

AXC F 2152 - Controller

2404267

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Controller (SPS), PLCnext Control; Programming: High-level language and IEC 61131-3; Operating system: Yocto/Linux® (real-time); Programming tool: PLCnext Engineer, Eclipse®, Visual Studio®, MATLAB®/ Simulink®; IoT connection: PROFICLOUD and every cloud via cloud connectors; Development process certified in accordance with IEC 62443-4-1, Certified in accordance with IEC 62443-4-2; Processor: Arm® Cortex®-A9, 2x 800 MHz.

Product description

The PLCnext AXC F 2152 controller for the Axioline I/O system is fast, robust and easy to use. It has been consistently designed for maximum performance, easy handling and use in harsh industrial environments.

Your advantages

- Linux operating system
- Support for a combination of high-level language and IEC 61131-3
- Up to 63 AXIO I/O modules can be mounted side by side
- 2x Ethernet interfaces (integrated switch)
- Increased resistance to EMI
- Extended temperature range of -40°C ... +70°C (see section "Tested successfully: use under extreme ambient conditions" in the user manual)
- PROFINET support
- Connection to PROFICLOUD
- Numerous protocols supported such as: HTTP, HTTPS, FTP, OPC UA, SNTP, SNMP, SMTP, SQL, MySQL, DCP, etc.
- Connection to the PLCnext Store
- Cybersecurity in accordance with IEC 62443

Commercial data

Item number	2404267
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	D01
Product key	DRADAC
GTIN	4055626356280
Weight per piece (including packing)	290 g
Weight per piece (excluding packing)	223 g
Customs tariff number	85371091
Country of origin	DE

Technical data

Notes

Note on application

Note on application	Only for industrial use
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Product properties

Product type	Controller
Product family	PLCnext Control
Type	modular
Special properties	Development process certified in accordance with IEC 62443-4-1 Certified in accordance with IEC 62443-4-2

Insulation characteristics

Protection class	III (IEC 61140, EN 61140, VDE 0140-1)
Overvoltage category	II
Pollution degree	2

Display

Diagnostics display	no
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System properties

Trusted Platform Module	TPM 1.2
Processor	Arm®Cortex®-A9, 2x 800 MHz
Flash memory	512 Mbyte (internal flash memory) SD card from Phoenix Contact (for external flash memory, see accessories)
Retentive data storage	48 kByte (NVRAM)
RAM	512 Mbyte DDR3 SDRAM

IoT capability: PROFICLOUDIoT capability: PROFICLOUD

IoT platform	PROFICLOUD
Supports cloud computing	yes

IoT capability: PROFICLOUDIoT capability: PROFICLOUD

IoT platform	PROFICLOUD
Supports cloud computing	yes

IEC 61131 runtime system

Program memory	8 Mbyte
Data storage system	12 Mbyte

Axioline

Amount of process data	max. 1482 Byte (per station (total input and output data)) max. 1024 Byte (Axioline F local bus (input)) max. 1024 Byte (Axioline F local bus (output))
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Number of supported devices	max. 63 (per station)
Number of local bus devices that can be connected	max. 63 (observe current consumption)

PROFINET

Device function	PROFINET controller, PROFINET device
Update rate	min. 1 ms (4 devices)
	min. 16 ms (64 devices)
Conformance Class	B
Number of supported devices	max. 64 (at PROFINET controller)
Supported functions	MRP FSU PROFINET controller
	MRP PROFINET device
Device ID	0142 _{hex}
Vendor ID	00B0 _{hex}

Function

Diagnostics display	no
Redundancy function	yes
Note on redundancy function	Applicative system redundancy
Safety function	no
Note on the safety function	Functional safety is provided with the left-alignable AXC F XT SPLC 1000 or AXC F XT SPLC 3000 extension modules.
Industrial cybersecurity	yes

Functionality

Programming languages supported	Symbolic flowchart (SFC)
	Ladder diagram (LD)
	Function block diagram (FBD)
	Structured text (ST)
	C++
	C#
	Java
	Python®
	Simulink®

System requirements

Engineering tool	PLCnext Engineer
	Eclipse®
	Visual Studio®
	MATLAB®/ Simulink®
Application interface	OPC UA®

Electrical properties

Maximum power dissipation for nominal condition	5.6 W (5.6 W = 10.6 W - 5.0 W)
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Real-time clock

Realtime clock	yes
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Description realtime clock	typ. 10 ppm, max. 20 ppm at 25°C
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Potentials: Communications power U_L feed-in (the supply of the Axioline F local bus U_{BUS} is generated from U_L)

Supply voltage	24 V DC
Supply voltage range	19.2 V DC ... 30 V DC (including all tolerances, including ripple ($\pm 5\%$))
Current draw	max. 442 mA (with 1 A at U_{BUS} for the I/Os)
Power consumption	max. 10.6 W (with 1 A at U_{BUS} for the I/Os)
Protective circuit	Surge protection; electronic Reverse polarity protection; electronic

Potentials: Axioline F local bus supply (U_{BUS})

Supply voltage	5 V DC (via bus base module)
Power supply unit	1 A

Connection data

Axioline F connector

Connection method	Push-in connection
Conductor cross section, rigid	0.2 mm ² ... 1.5 mm ²
Conductor cross section, flexible	0.2 mm ² ... 1.5 mm ²
Conductor cross section AWG	24 ... 16
Stripping length	8 mm

Interfaces

Supported protocols	HTTP
	HTTPS
	PROFINET
	INTERBUS
	Modbus/TCP (via corresponding library)
	Modbus/RTU (via corresponding library)
	EtherNet/IP™ (FS Adapter)
	CANopen® (via corresponding library)
	DALI (via corresponding library)
	DALI-2 (via corresponding app)
	HART (via corresponding app)
	IO-Link® (via corresponding app)
	PROFIBUS
	MQTT (via corresponding app)
	OPC UA® Server
	OPC UA® Client (via corresponding app)
	DHCP (via corresponding app)
	SFTP
	SMTP (via corresponding app)
	SNTP (via corresponding app)
	SNMP (via corresponding app)

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	DNS (via corresponding app)
	DNP3 (via corresponding app)
	IEC 60870-5-1 (via corresponding library)
	IEC 60870-5-104 (via corresponding library)
	IPsec
	syslog
Web server	yes

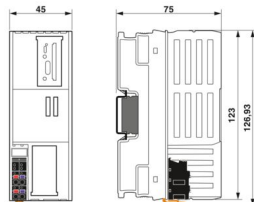
Axioline F local bus

Number of interfaces	1
Connection method	Bus base module
Transmission speed	100 Mbps

Ethernet

Bus system	RJ45
Number of interfaces	2 (Switched internally)
Connection method	RJ45 jack
Note on the connection method	Auto negotiation and autocrossing
Transmission speed	10/100 Mbps (full duplex)
Transmission physics	Ethernet in RJ45 twisted pair
Transmission length	max. 100 m

Dimensions

Dimensional drawing	
Width	45 mm
Height	126.93 mm
Depth	75 mm
Note on dimensions	The depth applies when a TH 35-7.5 DIN rail is used (in accordance with EN 60715).

Material specifications

Color (Housing)	gray (RAL 7042)
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Environmental and real-life conditions

Ambient conditions

Degree of protection	IP20 (Manufacturers declaration, not evaluated by UL)
Ambient temperature (operation)	-25 °C ... 60 °C up to 2000 m above mean sea level (observe derating)
	-25 °C ... 55 °C up to 3000 m above mean sea level (observe derating)

	55 °C (with max. 1 A on U _{Bus})
	55 °C ... 60 °C (only in conjunction with an Axoline F power module AXL F PWR 1H (Item no. 2688297))
	-40 °C ... 70 °C (Extended, see Section "Tested successfully: use under extreme ambient conditions" in the user manual)
Ambient temperature (storage/transport)	-40 °C ... 85 °C
Permissible humidity (operation)	5 % ... 95 % (according to DIN EN 61131-2)
Permissible humidity (storage/transport)	5 % ... 95 % (according to DIN EN 61131-2)
Shock (operation)	30g (in accordance with EN 60068-2-27/IEC 60068-2-27)
Vibration (operation)	5g (in accordance with EN 60068-2-6/IEC 60068-2-6)
Air pressure (operation)	70 kPa ... 106 kPa (up to 3000 m above sea level)
Air pressure (storage/transport)	58 kPa ... 106 kPa (up to 4500 m above mean sea level)

Approvals

ATEX

Identification	Ex II 3 G Ex ec IIC T4 Gc
Certificate	TÜV 19 ATEX 8356 X
References to standards	EN IEC 60079-0, EN IEC 60079-7

IECEx

Identification	Ex ec IIC T4 Gc
Certificate	IECEx TUR 19.0031X
References to standards	IEC 60079-0 Ed. 7, IEC 60079-7 Ed. 5.1

CCC / China-Ex

Identification	Ex ec IIC T4 Gc
Certificate	 
References to standards	GB/T 3836.1-2021, GB/T 3836.3-2021

UL Ex, USA / Canada

Identification	Class I, Zone 2, AEx ec IIC T4 Gc
	Ex ec IIC T4 Gc X
Certificate	E366272
References to standards	UL 60079-0, Ed. 6 / CSA C22.2 NO. 60079-0, Ed. 3
	UL 60079-7, Ed. 5 / CSA C22.2 NO. 60079-7, Ed. 2

UL, USA/Canada

Identification	cULus
Certificate	E238705

Corrosive gas test

Identification	ISA S71.04.2013 G3 Harsh Group A, DIN EN 60068-2-60:2016-06 Method 4
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Industrial Cyber Security

Identification	Industrial IT Security, IACS Component
Certificate	IITS2 029429 0027

Note	Configuration: Security Profile active
References to standards	IEC 62443-4-1:2018
	IEC 62443-4-2:2019
	PPP 15003B:2021 (IEC 62443-4-1: Full ML3 Process Profile)

EMC data

Electromagnetic compatibility	Conformance with EMC Directive 2014/30/EU
Conformance with EMC directives	Immunity test in accordance with EN IEC 61000-6-2 Electrostatic discharge (ESD) IEC 61000-4-2 Criterion B, ± 6 kV contact discharge, ± 8 kV air discharge
	Immunity test in accordance with EN IEC 61000-6-2 Electromagnetic fields IEC 61000-4-3 Criterion A, Field intensity: 10 V/m
	Immunity test in accordance with EN IEC 61000-6-2 Fast transients (burst) IEC 61000-4-4 Criterion B, ± 2 kV
	Immunity test in accordance with EN IEC 61000-6-2 Transient overvoltage (surge) IEC 61000-4-5 Criterion B; DC supply lines: ± 0.5 kV/ ± 1.0 kV (symmetrical/asymmetrical), fieldbus cable shielding: ± 1.0 kV
	Immunity test in accordance with EN IEC 61000-6-2 Conducted interference IEC 61000-4-6 Criterion A, Test voltage 10 V
	Noise emission test in accordance with EN IEC 61000-6-4 Class A

Mounting

Mounting type	DIN rail mounting
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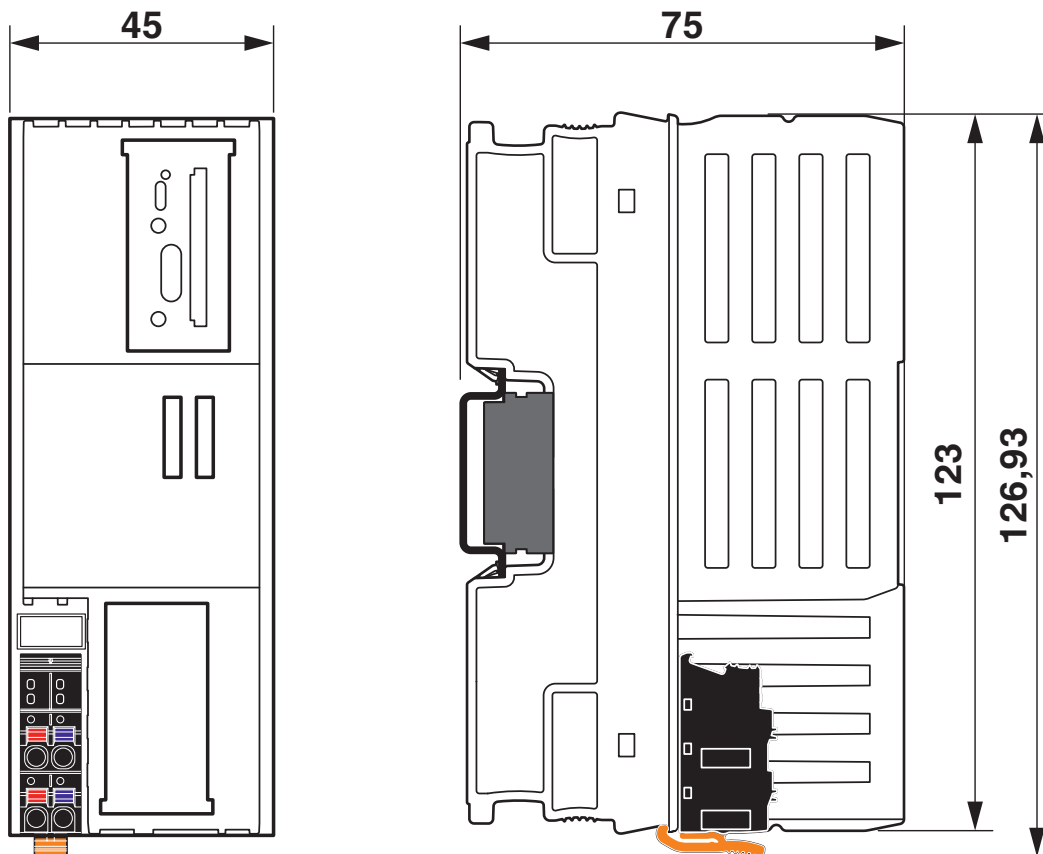
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Drawings

Dimensional drawing



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Approvals

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DNV GL

Approval ID: TAA00000DF



LR

Approval ID: LR2480202TA-02



PRS

Approval ID: TE/1020/880590/21

BSH

Approval ID: 840



RINA

Approval ID: ELE008423XG

ABS

Approval ID: 23-2449604-PDA

PROFINET

Approval ID: Z13493

PROFINET

Approval ID: Z13494



TÜV SÜD Type tested

Approval ID: IITS2 029429 0027



cULus Listed

Approval ID: E238705



IECEx

Approval ID: IECEx TUR 19.0031X

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cULus Listed

Approval ID: E366272



ATEX

Approval ID: TÜV 19 ATEX 8356 X



CCC

Approval ID: 2021122304114448

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Classifications

ECLASS

ECLASS-13.0	27242207
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ETIM

ETIM 9.0	EC000236
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UNSPSC

UNSPSC 21.0	32151700
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Environmental product compliance

EU RoHS	
Fulfills EU RoHS substance requirements	Yes
Exemption	7(a), 7(c)-I
China RoHS	
Environment friendly use period (EFUP)	EFUP-50
	An article-related China RoHS declaration table can be found in the download area for the respective article under "Manufacturer declaration". For all articles with EFUP-E, no China RoHS declaration table issued and required.
EU REACH SVHC	
REACH candidate substance (CAS No.)	Lead(CAS: 7439-92-1)
SCIP	283ed987-a288-4b1a-afd1-cb06231c8f4d
EF3.0 Climate Change	
CO2e kg	10.57 kg CO2e

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PHOENIX CONTACT Ltd
8240 Parkhill Drive
Milton, Ontario L9T 5V7
1-800-890-2820
cdinfo@phoenixcontact.ca