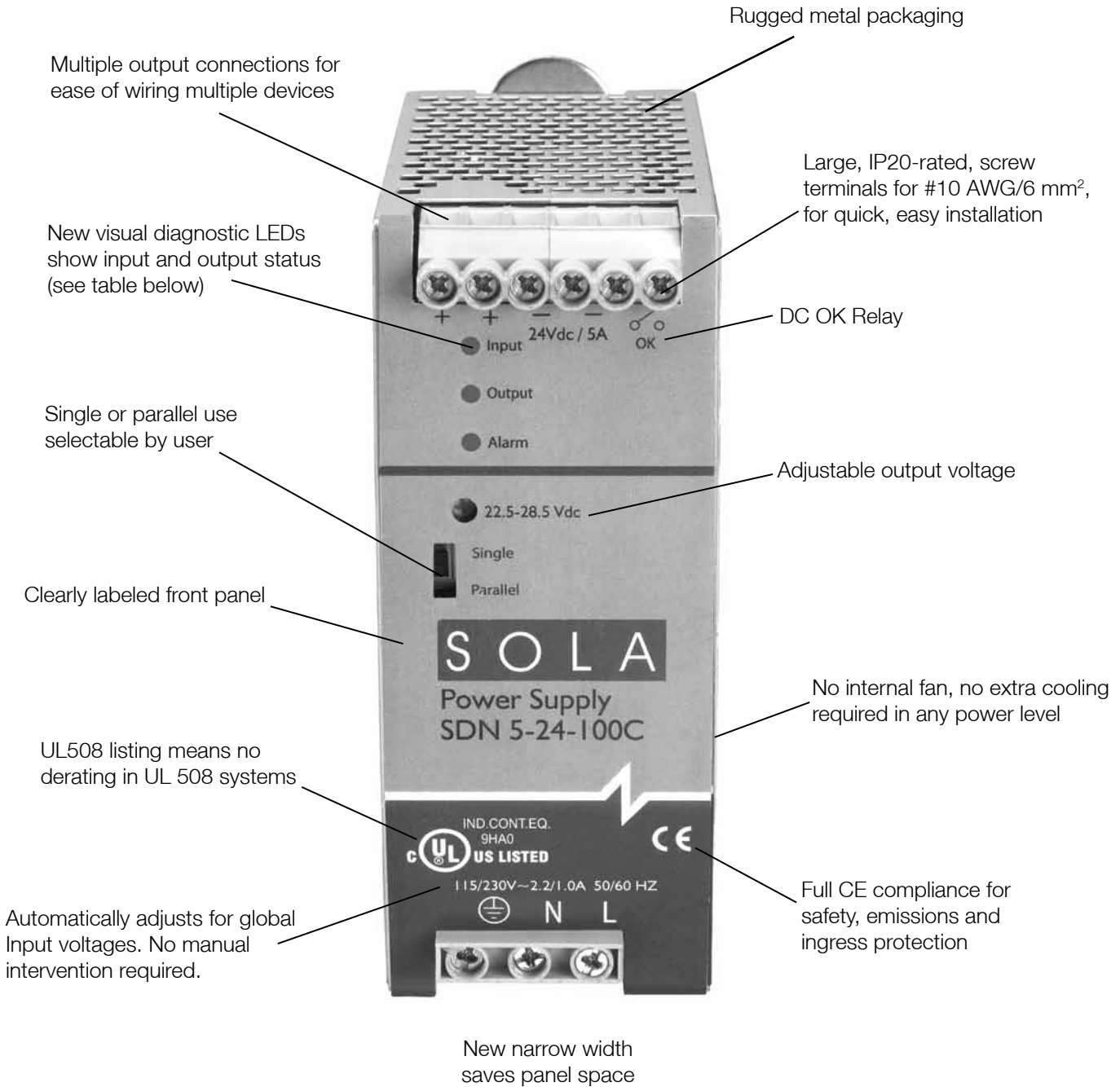


### The SolaHD Difference



### LED Light Status Conditions

	Normal	AC Power Loss	AC Input Low	No DC	High Load	Overload	Hot	Too Hot
<b>Input</b>	Green	-	Yellow	Green	Green	Green	Green	Green
<b>Output</b>	Green	-	Green	-	Yellow	Yellow	Green	-
<b>Alarm</b>	-	-	-	Red	Yellow	Red	Yellow	Yellow

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

SDN-C Specifications (Single Phase)

Description	Catalog Number		
	SDN 5-24-100C	SDN 10-24-100C	SDN 20-24-100C
<b>Input</b>			
Nominal Voltage	115/230 Vac		
-AC Range	85 - 264 Vac		
-DC Range <sup>1</sup>	90 - 375 Vdc		
-Frequency	43 - 67 Hz		
Nominal Current <sup>2</sup>	1.65 - 0.55 A	3.2 - 1.0 A	6 A / 3 A
-Inrush current max.	Typ. < 15 A	Typ. < 30 A	< 40 A
Efficiency (Losses <sup>3</sup> )	> 90% typ. (12 W)	> 90% typ. (24 W)	> 92% (38 W)
Power Factor Correction	Active power factor correction to better than 0.92		
<b>Output</b>			
Nominal Voltage	24 V (23.5~28.5 Vdc Adj.)		
-Tolerance	< ± 2 % overall (combination Line, load, time and temperature related changes)		
Initial Voltage Setting	24.5 V ± 1%		
-Ripple <sup>4</sup>	< 50 mVpp		< 100 mVpp
PARD	PARD (Periodic and Random Deviation) = 100 mV peak-peak max		
Overvoltage Protection	> 30.5 but < 33 Vdc, auto recovery		
Power Back Immunity	< 35 V		
Nominal Current	5 A (120 W)	10 A (240 W)	20 A (480 W)
-Peak Current <sup>5</sup>	1.5 x Nominal Current for 2 seconds minimum while holding voltage > 20 Vdc		
-Short Circuit Current	1.5 x Nominal Current at near zero volts at short circuit condition		
-Current Limit	PowerBoost™		
Parallel Operation	Switch selectable single unit or parallel unit operation. Units will not be damaged by parallel operation (regardless of switch position setting).		
Holdup Time	>20 ms (Full load, 100 Vac Input @ T <sub>amb</sub> = +25°C) to 95% output voltage		
Voltage Fall Time	<150 mS from 95% to 10% rated voltage @ full load (T <sub>amb</sub> = +25°C)		
Line and Load Regulation	< 0.5%		
<b>General</b>			
EMC: -Emissions	EN61000-6-2:2001, EN61000-6-3:2001, Class B EN55011, EN55022 Radiated and Conducted including Annex. A, EN61000-3-2		
-Immunity	EN61000-6-1:2001, EN61000-6-2:2001, EN61000-4-2 Level 4, EN61000-4-3 Level 3, EN61000-4-6 Level 3, EN61000-4-4 Level 4 input and level 3 output. EN61000-4-5 Isolation class 4, EN61000-4-11, IEC 61000-4-34 voltage dip immunity standard		
Approvals	cULus Listed UL508, CSA C22.2 No. 107.1; cULus UL 60950-1/CSA C22.2 No.60950-1 2nd ed, ANSI/ISA 12.12.01, CSA C22.2 No. 213; Class I, Div. 2, Groups A,B,C and D, T4 in a 40°C ambient; CE IEC60950-1:2005 2nd ed, EN60950-1:2006+A11:2009; Models SDN 5-24-100C and SDN 10-24-100C - cULus UL60079-15/CSA C22.2 E60079-15 Class I, Zone 2 AEx nC IIC, Ex nC IIC, 60°C ambient and ATEX EN60079-0, EN60079-15 Ex II 3 G Ex nC IIC pending		
Temperature <sup>6</sup>	Storage: -40°C to + 85°C, Operation -25°C to +60°C full power, with linear derating to half power from 60 to 70°C (Convection cooling, no forced air required). Operation up to 50% load permissible with sideways or front side up mounting orientation.		
MTBF <sup>7</sup>	> 550,000 hrs		> 450,000 hrs
Warranty	5 Years		
General Protection/Safety	Protected against continuous short -circuit, continuous overload, continuous open circuit. Protection Class 1 (IEC536), degree of protection IP20 (IEC60529) Safe low voltage: SELV (acc. IEC60950-1)		
Status Indicators	<b>Visual:</b> 3 status LEDs (Input, Output, Alarm) <b>Relay:</b> N.O. contact rated 200ma/50 Vdc		
<b>Installation</b>			
Fusing -Input	Internally fused		
-Output	Outputs are capable of providing high currents for short periods of time for inductive load startup or switching. Fusing may be required for wire/loads if 2x Nominal O/P current rating cannot be tolerated. Continuous current overload allows for reliable fuse tripping.		
Mounting	Simple snap-on to DIN TS35/7.5 or TS35/15 rail system.		
Connections	<b>Input:</b> Screw terminals, connector size range: 16-10 AWG (1.5-6 mm <sup>2</sup> ) for solid conductors. <b>Output:</b> Two terminals per output, connector size range: 16-10 AWG (1.5-6 mm <sup>2</sup> ) for solid conductors.		
Case	Fully enclosed metal housing with fine ventilation grid to keep out small parts.		
-Free Space	15 mm in front, 25 ~ 40 mm above and below, 10 mm left and right.		
H x W x D inches (mm)	4.85 x 1.97 x 4.36 (123 x 50 x 110)	4.85 x 2.36 x 4.36 (123 x 60 x 110)	4.85 x 3.42 x 4.98 (123 x 87 x 127)
Weight lbs(kg)	1.10 (0.5)	1.76 (0.8)	2.6 (1.2)

- Not UL listed for DC input.
- Input current ratings are conservatively specified with low input, worst case efficiency and power factor.
- Losses are heat dissipation in watts at full load, nominal input line.
- Ripple/noise is stated as typical values when measured with a 20 MHz, bandwidth scope and 50 Ohm resistor.
- Peak current is calculated at 24 Volt levels.
- Contact tech support for operation at -25°C.
- Demonstrated through extended life test.

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## SDN-C Specifications (Three Phase)

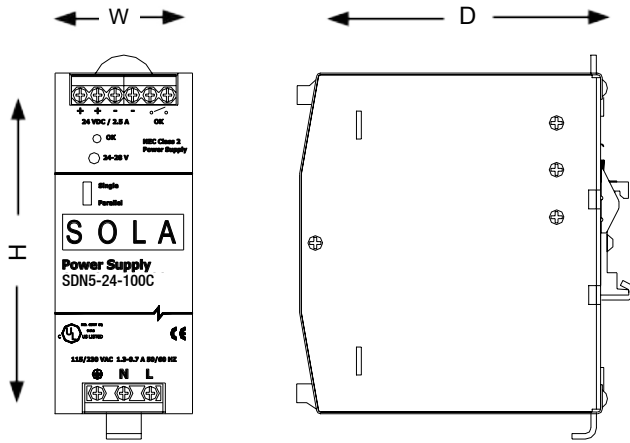
Description	Catalog Number			
	SDN 5-24-480C	SDN 10-24-480C	SDN 20-24-480CC	SDN 40-24-480C
<b>Input</b>				
Nominal Voltage	380 - 480 Vac			
Two - phase input	Yes <sup>1</sup>			
-AC Range <sup>2</sup>	320 - 540 Vac			
-DC Range	450 - 760 Vdc	450 - 760 Vdc	450 - 760 Vdc <sup>9</sup>	N/A
-Frequency	50/60 Hz			
Nominal Current <sup>3</sup>	3 x 0.5 or 2 x 0.7 A	3 x 0.8 or 2 x 1.2 A	3 x 0.9 or 2 x 1.3 A	3 x 1.6 A
-Inrush current max.	Typ. <25 A		Negligible	Negligible
Efficiency (Losses <sup>4</sup> )	> 85% (18 W)	91.2% (23.6 W)	93% (42 W)	94% (78 W)
Power Factor Correction	Power factor correction to meet EN61000-3-2 Class A		Active Power Factor Correction	
<b>Output</b>				
Turn on time	Typ. 1s			
Voltage Rise Time	ca. 5-20 ms		<100 ms full resistive load (T <sub>amb</sub> = +25°C)	
Power Back Immunity	<35 V			
Overvoltage Protection	>30.5 but <33 Vdc auto recovery			
Nominal Voltage	24 V (24 - 28 Vdc Adjustable)			
Voltage Regulation	< ±2 % overall			
Initial Voltage Setting	24.5 V ± 1%			
-Ripple <sup>5</sup>	<100 mVpp			
PAR	PAR = 100 mV peak-peak max		PAR = 200 mV peak-peak max	
Nominal Current	5 A (120 W)	10 A (240 W)	20 A (480 W) (constant power, not constant current)	40 A (960 W)
-Peak Current <sup>6</sup>	6A, 2xNominal Current <2sec	12A, 2xNominal Current <2sec	1.5xNominal Current for 4 sec minimum while holding voltage > 20Vdc	
-Current Limit	PowerBoost™			
Derating	typ. 6 W/°C	typ. 12 W/°C	typ. 24 W/°C	typ. 48 W/°C
Holdup Time	>20 ms		>15 ms	
Voltage Fall Time	<150 ms from 95% to 10% rated voltage @ full load (T <sub>amb</sub> = +25°C)		<50 ms from 95% to 10% rated voltage @ full load (T <sub>amb</sub> = +25°C)	
Parallel Operation <sup>7</sup>	Single or Parallel operation selectable via front switch. For redundant operation, use of external diode module is preferred			SDN 40 uses active paralleling
<b>General</b>				
Case	Fully enclosed metal housing with fine ventilation grid to keep out small parts.			
Min. Required	25mm above and below or 15mm in front	25mm above and below or 10mm in front	70mm above and below or 25mm in front and 25mm left & right	70mm above and below, 15mm in front, 25mm left & right
Free Space				
HxWxD inches (mm)	4.85 x 1.97 x 4.36 (123 x 50 x 111)	4.85 x 2.36 x 4.36 (123 x 60 x 111)	4.85 x 3.35 x 4.68 (123 x 85 x 119)	4.85 x 7.09 x 4.66 (123 x 180 x 119)
Weight lbs (kg)	1.15 (.52)	1.54 (0.7)	2.86 (1.3)	5.28 (2.4)
EMC: -Emissions	EN61000-6-3:2001, Class B EN55011, EN55022 Radiated and Conducted including Annex. A, EN61000-3-2			
-Immunity	EN61000-6-1:2001, EN61000-6-2:2001, EN61000-4-2 Level 4, EN61000-4-3 Level 3, EN61000-4-6 Level 3, EN61000-4-4 Level 4 input and level 3 output. EN61000-4-5 Isolation class 4, EN61000-4-11, Semi F47 sag immunity.			
Approvals	cULus Listed UL508, CSA C22.2 No. 107.1;  UL 60950-1/CSA C22.2 No.60950-1 2nd ed; CE IEC60950-1:2005 2nd ed, EN60950-1:2006+A11:2009; SDN 20-24-480C and SDN 40-24-480C -  UL ANSI/ISA 12.12.01, CSA C22.2 No. 213; Class I, Div. 2, Groups A,B,C and D, T4 in 60°C ambient; SDN 5-24-480C and SDN 10-24-480C -  UL 60079-15/CSA C22.2 E60079-15 Class I, Zone 2 AEx nA IIC, Ex nA IIC, T4 in 60°C ambient; ATEX: EN60079-0, EN60079-15  II 3 G Ex nC IIC Gc, T4 in 60°C ambient, DEMKO 11 ATEX 1057365U and DEMKO 11 ATEX 1105449U <sup>10</sup>			
Temperature	Storage: -40 to +85°C, Operation -25 to +60°C full power, with linear derating to half power from 60 to 70°C (Convection cooling, no forced air required). Operation up to 50% load permissible with sideways or front side up mounting orientation.			
Humidity	< 90% RH, noncondensing; IEC 60068-2-2, 68-2-3			
Altitude	0 to 3000 meters (0 to 10,000 feet)			
Vibration	2.5(g) RMS, 10-2000 Hz (random); three axes for 20 minutes each - IEC 60068-2-6			
Shock	3(g) peak, three axes, 11mseconds for each axis - IEC 60068-2-27			
Warranty	5 Years			
MTBF	>500,000 hrs MTBF (Nominal voltage, full load, T <sub>amb</sub> = 25°C)			
General Protection/Safety	Protected against short -circuit, overload, open circuit. Protection class 1 (IEC536), degree of protection IP20 (IEC 529) Safe low voltage: SELV (acc. EN60950)			
Over-temperature protection	LED Alarm, Output shutdown with automatic restart			
Status Indicators	Visual: 3 status LEDs (Input, Output, Alarm) Relay: SSR or dry relay contact, signal active when V <sub>out</sub> = 18.5 Vdc = +/-5%			
<b>Installation</b>				
Fusing: -Input	Externally fused			
-Output	Not fused. Output is capable of providing high currents (PowerBoost) for motor load startup.			
Mounting	Simple snap-on to DIN TS35/7.5 or TS35/15 rail system.			
Connections <sup>8</sup>	Unit should handle normal shock and vibration of industrial use and transportation without falling off the rail. Input: screw terminals, Wiring for the connector will be Ground on the left (when looking at the front of the unit), connector size range: 16-10AWG (1.5-6mm <sup>2</sup> ) for solid conductors. Output: connector size range, wire gauge 6-7 AWG for SDN40; all other models: 16-10AWG (1.5-6mm <sup>2</sup> ) for solid conductors.			

- SDN 20 will operate at 75% load; SDN 40 will operate at 50% load under loss of 1 phase; SDN 5 and SDN 10 will operate with single phase input power at 100% of load. Unit will shut down if thermal threshold is exceeded under this condition.
- Unit passed input voltage overstress test at 600 Vac without failure.
- Input current ratings are specified with low input, line conditions, worst case efficiency values and power factor spikes. Input current at nominal input settings will typically be half these values.
- Losses are heat dissipation in watts at full load, nominal line.
- Ripple/noise is stated as typical values when measured with a 20 MHz, bandwidth scope and 50 Ohm resistor.

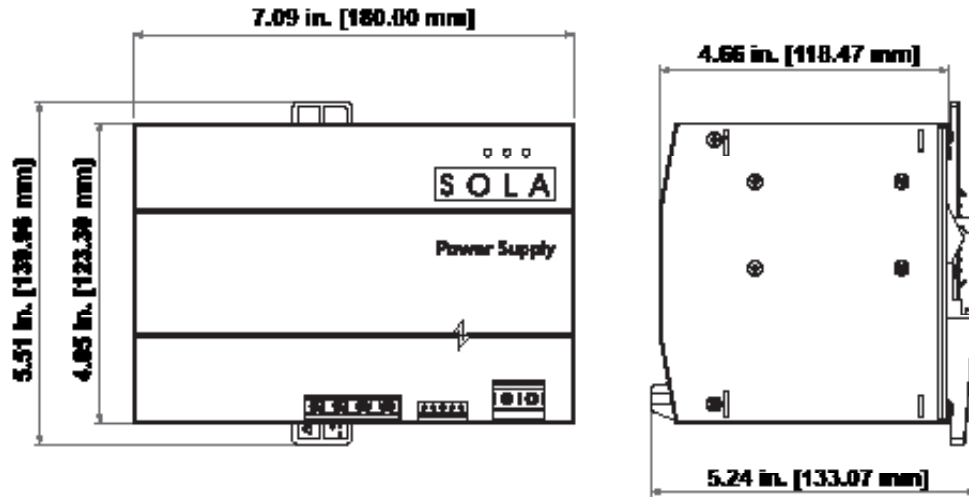
- SDN 20 and 40 unit will go to HICCU mode. SDN 5 and 10 will maintain min 4 secs to deliver 150% load then drops to almost zero V<sub>out</sub>. The output voltage will immediately drop to almost zero when load rises above 150%.
- All models except the 40amp unit are capable of parallel operation by use of a jumper pin, accessible by the end user. 40 amp unit will have active current sharing signal.
- SDN 40-24-480C only = Output signaling terminal block features (Shut down, Power Good, Current Monitor, Current Balance, signal GND).
- 70% maximum rated load.
- Additional Installation requirements apply when used in hazardous locations. (refer to user manual)

Visit our website at [www.solahd.com](http://www.solahd.com) or  
contact Technical Services at (800) 377-4384 with any questions.

SDN-C Series Dimensions



Catalog Number	Dimensions – inches (mm)		
	H	W	D
SDN 5–24–100C	4.85 (123)	1.97 (50)	4.36 (111)
SDN 10–24–100C	4.85 (123)	2.36 (60)	4.36 (111)
SDN 20–24–100C	4.85 (123)	3.42 (87)	4.98 (127)
SDN 5–24–480C	4.85 (123)	1.97 (50)	4.36 (111)
SDN 10–24–480C	4.85 (123)	2.36 (60)	4.36 (111)
SDN 20–24–480CC	4.85 (123)	3.35 (85)	4.68 (119)



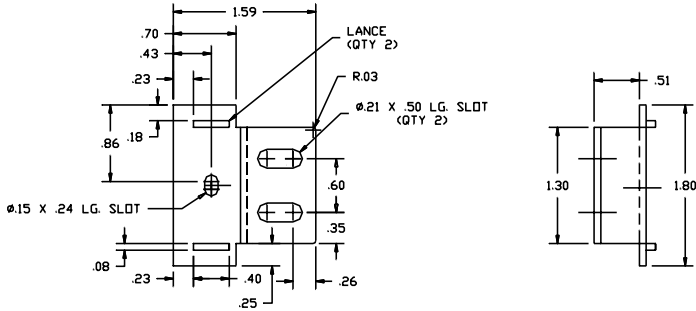
Catalog Number	Dimensions – inches (mm)		
	H	W	D
SDN 40–24–480C	4.85 (123)	7.09 (180)	4.66 (118)

### SDN-C Series Mounting (cont.)

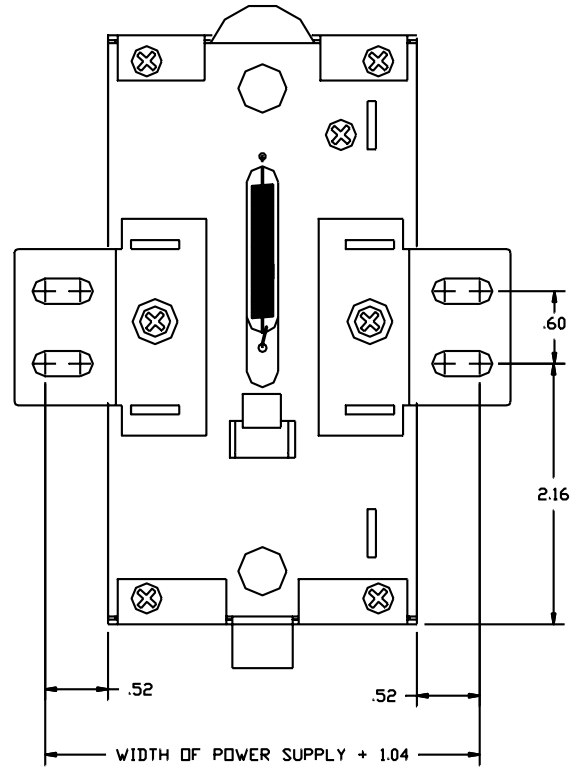
#### Chassis Mounting

Instead of snapping a SolaHD SDN™ unit on the DIN Rail, you can also attach it using the screw mounting set SDN-PMBRK2.

This set consists of two metal brackets, which replace the existing two aluminum profiles.



#### Dimensions



### SDN-C Series Mounting

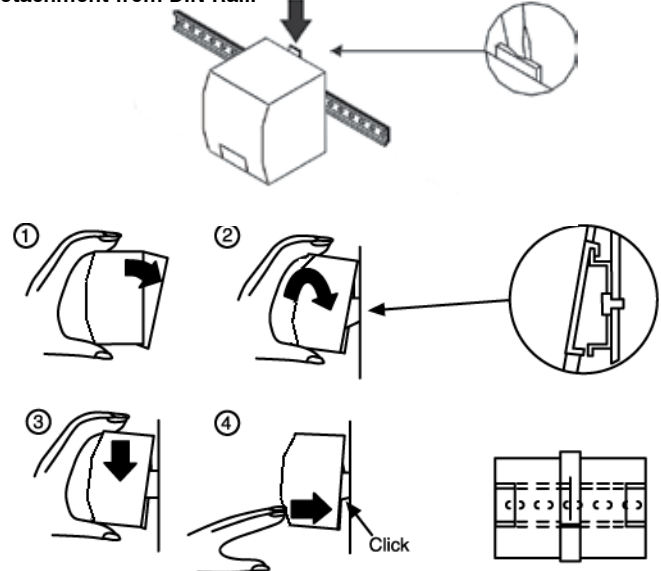
#### DIN Rail Mounting

Snap on the DIN Rail:

1. Tilt unit slightly backwards
2. Put it onto the DIN Rail
3. Push downwards until stopped
4. Push at the lower front edge to lock
5. Shake the unit slightly to ensure that the retainer has locked

Alternative Panel Mount: Using the optional SDN-PMBRK2 accessory, the unit can be screw mounted to a panel.

#### Detachment from DIN Rail:





## The Next Generation of SDN Series Power Supplies

### SDN 5-24-480C

SolaHD is proud to introduce the new SDN 5-24-480C power supplies, the next generation of our popular SDN5-24-480.

The new product has a significantly enhanced performance with a full **32%** smaller width along the DIN rail! Every effort has been made to ensure compatibility between generations. Still, we realize that even small differences can sometimes have unforeseen impact, so we have created this document to highlight all of these differences.

Specification	SDN 5-24-480C	SDN 5-24-480
<b>Input</b>		
Nominal Voltage	1 phase or 3-phase 380 - 480 Vac	Similar: 1 phase or 3-phase 380 - 480 Vac
AC Range	320-540 Vac	340-576 Vac
DC Range	450-760 Vdc	450-820 Vdc
Frequency	50/60 Hz	50/60 Hz
Nominal Current	3 x 0.5 or 2 x 0.7 A	0.5 A
Inrush Current Max	Typ. < 25 A	Typ. <18 A
Efficiency (Losses)	> 85% (18 W)	>90% (12 W)
Power Factor Correction	Power factor Correction to meet EN61000-3-2 Class A	SAME
<b>Output</b>		
Nominal Voltage	24 V (24-28 VDC Adj.)	24 V (22.5 - 28.5 VDC Adj.)
Initial voltage setting	24.5 V ± 1%	SAME
Tolerance	< 2 % overall (combination Line, load, time and temperature related changes)	SAME
Line regulation	< 0.5%	SAME
Load regulation	< 0.5%	SAME
Over voltage protection	> 30.5 but < 33 Vdc, auto recovery	SAME
Power Back Immunity	< 35 V	SAME
Time & temperature drift	< 1%	SAME
Ripple	< 50 mVpp	SAME
Nominal Current	5 A (120 W)	SAME
Peak Current	6A, 2 x Nominal Current <2sec	SAME
Current Limit	PowerBoost™	Fold Forward (Current rises, voltage drops to maintain constant power during overload up to max peak current)

<b>Holdup Time</b>	>20ms (Full load, 380Vac Input @ T ambient +25°C) to 95% output Voltage	> 16 ms at Full load (+25°C)
<b>Voltage fall time</b>	< 150ms from 95% to 10% rated voltage @ full load (T ambient =+25°C)	SAME
<b>Turn on time</b>	<1000mS after AC is applied to input at full resistive load (Tambient =+25°C)	SAME
<b>Parallel Operation</b>	Single or Parallel operation selectable via front switch. For redundant operation, use of external diode module is preferred.	SAME
<b>General</b>		
<b>Case</b>	Fully enclosed metal housing with fine ventilation grid to keep out small parts.	SAME
<b>Max. Required Free Space</b>	25 mm above and below or 15 mm in front	SAME
<b>HxWxD inches (mm)</b>	4.85 x 1.97 x 4.36 (123.3 x 50.0 x 110.8)	4.88 x 2.91 x 4.55 (124 x 73 x 116)
<b>Weight</b>	1.15 lb (520 g)	1.7 lbs. (730 g)
<b>Emissions</b>	EN61000-6-3:2001, Class B EN55011, EN55022 Radiated and Conducted including Annex. A, EN61000-3-2	SAME
<b>Immunity</b>	EN61000-6-1:2001, EN61000-6-2:2001, EN61000-4-2 Level 4, EN61000-4-3 Level 3, EN61000-4-6 Level 3, EN61000-4-4 Level 4 input and Level 3 output, EN61000-4-5 Isolation Class 4, EN61000-4-11, SEMI F47 Sag Immunity, EN61000-4-8, EN61000-4-34, Transient protection according to VDE 0160/W2 over entire load range	SAME
<b>Approvals</b>	cULus Listed: UL 508, CSA C22.2 No. 107.1; : UL 60950-1/CSA C22.2 60950-1 2nd edition, UL 60079-15 and CAN/CSA-E60079-15, Class I, Zone 2, AEx nC IIC Gc, Ex nC IIC U hazardous locations; CE: IEC60950-1:2005 2nd edition, EN60950-1:2006+A11:2009; ATEX: II 3 G Ex nC IIC Gc, DEMKO 11 ATEX 1057365U; EN60079-0:2009, EN60079-15:2010	SAME
<b>Temperature</b>	Storage : -40 to + 85 deg C, Operation -25 to +60 deg C full power, with linear derating to half power from 60 to 70 deg C (Convection cooling, no forced air required). Operation up to 50% load permissible with sideways or front side up mounting orientation.	Storage : -25 to + 85 deg C, Operation -10 to +60 deg C full power, with linear derating to half power from 60 to 70 deg C (Convection cooling, no forced air required). Operation up to 50% load permissible with sideways or front side up mounting orientation.
<b>Humidity</b>	< 90% RH, non-condensing; IEC 68-2-2, 68-2-3	SAME
<b>Altitude</b>	0 to 3000 meters (0 to 10,000 feet)	SAME
<b>Vibration</b>	2.5(g) RMS, 10-2000 Hz (random); three axes for 20 minutes each - IEC 60068-2-6	SAME



**Product Comparison Sheet**  
SDN 5-24-480C to SDN 5-24-480

<b>Shock</b>	3(g) peak, three axes, 11mseconds for each axis - IEC 60068-2-27	SAME
<b>Warranty</b>	5 Years	SAME
<b>MTBF</b>	>500,000 hrs DMTBF (Nominal voltage, full load, T ambient = 25 degrees C	No DMTBF figure, only calculated MTBF
<b>General Protection/Safety</b>	Protected against short -circuit, overload, open circuit. Protection class 1 (IEC536), degree of protection IP20 (IEC 529) Safe low voltage: SELV (acc. EN60950)	SAME
<b>Status Indicators - Visual</b>	3 status LEDs: Green LED when input voltage is in range and green LED on when V out = 18.5V +/-5%. Red alarm LED	Green LED on when Vout = 18V or greater
<b>-Relay</b>	SSR or dry relay contact, signal active when Vout = 18.5Vdc = +/-5%	SAME
<b>Installation</b>		
<b>Input Fusing</b>	Externally fused.	Internally Fused
<b>Output Fusing</b>	Not fused. Output is capable of providing high currents (PowerBoost) for motor load startup.	SAME
<b>Mounting</b>	Simple snap-on to DIN TS35/7.5 or TS35/15 rail system. Unit should handle normal shock and vibration of industrial use and transportation without falling off the rail.	SAME
<b>Connections</b>	Input: screw terminals, wiring for the connector will be Ground on the left (when looking at the front of the unit), connector size range: 16-10 AWG (1.5-6 mm <sup>2</sup> ) for solid conductors.	SAME
	Output: connector size range, wire gauge 16-10 AWG (1.5-6 mm <sup>2</sup> ) for solid conductors. The connector color will be either gray or off-white.	SAME



## SDN 5-24-480C Competitive Comparison

Comparison with 5A, 24Vdc, 3-phase slim models

	SolaHD SDN 5-24-480C	PULS (Two-Phase Input) CT5.241	Phoenix Contact QUINT- PS/3AC/24DC/5	AB/Rockwell (Two-Phase Input) 1606-XLE120E-2
<b>DIAGNOSTICS</b> (number of conditions)	<b>8</b> (Normal, AC Power Loss, AC Input Low, No DC, High Load, Overload, Hot, Too Hot)	<b>2</b> (DC ON, DC OFF)	<b>4</b> ( $I_{OUT} < I_N$ , $I_{OUT} > I_N$ , $V_{OUT} < 0.9 \times V_N$ , $V_{OUT} > 0.9 \times V_N$ )	<b>2</b> (DC ON, DC OFF)
<b>EFFICIENCY</b>	<b>&gt;85% typ.</b>	<b>&gt;90.4% typ.</b>	<b>&gt;89%</b>	<b>90 % typ.</b>
<b>Mains Frequency</b>	<b>50-60 Hz</b>	<b>50-60 Hz</b>	<b>50-60 Hz</b>	<b>50-60 Hz</b>
<b>RELIABILITY (MTBF)</b>	<b>&gt;500,000 hrs</b> (Nominal Voltage, Full load, 25°C Ambient)	<b>&gt;1,173 khrs</b> (40°C, SN 29500)	<b>&gt; 500,000 hrs</b> in acc. with IEC 61709 (SN29500)	<b>1,173,000 hrs</b> SN 29500, IEC 61709 (24 V, 5 A and 40°C)
<b>Size (cm<sup>3</sup>)</b>	<b>682</b>	<b>580</b>	<b>650</b>	<b>580</b>
<b>Width along the DIN rail inch (mm)</b>	<b>1.97 (50)</b>	<b>1.57 (40)</b>	<b>1.57 (40)</b>	<b>1.57 (40)</b>
<b>FULL POWER AMBIENT</b>	<b>-25 to 60°C</b>	<b>-25 to 60°C</b>	<b>-25 to 60°C</b>	<b>-25 to 60°C</b>
<b>WARRANTY</b>	<b>5 years</b>	<b>3 years</b>	<b>5 years</b>	<b>1 year</b>



## SDN 5-24-480C Competitive Comparison

Comparison with 5A, 24Vdc, 3-phase regular (non-slim) models

	SolaHD (Compact) SDN 5-24-480C	SolaHD (Non-Compact) SDN 5-24-480	PULS SL5.300	Lambda DPP-120-24-3	Phoenix Contact TRIO- PS/3AC/24DC/5	Mean well (Two-Phase Input) DRH-120-24	AB/Rockwell 1606- XL120E-3
<b>DIAGNOSTICS</b> (number of conditions)	<b>8</b> (Normal, AC Power Loss, AC Input Low, No DC, High Load, Overload, Hot, Too Hot)	<b>2</b> (DC ON, DC OFF)	<b>2</b> (DC ON, DC OFF)	<b>3</b> (DC ON, DC OFF, DC Output Low)	<b>2</b> (DC ON, DC OFF)	<b>2</b> (DC ON, DC OFF)	<b>2</b> (DC ON, DC OFF)
<b>EFFICIENCY</b>	<b>&gt;85% typ.</b>	<b>&gt;90% typ.</b>	<b>89% typ.</b>	<b>84-93%</b>	<b>&gt;89%</b>	<b>85% typ.</b>	<b>89% typ.</b>
<b>Mains Frequency</b>	<b>50-60 Hz</b>	<b>50-60 Hz</b>	<b>50-60 Hz</b>	<b>50-60 Hz</b>	<b>50-60 Hz</b>	<b>50-60 Hz</b>	<b>50-60 Hz</b>
<b>RELIABILITY</b> (MTBF)	<b>&gt;500,000hrs</b> (Nominal Voltage, Full load, 25°C Ambient)	<b>&gt;1,110,000hrs</b> (MIL STD 217F, 30°C Ambient)	<b>410,000hrs</b> (24V/5A, 3 AC 400V, 40°C ambient)	<b>527,000hrs</b> (Bellcore Issue 6 @ 40°C, GB)	<b>&gt; 500,000 hrs</b> (in acc. with IEC 61709 SN29500)	<b>178.7 khrs</b> (MIL-HDBK-217F, 25°C)	<b>410,000 hrs</b> acc. to Siemensnorm 29500 (24V/5A, 400Vac, 40°C)
<b>Size (cm<sup>3</sup>)</b>	<b>682</b>	<b>1,050</b>	<b>1,059</b>	<b>1,093</b>	<b>598</b>	<b>820</b>	<b>1,059</b>
<b>Width along the DIN rail inch (mm)</b>	<b>1.97 (50)</b>	<b>2.91 (73)</b>	<b>2.91 (73)</b>	<b>2.92 (74.17)</b>	<b>1.57 (40)</b>	<b>2.58 (65.5)</b>	<b>2.87 (73)</b>
<b>FULL POWER AMBIENT</b>	<b>-25 to 60°C</b>	<b>-10 to 60°C</b>	<b>-10 to 60°C</b>	<b>-25 to 60°C</b>	<b>-25 to 55°C</b>	<b>-20 to 60°C</b>	<b>-25 to 60°C</b>
<b>WARRANTY</b>	<b>5 years</b>	<b>5 years</b>	<b>3 years</b>	<b>2 years</b>	<b>5 years</b>	<b>3 years</b>	<b>1 year</b>



## The Next Generation of SDN Series Power Supplies

### SDN 10-24-480C

SolaHD is proud to introduce the new SDN 10-24-480C power supplies, the next generation of our popular SDN 10-24-480.

The new product has a significantly enhanced performance with a full **32%** smaller width along the DIN rail! Every effort has been made to ensure compatibility between generations. Still, we realize that even small differences can sometimes have unforeseen impact, so we have created this document to highlight all of these differences.

Specification	SDN 10-24-480C	SDN 10-24-480
<b>Input</b>		
Nominal Voltage	1 phase or 3-phase 380 - 480 Vac	Similar: 1 phase or 3-phase 380 - 480 Vac
AC Range	320-540 Vac	340-576 Vac
DC Range	450-760 Vdc	450-820 Vdc
Frequency	50/60 Hz	50/60 Hz
Nominal Current	3 x 0.8 or 2 x 1.2 A	0.8 A
Inrush Current Max	Typ. < 25 A	Typ. <18 A
Efficiency (Losses)	> 91.2% (23.6 W)	>90% (48 W)
Power Factor Correction	Power factor Correction to meet EN61000-3-2 Class A	SAME
<b>Output</b>		
Nominal Voltage	24 V (24-28 VDC Adj.)	24 V (22.5 - 28.5 VDC Adj.)
Initial voltage setting	24.5 V ± 1%	SAME
Tolerance	< 2 % overall (combination Line, load, time and temperature related changes)	SAME
Line regulation	< 0.5%	SAME
Load regulation	< 0.5%	SAME
Over voltage protection	> 30.5 but < 33 Vdc, auto recovery	SAME
Power Back Immunity	< 35 V	SAME
Time & temperature drift	< 1%	SAME
Ripple	< 50 mVpp	SAME
Nominal Current	10 A (240 W)	SAME
Peak Current	12A, 2 × Nominal Current <2sec	SAME
Current Limit	PowerBoost™	Fold Forward (Current rises, voltage drops to maintain constant power during overload up to max peak current)

<b>Holdup Time</b>	>20ms (Full load, 380Vac Input @ T ambient +25°C) to 95% output Voltage	> 24 ms at Full load (+25°C)
<b>Voltage fall time</b>	< 150ms from 95% to 10% rated voltage @ full load (T ambient =+25°C)	SAME
<b>Turn on time</b>	<1000mS after AC is applied to input at full resistive load (Tambient =+25°C)	SAME
<b>Parallel Operation</b>	Single or Parallel operation selectable via front switch. For redundant operation, use of external diode module is preferred.	SAME
<b>General</b>		
<b>Case</b>	Fully enclosed metal housing with fine ventilation grid to keep out small parts.	SAME
<b>Max. Required Free Space</b> <b>HxWxD inches (mm)</b>	25 mm above and below or 10 mm in front 4.85 x 2.36 x 4.36 (123.3 x 60.0 x 110.8)	25 mm above and below or 15 mm in front 4.88 x 3.5 x 4.55 (124 x 89 x 116)
<b>Weight</b>	1.54 lb (700 g)	2.16 lbs. (980 g)
<b>Emissions</b>	EN61000-6-3:2001, Class B EN55011, EN55022 Radiated and Conducted including Annex. A, EN61000-3-2	SAME
<b>Immunity</b>	EN61000-6-1:2001, EN61000-6-2:2001, EN61000-4-2 Level 4, EN61000-4-3 Level 3, EN61000-4-6 Level 3, EN61000-4-4 Level 4 input and Level 3 output, EN61000-4-5 Isolation Class 4, EN61000-4-11, SEMI F47 Sag Immunity, EN61000-4-8, EN61000-4-34, Transient protection according to VDE 0160/W2 over entire load range	SAME
<b>Approvals</b>	cULus Listed: UL 508, CSA C22.2 No. 107.1; ; UL 60950-1/CSA C22.2 60950-1 2nd edition, UL 60079-15 and CAN/CSA-E60079-15, Class I, Zone 2, AEx nC IIC Gc, Ex nC IIC U hazardous locations; CE: IEC60950-1:2005 2nd edition, EN60950-1:2006+A11:2009; ATEX: II 3 G Ex nC IIC Gc, DEMKO 11 ATEX 1057365U; EN60079-0:2009, EN60079-15:2010	SAME
<b>Temperature</b>	Storage : -40 to + 85 deg C, Operation -25 to +60 deg C full power, with linear derating to half power from 60 to 70 deg C (Convection cooling, no forced air required). Operation up to 50% load permissible with sideways or front side up mounting orientation.	Storage : -25 to + 85 deg C, Operation -10 to +60 deg C full power, with linear derating to half power from 60 to 70 deg C (Convection cooling, no forced air required). Operation up to 50% load permissible with sideways or front side up mounting orientation.
<b>Humidity</b>	< 90% RH, noncondensing; IEC 68-2-2, 68-2-3	SAME
<b>Altitude</b>	0 to 3000 meters (0 to 10,000 feet)	SAME
<b>Vibration</b>	2.5(g) RMS, 10-2000 Hz (random); three axes for 20 minutes each - IEC 60068-2-6	SAME



**Product Comparison Sheet**  
**SDN 10-24-480C to SDN 10-24-480**

<b>Shock</b>	3(g) peak, three axes, 11mseconds for each axis - IEC 60068-2-27	SAME
<b>Warranty</b>	5 Years	SAME
<b>MTBF</b>	>500,000 hrs DMTBF (Nominal voltage, full load, T ambient = 25 degrees C)	No DMTBF figure, only calculated MTBF
<b>General Protection/Safety</b>	Protected against short -circuit, overload, open circuit. Protection class 1 (IEC536), degree of protection IP20 (IEC 529) Safe low voltage: SELV (acc. EN60950)	SAME
<b>Status Indicators - Visual</b>	3 status LEDs: Green LED when input voltage is in range and green LED on when V out = 18.5V +/-5%. Red alarm LED	Green LED on when Vout = 18V or greater
<b>-Relay</b>	SSR or dry relay contact, signal active when Vout = 18.5Vdc = +/-5%	SAME
<b>Installation</b>		
<b>Input Fusing</b>	Externally fused.	Internally Fused
<b>Output Fusing</b>	Not fused. Output is capable of providing high currents (PowerBoost) for motor load startup.	SAME
<b>Mounting</b>	Simple snap-on to DIN TS35/7.5 or TS35/15 rail system. Unit should handle normal shock and vibration of industrial use and transportation without falling off the rail.	SAME
<b>Connections</b>	Input: screw terminals, wiring for the connector will be Ground on the left (when looking at the front of the unit), connector size range: 16-10 AWG (1.5-6 mm <sup>2</sup> ) for solid conductors.	SAME
	Output: connector size range, wire gauge 16-10 AWG (1.5-6 mm <sup>2</sup> ) for solid conductors. The connector color will be either gray or off-white.	SAME



## SDN 10-24-480C Competitive Comparison

Comparison with 10A, 24Vdc, 3-phase slim models

	SolaHD SDN 10-24-480C	PULS CT10.241	Phoenix Contact QUINT- PS/3AC/24DC/10	AB/Rockwell 1606-XLE240E-3
<b>DIAGNOSTICS</b> (number of conditions)	<b>8</b> (Normal, AC Power Loss, AC Input Low, No DC, High Load, Overload, Hot, Too Hot)	<b>2</b> (DC ON, DC OFF)	<b>4</b> ( $I_{OUT} < I_N$ , $I_{OUT} > I_N$ , $V_{OUT} < 0.9 \times V_N$ , $V_{OUT} > 0.9 \times V_N$ )	<b>2</b> (DC ON, DC OFF)
<b>EFFICIENCY</b>	<b>&gt;91.2% typ.</b>	<b>&gt;92.8% typ.</b>	<b>&gt;93% typ.</b>	<b>92.9% typ.</b>
<b>Mains Frequency</b>	<b>50-60Hz</b>	<b>50-60Hz</b>	<b>50-60Hz</b>	<b>50-60Hz</b>
<b>RELIABILITY (MTBF)</b>	<b>&gt;500,000 hrs</b> (Nominal Voltage, Full load, 25°C Ambient)	<b>&gt;975,000 hrs</b> (SN 29500, IEC 61709, 40°C Ambient)	<b>&gt; 500,000 hrs</b> in acc. with IEC 61709 (SN29500)	<b>&gt; 700,000 hrs</b> (Siemens norm SN29500 @ full load current, 40°C Ambient)
<b>Size (cm<sup>3</sup>)</b>	<b>819</b>	<b>899</b>	<b>975</b>	<b>899</b>
<b>Width along the DIN rail inch (mm)</b>	<b>2.36 (60)</b>	<b>2.44 (62)</b>	<b>2.36 (60)</b>	<b>2.44 (62)</b>
<b>FULL POWER AMBIENT</b>	<b>-25 to 60°C</b>	<b>-25 to 60°C</b>	<b>-25 to 60°C</b>	<b>-25 to 60°C</b>
<b>WARRANTY</b>	<b>5 years</b>	<b>3 years</b>	<b>5 years</b>	<b>1 year</b>



## SDN 10-24-480C Competitive Comparison

Comparison with 10A, 24Vdc, 3-phase regular (non-slim) models

	SolaHD (Compact) SDN 10-24-480C	SolaHD (Non-Compact) SDN 10-24-480	PULS SL10.300	Lambda DPP-240-24-3	Phoenix Contact TRIO- PS/3AC/24DC/10	Mean well DRT-240-24	AB/Rockwell 1606- XL240E-3
<b>DIAGNOSTICS</b> (number of conditions)	<b>8</b> (Normal, AC Power Loss, AC Input Low, No DC, High Load, Overload, Hot, Too Hot)	<b>2</b> (DC ON, DC OFF)	<b>2</b> (DC ON, DC OFF)	<b>3</b> (DC ON, DC OFF, DC Output Low)	<b>2</b> (DC ON, DC OFF)	<b>2</b> (DC ON, DC OFF)	<b>3</b> (DC ON, DC OFF, Overload)
<b>EFFICIENCY</b>	<b>&gt;91.2% typ.</b>	<b>&gt;90% typ.</b>	<b>91.2% typ.</b>	<b>90%</b>	<b>&gt;89%</b>	<b>89% typ.</b>	<b>91.2% typ.</b>
<b>Mains Frequency</b>	<b>50-60Hz</b>	<b>50-60Hz</b>	<b>50-60 Hz</b>	<b>50-60Hz</b>	<b>50-60 Hz</b>	<b>50-60Hz</b>	<b>50-60Hz</b>
<b>RELIABILITY</b> (MTBF)	<b>&gt;500,000 hrs</b> (Nominal Voltage, Full load, 25°C Ambient)	<b>&gt;940,000 hrs</b> (MIL STD 217F, 30°C Ambient)	<b>543,000 hrs</b> (24V/10A, 3 AC 400V, 40°C Ambient)	<b>488,000</b> (Bellcore Issue 6 @ 40°C, GB)	<b>&gt; 500,000 hrs</b> in acc. with IEC 61709 (SN29500)	<b>114.6 khrs</b> (MIL-HDBK-217F, 25°C)	<b>543,000 hrs</b> acc. to Siemensnorm 29500 (24V/10A, 400Vac, 40°C)
<b>Size (cm<sup>3</sup>)</b>	<b>819</b>	<b>1,280</b>	<b>1,291</b>	<b>1,309</b>	<b>1,189.5</b>	<b>1,571</b>	<b>1,291</b>
<b>Width along the DIN rail</b> inch (mm)	<b>2.36 (60)</b>	<b>3.50 (89)</b>	<b>3.50 (89)</b>	<b>3.50 (89)</b>	<b>2.36 (60)</b>	<b>4.94 (125.5)</b>	<b>3.50 (89)</b>
<b>FULL POWER AMBIENT</b>	<b>-25 to 60°C</b>	<b>-10 to 60°C</b>	<b>0 to 60°C</b>	<b>-25 to 60°C</b>	<b>-25 to 55°C</b>	<b>-20 to 60°C</b>	<b>-25 to 60°C</b>
<b>WARRANTY</b>	<b>5 years</b>	<b>5 years</b>	<b>3 years</b>	<b>2 years</b>	<b>5 years</b>	<b>3 years</b>	<b>1 year</b>