

# ARS-1000 series

Fanless and Compact Embedded Controller, 16 to 28V<sub>DC</sub> Input, Isolated DIO, DIN-Rail Support, Programmable GPIO & LED Display, PCI-104 & PC/104+, with Intel® Atom™ D525 Processor



ARS-1000 Front Panel Layout



ARS-1100 Front Panel Layout  
(with Three 1394a ports)



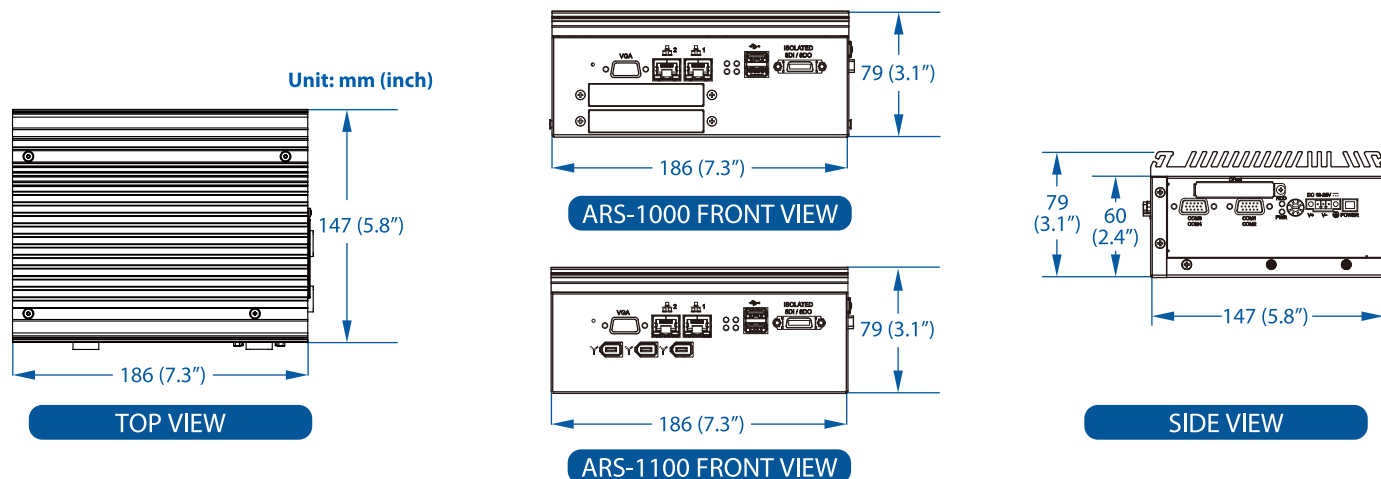
Side Panel Layout

- Intel® Atom™ D525 Processor (1M Cache, 1.8GHz)
- Rugged, -20°C to 70°C Operation Temperature
- Fanless & Compact Form Factor
- 2 DDR3 SO-DIMM, Up to 4GB
- VGA & 24-bit LVDS Dual Independent Display
- External Accessible CFast
- 3 RS-232 & 1 RS-232/422/485 with Auto Flow Control
- 5 USB 2.0 and 2 GbE Ports
- Three 1394a Ports (ARS-1100/ ARS-1200 Model)
- Programmable GPIO 16-step Rotary Switch
- Programmable LED Display 4 Modes/Status
- PCI-104 and PC/104+ Expansion
- Supports DC-IN Range from 16 to 28V
- Onboard EPROM for Unique ID No.
- Onboard USB Dongle Key Support
- DIN-rail, Wall

ARS-1000 series is fanless embedded automation controller equipped with Intel® Atom™ D525 1M cache, 1.8GHz processor, 2 Gigabit Ethernet ports, 3 RS-232 and 1 RS-232/422/485, external accessible CFast, 5 USB, Isolated DIO, Mini PCIe socket, and supports wide range DC-IN 16 to 28 V. With fanless thermal, compact size, small footprint, and wide operating temperatures -20 ~ 70°C (-4 ~ 157°F), ARS-1000 series provides high performance, high versatility, and easy to install in field cabinets. For further expansion, ARS-1000 series supports PCI-104, 1394a and PC/104+. In addition, ARS-1000 series supports programmable GPIO 16-step rotary switch and 4 mode/status LED displays, in order to provide more adaptability for various environment requests. With rich OS and driver supports, such as Windows XP Embedded, Windows XP Pro, and even Linux, ARS-1000 Series are application-ready platforms that provide multipurpose applications. ARS-1000 series is value computing platforms for manufacturing executing systems, factory automation, and industrial applications.



## Dimension



## Specification

### System Hardware

CPU	Intel® Atom™ D525, 1M Cache, 1.8GHz Processor
Chipset	ICH8M
Memory	Single Channel Support 2 DDR3 SO-DIMM up to 4GB
Indicators	LEDs for Power, HDD/CFast
Storage	Internal 2.5" SATA/SATA II for HDD/SSD Outside Accessible CFast Slot
Mini PCIe	1
Display	Front DB15 VGA Internal LVDS 24-bit
Audio	Internal Stereo Headphone, Internal Microphone

### I/O Interface

Serial Ports	3 RS-232, 1 RS-232/422/485 with Automatic Data Flow Control
LAN	2 Intel® GbE WG82583V
USB 2.0	Front: 2, Internal: 2, Mini PCIe: 1
Programmable GPIO	Isolation Protection on GPIO-16 (8DI/8DO) Sink/Wet Contact Source GPIO-4 (Programmable Status/Modes LED Display) 16-step Rotary Switch (States/Modes Select) 3 Ports (ARS-1100 and ARS-1200 Models)

1394a

### General

Certifications	CF, FCC Class A
Dimensions(W x H x D)	186mm x 147mm x 79mm (7.3" x 5.8" x 3.1")
Enclosure	Aluminum Heat-sink and Sheet Metal Chassis with Iron-gray Color
Mounting	Wall-mounting for DIN-rail
Power Requirements	ATX : 2-pin Remote Power On/Off Switch AT : Optional by Jumper Setting On-board DC-to-DC Power Support from 16 ~ 28 V <sub>DC</sub>
Weight	2.1 Kg (4.5 lb)
OS Support	Windows XP Embedded / Windows XP Pro or later Linux Fedora 11 / Ubuntu 10.04 / Cent OS 5.3 / Kernel
System Design	Top Cover Heat-sink with Internal Heat Spreader for Fanless Design

### Environment

Operating Temperature	-20 ~ 70°C (-4°F ~ 157°F) (Ambient Temperature with Air Flow)
Storage Temperature	-40~85°C (-40°F ~ 185°F)
Operating Humidity	20~95% (Non-condensing)
Storage Humidity	0~90% RH @ 40°C (Non-condensing)
Shock Protection	IEC 68 2-27, CFast: 50G @ Wall-mount, Half Sine, 11ms, HDD: 20G @ Wall-mount, Half Sine, 11ms IEC 68 2-64 (Random 1 Oct./min, 1hr/axis.)
Vibration Protection	CFast: 5 Grms @ 5~500Hz, HDD: 1 Grms @ 5~500Hz

\*All product specifications are subject to change without prior notice.

# Reliable & Rugged Design

ARS-1000 Front Panel Layout



- 2X LAN
- 2X PCI-104

ARS-1100 Front Panel Layout



- PC/104+
- 2X LAN
- 3X 1394a

ARS-1200 Front Panel Layout



- 2X CAN
- PC/104+
- 2X LAN
- 3X 1394a

ARS-1500 Front Panel Layout



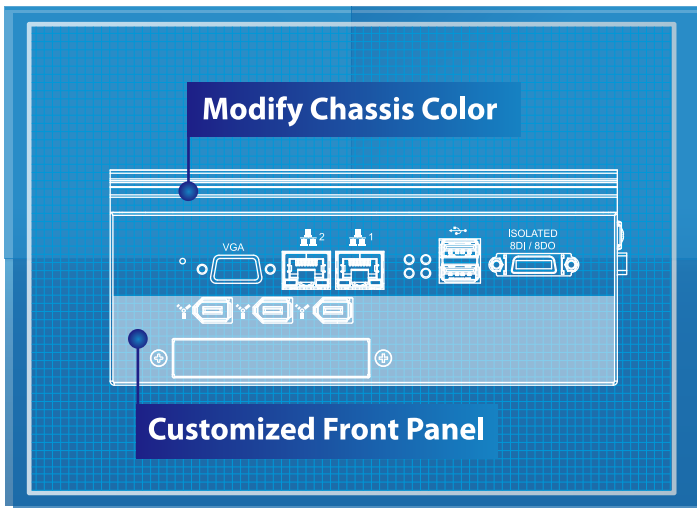
- 8X COM
- PC/104+
- 2X LAN

ARS-1600 Front Panel Layout



- 8X COM
- 2X CAN
- PC/104+
- 2X LAN

# Tailored Solution with Customized Components



Customized Solution Board

## Application

### RELIABILITY

- ★ Intel® Atom™ D525 Processor
- ★ -20 °C to 70 °C Operation Temp.
- ★ Fanless & Compact Form Factor
- ★ 2 DDR3 SO-DIMM, Up to 4GB
- ★ VGA & 24-bit LVDS Dual Display

### VERSATILITY

- ★ External Accessible CFast Port
- ★ 3 RS-232 & 1 RS-232/422/485 with Auto Flow Control
- ★ 5 USB 2.0, 2 GbE Ports
- ★ Programmable GPIO 16-step Rotary Switch
- ★ Programmable LED Display 4 Modes/Status
- ★ PCI-104 and PC/104+ Expansion
- ★ Isolated DIO

### SAFETY

- ★ DC-IN Range from 16 to 28V
- ★ Onboard EPROM for Unique ID No.
- ★ Onboard USB Dongle Key Support
- ★ DIN-rail, Wall



## Order Information

Product No.	Description
ARS-1000	Fanless Embedded Controller, 2 LANs, Isolated GPIO (8DI/8DO), 4 COMs, 5 USBs, Mini PCIe, PCI-104, YCB-D15D9 included
ARS-1100	Fanless Embedded Controller, 2 LANs, Isolated GPIO (8DI/8DO), 4 COMs, 5 USBs, Mini PCIe, 1394a, PC/104+, YCB-D15D9 included
ARS-1200	Fanless Embedded Controller, 2 LANs, Isolated GPIO (8DI/8DO), 4 COMs, 5 USBs, Mini PCIe, 1394a, CAN, PC/104+, YCB-D15D9 included
ARS-1500	Fanless Embedded Controller, 2 LANs, Isolated GPIO (8DI/8DO), 8 COMs, 5 USBs, Mini PCIe, PC/104+, 4 YCB-D15D9 included
ARS-1600	Fanless Embedded Controller, 2 LANs, Isolated GPIO (8DI/8DO), 8 COMs, 5 USBs, Mini PCIe, CAN, PC/104+, 4 YCB-D15D9 included
Option	Description
PWA-60WP3	60W, 24V, 100VAC to 240 VAC Power Adapter
SCSI-20P-100	20-pin SCSI Cable, 1M
TMB-SCSI-20P	Terminal Board with One 20-pin SCSI Connector and DIN-Rail Mounting
YCB-D15D9	Y Cable from DB15 to Two DB9