

THE *m-s* **endur II** SERIES VRLA BATTERY *THE TRUE LONG-LIFE BATTERY™*

For Standby TELECOM Applications
CAPACITIES FROM 345 - 2180 AMPERE-HOURS



The msEndur II is the latest advancement in battery technology with enhanced features for TEL applications.

By combining the service life reliability of a flooded battery with the performance energy density of a valve-regulated battery, C&D has created the msEndur II — The True Long-Life Battery™.

The msEndur II series of batteries are unmatched in power density with space saving modular designs and have a 20-year design life to reduce the total cost of ownership.

With its much lower float current, the msEndur II yields significant electrical costs savings over its life making it the most environmentally 2V VRLA battery.

APPLICATIONS

- **Wireless**
- **Wireline**
- **Central Office**
- **Mobile Switching Centers**
- **PBX Systems**
- **Microwave**
- **Broadband Headend**
- **Network Operation Ctrs**
- **Data Centers**

FEATURES & BENEFITS

ADVANCED SYSTEM FEATURES

- Modular design for ease of installation and stacking flexibility
- Space saving design for the greatest amount of power in a small footprint
- Certified as NEBS Level 3 and compliant to Earthquake Risk Zone 4 in various system configurations
- Exceeds 1997 UBC Zone 4 seismic requirements for at or below grade installations
- Exceeds 2000/2003 IBC requirements for 125% g level
- Tin-plated copper alloy connectors minimize maintenance
- New Ohmic Ring™ for ease of maintenance readings. With specially adapted probes only one technician is required to take readings.

ADVANCED MATERIALS

- Advanced micro-porous Absorbed Glass Mat separators for ultra-low float current — reduces grid corrosion for a long, usable service life
- Proprietary calcium alloys to minimize positive grid corrosion and growth — maximizes battery life
- Robust polypropylene container and cover — enhances product quality and improves strength of materials for safe operation with flammability rating UL94 VO, LOI>28%

- Highly efficient, proprietary plate processing for high utilization of active material — results in high energy density and low float current

ADVANCED PROCESSES

- Advanced formation process results in a narrow float voltage window making on-site float matching unnecessary
- Highly controlled manufacturing processes for exceptional and consistent plate quality

ADVANCED SERVICE LIFE & WARRANTY

- Proprietary cell design and manufacturing process provides for 20 year design life and documented long-lasting service life
- Industry leading warranty

ADVANCED EXPERIENCE

- Over 100 years of experience in the battery industry
- The only producer and marketer of complete battery and electronics systems for total power solutions
- Fully backed by a worldwide network for local service

Constant Current Discharge Ratings

AMPERES @ 77°F (25°)											
FV/Cell	Models	1 hr	2 hr	3 hr	4 hr	5 hr	6 hr	8 hr	10 hr	12 hr	24 hr
1.75	AT-07P	189	123	93	75	63	55	43	36	30	16
	AT-09P	259	170	129	104	88	76	60	50	42	23
	AT-11P	324	213	161	130	110	95	75	62	53	28
	AT-13P	362	235	177	143	120	104	82	68	58	31
	AT-15P	454	298	225	182	154	133	105	87	74	40
	AT-17P	505	327	247	200	168	145	115	95	81	43
	AT-19P	583	383	290	234	198	171	135	112	95	51
	AT-21P	631	409	309	250	210	182	144	119	101	54
	AT-23P	713	468	354	287	241	209	165	136	116	62
	AT-25P	757	491	370	299	252	218	172	143	122	65
	AT-27P	843	553	418	339	285	247	195	161	138	73
	AT-29P	884	573	432	349	294	255	201	166	142	76
AT-35P	1102	723	547	443	373	323	255	211	180	96	
AT-39P	1199	777	586	474	399	345	273	226	193	103	

Constant Power Discharge Ratings

KILOWATTS PER CELL @ 77°F (25°C)									
FV/Cell	Models	1 min	5 min	10 min	15 min	20 min	30 min	45 min	1 hr
1.67	AT-07P	0.837	0.791	0.730	0.669	0.612	0.520	0.430	0.373
	AT-09P	1.117	1.055	0.973	0.892	0.816	0.693	0.574	0.497
	AT-11P	1.396	1.318	1.217	1.115	1.020	0.866	0.717	0.622
	AT-13P	1.602	1.514	1.397	1.288	1.170	0.994	0.823	0.714
	AT-15P	1.954	1.846	1.704	1.561	1.427	1.213	1.004	0.870
	AT-17P	2.233	2.110	1.947	1.784	1.631	1.386	1.147	0.995
	AT-19P	2.512	2.373	2.190	2.007	1.835	1.559	1.291	1.119
	AT-21P	2.792	2.637	2.434	2.230	2.039	1.733	1.434	1.243
	AT-23P	3.071	2.901	2.677	2.452	2.243	1.906	1.578	1.368
	AT-25P	3.350	3.164	2.920	2.675	2.447	2.079	1.721	1.492
	AT-27P	3.629	3.428	3.164	2.898	2.651	2.253	1.864	1.617
	AT-29P	3.908	3.692	3.407	3.121	2.855	2.426	2.008	1.741
AT-35P						2.946	2.438	2.114	
AT-39P							2.725	2.363	

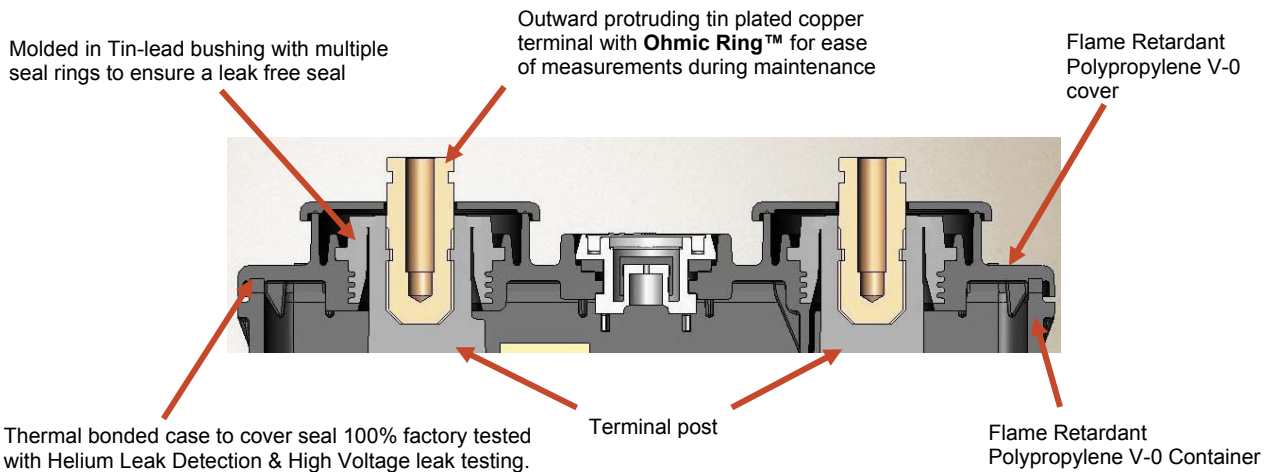
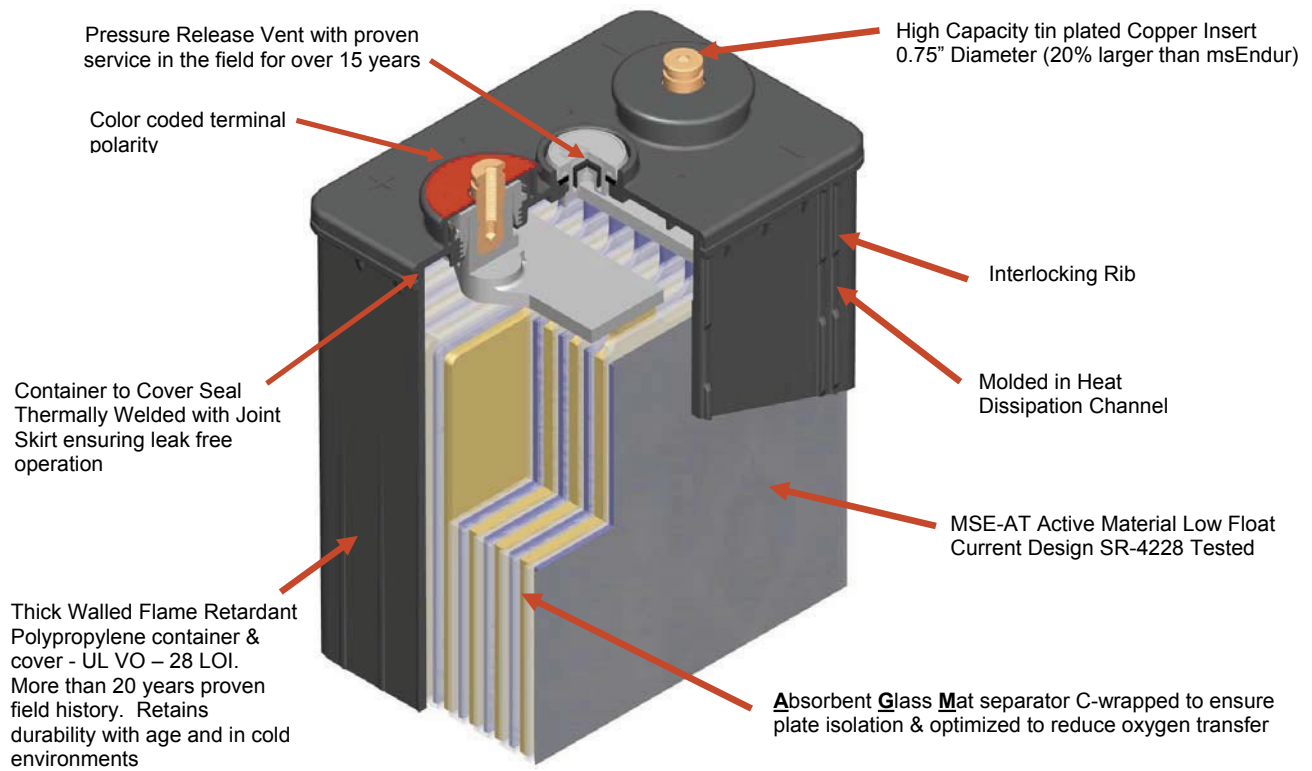
Please refer to the **msEndur II Performance Specifications Brochure, 12-1015**, for an expanded list of constant current and constant power ratings and end voltages.

You may also access the product ratings by logging onto the free **C&D Battery Sizing Program** at www.cdstandbypower.net.

Specifications and Characteristics

Cells, Voltage per Unit	1 cell, 2 VDC													
Recommended Operating Temperature	77°F (25°C)													
Connection Torque:	Initial: 160 in-lbs (18 N-m), Re-torque: 125 in-lbs (14 N-m)													
Recommended Float Charging Voltage (ATL Recommended Float Voltage)	AT-P = 2.25 - 2.27 volts per cell average @ 77°F (25°C) ATL-P = 2.17 - 2.22 volts per cell average @ 77°F (25°C)													
Charger Compensation Temperature / Voltage	(-)2 mV/cell/°F above 77°F (-3.6 mV/cell /°C above 25°C) +2 mV/cell/°F below 77°F (+3.6 mV/cell/°C below 25°C)													
	AT-07P ATL-07P	AT-09P ATL-09P	AT-11P ATL-11P	AT-13P* ATL-13P*	AT-15P ATL-15P	AT-17P* ATL-17P*	AT-19P ATL-19P	AT-21P* ATL-21P*	AT-23P ATL-23P	AT-25P* ATL-25P*	AT-27P ATL-27P	AT-29P* ATL-29P*	AT-35P ATL-35P	AT-39P* ATL-39P*
Number of Terminals	2	2	2	2	2	2	4*	4*	4*	4*	4	4	4	4
Nominal 8 Hr AH Rate to 1.75 v/c @ 77°F (25°C)	345 / 280	480 / 375	600 / 470	660 / 560	840 / 655	920 / 750	1080 / 845	1150 / 935	1320 / 1030	1380 / 1125	1560 / 1220	1605 / 1310	2040 / 1595	2180 / 1780
Nominal 10 Hr AH Rate to 1.80 v/c @ 68°F (20°C)	325 / 265	455 / 355	570 / 450	630 / 535	800 / 625	875 / 715	1030 / 805	1095 / 890	1260 / 985	1315 / 1075	1485 / 1165	1535 / 1255	1945 / 1525	2085 / 1700

* New Modules and Terminal



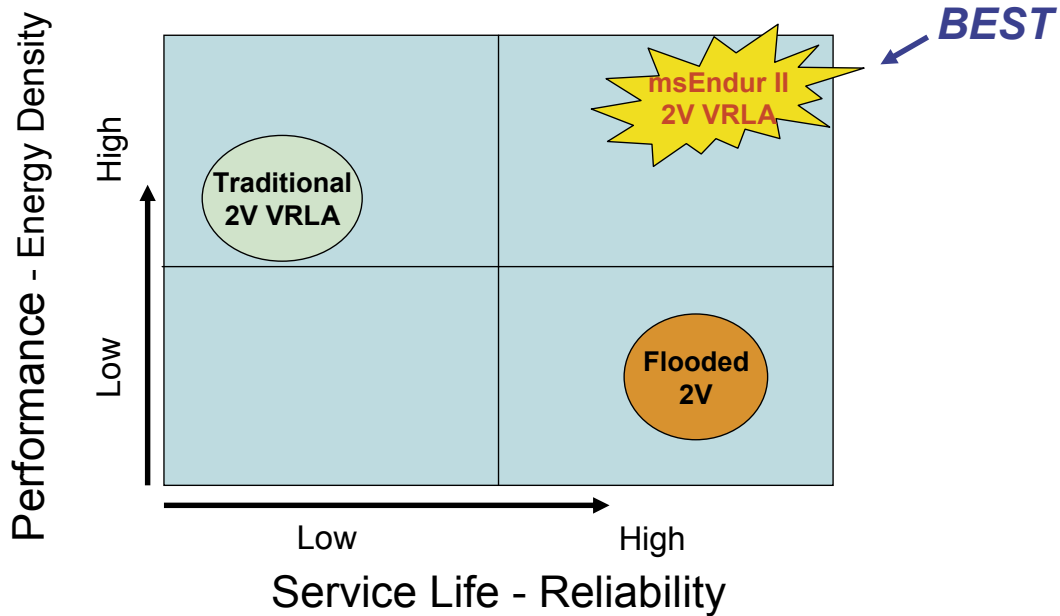
Modules

msEndur II cells are designed to be mounted in stackable modules of 3, 4, 5, 6, 8 & 10 cells wide. The most popular module sizes and configurations for Telecom systems are:

	AT-07P through AT-21P	AT-07P through AT-21P
Cells Wide/Module	6	3
Modules High	4	8

The specific cell wide x module high system configuration is flexible and can be configured to best match the physical requirements of the customer's site.

Detailed system dimensions and combinations are available in the **msEndur II Module Brochure 12-1014**.



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Standard
2V VRLA

**Has the light
turned on yet?**
Both devices can
save you 75%



msEndur II

The msEndur II sealed battery is the environmentally friendly battery that saves you money in normal operation.

The same low float current that ensures a twenty year life, is good for the environment and saves money

- **Up to 75% lower float current**
- **Consumes up to 75% less electricity**
- **Lower float current generates less heat**
- **Less heat generated reduces required air conditioning**
- **Less electricity consumed in float charging and air conditioning = reduce carbon emissions**

Go to www.cdtechno.com/savings to check out your possible savings

C&D TECHNOLOGIES, INC.

1400 Union Meeting Road
P.O. Box 3053 • Blue Bell, PA 19422-0858
(215) 619-2700 • Fax (215) 619-7899 • (800) 543-8630
customersvc@cdtechno.com
www.cdtechno.com

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