

# ILC 171 ETH 2TX - Controller



2700975

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The Inline controller offers the option of communicating via PROFINET and Modbus/TCP. Programming is carried out using PC Worx Express or PC Worx (IEC 61131-3).

## Product description

The ILC 171 ETH 2TX 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	2700975
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	DR10
Product key	DRAAAA
GTIN	4046356665513
Weight per piece (including packing)	365 g
Weight per piece (excluding packing)	350 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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#### Utilization restriction

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

Product type	Controller
Product family	Inline-Controller
Type	modular

#### Display

Diagnostics display	no
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### System properties

Clock frequency	64 MHz
Retentive data storage	48 kByte (NVRAM)

#### IEC 61131 runtime system

Program memory	512 kByte
Data storage system	512 kByte
Number of control tasks	8

#### INTERBUS-Master

Amount of process data	max. 4096 bit (INTERBUS)
Amount of process data (INTERBUS input/output data max.)	max. 4096 bit (INTERBUS)
Amount of process data (Modbus/TCP client)	max. 32768 bit (internal Modbus /TCP client)
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. 24
Number of supported branch terminals with remote bus branch	max. 3

#### Modbus/TCP-Client

Amount of process data	max. 32768 bit (internal Modbus /TCP client)
Number of Modbus/TCP clients	max. 16 later than FW 4.42

#### PROFINET

Device function	PROFINET device
Specification	2.2
Device ID	007A <sub>hex</sub> / 122 <sub>dez</sub>
Vendor ID	00B0 <sub>hex</sub> / 176 <sub>dez</sub>

#### Function

Diagnostics display	no
Redundancy function	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

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	8.5 s/day integrated (rechargeable battery buffered)

### 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	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)
Supply voltage range	19.2 V DC ... 30 V DC (including all tolerances, including ripple)

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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

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

## 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)
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## Environmental and real-life conditions

### Ambient conditions

Degree of protection	IP20
Ambient temperature (operation)	-25 °C ... 55 °C
Ambient temperature (storage/transport)	-25 °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
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Conformance with EMC directives	Immunity test in accordance with EN IEC 61000-6-2 Electrostatic discharge (ESD)IEC 61000-4-2 Criterion B, $\pm 6$ kV contact discharge, $\pm 8$ kV air discharge
	Immunity test in accordance with EN IEC 61000-6-2 Electromagnetic fieldsIEC 61000-4-3 Criterion A, Field intensity: 10 V/m
	Immunity test in accordance with EN IEC 61000-6-2 Fast transients (burst)IEC 61000-4-4 Criterion A, all interfaces $\pm 1$ kVCriterion B, all interfaces $\pm 2$ kV
	Immunity test in accordance with EN IEC 61000-6-2 Transient overvoltage (surge)IEC 61000-4-5 Criterion B; DC supply lines: $\pm 0.5$ kV/ $\pm 1.0$ kV (symmetrical/asymmetrical), fieldbus cable shielding: $\pm 1.0$ kV
	Immunity test in accordance with EN IEC 61000-6-2 Conducted interferenceIEC 61000-4-6 Criterion A, Test voltage 10 V
	Noise emission test in accordance with EN 61000-6-4/IEC 61000-6-4 Class A

## Mounting

Mounting type	DIN rail mounting
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## Approvals

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**LR**

Approval ID: LR23398855TA

**BSH**

Approval ID: 858



**RINA**

Approval ID: ELE121121XG

**ABS**

Approval ID: 22-2226444-PDA



**cULus Listed**

Approval ID: E238705

**DNV**

Approval ID: TAA00002CU



**BV**

Approval ID: 20989\_C1 BV



**cULus Listed**

Approval ID: E199827

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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
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)
SCIP	77e23193-f496-482b-9df3-f5490fc8188a

### EF3.1 Climate Change

CO2e kg	26.38 kg CO2e
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