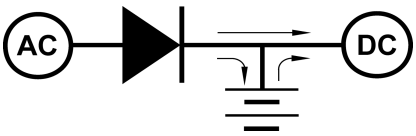
Station DC power reliability ensures a high station availability of mission-critical safety devices, controls, alarms, switchgear, instrumentation, inverters and railroad auxiliary DC power. **StatiVolt Rectifiers** are designed and built for decades of robust, industrial duty and field serviceability. Over 50 years of their sales and applications to batteries and critical DC loads is testimony to their reliability.



30 Year Design Life

25 Years Parts & Service

Utility Rectifier Cabinets

R

R

Telecom Rectifier Rack Cabinets

Features

Reliability by Design

- Robust industrial duty
- Full-wave silicon diode rectifier
- Electronic + magnetic V regulation
- Failsafe, soft-switching, low noise
- Natural convection cooled

Regulated DC Power

- Constant Vdc charging & supply
- Minimal noise & ripple voltage
- Remote sensing built-in

Protection

- Input & output circuit breakers
- Inherent surge rejection
- Transformer isolation
- Output current limiting
- Failsafe output V control

DC Volts	DC Amps	AC Input	Eff %	Cabinet Style
24	15-150	1Ø	77	W, B, R
48	15-150	1Ø	83	W, B, R
72	15-30	1Ø	85	W, B
120	15-75	1Ø	85	W, B
240	15-30	1Ø	85	W, B
24	50-500	3Ø	80	B, F
48	75-600	3Ø	90	B, F
72	100	3Ø	90	F
120	50-800	3Ø	90	B, F
240	50-250	3Ø	90	F

Versatile Functions & Options

- Input Power Factor Correction
- Extra Wide AC Input V Range
- Delayed Sequential Startup
- Charge Functions & Options
- Alarm / Annunciation Options
- Digital Multi-Function Power Meter
- Distribution Breakers
- Special Utility Options
- Tropical / Marine / Fungus Proofing

Warranty & Service

- 5 year full warranty
- 20 years parts & service available
- 30 year design life

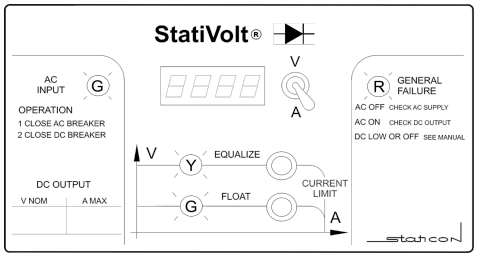
Digital Monitoring Options

- AccuDC243 ® RS485 Battery monitor
- PLC based Ethernet output
- PLC based RS485 Modbus output
- PLC based DNP3 output
- Real-time, analog V & I monitoring

DC Power System Solutions

- Simple, parallel rectifier operation
- Rectifier(s) + Battery + Distribution
- Batteries are IEEE 485 sized
- Integrated or separate charger / batteries
- Battery breaker / disconnect included
- Complete, single vendor DC solutions

Contents



Front Label

Rectifiers

Power Conversion Design

- Transformer input (60 or 50 Hz)
- Full-wave, silicon diode rectifier
  2 pulse I, V (1Ø)
  6 pulse I, V (3Ø, 3-125 kW)
- Soft switching, low noise

Output Control

- Closed loop, negative feedback control
- Analog electronics based
- High speed electronic V sensing
- FET based voltage-to-current control
- Failsafe, magnetic shunt regulation

Steady-State V Regulation

- ±0.5% (full load, ±10% AC V)
- ±1% (10-100% load, constant AC V)

Output V Range

- Nominal V +20% for float / equalize V

Dynamic V Response

- ±5% for 50% step-loads (battery load)
- Recovery in 3-6 cycles (50-100 ms)

Output Ripple / Noise Filter Options

- ≤ 1% rms ripple (standard **B**)
- ≤ 100 mV rms (option **CU**)
- ≤ 32 dBrnC (telecom noise option **C**)

Parallel Rectifier Operation

- Load sharing within 10% unit IDC

Annunciation & Meters

- Standard annunciation & meters:

AC Normal	green LED
General Fail	red LED, contacts
Float / Equal	green / yellow LEDs
V+A Meter	digital, 2% accuracy

- Choose from 9 alarm, 2 meter options
- Contacts are form 'C contacts rated:
  0.6 A @ 125 Vac 2 A @ 28 Vdc

Charge Functions & Options

- Choose from 4 charge functions
- Charge V temperature compensation

Protection

- AC breaker rated I ≈ 1.5 x full load IAC
- DC breaker rated I ≈ 120% full load IDC
- Input transformer, electrical isolation
- I^2t breaker coordinated power diodes
- Control fuses for protection / isolation
- Failsafe I limit set at 120% of rated IDC

Surge Tolerance

- Inherent, inductive surge tolerance is 4 kV (1Ø) & 6 kV (3Ø) peak for 8 ms
- Withstands ANSI / IEEE C62.41 (IEC 6080-4) standard surge V waveforms

Electromagnetic Interference

- Conducted / radiated EMI within CSA C108.8 & FCC Part 15 Class B limits

Input power Factor

- Input PF ≈ 0.80
- Input PF ≥ 0.90 optional capacitors

Input Harmonic Distortion

- Full load V THD is < 3%, I THD is ≤ 15% (3Ø, 6 pulse), 45% (1Ø, 2 pulse)

Audible Noise

- 55-65 dBA (at 1 m, rating dependent)

Cabinets

- NEMA type 1, IEC 60529 IP 20
- Front accessible, side / top cable entry
- 14 / 10 gage steel panels / mounts
- Powder coated, baked enamel finish

Environmental Requirements

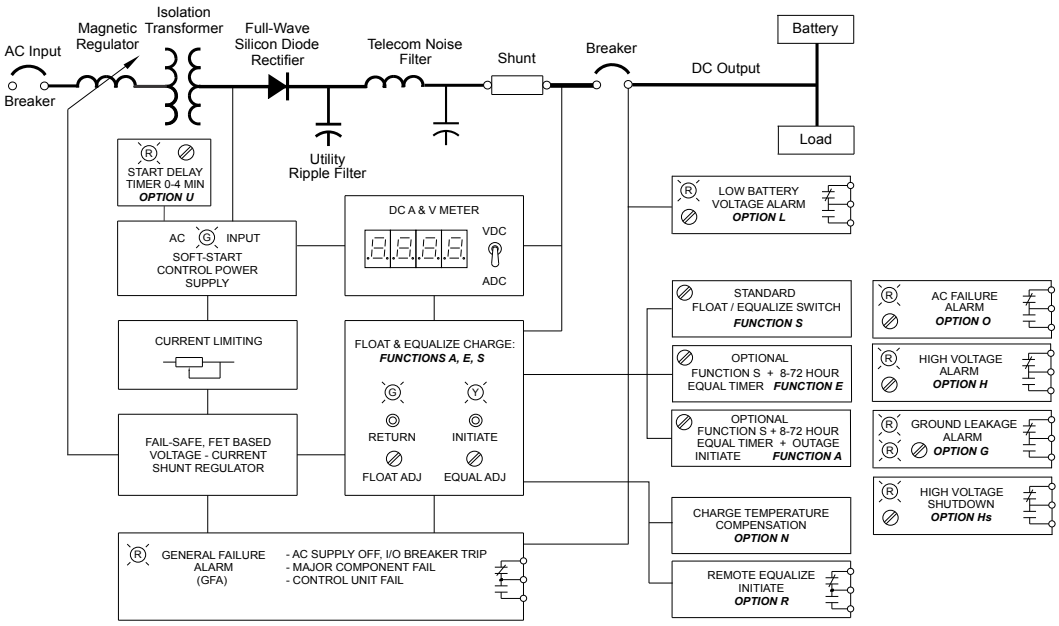
- Natural convection cooled, RH < 95%
- -20°C to +40°C continuous operation

Reliability

- MTBF is 300 k hrs (1Ø), 200 k hrs (3Ø)
- MTTR is 1 hour (spares on / near site)

Design & Test Standards

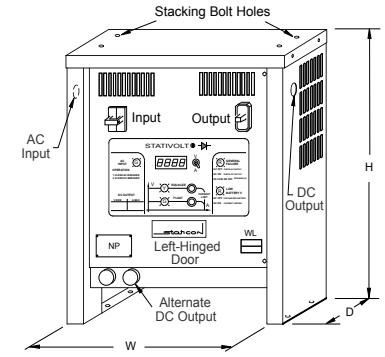
- CSA SPE-1000 inspected & approved
- Built to CSA C22.2 No. 107.2
- Built to NEMA PE5, IEEE Std 2405-2022
- Magnetics designed for Class H, 180°C
- Breakers certified to CSA C22.2 No. 5 and UL 489

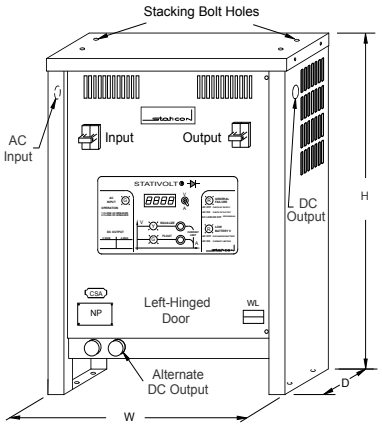


Rectifier Single-Line Diagram

Rectifier Cabinets (1 phase AC)

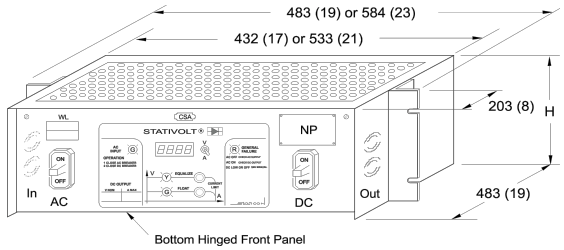
Utility Wall / Bench Mount (W) Stackable





Nominal DC V	A	Input	Style	Dimensions H	W	mm (in) D	Weight kg (lb)
24	**15**	1Ø	W	610 (24)	508 (20)	457 (18)	50 (110)
24	**30**	1Ø	W	610 (24)	508 (20)	457 (18)	60 (132)
24	**50**	1Ø	W	610 (24)	508 (20)	457 (18)	70 (154)
24	**75**	1Ø	W	610 (24)	508 (20)	457 (18)	80 (176)
24	**100**	1Ø	B	762 (30)	559 (22)	508 (20)	110 (243)
24	**150**	1Ø	B	762 (30)	559 (22)	508 (20)	160 (353)
48	**15**	1Ø	W	610 (24)	508 (20)	457 (18)	70 (154)
48	**30**	1Ø	W	610 (24)	508 (20)	457 (18)	80 (176)
48	**50**	1Ø	W	610 (24)	508 (20)	457 (18)	105 (232)
48	**75**	1Ø	B	762 (30)	559 (22)	508 (20)	130 (287)
48	**100**	1Ø	B	762 (30)	559 (22)	508 (20)	140 (309)
48	**150**	1Ø	B	762 (30)	559 (22)	508 (20)	210 (463)
72	**15**	1Ø	W	610 (24)	508 (20)	457 (18)	80 (176)
72	**30**	1Ø	B	762 (30)	559 (22)	508 (20)	100 (220)
72	**50**	1Ø	B	762 (30)	559 (22)	508 (20)	140 (308)
125	**15**	1Ø	W	610 (24)	508 (20)	457 (18)	90 (198)
125	**30**	1Ø	B	762 (30)	559 (22)	508 (20)	120 (265)
125	**50**	1Ø	B	762 (30)	559 (22)	508 (20)	155 (342)
125	**75**	1Ø	B	762 (30)	559 (22)	508 (20)	232 (512)
250	**15**	1Ø	B	1600 (63)	610 (24)	610 (24)	125 (276)
250	**30**	1Ø	B	1600 (63)	610 (24)	610 (24)	155 (342)

Utility Wall / Bench / Floor Mount (B) Stackable



Telecom Rectifier Rack Mount Cabinet (R)

Nom DC V	A	Input	Style	H mm (in)	Weight kg (lb)
24	**15**	1Ø	R	178 (7.0)	40 (88)
24	**30**	1Ø	R	222 (8.75)	45 (99)
24	**50**	1Ø	R	311 (12.25)	50 (110)
24	**75**	1Ø	R	356 (14.0)	65 (143)
24	**100**	1Ø	R	356 (14.0)	75 (165)
24	**150**	1Ø	R	445 (17.5)	85 (187)
48	**15**	1Ø	R	222 (8.8)	45 (99)
48	**30**	1Ø	R	267 (10.5)	55 (121)
48	**50**	1Ø	R	356 (14.0)	75 (165)
48	**75**	1Ø	R	445 (17.5)	90 (198)
48	**100**	1Ø	R	445 (17.5)	130 (287)
48	**150**	1Ø	R	533 (21.0)	130 (287)

Notes

Sizes may vary for options.
Dimensions in **mm** (**inches**).
Drawings are not to scale.

Cabinet Options

NEMA 2 / IEC IP22 top drip shield.
Zinc rich powder coat paint primer.
Epoxy powder coat / baked paint .

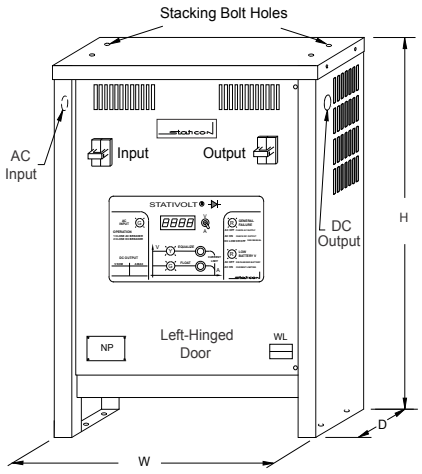
Standard Steel Cabinets

NEMA type 1. Front access.
14 gage sides, structural mounts
ASA 61 grey, powder coated enamel.

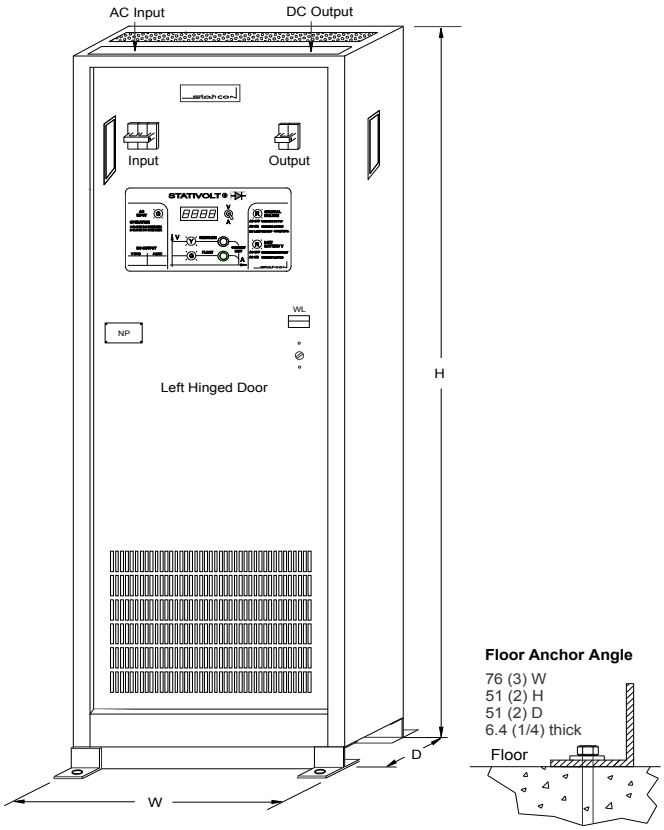
Installation

Top / side cable entry.
Required Ventilation Clearance:
W Cabs: 102 (4) side / rear.
B Cabs: 152 (6) side / rear.

Rectifier Cabinets (3 phase AC)



Utility Bench / Floor Mount (B) Stackable



Utility & Telecom Floor Mount

Nominal DC		Input	Style	Dimensions H	W	D	Weight kg (lb)
24	**50**	3Ø	B	762 (30)	559 (22)	508 (20)	100 (220)
24	**75**	3Ø	B	762 (30)	559 (22)	508 (20)	110 (242)
24	**100**	3Ø	B	762 (30)	559 (22)	508 (20)	125 (275)
24	**150**	3Ø	F	1600 (63)	610 (24)	610 (24)	175 (386)
24	**200**	3Ø	F	1600 (63)	610 (24)	610 (24)	250 (551)
24	**300**	3Ø	F	1600 (63)	610 (24)	610 (24)	300 (661)
24	**400**	3Ø	F	1600 (63)	610 (24)	610 (24)	350 (772)
24	**500**	3Ø	F	1600 (63)	762 (30)	762 (30)	400 (882)
48	**75**	3Ø	B	762 (30)	559 (22)	508 (20)	155 (342)
48	**100**	3Ø	B	762 (30)	559 (22)	508 (20)	180 (397)
48	**150**	3Ø	F	1600 (63)	610 (24)	610 (24)	270 (595)
48	**200**	3Ø	F	1600 (63)	610 (24)	610 (24)	330 (728)
48	**300**	3Ø	F	1600 (63)	610 (24)	610 (24)	440 (970)
48	**400**	3Ø	F	1600 (63)	762 (30)	762 (30)	475 (1047)
48	**500**	3Ø	F	2057 (81)	762 (30)	762 (30)	500 (1102)
48	**600**	3Ø	F	2057 (81)	762 (30)	762 (30)	560 (1235)
72	**100**	3Ø	F	1600 (63)	610 (24)	610 (24)	300 (661)
125	**50**	3Ø	B	762 (30)	559 (22)	508 (20)	215 (474)
125	**75**	3Ø	F	1600 (63)	610 (24)	610 (24)	250 (551)
125	**100**	3Ø	F	1600 (63)	610 (24)	610 (24)	380 (838)
125	**150**	3Ø	F	1600 (63)	610 (24)	610 (24)	450 (992)
125	**200**	3Ø	F	1600 (63)	762 (30)	762 (30)	520 (1146)
125	**250**	3Ø	F	2057 (81)	762 (30)	762 (30)	590 (1298)
125	**300**	3Ø	F	2057 (81)	762 (30)	762 (30)	660 (1455)
125	**400**	3Ø	F	2057 (81)	914 (36)	914 (36)	770 (1698)
125	**500**	3Ø	F	2057 (81)	914 (36)	914 (36)	840 (1852)
125	**600**	3Ø	F	2057 (81)	1067 (42)	1067 (42)	1000 (2205)
125	**800**	3Ø	F	2057 (81)	1067 (42)	1067 (42)	1350 (2976)
250	**50**	3Ø	F	1600 (63)	610 (24)	610 (24)	300 (661)
250	**75**	3Ø	F	1600 (63)	610 (24)	610 (24)	330 (728)
250	**100**	3Ø	F	1600 (63)	610 (24)	610 (24)	520 (1146)
250	**150**	3Ø	F	2057 (81)	762 (30)	762 (30)	630 (1389)
250	**200**	3Ø	F	2057 (81)	914 (36)	914 (36)	730 (1609)
250	**250**	3Ø	F	2057 (81)	914 (36)	914 (36)	880 (1940)

Notes
Sizes may vary for options.
Dimensions in **mm** (**inches**).
Drawings are not to scale.

Installation
Top / side cable entry.
Required Ventilation Clearance:
B Cabs: 152 (6) side / rear.
F Cabs: 152 (6) rear / top.

Standard Steel Cabinets
NEMA type 1. Front access.
14 gage sides. Structural mounts.
ASA 61 grey, powder coat enamel.

Cabinet Options
NEMA 2 / IEC IP22 top drip shield.
Zinc rich powder coat primer.
Epoxy powder coat & baked.

Model Numbers

_ CT 48 B 75 E 56 76 B E __

- └ Options (see below)
- └ Charge Program F, S, E, A, M
- └ **W**all, **B**ench, **F**loor, **R**ack mount
- └ Height (cm)
- └ Width (cm)
- └ AC input voltage code (table at right)
- └ Output current rating (Amperes)
- └ DC Ripple Filter, **B** 1% ripple), **CU** 100 mV rms, **C** 32 dBrnC
- └ Nominal DC voltage rating

└ For parallel, dual rectifier systems, add 2 prefix

AC Voltage	Phase	Code
110-120-127	1	A
208-240	1	B
220-230-240	1	UX
480	1	G
600	1	H
208	3	E
380-400-415	3	LX
480	3	F
600	3	K

60 Hz: no suffix
50 Hz: add suffix **X** to code

Options

AC Input Options		Code
Input PF correction to ≥ 0.90, via AC capacitors		P
AC input / start delay timer, 0 - 4 minutes adjustable		U
Soft walk-in, 12 cycle start-up		consult Staticon

Battery Charging Functions		
High float or single voltage for VRLA batteries or non-battery power supply		F
PB initiate equalize, PB return to float		S
PB initiate 8-72 hour equalize timer, auto / PB return to float		E
PB / AC outage initiate (0-15 minute adj. initiate time) 8-72 hour equal timer, auto / PB return to float		A
PB / 30 day initiate, 8-72 hour equalize timer, auto / PB return to float		M

DC Output & Battery Charging Options		
NEMA 5 Standard ripple filter: ≤ 1% ripple voltage		B
NEMA 5 Enhanced ripple filter: ≤ 100 mV rms		CU
NEMA 7 Telecom noise filter: ≤ 32 dBrNC		C
Charge voltage temperature compensation		N
Charge current limiting to 20 A / 100 Battery AH		CI

Annunciation Options		
AC input V & A meters, analog, 2% accuracy		Mac
Battery charge / discharge DC ammeter, analog, 2% accuracy		Q
AC input failure alarm, 1 red LED, 1 set NO-NC contacts		O
Low DC / battery voltage alarm, 1 red LED, 1 set NO-NC contacts, V adjustable		L
High DC voltage alarm, 1 red LED, 1 set NO-NC contacts, V adjustable	(not required)	H
High DC voltage shutdown, 1 red LED, 1 set NO-NC contacts, V adjustable	(not required)	Hs
Ground leakage alarm, 2 red LEDs, 1 set NO-NC contacts, 1-5 mA adjustable		G
Common alarm, 1 set NO-NC contacts (no individual alarm contacts)		Ca
Equalize charge annunciation, 1 set of form 'C' contacts (yellow LED)		J
Remote equalize initiation, 1 set of form 'C' contacts		R
Alarm memory latching module, 5 alarm red LEDs, LED test PB, 4 alarm reset PBs (6 s delay)		La
Audible alarm (used with common alarm)		Aa
PLC based Digital Monitor (Ethernet, RS485 or DNP3 output), consult Staticon		DM
AccuDC243 Digital Battery Monitor (RS485, Modbus RTU output), consult Staticon		DBM

DC System / Battery Options		
Distribution / protection circuit breakers, fuses or switches	consult Staticon	D
DC UPS system (battery mounted / integrated with the charger)	consult Staticon	B

Utility Options	
Auxiliary contacts for any input, output or built-in distribution breakers	Ac
High interrupting-ampere capacity input / output circuit breakers	I
Zinc Rich powder coat paint primer for enhanced cabinet corrosion protection	Z
Top drip shield per NEMA 2 / IEC 60529 IP22 requirements	N2
Tropical / humidity / marine / fungus proofing, acrylic sprayed components and wires	T

