ACES LI POWER LiFePO4 Batteries HFA series specifications 12V

Rev. V2.3

MODEL NAME	AL12V24HFA	AL12V45HFA-BT	AL12V60HFA-BT	AL12V80HFA-BT	AL12V100HFA-BT	AL12V100HFAS-BT	AL12V120HFA-BT	AL12V150HFA-BT	AL12V150HFAS-BTH	AL12V200HFA-BTH	AL12V280HFA-BTH	AL12V340HFA-BCH	AL12V460HFA-BCH
EAN number	4738474176742	4738470384141	4738479938789	4738476325483	4738475950945	4738477545552	4738476073223	4738479950491	4738475083575	4738479427757	4738475061597	4738478763764	4738479244828
ELECTRICAL													
Voltage category (V)	12	12	12	12	12	12	12	12	12	12	12	12	12
Nominal voltage	12.8	12.8	12.8	12.8	12.8	12.8	12.8	12.8	12.8	12.8	12.8	12.8	12.8
Max. charge voltage	14.6	14.6	14.6	14.6	14.6	14.6	14.6	14.6	14.6	14.6	14.6	14.6	14.6
Capacity (AH) at 0.2C	24	45	60	80	100	100	120	150	150	200	280	340	460
Energy (Wh)	307	576	768	1024	1280	1280	1536	1920	1920	2560	3584	4352	5888
Operational Voltage range (V)	11 – 14,6	11 – 14,6	11 – 14,6	11 – 14,6	11 – 14,6	11 – 14,6	11 – 14,6	11 – 14,6	11 – 14,6	11 – 14,6	11 – 14,6	11 – 14,6	11 – 14,6
Floating voltage (V)	13,6 – 13,8	13,6 – 13,8	13,6 – 13,8	13,6 – 13,8	13,6 – 13,8	13,6 – 13,8	13,6 – 13,8	13,6 – 13,8	13,6 – 13,8	13,6 – 13,8	13,6 – 13,8	13,6 – 13,8	13,6 – 13,8
Cycle Life (80% DOD) 0.2C	4000	4000	4000	4000	4000	4000	4000	4000	4000	6000	6000	6000	6000
Parallel connection	Up to 4	Up to 4	Up to 4	Up to 4	Up to 4	Up to 4	Up to 4	Up to 4	Up to 4	Up to 4	Up to 4	Up to 8	Up to 8
Series connection	no	no	no	no	no	no	no	no	no	no	no	no	no
Charge below zero °C	no	no	no	no	no	no	no	no	yes	yes	yes	yes	yes
Communication interface	no	no	no	no	no	no	no	no	no	no	no	yes, CAN-bus	yes, CAN-bus
Communication protocol		n.a.	n.a.	n.a.	n.a	n.a	n.a	n.a	n.a.	n.a.	n.a.	ACES, Victron, NMEA	ACES, Victron, NMEA
DISCHARGE													
Continuous current (A)	24	45	60	80	100	150	100	150	150	200	200	300	300
Peak current (A)	100	125	200	300	300	300	350	360	360	400	400	500	500
Overdischarge protection (V)	10	10	10	10	10	10	10	10	10	10	10	10	10
Fast short circuit protection	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Internal fuse	60A	100A	150A	200A	250A	300A	250A	300A	300A	400A	400A	500A	500A
CHARGE													
Max. charge current	24	45	60	80	100	100	100	150	150	150	150	200	200
Recommended charge cur. (A)	3 – 12	4 – 23	6 – 30	8 – 40	10 – 50	10 – 50	10 – 60	15 – 75	15 – 75	15 – 100	20 – 100	40 – 100	40 – 100
Charge Voltage to 100% (V)	14,4 – 14,6	14,4 – 14,6	14,4 – 14,6	14,4 – 14,6	14,4 – 14,6	14,4 – 14,6	14,4 – 14,6	14,4 – 14,6	14,4 – 14,6	14,4 – 14,6	14,4 – 14,6	14,4 – 14,6	14,4 – 14,6
Charging characteristic	CC /CV	CC /CV	CC /CV	CC /CV	CC /CV	CC /CV	CC /CV	CC /CV	CC /CV	CC /CV	CC /CV	CC /CV	CC /CV
Recommended ACES charger	ABC150-1210LF	ABC300-1212LF	ABC300-1212LF	ABC300-1212LF	ABC300-1212LF	ABC300-1212LF	ABC700-1220LF	ABC700-1220LF	ABC700-1220LF	ABC700-1220LF	ABC700-1220LF	ABC700-1220LF	ABC700-1220LF
MECHANICAL													
Dimensions (mm)	181 x 76 x 167	165 x 126 x 175	198 x 166 x 170	260 x 168 x 209	306 x 168 x 211	317 x 175 x 188	260 x 168 x 209	260 x 168 x 209	355 x 175 x 188	522 x 240 x 218	345 x 190 x 245	520 x 269 x 220	520 x 269 x 220
Weight (kg)	2.8	4.0	7.2	9.3	11.5	12.0	13.0	18.0	17.0	22.0	24.0	32.0	42.0
Protection IP class	65	65	65	65	65	65	65	65	65	65	65	65	65
Terminals	M5	M8	M8	M8	M8	Din 17(-) / 19(+)mm	M8	M8	Din 17(-) / 19(+)mm	M8	M8	M8	M8
Cell type (LiFePO4)	Cylindric	Cylindric	Cylindric	Prismatic	Prismatic	Prismatic	Cylindric	Prismatic	Prismatic	Prismatic	Prismatic	Prismatic	Prismatic
TEMPERATURE													
Discharge Temperature	-20 – 60°C	-20 – 60°C	-20 – 60°C	-20 – 60°C	-20 – 60°C	-20 – 60°C	-20 – 60°C	-20 – 60°C	-20 – 60°C	-20 – 60°C	-20 – 60°C	-20 – 60°C	-20 – 60°C
Charge Temperature	0 – 50°C	0 – 50°C	0 – 50°C	0 – 50°C	0 – 50°C	0 – 50°C	0 – 50°C	0 – 50°C	-20 – 50°C	-20 – 50°C	-20 – 50°C	-20 – 50°C	-20 – 50°C
Recommended storage temp.	5 – 30°C	5 – 30°C	5 – 30°C	5 – 30°C	5 – 30°C	5 – 30°C	5 – 30°C	5 – 30°C	5 – 30°C	5 – 30°C	5 – 30°C	5 – 30°C	5 – 30°C
BMS Cut-Off temperature	70°C	70°C	70°C	70°C	70°C	70°C	70°C	70°C	70°C	70°C	70°C	70°C	70°C

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MODEL NAME	AL24V12HFA	AL24V30HFA-BT	AL24V50HFA-BT	AL24V60HFA-BT	AL24V75HFA-BT	AL24V84HFA-BT	AL24V100HFA-BTH	AL24V160HFA-BT	AL24V200HFA-BTC	AL24V230HFA-BCH	AL24V300HFA-BTC
EAN number	4738474993882	4738470670572	4738475996288	4738473635950	4738477281177	4738478485765	4738474010183	4738475180120	4738472410213	4738478438822	4738476704332
ELECTRICAL											
Voltage category (V)	24	24	24	24	24	24	24	24	24	24	24
Nominal voltage	25.6	25.6	25.6	25.6	25.6	25.6	25.6	25.6	25.6	25.6	25.6
Max. charge voltage	29.2	29.2	29.2	29.2	29.2	29.2	29.2	29.2	29.2	29.2	29.2
Capacity (AH) at 0.2C	12	30	50	60	75	84	100	160	200	230	300
Energy (Wh)	307	768	1280	1536	1920	2150	2560	4096	5120	5888	7680
Operational Voltage range (V)	22 – 29,2	22 – 29,2	22 – 29,2	22 – 29,2	22 – 29,2	22 – 29,2	22 – 29,2	22 – 29,2	22 – 29,2	22 – 29,2	22 – 29,2
Floating voltage (V)	27,2 – 27,6	27,2 – 27,6	27,2 – 27,6	27,2 – 27,6	27,2 – 27,6	27,2 – 27,6	27,2 – 27,6	27,2 – 27,6	27,2 – 27,6	27,2 – 27,6	27,2 – 27,6
Cycle Life (80% DOD) 0.2C	4000	4000	4000	4000	4000	4000	6000	4000	6000	6000	6000
Parallel connection	Up to 4	Up to 4	Up to 4	Up to 4	Up to 4	Up to 4	Up to 4	Up to 4	Up to 8	Up to 8	Up to 8
Series connection	no	no	no	no	no	no	no	no	no	no	no
Charge below zero °C	no	no	no	no	no	no	yes	no	no	yes	no
Communication interface	no	no	no	no	no	no	no	no	yes, CAN-bus	yes, CAN-bus	yes, CAN-bus
Communication protocol	n.a.	n.a.	n.a.	n.a.	n.a	n.a	n.a	n.a	ACES, Victron, NMEA	ACES, Victron, NMEA	ACES, Victron, NMEA
DISCHARGE											
Continuous current (A)	12	30	50	50	60	84	100	150	150	200	200
Peak current (A)	80	140	220	220	220	220	350	400	400	400	400
Overdischarge protection (V)	20	20	20	20	20	20	20	20	20	20	20
Fast short circuit protection	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Internal fuse	40A	80A	125A	150A	200A	200A	250A	400A	400A	400A	400A
CHARGE											
Max. charge current	12	30	50	50	50	84	100	150	150	200	150
Recommended charge cur. (A)	1 – 6	3 – 15	5 – 25	6 – 30	7 – 38	8 – 42	10 – 50	15 – 80	20 – 100	20 – 100	20 – 150
Charge Voltage to 100% (V)	28,8 – 29,2	28,8 – 29,2	28,8 – 29,2	28,8 – 29,2	28,8 – 29,2	28,8 – 29,2	28,8 – 29,2	28,8 – 29,2	28,8 – 29,2	28,8 – 29,2	28,8 – 29,2
Charging characteristic	CC /CV	CC /CV	CC /CV	CC /CV	CC /CV	CC /CV	CC /CV	CC /CV	CC /CV	CC /CV	CC /CV
Recommended ACES charger	ABC100-2404LF	ABC100-2404LF	ABC300F-2412LF	ABC300F-2412LF	ABC300F-2412LF	ABC700-2420LF	ABC700-2420LF	ABC900F-2430LF	ABC2000-2450LF	ABC2000-2450LF	ABC2000-2450LF
MECHANICAL											
Dimensions (mm)	181 x 76 x 167	198 x 166 x 170	307 x 169 x 208	260 x 168 x 209	306 x 168 x 211	483 x 170 x 240	522 x 240 x 218	520 x 269 x 220	520 x 269 x 220	520 x 269 x 220	640 x 245 x 220
Weight (kg)	2.8	7.0	11.5	12.0	15.0	19.0	22.0	32.0	39.0	42.0	51.0
Protection IP class	65	65	65	65	65	65	65	65	65	65	65
Terminals	M5	M8	M8	M8	M8	M8	M8	M8	M8	M8	M8
Cell type (LiFePO4)	Cylindric	Cylindric	Cylindric	Cylindric	Cylindric	Cylindric	Prismatic	Prismatic	Prismatic	Prismatic	Prismatic
TEMPERATURE											
Discharge Temperature	-20 – 60°C	-20 – 60°C	-20 – 60°C	-20 – 60°C	-20 – 60°C	-20 – 60°C	-20 – 60°C	-20 – 60°C	-20 – 60°C	-20 – 60°C	-20 – 60°C
Charge Temperature	0 – 50°C	0 – 50°C	0 – 50°C	0 – 50°C	0 – 50°C	0 – 50°C	-20 – 50°C	0 – 50°C	0 – 50°C	-20 – 50°C	0 – 50°C
Recommended storage temp.	5 – 30°C	5 – 30°C	5 – 30°C	5 – 30°C	5 – 30°C	5 – 30°C	5 – 30°C	5 – 30°C	5 – 30°C	5 – 30°C	5 – 30°C
BMS disch. Cut-Off temp.	70°C	70°C	70°C	70°C	70°C	70°C	70°C	70°C	70°C	70°C	70°C

ACES LI POWER LiFePO4 Batteries HFA series specifications 36V, 48V, 60V and 72V

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MODEL NAME	AL36V100HFA-BT	AL48V12HFA-BT	AL48V18HFA-BT	AL48V30HFA-BT	AL48V60HFA-BT	AL48V80HFA-BT	AL48V100HFA-BTC	AL48V150HFA-BTC	AL60V30HFA-BT	AL60V75HFA-BT	AL72V30HFA-BT	AL72V60HFA-BT
EAN number	4738473635950	4738470107085	4738478548255	4738478298242	4738476073223	4738470112966	4738470089312	4738479776329	4738477281177	4738477140511	4738475685267	4738475648910
ELECTRICAL												
Voltage category(V)	36	48	48	48	48	48	48	48	60	60	72	72
Nominal voltage	38.4	51.2	51.2	51.2	51.2	51.2	51.2	51.2	60.8	60.8	73.6	73.6
Max. charge voltage	43.2	58.4	58.4	58.4	58.4	58.4	58.4	58.4	68.4	68.4	83.9	83.9
Capacity (AH) at 0.2C	100	12	18	30	60	80	100	150	30	75	30	60
Energy (Wh)	3840	614	922	1536	3072	4096	5120	7680	1824	4560	2208	4416
Operational Voltage range (V)	30 – 43.2	44 – 58,4	44 – 58,4	44 – 58,4	44 – 58,4	44 – 58,4	44 – 58,4	44 – 58,4	53.0 – 64V	53.0 – 64V	63.0 – 83.9V	63.0 – 83.9V
Floating voltage (V)	40.2 – 40.8	54,4 – 55,2	54,4 – 55,2	54,4 – 55,2	54,4 – 55,2	54,4 – 55,2	54,4 – 55,2	54,4 – 55,2	64.0	64.0	78 – 79,3	78 – 79,3
Cycle Life (80% DOD) 0.2C	6000	4000	4000	4000	4000	4000	6000	6000	4000	4000	4000	4000
Parallel connection	Up to 4	Up to 4	Up to 4	Up to 4	Up to 4	Up to 4	Up to 8	Up to 8	Up to 4	Up to 4	Up to 4	Up to 4
Series connection	no	no	no	no	no	no	no	no	no	no	no	no
Charge below zero °C	no	no	no	no	no	no	Option	no	yes	yes	yes	yes
Communication interface	no	no	no	no	no	no	yes, CAN-bus	yes, CAN-bus	no	no	no	no
Communication Protocol	n.a	n.a.	n.a.	n.a	n.a	n.a	ACES, Victron, NMEA	ACES, Victron, NMEA	n.a.	n.a.	n.a.	n.a
DISCHARGE												
Continuous current (A)	100	12	18	30	60	80	100	150	30	75	30	60
Peak current (A)	200	50	80	100	180	220	220	220	100	220	120	220
Overdischarge protection (V)	30	40	40	40	40	40	40	40	48	48	63	63
Fast short circuit protection	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Internal fuse	250A	40A	60A	100A	200A	200A	250A	300A	100A	200A	100A	200A
CHARGE												
Max. charge current	100	12	18	30	60	80	100	100	30	60	30	60
Recommended charge cur. (A)	10 – 50	1 – 6	2 – 9	2 – 15	8 – 30	8 – 40	10 – 50	10 – 75	3 – 15	6 – 38	3 – 15	6 – 30
Charge Voltage to 100% (V)	43.2 – 43.8	57,6 – 58,4	57,6 – 58,4	57,6 – 58,4	57,6 – 58,4	57,6 – 58,4	57,6 – 58,4	57,6 – 58,4	68.4 – 69.3	68.4 – 69.3	82.8 – 83,9	82.8 – 83,9
Charging characteristic	CC /CV	CC /CV	CC /CV	CC /CV	CC /CV	CC /CV	CC /CV	CC /CV	CC /CV	CC /CV	CC /CV	CC /CV
Recommended ACES charger	ABC900F-3625LF	ABC300-4805LF	ABC300-4805LF	ABC300-4805LF	ABC700-4810LF	ABC1350-4825LF	ABC1350-4825LF	ABC1350-4825LF	ABC700-6010LF	ABC1350-6020LF	ABC1350-7218LF	ABC1350-7218LF
MECHANICAL												
Dimensions (mm)	520 x 269 x 220	198 x 166 x 170	260 x 168 x 209	330 x 172 x 215	483 x 170 × 240	520 x 269 x 220	520 x 269 x 220	640 x 245 x 220	307 x 169 x 208	520 x 269 x 220	483 x 170 × 240	520 x 269 x 220
Weight (kg)	26.0	6.0	8.4	13.5	20.0	32.0	39.0	51.0	14.0	35.0	20.0	40.0
Protection IP class	65	65	65	65	65	65	65	65	65	65	65	65
Terminals	M8	M8	M8	M8	M8	M8	M8	M8	M8	M8	M8	M8
Cell type (LiFePO4)	Prismatic	Cylindric	Cylindric	Cylindric	Cylindric	Prismatic	Prismatic	Prismatic	Cylindric	Cylindric	Cylindric	Pouch
TEMPERATURE												
Discharge Temperature	-20 – 60°C	-20 – 60°C	-20 – 60°C	-20 – 60°C	-20 – 60°C	-20 – 60°C	-20 – 60°C	-20 – 60°C	-20 – 60°C	-20 – 60°C	-20 – 60°C	-20 – 60°C
Charge Temperature	0 – 45°C	0 – 50°C	0 – 50°C	0 – 50°C	0 – 50°C	0 – 50°C	0 – 50°C	0 – 50°C	0 – 50°C	0 – 50°C	0 – 50°C	0 – 50°C
Recommended storage temp.	5 – 30°C	5 – 30°C	5 – 30°C	5 – 30°C	5 – 30°C	5 – 30°C	5 – 30°C	5 – 30°C	5 – 30°C	5 – 30°C	5 – 30°C	5 – 30°C
BMS Cut-Off temperature	70°C	70°C	70°C	70°C	70°C	70°C	70°C	70°C	70°C	70°C	70°C	70°C