

# ILC 151 ETH/XC - Controller



2701141

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Inline controller for use under harsh ambient conditions, with Ethernet interface for coupling to other controllers and systems, with programming options according to IEC 61131-3, complete with connector and labeling field.

## Product description

The ILC 151 ETH/XC is a reliable compact controller for the Inline I/O system. The controller uses directly alignable Inline I/O modules and also is notable for supporting a number of Ethernet-based protocols such as Modbus/TCP or PROFINET.

## Your advantages

- Memory extendable by up to 2 GB via plug-in SD card
- Free engineering with PC Worx Express (IEC 61131-3)
- Complete INTERBUS master (4096 I/O points)
- PROFINET-Device
- Modbus/TCP-Client
- Integrated FTP and HTML5 web server
- Numerous protocols supported such as: HTTP, FTP, SNTP, SNMP, SMTP, SQL, MySQL, etc.

## Commercial data

Item number	2701141
Packing unit	1 pc
Note	Made to order (non-returnable)
Sales key	DR10
Product key	DRAAAA
Catalog page	Page 49 (C-6-2019)
GTIN	4046356712361
Weight per piece (including packing)	363.5 g
Weight per piece (excluding packing)	345.3 g
Customs tariff number	85371091
Country of origin	DE

## Technical data

### Notes

#### Utilization restriction

CCCex note	Use in potentially explosive areas is not permitted in China.
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### Product properties

Type	modular
Product type	Controller
Product family	Inline-Controller

#### Display

Diagnostics display	No
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### System properties

Processor	Altera Nios® II 64 MHz
Clock frequency	64 MHz
Retentive data storage	8 kByte (NVRAM)

#### IEC 61131 runtime system

Program memory	256 kByte
Data storage system	256 kByte
Number of control tasks	8

#### INTERBUS-Master

Amount of process data	max. 4096 bit (INTERBUS)
Number of supported devices	max. 128
Number of local bus devices that can be connected	max. 63 (observe current consumption)
Number of devices with parameter channel	max. 16
Number of supported branch terminals with remote bus branch	max. 3

#### Modbus/TCP-Client

Amount of process data	max. 16384 bit (internal Modbus /TCP client)
Number of Modbus/TCP clients	max. 8 later than FW 4.42

#### PROFINET

Device function	PROFINET device
Specification	2.2
Device ID	007E <sub>hex</sub> / 126 <sub>dez</sub>
Vendor ID	00B0 <sub>hex</sub> / 176 <sub>dez</sub>

#### Function

Diagnostics display	No
Controller redundancy	No
Safety function	No

## Functionality

Programming languages supported	Instruction list (IL)
	Symbolic flowchart (SFC)
	Ladder diagram (LD)
	Function block diagram (FBD)
	Structured text (ST)

## System requirements

Engineering tool	PC Worx
	PC Worx Express
Configuration tool	Config+ Version 1.01 or later
Diagnostics tool	DIAG+
Runtime system	eCLR
Application interface	OPC

## Electrical properties

Transmission medium	Copper
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### Real-time clock

Realtime clock	Yes
Description realtime clock	not integrated

### Potentials: 24 V supply $U_{ILC}$

Supply voltage	24 V DC -15 % / +20 % (in accordance with EN 61131-2)
Supply voltage range	19.2 V DC ... 30 V DC
Current draw	80 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 %
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### Potentials: 24 V analog supply $U_{ANA}$ (potential jumper)

Supply voltage	24 V DC -15 % / +20 %
Supply voltage range	19.2 V DC ... 30 V DC (including all tolerances, including ripple)

### Potentials: 24 V main supply $U_M$

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	max. 8 A DC
	6 mA (without sensors)

### Potentials: 24 V segment supply $U_S$

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	max. 8 A DC
	10 mA (without actuators)

## Input data


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## Digital

Input name	Digital inputs
Description of the input	EN 61131-2 type 1 NPN/PNP
Number of inputs	8
Cable length	max. 30 m
Connection method	Inline potential distributor
Connection technology	2-, 3-, 4-conductor
Input voltage range	-0.5 V ... 30 V
Input voltage range "0" signal	-0.5 V ... 5 V
Input voltage range "1" signal	15 V ... 30 V
Nominal input current at $U_{IN}$	typ. 7 mA max. 15 mA
Input filter time	typ. 5 ms (Signal change 0→  typ. 5 ms ( )

## Output data

### Digital

Output name	Digital outputs
Connection method	Spring-cage connection
Connection technology	2-, 3-, 4-conductor
Number of outputs	4
Maximum output current per channel	500 mA
Maximum output current per module / terminal block	2 A
Nominal load, lamp	12 W
Nominal load, ohmic	12 W
Behavior with inductive overload	Output can be destroyed
Output name	Digital outputs
Connection method	Spring-cage connection
Connection technology	2-, 3-, 4-conductor
Number of outputs	4
Maximum output current per channel	500 mA
Maximum output current per module / terminal block	2 A
Nominal load, lamp	12 W
Nominal load, ohmic	12 W
Behavior with inductive overload	Output can be destroyed

## 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

## Interfaces

Web server	yes
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### Ethernet 10Base-T/100Base-TX

Bus system	RJ45
Number of interfaces	1
Connection method	RJ45 jack
Transmission speed	10/100 Mbps
No. of channels	1

### INTERBUS local bus (master)

Number of interfaces	1
Connection method	Inline data jumper
Transmission speed	500 kBaud / 2 MBaud (can be switched)

### Parameterization/operation/diagnostics

Bus system	RS-232
Number of interfaces	1
Connection method	6-pos. MINI DIN socket (PS/2)
Transmission speed	max. 115.2 kbps
Transmission physics	Copper
No. of channels	1

## Dimensions

Width	80 mm
Height	119.8 mm
Depth	71.5 mm

## Material specifications

Color	green
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## Environmental and real-life conditions

### Ambient conditions

Degree of protection	IP20
Ambient temperature (operation)	-40 °C ... 60 °C
Ambient temperature (storage/transport)	-40 °C ... 85 °C
Permissible humidity (operation)	10 % ... 95 % (according to DIN EN 61131-2)
Permissible humidity (storage/transport)	10 % ... 95 % (according to DIN EN 61131-2)
Shock	25g, Criterion 1, according to IEC 60068-2-27
Vibration (operation)	5g
Air pressure (operation)	70 kPa ... 106 kPa (up to 3000 m above sea level)
Air pressure (storage/transport)	70 kPa ... 106 kPa (up to 3000 m above sea level)
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

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## EMC data

Conformance with EMC directives	Immunity test in accordance with EN 61000-6-2/IEC 61000-6-2 Electrostatic discharge (ESD)EN 61000-4-2/IEC 61000-4-2 Criterion B, $\pm 6$ kV contact discharge, $\pm 8$ kV air discharge
	Immunity test in accordance with EN 61000-6-2/IEC 61000-6-2 Electromagnetic fieldsEN 61000-4-3/IEC 61000-4-3 Criterion A, Field intensity: 10 V/m
	Immunity test in accordance with EN 61000-6-2/IEC 61000-6-2 Fast transients (burst)EN 61000-4-4/IEC 61000-4-4 Criterion A, all interfaces $\pm 1$ kVCriterion B, all interfaces $\pm 2$ kV
	Immunity test in accordance with EN 61000-6-2/IEC 61000-6-2 Transient overvoltage (surge)EN 61000-4-5/IEC 61000-4-5 Criterion B, supply lines DC: 0.5 kV/0.5 kV (symmetrical/asymmetrical), fieldbus cable shield 1 kV
	Immunity test in accordance with EN 61000-6-2/IEC 61000-6-2 Conducted interferenceEN 61000-4-6/IEC 61000-4-6 Criterion A, Test voltage 10 V
	Noise emission test in accordance with EN 61000-6-4/IEC 61000-6-4 EN 55011 Class A
Electromagnetic compatibility	Conformance with EMC Directive 2014/30/EU

## Mounting

Mounting type	DIN rail mounting
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