BXL Series

Battery Extra Load Units

- Used in a system with BLU device to increase load capacity
- Lightweight – starting from 12,5 kg (28 lbs.)
- Powerful – discharge power of up to 35 kW
- Voltage measurement range: up to 480 V DC
- Discharge current – up to 310 A DC
- Measurement resolution – current 1 A, voltage 1 V
- Discharge process controlled by BLU device
- Connects to battery terminals and parallel to BLU device

Description

Battery Extra Load Units BXL Series are designed as an additional load to be used with BLU series if required discharge current or power exceeds the capacity of available BLU device(s). BXL Series devices are based on a state-of-the-art technology - the most advanced power electronics solutions are used as well as 6-8 fans which are integrated into the device. BXL Series are powerful devices which provide high discharge currents (up to 310 A DC) applicable up to 480 V DC battery systems. System of a BLU and BXL enables performing the capacity test in an accurate, user-friendly way in accordance to battery testing standards (IEEE 450-2010 / 1188-2005 / 1106-2015, IEC 60896-11/22 and other relevant standards).

A BLU device (in a BLU-BXL system) ensures control of the discharge process. BXL simulates constant resistance load during the discharge test – its load parameter (resistance) can be set prior the discharge test. BXL provides flexibility in selecting its load capacities – several resistances can be set for most of nominal battery voltages.

Overview of the maximum currents for various battery voltage ranges with the minimum achievable cell voltage of 1,75 V is presented in the Table 1.

Application

Typical application is supporting a BLU device as an additional load in measuring the capacity of the batteries that serve as a backup power supply in (but not limited to):

- Power plants
- Telecommunication systems
- Generator excitation systems
- Substations
- Protection and control systems

Battery voltage (V)		Maximum currents (A)		
Nom.	Min/Max	BXL-A	BXL-T	BXL-V
6	5,25	59	74	11
	7,05	80	100	15
12	10,5	119	156	26
	14,1	160	210	35
24	21,0	186	230	55
	28,2	250	310	75
48	42,0	186	230	115
	56,4	250	310	155
60	52,5	81	-	141
	70,5	110		190
110	96,3	119	-	96
	129,3	160		130
120	105,0	134	-	107
	141,0	180		145
220	192,5	67	-	85
	258,5	90		115
240	210,0	67	-	93
	282,0	90		125
480	300,0	-	-	34
	480,0			55
Weight (kg / lbs)		12,5 / 28	12,5 / 28	16 / 35
Max Power (kW)		25,4	17,5	35,0

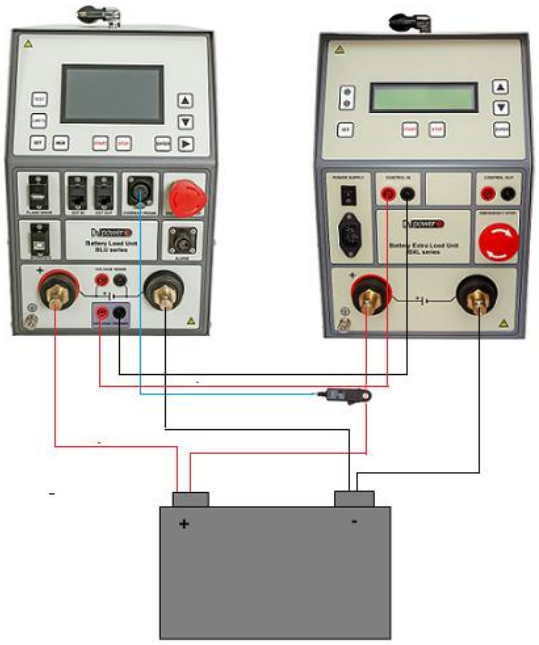
Table 1

Connecting BXL to Battery

The BXL devices should be connected to a battery system at the same points as a BLU device – BLU, BXL and the battery are all connected in parallel. The current clamp needs to be used in order to provide the information to BLU on current drawn from the battery by BXL. The BLU regulates discharge process according to current value measured by the current clamp.

Connection between BLU and BXL device is established by the EXT LOAD TRIGGER channel on a BLU instrument (as show in the Figure 1), enabling the discharge process on BXL to start simultaneously with a BLU and be initiated by a BLU.

In case of multiple BXL devices connection, channels CONTROL OUT/IN are used for the discharge process triggering. Number of BXL devices that can be used with a BLU is not limited – the only limitation is the maximum current that can be measured by the available current clamp.



Figures 1: BLU + BXL to battery connection diagram

BXL Series - models

BXL-A

- designed for parallel operation with BLU-A series
- applicable to 6 V – 300 V DC battery systems
- weight – 12,5 kg (28 lbs.)
- discharge power – up to 25,4 kW
- discharge current – up to 250 A

BXL-T

- designed for parallel operation with BLU220T device
- applicable to 6 V – 48 V DC battery systems
- weight – 12,5 kg (28 lbs.)
- discharge power – up to 17,5 kW
- discharge current – up to 310 A

BXL-V

- designed for parallel operation with BLU360V device
- applicable to 6 V – 480 V DC battery systems
- weight – 16,0 kg (35 lbs.)
- discharge power – up to 35 kW
- discharge current – up to 190 A

Accessories

Current cables

Extension cables

Transport case

Cable bag

Cable set for BLU-BXL simultaneous triggering

Technical Data

Mains Power Supply

- Connection according to IEC/EN60320-1; C320
- Voltage:
  90 V – 264 V AC, 50 / 60 Hz, single-phase
- Input power: 200 VA
- Fuse 2 A / 250 V, type F

Dimensions and Weights

Model	Dimensions	Weight
BXL-A	560 x 221 x 355 mm 22 x 8.7 x 14 in	12,5 kg 28 lbs.
BXL-T	560 x 221 x 355 mm 22 x 8.7 x 14 in	12,5 kg 28 lbs.
BXL-V	730 x 221 x 355 mm 28.7 x 8.7 x 14 in	16 kg 35 lbs.

Maximum discharge current & power

Model	Current	Power
BXL-A	250 A	25,4 kW
BXL-T	310 A	17,5 kW
BXL-V	190 A	35 kW

Measurement

Internal voltage measurement

Model	Range	Resolution
BXL-A	0 – 300 V DC	1 V
BXL-T	0 – 60 V DC	1 V
BXL-V	0 – 480 V DC	1 V

- Typical accuracy: ± 0,5% of reading ± 1 V

Internal current measurement

Model	Range	Resolution
BXL-A	0 – 300 A DC	1 A
BXL-T	0 – 450 A DC	1 A
BXL-V	0 – 250 A DC	1 A

- Typical accuracy: ± 0,5% of reading ± 1 A

Warranty

- 3 years

Display

- LCD screen 16 characters by 2 lines,
- LCD display with backlight, visible in bright sunlight

Environment conditions

- Operating temperature:
  -10 °C to +45 °C / 14 °F to +113 °F
- Storage & Transportation temperature:
  -40 °C to +70 °C / -40 °F to +158 °F
- Maximum relative humidity 95% for temperatures up to 31 °C (88 °F), decreasing linearly to 40% relative humidity at 55 °C (131 °F)
- Pollution degree: 2

Applicable Standards (for BLU-BXL system)

- IEEE 450-2010, IEEE 1188-2005, IEEE 1106-2015, IEC 60896-11, IEC 60896-22 and other relevant standards
- Installation/overvoltage: category II
- Pollution: degree 2
- Safety
  - Low Voltage Directive:
    Directive 2014/35/EU (CE conform)
    Applicable standards, for a class I instrument, pollution degree 2, Installation category II: IEC EN 61010-1
- Electromagnetic Compatibility:
  - Directive 2014/30/EU (CE conform)
    Applicable standard: EN 61326-1
- CAN/CSA-C22.2 No. 61010-1

All specifications herein are valid at ambient temperature of + 25 °C /+ 77°F and recommended accessories.
Specifications are subject to change without notice

Order Info

Instrument	Article No
Battery Extra Load Unit BXL-A	BXL400X-A-00
Battery Extra Load Unit BXL-T	BXL400X-T-00
Battery Extra Load Unit BXL-V	BXL400X-V-00

Included Accessories	Article No
Mains Power cable	MPCXXA-XX-00
Ground (PE) cable	CABLE-GND-00
Transport case (*for BXL-A and BXL-T models*)	HARD-CASE-BL
Transport case (*for BXL-V model*)	HARD-CASE-B1
Recommended	**Article No**
Current cables 2 x 3 m 35 mm^2 (9.84 ft., 2 AWG) with alligator clamps (A4) isolated (*for BXL-A and BXL-V models*)	C2-03-35VA4I
Current cables 2 x 3 m 50 mm^2 (9.84 ft., 0 AWG) with alligator clamps (A4) isolated (*for BXL-T model*)	C2-03-50FA4I
Cable bag	CABLE-BAG-00

Optional	Article No
Cable set 2 x 2 m 1 mm^2 (6.56 ft., 17 AWG) for BLU-BXL simultaneous triggering (*all models*)	PO-02-01BPBP
Cable set 2 x 5 m 1 mm^2 (16.4 ft., 17 AWG) for BLU-BXL simultaneous triggering (*all models*)	PO-05-01BPBP
Current cables 2 x 3 m 50 mm^2 (9.84 ft., 0 AWG) with alligator clamps (A4) isolated (*for BXL-A and BXL-V models*)	C2-03-50VA4I
Current cables 2 x 5 m 35 mm^2 (16.4 ft., 2 AWG) with alligator clamps (A4) isolated (*for BXL-A and BXL-V models*)	C2-05-35VA4I
Current cables 2 x 5 m 50 mm^2 (16.4 ft., 0 AWG) with alligator clamps (A4) isolated (*for BXL-A and BXL-V models*)	C2-05-50VA4I
Current cables 2 x 5 m 70 mm^2 (16.4 ft., 00 AWG) with alligator clamps (A4) isolated (*for BXL-T model*)	C2-05-70FA4I
Extension cables 2 x 5 m 35 mm^2 (16.4 ft., 2 AWG) (*for BXL-A and BXL-V models*)	E2-05-35VA3I
Extension cables 2 x 5 m 70 mm^2 (16.4 ft., 00 AWG) (*for BXL-T model*)	E2-05-70VFMI

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