



## Battery Range Summary

The DataSafe<sup>®</sup> HX top terminal battery range of Valve Regulated Lead Acid (VRLA) batteries has been designed to offer superior solutions for the Information Technology (IT) and Uninterruptible Power Supply (UPS) markets. DataSafe HX top terminal batteries are the ideal source of power to protect vital systems.

DataSafe HX top terminal batteries incorporate select design features that maximize reliability while ensuring superior performance and an excellent service life.

Gas recombination technology for VRLA batteries has completely changed the concept of standby power. The minimal level of gas evolution allows battery installation in cabinets or on stands, in offices or near main equipment, maximizing space utilization and reducing storage and maintenance costs. DataSafe HX top terminal batteries deliver superior performance.

### Features and Benefits

- Flame retardant case and cover (UL94) to meet UL1778
- Self-resealing, flame-arresting vents
- Battery containers and covers are hermetically sealed to provide leak resistance over the life of the product
- Absorbed Glass Mat (AGM) separators – the electrolyte is completely absorbed into the separator
- High performance brass threaded receptacle, bolt terminal or faston terminals
- Increased energy density
- Computer optimized electrochemistry for increased power up to the 15 minute rate to 1.67 Volts Per Cell (VPC)
- 100% initial battery capacity
- Classified as non-spillable

## Construction

- Brass insert with threaded receptacle (12HX80 - 12HX540), bolt terminal (12HX80-FR - HX150-FR) or faston tabs (HX25-FR - HX150-FR) for maximum conductivity and ease of installation.
- Compression grommet (12HX205-FR - 12HX540-FR) or dual welded/epoxy seal (12HX25-FR - 12HX150-FR) designed for long life.
- Self-sealing, flame-arresting vents and low pressure non-return valve prevents ingress of atmospheric oxygen.
- Rugged high performance positive plates designed to resist corrosion and prolong active life.
- Balanced negative plates ensure optimum recombination efficiency.
- Thick-wall plastic containers, highly resistant to shock and vibration. Flame retardant material is the standard offering.
- Low resistance microporous Absorbed Glass Mat (AGM) separator. The electrolyte is absorbed within this material.

## Installation and Operation

- Normal operating temperature range 12HX25-FR - 12HX150-FR: -4°F (-20°C) to 122°F (50°C) 12HX205-FR - 12HX540-FR: -22°F (-30°C) to 122°F (50°C)
- Float charging voltage 2.25-2.28 Volts per cell at 77°F (25°C)
- DataSafe® HX top terminal batteries can be safely recharged at high current rates.
- DataSafe HX top terminal batteries can be stored for up to six months at 77°F (25°C) before a freshening charge is required. At higher temperatures this time interval will be reduced.
- Torque specifications  
(Fig. C) M5 Receptacle - 31 in-lbs (3.5 Nm) ± 5%  
(Fig. D) M6 Receptacle - (12HX150-FR) 44 in-lbs (5 Nm) ± 5%  
(Fig. D) M6 Receptacle - (12HX205-FR - 12HX540-FR) 60 in-lbs (6.8 Nm) ± 5%  
(Fig. E) M5 Bolt - 40 in-lbs (4.5 Nm) ± 5%  
(Fig. F) M6 Bolt - 58 in-lbs (6.5 Nm) ± 5%

## Standards

- UL listing – File No MH16464 (12HX25-FR - 12HX150-FR) or MH12544 (12HX205 - 12HX540)
- The management systems governing the manufacture of this product are ISO 9001:2008 and ISO 14001:2004 certified.
- Approved for shipping as non-hazardous, non-spillable – per IATA Special Provision A67 and 49 CFR.

## General Specifications

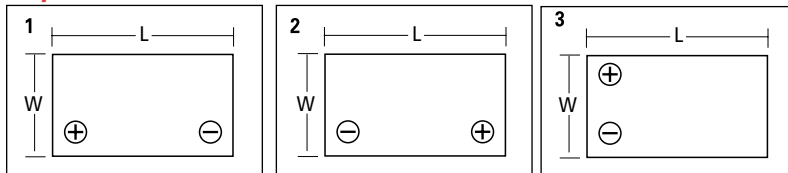
Battery Model	Nominal Voltage (V)	Nominal Ah		Nominal Dimensions						Electrolyte (1.300 SG)									
		8 hr rate to 1.75 volts/cell end voltage at 77°F (25°C)	@ 15 min rate to 1.67 volts/cell end voltage at 77°F (25°C)	Length	Width	Overall* Height	Typical Weight	Short Circuit Current (A)	Internal Resistance (mΩ)**	Layout	Terminals	Volume	Weight						
				in	mm	in	mm	in	mm	lbs	kg			gals	liters	lbs	kg		
12HX25-FR	12	4.8	23	3.5	90	2.8	70	4.2	107	4.4	2.0	300	16.5	1	A/B	0.066	0.250	0.715	0.324
12HX35-FR	12	7.9	36	5.9	151	2.6	65	3.9	100	6.1	2.8	500	13.2	3	A/B	0.102	0.386	1.10	0.501
12HX50-FR	12	12	54	6.0	152	3.9	99	3.9	99	9.1	4.1	720	12.2	3	A/B	0.133	0.503	1.44	0.653
12HX80-FR	12	18	80	7.1	181	3.0	76	6.6	167	14.0	6.4	1000	8.5	2	C/E	0.250	0.946	2.71	1.23
12HX100-FR	12	26	104	6.5	166	4.9	125	6.9	175	22.0	10.0	1500	7.1	2	C	0.375	1.42	4.06	1.84
12HX135B-FR	12	31	136	7.8	198	5.1	130	7.1	180	26.0	11.8	1800	5.6	1	F	0.438	1.66	4.74	2.15
12HX135R-FR	12	31	136	7.7	196	5.1	130	6.7	169	26.0	11.8	1800	5.6	1	C	0.438	1.66	4.74	2.15
12HX150-FR	12	38	160	7.8	197	6.5	165	6.7	170	32.0	14.5	2400	5.0	2	D	0.570	2.16	6.17	2.80
12HX205-FR	12	43	206	8.9	226	5.5	140	8.1	206	43.0	19.5	2775	4.5	1	D	0.700	2.65	7.58	3.44
12HX300-FR	12	71	284	10.2	259	6.9	175	8.2	208	60.0	27.2	3175	3.9	1	D	1.11	4.20	12.02	5.45
12HX330-FR	12	83	336	11.8	300	6.8	173	8.4	213	71.0	32.2	3700	3.4	1	D	1.25	4.73	13.54	6.14
12HX400-FR	12	94	381	13.3	338	6.8	173	8.3	211	80.0	36.3	4225	3.0	1	D	1.33	5.03	14.40	6.53
12HX505-FR	12	119	506	13.3	338	6.8	173	10.7	272	103.0	46.7	4510	2.8	1	D	1.66	6.28	17.98	8.15
12HX540-FR	12	123	540	13.3	338	6.8	173	10.7	272	106.0	48.1	4775	2.6	1	D	1.70	6.44	18.41	8.35

\* Including terminal

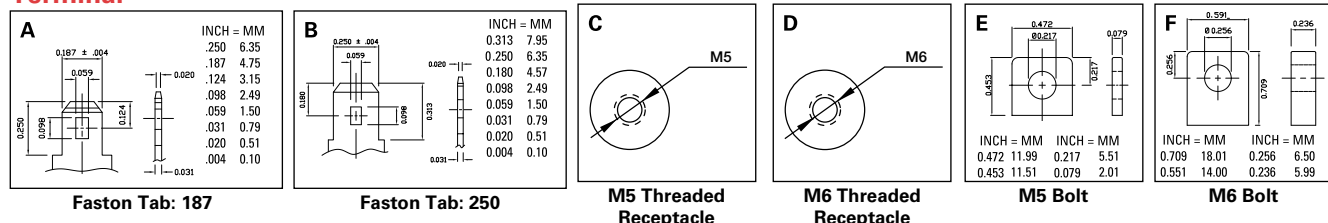
\*\* Resistance values are for reference only and not intended to represent an Ohmic Value or Baseline measurement.

All dimensions given are +/-0.08 in (2mm)

## Layout



## Terminal



# Battery Range Summary

Constant Power Discharge (Watts per Cell) to 1.75Vpc at 77°F (25°C)

Battery Model	Standby Time (Minutes)						
	5	10	15	20	30	45	60
12HX25-FR	47	30	23	18	13	10	8
12HX35-FR	70	47	36	29	21	15	12
12HX50-FR	105	70	53	43	32	23	18
12HX80-FR	144	101	79	64	47	34	27
12HX100-FR	180	128	100	82	62	46	37
12HX135-FR	244	171	134	110	82	60	47
12HX150-FR	270	195	152	127	96	71	57
12HX205-FR	373	258	197	160	118	85	67
12HX300-FR	513	357	277	227	173	128	102
12HX330-FR	590	418	328	272	204	150	120
12HX400-FR	671	479	371	308	230	170	136
12HX505-FR	783	600	479	398	298	218	173
12HX540-FR	835	638	511	425	318	233	186

Constant Power Discharge (Watts per Cell) to 1.70Vpc at 77°F (25°C)

Battery Model	Standby Time (Minutes)						
	5	10	15	20	30	45	60
12HX25-FR	49	31	23	19	13	10	8
12HX35-FR	73	48	36	29	21	15	12
12HX50-FR	111	72	54	44	32	23	18
12HX80-FR	152	104	80	65	47	34	27
12HX100-FR	192	133	103	84	63	46	37
12HX135-FR	256	176	136	111	82	60	47
12HX150-FR	289	205	158	130	97	71	57
12HX205-FR	400	269	204	164	119	85	67
12HX300-FR	545	369	283	231	174	128	102
12HX330-FR	624	431	336	276	206	150	120
12HX400-FR	708	493	380	313	232	170	136
12HX505-FR	845	637	499	410	301	218	173
12HX540-FR	898	675	532	439	326	236	186

Constant Power Discharge (Watts per Cell) to 1.67Vpc at 77°F (25°C)

Battery Model	Standby Time (Minutes)						
	5	10	15	20	30	45	60
12HX25-FR	50	32	23	19	13	10	8
12HX35-FR	74	48	36	29	21	15	12
12HX50-FR	113	73	54	44	32	23	18
12HX80-FR	156	105	80	65	47	34	27
12HX100-FR	197	135	104	84	63	46	37
12HX135-FR	260	177	136	111	82	60	47
12HX150-FR	299	209	161	131	97	71	57
12HX205-FR	412	274	206	164	119	85	67
12HX300-FR	558	373	284	231	174	128	102
12HX330-FR	637	435	336	276	206	150	120
12HX400-FR	722	498	381	313	232	170	136
12HX505-FR	877	653	506	412	301	218	173
12HX540-FR	931	691	540	444	326	236	186

Constant Power Discharge (Watts per Cell) to 1.65Vpc at 77°F (25°C)

Battery Model	Standby Time (Minutes)						
	5	10	15	20	30	45	60
12HX25-FR	50	32	23	19	13	10	8
12HX35-FR	74	48	36	29	21	15	12
12HX50-FR	114	73	54	44	32	23	18
12HX80-FR	157	106	80	65	47	34	27
12HX100-FR	200	136	104	84	63	46	37
12HX135-FR	262	177	136	111	82	60	47
12HX150-FR	304	211	161	131	97	71	57
12HX205-FR	420	276	206	164	119	85	67
12HX300-FR	563	375	284	231	174	128	102
12HX330-FR	643	437	336	276	206	150	120
12HX400-FR	729	500	381	313	232	170	136
12HX505-FR	897	661	510	412	301	218	173
12HX540-FR	951	699	545	446	326	236	186

Constant Power Discharge (Watts per Cell) to 1.63Vpc at 77°F (25°C)

Battery Model	Standby Time (Minutes)						
	5	10	15	20	30	45	60
12HX25-FR	51	32	23	19	13	10	8
12HX35-FR	74	48	36	29	21	15	12
12HX50-FR	115	73	54	44	32	23	18
12HX80-FR	158	106	80	65	47	34	27
12HX100-FR	202	137	104	84	63	46	37
12HX135-FR	263	177	136	111	82	60	47
12HX150-FR	309	212	160	131	97	71	57
12HX205-FR	426	278	206	164	119	85	67
12HX300-FR	567	375	284	231	174	128	102
12HX330-FR	648	437	336	276	206	150	120
12HX400-FR	734	500	381	313	232	170	136
12HX505-FR	916	667	511	412	301	218	173
12HX540-FR	970	706	549	446	326	236	186

Constant Power Discharge (Watts per Cell) to 1.60Vpc at 77°F (25°C)

Battery Model	Standby Time (Minutes)						
	5	10	15	20	30	45	60
12HX25-FR	51	32	23	19	13	10	8
12HX35-FR	75	48	36	29	21	15	12
12HX50-FR	116	73	54	44	32	23	18
12HX80-FR	160	106	80	65	47	34	27
12HX100-FR	204	137	104	84	63	46	37
12HX135-FR	264	177	136	111	82	60	47
12HX150-FR	315	214	161	131	97	71	57
12HX205-FR	433	279	206	164	119	85	67
12HX300-FR	571	375	284	231	174	128	102
12HX330-FR	652	437	336	276	206	150	120
12HX400-FR	739	500	381	313	232	170	136
12HX505-FR	941	675	511	412	301	218	173
12HX540-FR	995	715	550	446	326	236	186

## DataSafe® HX Top Terminal Battery Cabinets

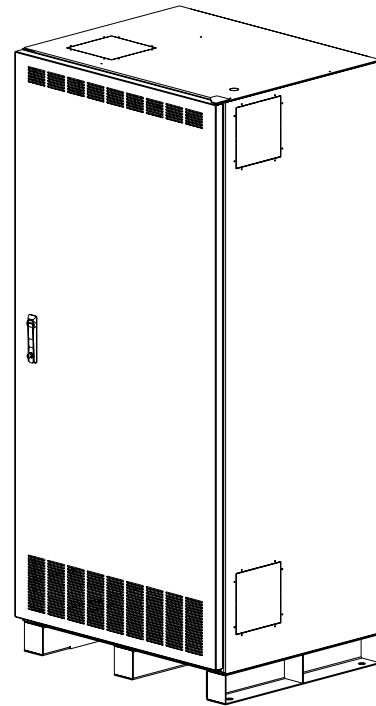
DataSafe® HX Top Terminal 12V Series Battery Cabinets\* (See Figure 1) are certified to UBC Zone 4, 2012 Edition of International Building Code (IBC), 2013 Edition of California Building Code (CBC), Seismic Design Category, Ss = 2.0 and Importance Factor 1.5, at or below grade.

Visit [www.enersys.com](http://www.enersys.com) for more information.

Battery Model	Data Sheet
HX Top Terminal Series	AM-DSCAB-RS

\* Battery Cabinet Accessories, inter-unit and inter-tier connections etc., for 120 VDC to 480 VDC Cabinets are included in the cabinet price as they are all sized at the 15 minute discharge rate to 1.67 VPC end voltage.

**Figure 1**  
Example of a HX Series Battery Cabinet



## DataSafe® HX Top Terminal Battery Racks

DataSafe® HX Top Terminal 12V Series Battery Racks\*\* (See Figure 2) are available in non-Seismic as well as UBC Zone 4, at or below grade.

Visit [www.enersys.com](http://www.enersys.com) for more information.

Battery Model	Zone 0 Data Sheet	Zone 4 Data Sheet
12HX205-FR	US-UAAx-RK	US-UJAx-RK
12HX300-FR	US-UABx-RK	US-UJBx-RK
12HX330-FR	US-UACx-RK	US-UJCx-RK
12HX400-FR	US-UADx-RK	US-UJDx-RK
12HX505-FR 12HX540-FR	US-UAEEx-RK	US-UJEx-RK

\*\* Battery rack accessories, inter-unit and inter-tier connectors etc., are not included in rack or battery prices as their size varies based on the specific site application or rates. Once properly sized and quoted by EnerSys®, battery rack accessories are available and sold as separate line items.

**Figure 2**  
Example of a HX Series Battery Rack

