

TECHNICAL DATASHEET

SUPERMICRO · EDGE & EMBEDDED

Supermicro Fan-based Embedded IoT Server SYS-E403-12P-FN2T

X12 2.5U Box PC with Intel 3th Gen Intel Xeon Scalable processor and support for 3 PCIe 4.0 x16 (FHFL) slots and 2 10GBase-T LAN

SKU SYS-E403-12P-FN2T

Compact

LGA4189

Supermicro



FORM FACTOR

Compact

MAX POWER (BASE)

306 W

HEAT OUTPUT

1,044 BTU/h

PRICE

On request

REQUEST A QUOTATION ONLINE

serverinvest.com/product/sys-e403-12p-fn2t

01 Product overview

The Supermicro SYS-E403-12P-FN2T is a Fan-based Embedded IoT Server built on Intel Xeon Scalable 3rd Gen with up to 2 TB of memory in 8 DIMM slots.

X12 2.5U Box PC with Intel 3th Gen Intel Xeon Scalable processor and support for 3 PCIe 4.0 x16 (FHFL) slots and 2 10GBase-T LAN.

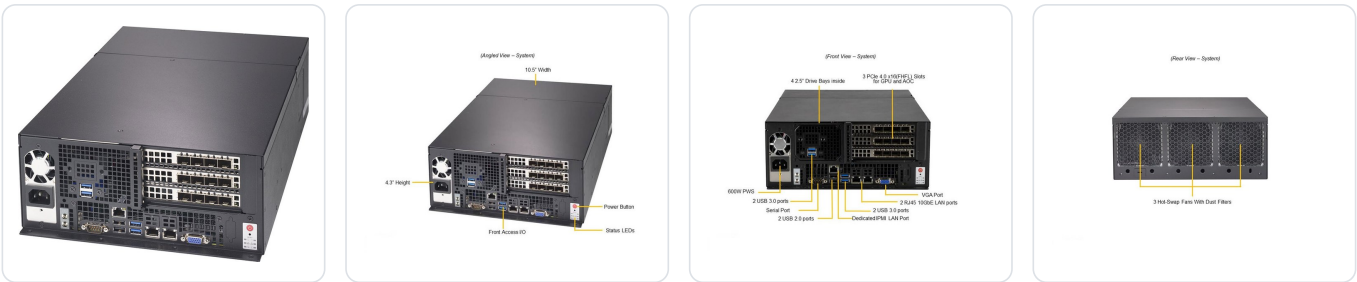
ServerInvest configures every SYS-E403-12P-FN2T to order, updates BIOS and BMC firmware, installs your operating system on request and runs a 48-hour burn-in test before delivery. Every system includes a 3-year warranty.

HIGHLIGHTS

- Intel Xeon Scalable 3rd Gen
- Up to 2 TB memory · 8 DIMM slots
- Total 4 bays 4 internal fixed 2.5" SATA drive bays
- Power: 1x 680W
- Networking: 2 RJ45 10GBASE-T with Intel X550-AT2

KEY SPECIFICATIONS

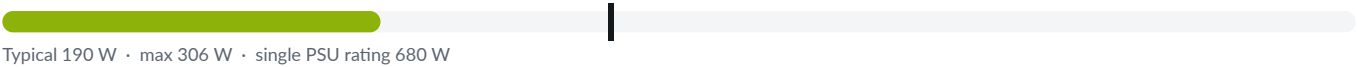
Form factor	Compact
Processor	Intel Xeon Scalable 3rd Gen
Socket	LGA4189
Memory	8 DIMM slots, up to 2 TB
Drive bays	4
Power supply	1× 680 W
Typical power draw	450 W
Networking	2 RJ45 10GBASE-T with Intel X550-AT2



02 Power & thermal

Calculated for the base configuration

IDLE	TYPICAL	MAXIMUM	HEAT (MAX)	COOLING	PSU LOAD
73 W	190 W	306 W	1,044 BTU/h	0.3 kW	45%



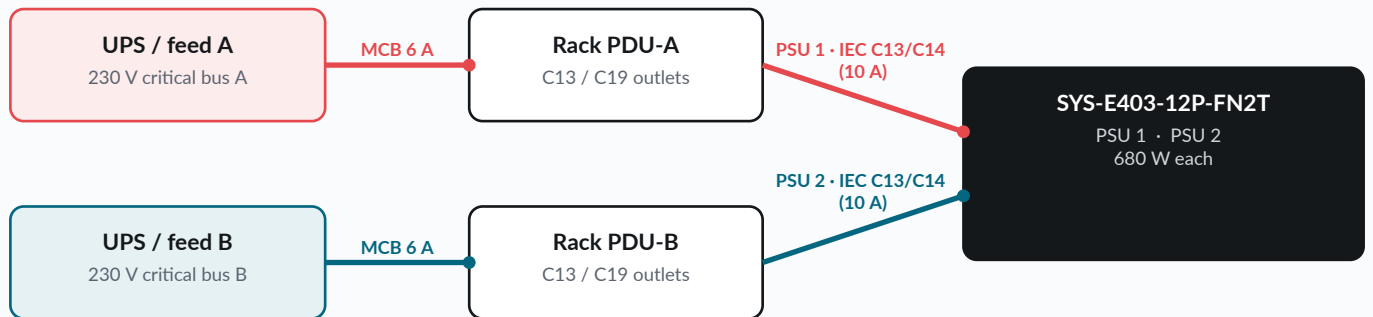
Annual IT energy (24/7)	1,357 kWh
Annual facility energy (PUE 1.5)	2,036 kWh
Annual energy cost	€271 IT · €407 incl. cooling (at 0.20 €/kWh)
CO ₂ emissions / year	0.53 t (grid factor 0.26 kg/kWh)
Power supplies	1× 680 W

POWER BY COMPONENT	IDLE	TYPICAL	MAX
Chassis, motherboard, fans, BMC	38 W	59 W	85 W
CPU (base configuration)	25 W	110 W	185 W
2× Memory (base configuration)	6 W	10 W	18 W

DC loads converted to wall power at 94% PSU efficiency; typical load assumed 70% of the time. Engineering estimates — confirm with the manufacturer's power calculator for critical designs.

03 Power connection diagram

Dual-feed (A/B) connection for redundant power supplies



- Connect PSU 1 to PDU-A and PSU 2 to PDU-B (independent feeds) using IEC C13/C14 (10 A) power cords.
- Maximum current per feed: 1.4 A at 230 V — each feed must be able to carry the full load if the other fails.
- Recommended protection per PDU circuit: MCB 6 A, curve C; RCD according to local regulations.
- Heat to remove at full load: 306 W = 1,044 BTU/h (0.3 kW).

04 Full specifications

MOTHERBOARD

Super X12SPW-TF

PROCESSOR

CPU	Single Socket P+ (LGA-4189) 3rd Gen Intel Xeon Scalable processors
Core Count	Up to 32C/64T; Up to 48MB Cache
Note	Supports up to 205W TDP CPUs (Air Cooled)

SYSTEM MEMORY

Memory	Slot Count: 8 DIMM slots Max Memory (1DPC): Up to 2TB 3200MT/s ECC DDR4 RDIMM/LRDIMM View Memory Options
Memory Voltage	1.2V

ON-BOARD DEVICES

SATA	SATA (6Gbps) via Intel C621A; RAID 0/1/5/10 support
Chipset	Intel C621A
Network Connectivity	2 RJ45 10GBASE-T with Intel X550-AT2 View AOC Options

INPUT / OUTPUT

LAN	1 RJ45 1 GbE Dedicated BMC LAN port 2 RJ45 10 GBASE-T LAN ports (Intel X550-AT2)
USB	2 USB 2.0 Type-A ports (rear) 4 USB 3.0 Type-A ports (Rear)

Video 1 VGA port (Rear)

SYSTEM BIOS

BIOS Type AMI 32MB SPI Flash

BIOS Features
ACPI 6.0
Plug and Play (PnP)
Riser Card audio detection support
SMBIOS 3.0 or later

MANAGEMENT

Software
SuperCloud Composer (SCC)
Supermicro Server Manager (SSM)
Supermicro Update Manager (SUM)
Supermicro SuperDoctor 5 (SD5)
Super Diagnostics Offline (SDO)
Supermicro Thin-Agent Service (TAS)
SuperServer Automation Assistant (SAA) New!

Power configurations
Power-on mode for AC power recovery
ACPI Power Management

SECURITY

Hardware
Trusted Platform Module (TPM) 2.0
Silicon Root of Trust (RoT) – NIST 800-193 Compliant

Features
Cryptographically Signed Firmware
Secure Boot
Secure Firmware Updates
Automatic Firmware Recovery
System Lockdown

CERTIFICATIONS

Operating Systems
RHEL 9.0, Windows Server 2019, Windows Server 2022
[View all OS Compatibility and Certification Matrix](#)

CHASSIS

Form Factor Fan-based Embedded

Model CSE-E403iF-000NBP

DIMENSIONS AND WEIGHT

Height 4.3" (109 mm)

Width 10.5" (267 mm)

Depth 16" (406 mm)

Package 10.4" (H) x 16.4" (W) x 26" (D)

Weight
Gross Weight: 24 lbs (10.89 kg)
Net Weight: 18 lbs (8.16 kg)

Available Color Black

FRONT PANEL

Buttons Power On/Off

LED	HDD activity LAN1 activity LAN2 activity Overheat status Power status reset status System information
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EXPANSION SLOTS

PCI-Express (PCIe) Configuration	Default 3 PCIe 4.0 x16 FHFL slots View AOC Options
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DRIVE BAYS / STORAGE

Drive Bays Configuration	Default: Total 4 bays 4 internal fixed 2.5" SATA drive bays View Drive Options
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M.2	1 M.2 PCIe 3.0 x4 NVMe/SATA slot (M-key 2280/22110) View M.2 Options
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SYSTEM COOLING

Fans	Up to 3 heavy duty fans with optimal fan speed control(In server) 80x80x38mm Fan(s)
Air Shroud	1 Air Shroud

POWER SUPPLY

1x 680W
1x 680W Gold Level (92%) power supply
Dimension (WxHxL)
100 x 40 x 220 mm

OPERATING ENVIRONMENT

Environmental Spec.	Operating Temperature: 0°C to 45°C (32°F to 113°F) Non-operating Temperature: -40°C to 70°C (-40°F to 158°F) Operating Relative Humidity: 8% to 90% (non-condensing) Non-operating Relative Humidity: 5% to 95% (non-condensing)
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05 Built, tested & supported by ServerInvest

Engineered configuration

Every option validated for socket, memory channels, PCIe lanes, power and cooling.

48-hour burn-in

Assembled, firmware-updated and stress-tested before it leaves our workshop.

3-year warranty

Standard on every system, with on-site next-business-day upgrades available.

Rack-ready delivery

Rails, cable management and labelling included — delivered across Europe.



Interested in this solution?

Request a quotation online or talk to a solutions engineer — we reply within one business day.
office@serverinvest.com

Official manufacturer datasheet: serverinvest.com/product/sys-e403-12p-fn2t/datasheet/manufacture

