

JetSafeControlMobile 720

Controller



- 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 require 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

Beschreibung

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.

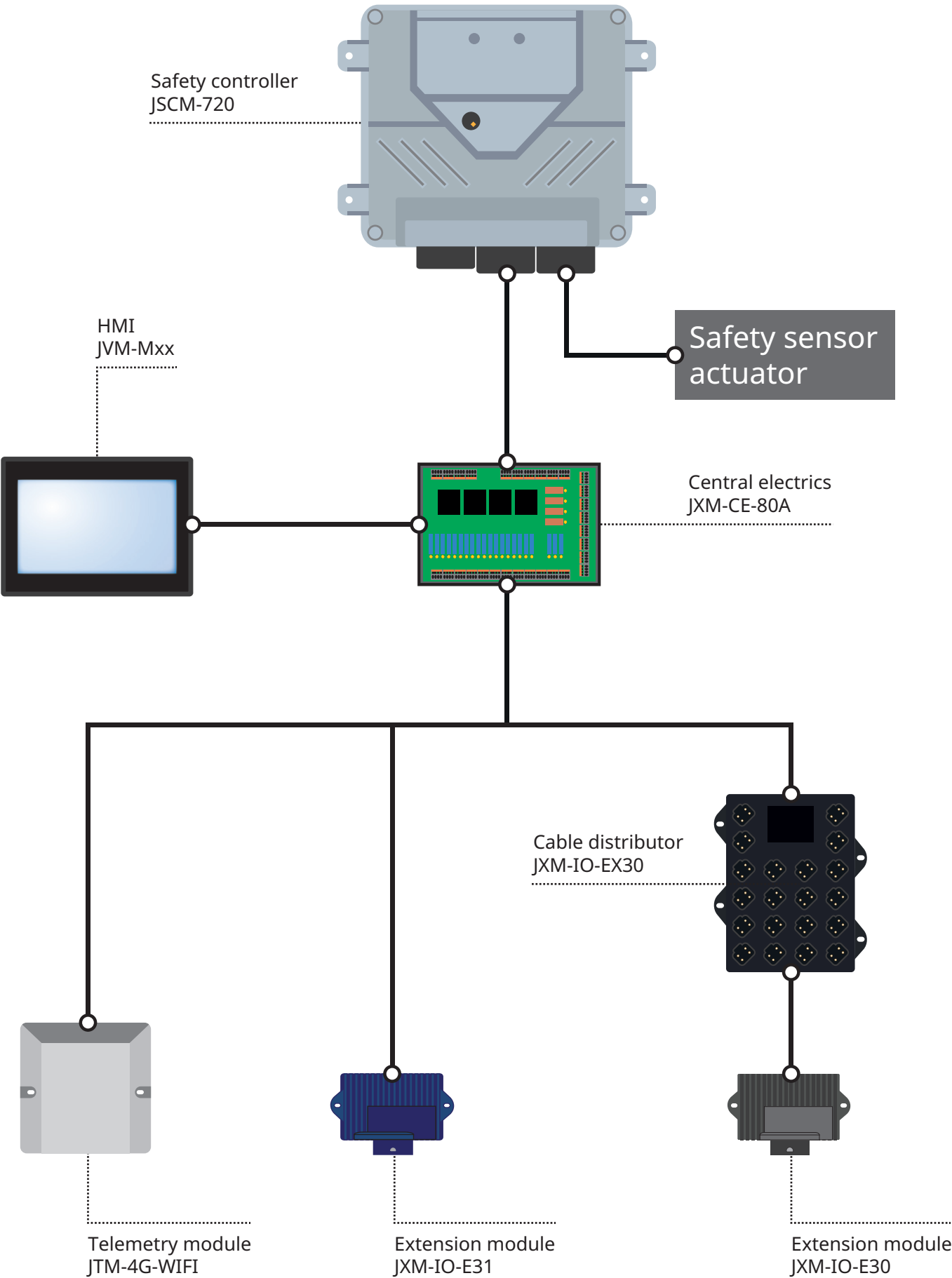
Hardware-wise, the JSCM-720 builds on the proven JCM-5xx family. Designed to operate as a central controller

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.

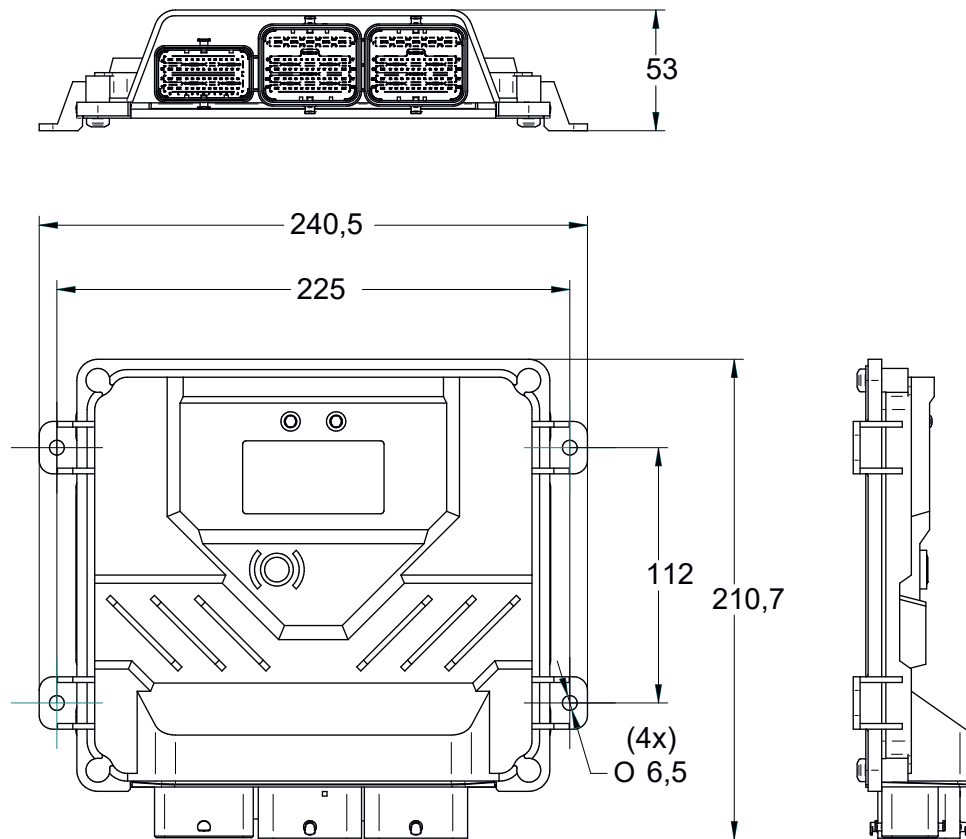
The JSCM-720 is being certified according to the current FS regulations for mobile automation. Undergoing the certification process and adhering to the specifications from the Safety Manual enable us to optimally implement any FS requirements deduced from the device's risk analyses.

Technical specifications

Approvals	ECE R10 approval, CE according to ISO 14982 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
Safety certificates	
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
Max. permissible total current	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
Diagnostic capabilities	35 A, max. housing temperature +80° C 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}



Dimensional drawing



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