

Высокоскоростные контроллеры ZX20

Технические характеристики

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Quick Start Guide ZX-FPGA-PLC

Quick Start Guide

Variants, Technical Data

Variant	Supply voltage	Internal processing time	Logic capacity FPGA, logic cells / registers	Reaction time digital inputs to digital outputs	Processing time of analog inputs	Processing time of analog outputs	Maximum Input Frequency	Number of programmable Timers
ZX20T	DC 24 V +/- 15%	< 20 ns	1792 / 3584	< 9 µs bei I _{out} > 250 mA	-	-	500 kHz	35 - 100
ZX21TP	DC 24 V +/- 15%	< 20 ns	3584 / 7168	< 9 µs bei I _{out} > 250 mA	-	-	500 kHz	50 - 200
ZX21TC	DC 24 V +/- 15%	< 20 ns	3584 / 7168	< 9 µs bei I _{out} > 250 mA	-	-	500 kHz	50 - 200
ZX21TPA	DC 24 V +/- 15%	< 20 ns	3584 / 7168	< 3 µs	< 10 µs	< 10 µs	500 kHz	50 - 200
ZX21TCA	DC 24 V +/- 15%	< 20 ns	3584 / 7168	< 3 µs	< 10 µs	< 10 µs	500 kHz	50 - 200

Connections

		ZX20T	ZX21TC	ZX21TP	ZX21TCA	ZX21TPA
Digital inputs		20	20	20	8	8
Digital outputs		16	16	16	4	4
Analog inputs 0..10 V / 4..20 mA switchable		-	-	-	2	2
Analog inputs 0..10V		-	-	-	2	2
Analog inputs 4..20 mA		-	-	-	-	-
Analog outputs 0..10V		-	-	-	-	-
RS-485 ports: programmable alternatives	SSI	-	-	-	1	1
	Modbus RTU	-	-	-	-	-
	ZanderLink	-	-	-	1	1
	TTL differential I/O	-	-	-	1	1
Ethernet (Modbus/TCP, ZanderNet)		1	1	1	1	1
PROFINET		-	-	2 (Switch)	-	2 (Switch)
EtherCAT		-	2 (In/Out)	-	2 (In/Out)	-

*Networkable via ZanderLink with the ZX21TCA and ZX21TPA PLCs

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Quick Start Guide

For your safety

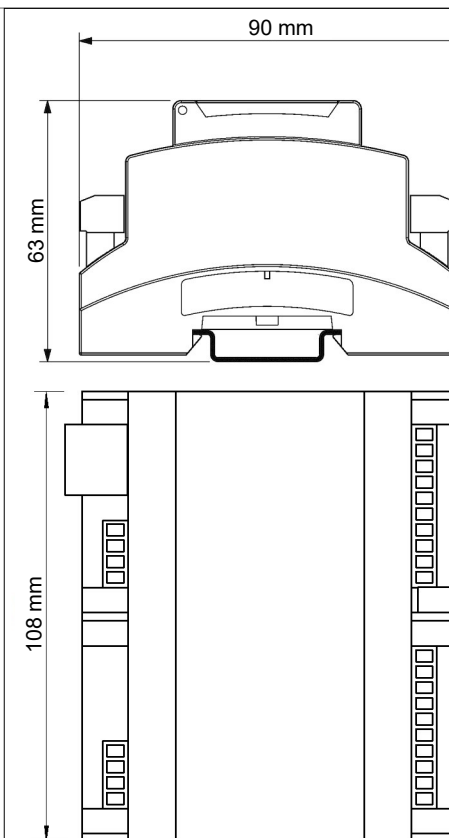
- The device may only be installed and put into operation by authorized qualified personnel,
 - who is familiar with the proper handling of electrical machine equipment
 - who is familiar with the applicable regulations for occupational safety and accident prevention
 - and who has read and understood the operating manual and, if applicable, the programming manual
- The safe functioning of the device during machine operation can no longer be guaranteed if it is connected incorrectly or used for purposes other than those for which it was intended. This can lead to fatal injuries or high material damage.
- When installing the device, the country-specific regulations must be observed.
- The electrical connection of the device may only be carried out when it is de-energized. This also applies to the connected sensors and actuators.
- The wiring of the device must comply with the instructions in this operating manual.
- Opening the device and any manipulation of the device is not permitted and will result in the loss of warranty or guarantee claims.
- All relevant safety regulations and standards must be observed.

Before use, read the detailed operating instructions, which you can download from our website, and keep them in a safe place. Make sure that the operating instructions are available at all times during assembly, commissioning and maintenance work.

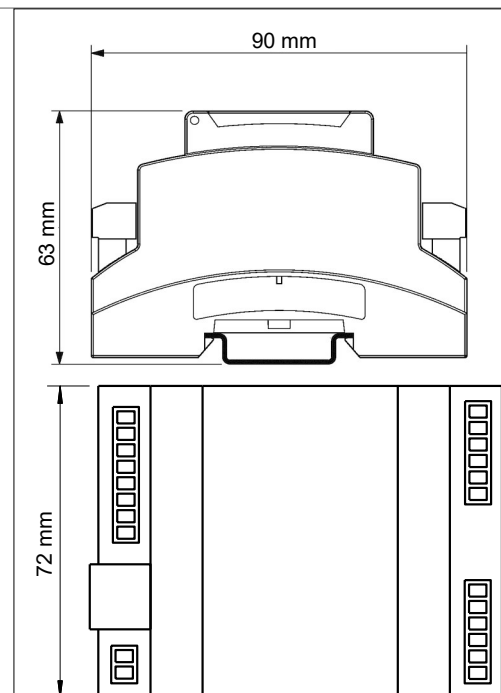
Product description

The ZX09 and ZX20/21 series controllers are high-speed industrial FPGA based programmable logic controllers (PLC). They can be used both as stand-alone PLCs and in a network as decentralized PLCs for parallel processing of signals in real time. This is made possible by the heart of every ZX controller: a Field Programmable Gate Array (FPGA). This enables the fastest possible and always consistently fast processes without cycle time in absolute parallelism.

Dimensions



Dimensions of ZX09/ZX20/ZX21-PLCs,
Connections exemplary for ZX09A

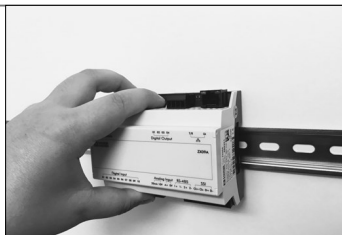


Dimensions of ZX06AIO and ZX08DIO PLCs,
Connections exemplary for ZX06AIO

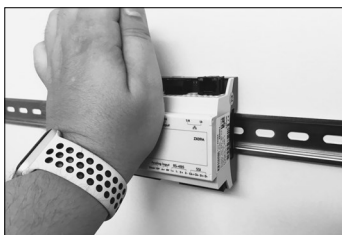
Quick Start Guide ZX-FPGA-PLC

Quick Start Guide

Assembly



Place device on top hat rail



Press device onto top-hat rail

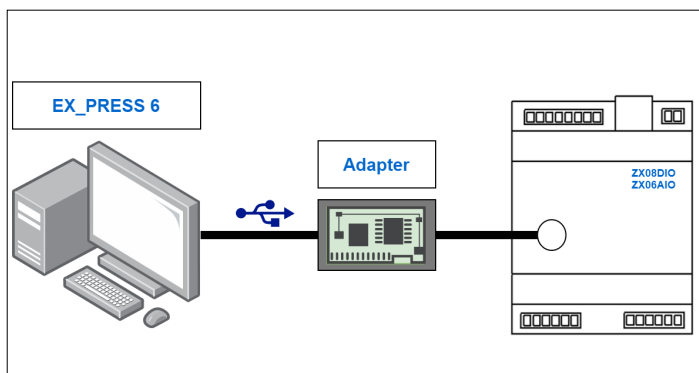
Disassembly



Press device onto top-hat rail

Programming of ZX06AIO and ZX08DIO

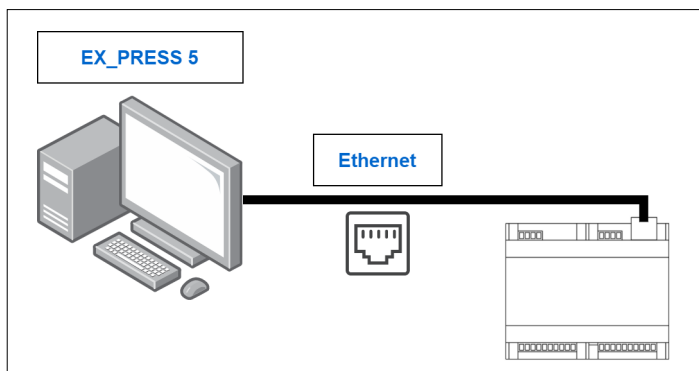
Connect the device according to the illustration.



The PLC has a programming interface on the front. This can be used to connect to a computer with the help of an adapter. The adapter is plugged into one of the USB sockets of the computer. Programming is done using the program-development-software EX_PRESS 6.

Programming of ZX09- and ZX20/21 family

Connect the device according to the illustration.



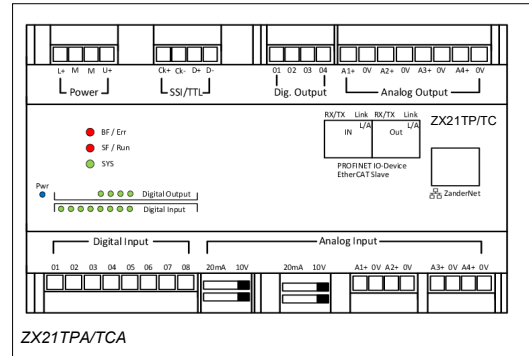
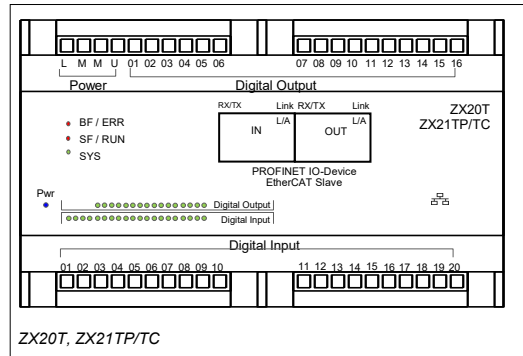
The PLS provides a network connection through an Ethernet-Port. With it, the PLC can be directly connection a computer. Programming is done using the program-development-software EX_PRESS 5.

Quick Start Guide ZX-FPGA-PLC

Quick Start Guide

Connection of ZX20/21 family

Connect the device according to the illustration.



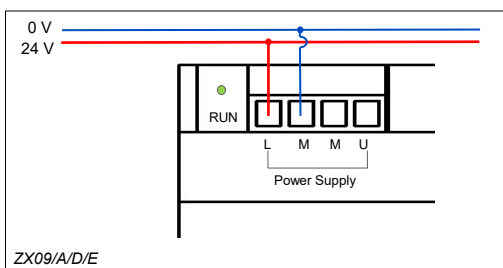
Terminal	Description
L+	Positive supply voltage U_B
M (2 equivalent terminals)	0 V - Connection of the supply voltage and the voltage for the dig. Outputs and 0 V - potential for digital inputs. M and 0 V are internally connected with each other
U+	Positive voltage for the dig. Outputs (may be different from operating voltage L+)
Digital Input 01, 02, ...	Digital inputs
Digital Output 01, 02, ...	Digital outputs
Analog Input A1+ / 0 V, A2+ / 0 V, ...	Analog voltage or current inputs (ZX21TPA and ZX21TCA only)
Analog Output A1+ / 0 V, A2+ / 0 V, ...	Analog voltage outputs (ZX21TPA and ZX21TCA only)
	Ethernet port
SSI/TTL	SSI or ZanderLink interface or TTL differential inputs or outputs (ZX21TPA and ZX21TCA only). The interface can be used in the user program for ZanderLink, SSI encoders or as inputs or outputs for (LV)TTL differential signals (e.g. for connecting a suitable incremental encoder).
PROFINET IO-Device	PROFINET interface (ZX21TP and ZX21TPA only)
EtherCAT Slave	EtherCAT interface (ZX21TC and ZX21TCA only)

Power supply

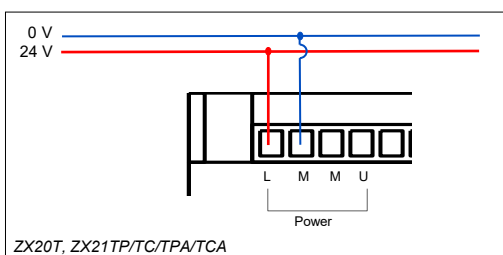
Connect the device to the supply voltage according to the illustrations.

Warning:

Do not connect terminal M with PE of the power supply, as this can lead to massive EMC interference.



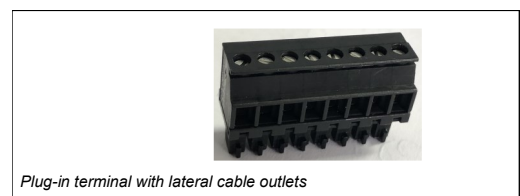
ZX09/A/D/E



ZX20T, ZX21TP/TC/TPA/TCA

Plug-in terminals

The controllers of the ZX06AIO, ZX08DIO, ZX09-, ZX20-, and ZX21-family are delivered including plug-in terminals with lateral cable outlets (see picture).



Plug-in terminal with lateral cable outlets

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