

## TECHNICAL DATASHEET

SUPERMICRO · EDGE &amp; EMBEDDED

# Supermicro 1U IoT Server SYS-110P-FDWTR-NEBS-DC

Intel Xeon Socket P+ (LGA-4189) 3rd Gen, 600W -48 Vdc redundant PWS, NEBS  
Level 3 certified 1U edge platform

SKU SYS-110P-FDWTR-NEBS-DC

1U

LGA4189

Supermicro



FORM FACTOR

**1U**

MAX POWER (BASE)

**306 W**

HEAT OUTPUT

**1,044 BTU/h**

PRICE

**On request**

REQUEST A QUOTATION ONLINE

[serverinvest.com/product/sys-110p-fdwtr-nebs-dc](https://serverinvest.com/product/sys-110p-fdwtr-nebs-dc)

## 01 Product overview

The Supermicro SYS-110P-FDWTR-NEBS-DC is a 1U IoT Server built on Intel Xeon Scalable 3rd Gen with up to 2 TB of memory in 8 DIMM slots.

Intel Xeon Socket P+ (LGA-4189) 3rd Gen, 600W -48 Vdc redundant PWS, NEBS Level 3 certified 1U edge platform.

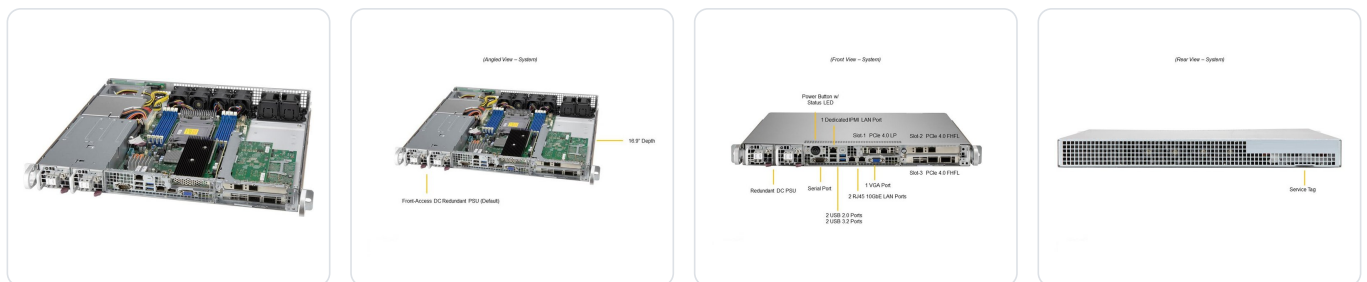
ServerInvest configures every SYS-110P-FDWTR-NEBS-DC to order, updates BIOS and BMC firmware, installs your operating system on request and runs a 48-hour burn-in test before delivery. Every system includes a 3-year warranty.

### HIGHLIGHTS

- Intel Xeon Scalable 3rd Gen
- Up to 2 TB memory · 8 DIMM slots
- Total 2 bays 2 internal fixed 2.5" SATA drive bays
- Power: 2x 600W
- Networking: 2 RJ45 10GBASE-T with Intel X550

### KEY SPECIFICATIONS

|                    |                                  |
|--------------------|----------------------------------|
| Form factor        | 1U                               |
| Processor          | Intel Xeon Scalable 3rd Gen      |
| Socket             | LGA4189                          |
| Memory             | 8 DIMM slots, up to 2 TB         |
| Drive bays         | 2                                |
| Power supply       | 2× 600 W                         |
| Typical power draw | 450 W                            |
| Networking         | 2 RJ45 10GBASE-T with Intel X550 |
| Dimensions (W×H×D) | 437 × 44 mm                      |



## 02 Power & thermal

Calculated for the base configuration

| IDLE        | TYPICAL      | MAXIMUM      | HEAT (MAX)         | COOLING       | PSU LOAD   |
|-------------|--------------|--------------|--------------------|---------------|------------|
| <b>73 W</b> | <b>190 W</b> | <b>306 W</b> | <b>1,044 BTU/h</b> | <b>0.3 kW</b> | <b>51%</b> |

Typical 190 W · max 306 W · single PSU rating 600 W

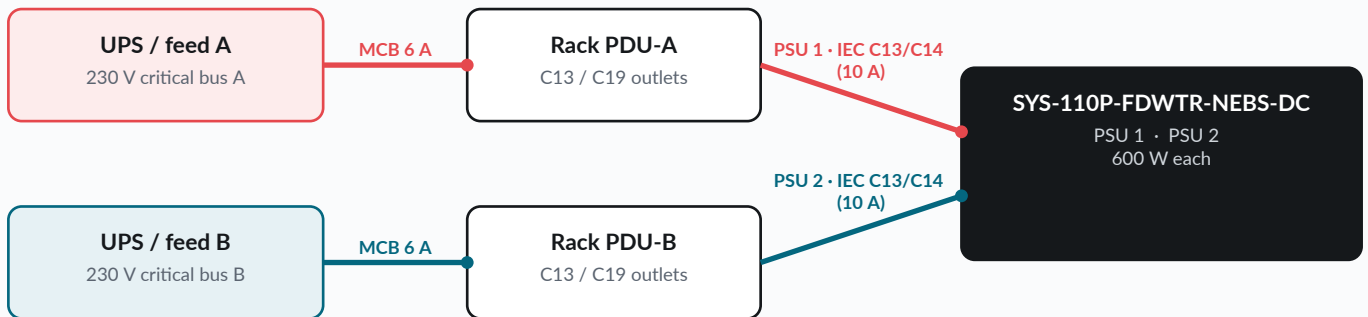
|                                  |                                              |
|----------------------------------|----------------------------------------------|
| Annual IT energy (24/7)          | 1,357 kWh                                    |
| Annual facility energy (PUE 1.5) | 2,036 kWh                                    |
| Annual energy cost               | €271 IT · €407 incl. cooling (at 0.20 €/kWh) |
| CO <sub>2</sub> emissions / year | 0.53 t (grid factor 0.26 kg/kWh)             |
| Power supplies                   | 2× 600 W redundant (N+1)                     |

| 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)<br>3rd Gen Intel Xeon Scalable processors |
| Core Count | Up to 32C/64T; Up to 48MB Cache                                       |
| Note       | Supports 85W - 205W TDP CPUs (Air Cooled)                             |

#### SYSTEM MEMORY

|                |                                                                                                                   |
|----------------|-------------------------------------------------------------------------------------------------------------------|
| Memory         | Slot Count: 8 DIMM slots<br>Max Memory (1DPC): Up to 2048GB 3200MT/s ECC DDR4 RDIMM/LRDIMM<br>View Memory Options |
| Memory Voltage | 1.2V                                                                                                              |

#### ON-BOARD DEVICES

|                      |                                                      |
|----------------------|------------------------------------------------------|
| SATA                 | SATA (6Gbps) ; RAID 0/1 support                      |
| Network Connectivity | 2 RJ45 10GBASE-T with Intel X550<br>View AOC Options |

#### INPUT / OUTPUT

|       |                                          |
|-------|------------------------------------------|
| USB   | 2 USB 2.0 Type-A ports<br>2 Type-A ports |
| Video | 1 VGA port                               |

## MANAGEMENT

|                      |                                                                                                                                                                                                                                                            |
|----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Software             | SuperCloud Composer (SCC)<br>Supermicro Server Manager (SSM)<br>Supermicro Update Manager (SUM)<br>Supermicro SuperDoctor 5 (SD5)<br>Super Diagnostics Offline (SDO)<br>Supermicro Thin-Agent Service (TAS)<br>SuperServer Automation Assistant (SAA) New! |
| Power configurations | Power-on mode for AC power recovery<br>ACPI Power Management                                                                                                                                                                                               |

## SECURITY

|          |                                                                                                                               |
|----------|-------------------------------------------------------------------------------------------------------------------------------|
| Hardware | Trusted Platform Module (TPM) 2.0<br>Silicon Root of Trust (RoT) – NIST 800-193 Compliant                                     |
| Features | Cryptographically Signed Firmware<br>Secure Boot<br>Secure Firmware Updates<br>Automatic Firmware Recovery<br>System Lockdown |

## PC HEALTH MONITORING

|             |                                                                                                                   |
|-------------|-------------------------------------------------------------------------------------------------------------------|
| CPU         | Monitors for CPU Cores, Chipset Voltages, Memory                                                                  |
| Fan         | Fans with tachometer monitoring<br>Pulse Width Modulated (PWM) fan connectors<br>Status monitor for speed control |
| Temperature | CPU thermal trip support, PEPI<br>Monitoring for CPU and chassis environment                                      |

## CHASSIS

|             |                |
|-------------|----------------|
| Form Factor | 1U             |
| Model       | CSE-515B-R601W |

## DIMENSIONS AND WEIGHT

|                 |                                                                     |
|-----------------|---------------------------------------------------------------------|
| Height          | 1.7" (43 mm)                                                        |
| Width           | 17.2" (437 mm)                                                      |
| Depth           | 16.9" (429 mm)                                                      |
| Package         | 8" (H) x 27" (W) x 24" (D)                                          |
| Weight          | Gross Weight: 14.99 lbs (6.8 kg)<br>Net Weight: 10.01 lbs (4.54 kg) |
| Available Color | No Paint                                                            |

## FRONT PANEL

|         |                                            |
|---------|--------------------------------------------|
| Buttons | Power On/Off button                        |
| LED     | Fan Fail/System Over Heat LED<br>Power LED |

## EXPANSION SLOTS

|                                  |                                                                                                                       |
|----------------------------------|-----------------------------------------------------------------------------------------------------------------------|
| PCI-Express (PCIe) Configuration | <p>Default</p> <p>1 PCIe 4.0 x16 LP slot</p> <p>2 PCIe 4.0 x16 FHFL slots</p> <p><a href="#">View AOC Options</a></p> |
|----------------------------------|-----------------------------------------------------------------------------------------------------------------------|

## DRIVE BAYS / STORAGE

|                          |                                                                                                              |
|--------------------------|--------------------------------------------------------------------------------------------------------------|
| Drive Bays Configuration | <p>Default: Total 2 bays 2 internal fixed 2.5" SATA drive bays</p> <p><a href="#">View Drive Options</a></p> |
| M.2                      | <p>1 M.2 NVMe/SATA slot (M-key 2280/22110)</p> <p><a href="#">View M.2 Options</a></p>                       |

## SYSTEM COOLING

|            |                                                        |
|------------|--------------------------------------------------------|
| Fans       | Up to 6 heavy duty fans with optimal fan speed control |
| Air Shroud | 1 Air Shroud                                           |

## POWER SUPPLY

2x 600W  
2x 600W Redundant (1 + 1) Typical 90%+ Level (96%) power supplies  
Dimension (WxHxL)  
54.5 x 40 x 220 mm

## OPERATING ENVIRONMENT

|                     |                                                                                                                                                                                                                                                              |
|---------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Environmental Spec. | <p>Operating Temperature: 0°C to 40°C (32°F to 104°F)</p> <p>Non-operating Temperature: -40°C to 70°C (-40°F to 158°F)</p> <p>Operating Relative Humidity: 8% to 90% (non-condensing)</p> <p>Non-operating Relative Humidity: 5% to 95% (non-condensing)</p> |
|---------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## 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](mailto:office@serverinvest.com)

Official manufacturer datasheet: [serverinvest.com/product/sys-110p-fdwtr-nebs-dc/datasheet/manufactur](https://serverinvest.com/product/sys-110p-fdwtr-nebs-dc/datasheet/manufactur)

