

Varex Battery Charger 1 and 3 Bay



Before using the Battery Charger, be sure to read this manual thoroughly along with any other manuals for the software and other system components. Keep this manual where it is easily accessible.





Before You Begin

To avoid personal injury or product damage, read the manual and all accompanying papers carefully before operating the Battery Charger.









For Your Safety

To avoid personal injury or product damage, read this manual and all accompanying information carefully before handling, installing, or using the Battery Charger. Follow all instructions, warnings, and cautions in this manual and all warnings and cautions printed on the warning label. Ignoring instructions, warnings, or cautions in the handling, installing, or using of the Battery Charger may result in personal injury, death, or product damage. Keep this manual for future reference.

Meaning of Alerts and Notes

	DANGER	This indicates a potentially hazardous situation which, if ignored, <u>will</u> result in severe personal injury, death, or substantial product damage.
	WARNING	This indicates a potentially hazardous situation which, if ignored, <u>may</u> result in severe personal injury, death, or substantial product damage.
	Caution	This indicates a potential hazardous situation which, if ignored, <u>may</u> result in minor or moderate personal injury or damage to the product.
	Note	This emphasizes or supplements important information about the main text.

Battery Charger

	WARNING	IP20 Protected from touch by objects greater than 12 millimeters, not protected from liquids.
	WARNING	Do not remove the charger cover. The charger has no internal user serviceable parts.
	WARNING	Do not use in operating room or other oxygen rich environment. Do not use in conjunction with flammable agents. Do not use in an environment with condensing moisture.
	WARNING	Use only charging devices approved by device manufacturer, and never attempt to bypass or override their charging protection circuits.
	Caution	Do not use flowing liquid or immersion on the battery charger. Do not Sterilize.
	Caution	Do not attempt to insert objects other than the Varex battery into the charger bay.
	Note	Use the Varex Battery Charger only with the Varex supplied power supply and power cord.
	Note	Use only the Varex supplied batteries in the battery charger. The systems are not designed to work in conjunction with any other battery type or design.

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1.0 Varex 1 and 3 Bay Battery Chargers

This section describes the 1 and 3 bay Varex Battery Chargers.

1.1 Intended Use

The Varex 1 bay and 3 bay Battery Chargers are intended for use with the Varex Lithium-ion Battery.

1.2 Standards and Regulations









The Varex Battery Chargers are Class 1 continuous operation devices and meet the following standards and regulations.

Table 1 Standards and Regulations

Standard	Description
IEC 61000-4-2	Electro-Static Discharge
IEC 61000-4-3	RF Electromagnetic Fields Immunity
IEC 61000-4-4	EFT/Burst
IEC 61000-4-5	Surge Immunity
IEC 61000-4-6	Conducted RF Disturbances Immunity
IEC 61000-4-8	Magnetic Field Immunity
IEC 61000-4-11	Dips, Interruptions, and Variations
IEC 61000-3-2	Harmonics Current Emission
IEC 61000-3-3	Voltage Fluctuation and Flicker

1.3 Definition of Symbols

Table 2 Definition of Symbols

Symbol	Description
	Part Number and Revision
	Serial Number
	Direct Current
	Authorized Representative in the European Community/European Union
	Important Information
	Consult Instruction for Use
	Do Not Discard with Domestic Waste
	European Conformity Marking for the Product
	Date of Manufacture YYYYMMDD
	Recognized component
	China RoHS environmentally friendly for 10 years
	Refer to instruction manual/booklet prior to use
	IS 13252 (Part 1): 2010 R-41084727

1.4 Battery Charger Specifications

Table 3 Specifications

Description	Specification
Input Voltage	19V DC (3-bay and 1-bay) ---
Input Current	4.5A (3-bay), 2.1A (1-bay)
Output Voltage	16.8V DC (3-bay and 1-bay) ---
Output Current	1.4A (3-bay and 1-bay)
Environmental	
Storage and Transport (Ambient)	-20°C to +60°C
Storage Humidity	10% to 90% at 20°C
Operation Humidity	10% to 90%
Atmospheric Pressure Range	700hPa to 1060hPa
Operation Range	0°C to 35°C Note: Normal charging must be terminated if the battery cell temperature is above 45°C or below -20°C. Outside of the 0°C to 35°C ambient temperature, the charger will remain active, but the charge current will be off or limited so that charge time will be extended.

1.5 Over-Discharged Battery Wake-Up

The Battery Chargers will wake-up a battery that is in over-discharge protection mode.

1.6 Over-Charge Battery Protection

Over-charge due to excessive or uncontrolled current is prevented by redundant software functions monitoring a minimum of two independent sources combined with the software independent method.

Over-charge due to excessive or uncontrolled voltage is prevented through continual monitoring of two independent measurement sources. The Battery Chargers have charge timeout functionality.

1.7 Steps to Set-up the Varex Charger



Note

The Varex Battery Charger must be installed near the outlet to which it will be connected.



Note

Do not block the Battery Charger's ventilation slots underneath the charger.



Note

Use the Battery Charger only with Varex batteries and the provided external power supply

To connect the Battery Charger to power:

- 1 Plug the DC cable from the power supply into the Battery Charger.
- 2 Plug the AC cable into the power supply.
- 3 Plug the AC cable into the appropriate power outlet.



Note


Ensure the Battery Charger is plugged into an outlet and mains cable that is equipped with an earth ground connection.

- 4 The Battery Charger is now ready for use.


1.8 Steps for Battery Charging using the Stand-Alone 3 Bay Battery Charger

The Varex 3-bay Battery Charger requires:

- 24V DC, 3.3A max input.
- The output of the Battery Charger is 16.8V DC, 1.5A max (+/- 1% and 10 Hz).

 Note	The following power supply must be used for the Varex 3 Bay Battery Charger: XP Power Supply AHM85PS19
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- 1 Hold battery on end opposite of the contacts with the contacts facing toward the Battery Charger.
- 2 Gently slide battery into battery compartment on the Battery Charger. When properly inserted, a light next to the battery slot will turn on showing the charge status of the battery. When the battery is charging the light will be orange, when charging is complete the light will turn green and when there is a fault the light will be red (see [Table 4](#)).
- 3 Charging a fully discharged battery will take 3.5 hours maximum and 2.5 hours typical when operating at room temperature. Up to three batteries can be charged at a time in the Varex 3-bay Battery Charger.

 Note	In the case that the Battery Charger status indicators show a fault, then the inserted battery should not be used. Note the behavior of the status indicators and contact service support with the fault status indicator information
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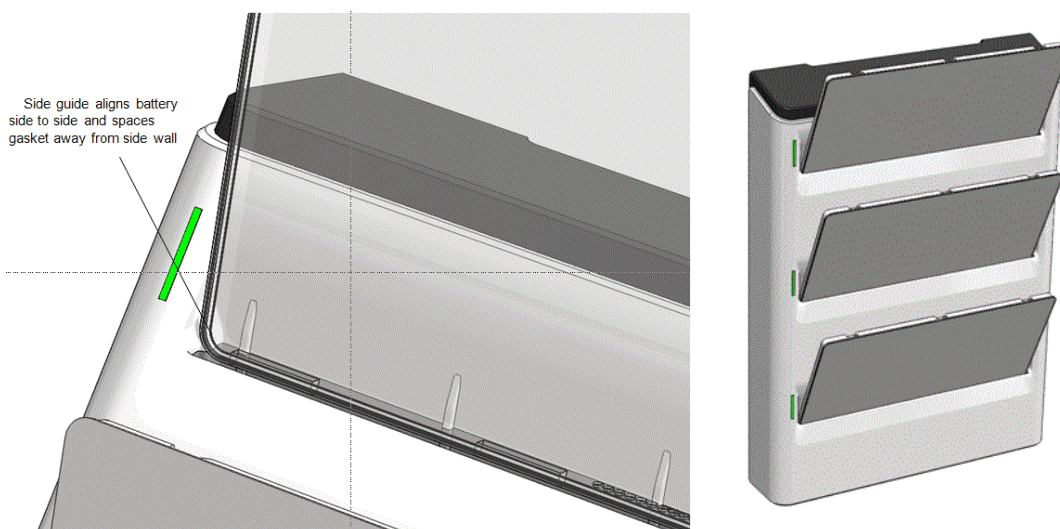


Figure 1 3-Bay Battery Charger Battery Insertion

Table 4 3-Bay Battery Charging Status Indicator

LED	LED State	Description
Green	Solid	Battery Full
Orange	Solid	Battery is Charging
Red	Solid	Charger timeout or bad battery ID
	2 Blinks	Bad Smbus
	3 Blinks	Voltage Fault
	4 Blinks	Temperature Fault

1.9 Steps for Battery Charging Using the Stand-Alone 1 Bay Battery Charger

The Varex 1-bay Battery Charger requires:

- 19V DC, 2.1A max input.
- The output of the Battery Charger is 16.8V DC, 1.4A max (+/- 1% and 10 Hz).



Note

The following power supply **must** be used with the Varex 1 Bay Battery Charger: **XP Power Supply ALM65US19** or **Megmeet Mango 40S**

- 1 The Varex battery communicates with the Varex 1-bay Battery Charger when it is plugged into the Battery Charger. The battery monitors its readiness state and is mechanically keyed to Battery Charger for easy installation.
- 2 The Battery Charger provides LED indicators to identify charge process and charge faults (see [Table 5](#)).
- 3 When all four (4) green LEDs are continuously illuminated (with the red LED off), the battery has reached maximum charge. It can either be removed or left in the Battery Charger to maintain full charge. Charging time typically is typically 2.5 hours, maximum 3.5 hours.



Note

In the case that the Battery Charger status indicators show a fault, then the inserted battery should not be used. Note the behavior of the status indicators and contact service support with the fault status indicator information

Table 5 1-Bay Battery Charging Status Indicators













Description	Green LEDs	Red Led	Example
Battery Charging Normally - up to 25%	1 - On - Blinking 2 - Off 3 - Off 4 - Off	Off	
Battery Charging Normally - 26% to 50%	1 - On - Continuous 2 - On - Blinking 3 - Off 4 - Off	Off	
Battery Charging Normally - 51% to 75%	1 - On - Continuously 2 - On - Continuously 3 - On - Blinking 4 - Off	Off	
Battery Charging Normally - 76% to 99%	1 - On - Continuously 2 - On - Continuously 3 - On - Continuously 4 - On - Blinking	Off	
Battery Charging Normally - Fully Charged	1 - On - Continuously 2 - On - Continuously 3 - On - Continuously 4 - On - Continuously	Off	
Fault - No Charge Current accepted or Battery Voltage too high	1 - On - Blinking 2 - Off 3 - Off 4 - Off	On	
Fault - Battery Over- discharged cannot wake up in less than 210 seconds	1 - On - Blinking 2 - On - Blinking 3 - Off 4 - Off	On	

Table 5 1-Bay Battery Charging Status Indicators

Fault - Battery exceeds allowable charge time	1 - On - Blinking 2 - On - Blinking 3 - On - Blinking 4 - Off	On	
Fault - Battery ID does not match V4336W or non-recoverable over-discharged battery	1 - On - Blinking 2 - On - Blinking 3 - On - Blinking 4 - On - Blinking	On	
Fault - Battery Temperature either too high or too low	1 - Off 2 - Off 3 - Off 4 - Off	On	
Fault - SMBus between the charger and battery is not operating properly	1 - On - Blinking 2 - Off 3 - On - Blinking 4 - Off	On	
Fault - Battery Permanent Fault	1 - Off 2 - On - Blinking 3 - Off 4 - On - Blinking	On	

2.0 Maintenance

The Battery Chargers have no serviceable parts. Do not Disassemble. No modification to the equipment is allowed.

2.1 Cleaning

The Battery Chargers may be cleaned using a cloth and the following chemicals:

- Isopropyl Alcohol, 70% Aqueous Solution
- Mild Soap and Water
- Chlorine Bleach, 3% aqueous solution. Do not clean the electrical contacts or connector with Bleach
- Quaternary ammonium compounds, such as Steris 'Coverage Plus NPD' (one part Coverage Plus NPD to 255 parts Water)
- CAVI-Wipes, Use in accordance with manufacturer's instructions

2.2 Disposal

- At the end of its working life, do not dispose of the Battery Chargers with other waste.
- Recycle or dispose of the Battery Chargers in accordance with local, state, and federal/national laws and environmental regulations.

2.3 After-Sales Service

For product returns, contact your distributor or device manufacturer for shipping and packaging instructions. Do not return products to Varex Imaging for repair or service without advance notification. Include all required papers in the shipment.

We request that you obtain an RMA number for in-warranty and out-of-warranty returns of products.

Contact: flatpanel.warranty@vareximaging.com

For warranty and returns, please visit:
<https://www.vareximaging.com/flat-panel-service-report>.

**WARNING**

If the Battery Chargers have been contaminated with potentially harmful substances, they cannot be accepted without written evidence of decontamination.

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