

# ILC 151 ETH/XC - Controller



2701141

<https://www.phoenixcontact.com/us/products/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                         |
| 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. |
|------------|---------------------------------------------------------------|

### Product properties

|                |                   |
|----------------|-------------------|
| Product type   | Controller        |
| Product family | Inline-Controller |
| Type           | modular           |

#### Display

|                     |    |
|---------------------|----|
| Diagnostics display | no |
|---------------------|----|

### System properties

|                        |                 |
|------------------------|-----------------|
| 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 |
| Redundancy function | no |
| Safety function     | no |

#### Functionality

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|                                 |                              |
|---------------------------------|------------------------------|
| 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 |
|---------------------|--------|

## 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 $\pm 5$ % |
|----------------|--------------------|

## 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

Digital:

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|                                   |                                                                                                                   |
|-----------------------------------|-------------------------------------------------------------------------------------------------------------------|
| 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 |

## 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 |
|------------|-----|

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)

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|                      |                                       |
|----------------------|---------------------------------------|
| 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 (RAL 6021) |
|-------|------------------|

## 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 |

## EMC data

|                                 |                                                                                                                                                                                        |
|---------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Electromagnetic compatibility   | Conformance with EMC Directive 2014/30/EU                                                                                                                                              |
| Conformance with EMC directives | Immunity test in accordance with EN 61000-6-2/IEC 61000-6-2<br>Electrostatic discharge (ESD)EN 61000-4-2/IEC 61000-4-2<br>Criterion B, ±6 kV contact discharge, ±8 kV air discharge    |
|                                 | Immunity test in accordance with EN 61000-6-2/IEC 61000-6-2<br>Electromagnetic fieldsEN 61000-4-3/IEC 61000-4-3 Criterion A,<br>Field intensity: 10 V/m                                |
|                                 | Immunity test in accordance with EN 61000-6-2/IEC 61000-6-2<br>Fast transients (burst)EN 61000-4-4/IEC 61000-4-4 Criterion A,<br>all interfaces ±1 kVCriterion B, all interfaces ±2 kV |

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|  |                                                                                                                                                                                                                                 |
|--|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | Immunity test in accordance with EN 61000-6-2/IEC 61000-6-2<br>Transient overvoltage (surge)EN 61000-4-5/IEC 61000-4-5<br>Criterion B, supply lines DC: 0.5 kV/0.5 kV<br>(symmetrical/asymmetrical), fieldbus cable shield 1 kV |
|  | Immunity test in accordance with EN 61000-6-2/IEC 61000-6-2<br>Conducted interferenceEN 61000-4-6/IEC 61000-4-6 Criterion A,<br>Test voltage 10 V                                                                               |
|  | Noise emission test in accordance with EN 61000-6-4/IEC 61000-6-4 EN 55011 Class A                                                                                                                                              |

## Mounting

|               |                   |
|---------------|-------------------|
| Mounting type | DIN rail mounting |
|---------------|-------------------|

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## Classifications

### ETIM

|          |          |
|----------|----------|
| ETIM 8.0 | EC000236 |
|----------|----------|

### UNSPSC

|             |          |
|-------------|----------|
| UNSPSC 21.0 | 32151700 |
|-------------|----------|

## Environmental product compliance

### EU RoHS

|                                         |              |
|-----------------------------------------|--------------|
| Fulfills EU RoHS substance requirements | Yes          |
| Exemption                               | 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(CAS: 7439-92-1) |
|-------------------------------------|----------------------|