

SCD Series, Encapsulated, Industrial DC to DC Converter

These compact, rugged DC to DC converters are power supplies designed to power industrial control instrumentation devices and equipment where AC power is not convenient or accessible. With high reliability and wide input range, these units can operate through the most difficult factory floor conditions around the globe. "User friendly" applies to these unique power supplies that feature easy-to-install DIN Rail and chassis mounting. Terminations are also easy to access and simple to wire. Encapsulated design meets IP20 specifications for use in harsh environments.

Applications

These units regulate voltage for sensitive electronic equipment run from battery power. For example, a 24 Vdc battery system where the battery voltage can be 30 volts, sometimes higher during charging, and dip below 22 volts under heavy load. The SCD can be used to stabilize the voltage for those devices not designed to handle wider voltage swings.

They are also a convenient and inexpensive alternative to running AC power through a large industrial machine. The SCD can use 24 Vdc commonly available on many parts of the machine to create other voltages needed to run sensors, transducers and other devices that the machine requires to work properly.

- Industrial
 - Encoders, special sensors, communications and instrumentation
- Telecommunications systems
- Remote Site/Harsh Environment

Features

- DIN Rail or Chassis mount by removing DIN clips
- Rugged, encapsulated design to resist environment
- IP20 protection
- Wide 20 to 72 Vdc input range
- M3 screw clamp terminations
- Simple snap-on for DIN Rail TS35/7.5 or TS35/15
- Galvanic isolation
- Five year limited warranty





Options and Accessories

- SCP-MDC Pair of metal DIN clips
- SCP-PDC 1 plastic DIN clip with lever for removal from rail

Certifications and Compliances

- c Listed, Ind. Control Equip., E61379
 - UL 508/CSA C22.2 No. 107.1
- c Sus Recognized Component, ITE, E137632
 - UL 60950/CSA C22.2 No. 234-M90
- **((-**IEC/EN60950-1
- IP20

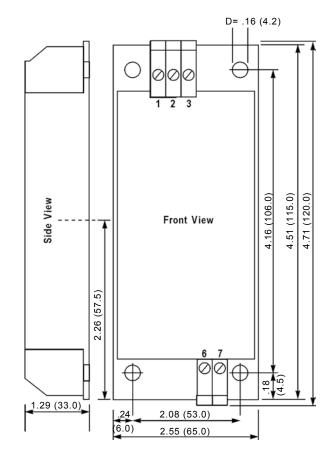


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Selection Table

Low Profile	Description	Output Voltages				Min	
Catalog Number		V1		V2		Load	
		Vdc	A	Vdc	A	V1 A	
30 Watts; Switching DC Power Supply							
SCD 30S5-DN	5 V	5	5	-	-	0	
SCD 30S12-DN	12 V	12	2.5	-	-	0	
SCD 30S15-DN	15 V	15	2	-	-	0	
SCD 30S24-DN	24 V	24	1.3	-	-	0	
SCD 30S48-DN	48 V	48	0.6	-	-	0	
SCD 30D15-DN	Dual O/P+15 V	15	0.8	-15	0.8	0.15	

Dimensions - in (mm)



Pin-Out

SCD 30	1	2	3	6	7
Single	+V1	-V1		+IN	-IN
Dual	V1	COM	V2	+IN	-IN

Specifications

	Parameter	Condition	Value					
Filtering EMI/RFI EN 55011/B, 55022/B Switching Frequency Typ. 100 kHz	Input							
Switching Frequency Output Output Voltage Accuracy $V_n = 48V$, $V_n = 48V$, $V_n = max$, 25°C V1 ≤ ±1%, V2 ≤ ±4% Output Voltage Accuracy $V_n = min$, $V_n = max$, 25°C Output Voltage Accuracy $V_n = min$, $V_n = min$, $V_n = min$, $V_n = max$, 25°C $V_n $	Input Voltage		20 - 72 Vdc					
$ \begin{array}{c c c c} \hline & Output \\ \hline \hline Output Voltage & V_{in} = 48V, \\ Accuracy & I_{out}^1 = \max, 25^\circ C & V1 \leq \pm 1\%, V2 \leq \pm 4\% \\ \hline Accuracy & V_{in}^1 = \min, \\ I_{out}^1 = \max, 25^\circ C & \leq 1\%, V_{out} \\ \hline \hline Noise & V_{in}^1 = \min, \\ I_{out}^1 = \max, 25^\circ C & \leq 2\%, V_{out} \\ \hline Line Regulation & V_{in}^1 = \min/\max 25^\circ C \\ I_{out}^1 = 10 \text{ to } 90 \text{ to } 10\%, \\ I_{out}^2 = 10 to $	Filtering EMI/RFI		EN 55011/B, 55022/B					
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	Switching Frequency		Typ. 100 kHz					
Accuracy I out = max, 25°C VIS±1%, V2S±4% Ripple $V_{in} = min, I_{out} = max, 25°C$ ≤1%, V_{out} Noise $V_{in} = min, I_{out} = max, 25°C$ ≤2%, V_{out} Line Regulation $V_{in} = min, I_{out} = max, 25°C$ ≤+0.5%, V_{out} Load Regulation $I_{out} = 10 \text{ to } 90 \text{ to } 10\%, 25°C$ ≤+0.5%, V_{out} Overcurrent Protection 10 to 90 to 10%, 25°C <+0.5%, V_{out} Load Regulation Timing 10 to 90 to 10%, 25°C <4 ms		Output						
Noise I a max, 25°C ≤ 1%, Vout Line Regulation V m min, I a max, 25°C ≤2%, Vout Load Regulation V m min/max 25°C ≤+0.5%, Vout Load Regulation I a max, 25°C ≤+0.5%, Vout Load Regulation 10 to 90 to 10%, 25°C ≤+0.5%, Vout Overcurrent Protection 105 to 130% I mom Load Regulation Timing 10 to 90 to 10%, 25°C <4 ms Temperature Coefficient T = -25 to +65°C 0.01%/K Overload/Short Circuit Continuous Derating Single/Dual/ Triple T = -25 to +65°C 5%/K max General Holdup Time V = 48 V >10 ms Operating Temperature -25 to +65°C Storage Temperature T = 25°C 45 to +85°C Case Temperature Rise at Full Load 45 K max MTBF at 25°C (input/output) acc. MIL-STD-217F 800,000 hrs Transient Protection EN61000-4-2, 3, 4, 5 Cooling Convection Weight – Ibs (kg) UL94-VO		V _{in} = 48V, I _{out} = max, 25°C	V1 ≤ ±1%, V2 ≤ ±4%					
Noise $ \begin{matrix} I_{out}^{1} = \max , 25^{\circ}C \\ V_{in} = \min / \max , 25^{\circ}C \\ V_{in} = \min / \max , 25^{\circ}C \\ V_{in} = 10 \text{ to } 90 \text{ to } 10\%, \\ 25^{\circ}C, V_{in} = 48 \text{ V}, 25^{\circ}C \\ V_{in} = 25 \text{ to } +65^{\circ}C \\ V_{in} = 25^{\circ}C \\ V_{in} = 2$	Ripple	V _{in} = min, I _{out} =max, 25°C	≤1%, V _{out}					
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	Noise I max, 25°C		≤2%, V _{out}					
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	Line Regulation	I _{out} = max, 25°C	≤+0.5%, V _{out}					
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	Load Regulation	l _{out} = 10 to 90 to 10%, 25°C, V _{in} = 48 V, 25°C	≤+0.5%, V _{out}					
Temperature Coefficient $T_A = -25 \text{ to } +65^{\circ}\text{C}$ $0.01\%/\text{K}$ Overload/Short Circuit $Continuous$ Derating Single/Dual/ $T_A > 50^{\circ}\text{C}$ $5\%/\text{K}$ max General Holdup Time $V_{in} = 48 \text{ V}$ $> 10 \text{ ms}$ Operating Temperature $T_A = 25^{\circ}\text{C}$ $45 \text{ to } +85^{\circ}\text{C}$ Case Temperature Rise at Full Load MTBF at 25°C $T_A = 25^{\circ}\text{C}$ $15\%/\text{K}$ max MTBF at 25°C $T_A = 25\%/\text{C}$ $15\%/\text{C}$ $15\%/\text$	Overcurrent Protection		105 to 130% I _{nom}					
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	Load Regulation Timing	10 to 90 to 10%, 25°C	<4 ms					
Derating Single/Dual/ Triple $T_A > 50 ^{\circ}\text{C} \qquad 5\%/\text{K max}$ $\frac{\text{General}}{\text{Holdup Time}} \qquad V_{\text{in}} = 48 \text{ V} \qquad > 10 \text{ ms}$ $-25 \text{ to} + 65 ^{\circ}\text{C}$ $\text{Storage Temperature} \qquad T_A = 25 ^{\circ}\text{C} \qquad 45 \text{ to} + 85 ^{\circ}\text{C}$ $\text{Case Temperature Rise at Full Load} \qquad 45 \text{ K max}$ $\text{MTBF at 25 ^{\circ}C} \qquad \text{acc. MIL-STD-217F} \qquad 800,000 \text{ hrs}$ $\text{Iransient Protection} \qquad \text{EN61000-4-2, 3, 4, 5}$ $\text{Cooling} \qquad \text{Convection}$ $\text{Weight - Ibs (kg)} \qquad 0.8 \text{ lbs (.39 kg)}$ $\text{Case Material/Potting} \qquad \text{UL94-VO}$	Temperature Coefficient	$T_A = -25 \text{ to } +65^{\circ}\text{C}$	0.01%/K					
Triple T _A >50 C S76/K Hax General Holdup Time $V_{in} = 48 \text{ V}$ >10 ms Operating Temperature $-25 \text{ to } +65^{\circ}\text{C}$ Storage Temperature $T_{A} = 25^{\circ}\text{C}$ $45 \text{ to } +85^{\circ}\text{C}$ Case Temperature Rise at Full Load -25 Kmax MTBF at 25°C $-25 \text{ to } +65^{\circ}\text{C}$ acc. MIL-STD-217F -25 kmax EN61000-4-2, 3, 4, 5 Cooling -25 convection Weight - Ibs (kg) -25 kg	Overload/Short Circuit	Cont	nuous					
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$		T _A >50°C	5%/K max					
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	General							
Storage Temperature T _A = 25°C 45 to +85°C 45 K max MTBF at 25°C (input/output) Transient Protection Cooling Weight – Ibs (kg) Case Material/Potting T _A = 25°C 45 to +85°C 45 K max 800,000 hrs EN61000-4-2, 3, 4, 5 Convection 0.8 lbs (.39 kg) UL94-VO	Holdup Time	V _{in} = 48 V	>10 ms					
Case Temperature Rise at Full Load MTBF at 25°C (input/output) Transient Protection Cooling Convection Weight – Ibs (kg) Case Material/Potting Weight – VO A5 K max 45 K max 45 K max 45 K max EN61000-4-2, 3, 4, 5 Convection U.94-VO	Operating Temperature		-25 to +65°C					
Full Load MTBF at 25°C (input/output) Transient Protection Cooling Convection Weight – Ibs (kg) Case Material/Potting Weight – VO	Storage Temperature	T _A = 25°C	45 to +85°C					
(input/output) Transient Protection EN61000-4-2, 3, 4, 5 Cooling Convection Weight – Ibs (kg) Case Material/Potting UL94-VO	•		45 K max					
Cooling Convection Weight – Ibs (kg) 0.8 lbs (.39 kg) Case Material/Potting UL94-VO		acc. MIL-STD-217F	800,000 hrs					
Weight – Ibs (kg) Case Material/Potting UL94-VO	Transient Protection		EN61000-4-2, 3, 4, 5					
Case Material/Potting UL94-VO	Cooling		Convection					
	Weight – lbs (kg)		0.8 lbs (.39 kg)					
Protection IP20	Case Material/Potting		UL94-VO					
	Protection		IP20					

Note: No input protection against reverse voltage.

Mouser Electronics

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