



*illustration similar

HY-Di-CHG-A1

HY-LINE Smart Battery Charger

- Dual bay charger
- SM- and CAN-Bus communication via HBI (HY-LINE Battery Interface)
- Optional: external power supply 160W

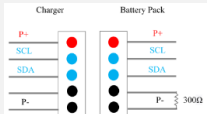
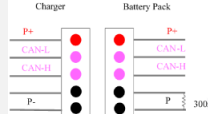
HY-Di-CHG-A1 - HY-LINE Smart Battery Charger

Specifications

Item	Descriptions	Specifications	Remark
1	Model Number	HY-Di-CHG-A1	
2	To be used for	HY-LINE Smart Battery Family	2S / 3S / 4S
3	Input Voltage	100 ~ 240VAC, 50 to 60 Hz.	Recommended power adapter: ATM-160T-P240 (med. Certified) or ATS160T-P240
4	AD/DC Adaptor	DC 24V, 0-6.6A	
5	Max Input Power	160W	
6	Charging Current per slot	1.6A at 16.8V 3.2A at 8.4V/12.6V/16.8V 4.8A at 8.4V 4.8A at 8.4V	Battery configuration: 1P Battery configuration: 2P Battery configuration: 3P Battery configuration: 4P
6.a	Charging Current per slot when over temperature	0.8A at 16.8V 1.6A at 8.4V/12.6V/16.8V 2.4A at 8.4V 3.2A at 8.4V	Battery configuration: 1P Battery configuration: 2P Battery configuration: 3P Battery configuration: 4P
7	Short circuit protection input	10.0A	
8	Short circuit protection output	10.0A	
9	Over current protection	1.85 ±0.1A 3.5 ±0.3A 5.5 ±0.5A 7.0 ±0.7A	Battery configuration: 1P Battery configuration: 2P Battery configuration: 3P Battery configuration: 4P
10	Over voltage protection	8.5V 12.75V 17.0V	Battery configuration: 2S Battery configuration: 3S Battery configuration: 4S
11	Enclosure	PC + ABS, Sabic C6600, color black AL5052, spray printing	Top housing Bottom plate
12	Operation temperature	0°C ~ 40°C	
13	Storage temperature	-10°C ~ 60°C	
14	Input connector charger	4pin mini DIN	Pin1: + Pin2: + Pin3: - Pin4: -

HY-Di-CHG-A1 - HY-LINE Smart Battery Charger

Specifications

Item	Descriptions	Specifications	Remark
15	Output connector charger	AMP 5787419-1 5-pin Plug	SM-Bus:  CAN-Bus: 
16	Dimension (mm) Weight (g)	L189.5 * W100 * H97 340	
17	LED indication (one per slot)	1: Charger Power ON 2: Charging in process 3: Battery fully charged 4: Charging abnormal	Orange LED flashes 3 times, then OFF Green LED flashes constantly Green LED constant ON Red LED flashes constantly
18	Certifications	CE	CB Safety (IT): IEC62368-1:2018 CE EMC (Medical): IEC 60601-1-2:2014+AMD1:2020 (EN 60601-1-2:2014+A1:2021) Mechanical Strength: IEC60601-1:2012, cl. 15.3.6 + IEC60601-1-12:2014, cl.10.1.3a,b,c

HY-Di-CHG-A1 - HY-LINE Smart Battery Charger

Performance Curves

HY-Di-4S1P-S1/-C1

in progress

HY-Di-2S2P-S1/-C1

in progress

HY-Di-3S2P-S1/-C1

in progress

HY-Di-4S2P-S1/-C1

in progress

HY-Di-2S3P-S1/-C1

in progress

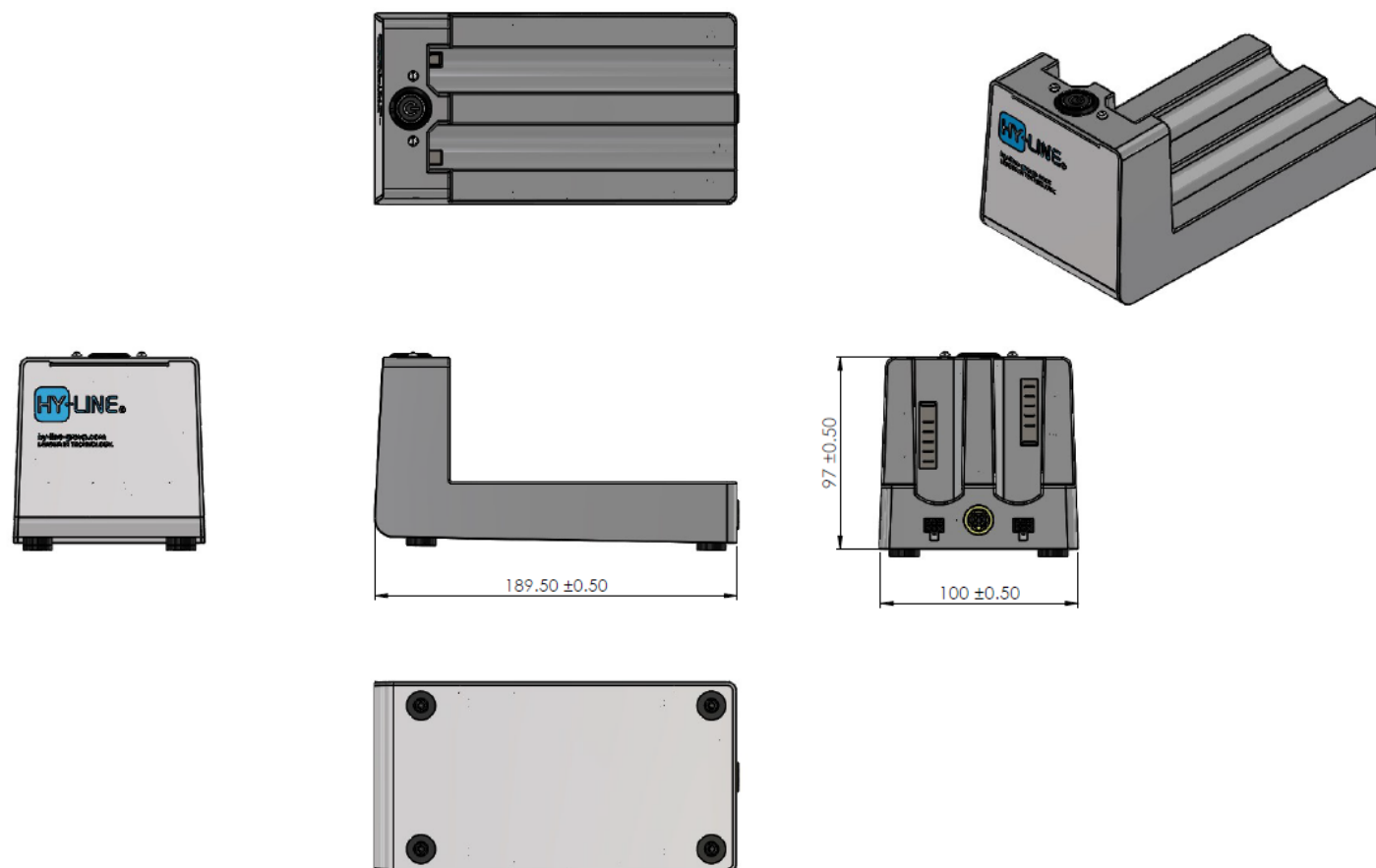
HY-Di-2S4P-S1/-C1

in progress

HY-Di-CHG-A1 - HY-LINE Smart Battery Charger

Mechanical

Drawing



Communication Connector and PIN definition

Connector: Molex Mirco-Fit+ 212528-0600:

PIN definition:

Pin1 CLOCK	Pin2 N/A	Pin3 CAN-H
Pin4 DATA	Pin5 GND	Pin6 CAN-L

HY-Di-CHG-A1 - HY-LINE Smart Battery Charger

Miscellaneous

Serial number code

Example: HY-Di-CHG-A1-1-5021-00000

Part Number	Hardware Rev.	Production Date wwww	Serial Number
HY-Di-CHG-A1	-1	-5021	-00000

Charger LED Indication

	Charger Status	LED Indication	Remark
1	Charger Power ON	Orange LED flash 3 times, then OFF	One LED indication per slot
2	Charging in progress	Green LED flashes constantly	
3	Battery fully charged	Green LED constant ON	
4	Charging abnormal <ul style="list-style-type: none">- Communication fail- Over-voltage- Over-current- Over-temperature	Red LED flashes constantly	
Charger Push On/Off Switch		<ul style="list-style-type: none">- When charger switch is pressed to On, the Power Switch will show white LED constant On.- When charger switch is pressed to Off, the Power Switch LED will be OFF.	


HY-Di-CHG-A1 - HY-LINE Smart Battery Charger

Charger Operation Notifications

- The HY-Di-CHG-A1 charger will firstly communicate with the battery to identify its battery configuration to provide charging current accordingly.
- The HY-Di-CHG-A1 charger can be used with Hy-Line interface of HBI to communicate the HY-Di battery while charging. Communication can be accessed from the MOLEX connector on the charger rear end.
- The communication connection with the HBI interface can be either before or after HY-Di-CHG-A1 is power on. But the HBI communication will only proceed when HY-Di-CHG-A1 charger complete battery identification. Hence, the HBI communication log may have a few seconds gap in between.
- When batteries are fully charged, the HBI interface can still be used to log data because the charger design has assumed communication from Molex connector is always on (No ID pin required).
- Since the charger will need to check batteries status via communication, there will be gap in between on HBI data log for a few seconds.

HY-Di-CHG-A1 - HY-LINE Smart Battery Charger

Accessories

Item	Part number	Remark
Power Supply 	ATM160T-P240	Universal Input: 100 - 240VAC Output: 24VDC / 0 - 6.6A / 160W max. Efficiency (av): ≥88% Protection: OVP, SCP, OCP, OTP DoE Level VI Dimensions: 183.2*81.0*42.3mm Weight: 720g Material flammability: UL 94V-0 Enclosure color: black Suitable for usage in medical equipment.
Power Supply 	ATS160T-P240	Universal Input: 100 - 240VAC Output: 24VDC / 0 - 6.6A / 160W max. Efficiency (av): ≥88% Protection: OVP, SCP, OCP, OTP DoE Level VI Dimensions: 175.2*74.0*42.0mm Weight: 700g Material flammability: UL 94V-0 Enclosure color: black
HY-LINE Battery Interface 	HY-Di-HBI-A1	integrated webserver CAN- and SM-Bus ready to use microUSB for power supply (5V/1A)
Connection cable	HK-HBI-CH01	Connection cable HBI to HY-LINE Smart Battery Charger (HY-Di-CHG-A1)
AC cord Switzerland	H7M300	3-pole instrument cable, L=1.8m Swiss plug Appliance outlet : C13
AC cord Germany (Schuko)	H7M301	3-pole instrument cable, L=1.8m Schuko plug Appliance outlet : C13
AC cord US	H7M302	3-pole instrument cable, L=1.8m US plug Appliance outlet : C13
AC cord Australia	H7M303	3-pole instrument cable, L=1.8m AUS plug Appliance outlet : C13
AC cord United Kingdom	H7M304	3-pole instrument cable, L=1.8m UK plug Appliance outlet : C13

HY-Di-CHG-A1 - HY-LINE Smart Battery Charger

Contact

HY-LINE AG

Hochstrasse 355
CH-8200 Schaffhausen

Support:

+41 (0) 52 / 647 42 00

+41 (0) 52 / 647 42 01

Mail us:

info@hy-line.ch

HY-LINE Power Components Vertriebs GmbH

Inselkammerstrasse 10
D-82008 Unterhaching

Support:

+49 89 614 503 10

+49 89 614 503 20

Mail us:

power@hy-line.de



HY-LINE AG

HY-LINE AG belongs to the HY-LINE group, a group of specialized distributors.

HY-LINE AG is a specialist in batteries and systems. In addition to standard batteries and charging and maintenance systems, the focus is on the development and design of custom-specific batteries and systems.

HY-LINE Power Components Vertriebs GmbH

HY-LINE Power Components is part of the HY-LINE Group, a group of specialized distributors.

HY-LINE Power Components supplies all core parts and components for power electronics and power supply technology. As a highly specialized distributor and manufacturer representative, HY-LINE Power Components has extensive application-specific know-how and provides support already during the design phase in the selection of components and the configuration of coordinated subsystems.

HY-LINE® is a registered trademark of the HY-LINE Group.
Energy_Datasheet_HY-Di-CHG-A1 | September 2022
Subject to changes without notice | All Information without guarantee
© 2022, HY-LINE Group