option	Option
Emulator	Option	Option	Option	Option
Weight incl. STO (kg)	4.2	4.3	6.8	7.1
Dimensions (W x H x D)	72 x 310 x 280 mm	72 x 310 x 280 mm	105 x 310 x 280 mm	105 x 310 x 280

Further details and order information are available on request.

JetMove 105

Product brief

The JetMove 105 has especially been designed for the voltage range from DC 12 to 48 V (up to 384 W). This servo amplifier supports all major motor types and offers space-saving installation due to its compact design.

Features

- DC 12 ... 48 V
- 5 A
- Supported motor types:
 - Synchronous and asynchronous motors
 - 2-phase stepper motors
 - Direct drives
 - DC and BDC motors
 - Linear motors
- Great number of integrated technological and special motion functions:
 - Electric gearbox
 - Table function/cam disc
 - Dynamically switchable tables
 - Position and speed synchronization
 - Print mark correction
 - Winding function
 - Flying saw
 - Cross cutter
 - Torque/force control



JetMove 105	
Rated motor voltage	DC 12 ... 48 V
Rated current (A)	5
Peak current (A)	10
Rated output (W)	240
Rated logic circuit voltage	DC 24 V
1 digital output (brake)	0.5 A; DC 24 V
1 analog input	0 ... 10 V (12 bits)
Ports and interfaces	JX2 system bus
Ambient temperature	0 ... 40 °C
Weight incl. STO (kg)	0.3
Dimensions (W x H x D)	26 x 136 x 96 mm

Further details and order information are available on request.

JetMove 108

Product brief

The JetMove 108 has especially been designed for the voltage range from DC 12 to 48 V (up to 384 W). This servo amplifier supports all major motor types and offers space-saving installation due to its compact design.

Features

- DC 12 ... 48 V
- 8 A
- Supported motor types:
 - Synchronous and asynchronous motors
 - 2-phase stepper motors
 - Direct drives
 - DC and BDC motors
 - Linear motors
- Great number of integrated technological and special motion functions:
 - Electric gearbox
 - Table function/cam disc
 - Dynamically switchable tables
 - Position and speed synchronization
 - Print mark correction
 - Winding function
 - Flying saw
 - Cross cutter
 - Torque/force control



JetMove 108	
Rated motor voltage	DC 12 ... 48 V
Rated current (A)	8
Peak current (A)	16
Rated output (W)	384
Rated logic circuit voltage	DC 24 V
1 digital output (brake)	0.5 A; DC 24 V
1 analog input	0 ... 10 V (12 bits)
Ports and interfaces	JX2 system bus
Ambient temperature	0 ... 40 °C
Weight incl. STO (kg)	0.3
Dimensions (W x H x D)	26 x 136 x 96 mm

Further details and order information are available on request.

Motion Control eXtended - more than movement _____





The integration of axis functions into the controller is an essential feature of Jetter's automation solutions. This makes point-to-point positioning (PtP), technology functions (MC), as well as path control and ro-

bot functions easy to realize. This universal motion controller is called Motion Control eXtended (MCX).

Moving and controlling precisely with MCX

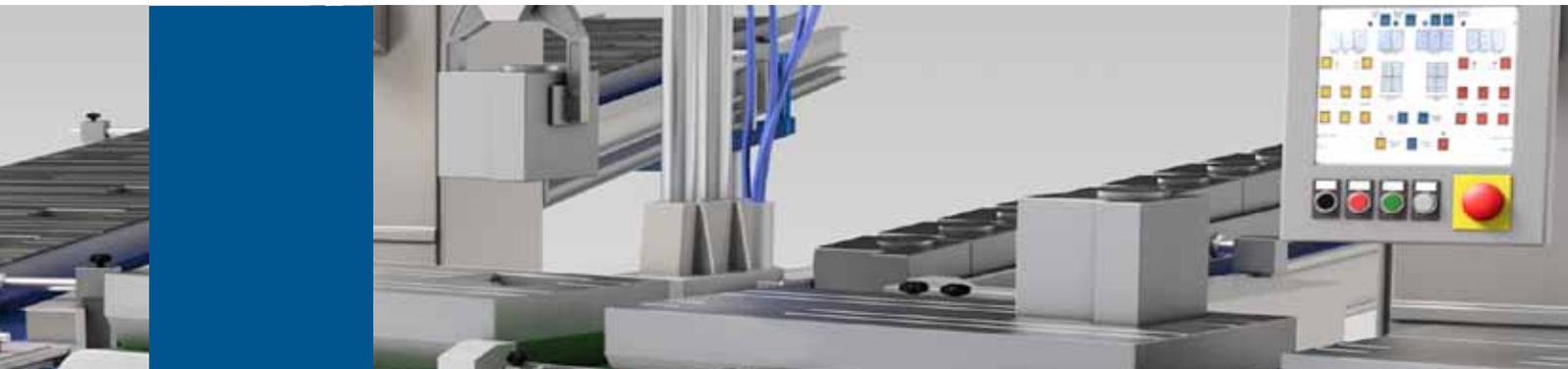


The possibilities for using MCX motion control are almost unlimited. MCX technology has all the advantages whenever complex motion sequences and production specifications meet. MCX's seamless integration into Jetter AG's control systems enables an optimal economic implementation of all processes such as for:

- Screw capping machines
- Winding machines
- Wood, plastic, glass, and stone machining
- Textile machinery
- Packaging systems
- Handling and assembly systems
- Robot kinematics
- Palletizing systems
- Special-purpose machines

MCX features

- Centralized generation of all command positions for single axes and axis groups
- Seamless integration into the controller
- Interface for kinematic transformations
- Jerk control to minimize machine vibrations
- Online generation of cam discs
- Combination of technology and path groups
- Cascading of axis groups
- Programming using SI units
- Consideration of mechanical parameters



Technology group

Line shaft

- Virtual leading axis
- External encoder as leading axis
- Cascaded groups
- Programming the whole group via leading axis
- Dynamic coupling and decoupling of following axes
- Print mark for high-precision position correction

Electronic gearbox

- Gear ratio can be changed dynamically
- Superimposed motions in the electronic gearbox

Electronic cam disc

- Segments: Polynomials 1, 3, 5, 7 (jerk-free transition); sine
- Definition via coefficients or marginal conditions
- Flexible activation of segments depending on the position of the leading/following axis or with immediate effect
- Scaling and shifting the areas of definition during operation

Path group (Tool Center Point programming)

- Cartesian (3 spatial axes, 2 axes for orientation)
- SCARA (4 axes)
- 2D delta
- Buffered operation (number of buffers: 96)
- Look-ahead function
- Smoothened coupling (optimum velocity profile)
- Block-synchronous events
- Coupling an axis group with a leading axis
- Linear
- 2D circle
- 3D circle
- Helix
- Spline interpolation
- Gantry axis pair
- Shifting in axial direction via offset

The MCX hardware and software package

Controllers with MCX feature

You can select your JetControl controller with MCX functionality from a scalable platform. Suitable servo amplifiers of the Jet-Move series with 250W to 15 kW of continuous power and servo motors with gearbox round off the system perfectly.

JetControl 365MC

- Up to 12 axes
- 4 path groups
- 6 technology groups
- 24 cam discs/100 segments

JetControl 440MC

- Up to 12 axes
- 4 path groups
- 6 technology groups
- 24 cam discs/100 segments

JetControl 94xMC

- Up to 64 axes
- 50 path groups
- 100 technology groups
- 24 cam discs/100 segments

JetControl 97xMC

- Up to 64 axes
- 50 path groups
- 100 technology groups
- 24 cam discs/100 segments
- Integrated IPC with Windows OS

Servo amplifiers

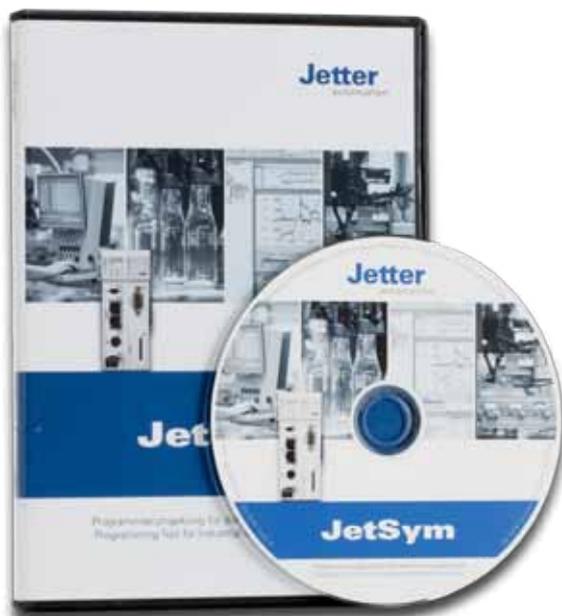
You will find the right servo amplifier from Page 76 of this catalog.

Servo motors

You will find the right servo motor from Page 94 of this catalog.

JetSym

The programming tool for all Jetter AG controllers.



JetSym, the IDE for all automation functions, fully supports your MotionControl tasks.

JetSym supports you with

- a project wizard with library management
- a hardware manager that allows you to put complete axis groups into operation without having to write a line of program code
- an oscilloscope function to optimize axis movements
- STX, the programming language that lets you seamlessly find your axes and axis groups in your control program and use them as easily as a digital output

Servo motors



Going with the JetMove servo amplifiers are Jetter motors featuring DC link voltages of DC 24 to 560 V and a great selection of motor windings.



Going with the servo amplifiers of the JetMove series are Jetter motors featuring DC link voltages of DC 24 to 560 V and a great selection of motor windings.

The optimum speed can be realized with the right combinations. This enables you to also make the best possible use of the rated current of each servo amplifier. All Jetter AG servo motors are extremely rugged 3-phase synchronous motors with UL certification. They are available in several series: JL, JHN and JHQ.

Numerous options for connector outlets, degrees of protection and encoder design are available. Along with this comprehensive range of motors, we offer pre-fabricated and tested servo cables and corresponding gearboxes. Both JHQ and JHN motors are featuring 1-cable technology, when they are connected with JM-1000 and JM-3000 servo amplifiers. This reduces the amount of engineering needed and above all saves machine space.

Motor series JL | JHN | JH | JHQ

Product brief

JL motors

JL motors cover the range from 0.1 Nm (JL1) to 115 Nm (JL8). They feature classic winding technology.

JHN motors

JHN motors' segment winding technology is automated, and the motor structure is additionally optimized. As a result, a high power density can be achieved with a very compact design. The motors are available in sizes 2 to 7 with 0.28 Nm to 60 Nm.

JHQ motors

The JHQ motors comprise frame sizes 2-5 (JH) and 2-8 (JL). Further they have got two intermediate sizes, 23 and 45. Their high torque constant makes them an alternative to the so far used JL and JH motors if an adequate quantity of them is ordered.

Advantages

All of the motors (except for JL1) have UL certification for the USA and Canada and can therefore be exported to those countries.

They also have reduced circular runout tolerance as standard, resulting in a smooth-running system.

All motors are wound to best suit Jetter servo amplifiers and their DC link voltages (or supply voltages), which noticeably improves system efficiency.

JHN motors excel in terms of highly compact design combined with high torque. This allows for installation in smaller machines.

	Flange 1
CE and UL certification (USA + Canada), cURus	-
Isolation class F, 2-pin resolver	x
Temperature monitoring	PTC
Degree of protection	IP64
Runout tolerance to DIN 42955 (for option JHQ)	R
Mo JL series (Nm)	0.1 ... 0.2
Mo JHN series (Nm)	-
Mo JHQ series (Nm)	-
Length (incl. resolver, without brake) JL (mm)	81 ... 111
Length (incl. resolver, without brake) JHN (mm)	-
Length (incl. resolver, without brake) JHQ (mm)	-
Flange size/centering/hole circle JL (mm)	37/25/41.5
Flange size/centering/hole circle JHN (mm)	-
Flange size/centering/hole circle JHQ (mm)	-
Shaft JL (mm)	6 x 16
Shaft JHN (mm)	-
Shaft JHQ (mm)	-
Option: Brake, keyway to DIN 6885 (for JL, JHN, JHQ)	x
Option: Degree of protection IP67 with shaft seal (for JL, JHN, JHQ)	-
Option HIPERFACE® SEx37, SKx36, SEx52, SRx50 (starting from flange size 3) (for JL, JHN, JHQ)	-
Option HIPERFACE DSL® EEEx37, EKx36 (for JHQ)	-
Connector output option: Drive end, non-drive end, rotatable (for JL, JHN, JHQ)	-
Option Potentially explosive areas ATEX zone 2 and 22: II 3G Ex nA IICT155 °C / II 3D Ex tc IICT135 °C (for JL, JHN, JHQ)	-
Electrical connection option: Cable screw connection, cable, connector (for JL, JHN, JHQ)	x
Options: Special shafts, other encoders, reinforced bearings, special ball-bearing grease, separately driven fan, etc.	On request

Flange 2	Flange 23	Flange 3	Flange 4	Flange 45	Flange 5	Flange 6	Flange 7	Flange 8
x	x	x	x	x	x	x	x	x
x	x	x	x	x	x	x	x	x
KTY83-110	x	KTY83-110	KTY83-110	x	KTY83-110	KTY83-110	KTY83-110	KTY83-110
IP64/IP65	x	IP65	IP65	x	IP65	IP65	IP65	IP65
R	R	R	R	R	R	R	R	R
0.2 ... 0.8	-	0.65 ... 3.0	5.3 ... 7.5	-	10.5 ... 22.0	19.0 ... 29.0	32.0 ... 40.0	40.0 ... 115.0
0.28 ... 0.95	-	1.15 ... 4.8	5.1 ... 11.3	-	12.0 ... 24.0	18.0 ... 44.0	30.0 ... 60.0	-
0.25 ... 1.25	0.6 ... 3.0	1.35 ... 4.5	4.0 ... 10.0	6.0 ... 14.0	4.5 ... 26.0	20.0 ... 28.0	36.0 ... 42.0	42.0 ... 73.0 81.0 ... 120.0
98 ... 143	-	109 ... 181	176 ... 221	-	226 ... 311	242 ... 317	264 ... 294	310 ... 514
67 ... 112	-	82 ... 172	113 ... 203	-	157 ... 247	158 ... 258	181 ... 271	-
87 ... 135	112 ... 182	122 ... 180	150 ... 214	168 ... 233	148 ... 298	195 ... 218	240 ... 263	293 ... 493
55/40/63	-	86/80/100	98/95/115	-	142/130/165	190/180/215	190/180/215	240/265/230
55/40/63	-	86/80/100	98/95/115	-	142/130/165	190/180/215	190/180/215	-
58/40/63	70/60/75	91.3/80/100	100/95/115	116/110/130	142/130/165	190/180/215	190/180/215	240/265/230
9 x 24	-	14 x 30	19 x 40	-	24 x 50	24 x 50	28 x 58	38 x 80 42 x 110
9 x 20	-	14 x 30	19 x 40	-	24 x 50	24 x 50	28 x 58	-
9 x 20	11 x 23 14 x 30	14 x 30	19 x 40	19 x 40 24 x 50	24 x 50	24 x 50	28 x 58	38 x 80 42 x 110
x	x	x	x	x	x	x	x	x
x	x	x	x	x	x	x	x	x
x	x	x	x	x	x	x	x	x
x	x	x	x	x	x	x	x	x
x	x	x	x	x	x	x	x	x
x	x	x	x	x	x	x	x	x
x	-	-	-	-	-	-	-	-

On request

Further details and order information are available on request.

Professional Services



Jetter AG provide professional services for the entire field of mechanical and plant engineering. The choice is yours: You can have us manage your entire project, or you can allow us to contribute our know-how for specific solutions.



Our services at a glance:

- Consulting | Project management
- Controller programming services
- Creation of visualization applications
- Electrical engineering | Control cabinet production
- Service | Maintenance
- Training
- Retrofit



Take the easy option and let our experts advise you from the very start. As part of our project management process, we'll work with you to identify which system, which partial or complete solution with which device, best suits your needs.

Consulting and management

- End-to-end project management
- Use of standard project management software
- Conceptual design and project planning (centralized, decentralized), dimensioning of project-specific drive technology
- Path, movement and energy optimization
- Creating the safety concept: Selecting safety components
- Selecting sensors, actuators and motors, as well as suitable automation components
- Procuring all necessary components

Controller programming

- Structured text programming to IEC 61131-3-(ST)
- Programming of third-party systems
- Conceptual design and development of software structures
- Development of programming concepts suitable for series production machinery including version management, update functions and variant handling
- Complete function test and acceptance

Creation of visualization applications

- Visualization using your own or standard visualization software
- Alarm handling, recipe management, collection and further processing of order and PDA information
- Implementation of database integration
- Selection and programming of suitable user interfaces with key, mouse or touch operation
- Complete function test and acceptance



Electrical engineering and Control cabinet production

- Planning and optimizing production capacity
- Manufacturing control panels and cabinets
- Fabrication in accordance with current EN regulations
- CE certification with risk analysis | Preparation for UL certification
- Electrical design with Eplan | To UL guidelines as an option
- Planning and design according to current standards
- Creating wiring, terminal and cable diagrams

Service and maintenance

- Hotline | Telephone and e-mail support
- 24/7 stand-by support on request
- On-site repairs and replacements by our own service team
- On-line support with optional remote access
- Remote maintenance
- Risk analysis for end-of-life products
- Compatibility analysis for products and systems
- Maintenance contracts | Preventative maintenance
- Optional enhanced warranty offers

Training

- STX programming
- Drive technology/MC
- Visualization
- Service staff

Retrofit

- Upgrading existing machines to create a modern, powerful control system
- Seamless integration with the existing IT structure
- Coordination of conversion work with non-production times

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