M100 GigE Series

Multi-Camera Vision Controller

▼ Easy cabling
with PoE

▼ Multiple inspections
available thanks to 6
GigE Vision ports and 4
USB3 ports

▼ Maximized acquisition
performance through 6 GigE
independent channels

Common features

▼ Huge data record
with 2 dedicated HD
for storage

▼ Long Term
Longevity
up to 10 years

▼ Gigabit Ethernet network
connectivity and Real
Time Input & Output

▼ Customizable
using 1 PCIe x8
expansion card

M100 CLink Series

Multi-Camera Vision Controller

▼ Multiple inspections available
thanks to 4 CameraLink ports
and 2 USB3 ports

▼ Maximized acquisition performance and
pre-processing through
dedicated large and programmable FPGA

▼ Easy cabling
with PoCL

Common features

▼ Enhanced communication
with Fieldbus and Industrial
Ethernet connectivity

▼ Open System:
Windows Embedded
Standard (WES) 7 or Linux O.S.

▼ Improved inspections
capabilities through Intel i3/i7
high performance processor

▼ Fanless design
reduces
maintenance cost

M100 GigE Series

Multi-Camera Vision Controller

▼ Gigabit Ethernet

6 Gigabit Ethernet ports with PoE (Power over Ethernet) allows the connection of GigE Vision cameras using only one cable (Ethernet + power supply).
Each Gigabit Ethernet port is connected to the CPU through a dedicated PCI-Express interface in order to guarantee the maximum acquisition performance.

Camera sync can be implemented using the 6 high-speed trigger outputs or thanks to the Precision Time Protocol (PTP) IEEE1588.
One additional Gigabit Ethernet port is dedicated to the LAN connection.

▼ Real Time I/O

The isolated high-speed digital I/O (8 in / 8 out) allows the perfect low-latency synchronization between vision system, cameras and machine automation.
Thanks to the FPGA technology, implementing real-time logics is incredibly easy.
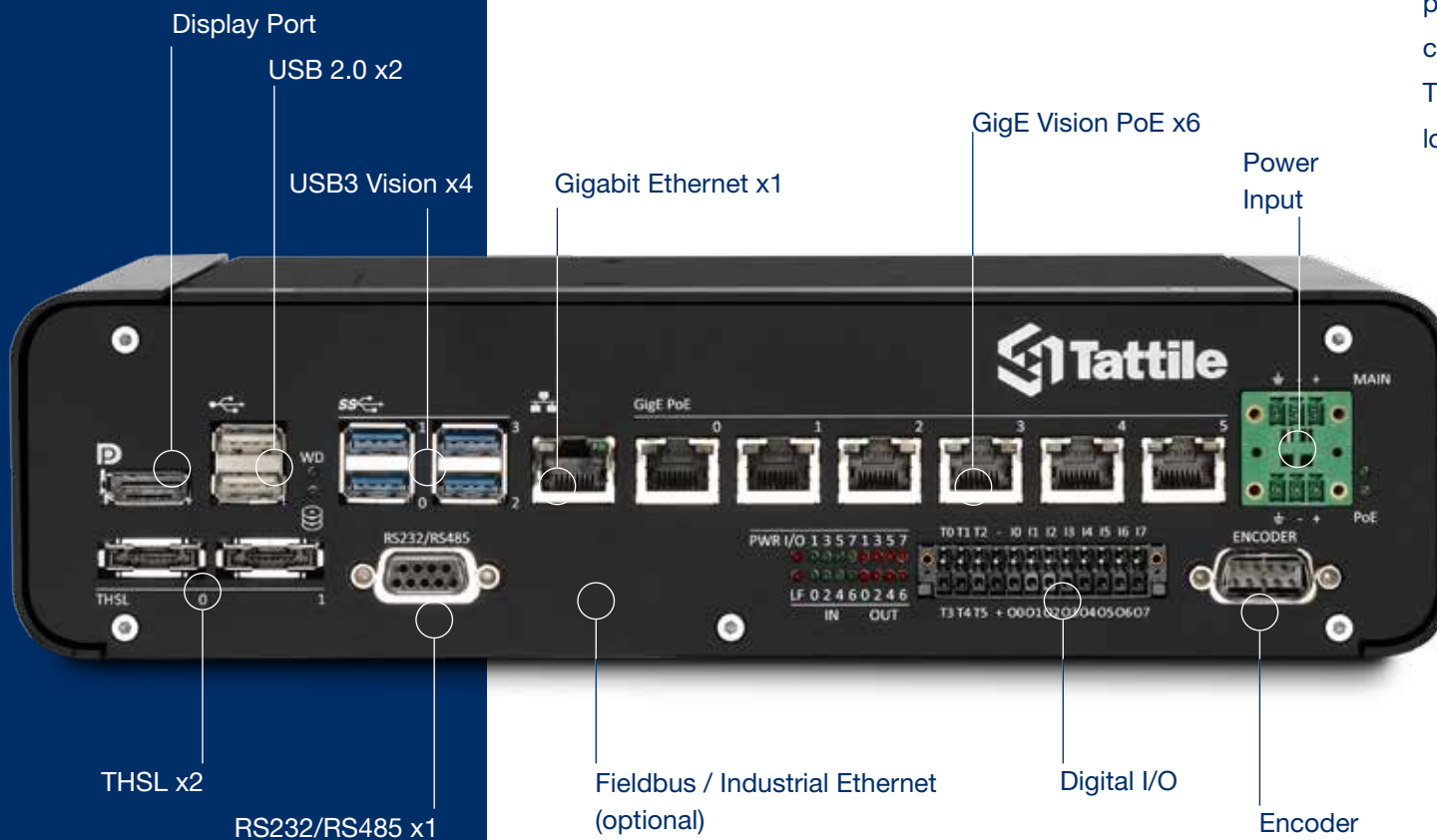
▼ Long Term Longevity

M100 Series is designed to guarantee long term longevity of the main electronic components (up to 10 years).

▼ USB 3.0 / 2.0

4 ports allows the connection of high-speed USB 3.0 Vision cameras with a bandwidth up to 350 MB/s.
Additionally, two USB 2.0 ports are accessible from the front panel and one USB 2.0 internal protected port can be used to connect a license dongle or other sensitive devices.

Display Port
USB 2.0 x2
USB3 Vision x4
Gigabit Ethernet x1
GigE Vision PoE x6
Power Input
THSL x2
RS232/RS485 x1
Fieldbus / Industrial Ethernet (optional)
Digital I/O
Encoder

Intel 3rd generation i3 / i7 processors

Today's multi-camera vision applications require a performing processing engine. The M100 is powered by Intel 3rd generation i3 / i7 processors with 8GB of DDR3 RAM (up to 16 GB) in order to tackle the most demanding inspection tasks.

Direct encoder input

If the vision system must be interfaced to an incremental encoder, the line-drive RS422 encoder input allows a perfect synchronization without the need of other interface devices.

Tattile High Speed Link (THSL)

THSL is a proprietary high-speed digital link for the I/O synchronization of different vision Controllers.

SSD/HDD internal data storage
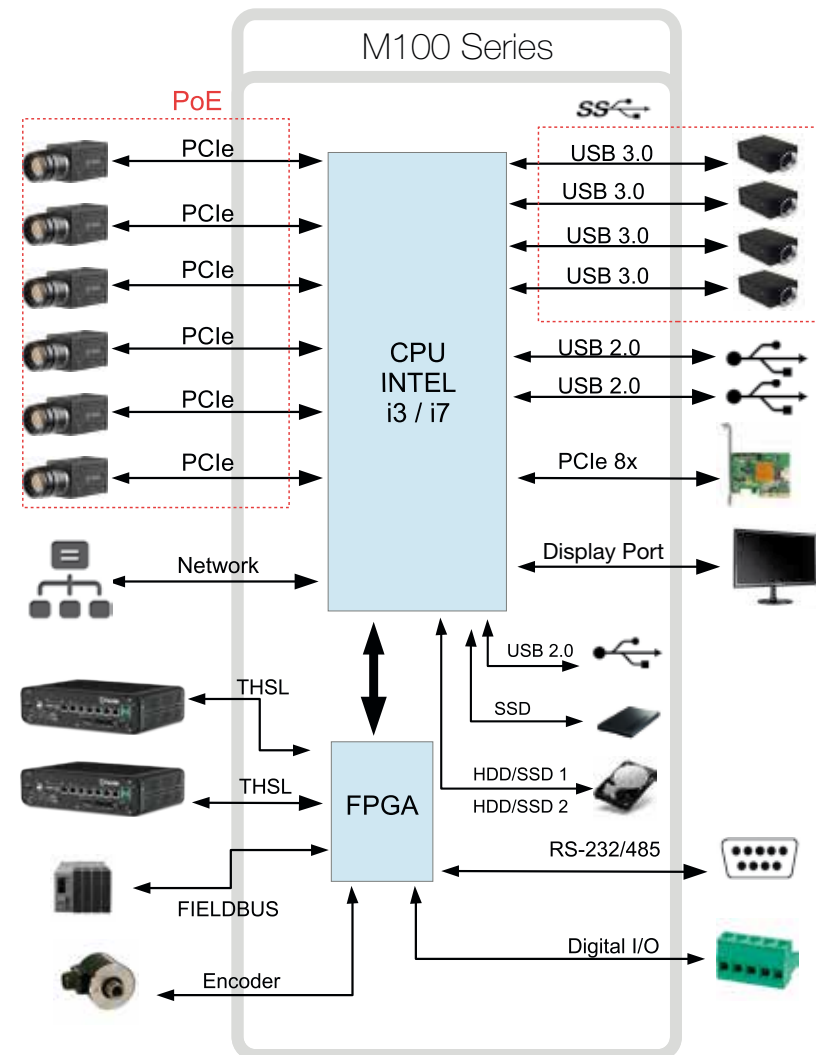
The internal SSD disk stores the operating system and the user program; it can be write-protected to enhance reliability.

Two separated 2.5" hard disk slots provide space for image storage, statistical data and more.

Separate storage slots increase the bandwidth for highspeed applications and reduce the possibility of data loss.

Open Architecture

Thanks to the use of standard WES 7 or Linux O.S., it is possible to develop Vision Application with Tattile software or third parties library / software.

M100 Series

PoE

PCIe · PCIe · PCIe · PCIe · PCIe · PCIe

CPU INTEL i3 / i7

USB 3.0 · USB 3.0 · USB 3.0 · USB 3.0
USB 2.0 · USB 2.0
PCIe 8x
Display Port

Network

FPGA

THSL · THSL
FIELDBUS
Encoder

USB 2.0
SSD
HDD/SSD 1 · HDD/SSD 2
RS-232/485
Digital I/O

M100 CLink Series

Multi-Camera Vision Controller

◤ *Camera Link*

4 Camera Link ports with PoCL (Power over Camera Link) allow the connection of Camera Link cameras using only one cable (Camera Link + power supply).
Device supports four Base link (Max Bandwidth 255MB/s), two Medium link (Max Bandwidth 510MB/s) or two Full link (Max Bandwidth 680MB/s) that is directly connected to FPGA device.

◤ *FPGA*
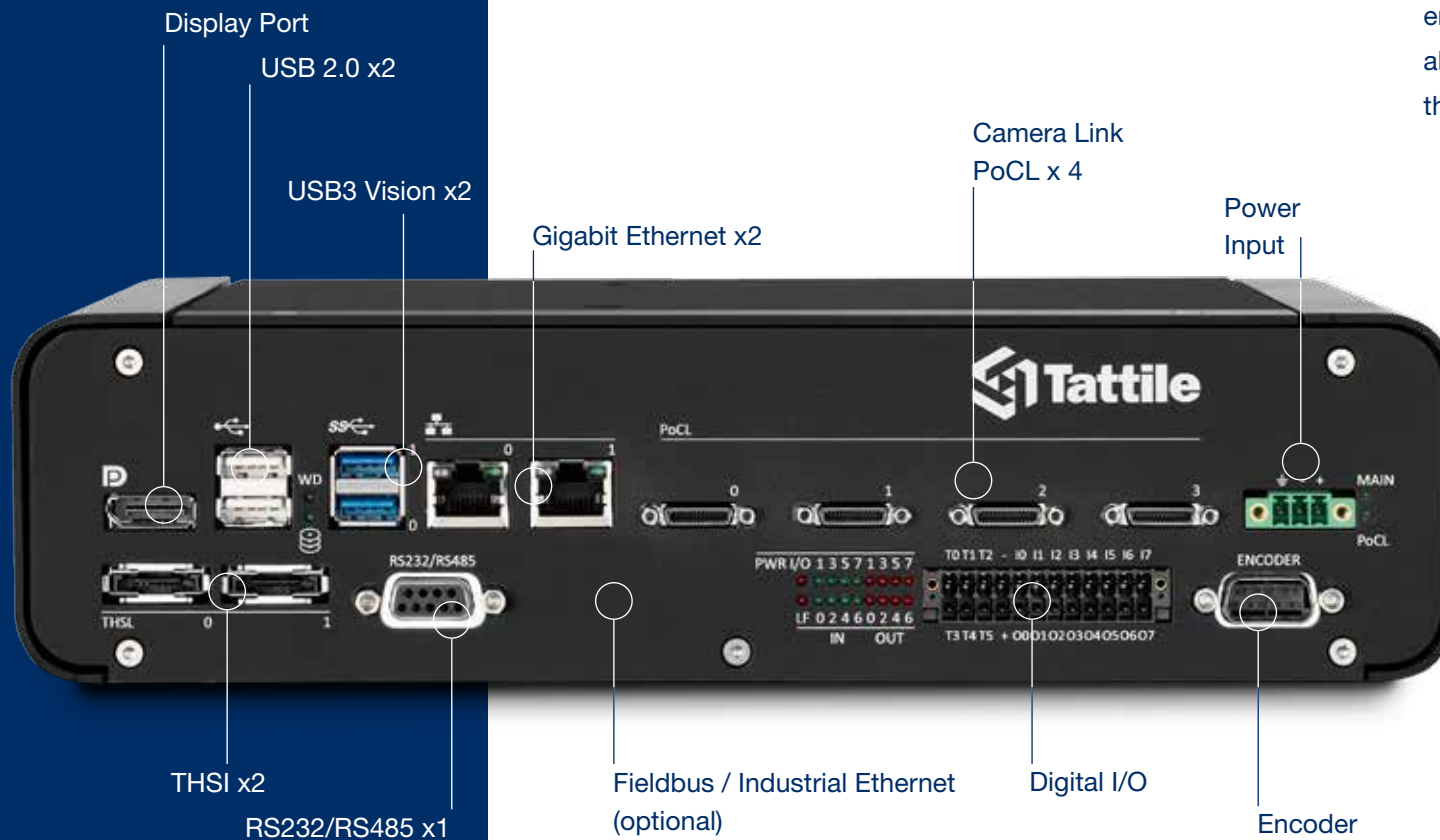
The image acquisition and image preprocessing are performed by dedicated FPGA in real time.
Using graphical tool,it is possible to progam the FPGA for image preprocessing.

◤ *Direct encoder input*

If the vision system must be interfaced to an incremental encoder, the line-drive RS422 encoder input of the M100 allows a perfect synchronization of the system without the need of other interface devices.

◤ *USB 3.0 / 2.0*

2 ports allow the connection of high-speed USB 3.0 Vision cameras with a bandwidth up to 350 MB/s.
Additionally, two USB 2.0 ports are accessible from the front panel and one USB 2.0 internal protected port can be used to connect a license dongle or other sensitive devices.

Display Port

USB 2.0 x2

USB3 Vision x2

Gigabit Ethernet x2

Camera Link PoCL x 4

Power Input

THSI x2

RS232/RS485 x1

Fieldbus / Industrial Ethernet (optional)

Digital I/O

Encoder

▼ Long Term Longevity

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▼ Real Time I/O

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Thanks to the FPGA technology, implementing realtime logics is incredibly easy.

▼ Tattile High Speed Link (THSL)

THSL is a proprietary high-speed digital link for the I/O synchronization of different vision controllers.
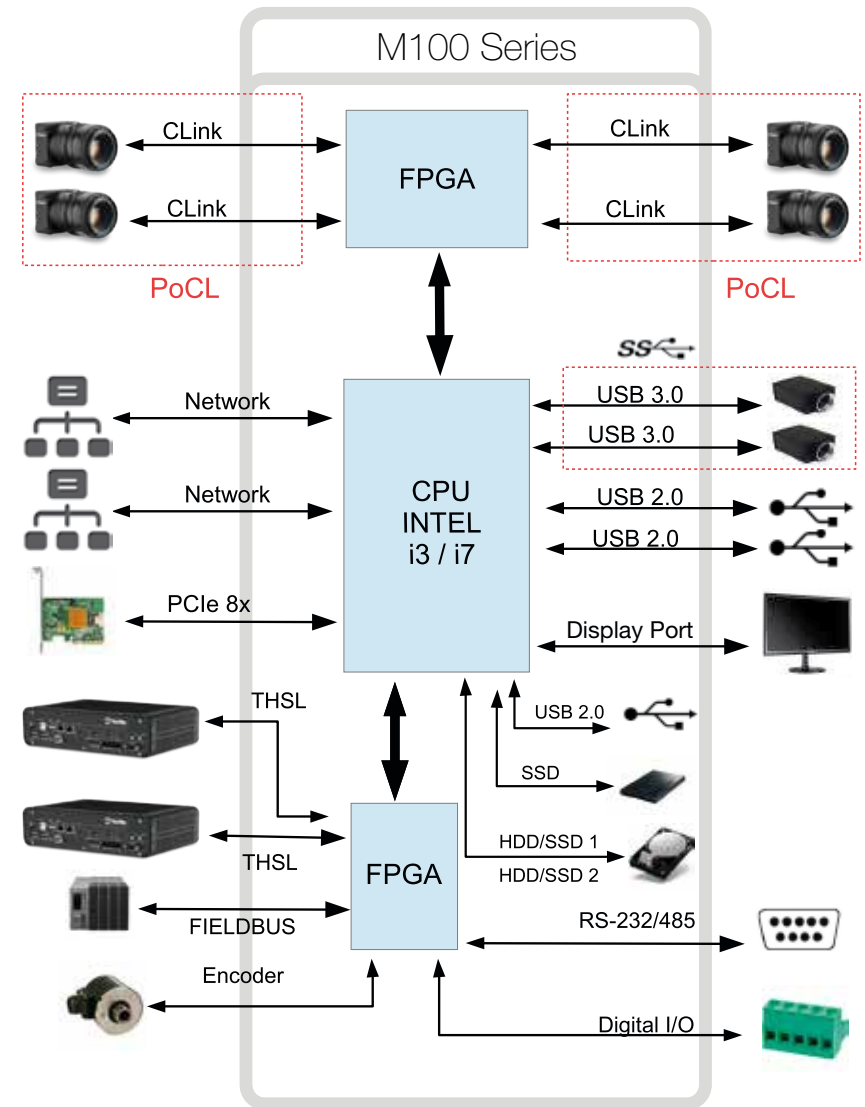
▼ Intel 3rd generation i3 / i7 processorss

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The M100 is powered by Intel 3rd generation i3 / i7 processors with 8GB of DDR3 RAM (up to 16 GB) in order to tackle the most demanding inspection tasks.

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M100 Series

FPGA — CLink, CLink — PoCL
CLink, CLink — FPGA — PoCL

CPU INTEL i3 / i7
Network
Network
PCIe 8x
USB 3.0
USB 3.0
USB 2.0
USB 2.0
Display Port

FPGA
THSL
THSL
FIELDBUS
Encoder
USB 2.0
SSD
HDD/SSD 1
HDD/SSD 2
RS-232/485
Digital I/O

Multi-Camera Vision Controller

Fieldbus and Industrial Ethernet connectivity

Several Fieldbus and Industrial Ethernet interfaces (Profinet, Profibus, Ethernet/IP, EtherCAT…) are optionally integrated.
This simplify and speeds up the communication with the automation system.

DIN Mounting
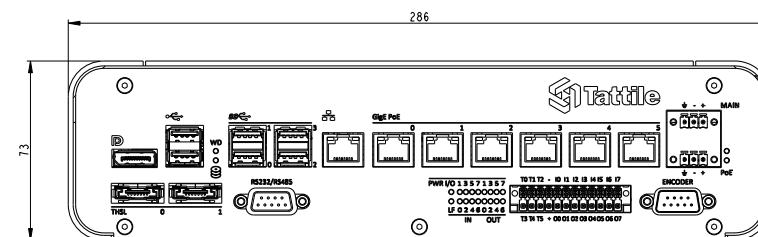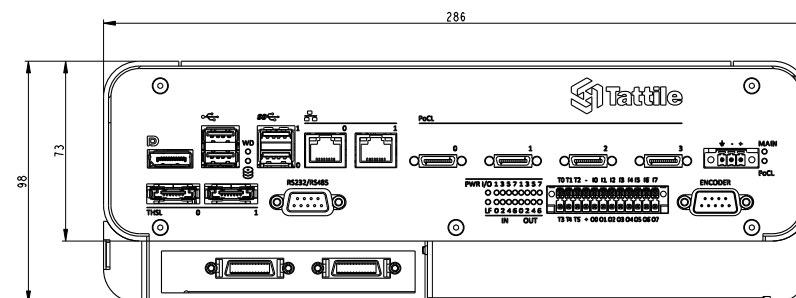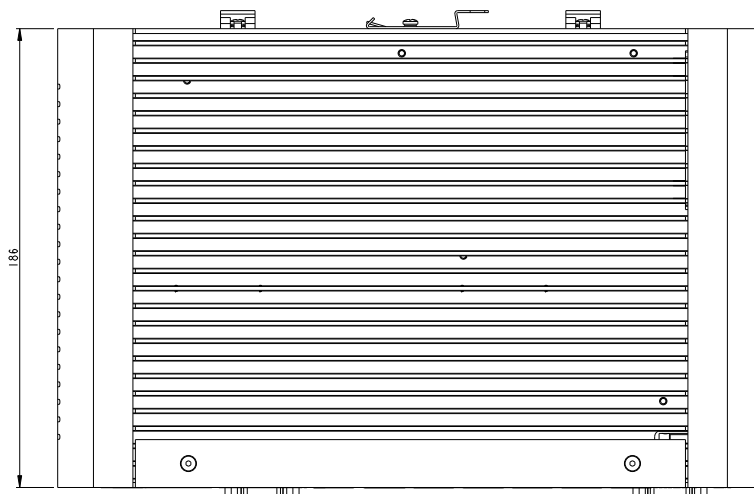
The M100 Series has 2 DIN mounting point for quickly assembly inside rack.

PCIe expansion

One PCI Express x8 expansion slot gives the possibility to install an additional card like a frame grabber or a vision processing unit (from Tattile or other manufacturers).

	M100 GigE	M100 CLink
Processing		
CPU	Intel i3 1.6 GHz dual core Intel i7 2.1 GHz quad core	Intel i3 1.6 GHz dual core Intel i7 2.1 GHz quad core
FPGA	Altera Cyclone GX 22K LEs (I/O management)	Xilinx Kintex-7 160K LEs (Pre-Processing) Altera Cyclone GX 22K LEs (I/O management)
RAM	8 GB (up to 16 GB)	
Storage	1x SSD 16 GB (up to 128 GB) 2x SATA HDD/SSD (optional)	
Camera interface		
Protocols	GigE Vision - USB 3.0	Camera Link - USB 3.0
GigE Vision ports	6	-
USB 3.0 ports	4	2
Camera Link ports	-	4
Camera supply	PoE - USB	PoCL - USB
Machine interface		
LAN	1x Gigabit Ethernet	2x Gigabit Ethernet
Video output	1x Display Port	
Serial interfaces	RS232/RS485	
Expansion bus	1x PCIe x8 expansion card (Frame grabber, FPGA, DSP, GPU)	
USB 2.0	2x USB 2.0 External / 1x USB 2.0 Internal	
Digital inputs	8x isolated PNP	
Digital outputs	8x isolated PNP	
Trigger	6x fast isolated PNP	
Encoder inputs	3-channel Line drive RS422	
Fieldbus (optional)	Profinet, Profibus, Ethernet/IP, EtherCAT, DeviceNet, Modbus, Powerlink, CANopen	
Device interlink	Property Tattile High Speed Link (THSL) LVDS I/O Interface for real time communication	
Machine interface		
Power Supply	22 – 27 VDC	
Weight	3.5 Kg	
Cooling	Fanless	
Operating Temperature	0 °C - 45 °C	
Conformity	2004/108/CE - EN 61326-1:2066 - EN 62311:2008 - RoHS	
Software		
Operating System	Windows Embedded Standard (WES) 7, Linux (optional)	

M100 vs. Industial PC

FEATURE	M100 SERIES	INDUSTRIAL PC
Ready-to-use	☑	⊘
Do not require additional component (like framegrabber or switch)	☑	⊘
Integrated 6x GigE E PoE with dedicated PCIexpress lanes	☑	⊘
Integrated 4 CameraLink interfaces with FPGA for preprocessing	☑	⊘
6 fast trigger output	☑	⊘
Precision Time Protocol IEEE1588	☑	⊘
FPGA-enabled real time I/O	☑	⊘
Line-drive direct encoder input	☑	⊘
Integrated Fieldbus and Industrial Ethernet	☑	⊘
Intelligent diagnostic service	☑	⊘
Compact, rugged and fanless construction	☑	⊘

M100 Series - Part Number

F01605	M110 GigE i3 Multi-Camera Vision Controller
F01606	M120 GigE i7 Multi-Camera Vision Controller
F01615	M150 CLink i3 Multi-Camera Vision Controller
F01551	M160 CLink i7 Multi-Camera Vision Controller
T18396	PCIe expansion for M100 series