



i CX5100 | Embedded PC series with Intel® Atom™ processor

CX5120, CX5130 and CX5140 are Embedded PCs from the CX5100 series based on the Intel® Atom™ multi-core processors. They differ from one another in housing width and CPU type. What is new is that the available Atom™ CPUs now also introduce genuine multi-core technology, extending up to quad-core, into the compact Embedded PC segment. Since the new devices are an extension of the existing CX5000 series, they are equipped with identical hardware interfaces. Two independent Gigabit-capable Ethernet interfaces as well as four USB 2.0 and one DVI-I interface are available. A multitude of further connection options and gateway functions is created by the multi-option interface, which can be pre-equipped ex factory, as well as the I/O level, which can optionally consist of either E-Bus or K-Bus Terminals.

All devices in the series are characterised by low power consumption and fanless design.

Depending on the installed TwinCAT runtime environment, the CX5100 can be used for implementing PLC or PLC/Motion Control projects with or without visualisation. The execution of Motion Control applications with interpolating axis movements is also possible.

The extended operating temperature range from -25 to +60 °C enables the use of the CX5100 Embedded PCs in climatically demanding environments.

Like the CX5000, the CX5100 series has a compact design; a modular device with extension modules like in the CX2000 series is not available.

The order number for CX5100 units can be derived as follows:

| CX51x0-01xx | | Optional interfaces: |
|--|---|---|
| 0 | = operating system only/optional TwinCAT 3 | CX51x0-N020 = audio interface |
| 1 | = with TwinCAT 2 PLC runtime | CX51x0-N030 = RS232, D-sub plug |
| 2 | = with TwinCAT 2 NC PTP runtime | CX51x0-N031 = RS422/RS485, D-sub socket |
| 3 | = with TwinCAT 2 NC I runtime | CX51x0-M310 = PROFIBUS master, D-sub socket, 9-pin |
| 0 | = no operating system | CX51x0-B310 = PROFIBUS slave, D-sub socket, 9-pin |
| 2 | = operating system Windows Embedded Standard 7 P 32 bit | CX51x0-M510 = CANopen master, D-sub plug, 9-pin |
| 3 | = operating system Windows Embedded Standard 7 P 64 bit | CX51x0-B510 = CANopen slave, D-sub plug, 9-pin |
| 2 | = Intel® Atom™ processor 1.46 GHz, 1 core | CX51x0-M930 = PROFINET RT, controller |
| 3 | = Intel® Atom™ processor 1.75 GHz, 2 cores | CX51x0-B930 = PROFINET RT, device, Ethernet (2 x RJ45 switch) |
| 4 | = Intel® Atom™ processor 1.91 GHz, 4 cores | CX51x0-B950 = EtherNet/IP slave, Ethernet (2 x RJ45 switch) |
| <p>Since not all combinations make sense, the table "Ordering information" contains a breakdown of the permissible combinations.</p> | | CX51x0-B110 = EtherCAT slave, EtherCAT IN and OUT (2 x RJ45) |

| Technical data | CX5120 | CX5130 | CX5140 |
|-------------------------------|--|--|---|
| Processor | processor Intel® Atom™ E3815, 1.46 GHz, 1 core (TC3: 40) | processor Intel® Atom™ E3827, 1.75 GHz, 2 cores (TC3: 40) | processor Intel® Atom™ E3845, 1.91 GHz, 4 cores (TC3: 50) |
| Flash memory | slot for CFast card (card not included), slot for microSD card | | |
| Internal main memory | 2 GB DDR3 RAM (not expandable) | 4 GB DDR3 RAM (not expandable) | 4 GB DDR3 RAM (not expandable) |
| Persistent memory | integrated 1-second UPS (1 MB on CFast card) | | |
| Interfaces | 2 x RJ45, 10/100/1000 Mbit/s, DVI-I, 4 x USB 2.0, 1 x optional interface | | |
| Diagnostics LED | 1 x power, 1 x TC status, 1 x flash access, 2 x bus status | | |
| Clock | internal battery-backed clock for time and date (battery exchangeable) | | |
| Operating system | Microsoft Windows Embedded Standard 7 P | | |
| Control software | TwinCAT 2 PLC runtime or TwinCAT 2 NC PTP runtime | | |
| I/O connection | E-bus or K-bus, automatic recognition | | |
| Power supply | 24 V DC (-15 %/+20 %) | | |
| Current supply E-bus/K-bus | 2 A | | |
| Max. power loss | 9 W (including the system interfaces) | 11 W (including the system interfaces) | 12 W (including the system interfaces) |
| Dimensions (W x H x D) | 124 mm x 100 mm x 92 mm | 142 mm x 100 mm x 92 mm | 142 mm x 100 mm x 92 mm |
| Weight | approx. 860 g | approx. 960 g | approx. 960 g |
| Operating/storage temperature | -25...+60 °C/-40...+85 °C | | |
| Relative humidity | 95 %, no condensation | | |
| Vibration/shock resistance | conforms to EN 60068-2-6/EN 60068-2-27 | | |
| EMC immunity/emission | conforms to EN 61000-6-2/EN 61000-6-4 | | |
| Protection class | IP 20 | | |
| Approvals | CE, UL | | |
| TC3 performance class | performance (40); please see here for an overview of all the TwinCAT 3 performance classes | performance (40); please see here for an overview of all the TwinCAT 3 performance classes | performance plus (50); please see here for an overview of all the TwinCAT 3 performance classes |

| Ordering information | no operating system | Windows Embedded Standard 7 P 32 bit | Windows Embedded Standard 7 P 64 bit | optional TwinCAT 3 | TwinCAT 2 PLC runtime | TwinCAT 2 NC PTP runtime | TwinCAT 2 NC I runtime |
|----------------------|---------------------|--------------------------------------|--------------------------------------|--------------------|-----------------------|--------------------------|------------------------|
| CX5120-0100 | x | – | – | – | – | – | – |
| CX5120-0120 | – | x | – | x | – | – | – |
| CX5120-0121 | – | x | – | – | x | – | – |
| CX5120-0122 | – | x | – | – | – | x | – |
| CX5120-0123 | – | x | – | – | – | – | x |
| CX5120-0130 | – | – | x | x | – | – | – |
| CX5130-0100 | x | – | – | – | – | – | – |
| CX5130-0120 | – | x | – | x | – | – | – |
| CX5130-0121 | – | x | – | – | x | – | – |
| CX5130-0122 | – | x | – | – | – | x | – |
| CX5130-0123 | – | x | – | – | – | – | x |
| CX5130-0130 | – | – | x | x | – | – | – |
| CX5140-0100 | x | – | – | – | – | – | – |
| CX5140-0120 | – | x | – | x | – | – | – |
| CX5140-0121 | – | x | – | – | x | – | – |
| CX5140-0122 | – | x | – | – | – | x | – |
| CX5140-0123 | – | x | – | – | – | – | x |
| CX5140-0130 | – | – | x | x | – | – | – |

| Accessories | |
|-------------|---|
| CX1900-0101 | DVI-to-VGA passive adaptor for connecting a standard desktop VGA monitor to the CX system (singles out the VGA signals of the DVI-I interface). |
| CX2900-00xx | CFast cards: 2, 4, 8, 16, 32 GB CFast card |

| Optional interfaces | |
|---------------------|---|
| CX5120-N020 | audio interface, 3 x 3.5 mm jack sockets, Line In, Mic In, Line Out or 5.1 Surround |
| CX5120-N030 | RS232 interface, D-sub plug, 9-pin |
| CX5120-N031 | RS485 interface, D-sub socket, 9-pin, configuration as an end point, without echo, termination on |
| CX5120-N031-0001 | RS485 interface, D-sub socket, 9-pin, configuration as an end point, with echo, termination on |
| CX5120-N031-0002 | RS485 interface, D-sub socket, 9-pin, configuration as drop point, without echo, termination off |
| CX5120-N031-0003 | RS485 interface, D-sub socket, 9-pin, configuration as drop point, with echo, termination off |
| CX5120-N031-0004 | RS422 interface, D-sub socket, 9-pin, configuration as full duplex end point, termination on |
| CX5120-B110 | EtherCAT slave interface, EtherCAT IN and OUT (2 x RJ45) |
| CX5120-M310 | PROFIBUS master interface, D-sub socket, 9-pin |
| CX5120-B310 | PROFIBUS slave interface, D-sub socket, 9-pin |
| CX5120-M510 | CANopen master interface, D-sub plug, 9-pin |
| CX5120-B510 | CANopen slave interface, D-sub plug, 9-pin |
| CX5120-M930 | PROFINET RT, controller interface, Ethernet (2 x RJ45) |
| CX5120-B930 | PROFINET RT, device interface, Ethernet (2 x RJ45 switched) |
| CX5120-B950 | EtherNet/IP slave interface, Ethernet (2 x RJ45 switched) |
| CX5130-N010 | DVI-D interface, additional DVI-D port for clone or extended desktop operation |
| CX5130-N020 | audio interface, 3 x 3.5 mm jack sockets, Line In, Mic In, Line Out or 5.1 Surround |
| CX5130-N030 | RS232 interface, D-sub plug, 9-pin |
| CX5130-N031 | RS485 interface, D-sub socket, 9-pin, configuration as an end point, without echo, termination on |
| CX5130-N031-0001 | RS485 interface, D-sub socket, 9-pin, configuration as an end point, with echo, termination on |
| CX5130-N031-0002 | RS485 interface, D-sub socket, 9-pin, configuration as drop point, without echo, termination off |
| CX5130-N031-0003 | RS485 interface, D-sub socket, 9-pin, configuration as drop point, with echo, termination off |
| CX5130-N031-0004 | RS422 interface, D-sub socket, 9-pin, configuration as full duplex end point, termination on |
| CX5130-B110 | EtherCAT slave interface, EtherCAT IN and OUT (2 x RJ45) |
| CX5130-M310 | PROFIBUS master interface, D-sub socket, 9-pin |
| CX5130-B310 | PROFIBUS slave interface, D-sub socket, 9-pin |
| CX5130-M510 | CANopen master interface, D-sub plug, 9-pin |
| CX5130-B510 | CANopen slave interface, D-sub plug, 9-pin |
| CX5130-M930 | PROFINET RT, controller interface, Ethernet (2 x RJ45) |
| CX5130-B930 | PROFINET RT, device interface, Ethernet (2 x RJ45 switched) |
| CX5130-B950 | EtherNet/IP slave interface, Ethernet (2 x RJ45 switched) |
| CX5140-N010 | DVI-D interface, additional DVI-D port for clone or extended desktop operation |
| CX5140-N020 | audio interface, 3 x 3.5 mm jack sockets, Line In, Mic In, Line Out or 5.1 Surround |
| CX5140-N030 | RS232 interface, D-sub plug, 9-pin |
| CX5140-N031 | RS485 interface, D-sub socket, 9-pin, configuration as an end point, without echo, termination on |
| CX5140-N031-0001 | RS485 interface, D-sub socket, 9-pin, configuration as an end point, with echo, termination on |
| CX5140-N031-0002 | RS485 interface, D-sub socket, 9-pin, configuration as drop point, without echo, termination off |
| CX5140-N031-0003 | RS485 interface, D-sub socket, 9-pin, configuration as drop point, with echo, termination off |
| CX5140-N031-0004 | RS422 interface, D-sub socket, 9-pin, configuration as full duplex end point, termination on |
| CX5140-B110 | EtherCAT slave interface, EtherCAT IN and OUT (2 x RJ45) |
| CX5140-M310 | PROFIBUS master interface, D-sub socket, 9-pin |
| CX5140-B310 | PROFIBUS slave interface, D-sub socket, 9-pin |
| CX5140-M510 | CANopen master interface, D-sub plug, 9-pin |
| CX5140-B510 | CANopen slave interface, D-sub plug, 9-pin |
| CX5140-M930 | PROFINET RT, controller interface, Ethernet (2 x RJ45) |
| CX5140-B930 | PROFINET RT, device interface, Ethernet (2 x RJ45 switched) |
| CX5140-B950 | EtherNet/IP slave interface, Ethernet (2 x RJ45 switched) |



Product announcement

CX51x0-B950: estimated market release 1st quarter 2016