

# Product datasheet

Specifications



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

ABLS1A24100

### Main

Range of product	Modicon Power Supply
product or component type	Power supply
Power supply type	Regulated switch mode
Variant option	Optimized
Enclosure material	Aluminium
Nominal input voltage	100...240 V AC single phase 100...240 V AC phase to phase 140...340 V DC
Rated power in W	240 W
Output voltage	24 V DC
Power supply output current	10 A

### Complementary

Input voltage limits	85...264 V AC without temperature derating 120...375 V DC without temperature derating 85...120 V DC with temperature derating
Nominal network frequency	50...60 Hz
Network system compatibility	TN TT 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 at 115 V 60.0 A at 230 V
Power factor	0.95 at 115 V AC 0.95 at 230 V AC
Efficiency	85 % at 115 V AC 88 % at 230 V AC
Output voltage adjustment	22...28 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
Turn-on time	< 1 s

Disclaimer: 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

<b>Holding time</b>	> 20 ms 115 V AC > 20 ms 230 V AC
<b>Startup with capacitive loads</b>	8000 µF
<b>residual ripple</b>	< 120 mV
<b>Meantime between failure [MTBF]</b>	700000 h at 25 °C, full load conforming to SR 332
<b>Output protection type</b>	Against overload and short-circuits, protection technology: automatic reset Against over temperature, protection technology: manual reset Against overvoltage, protection technology: manual reset
<b>Connections - terminals</b>	Screw connection: 0.5...4 mm <sup>2</sup> , (AWG 20...AWG 12) without wire end ferrule for output Screw connection: 0.5...2.5 mm <sup>2</sup> , (AWG 20...AWG 14) with wire end ferrule for output Screw connection: 0.75...4 mm <sup>2</sup> , (AWG 18...AWG 12) without wire end ferrule for input Screw connection: 0.75...4 mm <sup>2</sup> , (AWG 18...AWG 12) with wire end ferrule for input
<b>Line and load regulation</b>	< 0.5 % at 0 to 100 % load at 25 °C < 1 % at full voltage range in line at 25 °C
<b>Status LED</b>	1 LED (green) output voltage
<b>Depth</b>	117.6 mm
<b>Height</b>	123.6 mm
<b>Width</b>	60 mm
<b>net weight</b>	0.8 kg
<b>Output coupling</b>	Parallel Serial
<b>Mounting support</b>	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
<b>Supply</b>	SELV conforming to IEC 60950-1 SELV conforming to IEC 60204-1 SELV conforming to IEC 60364-4-41
<b>Dielectric strength</b>	3000 V AC with input to output
<b>Service life</b>	10 year(s)
<b>Overvoltage category</b>	II

## Environment

<b>Standards</b>	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
<b>Product certifications</b>	CE CUL listed CUL recognized RCM CB Scheme EAC KC
<b>Operating altitude</b>	< 5000 m
<b>Shock resistance</b>	150 m/s <sup>2</sup> for 11 ms
<b>IP degree of protection</b>	IP20

<b>Ambient air temperature for operation</b>	-20...40 °C without derating mounting position A 115 V AC < 2000 m -20...50 °C without derating mounting position A 230 V AC < 2000 m 40...70 °C with current derating of 1.67 % per °C mounting position A 115 V AC < 2000 m 50...70 °C with current derating of 2.5 % per °C mounting position A 230 V AC < 2000 m
<b>Electrical shock protection class</b>	Class I
<b>Pollution degree</b>	2
<b>Vibration resistance</b>	3 mm (f= 2...9 Hz) conforming to IEC 60068-2-6 10 m/s <sup>2</sup> (f= 9...200 Hz) conforming to IEC 60068-2-6
<b>Electromagnetic immunity</b>	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 MHz...2 GHz) conforming to IEC 61000-4-3 Immunity to conducted RF disturbances - test level: 5 V/m (2...2.7 GHz) conforming to IEC 61000-4-3 Immunity to conducted RF disturbances - 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 RF 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 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
<b>Electromagnetic emission</b>	Conducted emissions conforming to IEC 61000-6-3 Radiated emissions conforming to IEC 61000-6-4

## Packing Units

<b>Unit Type of Package 1</b>	PCE
<b>Number of Units in Package 1</b>	1
<b>Package 1 Height</b>	7.000 cm
<b>Package 1 Width</b>	17.500 cm
<b>Package 1 Length</b>	18.000 cm
<b>Package 1 Weight</b>	974.000 g
<b>Unit Type of Package 2</b>	S03
<b>Number of Units in Package 2</b>	9
<b>Package 2 Height</b>	30.000 cm
<b>Package 2 Width</b>	30.000 cm
<b>Package 2 Length</b>	40.000 cm
<b>Package 2 Weight</b>	9.150 kg
<b>Unit Type of Package 3</b>	P12
<b>Number of Units in Package 3</b>	72
<b>Package 3 Height</b>	45.000 cm
<b>Package 3 Width</b>	80.000 cm
<b>Package 3 Length</b>	120.000 cm
<b>Package 3 Weight</b>	85.200 kg

## 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-CO<sub>2</sub> 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

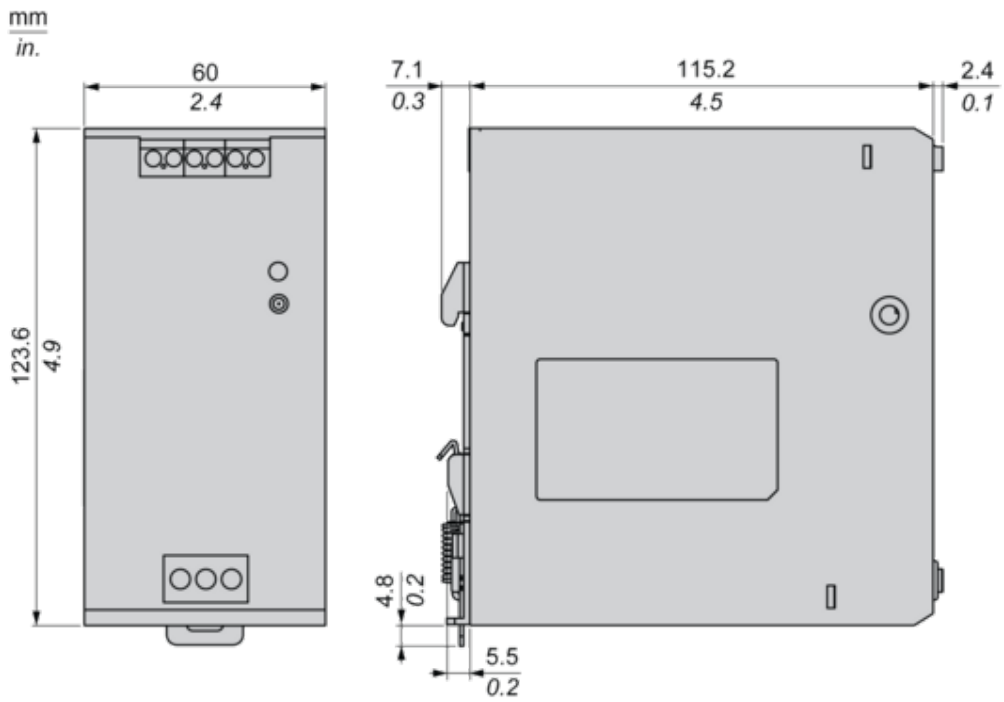
---

- 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

---

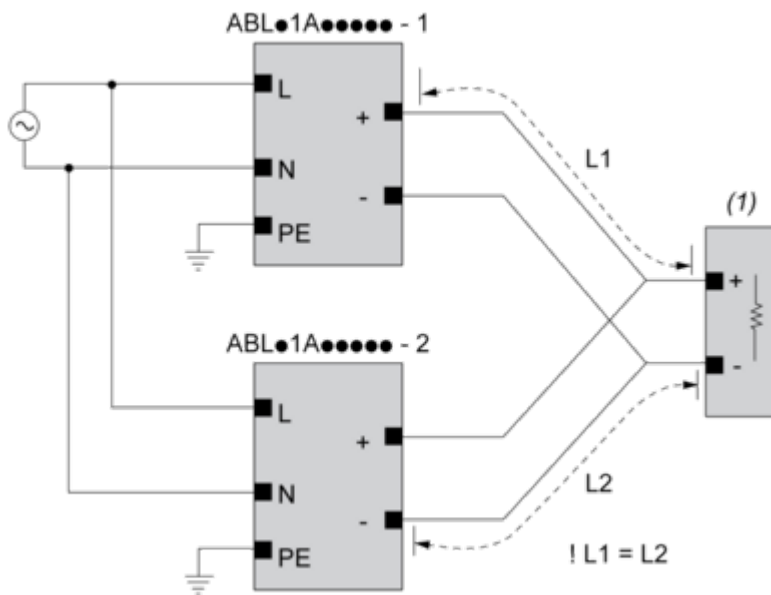
Front and Side Views



Connections and Schema

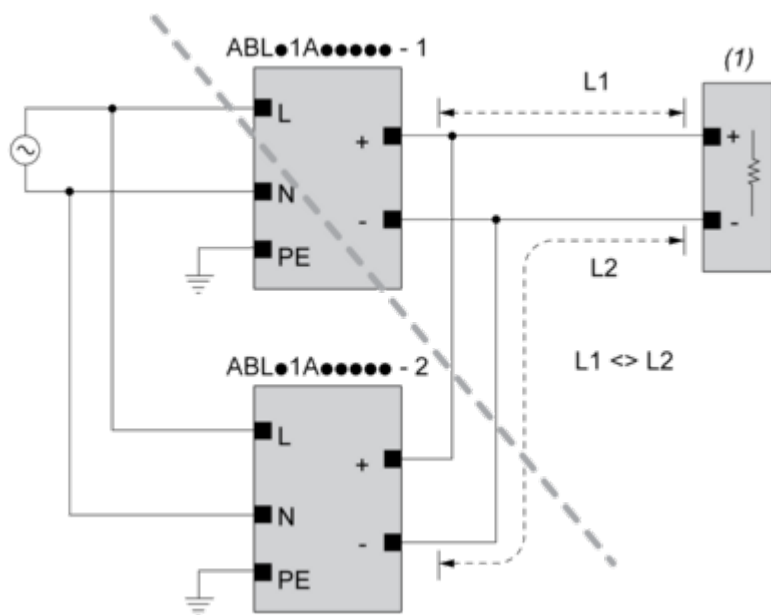
Connections and Schema

Correct Parallel Connection



(1) : Load

Incorrect Parallel Connection



(1) : Load

ABLx1Axxxxx-1 = ABLx1Axxxxx-2

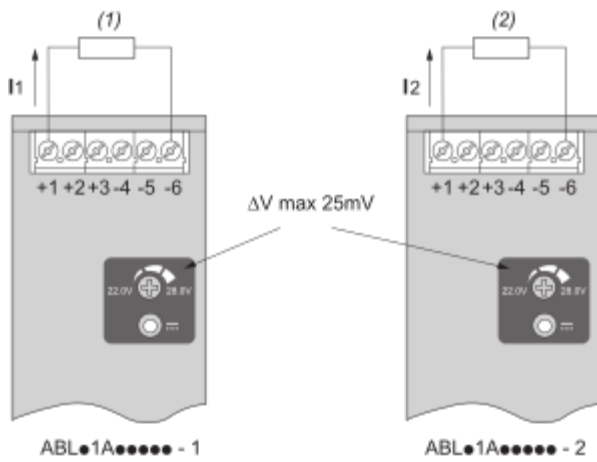
max 2 x ABLx1Axxxxx

L1 = L2

$\Delta V$  max 25 mV

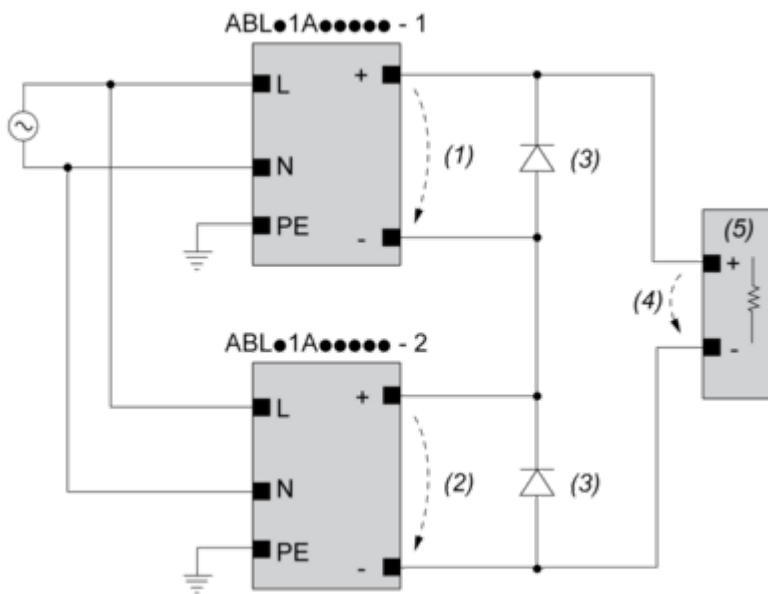
$I_{Load} < 90\% \cdot 2 \times I_{nom}$

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

---

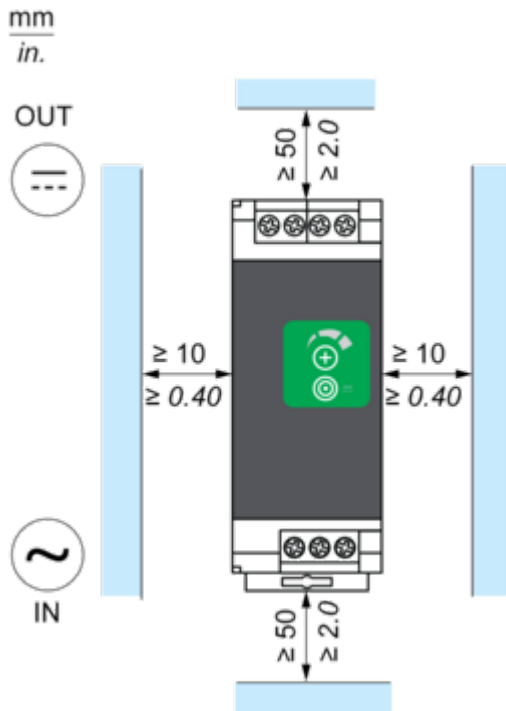
	(1)		
	<40°C	<50°C	<70°C
ABLS1A24021	50°C	60°C	75°C
ABLS1A24038	50°C	60°C	75°C
ABLS1A12062	50°C	60°C	80°C
ABLS1A24031	50°C	60°C	80°C
ABLS1A12100	60°C	70°C	90°C
ABLS1A24050	60°C	70°C	90°C
ABLS1A48025	60°C	70°C	90°C
ABLS1A24100	60°C	70°C	90°C
ABLS1A24200	95°C	95°C	90°C

(1) : Ambient

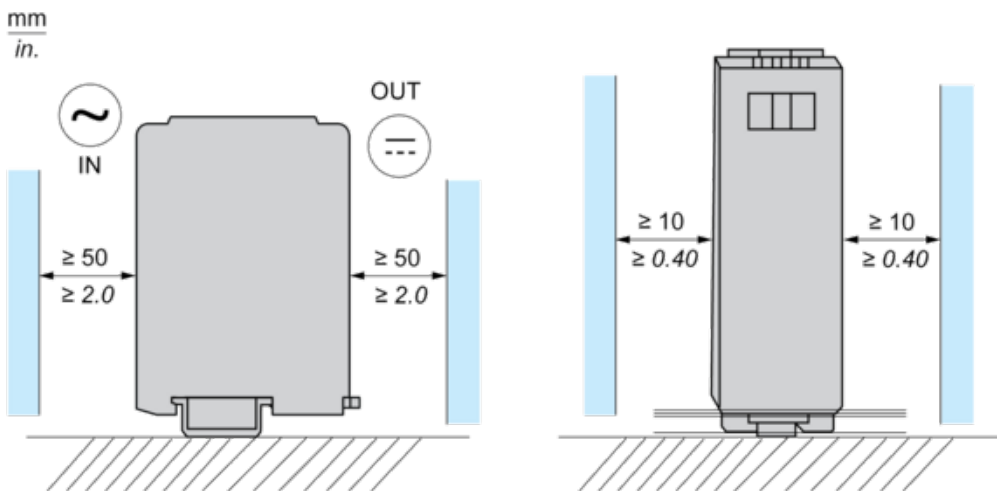
Mounting and Clearance

Mounting

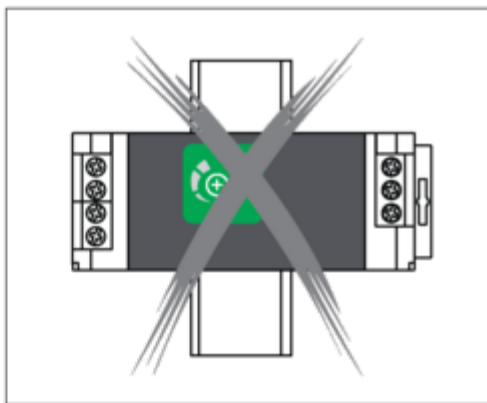
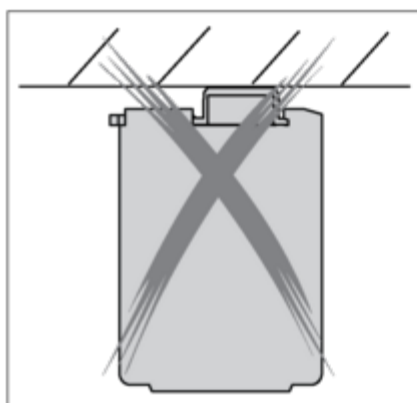
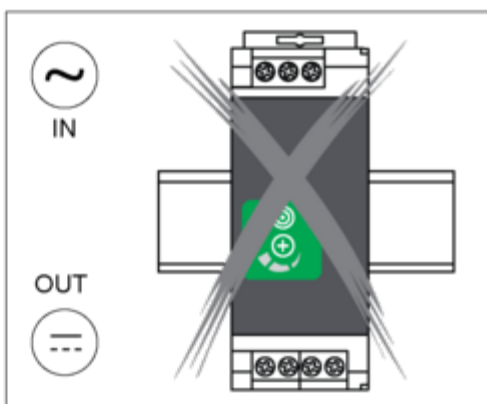
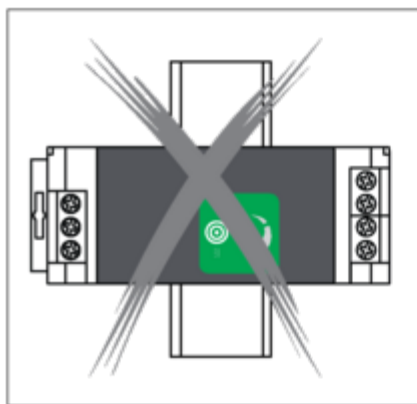
Mounting Position A



Mounting Position B



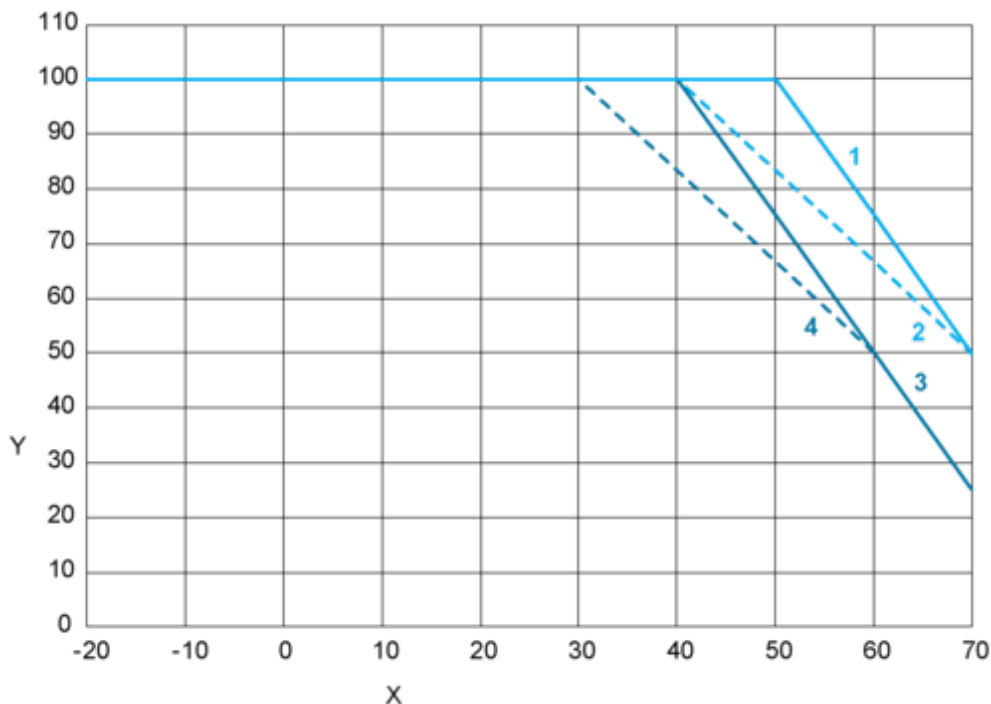
Incorrect Mounting



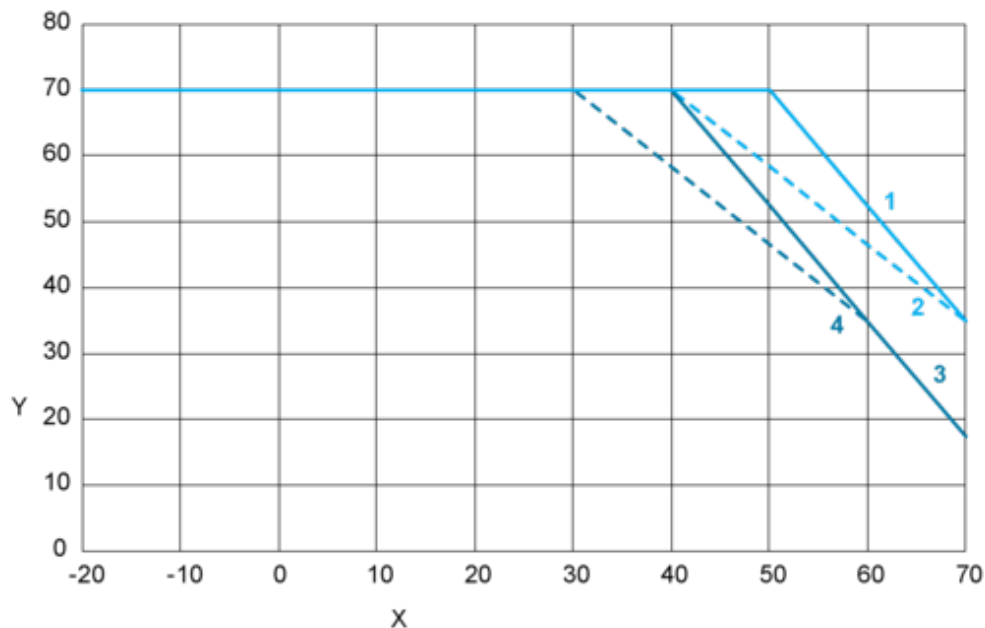
Performance Curves

Performance Curve

Mounting Position A



Mounting Position B



X : Surrounding Air Temperature (°C)

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

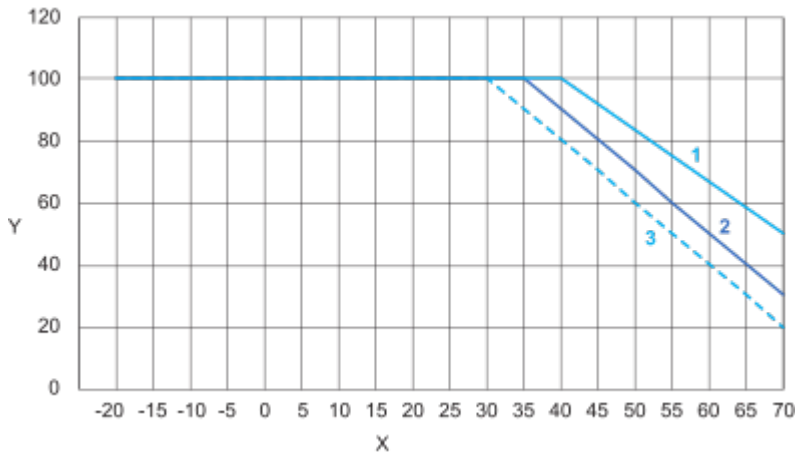
3 : Altitude ≤ 5000 m (16404 ft), Input voltage = 230 VAC / 325 VDC

4 : Altitude ≤ 5000 m (16404 ft), 115 VAC / 162 VDC



DC input voltage

---



X : Surrounding Air Temperature (°C)  
Y : Percentage of Maximum Load (%)  
1 : 110 VDC  
2 : 90 VDC  
3 : 85 VDC