AXC F 1152 - Controller

1151412

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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®; Processor: Arm® Cortex®-A9, 1x 800 MHz; 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);.

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

- 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

ELEKTROGERÄTE RÜCKNAHME

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)	280 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

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

Display

Diagnostics display	no

System properties

Operating system	Yocto/Linux® (real-time)
Processor	Arm®Cortex®-A9, 1x 800 MHz
Trusted Platform Module	TPM 1.2
Flash memory	512 Mbyte (internal flash memory)
RAM	512 Mbyte DDR3 SDRAM

IoT capability: PROFICLOUDIoT capability: PROFICLOUD

Supports cloud computing	yes
IoT platform	PROFICLOUD

IoT capabilityIoT capability

Supports cloud computing	yes
IoT platform	every cloud via cloud connectors

IEC 61131 runtime system

Program memory	8 Mbyte
Retentive data storage	48 kByte (NVRAM)
Data storage system	12 Mbyte
Cycle Time	5 ms (for cyclical task)
Number of data blocks	depending on data storage
Number of control tasks	8

System limits Controller

Amount of process data (Axioline input/output data)	max. 1482 Byte (Total per station)

Amount of process data (Axioline input data)	max. 1024 Byte
Amount of process data (Axioline output data)	max. 1024 Byte
Number of supported devices (Axioline)	max. 63 (per station)
Number of IO-Link masters (Recommended/No test)	max. 8 (recommended)
Number of local bus devices that can be connected (Axioline)	max. 63 (observe current consumption)

PROFINET

Device function	PROFINET controller, PROFINET device
Conformance Class	A
Supported functions (PROFINET-Controller)	MRP FSU
Supported functions (PROFINET-Device)	MRP
Update rate	min. 1 ms (4 devices)
	min. 4 ms (16 devices)
Update rate min/max (Supports (device))	1 ms ... 250 ms
Process data width (PROFINET-Device)	64 Byte ... 512 Byte
Number of supported devices (PROFINET-Controller)	max. 16 (at PROFINET controller)
Number of slots	1
Device ID	0169_{hex}
Vendor ID	$00B0_{hex}$

Function

Diagnostics display	no
Redundancy function	yes
Note on redundancy function	applicative system redundancy, PN S2 (IO controller and IO device)
Safety function	no
Industrial cybersecurity	yes

Programming data

Register length (master)	1482 Byte

Functionality

Programming tool	PLCnext Engineer
	Eclipse®
	Visual Studio®
	MATLAB®/ Simulink®
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®

Electrical properties

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

Real-time clock

Real-time clock	yes
Description real-time clock	typ. 10 ppm, max. 20 ppm at 25°C
Power reserve	120 h (at 25°C, from hardware version 07)
	240 h (at 25°C, to hardware version 06)

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)
Current consumption	typ. 200 mA (without I/Os and U_L = 24 V)
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

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 library)
	IO-Link® (via corresponding library)
	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

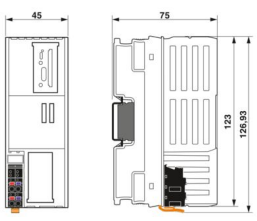
Ethernet

Bus system	RJ45
Number of interfaces	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

Memory card:

Number	1 (SD card from Phoenix Contact (for external flash memory, see accessories))

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 (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)
	-25 °C ... 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

EMC data

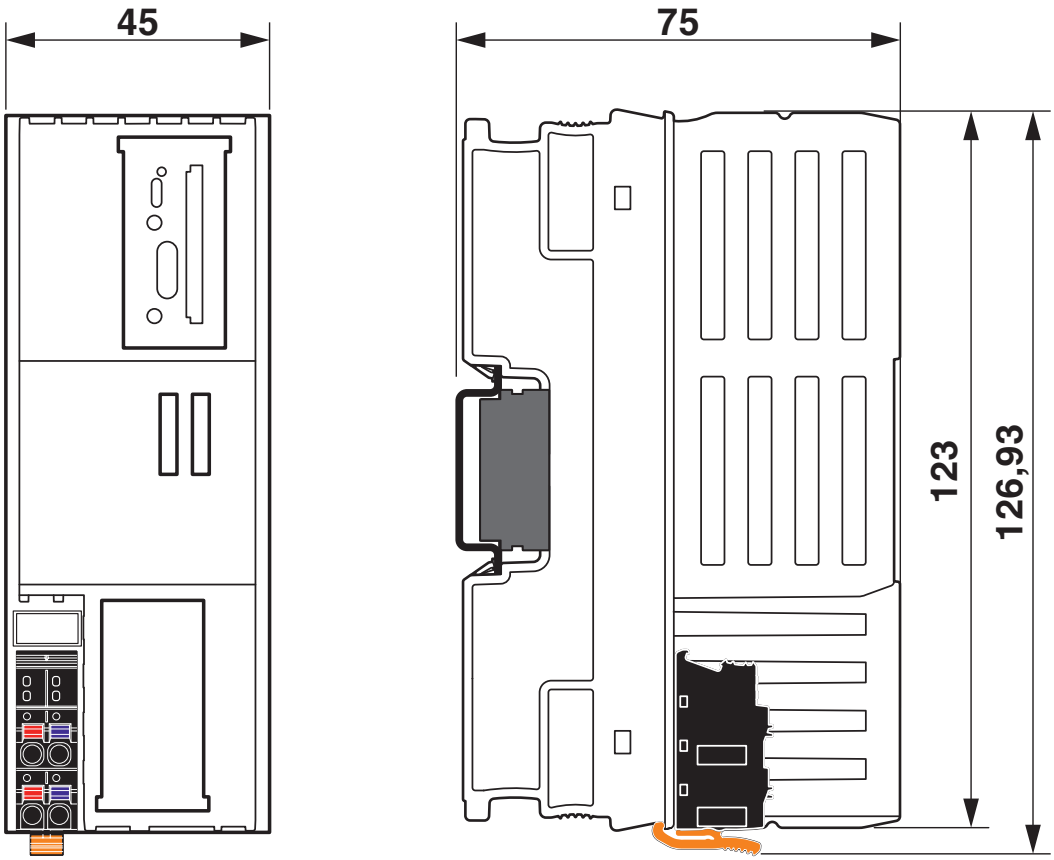
Electromagnetic compatibility	Conformance with EMC Directive 2014/30/EU
Conformance with EMC directives	Immunity test in accordance with EN IEC 61000-6-2 Electrostatic discharge (ESD)IEC 61000-4-2 Criterion B, ±6 kV contact discharge, ±8 kV air discharge
	Immunity test in accordance with EN IEC 61000-6-2 Electromagnetic 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

Mounting

Mounting type	DIN rail mounting

Drawings

Dimensional drawing



Approvals

To download certificates, visit the product detail page: https://www.phoenixcontact.com/us/products/1151412

cULus Listed
Approval ID: E238705

Cybersecurity Certificate
Approval ID: 968 CSP 1037.00 25

Classifications

ECLASS

ECLASS-13.0	27242207
ECLASS-15.0	27242207

ETIM

ETIM 10.0	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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