

# ILC 131 ETH/XC - Controller



2701034

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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.

Similar figure

## 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                          | 2701034       |
| Packing unit                         | 1 pc          |
| Sales key                            | DR10          |
| Product key                          | DRAAAA        |
| GTIN                                 | 4046356685092 |
| Weight per piece (including packing) | 363.8 g       |
| Weight per piece (excluding packing) | 363.5 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

|                 |                       |
|-----------------|-----------------------|
| Processor       | AlteraNios® II 64 MHz |
| Clock frequency | 64 MHz                |

#### IEC 61131 runtime system

|                         |                           |
|-------------------------|---------------------------|
| Program memory          | 192 kByte                 |
| Retentive data storage  | 8 kByte (NVRAM)           |
| Data storage system     | 192 kByte                 |
| Number of data blocks   | depending on data storage |
| Number of control tasks | 8                         |

#### System limits

|                                                              |                                             |
|--------------------------------------------------------------|---------------------------------------------|
| Amount of process data (INTERBUS input/output data)          | max. 4096 bit (INTERBUS)                    |
| Amount of process data (Modbus/TCP client)                   | max. 8192 bit (internal Modbus /TCP client) |
| Number of supported devices (INTERBUS)                       | max. 63                                     |
| Number of Modbus/TCP clients                                 | max. 4 later than FW 4.42                   |
| Number of local bus devices that can be connected (INTERBUS) | max. 63 (observe current consumption)       |
| Number of devices with parameter channel                     | max. 8                                      |

#### PROFINET

|                 |                                          |
|-----------------|------------------------------------------|
| Device function | PROFINET device                          |
| Specification   | 2.2                                      |
| Number of slots | 1                                        |
| Device ID       | 007D <sub>hex</sub> / 125 <sub>dez</sub> |
| Vendor ID       | 00B0 <sub>hex</sub> / 176 <sub>dez</sub> |

#### Function

|                     |    |
|---------------------|----|
| Diagnostics display | no |
| Redundancy function | no |
| Safety function     | no |

#### Programming data

|                          |          |
|--------------------------|----------|
| Register length (master) | 512 Byte |
|--------------------------|----------|

## Functionality

|                                 |                              |
|---------------------------------|------------------------------|
| Programming tool                | PC Worx                      |
|                                 | PC Worx Express              |
| Programming languages supported | Instruction list (IL)        |
|                                 | Symbolic flowchart (SFC)     |
|                                 | Ladder diagram (LD)          |
|                                 | Function block diagram (FBD) |
|                                 | Structured text (ST)         |

## System requirements

|                       |                               |
|-----------------------|-------------------------------|
| 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 | 8.5 s/day not integrated |
| Power reserve              | max. 240 h (at 25 °C)    |

## 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 $\pm 5$ %               |
| Power supply   | max. 0.8 A DC (observe derating) |

## 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) |
| Power supply         | max. 0.5 A DC (observe derating)                                   |

## 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) |
| Power supply         | max. 8 A DC (sum of $U_M + U_S$ )                                  |
| 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) |
|----------------|-------------------------------------------------------|

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|                      |                                                                    |
|----------------------|--------------------------------------------------------------------|
| Supply voltage range | 19.2 V DC ... 30 V DC (including all tolerances, including ripple) |
| Power supply         | max. 8 A (sum of $U_M + U_S$ )                                     |
| Current draw         | max. 8 A DC                                                        |
|                      | 10 mA (without actuators)                                          |

## Input data

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 (Signal change 1→  ) |

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

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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 (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, $\pm 6$ kV contact discharge, $\pm 8$ 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 $\pm 1$ kVCriterion B, all interfaces $\pm 2$ kV                                |
|                                 | 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

### UNSPSC

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

Environmental product compliance

|                                        |                                                                                                                                                                                                                                                                 |
|----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| China RoHS                             |                                                                                                                                                                                                                                                                 |
| Environment friendly use period (EFUP) | <div>EFUP-50</div> <div>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.</div> |
| EU REACH SVHC                          |                                                                                                                                                                                                                                                                 |
| REACH candidate substance (CAS No.)    | No substance above 0.1 wt%                                                                                                                                                                                                                                      |

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