AXC F 1152 - Controller

1151412

https://www.phoenixcontact.com/us/products/1151412

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PLCnext Control for the direct control of Axioline F I/Os. With two Ethernet interfaces. Complete with connector and bus base module.

Product description

The controllers of the PLCnext Control AXC F 1152 family for the Axioline I/O system are fast, robust, and easy to use. They were consistently designed for maximum performance, easy handling and use in harsh industrial environments.

Your advantages

• Linux operating system

• Supports high-level languages

• 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 -25 °C ... 60 °C

• 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	1151412
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	DR09
Product key	DRADAB
GTIN	4063151149420
Weight per piece (including packing)	277.56 g
Weight per piece (excluding packing)	223 g
Customs tariff number	85371091
Country of origin	DE

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Technical data

Product properties

Product type	Controller
Product family	PLCnext Control
Type	modular

Insulation characteristics

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

Display

Diagnostics display	No

System properties

Trusted Platform Module	TPM 1.2
Processor	Arm®Cortex®-A9, 1x 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: 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))
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
Specification	Version 2.3
Update rate	min. 1 ms (4 devices)
	min. 4 ms (16 devices)
Conformance Class	A
Number of supported devices	max. 16 (at PROFINET controller)
Supported functions	MRP FSU PROFINET controller

	MRP PROFINET device
Device ID	0169_{hex}
Vendor ID	$00B0_{hex}$

Function

Diagnostics display	No
Controller redundancy	No
Safety function	No

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

Real-time clock

Realtime clock	Yes
Description realtime clock	typ. 10 ppm, max. 20 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 (± 5 %))
Current draw	max. 442 mA (with 1 A at U_{Bus} for the I/Os and U_L = 24 V)
Power consumption	max. 10.6 W (with 1 A at U_{Bus} for the I/Os and U_L = 24 V)
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

Axioline F connector

Connection method	Push-in connection
Conductor cross section, rigid	0.2 mm² ... 1.5 mm²
Conductor cross section, flexible	0.2 mm² ... 1.5 mm²
Conductor cross section AWG	24 ... 16
Stripping length	8 mm

Interfaces

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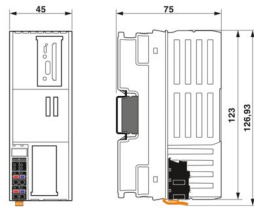
Number of interfaces	2 (Switched internally)
Connection method	RJ45 jack
Note on the connection method	Auto negotiation and autocrossing
Transmission speed	10/100 Mbps (full duplex)
Transmission physics	Ethernet in RJ45 twisted pair
Transmission length	max. 100 m

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)

Environmental and real-life conditions

Ambient conditions

Degree of protection	IP20
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 Axioline F power module AXL F PWR 1H (Item no. 2688297))
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

UL, USA/Canada

Identification	cULus

Certificate	E238705

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

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 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, ±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 interferenceIEC 61000-4-6 Criterion A, Test voltage 10 V
	Noise emission test in accordance with EN IEC 61000-6-4 Class A
Electromagnetic compatibility	Conformance with EMC Directive 2014/30/EU

Mounting

Mounting type	DIN rail mounting

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Drawings

Dimensional drawing

45

75

123

126,93

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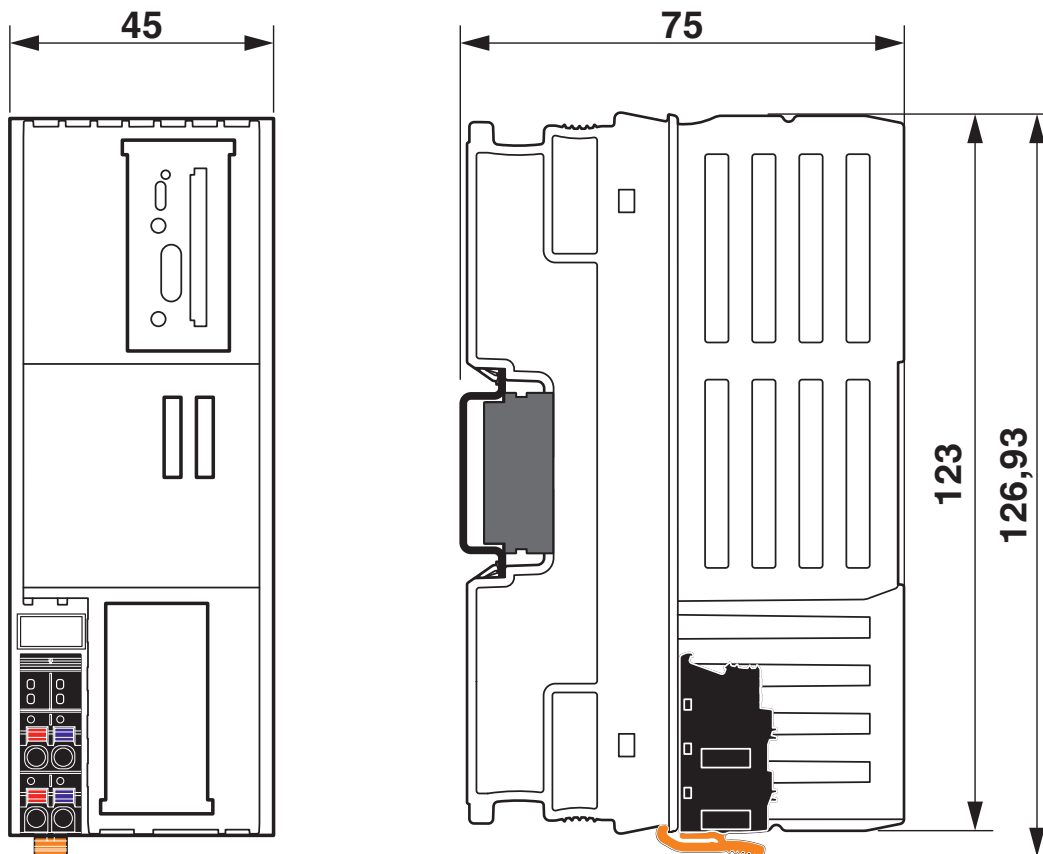
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Approvals

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EAC
Approval ID: RU*DE*08.B.00529/19

TÜV SÜD Type tested
Approval ID: IITS2 029429 0027

UAE-RoHS
Approval ID: 23-02-63241

cULus Listed
Approval ID: E238705

Classifications

ECLASS

ECLASS-11.0	27242207
ECLASS-12.0	27242207
ECLASS-13.0	27242207

ETIM

ETIM 9.0	EC000236

UNSPSC

UNSPSC 21.0	32151700

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	2418a98b-5b4d-41d2-9e52-7693084ccb5e

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Accessories

PLCNEXT ENGINEER - Programming software

1046008

https://www.phoenixcontact.com/us/products/1046008

Engineering software platform for Phoenix Contact automation controllers. PLCnext Engineer is IEC 61131-3-compliant and is available free of charge under Downloads. Its functionality can be extended using paid add-ins. To do this, open the license configurator via the "Configure" button.

SD FLASH 2GB PLCNEXT MEMORY - Program / configuration memory

1043501

https://www.phoenixcontact.com/us/products/1043501

Program and configuration memory for storing the application programs and other files in the file system of the PLC, plug-in, 2 GB.

SD FLASH 8GB PLCNEXT MEMORY - Program / configuration memory

1061701

https://www.phoenixcontact.com/us/products/1061701

Program and configuration memory for storing the application programs and other files in the file system of the PLC, plug-in, 8 GB.

SD FLASH 8GB PLCNEXT MEMORY LIC - Program / configuration memory

1151112

https://www.phoenixcontact.com/us/products/1151112

Program and configuration memory for storing the application programs, licenses, and other files in the file system of the PLC, plug-in, 8 GB.

AXC F 1152 - Controller

1151412

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SD FLASH 32GB PLCNEXT MEMORY LIC - Program / configuration memory

1151111

https://www.phoenixcontact.com/us/products/1151111

Program and configuration memory for storing the application programs, licenses, and other files in the file system of the PLC, plug-in, 32 GB.

SD FLASH PLCNEXT MEMORY LIC CFG - Program / configuration memory

1308064

https://www.phoenixcontact.com/us/products/1308064

Program and configuration memory for storing the application programs including pre-activated licenses and other files in the file system of the PLC, plug-in, 8 GB or 32 GB. The pre-activated licenses cannot be managed via the PLCnext Store, only via the WebDepot.

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AXC F IL ADAPT - PLC extension module

1020304

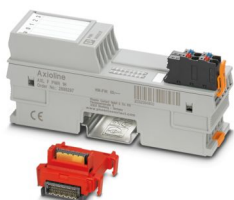https://www.phoenixcontact.com/us/products/1020304

Right-alignable Inline adapter terminal (INTERBUS master) for one PLCnext Control device for setting up a PLCnext Technology Inline station

AXL F PWR 1H - Power module

2688297

https://www.phoenixcontact.com/us/products/2688297

Axioline F, Power module for the logic supply U_{Bus}, max. 4 A, degree of protection: IP20, including bus base module and Axioline F connector

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PLCNEXT TECHNOLOGY TOOLCHAIN - Programming software

1639782

https://www.phoenixcontact.com/us/products/1639782

The PLCnext Technology tool chain is required to develop real-time and non-real-time applications in C++ and C# for PLCnext controllers. The PLCnext CLI command line tool is a core component in the tool chain and can be used to create metadata, C++ header files, and PLCnext Engineer libraries, as well as for the build process. There is also an add-in for Eclipse® and an extension for Microsoft Visual Studio®. This extends the user interfaces of these development environments to support the development process for PLCnext Technology.

AXL F BS BK - Bus connector

2701422

https://www.phoenixcontact.com/us/products/2701422

Axioline F bus base module for housing type BK