Specification





# Regulated Power Supply, 100 to 240V AC, 24V, 2.5A, single phase, Modular

ABLM1A24025

#### 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	100240 V AC single phase 100240 V AC phase to phase		
Rated power in W	60 W		
Output voltage	24 V DC		
Power supply output current	2.5 A		

## Complementary

Complementary	
Input voltage limits	90264 V AC
Nominal network frequency	5060 Hz
Network system compatibility	TN
	TT IT
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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	90 % at 115 V AC
	90 % at 230 V AC
Output voltage adjustment	2428 V
Power dissipation in W	6.5 W
Current consumption	< 1.5 A 115 V AC
	< 1 A 230 V AC
Turn-on time	<2s
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]	1300000 h at 25 °C, full load 700000 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: 0.52.5 mm², (AWG 20AWG 14) without wire end ferrule for output Screw connection: 0.51.5 mm², (AWG 20AWG 16) with wire end ferrule for output Screw connection: 0.51.5 mm², (AWG 20AWG 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 61000-3-2 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 m5000 m overvoltage category II
Shock resistance	150 m/s² for 11 ms

IP degree of protection	IP20					
Ambient air temperature for operation	-2510 °C with current derating of 1 % per °C mounting position A < 2000 m -1055 °C without current derating mounting position A < 2000 m 5570 °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= 29 Hz) conforming to IEC 60721-3-3 10 m/s² (f= 9200 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 MHz2 GHz) conforming to IEC 61000-4-3 Electromagnetic field immunity test - test level: 5 V/m (22.7 GHz) conforming to IEC 61000-4-3 Electromagnetic field immunity test - 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 Immunity to conducted 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 61000-4-1 Immunity to voltage dips - test level: 60 % (10 cycle) 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 55016-2-1					
Electromagnetic emission	Conducted emissions conforming to IEC 61000-6-3 Radiated emissions conforming to IEC 61000-6-4					

# Packing Units

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Unit Type of Package 1	PCE
Number of Units in Package 1	1
Package 1 Height	6.000 cm
Package 1 Width	6.000 cm
Package 1 Length	11.000 cm
Package 1 Weight	227.000 g
Unit Type of Package 2	S02
Number of Units in Package 2	24
Package 2 Height	15.000 cm
Package 2 Width	30.000 cm
Package 2 Length	40.000 cm
Package 2 Weight	5.681 kg
Unit Type of Package 3	P06
Number of Units in Package 3	384
Package 3 Height	75.000 cm
Package 3 Width	60.000 cm
Package 3 Length	80.000 cm

Package 3 Weight

98.896 kg



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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			

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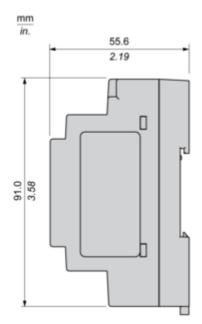
#### **Dimensions Drawings**

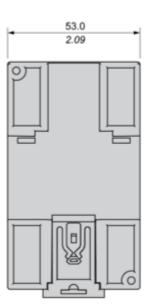
#### **Electrical Safety**

- 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**

#### Side and Rear View

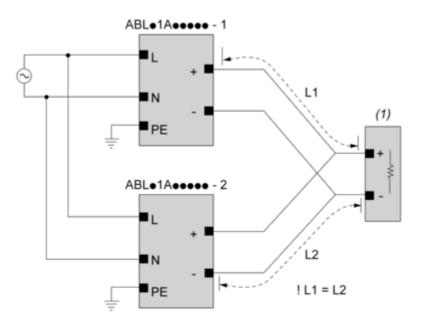




#### Connections and Schema

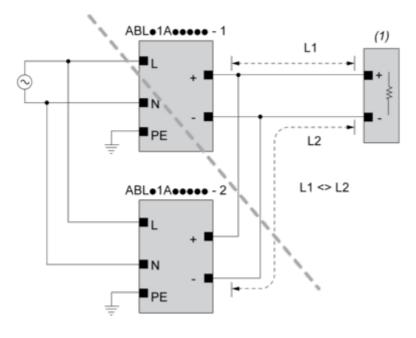
#### **Connections and Schema**

#### **Correct Parallel Connection**



#### (1): Load

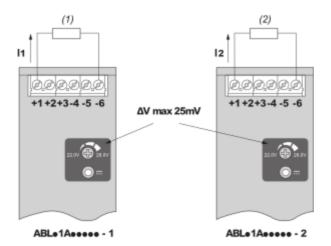
#### **Incorrect Parallel Connection**



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

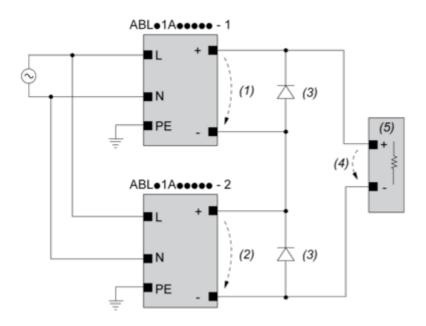
#### **Output Voltage Balancing**

## ABLM1A24025



- (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**

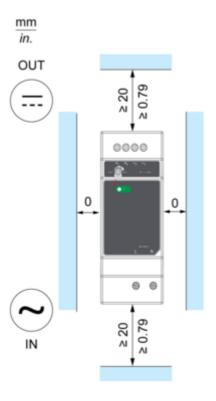
		(1)		
		<40°C	<50°C	<70°C
ABLM1A24004		60°C	75°C	75°C
ABLM1A12010		60°C	75°C	90°C
ABLM1A24006		60°C	75°C	90°C
ABLM1A05036	Input	60°C	75°C	90°C
7100000	Output	75°C	90°C	90°C
ABLM1A12021		60°C	75°C	90°C
ABLM1A24012		60°C	75°C	90°C
ABLM1A12042		60°C	75°C	90°C
ABLM1A24025		60°C	75°C	90°C

(1): Ambient

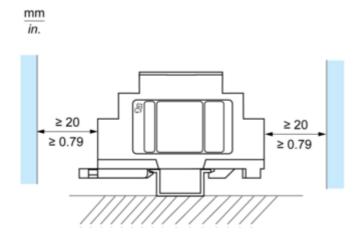
Mounting and Clearance

#### Mounting

#### **Mounting Position A**

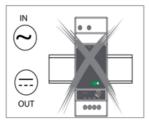


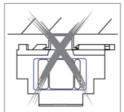
#### **Mounting Position B**

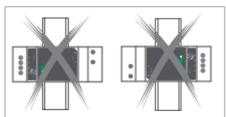


#### **Incorrect Mounting**

# ABLM1A24025



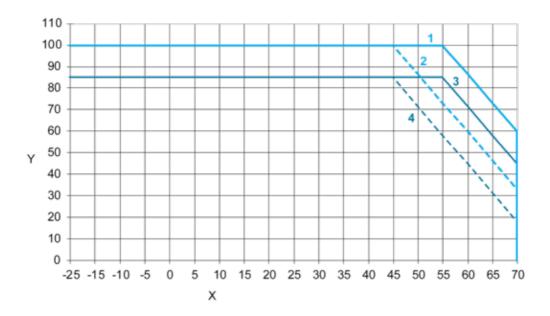




#### ABLM1A24025

#### 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