# CX5140 | Embedded PC with Intel Atom® processor

Ethernet and USB connection

DVI connection

Multi optional interface
(e.g. RS232, PROFIBUS, CANopen)

Status LEDs

Battery compartment
(behind the flap)

CFast slot
(behind the flap)
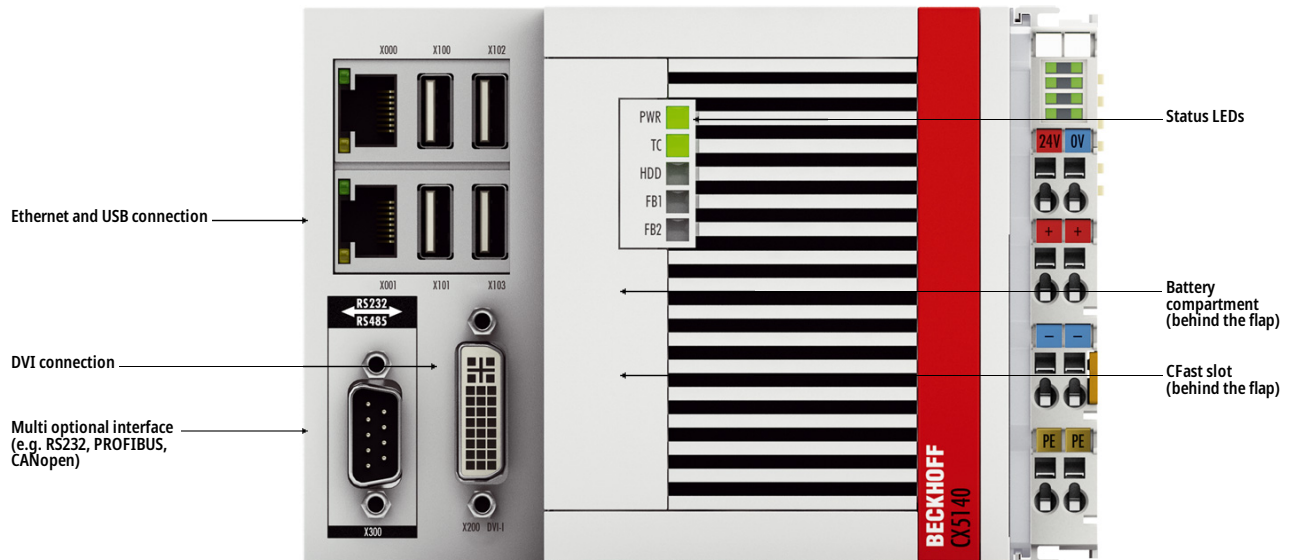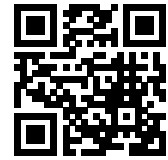
**ℹ️ Product status:** Regular delivery

The CX5140 has an Intel Atom® quad-core processor with a clock rate of 1.91 GHz. This makes genuine multi-core technology possible in the Embedded PC segment. The hardware interfaces in this series are oriented and implemented identically to those of the existing CX5000 series. Two independent, Gigabit-capable Ethernet interfaces as well as four USB 2.0 and a DVI-I interface are available. A multitude of further connection options and gateway functions is created by an 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.

The CX5140 is characterised by low power consumption and fanless design.

Depending on the installed TwinCAT runtime environment, the CX5140 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.

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

## Product information

### Technical Data

| Technical data | CX5140 |
| --- | --- |
| Processor | Intel Atom® E3845, 1.91 GHz |
| Number of cores | 4 |
| Flash memory | slot for CFast card and microSD card, cards not included |

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|---|---|
| **Main memory** | 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, 1 x 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** | Windows Embedded Compact 7 (supports only one CPU core), Windows Embedded Standard 7 P, Windows 10 IoT Enterprise 2016 LTSB, Windows 10 IoT Enterprise 2019 LTSC, TwinCAT/BSD |
| **Control software** | TwinCAT 2 runtime<br>TwinCAT 3 runtime (XAR) |
| **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 consumption** | 16 W |
| **Max. power consumption (with loading UPS)** | 23 W |
| **Dimensions (W x H x D)** | 142 mm x 100 mm x 92 mm |
| **Weight** | 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/markings** | CE, UL, ATEX, DNV GL, IECEx, cFMus |
| **Ex marking** | ATEX:<br>II 3 G Ex nA IIC T4 Gc<br>II 3 D Ex tc IIIC T135 °C Dc<br>IECEx:<br>Ex nA IIC T4 Gc<br>Ex tc IIIC T135 °C Dc<br>cFMus:<br>Class I, Division 2, Groups A, B, C, D<br>Class I, Zone 2, AEx ec IIC T4 Gc |
| **TwinCAT 3 platform level** | Performance Plus (50); please see here for an overview of all the TwinCAT 3 platform level |

## Ordering Information

| Ordering information | |
|---|---|
| **CX5140-0100** | no operating system, no TwinCAT |
| **CX5140-0110** | Windows Embedded Compact 7, no TwinCAT |
| **CX5140-0111** | Windows Embedded Compact 7, TwinCAT 2 PLC runtime |

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| CX5140-0112 | Windows Embedded Compact 7, TwinCAT 2 NC PTP runtime |
|---|---|
| CX5140-0113 | Windows Embedded Compact 7, TwinCAT 2 NC I runtime |
| CX5140-0115 | Windows Embedded Compact 7, TwinCAT 3 runtime (XAR) |
| CX5140-0120 | Windows Embedded Standard 7 P 32 bit, no TwinCAT |
| CX5140-0121 | Windows Embedded Standard 7 P 32 bit, TwinCAT 2 PLC runtime |
| CX5140-0122 | Windows Embedded Standard 7 P 32 bit, TwinCAT 2 NC PTP runtime |
| CX5140-0123 | Windows Embedded Standard 7 P 32 bit, TwinCAT 2 NC I runtime |
| CX5140-0125 | Windows Embedded Standard 7 P 32 bit, TwinCAT 3 runtime (XAR) |
| CX5140-0130 | Windows Embedded Standard 7 P 64 bit, no TwinCAT |
| CX5140-0135 | Windows Embedded Standard 7 P 64 bit, TwinCAT 3 runtime (XAR) |
| CX5140-0140 | Windows 10 IoT Enterprise 2016 LTSB 32 bit, no TwinCAT |
| CX5140-0141 | Windows 10 IoT Enterprise 2016 LTSB 32 bit, TwinCAT 2 PLC runtime |
| CX5140-0142 | Windows 10 IoT Enterprise 2016 LTSB 32 bit, TwinCAT 2 NC PTP runtime |
| CX5140-0143 | Windows 10 IoT Enterprise 2016 LTSB 32 bit, TwinCAT 2 NC I runtime |
| CX5140-0150 | Windows 10 IoT Enterprise 2016 LTSB 64 bit, no TwinCAT |
| CX5140-0155 | Windows 10 IoT Enterprise 2016 LTSB 64 bit, TwinCAT 3 runtime (XAR) |
| CX5140-0160 | Windows 10 IoT Enterprise 2019 LTSC 32 bit, no TwinCAT |
| CX5140-0161 | Windows 10 IoT Enterprise 2019 LTSC 32 bit, TwinCAT 2 PLC runtime |
| CX5140-0162 | Windows 10 IoT Enterprise 2019 LTSC 32 bit, TwinCAT 2 NC PTP runtime |
| CX5140-0163 | Windows 10 IoT Enterprise 2019 LTSC 32 bit, TwinCAT 2 NC I runtime |
| CX5140-0170 | Windows 10 IoT Enterprise 2019 LTSC 64 bit, no TwinCAT |
| CX5140-0175 | Windows 10 IoT Enterprise 2019 LTSC 64 bit, TwinCAT 3 runtime (XAR) |
| CX5140-0185 | TwinCAT/BSD, TwinCAT 3 runtime (XAR) |

CX51x0-016x: only 4 GB RAM can be used with Windows 10 IoT Enterprise 2019 LTSC 32 Bit

Windows Embedded Compact 7 only supports one CPU core.

Windows Embedded Compact 7 and TwinCAT/BSD require a CFast flash card with a minimum capacity of 20 GB

Other operating systems require a CFast flash card with a minimum capacity of 40 GB.

TwinCAT 3 runtime (XAR) is preinstalled, without licenses. Please order TwinCAT 3 licenses separately from the TwinCAT 3 Price List.

## Options

| Options | |
|---|---|

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|---|---|
| **CX2900-0107** | Device modification for CX5120, CX5130, CX5140 and CX9020 Embedded PCs according to the requirements for ATEX, IECEx and FM certification. The modification is mandatory for the usage of CX5120, CX5130, CX5140 and CX9020 in hazardous areas, Zone 2/22 respectively Class I, Div. 2. It includes the modification and repositioning of the device label as well as a mounting bracket installed ex works for mechanical locking of the connectors. Product labeling: ATEX: II 3 G Ex nA IIC T4 Gc and II 3 D Ex tc IIIC T135 °C Dc IECEx: Ex nA IIC T4 Gc and Ex tc IIIC T135 °C Dc cFMus: CL I, DIV 2. GP A, B, C, D und CL I, Zn 2 AEx/Ex ec IIC T4 Gc Read the device documentation for use in hazardous areas carefully. |

| Optional interfaces | |
|---|---|
| **CX5140-N010** | DVI-D interface, additional DVI-D port for clone or extended display mode. Is not supported by Windows Embedded Compact 7 or TwinCAT/BSD. |
| **CX5140-N011** | DisplayPort interface, additional DisplayPort for clone or extended display mode. Is not supported by Windows Embedded Compact 7 or TwinCAT/BSD. |
| **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 (RXD, TXD, RTS, CTS) |
| **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-M112** | 2 x EtherCAT master interface |
| **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 switch) |
| **CX5140-B930** | PROFINET RT, device interface, Ethernet (2 x RJ45 switched) |
| **CX5140-B950** | EtherNet/IP adapter interface, Ethernet (2 x RJ45 switched) Availability: on request |

## Accessories

| 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). |

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| **CX1900-0102** | Spare battery suitable for CX10x0, CX81x0, CX50x0, CX51x0, CX52x0, CX90x0, CX20xx<br>– lithium button cell type CR2032, 3V/225 mAh<br>– follow polarity when installing |
| **CX1900-0122** | 512 MB microSD card |
| **CX1900-0124** | 1 GB microSD card |
| **CX1900-0126** | 2 GB microSD card |
| **CX1900-0128** | 4 GB microSD card |
| **CX1900-0130** | 8 GB microSD card |
| **CX2900-0026** | 20 GB CFast card, 3D flash, extended temperature range (only for Windows CE or TwinCAT/BSD operating systems) |
| **CX2900-0038** | 40 GB CFast card, 3D flash, extended temperature range |
| **CX2900-0040** | 80 GB CFast card, 3D flash, extended temperature range |
| **CX2900-0042** | 160 GB CFast card, 3D flash, extended temperature range |

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