



## S28S

28 Ah | 12 V | 20 h

### Specifications

Voltage	12 V
Nominal Capacity	28 Ah @ 20 hour-rate
Number of Cells	6
Internal Resistance	Approx. 9 mΩ
Design Life	6 to 8 years (float charging)
Short Circuit Current	880 A
Self Discharge	Monthly rate < 3% @ 25 °C Recharge after 6 months Charge before using

### Charging & Discharging

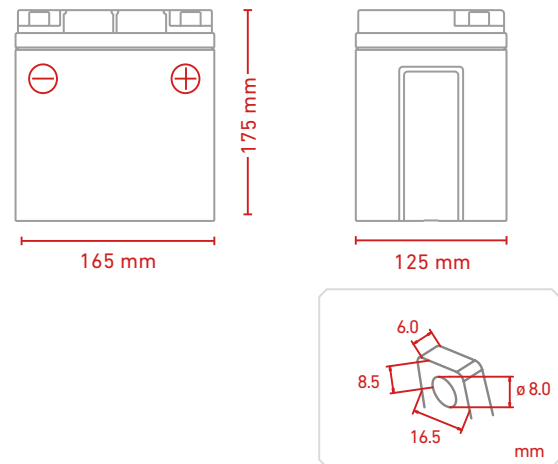
Max. Charging Current	8.4 A
Max. Discharge Current	280 A (5 sec)
Standby Use Voltage	13.7 V to 13.9 V @ 25 °C Temperature Compensation: -3mV/°C/Cell
Cycle Use Voltage	14.6 V to 14.8 V @ 25 °C Temperature Compensation: -4mV/°C/Cell
Reference Capacity	C3 21.7 Ah C5 24.2 Ah C10 26.2 Ah C20 28.0 Ah

### Temperature Ranges

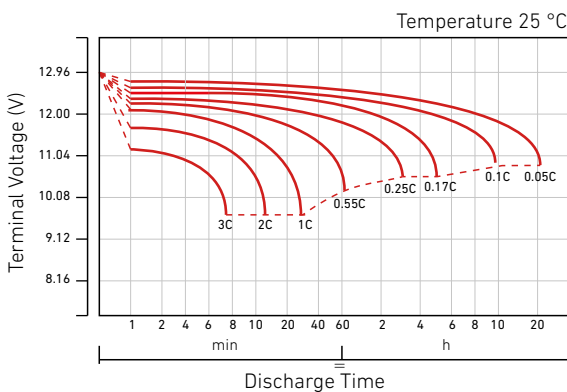
Normal Operation	25 °C ± 5 °C
Discharging	-20 °C to 60 °C
Charging	0 °C to 50 °C
Storage	-20 °C to 60 °C

### Mechanical Specifications

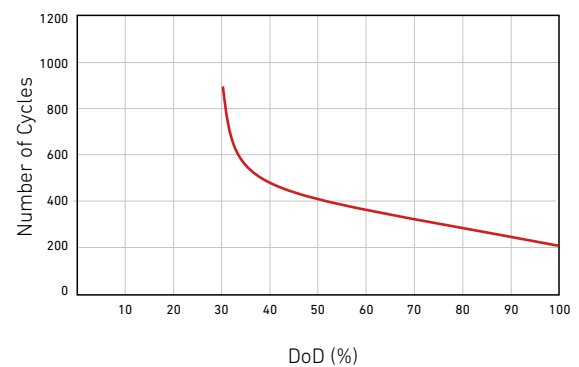
Measurements (L x W x H)	165 x 125 x 175 mm
Weight	Approx. 8.8 kg
Terminals	F7(M8)
Case material	A.B.S. UL94-HB, UL94-V0 Optional



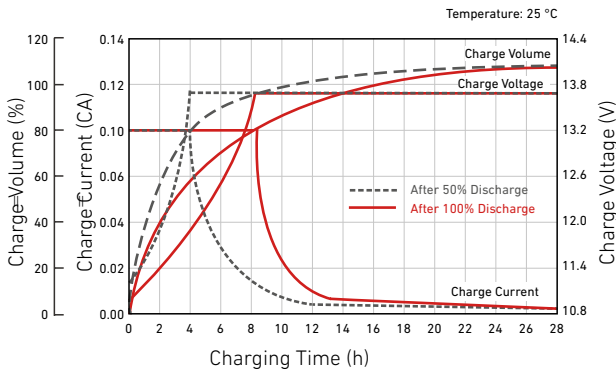
### Discharge Characteristics Curve



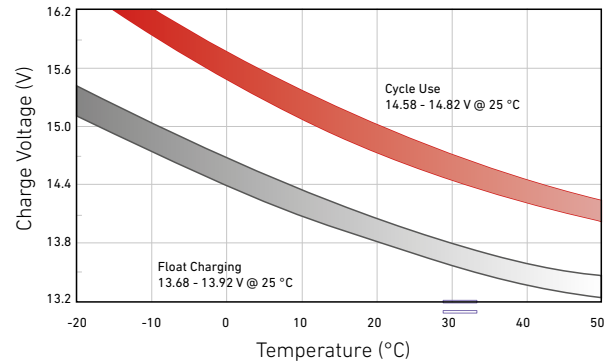
### Cycle Life in Relation to Depth of Discharge



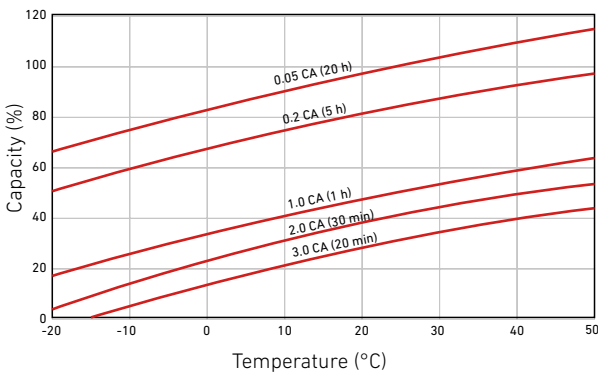
**Discharge Characteristics Curve For Standby Use**



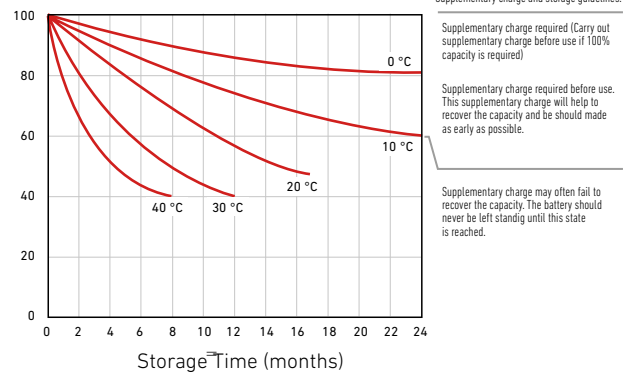
**Relationship Between Charging Voltage and Temperature**



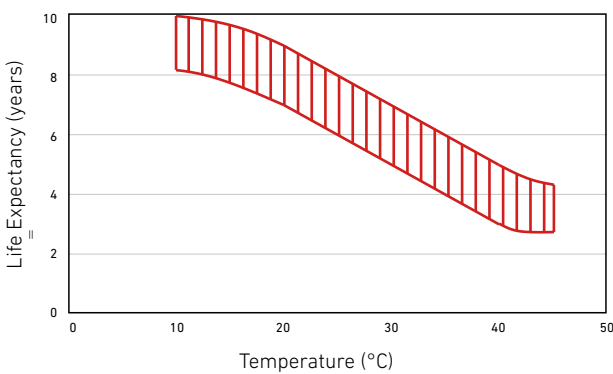
**Temperature Effects on Capacity**



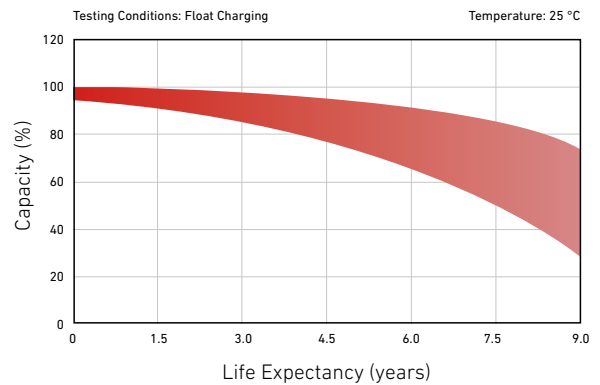
**Storage Characteristics**



**Effect of Temperature on Long-Term Life**



**Life Characteristics of Standby Use**



**Constant Current Discharge Characteristics: A (25 °C)**

F.V	Time											
	5 min	10 min	15 min	30 min	1 h	2 h	3 h	4 h	5 h	8 h	10 h	20 h
1.60 V	100,2	66,72	49,73	29,07	16,80	10,43	7,584	6,039	5,098	3,406	2,774	1,448
1.65 V	96,57	64,73	48,42	28,43	16,49	10,28	7,483	5,964	5,039	3,372	2,748	1,436
1.70 V	91,86	62,12	46,71	27,59	16,07	10,08	7,349	5,864	4,961	3,326	2,713	1,421
1.75 V	85,81	58,75	44,48	26,48	15,53	9,808	7,171	5,732	4,856	3,265	2,666	1,400
1.80 V	78,18	54,43	41,61	25,05	14,82	9,455	6,936	5,557	4,719	3,184	2,604	1,373
1.85 V	68,80	49,04	37,99	23,22	13,91	8,995	6,630	5,328	4,538	3,078	2,522	1,336

**Constant Power Discharge Characteristics: WPC (25 °C)**

F.V	Time											
	5 min	10 min	15 min	30 min	1 h	2 h	3 h	4 h	5 h	8 h	10 h	20 h
1.60 V	172,4	115,1	88,24	53,59	31,88	20,07	14,85	11,89	10,07	6,82	5,59	2,89
1.65 V	170,6	114,6	87,73	53,20	31,62	19,92	14,74	11,80	10,01	6,77	5,55	2,88
1.70 V	164,1	111,3	85,37	51,91	30,94	19,59	14,51	11,63	9,87	6,69	5,48	2,85
1.75 V	156,1	107,1	82,47	50,35	30,04	19,15	14,22	11,41	9,70	6,58	5,39	2,81
1.80 V	144,7	101,0	78,25	48,10	28,81	18,56	13,81	11,10	9,46	6,43	5,28	2,76
1.85 V	129,6	92,59	72,45	45,04	27,23	17,75	13,26	10,68	9,13	6,23	5,12	2,69