

# **UBI-2590 SMBus: Immersion Proof**

## **Technical Datasheet**





#### **Features**

- · Rugged, military tough case construction
- SmartCircuit Technology® Implements SMBus v1.1 smart battery technology
- Flexible output voltage
- State-of-Charge display
- · High energy density
- Enhanced version of UBI-2590 (UBBL02)

#### **Applications**

- · Rugged, portable electronics
- · Robotics / AUVs / UUVs
- · Military communication devices
- AN/PRC-117G, AN/PRC-117F, AN/PRC-119, AN/PSC-5D

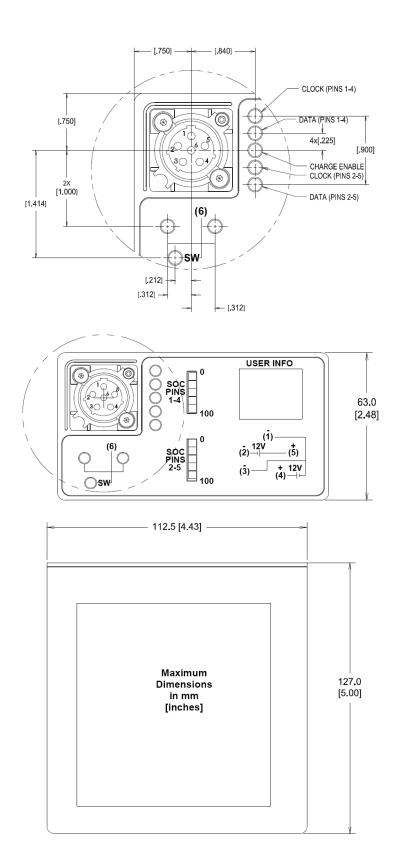
#### **Optional Accessories**

- · UCH0056: Smart Desktop Charger
- · CH0002: COTS Desktop Charger
- · CH0003 or MRC-86: 6-bay Charger
- CH0004 or MRC-85: 2-bay Charger
- MRC-88: 5-bay Charger
- MRC135A: Single Unit Solar Charger
- MRC-143A: 3-Unit Solar Charger
- UKT0011: Portable Battery System
- CA0003: 4 Conductor Cable
- CA0003: Vehicle Adapter
- CA0007: 12V, 2 Conductor Cable
- CA0006: 24V, 2 Conductor Cable

•	CA0008: 12/24V, 4 Conductor Cable
	UCA0039: Shielded Smart Cable

Part No. UBBL10/B  NSN 6140-01-554-2347  Voltage Range 30V Mode: 24.0 to 33.6V 15V Mode: 12.0 to 16.8V  Average Voltage 30V Mode: 28.8V 15V Mode: 14.4AV  Capacity 30V Mode: 7.2Ah @ 0.5A @ 23°C 15V Mode: 14.4Ah @ 1.0A @ 23°C Max. Discharge 30V Mode: 16.0A continuous 15V Mode: 12.0A continuous Max. Pulse Discharge 30V Mode: 18.0A for 5 seconds 15V Mode: 36.0A for 5		
NSN         6140-01-554-2347           Voltage Range         30V Mode: 24.0 to 33.6V           30V Mode: 12.0 to 16.8V           Average Voltage         30V Mode: 28.8V           30V Mode: 12.0 to 16.8V           Average Voltage         30V Mode: 14.4V           Capacity         30V Mode: 14.4AH @ 1.0A @ 23°C           Max. Discharge         30V Mode: 12.0A continuous           15V Mode: 12.0A continuous         15V Mode: 36.0A for 5 seconds           Energy         207Wh           Energy Density         144Wh/kg, 230Wh/l           Weight         1440g           Cycle Life         > 300 cycles @ C/5 to 80% of initial capacity @ 100% depth of discharge           Memory         No Memory Effect           Operating Temperature         -32°C to 60°C           Self-Discharge         < 5% per month           Exterior/Housing         Hard plastic, black (Noryl N190X-701)           Terminals/Connector         Connector SC-C-179495           Communications         SMBus v1.1 communication protocol           SBD v1.0 data set support           State of Charge Indicator         LCD Displays, one for each section - absolute capacity based on design capacity           Safety         Material Safety Datasheet - MSDS041           Refer also to Safety Guide UBI-S112	Technical Specifications	
Voltage Range	Part No.	UBBL10/B
Average Voltage  30V Mode: 28.8V 15V Mode: 14.4V  Capacity  30V Mode: 7.2Ah @ 0.5A @ 23°C 15V Mode: 11.4Ah @ 1.0A @ 23°C Max. Discharge  30V Mode: 12.0A continuous 15V Mode: 12.0A continuous 15V Mode: 12.0A continuous 15V Mode: 18.0A for 5 seconds 15V Mode: 36.0A for 5 second	NSN	6140-01-554-2347
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Max. Discharge  30V Mode: 14.4Ah @ 1.0A @ 23°C  Max. Pulse Discharge  30V Mode: 12.0A continuous 15V Mode: 36.0A for 5 seconds  Energy  207Wh  Energy Density  144Wh/kg, 230Wh/I  Weight  1440g  Cycle Life  > 300 cycles @ C/5 to 80% of initial capacity @ 100% depth of discharge  Memory  No Memory Effect  Operating Temperature  -32°C to 60°C  Storage Temperature  -32°C to 60°C  Self-Discharge  < 5% per month  Exterior/Housing  Hard plastic, black (Noryl N190X-701)  Terminals/Connector  Connector SC-C-179495  Communications  SMBus v1.1 communication protocol SBD v1.0 data set support  State of Charge Indicator  LCD Displays, one for each section - absolute capacity based on design capacity  Material Safety Datasheet - MSDS041 Refer also to Safety Guide UBI-5112  Transportation  Class 9 International and within U.S. unless shipped by motorcar or rail within U.S. (see note)  Qualification  Compliant to MIL-STD-810G 512.5 Shallow 4.1 (1 Meter)  Harmonized Tariff Code  Protection  Over Voltage Limit: 4.30V (per cell) Over Current Protection: 19.0A Re-setatable Fuse: Activates @ 70°±5°C Re-sets @ 55°±5°C One-Time Thermal Fuse: Activates @ 91°±4°C  Charging  Recommended charge rate is 3.0.A to max voltage of 16.8V in a temperature range of 0°C to 45°C. Hold at 16.8V until cyrrent declines to 300mA. Max	Average Voltage	
15V Mode: 12.0A continuous	Capacity	
Energy 207Wh Energy Density 144Wh/kg, 230Wh/I Weight 1440g Cycle Life > 300 cycles @ C/5 to 80% of initial capacity @ 100% depth of discharge Memory No Memory Effect Operating Temperature -32°C to 60°C Self-Discharge < 5% per month Exterior/Housing Hard plastic, black (Noryl N190X-701) Terminals/Connector Connector SC-C-179495 Communications SMBus v1.1 communication protocol SBD v1.0 data set support State of Charge Indicator LCD Displays, one for each section - absolute capacity based on design capacity Material Safety Datasheet - MSDS041 Refer also to Safety Guide UBI-5112 Transportation Class 9 International and within U.S. unless shipped by motorcar or rail within U.S. (see note) Qualification Compliant to MIL-STD-810G 512.5 Shallow 4.1 (1 Meter) Harmonized Tariff Code 8507.80.0000 Protection Over Voltage Limit: 4.30V (per cell) Under Voltage Limit: 2.40V (per cell) Over Current Protection: 19.0A Re-setatable Fuse: Activates @ 70°±5°C Re-sets @ 55°±5°C One-Time Thermal Fuse: Activates @ 91°±4°C Charging Recommended charge rate is 3.0A to max voltage of 16.8V in a temperature range of 0°C to 45°C. Hold at 16.8V until cyrrent declines to 300mA. Max	Max. Discharge	
Energy Density  144Wh/kg, 230Wh/l  Weight  1440g  Cycle Life  > 300 cycles @ C/5 to 80% of initial capacity @ 100% depth of discharge  Memory  No Memory Effect  Operating Temperature  -32°C to 60°C  Storage Temperature  -32°C to 60°C  Self-Discharge    Arac plastic, black (Noryl N190X-701)  Terminals/Connector  Connector SC-C-179495  Communications  SMBus v1.1 communication protocol SBD v1.0 data set support  State of Charge Indicator  LCD Displays, one for each section - absolute capacity based on design capacity  Safety  Material Safety Datasheet - MSDS041 Refer also to Safety Guide UBI-5112  Transportation  Class 9 International and within U.S. unless shipped by motorcar or rail within U.S. (see note)  Qualification  Compliant to MIL-STD-810G 512.5 Shallow 4.1 (1 Meter)  Harmonized Tariff Code  Protection  Over Voltage Limit: 2.40V (per cell)	Max. Pulse Discharge	
Weight     1440g       Cycle Life     > 300 cycles @ C/5 to 80% of initial capacity @ 100% depth of discharge       Memory     No Memory Effect       Operating Temperature     -32°C to 60°C       Storage Temperature     -32°C to 60°C       Self-Discharge     < 5% per month	Energy	
Cycle Life       > 300 cycles @ C/5 to 80% of initial capacity @ 100% depth of discharge         Memory       No Memory Effect         Operating Temperature       -32°C to 60°C         Storage Temperature       -32°C to 60°C         Self-Discharge       < 5% per month		144Wh/kg, 230Wh/l
Memory No Memory Effect Operating Temperature -32°C to 60°C Storage Temperature -32°C to 60°C Self-Discharge < 5% per month Exterior/Housing Hard plastic, black (Noryl N190X-701) Terminals/Connector Connector SC-C-179495 Communications SMBus v1.1 communication protocol SBD v1.0 data set support State of Charge Indicator LCD Displays, one for each section - absolute capacity based on design capacity Safety Material Safety Datasheet - MSDS041 Refer also to Safety Guide UBI-5112 Transportation Class 9 International and within U.S. unless shipped by motorcar or rail within U.S. (see note) Qualification Compliant to MIL-STD-810G 512.5 Shallow 4.1 (1 Meter) Harmonized Tariff Code 8507.80.0000 Protection Over Voltage Limit: 4.30V (per cell) Under Voltage Limit: 2.40V (per cell) Over Current Protection: 19.0A Re-setatable Fuse: Activates @ 70°±5°C Re-sets @ 55°±5°C One-Time Thermal Fuse: Activates @ 91°±4°C Charging Recommended charge rate is 3.0A to max voltage of 16.8V in a temperature range of 0°C to 45°C. Hold at 16.8V until cyrrent declines to 300mA. Max	Weight	9
Operating Temperature       -32°C to 60°C         Storage Temperature       -32°C to 60°C         Self-Discharge       < 5% per month	Cycle Life	
Storage Temperature -32°C to 60°C Self-Discharge - 5% per month Exterior/Housing Hard plastic, black (Noryl N190X-701) Terminals/Connector Connector SC-C-179495 Communications SMBus v1.1 communication protocol SBD v1.0 data set support State of Charge Indicator LCD Displays, one for each section - absolute capacity based on design capacity  Safety Material Safety Datasheet - MSDS041 Refer also to Safety Guide UBI-5112 Transportation Class 9 International and within U.S. unless shipped by motorcar or rail within U.S. (see note)  Qualification Compliant to MIL-STD-810G 512.5 Shallow 4.1 (1 Meter)  Harmonized Tariff Code 8507.80.0000  Protection Over Voltage Limit: 4.30V (per cell) Under Voltage Limit: 2.40V (per cell) Over Current Protection: 19.0A Re-setatable Fuse: Activates @ 70°±5°C Re-sets @ 55°±5°C One-Time Thermal Fuse: Activates @ 91°±4°C  Charging Recommended charge rate is 3.0A to max voltage of 16.8V in a temperature range of 0°C to 45°C. Hold at 16.8V until cyrrent declines to 300mA. Max	Memory	No Memory Effect
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Terminals/Connector Communications SMBus v1.1 communication protocol SBD v1.0 data set support  LCD Displays, one for each section - absolute capacity based on design capacity  Material Safety Datasheet - MSDS041 Refer also to Safety Guide UBI-5112  Transportation Class 9 International and within U.S. unless shipped by motorcar or rail within U.S. (see note)  Qualification Compliant to MIL-STD-810G 512.5 Shallow 4.1 (1 Meter)  Harmonized Tariff Code 8507.80.0000  Protection Over Voltage Limit: 4.30V (per cell) Under Voltage Limit: 2.40V (per cell) Over Current Protection: 19.0A Re-setatable Fuse: Activates @ 70°±5°C Re-sets @ 55°±5°C One-Time Thermal Fuse: Activates @ 91°±4°C  Charging Recommended charge rate is 3.0A to max voltage of 16.8V in a temperature range of 0°C to 45°C. Hold at 16.8V until cyrrent declines to 300mA. Max	Self-Discharge	< 5% per month
Communications       SMBus v1.1 communication protocol SBD v1.0 data set support         State of Charge Indicator       LCD Displays, one for each section - absolute capacity based on design capacity         Safety       Material Safety Datasheet - MSDS041 Refer also to Safety Guide UBI-5112         Transportation       Class 9 International and within U.S. unless shipped by motorcar or rail within U.S. (see note)         Qualification       Compliant to MIL-STD-810G 512.5 Shallow 4.1 (1 Meter)         Harmonized Tariff Code       8507.80.0000         Protection       Over Voltage Limit: 4.30V (per cell) Under Voltage Limit: 2.40V (per cell) Over Current Protection: 19.0A Re-setatable Fuse: Activates @ 70°±5°C Re-sets @ 55°±5°C One-Time Thermal Fuse: Activates @ 91°±4°C         Charging       Recommended charge rate is 3.0A to max voltage of 16.8V in a temperature range of 0°C to 45°C. Hold at 16.8V until cyrrent declines to 300mA. Max	Exterior/Housing	Hard plastic, black (Noryl N190X-701)
SBD v1.0 data set support  LCD Displays, one for each section - absolute capacity based on design capacity  Safety  Material Safety Datasheet - MSDS041 Refer also to Safety Guide UBI-5112  Transportation  Class 9 International and within U.S. unless shipped by motorcar or rail within U.S. (see note)  Qualification  Compliant to MIL-STD-810G 512.5 Shallow 4.1 (1 Meter)  Harmonized Tariff Code  8507.80.0000  Protection  Over Voltage Limit: 4.30V (per cell) Under Voltage Limit: 2.40V (per cell) Over Current Protection: 19.0A Re-setatable Fuse: Activates @ 70°±5°C Re-sets @ 55°±5°C One-Time Thermal Fuse: Activates @ 91°±4°C  Charging  Recommended charge rate is 3.0A to max voltage of 16.8V in a temperature range of 0°C to 45°C. Hold at 16.8V until cyrrent declines to 300mA. Max	Terminals/Connector	Connector SC-C-179495
Capacity based on design capacity  Material Safety Datasheet - MSDS041 Refer also to Safety Guide UBI-5112  Transportation  Class 9 International and within U.S. unless shipped by motorcar or rail within U.S. (see note)  Qualification  Compliant to MIL-STD-810G 512.5 Shallow 4.1 (1 Meter)  Harmonized Tariff Code  8507.80.0000  Protection  Over Voltage Limit: 4.30V (per cell) Under Voltage Limit: 2.40V (per cell) Over Current Protection: 19.0A Re-setatable Fuse: Activates @ 70°±5°C Re-sets @ 55°±5°C One-Time Thermal Fuse: Activates @ 91°±4°C  Charging  Recommended charge rate is 3.0A to max voltage of 16.8V in a temperature range of 0°C to 45°C. Hold at 16.8V until cyrrent declines to 300mA. Max	Communications	
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by motorcar or rail within U.S. (see note)  Qualification  Compliant to MIL-STD-810G 512.5 Shallow 4.1 (1 Meter)  Harmonized Tariff Code  8507.80.0000  Protection  Over Voltage Limit: 4.30V (per cell) Under Voltage Limit: 2.40V (per cell) Over Current Protection: 19.0A Re-setatable Fuse: Activates @ 70°±5°C Re-sets @ 55°±5°C One-Time Thermal Fuse: Activates @ 91°±4°C  Charging  Recommended charge rate is 3.0A to max voltage of 16.8V in a temperature range of 0°C to 45°C. Hold at 16.8V until cyrrent declines to 300mA. Max	Safety	
(1 Meter)  Harmonized Tariff Code 8507.80.0000  Protection Over Voltage Limit: 4.30V (per cell) Under Voltage Limit: 2.40V (per cell) Over Current Protection: 19.0A Re-setatable Fuse: Activates @ 70°±5°C Re-sets @ 55°±5°C One-Time Thermal Fuse: Activates @ 91°±4°C  Charging Recommended charge rate is 3.0A to max voltage of 16.8V in a temperature range of 0°C to 45°C. Hold at 16.8V until cyrrent declines to 300mA. Max	Transportation	
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Under Voltage Limit: 2.40V (per cell) Over Current Protection: 19.0A Re-setatable Fuse: Activates @ 70°±5°C Re-sets @ 55°±5°C One-Time Thermal Fuse: Activates @ 91°±4°C  Charging  Recommended charge rate is 3.0A to max voltage of 16.8V in a temperature range of 0°C to 45°C. Hold at 16.8V until cyrrent declines to 300mA. Max	Harmonized Tariff Code	8507.80.0000
of 16.8V in a temperature range of 0°C to 45°C. Hold at 16.8V until cyrrent declines to 300mA. Max	Protection	Under Voltage Limit: 2.40V (per cell) Over Current Protection: 19.0A Re-setatable Fuse: Activates @ 70°±5°C Re-sets @ 55°±5°C
	Charging	of 16.8V in a temperature range of 0°C to 45°C. Hold at 16.8V until cyrrent declines to 300mA. Max

## **Dimensions**



## **Performance Graphs**

