



# General Purpose MA12-12 (12V12AH)

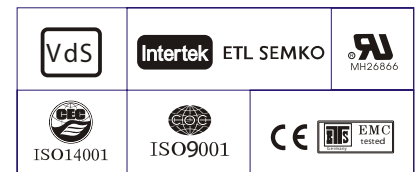


## Specification

Nominal Voltage	12V	
Nominal Capacity(20HR)	12.0AH	
Dimension	Length	151 ± 1mm (5.95 inches)
	Width	98 ± 1mm (3.86 inches)
	Container Height	95 ± 1mm (3.74 inches)
	Total Height (with Terminal)	101 ± 1mm (3.98 inches)
	Approx Weight	Approx 3.60 kg (7.94lbs)
Terminal	T1 / T2	
Container Material	ABS	
Rated Capacity	12.0 AH/0.60A	(20hr, 1.80V/cell, 25 °C/77 °F)
	11.2 AH/1.12A	(10hr, 1.80V/cell, 25 °C/77 °F)
	10.2 AH/2.04A	(5hr, 1.75V/cell, 25 °C/77 °F)
	9.2 AH/3.06A	(3hr, 1.75V/cell, 25 °C/77 °F)
	7.54AH/7.54A	(1hr, 1.60V/cell, 25 °C/77 °F)
Max. Discharge Current	180A (5s)	
Internal Resistance	Approx 14m Ω	
Operating Temperature Range	Discharge :	-15 ~ 50°C (5 ~ 122°F)
	Charge :	0 ~ 40°C (32 ~ 104°F)
	Storage :	-15 ~ 40°C (5 ~ 104°F)
Nominal Operating Temperature Range	25 ± 3°C (77 ± 5°F)	
Cycle Use	Initial Charging Current less than 3.6A. Voltage	
	14.4V~15.0V at 25°C (77°F) Temp. Coefficient -30mV/°C	
Standby Use	No limit on Initial Charging Current Voltage	
	13.5V~13.8V at 25°C (77°F) Temp. Coefficient -20mV/°C	
Capacity affected by Temperature	40°C (104°F)	103%
	25°C (77°F)	100%
	0°C (32°F)	86%
Self Discharge	Leoch LP series batteries may be stored for up to 6 months at 25°C (77°F) and then a refreshing charge is required. For higher temperatures the time interval will be shorter.	

## Applications

- ◆ All purpose
- ◆ Uninterruptable Power Supply(UPS)
- ◆ Electric Power System(EPS)
- ◆ Emergency backup power supply
- ◆ Emergency light
- ◆ Railway signal
- ◆ Aircraft signal
- ◆ Alarm and security system
- ◆ Electronic apparatus and equipment
- ◆ Communication power supply
- ◆ DC power supply
- ◆ Auto control system



## Constant Current Discharge (Amperes) at 25 °C (77°F)

F.V/Time	5min	10min	15min	20min	30min	45min	1h	2h	3h	4h	5h	6h	8h	10h	20h
1.85V/cell	22.9	17.5	14.5	12.6	9.72	7.16	6.03	3.57	2.79	2.27	1.85	1.61	1.30	1.08	0.594
1.80V/cell	30.7	22.4	17.6	14.9	11.5	8.33	6.76	3.90	3.00	2.42	1.99	1.72	1.37	1.12	0.600
1.75V/cell	34.6	24.6	19.2	16.0	11.9	8.64	7.07	4.04	3.06	2.48	2.04	1.77	1.40	1.15	0.606
1.70V/cell	38.1	26.9	20.5	16.8	12.4	8.99	7.29	4.14	3.15	2.54	2.09	1.81	1.42	1.17	0.617
1.65V/cell	42.0	29.0	21.8	17.8	13.1	9.21	7.46	4.20	3.28	2.63	2.15	1.85	1.44	1.19	0.625
1.60V/cell	46.3	31.5	23.3	19.0	13.8	9.60	7.54	4.38	3.38	2.71	2.22	1.89	1.45	1.21	0.629

## Constant Power Discharge (Watts) at 25 °C (77°F)

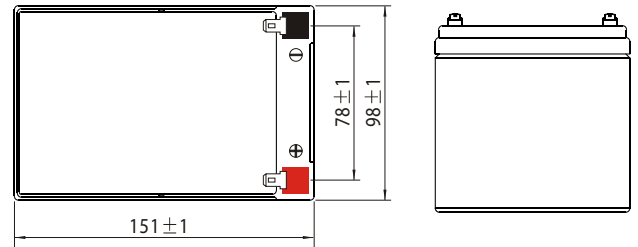
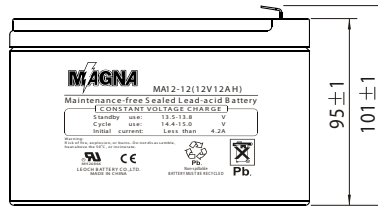
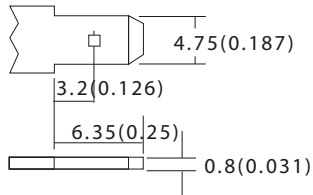
F.V/Time	5min	10min	15min	20min	30min	45min	1h	2h	3h	4h	5h	6h	8h	10h	20h
1.85V/cell	41.8	32.4	27.1	23.7	18.5	13.8	11.6	6.93	5.44	4.44	3.63	3.16	2.56	2.14	1.18
1.80V/cell	55.5	40.9	32.3	27.6	21.5	15.9	13.0	7.51	5.82	4.71	3.88	3.37	2.71	2.21	1.19
1.75V/cell	61.2	44.3	34.9	29.4	22.2	16.3	13.5	7.76	5.91	4.80	3.97	3.46	2.75	2.26	1.20
1.70V/cell	65.6	47.1	36.7	30.7	22.9	16.9	13.9	7.94	6.06	4.92	4.06	3.52	2.78	2.31	1.22
1.65V/cell	71.3	50.4	38.7	32.3	24.0	17.2	14.1	8.01	6.29	5.07	4.16	3.59	2.82	2.35	1.23
1.60V/cell	76.8	53.5	40.8	34.1	25.2	17.8	14.2	8.31	6.45	5.21	4.28	3.65	2.84	2.37	1.24



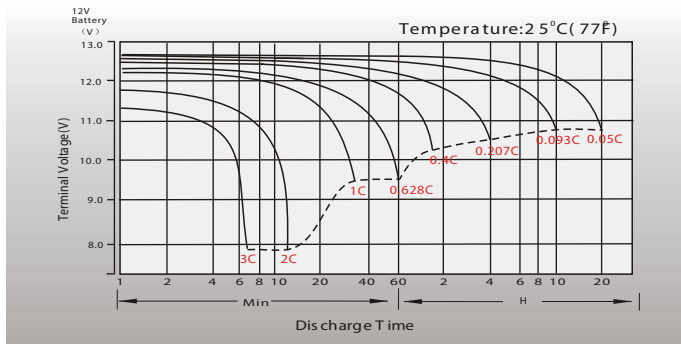
# Dimensions

## T1 Terminal

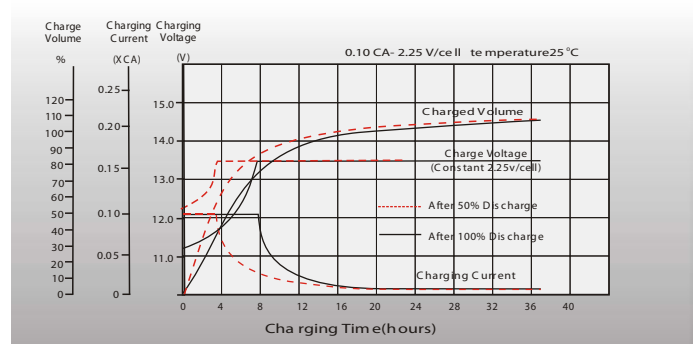
Unit: mm [inches]



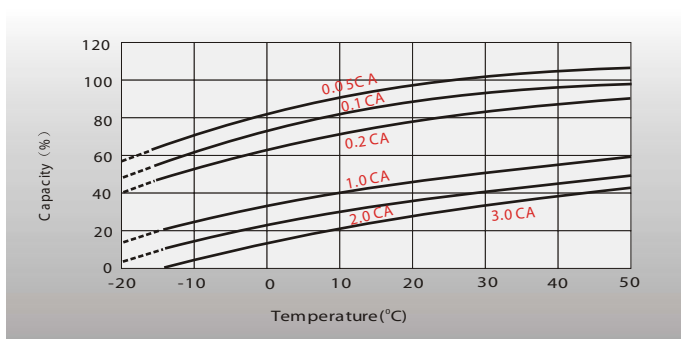
## Discharge Characteristics



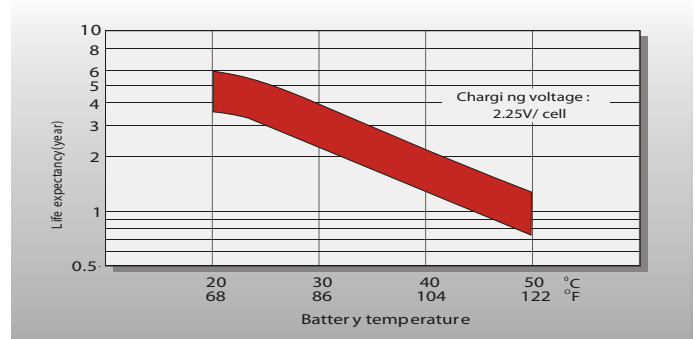
## Float Charging Characteristics



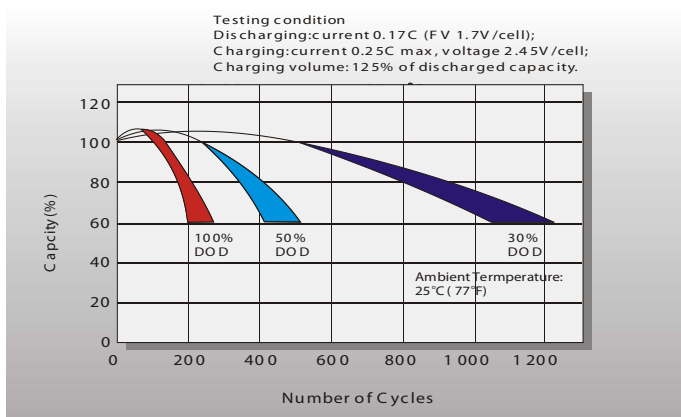
## Temperature Effects in Relation to Battery Capacity



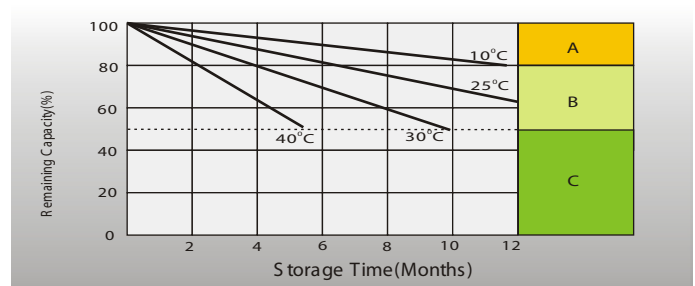
## Effect of Temperature on Long Term Float Life



## Cycle Life in Relation to Depth of Discharge



## Self Discharge Characteristics



- A** No supplementary charge required (Carry out supplementary charge before use if 100% capacity is required)
- B** Supplementary charge required before use. Optional charging ways as below:
  - Charged for above 3 days at limited current 0.25CA and constant voltage 2.25V/cell.
  - Charged for above 20 hours at limited current 0.25CA and constant voltage 2.45V/cell.
  - Charged for 8-10 hours at limited current 0.05 CA.
- C** Supplementary charge may often fail to recover the capacity. The battery should never be left standing till this is reached.

## Sales Office

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