



Backup Power

For UPS, Security, Fire Alarm System



Electric Vehicle Power

For Mobility Scooter, Electric Vehicle,
Golf Trolley, Medical



Green Power

For Solar and Renewable Energy,
Deep Cycle



Cyclic Power

For Multi-Purpose



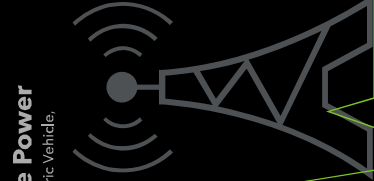
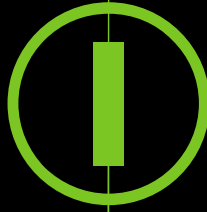
High Power

For Telecommunication,
UPS System



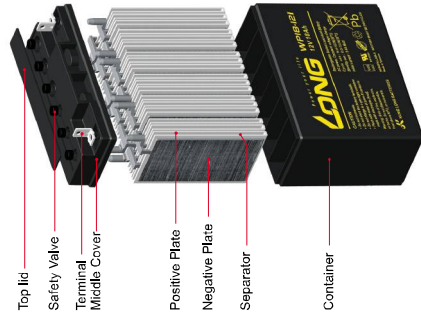
Long Life Power

For Telecommunication,
UPS System

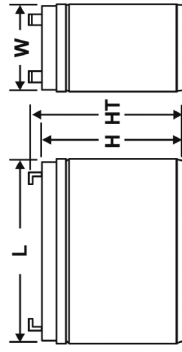


VRLA BATTERIES

CONSTRUCTION



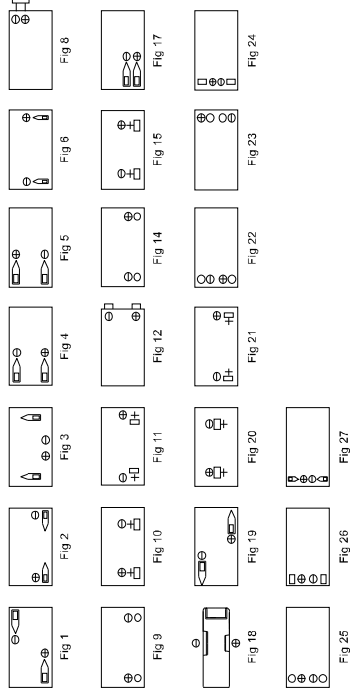
CASE DIMENSION



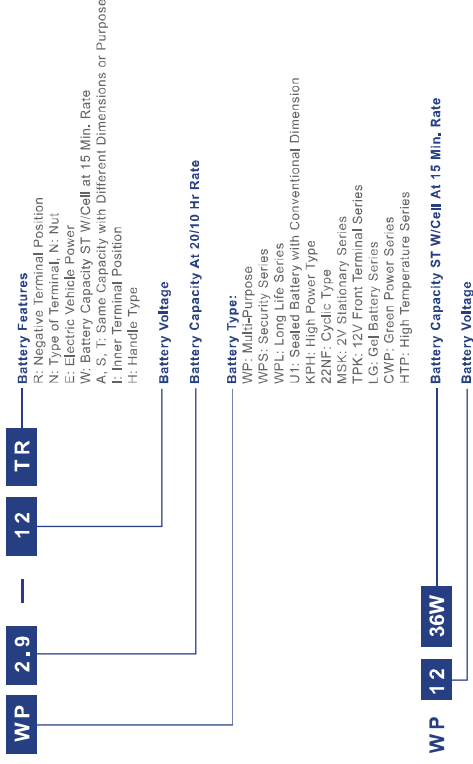
TERMINAL TYPE

F1		F2		F3		F4		F6		F18	
F8		F9		F13		F15					

TERMINAL POSITION



BATTERY NUMBERING SYSTEM



MAIN APPLICATION



Cyclic Power

For Multi-Purpose



MAIN APPLICATION

- VdS Approved Model 
- For batteries' capacity below 18Ah, all dimensions given are $\pm 1\text{ mm}$ (0.04 inches)
- For batteries' capacity below 18Ah, all dimensions given are $\pm 2\text{ mm}$ (0.08/0.04 inches)

Please refer to all the details of the specification sheet

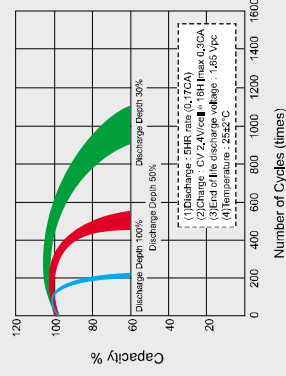
MAIN APPLICATION	BATTERY TYPE	NOMINAL VOLTAGE (V)	NOMINAL CAPACITY (Ah)		DIMENSION						WEIGHT (APPROX.)		ASSEMBLY FIGURE			
			5HR	20HR	L	W	H	L	W	H	in	mm		lbs	kg	
BACKUP POWER BATTERIES																
●○○○○○	WPS4-6	6	3.4	4	2.76	1.85	4.02	70	47	102	4.17	106	1.64	0.75	1	F1
●○○○○○	WPS23-12	12	1.96	2.3	7.01	1.36	2.36	178	34.5	60	2.60	66	1.91	0.87	2	F1
●○○○○○	WPS4-12	12	3.4	4	3.54	2.76	4.00	90	70	101.5	4.21	107	3.30	1.50	3	F1
●○○○○○	WPS5-12	12	4.25	5	3.54	2.76	4.00	90	70	101.5	4.21	107	3.56	1.62	3	F1
●○○○○○	WPS7-12	12	5.65	7	5.94	2.56	3.70	151	65	94	4.02	102	4.62	2.10	5	F1
●○○○○○	WPS7-2-12	12	6.12	7.2	5.94	2.56	3.70	151	65	94	4.02	102	5.17	2.35	5	F1
●○○○○○	WPS8-12	12	6.8	8	5.94	2.56	3.70	151	65	94	4.02	102	5.06	2.30	5	F1
●○○○○○	WPS12-12(T)	12	10.2	12	5.94	3.66	3.66	151	98	93	^{3.66} _(4.09)	98	8.10	3.68	5	F1(F3)
●○○○○○	WPS17-12	12	13.73	17	7.13	2.99	6.57	181	76	167	6.57	167	10.58	4.81	11	F3
●○○○○○	WPS26-12(N)	12	22.1	26	6.54	6.89	4.92	166	175	125	4.92	125	17.60	8.00	21(14)	F3(F6)
●○○○○○	WPS40-12(N)★	12	34	40	7.83	6.54	6.73	199	166	171	6.73	171	27.70	12.60	11(14)	F4(F8)
LONG LIFE POWER BATTERIES																
●○○○○○	WPL5-12	12	4.25	5	3.54	2.76	4.00	90	70	101.5	4.21	107	4.18	1.90	3	F1
●○○○○○	WPL7.2-12	12	6.12	7.2	5.94	2.56	3.70	151	65	94	4.02	102	5.28	2.40	5	F1
●○○○○○	WPL1235W	12	35	8.5	5.94	2.56	3.70	151	65	94	4.02	102	5.94	2.70	5	F2
●○○○○○	WPL12-12	12	10.2	12	5.94	3.66	3.66	151	98	93	3.66	98	8.84	4.02	5	F1
●○○○○○	WPL18-12(NSHR)	12	15.3	18	7.13	2.99	6.57	181	76	167	6.57	167	12.47	5.67	11(14)	F3(F6)
●○○○○○	WPL26-12(NB)	12	22.1	26	6.54	6.89	4.92	166	175	125	4.92	125	17.60	8.00	21(14)	F3(F6)
●○○○○○	WPL26-12 (N)	12	22.1	26	6.54	6.89	4.92	166	175	125	4.92	125	20.46	9.30	21(14)	F3(F6)
●○○○○○	WPL26-12TN	12	22.1	26	6.54	4.94	6.89	166	125.5	175	6.89	175	21.60	9.80	14	F6
●○○○○○	WPL28-12TN	12	23.8	28	6.54	4.94	6.93	166	125.5	176	6.93	176	20.20	9.18	14	F6
●○○○○○	WPL28-12TM	12	23.8	28	6.54	4.94	6.93	166	125.5	176	6.93	176	20.20	9.18	14	F9
●○○○○○	WPL34-12N	12	28.9	34	7.76	5.16	6.26	197	131	159	6.69	170	23.10	10.50	9	F6
●○○○○○	WPL40-12 (N)	12	34	40	7.83	6.54	6.73	199	166	171	6.73	171	^{29.7} _(25.5)	^{13.5} _(13.4)	11(14)	F4(F8)
●○○○○○	WPL45-12 (N)	12	38.25	45	7.83	6.54	6.73	199	166	171	6.73	171	^{29.7} _(25.5)	^{13.5} _(13.4)	11(14)	F4(F8)
●○○○○○	WPL50-12 (N)	12	42.5	50	7.83	6.54	6.73	199	166	171	6.73	171	33.22	15.10	11(14)	F4(F8)
●○○○○○	WPL55-12 (N)	12	46.75	55	8.90	5.31	8.15	226	135	207	^{9.02} _(8.43)	²²⁹ ₍₂₁₄₎	37.40	17.00	10(9)	F5(F8)
●○○○○○	WPL60-12AN	12	51	60	13.78	6.57	7.05	350	167	179	7.05	179	45.10	20.50	14	F8
●○○○○○	WPL60-12ARN	12	51	60	13.78	6.57	7.05	350	167	179	7.05	179	45.10	20.50	9	F8
●○○○○○	WPL65-12AN	12	55.25	65	13.78	6.57	7.05	350	167	179	7.05	179	46.00	20.90	14	F8
●○○○○○	WPL65-12ARN	12	55.25	65	13.78	6.57	7.05	350	167	179	7.05	179	46.00	20.90	9	F8
●○○○○○	WPL90-12N	12	76.5	90	12.97	6.78	8.46	329.5	172.3	215	8.74	222	62.04	28.20	14	F18
●○○○○○	WPL100-12N	12	85	100	12.97	6.78	8.46	329.5	172.3	215	8.74	222	66.90	31.30	14	F18
●○○○○○	WPL100-12RN	12	85	100	12.97	6.78	8.46	329.5	172.3	215	8.74	222	66.90	31.30	9	F18
●○○○○○	WPL120-12N	12	102	120	16.06	6.97	8.82	408	177	224	8.82	224	78.10	35.50	14	F18
●○○○○○	WPL120-12RN	12	102	120	16.06	6.97	8.82	408	177	224	8.82	224	78.10	35.50	9	F18
●○○○○○	WPL125-12RN	12	106.25	125	16.06	6.97	8.82	408	177	224	8.82	224	87.12	39.60	9	F18
●○○○○○	WPL130-12N	12	110.5	130	19.02	6.69	9.45	483	170	240	9.45	240	93.70	42.60	9	F18
●○○○○○	WPL150-12N	12	127.5	150	19.02	6.69	9.45	483	170	240	9.45	240	100.00	45.50	9	F18
●○○○○○	WPL12550VN	12	550W	150	19.02	6.69	9.45	483	170	240	9.45	240	110.00	49.80	9	F18
●○○○○○	WPL155-12N	12	131.75	155	19.02	6.69	9.45	483	170	240	9.45	240	106.00	48.20	9	F18
●○○○○○	WPL200-12BN	12	170	200	20.55	9.37	8.62	522	238	219	8.82	224	135.00	61.50	22	F18
●○○○○○	WPL200-12N	12	170	200	20.55	9.37	8.62	522	238	219	8.82	224	146.00	66.50	22	F18
●○○○○○	WPL230-12N	12	195.5	230	20.55	9.37	8.62	522	238	219	8.82	224	161.00	73.20	22	F18

MAIN APPLICATION	BATTERY TYPE	NOMINAL VOLTAGE (V)	NOMINAL CAPACITY (Ah)		DIMENSION								WEIGHT (APPROX.)		ASSEMBLY FIGURE	
			5HR	20HR	L	W	H	L	W	H	H	OVER	TERMINAL			
SPECIAL TYPE																
●○○○○○	WP2-12	12	1.7	2	5.91	0.79	3.54	150	20	90	3.54	90	1.60	0.73	12	F1
●○○○○○	WP1250	12	1.7	2	5.63	0.91	2.52	143	23	64	2.52	64	1.43	0.65	18	F13
●○○○○○	WP1222A	12	1.7	2	7.17	0.91	2.40	182	23	61	2.40	61	1.61	0.73	18	F13
●○○○○○	WP1223A	12	1.79	2.1	7.17	0.91	2.40	182	23	61	2.40	61	1.57	0.71	18	F13
2V STATIONARY BATTERIES																
○○○○○○	MSK75	2	63.75	75	6.69	2.83	8.07	170	72	205	8.19	208	14.08	6.40	-	F18
○○○○○○	MSK100A	2	85	100	6.69	2.83	8.07	170	72	205	8.19	208	16.50	7.50	-	F18
○○○○○○	MSK200	2	170	200	6.69	4.17	13.11	170	106	333	13.48	342.5	30.80	14.00	-	F18
○○○○○○	MSK300	2	255	300	6.69	5.91	13.11	170	150	333	13.48	342.5	46.60	21.20	-	F18
○○○○○○	MSK400	2	340	400	7.76	6.69	13.11	197	170	333	13.48	342.5	56.10	25.50	-	F18
○○○○○○	MSK440	2	374	440	7.76	6.69	13.11	197	170	333	13.48	342.5	65.30	29.70	-	F18
○○○○○○	MSK500	2	425	500	6.77	9.49	12.83	172	241	326	13.41	340.5	73.70	33.50	-	F18
12V FRONT TERMINAL BATTERIES																
○○○○○○	TPK12100A	12	85	100	19.96	4.17	9.25	507	106	235	9.25	235	67.80	30.80	23	F18
○○○○○○	TPK12125	12	106.25	125	21.65	4.33	11.34	550	110	288	11.34	288	85.80	39.00	23	F18
○○○○○○	TPK12150	12	127.5	150	21.65	4.33	11.34	550	110	288	11.34	288	105.00	47.50	23	F18
○○○○○○	TPK12155	12	131.8	155	21.65	4.33	11.34	550	110	288	11.34	288	108.00	49.00	23	F18
GEL BATTERIES																
○○●○○○	LG7-12	12	5.95	7	5.94	2.56	3.7	151	65	94	4.02	102	5.39	2.45	5	F2
○○●○○○	LG12-12	12	10.2	12	5.94	3.66	3.66	151	98	93	3.66	98	8.80	4.00	5	F2
○○●○○○	LG17-12	12	14.45	17	7.13	2.99	6.57	181	76	167	6.57	167	13.86	6.30	21	F3
○○●○○○	LG24-12	12	20.4	24	6.54	6.89	4.92	166	175	125	4.92	125	20.46	9.30	21	F3
○○●○○○	LG32-12	12	27.2	32	7.72	5.12	6.22	196	130	158	7.09	180	22.90	10.40	20	F4
○○●○○○	LG36-12N	12	30.6	36	7.72	5.12	6.22	196	130	158	6.65	169	23.50	10.70	9	F8
○○●○○○	LG40-12 (N)	12	34	40	7.83	6.54	6.73	199	166	171	6.73	171	29.30	13.30	11 (14)	F4 (F8)
○○●○○○	LG45-12 (N)	12	38.25	45	7.83	6.54	6.73	199	166	171	6.73	171	33.00	15.00	11 (14)	F4 (F8)
○○●○○○	LG50-12 (N)	12	42.5	50	7.83	6.54	6.73	199	166	171	6.73	171	33.20	15.10	11 (14)	F4 (F8)
○○●○○○	LG55-12N	12	46.75	55	8.9	5.31	8.15	226	135	207	8.43	214	37.40	17.00	9	F8
○○●○○○	LG22NF305CN	12	52.7	62	8.9	5.31	8.15	226	135	207	8.43	214	40.70	18.50	14	F8
○○●○○○	LG65-12	12	55.25	65	13.78	6.54	6.85	350	166	174	6.85	174	52.58	23.90	15	F4
○○●○○○	LGK75-12N	12	63.75	75	10.24	6.69	7.95	260	170	202	8.15	207	54.60	24.80	9	F8
○○●○○○	LGK100-12N	12	85	100	13.31	6.69	8.35	338	170	212	8.54	217	74.80	34.00	9	F8
○○●○○○	LGK150-12N	12	127.5	150	19.02	6.69	9.45	483	170	240	9.45	240	101.00	45.80	9	F18

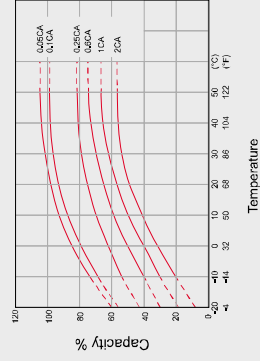
CHARACTERISTIC

Discharge current (A)	Final discharge Voltage (V/cell)
(A) ≤ 0.2C	1.75
0.2C < (A) ≤ 0.5C	1.70
0.5C < (A) ≤ 3.0C	1.60
(A) > 3.0C	1.40

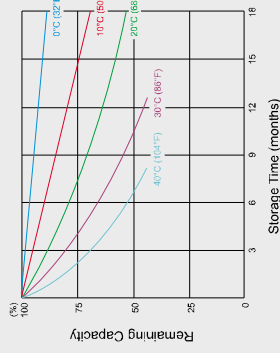
Discharge current and final discharge voltage



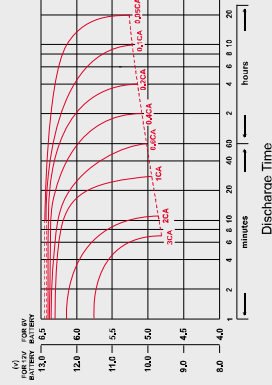
Cycle Service Life



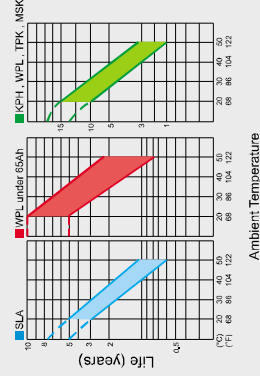
Effect of Temperature on Capacity 25°C (77°F)



Capacity Retention Characteristic



Discharge Time VS. Discharge Current (25°C (77°F))



Trickle (or float) Service Life

CHARGING METHOD

APPLICATION	STANDBY USE	CYCLE USE
Charging method	Constant voltage	
Setting voltage (V/cell)	2.25~2.30	2.40~2.50
Temperature factor	-3.0mV/°C/cell	-5.0mV/°C/cell
Max. charge current (CA)	0.3	0.3
Charge Time	Discharge 100% Discharge 50%	16h 10h
Temperature (°C)		-15°C~40°C

CHARGING METHOD

High performance and long service life of LONG battery depend upon correct charging. Improper charging modes or inadequate charging equipment result in decreased battery life and/or unsatisfactory performance.

Any of the conventional charging techniques may be used, but to obtain maximum service life and capacity, along with acceptable recharge time, constant current/constant voltage charging is recommended.

A charge quantity of 105~120% of the previous discharged quantity is needed for fully charging the battery. The charging voltage of battery decreases with increasing temperature and increases with decreasing temperature. At a temperature below 5°C (41°F) or above 35°C (95°F), the temperature compensation for charging voltage is necessary. At ambient temperature the compensation will not be necessary. Overcharging should be avoided: As a result of too high a charge voltage, excessive current will flow after reaching full charge, causing decomposition of water in the electrolyte and, hence, premature aging.

Undercharging should also be avoided: If too low a charge voltage is applied, the charger current output will essentially stop before the battery is fully charged. This allows some of the lead sulfate to remain on the plates which will eventually reduce capacity.

RECOMMENDED RECHARGING INTERVAL & METHOD

STORAGE TEMPERATURE	RECHARGE INTERVAL & METHOD
Below 20°C (68°F)	9 months, charge for 16~20 hrs at 2.4V/cell
20°C~30°C (68°F~86°F)	6 months, charge for 16~20 hrs at 2.4V/cell
above 30°C (86°F) (avoid this storage condition)	3 months, charge for 16~20 hrs at 2.4V/cell

HANDLING INSTRUCTION

- Do not short the terminals.
- Do not place the battery near or in fires.
- Do not use the battery in a container or bag without proper ventilation.
- Operate at a temperature between -15°C. To 50°C. But for cycle use, the 5°C to 35°C temperature range is recommended.
- To properly store the battery, remove battery from equipment or charge and store in a dry and cool place.
- Immediately recharge after discharging.
- If sulfuric acid from the battery is spilled on skin or clothing, wash immediately with water. If acid comes in contact with eyes, flush with large amounts of water and immediately see a doctor.
- To obtain maximum life, the ripple current at the RMS forward current of the charger should be regulated to 10% less than its output value.
- Avoid mixed use of batteries. Different capacities, histories, or manufacturers of batteries may cause damage to the batteries or other equipment's.