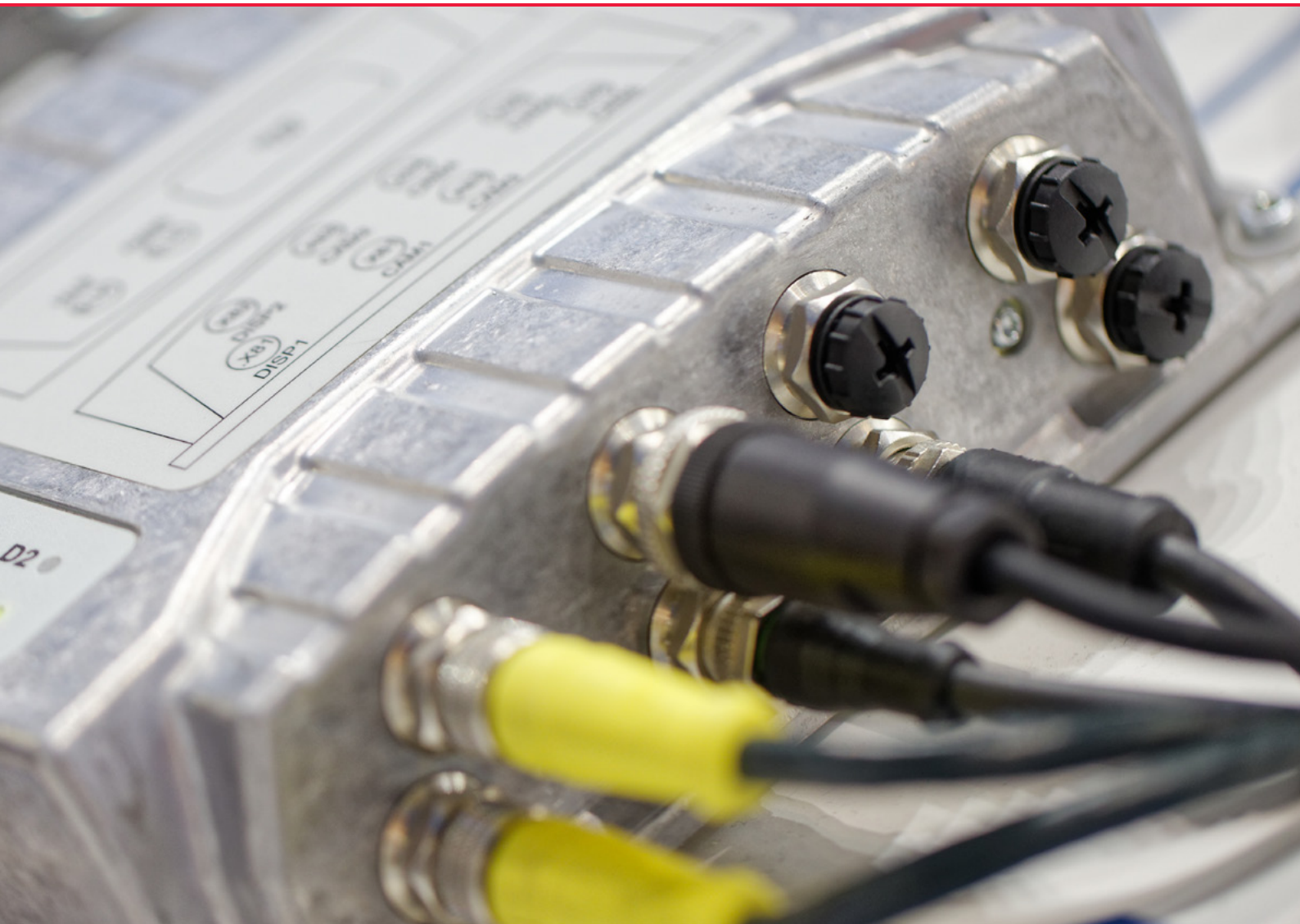
BUCHER
automation

Your partner in mobile automation

Products and Services



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



Experience
Know-how
Made in Germany

For decades, the name Bucher Automation AG has been synonymous with the highest standards in automation technology and used in a wide range of industrial and mobile automation applications.

The company's products and components stand out thanks to their advanced system integrity and diversity. Leveraging our in-house R&D capacities (hardware and software) and our production facilities in Germany we maximize our operational agility. Complemented by a comprehensive range of Professional Services we are able to put virtually any customer request into practice.

In industrial automation, Bucher Automation AG is focusing on selected industries. Customers benefit from made-to-measure solutions allowing them to engineer state-of-the-art-machines and facilities that will give the edge over market rivals.

In mobile automation, Bucher Automation AG develops and manufactures highly complex and robust automation strategies allowing users to control a wide variety of functions in municipal, fire-fighting, and agricultural vehicles. This way, our products help sustain the availability of your vehicles and implements.

Radical changes in the industry catalyzed by Industry 4.0 and the IoT call for future-proof solutions. Bucher Automation AG provides you with field-proven and safe systems, and is there for you every step of the way – from engineering to commissioning.

The cornerstone of Bucher Automation AG's product and networking philosophy has always been seamless integration of all automation components into the production process. Bucher Automation AG was the first company worldwide to rely on consistent networking with Ethernet TCP/IP and using common Internet protocols. For many years, we have been delivering tomorrow's state of the art in today's automation products to help customers stay on top of future production process requirements.



Display controller



JetViewMobile 104



Description

Thanks to its compact and rugged design, the JVM-104 HMI is ideally suited for any application of mobile machinery.

It comes with a powerful controller offering extension options through additional I/O connections, one Ethernet and one USB port. In many applications, this makes an additional controller redundant.

Typically, the HMI is operated via eight backlit keys, and a digipot used as pushbutton.

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

Product features

- Display with built-in controller 32 bits/500 MHz
- Flexible extension options
- Advanced connectivity
- Customizable
- Flush-mounted or surface-mounted model variant

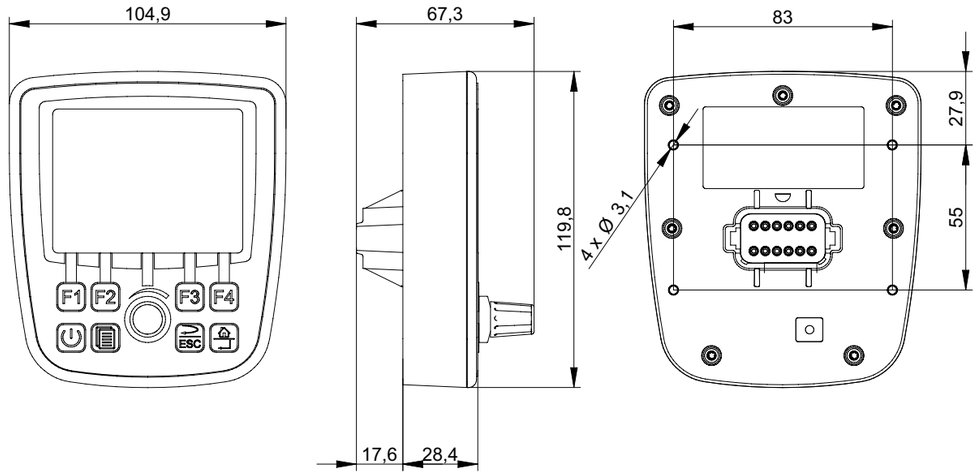
Technical specifications

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: IEC61131-3 STX
Operating system	WinCE 6.0
Operating voltage range	DC 8 ... 32 V
Operating/storage temperature	-20 °C ... +65 °C/-30 °C ... +70 °C
Ports and interfaces	
CAN	1 (2) CANopen, SAE J1939, ISOBUS 11783 (option: 2 interfaces)
USB	1 (option)
Ethernet	1 (option)
RS232	1 (option)
Control elements	8 membrane pushbuttons, backlit (customer-specific membrane on request)
Signaling	1 push encoder (option)
	1 touch screen (option)
Max. amount of inputs/outputs	1 buzzer 83 dB/10 cm/2670 Hz
	6 (option: enclosure with Deutsch-DT connector)
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 kHz... 10 kHz, period > 1 µs, input impedance 20 kΩ
	- Counting input 0.1 Hz ... 10 kHz, counting range 32 bits
Outputs (option)	
High-side outputs	4; 2.5 A; peak current 5 A (500 ms)
	Alternative usage:
	4 x PWM 2.5 A; 100 Hz ... 1 kHz, diagnostic capabilities
	4 x digital output 2.5 A, high-side, diagnostic capabilities
	4 x digital input active-high, NAMUR support, 8.2 V at 1 kΩ pull-up
	1 x full bridge + 2 x PWM
Max. permitted total current	12 A fully equipped with I/Os
RTC	Option
Degree of protection	IP65 front/IP65 rear/IP65 rear
	with Ethernet/USB port
Vibration	DIN EN 60068-2-64, Cat. 2
Shock	DIN EN 60068-2-64, 30 g
Protection against polarity reversal	Yes

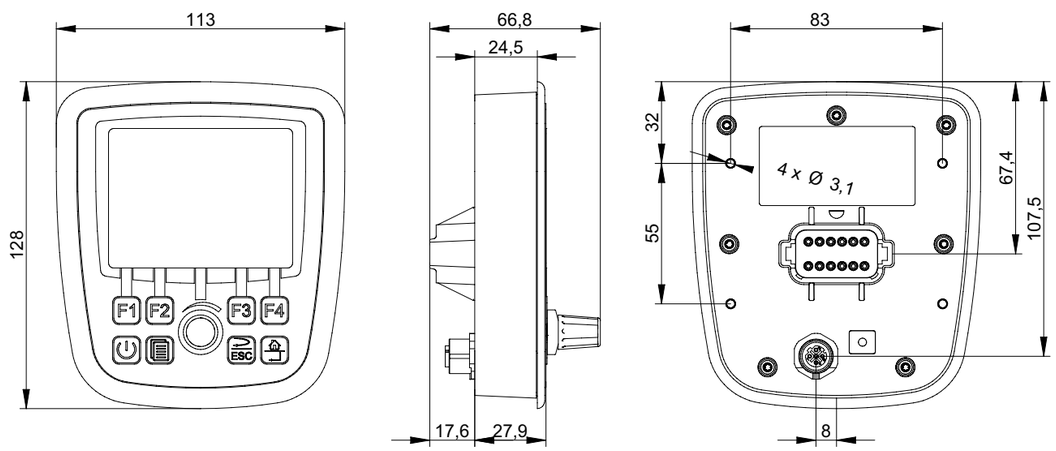
JetViewMobile 104

Dimensional drawing

Surface-mount model



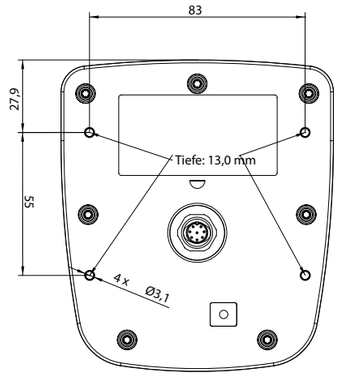
Flush-mount model



Pinout

Model with M12 screwtype connector

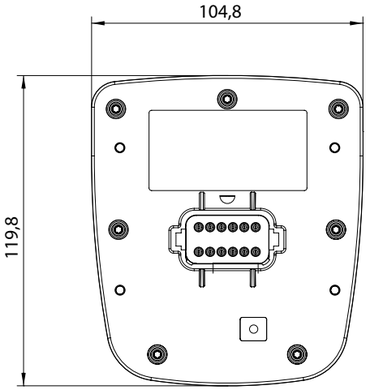
Power supply of logic unit 2 A	1
n.c.	2
Power supply ON	3
n.c.	4
CAN1-L	5
Ground	6
CAN1_H	7
n.c.	8
n.c.	8



Pinout

Model with M12 screwtype connector

Ground	1
Output 1	2
Output 2	3
Output 3	4
Output 4	5
Power supply of logic unit 2 A	6
Power supply of power outputs 10 A	7
Power supply ON	8
CAN1_L	9
CAN1_H	10
Analog input 1	11
Analog input 2	12



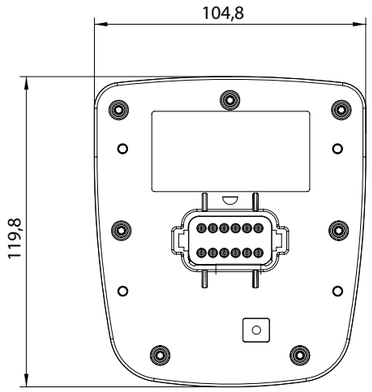
JetViewMobile 104

Pinout

Model with Deutsch connector and power outputs / 2 CAN ports

Ground	1
CAN2_L	2
CAN2_H	3
Output 3	4
Output 4	5
Power supply of logic unit 2 A	6
Power supply of power outputs 10 A	7
Power supply ON	8
CAN1_L	9
CAN1_H	10
Analog input 1	11
Analog input 2	12

Ethernet RJ45 and USB 2.0 host interface

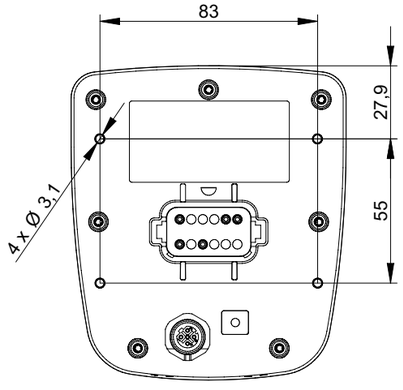


Pinout

Model with Deutsch connector and COM module

Ground	1
USB+	2
USB DP	3
USB DM	4
USB-	5
Power supply	6
RS232 TxD	7
RS232 RxD	8
CAN1_L	9
CAN1_H	10
CAN2_L	11
CAN2_H	12

Ethernet M12x1 (only flush-mount devices)



Pinout

M12 female connector, 4-pin, D-coded

ETH_TX+	1
ETH_RX+	2
ETH_TX-	3
ETH_TR+	4

Accessories

Dash mounts by RAM Mount



JXM-HMI





Description

The JXM-HMI is a versatile human-machine interface with three heavy-duty push encoders. It is therefore ideally suited for a wide range of dosing and control applications in mobile machines.

Thanks to its compact geometries, it can be flexibly mounted in the driver's cabin both individually or in combination with a displaying device such as JetViewMobile 104. Compatibility with the overall vehicle architecture as well as connectivity with vehicle electronics is ensured via CANopen. The push encoders offer a wide range of features allowing for virtually any application customization need to be met: For example, bidirectional rotation and a push button enable precise dosing of spread materials. Bespoke solutions include up to 16 backlit membrane pushbuttons instead of the push encoders.

The push encoders are distinguished by icons signaling their function, and have built-in LEDs to ensure the icons are clearly visible at all times. To maximize user comfort, the LEDs can also be dimmed to adjust to the peripheral equipment and changing lighting conditions during the day and at night.

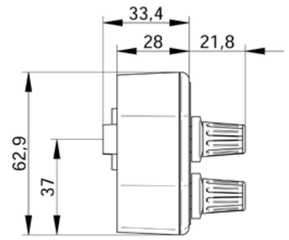
Product features

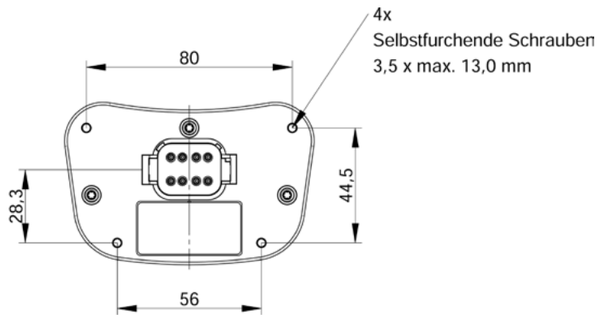
- 1 CANopen port for seamless integration into the vehicle architecture
- 3 push encoders with bidirectional rotation motion and push button for precise dosing and control operations
- Dimmable LED backlight for optimal adjustment to different daylight and lighting conditions
- Superior application versatility thanks to the compact design: Can be installed individually or in combination with a JVM-104 HMI

Technical specifications

Operating voltage range	DC 8 ... 32 V
Operating/storage temperature	-30 ... +85 °C
CAN ports	1 CANopen, built-in terminating resistor
Push encoder count	3
Push encoder properties	
Feature	Bidirectional rotation and push button
Illumination	Dimmable LEDs (icons)
Degree of protection	IP42
Vibration	ISO 16750-3
Shock	ISO 16750-3
Protection against polarity reversal	Yes

Dimensional drawing





Pinout

DT06-08SA Deutsch connector, 8 pins

CAN_L	1
CAN_H	2
Ground	3
Power supply	4
Power supply	5
Ground	6
CAN_H	7
CAN_L	8



ISOBUS HMIs



JetViewMobile 205



Description

The JVM-205 entry-level HMI is designed to offer intuitive operation. Thanks to the ISOBUS UT functionality, it integrates smoothly with all major ISOBUS controllers used in the field. Communication takes place via the ISOBUS protocol.

The recessed hand grip on the rear facilitates one-handed operation. By pairing a touch-sensitive display with a classic keyboard, this HMI combines the tactile sensation of keys with state-of-the-art touch control.

All ISOBUS virtual terminals are also available with neutral front foil making them universally applicable, C-programmable HMIs. Contact us for more information.

Product features

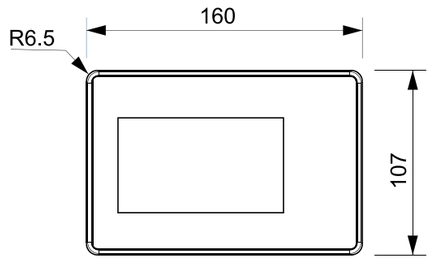
- 4.3” high-resolution touch display
- 8 soft keys
- 6 hard keys, ISB, power
- ISOBUS UT
- Update via CAN and USB

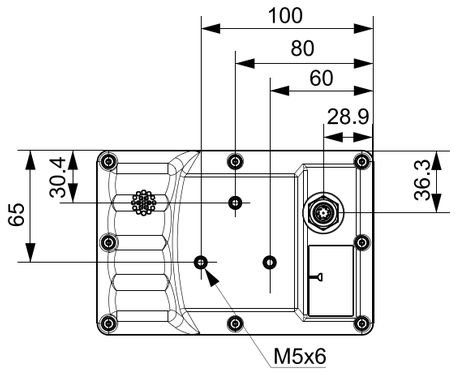
Technical specifications

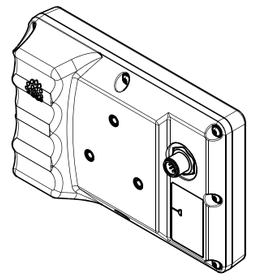
Display	4.3” TFT touch display with LED backlight, resolution: 480x272
Keys	8 soft keys
	6 hard keys
	ISB
	Power
Operating voltage range	DC 8 V ... 18 V, withstands 24 V supply (up to 32 V),
	Protection against load dump from 12 V systems
Operating/storage temperature	-20°C ... +70 °C, -30°C ... +70 °C
CPU	STM32H7
External flash memory	16 MB
USB	1
CAN ports	1 CAN, ISOBUS-compliant
Max. amount of inputs/outputs	1
Digital inputs	Ignition
Buzzer	Yes
Degree of protection	IP65
Real-time clock	Option, battery-backed, typically lasts 10 years
Vibration, shock	ISO 16750-3
ISOBUS features	ISOBUS UT
Certifications	CE according to ISO 14982

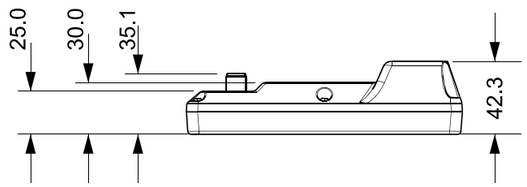
JetViewMobile 205

Dimensional drawing









Pinout

M12 8-pin male connector pinout

Power supply KL30 (+12 V)	1
USB Data+	2
Ignition	3
USB Data-	4
CAN-L	5
Power supply KL31 (GND)	6
CAN-H	7
USB +5V	8

JetViewMobile 206



Description

The JVM-206 entry-level HMI is designed to offer intuitive operation. Designed with limited ISOBUS UT functionality, it integrates smoothly with Bucher Automation AG's range of ISOBUS controllers. Communication takes place via the ISOBUS protocol.

The HMI's controls are arranged in a way that facilitate one-handed operation. By pairing a touch-sensitive display with a classic keyboard, this HMI combines the tactile sensation of keys with state-of-the-art touch control.

All ISOBUS virtual terminals are also available with neutral front foil making them universally applicable, C-programmable HMIs. Contact us for more information.

Product features

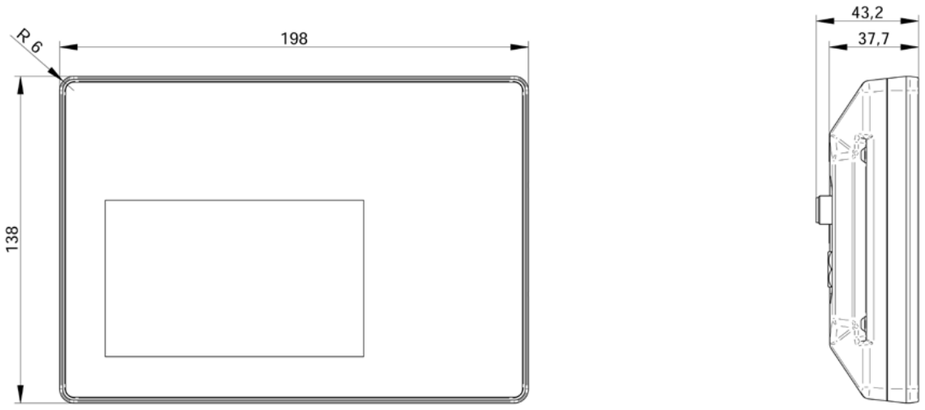
- 5" high-resolution touch display
- 12 soft keys
- 6 hard keys, ISB, power
- Limited ISOBUS UT
- Limited TECU
- Limited FS features

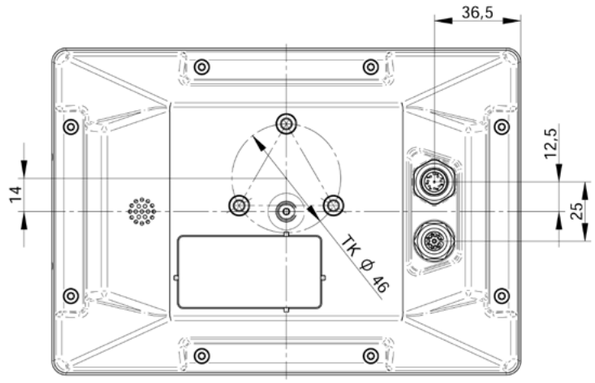
Technical specifications

Display	5" TFT touch display with LED backlight, resolution: 800x480
Keys	12 soft keys
	6 hard keys
	ISB
	Power
Operating voltage range	DC 8 V ... 18 V, withstands 24 V supply (up to 32 V).
	Protection against load dump from 12 V systems.
Operating/storage temperature	-20°C ... +70 °C, -30°C ... +70 °C
CPU	STM32F429
External flash memory	16 MB
USB	1
CAN ports	1 CAN, ISOBUS-compliant
Max. amount of inputs/outputs	6
Analog inputs	1 3-point analog input, compliant with ISO11786
Digital inputs	2 tractor speed inputs, compliant with ISO11786, 2 operating modes for configuration
	1 rear PTO speed input, compliant with ISO11786, 2 operating modes for configuration
	1 3-point input compliant with ISO11786
	Ignition
Buzzer	Yes
Degree of protection	IP65
Real-time clock	Yes, battery-backed, typically lasts 10 years
Vibration, shock	ISO 16750-3
ISOBUS features	Limited ISOBUS UT, Limited TECU, Limited FS, ISB
Certifications	CE according to ISO 14982

JetViewMobile 206

Dimensional drawing





Pinout

M12 8-pin male connector	
Power supply KL30 (+12 V)	1
USB Data+	2
Ignition I/O (0.5 A max.)	3
USB Data-	4
CAN-L	5
Power supply KL31 (GND)	6
CAN-H	7
USB +5V	8

Pinout

M12 8-pin female connector	
n.c.	1
Tractor speed input_0	2
Tractor speed input_1	3
n.c.	4
Rear PTO speed input	5
3-point digital input	6
Power supply KL31 (GND)	7
3-point analog input	8

JetViewMobile 306



AEF Certified ISOBUS UT TECU AUX-N TC-BAS TC-GEO TC-SC ... ... www.aef-isobus-database.org

Description

The JVM-306 HMI is designed to offer intuitive operation. Thanks to the AEF approved ISOBUS UT functionality, it integrates smoothly with all major ISOBUS controllers used in the field. Communication takes place via the ISOBUS protocol.

The HMI's controls are arranged in a way that facilitate one-handed operation. By pairing a touch-sensitive display with a classic keyboard, this HMI combines the tactile sensation of keys with state-of-the-art touch control.

All ISOBUS virtual terminals are also available with neutral front foil making them universally applicable, C-programmable HMIs. Contact us for more information.

Product features

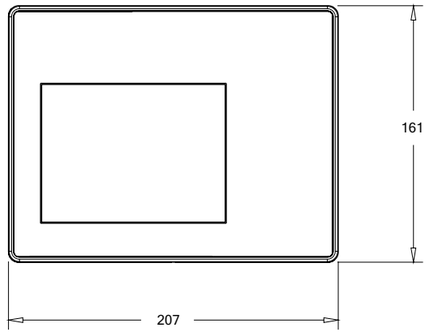
– 5.7" touch display, classic 4:3 format for optimized ISOBUS data mask visualization.
– 12 soft keys
– 8 hard keys, ISB, power
– ISOBUS UT, AEF certification
– ISOBUS TECU, AEF certification
– FS feature

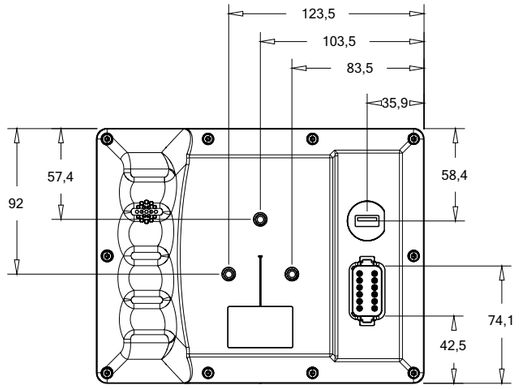
Technical specifications

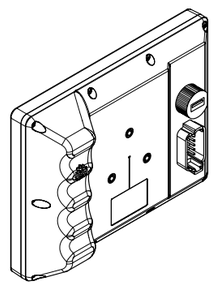
Display	5.7" TFT touch display with LED backlight, resolution: 640x480
Keys	12 soft keys
	8 hard keys
	ISB
	Power
Operating voltage range	DC 8 V ... 18 V, withstands 24 V supply (up to 32 V), Protection against load dump from 12 V systems
Operating/storage temperature	-20°C ... +70 °C, -30°C ... +70 °C
CPU	STM32H7
External flash memory	16 MB
USB	1
CAN ports	1 CAN, ISOBUS-compliant
Max. amount of inputs/outputs	6
Analog inputs	1 3-point analog input, compliant with ISO11786
Digital inputs	2 tractor speed inputs, compliant with ISO11786, 2 operating modes for configuration
	1 rear PTO speed input, compliant with ISO11786, 2 operating modes for configuration
	1 hitch input, compliant with ISO11786
	Ignition
Buzzer	Yes
Degree of protection	IP65
Real-time clock	Yes, battery-backed, typically lasts 10 years
Vibration, shock	ISO 16750-3
ISOBUS features	AEF-certified UT, TECU and FS, ISB
Certifications	CE according to ISO 14982

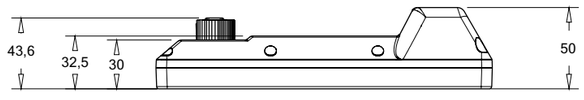
JetViewMobile 306

Dimensional drawing





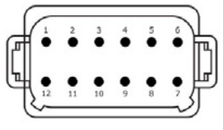


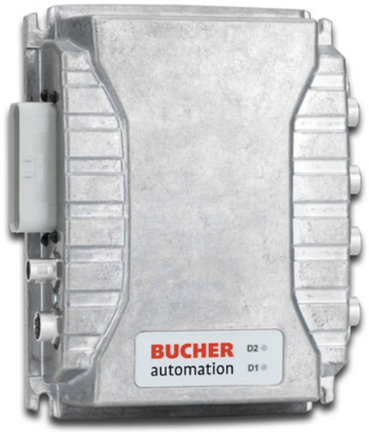


Pinout

Built-in Deutsch DT connector, 12 pins, A-coded

Power supply KL30 (+12 V)	1
Rear PTO speed input	2
Hitch position (digital) input	3
CAN-H	4
CAN-L	5
Hitch position (analog) input	6
RS-232-RX	7
RS-232-TX	8
Tractor wheel speed input_0	9
Ignition I/O (0.5 A max.)	10
Tractor ground speed input_1	11
Power supply KL31 (GND)	12





Multi-Display Controller



JetControlMobile 631-O04



Description

The JCM-631 multi-monitor controller combines outstanding video features, and high-performance HMI and PLC disciplines into a single system.

A powerful dual core 32-bit CPU with 1 GHz clock rate is at the heart of the automation functions. Four CAN interfaces, Gbit Ethernet connectivity, USB, LIN, and RS232 offer state-of-the-art connectivity to suit complex architectures.

Visualization takes place on 2 high-resolution displays each controlled via LVDS interfaces with one connector per display being sufficient. A host of supported display formats and configurations allow for versatile screen arrangement.

A single low-latency FPGA is able to process 6 camera images from 8 camera channels simultaneously. The images can be freely scaled, cut, positioned, or superimposed with graphic and text elements. With reasonable cost and effort, it is possible to implement operating concepts in special-purpose vehicles that offer a level of integration even outdoing modern middle-class cars.

The IEC-61131-3-compliant STX programming language, a C programming plug-in, and scalable vector graphics support by JetViewSoft offer a highly efficient workflow for control and visualization. The JCM-631 is available with ISOBUS stack.

Product features

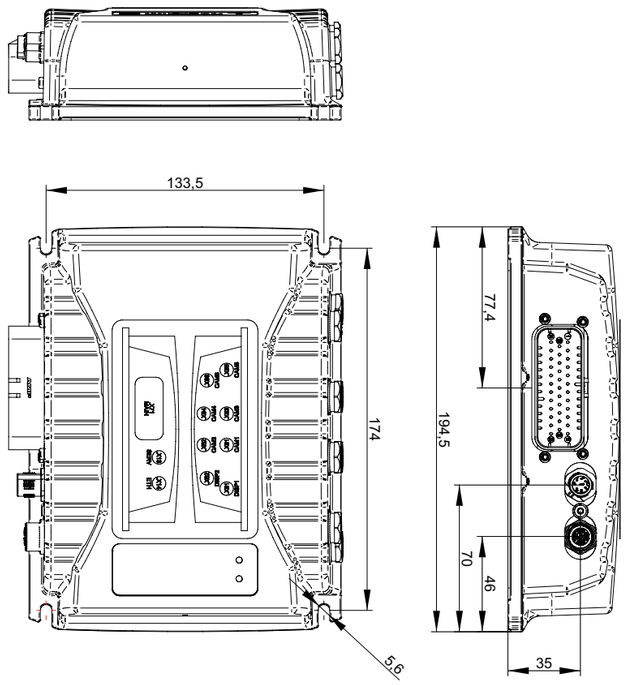
- Powerful PLC with advanced connectivity
- Excellent HMI features on two displays
- Free positioning, size adjustment and scaling of 6 camera images
- Integrated JetSym and JetViewSoft programming environment compliant with IEC-61131-3
- Plug-in for programming in C or 3rd party software
- Can be updated via USB flash drive
- Flush-mounted or surface-mounted model variant

Technical specifications

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: IEC61131-3 STX
Controller programming	JetSym logic: IEC61131-3 STX
Operating system	LINUX (5.xx LTS Kernel)
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 ... 1 MB/s
USB	1
Ethernet	1; (option)
CVBS cameras	8; of which 6 can be displayed simultaneously (incl. camera supply)
RS-232	2; (option)
LIN	1; (option, uses DI3)
Inputs	1; camera supply
Digital inputs	1; ignition
	3; digital input active-high, input impedance 43 kΩ
Digital outputs	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, 30 g
Protection against polarity reversal	Yes

JetControlMobile 631-O04

Dimensional drawing



Pinout

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
Power supply 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
Power supply 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
Camera output power (OUT)/DO3 up to 3 A	30
Camera power consumption (IN: DC 12 V/24 V)	31
DI2	32
n.c./option: DI3	33
Shield	34
Shield	35

Pinout

M12 male connector on 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

Pinout

M12 female connector on service port 2 (Gbit Ethernet)

D1 +	1
D1 -	2
D2 +	3
D2 -	4
D4 +	5
D4 -	6
D3 -	7
D3 +	8

Pinout

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

Pinout

M12 socket - CAM1 ... CAM6

Video input - for CAM1 ... 6	1
GND (supply)	2
Video input + for CAM 1 ... 6	3
Supply DC 12 V/12 V for CAM1 ... 6	4
GND (supply)	5

JetViewMobile MT101 | M043





Description

The outstanding feature of the latest JVM-Mxxx monitor generation is their brilliant, fully daylight-compatible display, beautifully designed and easy on the eyes.

Available in sizes from 4.3” to 10.1", the slim displays easily fit into even the smallest spaces.

The corresponding high-performance JCM-630 controller ensures advanced connectivity with the mobile equipment, and delivers operating technologies to 2 monitors through single-cable distribution.

Featuring multi-kernel processors, four CAN, LIN, and Gbit Ethernet connections along with eight camera inputs, the JCM-630 controller is braced for today's and tomorrow's operating needs.

Product features

- Brilliant, daylight-compatible displays
- Slim, unobtrusive design
- Single-cable connection to JCM-630
- PCAP can be integrated
- Mounts to VESA/RAM or flush

Technical specifications

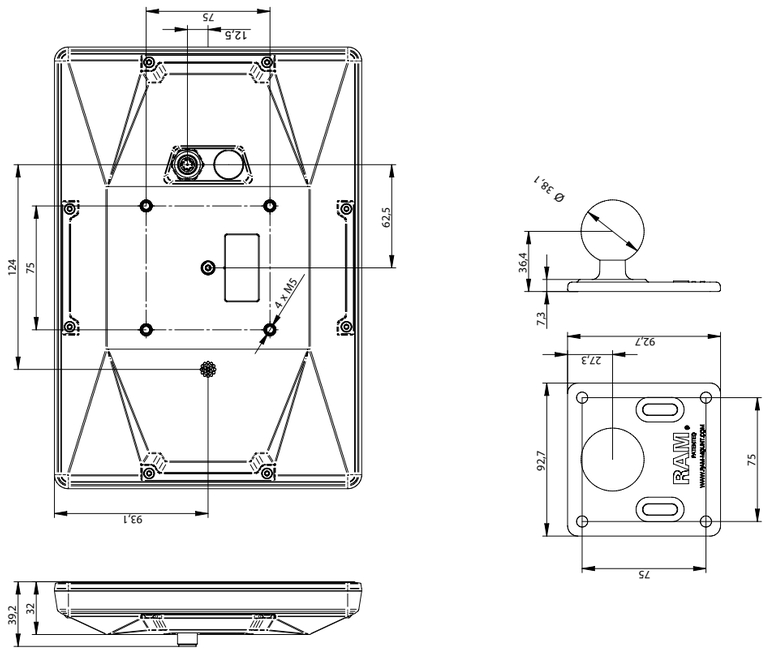
MT101	
Display	10.1“ TFT with LED backlight
Resolution	1280 x 800 pixels
Brightness	500 cd/m²(dimmable)
Viewing angle (h/v; u/d)	160°; 160°
Contrast	500:01:00
Control elements	1 PCAP touchscreen (option)
	4 keys, backlit (option)
	1 push encoder, backlit (option)
Signaling	1 buzzer 85 db (option)
Ports and interfaces	
FPD-LINKII	1 display, display power supply, CAN
CAN	1 CANopen; 125 kB/s ... 1 MB/s
External keyboard, push encoder, ...	10 ch. Matrix keyboard, switches, push encoders (option)
Programming	Via JCM-630 model series
	Graphics: JetViewSoft logic: IEC61131-3 STX
Operating voltage range	DC 8 ... 32 V
Operating/storage temperature	-20 °C ... +65 °C/-30 °C ... +85 °C
Degree of protection	“Open-frame” flush-mount model: IP12 front/IP20 rear
	Surface-mount model: IP54 front/IP54 rear
Vibration	DIN EN 60068-2-64, Cat. 2
Shock	DIN EN 60068-2-64, 30 g
Protection against polarity reversal	Yes

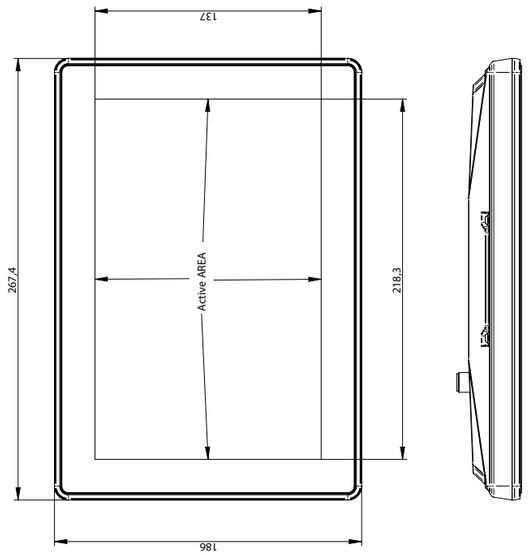
Technical specifications

MT043	
Display	4.3“ TFT with LED backlight
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 (option)
	4 keys, backlit (option)
	1 push encoder, backlit (option)
Signaling	1 buzzer 85 db (option)
Ports and interfaces	
FPD-LINKII	1 display, display power supply, CAN
CAN	1 CANopen; 125 kB/s ... 1 MB/s
External keyboard, push encoder, ...	10 ch. Matrix keyboard, switches, push encoders (option)
Programming	Via JCM-630 model series
	Graphics: JetViewSoft logic: IEC61131-3 STX
Operating voltage range	DC 8 ... 32 V
Operating/storage temperature	-20 °C ... +65 °C/-30 °C ... +85 °C
Degree of protection	“Open-frame” flush-mount model: IP12 front/IP20 rear
	Surface-mount model: IP54 front/IP54 rear
Vibration	DIN EN 60068-2-64, Cat. 2
Shock	DIN EN 60068-2-64, 30 g
Protection against polarity reversal	Yes

JetViewMobile MT101 | M043

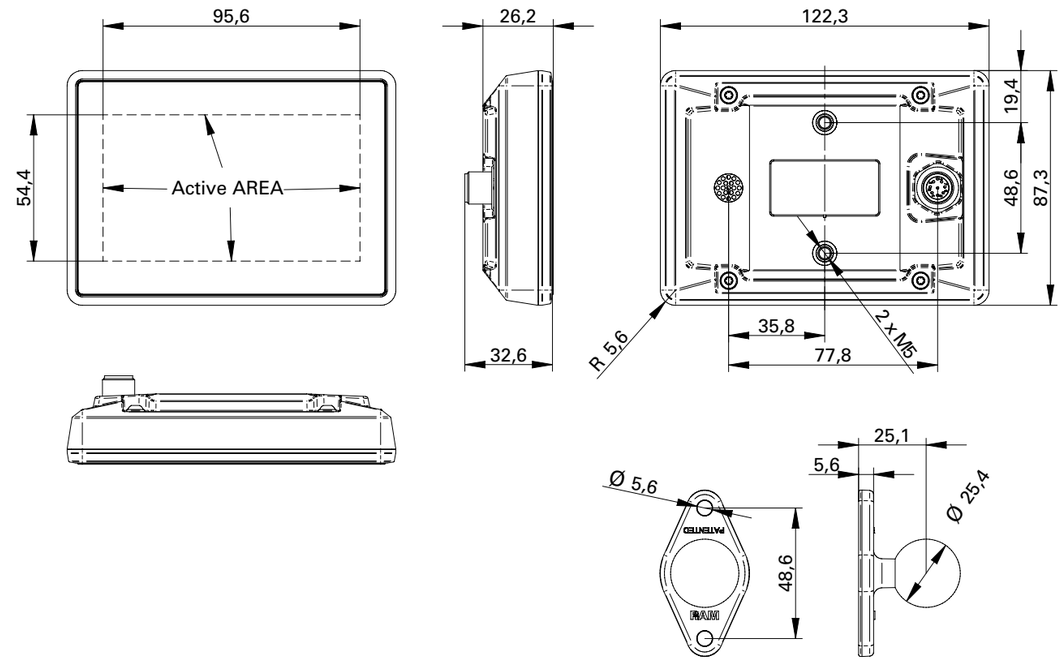
Dimensioned drawing MT101





The RAM Mount adapter is not included in the product package.

Dimensioned drawing MT043



The RAM Mount adapter is not included in the product package.

JetViewMobile MKT101



Description

The outstanding feature of the latest JVM-Mxxx monitor generation is their brilliant, fully daylight-compatible display, beautifully designed and easy on the eyes. Keypad modules with up to 24 keys allow for direct access to a variety of functions thereby facilitating modern and intuitive HMI concepts combining both touchscreen and keypad operation.

Available in sizes from 4.3” to 10.1", the slim displays easily fit into even the smallest spaces.

The corresponding high-performance JCM-630 controller ensures advanced connectivity with the mobile equipment, and delivers operating technologies to 2 monitors through single-cable distribution.

Featuring multi-kernel processors, four CAN, LIN, and Gbit Ethernet connections along with eight camera inputs, the JCM-630 controller is braced for today's and tomorrow's operating needs.

Product features

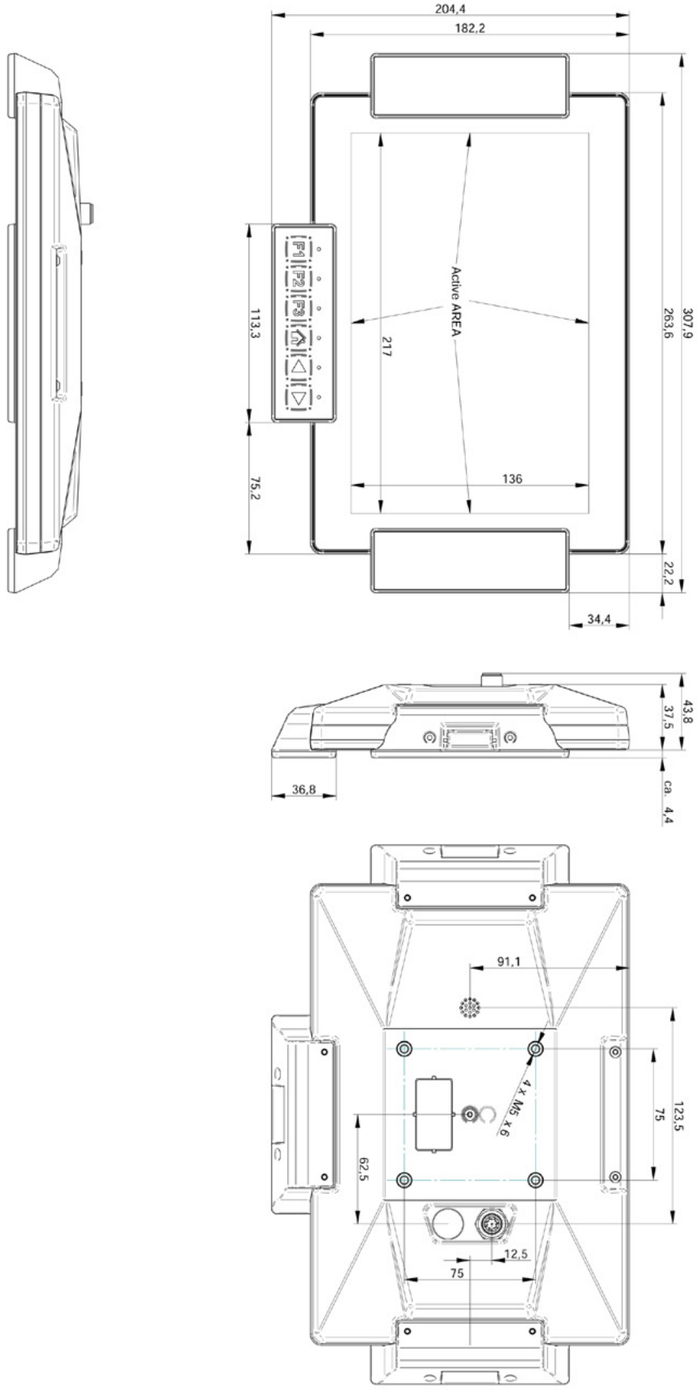
- Brilliant, daylight-compatible displays
- Slim, unobtrusive design
- Keypad modules connect on 3 sides, for up to 24 keys, customizable print
- Single-cable connection to JCM-630
- PCAP can be integrated
- Mounts to VESA/RAM or flush

Technical specifications

Display	10.1“ TFT with LED backlight
Resolution	1280 x 800 pixels
Brightness	500 cd/m²(dimmable)
Viewing angle (h/v; u/d)	160°; 160°
Contrast	500:01:00
Control elements	1 PCAP touchscreen
	24 keys (option), incl. signal LEDs
	1 push encoder, backlit (option)
Signaling	1 buzzer > 75 db (option)
Ports and interfaces	
FPD-LINKII	1 display, display power supply, CAN
CAN	1 CANopen; 125 kB/s ... 1 MB/s
External keyboard, push encoder, ...	10 ch. Matrix keyboard, switches, push encoders (option)
Programming	Via JCM-630 model series
	Graphics: JetViewSoft logic: IEC61131-3 STX
Operating voltage range	DC 8 ... 32 V
Operating/storage temperature	-20 °C ... +65 °C/-30 °C ... +85 °C
Degree of protection	Surface-mount model: IP54 front/IP54 rear
Vibration	DIN EN 60068-2-64, Cat. 2
Shock	DIN EN 60068-2-64, 30 g
Protection against polarity reversal	Yes

JetViewMobile MKT101

Dimensional drawing



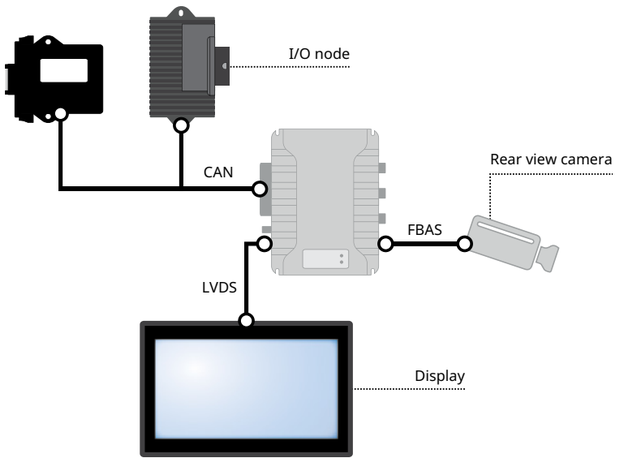
Application examples

Flexible in application

- Thanks to multiple display options, control system configurations in a vehicle can be weighted in terms of expenses. Because all display sizes support vector graphics, they interchange seamlessly and the visualization remains unchanged regardless of the configuration
- Superimposition of graphic elements or text information on video images facilitates intuitive operation. The optional PCAP multi-touch user interface allows for unlimited ease of operation refinement.
- Displays of the same type showing identical content can be cascaded – ideal for vehicles with multiple operator consoles.
- The optional ISOBUS stack enables powerful implement control while the integrated video feature compensates for the limited ISOBUS camera performance.

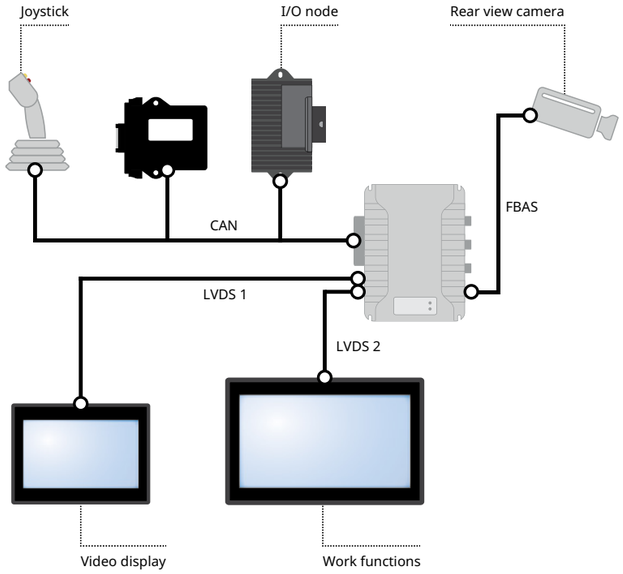
Application example 1

Typical standard equipment of a municipal vehicle with complete body control and integration of the rear view camera into the operating concept.



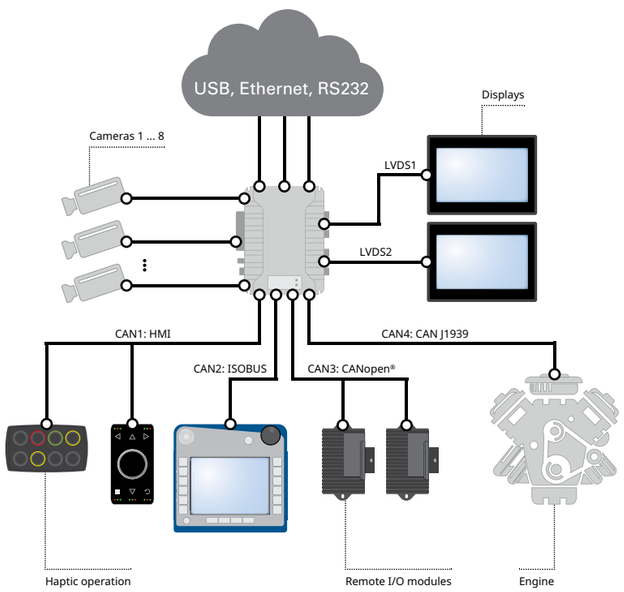
Application example 2

Extended range of functions with 2 displays, where one visualizes the machine functions and the other the video camera.



Application example 3

Powerful ISOBUS control system with advanced video performance for visual monitoring of a production chain in an agricultural self-propelled vehicle.





C-programmable controllers



JetControlMobile 230



Description

The JetControlMobile 230 is a compact controller packed with a stunning amount of freely configurable inputs and outputs. Among its peers, it sets the benchmark in terms of current carrying capacity which makes it an ideal choice to handle tasks involving high continuous currents, e.g. for lighting applications, in addition to classic hydraulic applications. Short-circuit-proof sensor supplies reduce the wiring effort. Programming is done in C/C++ via the STM32 CUBE IDE.

Product features

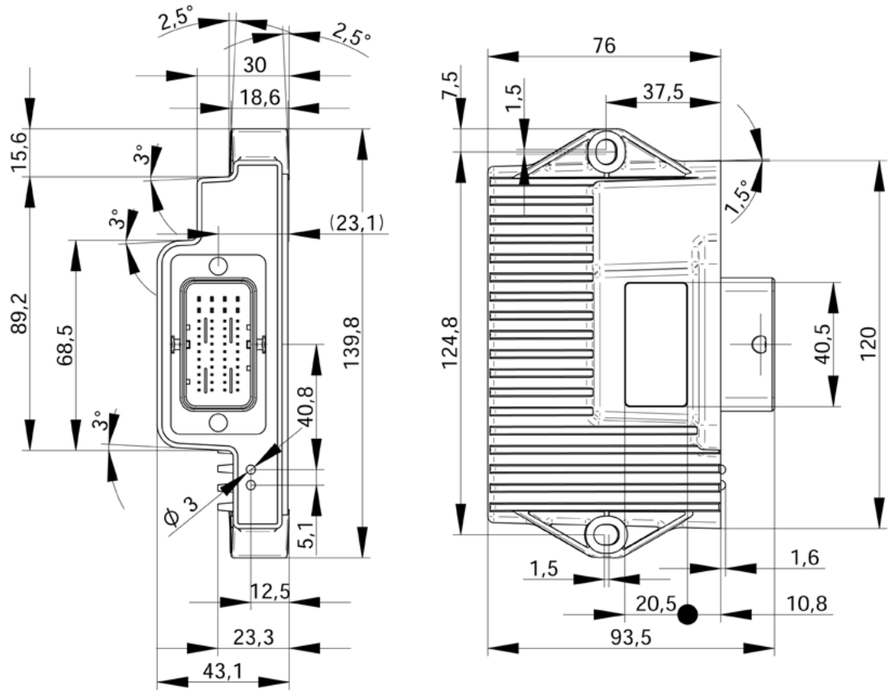
- 32-bit CPU > 200 MHz
- Programming in C/C++
- Withstands high total continuous current
- Configuration inputs for simplified multiple use
- Compact geometries
- Potted housing

Technical specifications

CPU	STM32 F4
Programming	C/C++
Operating voltage range	DC 8 V ... 32 V, with separate ECU power supply
Operating/storage temperature	-40 ... +85 °C
CAN ports	1, e.g. for CANopen, SAE J1939, ISOBUS, ..., requires the corresponding stack
Max. amount of inputs/outputs	26
Inputs	
Analog	8; 0 ... 5 V/0 ... 20 mA, can be configured individually, resolution: 12 bits, input impedance: 35 kΩ, load resistor: 120 Ω
Digital/frequency	4; active-high, input impedance 5.6 kΩ, 0.1 Hz ... 10 kHz
Digital / CAN coding	2; coding, e.g. for CAN ID, tri-state
Outputs with diagnostic capabilities (short-circuit, cable break)	
PWM, precision current measuring	4; 3 A, 1.5 kHz max., supports dithering; current-controlled, diagnostic capabilities; short-circuit-proof Alternative usage: Digital input, active-low, input impedance 10 kΩ Digital output 3 A PNP input 6; 7 A, 1.5 kHz max., supports dithering, diagnostic capabilities; short-circuit-proof Alternative usage: Digital input, active-low, input impedance 10 kΩ Digital output 7 A PNP input
PWM	4; 3 A high-side, diagnostic capabilities, short-circuit-proof, (with 50 % ON period) Alternative usage: Digital input, active-low, input impedance 10 kΩ PNP input
Digital (50 % ON period)	
Sensor power supply	3 x VBAT for independent sensor supply
Max. permitted total current	25 A
Degree of protection	IP65
Vibration	ISO 16750-3
Shock	ISO 16750-3
Protection against polarity reversal	Yes
Output diagnostics	Short circuit, no-load
Certifications	E1 (ECE R10), CE ISO 14982

JetControlMobile 230

Dimensional drawing



Pinout

CAN high signal	A1
CAN low signal	B1
PWMi_H3_4	C1
PWMi_H3_3	D1
PWMi_H3_2	E1
PWMi_H3_1	F1
DO_H3_4	G1
DO_H3_3	H1
DO_H3_2	J1
DO_H3_1	K1
VBAT PWR	L1
VBAT PWR	M1
CAN_TERM2	A2
CAN_TERM1	B2
DI_P_1	C2
DI_P_2	D2
DI_P_3	E2
DI_P_4	F2
GND_SEN	G2
VEXT_SEN_3	H2
VEXT_SEN_2	J2
VEXT_SEN_1	K2
VBAT PWR	L2
PWM_H7_1	M2
n.c.	A3
AI_1	B3
AI_2	C3
AI_3	D3
AI_4	E3
AI_5	F3
AI_6	G3
AI_7	H3
AI_8	J3
VBAT ECU	K3
GND_PWR	L3
PWM_H7_2	M3
PWM_H7_5	A4
PWM_H7_5	B4
PWM_H7_6	C4
PWM_H7_6	D4
PWM_H7_4	E4
PWM_H7_4	F4
PWM_H7_3	G4
PWM_H7_3	H4
CFG1_IN	J4
CFG2_OUT	K4
GND_PWR	L4
GND_PWR	M4

JetControlMobile 231



Description

The JetControlMobile 231 is a compact controller packed with a stunning amount of freely configurable inputs and outputs. It stands out thanks to the amply dimensioned half bridges, which are configured as full bridges and, if paralleled, supply up to 24 A of electricity. Short-circuit-proof reference and sensor supplies reduce the wiring effort. The built-in PT1000 temperature measurement input allows for the use fan controls for example. Programming is done in C/C++ via the STM32 CUBE IDE.

Product features

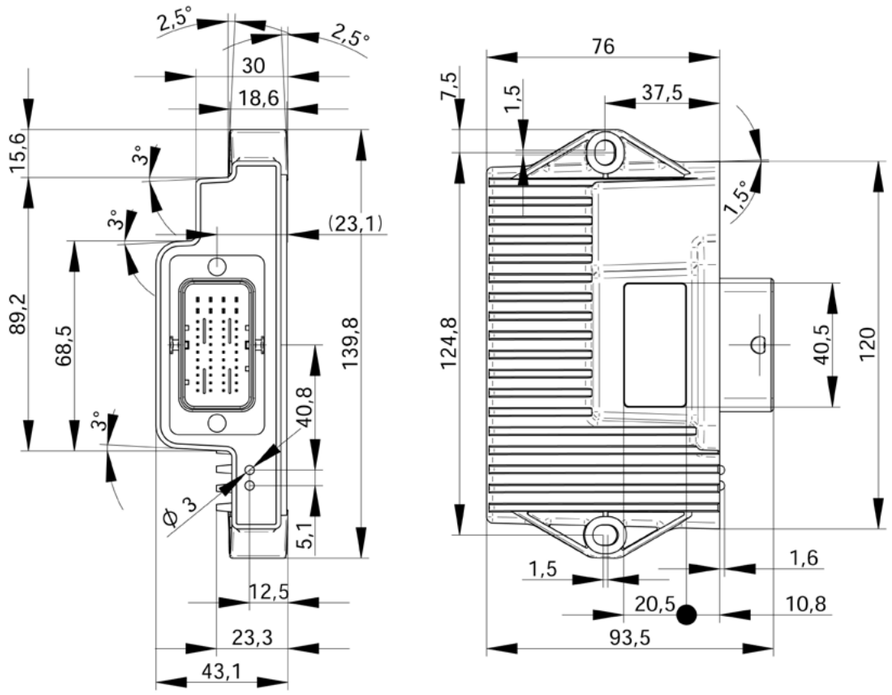
- 32-bit CPU > 200 MHz
- 2 CAN bus interfaces
- Programming in C/C++
- Withstands high total continuous current
- Configuration inputs for simplified multiple use
- Heavy-duty bridge outputs
- Temperature measurement input
- Compact geometries
- Potted housing

Technical specifications

CPU	STM32 F7
Programming	C/C++
Operating voltage range	DC 8 V ... 32 V, with separate ECU power supply
Operating/storage temperature	-40 °C ... +85 °C
CAN ports	2; e.g. for CANopen, SAE J1939, ISOBUS, ..., requires the corresponding stack
Max. amount of inputs/outputs	27
Inputs	
Analog	6; 0 ... 10 V/0 ... 20 mA, can be configured individually, resolution: 12 bits, input impedance: 35 kΩ, load resistor: 120 Ω
Thermal sensor inputs	1; PT1000
Digital/frequency	8; input impedance 5.6 kΩ 0.1 Hz ... 10 kHz NPN/PNP input, switchable via software
Digital / coding	2, coding e.g. for CAN ID, tri-state
Outputs with diagnostic capabilities (short-circuit, cable break)	
PWM, precision current measuring	4; 3 A, 1.5 kHz max., supports dithering; current-controlled, diagnostic capabilities; short-circuit-proof Alternative usage: Digital input, active-low, input impedance 10 kΩ Digital output 3 A 4; 12 A,10 Hz min, 15 kHz max., supports dithering, diagnostic capabilities, short-circuit-proof
PWM, half bridge	Tow half bridges connect to a full bridge to control DC motors (open-loop control), optional parallel connection 4; 5 A,10 Hz min, 5 kHz max., supports dithering, diagnostic capabilities, short-circuit-proof
PWM, half bridge	Tow half bridges connect to a full bridge to control DC motors (open-loop control), optional parallel connection
Sensor power supply	3 sensor supplies (of which 1 x 10 V reference output)
Max. permitted total current	24 A
Degree of protection	IP66
Vibration	ISO 16750-3
Shock	ISO 16750-3
Protection against polarity reversal	Yes
Certifications	E1 (ECE R10), CE ISO 14982
Output diagnostics	Short circuit, no-load

JetControlMobile 231

Dimensional drawing



Pinout

CAN1_H	A1
CAN1_L -	B1
PWMi_HL5_1	C1
PWMi_HL5_2	D1
PWMi_HL5_3	E1
PWMi_HL5_4	F1
DI_5	G1
DI_6	H1
DI_7	J1
DI_8	K1
VBAT PWR	L1
VBAT PWR	M1
CAN1_TERM2	A2
CAN1_TERM1 -	B2
DI_1	C2
DI_2	D2
DI_3	E2
DI_4	F2
GND_SEN	G2
VREF_SEN	H2
VEXT_SEN_1	J2
VEXT_SEN_2	K2
PWMi_HL12_1	L2
PWMi_HL12_2	M2
n.c.	A3
AI_1	B3
AI_2	C3
AI_3	D3
AI_4	E3
AI_5	F3
AI_6	G3
AI_PT1000	H3
GND_PT1000	J3
VBAT ECU	K3
PWMi_HL12_4	L3
PMWi_HL12_3	M3
n.c.	A4
n.c.	B4
n.c.	C4
n.c.	D4
PWMi_H3_1	E4
PWMi_H3_2	F4
PWMi_H3_3	G4
PWMi_H3_4	H4
CFG_1	J4
CFG_2	K4
GND	L4
GND	M4

JetSafeControlMobile 720



Description

The JSCM-7xx is the new generation of safety controllers based on microcontrollers of the Infineon Aurix® family. Whether multi- or single-core, this CPU family offers two powerful processors to drive your application. The JSCM-720 controller uses Safety RTOS and the JSCM API which makes it possible to run FS and non-FS applications on the same CPU core. This allows for simultaneous manual load balancing of the application tasks without blocking the CPU core for FS applications. Once FS applications have been created, they remain untouched and are separated in the system. In combination with agile software development methods, such as SCRUM, the JSCM-720 simplifies and streamlines the development of non-FS software. The application software is conveniently created in C/C++ programming language and transferred via the Bucher Automation diagnostic tool.

Hardware-wise, the JSCM-720 builds on the proven JCM-5xx family. Designed to operate as a central controller with gateway function, the I/O configuration is engineered accordingly: The controller offers a wide range of I/O configuration options, from high-performance motor control with up to 35 A H-bridge current rating, to safety-compliant supply of remote I/O with CAN expansion modules, such as JXM-IO-E3x. To it round out, the control system offers four CAN interfaces and supports dual port BroadR-Reach 100baseT. The Bucher Automation diagnostic tooling supports you with wide-ranging functions, even in the field, and helps you create applications in no time.

The JSCM-720 is being certified according to the current FS regulations for mobile automation. Undergoing the certification process and adhering to the specifications from the Safety Manual enable us to optimally implement any FS requirements deduced from the device's risk analyses.

Product features

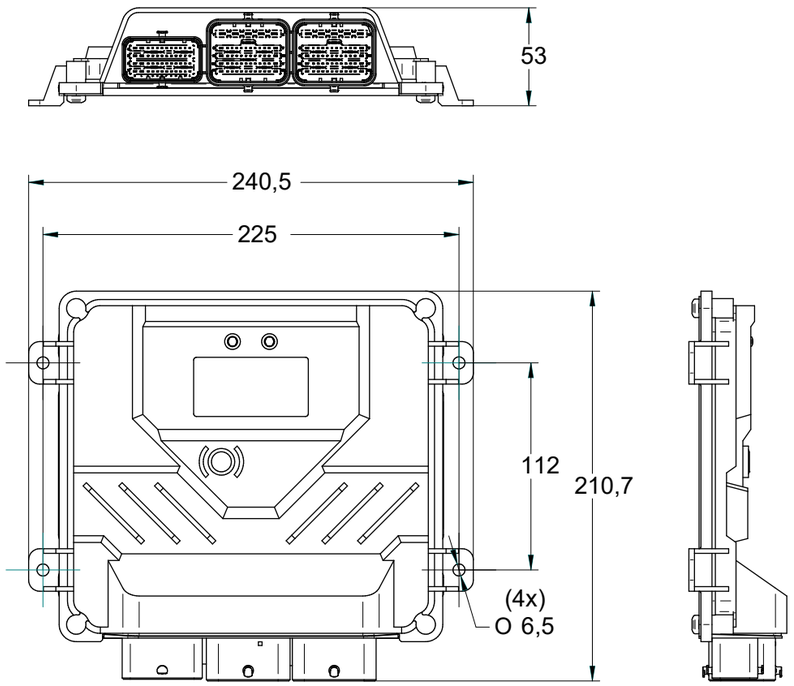
- Certified Cat2 safety controller up to performance level PL d
- Designed to run FS and non-FS applications on any core simultaneously
- Supports manual load balancing of application tasks across all CPU cores
- Does not required assignment of safety applications to one particular core
- Supports agile software development while meeting all safety requirements
- Powerful Infineon Aurix® CPU offering different performance levels
- Output power of up to 35 A can be configured via blockable output channels
- Programming in C/C++ with open toolchain based on Eclipse
- Closed-housing debugging in the field

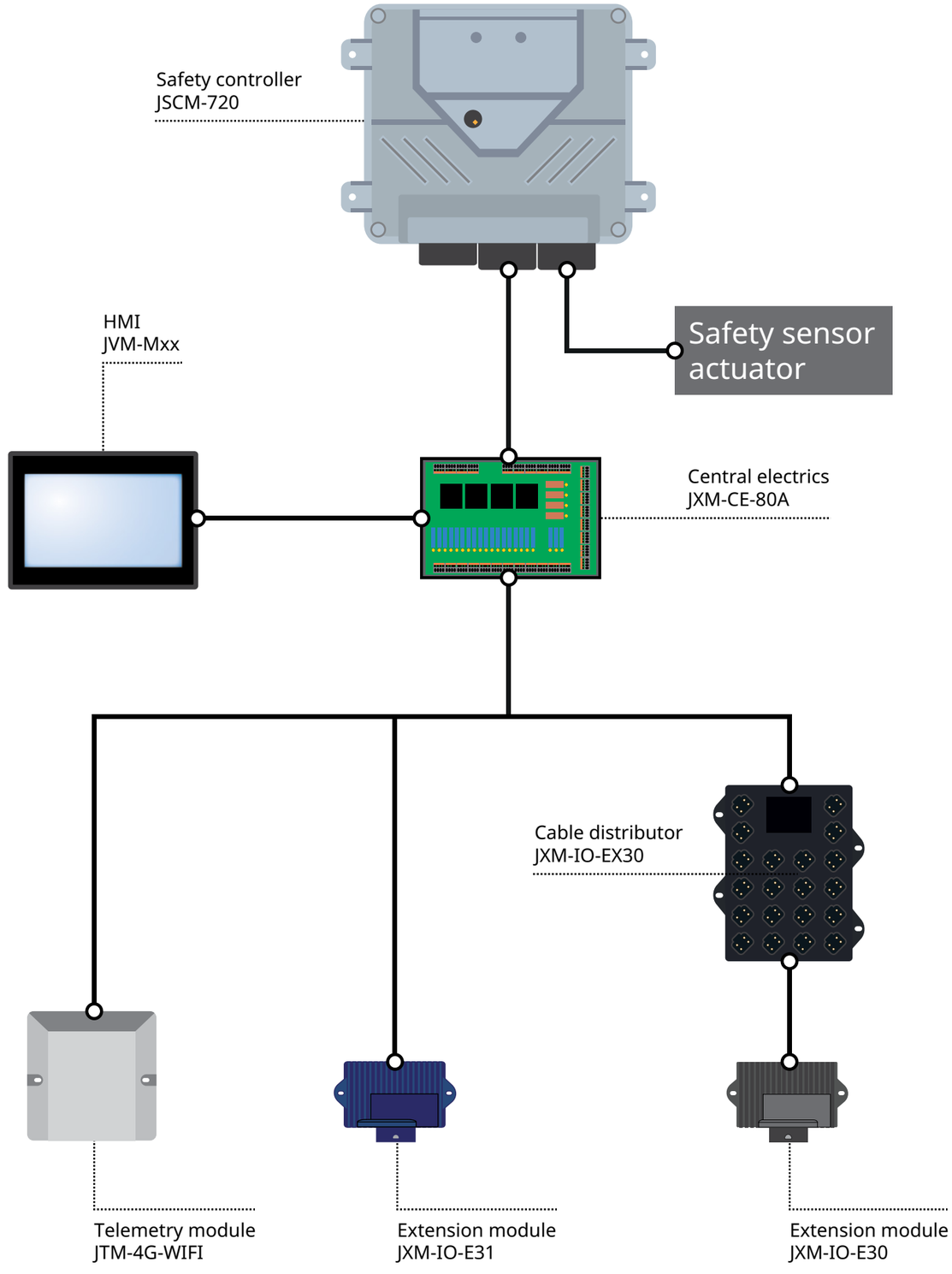
Technical specifications

Approvals	ECE R10 approval, CE according to ISO 14982
Safety certificates	ISO 13849: PL d ISO 25119: AgPL c (SRL 1)/AgPL d (SRL 2) IEC 61508: SIL2 Certificates are not yet available at this point of the development process
Operating voltage range	DC 8 V ... 32 V, separate load voltage
Protection against polarity reversal	Yes, assuming common reverse polarity
Operating/storage temperature	-40 ... +80 °C
Degree of protection	IP65
Vibration	DIN EN 60068-2-64, Cat. 2
Shock	DIN EN 60068-2-64, 30 g
Housing	Aluminum with heat sink at the bottom
Dimensions (W x H x D)	approx. 241 x 211 x 69 mm
Operation and diagnostics	Option: 2 dual-color LEDs for diagnostics/operating state/application
Connector	CPC 144-pin, Molex
CPU	Infineon Tricore Aurix® TC297/TC277
Memory: RAM – application – non-volatile	CPU dependent – 2.7 MB internal, 16 MB external – 32 KB EPROM
Programming	"C", FS and non-FS applications can run on one controller
Operating system	Certified safety RTOS with JSCM API extension
Ports and interfaces	
CAN	4x 125 KB/s ... 1 MB/s, CANopen, SAE J1939, ISOBUS 11783
LIN	1x 9.6 Kbit/s ... 38.4 Kbit/s, LIN-RAW protocol
Ethernet/BroadR-Reach	2x 100BASE-T1 with internal switch
Max. amount of inputs/outputs	104
Sensor supply U_{BAT}	4; all support ratiometric sensors
Sensor supply 10 V with 100 mA	2
Inputs	
Analog	8; 0 ... 10 V/0 ... 22 mA, can be configured individually; resolution 12 bits, input impedance: 50 kΩ, load resistor: 240 Ω; alternative usage: digital input for current signal, Fmax: 50 Hz
Analog, metric ratio	4; 0 ... 10 V/0 ... 32 V/0 ... 22 mA/ratiometric input, can be configured individually; resolution: 12 bits, input impedance: 50 kΩ, load resistor: 240 Ω; alternative usage: digital input for current signal, Fmax: 50 Hz
Frequency, digital, PNP	16; active-high with pull-down, input impedance 4 kΩ; alternative usage: frequency input, 0.1 kHz ... 20 kHz, pulse time > 20 µs
Frequency, digital, NPN	2; active-low with pull-down, input impedance 4 kΩ; alternative usage: frequency input, 0.1 kHz ... 20 kHz, pulse time > 20 µs
Frequency, digital, PNP/NPN	12; active-high/low with pull-up/down(bundled in groups of 4 channels), input impedance 4 kΩ; alternative usage: frequency input, 0.1 kHz ... 20 kHz, pulse time > 20 µs
Outputs	
PWM	34; 3 A; H-side, PWM 50 Hz ... 1 kHz
PWMi	16; 3 A; H-side, current control 2.5 %; 50 Hz ... 1 kHz
PWM PVG	4; PVG control of Danfoss valves: 10 % ... 90 % range, where 0 = 50 %; alternative usage: 3 A; H-side, PWM 50 Hz ... 1 kHz
AO	6; AO: 0 ... 10 V, 20 mA, 12 bits
Half bridge	8; 8 A; 50 Hz ... 1 kHz, as half bridge 8 A; 6 with Fmax 500 Hz blockable to full bridge with 35 A Alternative usage: - 8 x PWM, 50 Hz ... 1 kHz, 8 A - 16 x digital outputs, 8 A, H-side - 8 x digital outputs, 8 A, L-side
Max. permissible total current	35 A, max. housing temperature +80° C
Diagnostic capabilities	Supply voltage monitoring, total current monitoring, protection against polarity reversal, overloading and no-load detection, short-circuit protection of all I/Os against GND and U_{BAT}

JetSafeControlMobile 720

Dimensional drawing







STX-programmable controllers



JetControlMobile 501



Description

The JCM-501 is a central controller of compact build designed to control distributed architectures.

Geared with 2 CAN ports alongside RS232, USB and Ethernet interfaces, and a well-proven, powerful 32-bit CPU, it is ideally suited for handling systems of simple to medium complexity.

The built-in real-time clock completes the range of functions.

Product features

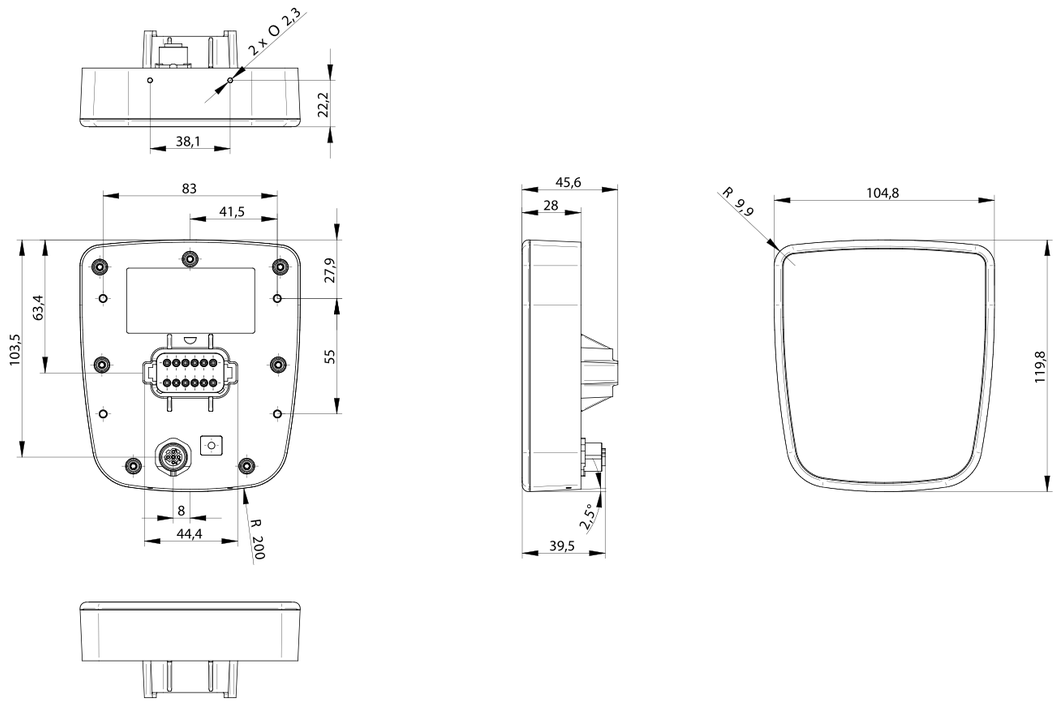
– 32-bit/500 MHz controller
– Compact geometries
– Advanced connectivity

Technical specifications

CPU	iMX 35, 32-bit, 500 MHz
Memory: RAM – application – non-volatile	128 MB RAM – 512 MB flash – 128 kB MRAM
Programming	Logic circuit: IEC61131-3 STX
Operating system	WinCE 6.0
Operating voltage range	DC 8 ... 32 V
Operating/storage temperature	-20 °C ... +65 °C/-30 °C ... +85 °C
Ports and interfaces	
CAN	2 CANopen, SAE J1939, ISOBUS 11783 (option: second interface)
USB	1
Ethernet	1
RS232	1
RTC	Option
Operation and diagnostics	2 status LEDs (three-colored each)
Connectivity	Deutsch DT06-12S
Degree of protection	IP65
Vibration	DIN EN 60068-2-64, Cat. 2
Shock	DIN EN 60068-2-64, 30 g
Protection against polarity reversal	Yes

JetControlMobile 501

Dimensional drawing



Pinout

Model with Deutsch connector and COM module

Ground	1
USB+	2
USB DP	3
USB DM	4
USB-	5
Power supply	6
RS232 TxD	7
RS232 RxD	8
CAN1_L	9
CAN1_H	10
CAN2_L	11
CAN2_H	12

Pinout

M12 female connector, 4-pin, D-coded

ETH_TX+	1
ETH_RX+	2
ETH_TX-	3
ETH_TR-+	4



Telemetry

As electronic components are increasingly being used in mobile machinery, so are software features. This requires efficient machine and software handling to minimize downtimes. Bucher Automation AG has developed a telemetry solution allowing for software on remote machinery to be serviced and updated. It is designed for bidirectional remote access to the equipment thereby cutting service technician costs considerably.



JetTelematicsMobile 4G



Description

Connecting to virtually all kinds of mobile equipment, the JTM telemetry device makes a major step toward digitalization of mobile machines. Its rugged design and many wireless connectivity capabilities make it the perfect tool for monitoring and managing entire mobile machine fleets.

Wireless communication via LTE CAT-1 and WiFi, or via CAN and USB within the vehicle network allow it to seamlessly integrate into the CAN networks of mobile machines. Customers can choose from different software packages to find the perfect match for each individual connectivity strategy. Additional hardware extension upgrades are available to cater for advanced connectivity demands.

The compact design includes an internal antenna and allows for flexible and space-saving installation on the machine. The device was designed to be used in demanding operating environments.

Product features

- LTE CAT-1 wireless connection with 2G fallback option for mobile connectivity when operating in the field
- Remote access to multiple machines, thereby cutting costs and improving TCO
- On-site diagnostics via internal web server and WiFi interface
- Tracking vehicles in the field thanks to a GNSS receiver
- All necessary antennas are built in
- Additional hardware extension modules allow for flexible modification of your vehicle network architecture
- 3 LEDs for swift diagnostics
- Rugged and compact housing offers many installation options

Technical specifications

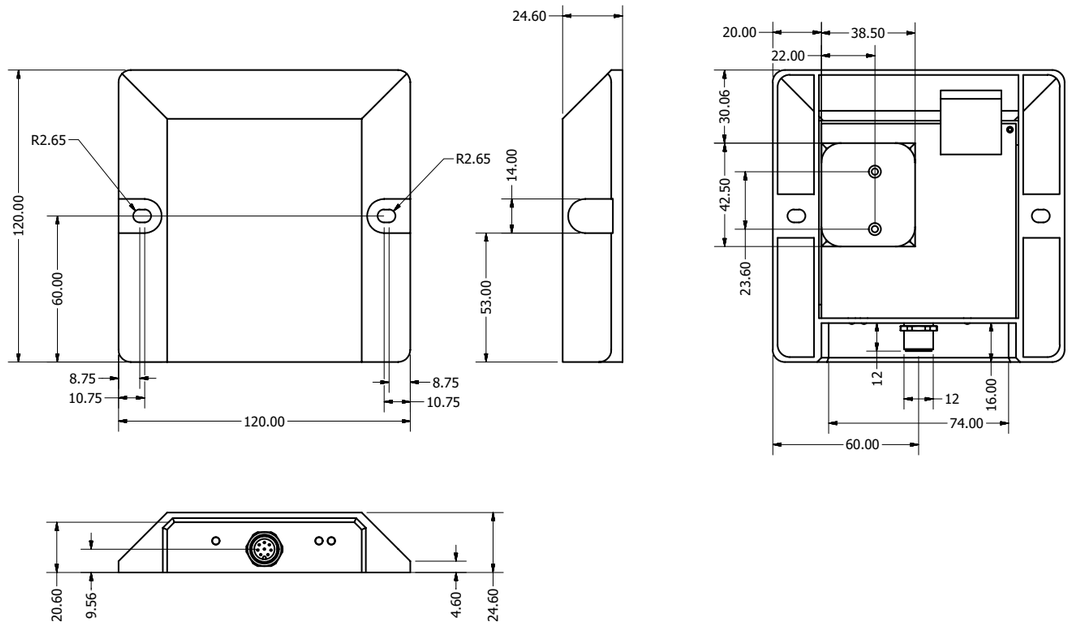
JetTelematicsMobile 4G	
Operating voltage range	DC 8 ... 32 V
Operating temperature range	-40 °C ... +85 °C
Ports and interfaces	
EU-4G modem	LTE CAT-1 with built-in antennas; 10 Mbps downstream; 5 Mbps upstream; 4G LTE bands: B1, B3, B7, B8, B20, B28; 2G bands (EDGE, GSM, GPRS): 900 MHz, 1800 MHz
WiFi	IEEE 802.11 b/g/n; internal antenna
CAN	2 x CAN 2.0 B
USB	1 x USB 2.0 (host/client)
Sensors	
Location data	GNSS receiver (GPS and GLONASS)
Acceleration	3D acceleration sensor
Hardware	
LED	3 x for diagnostic purposes; programmable
SIM	1 x micro SIM socket (option: pre-assembled SIM)
SD memory card	1 x micro SD socket (option: pre-assembled 8 GB industrial-grade card)
RTC	Gold cap RTC
Memory	256 MB RAM; 512 MB flash
CPU	Application processor: ARM® Cortex™ – A7 (1.3 GHz) Field bus processor: ARM® Cortex™ – M3 (72 MHz)
Mechanical parameters	
Dimensions	120x120x25 mm
Mechanical installation	2 x M5 screws
Mounting orientation	Vertical or horizontal
Weight	~350 g
Connector	M12 8-pin male connector
Shock & vibration	ISO 16750-3
Software	Linux-based; with open-source Legato® framework
Compatibility	ISO 14982, 2011/65/EU (RoHS)
Certifications	R.E.D. (CE), C1, E1 ECE R10

Technical specifications – hardware expansion module (external Ethernet module)

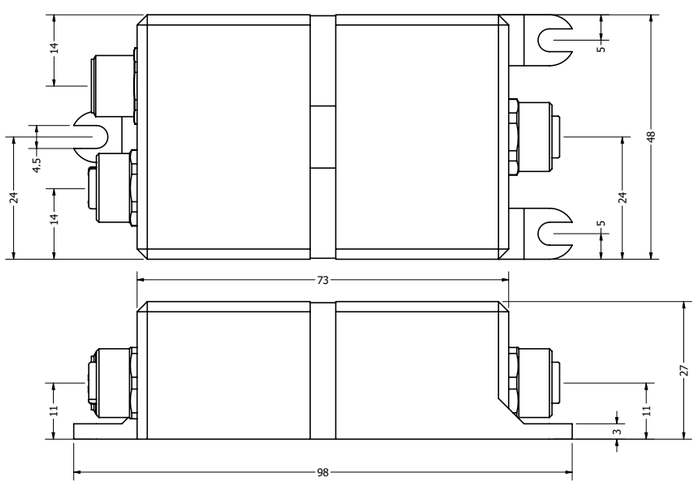
JXM-TE-E01	
Ethernet	10/100 BaseT
Operating voltage range	DC 9 V ... 30 V
Typical current consumption	1.2 W
Dimensions	96 x 28 x 48 mm
Weight	165 g
Degree of protection	IP67
UV radiation protection	Withstands direct sunlight

JetTelematicsMobile 4G

Dimensioned drawing JetTelematicsMobile 4G



Dimensioned drawing JXM-TE-E01



Pinout

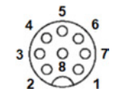
JetTelematicsMobile 4G

UB+ (power supply +12 V)	1
GND	2
CAN2-L	3
USB Data+	4
CAN1-L	5
USB Data-	6
CAN2-H	7
CAN1-H	8

Pinout

JXM-TE-E01 | M12 female, A-coded; uplink to JetTelematicsMobile 4G

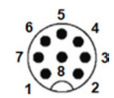
UB+ (power supply +12 V) output	1
GND	2
CAN2-L	3
USB Data+ (device)	4
CAN1-L	5
USB Data- (device)	6
CAN2-H	7
CAN1-H	8



Pinout

JXM-TE-E01 | M12 male, A-coded; power consumption, USB-HOST

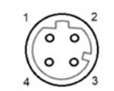
UB+ (power supply +12 V) input	1
GND	2
CAN2-L	3
USB Data+ (host)	4
CAN1-L	5
USB Data- (host)	6
CAN2-H	7
CAN1-H	8



Pinout

JXM-TE-E01 | M12 female, D-coded; 10/100 Base-T ETHERNET

TD+	1
RD+	2
TD-	3
RD-	4





I/O Modules

Bucher Automation I/O modules are engineered with a wide range of features making them a valuable complement or extension of control systems used in mobile machinery, commercial and special-purpose vehicles.



JXM-IO-E02



Description

The JXM-IO-E02 has a lot to commend it as multi-purpose CAN remote node: an ample number of individually configurable I/O connections, paired with an excellent current-carrying capacity packed into a rugged and compact housing.

The supply voltage of the inputs and outputs is divided into standard feed and protected feed, which 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 allowing for up to nine nodes to be addressed within one system without further configuration need.

Product features

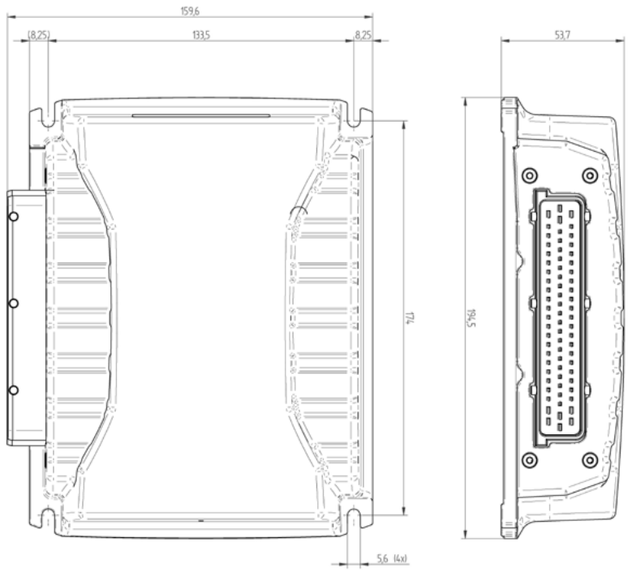
- Flexible I/O configuration
- The CAN addresses can be configured via wiring harness
- Compact and rugged housing
- High degree of protection IP66/IP68

Technical specifications

Operating voltage range	DC 8 V ... 32 V, separate load voltage
Operating/storage temperature	-40 ... +85 °C
Ports and interfaces	
CAN	1 CANopen
Max. amount of inputs/outputs	32
Inputs	
Analog	4; 0 ... 5 V/0 ... VBAT/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
	Active-low/high, can be configured individually, 5 Hz ... 20 kHz, Period 62.5 ns
Frequency	alternative usage: active-high digital input, input impedance 2 kΩ
Outputs	
Analog	1; 0 ... VBAT, resolution: 10-bit, short-circuit detection, peak current 100 mA
	8; 2.5 A high-side, diagnostic capabilities, short-circuit-proof; alternative usage: active-high digital input, input impedance 100 kΩ
	2; 2.5 A high-side, diagnostic capabilities, short-circuit-proof; alternative usage: active-low digital input, input impedance 100 kΩ
	8; 5 A high-side, diagnostic capabilities, short-circuit-proof, supplied via protected feed; alternative usage: active-high digital input, input impedance 100 kΩ
Digital	3: 2.5 A, max. 2 kHz, resolution: 8 bits, current-controlled, diagnostic capabilities; alternative usage: 2.5 A digital output
PWM	1; 2.5 A
H-bridge	1; 5 V power supply for sensors
Supply unit	40 A
Max. permitted total current	IP66/IP68
Degree of protection	DIN EN 60068-2-64, Cat. 2
Vibration	DIN EN 60068-2-64, 30 g
Shock	Yes
Protection against polarity reversal	

JXM-IO-E02

Dimensional drawing



Pinout

70-pin male AMP Tyco connector

Power supply - protected feed	1	Ground (digital Out 5)	36
V_{IGN}	2	Ground (digital Out 6)	37
Digital In 1 - standard feed	3	Ground (digital Out 7)	38
Digital In 2 - standard feed	4	Ground (digital Out 8)	39
Digital In 3 - standard feed	5	Ground (digital Out 9)	40
Digital In 4 - standard feed	6	Ground (digital Out 10)	41
Digital In 5 - standard feed	7	Ground (digital Out 11)	42
Digital In 6/Out 1 - standard feed*	8	Ground (digital Out 12)	43
Digital In 7/Out 2 - standard feed*	9	Ground (digital Out 13)	44
Digital In 8/Out 3 - standard feed*	10	Ground (digital Out 14)	45
Digital In 9/Out 4 - standard feed*	11	Ground (digital Out 15)	46
Digital In 10/Out 5 - standard feed*	12	Ground (digital Out 16)	47
Digital In 11/Out 6 - standard feed*	13	Ground	48
Digital In 12/Out 7 - standard feed*	14	Analog 1 - In 1 - standard feed	49
Digital In 13/Out 8 - standard feed*	15	Analog 2 - In 2 - standard feed	50
Digital In 14/Out 9 - protected feed*	16	Analog 3 - In 3 - standard feed	51
Digital In 15/Out 10 - protected feed*	17	Analog 4 - In 4 - standard feed	52
Digital In 16/Out 11 - protected feed*	18	Analog Out - standard feed	53
Digital In 17/Out 12 - protected feed*	19	Frequency In 1	54
Digital In 18/Out 13 - protected feed*	20	Frequency In 2	55
Digital In 19/Out 14 - protected feed*	21	PWM Out 1 - standard feed*	56
Digital In 20/Out 15 - protected feed*	22	PWM Out 2 - standard feed*	57
Digital In 21/Out 16 - protected feed*	23	PWM Out 3 - standard feed*	58
Power supply - standard feed	24	Ground (PWM 1)	59
Ground	25	Ground (PWM 2)	60
Ground (analog IN 1)	26	Ground (PWM 3)	61
Ground (analog IN 2)	27	CAN A Lo	62
Ground (analog IN 3)	28	CAN A Hi	63
Ground (analog IN 4)	29	CAN B Lo	64
Switch feed output 1 *	30	CAN B Hi	65
Switch feed output 2 *	31	5 V+ output ***	66
Ground (digital Out 1)	32	Node ID input 1	67
Ground (digital Out 2)	33	Node ID input 2	68
Ground (digital Out 3)	34	Half bridge A, standard feed*	69
Ground (digital Out 4)	35	H bridge 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-E11



Description

The JXM-IO-E11 expansion module 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. Of these, 20 LEDs can be dimmed individually. This way, a balanced background lighting within the HMI can be achieved, even if dissimilar light sources are used.

Product features

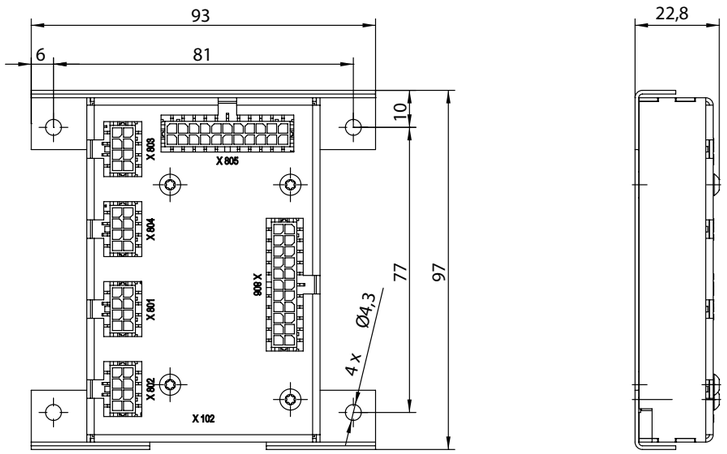
- Grouping of discrete input and output signals
- CANopen port
- Built-in 5 V power supply
- Compact geometries

Technical specifications

Operating voltage range	DC 8 ... 32 V
Operating/storage temperature	-40 ... +85 °C
Interface	
CAN	1 CANopen
Max. amount of inputs/outputs	50
Inputs	
Analog	3: 0 ... 5 V for analog joystick X-Y-Z, resolution: 8 bits; alternative usage: 4 x 5 V digital input for s/w joystick
Digital	22; 5 V for keypad
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, 30 g
Protection against polarity reversal	Yes

JXM-IO-E11

Dimensional drawing



Pinout

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

Pinout

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

Pinout

X803 4-way switch - Molex Microfit 8-pin

Voltage output 5 V	1
4-way switch 3	2
4-way LED 3	3
Ground	4
Voltage output 5 V	5
4-way switch 4	6
4-way LED 4	7
Ground	8

Pinout

X804 4-way switch - Molex Microfit 8-pin

Voltage output 5 V	1
4-way switch 1	2
4-way LED 1	3
Ground	4
Voltage output 5 V	5
4-way switch 2	6
4-way LED 2	7
Ground	8

Pinout

X805 switch inputs 1 ... 16 – Molex Microfit 22-pin

Voltage output 5 V	1
Slider 1	2
Slider 3	3
Slider 5	4
Slider 7	5
Slider 9	6
Slider 11	7
Slider 13	8
Slider 15	9
Ground	10
Ground	11
Slider 2	12
Slider 4	13
Slider 6	14
Slider 8	15
Slider 10	16
Slider 12	17
Slider 14	18
Slider 16	19
Ground	20
Ground	21
Ground	22

Pinout

X806 LED outputs 1 ... 20 (dimmable) Molex Microfit 22 pins

Supply voltage DC 5 V	1
LED driver # 1	2
LED driver # 3	3
LED driver # 5	4
LED driver # 7	5
LED driver # 9	6
LED driver # 11	7
LED driver # 13	8
LED driver # 15	9
LED driver # 17	10
LED driver # 19	11
LED driver # 2	12
LED driver # 4	13
LED driver # 6	14
LED driver # 8	15
LED driver # 10	16
LED driver # 12	17
LED driver # 14	18
LED driver # 16	19
LED driver # 18	20
LED driver # 20	21
Ground	22

JXM-IO-E30



Description

The JXM-IO-E30 expansion module is the universal building block for remote I/Os on mobile machines. Thanks to its fine-tuned I/O configuration, it can take on almost any remote task and this way significantly reduce wiring expenses. It comes with a reference output supporting standard sensors and 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.

Featuring a sturdy potted housing, the expansion module is designed to perform reliably even in the harshest operating environments.

Product features

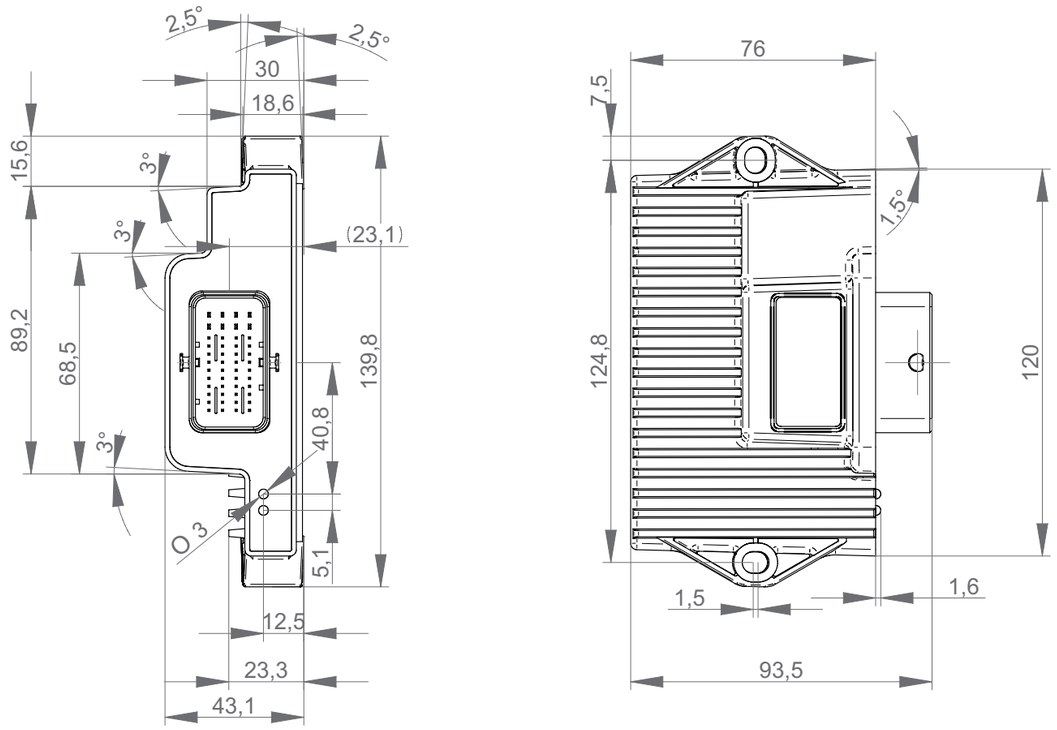
- 12 inputs, and 14 outputs with diagnostic capabilities – including high current paths and PWM with current control
- High switching capacity thanks to parallel output connection and high total continuous current
- CAN ID addressing via tri-state inputs allows for integration of up to 9 nodes in one network without software configuration, and testifies to the common part strategy
- Short-circuit-proof sensor supplies
- Rugged potted housing

Technical specifications

Operating voltage range	DC 8 V ... 32 V, with separate ECU power supply
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: 12 bits, input impedance: 35 kΩ, load resistor: 120 Ω
Digital/frequency	4; active-high; input impedance 5.6 kΩ; 0.1 Hz ... 10 kHz
Digital / CAN coding	2; Coding of the CAN ID, tri-state
Outputs with diagnostic capabilities (short-circuit, cable break)	
PWM, precision current measuring	4; 3 A, 1.5 kHz max., dithering, current-controlled, diagnostic capabilities, short-circuit-proof Alternative usage: - Digital input, active-low, input impedance 10 kΩ - Digital output 3 A - PNP input
PWM	6; 7 A, 1.5 kHz max., dithering, diagnostic capabilities, short-circuit-proof Alternative usage: - Digital input, active-low, input impedance 10 kΩ - Digital output 7 A - PNP input
Digital (50 % ON period)	4; 3 A high-side, diagnostic capabilities, short-circuit-proof, (with 50 % ON period) Alternative usage: - Digital input, active-low, input impedance 10 kΩ - PNP input
Sensor power supply	3 x VBAT for independent sensor supply
Max. permitted total current	25 A
Degree of protection	IP65
Vibration	ISO 16750-3
Shock	ISO 16750-3
Protection against polarity reversal	Yes
Output diagnostics	Short circuit, no-load

JXM-IO-E30

Dimensional drawing



Pinout

JXM-IO-E30

CAN high signal	A1
CAN low signal	B1
PWMi_H3_4 – high-side PWM output	C1
PWMi_H3_3 – high-side PWM output	D1
PWMi_H3_2 – high-side PWM output	E1
PWMi_H3_1 – high-side PWM output	F1
DO_H3_4 – Digital high-side output	G1
DO_H3_3 – Digital high-side output	H1
DO_H3_2 – Digital high-side output	J1
DO_H3_1 – Digital high-side output	K1
VBAT PWR – power supply	L1
VBAT PWR – power supply	M1
CAN_TERM2 – CAN termination	A2
CAN_TERM1 – CAN termination	B2
DI_P_1 – Digital and frequency input	C2
DI_P_2 – Digital and frequency input	D2
DI_P_3 – Digital and frequency input	E2
DI_P_4 – Digital and frequency input	F2
GND_SEN – ground for sensor supply	G2
VEXT_SEN_3 – sensor supply	H2
VEXT_SEN_2 – sensor supply	J2
VEXT_SEN_1 – sensor supply	K2
VBAT PWR – power supply	L2
PWM_H7_1 – high-side PWM output	M2
n.c.	A3
AI_1 – analog input, current/voltage	B3
AI_2 – analog input, current/voltage	C3
AI_3 – analog input, current/voltage	D3
AI_4 – analog input, current/voltage	E3
AI_5 – analog input, current/voltage	F3
AI_6 – analog input, current/voltage	G3
AI_7 – analog input, current/voltage	H3
AI_8 – analog input, current/voltage	J3
VBAT ECU – logic circuit supply	K3
GND_PWR – ground for power outputs	L3
PWM_H7_2 – high-side PWM output	M3
PWM_H7_5 – high-side PWM output	A4
PWM_H7_5 – high-side PWM output	B4
PWM_H7_6 – high-side PWM output	C4
PWM_H7_6 – high-side PWM output	D4
PWM_H7_4 – high-side PWM output	E4
PWM_H7_4 – high-side PWM output	F4
PWM_H7_3 – high-side PWM output	G4
PWM_H7_3 – high-side PWM output	H4
CFG1_IN	J4
CFG2_OUT	K4
GND_PWR – ground for power outputs	L4
GND_PWR – ground for power outputs	M4

Pinout

JXM-IO-E30-G20-K00-O01

CAN high signal	A1
CAN low signal	B1
PWMi_H3_4 – high-side PWM output	C1
PWMi_H3_3 – high-side PWM output	D1
PWMi_H3_2 – high-side PWM output	E1
PWMi_H3_1 – high-side PWM output	F1
DO_H3_4 – Digital high-side output	G1
DO_H3_3 – Digital high-side output	H1
DO_H3_2 – Digital high-side output	J1
DO_H3_1 – Digital high-side output	K1
VBAT PWR – power supply	L1
VBAT PWR – power supply	M1
CAN_H_OUT	A2
CAN_L_OUT	B2
DI_P_1 – Digital and frequency input	C2
DI_P_2 – Digital and frequency input	D2
DI_P_3 – Digital and frequency input	E2
DI_P_4 – Digital and frequency input	F2
GND_SEN – ground for sensor supply	G2
VEXT_SEN_3 – sensor supply	H2
VEXT_SEN_2 – sensor supply	J2
VEXT_SEN_1 – sensor supply	K2
VBAT PWR – power supply	L2
PWM_H7_1 – high-side PWM output	M2
n.c.	A3
AI_1 – analog input, current/voltage	B3
AI_2 – analog input, current/voltage	C3
AI_3 – analog input, current/voltage	D3
AI_4 – analog input, current/voltage	E3
AI_5 – analog input, current/voltage	F3
AI_6 – analog input, current/voltage	G3
AI_7 – analog input, current/voltage	H3
AI_8 – analog input, current/voltage	J3
VBAT ECU – logic circuit supply	K3
GND_PWR – ground for power outputs	L3
PWM_H7_2 – high-side PWM output	M3
PWM_H7_5 – high-side PWM output	A4
PWM_H7_5 – high-side PWM output	B4
PWM_H7_6 – high-side PWM output	C4
PWM_H7_6 – high-side PWM output	D4
PWM_H7_4 – high-side PWM output	E4
PWM_H7_4 – high-side PWM output	F4
PWM_H7_3 – high-side PWM output	G4
PWM_H7_3 – high-side PWM output	H4
CFG1_IN	J4
CFG2_OUT	K4
GND_PWR – ground for power outputs	L4
GND_PWR – ground for power outputs	M4

JXM-IO-EW30



Description

The JXM-IO-EW30 expansion module includes the full functional scope of its JXM-IO-E30 brother, but comes as PCB solution to be installed in a regular plastic or diecast aluminum housing.

WAGO™ connectors and heavy-duty cable glands offer maximum wiring versatility while ensuring excellent reliability in the most demanding operating conditions.

Product features

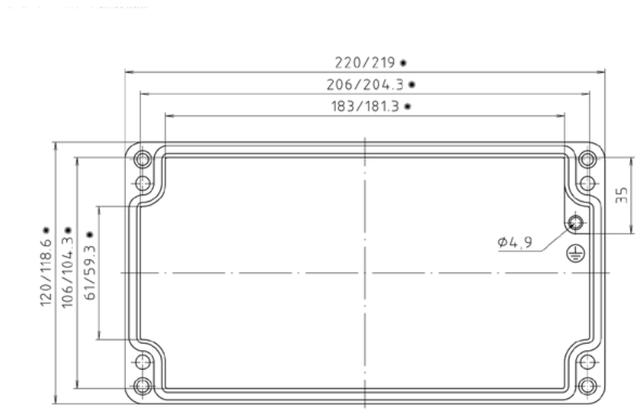
- Technical twin of JXM-IO-E30
- Connects via 5 x WAGO™ MCS mini HD
- Measuring range of the analog inputs is partly switchable
- Comes as PCB or pre-assembled in standard housing (120 x 220 x 91 mm)
- I/O signal grouping on the connectors with ground and/or sensor supplies.

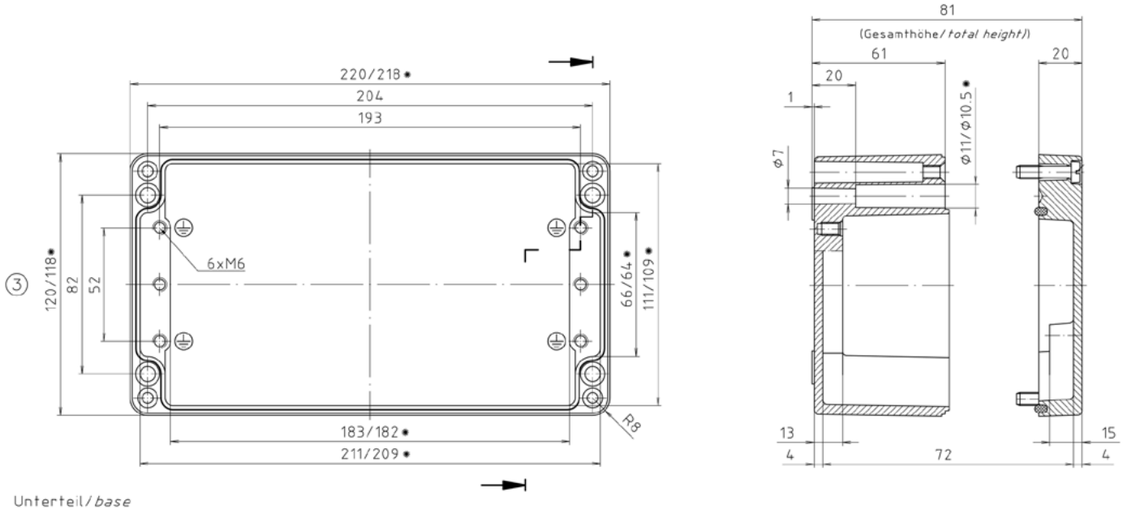
Technical specifications

Operating voltage range	DC 8 V ... 32 V, with separate ECU power supply
Operating/storage temperature	-40 ... +85 °C
CAN ports	1 CANopen
Max. amount of inputs/outputs	26
Inputs	
Analog	2; supports switching between measuring ranges 5 V/10 V
Digital/frequency	4; active-high; input impedance 5.6 kΩ, 0.1 Hz ... 10 kHz
Digital / CAN coding	2; Coding of the CAN ID, tri-state
Outputs with diagnostic capabilities (short-circuit, cable break)	
PWM, precision current measuring	4; 3 A, 1.5 kHz max., dithering, current-controlled, diagnostic capabilities, short-circuit-proof; alternative usage: - Digital input, active-low, input impedance 10 kΩ - Digital output 3 A - PNP input
PWM	6; 7 A, 1.5 kHz max., dithering, diagnostic capabilities, short-circuit-proof; alternative usage: - Digital input, active-low, input impedance 10 kΩ - Digital output 7 A - PNP input
Digital (50 % ON period)	4; 3 A high-side, diagnostic capabilities, short-circuit-proof (with 50 % ON period); alternative usage: - Digital input, active-low, input impedance 10 kΩ - PNP input
Sensor power supply	3 x independent VBAT supply for sensors
Max. permitted total current	25 A
Degree of protection	Depends on the type of installation
Vibration	ISO 16750-3
Shock	ISO 16750-3
Protection against polarity reversal	Yes
Output diagnostics	Short circuit, no-load

JXM-IO-EW30

Dimensional drawing





Pinout

Connector 1

AI_8	1
GND_SEN	2
AI_7	3
GND_SEN	4
AI_6	5
GND_SEN	6
AI_5	7
VEXT_SEN_2	8
AI_4	9
GND_SEN	10
AI_3	11
GND_SEN	12
AI_2	13
GND_SEN	14
AI_1	15
VEXT_SEN_1	16

Pinout

Connector 3

DO_H3_4	1
GND_PWR	2
DO_H3_3	3
GND_PWR	4
DO_H3_2	5
GND_PWR	6
DO_H3_1	7
GND_PWR	8
PWMi_H3_4	9
GND_PWR	10
PWMi_H3_3	11
GND_PWR	12
PWMi_H3_2	13
GND_PWR	14
PWMi_H3_1	15
GND_PWR	16

Pinout

Connector 2

DI_4	1
GND_SEN	2
DI_3	3
GND_SEN	4
DI_2	5
GND_SEN	6
DI_1	7
VEXT_SEN_3	8

Pinout

Connector 4

PWM_H7_6	1
GND_PWR	2
PWM_H7_5	3
GND_PWR	4
PWM_H7_4	5
GND_PWR	6
PWM_H7_3	7
GND_PWR	8
PWM_H7_2	9
GND_PWR	10
PWM_H7_1	11
GND_PWR	12

JXM-IO-EX30



Description

The JXM-IO-EX30 expansion module is the universal building block for remote I/Os on mobile machines and features a pioneering wiring scheme. Thanks to its fine-tuned I/O configuration, it can handle almost any remote task.

Communication with the JXM-IO-EX30 takes place via CANopen. This allows for integration into conventional CAN networks used in mobile machinery.

Featuring a sturdy potted housing, the expansion module is designed to perform reliably even in the harshest operating environments.

The wiring scheme centers around a 4-pin DT connector and the use of standard cables to facilitate swift plug&play connectivity in the field.

Product features

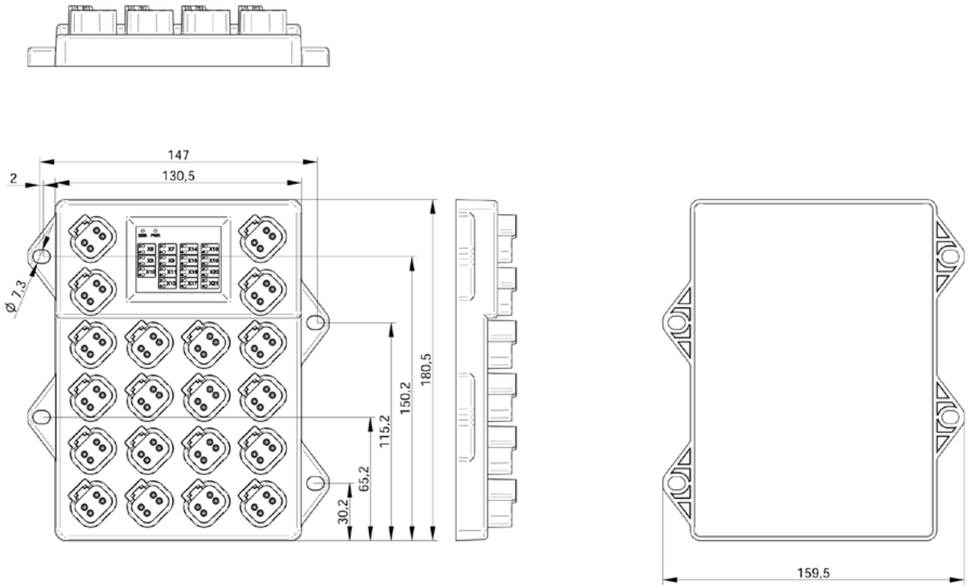
- 12 inputs, and 14 outputs with diagnostic capabilities – including high current paths and PWM with current control
- Thanks to CAN ID addressing via tri-state inputs, up to nine nodes in a network are supported without the need for software configuration. This lets you implement your common parts strategy.
- High switching capacity thanks to parallel output connection and high total continuous current
- Three short-circuit-proof sensor supplies provide stability for mission-critical sensor networks
- Sturdy potted housing with plug&play wiring scheme

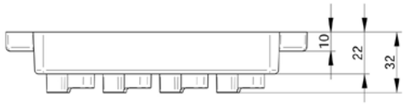
Technical specifications

Operating voltage range	DC 8 V ... 32 V, with separate ECU power supply
Operating/storage temperature	-40 ... +85 °C
CAN ports	1 CANopen
Max. amount of inputs/outputs	26
Inputs	
Analog	
Digital/frequency	8; 0 ... 10 V/0 ... 20 mA, can be configured individually; resolution: 12 bits, input impedance: 35 kΩ, load resistor: 120 Ω
Digital/CAN coding	4; active-high; input impedance 5.6 kΩ, 0.1 Hz ... 10 kHz
Outputs with diagnostic capabilities (short-circuit, cable break)	2; coding of the CAN ID, tri-state
PWM, precision current measuring	4; 3 A, 1.5 kHz max., dithering, current-controlled, diagnostic capabilities, short-circuit-proof; alternative usage: active-low digital input, input impedance 10 kΩ, digital output 3 A; PNP input
PWM	6; 7 A, 1.5 kHz max., dithering, diagnostic capabilities, short-circuit-proof; alternative usage: active-low digital input, input impedance 10 kΩ; digital output 7 A; PNP input
Digital (50 % ON period)	4; 3 A high-side, diagnostic capabilities, short-circuit-proof (with 50 % ON period); alternative usage: active-low digital input, input impedance 10 kΩ; PNP input
Sensor power supply	3 x protected VBAT sensor supply
Max. permitted total current	26 A
Degree of protection	IP65/IP6k9k using Bucher Automation plug-in connectors
Vibration	ISO 16750-3
Shock	ISO 16750-3
Certifications	ECE R10 E1, CE according to ISO 14982, ISO 13766-2
Protection against polarity reversal	Yes, external fuse
Output diagnostics	Short circuit, no-load

JXM-IO-EX30

Dimensional drawing





Pinout

X1 – VBAT_OUT

n.c.	1
VBAT_PWR	2
GND_PWR	3
GND_PWR	4

Pinout

X2 – VBAT_IN

VBAT_PWR	1
VBAT_PWR	2
GND_PWR	3
GND_PWR	4

Pinout

X4 – CAN_IN

VBAT_ECU	1
CAN_L	2
VBAT_ECU in BOOT state / n.c. in OPERATIONAL state	3
CAN_H	4

Pinout

X5 – CAN_OUT

VBAT_ECU	1
CAN_L	2
GND_PWR	3
CAN_H	4

Pinout

X6 – AI_1 ... AI_2

VEXT_SEN_1	1
AI_1	2
GND_SEN	3
AI_2	4

Pinout

X7 – AI_3 ... AI_4

VEXT_SEN_1	1
AI_3	2
GND_SEN	3
AI_4	4

Pinout

X8 – AI_5 ... AI_6

VEXT_SEN_2	1
AI_5	2
GND_SEN	3
AI_6	4

Pinout

X9 – AI_7 ... AI_8

VEXT_SEN_2	1
AI_7	2
GND_SEN	3
AI_8	4

Pinout

X10 – DI_P_1 ... DI_P_2

VEXT_SEN_3	1
DI_P_1	2
GND_SEN	3
DI_P_2	4

Pinout

X11 – DI_P_1 ... DI_P_2

VEXT_SEN_3	1
DI_P_3	2
GND_SEN	3
DI_P_4	4

JXM-IO-EX30

Pinout

X12 – CFG

VBAT_ECU	1
CFG_1	2
GND_PWR	3
CFG_2	4

Pinout

X13 - PWM_H7_5

VBAT_ECU	1
PWM_H7_5	2
GND_PWR	3
PWM_H7_5	4

Pinout

X14 – PWMi_H3_1 ... PW-Mi_H3_2

VEXT_SEN_1	1
PWMi_H3_1	2
GND_PWR	3
PWMi_H3_2	4

Pinout

X15 – DO_H3_1 ... DO_H3_2

VEXT_SEN_2	1
DO_H3_1	2
GND_PWR	3
DO_H3_2	4

Pinout

X16 – PWM_H7_3

VEXT_SEN_3	1
PWM_H7_3	2
GND_PWR	3
PWM_H7_3	4

Pinout

X17 – PWM_H7_6

VBAT_ECU	1
PWM_H7_6	2
GND_PWR	3
PWM_H7_6	4

Pinout

X18 – PWMi_H3_3 ... PW-Mi_H3_4

VEXT_SEN_1	1
PWMi_H3_3	2
GND_PWR	3
PWMi_H3_4	4

Pinout

X19 – DO_H3_3 ... DO_H3_4

VEXT_SEN_2	1
DO_H3_3	2
GND_PWR	3
DO_H3_4	4

Pinout

X20 - PWM_H7_4

VEXT_SEN_3	1
PWM_H7_4	2
GND_PWR	3
PWM_H7_4	4

Pinout

X21 – PWM_H7_1 ... PWM_H7_2

VBAT_ECU	1
PWM_H7_1	2
GND_PWR	3
PWM_H7_2	4

JXM-IO-E31



Description

The JXM-IO-E31 expansion module is the universal building block for remote I/Os on mobile machines. Thanks to its fine-tuned I/O configuration, it can handle almost any remote task and is particularly well-suited for controlling brushed DC motors in mobile machines.

Communication with the JXM-IO-E31 takes place via CANopen. This allows for integration into conventional CAN networks used in mobile machinery.

Featuring a sturdy potted housing, the expansion module is designed to perform reliably even in the harshest operating environments.

Product features

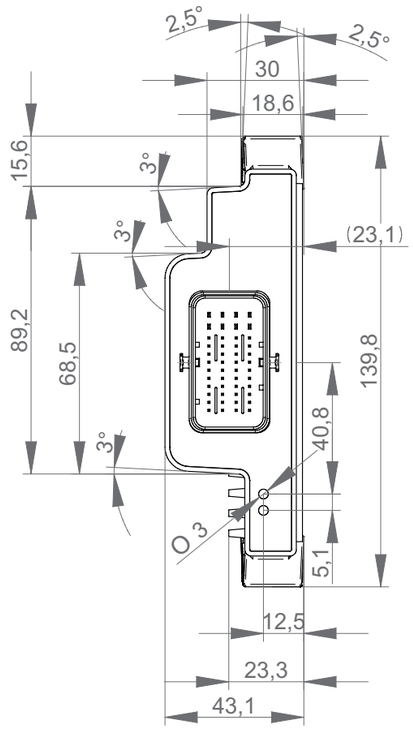
- 15 inputs, and 12 outputs with diagnostic capabilities – including high-current half-bridge paths and PWM with current control
- Improved application versatility thanks to a PT1000 thermal sensor input
- CAN ID addressing via tri-state inputs allows for integration of up to 9 nodes in one network without software configuration, and testifies to the common part strategy
- High switching capacity thanks to parallel use of H-bridges and high total continuous current to control DC motors
- Convenient switching of frequency inputs between NPN/PNP via software, allowing, for example, for vehicle speed signals to be read
- Three sensor power supplies support the connection of additional sensor networks
- Sturdy potted housing featuring a field-proven automotive connector

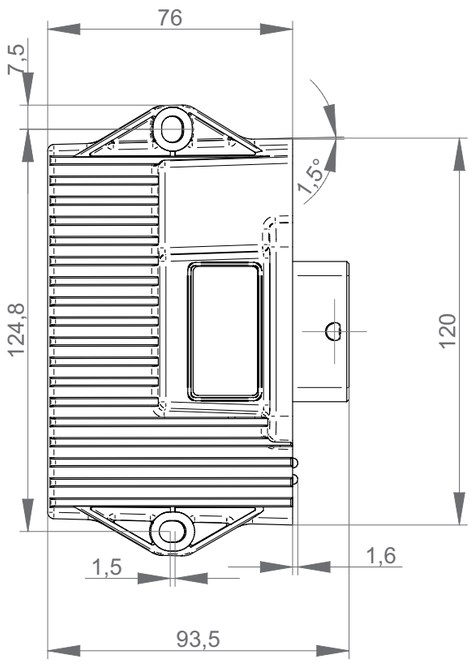
Technical specifications

Operating voltage range	DC 8 V ... 32 V, with separate ECU power supply
Operating/storage temperature	-40 °C ... +85 °C
CAN ports	1 CANopen
Max. amount of inputs/outputs	27
Inputs	
Analog	6; 0 ... 10 V/0 ... 20 mA, can be configured individually, resolution: 12 bits, input impedance: 35 kΩ, load resistor: 120 Ω
Thermal sensor inputs	1; PT1000
Digital/frequency	8; input impedance 5.6 kΩ; 0.1 Hz ... 10 kHz; NPN/PNP input, switchable via software
Digital / CAN coding	2; Coding of the CAN ID, tri-state
Outputs with diagnostic capabilities (short-circuit, cable break)	
PWM, precision current measuring	4; 3 A, 10 Hz ... 1.5 kHz, dithering, current-controlled, diagnostic capabilities, short-circuit-proof; alternative usage: active-low digital input, input impedance 10 kΩ, digital output 3 A
PWM, half bridge	4; 12 A, 10 Hz ... 15 kHz, diagnostic capabilities; short-circuit-proof; alternative usage: 2 half bridges connect to a full bridge to control DC motors (open-loop control), optional parallel connection
PWM, half bridge	4; 5 A, 10 Hz ... 5 kHz, diagnostic capabilities; short-circuit-proof; alternative usage: 2 half bridges connect to a full bridge to control DC motors (open-loop control), optional parallel connection
Sensor power supply	3 sensor supplies (of which 1 x 10 V reference output)
Max. permitted total current	24 A
Degree of protection	IP66
Vibration	ISO 16750-3
Shock	ISO 16750-3
Protection against polarity reversal	Yes
Certifications	E1 (ECE R10), CE ISO 14982
Output diagnostics	Short circuit, no-load

JXM-IO-E31

Dimensional drawing





Pinout

CAN1_H – CAN high signal	A1
CAN1_L – CAN low signal	B1
PWMi_HL5_1 – half bridge PWM output	C1
PWMi_HL5_2 – half bridge PWM output	D1
PWMi_HL5_3 – half bridge PWM output	E1
PWMi_HL5_4 – half bridge PWM output	F1
DI_5 – Digital and frequency input	G1
DI_6 – Digital and frequency input	H1
DI_7 – Digital and frequency input	J1
DI_8 – Digital and frequency input	K1
VBAT PWR – load power supply	L1
VBAT PWR – load power supply	M1
CAN1_TERM2 – CAN termination	A2
CAN1_TERM1 – CAN termination	B2
DI_1 – Digital and frequency input	C2
DI_2 – Digital and frequency input	D2
DI_3 – Digital and frequency input	E2
DI_4 – Digital and frequency input	F2
GND_SEN – ground for sensor supply	G2
VREF_SEN – sensor supply	H2
VEXT_SEN_1 – sensor supply	J2
VEXT_SEN_2 – sensor supply	K2
PWMi_HL12_1 – half bridge PWM output	L2
PWMi_HL12_2 – half bridge PWM output	M2
n.c.	A3
AI_1 – analog input, current/voltage	B3
AI_2 – analog input, current/voltage	C3
AI_3 – analog input, current/voltage	D3
AI_4 – analog input, current/voltage	E3
AI_5 – analog input, current/voltage	F3
AI_6 – analog input, current/voltage	G3
AI_PT1000 – analog input PT1000	H3
GND_PT1000 – ground for PT1000	J3
VBAT ECU – logic circuit supply	K3
PWMi_HL12_4 – half bridge PWM output	L3
PMWi_HL12_3 – half bridge PWM output	M3
n.c.	A4
n.c.	B4
n.c.	C4
n.c.	D4
PWMi_H3_1 – high-side PWM output	E4
PWMi_H3_2 – high-side PWM output	F4
PWMi_H3_3 – high-side PWM output	G4
PWMi_H3_4 – high-side PWM output	H4
CFG_1 – tri-state input	J4
CFG_2 – tri-state input	K4
GND – ground for power outputs	L4
GND – ground for power outputs	M4

Pinout

JXM-IO-E31-G20-K00-O01

CAN1_H – CAN high signal	A1
CAN1_L – CAN low signal	B1
PWMi_HL5_1 – half bridge PWM output	C1
PWMi_HL5_2 – half bridge PWM output	D1
PWMi_HL5_3 – half bridge PWM output	E1
PWMi_HL5_4 – half bridge PWM output	F1
DI_5 – Digital and frequency input	G1
DI_6 – Digital and frequency input	H1
DI_7 – Digital and frequency input	J1
DI_8 – Digital and frequency input	K1
VBAT PWR – load power supply	L1
VBAT PWR – load power supply	M1
CAN_H_OUT	A2
CAN_L_OUT	B2
DI_1 – Digital and frequency input	C2
DI_2 – Digital and frequency input	D2
DI_3 – Digital and frequency input	E2
DI_4 – Digital and frequency input	F2
GND_SEN – ground for sensor supply	G2
VREF_SEN – sensor supply	H2
VEXT_SEN_1 – sensor supply	J2
VEXT_SEN_2 – sensor supply	K2
PWMi_HL12_1 – half bridge PWM output	L2
PWMi_HL12_2 – half bridge PWM output	M2
n.c.	A3
AI_1 – analog input, current/voltage	B3
AI_2 – analog input, current/voltage	C3
AI_3 – analog input, current/voltage	D3
AI_4 – analog input, current/voltage	E3
AI_5 – analog input, current/voltage	F3
AI_6 – analog input, current/voltage	G3
AI_PT1000 – analog input PT1000	H3
GND_PT1000 – ground for PT1000	J3
VBAT ECU – logic circuit supply	K3
PWMi_HL12_4 – half bridge PWM output	L3
PMWi_HL12_3 – half bridge PWM output	M3
n.c.	A4
n.c.	B4
n.c.	C4
n.c.	D4
PWMi_H3_1 – high-side PWM output	E4
PWMi_H3_2 – high-side PWM output	F4
PWMi_H3_3 – high-side PWM output	G4
PWMi_H3_4 – high-side PWM output	H4
CFG_1 – tri-state input	J4
CFG_2 – tri-state input	K4
GND – ground for power outputs	L4
GND – ground for power outputs	M4

JXM-IO-EW31



Description

The JXM-IO-EW31 expansion module is a universal, distributed module for self-propelled machines. Its well-balanced I/O configuration enables it to handle almost all decentralized tasks and is particularly suitable for controlling brushed DC motors in self-propelled machines.

Communication with the JXM-IO-EW31 is carried out via CANopen®. This way, the module can be integrated into common CAN networks of self-propelled machines.

Due to its rugged, encapsulated housing, the expansion module can be used very flexibly in rough environmental conditions.

Product features

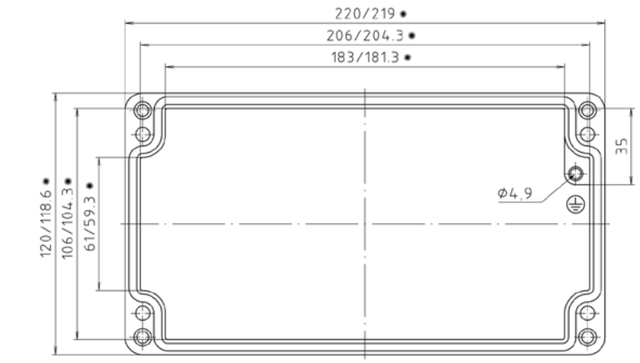
- 15 inputs and 12 diagnostic-capable outputs - including powerful H-bridge high-current paths and PWM with current control
- High application flexibility through a temperature sensor input for PT1000 sensors
- Thanks to CAN ID addressing via tristate inputs, up to nine nodes in a network are supported without the need for software configuration. This lets you implement your common parts strategy.
- High switching capacity through parallel connection of H-bridges and high total continuous current for controlling DC motors
- The frequency inputs can be conveniently switched between NPN/PNP via software. This allows, for example, vehicle speed signals to be read in
- Three sensor power supplies allow an extended connection of sensor networks
- Rugged, potted housing with proven automotive connector

Technical specifications

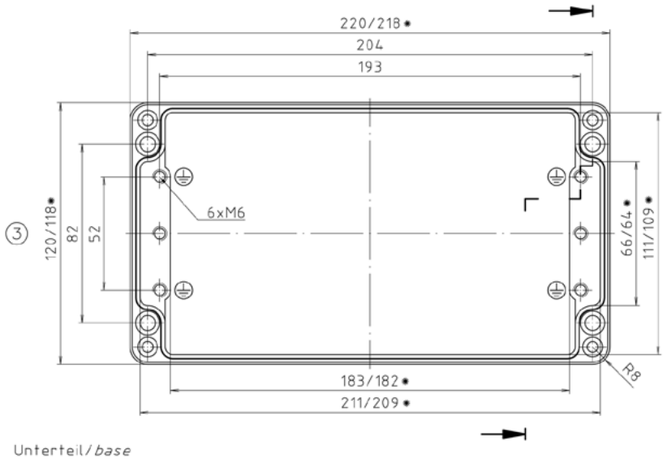
Operating voltage range	DC 8 ... 32 V, ECU voltage supplied separately
Operating / storage temperature range	-40 °C ... +85 °C
Interfaces CAN	1 CANopen®
Maximum number of inputs/outputs	27
Inputs	
Analog	6; 0 ... 10 V/0 ... 20 mA, individually configurable; resolution 12 bit, input impedance 35 kΩ, load 120 Ω
Temperature sensor inputs	1; PT1000
Digital / frequency	8; input impedance 5.6 kΩ 0.1 Hz ... 10 kHz NPN/PNP input switchable via software
Digital / CAN Coding	2 Coding of the CAN ID, Tristate
Outputs, diagnostic capable (short circuit, cable break)	
PWM, precision current measurement	4; 3 A, min. 10 Hz, max. 1.5 kHz, dithering, current controlled, diagnosable, short-circuit proof; alternatively to be used as digital input active-low, input impedance 10 kΩ; digital output 3 A
PWM, half bridge	8; 25 A, min. 10 Hz, max. 5 kHz, dithering, diagnosable, short-circuit-proof; alternatively, two half bridges can be connected together to form a full bridge to control DC motors (open loop control), parallel connection possible
Sensor supply	3 power supplies for sensors (of which 1 x 10 V reference output)
Maximum permissible total current	60 A
Protection class	IP66
Vibration	ISO 16750-3
Shock	ISO 16750-3
Reverse polarity protection	Yes
Certifications	E1 (ECE R10), CE ISO 14982
Diagnosis of the outputs	short circuit, cable break

JXM-IO-EW31

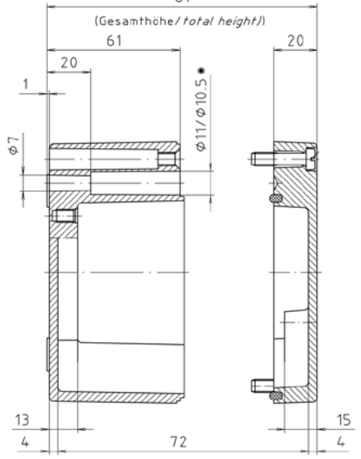
Dimensional drawing



Deckel/*lid*



Unterteil/*base*



Pinout

Connector 2

AI_1	1
VEXT_SEN_1	2
AI_2	3
GND_SEN	4
AI_3	5
GND_SEN	6
AI_4	7
GND_SEN	8
AI_5	9
VEXT_SEN_2	10
AI_6	11
GND_SEN	12
VREF_SEN	13
GND_SEN	14
AI_PT1000	15
GND_PT1000	16

Pinout

Connector 4

DI_1	1
VEXT_SEN_1	2
DI_2	3
GND_SEN	4
DI_3	5
GND_SEN	6
DI_4	7
GND_SEN	8
DI_5	9
VEXT_SEN_2	10
DI_6	11
GND_SEN	12
DI_7	13
GND_SEN	14
DI_8	15
GND_SEN	16

Pinout

DIP switch

CAN1_TERM	1
CAN2_TERM	2
-	3
BOOTSEL	4

Pinout

M12 connector (5-pol)

n.c.	1
VBAT_ECU	2
GND_ECU	3
CAN_H	4
CAN_L	5

Pinout

Connector 6

CAN1_L	1
CAN1_H	2
CAN2_L	3
CAN2_H	4
CFG1	5
CFG2	6
VBAT_ECU	7
GND	8

Pinout

Connector 7

PWMi_H3_1	1
GND_PWR	2
PWMi_H3_2	3
GND_PWR	4
PWMi_H3_3	5
GND_PWR	6
PWMi_H3_4	7
GND_PWR	8

Pinout

KL

PWMi_HL12_4	1
PWMi_HL12_3	2
PWMi_HL12_2	3
PWMi_HL12_1	4
GND_PWR	5
VBAT_PWR	6
PWMi_HL5_4	7
PWMi_HL5_3	8
PWMi_HL5_2	9
PWMi_HL5_1	10

Pinout

JST 4-pol (male)

NC	1
VBAT_ECU	2
GND_ECU	3
CAN1_H	4
CAN1_L	5

Pinout

JST 4-pol (male)

CAN1_L	1
CAN1_H	2
GND_PWR	3
VBAT_ECU	4

JXM-IO-EX31



Description

The JXM-IO-EX31 expansion module is the universal building block for remote I/Os on mobile machines and features a pioneering wiring scheme. Thanks to its fine-tuned I/O configuration, it can handle almost any remote task.

Communication with the JXM-IO-EX31 takes place via CANopen. This allows for integration into conventional CAN networks used in mobile machinery.

Featuring a sturdy potted housing, the expansion module is designed to perform reliably even in the harshest operating environments.

The wiring scheme centers around a 4-pin DT connector and the use of standard cables to facilitate swift plug&play connectivity in the field.

Product features

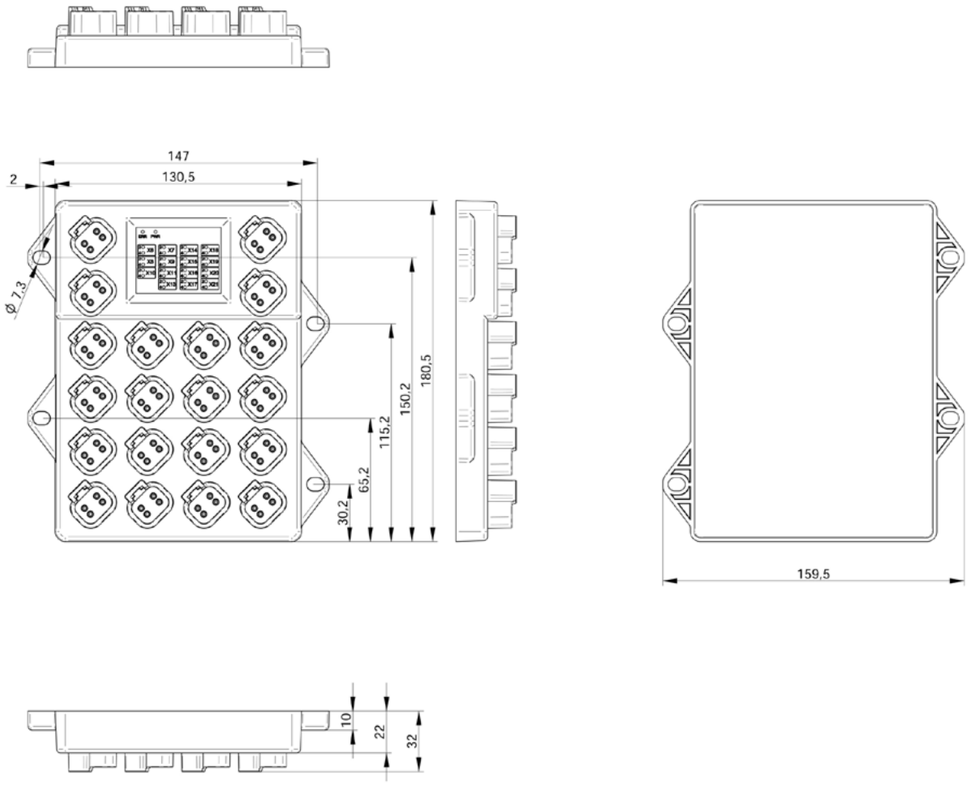
- 12 inputs, and 14 outputs with diagnostic capabilities – including high current paths and PWM with current control
- Thanks to CAN ID addressing via tri-state inputs, up to nine nodes in a network are supported without the need for software configuration. This lets you implement your common parts strategy.
- High switching capacity thanks to parallel output connection and high total continuous current
- Three short-circuit-proof sensor supplies provide stability for mission-critical sensor networks
- Sturdy potted housing with plug&play wiring scheme

Technical specifications

Operating voltage range	DC 8 V ... 32 V, with separate ECU power supply
Operating/storage temperature	-40 °C ... +85 °C
CAN ports	1 CANopen
Max. amount of inputs/outputs	27
Inputs	
Analog	6; 0 ... 10 V/0 ... 20 mA, can be configured individually, resolution: 12 bits, input impedance: 35 kΩ, load resistor: 120 Ω
Thermal sensor inputs	1; PT1000
Digital/frequency	8; input impedance 5.6 kΩ; 0.1 Hz ... 10 kHz; NPN/PNP input, switchable via software
Digital / CAN coding	2; Coding of the CAN ID, tri-state
Outputs with diagnostic capabilities (short-circuit, cable break)	
PWM, precision current measuring	4; 3 A, 10 Hz ... 1.5 kHz, dithering, current-controlled, diagnostic capabilities, short-circuit-proof; alternative usage: active-low digital input, input impedance 10 kΩ, digital output 3 A
PWM, half bridge	8; 12 A, 10 Hz ... 15 kHz, diagnostic capabilities; short-circuit-proof; alternative usage: 2 half bridges connect to a full bridge to control DC motors (open-loop control), optional parallel connection
Sensor power supply	3 sensor supplies (of which 1 x 10 V reference output)
Max. permitted total current	24 A
Degree of protection	IP66
Vibration	ISO 16750-3
Shock	ISO 16750-3
Protection against polarity reversal	Yes
Certifications	E1 (ECE R10), CE ISO 14982
Output diagnostics	Short circuit, no-load

JXM-IO-EX31

Dimensional drawing



Pinout

X1

VBAT_PWR	1
VBAT_PWR	2
GND_PWR	3
GND_PWR	4

Pinout

X2

VBAT_PWR	1
VBAT_PWR	2
GND_PWR	3
GND_PWR	4

Pinout

X4

VBAT_ECU	1
CAN1_L	2
BOOTSEL	3
CAN1_H	4

Pinout

X5

VBAT_ECU	1
CAN1_L	2
GND	3
CAN1_H	4

Pinout

X6

OUT_VEXT_SEN_1	1
DI_1	2
GND_SEN	3
DI_2	4

Pinout

X7

OUT_VEXT_SEN_1	1
DI_3	2
GND_SEN	3
DI_4	4

Pinout

X8

OUT_VEXT_SEN_2	1
DI_5	2
GND_SEN	3
DI_6	4

Pinout

X9

OUT_VEXT_SEN_2	1
DI_7	2
GND_SEN	3
DI_8	4

Pinout

X10

OUT_VREF_SEN	1
AI_1	2
GND_SEN	3
AI_2	4

Pinout

X11

OUT_VREF_SEN	1
AI_3	2
GND_SEN	3
AI_4	4

JXM-IO-EX31

Pinout

X12

VBAT_ECU	1
CFG_1	2
GND	3
IN_OUT_CFG_2	4

Pinout

X13

VBAT_ECU	1
AI_5	2
GND_SEN	3
AI_6	4

Pinout

X14

GND_PWR	1
PWMI_HL5_1	2
GND_PWR	3
PWMI_HL5_2	4

Pinout

X15

GND_PWR	1
PWMI_HL12_1	2
GND_PWR	3
PWMI_HL12_2	4

Pinout

X16

VBAT_ECU	1
PWMI_H3_1	2
GND_PWR	3
PWMI_H3_2	4

Pinout

X17

-	1
AI_PT1000	2
GND_PT1000	3
-	4

Pinout

X18

GND_PWR	1
PWMI_HL5_3	2
GND_PWR	3
PWMI_HL5_4	4

Pinout

X19

GND_PWR	1
PWMI_HL12_3	2
GND_PWR	3
PWMI_HL12_4	4

Pinout

X20

VBAT_ECU	1
PWMI_H3_3	2
GND_PWR	3
PWMI_H3_4	4

Pinout

X21

VBAT_ECU	1
n.c.	2
GND	3
n.c.	4

JXM-IO-E32



Description

The JXM-IO-E32 expansion module is the universal building block for remote I/Os on mobile machines. With its input-focused I/O configuration, it can handle a wide range of remote tasks and is particularly well-suited for integrating temperature and high-resolution pressure sensors in mobile machines.

Communication with the JXM-IO-E32 takes place via CANopen. This allows for integration into conventional CAN networks used in mobile machinery.

Featuring a sturdy potted housing, the expansion module is designed to perform reliably even in the harshest operating environments.

Product features

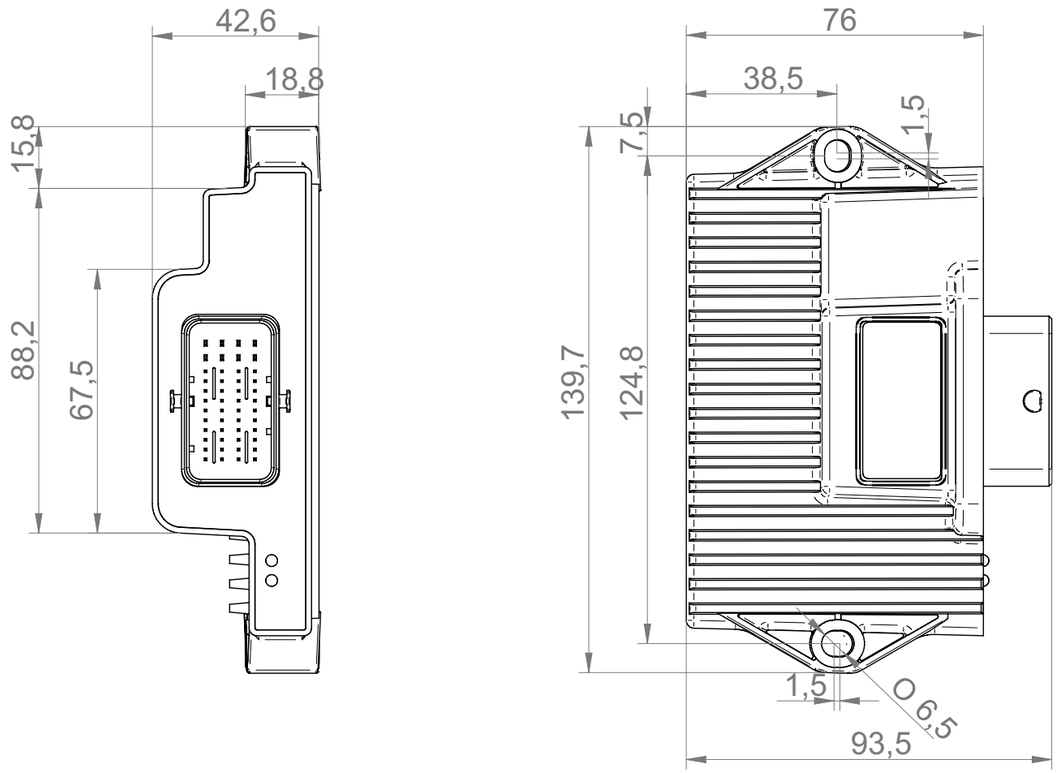
- 14 inputs, and 3 outputs with diagnostic capabilities – including analog inputs and high-resolution sensor inputs
- Improved application versatility thanks to 8 PT1000 thermal sensor inputs
- CAN ID addressing via tri-state inputs allows for integration of up to 9 nodes in one network without software configuration, and testifies to the common part strategy
- Minimal wiring effort: Each of the 10 analog inputs is assigned a supply voltage pin and a ground reference pin
- 3 analog outputs (current and voltage) can be used to control pneumatic valves, for example
- Sturdy potted housing featuring a field-proven automotive connector

Technical specifications

Operating voltage range	DC 8 V ... 32 V, with separate ECU power supply
Operating/storage temperature	-40 °C ... +85 °C
CAN ports	1 CANopen
Max. amount of inputs/outputs	17
Inputs	
Analog	8; 0 ... 10 V/0 ... 20 mA, can be configured individually, resolution: 12 bits, input impedance: 43 kΩ, load resistor: 120 Ω 2; 0 ... 20 mA, can be configured individually; resolution: 16 bits, input impedance: 47 kΩ, load resistor: 120 Ω
Thermal sensor inputs	8; PT1000 (switched via analog inputs)
Digital/frequency	6; input impedance 5.6 kΩ, 0.1 Hz ... 10 kHz; switchable NPN/PNP input
Digital / CAN coding	2; Coding of the CAN ID, tri-state
Outputs with diagnostic capabilities (short-circuit, cable break)	
Analog	3; 0 ... 10 V/0 ... 20 mA, can be configured individually; resolution: 12 bits
Sensor power supply	8 x 24 V sensor supply, battery voltage 2 x 10 V sensor supply, reference voltage
Ground	10 x sensor ground
Max. permitted total current	2 A
Degree of protection	IP66
Vibration	ISO 16750-3
Shock	ISO 16750-3
Protection against polarity reversal	Yes
Certifications	E1 (ECE R10), CE ISO 14982
Output diagnostics	Short circuit, no-load

JXM-IO-E32

Dimensional drawing



Pinout

CAN1_H – CAN high signal	A1
CAN1_L – CAN low signal	B1
AI_1 – analog input	C1
AI_2 – analog input	D1
AI_3 – analog input	E1
AI_4 – analog input	F1
AI_5 – analog input	G1
AI_6 – analog input	H1
AI_7 – analog input	J1
AI_8 – analog input	K1
AI_PREC_1 – 16 bits	L1
AI_PREC_2 – 16 bits	M1
CAN1_TERM2 – CAN termination	A2
CAN1_TERM1 – CAN termination	B2
VEXT_SEN_1 – sensor supply	C2
VEXT_SEN_2 – sensor supply	D2
VEXT_SEN_3 – sensor supply	E2
VEXT_SEN_4 – sensor supply	F2
VEXT_SEN_5 – sensor supply	G2
VEXT_SEN_6 – sensor supply	H2
VEXT_SEN_7 – sensor supply	J2
GND_SEN – ground for sensor supply	K2
VREF_10V_1 – sensor supply, reference voltage	L2
VREF_10V_2 – sensor supply, reference voltage	M2
n.c. (BOOT)	A3
AO_3 – analog output	B3
GND_SEN – ground for sensor supply	C3
GND_SEN – ground for sensor supply	D3
GND_SEN – ground for sensor supply	E3
GND_SEN – ground for sensor supply	F3
GND_SEN – ground for sensor supply	G3
GND_SEN – ground for sensor supply	H3
GND_SEN – ground for sensor supply	J3
VBAT ECU – logic circuit supply	K3
GND_SEN – ground for sensor supply	L3
GND_SEN – ground for sensor supply	M3
DI_1 – Digital and frequency input	A4
DI_2 – Digital and frequency input	B4
DI_3 – Digital and frequency input	C4
DI_4 – Digital and frequency input	D4
DI_5 – Digital and frequency input	E4
DI_6 – Digital and frequency input	F4
AO_1 – analog output	G4
AO_2 – analog output	H4
IN_CFG1 – CAN ID configuration pin	J4
OUT_CFG2 – CAN ID configuration pin	K4
VEXT_SEN_8 – sensor supply	L4
GND – ground for power outputs	M4



System Components

The variety of functions and ease of operation are significantly increased by system components. Individual demands in terms of user-friendly operation and made-to-measure configuration of mobile machinery can be easily met.



POWERTRACK



Description

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.

Product 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 system state feedback
- Compact design (degree of protection: IP54)
- CAN interface for CANopen or SAE J1939 (option)

Technical specifications

Connector	Deutsch DT04-4P
Keypad service life	3 million switching cycles min.
Rotary encoder service life, pushbutton function	1 million switching cycles min.
Rotary encoder service life, rotary function	100,000 cycles min.
Keypad	Silicone rubber, PU hard-coated
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, isopropyl alcohol, 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

POWERKEY PRO



Description

The POWERKEY PRO keyboard series stands out thanks to its compact geometries. Featuring a CAN interface and keys allowing for custom command assignments, this device opens up a wide range of application options. and makes it very easy to meet specific requirements placed on the operation of a mobile machine.

Product features

- Raised keys that are easy to press for operators wearing gloves
- User-programmable keys. Keypad layout: 2x2, 3x2, 4x2, and 6x2
- Individually printable key caps, standard: > 100 icons
- Keys with multi-color LEDs for system state feedback
- Compact design (degree of protection: IP67)
- CAN interface for CANopen or SAE J1939 (option)

Technical specifications

Connector	Deutsch DT04-4P
Keypad service life	3 million switching cycles min.
Keypad	Silicone rubber, PU hard-coated
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, isopropyl alcohol, 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

Wiring harness



Description

Design and crafting of wiring harnesses have a major influence on the functional reliability of mobile machinery. Customized wiring harnesses enable the implementation of customer-specific features. Bucher Automation AG draws on many years of expertise in wiring harness engineering.

RAM mounting base



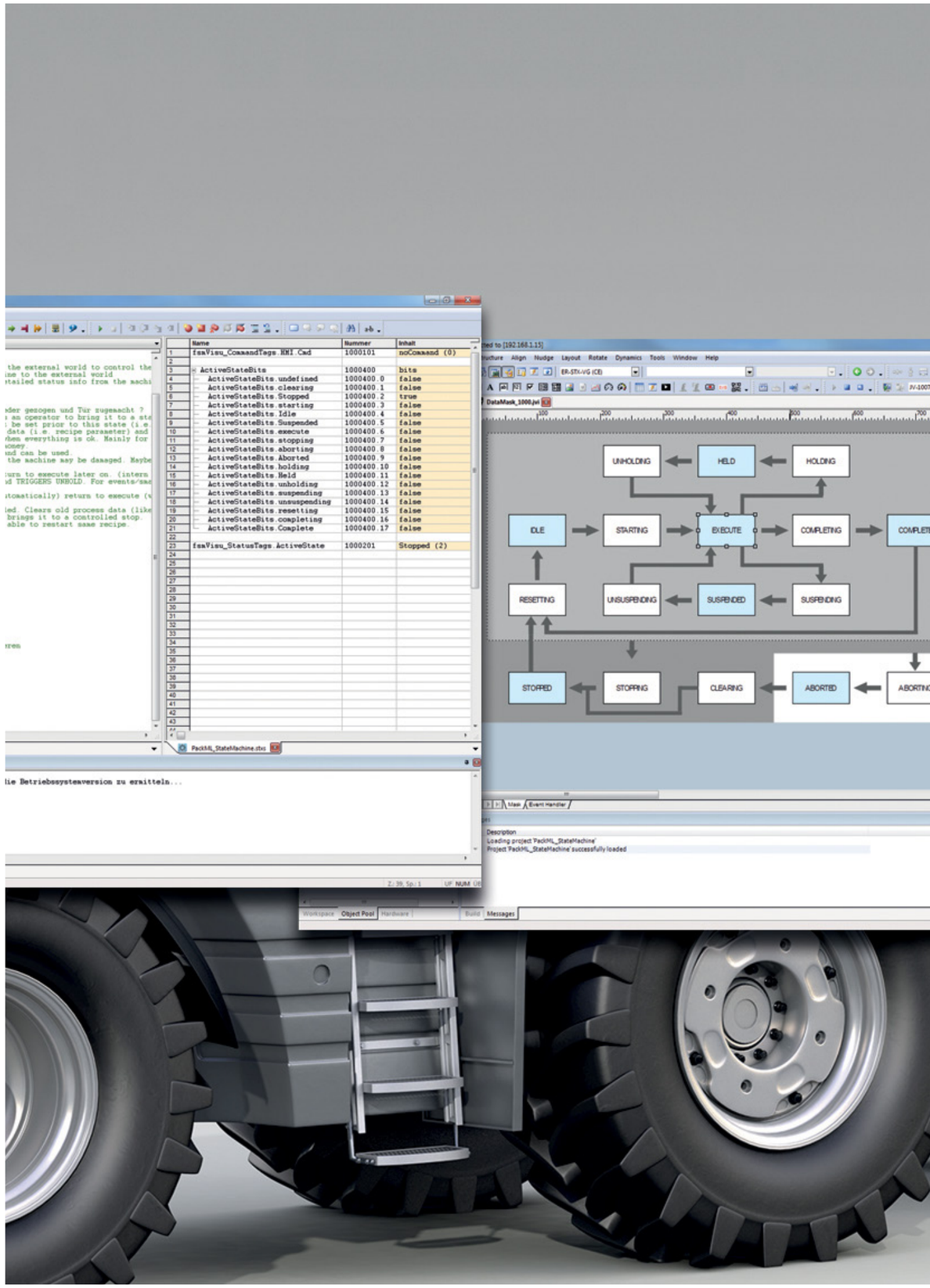
Description

RAM dash mounts allow for quick and easy positioning of HMIs according to one’s personal preferences.

Dash mounts and mounting solutions are available for select HMIs.

Engineering environment

The cornerstones of Bucher Automation AG software solutions are simplicity and integration Where usability of the systems is the guiding principle.



JetSym

Description

JetSym is the central programming tool by Bucher Automation AG compliant with IEC-61131-3 and caters to all technology functions required in mobile machinery.

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

Product features

- Configuration
- Programming
- Debugging
- Commissioning
- Diagnosis
- Version management

The STX programming language

STX meets all requirements of mobile machinery automation. Its syntax is based on IEC 61131-3 ST. Being a procedural language allows it to directly map and describe the real processes of a machine. High-performance commands for PWM-controlled valve handling, motor control, operator interaction and strings make it easy to program a controller.

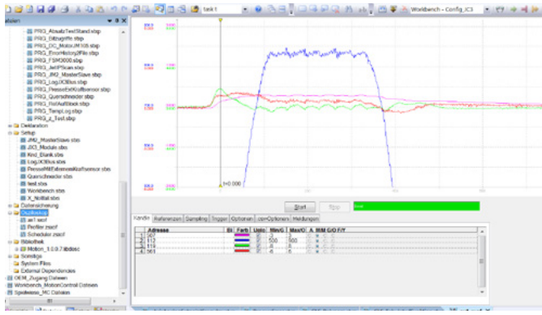
Object orientation helps reduce development and testing times

The object-oriented approach of STX helps reduce development and testing times. Tried and tested routines can be encapsulated such that neither code nor any essential data can be changed. Besides mere reusability, classes can adopt 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. The programming can map shared object properties through a base class and define derived classes for the different manifestations of the objects/functions. Using these program elements increases efficiency while significantly reducing testing times.

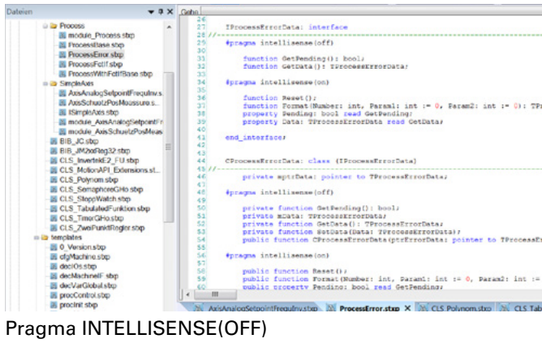
STX can do more

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:

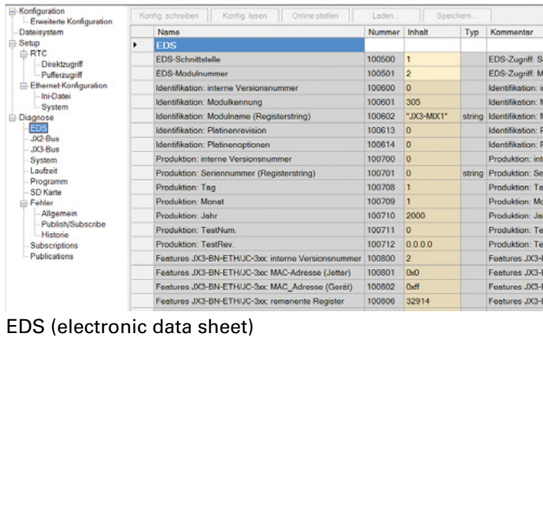
- Positioning
- CAN library
- Hydraulics temperature compensation through current control
- Task management
- File operations on the file system of the control system
- String processing
- Data processing in complex structures
- Exception handling
- and much more



Oscilloscope mode



Pragma INTELLISENSE(OFF)



EDS (electronic data sheet)

JetViewSoft

Description

JetViewSoft is a software tool designed for easy process visualization, and creation of individual HMI screens. The proven object-oriented approach allows you to implement even complex visualization tasks swiftly and efficiently without requiring previous knowledge. The user-friendly editor and a pool of predefined objects help you create screens in no time.

It includes key functions such as alarm handling, trending and libraries allowing you to design sophisticated visualizations. Thanks to its object-oriented concept, the user-friendly editor helps implement large-scale projects easily and efficiently.

Product 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

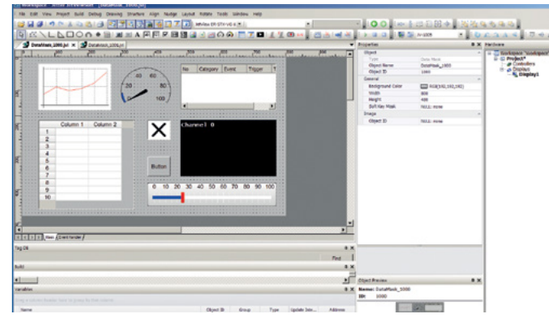
JetViewSoft uses vector graphics to allow for complete and lossless scalability of all objects (except for bitmap graphics). Thus, projects or parts thereof initially designed with a resolution of a specific target device can be used on displays with a different resolution without loss.

SVG import

JetViewSoft supports direct import of 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.

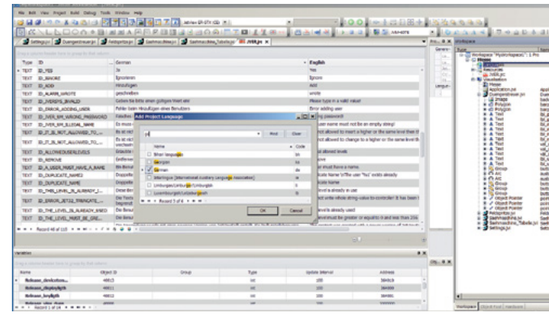
Object-oriented and efficient

The object-oriented approach of JetViewSoft makes generating screens a lot easier. Once an objects such as a button was defined it there is no limit to reusing it again. 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.



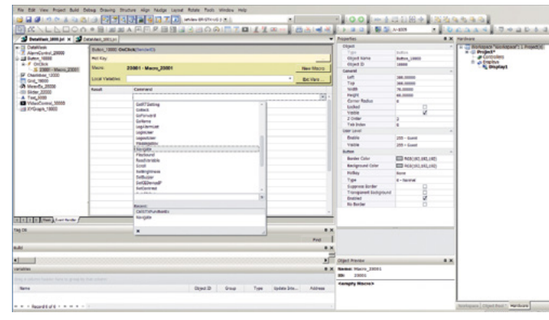
Configuring objects rather than programming

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 JetViewSoft development environment. These elements can be arranged on top of each 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 multilingual content 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

To simplify processes, JetViewSoft comes macro functions that can be configured to bespoke needs. To handle more complex processes, calculations, or program special functions, STX, a programming language based on IEC-61131-3, is available as scripting language. This scripting language is also used to program Bucher Automation controllers. This means, JetViewSoft and STX stand for perfect compatibility.

ISO-Designer

Description

With the ISO-Designer tool from Bucher Automation AG, creating ISOBUS-compliant files is a straightforward task. ISO-Designer commands a high-performance graphical editor with a functional scope that equals graphic software programs. Many operations can easily be executed by a few mouse clicks.

Product features

- Create masks to the ISO 11783 standard (.iop files)
- Graphics editor
- Convenient aligning/grouping
- Drag-and-drop operations
- Zoom function
- Undo/redo function
- Configurable GUI
- Smart copy function
- Object pool with preview function
- Library
- Bookmarks and history
- Supports standards on all levels
- Automatic color conversion
- Preview function
- Easy implementation of multilingual content

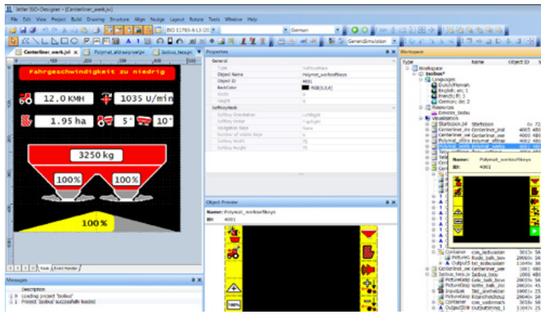
We are members

ISOBUS

AEF AGRICULTURAL INDUSTRY ELECTRONICS FOUNDATION

Clean project management | 100 % ISO-compliant

Comfortable 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 creating a new project, you are free to choose the specifications to be applied. The automatic color space conversion of imported images always ensures compliance with the ISO standard.



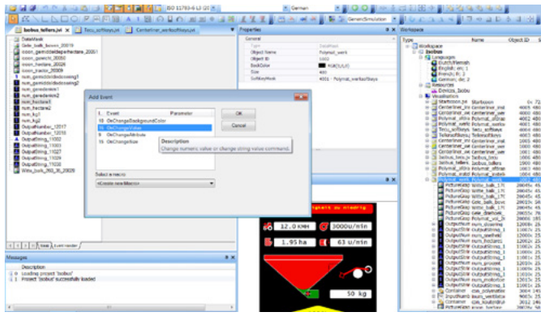
Everything at a glance

Ease of operation leaves nothing to be desired

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

Multilingual content made easy

With the ISO-Designer, multilingual masks are particularly easy to create. All necessary information is stored in a resource file. Content is displayed depending on the currently selected language. The resource file can also be exported as a table and imported again, which substantially simplifies external translation of the texts.

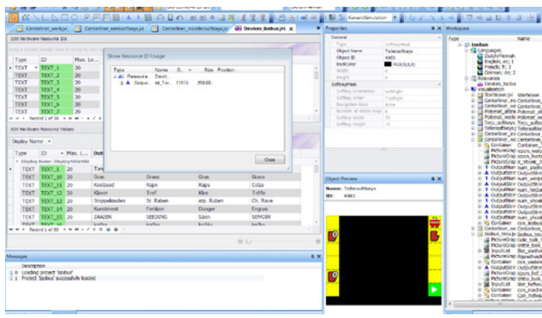


Optimized for use in the field

ISO-Designer – license now

Order your license today to take advantage of a host of benefits:

- Continuous further development including product upgrades
- Full functionality
- Full support
- Full compatibility for every ISOBUS terminal



Fast and efficient language management

Professional Services

Bucher Automation AG’s professional services cater for a full range of mechanical and plant engineering needs. The choice is yours: You can entrust us with managing your entire project, or you draw on our know-how for specific solutions.





Your project under focus

Why not take the easy option and rely on our experts to guide you every step of the way? As part of our project management process, we work with our customers to identify which system, which system module or full-service solution and which device, suits their needs best.

- Consulting and management
- Controller programming services
- Creation of visualization applications
- Electrical engineering and control cabinet manufacturing
- Service and maintenance
- Training
- Retrofit
- Functional safety
- Industrial security

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
- Sourcing of all necessary components

Controller programming services
- Structured text programming to the IEC 61131-3-(ST) standard
- 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 approval

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 approval

Electrical engineering and control cabinet manufacturing
- Planning and optimizing production capacity
- Manufacturing of control panels and cabinets
- Production 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
- Creation of wiring and terminal diagrams

Service and maintenance
- Hotline | Telephone and email 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
- Extended warranty offers as option

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

Retrofit
- Upgrade of existing machines to create a modern, powerful control system
- Seamless integration with the existing IT structure
- Coordination of change-over work with non-production times

Functional safety
- Risk analyses and definition of safety requirements
- Specification of detailed requirements
- Planning for implementing requirements in the development and production process
- Documentation and proof of correct functioning
- Tool qualification
- Staff training
- Verification and validation of documents, products, etc.
- Sourcing of components and quality assurance
- Four-eyes principle
- Monitoring of operational down-times

Industrial security
- Security awareness trainings
- Compliance check against legal and regulatory demands
- Threat and risk analysis
- Defense-in-depth security concept
- “Safe development process” and “safe operation” assessments
- Planning and implementation of technical and organizational steps according to best practices

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