

Product data sheet

Characteristics

ABLM1A24012

Regulated Power Supply, 100 to 240V AC,
24V, 1.2A, single phase, Modular



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
Kw Rating	30 W
Output voltage	24 V DC
Power supply output current	1.25 A

Complementary

Efficiency at full load	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) 4 A Curve B External protection (recommended) 4 A Curve C
Inrush current	25 A 115 V 50 A 230 V
Power factor	0.48 at 115 V AC 0.38 at 230 V AC
Efficiency	87 % 115 V AC 87 % 230 V AC
Output voltage adjustment	24...28 V
Power dissipation in W	5 W
Current consumption	< 0.8 A 115 V AC < 0.6 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 μ F
Residual ripple	< 100 mV
Meantime between failure [MTBF]	2500000 H at 77 °F (25 °C), full load 1000000 h at 131 °F (55 °C), 80 % load
Output protection type	Against overload and short-circuits automatic reset Against over temperature manual reset Against overvoltage manual reset
Connections - terminals	Screw connection 0.5...1.5 mm ² , AWG 20...AWG 16) without wire end ferrule input/output Screw connection 0.5...1 mm ² , AWG 20...AWG 18) with wire end ferrule input/output
Line and load regulation	< 0.5 % network in line < 1 % network 0 to 100 % load
Status LED	1 LED (Green) output voltage
Depth	2.19 in (55.6 mm)

The information provided in this documentation contains general descriptions and/or technical characteristics of the performance of the products contained herein. This documentation is not intended as a substitute for and is not to be used for determining suitability or reliability of these products for specific user applications. It is the duty of any such user or integrator to perform the appropriate and complete risk analysis, evaluation and testing of the products with respect to the relevant specific application or use thereof. Neither Schneider Electric Industries SAS nor any of its affiliates or subsidiaries shall be responsible or liable for misuse of the information contained herein.

Height	3.58 in (91 mm)
Width	1.42 in (36 mm)
Net Weight	0.37 lb(US) (0.170 kg)
Output coupling	Serial Parallel
Mounting support	Top hat type TH35-15 rail IEC 60715 Top hat type TH35-7.5 rail IEC 60715 Double-profile DIN rail Panel mounting
Supply	SELV IEC 60950-1 SELV IEC 60204-1 SELV 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[RETURN]CUL Listed[RETURN]CUL Recognized[RETURN]RCM[RETURN]CB Scheme[RETURN]EAC[RETURN]KC[RETURN]NEC class 2
Operating altitude	< 6561.68 ft (2000 m) overvoltage category III 2000 m...5000 m overvoltage category II
Shock resistance	150 m/s ² 11 ms
IP degree of protection	IP20
Ambient air temperature for operation	-13...131 °F (-25...55 °C) without current derating mounting position A < 6561.68 ft (2000 m) 131...158 °F (55...70 °C) with current derating of 2.67 % per °C mounting position A < 6561.68 ft (2000 m)
Electrical shock protection class	Class II without PE connection
Pollution degree	2
Vibration resistance	3 mm 2...9 Hz)IEC 60721-3-3 10 m/s ² 9...200 Hz)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 IEC 61000-6-3 Radiated emissions IEC 61000-6-4

Ordering and shipping details

Category	22525-ABL8 AND ABL7 POWER SUPPLIE
Discount Schedule	CP12
GTIN	3606481500151
Returnability	Yes
Country of origin	TH

Packing Units

Unit Type of Package 1	PCE
Number of Units in Package 1	1
Package 1 Height	1.97 in (5.000 cm)
Package 1 Width	2.36 in (6.000 cm)
Package 1 Length	4.33 in (11.000 cm)
Package 1 Weight	6.07 oz (172.000 g)
Unit Type of Package 2	S02
Number of Units in Package 2	29
Package 2 Height	5.91 in (15.000 cm)
Package 2 Width	11.81 in (30.000 cm)
Package 2 Length	15.75 in (40.000 cm)
Package 2 Weight	11.76 lb(US) (5.332 kg)
Unit Type of Package 3	P12
Number of Units in Package 3	464
Package 3 Height	17.72 in (45.000 cm)
Package 3 Width	31.50 in (80.000 cm)
Package 3 Length	47.24 in (120.000 cm)
Package 3 Weight	214.54 lb(US) (97.312 kg)

Offer Sustainability

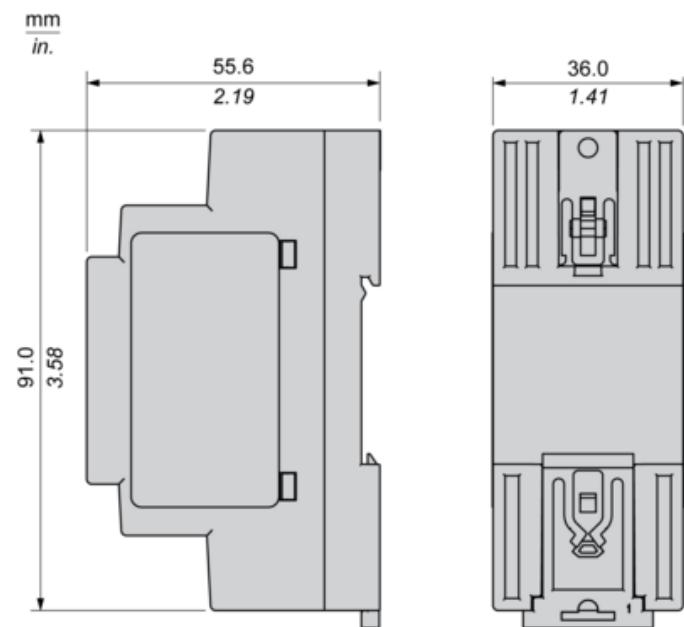
Sustainable offer status	Green Premium product
California proposition 65	WARNING: This product can expose you to chemicals including: Lead and lead compounds, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov
REACH Regulation	 REACH Declaration
EU RoHS Directive	Pro-active compliance (Product out of EU RoHS legal scope)
Mercury free	Yes
China RoHS Regulation	 China RoHS Declaration
RoHS exemption information	 Yes
Environmental Disclosure	 Product Environmental Profile
Circularity Profile	 End Of Life Information
WEEE	The product must be disposed on European Union markets following specific waste collection and never end up in rubbish bins.

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.

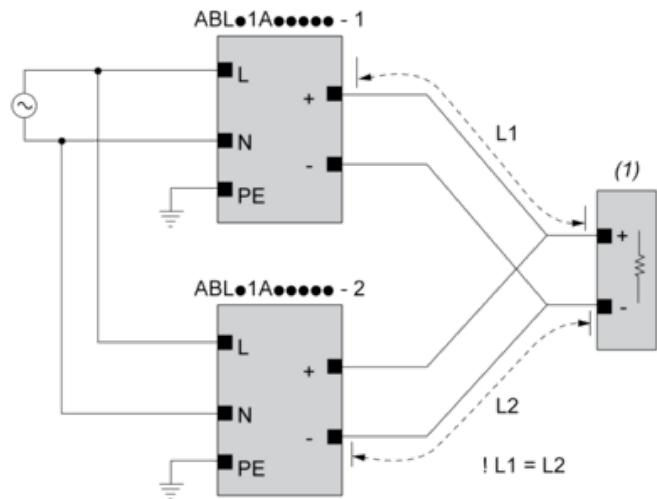
Dimensions

Side and Rear View

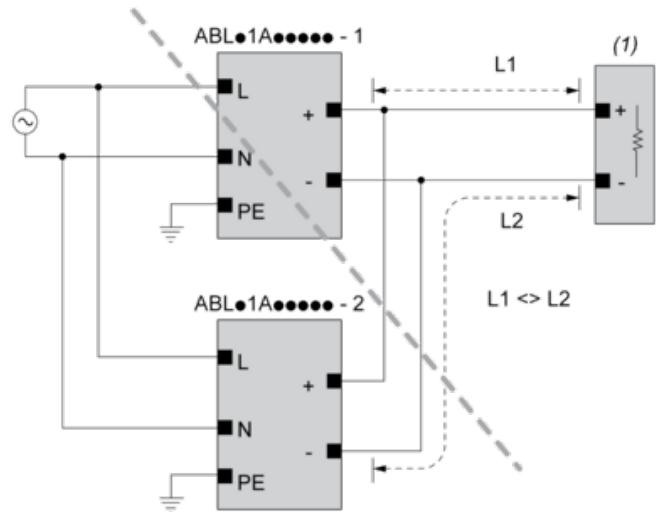


Connections and Schema

Correct Parallel Connection



Incorrect Parallel Connection



ABLx1Axxxxx-1 = ABLx1Axxxxx-2

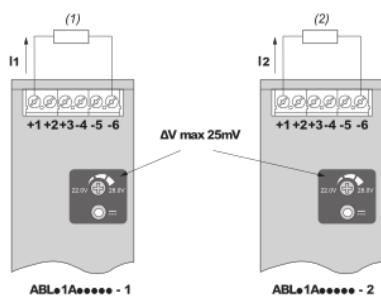
max 2 x ABLx1Axxxxx

$L1 = L2$

ΔV max 25 mV

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

Output Voltage Balancing



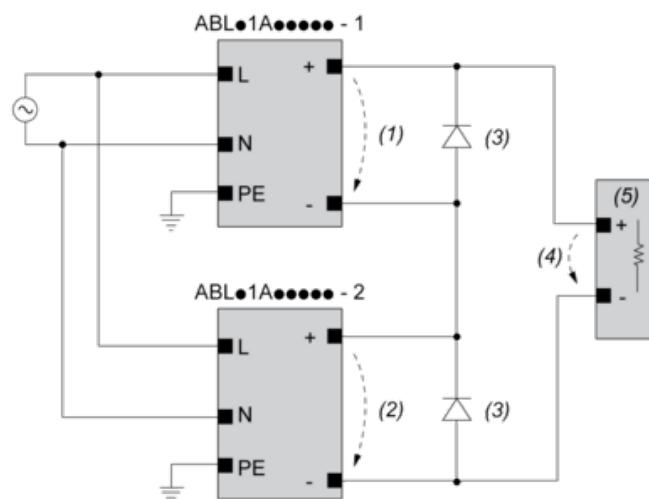
(1) : $R_{\text{Load}1}$

(2) : $R_{\text{Load}2}$

$R_{\text{Load}1} = R_{\text{Load}2}$

$I_1 = I_2 = \sim I_{\text{nom}}$

Series Connection



(1) : $V_{\text{out}1}$

(2) : $V_{\text{out}2}$

(3) : 2 x Diode, $V_{\text{RRM}} > 2 \times V_{\text{out}1/2}$, $I_F > 2 \times I_{\text{nom}1/2}$

(4) : $V_{\text{Load}} = 2 \times V_{\text{out}}$

(5) : Load

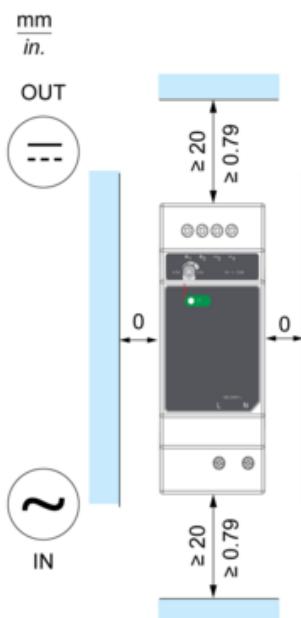
Connections and Schema

	(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
	Output	75°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

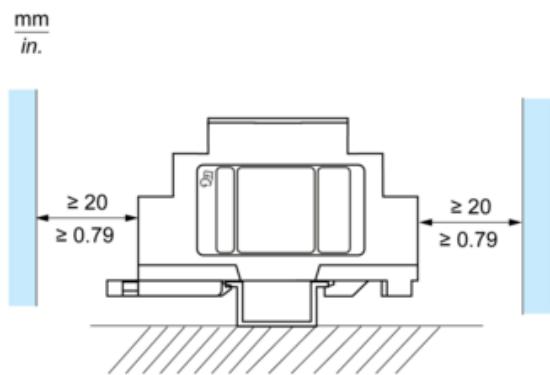
(1) : Ambient

Mounting

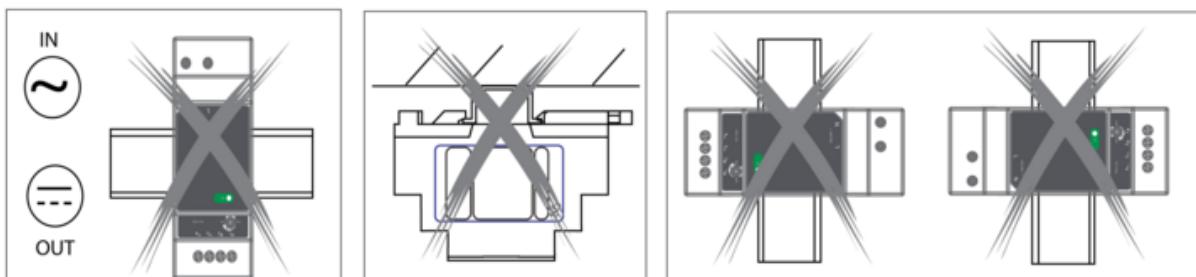
Mounting Position A



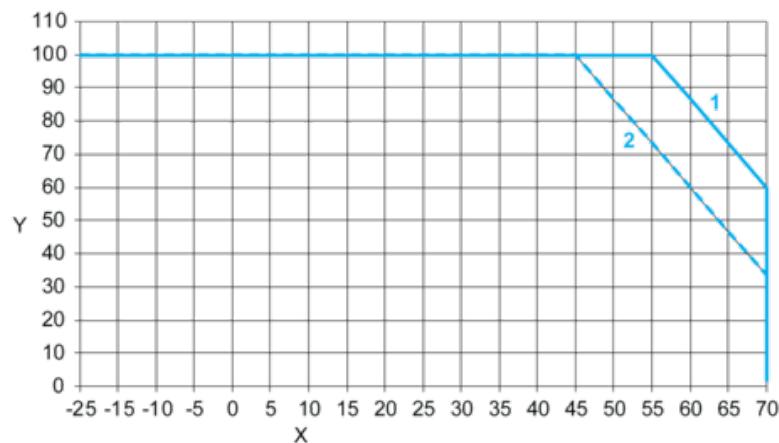
Mounting Position B



Incorrect Mounting



Performance Curve



X : Ambient Temperature (°C)

Y : Percentage of Max Load (%)

1 : Mounting A & B, altitude 2000M

2 : Mounting A & B, altitude 5000M