



- › CPU module for WP42xx Systems and Concepts
- › High performing controller for all types of turbines
- › Safe operation in harsh environmental conditions
- › Maintenance free - no fans and no replaceable batteries
- › Advanced event based data logging and storage
- › Direct integration with safety system
- › Integrated Failsafe Flash disc
- › High-speed multi-core processor (CPU and DSP)
- › Built-in floating point unit (FPU) for fast advanced mathematical calculations
- › Gigabit Ethernet, Serial RS232 and USB 2.0 port
- › 8/16 accelerometer inputs (-08, -09, -10 variant only)
- › Fan control for small size high IP class panels (-10 variant only)

The WP4200 Controller

The WP4200 Platform controllers are based on the multi-core CPU technology, offer superior performance and with its built-in floating point unit it is perfectly suited for high demanding control- and regulation applications. Furthermore, the controllers are equipped with high-speed gigabit Ethernet interface, for communication in the wind farm. Additionally there is one more Ethernet interface backbone communication to the distributed I/O modules. It also features safety chain relay logic that integrates with the safety system to fulfill the requirements in the ISO 13849-1 standard. In standalone mode WP4200 controller can provide power supply for up to 3 WP-Line modules connected to WP-Line bus.

- › The WP4200 Controller - 08 has 8 accelerometer inputs for ICP sensors; these can be used for basic condition monitoring measurements.
- › The WP4200 Controller - 09 has 16 accelerometer inputs for ICP sensors; these can be used for advanced condition monitoring measurements.
- › The WP4200 Controller - 10 has 8 accelerometer inputs for ICP sensors and additional IO interface intended for standalone condition monitoring solution.

The controllers of the WP4200 platform are equipped with internal maintenance-free power back-up, ensuring all data is stored in the event of system power failure (UPS shutdown/failure) and program update.

The USB 2.0 port can be used with USB devices complying with the USB Mass Storage Class Specification, like USB Flash drives and hard disc drives, allowing storage of up to 2 TB of data.

The controller uses the advanced OS42xx Operating System software, featuring the Failsafe Flash file system, TCP/IP protocol stack, WEB-server, plug-and-play identification/configuration of all WP-Line modules, status code system, 30-year summation structure, menu system and log systems.

The OS42xx Operating System API is 100% backwards compatible with the OS4000 and OS4100 operating systems in case of invariant system layout – this ensures that existing applications can be used with the WP4200 Platform controllers without any modification or recompilation.

Specifications subject to change

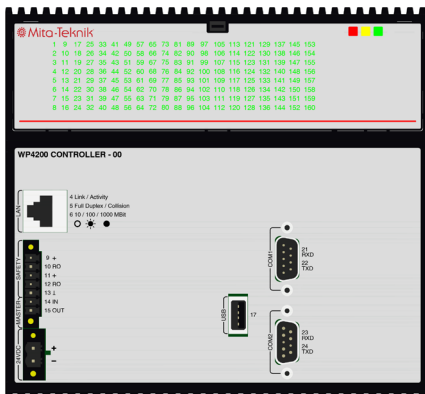
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The module handles the executing of up to 10 different synchronous/asynchronous applications running in parallel. As an example this can be: turbine control application, grid quality monitor and condition monitoring applications, standard communication protocols, customer specific communication protocols, CODESYS RTS, etc.

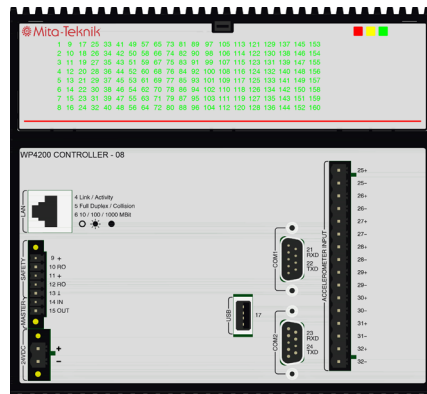
The controller supports the IEC 61131-3 (CODESYS) PLC programming languages as well as advanced programming in C and C++, using PEPTOOL or other programming tool of your choice.

WP4200 Variants

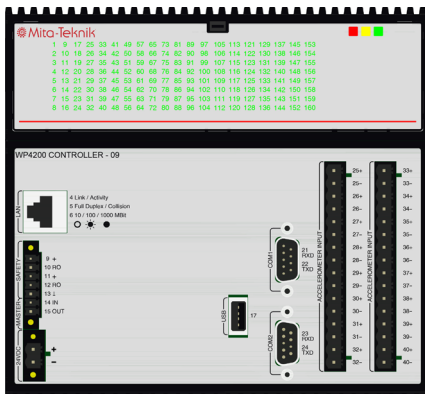
WP4200 - 00



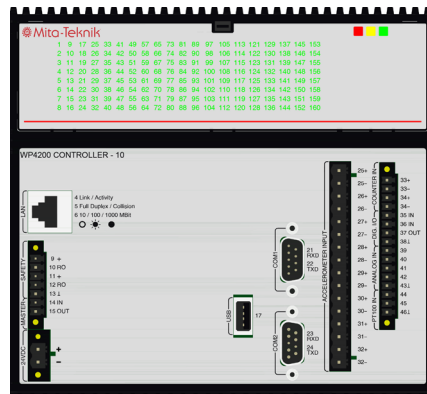
WP4200 - 08



WP4200 - 09



WP4200 - 10



Specifications subject to change

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Technical Data

CPU System	
CPU	ARM Cortex™ - A8 1.2 GHz
DSP	TI C674X Core 1 GHz
FPGA	Xilinx FPGA Spartan - 3 AN
NVRAM	Dynamic allocated up to 10 MB
DDR III RAM	256 MB
Flash disk	512 MB

USB	
USB type	Host, type A connector
USB ver.	2.0
Supported devices	USB Mass Storage Class (up to 2TB)

Ethernet RJ45 LAN Port	
Communication speed	10/100/1000 Mbit/s
Connector	RJ45 Shielded

Ethernet WP-Line BUS	
Communication speed	10/100 Mbit/s
Connector	WP-Line BUS connector (left side)

Relay Output - Safety	
Isolation type	Relay contact
Nominal voltage	24 VDC
Input current/signal "1"	10 mA to 1 A
Input impedance	2.4 kΩ

Redundant System Interface - Master	
Isolation type	Optocoupler
Nominal voltage	24 VDC
Input impedance	1.6 kΩ

Serial Communication Port - COM 1	
Port type	RS232 (RTS/CTS/RI)
Communication speed	300 BAUD to 230.4 kBAUD (software configuration)
Connector	9-pin Sub D connector

Serial Communication Port - COM 2	
Port type	RS232 (RTS/CTS)
Communication speed	300 BAUD to 230.4 kBAUD (software configuration)
Connector	9-pin Sub D connector

Accelerometer Inputs (WP4200 Controller - 08, -09 and -10 only)				
Variant	-00	-08	-09	-10
Number of inputs	None	8	16	8
Galvanic isolation	-	500 V	500 V	500 V
Supported sensors	IEPE type - integrated electronics piezoelectric			

Specifications subject to change

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Technical Data

ADC	Resolution: 24 Bit Range of measurement: 0.1 to 25 g (supporting ICP sensors) Frequency range: 0.1 to 10 000 Hz Sampling rate: 48 kHz
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High Speed Counter Inputs (WP4200 Controller - 10)	
Number of inputs	2
Galvanic isolation	500 V
<i>Nominal voltage:</i>	
Signal "1"	15 to 30 VDC
Signal "0"	0 to 5 VDC
Input impedance	2400 Ω
Frequency range	0.05 Hz to 1k Hz

Digital Inputs (WP4200 Controller - 10)	
Number of inputs	2 with common ground
Galvanic isolation	500 V
<i>Nominal voltage:</i>	
Signal "1"	15 to 30 VDC
Signal "0"	0 to 5 VDC
Input impedance	Min. 2400 Ω
Minimum pulsewidth	>20ms
Sampling rate	50 Hz

Digital Output (WP4200 Controller - 10)	
Number of outputs	1
Output type	NPN
Galvanic isolation	500 V
Nominal voltage	24 V
Maximum current	0.1 A

PT100 Inputs (WP4200 Controller - 10)	
Number of inputs	2 with common ground
Galvanic isolation	500 V
Temperature measuring range	-40 to +211°C
Accuracy	$\pm 0.5\%$ of full scale
Resolution	0.1°C
Current for PT100 input	Max. 1 mA
Conversion time for each channel, max	250 ms

Analog Inputs (WP4200 Controller - 10)	
Number of inputs	4 with common ground
Galvanic isolation	500 V
Input current	0 to 20 mA
Analog bandwidth	0 to 100 Hz
Accuracy	$\pm 0.5\%$ of full scale
Measurement resolution	0.01 mA
Input resistance	<200 Ω

Specifications subject to change

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Technical Data

WP-Line BUS	
Nominal voltage	12 VDC (10.5 to 13.5 VDC)
Standard module load	3

External 24 V				
Variant	-00	-08	-09	-10
<i>Current consumption (excluding connected WP-Line modules consumption up to 0.6A):</i>				
Maximum	0.9 A @ 24 VDC	1.0 A @ 24 VDC	1.10 A @ 24 VDC	1.10 A @ 24 VDC
Typical	0.5 A @ 24 VDC	0.58 A @ 24 VDC	0.66 A @ 24 VDC	0.65 A @ 24 VDC
Required voltage	24 VDC (19 to 30 VDC)			

Module Power Consumption				
Variant	-00	-08	-09	-10
Typical	12.0 W	13.9 W	15.9 W	15.6 W

Permissible Ambient Conditions	
Operation temperature	-30 to +60°C (fanless operation)
Storage temperature	-40 to +85°C
Relative humidity	Max. 95% RH (non-condensing @ 40°C)
Operation altitude	Max. 2000 m above sea level (up to 4000 m at derated temperature)

Mechanical Information				
Variant	-00	-08	-09	-10
Weight	0.6 kg	0.66 kg	0.72 kg	0.7 kg
Dimensions (WxHxD)	170 x 165 x 65 mm			
Required gap (top/bottom)	Min. 25 mm			
Degree of protection	IP30			

Applied Standards	
Damp heat	EN 60068-2-78
Vibration	EN 60068-2-6
Bump	EN 60068-2-27
Shock	EN 60068-2-27
Temperature	EN 60068-2-1, EN 60068-2-2 and EN 60068-2-14
EMC	EN 61000-6-2 (Immunity standard for industrial environments) EN 61000-6-4 (Emission standard for industrial environments)

Specifications subject to change

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Mita-Teknik Ordering Information

Order Number	Variant	Order Name
9784201	- 00	WP4200 Controller with stand-alone capability - Basic
	- 08-01	WP4200 Controller with stand-alone capability - Basic 8 accelerometer inputs (PCB plug)
	- 09-01	WP4200 Controller with stand-alone capability - Advanced 16 accelerometer inputs (PCB plugs)
	- 10-01	WP4200 Controller with stand-alone capability - Extended 8 accelerometer inputs (PCB plug) & I/O

Accessories		
For all variants		
978011102		WP-Line 111 MK II Power Supply / Backbone
978800101		WP-Line BUS flat cable 27 mm molded
978800202		WP-Line BUS Terminator MK II
9788080		WP-Line MK II 80 LED module
9788106		Serial Cable RS232 WP4x00 / N-Port 5 m
978810601		Serial Cable RS232 WP4x00 / N-Port 1.5 m
9788108		Serial Cable RS232 WP4x00 / Modem 2 m
9788109		Serial Cable RS232 WP4x00 / PC 3 m
3389210		Ethernet Patch Cable RJ45, Cat. 6 STP Shielded Grey 1 m
3389220		Ethernet Patch Cable RJ45, Cat. 6 STP Shielded Grey 2 m
3389250		Ethernet Patch Cable RJ45, Cat. 6 STP Shielded Grey 5 m
337609002		Fiber Optic Cable Trunk 6 x 62.5/125 um SC/SC 90 m

For WP4200 Controller - 00 only		
978904200	- 00-00	Connector Kit Screw Black WP4200 - 00

For WP4200 Controller - 08 only		
978904200	- 08-01	Connector Kit Screw Black WP4200 - 08-01

For WP4200 Controller - 09 only		
978904200	- 09-01	Connector Kit Screw Black WP4200 - 09-01

For WP4200 Controller - 10 only		
978904200	- 10-01	Connector Kit Screw Black WP4200 - 10-01
7621700		Cylindrical Proximity Sensor M12
7628010		Shielded cable for the Proximity Sensor 10 m

Common for WP4200 Controller - 08, - 09 & -10		
8946032		Accelerometer, 100 mV/g, 80 g, 0.5 - 14 000 Hz, M12 top connector
8946033		Accelerometer, 500 mV/g, 10 g, 0.2 - 3 700 Hz, M12 top connector
8946039		Accelerometer, 100 mV/g, 80 g, 0.5 - 12 000 Hz, M12 side connector (incl. M6 bolt)
8946029		Accelerometer, 500 mV/g, 10 g, 0.2 - 3 700 Hz, M12 side connector (incl. M6 bolt)
894604405		Accelerometer Cable, Shielded, 4-pin M12 connector, 5 m
894604410		Accelerometer Cable, Shielded, 4-pin M12 connector, 10 m
894604415		Accelerometer Cable, Shielded, 4-pin M12 connector, 15 m

Specifications subject to change

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Mita-Teknik Ordering Information

894604420	Accelerometer Cable, Shielded, 4-pin M12 connector, 20 m
7983212	Mounting stud with M6 x 1 to M6 x 1 thread
7983213	Mounting stud with M6 x 1 to M8 x1.25 thread
7983140	Mounting pad, M6 x 1 integral stud, stainless steel
7983150	Magnetic mounting pad, M6X1 integral stud, stainless steel
8702015	Glue for accelerometer mounting pads
For upgrade from WP4100 Controller to WP4200 Controller only	
9788042	WP4100 to WP4200 SC/MS Adapter

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