

# LP SERIES-General Purpose

## LP12-28H (12V28AH)

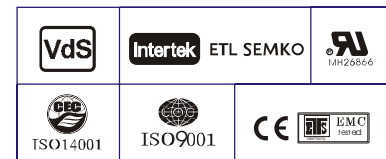
### Specification

Nominal Voltage	12V	
Nominal Capacity(20HR)	28.0AH	
Dimensions	Length	165±2mm (6.50 inches)
	Width	125±2mm (4.92 inches)
	Container Height	175±2mm (6.89 inches)
	Total Height (with Terminal)	175±2mm (6.89 inches)
	Approx Weight	Approx 9.5 kg (20.95lbs)
Terminal	T3 / T12 / T10	
Container Material	ABS	
Rated Capacity	28.0 AH/1.40A	(20hr, 1.80V/cell, 25°C/77°F)
	26.0 AH/2.60A	(10hr, 1.80V/cell, 25°C/77°F)
	23.8 AH/4.76A	(5hr, 1.75V/cell, 25°C/77°F)
	21.4 AH/7.14A	(3hr, 1.75V/cell, 25°C/77°F)
	17.6 AH/17.6A	(1hr, 1.60V/cell, 25°C/77°F)
	Max. Discharge Current	420A (5s)
Internal Resistance	Approx 14mΩ	
Operating Temp. Range	Discharge : -15~50°C (5~122°F)	
	Charge : 0~40°C (32~104°F)	
	Storage : -15~40°C (5~104°F)	
Nominal Operating Temp. Range	25±3°C (77±5°F)	
Cycle Use	Initial Charging Current less than 8.4A. 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 freshening 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	53.3	40.9	33.9	29.3	22.7	16.7	14.1	8.33	6.52	5.30	4.32	3.75	3.02	2.53	1.39
1.80V/cell	71.6	52.3	41.0	34.7	26.8	19.4	15.8	9.09	7.01	5.66	4.64	4.02	3.21	2.60	1.40
1.75V/cell	80.7	57.5	44.8	37.3	27.8	20.2	16.5	9.42	7.14	5.78	4.76	4.13	3.26	2.67	1.41
1.70V/cell	88.9	62.7	47.8	39.2	28.9	21.0	17.0	9.66	7.34	5.94	4.88	4.22	3.31	2.73	1.44
1.65V/cell	98.0	67.6	50.8	41.6	30.5	21.5	17.4	9.80	7.65	6.14	5.01	4.31	3.36	2.78	1.46
1.60V/cell	108.1	73.4	54.3	44.4	32.2	22.4	17.6	10.2	7.88	6.33	5.18	4.40	3.39	2.81	1.47

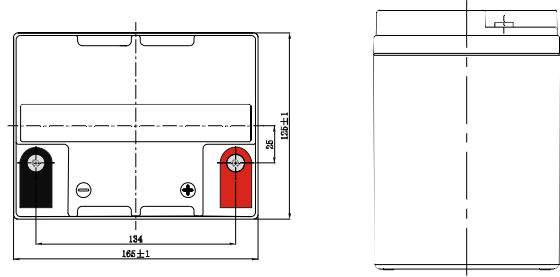
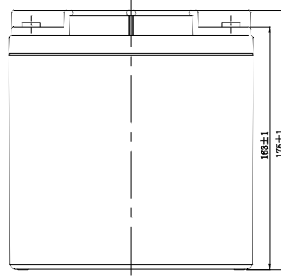
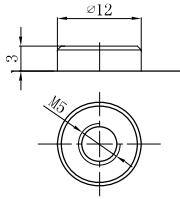
### Constant Power Discharge (Watts/cell) at 25 °C (77°F)

F.V/Time	5min	10min	15min	20min	30min	45min	1h	2h	3h	4h	5h	6h	8h	10h	20h
1.85V/cell	97.5	75.6	63.3	55.3	43.2	32.1	27.2	16.17	12.70	10.36	8.47	7.37	5.97	5.00	2.75
1.80V/cell	129.5	95.5	75.4	64.4	50.2	37.1	30.3	17.53	13.59	11.00	9.05	7.87	6.31	5.15	2.77
1.75V/cell	142.9	103.3	81.4	68.6	51.7	38.1	31.5	18.11	13.78	11.21	9.26	8.06	6.41	5.28	2.79
1.70V/cell	153.0	110.0	85.7	71.6	53.5	39.5	32.4	18.53	14.14	11.48	9.48	8.22	6.49	5.38	2.84
1.65V/cell	166.3	117.6	90.4	75.4	56.0	40.1	32.9	18.68	14.68	11.83	9.70	8.37	6.58	5.48	2.88
1.60V/cell	179.2	124.8	95.1	79.5	58.7	41.6	33.1	19.39	15.06	12.17	9.99	8.53	6.63	5.53	2.89

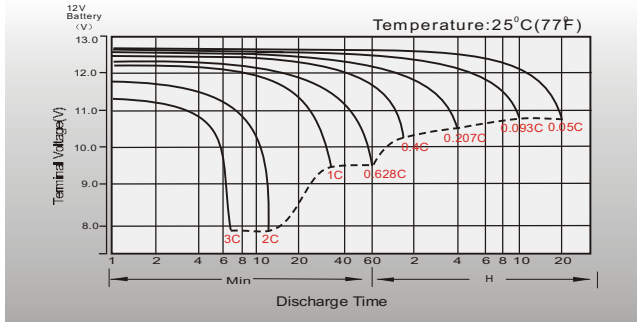
## Dimensions

### T12 Terminal

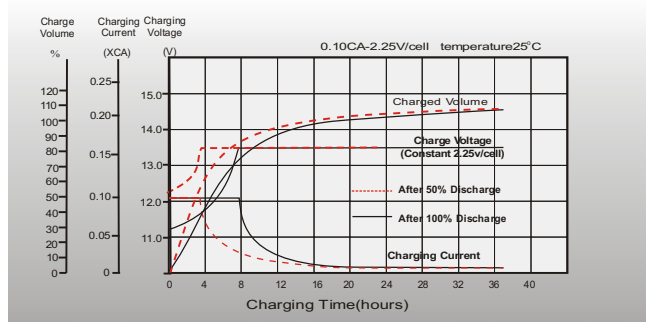
Unit: mm [inches]



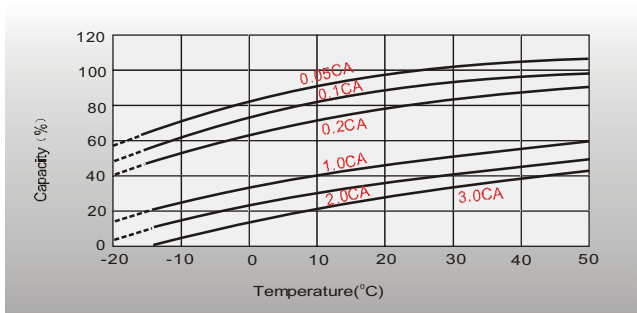
## Discharge Characteristics



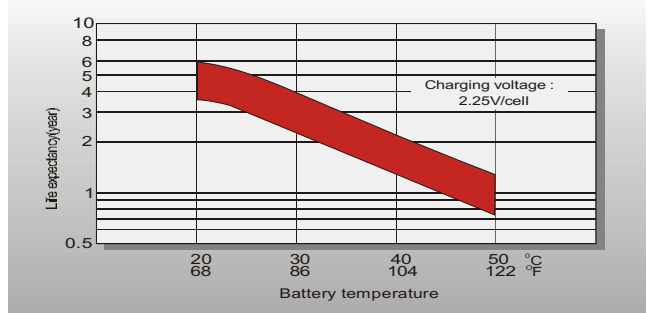
## Float Charging Characteristics



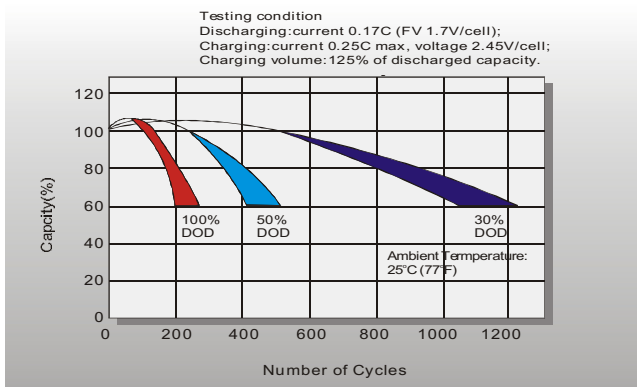
## Temperature Effects in Relation to Battery Capacity



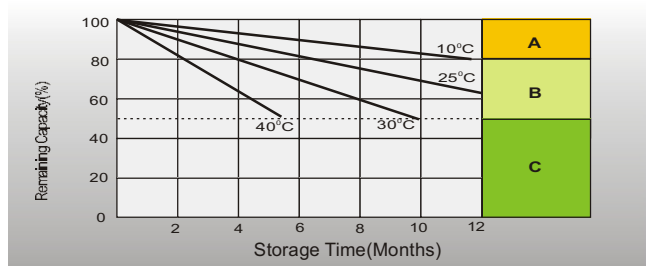
## Effect of Temperature on Long Term Float Life



## 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 way as below:  
1. Charged for above 3 days at limited current 0.25CA and constant voltage 2.25V/cell.  
2. Charged for above 20 hours at limited current 0.25CA and constant voltage 2.45V/cell.  
3. Charged for 8-10 hours at limited current 0.05CA.
- C** Supplementary charge may often fail to recover the capacity.  
The battery should never be left standing till this is reached.

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