# **Product data sheet**

Specifications





# Regulated Power Supply, 100 to 240V AC, 24V, 10A, single phase, Optimized

ABLS1A24100

Product availability: Stock - Normally stocked in distribution

Price\*: 315.00 USD

# Main

Range of Product	Modicon Power Supply
Product or Component Type	Power supply
Power supply type	Regulated switch mode
Variant option	Optimized
Enclosure Material	Aluminum
Nominal input voltage	100240 V AC single phase 100240 V AC phase to phase 140340 V DC
Kw Rating	240 W
Output voltage	24 V DC
Power supply output current	10 A

# Complementary

Efficiency at full load	85264 V AC without temperature derating			
•	120375 V DC without temperature derating			
	85120 V DC with temperature derating			
Nominal network frequency	5060 Hz			
Network system compatibility	TN			
	Π			
	IT			
Maximum leakage current	1 mA 240 V AC			
Input protection type	Integrated fuse (not interchangeable) 6.3 A			
	External protection (recommended) 20 A Curve B			
	External protection (recommended) 20 A Curve C			
	External protection (recommended) 6 A Curve B			
	External protection (recommended) 6 A Curve C			
Inrush current	30.0 A 115 V			
	60.0 A 230 V			
Power factor	0.95 at 115 V AC			
	0.95 at 230 V AC			
Efficiency	85 % 115 V AC			
	88 % 230 V AC			
Output voltage adjustment	2228 V			
Power dissipation in W	36 W			
Current consumption	< 2.8 A 115 V AC			
	< 1.4 A 230 V AC			
	< 2.4 A 140 V DC			

Price is "List Price" and may be subject to a trade discount – check with your local distributor or retailer for actual price.

Turn-on time	<1s		
Holding time	> 20 ms 115 V AC > 20 ms 230 V AC		
Startup with capacitive loads	8000 μF		
Residual ripple	< 120 mV		
Meantime between failure [MTBF]	700000 h at 77.00000000000 °F (25 °C), full load conforming to SR 332		
Output protection type	Against overload and short-circuits automatic reset Against over temperature manual reset Against overvoltage manual reset		
Connections - terminals	Screw connection 0.54 mm², AWG 20AWG 12) without wire end ferrule output Screw connection 0.52.5 mm², AWG 20AWG 14) with wire end ferrule output Screw connection 0.754 mm², AWG 18AWG 12) without wire end ferrule input Screw connection 0.754 mm², AWG 18AWG 12) with wire end ferrule input		
Line and load regulation	< 0.5 % network 0 to 100 % load at 77.0000000000 °F (25 °C) < 1 % network full voltage range in line at 77.0000000000 °F (25 °C)		
Status LED	1 LED (Green) output voltage		
Depth	4.6 in (117.6 mm)		
Height	4.9 in (123.6 mm)		
Width	2.4 in (60 mm)		
Net Weight	1.8 lb(US) (0.8 kg)		
Output coupling	Parallel Serial		
Mounting support	Top hat type TH35-15 rail IEC 60715 Top hat type TH35-7.5 rail IEC 60715 Double-profile DIN rail		
Supply	SELV IEC 60950-1 SELV IEC 60204-1 SELV 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 11 ms
IP degree of protection	IP20

Ambient air temperature for operation	-4.0000000000104.00000000000 °F (-2040 °C) without derating mounting position A 115 V AC < 6561.68 ft (2000 m) -4.0000000000122.0000000000 °F (-2050 °C) without derating mounting position A 230 V AC < 6561.68 ft (2000 m) 104.0000000000158.0000000000 °F (4070 °C) with current derating of 1.67 % per °C mounting position A 115 V AC < 6561.68 ft (2000 m) 122.0000000000158.0000000000 °F (5070 °C) with current derating of 2.5 % per °C mounting position A 230 V AC < 6561.68 ft (2000 m)	
Electrical shock protection class	Class I	
Pollution degree	2	
Vibration resistance	3 mm 29 Hz)IEC 60068-2-6 10 m/s² 9200 Hz)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 (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	
Electromagnetic emission	conforming to EN 55016-2-1  Conducted emissions IEC 61000-6-3  Radiated emissions IEC 61000-6-4	

# Ordering and shipping details

Category	US1CP1222525
Discount Schedule	CP12
GTIN	3606481500250
Returnability	Yes
Country of origin	SG

# **Packing Units**

Unit Type of Package 1	PCE
Number of Units in Package 1	1
Package 1 Height	2.756 in (7.000 cm)
Package 1 Width	6.890 in (17.500 cm)
Package 1 Length	7.087 in (18.000 cm)
Package 1 Weight	34.356 oz (974.000 g)
Unit Type of Package 2	S03
Number of Units in Package 2	9
Package 2 Height	11.811 in (30.000 cm)
Package 2 Width	11.811 in (30.000 cm)

Package 2 Length	15.748 in (40.000 cm)
Package 2 Weight	20.166 lb(US) (9.147 kg)
Unit Type of Package 3	P12
Number of Units in Package 3	72
Package 3 Height	17.717 in (45.000 cm)
Package 3 Width	31.496 in (80.000 cm)
Package 3 Length	47.244 in (120.000 cm)
Package 3 Weight	187.834 lb(US) (85.200 kg)



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Transparency RoHS/REACh

# Well-being performance



Mercury Free



Rohs Exemption Information

Yes

## **Certifications & Standards**

Reach Regulation	REACh Declaration		
Eu Rohs Directive	Pro-active compliance (Product out of EU RoHS legal scope)		
China Rohs Regulation	China RoHS declaration		
Environmental Disclosure	Product Environmental Profile		
Weee	The product must be disposed on European Union markets following specific waste collection and never end up in rubbish bins.		
Circularity Profile	End of Life Information		
California Proposition 65	"WARNING: This product can expose you to chemicals including: Lead and lead compounds, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov"		

# Product data sheet

#### ABLS1A24100

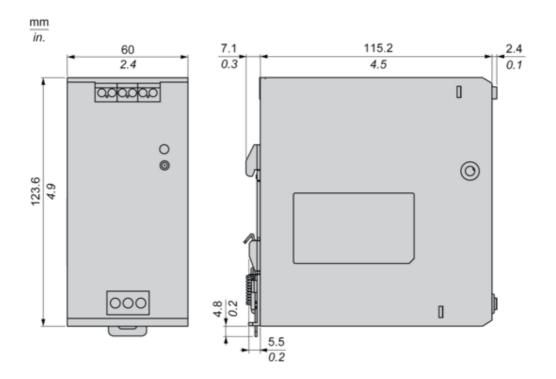
#### **Dimensions Drawings**

#### **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**

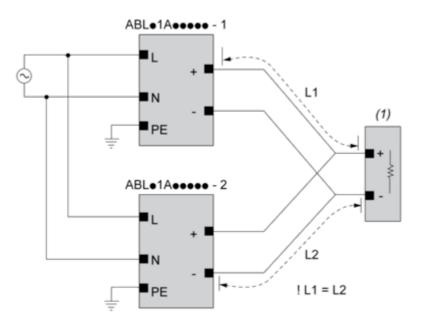
#### Front and Side Views



#### Connections and Schema

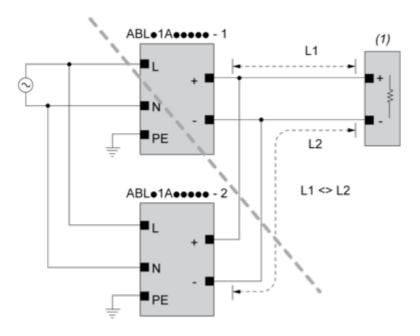
#### **Connections and Schema**

#### **Correct Parallel Connection**



#### (1): Load

#### **Incorrect Parallel Connection**

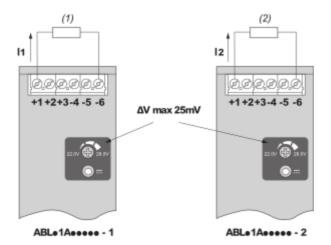


(1): Load ABLx1Axxxxx-1 = ABLx1Axxxxx-2 max 2 x ABLx1Axxxxx L1 = L2  $\Delta V max 25 mV$   $I_{Load} < 90\% 2 x I_{nom}$ 

#### **Output Voltage Balancing**

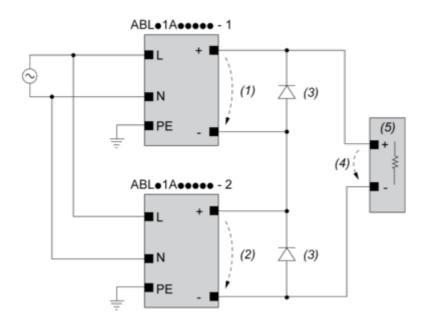
# **Product data sheet**

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- (1): R<sub>Load1</sub>
- (2) : R<sub>Load2</sub>
- $R_{Load1} = R_{Load2}$
- $I_1 = I_2 = \sim I_{\text{nom}}$

#### **Series Connection**



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

# **Connections and Schema**

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

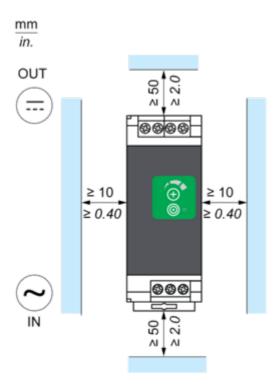
(1): Ambient

Oct 2, 2024

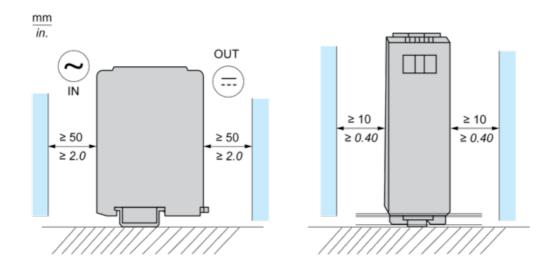
Mounting and Clearance

#### Mounting

#### **Mounting Position A**

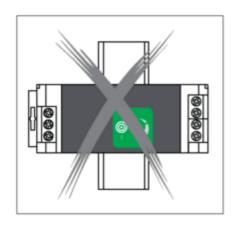


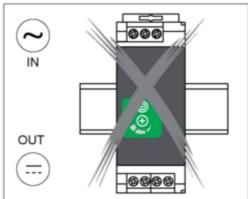
# **Mounting Position B**

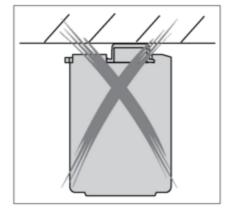


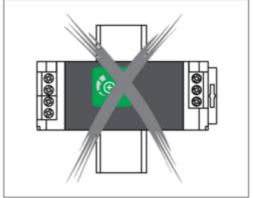
#### **Incorrect Mounting**

# ABLS1A24100





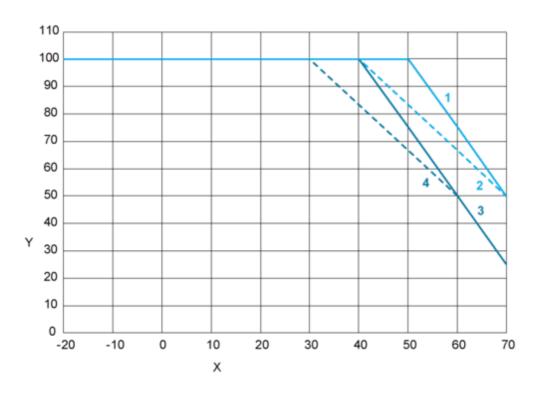




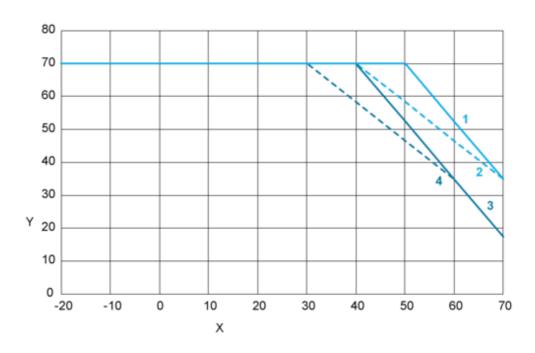
#### Performance Curves

#### **Performance Curve**

#### **Mounting Position A**



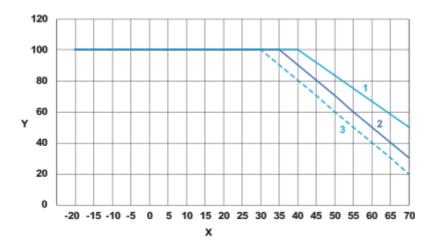
#### **Mounting Position B**



- $\boldsymbol{X}$  : Surrounding Air Temperature (°C)
- $\mathbf{Y}:$  Percentage of Maximum Load (%)
- 1 : Altitude ≤ 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

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#### DC input voltage



X : Surrounding Air Temperature (°C)
Y : Percentage of Maximum Load (%)

1:110 VDC 2:90 VDC 3:85 VDC Image of product / Alternate images

#### **Alternative**









