

SEALED EXTENDED FINS ATR ENCLOSURE

- » Dry air contaminant-free applications
- » Increased natural free-air convection
- » Supports conduction and air-cooled modules
- » Up to 220 watts chassis power dissipation*
- » Designed for low wattage demands
- » Ideal for aerospace applications
- » Internal forced-air recirculation
- » Silent, no external fans



SEF

SEALED EXTENDED FINS

↑ 220W
PAYLOAD POWER DISSIPATION



SEALED EXTENDED FINS 6U ATR

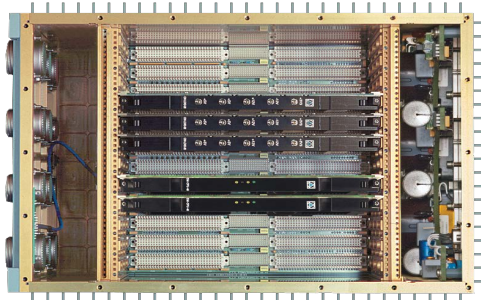


Sealed Extended Fins 6U ATR - Contaminant-free Enclosure suitable for applications that demand moderate passive cooling capability

CM's *Sealed Extended Fins* chassis is an improved version of our *Standard Sealed* model that extends natural-air convection and radiation capabilities. These zero maintenance chassis incorporate no external fans and are ideal for military and aerospace applications where ambient air is laden with hostile or harmful contaminants.

AVAILABILITY

The 6U CM Sealed with Extended Fins series is available in 5, 7, & 12 slot versions, supporting our comprehensive line of 0.8" pitch military VME, cPCI, VPX or Hybrid Backplanes and CM's first generation of military Power Supply Units.



LAYOUT & DESIGN

Internal layout is divided into 3 independent metallic partitions: I/O section at the front, card-cage in the middle, and PSU section at the rear. This increases thermal dissipation and reduces PSU heat and EMI/EMC noise on system electronics.

DISSIPATION & COOLING

Heat generated within the enclosure is primarily dissipated by free-air convection to the surrounding environment. Internal low noise recirculation fans ensure dry air is forced across conduction or air-cooled payload modules, minimizing hot-spots and dissipating heat homogeneously throughout the chassis walls.

RECOMMENDED PAYLOAD POWER RATINGS

(SELF DISSIPATING NO EXTERNAL AIRFLOW OR COLD PLATE PROVIDED)

CM-ATR-45/SEF (12 SLOT)

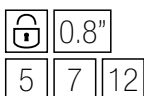
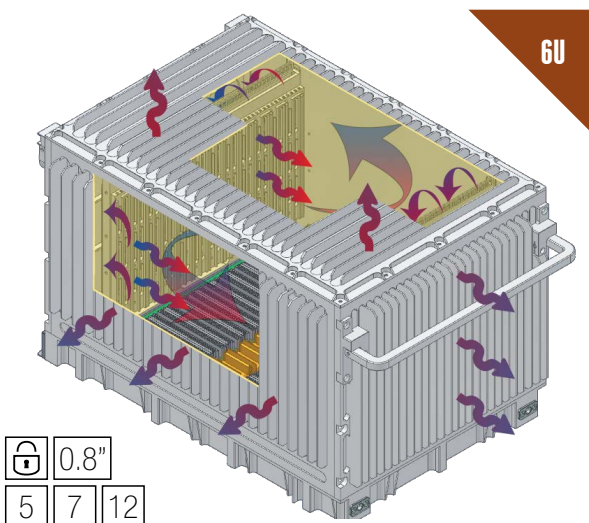
≤ 220 watts

CM-ATR-35/SEF (7 SLOT)

≤ 160 watts

CM-ATR-25/SEF (5 SLOT)

≤ 120 watts



IMPROVED DISSIPATION

MAINTENANCE-FREE

LOW WEIGHT



SEF

SEALED EXTENDED FINS



CM MILITARY ATR PRODUCT RANGE

Sealed Extended Fins 6U ATR Series Specifications for low wattage VME, VPX & cPCI applications with 0.8" pitch eurocards

	CM-ATR-25/SEF	CM-ATR-35/SEF	CM-ATR-45/SEF
SLOTS	5	7	12
WIDTH	155 mm	195 mm	296 mm
HEIGHT	246 mm	246 mm	246 mm
DEPTH	405 mm	405 mm	405 mm
WEIGHT	6.3 Kg	7.7 Kg	11.2 Kg
CGTR THERMAL RES.	$\Delta T/W = 0.23^{\circ}\text{C}$	$\Delta T/W = 0.21^{\circ}\text{C}$	$\Delta T/W = 0.15^{\circ}\text{C}$
PSU MODEL	A-575W/A-475W	C-625W/C-575W	950W/1050W
PSU POWER	575 watts (28 VDC 475 watts)	625 watts (28 VDC 575 watts)	1050 watts (28 VDC 950 watts)
PSU V-INPUT	28 VDC $\pm 30\%$, 48 VDC $\pm 30\%$, 72 VDC $\pm 30\%$, 270 VDC $\pm 30\%$, Autorange 90-132 VAC RMS & 180-264 VAC RMS @ 47-880 Hz, 3-Phase 200 VAC @ 47-880 Hz $\pm 30\%$		
STD BACKPLANE	VME64X or cPCI or VPX or Hybrid VME64X/VPX 6U 0.8" pitch backplanes		
SLOT/BOARD FORMAT	CCS: Conduction-cooled slots only or MCS: Slot-by-slot user configured card-cage allows intermixing conduction-cooled ANSI-VITA 48.2 & air-cooled ANSI-VITA 48.1 boards		
INTERNAL FAN	27 CFM	54 CFM	108 CFM
FRONT PANEL AREA	101 mm x 172.5 mm	141.5 mm x 172.5 mm	243 mm x 172.5 mm
CM FRONT PANEL I/O	6 Power Pins (23 Amp) & 365 I/O Pins (5 Amp)	6 Power Pins (23 Amp) & 822 I/O Pins (5 Amp)	6 Power Pins (23 Amp) & 1057 I/O Pins (5 Amp)
TEMPERATURE SPECS	-40 °C to +85 °C Operating, -55 °C to 100 °C Storage		
MTBF	25° GB 98,000 Hours 65° AIC 32,000 Hours	25° GB 86,000 Hours 65° AIC 28,000 Hours	25° GB 78,000 Hours 65° AIC 24,000 Hours
MOUNTING TRAY	CM-TR-25/SEF	CM-TR-35/SEF	CM-TR-45/SEF

COMPLEMENTARY INFORMATION

- CM ATR Common Features
- CM ATR Backplanes
- CM ATR Power Supplies

OPTIONAL COLD PLATE MOUNTING

Chassis can be optionally cold plate mounted to increase power dissipation rates by approximately 20%.

SEALED EXTENDED FINS ATR ORDERING

For ordering information see page 127 of this catalog.

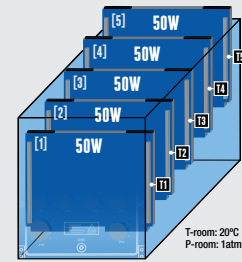
PART NUMBER EXAMPLE:

CM-ATR-25/SEF/VME64x/28VDC/300W/3.3-75W/CMP/STC/HBC/CCS/BLU

- 5 slot, 6U Avionics Enclosure.
- Sealed Extended Fins Enclosure.
- 5 slot VME64x Backplane for 6U 0.8" boards, 160 pin VME64x J0/J1/J2 con.
- 28VDC Power Supply Unit with 300W (+5VDC @ 20A, +3.3VDC @ 5A, $\pm 12\text{VDC}$ @ 8A).
- (+) 3.3VDC @ 22A DC/DC converter on Backplane.
- CM Front Panel fitted with MIL-DTL-38999 connectors.
- Standard Top Cover.
- High profile Bottom Cover (50mm wiring clearance).
- Conduction-cooled Card-cage Slots (conduction-cooled modules only).
- Enclosure color: Dark Blue.



CM ATR CHASSIS THERMAL TESTING

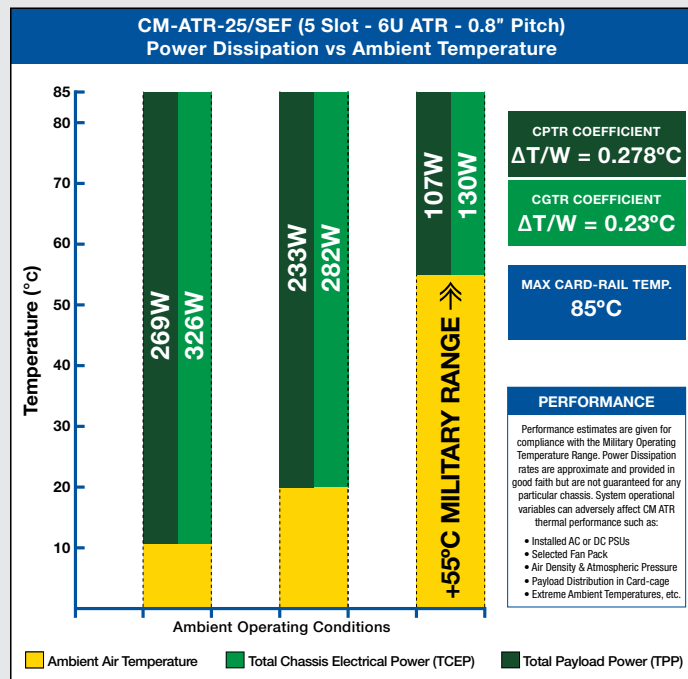
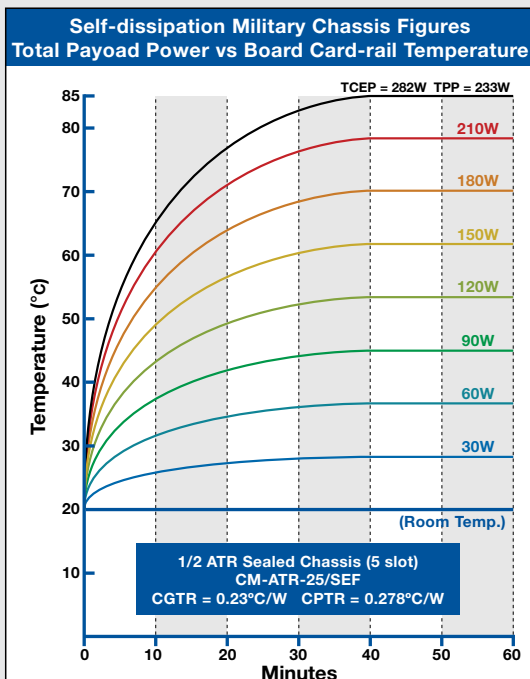
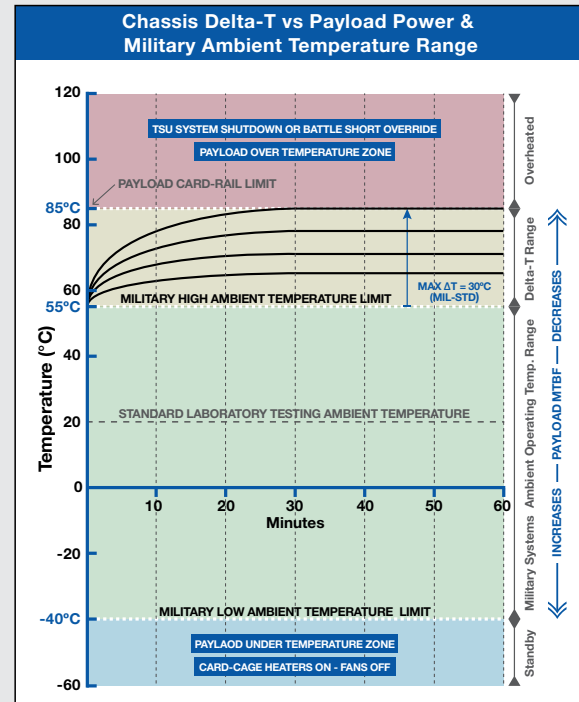
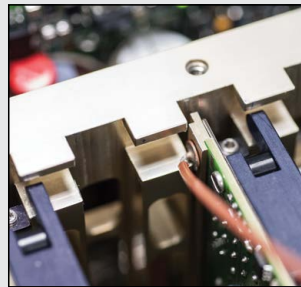


6U SEF Military ATR Chassis Performance suitable for low wattage, 0.8" pitch - sealed applications

MAXIMUM MILITARY SYSTEM DELTA-T

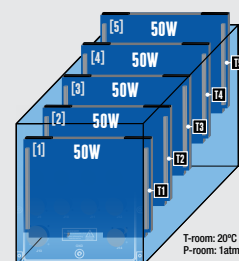
Maximum conduction-cooled payload card-rail temperature is typically 85°C. To comply with MIL-STD-810, systems must be operational up to 55°C ambient (worst case scenario).

In theory, this restricts payload maximum ΔT to 85°C - 55°C ($\Delta T_{max} = 30^\circ\text{C}$). Temperatures in excess of 85°C dramatically increase the risk of module failure and reduce component MTBF. Military limits may be relaxed for systems serving in 'indoor environments' (e.g. to 40°C ambient). Under these conditions ΔT margin can be increased to 85°C - 40°C = 45°C ΔT_{max} .



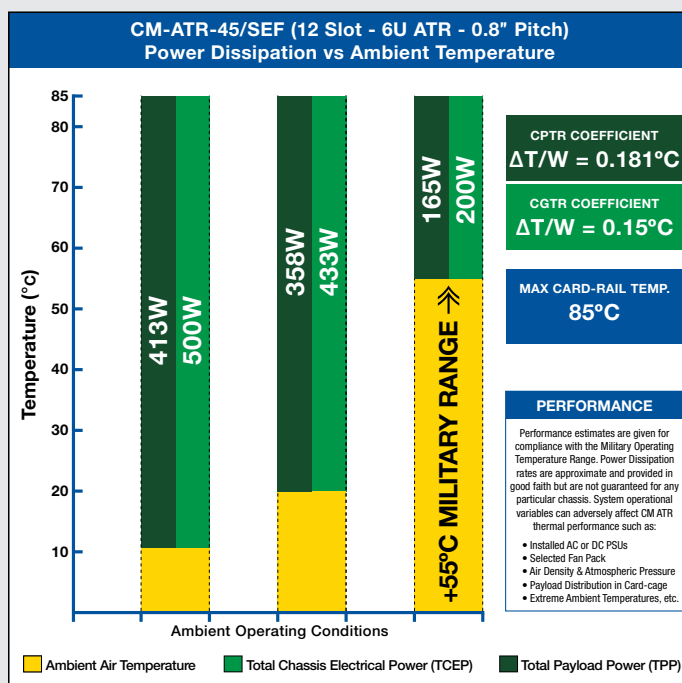
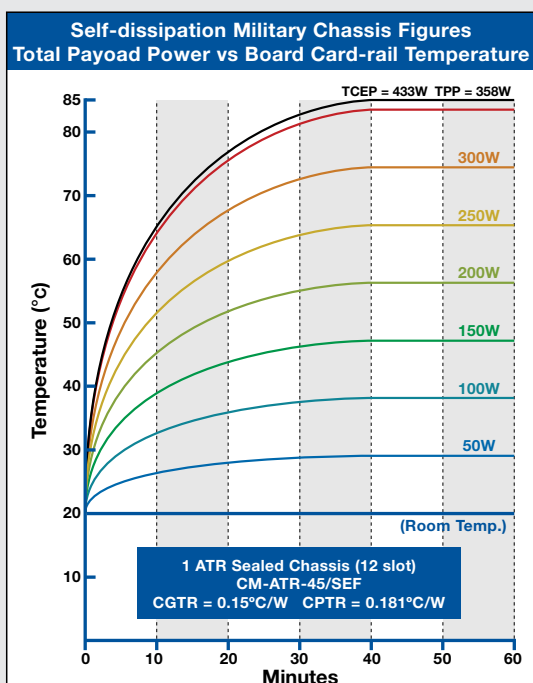
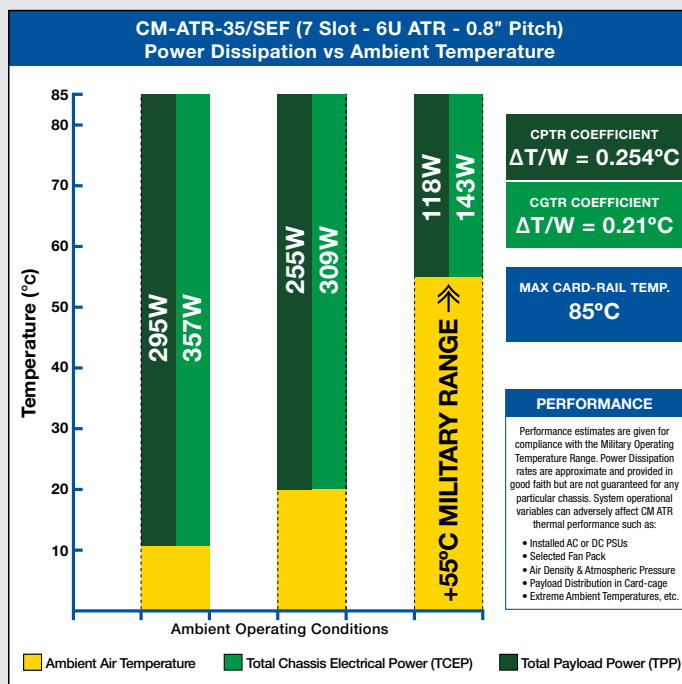
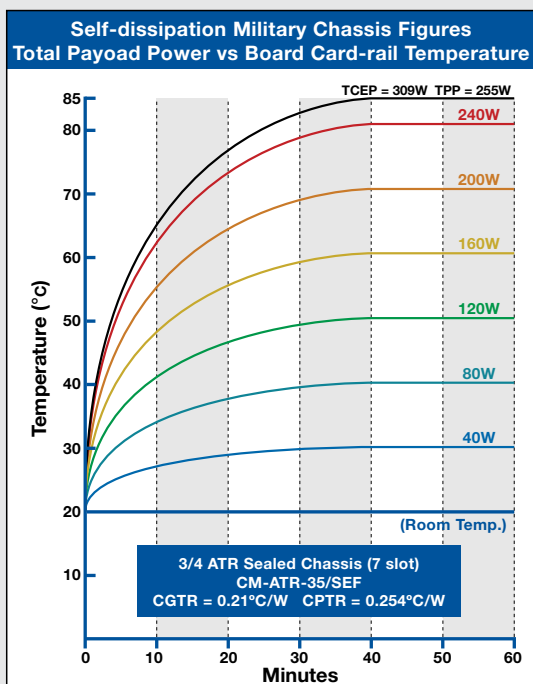


CM ATR CHASSIS THERMAL TESTING



6U SEF Military ATR Chassis Performance

suitable for low wattage, 0.8" pitch - sealed applications





CM ATR ORDERING INFORMATION



6U Military ATR Chassis Ordering high performance military aerospace enclosure part number configuration

CHASSIS GENERIC PART NUMBER:

CM-ATR-S5 /CT /B /I /W /3.3 /D1 /D2 /R /S /FP /TC /BC /CS /F /G /C

/S5 COTS Enclosure Size/Model

CM-ATR-25: 5 Slot 6U Enclosure (0.8" pitch - 1/2 ATR type)

CM-ATR-125: 5 Slot 6U Enclosure (1" pitch - 1/2 ATR type)

CM-ATR-35: 7 Slot 6U Enclosure (0.8" pitch - 3/4 ATR type)

CM-ATR-135: 7 Slot 6U Enclosure (1" pitch - 3/4 ATR type)

CM-ATR-45: 12 Slot 6U Enclosure (0.8" pitch - 1 ATR type)

/CT Enclosure Cooling Technique

S: Standard Sealed (0.8" pitch)

SEF: Sealed with Extended Fins (0.8" pitch)

SEF-HP: Sealed with Extended Fins + 18/20 Heat Pipes (0.8" pitch)

HES: Sealed with 4 Heat Exchangers (0.8" and 1" pitch versions)

SIXHEX: Sealed with 6 Heat Exchangers (0.8" and 1" pitch versions)

SIXHEX-HP: Sealed with 6 Heat Exchangers and integrated Heat Pipes (0.8" pitch with 16HP and 1" pitch with 20HP versions)

FAC: Flowthrough Air Cooled Enclosure (open, non-sealed) (0.8" pitch)

/B Backplane Type (slot pitch according to chassis model)

VME64x: Military VME64x Backplane

cPCI: Military Compact PCI Backplane

VPX: VITA 46 Military VPX Backplane

VME64x/VPX: Hybrid VME64x mixed with VPX Military Backplane

VME64x/cPCI: Hybrid VME64x mixed with cPCI Military Backplane

Note: Hybrid dual bus backplanes are available for a limited set of chassis only

/I PSU Input Power Voltage

28VDC: 28 VDC Input

48VDC: 48 VDC Input

72VDC: 72 VDC Input

270VDC: 270 VDC Input

90-264VAC: Autorange 90-264 VAC @ 47-880 Hz Input

200VAC-3PH: 200 VAC 3 Phase @ 47-880 Hz Input

/W Power Supply Unit Watts

All PSUs = All PSUs except 28 VDC input | 28 VDC = 28 VDC input only

PSUs for CM-ATR-25 (5 slot)

Models: /S or /SEF or /SEF-HP or /HES (0.8") or /FAC

300W: 28 VDC (+5 VDC @ 20A, +3.3 VDC @ 5A, ±12 VDC @ 8A)

400W: All PSUs (+5 VDC @ 20A, +3.3 VDC @ 5A, ±12 VDC @ 12A)

Models: /S or /SEF or /SEF-HP or /HES or /SIXHEX or /SIXHEX-HP

A-475W: 28 VDC (+5 VDC @ 40A, +3.3 VDC @ 22A, ±12 VDC @ 8A)

A-575W: All PSUs (+5 VDC @ 40A, +3.3 VDC @ 22A, ±12 VDC @ 12A)

B-450W: 28 VDC (+5 VDC @ 20A, +3.3 VDC @ 45A, ±12 VDC @ 8A)

B-550W: All PSUs (+5 VDC @ 20A, +3.3 VDC @ 45A, ±12 VDC @ 12A)

C-475W: 28 VDC (+5 VDC @ 20A, +3.3 VDC @ 22A, +12 VDC @ 16A, -12 VDC @ 8A)

C-575W: All PSUs (+5 VDC @ 20A, +3.3 VDC @ 22A, +12 VDC @ 21A, -12 VDC @ 12A)

MOUNTING TRAY GENERIC PART NUMBER:

CM-TR-S5 /CT

PSUs for CM-ATR-(1)35 (7 slot) & CM-ATR-125 (5 Slot 1" Pitch)

Models: /S or /SEF or /SEF-HP or /HES (0.8") or /FAC

400W: 28 VDC (+5 VDC @ 40A, +3.3 VDC @ 5A, ±12 VDC @ 8A)

500W: All PSUs (+5 VDC @ 40A, +3.3 VDC @ 5A, ±12 VDC @ 12A)

Models: /S or /SEF or /SEF-HP or /HES or /SIXHEX or /SIXHEX-HP

A-475W: 28 VDC (+5 VDC @ 40A, +3.3 VDC @ 22A, ±12 VDC @ 8A)

A-575W: All PSUs (+5 VDC @ 40A, +3.3 VDC @ 22A, ±12 VDC @ 12A)

A-675W: 28 VDC (+5 VDC @ 80A, +3.3 VDC @ 22A, ±12 VDC @ 8A)

A-775W: All PSUs (+5 VDC @ 80A, +3.3 VDC @ 22A, ±12 VDC @ 12A)

B-450W: 28 VDC (+5 VDC @ 20A, +3.3 VDC @ 45A, ±12 VDC @ 8A)

B-550W: All PSUs (+5 VDC @ 20A, +3.3 VDC @ 45A, ±12 VDC @ 12A)

B-564W: 28 VDC (+5 VDC @ 20A, +3.3 VDC @ 80A, ±12 VDC @ 8A)

B-664W: All PSUs (+5 VDC @ 20A, +3.3 VDC @ 80A, ±12 VDC @ 12A)

C-475W: 28 VDC (+5 VDC @ 20A, +3.3 VDC @ 22A, +12 VDC @ 16A, -12 VDC @ 8A)

C-575W: All PSUs (+5 VDC @ 20A, +3.3 VDC @ 22A, +12 VDC @ 21A, -12 VDC @ 12A)

C-775W: 28 VDC (+5 VDC @ 20A, +3.3 VDC @ 22A, +12 VDC @ 41A, -12 VDC @ 8A)

C-825W: All PSUs (+5 VDC @ 20A, +3.3 VDC @ 22A, +12 VDC @ 41A, -12 VDC @ 12A)

D-550W: 28 VDC (+5 VDC @ 40A, +3.3 VDC @ 45A, ±12 VDC @ 8A)

D-650W: All PSUs (+5 VDC @ 40A, +3.3 VDC @ 45A, ±12 VDC @ 12A)

E-550W: 28 VDC (+5 VDC @ 20A, +3.3 VDC @ 45A, +12 VDC @ 16A, -12 VDC @ 8A)

E-650W: All PSUs (+5 VDC @ 20A, +3.3 VDC @ 45A, +12 VDC @ 21A, -12 VDC @ 12A)

F-575W: 28 VDC (+5 VDC @ 40A, +3.3 VDC @ 22A, +12 VDC @ 16A, -12 VDC @ 8A)

F-675W: All PSUs (+5 VDC @ 40A, +3.3 VDC @ 22A, +12 VDC @ 21A, -12 VDC @ 12A)

Dual-redundant PSUs for /HES or /SIXHEX or /SIXHEX-HP models

R2x500W: (+5 VDC @ 25A, +3.3 VDC @ 23A, ±12 VDC @ 12A)

PSU for CM-ATR-45 (12 slot)

Models: /S or /SEF or /SEF-HP or /HES (0.8") or /FAC

950W: 28 VDC (+5 VDC @ 80A, +3.3 VDC @ 45A, ±12 VDC @ 16A)

1050W: All PSUs (+5 VDC @ 80A, +3.3 VDC @ 45A, ±12 VDC @ 21A)

Models: /HES or /SIXHEX or /SIXHEX-HP

A-950W: 28 VDC (+5 VDC @ 80A, +3.3 VDC @ 45A, ±12 VDC @ 16A)

A-1050W: All PSUs (+5 VDC @ 80A, +3.3 VDC @ 45A, ±12 VDC @ 21A)

B-950W: 28 VDC (+5 VDC @ 40A, +3.3 VDC @ 45A, +12 VDC @ 33A, -12 VDC @ 16A)

B-1100W: All PSUs (+5 VDC @ 40A, +3.3 VDC @ 45A, +12 VDC @ 41A, -12 VDC @ 20A)

B-1065W: 28 VDC (+5 VDC @ 80A, +3.3 VDC @ 80A, ±12 VDC @ 16A)

B-1165W: All PSUs (+5 VDC @ 80A, +3.3 VDC @ 80A, ±12 VDC @ 21A)

C-864W: 28 VDC (+5 VDC @ 40A, +3.3 VDC @ 80A, ±12 VDC @ 16A)

C-964W: All PSUs (+5 VDC @ 40A, +3.3 VDC @ 80A, ±12 VDC @ 20A)

C-1225W: 28 VDC (+5 VDC @ 80A, +3.3 VDC @ 160A, ±12 VDC @ 16A)

C-1425W: All PSUs (+5 VDC @ 80A, +3.3 VDC @ 160A, ±12 VDC @ 21A)

D-1350W: 28 VDC (+5 VDC @ 160A, +3.3 VDC @ 80A, ±12 VDC @ 16A)

D-1550W: All PSUs (+5 VDC @ 160A, +3.3 VDC @ 80A, ±12 VDC @ 21A)

Dual-redundant PSUs for /HES or /SIXHEX or /SIXHEX-HP models

R2x725W: (+5 VDC @ 20A, +3.3 VDC @ 23A, ±12 VDC @ 12A, ±28 VDC @ 9A)

R2x675W: (+5 VDC @ 60A, +3.3 VDC @ 23A, ±12 VDC @ 12A)

R2x625W: (+5 VDC @ 20A, +3.3 VDC @ 68A, ±12 VDC @ 12A)

R2x710W: (+5 VDC @ 20A, +3.3 VDC @ 23A, +12 VDC @ 32A, -12 VDC @ 12A)



/3.3 DC/DC AUX0 fitted for 3.3VDC (CM-ATR-25 & CM-ATR-35)

3.3-75W: 3.3VDC @ 22A (in lieu of default 3.3 VDC @ 5A)

Optional DC/DC AUX0 converter on Backplane fitted for 3.3VDC. Option suited for 1st generation PSU models 300W/400W/500W. Note: If /3.3-75W is not selected, DC/DC power socket AUX0 remains free to the user.

/D1 DC/DC AUX1 (CM-ATR-35 & CM-ATR-45)

/D2 DC/DC AUX2 (CM-ATR-45)

D1: 100W Optional DC/DC Converter on Backplane. User-defined output 1
D2: 100W Optional DC/DC Converter on Backplane. User-defined output 2

Backplane auxiliary DC/DC converter output options: +2VDC 50W, -2VDC 50W, +3.3VDC 75W, -3.3VDC 75W, +5VDC 100W, -5VDC 100W, +12VDC 100W, -12VDC 100W, +15VDC 100W, -15VDC 100W, +28VDC 100W, -28VDC 100W, +48VDC 100W, -48VDC 100W.

Ordering Examples: 48-100W » 48VDC @ 2A / -5-100W » -5VDC @ 20A / 2-50W » 2VDC @ 25A / ±15-100W » ±15VDC @ 6A

/R Redundant PSU (Plug-in for VMEbus systems only)

RPSU for CM-ATR-35 (7 slot) & CM-ATR-45 (12 slot)

RA-475W: 28 VDC (+5 VDC @ 40A, +3.3 VDC @ 22A, ±12 VDC @ 8A)

RB-575W: All PSUs (+5 VDC @ 40A, +3.3 VDC @ 22A, ±12 VDC @ 12A)

/S Temperature Supervisory Unit

TSU: Optionally installed in backplane (for /S or /SEF or /FAC models)

Note: TSU is fitted as standard in /SEF-HP, /HES, /SIXHEX & /SIXHEX-HP models

/FP Front Panel Layout

CMP: Standard CM front panel fitted with MIL-DTL-38999 connectors

UDP: User-defined front panel layout (requires customer drawing)

/TC Chassis Top Cover

STC: Standard top cover (wiring clearance 20mm)

FTC: Finned top cover (wiring clearance 20mm)*

HTC: High profile top cover (wiring clearance 35mm)

HETC: Heat Exchanger top cover (wiring clearance 20mm)**

EHETC: Extended Heat Exchanger top cover (wiring clearance 35mm)

** FTC chassis top cover is standard on /SEF & /SEF-HP models*

*** HETC chassis top cover is standard on /HES, /SIXHEX & /SIXHEX-HP models*

/BC Chassis Bottom Cover

SBC: Standard bottom cover (wiring clearance below backplane 25mm)

HBC: High profile bottom cover (wiring clearance below backplane 50mm)*

** 50mm bottom clearance is standard on /HES-1", /SIXHEX & /SIXHEX-HP models*

/CS Chassis Card-Cage Slot

MCS: Mixed Card-cage slots (mixed conduction-cooled & air-cooled boards)

CCS: Conduction-cooled Card-cage slots (conduction-cooled boards only)*

** CCS card-cage is standard on /HES-1", /SIXHEX-1" & /SIXHEX-HP-1" models*

/F Rear-Mounted Fan Assembly

Fans for CM-ATR-(1)25 (5 slot) & CM-ATR-(1)35 (7 slot)

Models: /FAC

F115-400: 1x65 CFM 115 VAC @ 400Hz Rotron PX2 Military fan

F200-400: 1x120 CFM 200 VAC 3PH @ 400Hz Rotron PX2 fan

F28: 1x65 CFM 28 VDC Rotron PX2 Military fan (through DC/AC converter)

Models: /HES (0.8")

F115-400: 2x65 CFM 115 VAC @ 400Hz Rotron PX2 Military fans

F200-400: 2x120 CFM 200 VAC 3PH @ 400Hz Rotron PX2 fans

F28: 2x65 CFM 28 VDC Rotron PX2 Military fans (through DC/AC converter)

Models: /HES (1") /SIXHEX or /SIXHEX-HP

F115-400: 2x100 CFM 115 VAC @ 400Hz Rotron PX3 Military fans

F200-400: 2x140 CFM 200 VAC 3PH @ 400Hz Rotron PX3 fans

F28: 2x100 CFM 28 VDC Rotron PX3 Military fans

F115-60: 2x100 CFM 115 VAC @ 60Hz Rugged fans

F220-50: 2x100 CFM 220 VAC @ 50Hz Rugged fans

Fans for CM-ATR-45 (12 slot)

Models: /FAC

F115-400: 2x100 CFM 115 VAC @ 400Hz Rotron PX3 Military fans

F200-400: 2x140 CFM 200 VAC 3PH @ 400Hz Rotron PX3 fans

F28: 2x100 CFM 28 VDC Rotron PX3 Military fans

Models: /HES

F115-400: 4x65 CFM 115 VAC @ 400Hz Rotron PX2 Military fans

F200-400: 4x120 CFM 200 VAC 3PH @ 400Hz Rotron PX2 fans

F28: 4x65 CFM 28 VDC Rotron PX2 Military fans (through DC/AC converter)

Models: /SIXHEX or /SIXHEX-HP

F115-400: 4x100 CFM 115 VAC @ 400Hz Rotron PX3 Military fans

F200-400: 4x140 CFM 200 VAC 3PH @ 400Hz Rotron PX3 fans

F28: 4x100 CFM 28 VDC Rotron PX3 Military fans

F115-60: 4x100 CFM 115 VAC @ 60Hz Rugged fans

F220-50: 4x100 CFM 220 VAC @ 50Hz Rugged fans

VAP: Vehicle Air-Plenum according to system specs (external forced air source)

- No rear fan required for /S, /SEF & /SEF-HP models, omit option from part number

- Rugged fans are fitted with aluminum housing. Operating range: -10°C to +70°C

- Full military Rotron PX2 & PX3 AC fans. Operating range: -54°C to +125°C

- Note: Fan input voltage can be selected independently of main PSU voltage

/G Fan Finger Guards

STDG: Standard Rotron PX2/PX3 finger guards

EMIG: Optional EMI shielding finger guards with honeycomb filter

GNF: Optional finger guards with acoustic noise filter (-5dB)

/C Chassis Color

B: Black, **G:** Navy Grey, **E:** Army Dark Earth, **W:** White, **R:** Red, **PT:** Platinum,

YW: Yellow, **GN:** Green, **BLU:** Dark Blue, **CR:** Chromate, **O:** Other (user-defined)

PART NUMBER EXAMPLE:

CM-ATR-45/HES/VME64x/90-264VAC/A-1050W/15-100W/-15-100W/UDP/HTC/HBC/MCS/F200-400/EMIG/B

- 12 slot, Heat Exchanger Sidewalls. 6U Avionics Enclosure.
- 12 slot VME64x backplane for 6U boards (0.8" pitch).
- Auto-range 90-264VAC @ 47-880Hz Input Power Supply.
- A-1050W power supply (+5VDC @ 80A, +3.3VDC @ 45A, ±12VDC @ 21A).
- (±)15VDC @ 6.6A DC/DC AUX1 & AUX2 user output on backplane.
- Temperature Supervisory Unit fitted as standard.
- User-defined front panel layout.
- High profile Top & Bottom cover. Universal Card-cage Slots.
- 4x Rotron PX2 military fan 115VAC @ 400Hz (260 CFM total).
- EMI shielded finger guards. Enclosure color: Black.



based on system total payload power dissipation



CHMPF : Chassis Half MTBF Power Factor
CPMDC : Chassis Payload MTBF Degradation Coefficient
CIA : Chassis Installed Airflow
CEA : Chassis Effective Airflow
ADDT : Ambient Airflow Delta-T
CSAOP : Chassis Stable Airflow Operating Point
CIARC : Chassis Impedance Airflow Reduction Coefficient
MFARC : Multiple Fan Airflow Reduction Coefficient
OARC : Overall Airflow Reduction Coefficient
SCIDPC : Sealed Chassis Indirect Delta-T Power Coefficient
PEADT : Payload to Exhaust Airflow Delta-T
CCAAT : Chassis Cooling Airflow Average Temperature