

Product data sheet

Specifications



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

ABLM1A12042

Product availability : Stock - Normally stocked in distribution facility

Price* : 152.91 USD

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 2 phases
Input voltage limits	90...264 V AC
Rated power in W	50 W
Output voltage	12 V DC
Power supply output current	4.17 A

Complementary

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 115 V 60 A 230 V
Power factor	0.50 at 115 V AC 0.39 at 230 V AC
Efficiency	88 % 115 V AC 88 % 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

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

	> 60 ms 230 V AC
Startup with capacitive loads	3000 µF
Residual ripple	< 100 mV
Expected capacitor life time	10 year(s)
Meantime between failure [MTBF]	1500000 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...2.5 mm², AWG 20...AWG 14) without wire end ferrule output Screw connection 0.5...1.5 mm², AWG 20...AWG 16) with wire end ferrule output Screw connection 0.5...1.5 mm², AWG 20...AWG 16) input
Line and load regulation	< 0.5 %line < 1 %load
Status LED	Output voltage 1 LED Green)
Depth	2.19 in (55.6 mm)
Height	3.58 in (91 mm)
Width	2.09 in (53 mm)
Net Weight	0.49 lb(US) (0.221 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 EN/IEC 60950-1 SELV EN/IEC 60204-1 SELV IEC 60364-4-41

Environment

Standards	EN 62368-1 EN/IEC 61010-1 EN 61010-2-201 EN/IEC 61204-3 EN 61000-6-1 EN 61000-6-2 EN 61000-6-3 EN 61000-6-4 EN 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	< 6561.68 ft (2000 m) overvoltage category III 2000 m...5000 m overvoltage category II
Shock resistance	100 m/s² 11 ms
IP degree of protection	IP20
Ambient air temperature for operation	-13...131 °F (-25...55 °C) without current derating) 131...158 °F (55...70 °C) with current derating of 2.67 % per °C)
Ambient Air Temperature for Storage	-40...185 °F (-40...85 °C)
Relative Humidity	0...95 % without condensation

Overvoltage category	II
Electrical energy source class conforming to IEC 62368-1	ES1
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/s² 9...200 Hz)IEC 60721-3-3
Electromagnetic immunity	Immunity to electrostatic discharge 6 kV contact discharge) EN/IEC 61000-4-2 Immunity to electrostatic discharge 9 kV air discharge) EN/IEC 61000-4-2 Electromagnetic field immunity test 10 V/m 80 MHz...2 GHz) EN/IEC 61000-4-3 Electromagnetic field immunity test 5 V/m 2...2.7 GHz) EN/IEC 61000-4-3 Electromagnetic field immunity test 3 V/m 2.7...6 GHz) EN/IEC 61000-4-3 Immunity to fast transients 4 kV on input-output) EN/IEC 61000-4-4 Surge immunity test 3 kV between power supply and earth) EN/IEC 61000-4-5 Surge immunity test 1.5 kV between phases) EN/IEC 61000-4-5 Immunity to conducted disturbances 10 Vrms 0.15...80 MHz) EN/IEC 61000-4-6 Immunity to magnetic fields 30 A/m 50...60 Hz) EN/IEC 61000-4-8 Immunity to voltage dips 100 % 1 cycle) EN/IEC 61000-4-11 Immunity to voltage dips 60 % 10 cycles) EN/IEC 61000-4-11 Immunity to voltage dips 30 % 25 cycles) EN/IEC 61000-4-11 Disturbing field emission EN 55016-2-3 Limits for harmonic current emissions EN 61000-3-2 Conducted disturbance emission EN 55016-1-2 Conducted disturbance emission EN 55016-2-1
Electromagnetic emission	Conducted emissions EN 61000-6-3 Radiated emissions EN 61000-6-4
Dielectric strength	3000 V AC input/output

Ordering and shipping details

Category	22525-ABL8 AND ABL7 POWER SUPPLIE
Discount Schedule	CP12
GTIN	3606481500168
Nbr. of units in pkg.	1
Package weight(Lbs)	8.08 oz (229 g)
Returnability	Yes
Country of origin	TH

Packing Units

Unit Type of Package 1	PCE
Package 1 Height	2.40 in (6.1 cm)
Package 1 width	2.40 in (6.1 cm)
Package 1 Length	4.33 in (11 cm)
Unit Type of Package 2	BB1
Number of Units in Package 2	1
Package 2 Weight	8.08 oz (229 g)
Package 2 Height	2.40 in (6.1 cm)
Package 2 width	2.40 in (6.1 cm)
Package 2 Length	4.33 in (11 cm)
Unit Type of Package 3	S02
Number of Units in Package 3	24
Package 3 Weight	13.12 lb(US) (5.951 kg)
Package 3 Height	5.91 in (15 cm)
Package 3 width	11.81 in (30 cm)

Package 3 Length	15.75 in (40 cm)
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Offer Sustainability

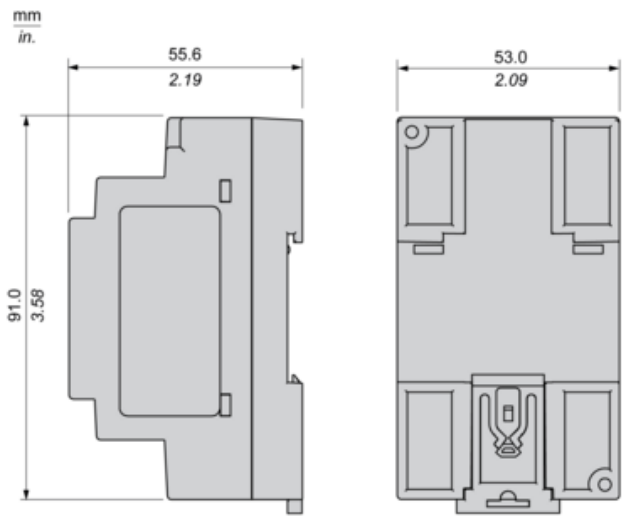
Sustainable offer status	Green Premium product
California proposition 65	WARNING: This product can expose you to chemicals including: Lead and lead compounds, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov
REACH Regulation	REACH Declaration
EU RoHS Directive	Pro-active compliance (Product out of EU RoHS legal scope) EU RoHS Declaration
Mercury free	Yes
RoHS exemption information	Yes
China RoHS Regulation	China RoHS declaration
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 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 devi
- 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 d
- The power supply is only suitable for audio, video, information, communication, industrial and control equipment.

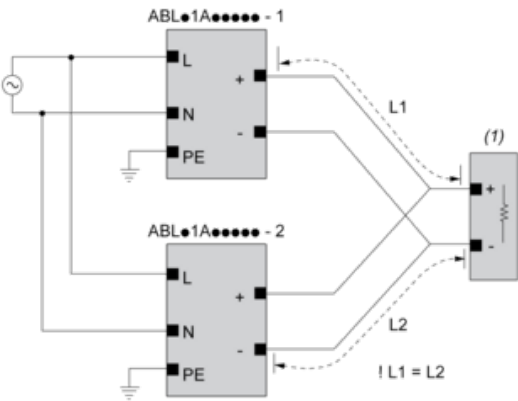
Dimensions

Side and Rear View



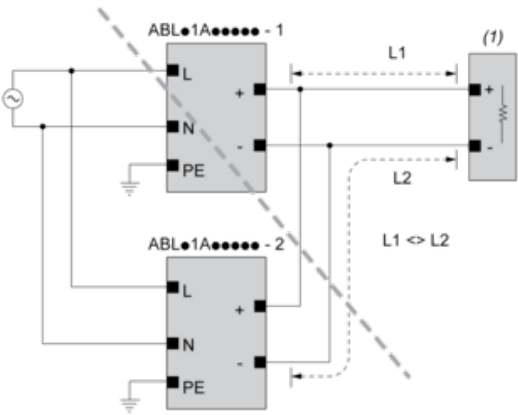
Connections and Schema

Correct Parallel Connection



(1) : Load

Incorrect Parallel Connection



(1) : Load

ABLx1Axxxxx-1 = ABLx1Axxxxx-2

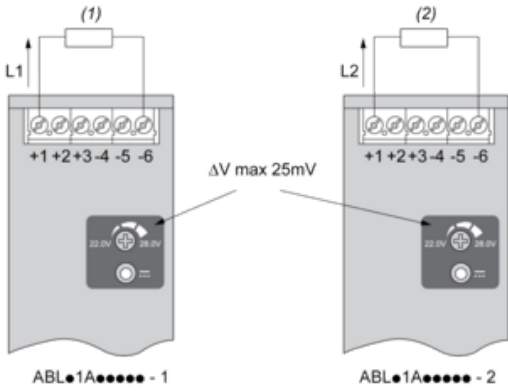
max 2 x ABLx1Axxxxx

L1 = L2

ΔV max 25 mV

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

Output Voltage Balancing



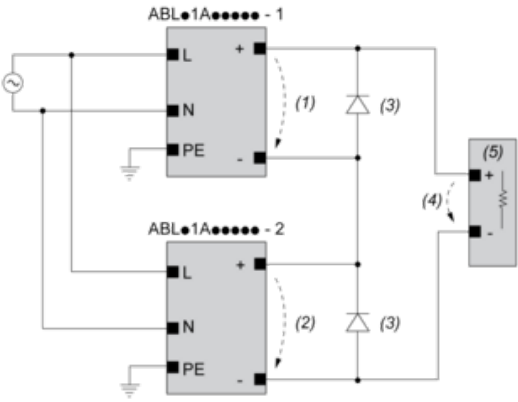
(1) : R_{Load1}

(2) : R_{Load2}

$R_{Load1} = R_{Load2}$

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

Series Connection



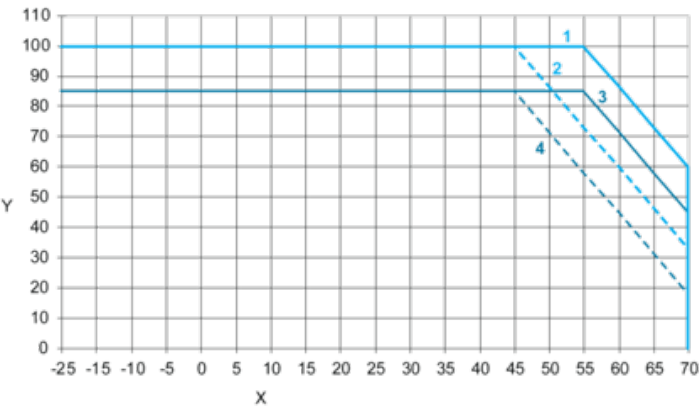
- (1) : V_{out1}
- (2) : V_{out2}
- (3) : 2 x Diode, $V_{RRM} > 2 \times V_{out1/2}$, $I_F > 2 \times I_{nom1/2}$
- (4) : $V_{Load} = 2 \times V_{out}$
- (5) : Load

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

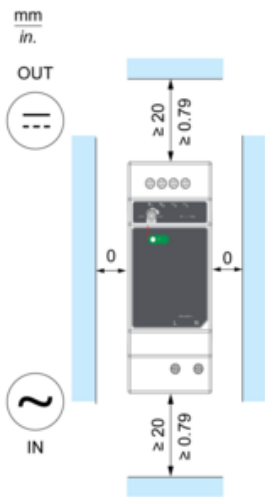
Performance Curve



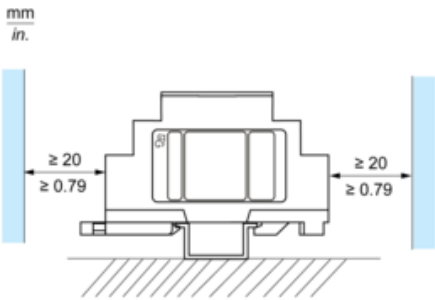
- X : Ambient Temperature (°C)
- Y : Percentage of Max Load (%)
- 1 : Altitude @2000M with Mounting A
- 2 : Altitude @5000M with Mounting A
- 3 : Altitude @2000M with Mounting B
- 4 : Altitude @5000M with Mounting B

Mounting

Mounting Position A



Mounting Position B



Incorrect Mounting

