

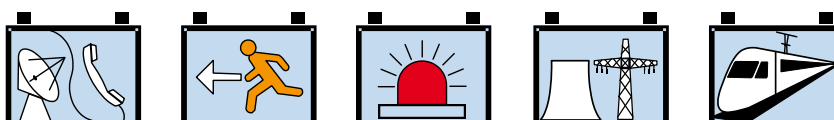


EverExceed®
power your applications

Front Access FT Gel Range VRLA



*»Premium quality for
uninterrupted communication«*



www.everexceed.com



VRLA MONOBLOC GEL BATTERIES 80Ah to 180Ah @ C10

The extremely powerful, compact Gel batteries of EverExceed front access FT Gel Range are an absolutely reliable energy source for durability in Solar / Photovoltaic, Telecommunications and Electric Utility applications. The EverExceed front access FT Gel Range VRLA provides excellent performance and reliability in long duration discharge & cycling applications. Our development team combines the market's demand with design optimization, precision component selection and state-of-the-art manufacturing process to produce the most cost effective battery solution for today's applications.

Applicable Operating temperature range:
-40°C (-40°F) to +70°C (+158°F)

Ideal Operating temperature range:
+20°C (+68°F) to +35°C (+95°F)

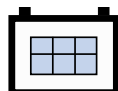
Storage time from a fully charged condition:
24 months at 20°C / 68°F.
For each 9°C / 15°F rise, reduce the storage time by half.

Designed in Quality Manufacturing

Advanced Germany technology and the use of the most modern computer-aided design and manufacturing techniques combine to make EverExceed's front access FT Gel Range Batteries the ideal power solution for your applications. Each and every unit is capacity tested.

Applications

- | | |
|--|---|
| <input type="checkbox"/> Telecommunication | <input type="checkbox"/> Solar / Photovoltaic |
| <input type="checkbox"/> UPS | <input type="checkbox"/> Wind Generation |
| <input type="checkbox"/> Remote Monitoring | <input type="checkbox"/> Lighting |
| <input type="checkbox"/> Cathodic Protection | |



Innovative Features

- ◆ Special design comply with telecom 19"/ 23" cabinet for space limitation;
- ◆ The success of EverExceed Gel batteries comes from the internationally superior EverExceed Gel technology;
- ◆ Exceptional energy storage capacity combined with long life - BCI Classification;
- ◆ Virgin Pure Lead Tin and thick positive plate technology design for maximum service float life - 15 years design life @ 20°C(68°F);
- ◆ Thick positive plate plus optimized plate alloy to anti-corrosion;
- ◆ Designed in accordance with IEC 60896-21/-22;
- ◆ Spill-proof and leak-proof;
- ◆ Maintenance-free (no topping up) during the whole service life due to EverExceed GEL technology;
- ◆ Flame-arresting one-way pressure-relief vent for safe and long life;
- ◆ Microporous rubber and corrugated PVC SiO₂ separator, the special design increase the high porosity and anti-corrosion and decrease the internal resistance;
- ◆ Electrolyte in solid gel form will not stratify-no equalization charge required;
- ◆ Sulfuric acid thixotropic gel, gel powder from Europe leading supplier to ensure the unique performance of gel battery;
- ◆ Proprietary Fixed Orifice Plate Pasting technology applying active materials on both sides of the grid for consistent cell-to-cell performance, higher capacity and uniform grid protection.
- ◆ Increased durability and deep cycle ability for heavy-duty applications;
- ◆ Fully tank formed grid Lead Calcium Tin plate ensures voltage matching between cells;
- ◆ Shelf life up to 2 years at 20°C (68°F), very low gassing due to internal gas recombination;
- ◆ Unique performance against high temperature;
- ◆ Reinforced ABS case and cover – flame retardant material UL 94 V-0 on request.

Specifications

Voltage	12 volts nominal
Plate alloy	Lead-Calcium-Tin alloy
Element, post	Silver plated Copper female insert
Container/cover	Reinforced ABS, UL V-0 on request
Specific	1.280g/cm ³
Electrolyte	Sulfuric acid thixotropic solid gel
Vent	Self sealing (2 PSI operation)

No transport restrictions

Surface transport. Classified as non-hazardous material as related to DOT-CFR Title 49 parts 171-189.

Marine transport. Classified as non-hazardous material as per IMDG amendment 27.

Air transport. Complies with IATA/ICAO, Special provision A67.

CONSTRUCTION - EverExceed's front access FT Gel Range Gel battery construction is as shown in the diagram below. The positive and negative plates are cast from a Lead-Calcium-Tin alloy to reduce grid growth and corrosion and achieve excellent cycling ability. The active material is manufactured from high purity lead (99.994%) to minimize the negative effects of impurities.

Gel separator is supplied by the leading manufacturer in the field, utilizing the latest world technology. The base material is a microporous duroplastic exhibiting excellent high temperature stability and mechanical strength, resulting in very good resistance to vibration and mechanical shock. The integrity of the battery will be maintained under extreme conditions.

The purpose of the separator is to maintain a constant distance between the positive and negative plates, thus removing the possibility of short circuits whilst allowing the active material to fully react with the electrolyte. The random weaving also results in an open structure, which offers minimal resistance to the flow of electrolyte during filling.



- **Plates:** Lead-Calcium-Tin alloy, optimized for high corrosion resistance and excellent cycling ability.
- **Separator:** PVC SiO₂ Microporous and robust, for Electrical separation of the positive and negative plates and optimized for low internal resistance.
- **Standard Housing:** Reinforced ABS (UL 94HB); container and cover;
- **Optional Housing:** Flame-retardant reinforced ABS, container and cover compliant with U.L.94 V-0 with an Oxygen limiting Index of greater than 28%.
- **Terminals:** Silver plated Copper female insert for easy and safe assembly and maintenance free connection with excellent conductivity.
- **Valves:** Release gas in case of excess pressure and protects the cell against atmosphere.

ELECTROLYTE FILLING - Gelled electrolyte is filled into the cell by means of custom-built vacuum filling machines. To achieve reliable performance it is vitally important that the electrolyte achieves full penetration of the separators and plates therefore, vacuum cycling is utilized after the filling process. To ensure each cell has the correct amount of gel, the cells are first overfilled, the extra gel then removed. The VRLA Gel battery design and construction negates the need for electrolyte addition and the battery remains maintenance free throughout its design life.

SAFETY RELEASE VALVE - The battery will operate above atmospheric pressure under normal operating conditions, however the maximum pressure is governed by the safety one-way release valve. Open is activated by pressures in excess of approx. 2 PSI (14 Kpa), resealing at approx. 1.2 PSI (8.4Kpa).

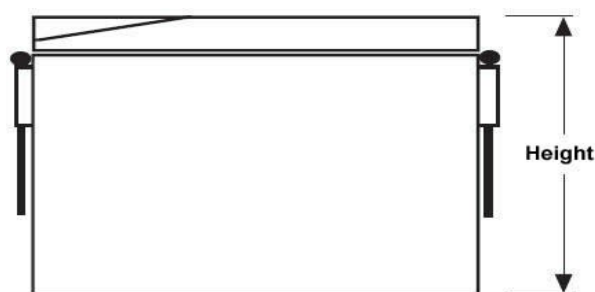
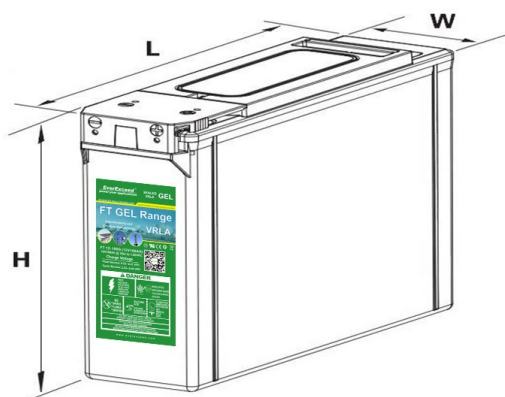
GAS RECOMBINATION - The gasses generated during normal operation of the battery are internally recombined. In fact more than 99% of the gas achieves recombination.

TERMINAL CONSTRUCTION - The contact quality between the insert terminal and the lead post is of vital importance during short duration / high Amp discharges. Elevated terminal temperatures are the result of poor contact, eventually causing seal degradation and electrolyte leaks. EverExceed's strong design and assembly technique for terminal casting combined with triple sealing terminal structure ensures trouble free operation for the whole design life of the battery.

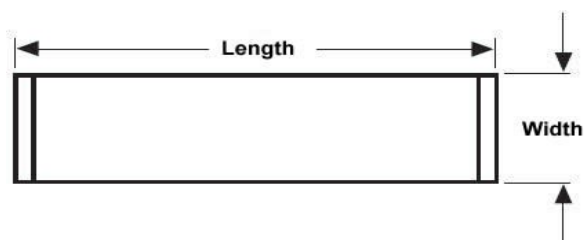
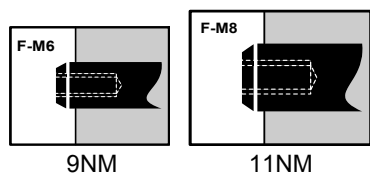


EverExceed FT GEL Range Electrical Specifications & Dimensions

Battery Model	Nom. Voltage (V)	Capacity C10 1.80VPC	Short Circuit current Amps	Internal Resistance Milli-ohms	Female Terminal Type	Battery Weight		Outline Dimensions					
								Length		Width		Height	
						Kg	lbs	mm	inch	mm	inch	mm	inch
FT12V80G	12	80	1880	6.32	F-M6	33.5	73.7	395	15.6	110	4.33	285	11.2
FT12V100G	12	100	2326	5.27	F-M6	35.0	77.0	510	20.1	110	4.33	225	8.86
FT12V155G	12	155	3141	4.23	F-M8	59.5	131	560	22.0	125	4.92	316	12.4
FT12V180G	12	180	4176	3.85	F-M8	65.0	143	560	22.0	125	4.92	316	12.4

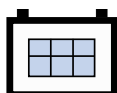
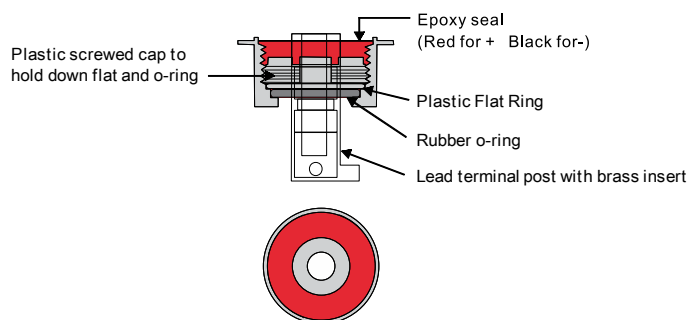


Terminal and Torque



15 years Design Life
Grid Plate
Monobloc Battery
Nominal Capacity 80~180Ah
Deep Discharge Recovery
Maintenance Free
Recyclable
Valve Regulated Lead - Acid

Float Voltage & Charging
Constant voltage charging is recommended
Recommended float voltage: 2.25VPC @ 20°C(68°F)
Float voltage range: 2.23VPC to 2.27 VPC @ 20°C(68°F)
Equalize voltage: 2.35VPC to 2.40VPC



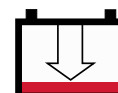
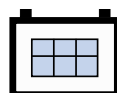
FT GEL Range Discharge Ampere Hours Data @ 20°C (68°F)

Battery Model	End VPC	Discharge Data Amps @ 20°C				End VPC	Discharge Data Ampere Hours @ 20°C												
		Discharge Time In Minutes					Discharge Time In Hours												
		15	30	45	60		1.5	2	3	4	5	8	10	12	20	24	48	72	100
FT12V80G	1.80	124	79.9	59.7	49.3	1.85	50.6	56.8	61.5	64.7	66.9	74.7	78.9	78.7	85.6	88.2	92.3	95.6	99.1
	1.75	134	82.7	61.6	50.5	1.80	53.6	60.3	65.2	68.6	71.0	79.2	80.0	84.0	91.3	92.7	95.7	98.9	102
	1.67	142	84.5	61.8	50.9	1.75	55.0	61.7	66.9	70.3	72.7	81.2	84.6	86.2	94.2	95.5	98.1	101	104
FT12V100G	1.80	150	95.9	71.7	59.3	1.85	60.7	68.2	73.8	77.6	80.4	89.8	92.4	94.3	103	106	111	116	119
	1.75	163	99.3	73.9	60.7	1.80	64.5	72.4	78.3	82.3	85.3	95.0	100	101	110	111	116	119	122
	1.67	171	102	74.1	61.1	1.75	66.0	74.1	80.3	84.4	87.3	97.6	102	104	113	116	118	122	125
FT12V155G	1.80	235	151	112	92.7	1.85	95.2	107	116	121	127	141	145	147	162	166	174	179	186
	1.75	254	155	116	95.2	1.80	101	113	122	129	133	149	155	157	173	175	180	186	191
	1.67	268	160	117	95.7	1.75	104	117	127	132	136	153	160	163	177	179	185	189	196
FT12V180G	1.80	272	175	130	108	1.85	111	125	134	140	148	163	168	170	188	193	202	208	216
	1.75	295	180	134	111	1.80	117	131	142	150	155	173	180	182	200	203	209	216	222
	1.67	311	186	136	111	1.75	121	136	148	154	158	178	186	190	205	208	215	220	228

FT GEL Range Discharge Amps Data @ 20°C (68°F)

Battery Model	End VPC	Discharge Data Amps @ 20°C				End VPC	Discharge Data Amps @ 20°C													
		Discharge Time In Minutes					Discharge Time In Hours													
		15	30	45	60		1.5	2	3	4	5	8	10	12	20	24	48	72	100	
FT12V80G	1.80	125	79.9	59.7	49.3	1.85	33.7	28.4	20.5	16.2	13.4	9.34	7.89	6.56	4.28	3.68	1.92	1.33	0.99	
	1.75	135	82.7	61.6	50.5	1.80	35.7	30.2	21.7	17.2	14.2	9.90	8.00	7.00	4.57	3.86	1.99	1.37	1.02	
	1.67	142	84.5	61.8	50.9	1.75	36.7	30.9	22.3	17.6	14.5	10.2	8.46	7.18	4.71	3.98	2.04	1.40	1.04	
FT12V100G	1.80	150	95.9	71.7	59.3	1.85	40.5	34.1	24.6	19.5	16.1	11.2	9.24	7.85	5.14	4.41	2.30	1.60	1.19	
	1.75	163	99.3	73.9	60.7	1.80	43.0	36.2	26.1	20.6	17.1	11.9	10.0	8.40	5.49	4.64	2.40	1.65	1.22	
	1.67	171	102	74.1	61.1	1.75	44.0	37.2	26.7	21.1	17.5	12.2	10.2	8.64	5.64	4.77	2.46	1.68	1.25	
FT12V155G	1.80	235	151	112	92.7	1.85	63.6	53.4	38.6	30.5	25.2	17.6	14.5	12.2	8.05	6.92	3.62	2.50	1.86	
	1.75	254	155	116	95.2	1.80	67.3	56.7	40.9	32.1	26.8	18.6	15.5	13.2	8.59	7.27	3.75	2.57	1.91	
	1.67	268	160	117	95.7	1.75	69.0	58.1	42.0	33.0	27.4	19.0	16.0	13.5	8.84	7.47	3.84	2.64	1.96	
FT12V180G	1.80	272	175	130	108	1.85	73.8	62.0	44.9	35.4	29.3	20.4	16.8	14.2	9.35	8.04	4.20	2.90	2.16	
	1.75	295	180	134	111	1.80	78.1	65.9	47.5	37.3	31.1	21.6	18.0	15.4	9.97	8.45	4.36	2.99	2.22	
	1.67	311	186	136	111	1.75	80.2	67.4	48.7	38.3	31.8	22.1	18.6	15.7	10.3	8.68	4.46	3.06	2.28	

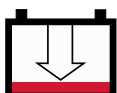
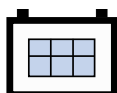
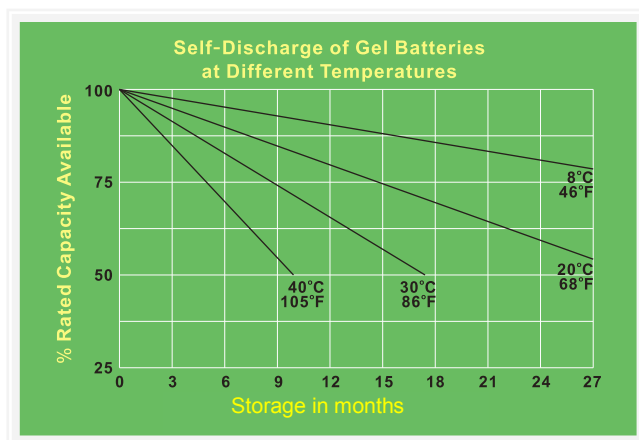
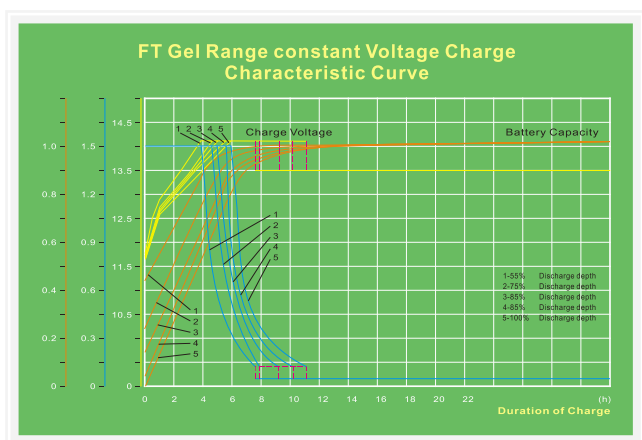
Actual Battery Discharge Data may be +/-5% of figures shown above.



FT GEL Range Discharge Watts Per Cell @ 20°C (68°F)

Battery Model	End VPC	Discharge Watts Per Cell @ 20°C				End VPC	Discharge Watts Per Cell @ 20°C									
		Discharge Time In Minutes					Discharge Time In Hours									
		15	30	45	60		1.5	2	3	4	5	8	10	12	20	24
FT12V80G	1.80	230	150	113	94.7	1.85	64.9	55.0	39.8	31.7	26.4	18.6	15.3	13.2	8.58	7.40
	1.75	249	154	118	97.0	1.80	68.4	57.9	42.0	33.3	27.8	19.5	16.2	13.9	9.16	7.76
	1.67	262	157	118	97.8	1.75	69.7	59.4	43.0	34.1	28.3	19.9	16.7	14.2	9.28	7.88
FT12V100G	1.80	275	179	136	114	1.85	77.9	65.9	48.0	38.1	31.7	22.2	18.4	15.7	10.3	8.87
	1.75	299	186	140	117	1.80	82.1	69.5	50.6	40.0	33.4	23.4	19.6	16.7	10.9	9.27
	1.67	314	189	141	118	1.75	83.6	71.3	51.6	40.8	34.1	24.0	19.9	17.1	11.1	9.45
FT12V155G	1.80	431	281	213	178	1.85	121	103	75.0	59.6	49.6	34.9	28.8	24.6	16.2	14.0
	1.75	469	290	220	183	1.80	129	109	79.2	62.8	52.4	36.7	30.6	26.1	17.2	14.5
	1.67	493	297	220	184	1.75	131	111	80.9	64.0	53.4	37.5	31.2	26.7	17.5	14.9
FT12V180G	1.80	500	326	247	206	1.85	142	120	87.1	69.2	57.6	40.6	33.5	28.6	18.8	16.2
	1.75	545	337	256	212	1.80	150	126	91.9	73.0	60.8	42.6	35.5	30.4	19.9	16.8
	1.67	572	344	256	214	1.75	152	128	94.0	74.3	62.0	43.6	36.2	31.0	20.3	17.3

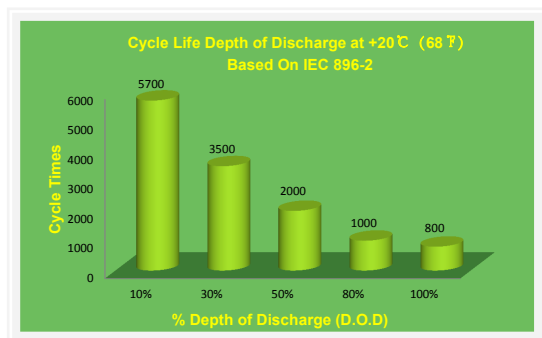
Actual Battery Discharge Data may be +/-5% of figures shown above.



BATTERY CYCLING ABILITY

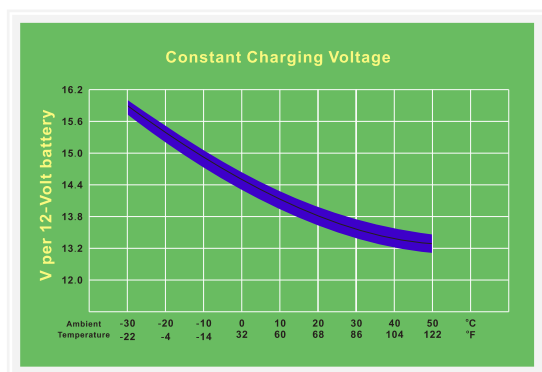
The EverExceed's FT Gel Range Battery excels in cycling applications.

FT Gel Range batteries are capable of 5700+ charge / discharge cycles depending on the depth of discharge.



TYPICAL CYCLIC PERFORMANCE

CAPACITY WITHDRAWN	CYCLES
100%	800
80%	1000
50%	2000
30%	3500
10%	5700



CONSTANT CHARGING VOLTAGE:

Shown is the constant charging voltage in relation to the ambient temperature.

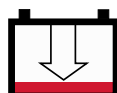
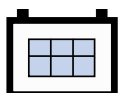
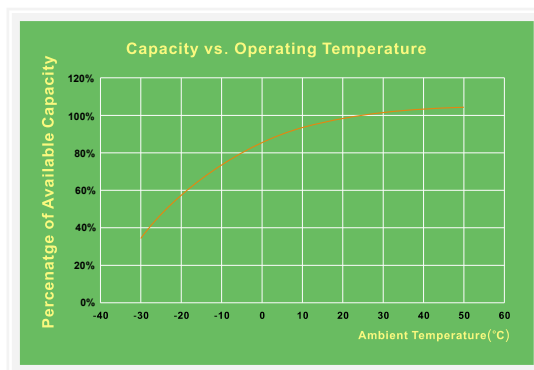
The bandwidth shows a tolerance of $\pm 30\text{mV/cell}$.

This constant voltage is suitable for continuous charging and cyclic operation.

In a parallel standby (floating) condition it always keeps the battery in a fully charged state; in a cyclic condition, it provides for rapid recharging and high cyclic performance.

CAPACITY VS. OPERATING TEMPERATURES:

Above are the changes in capacity for wider ambient temperature range, giving the available capacity, as a percentage of the rated capacity, at different ambient temperatures. The curves show the behavior of the battery after a number of cycles.



EverExceed®
power your applications



***Supplied Worldwide by
EverExceed Corporation***

