

Ohmic Reference Values Current VRLA Products

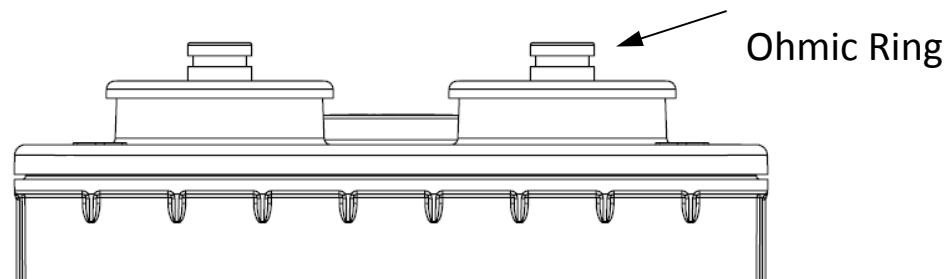
Note: Values contained within this document are approximate and may vary up to +/- 20%. These values are to be used for reference only and cannot be used for a warranty claim. Upon installation, initial readings should be taken and used as a reference for subsequent maintenance. Capacity testing should be performed to confirm abnormal readings. Values are subject to change without notification.



msEndur II (AT-P) Ohmic Reference Values Standard Specific Gravity Cells

Model Number	Midtronics Conductance Mhos	Biddle Impedance milli-ohms
AT-07P	1284*	587
AT-09P	1861*	495
AT-11P	2270	421
AT-13P	2605	370
AT-15P	2975	321
AT-17P	3305	287
AT-19P	3670	255
AT-21P	4015	231
AT-23P	4350	212
AT-25P	4750	194
AT-27P	5075	181
AT-29P	5420	171
AT-35P	6480	148
AT-39P	7175	142
*Values have been updated. See final page for past data.		

msEndurII cells have an Ohmic Ring on each post to be used for taking Impedance and Conductance values.



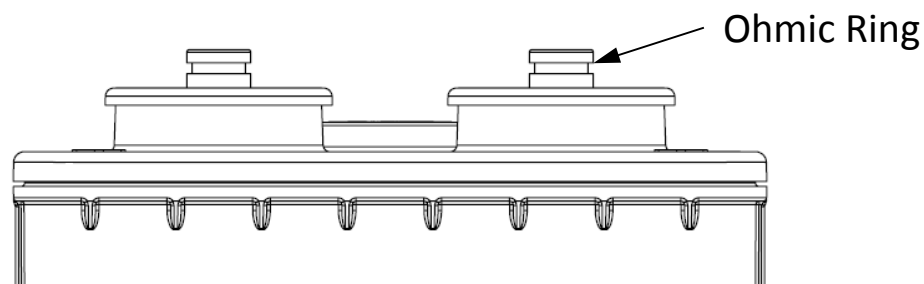
Note: Values are for reference only and may not be used to determine a warranty claim since ohmic readings do not correlate to specific battery capacity. When new, cell readings may vary by +/- 20% from these reference values. msEndur II typically retains greater than 80% capacity even when ohmic values change by 50% or more. This information is subject to change without notice.



msEndur II (ATL-P) Ohmic Reference Values Reduced Specific Gravity Cells

Model Number	Midtronics Conductance Mhos
AT-07P	1284
AT-09P	1861
AT-11P	2270
AT-13P	2605
AT-15P	2975
AT-17P	3305
AT-19P	3670
AT-21P	4015
AT-23P	4350
AT-25P	4750
AT-27P	5075
AT-29P	5420
AT-35P	6480
AT-39P	7175

msEndurII cells have an Ohmic Ring on each post to be used for taking Impedance and Conductance values.



Note: Values are for reference only and may not be used to determine a warranty claim. Initial readings may vary +/- 20% from these reference values depending on equipment, state-of-charge, string connection layout, temperature and other conditions. Information is subject to change without notice.



Liberty MSE Ohmic Reference Values*

Model Number	Midtronics Conductance Mhos
100LF17	2500
100LF19	2750
100LF21	2975
100LF23	3210
100LF25	3455
100LF27	3675
100LF29	3915
100LF31	4150
100LF33	4400

*These values are based on limited data and will be updated as additional data becomes available.

Ohmic readings should always be taken from the battery post. If this is not possible, readings can be taken from a consistent location on connectors, but never from the terminal hardware.

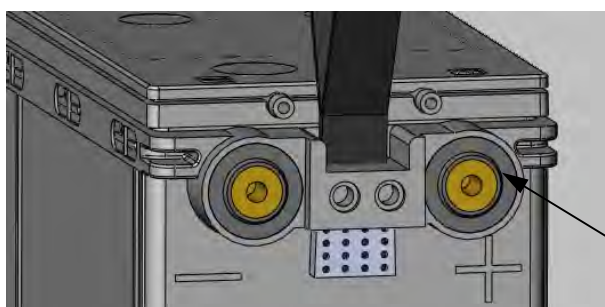
Note: Values are for reference only and may not be used to determine a warranty claim. Initial readings may vary +/- 20% from these reference values depending on equipment, state-of-charge, string connection layout, temperature and other conditions. Information is subject to change without notice.



TEL Series True Front Access Ohmic Reference Values

Meter Type	Midtronics	Alber	AVO Biddle
Model Number	Mhos	micro-Ohms	milli-Ohms
TEL12-105FNS/FNSG	1050	No Data	No Data
TEL12-105FS	1300*	4450	3.33
TEL12-115FN/FNG	1090	No Data	No Data
TEL12-145FW	1700	No Data	No Data
TEL12-155F/FG	1120	No Data	No Data
TEL12-160FW	1780*	3340	2.68
TEL12-160F	1430*	3940	3.14
TEL12-170F/FG	1400	No Data	No Data
TEL12-180F	1510	4260	3.66
TEL12-190F/FG	1450	No Data	No Data
TEL12-210F/FG	1500	No Data	No Data
*Values have been updated. See final page for past data.			

True Front Access models have an Ohmic Ring surrounding each post to be used for taking Impedance and Conductance values.



Ohmic Ring

Note: Values are for reference only and may not be used to determine a warranty claim. Initial readings may vary +/- 20% from these reference values depending on equipment, state-of-charge, string connection layout, temperature and other conditions. Information is subject to change without notice.

Meter Type	Midtronics	Alber	AVO Biddle
Model Number	Mhos	micro-Ohms	milli-Ohms
TEL12-105FNS/FNSG	1050	No Data	No Data
TEL12-105FS	1300*	4450	3.33
TEL12-115FN/FNG	1090	No Data	No Data
TEL12-145FW	1700	No Data	No Data
TEL12-155F/FG	1120	No Data	No Data
TEL12-160FW	1780*	3340	2.68
TEL12-160F	1430*	3940	3.14
TEL12-170F/FG	1400	No Data	No Data
TEL12-180F	1510	4260	3.66
TEL12-190F/FG	1450	No Data	No Data
TEL12-210F/FG	1500	No Data	No Data
*Values have been updated. See final page for past data.			

Meter Type Model Number	Midtronics Mhos	Alber micro-Ohms	Avo Biddle milli-Ohms
Tel12-105FNS/FNSG	1050	No data	
Tel12-105FS	1300*	4450	
Tel12-115FN/FNG	1090		
Tel12-145FW	1700		
Tel12-155F/FG	1120		
Tel12-160FW	1780*		
Tel12-160F	1430*		
Tel12-170F/FG	1400		
Tel12-180F	1510		
Tel12-190F/FG	1450		
Tel12-210F/FG	1500		
*Values have been updated. See final page for past data.			















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