

AXC F 3152 - Controller



1069208

<https://www.phoenixcontact.com/us/products/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, SNTP, 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 | DR09 |
| Product key | DRADAD |
| GTIN | 4055626741192 |
| Weight per piece (including packing) | 538 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 |
|---------------------|-------------------------|

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 |
|---------------------|----|

System properties

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|-------------------------|--|
| 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 |

IoT capability: PROFICLOUDIoT capability: PROFICLOUD

| | |
|--------------------------|------------|
| IoT platform | PROFICLOUD |
| Supports cloud computing | yes |

IEC 61131 runtime system

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|---------------------|----------|
| 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)) |
|------------------------|--|

AXC F 3152 - Controller



1069208

<https://www.phoenixcontact.com/us/products/1069208>

| | |
|---|--|
| | 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 _{hex} |
| Vendor ID | 00B0 _{hex} |

Function

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|-----------------------------|---|
| 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

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

System requirements

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|-----------------------|---------|
| Application interface | OPC UA® |
|-----------------------|---------|

Electrical properties

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|---|--------------------------|
| Maximum power dissipation for nominal condition | 10 W (10 W = 15 W - 5 W) |
|---|--------------------------|

AXC F 3152 - Controller



1069208

<https://www.phoenixcontact.com/us/products/1069208>

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) |
| 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

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|-------------------|--------------------|
| Connection method | Push-in connection |
|-------------------|--------------------|

Axioline F connector

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|-----------------------------------|---|
| 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

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|-----------------------------------|--|
| Supported protocols | HTTP |
| | HTTPS |
| | PROFINET |
| | INTERBUS |
| | Modbus/TCP (via corresponding library) |
| | Modbus/RTU (via corresponding library) |
| | EtherNet/IP™ (ES Adapter) |
| | CANopen® (via corresponding library) |
| | DALI (via corresponding library) |
| | DALI-2 (via corresponding app) |
| | HART (via corresponding library) |
| | IO-Link® (via corresponding library) |
| | PROFIBUS |
| | MQTT (via corresponding app) |
| | OPC UA® Server |
| OPC UA® Client (License required) | |
| DHCP (via corresponding library) | |

AXC F 3152 - Controller



1069208

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| | |
|------------|---|
| | 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

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

Ethernet

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|-------------------------------|-----------------------------------|
| 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

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

Dimensions

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|---------------------|--|
| 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). |

Material specifications

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|-----------------|-----------------|
| Color (Housing) | gray (RAL 7042) |
|-----------------|-----------------|

Environmental and real-life conditions

Ambient conditions

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|--|---|
| 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 | ⊕ 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

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|---------------------------------|---|
| 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 |

AXC F 3152 - Controller



1069208

<https://www.phoenixcontact.com/us/products/1069208>

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|--|---|
| | 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 61000-6-3 Class B |

Mounting

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|---------------|-------------------|
| Mounting type | DIN rail mounting |
|---------------|-------------------|

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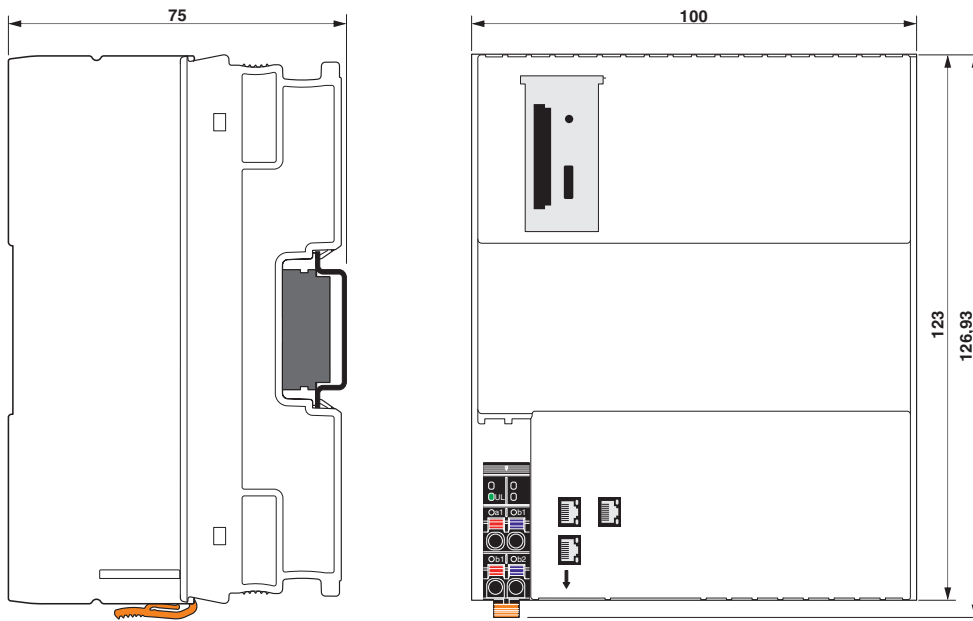
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Drawings

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

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|-------------|----------|
| 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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