Jetter
automation

Mobile Automation

Products and Services

We automate your success.

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We automate your success.

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Mobile Automation

Experience | Know-how | Made in Germany

For decades, the name Jetter AG has stood for highest demands on 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, firefighting, and agricultural vehicles. Thus, permanent availability of vehicles and implements is ensured.

Radical changes in industry caused by Industrie 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, such as, for example, end-of-line programming of vehicles. 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 best solution in terms of functionality, sustainability and efficiency.

HMIs


Jetter
43 Km/h
12:25 Uhr
Uhr / Datum
Hintergrundfarbe
Sprachauswahl
DM1-Nachrichten
Lernmodus
Zurueck
0000332 Km
min⁻¹ x 1000
P x 2 bar

Jetter AG provide numerous HMIs for a wide range of requirements and applications. These devices especially distinguish themselves by their diversity of individualization options, as well as by their large number of interfaces.

JetViewMobile 104

Product brief

With its compact design and rugged enclosure the JVM-104 is an ideal HMI for any application of mobile machinery.

It is equipped with a powerful controller which can be expanded by additional I/O connections, as well as by one Ethernet and one USB port. This device saves you an extra controller for many applications.

The standard operation by means of four backlit keys can be extended by a digipot used as pushbutton or by touchdisplay.

The built-in light sensor perfectly adapts the illumination of the display to the brightness of the surroundings.

Features

- Display with built-in controller 32 bits/500 MHz
- Flexible expandability
- High connectivity
- Customizable
- Available either as a flush mount or as surface mount model

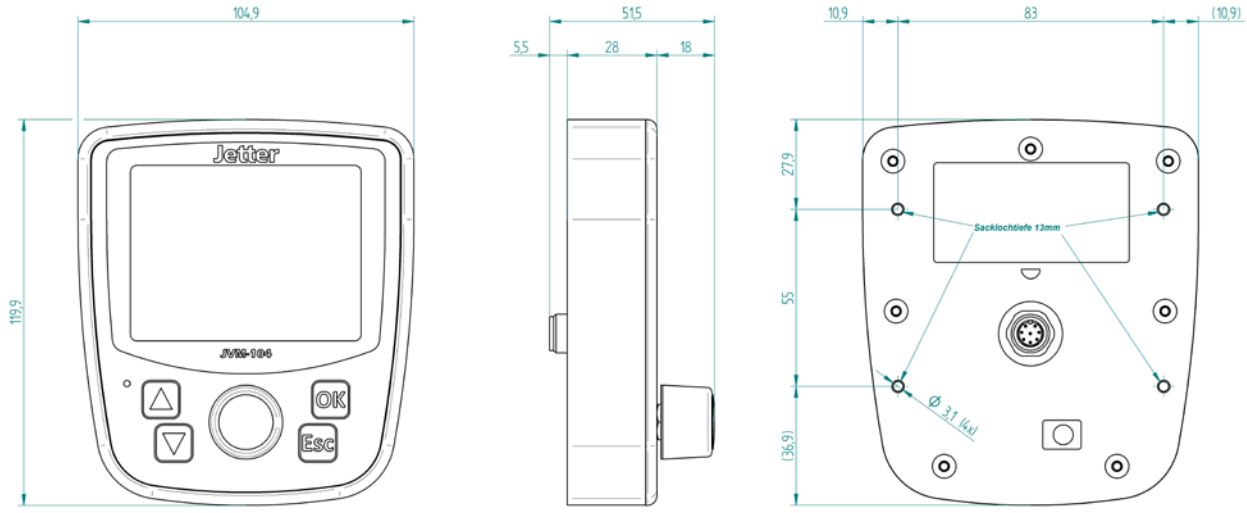
	JVM-104	
Display	3.5" TFT with LED backlight	
Display resolution and brightness	320 x 240 pixels (QVGA); 350 cd/m² (dimmable)	
CPU	iMX 35, 32 Bit, 500 MHz	
Memory: RAM - Application - Non-volatile	128 MB RAM – 512 MB Flash – 128 kB MRAM	
Programming	Graphics: JetViewSoft - Logic circuit: IEC61131-3 STX	
Operating system	WinCE 6.0	
Operating voltage	DC 8 ... 32 V	
Operating/storage temperature	-20 ... +65 °C/-30 ... +85 °C	
Ports and interfaces:		
▪ CAN	1 (2)	CANopen®, SAE J1939, ISOBUS 11783 (option: 2nd port)
▪ USB	1	(option)
▪ Ethernet	1	(option)
Control elements	Up to 8	Membrane pushbuttons, backlit
	1	Digipot - pushbutton function (option)
	1	Touch display (option)
Acoustic signaling	1	Buzzer 83 dB/10 cm/2670 Hz
Max. number of inputs/outputs	6	(option: enclosure with Deutsch-DT connectors)
▪ Inputs (option)		
Analog	2	0 ... 15 V/0 ... 20 mA, can be configured individually, resolution: 12 bits, input impedance: 50 kΩ, load resistor: 120 Ω Alternative usage: ▪ Digital input active-high, input impedance 50 kΩ ▪ Frequency input 0.1 ... 10 kHz, period > 1 µs, input impedance 20 kΩ ▪ Counting input 0.1 Hz - 10 kHz, counting range 32 bits
▪ Outputs (option)		
H-bridge	2	2.5 A; peak current 5 A (500 ms) Alternative usage: ▪ 4x PWM 2.5 A; 100 Hz ... 1 kHz, diagnostics capability ▪ 4x digital output 2.5 A , high-side, diagnostics capability ▪ 4x digital input active-high, NAMUR support, 8.2 V at 1 kΩ pull-up
Max. permitted total current	12 A fully equipped with I/Os	
Degree of protection	IP65 front/IP65 rear with rear-side Ethernet/USB port: IP20	
Vibration	DIN EN 60068-2-64, Cat. 2	
Shock	DIN EN 60068-2-64, 30g	
Protection against polarity reversal	Yes	

Further details and order information are available on request. Specifications are subject to change without notice. Errors and omissions excepted.

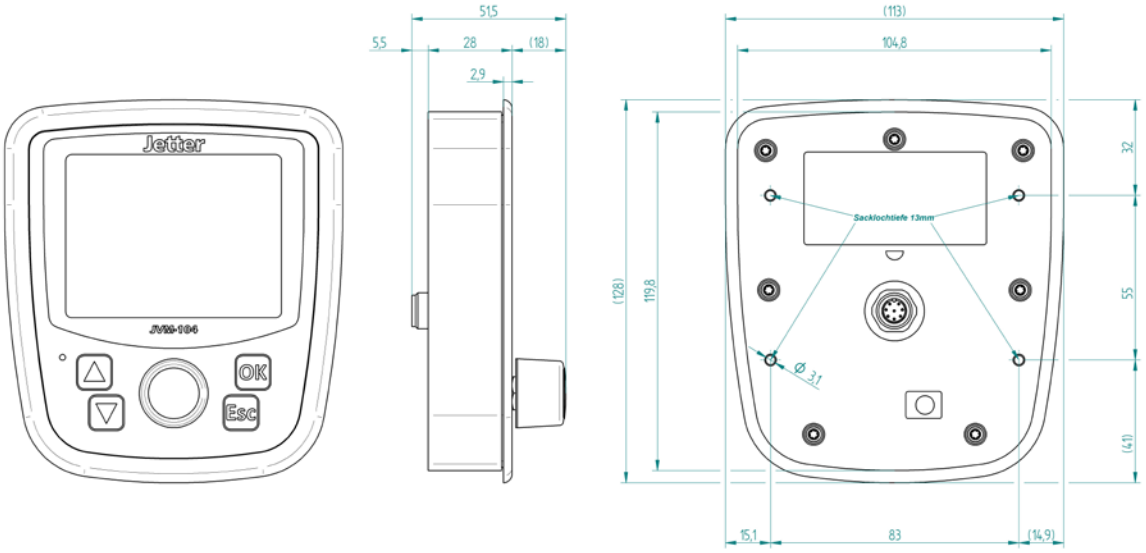
JetViewMobile 104

Dimensional drawing

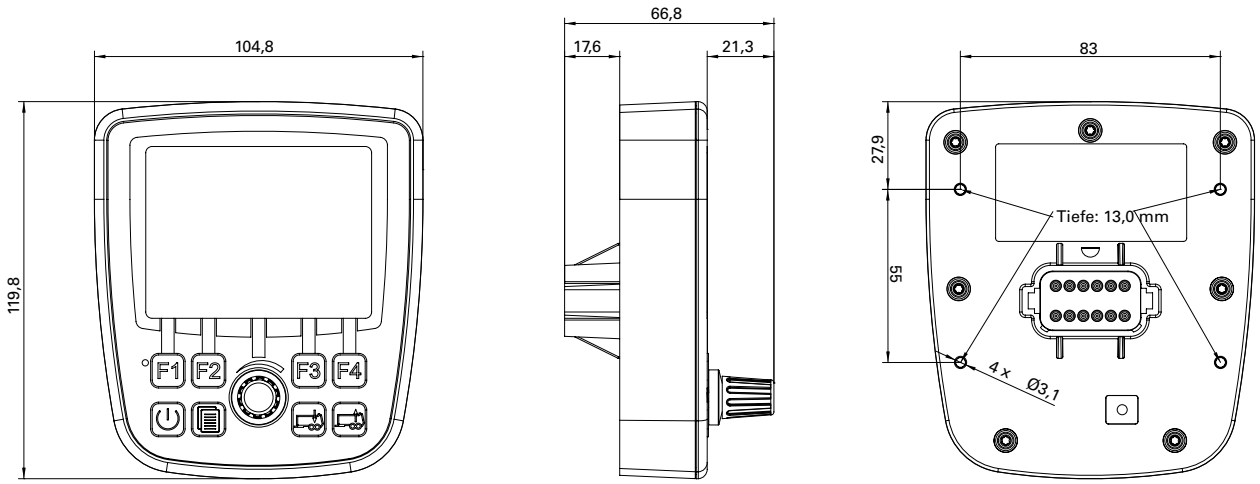
Surface mount model



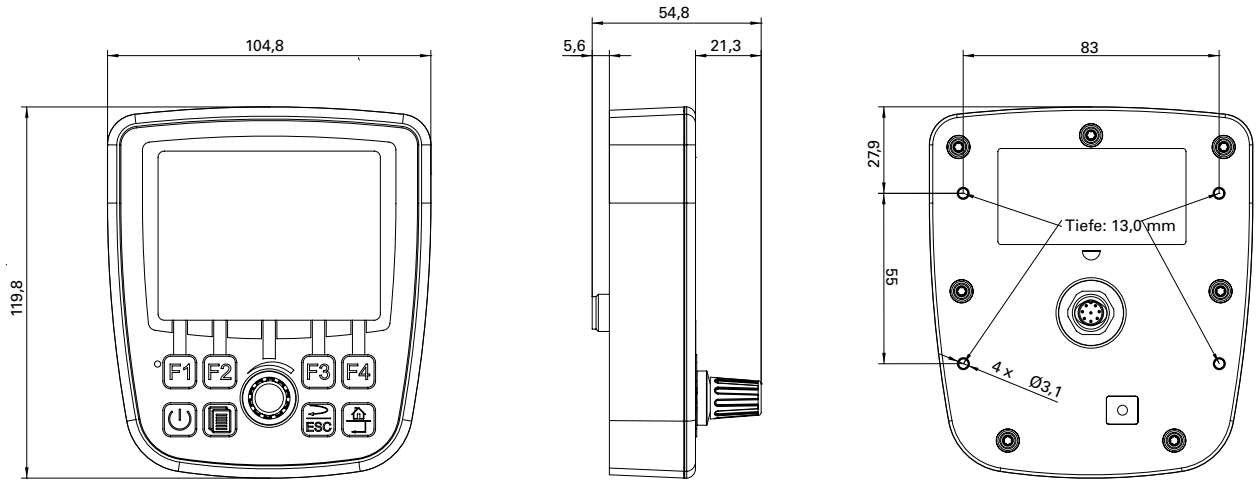
Flush mount model



Model with Deutsch connector



Model with M12 screw-type connector



JetViewMobile 104

Accessories

Dash mounts by RAM Mount

Connector pinout

JVM-104 - Basic version M12 - 8-pin, e.g. Lumberg RKCN 8/9	
Power supply - Logic unit - 2 A	1
n.c.	2
Power supply ON	3
n.c.	4
CAN1-L	5
Ground	6
CAN1_H	7
n.c.	8

JVM 104 - with I/O expansion Deutsch DT06-12S	
Ground	1
Output 1	2
Output 2	3
Output 3	4
Output 4	5
Power supply - Logic unit - 2 A	6
Power supply - Power outputs 10 A	7
Power supply ON	8
CAN1_L	9
CAN1_H	10
Analog input 1	11
Analog input 2	12

USB host interface, USB 2.0

Ethernet port, RJ45 jack

JVM 104 - with I/O expansion and second CAN Deutsch DT06-12S	
Ground	1
CAN2_L	2
CAN2_H	3
Output 3	4
Output 4	5
Power supply - Logic unit - 2 A	6
Power supply - Power outputs 10 A	7
Power supply ON	8
CAN1_L	9
CAN1_H	10
Analog input 1	11
Analog input 2	12

JetViewMobile 407B

Product brief

With its elegant and high-quality design, the JVM-407B HMI is a standout product and can be supplied both as flush mount or surface mount model.

Right and left of the 7" display, 10 LEDs have been arranged, which, thanks to an integrated controller within the HMI, can be directly operated by the user. This way, they can also be used as warning and control lights for cars; they even allow for the JVM-407B to be used as a fully-fledged dashboard.

The integrated controller of the HMI is equipped with multi-purpose interfaces and can therefore be used as a powerful master controller for medium-size systems. A video input allows for integrating a rear view camera.

The HMI is operated via four high-grade backlit keys, as well as a digipot used as pushbutton. The acoustic signaling device produces an alarm loud enough to be heard even in noisy surroundings. A USB port at the front side allows for simple data interchange in the field.

Features

- Display with built-in controller 32 bits/500 MHz
- 3 CAN ports, Ethernet, SD card and front-side USB port
- Video input
- Built-in car LED
- Elegant and high-value design
- Available either as a flush mount or as surface mount model

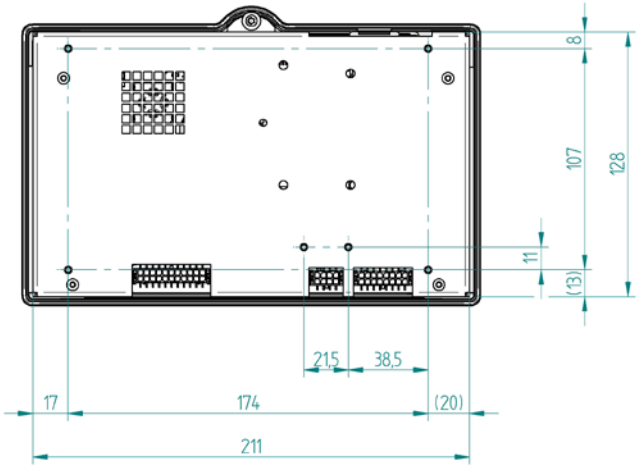
	JVM-407B	
Display	7" TFT with LED backlight	
Display resolution and brightness	800 x 480 pixels (WVGA); 300 cd/m² (dimmable)	
CPU	iMX 35, 32 Bit, 500 MHz	
Memory: RAM - Application - Non-volatile	128 MB RAM – 512 MB Flash – 128 kB MRAM	
Programming	Graphics: JetViewSoft - Logic circuit: IEC61131-3 STX	
Operating system	WinCE 6.0	
Operating voltage	DC 8 ... 32 V	
Operating/storage temperature	-20 ... +65 °C/-30 ... +85 °C	
Ports and interfaces:		
▪ CAN	3	CANopen®, SAE J1939, ISOBUS 11783
▪ USB	1	Front panel
▪ SD memory card	1	Rear panel
▪ Ethernet	1	
▪ CVBS	1	
Control elements	4	Keys, backlit
	1	Digipot used as pushbutton, backlit
Acoustic signaling	1	Buzzer
	10	LEDs of customized design
Inputs (option)		
▪ Digital	10	Switch input for LEDs, supply by Ub is possible
	5	Digital input active-high, input impedance 43 kΩ
Outputs (option)		
▪ Digital	1	Peak current 3 A
RTC	Yes, replaceable battery	
Degree of protection	Flush mount model: IP65 front/IP20 rear Surface mount model: IP65 front/IP54 rear	
Vibration	DIN EN 60068-2-64, Cat. 2	
Shock	DIN EN 60068-2-64, 30g	
Protection against polarity reversal	Yes	

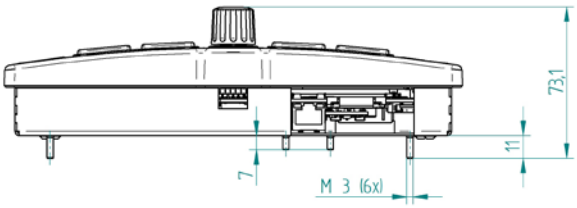
Further details and order information are available on request. Specifications are subject to change without notice. Errors and omissions excepted.

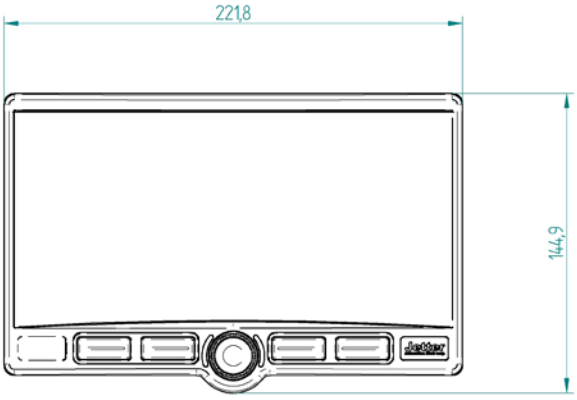
JetViewMobile 407B

Dimensional drawing

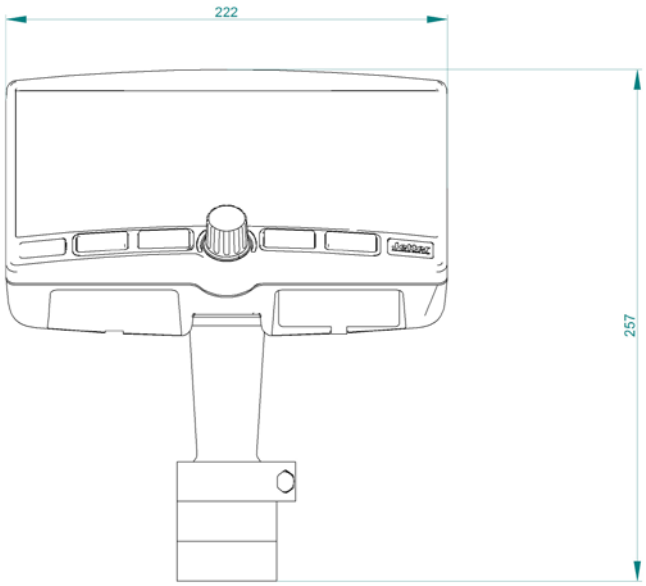
Flush mount model

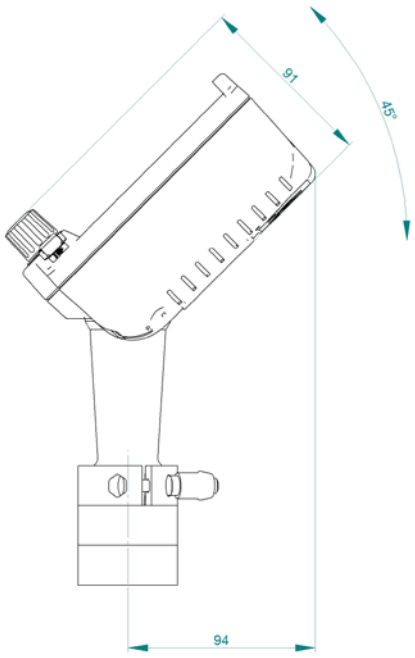






Surface mount model





Connector pinout

JVM-407B Molex Microfit 3.0 - 22-pin	
Power supply	1
Power supply ON	2
Output 1	3
LED 2	4
LED 4	5
LED 6	6
LED 8	7
LED 10	8
Input 2	9
Input 4	10
Ground	11
Power supply	12
Output 1	13
LED 1	14
LED 3	15
LED 5	16
LED 7	17
LED 9	18
Input 1	19
Input 3	20
Input 5	21
Ground	22

JVM-407B Molex Microfit 3.0 - 16-pin	
CAN1_H_IN	1
CAN1_Term	2
CAN1_L_OUT	3
CAN2_L_IN	4
CAN2_H_OUT	5
CAN3_H_IN	6
CAN3_Term	7
CAN3_L_OUT	8
CAN1_L_IN	9
CAN1_U_OUT	10
CAN2_H_IN	11
CAN2_Term	12
CAN2_L_OUT	13
CAN3_L_IN	14
CAN3_H_OUT	15
Shield	16

JVM-407B Molex Microfit 3.0 - 8-pin	
Supply voltage DC 12 V for the camera	1
Video signal +	2
Shield	3
Ground	4
Video signal -	5
Ground	6
Video signal -	7
n.c.	8

USB host interface, USB 2.0

Ethernet port, RJ45 jack

SD card slot, rear side

JetViewMobile 507B

Product brief

The HMI JVM-507B is equipped with a 7" display and 12 backlit buttons with symbols printed to customer's wishes. The keys have been arranged right and left of the display. As an option, the HMI can be supplied with a resistive touch screen. This way, highly flexible and comprehensive operating concepts can be implemented. The HMI has been designed for installation in a double DIN slot in the dashboard.

The integrated controller of the HMI is equipped with multi-purpose interfaces and can therefore be used as a powerful master controller for medium-size systems. Four video inputs allow for establishing high-level monitor applications.

A light sensor allows for automatically adjusting to display brightness and key backlighting. The acoustic signaling device produces an alarm loud enough to be heard even in noisy surroundings.

Features

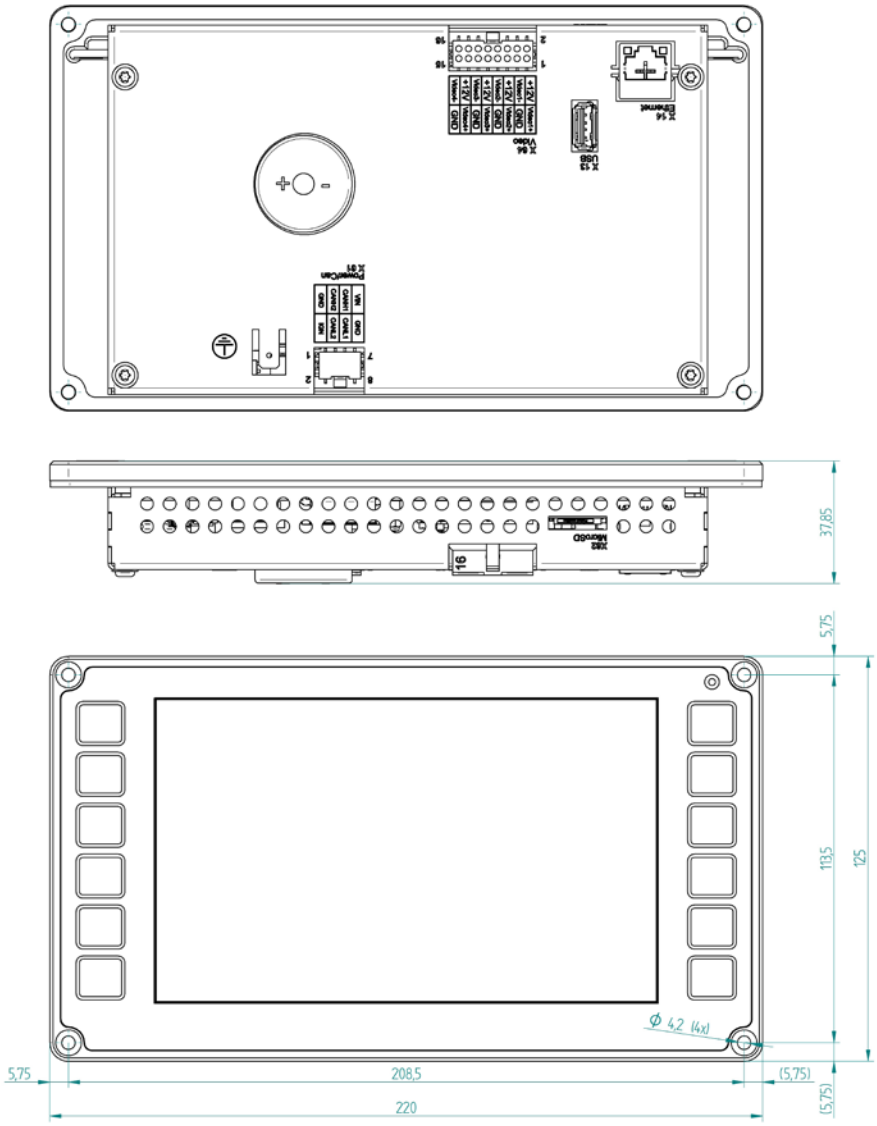
- Display with built-in controller 32 bits/500 MHz
- Labelable buttons
- 2 CAN ports, Ethernet, microSD card and USB port
- 4 video inputs
- Rugged aluminum front panel

	JVM-507B	
Display	7" TFT with LED backlight	
Display resolution and brightness	800 x 480 pixels (WVGA); 300 cd/m² (dimmable)	
CPU	iMX 35, 32 Bit, 500 MHz	
Memory: RAM - Application - Non-volatile	128 MB RAM – 512 MB Flash – 128 kB MRAM	
Programming	Graphics: JetViewSoft - Logic circuit: IEC61131-3 STX	
Operating system	WinCE 6.0	
Operating voltage	DC 8 ... 32 V	
Operating/storage temperature	-20 ... +65 °C/-30 ... +85 °C	
Ports and interfaces:		
▪ CAN	2	CANopen®, SAE J1939, ISOBUS 11783 - 125 kB/s to 1MB/s
▪ USB	1	
▪ microSD card	1	
▪ Ethernet	1	
▪ CVBS	4	
Control elements	12	Backlit buttons with symbols printed to customer's wishes
	1	Resistive touch (optional)
Acoustic signaling	1	Buzzer
RTC	Yes, replaceable battery	
Degree of protection	Flush mount model: IP65 front/IP20 rear Surface mount model: upon request	
Vibration	DIN EN 60068-2-64, Cat. 2	
Shock	DIN EN 60068-2-64, 30g	
Protection against polarity reversal	Yes	

Further details and order information are available on request. Specifications are subject to change without notice. Errors and omissions excepted.

JetViewMobile 507B

Dimensional drawing



Connector pinout

JVM-507B Molex Microfit 3.0 - 16-pin X64	
Video signal 1+	1
Supply voltage 12 V, camera 1	2
Ground	3
Video signal 1-	4
Video signal 2+	5
Supply voltage 12 V, camera 2	6
Ground	7
Video signal 2-	8
Video signal 3+	9
Supply voltage 12 V, camera 3	10
Ground	11
Video signal 3-	12
Video signal 4+	13
Supply voltage 12 V, camera 4	14
Ground	15
Video signal 4-	16

JVM-507B Molex Microfit 3.0 - 8-pin X61	
Ground	1
Ignition ON	2
CAN2_H	3
CAN2_L	4
CAN1_H	5
CAN1_L	6
Power supply	7
Ground	8

X13 USB host interface, USB 2.0

X14, Ethernet port, RJ-45 jack

X62 microSD card slot, rear side

JetViewMobile MT101

Product brief

The outstanding feature of the new monitor generation JVM-Mxxx is its brilliant displays of appealing design which are also readable in bright sunlight.

Coming as mere monitors of 4.3 to 15", the devices are low-size enough to be installed even in small spaces.

The corresponding high-performance ECU JCM-630 does not only establish all connections with the mobile machine, but it also provides two monitors with operating parameters by single-cable technology.

Thanks to its multi-kernel processors, its four CAN, Lin and Ethernet connections and its eight camera inputs, the JCM-630 is fit for any kind of today's and tomorrow's operating philosophy.

Features

- Brilliant displays readable in bright sunlight
- Slim, modern design
- Single-cable connection to JCM-630
- PCAP can be integrated
- Mounting: VESA/RAM, flush mounting

	JVM-MT101	
Display		10.1" TFT with LED backlight
Display resolution		1024 x 600 pixels
Brightness		500 cd/m2(dimmable)
Viewing angle (h/v, u/d)		160°; 160°
Contrast		500:1
Control elements	1	PCAP touchscreen
	4	Keys, backlit (option)
	1	Push encoder, backlit (option)
Acoustic signaling	1	Buzzer 85 db (option)
Ports and interfaces:		
- FPD-LINKII	1	Display, display power supply, CAN
- CAN	1	CANopen®; 125 kB/s to 1 MB/s
- External keyboard, rotary, ...	10 ch.	Matrix keyboard, switches, rotary encoder
Programming		Via JCM-630 series Graphics: JetViewSoft - Logic circuit: IEC61131-3 STX
Operating voltage		DC 8 ... 32 V
Operating/storage temperature		-20 ... +65 °C/-30 ... +85 °C
Degree of protection		“Open frame” model: IP23 front/IP20 rear
		Surface mount model: IP54 front/IP54 rear
Vibration		DIN EN 60068-2-64, Cat. 2
Shock		DIN EN 60068-2-64, 30g
Protection against polarity reversal		Yes

Further details and order information are available on request. Specifications are subject to change without notice. Errors and omissions excepted.

JetViewMobile M043

Product brief

The outstanding feature of the new monitor generation JVM-Mxxx is its brilliant displays of appealing design which are also readable in bright sunlight.

Coming as mere monitors of 4.3” to 15", the devices are low-size enough to be installed even in small spaces.

The corresponding high-performance ECU JCM-630 does not only establish all connections with the mobile machine, but it also provides two monitors with operating parameters by single-cable technology.

Thanks to its multi-kernel processors, its four CAN, Lin and Ethernet connections and its eight camera inputs, the JCM-630 is fit for any kind of today's and tomorrow's operating philosophy.

Features

- Brilliant displays readable in bright sunlight
- Slim, modern design
- Single-cable connection to JCM-630
- PCAP can be integrated
- Mounting: VESA/RAM, flush mounting

	JVM-M043	
Display		4.3" TFT with LED backlight
Display resolution		480 x 272 pixels
Brightness		800 cd/m2(dimmable)
Viewing angle (h/v, u/d)		150°; 150°
Contrast		300:1
Control elements	1	PCAP touchscreen
	4	Keys, backlit (option)
	1	Push encoder, backlit (option)
Acoustic signaling	1	Buzzer 85 db (option)
Ports and interfaces:		
- FPD-LINKII	1	Display, display power supply, CAN
- CAN	1	CANopen®; 125 kB/s to 1MB/s
- External keyboard, rotary, ...	10 ch.	Matrix keyboard, switches, rotary encoder
Programming		Via JCM-630 series. Graphics: JetViewSoft - Logic circuit: IEC61131-3 STX
Operating voltage		DC 8 ... 32 V
Operating/storage temperature		-20 ... +60 °C/-30 ... +85 °C
Degree of protection		"Open frame" model: IP23 front/IP20 rear
		Surface mount model: IP54 front/IP54 rear
Vibration		DIN EN 60068-2-64, Cat. 2
Shock		DIN EN 60068-2-64, 30g
Protection against polarity reversal		Yes

Further details and order information are available on request. Specifications are subject to change without notice. Errors and omissions excepted.

Controllers

Controllers of the JetControl Mobile series can best meet the special demands made on mobile automation. Their pre-eminent trait is the combination of ultimate ruggedness, high and scalable CPU performance and the ability to implement individual customer requirements. The controllers can directly be built into the vehicle without a control cabinet being needed. This is space-saving and therefore allows for flexible installation.

JetControlMobile 630

Product brief

The multi-monitor controller JCM-630 combines outstanding video features with classic HMI and PLC disciplines in one system. Camera images, textual and graphic information can flexibly and almost arbitrarily be assigned to, scaled, placed and overlaid in two LVDS displays. This way, operating concepts exceeding the level of integration into modern middle-class cars can be physically established in special-purpose vehicles with moderate application expense.

The powerful graphics controller allows for high-standard image editing for third-party applications such as bird view, surround view or mirror equivalent systems. All features up to mapping the work functions can be presented by means of the integrated JetViewSoft and JetSym toolchain. Due to its high connectivity of 4 CAN ports, USB, RS232 and GBIT Ethernet, complex remote networks can be established.

Features

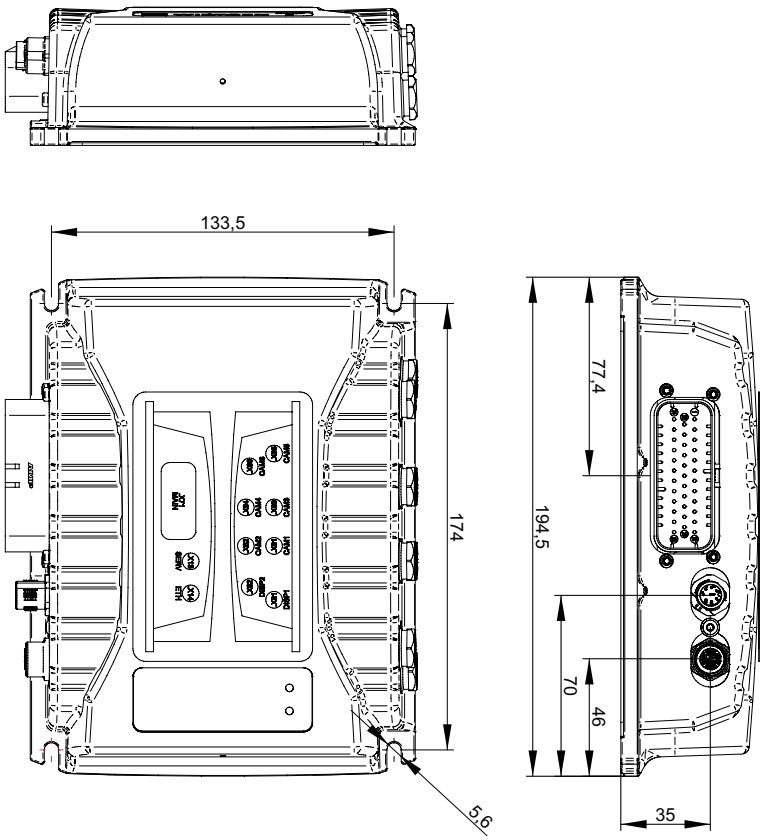
- Excellent video features on 2 displays
- Free positioning, size, and scaling of 8 cameras
- Integrated programming environment JetSym, JetViewSoft
- Plug-in for C-programming, third-party programs
- 4 CAN, GBIT-Ethernet connectivity
- Can be updated via USB flash drive

	JetControlMobile 630	
CPU	iMX 6, 32-bit, 800 MHz	
Memory: RAM - Application - Non-volatile	1 GB ... 4 GB eMMC flash	
Co-CPU (CAN 3, 4 / Watchdog)	120 MHz, 128 KB ... 512 KB flash	
Graphics programming	JetViewSoft - Logic circuit: IEC61131-3 STX	
Controller programming	JetSym - Logic circuit: IEC61131-3 STX	
Operating system	WinCE 2013	
Power management	Boot-up duration < 10 s (until application screen appears)	
Operating/storage temperature	-30 ... +75 °C/-40 ... +85 °C	
Ports and interfaces:		
▪ FPD-LINKII	2	Display, display power supply, CAN
▪ CAN	4	CANopen®, SAE J1939, ISOBUS 11783, 125 kB/s through 1 MB/s
▪ USB	1	
▪ Ethernet	1	(option)
▪ Camera CVBS	6	Camera supply included
▪ RS-232	2	(option)
▪ LIN	1	(option, uses DI3)
Inputs	1	Camera supply
Inputs, digital	1 3	Ignition Digital input active-high, input impedance 43 kΩ
Outputs, digital	2	Peak current 3 A
RTC	Yes, various backup modes, battery included	
Degree of protection	IP65	
Vibration	DIN EN 60068-2-64, Cat. 2	
Shock	DIN EN 60068-2-64, 30g	
Protection against polarity reversal	Yes	

Further details and order information are available on request. Specifications are subject to change without notice. Errors and omissions excepted.

JetControlMobile 630

Dimensional drawing



Connector pinout

JCM-630 35-pin male connector	
Ignition, U_{ign} (terminal 15)	1
GND, battery - (terminal 31)	2
UB, battery + (terminal 30)	3
n.c. (not connected)/option: CAN3 L	4
CAN2 L	5
CAN1 L	6
n.c./option: CAN4 L	7
n.c./option: CAN4 H	8
GND for RS-232 (COM2)	9
GND (supply) for CAM8	10
DO1	11
DO2	12
Supply DC 12 V DC 12 V/24 V for CAM8	13
Video input for CAM7	14
Video input + for CAM8	15
n.c./option: CAN3 H	16
CAN2 H	17
CAN1 H	18
GND	19
GND	20
GND (supply) for CAM7	21
GND	22
Shield	23
Supply DC 12 V DC 12 V/24 V for CAM7	24
Video input + for CAM7	25
Video input for CAM8	26
RS-232 TX (COM2)	27
RS-232 RX (COM2)	28
DI1	29
Output power camera (OUT)/DO3 to 3 A	30
Power consumption camera (IN: DC 12 V/24 V)	31
DI2	32
n.c./option: DI3	33
Shield	34
Shield	35

JCM-630 M12 male connector - Service port 1	
USB signal VCC5 + I/O	1
USB signal DATA -	2
USB signal DATA +	3
- (do not connect)	4
Screen for USB	5
RS-232 RX (COM1)	6
RS-232 TX (COM1)	7
GND	8

JCM-630 M12 female connector - Service port 2	
D1 +	1
D1 -	2
D2 +	3
D2 -	4
D4 +	5
D4 -	6
D3 -	7
D3 +	8

JCM-630 M12 female connector - WLVDS 1 ... 2 - OUT	
24-V supply	1
GND (supply)	2
GND (supply)	3
LVDS 1 ... 2 +	4
CAN1 Low	5
LVDS1 ... 2 -	6
24-V supply	7
CAN1 High	8

JCM-630 M12 socket - CAM1 ... CAM6	
Video input - for CAM1 ... 6	1
GND (supply)	2
Video input + for CAM1 ... 6	3
Supply DC 12 V / 12 V for CAM1 ... 6	4
GND (supply)	5

JetControlMobile 521

Product brief

The JCM-521 controllers are fully modular. They have been designed for control systems exacting high-level requirements on flexibility and connectivity.

The controllers consist of a main board and of MX modules which are add-ons providing various functions. The main board features a powerful CPU and an FPGA. Depending on the desired configuration, it can be equipped with 6 or 15 MX modules in any combination. Fully equipped, it offers up to 120 I/O connections. This way, the number of I/Os can precisely be customized to any application.

An optional diagnostics display with controls features production data display, diagnostics and configuration on the spot without additional supporting devices such as PC or testing devices still being needed.

Features

- 32-bit controller, 500 MHz
- Programming to IEC 61131-3 STX or in C/C++
- Modular I/O configuration for high flexibility
- High connectivity thanks to CAN, USB, LIN, Ethernet and RS232 port
- Built-in controls with graphic display

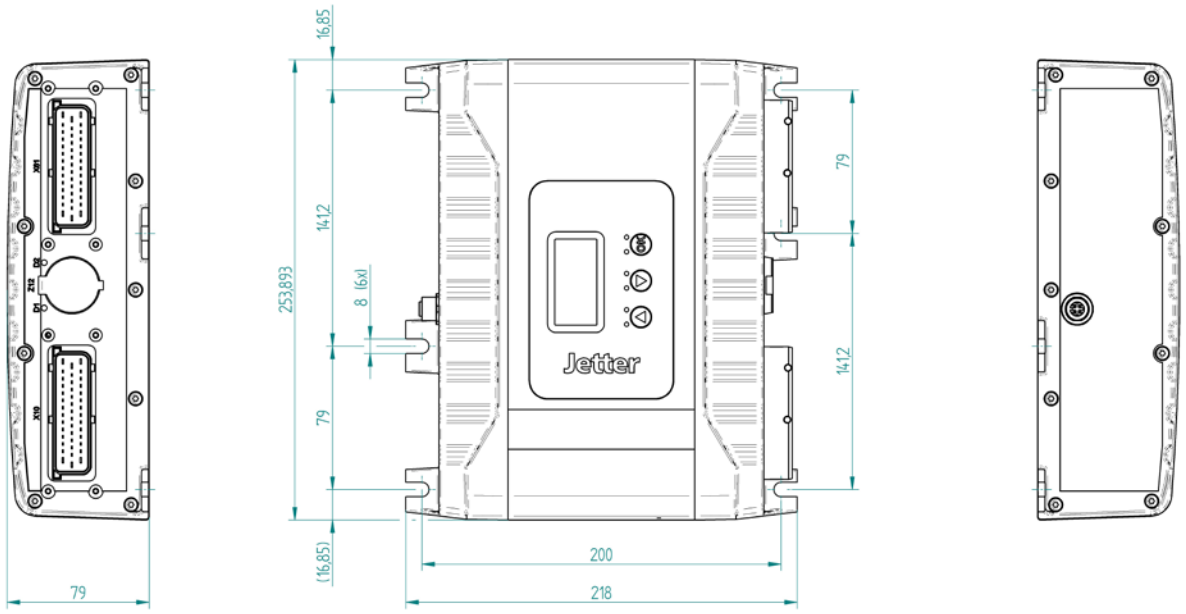
	JetControlMobile 521	
CPU	ARM 11, 32-bit, 500 MHz	
Memory: RAM - Application - Non-volatile	128 MB RAM – 512 MB Flash – 128 kB MRAM	
Peripherals	FPGA	
Programming	IEC 61131-3 STX, C/C++	
Operating system	WinCE 6.0	
Operating voltage	DC 8 ... 32 V, load voltage isolated	
Operating/storage temperature	-40 ... +85 °C	
Ports and interfaces:		
▪ CAN	2 (optionally more)	125 kB/s to 1 MB/s CANopen®, SAE J1939, ISOBUS 11783 Jetter CAN-Prim for customer-specific proprietary protocols
▪ Ethernet	Option; up to 100 Mbit/s	
▪ USB	1 (optionally more), host and client	
▪ RS-232	1	
▪ LIN	1	
Operation and diagnostics (optional)	1 6 3	LCD graphics display LEDs red, green Keys
RTC	Option	
Maximum number of inputs/outputs*	48	
Maximum number of MX modules	6	
Max. permitted total current	40 A	
Safety relay in the load circuit	Yes, PWM outputs can be disabled	
Degree of protection	IP65	
Vibration	DIN EN 60068-2-64, Cat. 2	
Shock	DIN EN 60068-2-64, 30g	
Protection against polarity reversal	Yes	

* Number of I/O connections depends on configuration with MX modules.

Further details and order information are available on request. Specifications are subject to change without notice. Errors and omissions excepted.

JetControlMobile 521

Dimensional drawing



Connector pinout

X10 and up to 2 MX modules | Tyco Ampseal	
Supply of power outputs	1
MX2-1	2
MX2-4	3
MX2-7	4
MX1-2	5
MX1-5	6
MX1-8	7
CAN1 L input	8
CAN1 H input	9
RS-232TX	10
RS-232 RX	11
Ground - Logic circuit	12
Ground - Logic circuit	13
Ground - Power outputs	14
Supply of power outputs	15
MX2-2	16
MX2-5	17
MX2-8	18
MX1-3	19
MX1-6	20
CAN1 L output	21
CAN1 H output	22
Emergency OFF signal	23
Emergency OFF PWR	24
LIN1	25
CONFIG	26
Power supply - Logic unit	27
Ground - Power outputs	28
Supply of power outputs	29
MX2-3	30
MX2-6	31
MX1-1	32
MX1-4	33
MX1-7	34
CAN2 L	35
CAN2 H	36
Ignition ON	37
TBC OFF	38
Power supply - Logic unit	39
Power supply - Sensors	40
Power supply - Sensors	41
Ground - Power outputs	42

X61 4 MX modules each | Tyco Ampseal	
Supply of power outputs	1
MX6-1	2
MX6-4	3
MX6-7	4
MX5-2	5
MX5-5	6
MX5-8	7
MX4-3	8
MX4-6	9
MX3-1	10
MX3-4	11
MX3-7	12
Ground - Logic circuit	13
Ground - Power outputs	14
Supply of power outputs	15
MX6-2	16
MX6-5	17
MX6-8	18
MX5-3	19
MX5-6	20
MX4-1	21
MX4-4	22
MX4-7	23
MX3-2	24
MX3-5	25
MX3-8	26
Power supply - Logic unit	27
Ground - Power outputs	28
Supply of power outputs	29
MX6-3	30
MX6-6	31
MX5-1	32
MX5-4	33
MX5-7	34
MX4-2	35
MX4-5	36
MX4-8	37
MX3-3	38
MX3-6	39
Power supply - Sensors	40
Power supply - Sensors	41
Ground - Power outputs	42

JetControlMobile 511

Product brief

The partially modular compact controller JetControlMobile 511 is based on the modular JCM-521 series. Due to its vast I/O capacity featuring high-performance H-bridges, PWM outputs, flexibly applicable inputs and high total electric currents, even its basic configuration is already sufficient for numerous applications. Besides hydraulic actuators, it can even directly control electric motors. Extensibility by two MX modules allows for easily adjusting to a great variety of functions and applications.

Besides standard ports and interfaces, the JCM-511 is equipped with inputs apt for NAMUR, as well as with a LIN port. This way, it can be integrated into almost any systems architecture.

The high-level language STX to IEC61131-3 lets you implement virtually any control task. Programming in C/C++ is possible, too.

Features

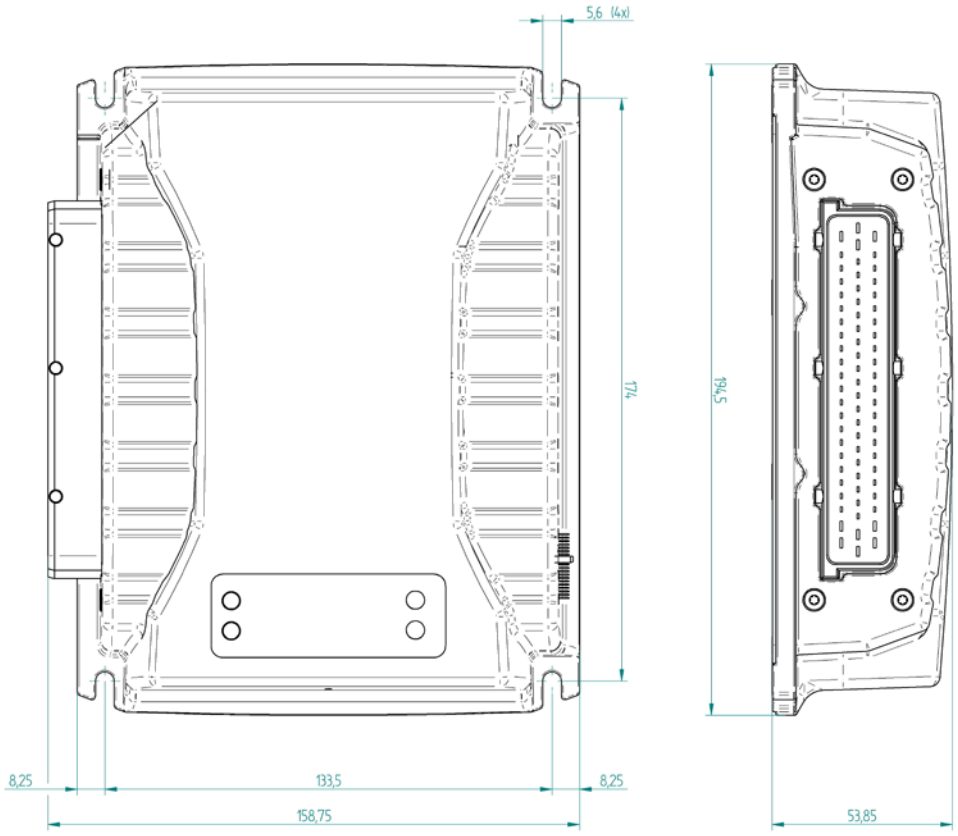
- 32-bit controller, 500 MHz
- Programming to IEC 61131-3 STX or in C/C++
- Partially modular I/O configuration for high flexibility
- CAN, USB, LIN and RS232 port for high connectivity
- Compact design

	JetControlMobile 511	
CPU	ARM 11, 32-bit, 500 MHz	
Memory: RAM - Application - Non-volatile	128 MB RAM – 512 MB Flash – 128 kB MRAM	
Peripherals	FPGA	
Programming	IEC 61131-3 STX, C/C++	
Operating system	WinCE 6.0	
Operating voltage	DC 8 ... 32 V, load voltage isolated	
Operating/storage temperature	-40 ... +85 °C	
Ports and interfaces:		
▪ CAN	2	125 kB/s to 1 MB/s CANopen®, SAE J1939, ISOBUS 11783 Jetter CAN-Prim for customer-specific proprietary protocols
▪ USB	1	
▪ RS-232	1	
▪ LIN	1	
▪ Ethernet	1 (option)	
Operation and diagnostics	2 status LEDs	
RTC	Option	
Max. number of inputs/outputs	40	
Inputs (basic configuration)		
▪ Analog	8	0 ... 5.7 V/0 ... 22 mA, can be configured individually, resolution: 12 bits, input impedance: 75 kΩ, load resistor: 120 Ω Alternative usage: ▪ NAMUR input with a bias voltage of 8.2 V ▪ Digital input active-high, input impedance 50 kΩ ▪ Frequency input, 0.1 ... 10 kHz, period > 1 µs
▪ Digital	8	Active-high, input impedance 50 kΩ Alternative usage: ▪ Frequency input, 0.1 ... 10 kHz, period > 1 µs
Outputs (basic configuration)		
▪ PWM	4	3.5 A; current control 1 %; 10 Hz ... 1 kHz Alternative usage: ▪ Digital output 3.5 A, high-side
▪ H-bridge	2	15 A; 10 Hz ... 1 kHz Alternative usage: ▪ 4x PWM 10 Hz ... 1 kHz, 15 A ▪ 4x digital output 15 A high-side ▪ 4x digital output 15 A low-side
Maximum number of MX modules (expansion modules)	2	Up to 8 inputs/outputs per MX module
Power supply - External sensors	5 V or 10 V, can be toggled via software configuration	
Max. permitted total current	30 A, temporarily 60 A	
Safety relay in the load circuit	Yes, PWM outputs can be disabled	
Diagnostics	Total current monitoring, protection against polarity reversal, overload and no-load detection, all I/Os are protected against short circuit to GND and Ub	
Degree of protection	IP65	
Vibration	DIN EN 60068-2-64, Cat. 2	
Shock	DIN EN 60068-2-64, 30g	
Protection against polarity reversal	Yes	

Further details and order information are available on request. Specifications are subject to change without notice. Errors and omissions excepted.

JetControlMobile 511

Dimensional drawing



Connector pinout

JCM-511 | 70-pin AMP Tyco 963484	
H-bridge A1	1
Ignition ON	2
Power supply - Logic unit and external circuit	3
CAN1-L	4
CAN1-H	5
PWM3	6
PWM1	7
PWM2	8
PWM4	9
USB CNX	10
USB Dp	11
USB DM	12
Output - Reference voltage	13
Analog input 1	14
Analog input 2	15
Analog input 3	16
Analog input 4	17
Analog input 5	18
Analog input 6	19
Analog input 7	20
Analog input 8	21
Supply of power outputs	22
Ground	23
H-bridge B1	24
H-bridge A2	25
Ground	26
Input for release relay	27
CAN2-L	28
CAN2-H	29
Digital input 1	30
Digital input 2	31
Digital input 3	32
Digital input 4	33
Digital input 5	34
Digital input 6	35
Digital input 7	36
Digital input 8	37
RS-232 TX	38
Ground	39
Ground	40

JCM-511 | 70-pin AMP Tyco 963484	
MX6-1	41
MX6-2	42
MX6-3	43
MX6-6	44
MX6-7	45
Supply of power outputs	46
Ground	47
H-bridge B2	48
Switched power for external devices	49
Power supply - Enabling relay	50
n.c.	51
n.c.	52
MX5-2	53
MX5-3	54
MX5-8	55
MX5-7	56
MX5-6	57
MX5-5	58
MX5-4	59
LIN	60
RS-232 RX	61
Ground	62
MX module 1 - Port 1	63
Ground	64
Ground	65
MX6-8	66
MX6-4	67
MX6-5	68
Supply of power outputs	69
Ground	70

JetControlMobile 529

Product brief

In JCM-529, circuit parts for modular expansion of the JCM-521 series have been translated into a concept comprising fixed I/O configuration. This makes it a cost-effective solution keeping up the performance features of the JCM-521 series. Layout-reuse technology enables adjustments to be made in PCB assembly at low cost. 103 I/O connections are available in the fully equipped configuration.

An optional diagnostics display with controls features production data display, diagnostics and configuration on the spot without additional supporting devices such as PC or testing devices still being needed.

Features

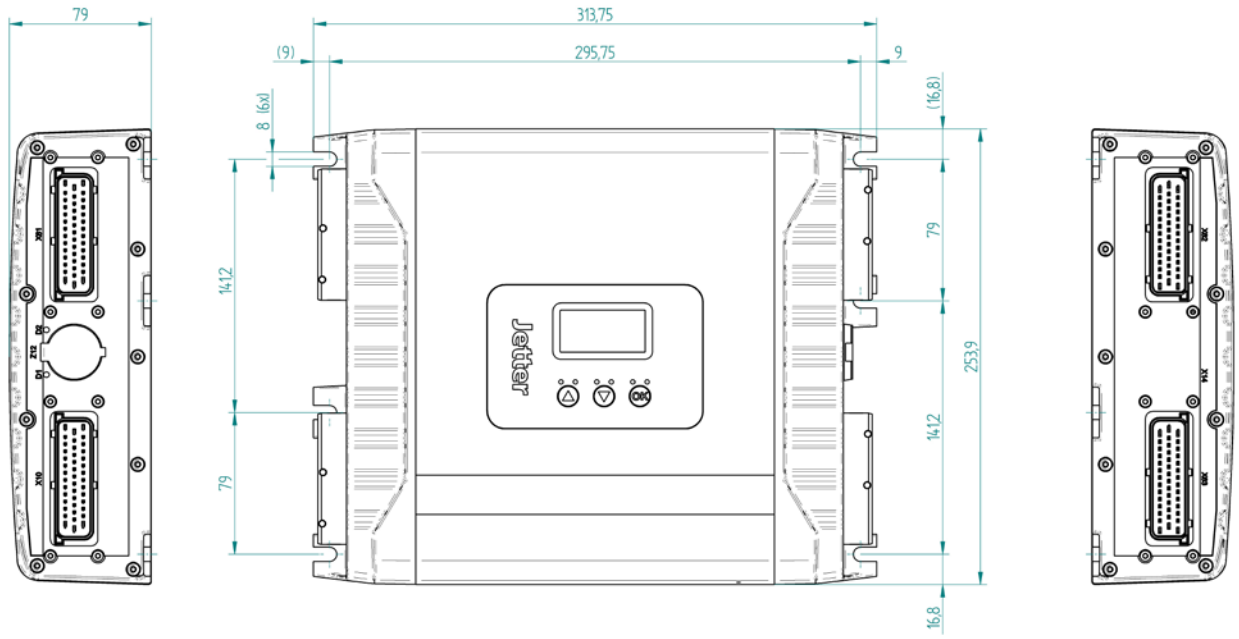
- 32-bit controller, 500 MHz
- Programming to IEC 61131-3 STX or in C/C++
- Fixed I/O configuration featuring modularizing varieties
- CAN, LIN, Ethernet and RS232 port for high connectivity
- Built-in controls with graphic display

	JetControlMobile 529	
CPU	ARM 11, 32-bit, 500 MHz	
Memory: RAM - Application - Non-volatile	64 MB RAM – 512 MB Flash – 64 kB MRAM	
Peripherals	FPGA	
Programming	IEC 61131-3 STX, C/C++	
Operating system	WinCE 6.0	
Operating voltage	DC 8 ... 30 V, load voltage isolated	
Operating/storage temperature	-40 ... +85 °C	
Ports and interfaces:		
▪ Ethernet	1	Up to 100 Mbit/s
▪ CAN	2	125 kB/s to 1 MB/s CANopen®, SAE J1939, ISOBUS 11783 Jetter CAN-Prim for customer-specific proprietary protocols
▪ RS-232	1	
▪ LIN	4	
Operation and diagnostics (optional)	1 6 3	LCD graphics display LEDs red, green Keys
RTC	Option	
Number of inputs/outputs	103	
Inputs:		
▪ Analog	58	0 ... 5.7 V/0 ... 15 V/0 ... 20 mA, can be configured individually, capable of diagnostics, resolution: 12 bits, input impedance: 50 ... 100 kΩ, load resistor: 120 Ω Alternative usage: ▪ NAMUR input with a bias voltage of 8.2 V ▪ Digital input active-high, input impedance 50 ... 100 kΩ ▪ Frequency input 0.1 ... 10 kHz, period > 1 µs, input impedance 50 ... 100 kΩ ▪ Input for gate time measuring 0.1 ... 10 s ▪ Interruptible input, 16-bit time stamp, resolution 1 µs
Outputs:		
▪ PWM	4 34 5	3.8 A; current control 1 %; 10 Hz ... 1 kHz Alternative usage: ▪ Digital output 3.5 A, high-side 3.8 A; current control 6 %; 10 Hz ... 1 kHz Alternative usage: ▪ Digital output 3.5 A, high-side 0.5 A; 10 Hz ... 1 kHz Alternative usage: ▪ Digital output 2.0 A, high-side
▪ H-bridge	2	3.8 A; current control 6 %; 10 Hz ... 1 kHz Alternative usage: ▪ 4x digital output 3.8 A high-side ▪ 4x digital output 3.8 A low-side
Max. permitted total current	40 A	
Diagnostics	Total current monitoring, protection against polarity reversal, overload and no-load detection, all I/Os are protected against short circuit to GND and Ub	
Degree of protection	IP65	
Vibration	DIN EN 60068-2-64, Cat. 2	
Shock	DIN EN 60068-2-64, 30g	
Protection against polarity reversal	Yes	

Further details and order information are available on request. Specifications are subject to change without notice. Errors and omissions excepted.

JetControlMobile 529

Dimensional drawing



Connector pinout

JVM-529 AMP timer, 29-pin - Power	
Power supply - Emergency stop 1	1
Signal - Emergency stop 1	2
Ignition ON	3
LIN1	4
CAN1_IN_H	5
CAN1_IN_L	6
PWM low-current 1	7
Input 1	8
PWM low-current 2	9
Input 2	10
PWM low-current 3	11
Input 3	12
PWM low-current 4	13
Input 4	14
RS232_TXD	15

JVM-529 AMP timer, 29-pin - Power	
RS232_RXD	16
CAN1_OUT_H	17
CAN1_OUT_L	18
TBC_OFF	19
PWM low-current D1	20
Power supply - Logic unit	21
Power supply	22
Power supply	23
Power supply	24
Power supply	25
Ground	26
Ground	27
Ground	28
Ground	29

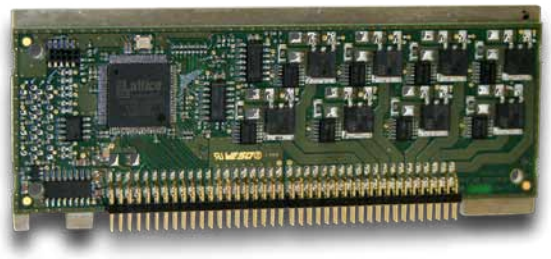
Connector pinout

JVM-529 AMP timer, 42-pin - Group A	JVM-529 AMP timer 42-pin - Group B	JVM-529 AMP timer 42-pin - Group C	
H-bridge 1_B	Sensor supply 1	Sensor supply 1	1
H-bridge 2_B	Input 22	Input 42	2
Input 5	Input 23	Input 43	3
Input 6	PWM 6	Input 44	4
PWM precision current measuring 1	PWM 7	Input 45	5
PWM precision current measuring 2	PWM 8	Input 46	6
PWM precision current measuring 3	PWM 9	Input 47	7
Sensor supply 3	Input 24	Input 48	8
Input 7	Input 25	Input 49	9
Input 8	Input 26	Input 50	10
Input 9	Input 27	PWM 17	11
Input 10	Input 28	PWM 18	12
PWM 1	Input 29	PWM 19	13
Ground	Ground	Ground	14
H-bridge 2_A	Sensor supply 2	Sensor supply 2	15
Input 11	Input 30	PWM 20	16
PWM precision current measuring 4	PWM 10	PWM 21	17
PWM 2	H-bridge 3_A	Input 51	18
Sensor supply 1	H-bridge 3_B	Input 52	19
Sensor supply 2	H-bridge 4_A	Input 53	20
Input 12	H-bridge 4_B	Input 54	21
Input 13	Input 31	PWM 22	22
Input 14	Input 32	PWM 23	23
Input 15	Input 33	PWM 24	24
PWM 3	Input 34	PWM 25	25
PWM 4	Input 35	PWM 26	26
PWM 5	Input 36	PWM 27	27
Ground	Ground	Ground	28
H-bridge 1_A	Sensor supply 3	Sensor supply 3	29
Input 16	Input 37	PWM 28	30
Input 17	PWM 11	PWM 29	31
Input 18	PWM 12	Input 55	32
Input 19	PWM 13	Input 56	33
Input 20	Input 38	Input 57	34
Input 21	Input 39	Input 58	35
Power supply - Emergency stop 2	Input 40	PWM 30	36
Signal - Emergency stop 2	Input 41	PWM 31	37
UON_EXT	PWM 14	PWM 32	38
LIN2	PWM 15	PWM 33	39
CAN2_H	PWM 16	PWM 34	40
CAN2_L	LIN3	LIN4	41
Ground	Ground	Ground	42

MX modules

Product brief

MX modules are configurable multi-purpose add-on modules for the JCM-511 and -521 controllers.



Available configurations

- Multi-purpose 8-channel input module with analog-digital mode, current measuring and frequency measuring mode
- 8-channel output module
- 4-channel H-bridge module
- 8-channel output module with precise current measurement
- 2-channel weighing module (load cell) with tilt sensor

	MX-MFQE	MX-LC	MX-DOUT8
Operating voltage; load voltage isolated	DC 8 ... 32 V	DC 8 ... 32 V	DC 8 ... 32 V, yes
Operating/storage temperature	-40 ... +85 °C	-40 ... +85 °C	-40 ... +85 °C
Diagnostics	NAMUR	-	Open load, short circuit, current measuring
Max. number of inputs/outputs	8	2 (LC)	8
Inputs:	Multi-purpose input	Load cell & tilt sensor	
▪ Analog	0 ... 5.7 V; 0 ...15 V; 0 ... 22 mA	Load cell 2-channel, 0.1 % accuracy Tilt sensor 2 directions, 1° accuracy	-
▪ Digital	Active high	-	-
▪ Frequency	0.1 ... 10 kHz, period > 1 µs	-	-
Outputs:			H-side
▪ Digital; PWM	-	-	3.5 A (10 Hz ... 1 kHz , resolution 10 bits)
▪ H-bridge	-	-	-
▪ Analog	-	DC 5 ... 10 V @ 75 mA	-
Max. total current	-	-	32 A
Safety relay in the load circuit	-	-	Yes
Vibration	DIN EN 60068-2-64, Cat. 2	DIN EN 60068-2-64, Cat. 2	DIN EN 60068-2-64, Cat. 2
Shock	DIN EN 60068-2-64, 30 g	DIN EN 60068-2-64, 30 g	DIN EN 60068-2-64, 30 g
Protection against polarity reversal	Yes	Yes	Yes

Further details and order information are available on request. Specifications are subject to change without notice. Errors and omissions excepted.

	MX-DOUT8P	MX-DOUT4HB	MX-RELAIS_S4
Operating voltage; load voltage isolated	DC 8 ... 32 V, yes	DC 8 ... 32 V, yes	DC 8 ... 32 V, yes
Operating/storage temperature	-40 ... +85 °C	-40 ... +85 °C	-40 ... +85 °C
Diagnostics	Open load, short circuit; Precision current measuring (1 %)	Open load, short circuit, current measuring	n.a.
Max. number of inputs/outputs	8	4	4
Inputs:			
▪ Analog	-	-	-
▪ Digital	-	-	-
▪ Frequency	-	-	-
Outputs:	H-side, precision controlling	H-side/L-side, alternative: Individual PWM	Electrically isolated relays, NO contact
▪ Digital; PWM	3.5 A (10 Hz ... 1 kHz, resolution 10 bits)		32 V/400 mA
▪ H-bridge	-	3.5 A (10 Hz ... 1 kHz, resolution 10 bits)	-
▪ Analog	-	-	-
Max. total current	32 A	32 A	4x 400 mA, not short-circuit proof
Safety relay in the load circuit	Yes	Yes	-
Vibration	DIN EN 60068-2-64, Cat. 2	DIN EN 60068-2-64, Cat. 2	DIN EN 60068-2-64, Cat. 2
Shock	DIN EN 60068-2-64, 30 g	DIN EN 60068-2-64, 30 g	DIN EN 60068-2-64, 30 g
Protection against polarity reversal	Yes	Yes	No

Further details and order information are available on request. Specifications are subject to change without notice. Errors and omissions excepted.

JetControlMobile 350-E01 | E02

Product brief

JCM-350 was designed for control systems of a high total current. It can be obtained as variant -E01 featuring a total current of 106 A, or as variant -E02 with a total current of 212 A.

All outputs are rated at high currents. Further, the permitted inrush currents amount to a multiple of the rated currents. For this reason, the JCM-350 can be recommended for lighting systems or as body controllers for smart controlling of all electrical consumers of a vehicle according to demand.

High-performance H-bridges enable direct power supply of actuators, fans, heating systems or windscreen wipers.

5 independent CAN ports allow for integrating all CAN nodes of a vehicle. In this case, the controller acts as a CAN gateway. As an option, an operator interface can be built into the enclosure as well. It will report the operating states.

Features

- 32-bit controller, 150 MHz
- Programming to IEC 61131-3 STX
- High individual currents and high total current capacity
- High-performance H-bridges enable electric motor control
- 5 CAN ports
- Built-in operator interface

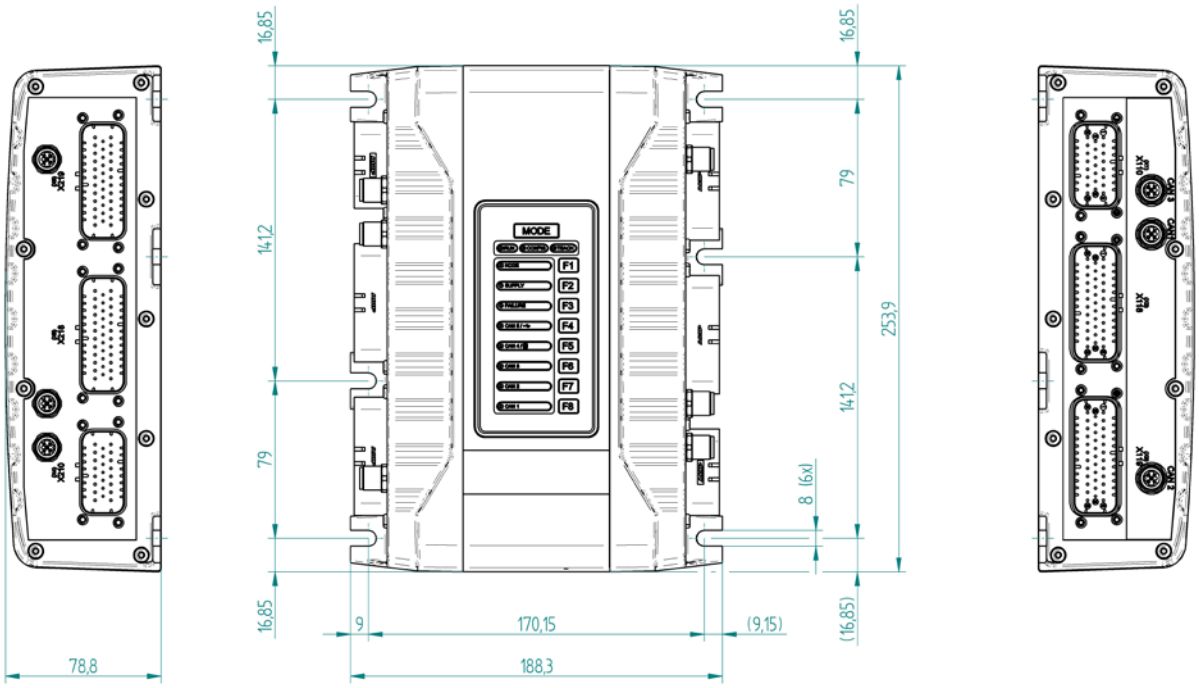
	JetControlMobile 350-E01 | E02	
CPU	32-bit, 150 MHz	
Memory: RAM - Application - Non-volatile	16 MB RAM – 16 MB Flash – 32 kB MRAM	
Programming	IEC 61131-3 STX	
Operating system	Jetter	
Operating voltage	DC 8 ... 32 V, load voltage isolated	
Operating/storage temperature	-40 ... +85 °C	
Ports and interfaces:		
▪ CAN	5	125 kB/s to 1 MB/s CANopen®, SAE J1939, ISOBUS 11783 Jetter CAN-Prim for customer-specific proprietary protocols
Operation and diagnostics	11 status LEDs, dual-color red/green 9 keys	
Diagnostics	Total current monitoring, protection against polarity reversal, overload and no-load detection, all I/Os are protected against short circuit to GND and Ub	
Degree of protection	IP65	
Vibration	DIN EN 60068-2-64, Cat. 2	
Shock	DIN EN 60068-2-64, 30g	
Protection against polarity reversal	Yes	

Variant	E01	E02	
Max. number of inputs/outputs	37	74	
Inputs:			
▪ Analog	4	8	0 … 10 V/0 … 32 V/0 … 20 mA/4 … 20 mA, can be configured individually, resolution: 12 bits, input impedance 35 kΩ, load resistor 400 Ω
▪ Digital	11	22	Active low/high, can be configured individually, input impedance 3.2 kΩ
▪ Frequency	4	8	Active-low with pull-down resistor 0 ... 50 kHz, input impedance 3.2 kΩ
Outputs:			
▪ Analog	4	8	0 … 10 V/0 … 32 V, can be configured individually, peak current 100 mA per output
▪ Digital	8	16	8 A (16 A for 4 sec/40 A for 500 msec) Total current of each of the 4 digital outputs: 16 A
▪ PWM	8	16	2 A (4 A for 4 sec/10 A for 500 msec) 25 Hz ... 1 kHz, without current control Total current of each of the 8 digital outputs: 8 A
H-bridge	2	4	16 A (32 A for 4 sec/80 A for 500 msec)
Relay			
▪ High current	2	4	15 A
▪ Standard design	2	4	2 A
Max. permitted total current	106 A	212 A	

Further details and order information are available on request. Specifications are subject to change without notice. Errors and omissions excepted.

JetControlMobile 350-E01 | E02

Dimensional drawing



Connector pinout

JCM-350* AMPSEAL Automotive Plug Connector 60874422	
Relay 1 (high current): shared contact	1
Relay 2 (high current): NC contact	2
Relay 2 (high current): NO contact	3
Relay 2 (high current): shared contact	4
Relay 3 (standard): shared contact	5
Relay 3 (standard): NC contact	6
Relay 4 (standard): NC contact	7
Relay 3 (standard): NO contact	8
Relay 1 (high current): NO contact	9
Analog output 3	10
Analog output # 4	11
PWM output 7	12

JCM-350* AMPSEAL Automotive Plug Connector 60874422	
PWM output 8	13
Relay 4 (standard): NO contact	14
Relay 4 (standard): shared contact	15
Relay 1 (high current): NC contact	16
Ground	17
Power supply - Digital peripherals	18
Frequency/pulse input 3	19
Frequency/pulse input 4	20
Not connected	21
Not connected	22
Not connected	23

* Note: The amount of connectors doubles in analogy with double assembly of the JCM-350-E02.

Connector pinout

JCM-350* AMPSEAL Automotive Plug Connector 60874424	
Digital output 6, current-sourcing	1
Power supply - Digital outputs 5 ... 8	2
Power supply - Digital outputs 5 ... 8	3
Bridge output 1, right	4
Bridge output 1, left	5
Power supply - Bridge 1	6
Power supply - Bridge 1	7
Bridge output 2, right	8
Bridge output 2, left	9
Power supply - Bridge 2	10
Power supply - Bridge 2	11
Frequency input 1	12
Digital output 5, current-sourcing	13
Digital output 8, current-sourcing	14
Bridge output 1, right	15
Bridge output 1, left	16
Ground	17
Ground	18
Bridge output 2, right	19
Frequency input 2	20
Bridge output 2, left	21
Digital input 11	22
Digital input 10	23
Digital output 7, current-sourcing	24
Digital input 4	25
Digital input 5	26
Digital input 6	27
Ground	28
Ground	29
Digital input 7	30
Digital input 8	31
Digital input 9	32
Not to be used (connector coding)	33
PWM output 5	34
PWM output 6	35

* Note: The amount of connectors doubles in analogy with double assembly of the JCM-350-E02.

JCM-350* AMPSEAL Automotive Plug Connector 60874423	
Analog input 4	1
Analog input 3	2
Digital input 3	3
Digital input 2	4
Digital input 1	5
Digital output 2, current-sourcing	6
Digital output 4, current-sourcing	7
Digital output 1, current-sourcing	8
Digital output 3, current-sourcing	9
Power supply - Digital outputs 1 ... 4	10
Power supply - Digital outputs 1 ... 4	11
Power supply - Logic unit and peripheral devices	12
Analog input 2	13
Analog input 1	14
Analog output 1	15
Analog output 2	16
Ground	17
Ground	18
Power supply - Analog outputs	19
Ground	20
Power supply - PWM outputs	21
Power supply - Analog peripherals	22
Power supply - Digital inputs	23
PWM output 1	24
PWM output 2	25
PWM output 3	26
PWM output 4	27
Ground	28
Ground	29
CAN-L, CAN port 5	30
Power supply - Analog peripherals	31
CAN-L, CAN port 4	32
Do not connect	33
CAN-H, CAN port 4	34
CAN-H, CAN port 5	35

JetControlMobile 350-E03

Product brief

The large number of individually configurable I/O connections, the high total current as well as the rugged and compact design make the JCM-350-E03 a perfect controller for general control tasks.

The JCM-350-E03 comprises the remote I/O node JXM-IO-E02, as well as a controller board. Both components communicate via a CANopen® interface which can be addressed from the outside.

The CAN ID of the I/O node can be defined via external connection to digital inputs. This way, up to nine JXM-IO-E02 can be addressed within one system without further configuration measures to be taken (for the description of the JXM-IO-E02, refer to page 50).

The supply voltage of the inputs and outputs is divided into a Standard Feed and a Protected Feed, and it allows for independent deactivation of inputs and outputs in safety applications.

Features

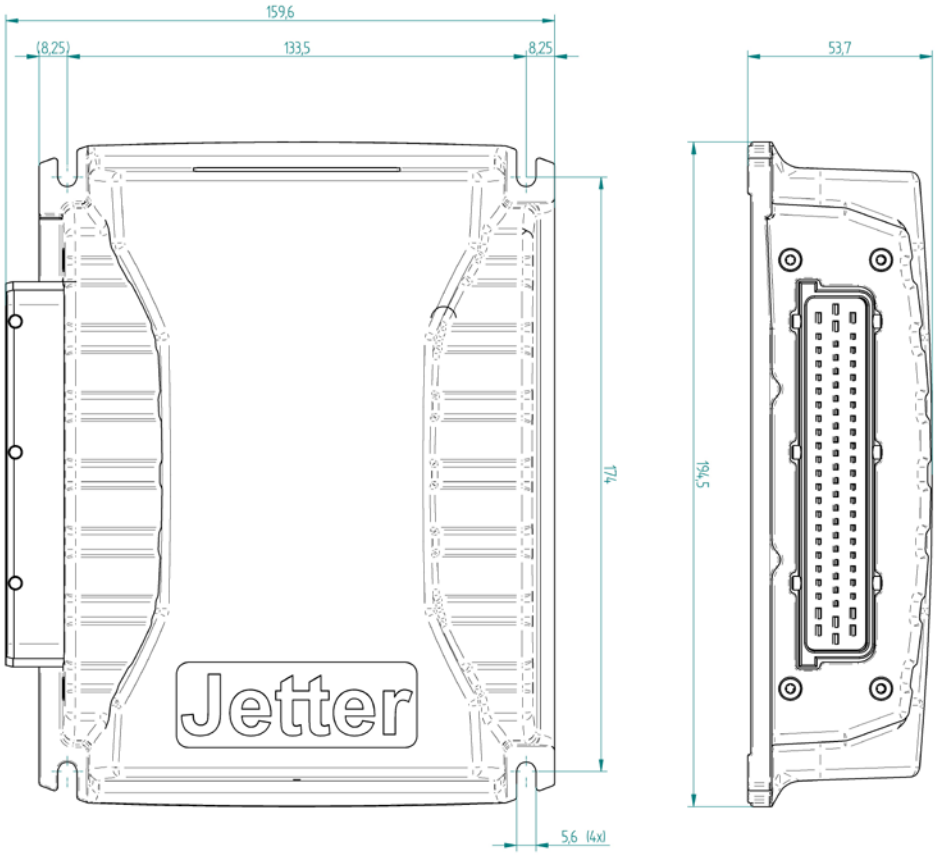
- 32-bit controller, 150 MHz
- Programming to IEC 61131-3 STX
- Flexible I/O configuration
- The CAN addresses can be configured via wiring harness
- Compact and rugged enclosure
- High degree of protection IP66/IP68

	JetControlMobile 350-E03	
CPU	32-bit, 150 MHz	
Memory: RAM - Application - Non-volatile	16 MB RAM – 16 MB Flash – 32 kB MRAM	
Programming	IEC 61131-3 STX	
Operating system	Jetter	
Operating voltage	DC 8 ... 32 V, load voltage isolated	
Operating/storage temperature	-40 ... +85 °C	
Ports and interfaces:		
▪ CAN	1 (optional 2)	125 kB/s to 1 MB/s CANopen®, SAE J1939, ISOBUS 11783 Jetter CAN-Prim for customer-specific proprietary protocols
RTC	Option	
Max. number of inputs/outputs	32	
Inputs:		
▪ Analog	4	0 ... 5 V/0 ... Ub/0 ... 20 mA/4 ... 20 mA, can be configured individually, resolution: 10 bits, input impedance: 50 kΩ, load resistor: 240 Ω
▪ Digital	5	Active low/high, can be configured individually, input impedance 2 kΩ
▪ Frequency	2	Active low/high, can be configured individually, 5 Hz ... 20 kHz, period 62.5 ns Alternative usage: ▪ Digital input active-high, input impedance 2 kΩ
Outputs:		
▪ Analog	1	0 ... Ub, 10-bit resolution, short-circuit detection, peak current 100 mA
▪ Digital	8	2.5 A high-side, diagnostics capability, short-circuit proof Alternative usage: ▪ Digital input active-high, input impedance 100 kΩ
	2	2.5 A high-side, diagnostics capability, short-circuit proof, supplied via Protected Feed Alternative usage: ▪ Digital input active-high, input impedance 100 kΩ
	8	5 A high-side, diagnostics capability, short-circuit proof, supplied via Protected Feed Alternative usage: ▪ Digital input active-high, input impedance 100 kΩ
▪ PWM	3	2.5 A, max. 2 kHz, resolution: 8 bits, current-controlled, capable of diagnostics Alternative usage: ▪ Digital output 2.5 A
▪ H-bridge	1	2.5 A Alternative usage: ▪ 2x digital output, 2.5 A
▪ Power supply	1	5 V power supply for sensors
Max. permitted total current	40 A	
Degree of protection	IP66/IP68	
Vibration	DIN EN 60068-2-64, Cat. 2	
Shock	DIN EN 60068-2-64, 30g	
Protection against polarity reversal	Yes	

Further details and order information are available on request. Specifications are subject to change without notice. Errors and omissions excepted.

JetControlMobile 350-E03

Dimensional drawing



Connector pinout

JCM-350-E03 70-pin male AMP Tyco connector	
Power supply - Protected Feed	1
Ignition ON	2
Digital In 1 - Standard Feed	3
Digital In 2 - Standard Feed	4
Digital In 3 - Standard Feed	5
Digital In 4 - Standard Feed	6
Digital In 5 - Standard Feed	7
Digital In 6/Out 1 - Standard Feed*	8
Digital In 7/Out 2 - Standard Feed*	9
Digital In 8/Out 3 - Standard Feed*	10
Digital In 9/Out 4 - Standard Feed*	11
Digital In 10/Out 5 - Standard Feed*	12
Digital In 11/Out 6 - Standard Feed*	13
Digital In 12/Out 7 - Standard Feed*	14
Digital In 13/Out 8 - Standard Feed*	15
Digital In 14/Out 9 - Protected Feed*	16
Digital In 15/Out 10 - Protected Feed*	17
Digital In 16/Out 11 - Protected Feed**	18
Digital In 17/Out 12 - Protected Feed**	19
Digital In 18/Out 13 - Protected Feed**	20
Digital In 19/Out 14 - Protected Feed**	21
Digital In 20/Out 15 - Protected Feed**	22
Digital In 21/Out 16 - Protected Feed**	23
Power supply - Standard Feed	24
Ground	25
Ground (analog IN 1)	26
Ground (analog IN 2)	27
Ground (analog IN 3)	28
Ground (analog IN 4)	29
Switch reference 1 *	30
Switch reference 2 *	31
Ground (digital Out 1)	32
Ground (digital Out 2)	33
Ground (digital Out 3)	34
Ground (digital Out 4)	35

JCM-350-E03 70-pin male AMP Tyco connector	
Ground (digital Out 5)	36
Ground (digital Out 6)	37
Ground (digital Out 7)	38
Ground (digital Out 8)	39
Ground (digital Out 9)	40
Ground (digital Out 10)	41
Ground (digital Out 11)	42
Ground (digital Out 12)	43
Ground (digital Out 13)	44
Ground (digital Out 14)	45
Ground (digital Out 15)	46
Ground (digital Out 16)	47
Ground	48
Analog 1 - In 1 - Standard Feed	49
Analog 2 - In 2 - Standard Feed	50
Analog 3 - In 3 - Standard Feed	51
Analog 4 - In 4 - Standard Feed	52
Analog Out - Standard Feed	53
Frequency In 1 - Standard Feed	54
Frequency In 2 - Standard Feed	55
PWM Out 1 - Standard Feed*	56
PWM Out 2 - Standard Feed*	57
PWM Out 3 - Standard Feed*	58
Ground (PWM 1)	59
Ground (PWM 2)	60
Ground (PWM 3)	61
CAN A Lo	62
CAN A Hi	63
CAN B Lo	64
CAN B Hi	65
5 V+ output ***	66
Node ID input 1	67
Node ID input 2	68
H-brigde A - Standard Feed*	69
H-brigde B - Standard Feed*	70

* max. current 2.5 A
** max. current 5 A
*** max. current 0.2 A

The maximum total current is 20 A per supply voltage type (Protected Feed, Standard Feed).

Expansion modules

I/O modules providing a wide range of features let you in the best possible way complete or expand the control systems in mobile machinery, commercial and special-purpose vehicles.

JXM-IO-E02

Product brief

The large number of individually configurable I/O connections, the high total current as well as the rugged and compact design make the JXM-IO-E02 a multi-purpose CAN remote node.

The supply voltage of the inputs and outputs is divided into Standard Feed and Protected Feed, and it allows for independent deactivation of inputs and outputs in safety applications.

The CAN ID of the I/O node can be defined via external connection of digital inputs. This way, up to nine nodes can be addressed within one system without further configuration measures to be taken.

Features

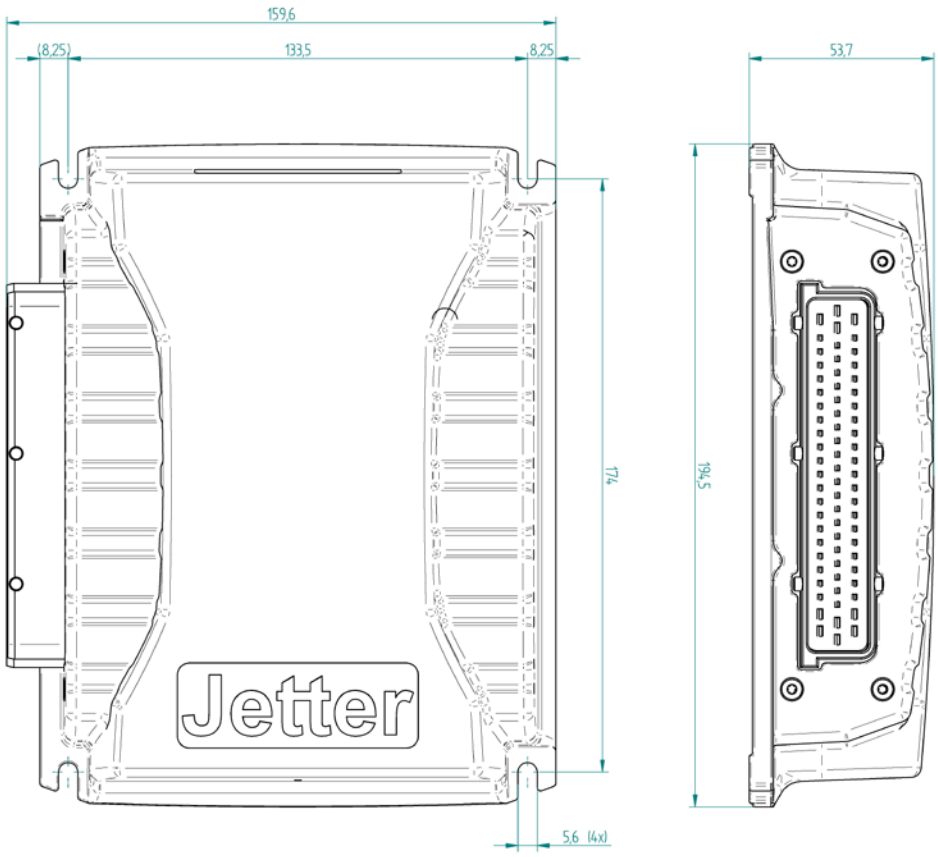
- Flexible I/O configuration
- The CAN addresses can be configured via wiring harness
- Compact and rugged enclosure
- High degree of protection IP66/IP68

	JXM-IO-E02	
Operating voltage	DC 8 ... 32 V, load voltage isolated	
Operating/storage temperature	-40 ... +85 °C	
Ports and interfaces:		
▪ CAN	1	CANopen®
Max. number of inputs/outputs	32	
Inputs:		
▪ Analog	4	0 ... 5 V/0 ... Ub/0 ... 20 mA/4 ... 20 mA, can be configured individually, resolution: 10 bits, input impedance: 50 kΩ, load resistor: 240 Ω
▪ Digital	5	Active low/high, can be configured individually, input impedance 2 kΩ
▪ Frequency	2	Active low/high, can be configured individually, 5 Hz ... 20 kHz, period 62.5 ns Alternative usage: ▪ Digital input active-high, input impedance 2 kΩ
Outputs:		
▪ Analog	1	0 ... Ub, 10-bit resolution, short-circuit detection, peak current 100 mA
▪ Digital	8	2.5 A high-side, diagnostics capability, short-circuit proof Alternative usage: ▪ Digital input active-high, input impedance 100 kΩ
	2	2.5 A high-side, diagnostics capability, short-circuit proof Alternative usage: ▪ Digital input active-low, input impedance 100 kΩ
	8	5 A high-side, diagnostics capability, short-circuit proof, supplied via Protected Feed Alternative usage: ▪ Digital input active-high, input impedance 100 kΩ
▪ PWM	3	2.5 A, max. 2 kHz, resolution: 8 bits, current-controlled, capable of diagnostics Alternative usage: ▪ Digital output 2.5 A
H-bridge	1	2.5 A
Power supply	1	5 V power supply for sensors
Max. permitted total current	40 A	
Degree of protection	IP66/IP68	
Vibration	DIN EN 60068-2-64, Cat. 2	
Shock	DIN EN 60068-2-64, 30g	
Protection against polarity reversal	Yes	

Further details and order information are available on request. Specifications are subject to change without notice. Errors and omissions excepted.

JXM-IO-E02

Dimensional drawing



Connector pinout

JXM-IO-E02 70-pin male AMPTyco connector	
Power supply - Protected Feed	1
Ignition ON	2
Digital In 1 - Standard Feed	3
Digital In 2 - Standard Feed	4
Digital In 3 - Standard Feed	5
Digital In 4 - Standard Feed	6
Digital In 5 - Standard Feed	7
Digital In 6/Out 1 - Standard Feed*	8
Digital In 7/Out 2 - Standard Feed*	9
Digital In 8/Out 3 - Standard Feed*	10
Digital In 9/Out 4 - Standard Feed*	11
Digital In 10/Out 5 - Standard Feed*	12
Digital In 11/Out 6 - Standard Feed*	13
Digital In 12/Out 7 - Standard Feed*	14
Digital In 13/Out 8 - Standard Feed*	15
Digital In 14/Out 9 - Protected Feed*	16
Digital In 15/Out 10 - Protected Feed*	17
Digital In 16/Out 11 - Protected Feed**	18
Digital In 17/Out 12 - Protected Feed**	19
Digital In 18/Out 13 - Protected Feed**	20
Digital In 19/Out 14 - Protected Feed**	21
Digital In 20/Out 15 - Protected Feed**	22
Digital In 21/Out 16 - Protected Feed**	23
Power supply - Standard Feed	24
Ground	25
Ground (analog IN 1)	26
Ground (analog IN 2)	27
Ground (analog IN 3)	28
Ground (analog IN 4)	29
Switch feed output 1 *	30
Switch feed output 2 *	31
Ground (digital Out 1)	32
Ground (digital Out 2)	33
Ground (digital Out 3)	34
Ground (digital Out 4)	35

JXM-IO-E02 70-pin male AMPTyco connector	
Ground (digital Out 5)	36
Ground (digital Out 6)	37
Ground (digital Out 7)	38
Ground (digital Out 8)	39
Ground (digital Out 9)	40
Ground (digital Out 10)	41
Ground (digital Out 11)	42
Ground (digital Out 12)	43
Ground (digital Out 13)	44
Ground (digital Out 14)	45
Ground (digital Out 15)	46
Ground (digital Out 16)	47
Ground	48
Analog 1 - In 1 - Standard Feed	49
Analog 2 - In 2 - Standard Feed	50
Analog 3 - In 3 - Standard Feed	51
Analog 4 - In 4 - Standard Feed	52
Analog Out - Standard Feed	53
Frequency In 1	54
Frequency In 2	55
PWM Out 1 - Standard Feed*	56
PWM Out 2 - Standard Feed*	57
PWM Out 3 - Standard Feed*	58
Ground (PWM 1)	59
Ground (PWM 2)	60
Ground (PWM 3)	61
CAN A Lo	62
CAN A Hi	63
CAN B Lo	64
CAN B Hi	65
5 V+ output ***	66
Node ID input 1	67
Node ID input 2	68
H-brigde A - Standard Feed*	69
H-brigde B - Standard Feed*	70

* max. current 2.5 A
** max. current 5 A
*** max. current 0.2 A

The maximum total current is 20 A per supply voltage type (Protected Feed, Standard Feed).

JXM-IO-E09

Product brief

The expansion module JXM-IO-E09 was designed as a high-current CAN node. It is for controlling power consumers such as spotlights or signal encoders in CANopen® networks.

Due to its small size, the module can be placed very flexibly very close to the consumer.

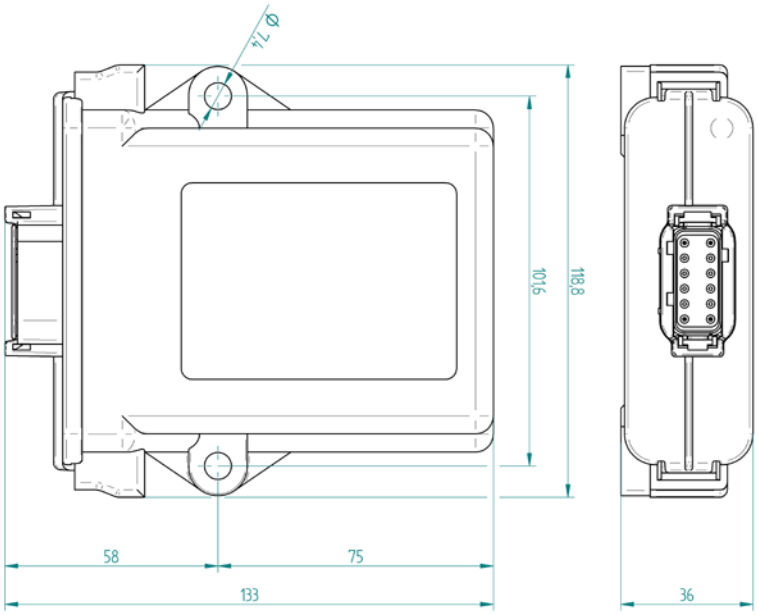
Features

- Rugged and compact enclosure
- High degree of protection IP67
- High total current
- CAN port

	JXM-IO-E09	
Operating voltage	DC 8 ... 32 V	
Operating/storage temperature	-40 ... +85 °C	
Ports and interfaces:		
▪ CAN	1	CANopen®
Outputs:		
▪ Digital	4	7.5 A high-side with current measuring, diagnostics capability, short-circuit proof
Max. permitted total current	21 A	
Degree of protection	IP65/IP67	
Vibration	DIN EN 60068-2-64, Cat. 2	
Shock	DIN EN 60068-2-64, 30g	
Protection against polarity reversal	Yes	

Further details and order information are available on request. Specifications are subject to change without notice. Errors and omissions excepted.

Dimensional drawing



Connector pinout

JXM-IO-E09 DEUTSCH DTM13-12 PA-R008	
Power supply	1
Power supply	2
Power supply	3
Ground	4
CAN_H	5
CAN_H	6
Output 1	7
Output 2	8
CAN_L	9
CAN_L	10
Output 3	11
Output 4	12

Note: Load ground return via car body respectively individual grounding cable.

JXM-IO-E11

Product brief

The expansion module JXM-IO-E11 has been designed for signal processing in the dashboard or in the driver's cabin.

20 digital switching signals, 3 analog joystick axes and a 4-way switch can be combined to be transmitted to the controller as a CAN message.

Up to 24 LEDs can be controlled via CAN in parallel. Out of these, 20 LEDs can be dimmed individually. This way, a balanced background lighting within the HMI can be set, even if different light sources are used.

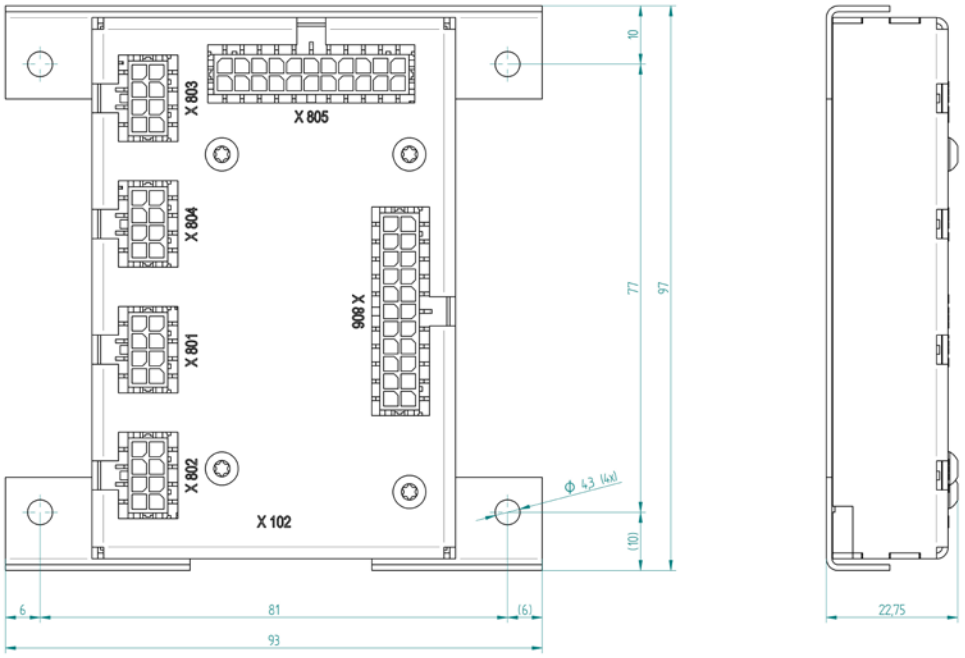
Features

- Grouping of discrete input and output signals
- CANopen® port
- 5 V power supply, built in
- Compact design

	JXM-IO-E11	
Operating voltage	DC 8 ... 32 V	
Operating/storage temperature	-40 ... +85 °C	
Ports and interfaces:		
▪ CAN	1	CANopen®
Max. number of inputs/outputs	50	
Inputs:		
▪ Analog	3	0 ... 5 V for analog joystick X-Y-Z, resolution 8 bits Alternative usage: ▪ 4x digital input, 5 V, for b/w joystick
▪ Digital	22	5 V for keys
Outputs:		
▪ PWM	20	5 mA for LEDs, resolution 4 bits
▪ Digital	4	5 mA for LEDs
Degree of protection	IP20	
Vibration	DIN EN 60068-2-64, Cat. 2	
Shock	DIN EN 60068-2-64, 30g	
Protection against polarity reversal	Yes	

Further details and order information are available on request. Specifications are subject to change without notice. Errors and omissions excepted.

Dimensional drawing



JXM-IO-E11

Connector pinout

JXM-IO-E11 X801 CAN - Molex Microfit 8-pin	
Power supply	1
CAN-H_IN	2
CAN-H_OUT	3
CAN-L_IN	4
CAN-L_OUT	5
Ground	6
n.c.	7
Ground	8

JXM-IO-E11 X802 joystick - Molex Microfit 8-pin	
n.c.	1
Joystick x-axis or b/w, direction: north	2
Joystick y-axis or b/w, direction: east	3
Joystick z-axis or b/w, direction: south	4
b/w, direction: west	5
Joystick button 1	6
Joystick button 2	7
Ground	8

JXM-IO-E11 X803 4-way switch - Molex Microfit 8-pin	
Voltage output 5 V	1
4-way switch 3	2
LED SW 3	3
Ground	4
Voltage output 5 V	5
4-way switch 4	6
LED SW 4	7
Ground	8

JXM-IO-E11 X804 4-way switch - Molex Microfit 8-pin	
Voltage output 5 V	1
4-way switch 1	2
LED SW 1	3
Ground	4
Voltage output 5 V	5
4-way switch 2	6
LED SW 2	7
Ground	8

JXM-IO-E11 X805 switch inputs 1 to 16 - Molex Microfit 22-pin	
Voltage output 5 V	1
Switch 1	2
Switch 3	3
Switch 5	4
Switch 7	5
Switch 9	6
Switch 11	7
Switch 13	8
Switch 15	9
Ground	10
Ground	11
Switch 2	12
Switch 4	13
Switch 6	14
Switch 8	15
Switch 10	16
Switch 12	17
Switch 14	18
Switch 16	19
Ground	20
Ground	21
Ground	22

JXM-IO-E11 X806 LED outputs 1 to 20 (dimmable) Molex Microfit 22-pin	
Voltage output 5 V	1
Switch 1	2
Switch 3	3
Switch 5	4
Switch 7	5
Switch 9	6
Switch 11	7
Switch 13	8
Switch 15	9
Ground	10
Ground	11
Switch 2	12
Switch 4	13
Switch 6	14
Switch 8	15
Switch 10	16
Switch 12	17
Switch 14	18
Switch 16	19
Ground	20
Ground	21
Ground	22

JXM-IO-E30

Product brief

The expansion module JXM-IO-E30 is the universal building block for remote I/Os on mobile machinery. Thanks to its well-adjusted I/O configuration, it can take on almost any remote task and this way significantly reduce wiring expenses. The reference output lets you use standard sensors and carry out pre-processing applications.

Communication with the JXM-IO-E30 takes place via CANopen®. This allows for integration into conventional CAN networks used in mobile machinery.

The potted - and thus rugged - enclosure is applicable in any situation even under harsh environmental conditions.

Features

- Potted - rugged and tight
- Multi-purpose I/O configuration
- Reference voltage for sensors
- CAN port (CANopen®)

	JXM-IO-E30	
Operating voltage	DC 8 ... 32 V, ECU voltage, isolated	
Operating/storage temperature	-40 ... +85 °C	
CAN ports	1	CANopen®
Max. amount of inputs/outputs	26	
Inputs:		
▪ Analog	8	▪ 0 ... 5 V/0 ... 20 mA, can be configured individually, ▪ resolution: 10 bits, input impedance: 50 kΩ, load resistor: 240 Ω
▪ Digital / frequency	4	▪ Active-high, ▪ input impedance 3 kΩ ▪ 5 Hz ... 30 kHz, period 62.5 ns
▪ Digital / CAN-coding	2	Coding of the CAN ID, tristate
Outputs with diagnostics capability (short-circuit, no-load):		
▪ PWM, precision current measuring	4	3 A, 1.5 kHz max., dithering, current-controlled, diagnostics capability, short-circuit proof Alternative usage: ▪ Digital input, active-high, input impedance 100 kΩ ▪ Digital output 3 A
▪ PWM	6	7 A, 1.5 kHz max., dithering, diagnostics capability, short-circuit proof Alternative usage: ▪ Digital input, active-high, input impedance 100 kΩ ▪ Digital output 7 A
▪ Digital (50 % ON period)	4	3 A high-side, diagnostics capability, short-circuit proof, (with 50 % ON period) Alternative usage: ▪ Digital input, active-high, input impedance 100 kΩ
▪ Sensor supply	3	Independent Uop supply for sensors
▪ Max. permitted total current	25 A	
▪ Degree of protection	IP65	
Vibration	DIN EN 60068-2-64, Cat. 2	
Shock	DIN EN 60068-2-64, 30g	
Protection against polarity reversal	Yes	
Output diagnostics	Short circuit, no-load	

Further details and order information are available on request. Specifications are subject to change without notice. Errors and omissions excepted.

JXM-IO-E30

Connector pinout

JXM-IO-E30	
CAN_H	A1
CAN_L	B1
HS3C_4	C1
HS3C_3	D1
HS3C_2	E1
HS3C_1	F1
HS3_4	G1
HS3_3	H1
HS3_2	J1
HS3_1	K1
UB	L1
UB	M1
CAN_TERM2	A2
CAN_TERM1	B2
DIP_1	C2
DIP_2	D2
DIP_3	E2
DIP_4	F2
SGND	G2
SPWR_3	H2
SPWR_2	J2
SPWR_1	K2
UB	L2
HS7_1	M2

JXM-IO-E30	
n.c.	A3
ANI_1	B3
ANI_2	C3
ANI_3	D3
ANI_4	E3
ANI_5	F3
ANI_6	G3
ANI_7	H3
ANI_8	J3
ECU_UB	K3
GND	L3
HS7_2	M3
HS7_5	A4
HS7_5	B4
HS7_6	C4
HS7_6	D4
HS7_4	E4
HS7_4	F4
HS7_3	G4
HS7_3	H4
IN_CFG1	J4
OUT_CFG2	K4
GND	L4
GND	M4

Motion systems

For electrification of drive systems, we provide highly-specialized and especially powerful and robust devices.

JetMoveMobile 5000

Product brief

Servo amplifiers of the JetMoveMobile-5000 series are key to electrification of mobile machinery. Thanks to their high quality of control, these servo amplifiers achieve a significantly higher level of effectiveness than it is the case with comparable hydraulic motion systems. Decoupling the speed of the Diesel engine from the speed requirements of the processes enables the Diesel engine to run at its optimum operating point. This results in lower fuel consumption, sided by reduced noise emission.

Having got water-cooling, the inverter could be designed very compact. This allows for space-saving installation in the vehicle.

The enclosures of the servo amplifiers are both extremely rugged and protected according to IP6K9K (pressure washing).

Features

- Extremely rugged (IP6K9K)
- High quality of control
- Fast and safe processes
- High efficiency
- Low fuel consumption
- Low noise level
- Parallel operation of up to 80 kW
- Water-cooled
- Stackable

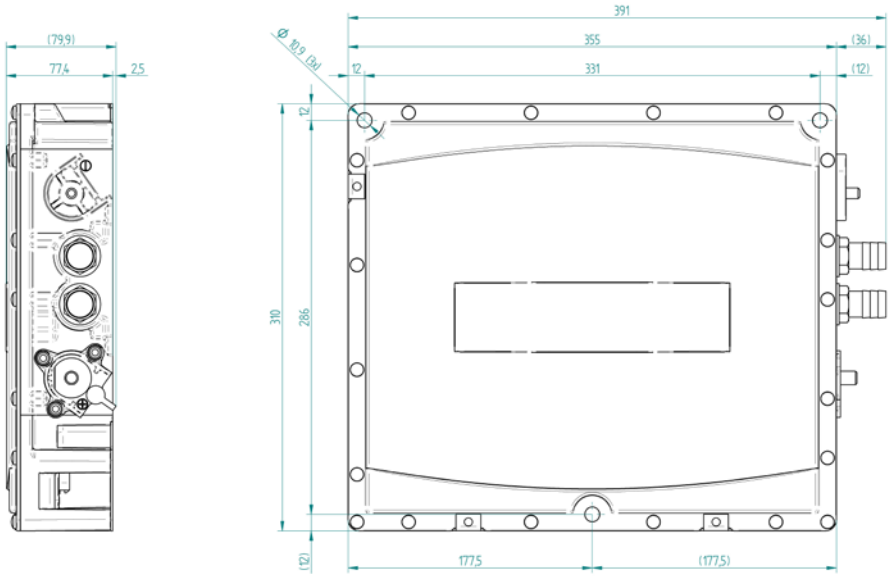
Options

- DC/DC converter up to 200 A

	JMM-5440-800
Power output stage 1 (Continuous output)	40 KW
Current	58 A_{eff}
Frequency	0 ... 1000 Hz
Power output stage 2 (Continuous output)	40 KW
Current	58 A_{eff}
Frequency	0 ... 1000 Hz
DC link voltage	DC 200 ... 800 V
Operating voltage (logic unit)	DC 8 ... 32 V
Operating/storage temperature	-40 ... +85 °C
Ports and interfaces:	
- CAN	2
Max. number of inputs/outputs	8
Inputs:	
- Analog; digital; frequency	0, 4, (4)
Outputs:	
- Digital; PWM; H-bridge	(4); 4; 0
Coolant, operating pressure	Water, 2 bar max.
Coolant, temperature (during operation)	30 ... 65 °C
Degree of protection	IP6K9K
Vibration	DIN EN 60068-2-64, Cat. 2
Shock	DIN EN 60068-2-64, 30g
Protection against polarity reversal	Yes

Further details and order information are available on request. Specifications are subject to change without notice. Errors and omissions excepted.

Dimensional drawing



	JMM-5330-800	JMM-5220-800	JMM-5210-800	JMM-5201-800
Power output stage 1 (Continuous output)	20 KW	10 KW	10 KW	10 KW
Current	30 A_{eff}	15 A_{eff}	15 A_{eff}	15 A_{eff}
Frequency	0 ... 1000 Hz	0 ... 1000 Hz	0 ... 1000 Hz	0 ... 1000 Hz
Power output stage 2 (Continuous output)	20 KW	10 KW	5 KW	DC/DC converter
Current	30 A_{eff}	15 A_{eff}	8 A_{eff}	DC 14 V/200 A
Frequency	0 ... 1000 Hz	0 ... 1000 Hz	0 ... 1000 Hz	DC
DC link voltage	DC 200 ... 800 V	DC 200 ... 800 V	DC 200 ... 800 V	DC 200 ... 800 V
Operating voltage (logic unit)	DC 8 ... 32 V	DC 8 ... 32 V	DC 8 ... 32 V	DC 8 ... 32 V
Operating/storage temperature	-40 ... +85 °C	-40 ... +85 °C	-40 ... +85 °C	-40 ... +85 °C
Ports and interfaces:				
- CAN	2	2	2	2
Max. number of inputs/outputs	8	8	8	8
Inputs:				
- Analog; digital; frequency	0, 4, (4)	0, 4, (4)	0, 4, (4)	0, 4, (4)
Outputs:				
- Digital; PWM; H-bridge	(4); 4; 0	(4); 4; 0	(4); 4; 0	(4); 4; 0
Coolant, operating pressure	Water, 2 bar max.	Water, 2 bar max.	Water, 2 bar max.	Water, 2 bar max.
Coolant, temperature (during operation)	30 ... 65 °C	30 ... 65 °C	30 ... 65 °C	30 ... 65 °C
Degree of protection	IP6K9K	IP6K9K	IP6K9K	IP6K9K
Vibration	DIN EN 60068-2-64, Cat. 2	DIN EN 60068-2-64, Cat. 2	DIN EN 60068-2-64, Cat. 2	DIN EN 60068-2-64, Cat. 2
Shock	DIN EN 60068-2-64, 30 g	DIN EN 60068-2-64, 30 g	DIN EN 60068-2-64, 30 g	DIN EN 60068-2-64, 30 g
Protection against polarity reversal	Yes	Yes	Yes	Yes

Further details and order information are available on request. Specifications are subject to change without notice. Errors and omissions excepted.

System components

The variety of functions and ease of operation are significantly increased by system components. Individual demands placed on user-friendly operation and configuration of mobile machinery can very easily be met this way.

POWERTRACK

Product brief

POWERTRACK allows for HMIs to be expanded by a rotary encoder and 6 user-programmable keys. POWERTRACK connected via CAN enables intuitive and efficient user guidance.

Features

- Easy-to-grip rotary encoder which can also be handled by a user wearing gloves
- 6 user-programmable keys which can be labeled individually
- Keys with multi-color LEDs for state reporting
- Compact design (degree of protection: IP54)
- CAN interface for CANopen® or SAE J1939 (optional)

	POWERTRACK
Connector	Deutsch DT04-4P
Service life - keyboard	3 million switching cycles min.
Service life - rotary encoder (key function)	1 million switching cycles min.
Service life - rotary encoder (rotary function)	100,000 cycles min.
Keyboard	Silicone rubber, PU-hardcoated
Operating/storage temperature	-40 °C ... +70 °C / -40 °C ... +85 °C
UV radiation protection	UVB resistance: 400 hours
Salt spray	To ASTMB117
Chemical resistance	DEET, motor cleaners, isopropanol, sunscreen, multi-purpose cleaners, orange- or lemon-based cleaners
Degree of protection	IP54
Power supply	Rated voltage DC 12 ... 24 V (DC 8 ... 32 V)
Communications bus	CANopen®

Further details and order information are available on request. Specifications are subject to change without notice. Errors and omissions excepted.

POWERKEY PRO

Product brief

The keyboard series POWERKEY PRO excels by its compact design. Being equipped with a CAN interface and keys which can be assigned by the user, this device opens up a wide range of application options. Meeting specific requirements for the operation of mobile machinery can be very easy this way.

Features

- The keys are raised so they can be easily pressed even by operators wearing gloves.
- User-programmable keys of layout 2x2, 3x2, 4x2, and 6x2
- Individually printable key caps; > 100 default icons
- Keys with multi-color LEDs for state reporting
- Compact design (degree of protection: IP67)
- CAN interface for CANopen® or SAE J1939 (optional)

	POWERKEY PRO
Connector	Deutsch DT04-4P
Service life - keyboard	3 million switching cycles min.
Keyboard	Silicone rubber, PU-hardcoated
Operating/storage temperature	-40 °C ... +70 °C / -40 °C ... +85 °C
UV radiation protection	UVB resistance: 400 hours
Salt spray	To ASTMB117
Chemical resistance	DEET, motor cleaners, isopropanol, sunscreen, multi-purpose cleaners, orange- or lemon-based cleaners
Degree of protection	IP67
Power supply	Rated voltage DC 12 ... 24 V (DC 8 ... 32 V)
Communications bus	CANopen®

Further details and order information are available on request. Specifications are subject to change without notice. Errors and omissions excepted.

JXM-CAM

Product brief

The JXM-CAM is a video camera especially designed for outdoor use. It is ideal for use as a surveillance camera in mobile machinery, or as a rear-view camera in cars.

When the light conditions turn weak the photo sensor automatically activates the infrared LEDs which completely illuminate a circle of 10 m in diameter.

The JXM-CAM can be used along with all devices by Jetter AG which are equipped with the corresponding video input.

Features

- Compact steel-sheet enclosure
- Degree of protection: IP68
- Operating voltage: DC 12 V
- Ambient temperature: -30 … +65 °C

	JXM-CAM
System	PAL/NTSC, automatic changeover
Operating voltage	DC 12 V
Operating/storage temperature	-30 … +65 °C/-40 … +80 °C
Input current	0.2 A
Outputs:	
- Video	1 (MiniDIN - Composite 1 Vp-p 75 ohms)
Degree of protection	IP68
Night-time operation	Infrared LEDs for illumination at night (sensor-controlled activation)
Dimensions (W x H x D)	90 x 80 x 55 mm

Further details and order information are available on request. Specifications are subject to change without notice. Errors and omissions excepted.

Connector pinout

JXM-CAM 5-pin MiniDIN connector	
Power DC 12 V (yellow)	1
Audio IN (red)	2
Mirror (blue)	3
Video IN (white)	4
GND	5

Wiring harness | RAM Mount mounting bases

Product brief

Design and manufacturing of wiring harnesses are a decisive factor for the functional reliability of mobile machinery. Customized wiring harnesses enable implementing customer-specific features. Jetter AG provides long-year expertise in wiring harness technology.

Product brief

Dash mounts by RAM Mount allow quick and easy positioning of HMIs for the perfect angle.

For individual HMIs there are corresponding dash mounts and mounting solutions available.

Software


Jetter
automation
ISO-D
Designumgebung
Design Environment
Jetter
automation
ISO-Designer

Jetter AG software solutions unite simplicity and integration. A decisive factor in this case is the usability of the systems.

JetSym

Product brief

JetSym is the central programming tool by Jetter AG compliant with IEC-61131-3. It corresponds to all technology functions needed for mobile machinery.

From programming the control system to commissioning the mobile machine, every programming detail can be realized with JetSym.

Features

- Configuration
- Programming
- Debugging
- Commissioning
- Diagnostics
- Version management

The programming language STX

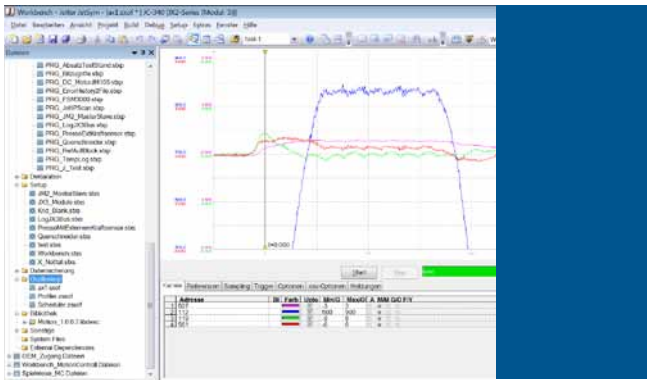
STX meets all requirements of mobile machinery automation. Its syntax is based on IEC 61131-3 ST. With this process-oriented language, the real processes of a machine can be directly mapped and described. High-performance commands for PWM-controlled valve handling, motor control, operator interaction and strings make programming of controllers much easier.

The object-oriented approach of STX offers clear advantages. With it, tried and tested routines can be encapsulated so that neither the code nor the essential data can be changed.

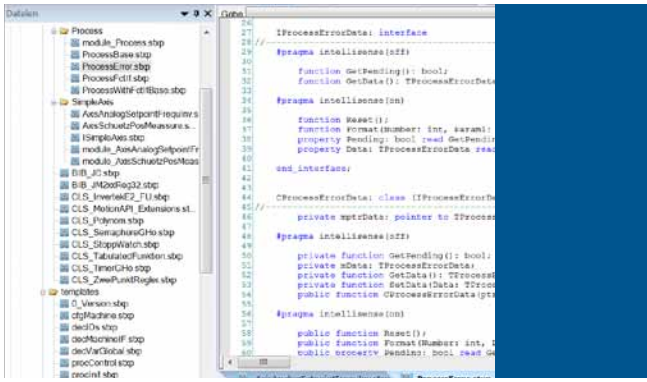
In addition, classes can also take over data structures and methods of other classes and extend them. It is exactly this basic principle of object-oriented programming, which is highly interesting for automation systems: Here, the programmer can map shared object properties through a base class and therewith define derived classes for the different manifestations of the objects. The use of these program elements is especially efficient.

Object orientation helps to reduce development and testing times

The object-oriented approach of STX helps to reduce development and testing times. With it, tried and tested routines can be encapsulated so that neither the code nor the essential data can be changed. Besides mere reusability, classes can also take over data structures and methods of other classes and extend them. It is exactly this basic principle of object-oriented programming, which is highly interesting for state-of-the-art software architecture in mobile machinery. Here, the programmer can map shared object properties through a base class and therewith define derived classes for the different manifestations of the objects/functions. The use of these program elements is especially efficient and significantly reduces testing times.



Oscilloscope mode

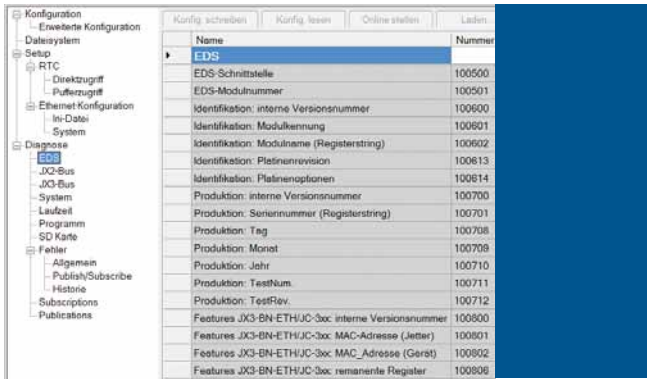


Pragma INTELLISENSE(OFF)

STX – Can do more

STX has been extended beyond the standard to include many important elements that are indispensable in modern automation. These include object orientation, which is integrated into STX to a very high degree. Many further indispensable functions can be mapped with simple and common commands:

- Positioning
- CAN library
- Hydraulics temperature compensation by current regulation
- Task management
- File operations on the file system of the control system
- String processing
- Data processing in complex structures
- Exception handling
- and much more



EDS (Electronic data sheet)

JetViewSoft

Product brief

The software tool JetViewSoft lets you easily visualize processes and design individual screens for HMIs. The proven object-oriented approach allows you to easily and efficiently complete even complex visualization tasks without previous experience. The user-friendly editor and a pool of predefined objects actively help you create screens in no time at all.

All important functions such as alarm handling, trending and libraries are available for the creation of sophisticated visualizations. Thanks to its object-oriented concept, the user-friendly editor helps to implement large-scale projects easily and efficiently.

Features

- Supports scalable vector graphics and SVG import
- Features gesture control for modern visualizations
- Efficient design process thanks to object-oriented structure
- Database with predefined objects and preview feature
- Supports creation of multilingual screens and import/export of language resources
- Alarm handling and trend graph
- STX as scripting language lets you add new functions
- Terminal Wizard and simple download to HMIs

Full scalability thanks to vector graphics technology

The vector graphics technology of JetViewSoft allows for complete and lossless scalability of all objects (except for bitmap graphics). Thus, projects or project parts that are designed for a specific resolution of the target device can be used on displays with a different resolution without any loss.

SVG import

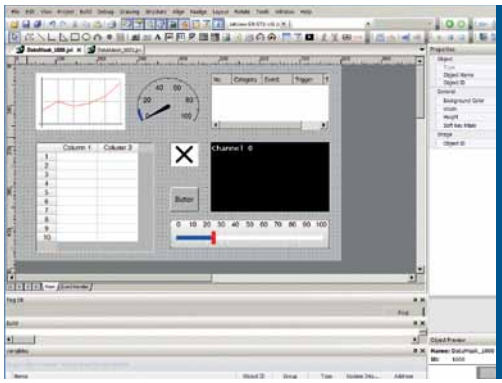
JetViewSoft lets you directly import SVG files from graphics or CAD tools into a visualization application. Cumbersome conversion of CAD drawings into bitmap format is therefore a thing of the past.

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 be dynamically displayed during runtime in the control program by means of pointers.

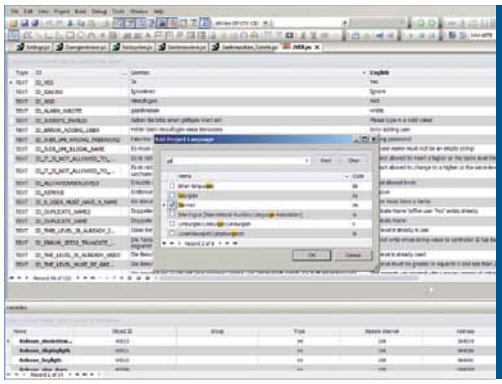
Configuring objects rather than programming

In JetViewSoft, visualizations can be configured using existing graphic objects. To this end, predefined objects, such as sliders, meters, buttons, lines, circles, ellipses, list boxes, check boxes, symbols, XY graphs, image and video objects are simply arranged by drag and drop in the development environment. These elements can be arranged one upon the other or side by side. They can also be combined to form groups. All elements can be stored in a separate structured object library.



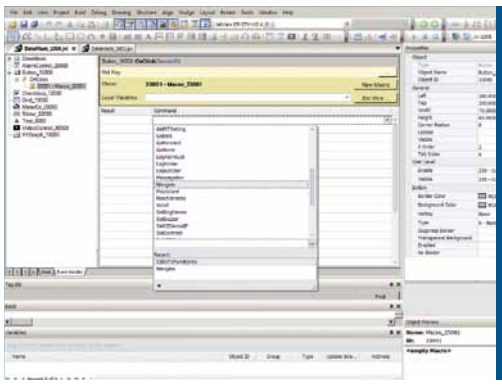
Editing and managing multilingualism in a central repository

In JetViewSoft, the selected language and optional image fonts are loaded from a central language management pool during runtime. This allows for simple import or export of language resources as CSV files for further editing in MS Excel, for instance. Translation, maintenance and handling of several languages can be carried out quickly and easily.



Macro and scripting language in perfect unison

For simple processes, JetViewSoft offers programmable macro functions. For complex processes, calculations, or for programming special functions, STX, a programming language based on IEC-61131-3, is available as scripting language. This scripting language is also used to program Jetter controllers. This means, JetViewSoft and STX stand for perfect compatibility.



ISO-Designer

Product brief

With the ISO-Designer from Jetter AG, it is simple to create ISOBUS-compliant files. ISO-Designer commands a high-performance graphical editor with a functional scope comparable to graphic programs. Many actions can easily be executed by a few mouse clicks.

Features

- Creating masks to ISO 11783 (.iop files)
- Graphics editor
- Convenient aligning/grouping
- Operating by drag-and-drop
- Zoom function
- Undo/redo function
- Configurable GUI
- Smart copy function
- Object pool with preview function
- Library
- Bookmarks and history
- Supporting standards on all levels
- Automatic color conversion
- Preview function
- Multilingualism is easy to implement

We are members

ISOBUS

AEF
AGRICULTURAL INDUSTRY
ELECTRONICS FOUNDATION

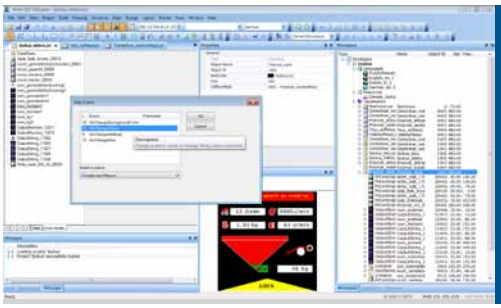
Clearly designed project management | 100 % ISO-compliant

Optimum project management is achieved by presenting the objects in a clear tree structure with a preview function. The ISO-Designer supports all specified levels of the standard. When you create a new project, you are free to choose which specifications should apply. The automatic color space conversion of imported images always ensures compliance with the ISO standard.

Everything at a glance

Ease of operation leaves no wish unfulfilled

Profit from numerous convenient functions which ease your daily work. This way, even the work interface can be customized to your needs. All functions first go through an intensive practical test before they are finally integrated into the program.



Optimized for the practice

Multilingualism | More options

With the ISO-Designer, multilingual masks are especially simple to create. A resource file saves all the necessary information. The relevant texts are displayed depending on the active language. The resource file can also be exported as a table and imported again, which substantially simplifies external translation of the texts.

Fast, efficient language management

ISO-Designer – Get your license at no cost for an unlimited period.

Register at www.iso-designer.de and you will receive your personal activation code. Profit from the benefits:

- Standard-compliant further development with update service
- Full functionality
- Full support
- Full compatibility for every ISOBUS terminal

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 let us 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
- 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)
- 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
- 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
- Wire harness manufacturing
- CE certification with risk analysis
- Electrical design with Eplan
- 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
- 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

Jetter
automation

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We automate your success.