

PULS

DC BACKUP SOLUTIONS

Reliable DC Backup Power for Critical Loads



pulspower.us

DC-UPS with Battery Storage

BE PREPARED FOR THE NEXT POWER DISRUPTION



The installation of a DC-UPS system requires three essential elements: a power supply, a DC-UPS controller and a battery.

PULS **DC-UPS controllers** increase system reliability and prevent unplanned and expensive downtime, as well as **a loss of data.**

DC-UPS controllers are responsible for monitoring and charging the batteries, as well as controlling the seamless transition between normal and buffer mode. They bridge power failures or voltage fluctuations **from minutes to hours to days.**

ADVANTAGES OF PULS DC-UPS CONTROLLERS:

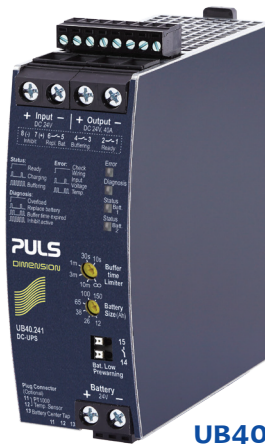
- » **1-Battery Concept:** Each Battery is Individually Charged & Monitored to Maximize Battery Life
- » No Need for Matched Batteries
- » Output De-coupled from the Input, Allowing Buffered & Unbuffered Branches
- » 50% Power Reserves for 5 Seconds
- » Fixed Output Voltage in Backup Mode for 10 A & 20 A Models
- » 22.5-26 V Adjustable Output Voltage in Backup Mode for the UB20.241
- » Selectable Backup Time Limiter to Extend Battery Life (on select models)



UB10.241



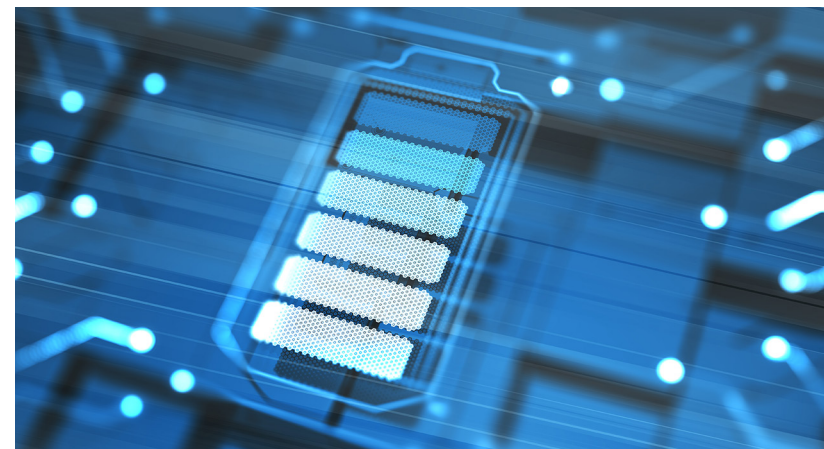
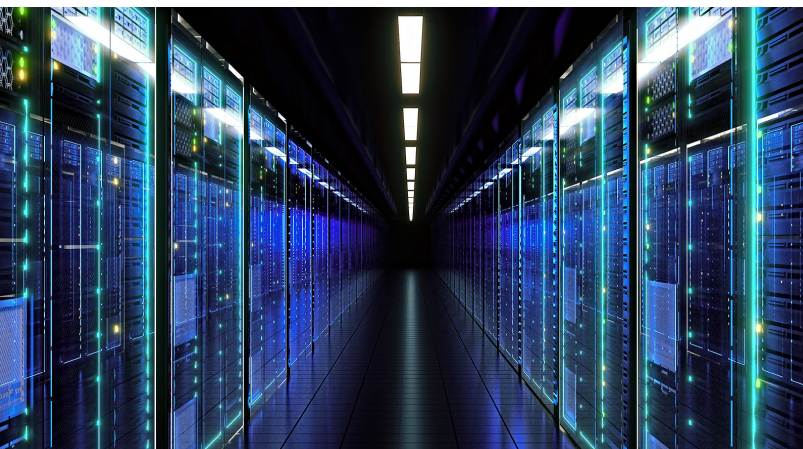
UB20.241



UB40.241



UBC10.241



DC-UPS with Battery Storage

WATCH THE DC-UPS VIDEO



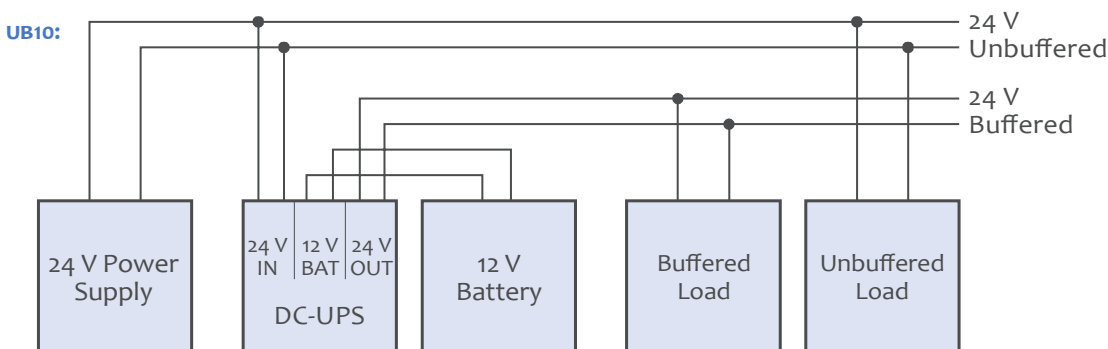
Output Voltage	Output Current	Catalog Number	Width (mm)	Battery Requirements	Note
24 V	10 A	UBC10.241	123.0	Integrated, 12 V, 5 Ah	Battery Included
		UBC10.241-N1		External, 12 V, 5 Ah	
		UB10.241	49.0	External, 12 V, 3.9-40 Ah	Battery Not Included
		UB10.242		External, 12 V, 17-130 Ah	
24 V / 12 V	10 A / 5 A	UB10.245	46.0	External, 12 V, 3.9-40 Ah	
24-26 V	20 A	UB20.241		External, (2) 12 V, 3.9-150 Ah	
24 V	40 A	UB40.241		External, (2) 12 V, 12-200 Ah	

NOTE: All UPS controllers and buffer modules require a 24VDC input from a power supply or other source

Backup Times

Backup Current	0.5 A	1 A	3 A	5 A	7 A	10 A	15 A	20 A	40 A
UBC10.241	3 h 50 min	2 h	30 min	16 min	11 min	6 min	-	-	-
UB10 + 7 Ah Battery (12 V)	5 h 10 min	2 h 30 min	38min	20 min	13 min	6 min	-	-	-
UB10 + 12 Ah Battery (12 V)	10 h 41 min	5 h 17 min	1 h 40 min	46 min	28 min	16 min	-	-	-
UB10 + 26 Ah Battery (12 V)	23 h 6 min	11 h 23 min	3 h 40 min	2 h 10 min	1 h 30 min	55 min	-	-	-
UB10.242 + 65 Ah Battery (12 V)	2 d 11 h	1 d 5 h	9 h 53 min	5 h 51 min	4 h	2 h 45 min	-	-	-
UB10.242 + 100 Ah Battery (12 V)	3 d 19 h	1 d 21 h	14 h 53 min	8 h 41 min	6 h	4 h 7 min	-	-	-
UB10.242 + 130 Ah Battery (12 V)	4 d 23 h	2 d 11 h	19 h 21 min	11 h 18 min	7 h 48 min	5 h 21 min	-	-	-
UB20 + 7 Ah Battery (2,12 V)	9 h 26 min	5 h 16 min	1 h 30 min	46 min	30 min	19 min	10 min	6 min	-
UB20 + 12 Ah Battery (2,12 V)	17 h 13 min	9 h 51 min	3 h 29 min	2 h 2 min	1 h 23 min	46 min	27 min	16 min	-
UB20 + 26 Ah Battery (2,12 V)	1 d 13 h	21 h 34 min	7 h 32 min	4 h 26 min	3 h 7 min	2 h 10 min	1 h 17 min	55 min	-
UB20 + 65 Ah Battery (2,12 V)	3 d 19 h	2 d 4 h	20 h 5 min	11 h 56 min	8 h 25 min	5 h 50min	3 h 49 min	2 h 49 min	-
UB20 + 100 Ah Battery (2,12 V)	6 d 3 h	3 d 11 h	1 d 6 h	18 h 30 min	13 h 10 min	9 h 11min	6 h 3 min	4 h 31 min	-
UB20 + 140 Ah Battery (2,12 V)	8 d 12 h	4 d 21 h	1 d 19 h	1 d 1 h	18 h 26 min	12 h 52min	8 h 27 min	6 h 19 min	-
UB40 + 12 Ah Battery (2,12 V)	24 h 4 min	11 h 20 min	3 h 55 min	2 h	1 h 17 min	47 min	27 min	18 min	7 min
UB40 + 26 Ah Battery (2,12 V)	2 d 5 h	1d1h27min	8 h 44 min	4 h 44 min	3 h 38 min	2 h 17 min	1 h 21 min	55 min	21 min
UB40 + 38 Ah Battery (2,12 V)	3 d 9 h	1 d 11 h	12 h 14 min	7 h 24 min	5 h 17 min	3 h 28 min	2 h 8 min	1 h 31 min	36 min
UB40 + 65 Ah Battery (2,12 V)	6 d 1 h	2 d 23 h	17 h 18 min	13 h 53 min	9 h 56 min	6 h 49 min	4 h 23 min	3 h 4 min	1 h 14 min
UB40 + 100 Ah Battery (2,12 V)	9 d 3 h	4 d 12 h	1 d 2h	20 h 50 min	14 h 56 min	10 h 7 min	6 h 33 min	4h 48 min	1 h 59 min
UB40 + 200 Ah Battery (2,12 V)	19 d 16 h	9 d 18 h	2d9h8min	1 d 21 h	1d8h49min	22 h 27 min	14 h 44 min	10 h 52 min	4 h 55 min

The UB10, UB20 and UB40 tables show approximate typical buffer times of new battery modules without the aging effect included. PULS recommends adding 30-50% battery capacity to account for battery wear and aging. Please review specific datasheets for additional buffer times.



Buffer Modules with Capacitor Storage



UC10.241 DC-UPS with capacitor storage, 24 V, 15 A

**AVOID DOWNTIME
AVOID DATA LOSS
LIVE MAINTENANCE-FREE**

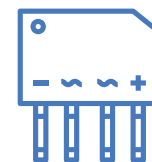


The **uc series** DC-UPS utilizes an Electrochemical Double Layer Capacitor (EDLC), commonly known as Ultracapacitors or Supercapacitors, to store energy. They can bridge power failures or voltage fluctuations and supply voltage to the 24 VDC bus, which allows for a safe shut-down of the system. Expensive downtimes, long restart cycles and loss of data can be avoided.

UF40.241 Electrolytic Capacitor Buffer Module, typ. 250 ms at 40 A



**BRIDGE POWER FAILURE
ENJOY PEACE OF MIND**



The **uf series** buffer modules with electrolytic capacitors work similarly to a DC-UPS and can bridge power failures in the 24 VDC or 48 VDC bus for periods measured in milliseconds to seconds.

In buffer mode, the output voltage is regulated and the change from normal to buffer mode occurs without interruptions. All modules are protected against overload and short-circuit and have a wide operating temperature range.

Output Voltage	Output Current	Catalog Number	Width (mm)	Storage Capacity	Storage Element
24 V	15 A	UC10.241	126.0	6 kW - Buffer Time: 9 s at 15 A	Ultracapacitor (EDLC)
		UC10.242	198.0	12 kW - Buffer Time: 18 s at 15 A	
	20 A	UF20.241	64.0	0.2 kW - Buffer Time: 310 ms at 20 A	Electrolytic Capacitor
	40 A	UF40.241		0.32 kW - Buffer Time: 250 ms at 40 A	
48 V	20 A	UF20.481	0.2 kW - Buffer Time: 150 ms at 20 A		

Buffer Times

Buffer Current	0.5 A	1 A	3 A	5 A	7 A
UF20.481	6.4 s	3.2 s	1 s	660 ms	470 ms
UF20.241	12.7 s	6.5 s	2.2 s	1.3 s	950 ms
UF40.241	20 s	10.6 s	3.6 s	2.1 s	1.5 s
UC10.241	340 s	200 s	68 s	39 s	26 s
UC10.242	680 s	400 s	136 s	78 s	53 s

Buffer Current	10 A	15 A	20 A	30 A	40 A
UF20.481	300 ms	220 ms	150 ms	-	-
UF20.241	670 ms	450 ms	310 ms	-	-
UF40.241	1 s	730 ms	500 ms	350 ms	250 ms
UC10.241	16.5 s	9 s	-	-	-
UC10.242	33 s	18 s	-	-	-

Battery Modules for DC-UPS

Battery modules use maintenance-free VRLA batteries (valve regulated lead-acid). Battery modules can be ordered with a battery (UZK Series) or without a battery (UZO Series). All battery modules from PULS support our 1-Battery Concept. The 24 V battery modules for use with the UB20 and UB40 battery modules from PULS Series are equipped with a center-tap, which are protected against overcurrent and with an integrated temperature sensor.

Users who opt for using their own batteries should use a high quality VRLA, Gel Cell or Glass Mat battery. When using batteries for the UB20 and UB40 Series, it is recommended to use the appropriate sensor board with a PT1000 temperature sensor included, and a center-tap to take advantage of the PULS 1-Battery Concept.



UZK12.072
Battery Module with Battery, 12 V

Catalog Number	Description	Dimensions (W x H x D)
UZB12.051	12 V, 5 Ah replacement battery for UBC10.241	90 x 106 x 70 mm
UZB12.071	12 V, 7 Ah replacement battery for UZK12.071 and UZK24.071 a)	151 x 100 x 65 mm
UZB12.121	12 V, 12 Ah replacement battery for UZK24.121 a)	151 x 100 x 98 mm
UZB12.261	12 V, 26 Ah replacement battery for UZK12.261	175 x 166 x 125 mm
UZK12.071	12 V, 7 Ah battery module for UB10	155 x 124 x 112 mm
UZK12.072	12 V, 7 Ah battery module for UB10 (Class I Division 2)	155 x 124 x 112 mm
UZK12.261	12 V, 26 Ah battery module for UB10	214 x 179 x 153 mm
UZK24.071	24 V, 7 Ah battery module for UB20	137 x 186 x 124 mm
UZK24.121	24 V, 12 Ah battery module for UB20	203 x 186 x 124 mm
UZK24.122	24 V, 12 Ah battery module for UB40	203 x 186 x 125 mm
UZK24.262	24 V, 26 Ah battery module for UB40	214 x 179 x 167 mm
UZK24.262-E1	24 V, 26 Ah Battery Module with Battery extension kit included	214 x 179 x 128 mm
UZO12.07	Mounting Bracket for use with 7 Ah Battery	155 x 124 x 112 mm
UZO12.072	Mounting Bracket for use with 7 Ah Battery (Class I Division 2)	155 x 124 x 112 mm
UZO12.26	Mounting Bracket for use with 26 Ah Battery	214 x 179 x 153 mm
UZO24.071	Mounting Bracket for use with 7 Ah Battery Pair for UB20	137 x 186 x 124 mm
UZO24.121	Mounting Bracket for use with 12 Ah Battery Pair for UB20	203 x 186 x 124 mm
UZO24.122	Mounting Bracket for use with 12 Ah Battery for UB40	203 x 186 x 125 mm
UZO12.262	Mounting Bracket for use with 26 Ah Battery for UB40	214 x 179 x 167 mm
UZO24.262-E1	Battery extension kit for 26 Ah Batteries	214 x 179 x 128 mm
UZS24.100	Sensorboard with PT1000 temperature sensor & center-tap for use with UB20.241	23 x 110.5 x 15 mm
UZW24.100	Wiring kit for UB40 for Batteries up to 26 Ah not supplied by PULS. Includes connection cables.	
UZW24.101	Connection module for UB40 for larger batteries not supplied by PULS. Cables not included.	

a) Two required for UZK24 battery modules

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