Product data sheet

Specifications

Regulated Power Supply, 100 to 240V AC, 24V, 20A, single phase, Optimized

ABLS1A24200

Product availability: Stock - Normally stocked in distribution facility

Price*: 365.00 USD

Main

Range of Product	Modicon Power Supply
Product or Component Type	Power supply
Power supply type	Regulated switch mode
Variant option	Optimized
Enclosure Material	Aluminum
Nominal input voltage	100...240 V AC single phase 100...240 V AC phase to phase 140...340 V DC
Kw Rating	480 W
Output voltage	24 V DC
Power supply output current	20 A

Complementary

Efficiency at full load	85...264 V AC without temperature derating 120...375 V DC without 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) 10 A External protection (recommended) 20 A Curve C External protection (recommended) 16 A Curve B External protection (recommended) 13 A Curve C
Inrush current	45.0 A 115 V 90.0 A 230 V
Power factor	0.95 at 115 V AC 0.95 at 230 V AC
Efficiency	85 % 115 V AC 88 % 230 V AC
Output voltage adjustment	22...28 V
Power dissipation in W	60 W
Current consumption	< 5.4 A 115 V AC < 2.7 A 230 V AC < 5 A 140 V DC
Turn-on time	< 1.5 s

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

Holding time	> 20 ms 115 V AC > 20 ms 230 V AC
Startup with capacitive loads	8000 µF
Residual ripple	< 120 mV
Meantime between failure [MTBF]	700000 h at 77.0000000000 °F (25 °C), full load conforming to SR 332
Output protection type	Against overload and short-circuits automatic reset Against over temperature manual reset Against overvoltage manual reset
Connections - terminals	Screw connection 0.75...4 mm², AWG 20...AWG 12) without wire end ferrule output Screw connection 0.75...4 mm², AWG 20...AWG 14) with wire end ferrule output Screw connection 0.75...4 mm², AWG 18...AWG 12) without wire end ferrule input Screw connection 0.75...4 mm², AWG 18...AWG 12) with wire end ferrule input
Line and load regulation	< 0.5 % network 0 to 100 % load at 77.0000000000 °F (25 °C) < 1 % network full voltage range in line at 77.0000000000 °F (25 °C)
Status LED	1 LED (Green) output voltage
Depth	5.06 in (128.5 mm)
Height	4.9 in (123.6 mm)
Width	3.4 in (85.5 mm)
Net Weight	2.76 lb(US) (1.25 kg)
Output coupling	Parallel Serial
Mounting support	Top hat type TH35-15 rail IEC 60715 Top hat type TH35-7.5 rail IEC 60715 Double-profile DIN rail
Supply	SELV IEC 60950-1 SELV IEC 60204-1 SELV IEC 60364-4-41
Dielectric strength	3000 V AC with input to 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
Operating altitude	< 5000 m
Shock resistance	150 m/s² 11 ms

IP degree of protection	IP20
Ambient air temperature for operation	-4.0000000000…104.0000000000 °F (-20…40 °C) without derating mounting position A 115 V AC < 6561.68 ft (2000 m) -4.0000000000…122.0000000000 °F (-20…50 °C) without derating mounting position A 230 V AC < 6561.68 ft (2000 m) 104.0000000000…158.0000000000 °F (40…70 °C) with current derating of 1.67 % per °C mounting position A 115 V AC < 6561.68 ft (2000 m) 122.0000000000…158.0000000000 °F (50…70 °C) with current derating of 2.5 % per °C mounting position A 230 V AC < 6561.68 ft (2000 m)
Electrical shock protection class	Class I
Pollution degree	2
Vibration resistance	3 mm 2…9 Hz)IEC 60068-2-6 10 m/s² 9…200 Hz)IEC 60068-2-6
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 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
Electromagnetic emission	Conducted emissions IEC 61000-6-3 Radiated emissions IEC 61000-6-4

Ordering and shipping details

Category	US1CP1222525
Discount Schedule	CP12
GTIN	3606481500267
Returnability	Yes
Country of origin	SG

Packing Units

Unit Type of Package 1	PCE
Number of Units in Package 1	1
Package 1 Height	3.7 in (9.5 cm)
Package 1 Width	6.9 in (17.5 cm)
Package 1 Length	7.09 in (18.0 cm)
Package 1 Weight	3.128 lb(US) (1.419 kg)
Unit Type of Package 2	S03
Number of Units in Package 2	7
Package 2 Height	11.8 in (30 cm)

Package 2 Width	11.8 in (30 cm)
Package 2 Length	15.7 in (40 cm)
Package 2 Weight	23.186 lb(US) (10.517 kg)

Sustainability

Green Premium^{TM} 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_2 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
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"

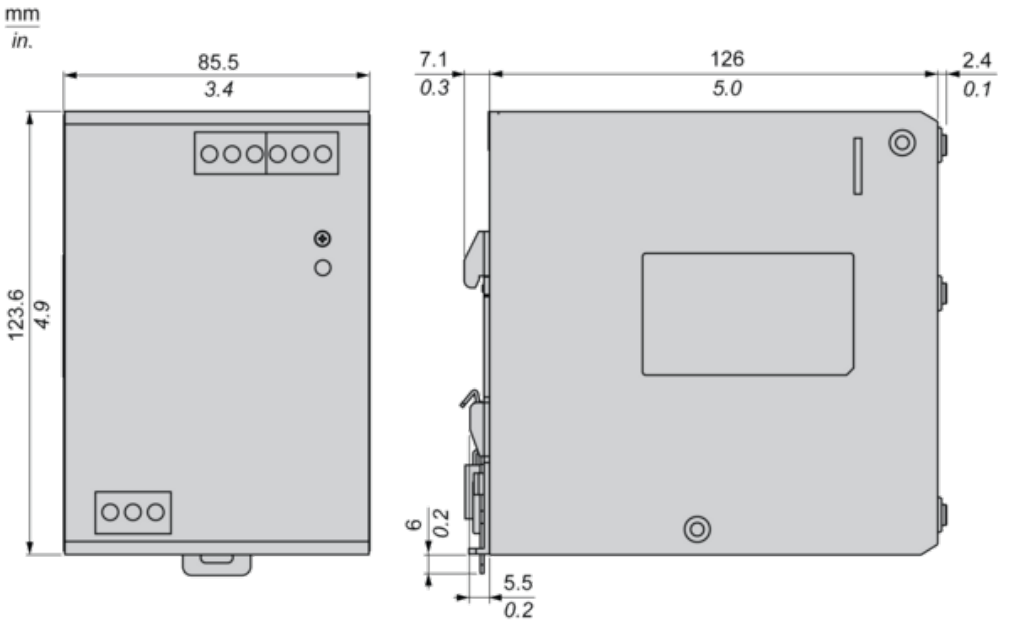
Dimensions Drawings

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

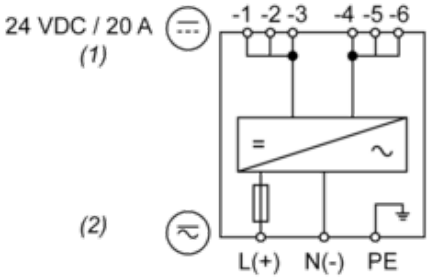
Front and Side Views



Connections and Schema

Connections and Schema

Wiring

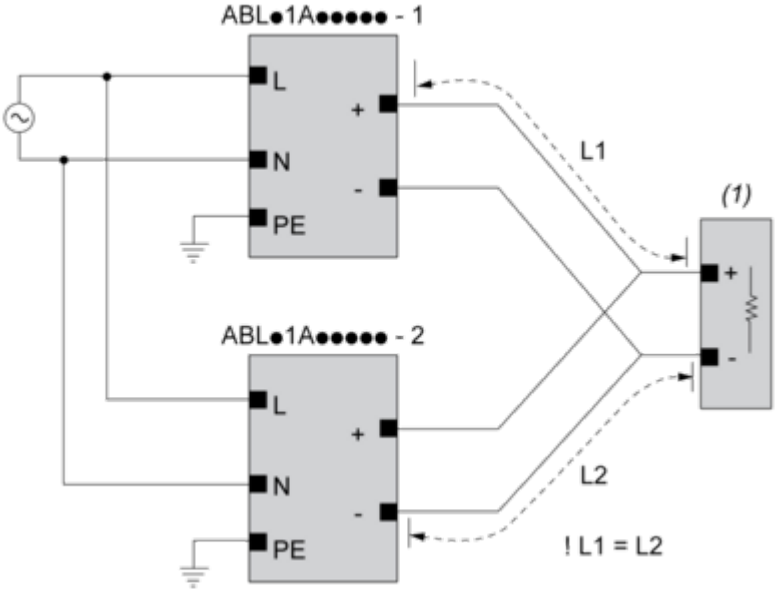


mm²	0.75 - 4	0.75 - 4	2x0.75 - 2.5	2x0.75 - 1.5	2x0.75 - 2.5
AWG	18 - 12	18 - 12	2x18 - 14	2x18 - 16	2x18 - 14

mm²	0.75 - 4	0.75 - 4	2x0.75 - 2.5	2x0.75 - 1.5	2x0.75 - 2.5
AWG	18 - 12	18 - 12	2x18 - 14	2x18 - 16	2x18 - 14

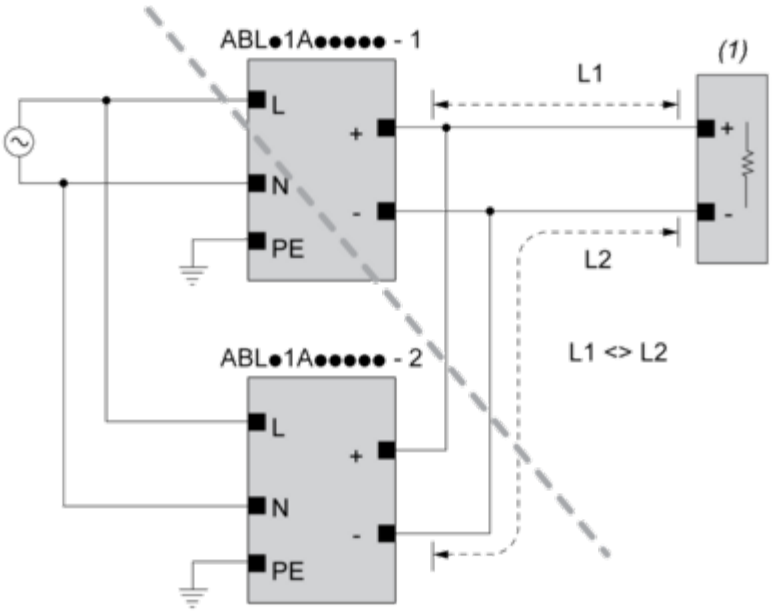
(1) : Output wiring
(2) : Input wiring
This is only the terminal wire rating. The wire size to be used in the application must be selected by the machine builder according to the ambient temperature, the wiring method and the end-use product standard. The unit has been tested and approved with input wire (80°C) and output wire 1 x 12AWG (95°C) or 3 x 18 AWG copper wire.

Correct Parallel Connection



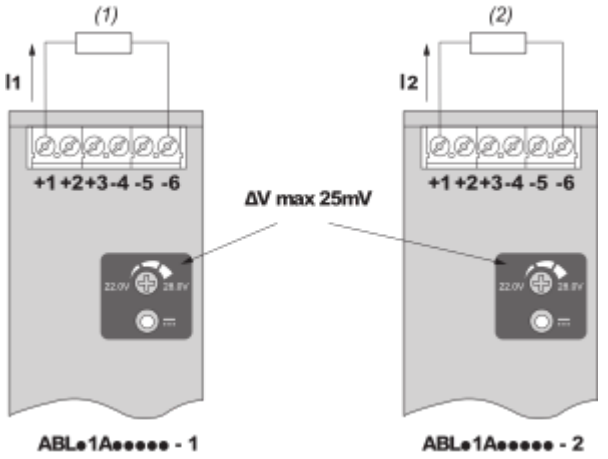
(1) : Load

Incorrect Parallel Connection



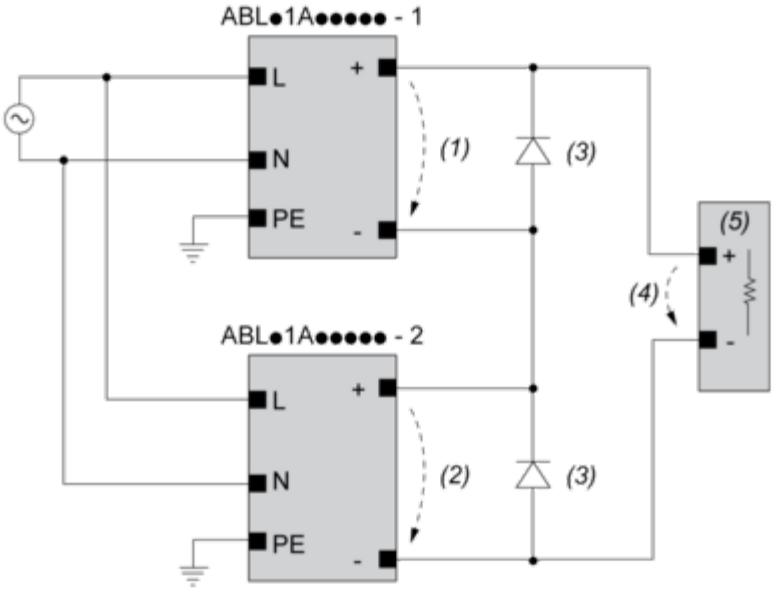
(1) : Load
ABLx1Axxxxx-1 = ABLx1Axxxxx-2
max 2 x ABLx1Axxxxx
L1 = L2
ΔV max 25 mV
I_{Load} < 90% 2 x I_{nom}

Output Voltage Balancing



(1) : R_{Load1}
(2) : R_{Load2}
R_{Load1}= R_{Load2}
I_1 = I_2 = ~ I_{nom}

Series Connection

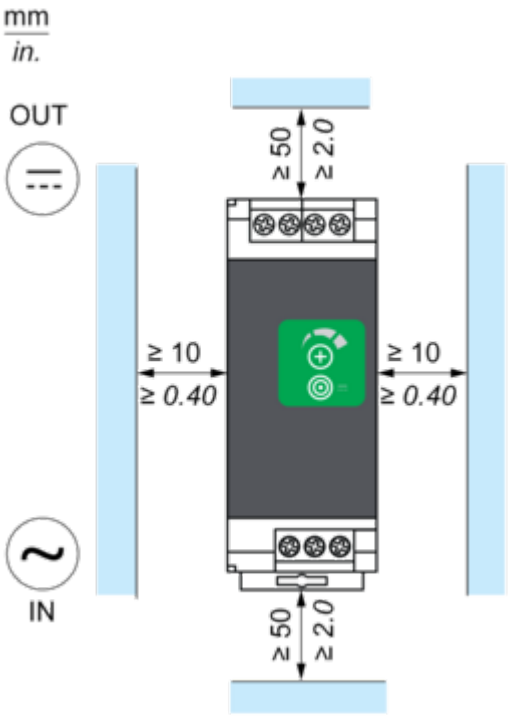


(1) : V_{out1}
(2) : V_{out2}
(3) : 2 x Diode, $V_{RRM} > 2 \times V_{out1/2}$, $I_F > 2 \times I_{nom1/2}$
(4) : $V_{Load} = 2 \times V_{out}$
(5) : Load

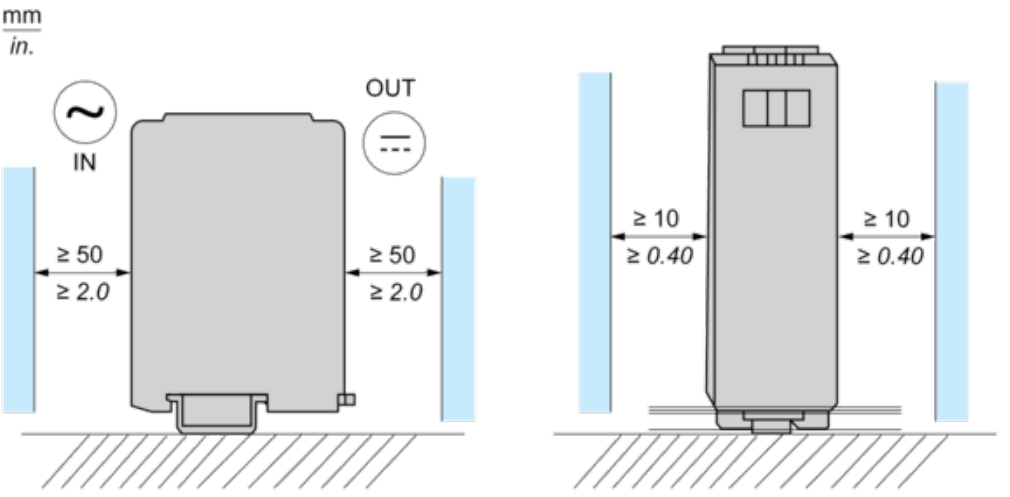
Mounting and Clearance

Mounting

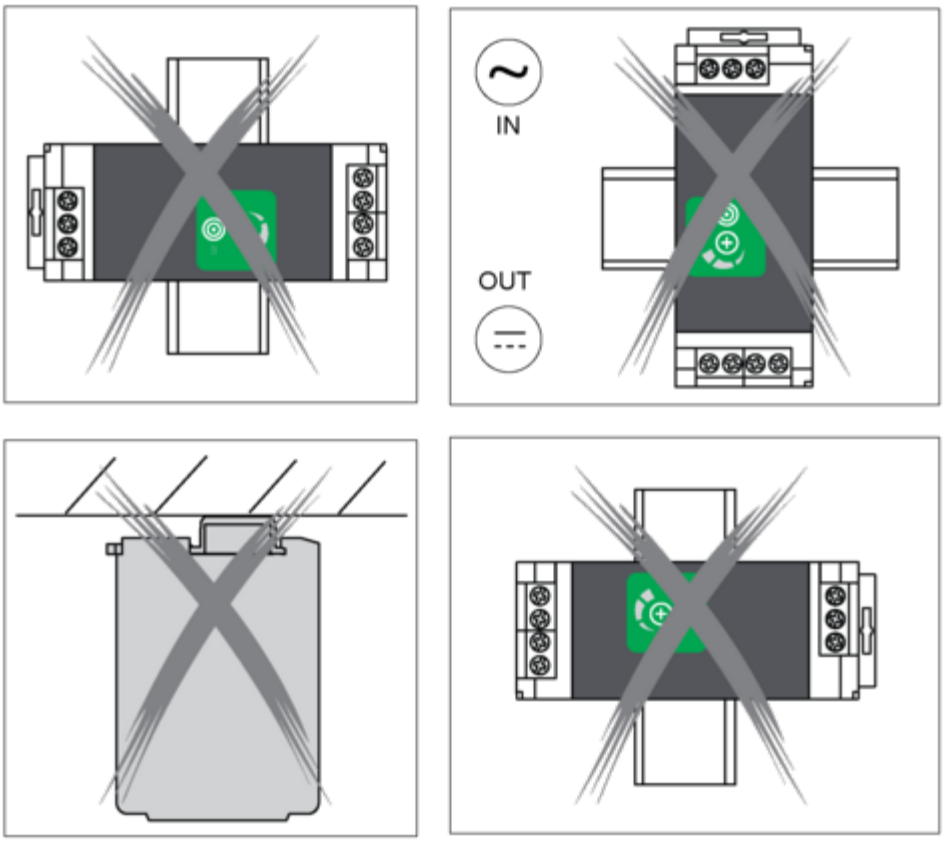
Mounting Position A



Mounting Position B



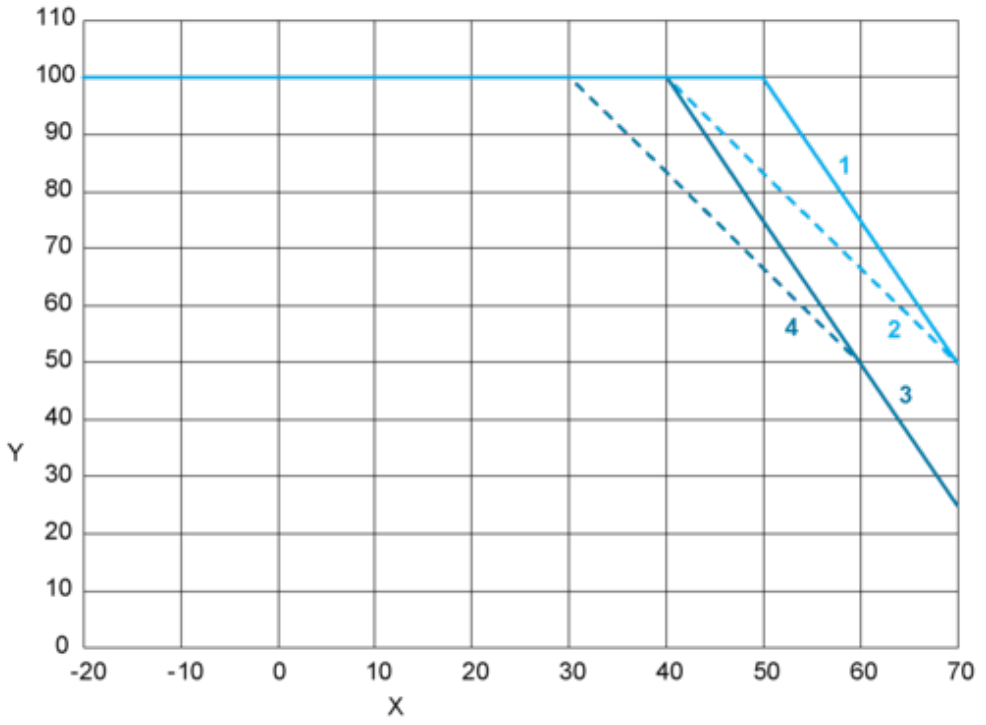
Incorrect Mounting


IN
OUT

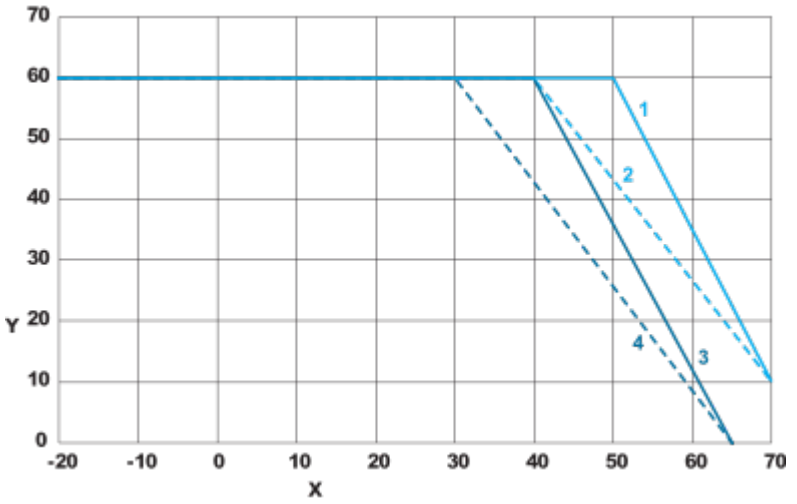
Performance Curves

Performance Curve

Mounting Position A

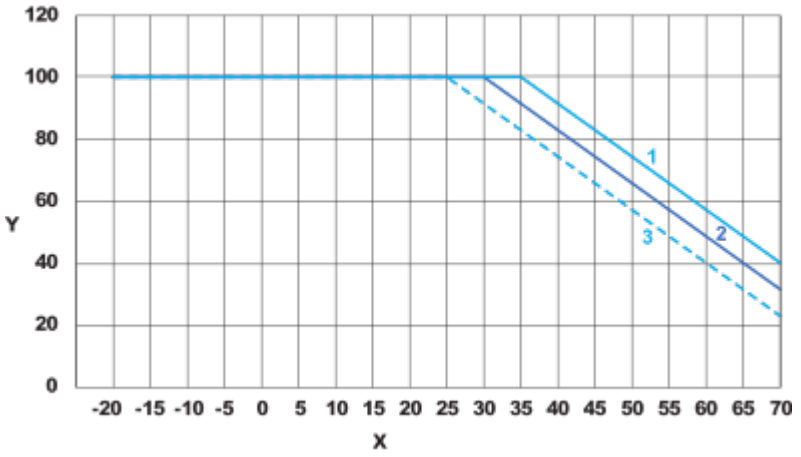


Mounting Position B



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

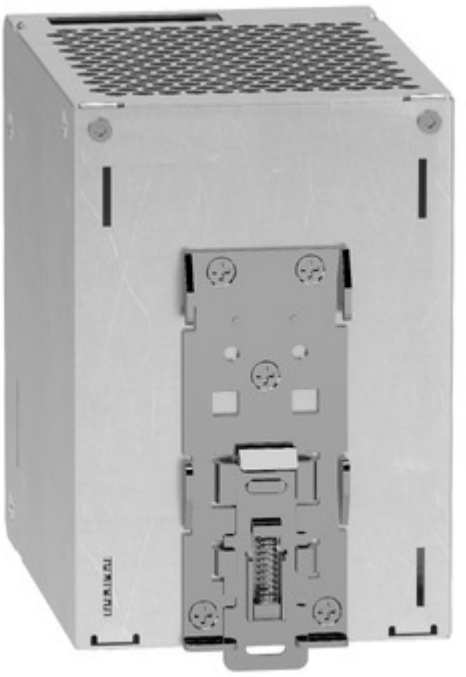
DC input voltage



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

Image of product / Alternate images

Alternative




+1 +2 +3 −4 −5 −6
24V⎓20A
22.0V
28.0V
Schneider
ABLS1A24200
100-240V~
140-340V⎓
L(+) N(-)