

VITO Universal Controller

- 1 Application Server Platform
- 2 Single Board Computer
- 3 SET Series POS PC
- 4 APOLUX POS Panel PC
- 5 VISO Capture Card
- 6 KMMO RISC
- 7 XDU Open HMI
- 8 VITO Universal Controller
- 9 SBC BLADE
- 10 LCD Product Series
- 11 Embedded System
- 12 Industrial Computer Chassis
- 13 Power Supply
- 14 Peripherals



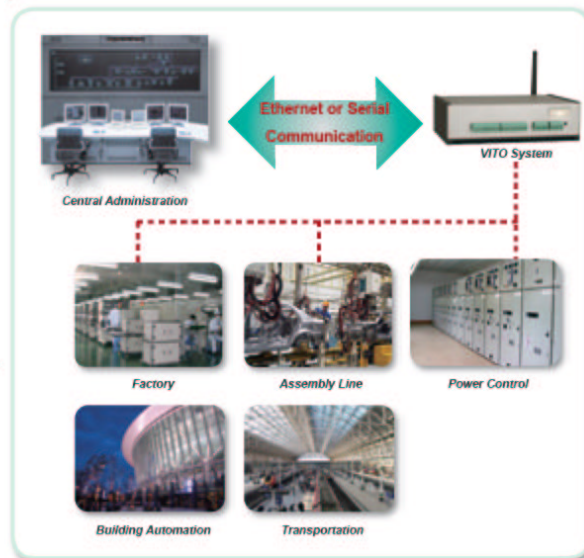
Introduction

The IEI VITO series is the fanless, diskless, and rugged PC-based industrial universal controller which is ideal for integration into applications that operate in extreme environmental conditions. With built-in industrial I/O supports such as analog input (AI), digital input (DI), digital output (DO), counter, timer, and CAN bus communication interfaces, a VITO universal controller is a PC-based data acquisition and control (DA&C) system which generally performs one or more input and output functions in a specific application field. And with preloaded Windows® XP Embedded or Windows® CE embedded operating system, rich software development kit (SDK) and features from the OS equip a VITO to be applied in a wide variety of applications in a diverse range of industries. Since the PC-based DA&C system has become increasingly reliable, accurate, and affordable, it is now widely used in industrial and laboratory applications such as monitoring, control, data acquisition and automated testing.

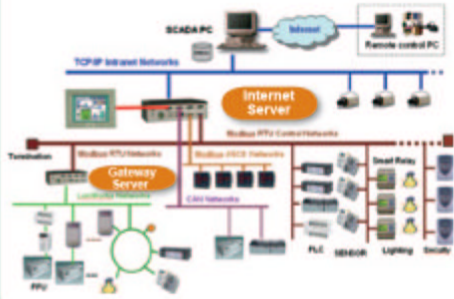
Applications

The VITO series industrial universal controller is the ideal for integration into applications that operate in extreme environmental conditions. All low power VITO controllers are of fanless, diskless, and rugged design. Each VITO controller comes with an embedded OS such as Windows® XP Embedded or Windows® CE. The VITO SDK (Software Development Kit) and rich features from the OS equip the VITO to be applied in a wide variety of applications in a diverse range of industries that include:

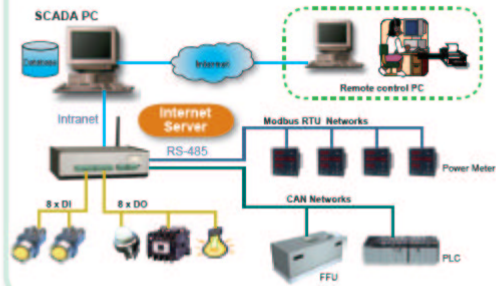
- SCADA (supervisory control and data acquisition) system
- Power plant/ transformer station monitoring and management system
- Environmental monitoring and control system
- ITS (intelligent transportation system)
- FA (factory automation)
- BA (building automation)
- HA (home automation)
- IDC (industrial data collector)
- Industrial communication converter/gateway/bridge
- MES (manufacturing execution system)
- Logistics
- Database system
- Thin client device
- Remote temperature and humidity data acquisition system
- Railroad signal control system
- Oil refinery remote monitoring and control system under hazardous environments



Control Networks Integrated



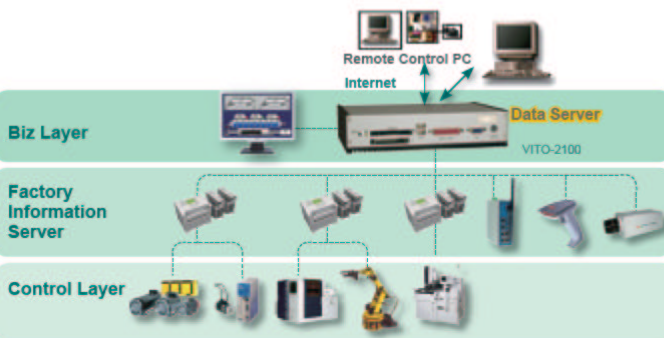
Internet Control Server for Web-Based Application



Factory Automation

Features :

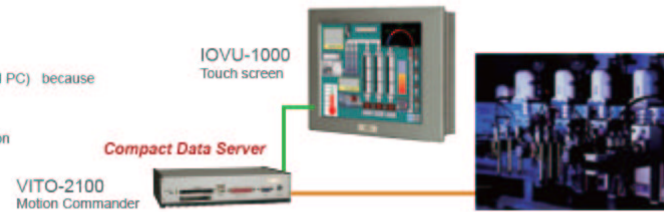
- Factory Information Server
- Extract data from PLCs on Control Layer
- Aggregate data on Factory Information Server
- Transform data into Biz Layer
- Distribute data to Web
- Enable PLC information into Web/Ethernet/ Internet
- Avoid annoyance to control layer from Biz layer
- VITO-2100 series is best platform for this AP



Motion Automation

Features :

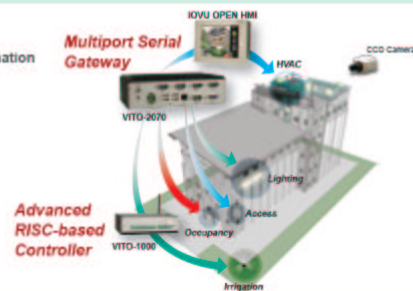
- Send motor control commands via RS-485
- Use VITO-2100 instead on White Box (commercial PC) because of its reliability and robustness:
- Fanless / 10 G shock / 1.5 G vibration
- Isolated RS-485 with communication control function



Building Automation

VITO-2070 / VITO-1000 series acts as embedded server in Building Automation

- Access control
- Biometric access control
- CCTV switcher and Video surveillance integration
- Lighting control
- Audio intercom integration



1

Application Server Platform

2

Single Board Computer

3

80x Series POS PC

4

AFOLUX POS Panel PC

5

Video Camera Cart

6

KAMIO RISC

7

IOVU Open HMI

8

VITO Universal Controller

9

DINO BLADE

10

LCD Product Series

11

Embedded System

12

Industrial Computer Chassis

13

Power Supply

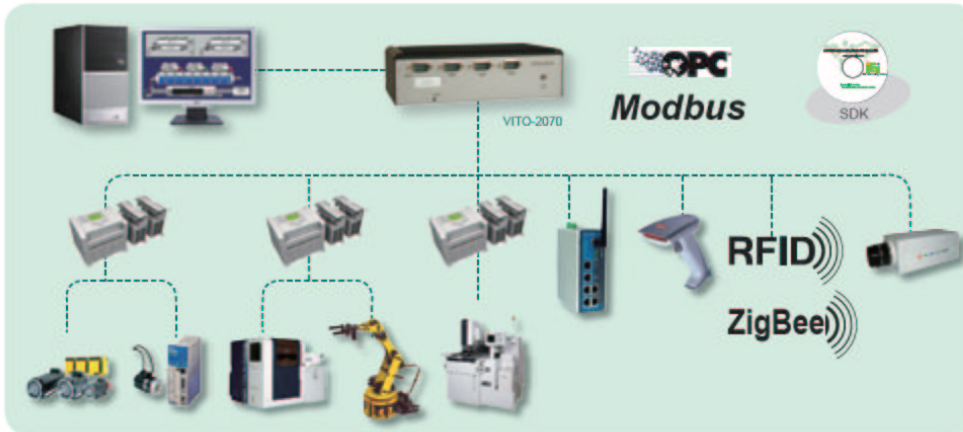
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Peripherals

Industrial Communication Interface

The smart VITO controllers are easily connected to Ethernet networks and standard serial devices through the integrated Ethernet and serial port connectors. The VITO SDK includes a Modbus Client support library and a Modbus client tool with complete source code. The source code demonstrates how to use the VITO Modbus Client support library to connect to Modbus devices and shows how to develop Modbus client applications. The VITO series also provides optional OPC servers to enable connection to leading PLC's, controllers, and other SCADA servers that have OPC client support. All the functions described above enable the VITO to operate as a data collector, a data converter, a data gateway, or a data bridge in a variety of application fields.

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- 3 iSX Series POS PC
- 4 APOLLUX POS Panel PC
- 5 Video Capture Card
- 6 AMD RISC
- 7 IOV Open I/O
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IEI OPC Server Software

What is OPC?

OPC (OLE for Process Control) is an open international standard for program interface ensuring connectivity of industrial software and devices. The OPC support helps users to link software products made by different independent manufactures, who never tested their interoperability. The growing OPC usage, has resulted in publishing of many OPC specifications and versions with different and often excessive features. The OPC standard specifies its own alarms and events, data access, security and so on. However, among all specifications the most widely used is OPC Data Access (OPCDA), which is used to move real-time data from PLCs, and other control devices to VITOs and other display clients. The OPCDA specification is fully supported in the IEI VITO devices.

The IEI Modbus OPC Server

The IEI Modbus OPC Server is the first OPC server provided by IEI to support Modbus TCP/RTU protocols. It comprises Modbus OPC Server, OPC Tag Configurator, and Simple OPC Client.

Modbus OPC Server

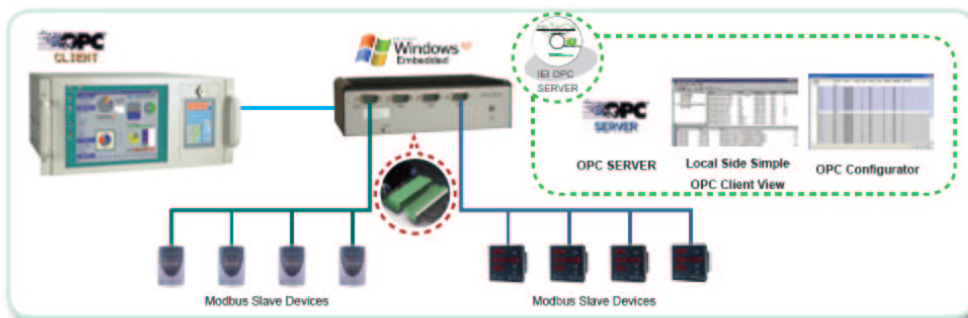
A high performance OPC Server supports OPCDA protocol to process data input/output from VITO built-in I/O channels and Modbus devices connected to the VITO via serial or Ethernet ports. It provide users an easy, quick, and standard way to access VITO built-in I/O and other 3rd party I/O devices connected to the VITO.

OPC Tag Configurator

A convenient, user friendly, and easy-to-use configuration tool for configuring OPC tags for IEI OPC Server. It also provides automatic scanning of any networked device and OPC server for easy detection and configuration.







Simple OPC Client View

A simple OPC client with GUI (Graphical User Interface) to show statuses of all OPC tags in the runtime. All OPC tags configured by OPC Tag Configurator could be monitored and tested by this simple OPC client view tool.



Hardware and Software Platform

The IEI VITO product line has several series, and each series is different in computing power, housing, special I/O, communication interface, and embedded OS supports.

VITO Series							1 Application Server Platform
	VITO-1000 Advanced RISC-based Controller	VITO-2060 Generic Data Collector	VITO-2070 Multiport Data Collector	VITO-2100 Compact Data Server	VITO-2600 Industrial Communication Server	VITO-350 Embedded / Mobile Digital Video Server	2 Single Board Computer
Processor	MARVELL® XScale PXA270 520 MHz	AMD® Geode™ GX466 333 MHz	AMD® Geode™ LX 800 500 MHz	ULV Intel® Celeron® M 1 GHz	ULV Intel® Celeron® M 1 GHz	Celeron® M 423 1.06 GHz	3 iBX Series POS PC
Models	VITO-1000 VITO-1001 VITO-1002 VITO-1003 VITO-1004	VITO-2060 VITO-2061 VITO-2062 VITO-2063 VITO-2064	VITO-2070 VITO-2071 VITO-2072 VITO-2073 VITO-2074	VITO-2100 VITO-2101 VITO-2102 VITO-2103 VITO-2104	VITO-2688	VITO-350	4 AFOLUX POS Panel PC
Common Features	<ul style="list-style-type: none"> 2 x LAN 1 x RS-232/422/485 2 x isolated RS-232/422/485 8 x Isolated DI, 8 x Isolated DO 1 x VGA 2 x USB 1 x external CF type I/II Slot 1 x wireless LAN 802.11b/g 9-36VDC power input (ATX) 	<ul style="list-style-type: none"> 2 x LAN 2 x RS-232 1 x RS-422/485 1 x VGA 2 x USB 1 x line out 1 x InternalCF type I/II slot 9-36VDC power input (ATX) 	<ul style="list-style-type: none"> 1 x LAN 3 x RS-232 or 7 x RS-232 1 x RS-422/485 1 x VGA 4 x USB 1 x line out 1 x InternalCF type I/II slot 9-36VDC power input (ATX) 	<ul style="list-style-type: none"> 2 x LAN 4 x isolated RS-232/422/485 1 x VGA 2 x USB 1 x PS/2 1 x PC card slot 1 x external CF type I/II slot 1 x IDE 1 x LPT 9-36VDC power input (AT) 	<ul style="list-style-type: none"> 4 x LAN 8 x isolated RS-232/422/485 2 x RS-232 1 x VGA 2 x USB 2 x PS/2 1 x IDE 1 x Internal CF type I/II slot 9-36VDC power input (AT) 	<ul style="list-style-type: none"> 16 x NTSC/PAL/SECOM 4 x capture audio in total 120 fps@D1 2 x LAN 1 x VGA 4 x USB 2 x isolated RS-232/422/485 4 x Isolated DI, 4 x Isolated DO 1 x PS/2 1 x PC card slot 1 x external CF type I/II slot 1 x IDE 1 x wireless LAN 802.11b/g 9-36VDC power input (AT) 	5 Video Capture Card
Advanced I/O Support	<ul style="list-style-type: none"> VITO-xxx1: 2 x isolated CAN, 4 x isolated DI, 4 x isolated DO VITO-xxx2: 8 x isolated DI, 8 x isolated DO (2 x counter, 2 x timer) VITO-xxx3: 4 x isolated DI, 4 x isolated DO, 2 x AI VITO-xxx4: 2 x isolated CAN, 4 x isolated DI, 4 x isolated DO, 2 x AI 				VITO-2688: - 4 x isolated DI - 4 x isolated DO - 2 x isolated CAN interface	VITO-350: - 1 x TV-out - 1 x SATA	6 KAMIO RISC
OS Support	Windows CE 5.0	Windows® XP Embedded Windows® CE 5.0	Windows® XP Embedded Windows® CE 5.0	Windows® XP Embedded	Windows® XP Embedded	Windows® XP Embedded	7 IOVU Open IxM
							8 VITO Universal Controller
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Embedded OS

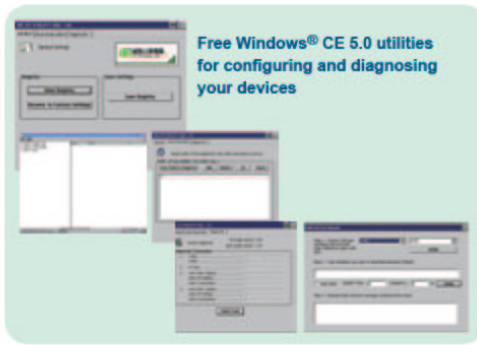
VITO embedded controllers support popular embedded Windows® Embedded OS including Windows® XP Embedded and Windows® CE 5.0. An optional embedded OS support package comprises one CompactFlash™ memory card where the Windows® Embedded OS is installed, one Windows® Embedded OS license, and one CD containing all the related SDK (Software Development Kit) and user manuals. The VITO SDK, as well as VITO's open architecture enables transparent software application development.

- 1 Application Server Platform
- 2 Single Board Computer
- 3 i8X Series POC PC
- 4 AFOLUX POC Panel PC
- 5 Video Capture Card
- 6 XAMO RISC
- 7 IDVU Open I80
- 8 VITO Universal Controller
- 9 DINO BLAZE
- 10 LCD Product Series
- 11 Embedded System
- 12 Industrial Computer CLASS
- 13 Power Supply
- 14 Peripherals



IEI Utilities and Remote Management Tool

Thin client technology provides the VITO with access to Microsoft Windows® applications and web-based applications stored remotely on Microsoft® Terminal Service servers. These applications include legacy applications, Windows® SCADA systems and Windows® applications such as word processors, spreadsheets, and database queries. The CD shipped with VITO also contains the IEI Remote Management Tool for users to manage their thin-client devices remotely.



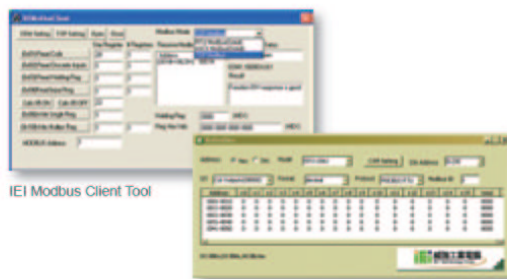
Free Windows® CE 5.0 utilities for configuring and diagnosing your devices



Free remote management tools for remotely configuring, grouping, and updating your devices.

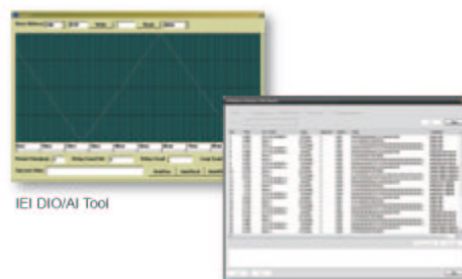
IEI SDK Software Features

- Software development kit (SDK) for eVC++ and .NET Compact Framework programming
- I/O drivers and APIs
- Modbus (RTU/ASCII/TCP) Support
 - Modbus Library
 - Modbus Slave for built-in DI, DO, AI, counter, and timer
 - DI , DO , Counter/Timer , AI , CAN bus Demo Application with source code
- Modbus RTU/ASCII to Modbus TCP Gateway and Traffic Monitor AP



IEI Modbus Client Tool

IEI Modbus Slave Tool

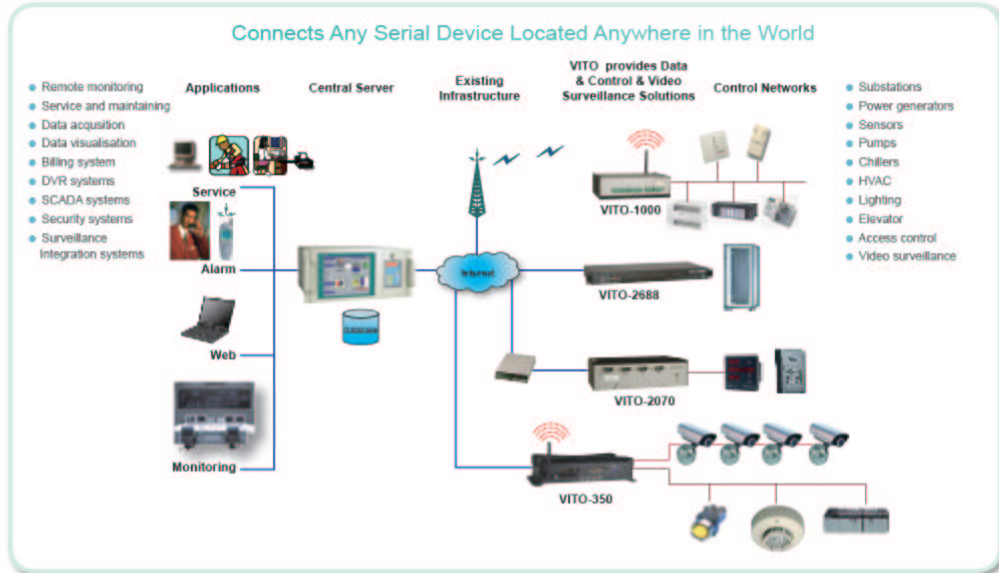


IEI DIO/AI Tool

IEI Modbus Gateway Traffic Monitor

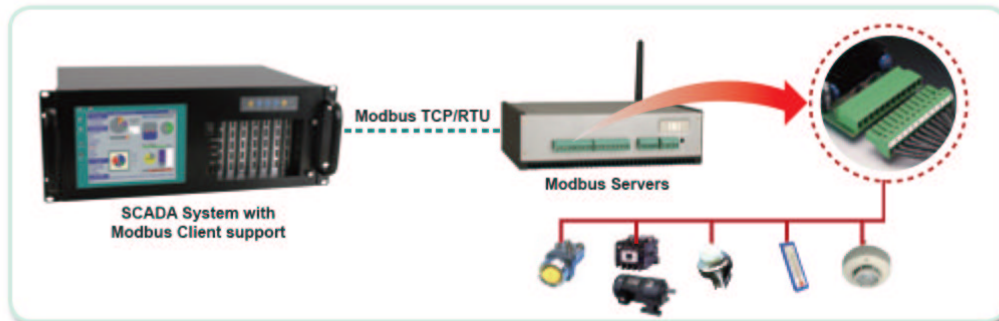
Easy Networking and Powerful Communication

The VITO series can be easily networked to a variety of networks, including serial communication network, CAN bus communication network, wireless LAN, Ethernet LAN, and Internet. These network abilities enable your system to be monitored, controlled, and accessed anywhere and anytime. The VITO series can also play as a gateway or bridge to interconnect several different networks together to provide your system with transparently communications between any device.



PC-Based Data Acquisition and Control (DA&C) System

IEI provides VITO Series Universal Controller products designed with different CPU computing power, rich built-in industrial I/O functions, and rugged embedded chassis. The VITO Series is a ideal solution for PC-based data acquisition and control (DA&C) systems to perform one or more input and output functions such as analog input, analog output, digital input, digital output, counter/timer, and industrial field bus communication.



Custom Service

IEI welcomes OEM requirements from customers. IEI can design customer-specific peripherals, digital I/O, analog I/O, networking interfaces, communication protocols, embedded OS, and even chassis to meet customer requirements.



- 1 Application Server Platform
- 2 Single Board Computer
- 3 iX Series PCG PC
- 4 AFOLUX PCG Panel PC
- 5 Video Capture Card
- 6 KAMRO RISC
- 7 IOVU Open IAT
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- 9 DINO BLADE
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VITO-2100/2101/2102/2103/2104

Compact Data Server with ULV Intel® Celeron® M 1 GHz, 2 x LAN, 4 x COM, 2 x USB, 1 x LPT, 1 x PC Card Slot, 1 x CF Slot, I/O support DI/DO/AI and CAN Bus

- 1 Application Server Platform
- 2 Single Board Computer
- 3 iX Series POS PC
- 4 APOLUX POS Panel PC
- 5 Vito Capture Card
- 6 KAMIO RISC
- 7 IOVU Open HMI
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- 9 DINO BLACK
- 10 LCD Product Series
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Features

- ULV Intel® Celeron® M 1GHz zero cache processor
- Four isolated RS-232/422/485 (DB-9 connectors) ports with automatic flow control
- Two 10/100 Mbps Ethernet RJ-45 ports and two USB ports
- One PC card slot support PCMCIA and one CompactFlash™ slot

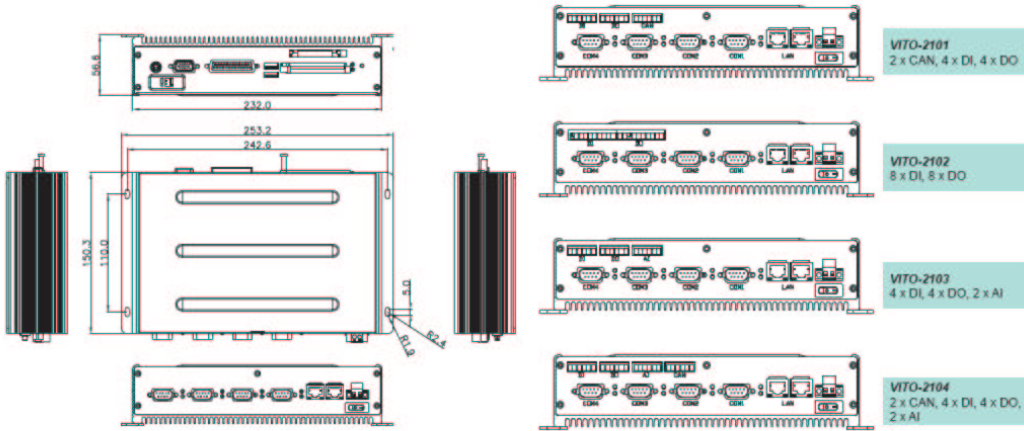


- One parallel port
- Windows® XP Embedded ready platform
- Supports remote display for easy configuration
- Provides Modbus RTU/ASCII to Modbus TCP Gateway utilities
- Supports Modbus/RTU and Modbus/TCP devices
- Supports DI/DO/AI and CAN Bus options
- Supports IEC OPC server software

Specifications

System hardware	CPU	ULV Intel® Celeron® M 1 GHz / zero cache				
	System chipsets	Intel® 852GM + ICH4				
	Memory socket	1 x 200-pin 1 GB (max.) 266/200 MHz DDR SDRAM SO-DIMM				
	Memory size	512 MB				
	Keyboard/mouse	1 x PS/2				
	Expansion slot	1 x PC card slot support PCMCIA, 1 x CompactFlash™ slot				
	PC/104	1 x PC/104				
	Printer port	1 x LPT				
	Storage interface	1 x CF type II slot, 1 x IDE				
	Storage	1 GB CF card or 2.5"/1.8" 40 G HD (optional)				
I/O & communication	VGA	1 x 15-pin D-SUB VGA output supports up to 1600 x 1200				
	Audio	-				
	Watchdog timer	Programmable				
	LAN	2 x Ethernet (10/100Base-T with RJ-45 port)				
	Serial port	4 x isolated RS-232/422/485 with 9-pin D-SUB connectors automatic RS-485 data flow control				
Channel	USB port	2 x USB 2.0				
	Model name	VITO-2100	VITO-2101	VITO-2102	VITO-2103	VITO-2104
	Communication interface	-	2-channel isolated CAN Bus	-	-	2-channel isolated CAN Bus
	Digital input	-	4-channel isolated DI	8-channel isolated DI (2 x Counter)	4-channel isolated DI	4-channel isolated DI
	Digital output	-	4-channel isolated DO	8-channel isolated DO (2 x Timer)	4-channel isolated DO	4-channel isolated DO
	Analog input	-	-	-	2-channel AI	2-channel AI
Channel hardware	Digital input signal	DI ch. 2,000 VDC isolation, 2,000 VDC ESD protection and 70 VDC overvoltage protection 0 ~ 50 VDC input range and 10 kHz speed Digital input levels with dry contact: Logic level 0: Close to GND, Logic level 1: Open Digital input levels with wet contact: Logic level 0: +2 V max, Logic level 1: +4 V ~ +50V				
	Digital output signal	DO ch 2000 VDC isolation and 200mA max/ch sink current keeps. Keeps output status after system hot reset. 5~30 VDC output range and 10kHz.				
	Counter / timer	2x 16-bit - counter source: DI6 & DI7 , - Pulse output: DO6 & DO7 , Can be cascaded as one 32-bit counter/timer, Down counting, preset counting value, interrupt handling, Timer - time base: 100/10/1 kHz,100 Hz				
	Analog input signal	2 ch. input type: Thermocouple: JKTE type Input range : ±15 mV, ±50 mV, ±100 mV, ±500 mV, ±1 V, ±2.5 V, ±20 mA T/C types and temperature ranges : J : 0 ~ 760°C, K : 0 ~ 1370°C, T : -100 ~ 400°C, E : 0 ~ 1000°C				
Power	CAN communication interface	Compatible with CAN specifications 2.0 3000 VDC isolated by photo coupler for dual ports.				
	Power input	9~36 VDC (e.g. +24 V@1.25 A) (min. 30 W), AT		9~36 VDC (e.g. +24 V@1.5 A) (min 36 W), AT		
	Power consumption	20 W		25 W		
Environmental	Operation temperature	0 ~ 60°C				
	Humidity	5% ~ 95% RH without condensation				
	Vibration	5~17 Hz, 0.1" double amplitude displacement, 17~640 Hz, 1.5 G acceleration peak to peak				
General	Shock	10 G acceleration peak to peak. (11ms)				
	Dimensions (WxDxH)	253.2 mm x 150.3 mm x 56.6 mm				
	Construction	Aluminum extrusion, heavy-duty steel chassis				
	Mounting	wall mount, DIN-Rail mount				
OS support	Weight	1.76 kg		1.84 kg		
	OS support	Windows® XP Embedded / Linux (OEM/ODM)				

Dimensions (Unit:mm)



Mounting Support



Packing List

1 x VITO-210X
1 x Utility CD including SDK, utilities, and technical documents
1 x PS/2 Y type cable for KB&MS
1 x Null modem cable
1 x Screw kit
1 x Wall mount kit

Options

PART NO	DESCRIPTION
VITO-CF-2100XPE-R10	1 GB CF memory card with built-in Windows® XP Embedded OS image, licensed sticker, and SLD S/W CD
IEIOPC-CSXPE-R10	IEI OPC server support Modbus /TCP/RTU mode protocol slave devices for Windows® XP Embedded (include local side OPC simple client view, configuration tool)
63000-UP0451E24P56L-RS	24 VDC 45 W power adapter with bare wire; 90~264VAC input
DK-84MS	Din mounting kit



45W AC/DC Adapter
Part No: 63000-UP0451E24P56L-RS

Ordering Information

PART NO	DESCRIPTION
VITO-2100-R10	Compact Data Server with ULV Intel® Celeron® M 1 GHz, 512 MB 400 MHz DDR SDRAM, 1 x VGA, 2 x LAN, 4 x COM, 2 x USB, 1 x LPT, 1 x PC card slot, 1 x CF slot
VITO-2101-R10	Compact Data Server with ULV Intel® Celeron® M 1 GHz, 512 MB 400 MHz DDR SDRAM, 1 x VGA, 2 x LAN, 4 x COM, 2 x USB, 1 x LPT, 1 x PC card slot, 1 x CF slot, 2 x isolated CAN, 4 x isolated DI, 4 x isolated DO
VITO-2102-R10	Compact Data Server with ULV Intel® Celeron® M 1 GHz, 512 MB 400 MHz DDR SDRAM, 1 x VGA, 2 x LAN, 4 x COM, 2 x USB, 1 x LPT, 1 x PC card slot, 1 x CF slot, 8 x isolated DI, 8 x isolated DO
VITO-2103-R10	Compact Data Server with ULV Intel® Celeron® M 1 GHz, 512 MB 400 MHz DDR SDRAM, 1 x VGA, 2 x LAN, 4 x COM, 2 x USB, 1 x LPT, 1 x PC card slot, 1 x CF slot, 4 x isolated DI, 4 x isolated DO, 2 x AI
VITO-2104-R10	Compact Data Server with ULV Intel® Celeron® M 1 GHz, 512 MB 400 MHz DDR SDRAM, 1 x VGA, 2 x LAN, 4 x COM, 2 x USB, 1 x LPT, 1 x PC card slot, 1 x CF slot, 2 x isolated CAN, 4 x isolated DI, 4 x isolated DO, 2 x AI

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