



# ES5-12FR T2

## SPECIFICATIONS

Nominal Voltage (V) 12V

### Nominal Capacity

20 hour rate ( 0.25A to 10.50V )	5Ah
10 hour rate ( 0.475A to 10.50V )	4.75Ah
5 hour rate ( 0.85A to 10.20V )	4.25Ah
1C ( 5A to 9.60V )	2.833Ah
3C ( 15A to 9.60V )	2.0Ah

Weight Approx. 4.18Lbs. (1.9kg)

Internal Resistance (at 1KHz) Approx. 19 mΩ

Maximum Discharge Current for 5 seconds : 75A

### Operating Temperature Range

Charge	-15°C ( 5°F ) to 40°C (104°F )
Discharge	-15°C ( 5°F ) to 50°C (122°F )
Storage	-15°C ( 5°F ) to 40°C (104°F )

### Charge Retention (shelf life) at 20°C ( 68°F )

1 month	92%
3 months	90%
6 months	80%

### Charging Methods at 25°C ( 77°F )

**Cycle Use :** Charging Voltage 14.4 to 15.0V  
Coefficient -5.0mv / °C / cell  
Maximum Charging Current : 1.5A

**Standby Use :** Float Charging Voltage 13.50 to 13.80V  
Coefficient -3.0mv / °C / cell

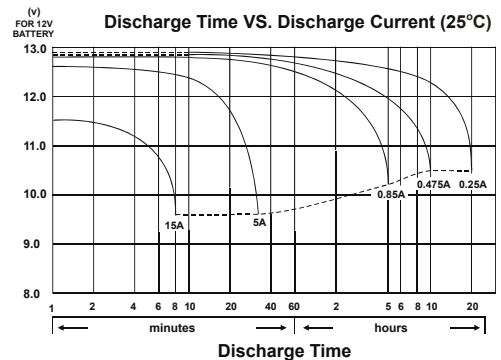
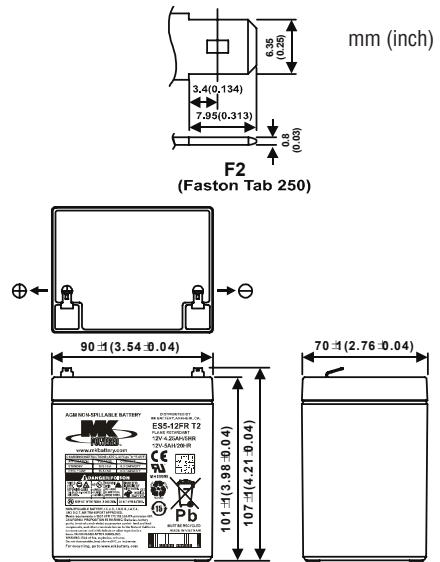
**Case Material :** ABS  
(UL94 V-0 Flame Retardant Case Material)

**Terminal :** F2

## Maintenance-Free Rechargeable Sealed Lead-Acid Battery



## DIMENSIONS



## MK Battery

1631 South Sinclair Street • Anaheim, California 92806

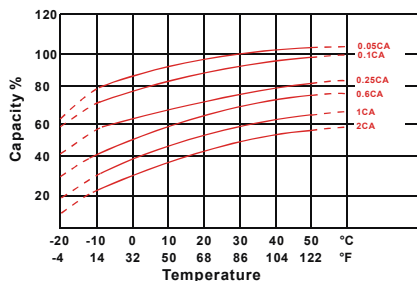
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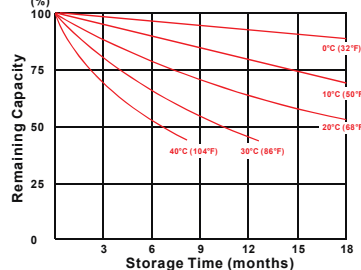


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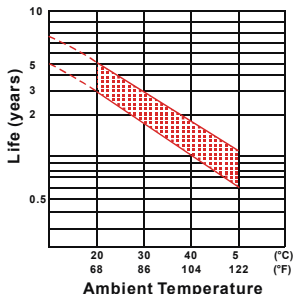
Effect of Temperature on Capacity 25°C (77°F)



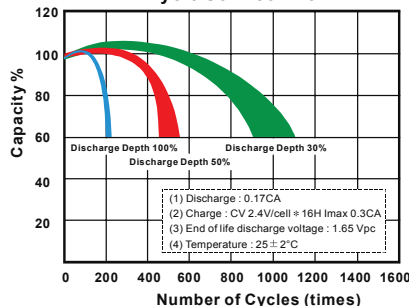
Capacity Retention Characteristic



Trickle (or float) Service Life



Cycle Service Life



## - PERFORMANCE DATA

Discharge Rates in Watts to Various End Voltages at 25°C (77°F)

Time	End Voltage	1.85V	1.80V	1.75V	1.70V	1.67V	1.65V	1.60V
5	min	36.3	39.5	41.5	43.5	44.3	45.5	47.0
10	min	25.7	27.7	29.2	30.2	30.7	31.3	32.3
15	min	19.7	21.2	21.8	22.5	22.8	23.2	23.7
30	min	11.2	11.7	12.1	12.5	12.7	12.8	12.9
60	min	5.95	6.27	6.47	6.70	6.82	6.93	7.07
120	min	3.13	3.38	3.53	3.65	3.72	3.80	3.92
180	min	2.53	2.72	2.85	2.97	3.02	3.07	3.15
240	min	2.02	2.15	2.27	2.33	2.37	2.40	2.45
300	min	1.73	1.87	1.95	1.98	2.00	2.02	2.05
600	min	1.01	1.09	1.15	1.17	1.18	1.19	1.21
1200	min	0.530	0.572	0.603	0.615	0.620	0.625	0.633

- Discharge Rates in Amperes to Various End Voltages at 25°C (77°F)

Time	End Voltage	1.85V	1.80V	1.75V	1.70V	1.67V	1.65V	1.60V
5	min	17.8	21.7	23.9	25.8	26.4	27.0	27.8
10	min	13.2	14.8	15.7	16.2	16.6	16.9	17.3
15	min	9.92	10.5	10.9	11.1	11.2	11.3	11.5
30	min	5.84	6.15	6.26	6.38	6.42	6.47	6.55
60	min	3.04	3.20	3.38	3.46	3.49	3.53	3.59
120	min	1.58	1.70	1.79	1.87	1.91	1.94	1.99
180	min	1.27	1.35	1.41	1.47	1.49	1.52	1.55
240	min	1.00	1.07	1.11	1.15	1.16	1.18	1.21
300	min	0.851	0.898	0.919	0.942	0.953	0.962	0.978
600	min	0.497	0.506	0.514	0.521	0.524	0.529	0.535
1200	min	0.268	0.274	0.279	0.284	0.286	0.287	0.291

All data on the spec. sheet is an average value:

The tolerance range :  $X < 6\text{min}$ (+15%~-15%),  $6\text{min} \leq X < 10\text{min}$ (+12%~-12%),  $10\text{min} \leq X < 60\text{min}$ (+8%~-8%),  $X \geq 60\text{min}$ (+5%~-5%)

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