

# BPC 9102S - Safety controller



1246285

<https://www.phoenixcontact.com/us/products/1246285>

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Safety 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: Intel® Core™ i7-10700TE, 8x 2 GHz (Standard).

## Product description

The BPC 9102S is the most performant Remote Field Controller based on PLCnext Technology. It is also possible to use applications with the highest safety requirements in accordance with SIL 3 or PLe. Standard and safety programming in only one engineering tool, thanks to PLCnext Engineer.

## 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
- Integrated PROFINET controller and PROFINET device
- Support for PROFIsafe Profile V2.6.1
- Safety: highest level of safety of machinery, thanks to diversified processors and the support of up to 300 PROFIsafe devices
- PLCnext Technology for preferred programming languages and programming environments, open-source software, apps, PROFICLOUD, and soon, also PLCnext Store with real-time execution
- Performance: Use of one Intel® Core™ i7 octacore processor and two powerful processors based on ARM architecture enables one of the best performance capabilities on the market.
- 3 independent Ethernet interfaces
- Optional pluggable fan module allows reliable operation, even under challenging ambient conditions.

## Commercial data

Item number	1246285
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	DR12
Product key	DRBAAA
GTIN	4063151346836

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Weight per piece (including packing)	6,700 g
Weight per piece (excluding packing)	4,772 g
Customs tariff number	85371091
Country of origin	TW

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## 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	Stand-alone

#### Insulation characteristics

Protection class	III (IEC 61140, EN 61140, VDE 0140-1)
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### System properties

Trusted Platform Module	fTPM 1.2 (Encryption Technology not Chinese)
Processor	Arm® Cortex®-A9 800 MHz (CPU1)
	Arm® Cortex®-A8 600 MHz (CPU2)
	Intel®Core™ i7-10700TE, 8x 2 GHz (Standard)
Retentive data storage	4 Mbyte
RAM	16384 Mbyte DDR4-2400

#### IEC 61131 runtime system

Program memory	32 Mbyte
Data storage system	64 Mbyte

#### PROFINET

Device function	PROFINET controller, PROFINET device
Update rate	min. 1 ms
Conformance Class	B
Number of supported devices	max. 256

#### Function

Safety function	yes
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#### Functionality

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

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Simulink®

## System requirements

### Engineering tool

PLCnext Engineer

Eclipse®

Visual Studio®

MATLAB®/ Simulink®

### Application interface

OPC UA®

## Electrical properties

### Power consumption

typ. 50 W

max. 55 W

### Maximum power dissipation for nominal condition

max. 55 W

## Supply

### Supply voltage (DC)

24 V DC

### Supply voltage range

19.2 V DC ... 30 V DC (including ripple (3.6 V<sub>PP</sub>))

### Power supply connection

Screw terminal blocks, plug-in

### Max. current consumption

2.3 A

### Typical current consumption

2.1 A

## Real-time clock

### Realtime clock

Integrated (battery backup)

## Connection data

### COMBICON connector

#### Conductor cross-section, rigid

0.2 mm² ... 2.5 mm²

#### Conductor cross-section, flexible

0.2 mm² ... 2.5 mm²

#### Conductor cross-section AWG

24 ... 12

## Interfaces

### Web server

yes

## USB

### Number of interfaces

1

### Connection method

USB type A, male connector

## Ethernet

### Bus system

RJ45

### Number of interfaces

3

### Connection method

RJ45 jack

### Transmission speed

1000/2000 Mbps (1000 Mbps (LAN 2 and LAN 3), 1000/2000 Mbps (LAN 1))

## Dimensions

### External dimensions

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Width / Height / Depth	218 mm / 250 mm / 135 mm (without fan module)
	218 mm / 285 mm / 135 mm (With fan module)

## Characteristics

Safety data: EN ISO 13849

Category	max. 4
Performance level (PL)	max. e

Safety data: IEC 61508 - High demand

Safety Integrity Level (SIL)	max. 3
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Safety data: EN IEC 62061

Safety Integrity Level Claim Limit (SIL CL)	max. 3
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## Environmental and real-life conditions

Ambient conditions

Degree of protection	IP20
Ambient temperature (operation)	0 °C ... 60 °C up to 2000 m above mean sea level
	0 °C ... 55 °C 2000 m ... 3000 m above mean sea level
	0 °C ... 50 °C 3000 m ... 4000 m above mean sea level
Ambient temperature (storage/transport)	-30 °C ... 85 °C
Permissible humidity (operation)	10 % ... 95 % (non-condensing)
Permissible humidity (storage/transport)	5 % ... 95 % (non-condensing)
Shock (operation)	15g (according to IEC 61131-2)
Shock (storage/transport)	20g (in accordance with EN 60068-2-27/IEC 60068-2-27)
Vibration (operation)	3g (in accordance with EN 60068-2-6/IEC 60068-2-6)
Vibration (storage/transport)	3g (in accordance with EN 60068-2-6/IEC 60068-2-6)
Air pressure (operation)	60 kPa ... 108 kPa (up to 4000 m above mean sea level)
Air pressure (storage/transport)	58 kPa ... 108 kPa (up to 4500 m above mean sea level)

## Mounting

Mounting type	Panel mounting
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## Approvals

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### PROFINET

Approval ID: Z13531

### PROFIsafe

Approval ID: Z20291

### PROFINET

Approval ID: Z13532



### TÜV SÜD Type tested

Approval ID: IITS2 029429 0027



### cULus Listed

Approval ID: E238705

### PROFIsafe

Approval ID: Z20354

### Cybersecurity Certificate

Approval ID: 968 CSP 1037.00 25



### Functional Safety

Approval ID: 01/205/5649.01/23

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## Classifications

### ECLASS

ECLASS-13.0	27242207
ECLASS-15.0	27242207
ECLASS-15.0 ASSET	27250101

### 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	6(c), 7(a), 7(c)-I

### China RoHS

Environment friendly use period (EFUP)	EFUP-15
	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.)	4,4'-isopropylidenediphenol(CAS: 80-05-7)
	Lead(CAS: 7439-92-1)
SCIP	7ffeb066-39aa-4355-a5e8-4f354a29e242

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