

# AXC F 3152 - Controller



1069208

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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, Product certified in accordance with IEC 62443-4-2 (Certification conditions see user documentation); Processor: Intel® Atom® x5-E3930, 2x 1.3 GHz.

## Product description

The PLCnext Control AXC F 3152 for the Axioline I/O system is fast, robust, and easy to use. This means it is consistently designed for maximum performance, easy handling, and use in harsh industrial environments.

## Your advantages

- Real-time-capable Linux operating system for deterministic and reliable execution of time-critical processes
- Supports numerous protocols such as: HTTP, HTTPS, FTP, OPC UA, SNMP, SMTP, SQL, MySQL, DCP, etc. – for smooth communication with IT systems
- Direct connection to the Proficloud, the PLCnext Store and any cloud platforms – for seamless IoT integration of your applications
- Support for numerous fieldbus protocols (PROFINET, Modbus TCP/RTU, Ethernet/IP, etc.) for easy integration into existing automation technology systems and installations
- Maximum design freedom thanks to the combination of classic PLC programming with modern high-level languages such as C++, C#, or Python
- Meets the highest security requirements of industrial automation – for the protection of your applications and data

## Commercial data

Item number	1069208
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	DRADAD
Product key	DRADAD
GTIN	4055626741192
Weight per piece (including packing)	544 g
Weight per piece (excluding packing)	536.25 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 Product certified in accordance with IEC 62443-4-2 Certification conditions see user documentation

#### 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 (to hardware version 03) TPM 2.0 (from hardware version 04)
Flash memory	1 GByte (internal flash memory) SD card from Phoenix Contact (for external flash memory, see accessories)
Retentive data storage	1 Mbyte
RAM	2048 Mbyte

#### IoT capability: PROFICLOUDIoT capability: PROFICLOUD

IoT platform	PROFICLOUD
Supports cloud computing	yes

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IoT platform	PROFICLOUD
Supports cloud computing	yes

#### IEC 61131 runtime system

Program memory	12 Mbyte
Data storage system	32 Mbyte

#### Axiline

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

## INTERBUS-Master

Amount of process data (Axioline input/output data max.)	max. 1482 Byte (per station (total input and output data))
Amount of process data (Axioline input data max.)	max. 1024 Byte (Axioline F local bus (input))
Amount of process data (Axioline output data max.)	max. 1024 Byte (Axioline F local bus (output))

## PROFINET

Device function	PROFINET controller, PROFINET device
Update rate	min. 1 ms (32 participants)
	min. 2 ms (64 devices)
	min. 4 ms (128 participants)
Process data width	64 Byte ... 512 Byte (PROFINET device)
Conformance Class	B
Number of supported devices	max. 128 (at PROFINET controller)
Supported functions	FSU PROFINET controller
Device ID	0158 <sub>hex</sub>
Vendor ID	00B0 <sub>hex</sub>

## 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

## Programming data

Register length (master)	1482 Byte
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## Functionality

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

## System requirements

Application interface	OPC UA®
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## Electrical properties

Maximum power dissipation for nominal condition	10 W (10 W = 15 W - 5 W)
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### Real-time clock

Realtime clock	yes
Description realtime clock	0.7 s/day = 8 ppm at 25 °C

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. 650 mA (with 1 A at $U_{BUS}$ for the I/Os and $U_L = 24$ V)
Current consumption	typ. 260 mA (without I/Os and $U_L = 24$ V)
Power consumption	typ. 15 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

Connection method	Push-in connection
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### Axioline F connector

Connection method	Push-in connection
Conductor cross-section, rigid	0.2 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>
Conductor cross-section, flexible	0.2 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>
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 library)
	IO-Link® (via corresponding library)
	PROFIBUS

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	MQTT (via corresponding app)
	OPC UA® Server
	OPC UA® Client (License required)
	DHCP (via corresponding library)
	SFTP
	SMTP (via corresponding library)
	SNTP (via corresponding library)
	SNMP (via corresponding library)
	DNS (via corresponding library)
	DNP3 (via corresponding library)
	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	3
Connection method	RJ45 jack
Note on the connection method	Auto negotiation and autocrossing
Transmission speed	10/100/1000 Mbps
Transmission physics	Ethernet in RJ45 twisted pair
Transmission length	max. 100 m

## Service

Bus system	USB
Number of interfaces	1
Connection method	USB type C
Note on the connection method	Only device interface

## Dimensions

Dimensional drawing	
Width	100 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).
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## 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 <sub>Bus</sub> )
	55 °C ... 60 °C (only in conjunction with an AxioLine 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	⊕ II 3 G Ex ec IIC T4 Gc
Certificate	UL 25 ATEX 3349X

### IECEX

Identification	Ex ec IIC T4 Gc
Certificate	IECEX ULD 25.0004X

### UL Ex, USA / Canada

Identification	Class I, Zone 2, AEx ec IIC T4 Gc
	Ex ec IIC T4 Gc X
Certificate	E366272

### UL, USA/Canada

Identification	cULus
Certificate	E238705

## EMC data

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

## Mounting

Mounting type	DIN rail mounting
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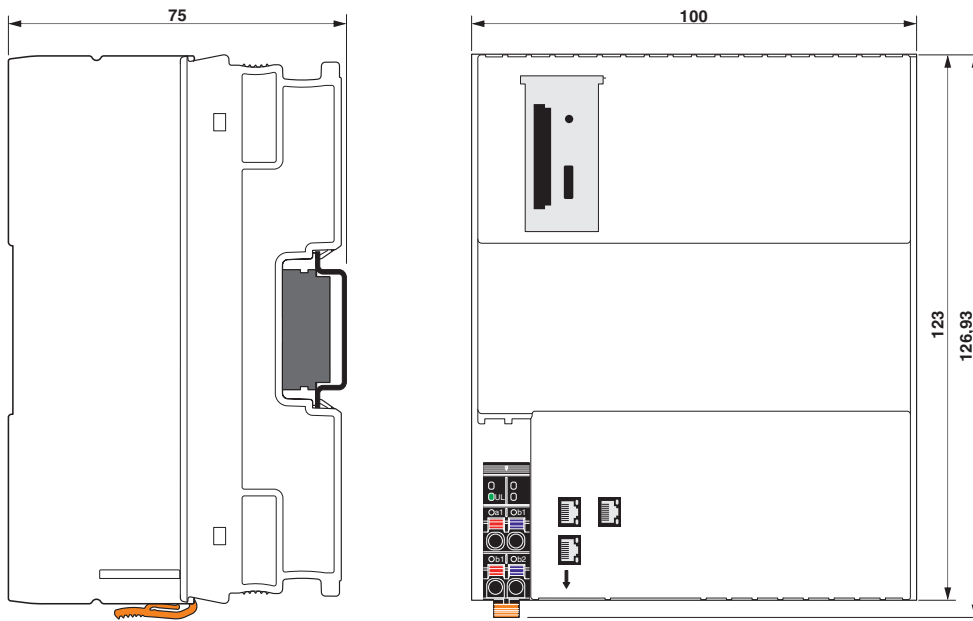
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## Drawings

### Dimensional drawing



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## Approvals

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**DNV GL**

Approval ID: TAA00000DF

**BSH**

Approval ID: 840

**PROFINET**

Approval ID: Z13491

**PROFINET**

Approval ID: Z13492



**cULus Listed**

Approval ID: E238705



**RINA**

Approval ID: ELE008423XG001

**PROFINET**

Approval ID: Z13147

**PROFINET**

Approval ID: Z14091

**FS Thermoprocess**

Approval ID: 968 INS 799.01 25

**Cybersecurity Certificate**

Approval ID: 968 CSP 1037.00 25



**IECEX**

Approval ID: IECEX ULD 25.0004X

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**ATEX**

Approval ID: UL 25 ATEX 3349X



**cULus Listed**

Approval ID: E366272

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## Classifications

### ECLASS

ECLASS-13.0	27242207
ECLASS-15.0	27242207

### UNSPSC

UNSPSC 21.0	32151700
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## Environmental product compliance

### EU RoHS

Fulfills EU RoHS substance requirements	Yes
Exemption	6(a), 6(a)-I, 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	af0e0fbc-0c65-4147-b7b5-a67bef6bf16c

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