

HA SERIES HA28-106FR5X

AGM BLOCK RANGE VRLA INDUSTRIAL BATTERY

Sterling HA Series of VRLA Industrial Batteries provide superior high integrity reliability for critical backup power applications. The maintenance-free valve regulated lead acid (VRLA) construction make Sterling HA series batteries the definitive choice for UPS, telecom and utility applications.

Sterling HA series are constructed with proprietary grid alloy and active material with a unique plate curing manufacturing process. This process allows for 99% gas recombination, providing extended float service life.

From grid design to curing and formation, every facet of the manufacturing process is controlled and completed in one production facility utilizing cutting edge, fully automated production technologies. Production standards for quality control are among the highest in the industry and are ISO 9000 certified.

Specifications

Model	C ₂₀ 1.75	C ₁₀ 1.75	C ₅ 1.75	R _{INT} mohms	Max. Discharge Amps	L mm	W mm	H mm	W kg
HA28-106FR5X	28.0	26.0	23.8	10.0	390.0	165.1	126.0	174.0	10.21

All capacities in ampere-hours at 25°C. R_{INT} for fully charged battery at 25°C. Maximum discharge is 25°C, 5 seconds.

Discharge Data - Amperes

END VOLTAGE	30mins.	60mins.	2hrs.	3hrs.	4hrs.	5hrs.	6hrs.	8hrs.
1.75	33.2	19.8	10.9	7.6	5.9	4.8	4.1	3.2
1.80	31.0	18.7	10.4	7.4	5.8	4.7	4.1	3.1
1.85	27.8	17.2	10.0	7.1	5.5	4.6	3.9	3.0
1.90	25.3	15.2	9.2	6.8	5.3	4.4	3.7	2.8

All discharge ratings at 25°C.

Discharge Data - Watts Per Cell

END VOLTAGE	5mins.	10mins.	15mins.	20mins.	30mins.	45mins.	50mins.	60mins.
1.60	194.8	141.8	112.2	93.8	71.4	53.0	45.6	42.8
1.67	191.0	139.0	106.0	92.0	70.0	52.0	44.7	42.0
1.70	187.0	134.0	105.0	89.0	67.0	50.0	43.0	40.0
1.75	170.0	123.0	103.0	83.0	66.0	49.0	42.1	39.0

All discharge ratings at 25°C.

FEATURES

& BENEFITS

Flame Retardant ABS Case and Cover

- > Impact resistant, self-extinguishing material with standard Underwriters Laboratories (UL) 94 VO rating

Tank Formed Plate Construction

- > 100% capacity on shipment
- > Plate consistency and matching dependable performance

Threaded Insert Post

- > High conductivity
- > Increased retorque intervals

Epoxy Post Seal

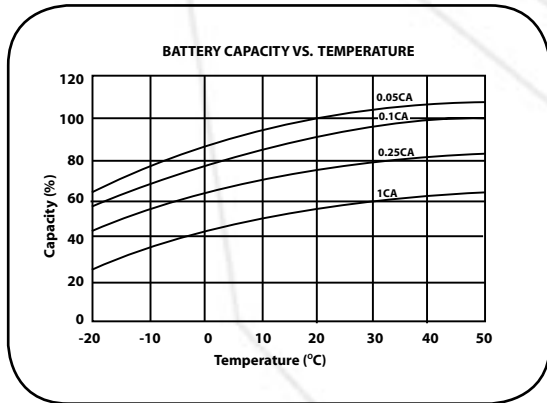
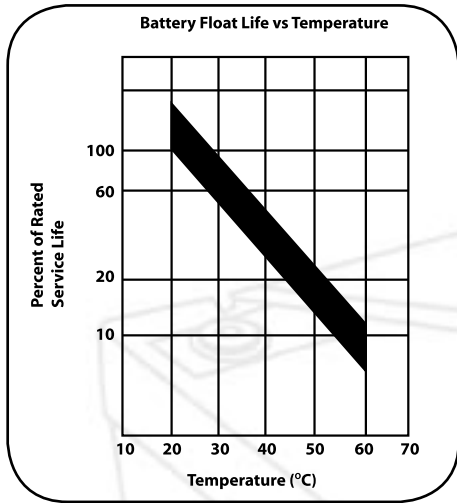
- > Elimination of acid egress for trouble-free service life

Flame Arrestor

- > Ceramic disc flame arrestor



TECHNICAL DATA



Positive Plate > Tank formed grid plate, lead-tin-calcium alloy, wrapped

Negative Plate > Tank formed grid plate, lead-tin-calcium alloy

Separator > Non woven glass-fleece high absorption grade

Electrolyte > 1300 S.G. AGM Suspension

Case Material > Standard impact resistant acrylobutadien-styrene (ABS), UL 94 VO

Post > Threaded insert, M6 stainless steel bolt and washer supplied
M6 bolt will fit lugs with 6.35 mm hole
> 60 in-lbs initial, 48 in-lbs retorque

Valve > One-way pressure release, self-sealing neoprene

Charging > Cycle service - 14.5-14.9 Volt at 25°C
> Float service - 13.5-13.8 Volt at 25°C

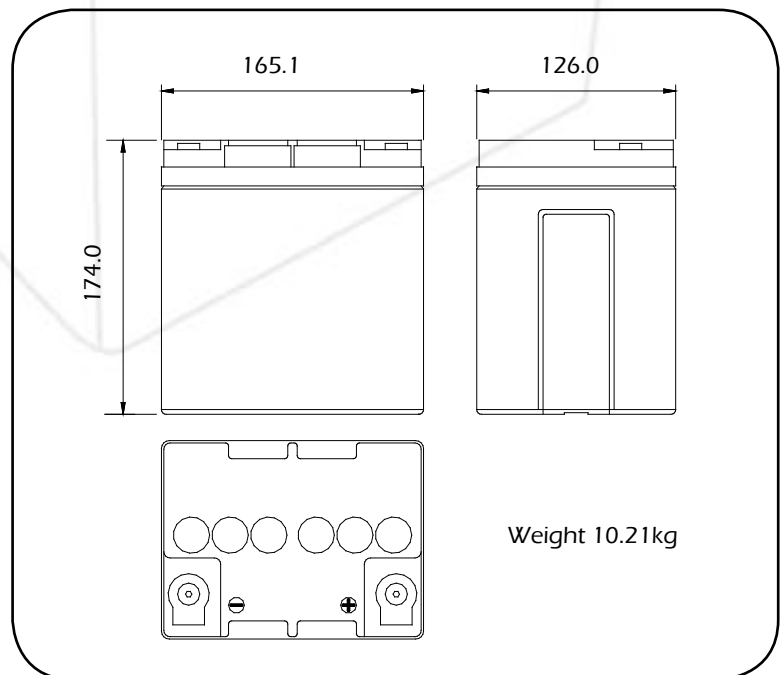
Capacity vs. Temperature > 40°C - 102%
> 0°C - 85%

Self Discharge > 3% per month at 25°C

Operating Temperature > Charge: 0°C - 40°C
> Discharge: -15°C - 50°C
> Storage: -15°C - 40°C

Transport > Unregulated for transportation via road, rail, sea and air transportation meeting the requirements of 49 CFR 173.159 (D)

Approvals > CE Mark, UL standard 1989 approved component



HA SERIES HA35-145FR

AGM BLOCK RANGE VRLA INDUSTRIAL BATTERY

Sterling HA Series of VRLA Industrial Batteries provide superior high integrity reliability for critical backup power applications. The maintenance-free valve regulated lead acid (VRLA) construction make Sterling HA series batteries the definitive choice for UPS, telecom and utility applications.

Sterling HA series are constructed with proprietary grid alloy and active material with a unique plate curing manufacturing process. This process allows for 99% gas recombination, providing extended float service life.

From grid design to curing and formation, every facet of the manufacturing process is controlled and completed in one production facility utilizing cutting edge, fully automated production technologies. Production standards for quality control are among the highest in the industry and are ISO 9000 certified.

FEATURES & BENEFITS

Flame Retardant ABS Case and Cover

- > Impact resistant, self-extinguishing material with standard Underwriters Laboratories (UL) 94 VO rating

Tank Formed Plate Construction

- > 100% capacity on shipment
- > Plate consistency and matching dependable performance

Threaded Insert Post

- > High conductivity
- > Increased retorque intervals

Epoxy Post Seal

- > Elimination of acid egress for trouble-free service life

Flame Arrestor

- > Ceramic disc flame arrestor



Specifications

Model	C ₂₀ 1.75	C ₁₀ 1.75	C ₅ 1.75	R _{INT} mohms	Max. Discharge Amps	L mm	W mm	H mm	W kg
HA35-145 FR	35.0	32.6	29.8	8.5	525	196.1	131.1	166.9	11.52

All capacities in ampere-hours at 25°C. R_{INT} for fully charged battery at 25°C. Maximum discharge is 25°C, 5 seconds.

Discharge Data - Amperes

END VOLTAGE	30mins.	60mins.	2hrs.	3hrs.	4hrs.	5hrs.	6hrs.	8hrs.
1.75	40.0	23.5	13.0	9.1	7.0	5.8	5.0	3.8
1.80	37.2	22.3	12.4	8.8	6.9	5.6	4.8	3.7
1.85	34.0	20.5	11.8	8.4	6.6	5.5	4.7	3.6
1.90	30.0	18.1	11.0	8.0	6.3	5.2	4.4	3.4

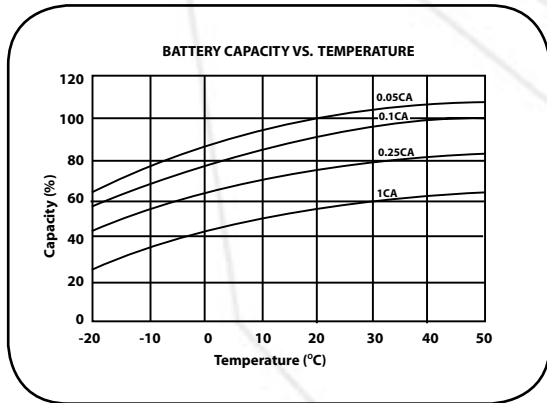
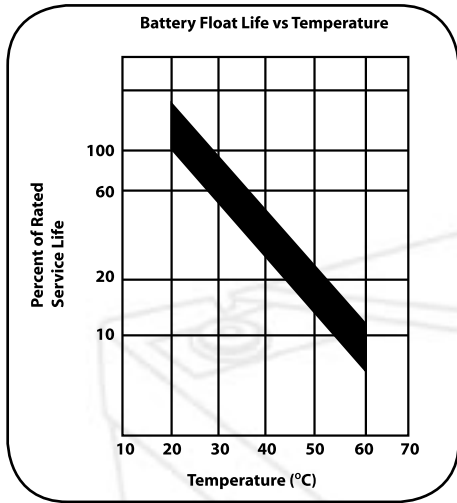
All discharge ratings at 25°C.

Discharge Data - Watts Per Cell

END VOLTAGE	5mins.	10mins.	15mins.	20mins.	30mins.	45mins.	50mins.	60mins.
1.60	272.0	185.0	147.0	127.5	86.8	64.7	51.9	53.1
1.67	265.0	183.0	145.0	125.0	85.6	63.3	51.4	52.0
1.70	259.0	180.0	142.0	122.5	83.3	62.1	50.4	51.2
1.75	253.0	174.0	137.0	115.0	81.7	60.9	48.3	50.3

All discharge ratings at 25°C.

TECHNICAL DATA



Positive Plate > Tank formed grid plate, lead-tin-calcium alloy, wrapped

Negative Plate > Tank formed grid plate, lead-tin-calcium alloy

Separator > Non woven glass-fleece high absorption grade

Electrolyte > 1300 S.G. AGM Suspension

Case Material > Standard impact resistant acrylobutadien-styrene (ABS), UL 94 VO

Post > Threaded insert, M6 stainless steel bolt and washer supplied
M6 bolt will fit lugs with 6.35 mm hole
> 60 in-lbs initial, 48 in-lbs retorque

Valve > One-way pressure release, self-sealing neoprene

Charging > Cycle service - 14.5-14.9 Volt at 25°C
> Float service - 13.5-13.8 Volt at 25°C

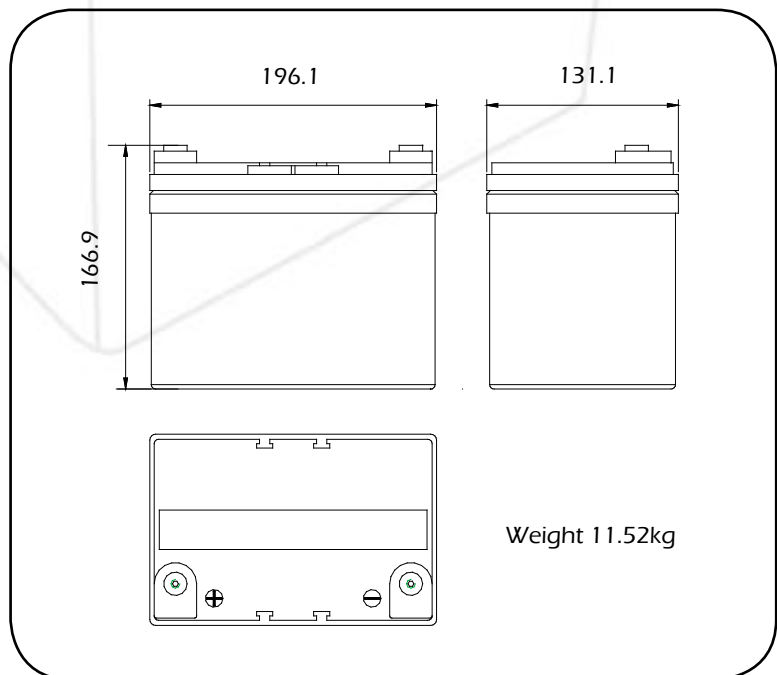
Capacity vs. Temperature > 40°C - 102%
> 0°C - 85%

Self Discharge > 3% per month at 25°C

Operating Temperature > Charge: 0°C - 40°C
> Discharge: -15°C - 50°C
> Storage: -15°C - 40°C

Transport > Unregulated for transportation via road, rail, sea and air transportation meeting the requirements of 49 CFR 173.159 (D)

Approvals > CE Mark, UL standard 1989 approved component



HA SERIES HA40-150FR5

AGM BLOCK RANGE VRLA INDUSTRIAL BATTERY

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Sterling HA series are constructed with proprietary grid alloy and active material with a unique plate curing manufacturing process. This process allows for 99% gas recombination, providing extended float service life.

From grid design to curing and formation, every facet of the manufacturing process is controlled and completed in one production facility utilizing cutting edge, fully automated production technologies. Production standards for quality control are among the highest in the industry and are ISO 9000 certified.

Specifications

Model	C ₂₀ 1.75	C ₁₀ 1.75	C ₅ 1.75	R _{INT} mohms	Max. Discharge Amps	L mm	W mm	H mm	W kg
HA40-150 FR5	40.0	37.2	34.0	7.5	600	198.1	166.1	174.0	15.0

All capacities in ampere-hours at 25°C. R_{INT} for fully charged battery at 25°C. Maximum discharge is 25°C, 5 seconds.

Discharge Data - Amperes

END VOLTAGE	30mins.	60mins.	2hrs.	3hrs.	4hrs.	5hrs.	6hrs.	8hrs.
1.75	45.1	26.5	15.7	10.9	8.5	7.0	5.9	4.6
1.80	42.1	24.3	15.0	10.6	8.3	6.8	5.8	4.4
1.85	38.7	23.2	14.2	10.1	7.9	6.6	5.6	4.3
1.90	33.3	20.1	13.3	9.7	7.6	6.2	5.3	4.1

All discharge ratings at 25°C.

Discharge Data - Watts Per Cell

END VOLTAGE	5mins.	10mins.	15mins.	20mins.	30mins.	45mins.	50mins.	60mins.
1.60	269.4	186.6	161.2	111.2	86.7	62.2	73.8	50.7
1.67	261.6	183.1	158.0	109.0	85.0	61.0	73.1	50.1
1.70	253.7	177.6	153.3	106.8	83.3	59.7	71.6	49.1
1.75	235.4	164.8	142.2	100.3	79.1	56.8	68.7	47.1

All discharge ratings at 25°C.

FEATURES

& BENEFITS

Flame Retardant ABS Case and Cover

- > Impact resistant, self-extinguishing material with standard Underwriters Laboratories (UL) 94 VO rating

Tank Formed Plate Construction

- > 100% capacity on shipment
- > Plate consistency and matching dependable performance

Threaded Insert Post

- > High conductivity
- > Increased retorque intervals

Epoxy Post Seal

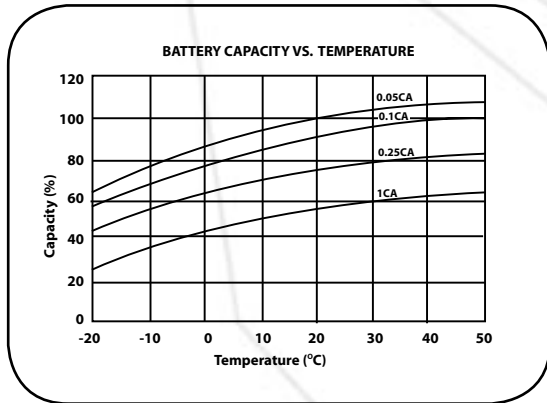
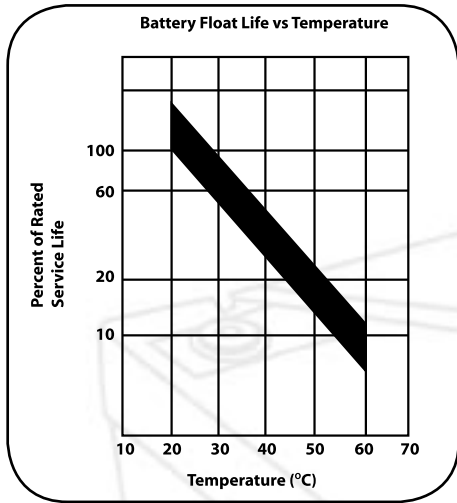
- > Elimination of acid egress for trouble-free service life

Flame Arrestor

- > Ceramic disc flame arrestor



TECHNICAL DATA



Positive Plate > Tank formed grid plate, lead-tin-calcium alloy, wrapped

Negative Plate > Tank formed grid plate, lead-tin-calcium alloy

Separator > Non woven glass-fleece high absorption grade

Electrolyte > 1300 S.G. AGM Suspension

Case Material > Standard impact resistant acrylobutadien-styrene (ABS), UL 94 VO

Post > Threaded insert, M6 stainless steel bolt and washer supplied
M6 bolt will fit lugs with 6.35 mm hole
> 60 in-lbs initial, 48 in-lbs retorque

Valve > One-way pressure release, self-sealing neoprene

Charging > Cycle service - 14.5-14.9 Volt at 25°C
> Float service - 13.5-13.8 Volt at 25°C

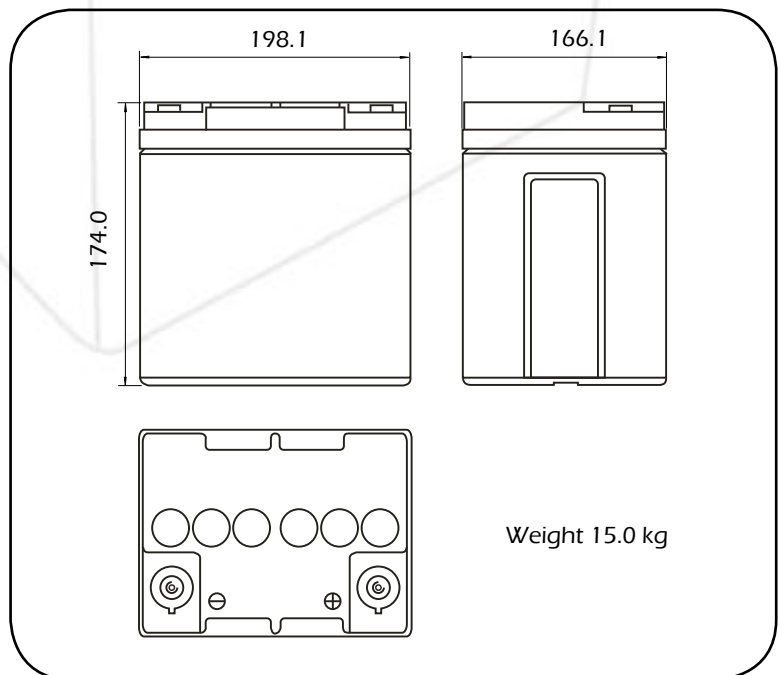
Capacity vs. Temperature > 40°C - 102%
> 0°C - 85%

Self Discharge > 3% per month at 25°C

Operating Temperature > Charge: 0°C - 40°C
> Discharge: -15°C - 50°C
> Storage: -15°C - 40°C

Transport > Unregulated for transportation via road, rail, sea and air transportation meeting the requirements of 49 CFR 173.159 (D)

Approvals > CE Mark, UL standard 1989 approved component



HA SERIES HA50-170FR

AGM BLOCK RANGE VRLA INDUSTRIAL BATTERY

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Sterling HA series are constructed with proprietary grid alloy and active material with a unique plate curing manufacturing process. This process allows for 99% gas recombination, providing extended float service life.

From grid design to curing and formation, every facet of the manufacturing process is controlled and completed in one production facility utilizing cutting edge, fully automated production technologies. Production standards for quality control are among the highest in the industry and are ISO 9000 certified.

Specifications

Model	C ₂₀ 1.75	C ₁₀ 1.75	C ₅ 1.75	R _{INT} mohms	Max. Discharge Amps	L mm	W mm	H mm	W kg
HA50-170 FR	50.0	46.5	42.5	7.0	825	229.1	137.9	212.1	17.0

All capacities in ampere-hours at 25°C. R_{INT} for fully charged battery at 25°C. Maximum discharge is 25°C, 5 seconds.

Discharge Data - Amperes

END VOLTAGE	30mins.	60mins.	2hrs.	3hrs.	4hrs.	5hrs.	6hrs.	8hrs.
1.75	52.6	32.0	18.6	13.3	10.5	8.7	7.4	5.8
1.80	49.2	30.4	18.2	13.0	10.3	8.5	7.2	5.6
1.85	45.6	29.0	17.5	12.7	10.0	8.3	7.1	5.5
1.90	38.0	25.2	16.0	11.8	9.5	7.8	6.7	5.2

All discharge ratings at 25°C.

Discharge Data - Watts Per Cell

END VOLTAGE	5mins.	10mins.	15mins.	20mins.	30mins.	45mins.	50mins.	60mins.
1.60	335.0	233.0	186.0	159.1	110.0	86.2	73.8	65.2
1.67	326.0	230.0	180.0	156.0	109.0	79.5	73.1	63.9
1.70	318.0	225.0	177.0	152.8	106.0	77.8	71.6	63.1
1.75	308.0	217.0	171.0	143.5	103.0	76.2	68.7	62.0

All discharge ratings at 25°C.

FEATURES

& BENEFITS

Flame Retardant ABS Case and Cover

- > Impact resistant, self-extinguishing material with standard Underwriters Laboratories (UL) 94 VO rating

Tank Formed Plate Construction

- > 100% capacity on shipment
- > Plate consistency and matching dependable performance

Threaded Insert Post

- > High conductivity
- > Increased retorque intervals

Epoxy Post Seal

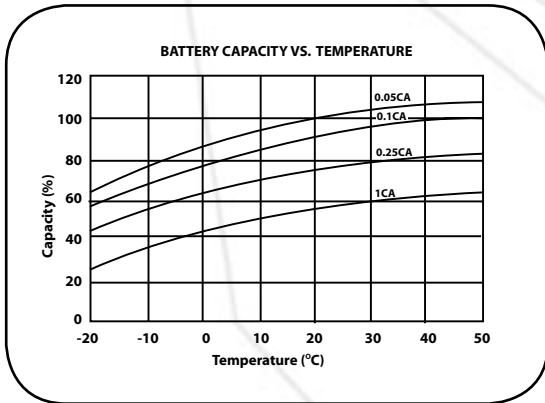
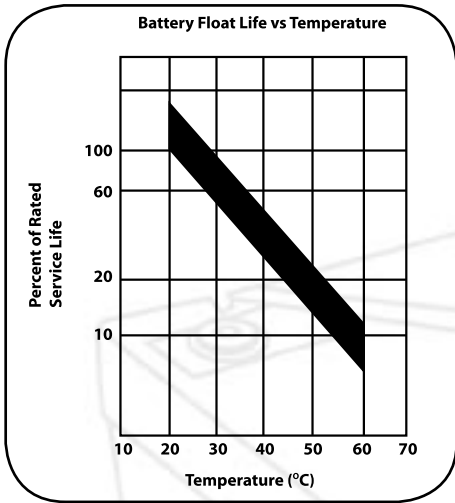
- > Elimination of acid egress for trouble-free service life

Flame Arrestor

- > Ceramic disc flame arrestor



TECHNICAL DATA



Positive Plate > Tank formed grid plate, lead-tin-calcium alloy, wrapped

Negative Plate > Tank formed grid plate, lead-tin-calcium alloy

Separator > Non woven glass-fleece high absorption grade

Electrolyte > 1300 S.G. AGM Suspension

Case Material > Standard impact resistant acrylobutadien-styrene (ABS), UL 94 VO

Post > Threaded insert, M6 stainless steel bolt and washer supplied
M6 bolt will fit lugs with 6.35 mm hole
> 60 in-lbs initial, 48 in-lbs retorque

Valve > One-way pressure release, self-sealing neoprene

Charging > Cycle service - 14.5-14.9 Volt at 25°C

> Float service - 13.5-13.8 Volt at 25°C

Capacity vs. Temperature > 40°C - 102%

> 0°C - 85%

Self Discharge > 3% per month at 25°C

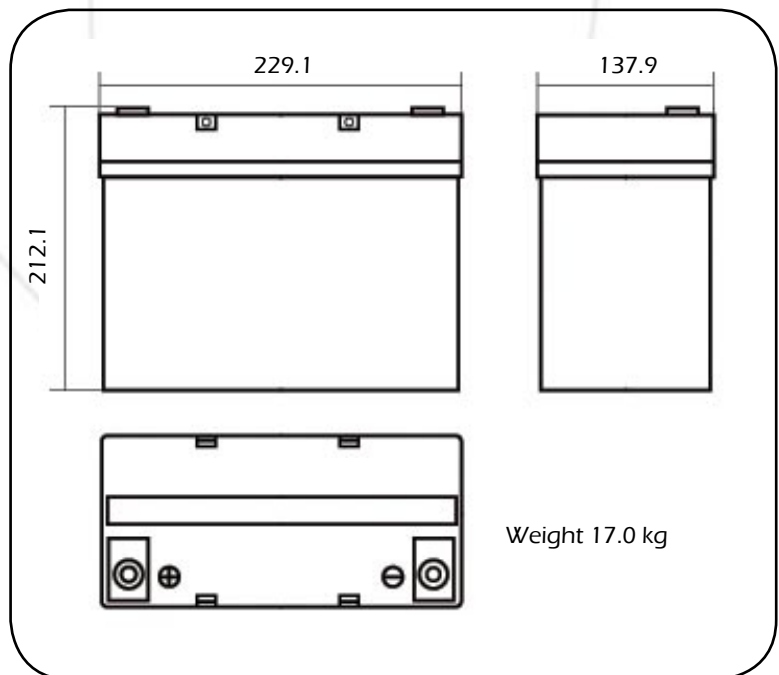
Operating Temperature > Charge: 0°C - 40°C

> Discharge: -15°C - 50°C

> Storage: -15°C - 40°C

Transport > Unregulated for transportation via road, rail, sea and air transportation meeting the requirements of 49 CFR 173.159 (D)

Approvals > CE Mark, UL standard 1989 approved component



HA SERIES HA70-270FR

AGM BLOCK RANGE VRLA INDUSTRIAL BATTERY

Sterling HA Series of VRLA Industrial Batteries provide superior high integrity reliability for critical backup power applications. The maintenance-free valve regulated lead acid (VRLA) construction make Sterling HA series batteries the definitive choice for UPS, telecom and utility applications.

Sterling HA series are constructed with proprietary grid alloy and active material with a unique plate curing manufacturing process. This process allows for 99% gas recombination, providing extended float service life.

From grid design to curing and formation, every facet of the manufacturing process is controlled and completed in one production facility utilizing cutting edge, fully automated production technologies. Production standards for quality control are among the highest in the industry and are ISO 9000 certified.

Specifications

Model	C ₂₀ 1.75	C ₁₀ 1.75	C ₅ 1.75	R _{INT} mohms	Max. Discharge Amps	L mm	W mm	H mm	W kg
HA70-270 FR	70.0	65.1	59.5	4.5	1050	260.1	168.9	214.9	25.0

All capacities in ampere-hours at 25°C. R_{INT} for fully charged battery at 25°C. Maximum discharge is 25°C, 5 seconds.

Discharge Data - Amperes

END VOLTAGE	30mins.	60mins.	2hrs.	3hrs.	4hrs.	5hrs.	6hrs.	8hrs.
1.75	75.3	45.5	26.0	18.5	14.4	11.9	10.2	8.0
1.80	71.6	43.7	25.1	17.9	14.1	11.7	10.0	7.8
1.85	65.1	40.5	23.7	17.0	13.6	11.2	9.6	7.5
1.90	56.7	36.3	22.5	16.1	12.8	10.8	9.2	7.2

All discharge ratings at 25°C.

Discharge Data - Watts Per Cell

END VOLTAGE	5mins.	10mins.	15mins.	20mins.	30mins.	45mins.	50mins.	60mins.
1.60	484.0	348.0	278.0	239.7	167.0	120.0	110.0	93.9
1.67	470.0	341.0	270.0	235.0	164.0	118.0	108.9	92.3
1.70	457.0	331.0	261.0	230.0	159.0	115.0	106.7	91.4
1.75	438.0	318.0	251.0	216.2	154.0	113.0	102.4	89.9

All discharge ratings at 25°C.

FEATURES

& BENEFITS

Flame Retardant ABS Case and Cover

- > Impact resistant, self-extinguishing material with standard Underwriters Laboratories (UL) 94 VO rating

Tank Formed Plate Construction

- > 100% capacity on shipment
- > Plate consistency and matching dependable performance

Threaded Insert Post

- > High conductivity
- > Increased retorque intervals

Epoxy Post Seal

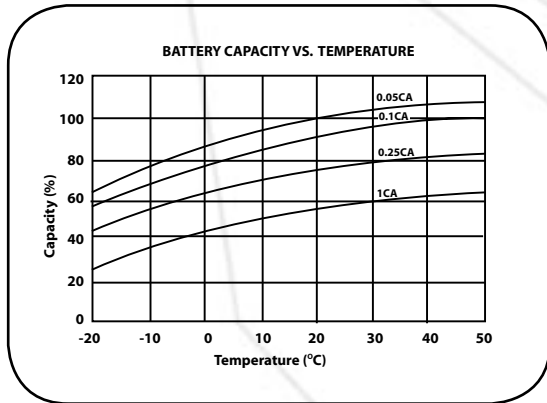
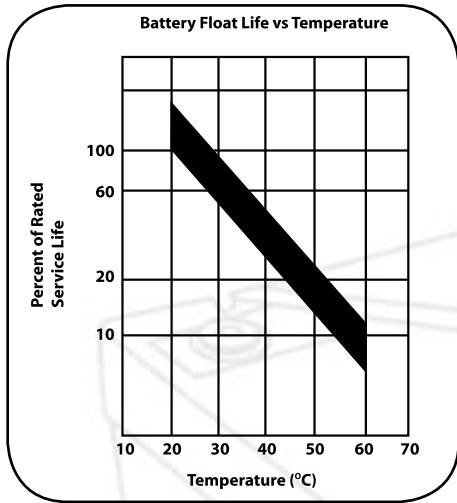
- > Elimination of acid egress for trouble-free service life

Flame Arrestor

- > Ceramic disc flame arrestor



TECHNICAL DATA



Positive Plate > Tank formed grid plate, lead-tin-calcium alloy, wrapped

Negative Plate > Tank formed grid plate, lead-tin-calcium alloy

Separator > Non woven glass-fleece high absorption grade

Electrolyte > 1300 S.G. AGM Suspension

Case Material > Standard impact resistant acrylobutadien-styrene (ABS), UL 94 VO

Post > Threaded insert, M6 stainless steel bolt and washer supplied
M6 bolt will fit lugs with 6.35 mm hole
> 60 in-lbs initial, 48 in-lbs retorque

Valve > One-way pressure release, self-sealing neoprene

Charging > Cycle service - 14.5-14.9 Volt at 25°C
> Float service - 13.5-13.8 Volt at 25°C

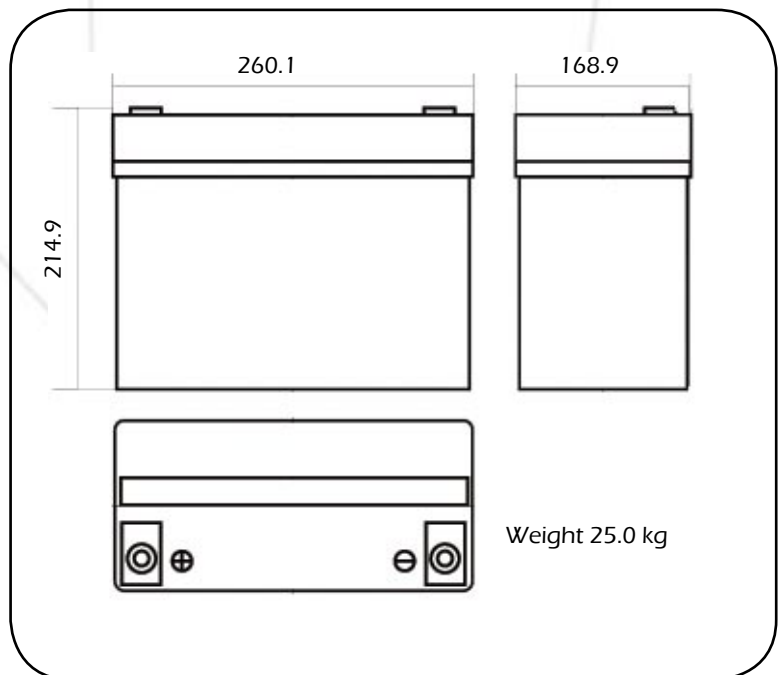
Capacity vs. Temperature > 40°C - 102%
> 0°C - 85%

Self Discharge > 3% per month at 25°C

Operating Temperature > Charge: 0°C - 40°C
> Discharge: -15°C - 50°C
> Storage: -15°C - 40°C

Transport > Unregulated for transportation via road, rail, sea and air transportation meeting the requirements of 49 CFR 173.159 (D)

Approvals > CE Mark, UL standard 1989 approved component



HA SERIES HA90-310FR

AGM BLOCK RANGE VRLA INDUSTRIAL BATTERY

Sterling HA Series of VRLA Industrial Batteries provide superior high integrity reliability for critical backup power applications. The maintenance-free valve regulated lead acid (VRLA) construction make Sterling HA series batteries the definitive choice for UPS, telecom and utility applications.

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From grid design to curing and formation, every facet of the manufacturing process is controlled and completed in one production facility utilizing cutting edge, fully automated production technologies. Production standards for quality control are among the highest in the industry and are ISO 9000 certified.

FEATURES & BENEFITS

Flame Retardant ABS Case and Cover

- > Impact resistant, self-extinguishing material with standard Underwriters Laboratories (UL) 94 VO rating

Tank Formed Plate Construction

- > 100% capacity on shipment
- > Plate consistency and matching dependable performance

Threaded Insert Post

- > High conductivity
- > Increased retorque intervals

Epoxy Post Seal

- > Elimination of acid egress for trouble-free service life

Flame Arrestor

- > Ceramic disc flame arrestor



Specifications

Model	C ₂₀ 1.75	C ₁₀ 1.75	C ₅ 1.75	R _{INT} mohms	Max. Discharge Amps	L mm	W mm	H mm	W kg
HA90-310 FR	90.0	83.7	76.5	3.7	1350	307.1	168.9	214.9	30.6

All capacities in ampere-hours at 25°C. R_{INT} for fully charged battery at 25°C. Maximum discharge is 25°C, 5 seconds.

Discharge Data - Amperes

END VOLTAGE	30mins.	60mins.	2hrs.	3hrs.	4hrs.	5hrs.	6hrs.	8hrs.
1.75	90.0	54.3	31.0	22.5	17.8	14.8	13.0	9.9
1.80	85.0	51.0	30.3	22.0	17.3	14.4	12.6	9.6
1.85	77.0	47.7	28.2	20.5	16.2	13.5	12.1	9.1
1.90	68.0	41.4	25.4	18.5	14.7	12.3	11.6	8.4

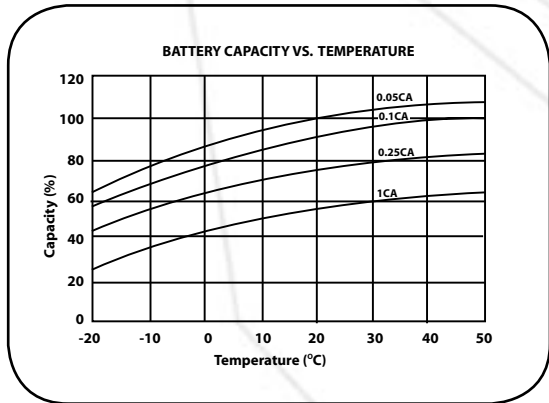
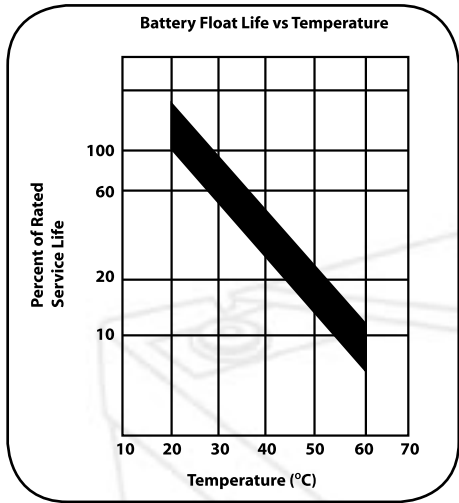
All discharge ratings at 25°C.

Discharge Data - Watts Per Cell

END VOLTAGE	5mins.	10mins.	15mins.	20mins.	30mins.	45mins.	50mins.	60mins.
1.60	561.0	406.0	325.0	279.5	195.0	140.0	124.7	109.0
1.67	544.0	398.0	315.0	274.0	192.0	138.0	123.5	107.0
1.70	527.0	386.0	304.0	268.5	187.0	134.0	121.0	106.0
1.75	505.0	369.0	292.0	252.1	180.0	131.0	116.1	104.0

All discharge ratings at 25°C.

TECHNICAL DATA



Positive Plate > Tank formed grid plate, lead-tin-calcium alloy, wrapped

Negative Plate > Tank formed grid plate, lead-tin-calcium alloy

Separator > Non woven glass-fleece high absorption grade

Electrolyte > 1300 S.G. AGM Suspension

Case Material > Standard impact resistant acrylobutadien-styrene (ABS), UL 94 VO

Post > Threaded insert, M6 stainless steel bolt and washer supplied
M6 bolt will fit lugs with 6.35 mm hole
> 60 in-lbs initial, 48 in-lbs retorque

Valve > One-way pressure release, self-sealing neoprene

Charging > Cycle service - 14.5-14.9 Volt at 25°C
> Float service - 13.5-13.8 Volt at 25°C

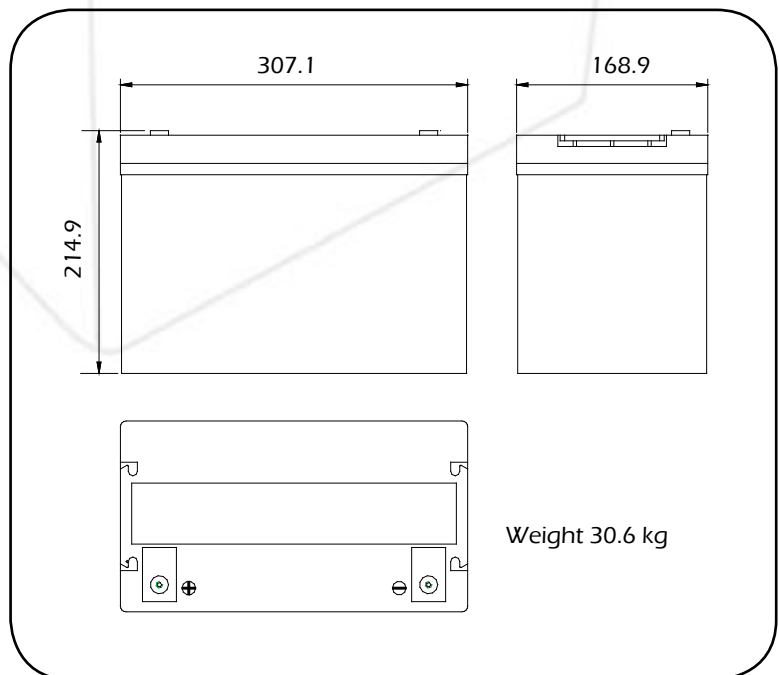
Capacity vs. Temperature > 40°C - 102%
> 0°C - 85%

Self Discharge > 3% per month at 25°C

Operating Temperature > Charge: 0°C - 40°C
> Discharge: -15°C - 50°C
> Storage: -15°C - 40°C

Transport > Unregulated for transportation via road, rail, sea and air transportation meeting the requirements of 49 CFR 173.159 (D)

Approvals > CE Mark, UL standard 1989 approved component



HA SERIES HA100-380FR

AGM BLOCK RANGE VRLA INDUSTRIAL BATTERY

Sterling HA Series of VRLA Industrial Batteries provide superior high integrity reliability for critical backup power applications. The maintenance-free valve regulated lead acid (VRLA) construction make Sterling HA series batteries the definitive choice for UPS, telecom and utility applications.

Sterling HA series are constructed with proprietary grid alloy and active material with a unique plate curing manufacturing process. This process allows for 99% gas recombination, providing extended float service life.

From grid design to curing and formation, every facet of the manufacturing process is controlled and completed in one production facility utilizing cutting edge, fully automated production technologies. Production standards for quality control are among the highest in the industry and are ISO 9000 certified.

Specifications

Model	C ₂₀ 1.75	C ₁₀ 1.75	C ₅ 1.75	R _{INT} mohms	Max. Discharge Amps	L mm	W mm	H mm	W kg
HA100-380 FR	100.0	93.0	85.0	3.5	1500	327.9	172.0	220.0	34.2

All capacities in ampere-hours at 25°C. R_{INT} for fully charged battery at 25°C. Maximum discharge is 25°C, 5 seconds.

Discharge Data - Amperes

END VOLTAGE	30mins.	60mins.	2hrs.	3hrs.	4hrs.	5hrs.	6hrs.	8hrs.
1.75	105.0	61.5	34.0	25.0	19.6	16.2	14.0	11.0
1.80	99.0	60.1	32.0	24.2	19.0	15.8	13.6	10.7
1.85	92.0	55.0	31.4	22.8	18.0	15.0	12.9	10.1
1.90	75.0	47.0	28.9	21.0	16.8	14.0	12.0	9.5

All discharge ratings at 25°C.

Discharge Data - Watts Per Cell

END VOLTAGE	5mins.	10mins.	15mins.	20mins.	30mins.	45mins.	50mins.	60mins.
1.60	668.8	488.8	406.0	348.8	235.0	168.0	142.5	129.0
1.67	647.0	478.0	398.0	342.0	231.0	165.0	141.1	127.0
1.70	626.0	462.0	365.0	335.1	225.0	161.0	138.3	126.0
1.75	598.0	442.0	349.0	314.6	216.0	157.0	132.6	124.0

All discharge ratings at 25°C.

FEATURES

& BENEFITS

Flame Retardant ABS Case and Cover

- > Impact resistant, self-extinguishing material with standard Underwriters Laboratories (UL) 94 VO rating

Tank Formed Plate Construction

- > 100% capacity on shipment
- > Plate consistency and matching dependable performance

Threaded Insert Post

- > High conductivity
- > Increased retorque intervals

Epoxy Post Seal

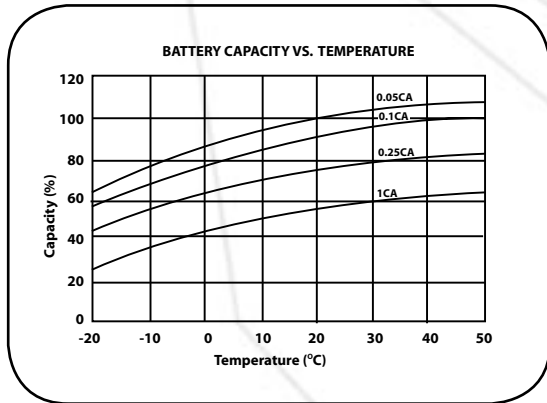
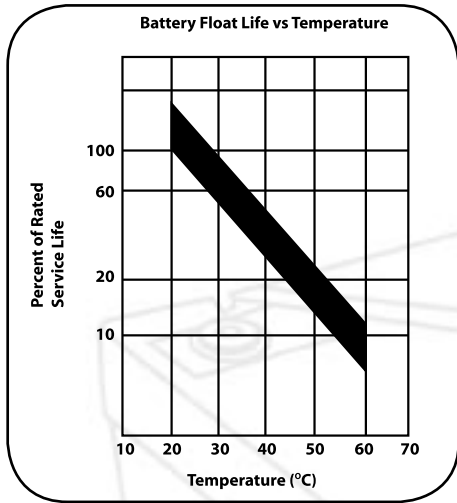
- > Elimination of acid egress for trouble-free service life

Flame Arrestor

- > Ceramic disc flame arrestor



TECHNICAL DATA



Positive Plate > Tank formed grid plate, lead-tin-calcium alloy, wrapped

Negative Plate > Tank formed grid plate, lead-tin-calcium alloy

Separator > Non woven glass-fleece high absorption grade

Electrolyte > 1300 S.G. AGM Suspension

Case Material > Standard impact resistant acrylobutadien-styrene (ABS), UL 94 VO

Post > Threaded insert, M6 stainless steel bolt and washer supplied
M6 bolt will fit lugs with 6.35 mm hole
> 60 in-lbs initial, 48 in-lbs retorque

Valve > One-way pressure release, self-sealing neoprene

Charging > Cycle service - 14.5-14.9 Volt at 25°C

> Float service - 13.5-13.8 Volt at 25°C

Capacity vs. Temperature > 40°C - 102%

> 0°C - 85%

Self Discharge > 3% per month at 25°C

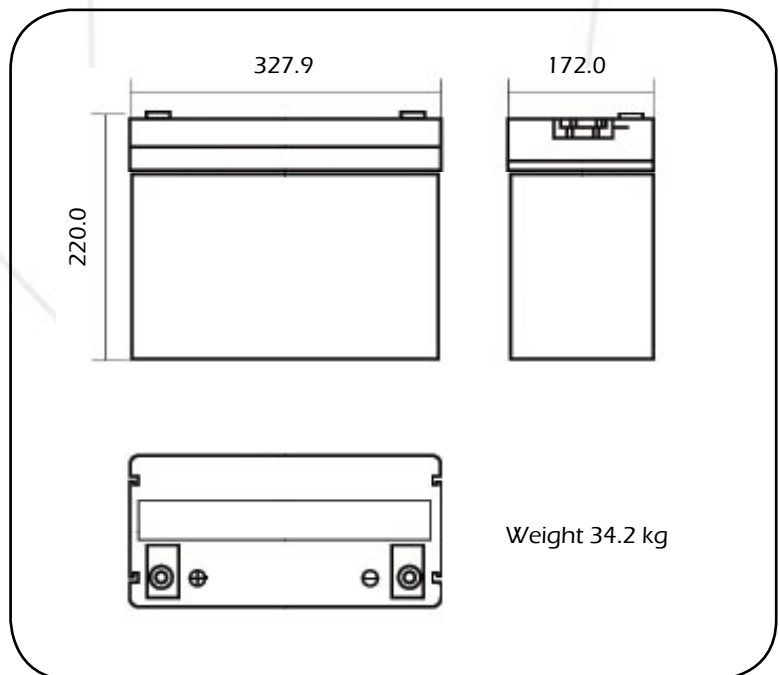
Operating Temperature > Charge: 0°C - 40°C

> Discharge: -15°C - 50°C

> Storage: -15°C - 40°C

Transport > Unregulated for transportation via road, rail, sea and air transportation meeting the requirements of 49 CFR 173.159 (D)

Approvals > CE Mark, UL standard 1989 approved component



HA SERIES HA120-430FR

AGM BLOCK RANGE VRLA INDUSTRIAL BATTERY

Sterling HA Series of VRLA Industrial Batteries provide superior high integrity reliability for critical backup power applications. The maintenance-free valve regulated lead acid (VRLA) construction make Sterling HA series batteries the definitive choice for UPS, telecom and utility applications.

Sterling HA series are constructed with proprietary grid alloy and active material with a unique plate curing manufacturing process. This process allows for 99% gas recombination, providing extended float service life.

From grid design to curing and formation, every facet of the manufacturing process is controlled and completed in one production facility utilizing cutting edge, fully automated production technologies. Production standards for quality control are among the highest in the industry and are ISO 9000 certified.

Specifications

Model	C ₂₀ 1.75	C ₁₀ 1.75	C ₅ 1.75	R _{INT} mohms	Max. Discharge Amps	L mm	W mm	H mm	W kg
HA120-430 FR	120.0	111.6	102.0	3.0	1800	331.0	175.0	239.0	35.0

All capacities in ampere-hours at 25°C. R_{INT} for fully charged battery at 25°C. Maximum discharge is 25°C, 5 seconds.

Discharge Data - Amperes

END VOLTAGE	30mins.	60mins.	2hrs.	3hrs.	4hrs.	5hrs.	6hrs.	8hrs.
1.75	118.9	70.6	39.7	28.6	22.4	20.4	16.9	14.0
1.80	112.1	68.9	38.9	27.6	21.7	19.8	16.4	14.0
1.85	101.4	62.9	35.8	25.9	20.5	18.8	15.6	13.3
1.90	85.4	53.7	32.9	24.0	19.1	17.4	14.4	12.5

All discharge ratings at 25°C.

Discharge Data - Watts Per Cell

END VOLTAGE	5mins.	10mins.	15mins.	20mins.	30mins.	45mins.	50mins.	60mins.
1.60	736.0	550.0	443.0	387.6	273.0	198.0	183.0	154.0
1.67	707.0	533.0	429.0	380.0	268.0	194.0	181.0	151.0
1.70	681.0	515.0	413.0	372.4	262.0	190.0	176.0	150.0
1.75	648.0	490.0	395.0	349.6	252.0	186.0	173.0	148.0

All discharge ratings at 25°C.

FEATURES & BENEFITS

Flame Retardant ABS Case and Cover

- > Impact resistant, self-extinguishing material with standard Underwriters Laboratories (UL) 94 VO rating

Tank Formed Plate Construction

- > 100% capacity on shipment
- > Plate consistency and matching dependable performance

Threaded Insert Post

- > High conductivity
- > Increased retorque intervals

Epoxy Post Seal

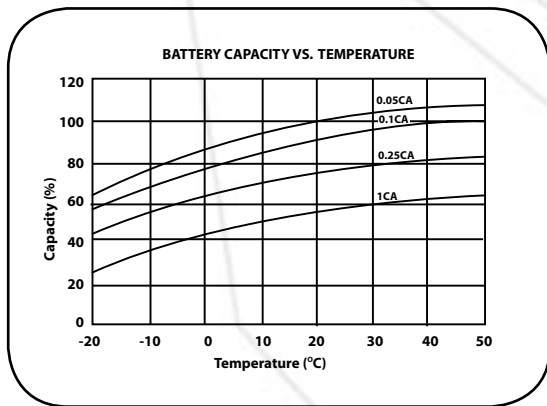
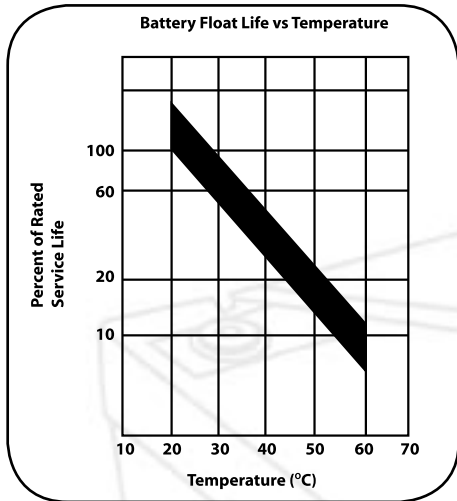
- > Elimination of acid egress for trouble-free service life

Flame Arrestor

- > Ceramic disc flame arrestor



TECHNICAL DATA



Positive Plate > Tank formed grid plate, lead-tin-calcium alloy, wrapped

Negative Plate > Tank formed grid plate, lead-tin-calcium alloy

Separator > Non woven glass-fleece high absorption grade

Electrolyte > 1300 S.G. AGM Suspension

Case Material > Standard impact resistant acrylobutadien-styrene (ABS), UL 94 VO

Post > Threaded insert, M6 stainless steel bolt and washer supplied
M6 bolt will fit lugs with 6.35 mm hole
> 60 in-lbs initial, 48 in-lbs retorque

Valve > One-way pressure release, self-sealing neoprene

Charging > Cycle service - 14.5-14.9 Volt at 25°C
> Float service - 13.5-13.8 Volt at 25°C

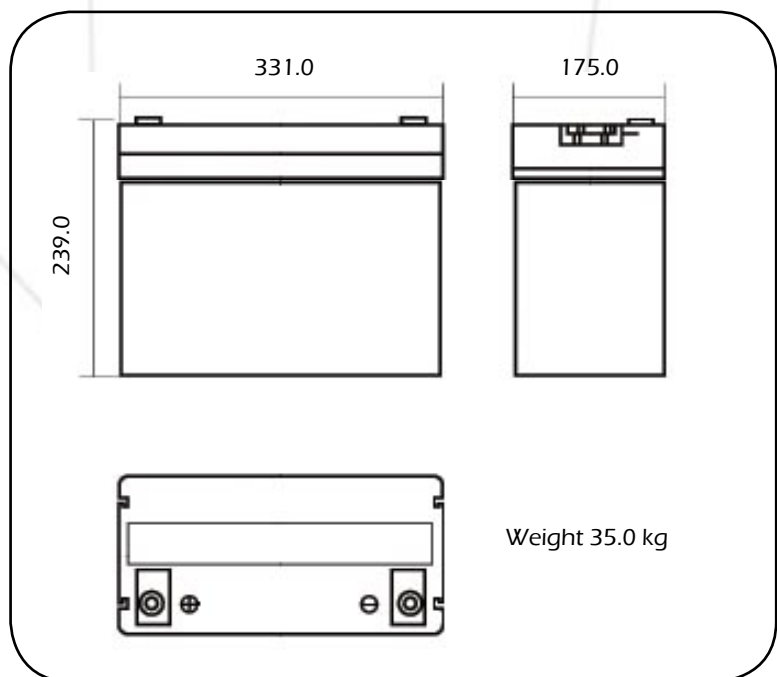
Capacity vs. Temperature > 40°C - 102%
> 0°C - 85%

Self Discharge > 3% per month at 25°C

Operating Temperature > Charge: 0°C - 40°C
> Discharge: -15°C - 50°C
> Storage: -15°C - 40°C

Transport > Unregulated for transportation via road, rail, sea and air transportation meeting the requirements of 49 CFR 173.159 (D)

Approvals > CE Mark, UL standard 1989 approved component



HA SERIES HA140-520FR

AGM BLOCK RANGE VRLA INDUSTRIAL BATTERY

Sterling HA Series of VRLA Industrial Batteries provide superior high integrity reliability for critical backup power applications. The maintenance-free valve regulated lead acid (VRLA) construction make Sterling HA series batteries the definitive choice for UPS, telecom and utility applications.

Sterling HA series are constructed with proprietary grid alloy and active material with a unique plate curing manufacturing process. This process allows for 99% gas recombination, providing extended float service life.

From grid design to curing and formation, every facet of the manufacturing process is controlled and completed in one production facility utilizing cutting edge, fully automated production technologies. Production standards for quality control are among the highest in the industry and are ISO 9000 certified.

FEATURES

& BENEFITS

Flame Retardant ABS Case and Cover

- > Impact resistant, self-extinguishing material with standard Underwriters Laboratories (UL) 94 VO rating

Tank Formed Plate Construction

- > 100% capacity on shipment
- > Plate consistency and matching dependable performance

Threaded Insert Post

- > High conductivity
- > Increased retorque intervals

Epoxy Post Seal

- > Elimination of acid egress for trouble-free service life

Flame Arrestor

- > Ceramic disc flame arrestor



Specifications

Model	C ₂₀ 1.75	C ₁₀ 1.75	C ₅ 1.75	R _{INT} mohms	Max. Discharge Amps	L mm	W mm	H mm	W kg
HA140-520 FR	140.0	130.2	119.0	2.5	2100	341.1	173.0	287.0	47.5

All capacities in ampere-hours at 25°C. R_{INT} for fully charged battery at 25°C. Maximum discharge is 25°C, 5 seconds.

Discharge Data - Amperes

END VOLTAGE	30mins.	60mins.	2hrs.	3hrs.	4hrs.	5hrs.	6hrs.	8hrs.
1.75	138.8	82.1	46.4	33.4	26.2	23.8	19.8	15.9
1.80	130.8	80.5	45.4	32.2	25.4	23.2	19.2	15.9
1.85	118.4	73.4	41.8	30.3	24.0	22.0	18.2	15.1
1.90	99.7	62.7	38.5	28.0	22.3	20.4	16.9	14.2

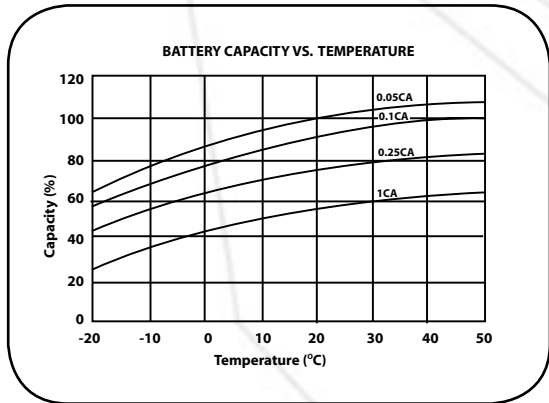
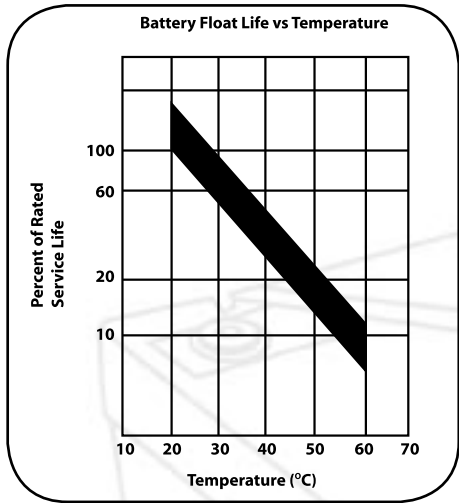
All discharge ratings at 25°C.

Discharge Data - Watts Per Cell

END VOLTAGE	5mins.	10mins.	15mins.	20mins.	30mins.	45mins.	50mins.	60mins.
1.60	812.0	619.0	513.0	459.0	315.0	232.0	207.5	181.0
1.67	775.0	596.0	520.0	450.0	309.0	227.0	205.4	178.0
1.70	742.0	574.0	467.0	441.0	303.0	224.0	201.3	177.0
1.75	704.0	545.0	447.0	414.0	293.0	218.0	193.1	175.0

All discharge ratings at 25°C.

TECHNICAL DATA



Positive Plate > Tank formed grid plate, lead-tin-calcium alloy, wrapped

Negative Plate > Tank formed grid plate, lead-tin-calcium alloy

Separator > Non woven glass-fleece high absorption grade

Electrolyte > 1300 S.G. AGM Suspension

Case Material > Standard impact resistant acrylobutadien-styrene (ABS), UL 94 VO

Post > Threaded insert, M6 stainless steel bolt and washer supplied
M6 bolt will fit lugs with 6.35 mm hole
> 60 in-lbs initial, 48 in-lbs retorque

Valve > One-way pressure release, self-sealing neoprene

Charging > Cycle service - 14.5-14.9 Volt at 25°C
> Float service - 13.5-13.8 Volt at 25°C

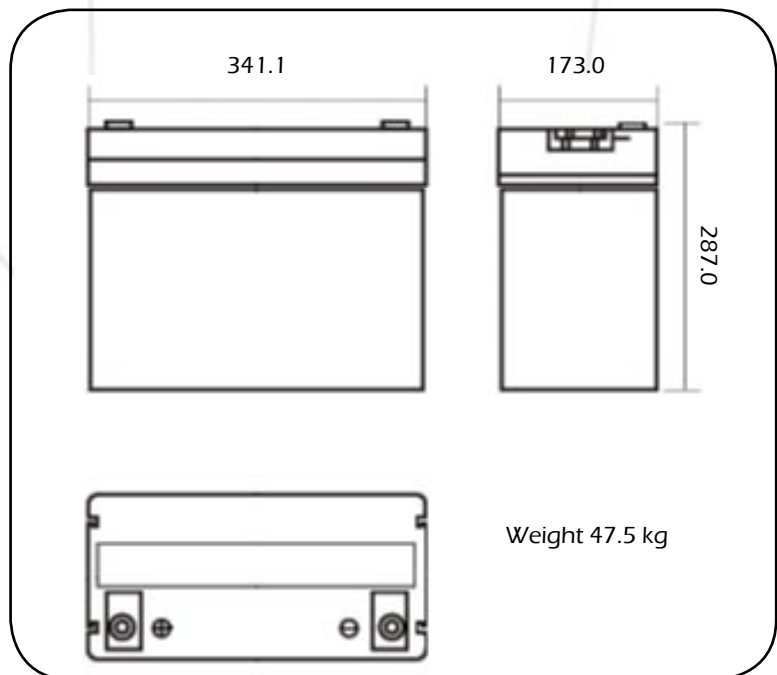
Capacity vs. Temperature > 40°C - 102%
> 0°C - 85%

Self Discharge > 3% per month at 25°C

Operating Temperature > Charge: 0°C - 40°C
> Discharge: -15°C - 50°C
> Storage: -15°C - 40°C

Transport > Unregulated for transportation via road, rail, sea and air transportation meeting the requirements of 49 CFR 173.159 (D)

Approvals > CE Mark, UL standard 1989 approved component



HA SERIES HA200-6620FR

AGM BLOCK RANGE VRLA INDUSTRIAL BATTERY

Sterling HA Series of VRLA Industrial Batteries provide superior high integrity reliability for critical backup power applications. The maintenance-free valve regulated lead acid (VRLA) construction make Sterling HA series batteries the definitive choice for UPS, telecom and utility applications.

Sterling HA series are constructed with proprietary grid alloy and active material with a unique plate curing manufacturing process. This process allows for 99% gas recombination, providing extended float service life.

From grid design to curing and formation, every facet of the manufacturing process is controlled and completed in one production facility utilizing cutting edge, fully automated production technologies. Production standards for quality control are among the highest in the industry and are ISO 9000 certified.

Specifications

Model	C ₂₀ 1.75	C ₁₀ 1.75	C ₅ 1.75	R _{INT} mohms	Max. Discharge Amps	L mm	W mm	H mm	W kg
HA200-6620 FR	200.0	186.0	170.0	2.4	3000	322.1	177.0	230.1	34.0

All capacities in ampere-hours at 25°C. R_{INT} for fully charged battery at 25°C. Maximum discharge is 25°C, 5 seconds.

Discharge Data - Amperes

END VOLTAGE	30mins.	60mins.	2hrs.	3hrs.	4hrs.	5hrs.	6hrs.	8hrs.
1.75	208.0	123.0	69.5	50.0	39.2	32.4	28.0	22.0
1.80	196.0	120.0	68.0	48.3	38.0	31.6	27.2	21.3
1.85	174.0	110.0	62.7	45.5	36.0	30.0	25.8	20.3
1.90	149.0	94.0	57.7	42.0	33.5	27.9	24.0	19.0

All discharge ratings at 25°C.

Discharge Data - Watts Per Cell

END VOLTAGE	5mins.	10mins.	15mins.	20mins.	30mins.	45mins.	50mins.
1.60	1008.0	796.0	655.0	565.1	423.0	318.0	252.0
1.67	948.0	756.0	625.0	554.0	413.0	311.0	247.0
1.70	897.0	726.0	605.0	542.9	408.0	308.0	245.0
1.75	847.0	686.0	580.0	509.7	398.0	300.0	244.0

All discharge ratings at 25°C.

FEATURES

& BENEFITS

Flame Retardant ABS Case and Cover

- > Impact resistant, self-extinguishing material with standard Underwriters Laboratories (UL) 94 VO rating

Tank Formed Plate Construction

- > 100% capacity on shipment
- > Plate consistency and matching dependable performance

Threaded Insert Post

- > High conductivity
- > Increased retorque intervals

Epoxy Post Seal

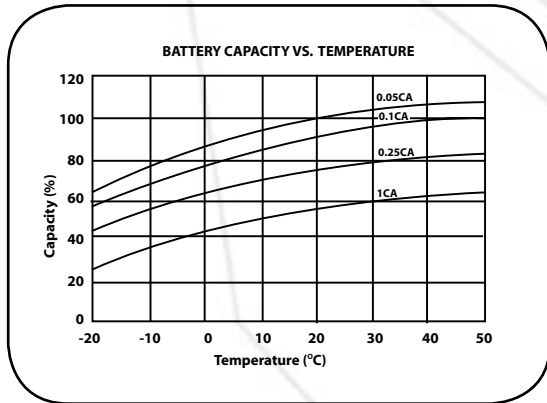
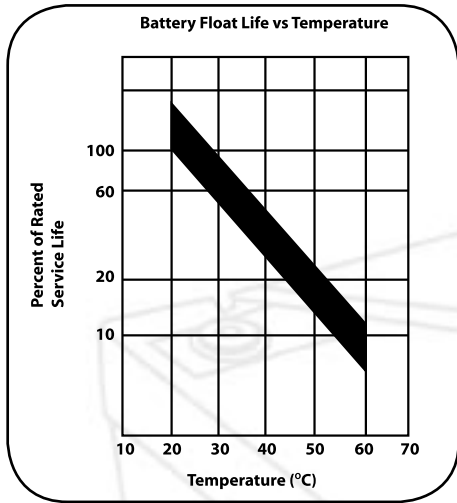
- > Elimination of acid egress for trouble-free service life

Flame Arrestor

- > Ceramic disc flame arrestor



TECHNICAL DATA



Positive Plate > Tank formed grid plate, lead-tin-calcium alloy, wrapped

Negative Plate > Tank formed grid plate, lead-tin-calcium alloy

Separator > Non woven glass-fleece high absorption grade

Electrolyte > 1300 S.G. AGM Suspension

Case Material > Standard impact resistant acrylobutadien-styrene (ABS), UL 94 VO

Post > Threaded insert, M6 stainless steel bolt and washer supplied
M6 bolt will fit lugs with 6.35 mm hole
> 60 in-lbs initial, 48 in-lbs retorque

Valve > One-way pressure release, self-sealing neoprene

Charging > Cycle service - 14.5-14.9 Volt at 25°C

> Float service - 13.5-13.8 Volt at 25°C

Capacity vs. Temperature > 40°C - 102%

> 0°C - 85%

Self Discharge > 3% per month at 25°C

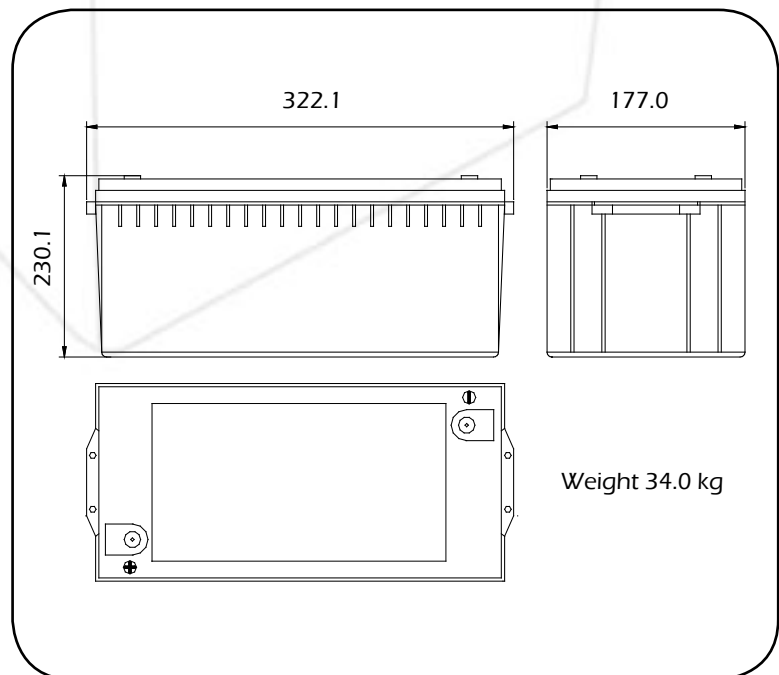
Operating Temperature > Charge: 0°C - 40°C

> Discharge: -15°C - 50°C

> Storage: -15°C - 40°C

Transport > Unregulated for transportation via road, rail, sea and air transportation meeting the requirements of 49 CFR 173.159 (D)

Approvals > CE Mark, UL standard 1989 approved component



HA SERIES HA200-620FR

AGM BLOCK RANGE VRLA INDUSTRIAL BATTERY

Sterling HA Series of VRLA Industrial Batteries provide superior high integrity reliability for critical backup power applications. The maintenance-free valve regulated lead acid (VRLA) construction make Sterling HA series batteries the definitive choice for UPS, telecom and utility applications.

Sterling HA series are constructed with proprietary grid alloy and active material with a unique plate curing manufacturing process. This process allows for 99% gas recombination, providing extended float service life.

From grid design to curing and formation, every facet of the manufacturing process is controlled and completed in one production facility utilizing cutting edge, fully automated production technologies. Production standards for quality control are among the highest in the industry and are ISO 9000 certified.

Specifications

Model	C ₂₀ 1.75	C ₁₀ 1.75	C ₅ 1.75	R _{INT} mohms	Max. Discharge Amps	L mm	W mm	H mm	W kg
HA200-620FR	200.0	186.0	170.0	2.4	3000	332.1	177.1	230.0	34.0

All capacities in ampere-hours at 25°C. R_{INT} for fully charged battery at 25°C. Maximum discharge is 25°C, 5 seconds.

Discharge Data - Amperes

END VOLTAGE	30mins.	60mins.	2hrs.	3hrs.	4hrs.	5hrs.	6hrs.	8hrs.
1.75	208.0	123.0	69.5	50.0	39.2	32.4	28.0	22.0
1.80	196.0	120.0	68.0	48.3	38.0	31.6	27.2	21.3
1.85	174.0	110.0	62.7	45.5	36.0	30.0	25.8	20.3
1.90	149.0	94.0	57.7	42.0	33.5	27.9	24.0	19.0

All discharge ratings at 25°C.

Discharge Data - Watts Per Cell

END VOLTAGE	5mins.	10mins.	15mins.	20mins.	30mins.	45mins.	50mins.	60mins.
1.60	1000.0	790.0	650.0	550.0	420.0	294.0	23.1	250.0
1.67	940.0	750.0	620.0	525.0	410.0	292.0		245.0
1.70	890.0	720.0	600.0	520.0	405.0	290.0		243.0
1.75	840.0	680.0	575.0	500.0	395.0	276.0		242.0

All discharge ratings at 25°C.

FEATURES

& BENEFITS

Flame Retardant ABS Case and Cover

- > Impact resistant, self-extinguishing material with standard Underwriters Laboratories (UL) 94 VO rating

Tank Formed Plate Construction

- > 100% capacity on shipment
- > Plate consistency and matching dependable performance

Threaded Insert Post

- > High conductivity
- > Increased retorque intervals

Epoxy Post Seal

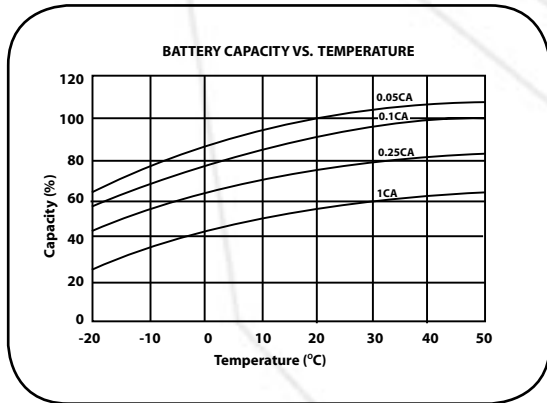
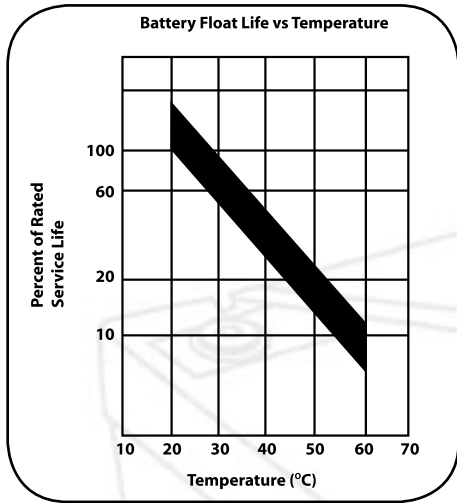
- > Elimination of acid egress for trouble-free service life

Flame Arrestor

- > Ceramic disc flame arrestor



TECHNICAL DATA



Positive Plate > Tank formed grid plate, lead-tin-calcium alloy, wrapped

Negative Plate > Tank formed grid plate, lead-tin-calcium alloy

Separator > Non woven glass-fleece high absorption grade

Electrolyte > 1300 S.G. AGM Suspension

Case Material > Standard impact resistant acrylobutadien-styrene (ABS), UL 94 VO

Post > Threaded insert, M6 stainless steel bolt and washer supplied
M6 bolt will fit lugs with 6.35 mm hole
> 60 in-lbs initial, 48 in-lbs retorque

Valve > One-way pressure release, self-sealing neoprene

Charging > Cycle service - 14.5-14.9 Volt at 25°C
> Float service - 13.5-13.8 Volt at 25°C

Capacity vs. Temperature > 40°C - 102%
> 0°C - 85%

Self Discharge > 3% per month at 25°C

Operating Temperature > Charge: 0°C - 40°C
> Discharge: -15°C - 50°C
> Storage: -15°C - 40°C

Transport > Unregulated for transportation via road, rail, sea and air transportation meeting the requirements of 49 CFR 173.159 (D)

Approvals > CE Mark, UL standard 1989 approved component

