

960W, 20A 12-48Vdc Output UPS DIN Rail Modules

<https://product.tdk.com/en/power/dush>
www.emea.lambda.tdk.com/dush-series



The DUSH960-1248 performs two functions to provide DC backup power in the event of a power loss. Under normal conditions the external AC-DC power supply will provide power to the load. The external power source also keeps the (external) batteries fully charged, via an internal bi-directional DC-DC converter. If the input source to the load is interrupted, the DC-DC converter will maintain a regulated output voltage, using the battery as the power source. Capable of operating from an input voltage of 10 to 60V, the DUSH series can be programmed to provide a regulated 10 to 58V output rated at 20A. Additionally, an unregulated 5A auxiliary output is available (-0M suffix model). Multiple battery technologies can be accommodated, including lead, nickel, lithium and supercapacitors, up to a capacity of 1000Ah. An integrated DC-DC buck/boost converter decouples the battery from the load voltage. The DUSH module can manage the health status of the battery by preventing deep discharging, enabling temperature-compensated charging, and monitoring the internal resistance through the PowerCMC user interface.

Features

- DC-UPS with integrated DC-DC converter
- Wide programmable input & output voltage range
- High Efficiency of up to 98%
- LCD and Modbus Interfaces
- Multiple battery technologies up to 1000Ah

Benefits

- Operates from 10 to 60V Batteries
- Can provide a 10 to 58V Output
- Enables Longer Battery Run Times
- Allows Remote Maintenance and Adjustable Parameters
- Flexible Use

Model Selector

Model	Nominal Output Voltage (V)	Nominal Battery Voltage (V)	Maximum Battery Voltage (V)	Maximum Output Current (A)	Front Panel
DUSH960-1248-0M	12 - 48	12 - 48	10 - 58	20	LCD, Push Buttons & Auxiliary Output
DUSH960-1248-1M	12 - 48	12 - 48	10 - 58	20	LED Indicators

Related Products

Type	Part Number(s)	Description
DUSH960-1248 Temperature Sensor	ACC-DUSH-DTX01-0X	10kΩ NTC sensor, with plug connector, cable length 1m
DUSH960-1248 Temperature Sensor	ACC-DUSH-DTX02-0X	10kΩ NTC sensor, with plug connector, cable length 2m
Redundancy module	DRM40	20 to 40A DIN Rail Redundancy Module
Low power DIN rail power supplies	DRB15, 30, 50, 100	15 to 100W AC-DC DIN rail power supplies
Mid to high power DIN rail power supplies	DRB120, 240, 480	120 to 480W AC-DC DIN rail power supplies
Mid to high power premium DIN rail power supplies	DRF120, 240, 480, 960	120 to 960W AC-DC DIN rail power supplies
3-phase DIN rail power supplies	DRB-3	120 to 960W AC-DC 3-phase DIN rail power supplies
DIN rail mount filters	RSMN	3A to 30A 250Vac 2 stage filters with pulse attenuation
DIN rail mount filters	RSEV	6A to 30A 250Vac 2 stage filters
RSEV DIN rail mounting kit	DIN-RSEV	RSEV DIN rail mounting kit

Specifications			
Model		DUSH960-1248-0M	DUSH960-1248-1M
Input			
Input Voltage Range (Operating)	Vdc	10 - 60	
Input Voltage Range (Nominal)	Vdc	12 - 48	
Charge Current (Maximum)	A	20	
Discharge Current (Maximum)	A	21	
Storage Technologies	-	Lead, Nickel, Lithium, Supercaps. DUSH firmware provides charging profiles	
Hold Up Time	-	Configurable, up to deep-discharge threshold of the battery	
Battery Reverse Input Protection	-	Yes	
Conducted & Radiated EMI	-	EN55032-B CISPR32-B	
Immunity	-	See immunity table	
Safety Certifications and Markings	-	IEC/EN/UL/CSA61010-1, IEC/UL 61010-2-201, IEC/EN/UL/CSA62368-1 (Ed.3), CE Mark and UKCA Mark	

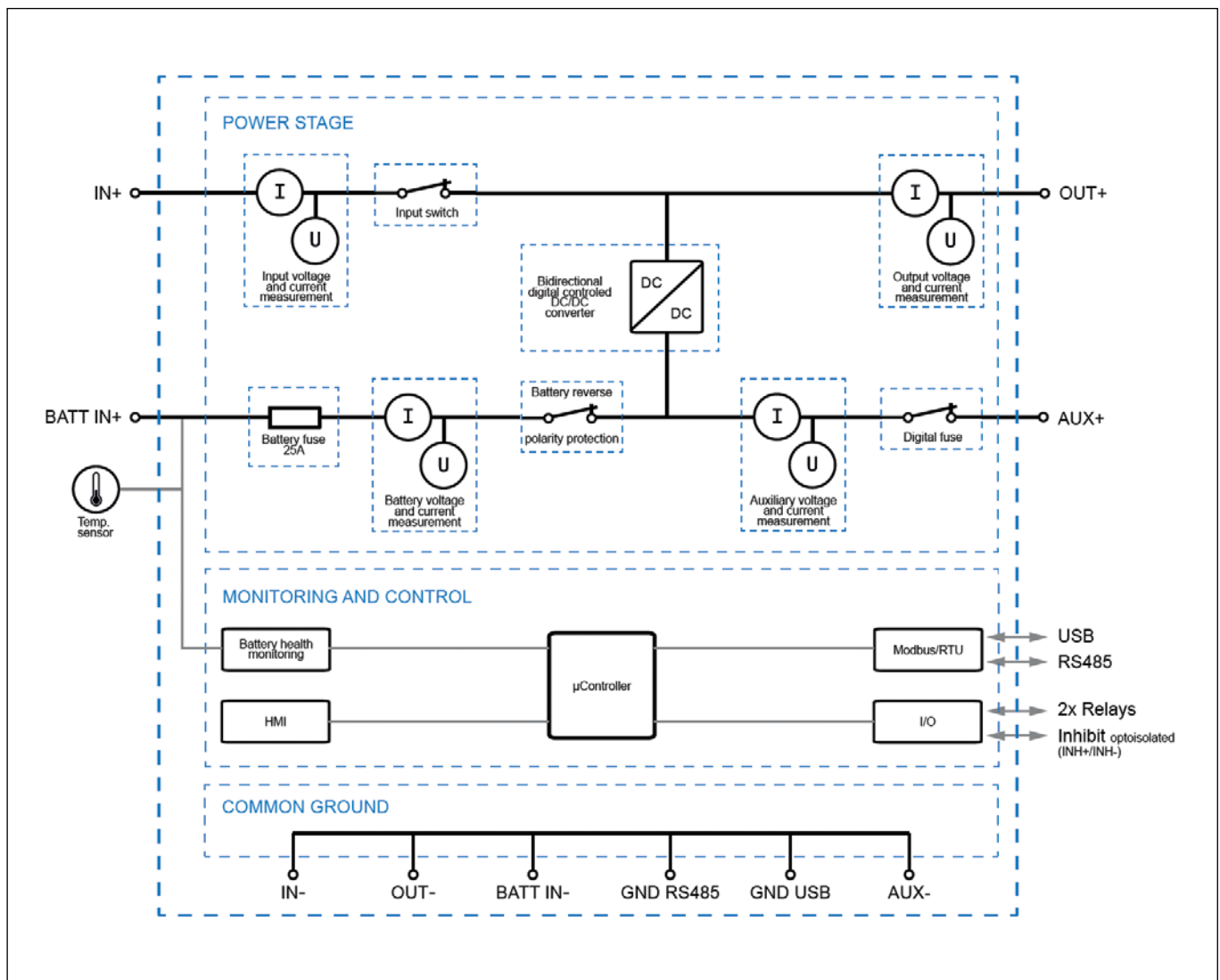
Immunity				
Test	Standard	Test Level	Criteria	Notes
ESD	EN61000-4-2	8kV air, 4kV contact	A	See full report on line
Radiated Susceptibility	EN61000-4-3	10V/m, 3V/m	A	
Electrical Fast Transient Burst	EN61000-4-4	1kV	A	
Magnetic Field	EN61000-4-8	30A/m	A	

Specifications			
Model		DUSH960-1248-0M	DUSH960-1248-1M
Output			
Output Power at 48V	W	960	
Charge Current Range	A	0.5 - 20	
Discharge Current Range	A	0.5 - 21	
Deep Discharge Voltage	V	5 - 58	
Battery Capacity Range	Ah	1 - 1000	
Ripple & Noise	mV(pk-pk)	<690	
Minimum Load	-	No minimum load required	
Overcurrent Protection	A	Normal operation: See input power supply specification. Backup mode: >25	
Overvoltage Protection	V	Normal operation: See input power supply specification. Backup mode: lout_bat <62	
Overtemperature Protection	-	Yes	
Remote On/Off	-	Yes, inhibit or enable, isolated	
Status Signals	-	Via LCD, Modbus or PowerCMC	
Indicators	-	LED on front panel	
Auxiliary Output (DUSH960-1248-0M Model Only)	-	Unregulated 5A output equal to battery discharge voltage	
Parallel Operation	-	Not possible	
Series Operation	-	Not possible	
Interfaces	-	RS485 and USB, Modbus/RTU protocol	
Environmental			
Operating Temperature	°C	-25 to +70. Derate linearly to 15A from 50 to 70	
Storage Temperature	°C	-40 to +85	
Humidity (non condensing)	%RH	Operating and storage: 95 max	
Cooling	-	Convection	
Altitude	m	3000 nominal, 6,000 not safety certified	
Withstand Voltage	-	Non-isolated	
Isolation Resistance	MΩ	Not applicable	
Vibration (Mounted on DIN rail)	-	IEC 60068-2-6. 2g / 10 to 500Hz, 2 hours/direction X,Y,Z	
Shock (Mounted on DIN rail)	-	IEC 60068-2-27. 30g / 11ms ±5ms, 2 bumps/direction, 9 bumps total	

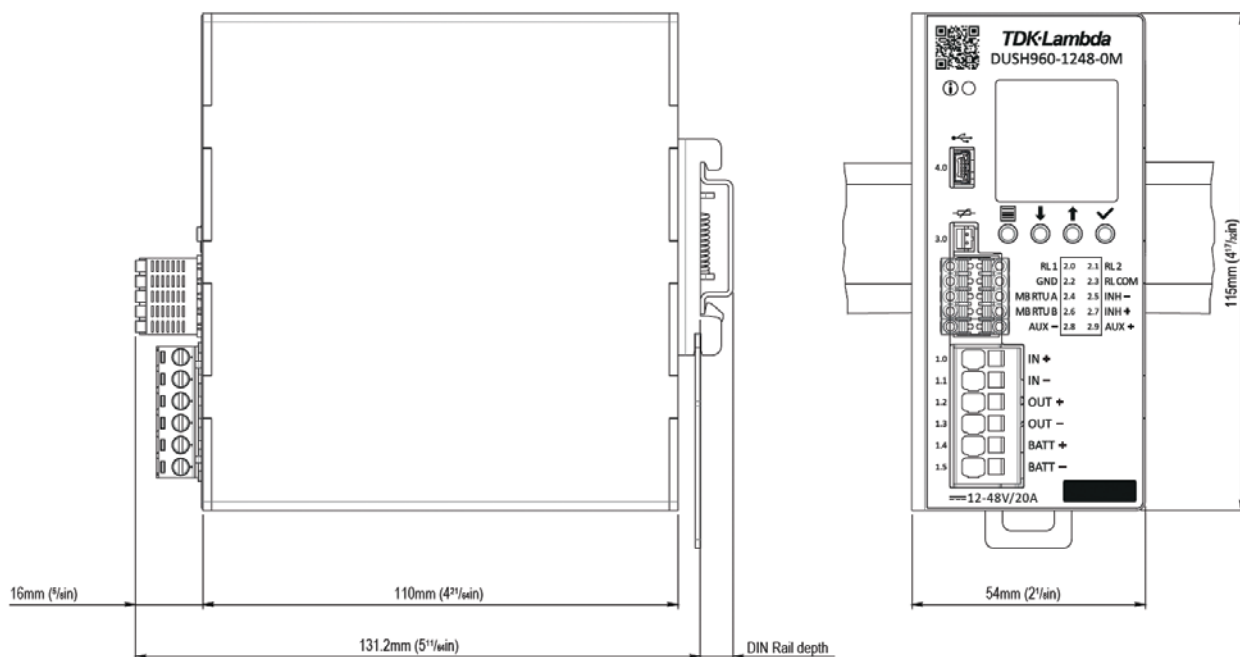
Specifications

Model		DUSH960-1248-0M	DUSH960-1248-1M
Other			
Weight (Typ)	g	500	470
Size (WxHxD)	mm	54 x 115 x 131.2	
Size (WxHxD)	Inches	2.13 x 4.53 x 5.17	
Connectors		Push-in terminals	
DIN Rail Type	-	Suitable for mounting on TS-35/7.5 or TS35/15 DIN Rails	
MTBF - Telcordia SR-332 issue 4 (25°C)	Hours	2,630,000	
Warranty	yrs	3	

DUSH Block Diagram



Outline Drawings



DUSH960-1248-0M dimensions



DUSH960-1248-1M dimensions