

# ILC 2250 BI - Controller



1541303

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The modular Inline controller for automation applications in infrastructure, energy, and buildings is based on the Niagara Framework®.

Four LAN, two USB, and two RS-485 interfaces are integrated.

The controller can be extended with numerous Inline I/O modules.

## Product description

The ILC 2250 BI is the powerful successor to the ILC 2050 BI, the central controller for automation of buildings, infrastructure, and energy. The industrial design guarantees a high level of reliability and therefore makes the ILC 2250 BI suitable for business-critical applications. It is equipped with 4 LAN, 2 USB, and 2 RS-485 interfaces. The controller can be extended with a wide range of Inline modules for digital and analog I/Os and for all widely used bus systems. The corresponding drivers ensure uniform interfaces, thus greatly simplifying system integration.

## Your advantages

- Time-optimized engineering using the Niagara 4 framework
- Support for all the main communication protocols used in building infrastructure automation
- Effective engineering and visualization with Emalytics and the Niagara Framework
- Easy extension of the Niagara 4 framework with self-programmed functions
- Digital twin as the basis for smart buildings
- Software security with secure boot, signed software, and TPM-protected device identity

## Commercial data

Item number	1541303
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	DRHAAA
Product key	DRHAAA
GTIN	4067923013964
Weight per piece (including packing)	317 g
Weight per piece (excluding packing)	237 g
Customs tariff number	85371091
Country of origin	DE

## Technical data

### Notes

#### Note on application

Note on application	Only for industrial use
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### Product properties

Product type	Controller
Product family	Inline-Controller
Special properties	Development process certified in accordance with IEC 62443-4-1
Installation location	indoor use

#### Insulation characteristics

Protection class	III (IEC 61140, EN 61140, VDE 0140-1)
Overvoltage category	II (IEC 60664-1, EN 60664-1)
Pollution degree	2 (IEC 60664-1, EN 60664-1)

### System properties

Trusted Platform Module	TPM 2.0
Processor	Arm®Cortex®-A53, 4x 1.6 GHz
Retentive data storage	512 kByte (NVRAM)
RAM	2048 Mbyte (LPDDR4-RAM)

#### IEC 61131 runtime system

Data storage system	5 GByte (eMMC)
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#### Functionality

Programming languages supported	Niagara Framework®
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#### System requirements

Engineering tool	Emalytics
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### Electrical properties

#### Supply

Current carrying capacity (Terminal points)	8 A
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#### Real-time clock

Realtime clock	integrated (capacitive buffering)
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#### Potentials

Supply voltage	24 V DC -15 % / +20 % (in accordance with EN 61131-2)
Supply voltage range	19.2 V DC ... 30 V DC (including all tolerances, including ripple)
Current draw	≤ 1.5 A
	≤ 170 mA (at nominal voltage without local bus device)

### Connection data

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## Inline connector

Connection method	Spring-cage connection
Conductor cross-section, rigid	0.08 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>
Conductor cross-section, flexible	0.08 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>
Conductor cross-section AWG	28 ... 16
Stripping length	8 mm

## Interfaces

Supported protocols	BACnet/IP
	BACnet MS/TP (only at COM1 and COM2)
	Modbus/TCP
	Modbus/RTU
	KNX IP
	DALI
	DALI-2
	LON IP
	EnOcean
	SMI
	MP-Bus
	SNMP
	M-Bus
	MQTT
	OPC UA
	Simple OpenADR
	LDAP
	SMS
	CSV
	oBIX
Web server	yes

## Ethernet

Bus system	RJ45
Number of interfaces	4
Connection method	RJ45 jack, shielded
Transmission speed	10/100/1000 Mbps
No. of channels	2
Bus system	RS-485
Number of interfaces	2

## USB

Bus system	USB type C
Number of interfaces	2
Connection method	USB type C

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## microSD

Bus system	microSD
Number of interfaces	1 (Top)
Connection method	microSD slot

## Dimensions

Width	80 mm
Height	119.8 mm
Depth	71.5 mm

## Material specifications

Color (Housing)	green (RAL 6021)
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## Mechanical tests

Vibration resistance in accordance with EN 60068-2-6/IEC 60068-2-6	: 5g
Shock in accordance with EN 60068-2-27/IEC 60068-2-27	: 30g
Continuous shock in accordance with EN 60068-2-27/IEC 60068-2-27	: 10g

## Environmental and real-life conditions

### Ambient conditions

Degree of protection	IP20
Ambient temperature (operation)	-25 °C ... 55 °C (observe derating)
Ambient temperature (storage/transport)	-25 °C ... 85 °C
Permissible humidity (operation)	0 % ... 75 % (according to DIN EN 61131-2)
Permissible humidity (storage/transport)	0 % ... 75 % (according to DIN EN 61131-2)
Air pressure (operation)	70 kPa ... 106 kPa (up to 3000 m above sea level)
Air pressure (storage/transport)	70 hPa ... 106 kPa (up to 3000 m above sea level)
GRP_Temperature class	T4
Resistance to gases that may endanger the functions, in acc. with DIN 40046-36, DIN 40046-37	Sulfur dioxide (SO <sub>2</sub> ) 10 ±0.3 ppm (test duration: 10 days), hydrogen sulfide (H <sub>2</sub> S) 1 ±0.3 ppm (test duration: 4 days), both at 25°C and with 75% humidity

## EMC data

Electromagnetic compatibility	Conformance with EMC directive
Conformance with EMC directives	Immunity test in accordance with EN IEC 61000-6-2 Transient overvoltage (surge) Criterion B
	Immunity test in accordance with EN IEC 61000-6-2 Fast transients (burst) Criterion A, ±500 V, Criterion B, ±1000 V
	Immunity test in accordance with EN IEC 61000-6-2 Electromagnetic fields Criterion A, Field intensity: 10 V/m
	Immunity test in accordance with EN IEC 61000-6-2 Electrostatic discharge (ESD) Criterion A, ±4 kV contact discharge, ±8 kV air discharge
	Immunity test in accordance with EN IEC 61000-6-2 Conducted disturbance Criterion A, Test voltage 10 V

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	Noise emission test in accordance with EN 61000-6-3/IEC 61000-6-3 Class B
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## Mounting

Mounting type	DIN rail mounting
Mounting position	horizontal
	Alternative mounting positions are possible, but can lead to a reduction in thermal performance.

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## Approvals

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**cULus Listed**

Approval ID: E238705

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## Classifications

### ECLASS

ECLASS-13.0	27242207
ECLASS-15.0	27242207

### ETIM

ETIM 9.0	EC000236
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## Environmental product compliance

### EU RoHS

Fulfills EU RoHS substance requirements	Yes
Exemption	6(a)-I, 6(c), 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 titanium zirconium oxide(CAS: 12626-81-2)
	4,4'-isopropylidenediphenol(CAS: 80-05-7)
	Lead(CAS: 7439-92-1)
	diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide(CAS: 75980-60-8)