

# ILC 2050 BI-L - Controller

2404671

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Modular Inline controller for automation applications in the fields of building technology, infrastructure, and energy technology. Equipped with two logically separated IP address interfaces each with 2 integrated Fast Ethernet ports. Configurable assignment of the Ethernet ports for the use of the Spanning Tree Protocol, daisy chain and redundant ring structures for optimum availability. 4 LAN, 2 USB, and 2 RS-485 interfaces are integrated. It enables the direct connection of LonMark TP/FT-10 networks. The data point connections can be extended with up to 63 Inline I/O modules.

## Product description

The ILC 2050 BI-L is the central controller for the automation of buildings, infrastructure, and energy. The industrial design guarantees a high level of reliability and therefore also makes the ILC 2050 BI-L suitable for business-critical applications. It is equipped with four LAN, two USB, and two RS-485 interfaces. It enables the direct connection of LonMark TP/FT-10 networks. 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
- Direct connection of LonMark TP/FT-10 networks (in accordance with the CEA-709 standard)
- Planning, engineering, and visualization in the Java-based Niagara 4 framework
- Easy extension of the Niagara 4 framework with self-programmed functions

powered by



## Commercial data

Item number	2404671
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	DR18
Product key	DRHAAA

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GTIN	4055626933030
Weight per piece (including packing)	340 g
Weight per piece (excluding packing)	243 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
Installation location	indoor use
Installation location	Control cabinet

### System properties

Retentive data storage	2 GByte (eMMC)
RAM	1024 Mbyte DDR3 SDRAM

#### IEC 61131 runtime system

Data storage system	2 GByte (eMMC)
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#### INTERBUS-Master

Amount of process data	max. 4096 bit (INTERBUS)
Amount of process data (INTERBUS input/output data max.)	max. 4096 bit (INTERBUS)
Number of local bus devices that can be connected	max. 63 (observe current consumption)
Number of devices with parameter channel	max. 16

#### Programming data

Register length (master)	512 Byte
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#### Functionality

Programming languages supported	Niagara Framework®
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## Electrical properties

### Supply

Supply voltage (DC)	24 V DC
Supply voltage range	19.2 V DC ... 30 V DC
Max. current consumption	≤ 1.5 A
Typical current consumption	≤ 170 mA (at nominal voltage without local bus device)

### Real-time clock

Realtime clock	Yes
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### Potentials: 24 V supply U<sub>ILC</sub>

Supply voltage	24 V DC (via Inline connector)
Supply voltage range	19.2 V DC ... 30 V DC (including all tolerances, including ripple)
Current draw	max. 1.5 A

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	typ. 170 mA (without connected I/O terminal blocks)
Potentials: 7.5 V communications power $U_L$ (potential jumper)	
Supply voltage	7.5 V DC $\pm 5\%$
Power supply	max. 2 A DC
Potentials: 24 V analog supply $U_{ANA}$ (potential jumper)	
Supply voltage	24 V DC
Supply voltage range	19.2 V DC ... 30 V DC (including all tolerances, including ripple)
Power supply	max. 0.5 A DC
Potentials: Main circuit supply ( $U_M$ )	
Supply voltage	24 V DC (via Inline connector)
Supply voltage range	19.2 V DC ... 30 V DC (including all tolerances, including ripple)
Power supply	max. 8 A DC (sum of $U_M + U_S$ )
Potentials: Segment circuit supply ( $U_S$ )	
Supply voltage	24 V DC (via Inline connector)
Power supply	max. 8 A DC (sum of $U_M + U_S$ )

## Connection data

### 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
	Milestone Video Framework Interface
	LonMark TP/FT

## Ethernet

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

## USB

Bus system	USB type A
Number of interfaces	1
Connection method	USB type A, socket

## USB

Bus system	Mini-USB
Number of interfaces	1

## 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	green (RAL 6021)
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## 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)

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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

## 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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## Classifications

### ECLASS

ECLASS-13.0	27242207
ECLASS-15.0	27242207

### UNSPSC

UNSPSC 21.0	32151700
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## Environmental product compliance

### EU RoHS

Fulfills EU RoHS substance requirements	Yes, No exemptions
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### China RoHS

Environment friendly use period (EFUP)	EFUP-E
	No hazardous substances above the limits

### EU REACH SVHC

REACH candidate substance (CAS No.)	No substance above 0.1 wt%
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