TORKEL 820

Battery Load Unit

Programma®

TORKEL 820 – Telecom

Battery load unit

During a power outage, crucial telecommunication and radio equipment must be kept operating by batteries. Unfortunately, however, the capacity of such batteries can drop significantly for a number of reasons before their calculated life expectancy is reached. Battery capacity should thus be checked to prevent expensive downtime in the event of a power failure.

The most reliable way to determine battery capacity is to conduct a discharge test. The TORKEL™820 Battery Load Unit features a unique design that combines efficiency with portability. Using TORKEL 820 you can discharge 24 and 48 V batteries at a current of 270 A, and 12 V batteries at 135 A. Moreover, two or more TORKEL 820 units and/or extra load units, TXL, can be linked together if you need higher current. Discharging proceeds at constant current, constant power or constant resistance, or in accordance with a pre-selected load profile.

TORKEL 820 issues a warning and/or shuts down the test automatically when a) the voltage has dropped to a certain level, b) discharging has continued through a certain time interval or c) a certain amount of capacity has been dissipated.

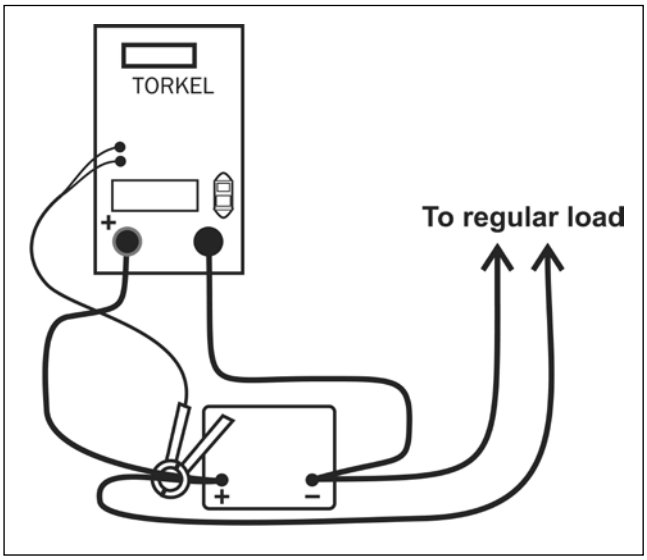
Application example

IMPORTANT

Read the User's manual before using the instrument.

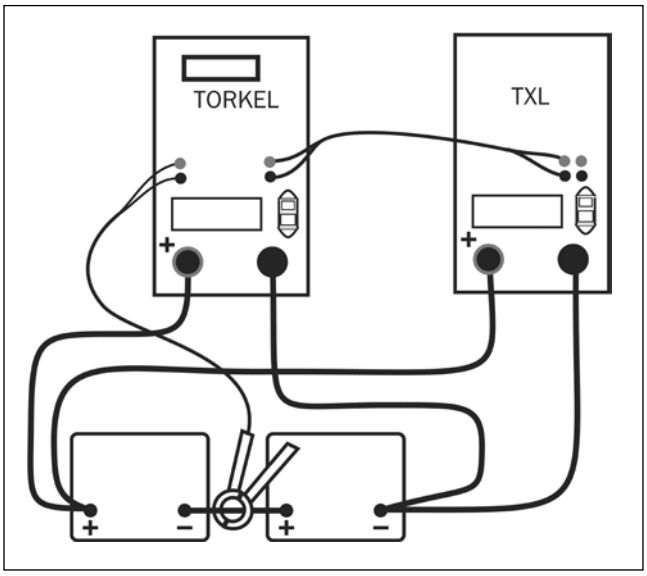
Testing can be carried out without disconnecting the battery from the equipment it serves. Via a DC clamp-on ammeter, TORKEL 820 measures total battery current while regulating it at a constant level.

1. Connect TORKEL 820 to battery.
2. Set the current and voltage alarm level
3. Start discharging. TORKEL 820 keeps the current constant at the preset level.
4. When the voltage drops to a level slightly above the final voltage, TORKEL 820 issues an alarm.
5. If the voltage drops low enough so that there is risk of deepdischarging the battery, TORKEL 820 shuts down the test. The total voltage curve and the readings taken at the end of the test are stored in TORKEL 820. Later, using the TORKEL Win program which runs on a PC under Windows®, you can transfer these readings to your computer for storage, printout or export. If your PC is connected to TORKEL 820 during the test, TORKEL Win builds up a voltage curve on the screen in real time and displays the current, voltage and capacity readings. You can also control the test using TORKEL Win.

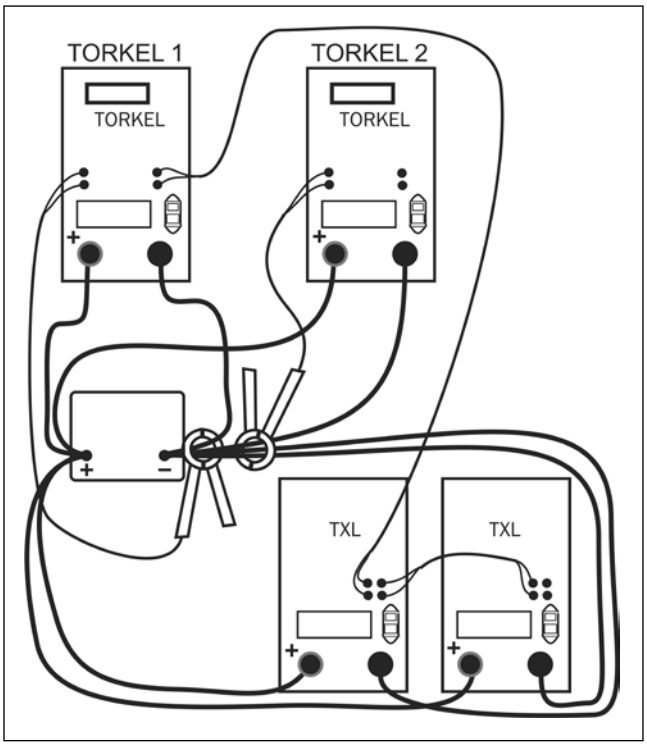


Application examples with TORKEL/TXL systems

TORKEL and TXL can be combined into systems to match up for different battery capacities. Here are two examples, you can find more in the section Battery Testing Accessories.



TORKEL and the extra load TXL



Example of multiple TORKEL and TXL arrangement

Specifications TORKEL 820

Specifications are valid at nominal input voltage and an ambient temperature of +25°C, (77°F). Specifications are subject to change without notice.

Environment

Application field	The instrument is intended for use in high-voltage substations and industrial environments.
Temperature	
Operating	0°C to +40°C (32°F to +104°F)
Storage & transport	-40°C to +70°C (-40°F to +158°F)
Humidity	5% – 95% RH, non-condensing

CE-marking

Safety standards	IEC 61010-1:2001 Incl. national dev. for US and CA EN 61010-1:2001
EMC standards	EN 61326: 1997+A1:1998+A2:2001

General

Mains voltage	100 – 240 V AC, 50/60 Hz
Power consumption (max)	150 W
Protection	Thermal cut-outs, automatic overload protection
Dimensions	
Instrument	210 x 353 x 700 mm (8.3" x 13.9" x 27.6")
Transport case	265 x 460 x 750 mm (10.4" x 18.1" x 29.5")
Weight	22.3 kg (49.2 lbs) 40.4 kg (89.1 lbs) with accessories and transport case
Display	LCD
Available languages	English, French, German, Spanish, Swedish

Measurement section

Current measurement

Display range	0.0 – 2999 A
Basic inaccuracy	±(0.5% of reading +0.2 A)
Resolution	0.1 A

Internal current measurement

Range	0 – 270 A

Input for clamp-on ammeter

Range	0 – 1 V
mV/A-ratio	Software settable, 0.3 to 19.9 mV/A
Input impedance	>1 MΩ

Voltage measurement

Display range 0.0 – 60 V

Basic inaccuracy	±(0.5% of reading +0.1 V)
Resolution	0.1 V

Display range 0.0 – 500 V

Basic inaccuracy	±(0.5% of reading +1 V)
Resolution	0.1 V

Time measurement

Basic inaccuracy	±0.1% of reading ±1 digit

Load section

Battery voltage	10 – 60 V DC
Max. current	270 A
Max. power	15 kW
Load patterns	Constant current, constant power, constant resistance, current or power profile
Current setting	0-270.0 A (2999.9 A) [1]
Power setting	0-15.00 kW (299.99 kW) [1]
Resistance setting	0.1-2999.8 Ω
Battery voltage range	2 ranges, selected automatically at start of test
Stabilization (For internal current measurement)	±(0.5% of reading + 0.5 A)

	Battery voltage	***Highest permissible current***	***Resistor element (Nominal values)***
Range 1	10 – 27.6 V	270 A	0.069 Ω
Range 2	10 – 55.2 V	270 A	0.138 Ω

1) Maximum value for a system with more than one load unit

Inputs, maximal values

EXTERNAL CURRENT MEASUREMENT	1 V DC, 300 V DC to ground. Current shunt should be connected to the negative side of the battery
START/STOP	Closing/opening contact Closing and then opening the contact will start/stop Torkel. It is not possible to keep the contacts in closed position.
Delay until start	200 – 300 ms
Stop delay	100 – 200 ms
Battery	60 V DC, 500 V DC to ground
VOLTAGE SENSE	60 V DC, 500 V DC to ground
SERIAL	< 15 V
ALARM	250 V DC 0.28 A 28 V DC 8 A 250 V AC 8 A

Outputs, maximal values

START/STOP	5 V, 6 mA
TXL	Relay contact
SERIAL	< 15 V
ALARM	Relay contact

Discharging capacity, examples		
12 V battery (6 cells) [2)]		
Final voltage	***Constant cur-***	***Constant power***
1.80 V/cell (10.8 V)	0 – 121 A	0 – 1.31 kW
1.75 V/cell (10.5 V)	0 – 117 A	0 – 1.23 kW
1.67 V/cell (10.0 V)	0 – 110 A	0 – 1.10 kW
24 V battery (12 cells) [2)]		
1.80 V/cell (21.6 V)	0 – 270 A	0 – 5.8 kW
1.75 V/cell (21.0 V)	0 – 266 A	0 – 5.59 kW
1.60 V/cell (19.2 V)	0 – 241 A	0 – 4.63 kW
48 V battery (24 cells) [2)]		
1.80 V/cell (43.2 V)	0 – 270 A	0 – 11.6 kW
1.75 V/cell (42.0 V)	0 – 270 A	0 – 11.3 kW
1.60 V/cell (38.4 V)	0 – 259 A	0 – 9,9 kW

2) 2.15 V per cell when test starts

Cable set, GA-00554

Ordering information

	Art.No.
TORKEL 820	
Complete with:	
Cable set GA-00554	
Transport case GD-00054	**BS-49092**
Optional accessories	
See section "Battery Testing Accessories"	

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