

Modicon Power Supply
Regulated power supply for industrial use, rail
mounting
Functional modules for Modicon ABL8RP/WP Universal Power
Supply

Functionality		Supplying 5 Vdc to 15 Vdc auxiliary voltage		Continuity of service after a failure of power supply equipment		Continuity of service: Solutions to microbreaks and power outages		Solution for discriminating protection of the application	
									
Input Voltage		24 Vdc				24 Vdc			
Output voltage		5...6.5 Vdc	7...15 Vdc	24 Vdc		24 Vdc		24 Vdc	
Certifications and standards (1)		- C� marking - EAC - CSA - RCM - UL		- C� marking - EAC - CSA - RCM - UL		- C� marking - EAC - CSA - RCM - UL		- C� marking - EAC - CSA - RCM - UL	
Functional module type		Converter module		Redundancy module		Battery control modules		Buffer module	
Output current	2 A	ABL8DCC12020							
	6 A	ABL8DCC05060							
	10 A								
	20 A								
	40 A			ABL8RED24400					
Battery capacity	3.2 Ah								
	7 Ah								
	12 Ah								
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(1) Consult detail on conformity to standards for each reference in the product data sheet, click on [product reference](#) to open it.

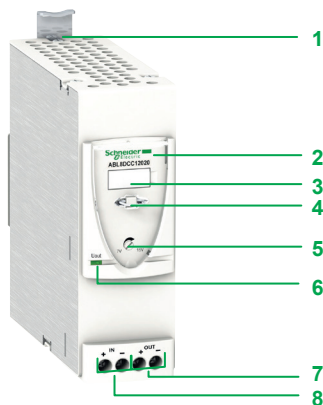
Note: Phaseo Functional modules shown in this document are identified as Modicon as they will undergo a future brand change.

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Functional modules for Modicon ABL8RP/WP Universal Power Supply



Supplying 5 Vdc and 12 Vdc auxiliary voltage

ABL8DCC●●●● functional modules are designed to convert the 24 Vdc voltage into a 5 to 15 Vdc voltage.

These modules can be used to make savings in the:

- Upstream protection normally used with the 5 to 15 Vdc power supply
- Connection to the line supply

Description

- 1 Spring clip for 35 mm (1.37 in) rail
- 2 Protective glass flap
- 3 Clip-on marker label
- 4 Locking catch for the glass flap (sealable)
- 5 Output voltage adjustment potentiometer
- 6 Output current status LED (green)
- 7 4 mm² enclosed screw terminals for connection of the 24 Vdc input voltage
- 8 4 mm² enclosed screw terminals for connection of the 5 Vdc or 12 Vdc output voltage

References

Functional module

Designation	Functionality	Primary (1)		Secondary		Reference	Weight kg /lb
		Input voltage	Output current power supply ABL8RP/WP Universal	Output voltage	Nominal current		
DC/DC converter modules	Supplying 5 to 12 Vdc auxiliary voltage	24 Vdc	2.2 A	5 Vdc Adjustable from 5 to 6.5 Vdc	6 A	ABL8DCC05060	0.300/ 0.661
			1.7 A	12 Vdc Adjustable from 7 to 15 Vdc	2 A	ABL8DCC12020	0.300/ 0.661

Replacement part

Designation	Composition	Unit reference	Weight kg /lb
Legend holder	Order in multiples of 100	LAD90	0.001/ 0.002

(1) Voltage from a 24 Vdc ABL8RP/WP Universal power supply.

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ABL8DCC12020



ABL8DCC05060

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Continuity of service after a failure of power supply equipment

Where continuous operation of the application is the prime concern, it is necessary to know that when one power supply is not available, a second power supply takes over. The ABL8RED24400 Redundancy module can perform this function, allowing that the inoperability of one power supply does not disturb the second (for example, in the event of a short-circuit of one of the power supply outputs).

The **ABL8RED24400** redundancy module, used with two regulated power supplies of the same type, can be used to supply the nominal power to the application even if one of the power supplies is inoperable or otherwise unavailable.

The various diagnostics - on the front panel (LED) and remote (relay) can be used to inform the maintenance team as soon as the first detected error occurs on one of the power supplies.

In the event that continuity of service is a must for the application, redundancy modules can be put in cascade with addition power supplies.

Note: The redundancy module can be used to connect two power supplies with a maximum rating of 20 A in parallel. To connect two 40 A **ABL8WPS24400** power supplies, two **ABL8RED24400** redundancy modules must be used.

Description

- 1 Spring clip for 35 mm (1.37 in) rail
- 2 Clip-on marker label
- 3 Input voltage status LED (green) for the first 24 Vdc power supply
- 4 Input voltage status LED (green) for the second 24 Vdc power supply
- 5 10 mm² enclosed screw terminals for connection of the 24 Vdc output voltage
- 6 10 mm² enclosed screw terminals for connection of the input voltage for the second 24 Vdc power supply ($I \leq 20$ A)
- 7 10 mm² enclosed screw terminals for connection of the input voltage for the first 24 Vdc power supply ($I \leq 20$ A)
- 8 Removable screw terminal block for connection of the diagnostic contact

References

Functional module

Designation	Functionality	Nominal current	Reference	Weight kg/lb
Redundancy module	Continuity of service after a failure of power supply equipment	40 A	ABL8RED24400	0.700/ 1.543

Replacement part

Designation	Composition	Unit reference	Weight kg/lb
Legend holder	Order in multiples of 100	LAD90	0.001/ 0.002

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ABL8RED24400

Modicon Power Supply

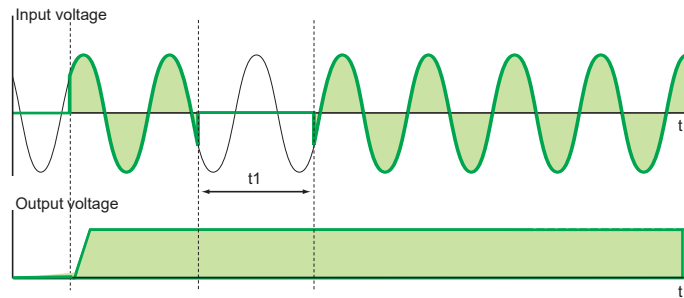
Regulated power supply for industrial use, rail mounting

Functional modules for Modicon ABL8RP/WP Universal Power Supply

Continuity of service: Voltage holding in the event of a power outage

Modicon ABL8RP/WP Universal power supply can deliver their nominal power in the event of a microbreak of less than 20 ms. When outages exceed this value, the **ABL8BUF** Buffer module, combined with a Modicon ABL8RP/WP Universal power supply, is used. In the event of short interruptions, the Buffer module takes over and continues to provide the 24 Vdc voltage.

The table below indicates the maximum time for immunity to microbreaks t_1 .



Power supply		Typical time for immunity to microbreaks with ABL8BUF Buffer module (40 A) at Un t_1	
		100% load at the Buffer module output	2 A at the Buffer module output
ABL8RPS24030	Single-phase or 2-phase 3 A, 72 W	0.912 s	0.984 s
ABL8RPS24050	Single-phase or 2-phase 5 A, 120 W	0.472 s	1.33 s
ABL8RPS24100	Single-phase or 2-phase 10 A, 240 W	0.220 s	1.34 s
ABL8RPM24200	Single-phase or 2-phase 20 A, 480 W	0.206 s	1.82 s
ABL8WPS24200	3-phase 20 A, 480 W	0.056 s (1)	1.18 s
ABL8WPS24400	3-phase 40 A, 960 W	0.092 s (1)	1.29 s

Note: In order to maximize the immunity time, it is advisable to connect only those circuits requiring protection against microbreaks (controller or PLC power supply) at the Buffer module output

(1) Values liable to increase significantly.

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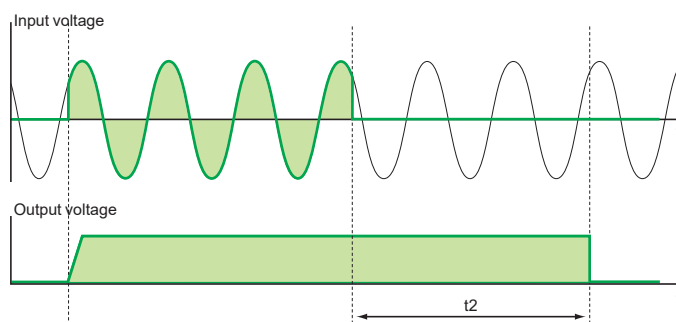
Continuity of service: Voltage holding in the event of a power outage

For applications that are sensitive to unintended stopping, the **ABL8B** functional module offers a solution comprising:

- Electronic switch mode power supply and Buffer module for holding times t_2 up to two seconds
- Electronic switch mode power supply, Battery control module and Battery module for holding times t_2 of between two seconds and a few hours

These solutions are used to supply voltage after loss of the line supply, thus enabling saving of current values or fallback of some actuators supplied with 24 Vdc.

The table below indicates the possible holding times according to the equipment combinations and the current required.



Holding current	Holding time t2																											
	Seconds								Minutes										Hours									
	0.1	0.2	0.5	1	2	5	10	30	1	2	3	4	5	6	7	8	9	10	15	20	30	40	50	1	2	3	5	
1 A	1	1	1	1	1	2+4	2+4	2+4	2+4	2+4	2+4	2+4	2+4	2+4	2+4	2+4	2+4	2+4	2+4	2+4	2+4	2+4	2+4	2+4	2+4	2+5	2+5	
2 A	1	1	1	1	1	2+4	2+4	2+4	2+4	2+4	2+4	2+4	2+4	2+4	2+4	2+4	2+4	2+4	2+4	2+4	2+4	2+4	2+4	2+4	2+5	2+6	2+6	
3 A	1	1	1	1	2+4	2+4	2+4	2+4	2+4	2+4	2+4	2+4	2+4	2+4	2+4	2+4	2+4	2+4	2+4	2+4	2+4	2+5	2+5	2+5	2+6	2+6	2+6	
4 A	1	1	1	1	2+4	2+4	2+4	2+4	2+4	2+4	2+4	2+4	2+4	2+4	2+4	2+4	2+4	2+4	2+4	2+4	2+5	2+5	2+5	2+5	2+6	2+6	2+6	
5 A	1	1	1	2+4	2+4	2+4	2+4	2+4	2+4	2+4	2+4	2+4	2+4	2+4	2+4	2+4	2+4	2+4	2+4	2+5	2+5	2+5	2+6	2+6	2+6	2+6	2+6	
6 A	1	1	1	2+4	2+4	2+4	2+4	2+4	2+4	2+4	2+4	2+4	2+4	2+4	2+4	2+4	2+4	2+4	2+5	2+5	2+5	2+6	2+6	2+6	2+6	2+6	2+6	
7 A	1	1	1	2+4	2+4	2+4	2+4	2+4	2+4	2+4	2+4	2+4	2+4	2+4	2+4	2+5	2+5	2+5	2+5	2+5	2+6	2+6	2+6	2+6	2+6	2+6	2+6	
8 A	1	1	1	2+4	2+4	2+4	2+4	2+4	2+4	2+4	2+4	2+4	2+4	2+5	2+5	2+5	2+5	2+5	2+5	2+5	2+6	2+6	2+6	2+6	2+6	2+6	2+6	
10 A	1	1	2+4	2+4	2+4	2+4	2+4	2+4	2+4	2+4	2+4	2+4	2+5	2+5	2+5	2+5	2+5	2+5	2+5	2+6	2+6	2+6	2+6	2+6	2+6	2+6	2+6	
15 A	1	1	2+4	2+4	2+4	2+4	2+4	2+4	2+4	2+4	2+4	2+5	2+5	2+5	2+5	2+5	2+6	2+6	2+6	2+6	2+6	2+6	2+6	2+6	2+6	2+6	2+6	
20 A	1	1	2+5	2+5	2+5	2+5	2+5	2+5	2+5	2+5	2+5	2+5	2+6	2+6	2+6	2+6	2+6	2+6	2+6	2+6	2+6	2+6	2+6	2+6	2+6	2+6	2+6	
25 A	1	3+5	3+5	3+5	3+5	3+5	3+5	3+5	3+5	3+5	3+5	3+6	3+6	3+6	3+6	3+6	3+6	3+6	3+6	3+6	3+6	3+6	3+6	3+6	3+6	3+6	3+6	
30 A	1	3+5	3+5	3+5	3+5	3+5	3+5	3+5	3+5	3+5	3+6	3+6	3+6	3+6	3+6	3+6	3+6	3+6	3+6	3+6	3+6	3+6	3+6	3+6	3+6	3+6	3+6	
35 A	1	3+5	3+5	3+5	3+5	3+5	3+5	3+5	3+5	3+6	3+6	3+6	3+6	3+6	3+6	3+6	3+6	3+6	3+6	3+6	3+6	3+6	3+6	3+6	3+6	3+6	3+6	
40 A	1	3+6	3+6	3+6	3+6	3+6	3+6	3+6	3+6	3+6	3+6	3+6	3+6	3+6	3+6	3+6	3+6	3+6	3+6	3+6	3+6	3+6	3+6	3+6	3+6	3+6	3+6	

Code	Functional module	
	Designation	Reference
1	40 A Buffer module	ABL8BUF24400
2	20 A Battery control module	ABL8BBU24200
3	40 A Battery control module	ABL8BBU24400
4	3.2 Ah Battery module	ABL8BPK24A03
5	7 Ah Battery module	ABL8BPK24A07
6	12 Ah Battery module	ABL8BPK24A12

Note: Several Buffer modules (up to a maximum of three) can be connected in parallel to increase the immunity time. The times given in the table above (boxes marked 1) should be multiplied by the number of modules used (2 or 3).



Green: Nominal status/information



Orange: Warning



Red: Fault

Examples of Battery control module diagnostic screens

Continuity of service: Voltage holding in the event of a power outage

Functions

ABL8BBU Battery control modules

The main module function are:

- Charging and checking the associated battery
- Automatic switching between the power supply and the battery in the event of a power outage
- Diagnostics

The Battery control modules offer a three-color LCD screen and a navigation button that can be used to:

- Display the status and diagnostic data
- Access the service and maintenance functions
- Set the module parameters

These modules also have a diagnostic relay (C/O contacts) relating to:

- The power supply status
- The Battery module status
- The alarm

The following functions are available:

- Inhibition or activation (local or remote) of the battery in order to do maintenance operations on the application
- Battery test
- Backup and download of a configuration via a memory card enabling storage and duplication of the configuration parameters

The module parameters can be set in order to define:

- The user language
- The rating of the battery connected to the Battery control module
- The operating temperature for the battery in order to optimize its life
- The length and cross-section of the connection to compensate for voltage losses due to the length of the line
- The duration of the battery-powered supply
- The threshold voltage provided by the power supply below which the battery takes over

Whichever solution is used, the output terminals for the power supplies, Buffer modules and Battery control modules have been designed to make it easier to isolate a backed-up circuit and a non-backed-up circuit to maintain continuity of service after a power outage.

ABL8BPK Battery modules

Each Battery module consists of:

- Lead-sealed batteries (two in series)
- Its automotive type fuse protection

Only these modules are compatible with the **ABL8BBU** Battery control modules.

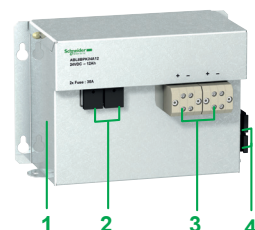
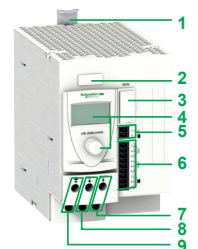
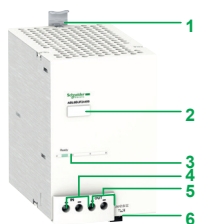
In the event of the Battery control module-Battery module combination not being used for long periods (approximately 1 week minimum) the following is recommended:

- Fully charge the Battery module beyond 72 hours,
- Remove the fuse(s) from the Battery module(s) and store them in the allocated slots

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ABL8BUF24400



ABL8BBU24200



ABL8BPK24A03, ABL8BPK24A07,
ABL8BPK24A12

Continuity of service: Voltage holding in the event of a power outage

Description

Buffer module

- 1 Spring clip for 35 mm (1.37 in) rail
- 2 Clip-on marker label
- 3 LED indicator (green): module ready (maximum load)
- 4 10 mm² enclosed screw terminals for connection of the 24 Vdc input voltage
- 5 10 mm² enclosed screw terminals for connection of the 24 Vdc output voltage
- 6 Removable screw terminal block for connection of the diagnostic contact: module ready (maximum load)

Battery control modules

- 1 Spring clip for 35 mm (1.37 in) rail
- 2 Clip-on marker label
- 3 Memory card slot for backup and duplication of the configuration parameters
- 4 Display and configuration parameter browse/selection button
- 5 Removable screw connector for connection of the battery voltage inhibit input (terminal block supplied) (This contact must always be volt-free).
- 6 Removable screw connector for connection of the diagnostic contacts: power supply presence, battery presence (terminal block supplied)
- 7 10 mm² enclosed screw terminals for connection of the 24 Vdc output voltage
- 8 10 mm² enclosed screw terminals for connection of the power supply 24 Vdc input voltage
- 9 10 mm² enclosed screw terminals for connection of the battery voltage 24 Vdc input voltage

Battery modules

- 1 A metal box that can be fixed on a vertical or horizontal panel
- 2 Fuse carrier (one or two depending on the model), which, in addition to protect the output, can be used to disable the battery module (fuse supplied but not fitted)
- 3 10 mm² enclosed screw terminals for connection of the Battery module 24 Vdc output voltage (depending on the model, allows two Battery modules to be connected in parallel)
- 4 Fuse storage attachment

References

Functional module for Solutions to microbreaks and power outages

Designation	Use	Output current	Reference	Weight kg/lb
Buffer module	Holding time: 100 ms at 40 A, 2 s at 1 A	40 A	ABL8BUF24400	1.200/ 2.646
Battery control modules	Holding time: 9 min at 40 A to 2 hrs at 1 A (depending on use with a battery control module-battery unit and load) (1)	20 A	ABL8BBU24200	0.500/ 1.102
		40 A	ABL8BBU24400	0.700/ 1.543

Designation	Use	Capacity	Reference	Weight kg/lb
Battery modules	Holding time: 9 min at 40 A to 2 hrs at 1 A (depending on use with a battery control module-battery unit and load) (1)	3.2 Ah (2)	ABL8BPK24A03	3.500/ 7.716
		7 Ah (2)	ABL8BPK24A07	6.500/ 14.330
		12 Ah (2)	ABL8BPK24A12	12.000/ 26.455

Separate and replacement parts

Designation	For use with	Composition	Unit reference	Weight kg/lb
Fuse set	ABL8BPK24A03, ABL8BPK24A07, and ABL8BPK24A12 Battery modules	4 x 20 A and 6 x 30 A	ABL8FUS02	—
Legend holder	All functional modules except ABL8PRP24100	Order in multiples of 100	LAD90	0.001/ 0.002
EEPROM memory cartridge for backup and duplication of parameters	ABL8BBU24200 and ABL8BBU24400 Battery control modules	—	SR2MEM02	0.010/ 0.022

(1) Compatibility table for battery check module-battery unit with holding time depending on the load, see page 19.

(2) Supplied with 20 or 30 A fuse depending on the model.