Priva Blue ID Controller S10

A controller is the intelligent heart of the system.

Characteristics

- powerful processor
- native BACnet
- hot swappable
- upgrade via licence codes
- fast communication between controllers
- slot for memory card
- real time clock
- USB connection (for future applications)
- 24 V system power supply monitoring
- connections for communication with I/O modules and modules for serial communication
- on-board alarm output
- energy-saving mode
- Priva Blue ID Lifeline
- clear indication

Intelligent heart

The controller is the intelligent heart of the Priva Blue ID system. The controller shares the base with the system's network module (SN module) and handles the input and output based on the control programs loaded into the controller via TC Engineer.

When the controller is removed the system remains operational as far as possible, so it does not go offline. This means that the network will continue to function, the I/O modules will revert to a pre-programmed state and the modules with override switches are in the override state. Manual override remains operational also.

Easy to expand with more I/O

When the system is expanded, you can easily expand the controller with more I/O via a licence code. There is therefore no need to acquire a new controller.

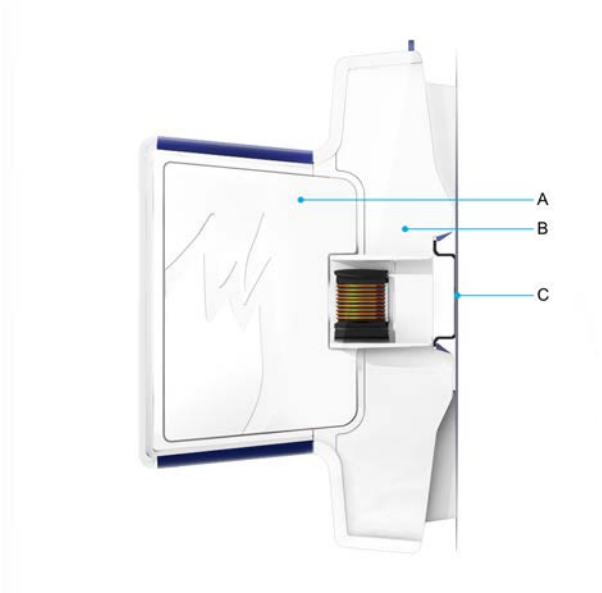
Internal bus

The Priva Blue ID system is equipped with an internal bus. The 24 VDC system power is distributed via this bus. The communications between controller and modules also runs via the internal bus.

Protocols for field bus devices

By expanding the system with SC modules, the system can support many protocols for field bus equipment via RS232 and RS485.

Modular design



Module (A) and base (B) form a unique combination. As a result of this, a module cannot be incorrectly positioned in a base.

You simply click the base onto the DIN rail (C). The wiring easily connects to the base via spring terminals. The base remains in place when replacing the module, removing the need to rewire.

Hot swappable

Removing a module from the base and replacing it can easily be done without tools. This can be done live (hot swappable).

Wiring
You do not need to disconnect wiring when exchanging modules. This is because the wiring is connected to the module's base.

Components
All functions and indications are on the front of the controller.

Legend

A	on-board alarm output
B	Priva Blue ID Lifeline
C	energy-saving button
D	shutdown button
E	battery
F	reset button (accessible with paper clip)
G	slot for memory card
H	USB port (for future applications)
I	LED for status of module
Y	on-off button
K	connections for system power LED for system power functional earth Ethernet shielding

On-board alarm output
The on-board alarm output can be used to indicate controller failures. You can define whether and how the alarm output is used in TC Engineer.

Priva Blue ID Lifeline
The modules are equipped with blue LEDs. Together, these LEDs form the Priva Blue ID Lifeline. If the blue line is continuously on, the modules and bases are in the correct place according to the configuration in TC Engineer.

Energy-saving button
The energy-saving button allows you to switch the lifeline, LED signals and manual operation of the modules on and off in a single action.

Reset button
The reset button can be accessed via a pinhole. You can use this button to restart the controller or restore the factory settings.

Stop button
The stop button is used to perform a shutdown, or to stop the system, before you remove a module from the base.

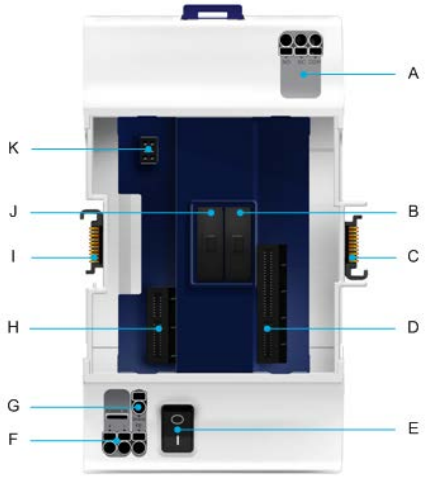
Battery
The battery powers the clock to keep the right time during power outages.

Memory card
The controller has a slot for a memory card. The memory card is used to store project properties from Top Control. In a multi-project environment the properties of all projects can be stored on one memory card.

LED for status of module
The LED shows the status of the module. The LED is on continuously when the module is working correctly. If not, and in special circumstances, the LED flashes.

Priva Blue ID S Base

The controller and the SN module share a common base. On the right-hand side of the base, there is the connector for connecting to the I/O modules. On the left-hand side of the base, there is the connector for the interface with a module for serial communication (see SC module).



A	on-board alarm output
B	glass fuse for I/O modules (F2)
C	connector for I/O module
D	connector for controller
E	on-off button
F	connection for system power LED for system power
G	Ethernet shielding
H, K	connector for SN module
I	connector for SC module
Y	glass fuse for SC modules, SN modules and controller (F1)

S10 controller specifications

General	
Module article description	Priva Blue ID S10 Controller
Module article number	5010001
Base article description	Priva Blue ID S Base
Base article number	5010101
Number of inputs and outputs	0 ... 500 (depending on licence)
Dimensions (XYZ)	161.5 x 91 x 117.4 mm (6.36 x 3.58 x 4.62 inch)
Weight	module: 150 grams base: 235 grams
Maximum power consumption	3.2 W (excluding power to USB port of 2.5 W)
MTBF[1]	2,920,000 hours
Construction	removable module on a base
Mounting of base	clicks onto DIN rail
Housing material	mixture of polycarbonate and ABS
Button material	TPE (synthetic rubber)
Connector type for power supply and I/O	spring terminal
Permitted core cross section area	solid: 0.2 … 4 mm² flexible: … 2.5 mm² flexible with ferrule connector: 0.25 … 1.5 mm²
Identification of connections	abbreviated labelling

[1] The MTBF is calculated according to the *Telcordia SR-332 standard Issue 2* under the following conditions:
- ambient temperature: 35 … 50 °C
- supply voltage: 24 VDC
- time in operation per day: 24 hours
- reliability level: 60 %

Processor	
Processor	Freescale ARM11 processor
USB connection file system[1]	FAT32
Clock frequency	500 MHz
Working memory	128 MB DDR2 RAM
Storage memory	1 GB NAND flash

[1] For future applications

Memory card	
Maximum ambient temperature	70 °C
Supported SD formats	• SDSC: storage capacity up to 2 GB • SDHC: storage capacity up to 32 GB
File system	FAT32

Electrical	
Accuracy of system power measurement	± 2 %
Under-voltage warning level	17 … 19.5 VDC
Accuracy of real time clock	± 20 ppm at 25 °C ± 95 ppm 0 ... 50 °C
Type of battery	BR2032
Battery service life	5 years
USB port speed[1]	12 Mbps
Maximum output current of USB connection[1]	500 mA
Indication	• Priva Blue ID Lifeline • red-green LED for status of module

[1] USB connection for future applications

S base specifications

General	
Weight	235 grams
Maximum power consumption	0.6 W
MTBF[1]	8,760,000 hours

[1] The MTBF is calculated according to the *Telcordia SR-332 standard Issue 2* under the following conditions:
- ambient temperature: 35 … 50 °C
- supply voltage: 24 VDC
- time in operation per day: 24 hours
- reliability level: 60 %

Electrical	
Input voltage between SP and SG	21.6 VDC … 26.4 VDC (24 VDC ± 10 %)
Maximum input current	4.3 A (2.5 A for I/O modules and 1.8 A for SC module, SN module and controller)
Minimum switch off voltage	21.1 VDC
Maximum switch off voltage	26.9 VDC
$U_{FE-SP\ (max)}$, $U_{FE-SG\ (max)}$, $U_{SP-SG\ (max)}$	30 VAC and +/- 30 VDC
C_{FE-SP}, C_{FE-SG}	1 nF nominal
R_{FE-SG}	1 MΩ nominal
Glass fuses	3.15 AT
Indication	green LED for system power
Switching voltage alarm output	max. 30 VAC max. 30 VDC
Switching current alarm output	0.1 mA … 1 A with cosφ = 1

Power supply	Requirements
The system power supply must comply with the following requirements.	• output voltage: 21.6 … 26.4 VDC • double insulation between input and output • Class 2 power supply for UL508, UL916, CSA C22.2 No. 14 and No. 205

General specifications of controllers, modules and bases

Housing	
IP code	IP30 (IEC 60529)
Flammability class	V-0 (UL 94)
Recycle code	7
Colour	release surfaces of module and DIN rail release: blue (RAL5013) other parts: white (RAL9003)
Device type	open device, for use in a pollution degree 2 environment

Installation and connection	
Installation	in control panel: • accessible to authorized personnel only • can be clicked onto the DIN rail that is positioned horizontally or vertically on the mounting plate Note: The controller, SC module and SN module may only be mounted horizontally. in panel door integration in control panel: • accessible to authorized personnel only • can be clicked onto the DIN rail that is positioned horizontally on the mounting plate
Maximum width of I/O modules, bus extension modules and controller	20 m

Environment	
Permitted temperature inside control cabinet during normal operation with horizontally mounted modules only	0 … 50 ºC
Permitted temperature inside control cabinet during normal operation with vertically mounted modules only	0 … 35 ºC
Permitted temperature inside control cabinet during transport and storage	0 … 70 ºC
Permitted relative ambient humidity	10 % … 95 % (non-condensing)
Shock and vibration resistance	IEC 61131-2
Installation category	II

Legislation and standards		
Canada / USA		• UL 508:2005 (industrial control equipment) • UL 916:2007 (energy management equipment) • UL 61010-1:2004 (measurement and control equipment) • CSA C22.2 No 14-10: 2011 (industrial control equipment) • CSA C22.2 No 205-M1983: 2009 (signal equipment) • CSA C22.2 No 61010-1-04 (measurement and control equipment)
	EMC	• complies with 47 CFR Part 15 Subpart B, Class B (FCC Rules) Operation is subject to the following two conditions: 1. This system may not cause harmful interference. 2. This system must accept any interference received, including interference that may cause undesired operation. • ISM-system, complies with Canadian ICES-001

Europe		• Low voltage directive 2006/95/CE:
		  • EN 61010-1:2001 (measurement and control equipment)
		• EMC directive 2004/108/EC:
		  • EN 61326-1:2006 (measurement and control equipment)
		  • EN 61000-6-2:2005 (generic immunity standard)
		  • EN 61000-6-3:2007 (generic emission standard)
		• RoHS directive 2011/65/EU

		complies with the WEEE directive 2002/96/EC

Legislation and standards		
International		• The Priva Blue ID S10 Controller is BTL registered at BACnet International. • The Priva Blue ID S10 Controller is BACnet certified in accordance with ISO 16484-5/6. • Priva is a member of the BACnet Interest Group Europe.

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