

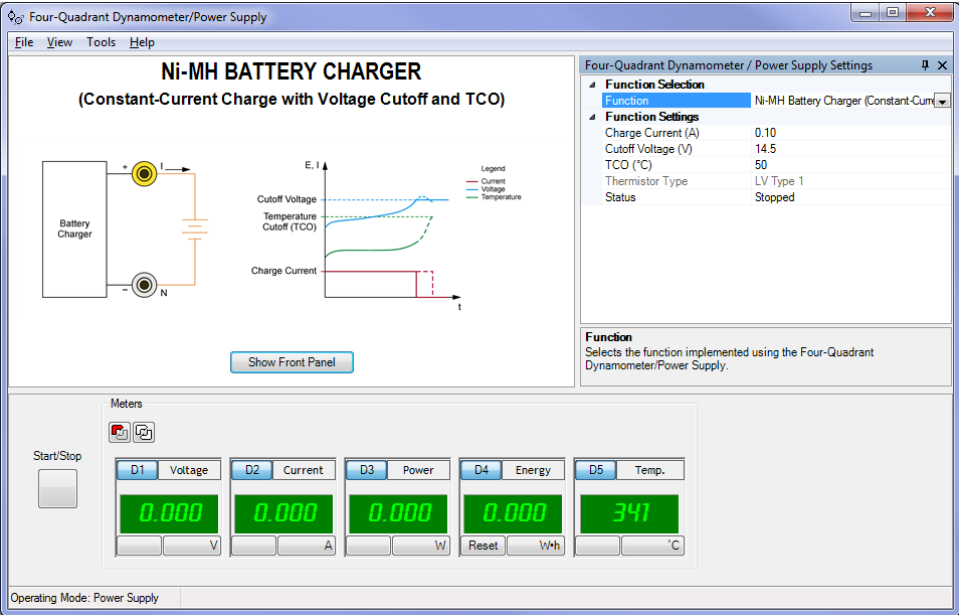
Ni-MH Battery Charger Function Set

581439 (8968-50)



LabVolt Series

Datasheet



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General Description

The Ni-MH Battery Charger Function Set is a package of control functions that can be activated in the Four-Quadrant Dynamometer/Power Supply, enabling the module to operate as different types of Ni-MH battery chargers, as well as a battery discharger.

The control functions in the set are only available in computer-based mode. This means that the function performed by the Four-Quadrant Dynamometer/Power Supply is selected, set, and monitored using the LVDAC-EMS software. The following control functions are available in the set:

Power Supply operating mode

- Ni-MH Battery Charger (Constant-Current Charge with Voltage Cutoff and TCO): this function implements a basic Ni-MH battery charger. This charger forces a constant charge in the battery until the battery voltage reaches a certain value at which the charge terminates. The charger also monitors the battery temperature during charge. Battery charging is terminated immediately when the battery temperature reaches a specific cutoff temperature. The user has control over the charge current, cutoff voltage, and cutoff temperature.
- Ni-MH Battery Charger (Constant-Current Timed Charge with TCO): this function implements a time-controlled Ni-MH battery charger. This charger forces a constant charge current in the battery during a specific period of time and then turns off. The charger also monitors the battery temperature during charge. Battery charging is terminated immediately when the battery temperature reaches a specific cutoff temperature. The user has control over the charge current, charge duration, and cutoff temperature.
- Ni-MH Battery Charger (Constant-Current Charge with -dV and TCO): this function implements an advanced Ni-MH battery charger. This charger forces a constant charge current in the battery until the battery voltage, which increases steadily from the beginning of charge, reaches a plateau and decreases by a certain amount (-dV), at which point the charge terminates. The charger also monitors the battery temperature during charge. Battery charging is terminated immediately when the battery temperature reaches a specific cutoff temperature. The user has control over the charge current, voltage drop (-dV), and cutoff temperature.
- Ni-MH Battery Charger (Constant-Current Charge with dT°/dt and TCO): this function implements an advanced Ni-MH battery charger. This charger monitors the battery temperature and forces a constant charge current in the battery until the rate of increase of the battery temperature (dT°/dt) reaches a specific value, at which point the charge terminates. Battery charging can also terminate when the battery temperature reaches a specific cutoff temperature. The user has control over the charge current, maximum rate of temperature increase (dT°/dt), and cutoff temperature.
- Ni-MH Battery Charger (Three-Step Charge with TCO): this function implements a fast Ni-MH battery charger (three-step charge algorithm). Battery charging begins by forcing a constant charge current in the battery until the rate of increase of the battery temperature (dT°/dt) reaches a specific value. At this point, the charger enters the second phase of the charge process and continues battery charging with a constant current having a lower value for a specific period. After this period, battery charging continues with a constant current of very low value. The charger monitors the battery temperature during charge. Battery charging can also terminate when the battery temperature reaches a specific cutoff temperature. The user has control over the charge current for each of the three phases of the charging process, maximum rate of temperature increase (dT°/dt) used during the first phase of charge, duration of the second phase of charge, and cutoff temperature.
- Battery Discharger (Constant-Current Timed Discharge with Voltage Cutoff): this function sinks a constant current from a battery, thereby discharging the battery at a specific rate, during a specific period. The discharger also monitors the battery voltage during discharge. Battery discharging terminates immediately when the battery voltage decreases to a specific cutoff voltage. The user has control over the discharge current, discharge duration, and cutoff voltage.

Specifications

Parameter	Value
Control Functions	
Control Functions	Ni-MH Battery Charger (Constant-Current Charge with Voltage Cutoff and TCO)
	Ni-MH Battery Charger (Constant-Current Timed Charge with TCO)
	Ni-MH Battery Charger (Constant-Current Charge with -dV and TCO)
	Ni-MH Battery Charger (Constant-Current Charge with dT°/dt and TCO)
	Ni-MH Battery Charger (Three-Step Charge with TCO)
	Battery Discharger (Constant-Current Timed Discharge with Voltage Cutoff)
Ni-MH Battery Charger (Constant-Current Charge with Voltage Cutoff and TCO)	
Charge Current	0-5 A
Cutoff Voltage	0-150 V
TCO	20-60°C (68-140°F)
Ni-MH Battery Charger (Constant-Current Timed Charge with TCO)	
Charge Current	0-5 A
Charge Duration	0-100 h
TCO	20-60°C (68-140°F)
Ni-MH Battery Charger (Constant-Current Charge with -dV and TCO)	
Charge Current	0-5 A
-dV	0-10 V
TCO	20-60°C (68-140°F)
Ni-MH Battery Charger (Constant-Current Charge with dT°/dt and TCO)	
Charge Current	0-5 A
dT°/dt	0-10°C/min (0-18°F/min)
TCO	20-60°C (68-140°F)
Ni-MH Battery Charger (Three-Step Charge with TCO)	
TCO	20-60°C (68-140°F)
Step-1 Current	0-5 A
Step-1 dT°/dt	0-10°C/min (0-18°F/min)
Step-2 Current	0-5 A
Step-2 Duration	0-100 min
Step-3 Current	0-5 A
Battery Discharger (Constant-Current Timed Discharge with Voltage Cutoff)	
Discharge Current	0-5 A
Discharge Duration	0-2000 min
Cutoff Voltage	0-150 V

Reflecting the commitment of Festo Didactic to high quality standards in product, design, development, production, installation, and service, our manufacturing and distribution facility has received the ISO 9001 certification.

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