

Product datasheet

Specifications



Regulated Power Supply, 100-240V AC, 12V 4.2 A, single phase, Modular

ABLM1A12042

EAN Code: 3606481500168

Main

Range Of Product	Modicon Power Supply
Product Or Component Type	Power supply
Power Supply Type	Regulated switch mode
Variant Option	Modular
Enclosure Material	Plastic
Nominal Input Voltage	100...240 V AC single phase 100...240 V AC phase to phase
Rated Power In W	50 W
Output Voltage	12 V DC
Power Supply Output Current	4.17 A

Complementary

Input Voltage Limits	90...264 V AC
Nominal Network Frequency	50...60 Hz
Network System Compatibility	TN TT IT
Maximum Leakage Current	0.25 mA 240 V AC
Input Protection Type	Integrated fuse (not interchangeable) 3.15 A External protection (recommended) 20 A Curve B External protection (recommended) 20 A Curve C External protection (recommended) 10 A Curve B External protection (recommended) 6 A Curve C
Inrush Current	30 A at 115 V 60 A at 230 V
Power Factor	0.50 at 115 V AC 0.39 at 230 V AC
Efficiency	88 % at 115 V AC 88 % at 230 V AC
Output Voltage Adjustment	12...15 V
Power Dissipation In W	5.5 W
Current Consumption	< 1.5 A 115 V AC < 1 A 230 V AC
Turn-On Time	< 2 s
Holding Time	> 20 ms 115 V AC > 60 ms 230 V AC
Startup With Capacitive Loads	3000 µF

Residual Ripple	< 100 mV
Meantime Between Failure [Mtbf]	1500000 h at 25 °C, full load 1000000 h at 55 °C, 80 % load
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: 0.5...2.5 mm ² , (AWG 20...AWG 14) without wire end ferrule for output Screw connection: 0.5...1.5 mm ² , (AWG 20...AWG 16) with wire end ferrule for output Screw connection: 0.5...1.5 mm ² , (AWG 20...AWG 16) for input
Line And Load Regulation	< 0.5 % at in line < 1 % at 0 to 100 % load
Status Led	1 LED (green) output voltage
Depth	55.6 mm
Height	91 mm
Width	53 mm
Net Weight	0.221 kg
Output Coupling	Serial Parallel
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 panel mounting
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 input/output
Service Life	10 year(s)
Overvoltage Category	II

Environment

Standards	IEC 62368-1 EN/IEC 61010-1 EN 61010-2-201 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 UL 61010-1 UL 61010-2-201 CSA C22.2 No 62368-1 CSA C22.2 No 61010-1 CSA C22.2 No 61010-2-201 EN/IEC 62368-1
Product Certifications	CE CUL listed CUL recognized RCM CB Scheme EAC KC NEC: class 2
Operating Altitude	< 2000 m overvoltage category III 2000 m...5000 m overvoltage category II
Shock Resistance	150 m/s ² for 11 ms

Ip Degree Of Protection	IP20
Ambient Air Temperature For Operation	-25...55 °C without current derating mounting position A < 2000 m 55...70 °C with current derating of 2.67 % per °C mounting position A < 2000 m
Electrical Shock Protection Class	Class II without PE connection
Pollution Degree	2
Vibration Resistance	3 mm (f= 2...9 Hz) conforming to IEC 60721-3-3 10 m/s² (f= 9...200 Hz) conforming to IEC 60721-3-3
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 Electromagnetic field immunity test - test level: 15 V/m (80 MHz...2 GHz) conforming to IEC 61000-4-3 Electromagnetic field immunity test - test level: 5 V/m (2...2.7 GHz) conforming to IEC 61000-4-3 Electromagnetic field immunity test - test level: 5 V/m (2.7...6 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 disturbances - test level: 15 V (0.15...80 MHz) conforming to IEC 61000-4-6 Immunity to magnetic fields - test level: 30 A/m (50...60 Hz) conforming to IEC 61000-4-8 Immunity to voltage dips - test level: 100 % (1 cycle) conforming to IEC 61000-4-11 Immunity to voltage dips - test level: 60 % (10 cycles) conforming to IEC 61000-4-11 Immunity to voltage dips - test level: 30 % (25 cycles) 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	6.1 cm
Package 1 Width	6.1 cm
Package 1 Length	11 cm
Package 1 Weight	229 g
Unit Type Of Package 2	S02
Number Of Units In Package 2	24
Package 2 Height	15 cm
Package 2 Width	30 cm
Package 2 Length	40 cm
Package 2 Weight	6 kg
Unit Type Of Package 3	P06
Number Of Units In Package 3	384
Package 3 Height	75.0 cm
Package 3 Width	60.0 cm
Package 3 Length	80.0 cm
Package 3 Weight	95.2 kg

Contractual warranty

Warranty

18 months

Sustainability

Green Premium™ label is Schneider Electric's commitment to delivering products with best-in-class 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.

[Learn more about Green Premium >](#)

[Guide to assess a product's sustainability >](#)



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](#)

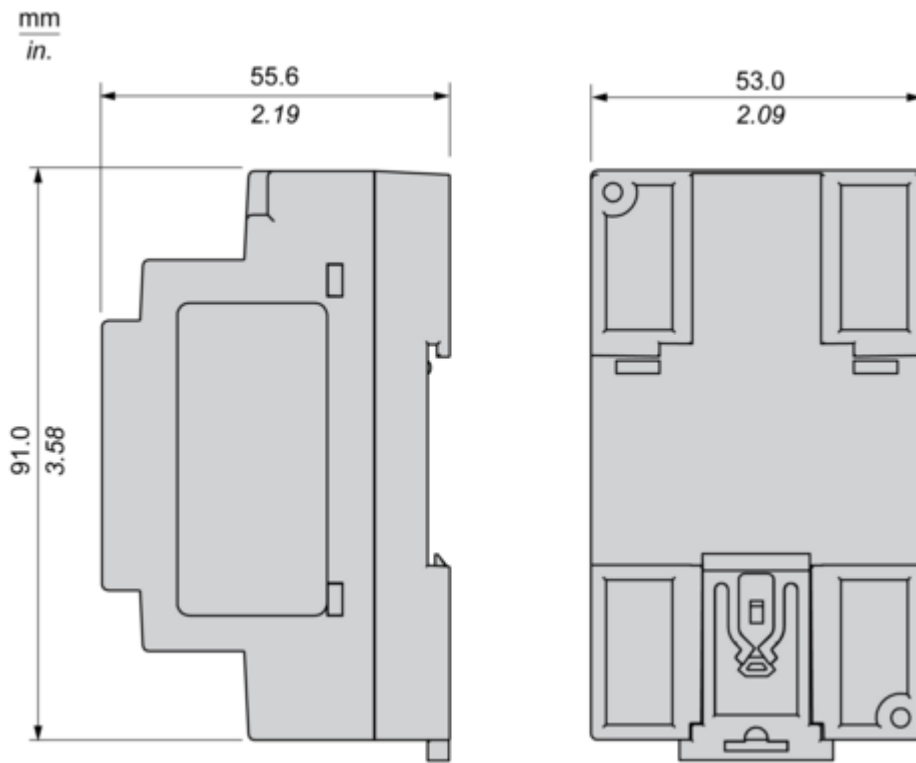
Dimensions Drawings

Electrical Safety

- If the unit is used 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

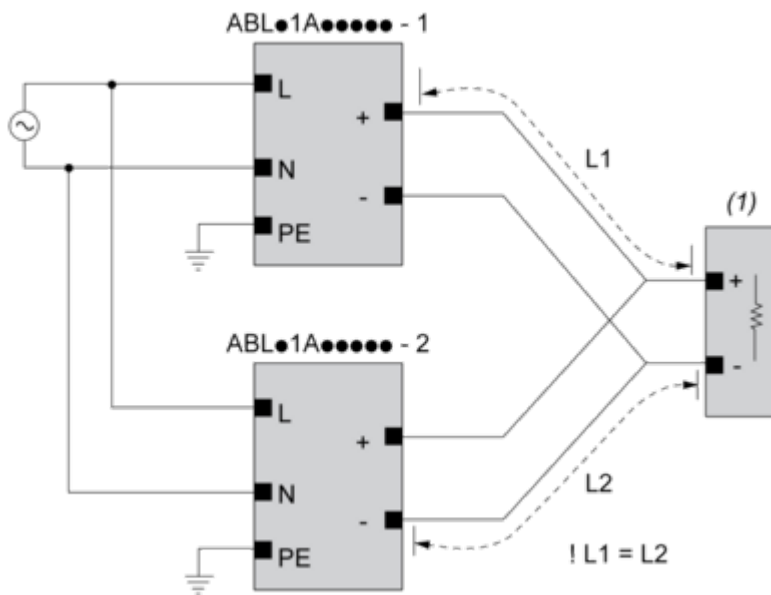
Side and Rear View



Connections and Schema

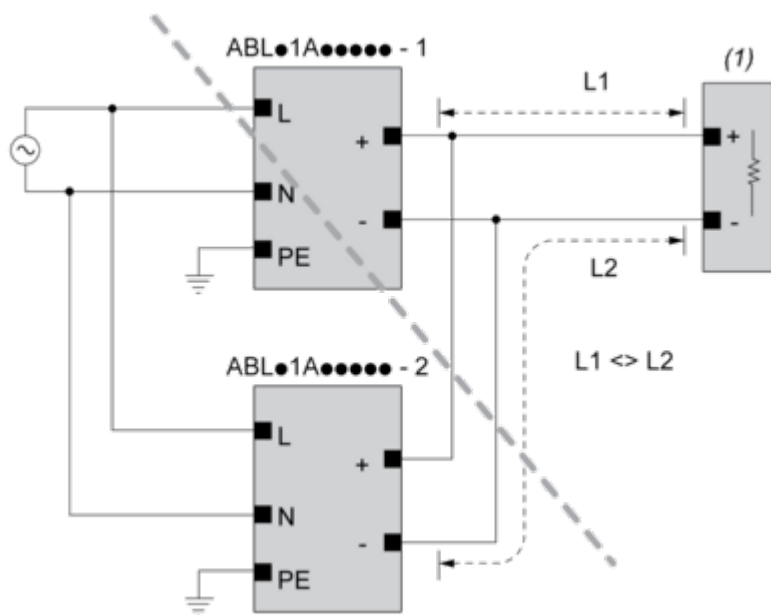
Connections and Schema

Correct Parallel Connection



(1) : Load

Incorrect Parallel Connection



(1) : Load

ABLx1Axxxxx-1 = ABLx1Axxxxx-2

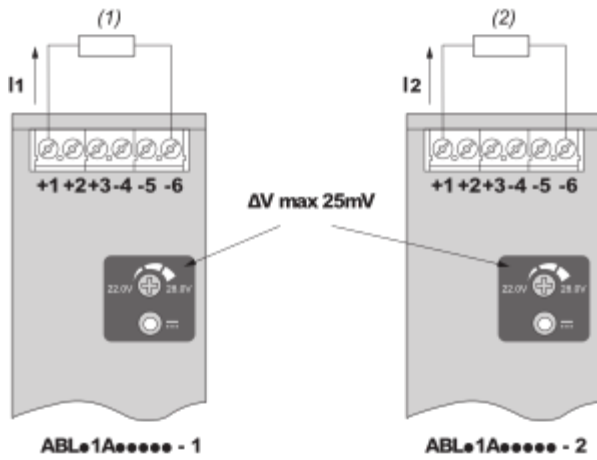
max 2 x ABLx1Axxxxx

L1 = L2

ΔV max 25 mV

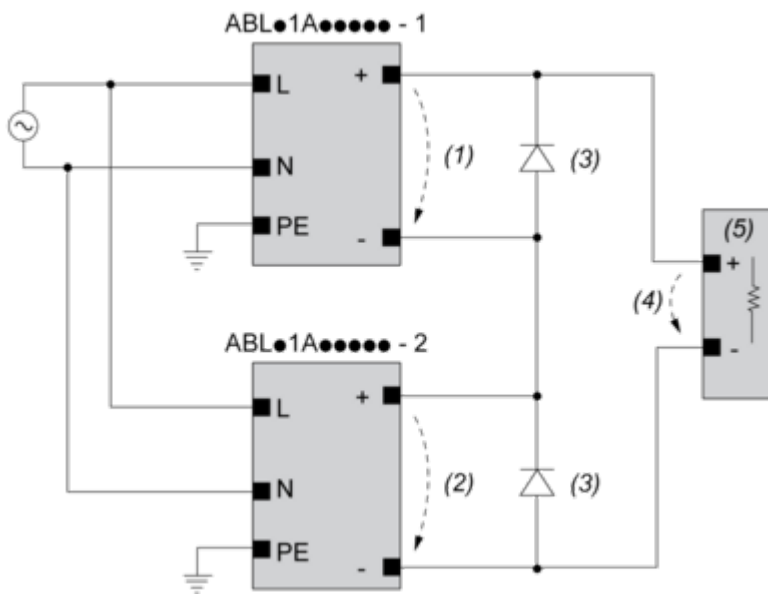
$I_{Load} < 90\% \times 2 \times I_{nom}$

Output Voltage Balancing



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

Series Connection



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

Connections and Schema

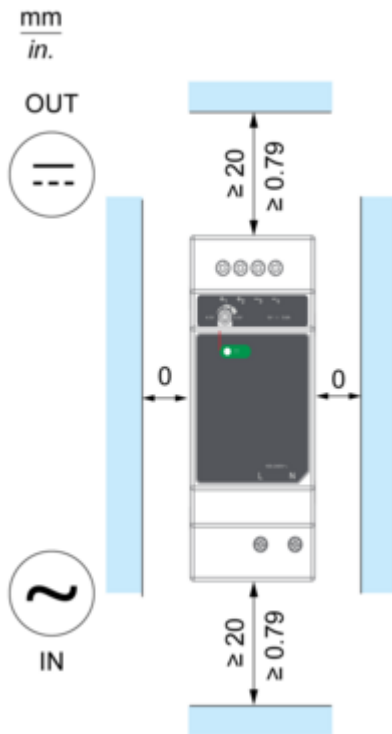
		(1)		
		<40°C	<50°C	<70°C
ABLM1A24004		60°C	75°C	75°C
ABLM1A12010		60°C	75°C	90°C
ABLM1A24006		60°C	75°C	90°C
ABLM1A05036	Input	60°C	75°C	90°C
	Output	75°C	90°C	90°C
ABLM1A12021		60°C	75°C	90°C
ABLM1A24012		60°C	75°C	90°C
ABLM1A12042		60°C	75°C	90°C
ABLM1A24025		60°C	75°C	90°C

(1) : Ambient

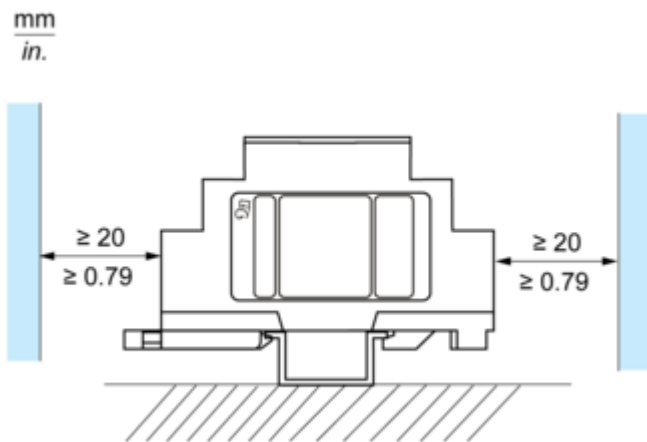
Mounting and Clearance

Mounting

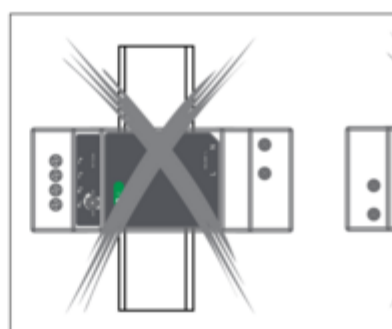
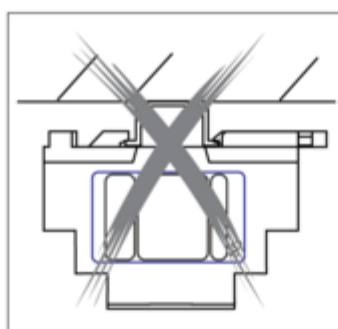
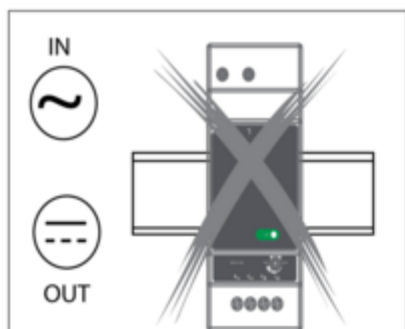
Mounting Position A



Mounting Position B

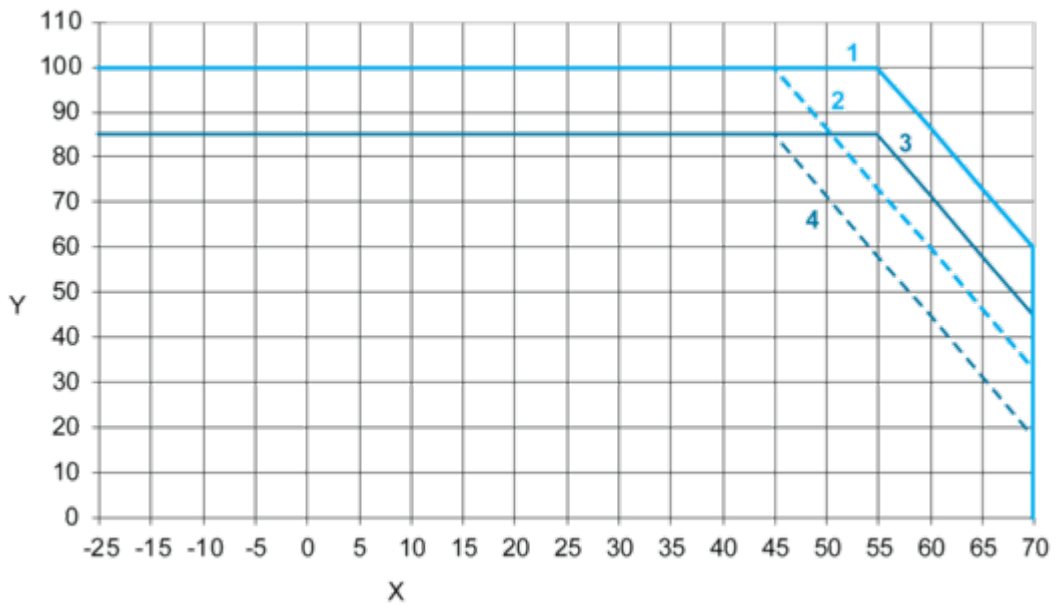


Incorrect Mounting



Performance Curves

Performance Curve



X : Ambient Temperature (°C)

Y : Percentage of Max Load (%)

1 : Altitude @2000M with Mounting A

2 : Altitude @5000M with Mounting A

3 : Altitude @2000M with Mounting B

4 : Altitude @5000M with Mounting B