

IEC-830

Fault Resilient and Shielded 19" Rackmount Chassis

Industrial PC-based Automation

Resilient and Redundant

- Monitoring and Alarm of Temperature and Fan operation
- Large drivebay with space for up to three 5¼" drives and three 3½" drives offers space to Raid Subsystem
- Optional Redundant Power Supply Hot-swap, Hot-plug

High-end Features

- EMI stainless steel springs and clips standard installed on chassis edges, and around card slot holes to ensure electrically bonding and grounding of system parts.
- Designed to meet FCC Class B, UL1950 and CSA.
- CE and TÜV certifiable
- Hold-down clamp to secure feature cards and firm board connections.
- Large 120 CFM cooling fan with washable air filter on front panel



Fault Resilient, Enhanced EMI Protection

EMI Shielding and Protection, a major issue

The new generation of high frequency (>500 MHz) processors with faster clock speeds and edge rates, as well as increasing circuit board density, pose a great challenge to 19" rackmount chassis in meeting international emissions regulations. With increased use of densely packed PC-based rackmount systems in sensitive environments such as the telecommunication field, EMI shielding and protection has become a major issue.

Shielded rack enclosures like the IEC-830, differ from their non-shielded counterparts in the details of their construction and electrical bonding

A shielded rack enclosure is constructed using materials and finishes that allow all of the enclosure seams to be electrically continuous, including top cover, fan opening, backplates and interfaces.

The IEC-830 I/O slot cards, and I/O connectors are better bonded than standard chassis and its backplate is equipped with conductive clips to ensure electrical bonding to the main chassis.



System Monitoring and Full Redundancy

Up to 8 eight separate fans can be monitored. If one of the fans malfunctions an alarm LED will light up and flash and an audible alarm sounds. At two places inside the chassis the temperature can be measured. The temperature limit is configurable between 50 and 70°C. If one of the temperatures exceeds the limit an LED changes color from green to red and an audible alarm sounds.

The IEC-830 can be optionally equipped with a hot-plug hot-swap redundant power supply to ensure continuous operation.

An extra large shock mounted drive bay can accept as much as three 5¼" drives and three 3½" drives offering enough space for a hotswap IDE-based RAID subsystem plus an additional CDROM drive.



Mounting panel for special connectors or cable extensions

Hold-down clamp protects cards from vibration

Power supply options :

- 250 W Standard AC
- 250 W ATX
- 2 x 250 W Redundant

Removable drivebay offers space to :
three 5¼" drives
three 3½" drives

Cooling fan with removable air-filter

Power switch, Reset switch, HDD activity, Power and Alarm LEDs behind lockable door

Heavy duty, 120 CFM ballbearing fan, fully servicable from front side

Optional Fan and Temperature Monitoring Module

Optional 2x 250 Watt Hot-swap, Hot-plug Redundant Power Supply with external Fan

Seperate backplate options for AT/ATX motherboard or Passive Backplane operation

Ordering Information

IEC-830A

19" Fault Resilient and Shielded Rackmount Chassis with three 5¼" and three 3½" drive bays
Barebone for AT/ATX motherboard

IEC-830B

19" Fault Resilient and Shielded Rackmount Chassis with three 5¼" and three 3½" drive bays
Barebone for Passive Backplane

IEC-830A-AX250

19" Fault Resilient and Shielded Rackmount Chassis with three 5¼" and three 3½" drive bays includes : 250 Watt PS/2-type ATX power supply
(without AT/ATX motherboard)

IEC-830B-C14A-AT250

19" Fault Resilient and Shielded Rackmount Chassis with three 5¼" and three 3½" drive bays includes : 14-slot PCI/ISA Passive Backplane and 250 Watt standard PS/2-type power supply

IEC-830B-C14A-AX250

19" Fault Resilient and Shielded Rackmount Chassis with three 5¼" and three 3½" drive bays includes : 14-slot PCI/ISA Passive Backplane and 250 Watt PS/2-type ATX power supply

IEC-830B-C14A-MX250

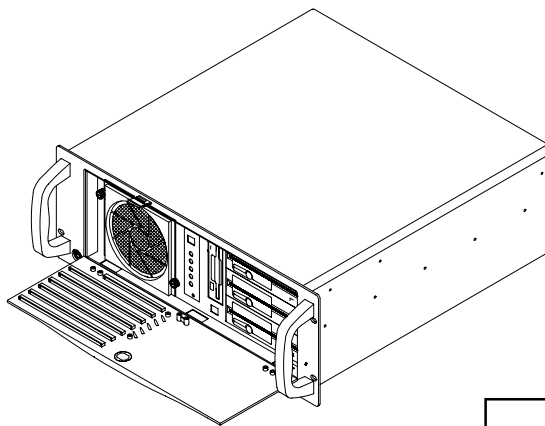
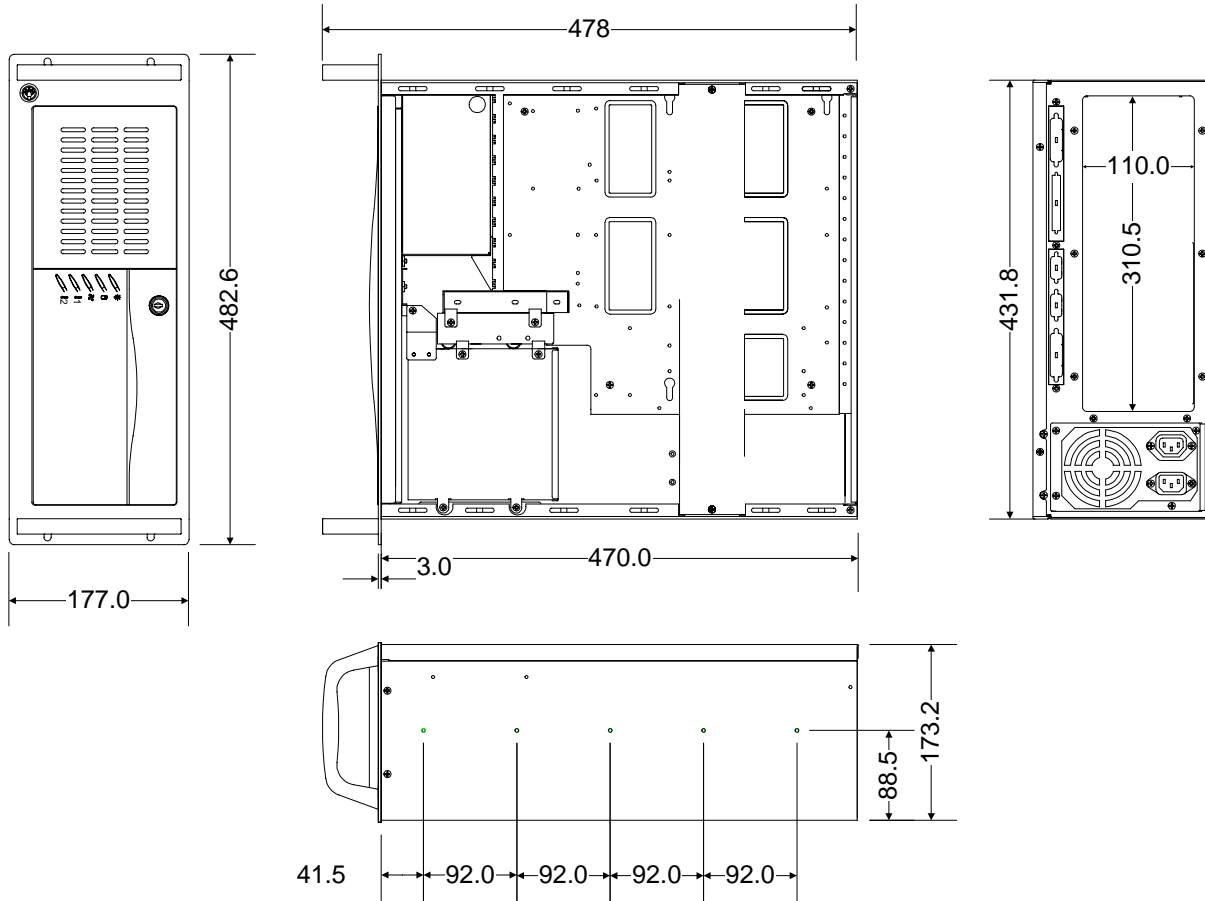
19" Fault Resilient and Shielded Rackmount Chassis with three 5¼" and three 3½" drive bays includes : 14-slot PCI/ISA Passive Backplane and Mini-Redundant 2x 250 Watt ATX power supply

(See "Options datasheets" for additional ordering codes)

IEC-830

4U Fault Resilient Rackmount Chassis

Main Chassis Outline Dimensions
applicable for all models



Open front door

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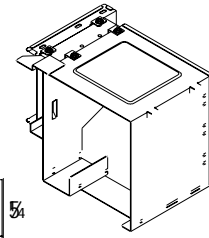
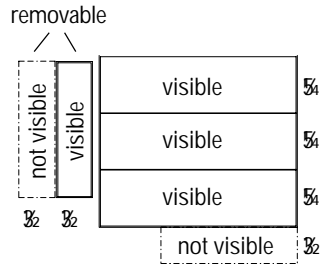
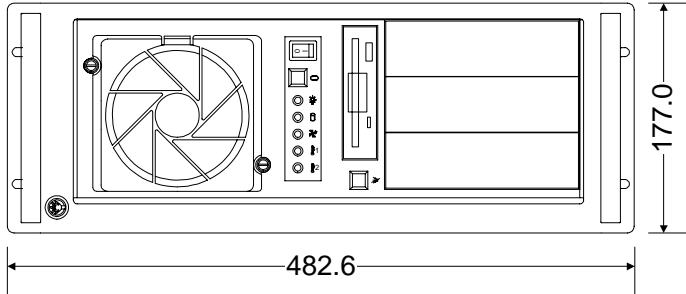
4U Fault Resilient Rackmount Chassis

REFERENCE ONLY	SIZE	IFSCM	DRAWING NO.	REV.
	L		830000	A
All dimensions in millimeters unless noted otherwise		SCALE: NONE	HBR	SHEET 1 OF 4

IEC-830

4U Fault Resilient Rackmount Chassis

Front Panel Controls and Drive Bays



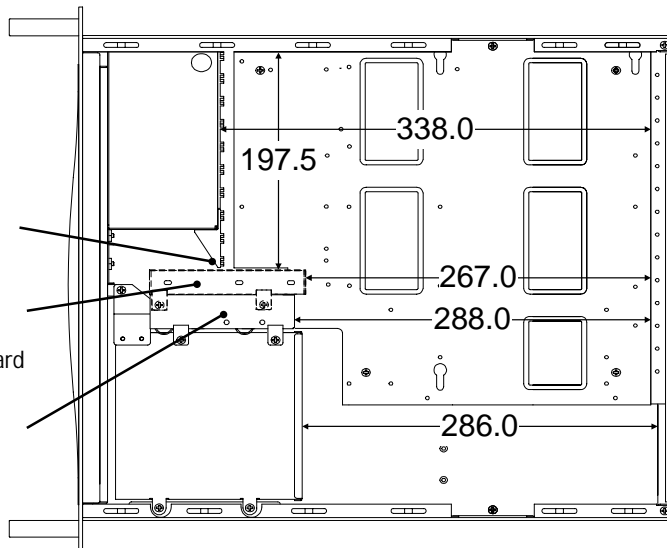
Drive Bay arrangement

10 full-size boards

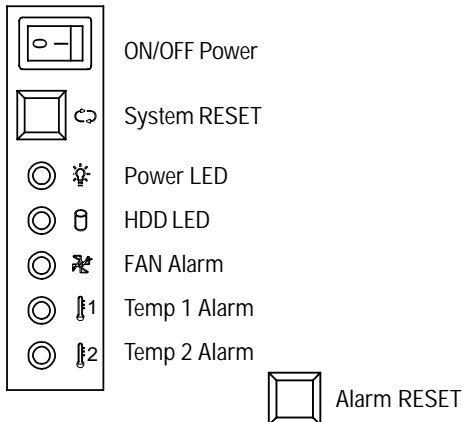
Support clip for additional (10th) full-size board

Non-visible 3 1/2 " drive bay needs to be removed to offer place to additional full-size board

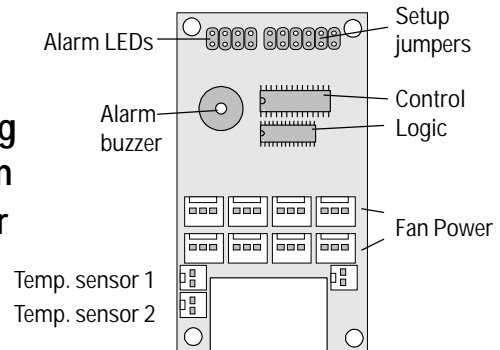
Visible 3 1/2 " drive bay can be removed for space considerations



Controls and Indicators on Front Panel



Monitoring and Alarm Controller



4U Fault Resilient Rackmount Chassis

REFERENCE ONLY	SIZE	IFSCM	DRAWING NO.	REV.
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All dimensions in millimeters unless noted otherwise		SCALE: NONE	HBR	SHEET 2 OF 4

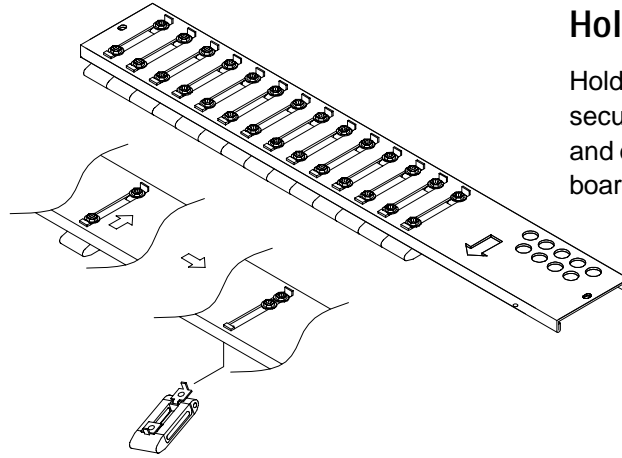
IEC-830

4U Fault Resilient Rackmount Chassis

EMI Shielding, Cooling Fan, Holddown Clamp

Holddown Clamp

Hold-down clamp to secure feature cards and ensure firm board connections.



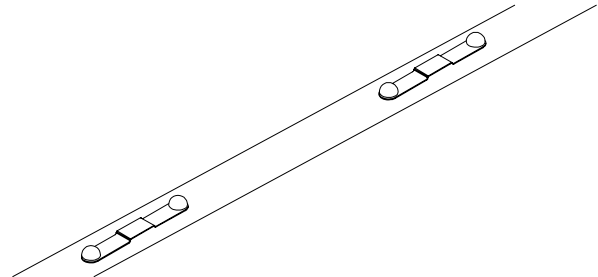
EMI Shielding

EMI stainless steel springs and clips are standard installed on chassis edges, cooling fan edges, backplate edges and around card slot holes to ensure electrically bonding and grounding of system components. Chassis designed to meet FCC Class B, UL1950 and CSA. CE and TÜV certifiable

Card slot clips

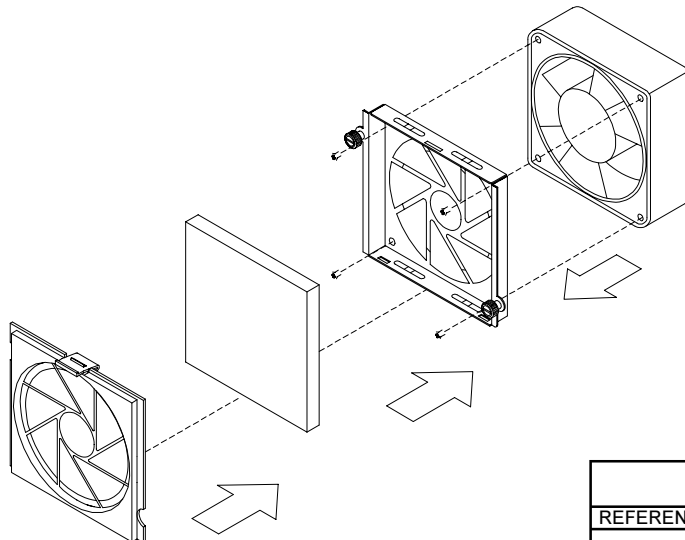


Edge springs



Cooling Fan

The 120 CFM fan with washable air filter on front panel is fully removable for maintenance by simply using two thumb screws. No need to open the main system cover.



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4U Fault Resilient Rackmount Chassis

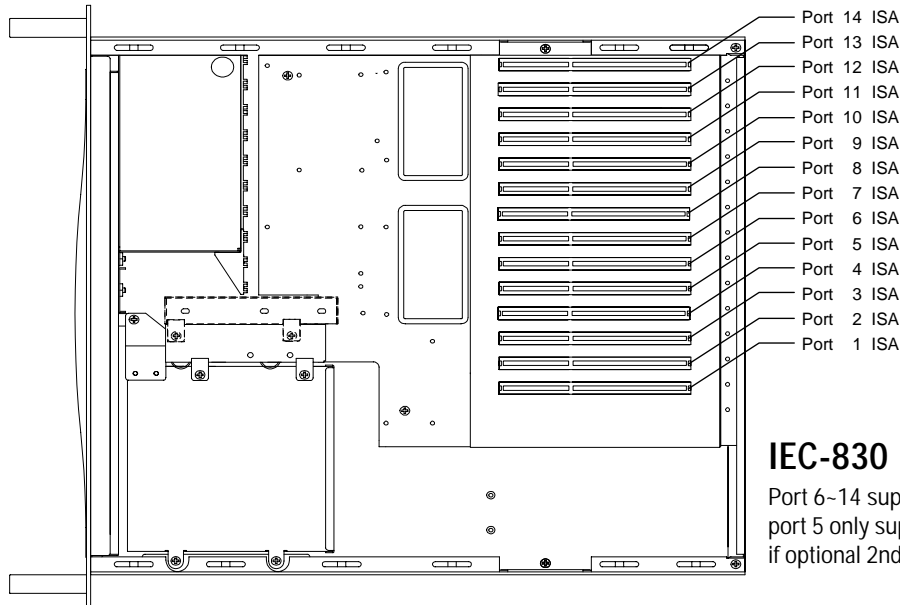
REFERENCE ONLY	SIZE	IFSCM	DRAWING NO.	REV.
	L		830000	A
All dimensions in millimeters unless noted otherwise		SCALE : NONE	HBR	SHEET 3 OF 4

IEC-830

4U Fault Resilient Rackmount Chassis

Passive Backplane and Motherboard Options 1 (3)

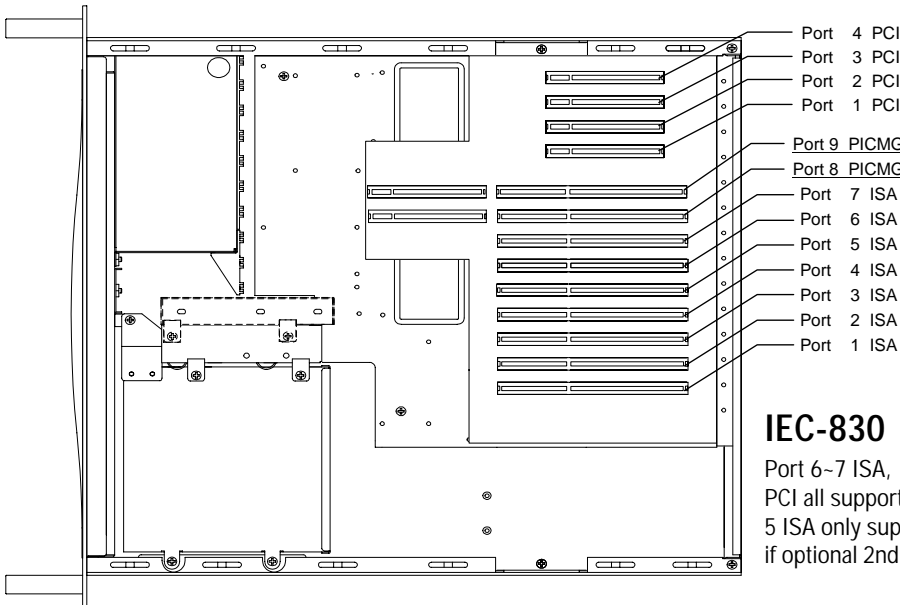
Options



ISA

IEC-830 + PBI-14S

Port 6-14 support full-size boards, port 5 only supports full-size boards if optional 2nd drive bay is removed



**“mirrored”
PICMG**

IEC-830 + PBPI-14S2

Port 6-7 ISA, 8-9 PICMG and 1-4 PCI all support full-size boards, port 5 ISA only supports full-size boards if optional 2nd drive bay is removed



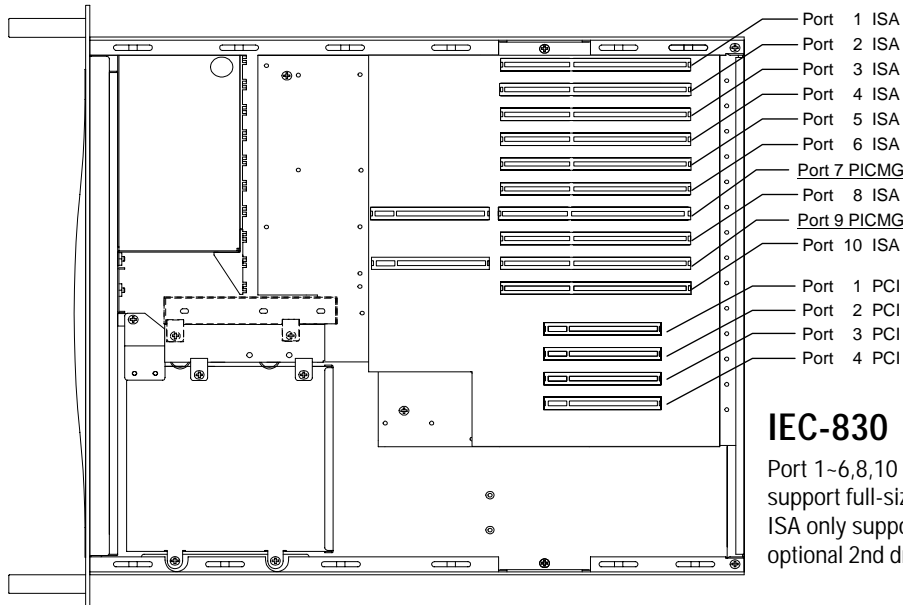
4U Fault Resilient Rackmount Chassis			
REFERENCE ONLY	SIZE	IFSCM	DRAWING NO.
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All dimensions in millimeters unless noted otherwise	SCALE: NONE	HBR	REV. A
			SHEET 1 OF 4

IEC-830

4U Fault Resilient Rackmount Chassis

Passive Backplane and Motherboard Options 2 (3)

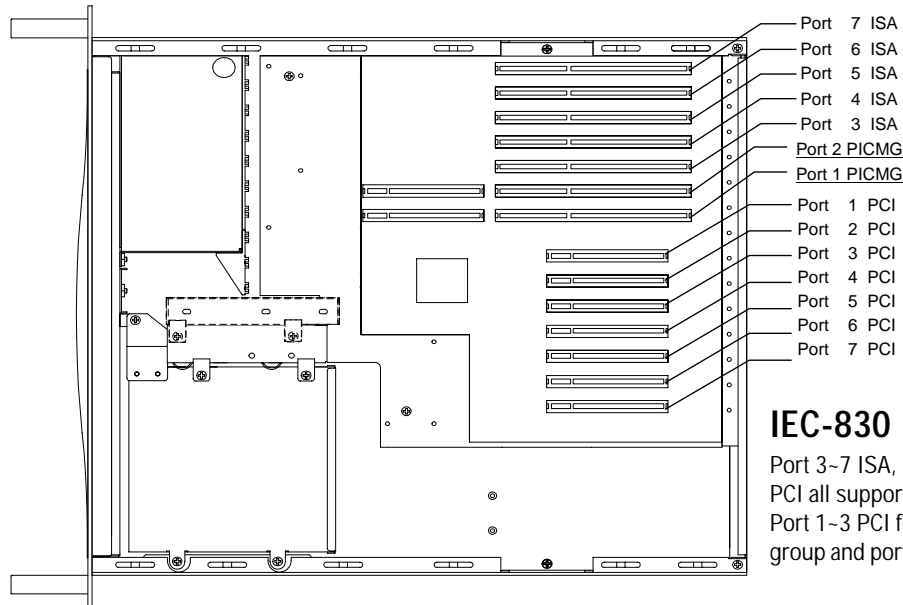
Options



**standard
PICMG**

IEC-830 + PBPI-14SA

Port 1~6,8,10 ISA, 7,9 PICMG all support full-size boards, port 10 ISA only supports full-size boards if optional 2nd drive bay is removed



**PCI
Bridge**

IEC-830 + PBPX-14S7

Port 3~7 ISA, 1~2 PICMG and 1~2 PCI all support full-size boards. Port 1~3 PCI form the primary PCI group and port 4~7 the secondary



4U Fault Resilient Rackmount Chassis

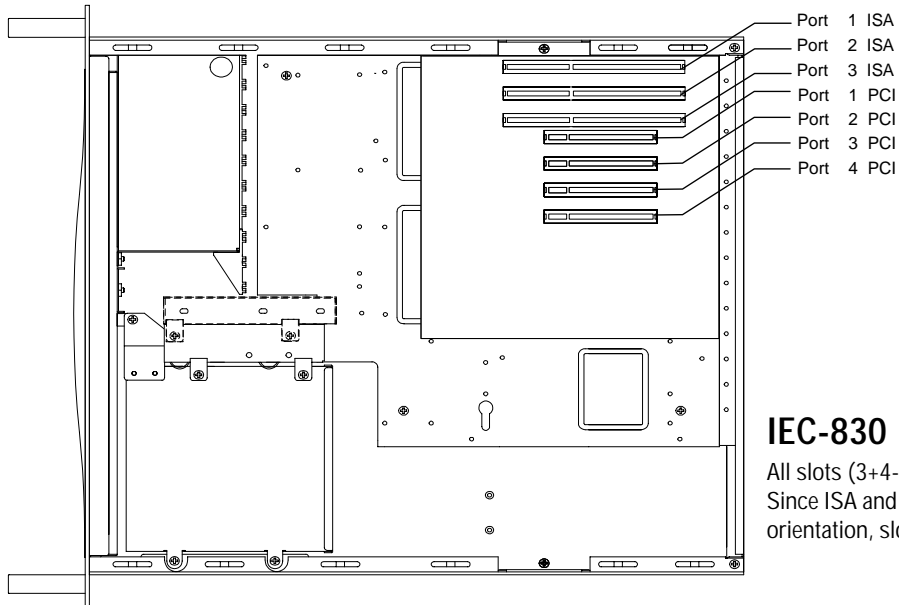
REFERENCE ONLY	SIZE	IFSCM	DRAWING NO.	REV.
	L		830020	A
All dimensions in millimeters unless noted otherwise		SCALE: NONE	HBR	SHEET 2 OF 4

IEC-830

4U Fault Resilient Rackmount Chassis

Passive Backplane and Motherboard Options 3 (3)

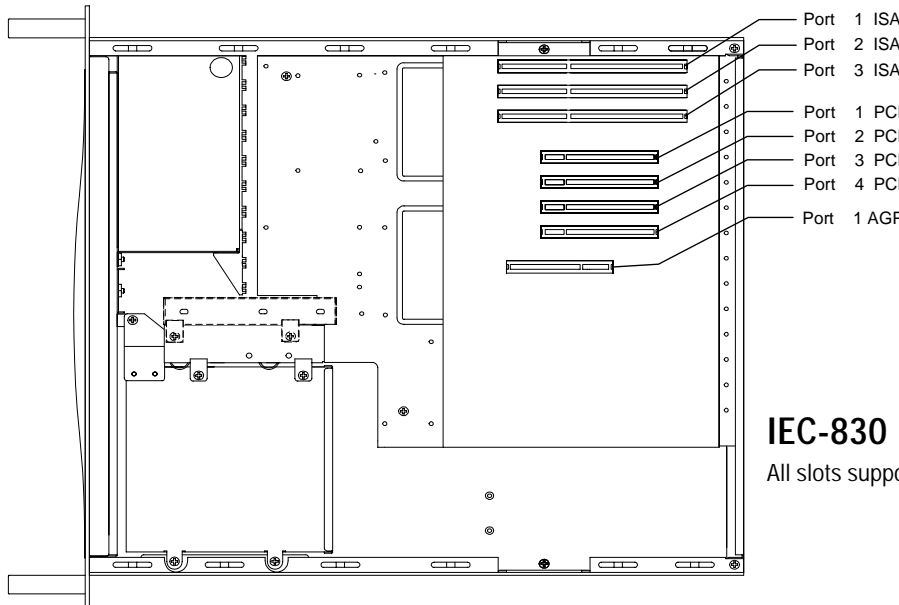
Options



Baby AT

IEC-830 + AT motherboard

All slots (3+4-1) support full-size boards. Since ISA and PCI boards have a different orientation, slot 3 ISA and 1 PCI are either/or.



ATX

IEC-830 + ATX motherboard

All slots support full-size boards



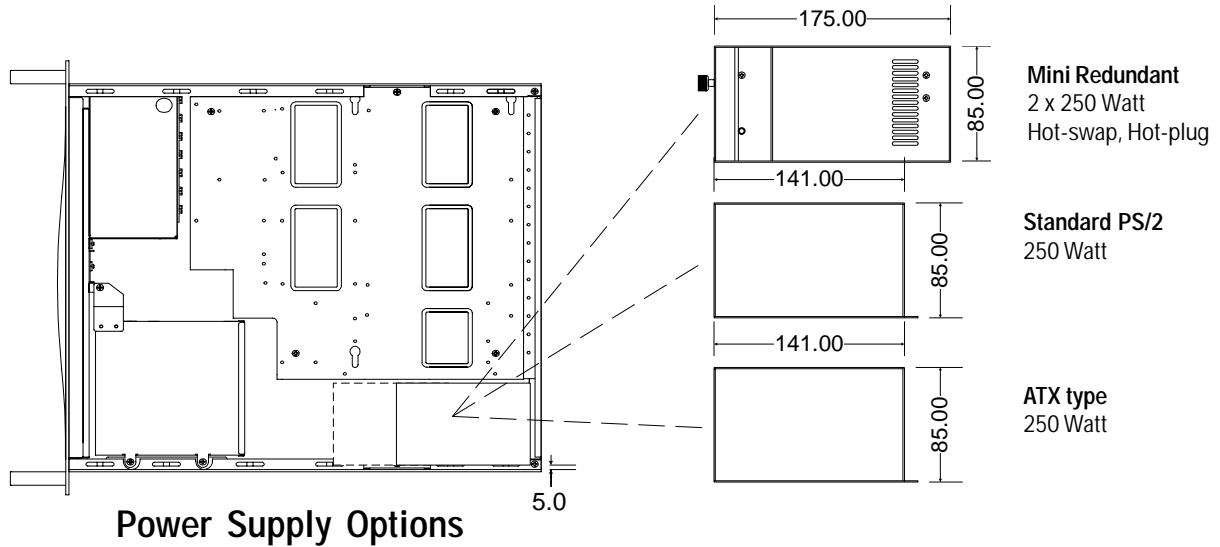
4U Fault Resilient Rackmount Chassis			
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All dimensions in millimeters unless noted otherwise		SCALE: NONE	REV. A
		HBR	SHEET 3 OF 4

IEC-830

4U Fault Resilient Rackmount Chassis

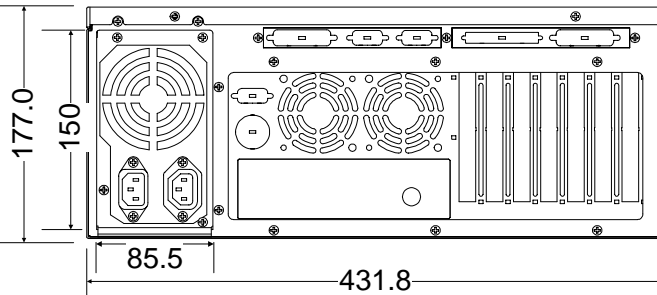
Power Supply and Backplate Options

Options



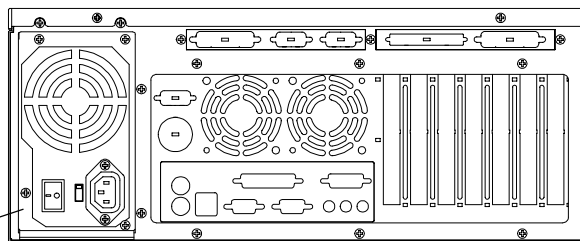
Standard PS/2 type
250 Watt

(with PS/2 type fill plate)

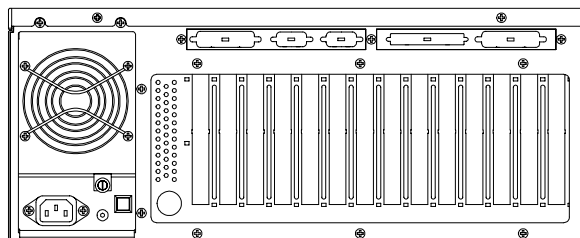


ATX type
250 (300) Watt

(to accommodate PS/2 type (AT/ATX) power supplies an additional fill plate is needed)



Mini Redundant
2 x 250 (300) Watt
Hot-swap, Hot-plug



Baby-AT Motherboard

The backplate for Baby-AT motherboard is the same as that for full-size ATX motherboard with a special window to accommodate the connection of a keyboard. The backplate has two additional pull-fans.

ATX Motherboard

The backplate (AT/ATX) for full-size ATX comes with several optional windows to accommodate the different types. The backplate has two additional pull-fans.

Passive Backplane

Special backplate (PB) that offers space to up to 14 slots plus a keyboard.

(Combinations of above power supplies and backplates can be freely selected)



4U Fault Resilient Rackmount Chassis

REFERENCE ONLY		SIZE	IFSCM	DRAWING NO.	REV.
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All dimensions in millimeters unless noted otherwise		SCALE : NONE		HBR	SHEET 4 OF 4

IEC-830 Ordering Codes

IEC-830 A - **S14** = **AX300** (example only)

**Position #1
Display Type**

- A = with backplate that fits AT/ATX Motherboards
- B = with backplate that fits Passive Backplanes

Position #2

Passive Backplane Type

(S is ISA, C is PICMG, B is PCI Bridge)

- S14 = 14-slot ISA backplane
10 x ISA (PBI-14S)
- C14A = 14-slot PCI/ISA backplane
8xISA, 4xPCI, 2xPICMG
(PBPI-14SA)
- C142 = 14-slot PCI/ISA backplane
mirrored type
8xISA, 4xPCI, 2xPICMG
(PBPI-14SA)
- B147 = 14-slot PCI/ISA backplane
with PCI bridge
5xISA, 7xPCI, 2xPICMG
(PBPX-14S7)

Position #3

Power Supply Options

(AT is Standard PS/2, AX is ATX, MR is Mini Redundant)

- AT250 = 250 Watt Standard
Power Supply PS/2 size
(IPS-ZKS-250A)
- AX250 = 250 Watt ATX
Power Supply PS/2 size
(IPS-ZKS-250WX)
- AX300 = 300 Watt ATX
Power Supply PS/2 size
(IPS-ZKS-300WX)
- MR250 = 2x 250 Watt Redundant
Power Supply PS/2 size
(IPS-MR2-250)
- MR300 = 2x 300 Watt ATX Redundant
Power Supply PS/2 size
(IPS-TC-300R8)



4U Fault Resilient Rackmount Chassis

REFERENCE ONLY	SIZE	IFSCM	DRAWING NO.	REV.
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All dimensions in millimeters unless noted otherwise		SCALE : NONE	HBR	SHEET 5 OF 4

IEC-830

GENERAL

Dimensions

482 (W) x 177 (H) x 478 (D) mm (19" x 7" x 18.8")

Weight

Netto 12.5 kg (27.5 lb), Gross 17.5 kg (38.5 lb)
(without backplane, drives and power supply)

Color

PANTONE 414C

Construction

Heavy-duty steel chassis

Slots

up to 14 boards (from which 10 full-length) can be installed

Disk drive bay

three 5¼" drives (all accesible from front panel)
and three 3½" drives (one accesible from front panel)

Cooling fans

120 CFM ballbearing fan (flow-in) with air filter on front
7.6 Watt (+12 V @ 0.63A), 3150 rpm, 120 x 120 x 38 mm

Controls on Front Panel

Power On/Off switch, System reset button, Alarm reset
button, protected by a lockable door

Indicators on Front panel

Five LEDs Power on, HDD activity, Fan failure alarm,
Temperature 1 alarm and Temperature 2 alarm

Keyboard connector

Pre-wired 5-pin DIN connector on front panel

Speaker

one 8-ohm speaker mounted on fan housing

FAULT DETECTION AND ALARM BOARD

Fan failure

up to 8 eight seperate fans can be monitored, if one of the
fans malfunctions an alarm LED lights up and flashes and
an audible alarm sounds. The alarm sound stops when the
alarm reset button is pressed. The LED alarm indicator will
stay red until the fault condition is resolved

Temperature Limit

At two places inside the chassis the temperature can be
measured. The temperature limit is configurable between 50
and 70°C. If one of the temperatures exceeds the limit an
LED lights up and flashes and an audible alarm sounds. The
alarm sound stops when the alarm reset button is pressed.
The LED alarm indicator will stay red until the fault condition
is resolved

Technical Specifications

ENVIRONMENTAL

EMC (Electromagnetic Compatibility)

EMI stainless steel springs standard installed on chassis
edges, card slots and cooling fan edges to ensure electrically
bonding and grounding of system components. Chassis
designed to meet FCC Class B, UL1950 and CSA. CE and
TÜV certifiable

Operating Temperature

0~50°C (0~70°C non-operating)

Altitude

3000 m (10,000 ft.)

Shock

2.5G @ 15-20ms (35G @ 15-20ms non-operating)

Vibration

5 ~ 17 Hz, 0.1" double amplitude displacement; 17 ~ 500 Hz,
1.5 G acceleration (operating and non-operating)



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4U Fault Resilient Rackmount Chassis

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IEC-830

POWER SUPPLY OPTIONS

Standard PS/2

IPS-ZKS-250A

250 W Standard Power Supply (PS/2 size)

V_{INPUT} : 95~130 V_{AC} or 180~260 V_{AC} @ 47~63 Hz, switchable

V_{OUTPUT} (max. load) : +5 V @ 25 A, +12 V @ 10 A,

-5 V @ 0.5 A, -12V @ 0.5 A

V_{OUTPUT} (min. load) : +5 V @ 1 A, +12 V @ 0.4 A

ATX PS/2-size

IPS-ZKS-250WX

250 W ATX Power Supply (PS/2 size)

V_{INPUT} : 90~130 V_{AC} or 180~260 V_{AC} @ 47~63 Hz, switchable

V_{OUTPUT} (max. load) : +3.3 V @ 14 A, +5 V @ 25 A,

+12 V @ 12 A, -5 V @ 0.5 A, -12V @ 1 A, +5 Vsb @ 1.5 A

V_{OUTPUT} (min. load) : +3.3 V @ 0.2 A, +5 V @ 3 A, +12V @ 2A

IPS-ZKS-300WX

300 W ATX Power Supply (PS/2 size)

V_{INPUT} : 90~130 V_{AC} or 180~260 V_{AC} @ 47~63 Hz, switchable

V_{OUTPUT} (max. load) : +3.3 V @ 20 A, +5 V @ 30 A,

+12 V @ 12 A, -5 V @ 0.5 A, -12V @ 1 A, +5 Vsb @ 1.5 A

V_{OUTPUT} (min. load) : +3.3 V @ 0.2 A, +5 V @ 3 A, +12V @ 2A

Mini Redundant

IPS-MR2-250

2x 250 W Mini Redundant Power Supply (PS/2 size)

Load balance sharing for power redundancy

Hot plug, Hotswap design

V_{INPUT} : 98~132 V_{AC} or 190~260 V_{AC} @ 47~63 Hz, switchable

V_{OUTPUT} (max. load) : +5 V @ 25 A,

+10 V @ 10 A, -5 V @ 0.5 A, -12 V @ 0.5 A

V_{OUTPUT} (min. load) : +5 V @ 4 A, +12 V @ 1.5 A

IPS-TC-300R8

2x 300 W ATX Mini Redundant Power Supply (PS/2 size)

Load balance sharing for power redundancy

Hot plug, Hotswap design with ATX features

V_{INPUT} : 96~132 V_{AC} or 192~264 V_{AC} @ 47~63 Hz, switchable

V_{OUTPUT} (max. load) : +3.3 V @ 14 A, +5 V @ 30 A,

+12 V @ 12 A, -5 V @ 0.5 A, -12V @ 0.8 A, +5 Vsb @ 0.8 A

V_{OUTPUT} (min. load) : +3.3 V @ 0.3 A, +5 V @ 3 A,

+12 V @ 2 A, -5 V @ 0.1 A, -12V @ 0.1 A

Technical Specifications

PASSIVE BACKPLANE OPTIONS

PBI-14S

14-slot ISA Passive Backplane

PBPX-14S7

14-slot PICMG Passive Backplane, 8 ISA, 2 PICMG, 4 PCI with 20-pin ATX, standard AT and power terminal block

PBPI-14SA

14-slot PICMG Passive Backplane with PCI bridge, 5 ISA, 2 PICMG, 7 PCI, with 20-pin ATX, standard AT and power terminal block

PBPI-14S2

Mirrored 14-slot PICMG Passive Backplane
8 ISA, 2 PICMG, 4 PCI in reversed order

Baby-AT or Full-size ATX motherboard

Select any type available



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4U Fault Resilient Rackmount Chassis

REFERENCE ONLY	SIZE	IFSCM	DRAWING NO.	REV.
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