



SWL



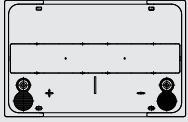
SWL Series

VALVE REGULATED LEAD-ACID BATTERIES

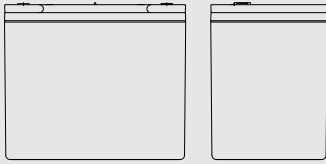
SWL

Layouts continued

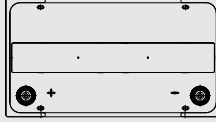
SWL2300E (FR)



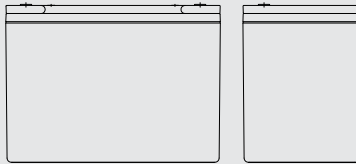
This battery type must never be installed permanently suspended by their handles



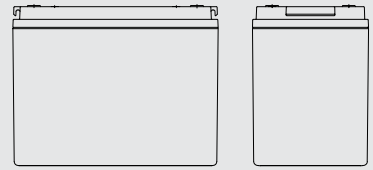
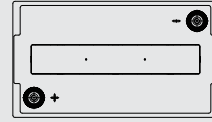
SWL2500E (FR)



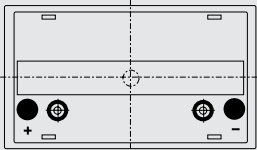
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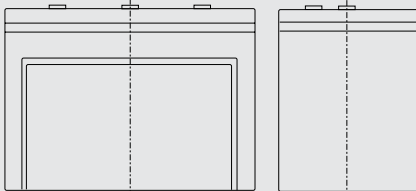
SWL2500-6 (FR)



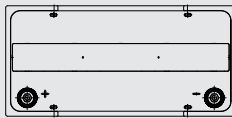
SWL2500T (FR)



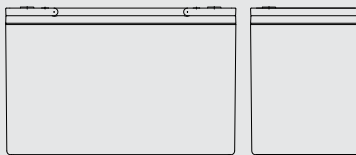
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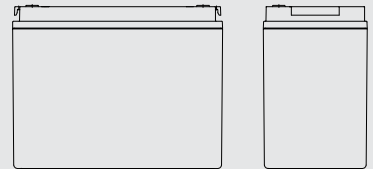
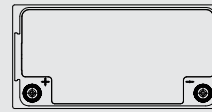
SWL3300 (FR)



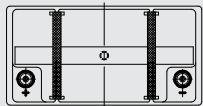
This battery type must never be installed permanently suspended by their handles



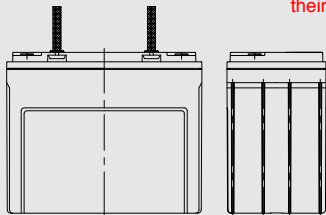
SWL3800 (FR)



SWL4250 (FR)

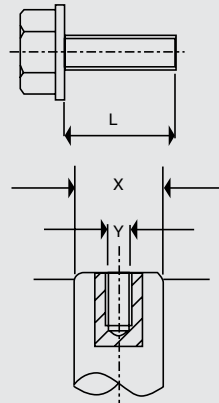


This battery type must never be installed permanently suspended by their handles



Terminals (mm)

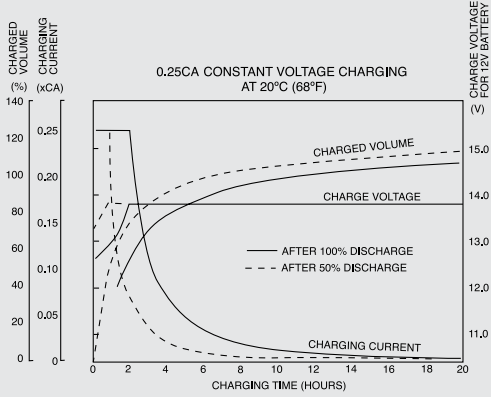
Terminal	X	Y	L
B	17mm	M5	10
C	20mm	M6	16
D	20mm	M8	16



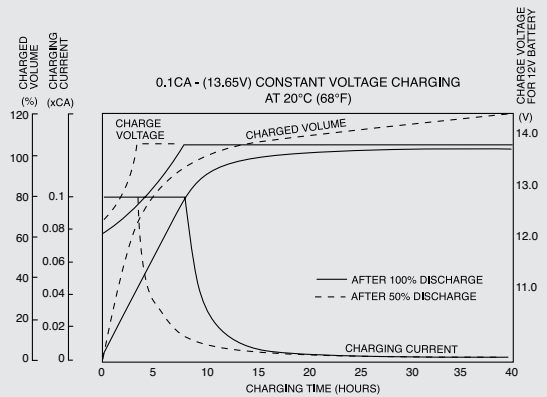
General Specifications continued

Specifications	SWL2300E (FR)	SWL2500-6 (FR)	SWL2500E (FR)	SWL2500T (FR)	SWL3300 (FR)	SWL3800 (FR)	SWL4250 (FR)
Nominal Voltage	12V	6V	12V	12V	12V	12V	12V
10-min rate Constant Power 9.6V at 20°C	2400W	2766W	2940W	2940W	3300W	4206W	4266W
10-min rate Constant Power 1.6V/Cell at 20°C	400W	922W	490W	490W	550W	701W	711W
10-hr rate Capacity to 10.8V at 20°C	78Ah	180Ah	90Ah	90Ah	105Ah	124Ah	140Ah
Dimensions / mm							
Length	261 (± 0.7)	297 (± 1)	305 (± 0.7)	305 (± 3)	350 (± 0.7)	350 (± 1)	341 (± 3)
Width	168 (± 0.5)	168 (± 1)	168 (± 0.5)	173 (± 3)	168 (± 0.5)	173 (± 1)	173 (± 3)
Height	225 (± 0.7)	231.5 (± 2)	225 (± 0.7)	220 (± 3)	225 (± 0.7)	272 (± 2)	281 (± 3)
(height over terminals)	N/A	N/A	N/A	223 (± 3)	N/A	N/A	N/A
Mass (typical) Kg	27.0	32.5	32.0	31.0	38.0	48.0	49.0
Terminal Type							
Female threaded terminal	M6mm	M8mm	M6mm	M6mm	M8mm	M8mm	M8mm
Torque	4.8Nm	6Nm	4.8Nm	4.8Nm	6Nm	6Nm	6Nm
Operating Temperature Range							
Storage (in fully charged condition) °C	-20 to +50	-20 to +50	-20 to +50	-15 to +40	-20 to +50	-20 to +50	-20 to +50
Charge °C	-15 to +50	-15 to +50	-15 to +50	-15 to +50	-15 to +50	-15 to +50	-15 to +50
Discharge °C	-20 to +60	-20 to +60	-20 to +60	-15 to +50	-20 to +60	-20 to +60	-20 to +60
Storage							
Capacity loss per month at 20°C (approx)	3%	3%	3%	3%	3%	3%	3%
Case Material							
Standard Option	ABS (UL94:HB)	ABS (UL94:HB)	ABS (UL94:HB)	ABS (UL94:HB)	ABS (UL94:HB)	ABS (UL94:HB)	ABS (UL94:HB)
Flame retardant option (FR)	ABS (UL94:VO)	ABS (UL94:VO)	ABS (UL94:VO)	ABS (UL94:VO)	ABS (UL94:VO)	ABS (UL94:VO)	ABS (UL94:VO)
Charge Voltage							
Float charge voltage at 20°C	13.65 (± 1%) V	6.825 (± 1%) V	13.65 (± 1%) V	13.65 (± 1%) V	13.65 (± 1%) V	13.65 (± 1%) V	13.65 (± 1%) V
	2.275 (± 1%) V/cell	2.275 (± 1%) V/cell	2.275 (± 1%) V/cell	2.275 (± 1%) V/cell	2.275 (± 1%) V/cell	2.275 (± 1%) V/cell	2.275 (± 1%) V/cell
Float Charge voltage temperature correction factor (for variations from the standard 20°C)	-3 mV/cell/°C	-3 mV/cell/°C	-3 mV/cell/°C	-3 mV/cell/°C	-3 mV/cell/°C	-3 mV/cell/°C	-3 mV/cell/°C
Cyclic (or Boost) charge at 20°C	14.5 (± 3%) V	7.25 (± 3%) V	14.5 (± 3%) V	14.5 (± 3%) V	14.5 (± 3%) V	14.5 (± 3%) V	14.5 (± 3%) V
	2.42 (± 3%) V/cell	2.42 (± 3%) V/cell	2.42 (± 3%) V/cell	2.42 (± 3%) V/cell	2.42 (± 3%) V/cell	2.42 (± 3%) V/cell	2.42 (± 3%) V/cell
Cyclic Charge voltage temperature correction factor (for variations from the standard 20°C)	-4 mV/cell/°C	-4 mV/cell/°C	-4 mV/cell/°C	-4 mV/cell/°C	-4 mV/cell/°C	-4 mV/cell/°C	-4 mV/cell/°C
Charge Current							
Float charge current limit	No Limit A	No Limit A	No Limit A	No Limit A	No Limit A	No Limit A	No Limit A
Cyclic (or Boost) charge current limit	19.50A	45A	22.50A	22.5A	26.25A	31.00A	35.00A
Maximum Discharge Current							
1 second	800A	1500A	1000A	598A	1100A	1200A	840A
1 minute	400A	800A	500A	276A	550A	600A	420A
Short-circuit Current & Internal Resistance (according to EN IEC 60896-21)							
Internal resistance	7.71mΩ	N/A mΩ	6.5mΩ	5.64mΩ	5.64mΩ	4.8mΩ	N/A mΩ
Short-circuit current	1857A	N/A A	2258A	2547A	2547A	3000A	N/A A
Impedance							
Measured at 1 kHz	5.5mΩ	3mΩ	5mΩ	6mΩ	4mΩ	4mΩ	2.7mΩ
Design Life							
EUROBAT Classification: High Performance Years	10 to 12	10 to 12	10 to 12	10 to 12	10 to 12	10 to 12	10 to 12
Yuasa design life (at 20°C) Years	up to 10	up to 10	up to 10	up to 10	up to 10	up to 10	up to 10

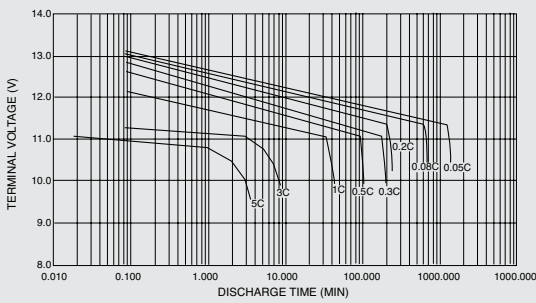
CHARGING CHARACTERISTICS



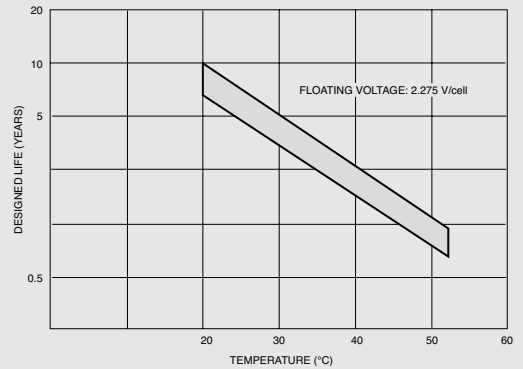
CHARGING CHARACTERISTICS



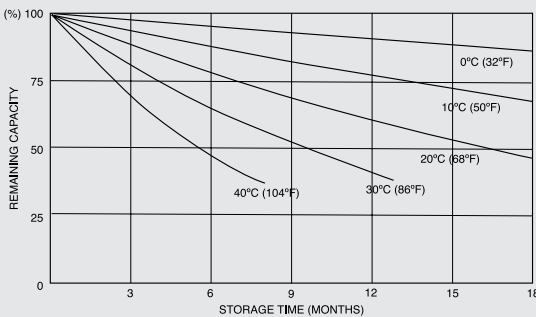
DISCHARGE CHARACTERISTIC CURVES



TEMPERATURE/LIFE CHARACTERISTIC



SELF DISCHARGE CHARACTERISTICS



Charging Methods (At 20°C)

Standby use: Float charging voltage 2.275vpc

CAUTION

- Avoid short circuit.
- Do not charge in a sealed container.
- Service life and operational characteristics will be affected by temperature.
- AC Ripple reduces service life.

WARNING!

SWL (Standard) and (FR) battery types SWL1850; SWL1850-6; SWL2500, must never be installed permanently suspended by their handles; they are not designed for this purpose.



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