24 V DC UPS INTEGRATED BATTERY 5 AH

UBC10.241
DC UPS 24V dc I/P 24V dc 10A O/P w/ 12V 5Ah Battery

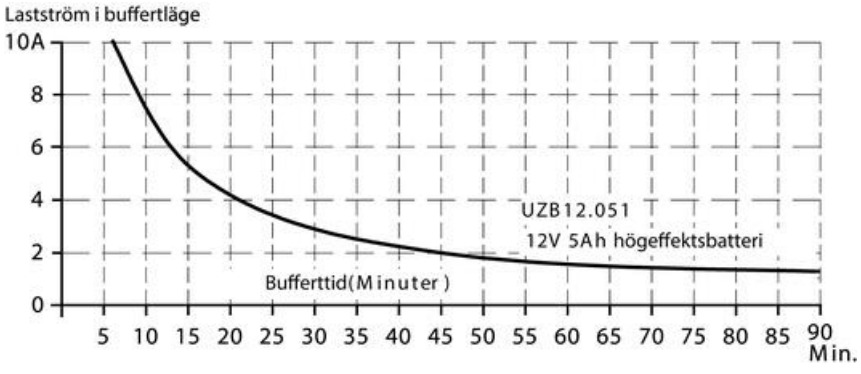


- Load current 10 A
- Only one 12 V battery
- Integrated high power battery of 5 Ah
- Relay outputs for status

PRODUCT DESCRIPTION

A DC-UPS system comprises a control unit with integrated 5 A high power battery, and a power supply with suitable power for the application. The battery is easy to replace by undoing the screw at the front. In case of a power failure, the battery is automatically connected and feeds the connected loads. The UPS requires only one (1) 12 V battery which then transforms up the battery voltage to 22.3 V dc, one does not need to match 2 batteries with each other and the output voltage does not follow the battery's discharge curve but is constant at 22.3 V. The battery capacity is utilised 100% compared with two series-connected batteries where one of the batteries will not be fully charged.
Two relay outputs indicate status; module ready (battery capacity >85%) and module active (buffer mode). The control unit tests the battery's condition in cycles, when it is time to replace the battery, a relay output is activated (replace battery). One sensor measures the temperature and optimises the final charging voltage. The buffer time can be set in different time ranges to save battery capacity, when a constant discharge is selected, the output voltage will be active until the battery reaches deep discharge and the control unit disconnects the battery.
A fault on the battery fuse drops the Ready output and a red LED lights on the control unit. The output has a current limit and shuts itself off after about 5 seconds after a short-circuit to save the battery and at the same time avoid tripping the battery fuse. With a short-circuit in buffer mode, the module will deliver approx. 20 A which helps to trip any secondary fuse. Monitoring of the battery fuse and current limitation with short-circuits gives an increased safety and a guarantee that the UPS will function after a short circuit. The input is galvanically isolated from the output side.

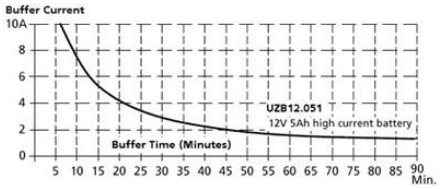
BACKUP TIMES

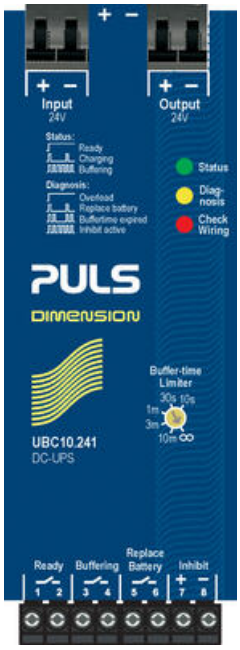


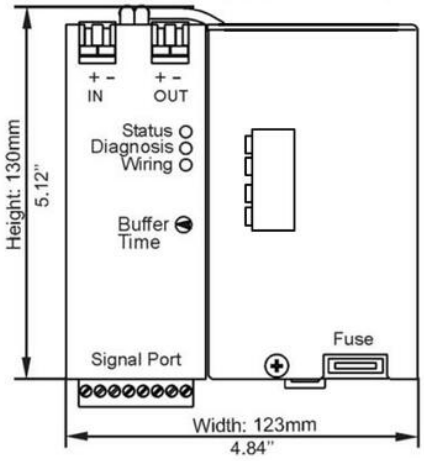
Discharge curve for 5 Ah battery

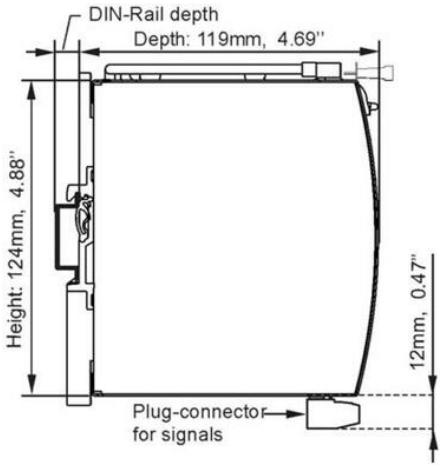
SPECIFICATIONS

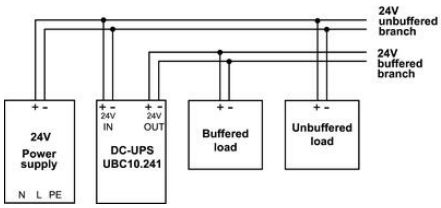
Approvals	ABS, CB, CE, CSA, CSA US, EX, GL, IECEx, UL
Charging The Battery Type	1.5
Depth	119
Efficiency	97.8
Height	124
Input Current During Charging Of Aggregates	1.3
Input voltage for battery connection	22.8
Input Voltage From battery	12
Input Voltage From The Unit	24
IP Class	IP20
Life span	137 400 h @ 10 A, 40 °C
MTBF (IEC 61709)	886 000 h @ 10 A, 40 °C
Output current at 24 V dc	10
Output Current During Normal Operation Via The Unit Max	15
Output current for battery operation max	10 A (15 A @ 5 s)
Output Voltage at Battery	22.25
Output Voltage At Buffering	22.25
Output Voltage Normal Operation	24
Permitted Battery Sizes	5 Ah
Ripple. max	20
Temperature Range Without Derating From	0
Temperature Range Without Derating To	40
Weight	2.85
Width	123

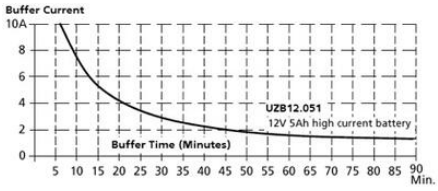


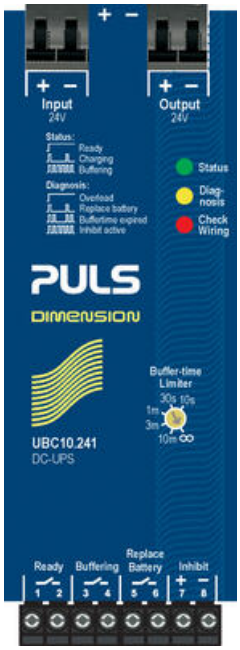

Input
24V
Output
24V
Status:
Ready
Charging
Buffering
Diagnosis:
Overload
Replace battery
Buffertime expired
Inhibit active
Status
Diag-nosis
Check Wiring
PULS
DIMENSION
Buffer-time Limiter
30s 10s
1m
3m
10m ∞
UBC10.241
DC-UPS
Ready
Buffering
Replace Battery
Inhibit
1 2
3 4
5 6
7 8

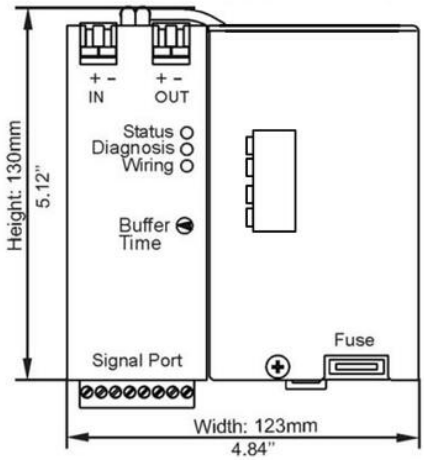

+ -
IN
+ -
OUT
Status
Diagnosis
Wiring
Buffer Time
Height: 130mm
5.12"
Fuse
Signal Port
Width: 123mm
4.84"

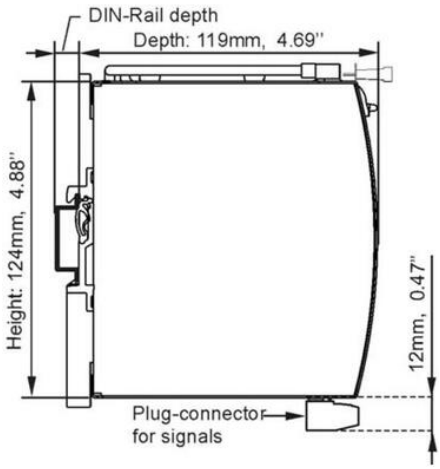

DIN-Rail depth
Depth: 119mm, 4.69"
Height: 124mm, 4.88"
12mm, 0.47"
Plug-connector for signals

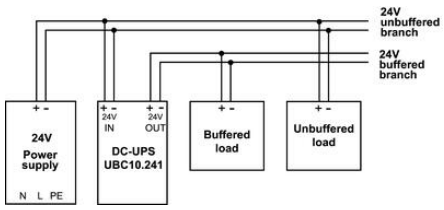

24V unbuffered branch
24V buffered branch
24V
Power supply
N L PE
+ -
24V
IN
+ -
24V
OUT
DC-UPS
UBC10.241
Buffered load
Unbuffered load


Buffer Current
10A
8
6
4
2
0
UZB12.051
12V 5Ah high current battery
Buffer Time (Minutes)
5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90
Min.


Input
24V
Output
24V
Status:
Ready
Charging
Buffering
Diagnosis:
Overload
Replace battery
Buffertime expired
Inhibit active
Status
Diag-nosis
Check Wiring
PULS
DIMENSION
Buffer-time Limiter
30s 10s
1m
3m
10m ∞
UBC10.241
DC-UPS
Ready
Buffering
Replace Battery
Inhibit
1 2
3 4
5 6
7 8


+ -
IN
+ -
OUT
Status
Diagnosis
Wiring
Buffer Time
Height: 130mm
5.12"
Fuse
Signal Port
Width: 123mm
4.84"


DIN-Rail depth
Depth: 119mm, 4.69"
Height: 124mm, 4.88"
12mm, 0.47"
Plug-connector for signals


24V
unbuffered
branch
24V
buffered
branch
+ -
24V
Power
supply
N L PE
+ -
24V
IN
+ -
24V
OUT
DC-UPS
UBC10.241
+ -
Buffered
load
+ -
Unbuffered
load