Specifications





Regulated Power Supply, 100 to 240V AC, 24V, 5A, single phase, Optimized

ABLS1A24050

Main

Range of product	Modicon Power Supply	
Product or component type	Power supply	
Power supply type	Regulated switch mode	
Variant option	Optimized	
Enclosure material	Aluminium	
Nominal input voltage	100240 V AC single phase 100240 V AC phase to phase 140340 V DC	
Rated power in W	120 W	
Output voltage	24 V DC	
Power supply output current	5 A	

Complementary

35264 V AC without temperature derating 120375 V DC without temperature derating
35120 V DC with temperature derating
SS 120 V DC with temperature defaung
5060 Hz
TN
TT
Т
1 mA 240 V AC
ntegrated fuse (not interchangeable) 4 A
External protection (recommended) 20 A Curve C
External protection (recommended) 13 A Curve C
30.0 A at 115 V
50.0 A at 230 V
0.55 at 115 V AC
0.45 at 230 V AC
35 % at 115 V AC
38 % at 230 V AC
2228 V
25 W
< 2.5 A 115 V AC
< 1.4 A 230 V AC
< 1.3 A 140 V DC
<1s
> 20 ms 115 V AC

Startup with capacitive loads	8000 µF		
Residual ripple	< 120 mV		
Meantime between failure [MTBF]	700000 h at 25 °C, full load conforming to SR 332		
Output protection type	Against overload and short-circuits, protection technology: automatic reset Against over temperature, protection technology: manual reset Against overvoltage, protection technology: manual reset		
Connections - terminals Screw connection: 0.54 mm ² , (AWG 20AWG 12) without wire e output Screw connection: 0.52.5 mm ² , (AWG 20AWG 14) with wire en Screw connection: 0.754 mm ² , (AWG 18AWG 12) without wire input Screw connection: 0.754 mm ² , (AWG 18AWG 12) with wire end			
Line and load regulation	< 0.5 % at 0 to 100 % load at 25 °C < 1 % at full voltage range in line at 25 °C		
Status LED	1 LED (green) output voltage		
Depth	117.6 mm		
Height	123.6 mm		
Width	40 mm		
Net weight	0.55 kg		
Output coupling	Parallel Serial		
Mounting support	Top hat type TH35-15 rail conforming to IEC 60715 Top hat type TH35-7.5 rail conforming to IEC 60715 Double-profile DIN rail		
Supply	SELV conforming to IEC 60950-1 SELV conforming to IEC 60204-1 SELV conforming to IEC 60364-4-41		
Dielectric strength	3000 V AC with input to output		
Service life	10 year(s)		
Overvoltage category	II		

Environment

Standards	IEC 62368-1
	EN/IEC 61204-3
	IEC 61000-6-1
	IEC 61000-6-2
	IEC 61000-6-3
	IEC 61000-6-4
	IEC 61000-3-2
	EN 61000-3-3
	UL 62368-1
	CSA C22.2 No 62368-1
	UL 508
	CSA C22.2 No 107.1
	EN/IEC 62368-1
Product certifications	CE
	CUL listed
	CUL recognized
	RCM
	CB Scheme
	EAC
	KC
Operating altitude	< 5000 m
Shock resistance	150 m/s² for 11 ms
IP degree of protection	IP20

Ambient air temperature for operation	-2010 °C with current derating of 2 % per °C mounting position A < 2000 m -1040 °C without derating mounting position A 115 V AC < 2000 m -1050 °C without derating mounting position A 230 V AC < 2000 m 4070 °C with current derating of 1.67 % per °C mounting position A 115 V AC < 2000 m 5070 °C with current derating of 2.5 % per °C mounting position A 230 V AC < 2000 m		
Electrical shock protection class	Class I		
Pollution degree	2		
Vibration resistance	3 mm (f= 29 Hz) conforming to IEC 60068-2-6 10 m/s² (f= 9200 Hz) conforming to IEC 60068-2-6		
Electromagnetic immunity	Immunity to electrostatic discharge - test level: 8 kV (contact discharge) conforming to IEC 61000-4-2 Immunity to electrostatic discharge - test level: 15 kV (air discharge) conforming to IEC 61000-4-2 Immunity to conducted RF disturbances - test level: 15 V/m (80 MHz2 GHz) conforming to IEC 61000-4-3 Immunity to conducted RF disturbances - test level: 5 V/m (22.7 GHz) conforming to IEC 61000-4-3 Immunity to conducted RF disturbances - test level: 5 V/m (22.7 GHz) conforming to IEC 61000-4-3 Immunity to conducted RF disturbances - test level: 5 V/m (2.76 GHz) conforming to IEC 61000-4-3 Immunity to fast transients - test level: 4 kV (on input-output) conforming to IEC 61000-4-4 Surge immunity test - test level: 4 kV (between power supply and earth) conforming to IEC 61000-4-5 Surge immunity test - test level: 3 kV (between phases) conforming to IEC 61000-4-5 Immunity to conducted RF disturbances - test level: 15 V (0.1580 MHz) conforming to IEC 61000-4-6 Immunity to magnetic fields - test level: 30 A/m (5060 Hz) conforming to IEC 61000-4-8 Immunity to voltage dips conforming to IEC 61000-4-11 Disturbing field emission conforming to EN 55016-2-3 Limits for harmonic current emissions conforming to IEC 61000-3-2 conforming to EN 55016-1-2 conforming to EN 55016-2-1		

Electromagnetic emission Conducted emissions conforming to IEC 61000-6-3 Radiated emissions conforming to IEC 61000-6-4

Packing Units

Unit Type of Package 1	PCE
Number of Units in Package 1	1
Package 1 Height	5.000 cm
Package 1 Width	17.500 cm
Package 1 Length	18.000 cm
Package 1 Weight	696.000 g
Unit Type of Package 2	S03
Number of Units in Package 2	13
Package 2 Height	30.000 cm
Package 2 Width	30.000 cm
Package 2 Length	40.000 cm
Package 2 Weight	9.468 kg
Unit Type of Package 3	P12
Number of Units in Package 3	312
Package 3 Height	90.000 cm
Package 3 Width	80.000 cm
Package 3 Length	120.000 cm

Package 3 Weight

239.232 kg

Sustainability Screen Premium

Green PremiumTM label is Schneider Electric's commitment to delivering products with best-inclass environmental performance. Green Premium promises compliance with the latest regulations, transparency on environmental impacts, as well as circular and low-CO₂ products.

Guide to assessing product sustainability is a white paper that clarifies global eco-label standards and how to interpret environmental declarations.

Yes

Learn more about Green Premium >

Guide to assess a product's sustainability >



Transparency RoHS/REACh

Well-being performance

Mercury Free

Rohs Exemption Information

Certifications & Standards

Reach Regulation	REACh Declaration Pro-active compliance (Product out of EU RoHS legal scope)		
Eu Rohs Directive			
China Rohs Regulation	China RoHS declaration		
Environmental Disclosure	Product Environmental Profile The product must be disposed on European Union markets following specific waste collection and never end up in rubbish bins		
Weee			
Circularity Profile	End of Life Information		

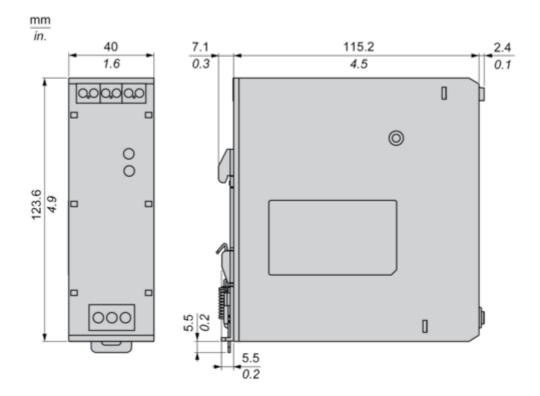
Dimensions Drawings

Electrical Safety

- If the unit is use in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.
- For means of disconnection a switch or circuit breaker, located near the product, must be included in the installation. A marking as disconnecting device for the product is required.
- The device has an internal fuse. The unit is tested and approved with branch circuit protective device up to 20A. This circuit breaker can be used as disconnecting device.
- The power supply is only suitable for audio, video, information, communication, industrial and control equipment.

Dimensions

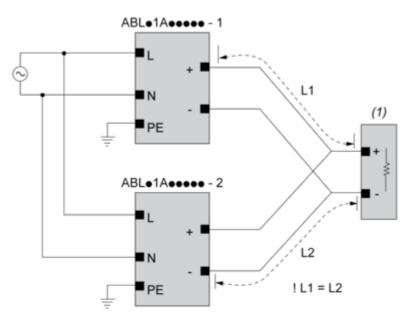
Front and Side Views



Connections and Schema

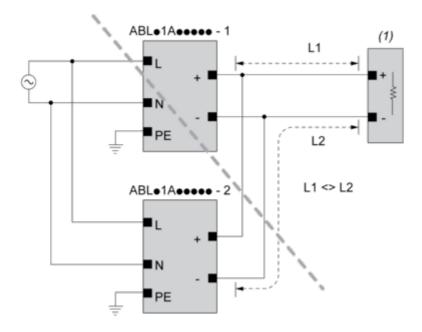
Connections and Schema

Correct Parallel Connection



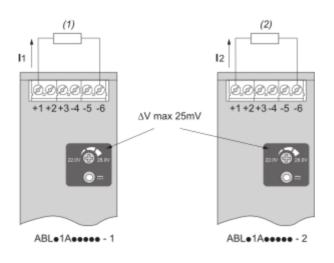


Incorrect Parallel Connection



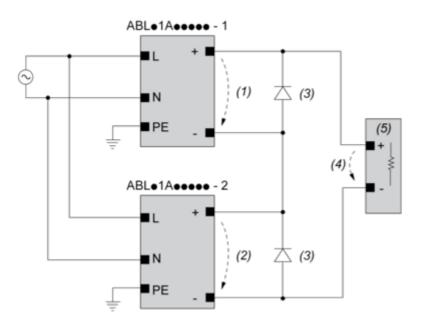
(1) : Load ABLx1Axxxxx-1 = ABLx1Axxxxx-2 max 2 x ABLx1Axxxxx L1 = L2 ΔV max 25 mV $I_{Load} < 90\% 2 x I_{nom}$

Output Voltage Balancing



(1): R_{Load1} (2): R_{Load2} $R_{Load1} = R_{Load2}$ $I_1 = I_2 = -I_{nom}$





(1) : V_{out1}

- (2) : V_{out2}
- (3) : 2 x Diode, V_{RRM} > 2 x $V_{out1/2}$, I_F > 2 x $I_{nom1/2}$
- (4) : V_{Load} = 2 x V_{out}
- (5) : Load

Connections and Schema

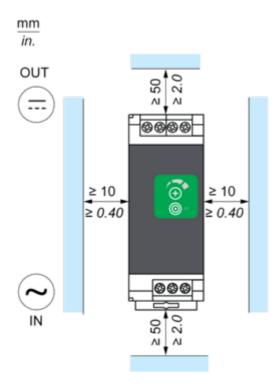
	(1)		
	<40°C	<50°C	<70°C
ABLS1A24021	50°C	60°C	75ºC
ABLS1A24038	50°C	60°C	75°C
ABLS1A12062	50°C	60°C	80°C
ABLS1A24031	50°C	60°C	80ºC
ABLS1A12100	60°C	70ºC	90°C
ABLS1A24050	60°C	70ºC	90°C
ABLS1A48025	60°C	70°C	90°C
ABLS1A24100	60°C	70ºC	90°C
ABLS1A24200	95°C	95°C	90°C

(1) : Ambient

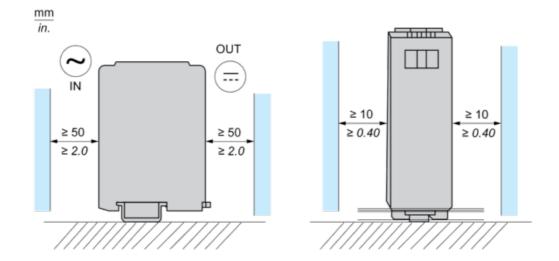
Mounting and Clearance

Mounting

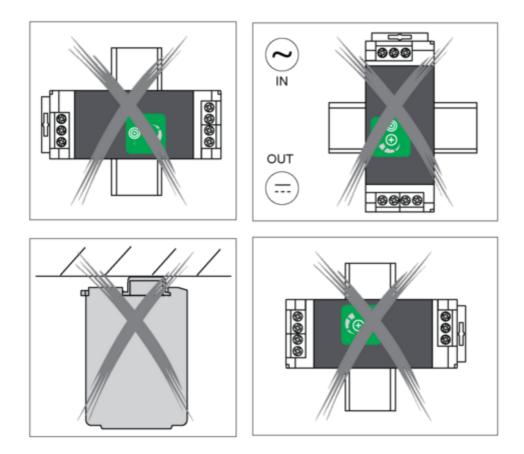
Mounting Position A



Mounting Position B



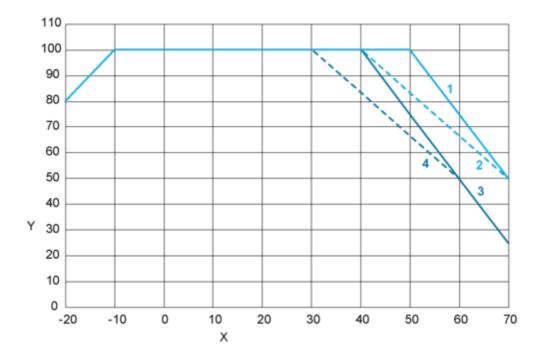
Incorrect Mounting



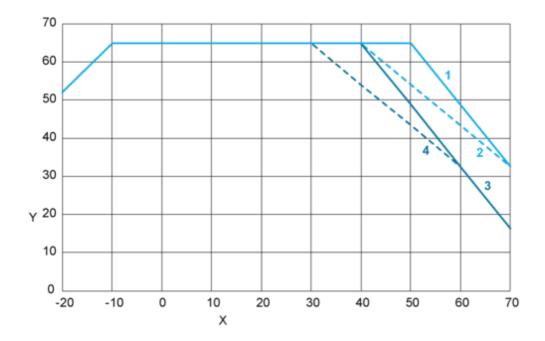
Performance Curves

Performance Curve

Mounting Position A



Mounting Position B

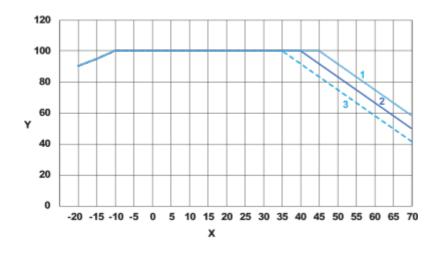


 \boldsymbol{X} : Surrounding Air Temperature (°C)

- Y: Percentage of Maximum Load (%)
- 1 : Altitude \leq 2000 m (6561 ft), Input voltage = 230 VAC / 325 VDC
- 2 : Altitude ≤ 2000 m (6561 ft), 115 VAC / 162 VDC
- 3 : Altitude \leq 5000 m (16404 ft), Input voltage = 230 VAC / 325 VDC
- **4** : Altitude ≤ 5000 m (16404 ft), 115 VAC / 162 VDC

Life Is On Schneider

DC input voltage



X : Surrounding Air Temperature (°C)

Y: Percentage of Maximum Load (%)

1:110 VDC

2:90 VDC

3:85 VDC