

SPECTRA POWERBOX 5000C-SERIES

FEATURES

- Support Intel® Core™ i7/i5/i3 or Xeon® Processors of the 9th/8th Generation
- Robust compact-PC in attractive industrial design
- Maintenance friendly over the front lid
- External expansion boxes with 2 or 4 PCIe expansion slots
- Upgrade through system modules (COM, USB, digital IO, 10GLAN, PoE ...)
- Wide-range voltage input: 9 – 48 V DC with voltage monitoring
- SuperCap & Battery buffered CMOS
- Ignition input and time-controlled shut-down, ideal for automotive and battery applications
- Flexible mounting options: Wall, 19"-Rack, Desktop



The Spectra PowerBox 5000 series is powered by 9th generation Intel® processors, supports ECC/non-ECC DDR4-2666 memory and allows for the installation of up to two high-end graphics cards, providing lightning-fast performance for AI, Deep Learning, machine vision and Big Data analytics.

TOP PERFORMANCE

The Spectra PowerBox 5000 stands for exceptional speed and responsiveness. It is one of the most powerful industrial AI and machine vision computers currently available.

SCALABILITY & UPGRADEABILITY

The system offers an exclusive GPU Expansion Box, a scalable GPU solution for performance expansion and flexibility. It supports up to two 250 W graphics cards with a total length of 328 mm or other PCIe expansion cards. The total power consumption is 720 W max.

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HIGHLIGHTS



Spectra PowerBox 50C
compact Edge-PC



PowerBox Ext-04 expansion box
and 2 GPU cards



Spectra PowerBox 54C Edge-PC
with Dual GPU Power

SCALABILITY



By docking a single or dual GPU expansion box, GPU power and additional PCIe expansion cards can be added to the main processing unit.

UPGRADEABILITY



Additional individual I/O are available via the Multi-I/O expansion slot: 10GLAN, GLAN or PoE (RJ45 or M12 connector), DIO, COM, USB3.0

INTELLIGENT COOLING SYSTEM



The mechanical structure and the isolated external Smart Fan Kits on both sides of the enclosure effectively dissipate heat when fully loaded under extreme conditions.

VARIOUS MOUNTING OPTIONS



Mounting options include wall, desktop, face-up and 19" rack mounting.

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COMMON TECHNICAL DATA

SYSTEM

CPU Support	9th Generation Intel® Coffee Lake-Refresh: - Xeon® E-2278GE 8 Cores up to 4.7 GHz, TDP 80W - Xeon® E-2278GEL 8 Cores up to 3.9 GHz, TDP 35W - Core™ i7-9700E 8 Cores up to 4.4 GHz, TDP 65W - Core™ i7-9700TE 8 Cores up to 3.8 GHz, TDP 35W - Core™ i5-9500E 6 Cores up to 4.2 GHz, TDP 65W - Core™ i5-9500TE 6 Cores up to 3.6 GHz, TDP 35W - Core™ i3-9100E 4 Cores up to 3.7 GHz, TDP 65W - Core™ i3-9100TE 4 Cores up to 3.2 GHz, TDP 35W 8th Generation Intel® Coffee Lake
Chipset	Intel® C246
BIOS	AMI
Memory Socket	2x DDR4 SO-DIMM, max. 64 GB, ECC/non-ECC, 2666 MHz (Xeon® / Core™ i7/i5) 2400 MHz (Core™ i3)
Network	- #1: Intel® I219LM Gigabit-LAN - #2~5: Intel® I210-IT Gigabit-LAN
Graphics	Intel® UHD Graphics 630 (Core™ i7/i5/i3) supports 3 independant displays (VGA/DP/ HDMI)
Audio	Realtek® ALC888, HD
HW Monitoring	software programmable, 1~255 sec.

I/O

Front	- 1x HDMI (4096 x 2160 @ 30Hz) - 1x DisplayPort (4096 x 2304 @ 60Hz) - 1x VGA (1920 x 1200 @30Hz) - 5x Gigabit-LAN, RJ45 - 2x USB 3.2 Gen2 (10Gbps), Type A - 4x USB 3.2 Gen1 (5Gbps), Type A - 2x RS-232/422/485, 5V/12V, DB9 - 1x Line-Out, Phone Jack 3.5mm - 1x Mic-In, Phone Jack 3.5mm - 1x ATX Power On/Off Button - 1x Remote Power On/Off, 2-pin Terminal Block - 1x Remote Reset, 2-pin Terminal Block - 7 holes for Antennas
Front behind Service lid	- 1x AT/ATX Mode Switch - 1x Reset - 1x CMOS Battery - 1x Clear CMOS - 1x Power Ignition 12V/24V Switch - 1x Power Ignition Timer Setting Switch

DRIVES

Storage sockets	- 4 x 2.5" SATA Hotswap HDD/SSD, max. 15mm height; with front access; RAID 0/1/5/10 - 1x M.2; M Key 2280 Socket support: PCIe(x4) NVMe / SATA SSD Gen3
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EXPANSIONS

Expansion slots	- GPU expansion box (optional) with Ext-02: . 1x PCIe(x4) Gen 3 . 1x PCIe(x16) Gen 3 Ext-04: . 2x PCIe(x16) 8 Lanes Gen 3 . 1x PCIe(x1) Gen 3 . 1x PCIe(x4) Gen 3 - 2x Full-Size mPCIe sockets - 1x Universal Bracket for Multi-I/O modules - 2x Interfaces for High-Speed/Low-Speed modules - 2x SIM Sockets - 1x M.2, E Key 2230 Socket (Intel CNVi module)
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MECHANICAL & ENVIRONMENT CONDITIONS

Power	AT/ATX, 9~48 V DC Power adapter: see system configuration table
Temperatures	Storage temperature: -40°C bis +85°C Relative humidity: 95%@70°C, non condensing Operating temperature: - with Wide Temp. components, ambient Air Flow - according to IEC60068-2-1, IEC60068-2-2, IEC60068-2-14) - 100% CPU and GPU without thermal throttling

GPU CPU	w/out GPU	1x 250W GPU	2x 250W GPU
35W	-40°C to +65°C		
65W	-40°C to +55°C	0°C to +40°C	0°C to +35°C
80W	-40°C to +45°C		

Protection	- Reverse power input - Over voltage: 51-58 V - Over current: 30 A - ESD: ± 8 kV (air), ± 4 kV (contact) - Surge: 3,84 kW (Impedance 12 Ohm 1.2/50us Waveform)
Operating system Support	- Microsoft® Windows® 10 - Linux®
Warranty	24 months
Certificates	EMC: CE, FCC ICES-003 Class A Safety, LVD: EN62368-1 Railway: EN50121-3-2

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SYSTEM CONFIGURATION



Base System



2 Slots



4 Slots

Model	Spectra PowerBox 50C0	Spectra PowerBox 50C5	Spectra PowerBox 52C0	Spectra PowerBox 52C5	Spectra PowerBox 54C0	Spectra PowerBox 54C5
Article n°	164616	164617	164618	164622	164620	164625

SYSTEM

CPU	Intel® Core™ i5-9500TE, 2.2 GHz, 6C, 35 W TPD	Intel® Xeon® E-2278GEL, 2.0 GHz, 8C, 35 W TPD	Intel® Core™ i5-9500TE, 2.2 GHz, 6C, 35 W TPD	Intel® Xeon® E-2278GEL, 2.0 GHz, 8C, 35 W TPD	Intel® Core™ i5-9500TE, 2.2 GHz, 6C, 35 W TPD	Intel® Xeon® E-2278GEL, 2.0 GHz, 8C, 35 W TPD
RAM	16 GB DDR4 SO-DIMM Wide Temp		16 GB DDR4 SO-DIMM			
Storage	256 GB 2.5" SATA-6G SSD Wide Temp		256 GB 2.5" SATA-6G SSD			

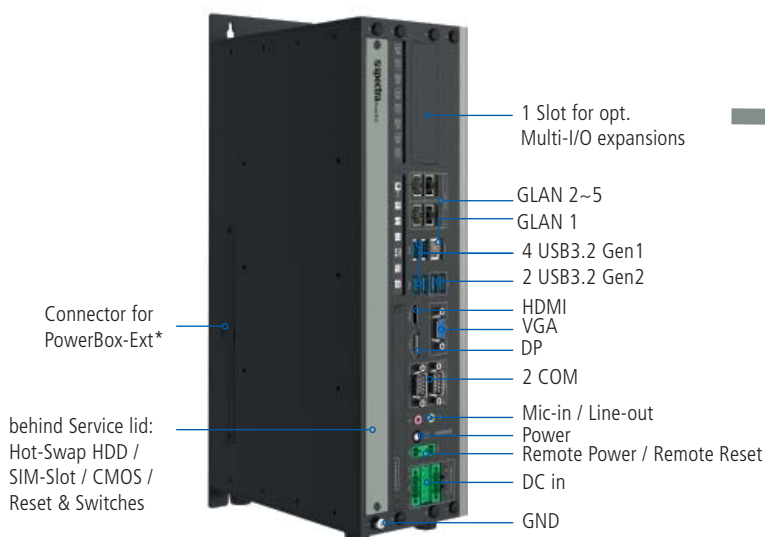
EXPANSIONS

Multi I/O	–	2x Intel® X550 10GbE LAN, 2xRJ45	–
Expansion box	–	2 Slots for opt. 1x GPU + 1x Add-on card	4 Slots for opt. 2x GPU + 2x Add-on card
PCIe	–	1x PCIe(x16), 1x PCIe(x4)	2x PCIe(x16), 1x PCIe(x4), 1x PCIe(x1)

FURTHER DATA

Operating System	Microsoft® Windows® 10 IoT Enterprise 2019 LTSC					
Temperature range	extended		standard			
Operating temperature	-40°C to +65°C	0°C to +55°C	0°C to +55°C	0°C to +55°C	0°C to +50°C	0°C to +50°C
opt. Wide Temp opt. with GPU	–	(-40°C to +65°C)	(-40°C to +55°C) (0°C to +40°C)	(-40°C to +55°C) (0°C to +40°C)	(-40°C to +50°C) (0°C to +35°C)	(-40°C to +50°C) (0°C to +35°C)
Power Supply	220 W 24V@9,2A		480 W 24V@20A		1000 W 24 V@42A	
Dimensions (W x H x D)	105 x 370 x 195 mm		209 x 370 x 195 mm		305 x 370 x 195 mm	
Weight (kg)	approx. 8 kg		approx. 11 kg		approx. 13 kg	

I/O & INTERFACES



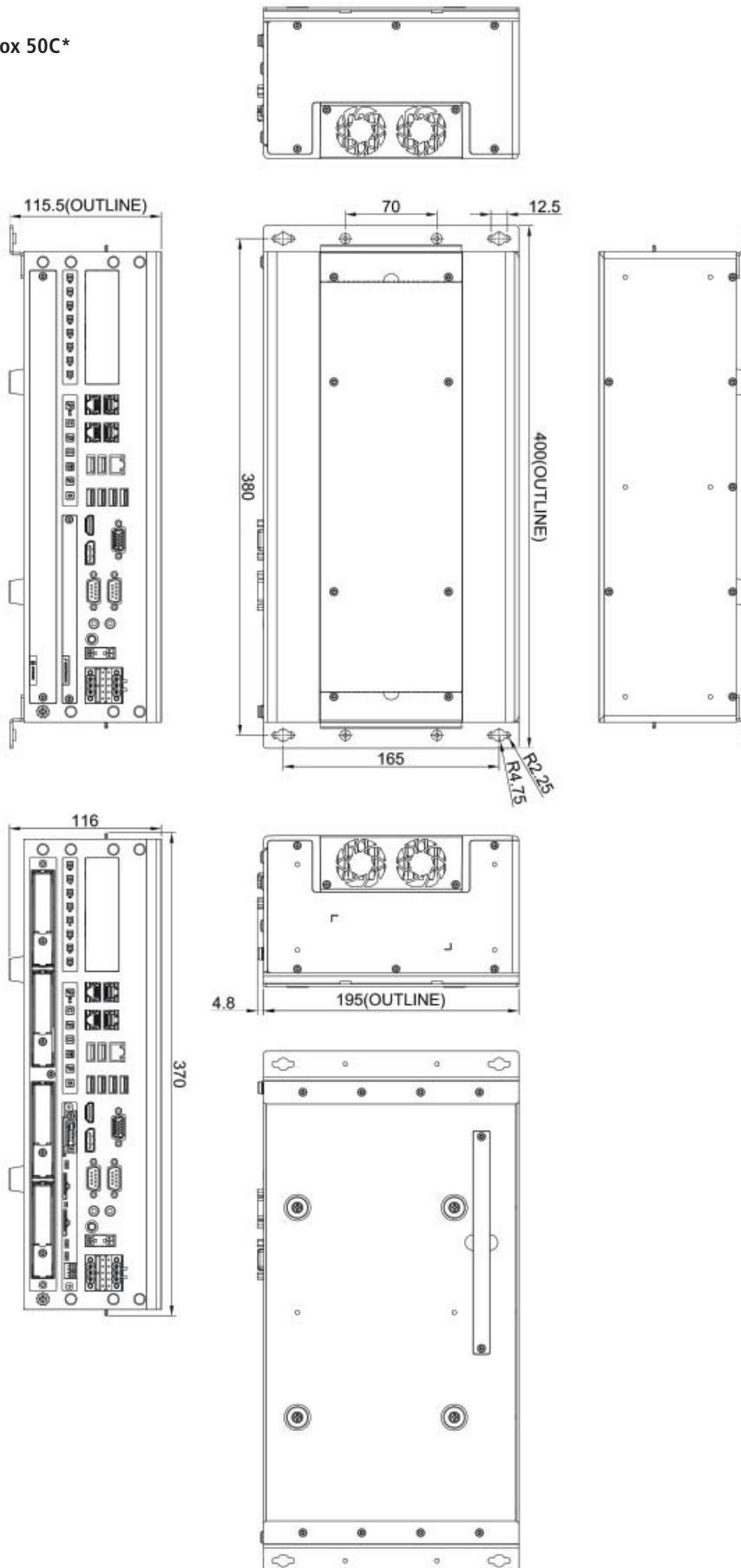
OPTIONAL MULTI-I/O EXPANSIONS



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DIMENSIONS – BASIS SYSTEM

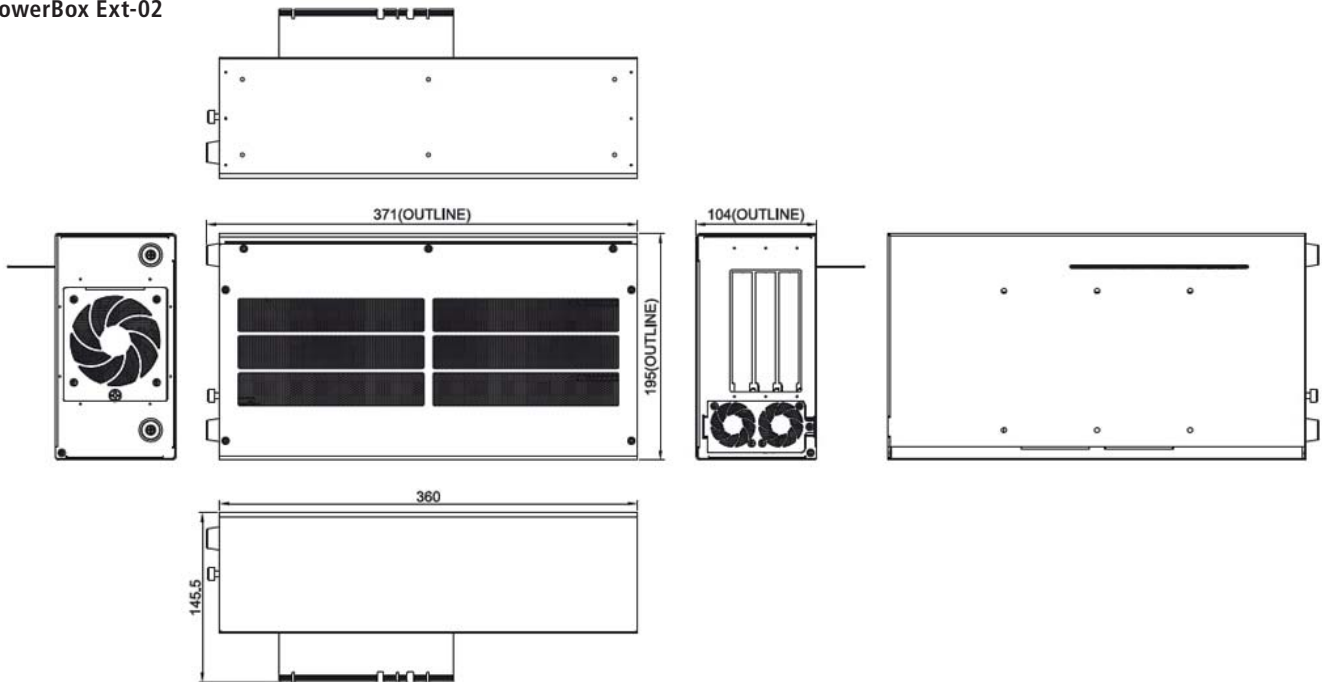
Spectra PowerBox 50C*



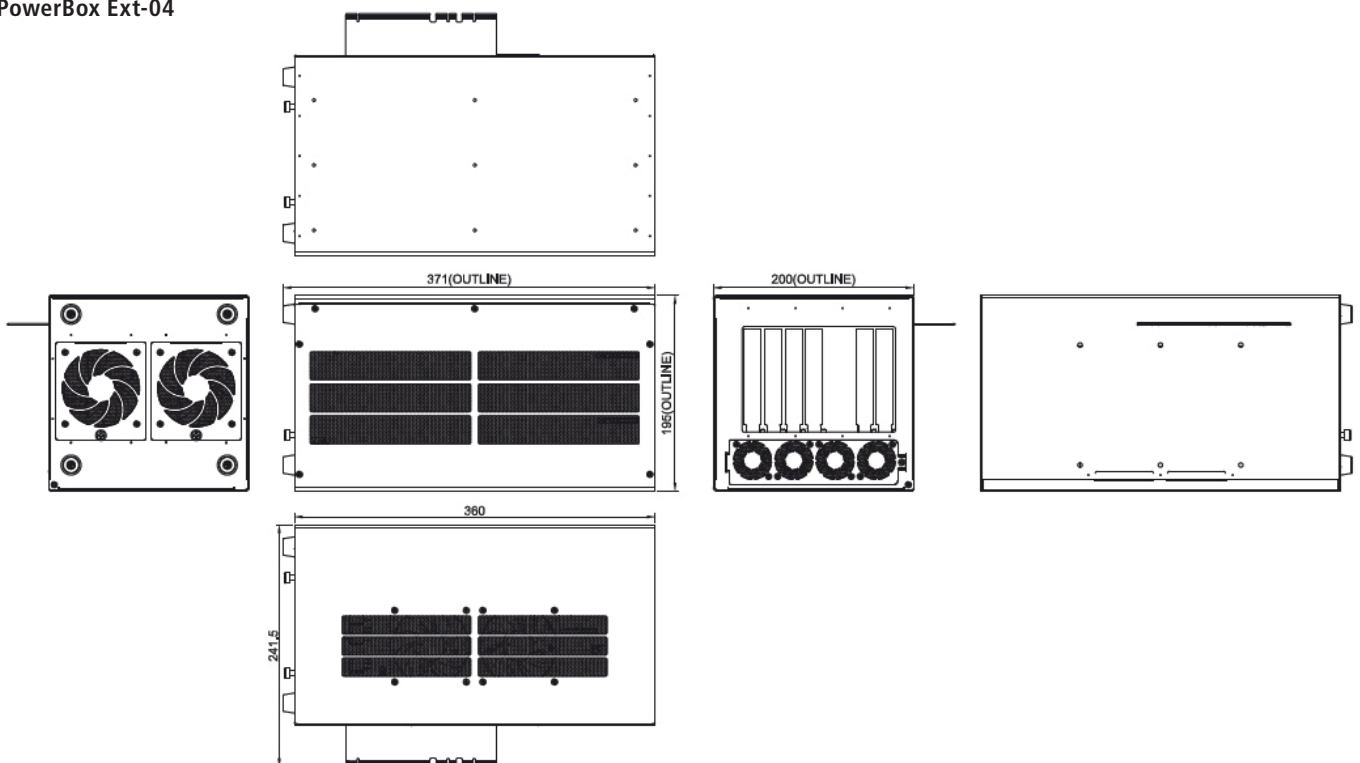
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DIMENSIONS – EXPANSION BOXES

PowerBox Ext-02



PowerBox Ext-04



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ORDERING INFORMATION & PACKING LIST

ORDERING INFORMATION

N° 164616 Spectra PowerBox 50C0

Compact-PC, Intel® Core™ i5-9500TE, 256 GB 2.5" SSD,
16 GB RAM, Wide Temp., 1 Universal Bracket

N° 164618 Spectra PowerBox 52C0

like 50C0, with 2 PCIe Slots

N° 164620 Spectra PowerBox 54C0

like 50C0, with 4 PCIe Slots

N° 164617 Spectra PowerBox 50C5

Compact-PC, Intel® Xeon® E-2278GEL, 256 GB 2.5" SSD,
16 GB RAM, 1 Universal Bracket

N° 164622 Spectra PowerBox 52C5

like 50C5, with 2 PCIe Slots

N° 164625 Spectra PowerBox 54C5

like 50C5, with 4 PCIe Slots

PACKING LIST

- 1 x Desktop Mount Kit
- 1 x Wall Mount Bracket
- 1 x Rubber foot Kit
- 1 x Power adapter
- 1 x Microsoft® Windows® Recovery Stick
- 1 x Heat Sink pack
- 1 x Screw pack
- 2 x Power Terminal Block connectors
- 2 x Remote Power Terminal Block connectors

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For Spectra PowerBox 52C*

- PowerBox Ext-02, incl. Riser card,
Wall Mount Kit, Rubber foot kit,
Power cable and screw pack

For Spectra PowerBox 54C*

- PowerBox Ext-04, incl. Riser card,
Wall Mount Kit, Rubber foot kit,
Power cable and screw pack

ORDERING INFORMATION EXPANSION BOXES

(for retrofitting)

N° 164594 PowerBox Ext-02

Expansion box, PCIe16 / PCIe4, for PB-50C*

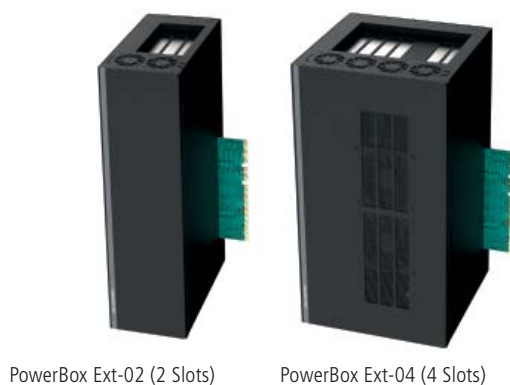
N° 164595 PowerBox Ext-04

Expansion box, 2PCIe16(x8) / PCIe4 / PCIe, for PB-50C*

Mounting Kits in Packing list



Expansion boxes



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OPTIONAL ACCESSORIES

MULTI I/O EXPANSIONS

N° 164637 PB-5000C-10GLAN02-Set

2x 10GLAN X550, RJ45, incl. Bracket

N° 164634 PB-5000C-LAN-Set

4x GLAN i210-IT, RJ45, incl. Bracket

N° 164636 PB-5000C-LAN-M12-Set

4x GLAN i210-IT, RJ45, M12, incl. Bracket

N° 164640 PB-5000C-COM04-Set

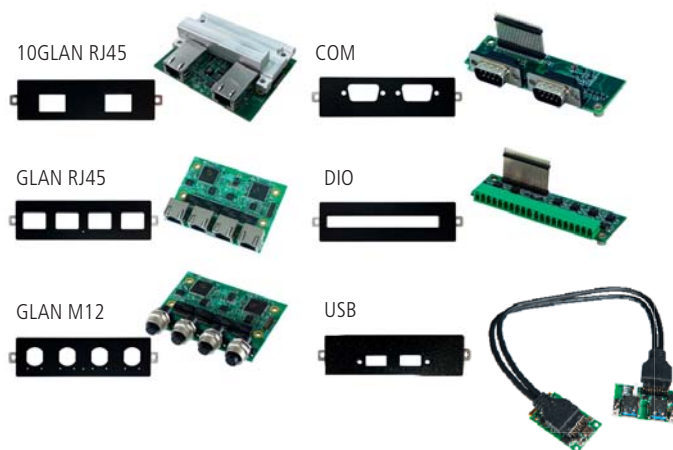
2x RS232/422/485, DB9, incl. Bracket

N° 164641 PB-5000C-DIO04-Set

8DI/8DO isolated, incl. Bracket

N° 164642 PB-5000C-MEC-USB-M102-Set

2x USB 3.2 Gen1, incl. Bracket, 1x 15cm cable



FUNCTION EXPANSIONS

N° 165192 PB-5000C-IGN V1.5

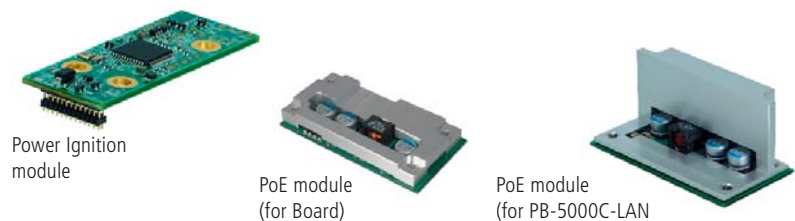
Power Ignition module for PB-5000C-Series

N° 153823 CFM-PoE01

PoE module to install on Board

N° 164598 CFM-PoE07-R10

PoE module to add on PB-5000C-LAN-Set



FURTHER MOUNTING EQUIPMENT

N° 164601 RM01-R10

19" Rack Mount for Spectra PowerBox 50C*

N° 164602 RM02-R10

19" Rack Mount for Spectra PowerBox 52C*

N° 164604 RM03-R10

19" Rack Mount for Spectra PowerBox 54C*

