

# TDK-Lambda

## DSP Series Datasheets



### DSP Series

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### DSP/277A2 Series

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## 7.5-100W Low Profile DIN Rail Mount Power Supplies

### Features

- ◆ Low Profile for Building Automation
- ◆ 5V to 24V Outputs
- ◆ Wide Range AC Input
- ◆ UL1310 Class 2<sup>(1)</sup>
- ◆ Class II Double Insulation
- ◆ -25 to +71°C Operation



### Key Market Segments & Applications



Industrial



RoHS

Specifications		DSP10	DSP30	DSP60	DSP100
AC Input Voltage range	VAC	90 - 264VAC, Class II double insulated (No ground connection required)			
Input Frequency	Hz	47 - 63Hz			
DC Input Voltage range	VDC	120 - 370VDC*			
Inrush Current (115 / 230VAC)	A	15 / 30A	25 / 50A	30 / 60A	30 / 60A
Power Factor & Flicker	-	Meets EN61000-3-2, EN61000-3-3			
Input Current (Rated)	A	0.3A	0.8A (5V: 0.6A)	1.5A (5V: 1A)	5V:1.5A,12-15V:1.7A,24V:2.2A
Output Voltage Accuracy	%	±1% of Nominal			
Line Regulation	%	1%			
Load Regulation	%	1%			
Ripple and Noise (20MHz BW)	mV	50mV			
Overcurrent Protection (Typ)	-	110 - 160%, fold forward under short circuit (DSP100-24/C2 102-108%)			
Overvoltage Protection	V	120 - 145%			
Hold Up Time (115VAC input)	ms	See Model Selector			
LED Indicators	-	Green LED = On, Red LED = DC Output Low			
Operating Temperature	°C	-25 to +71°C (Derate linearly 2.5%/°C from 55 to 71°C)			
Temperature Coefficient	%/°C	±0.02%/°C			
Storage Temperature	°C	-25 to +85°C			
Operating Humidity	-	20 - 95% RH (non condensing)			
Cooling	-	Convection			
Withstand Voltage	-	Input to Output 3kVAC for 1 min.			
Isolation Resistance	-	>100M at 25°C & 70%RH, Input to Output 500VDC			
Vibration (tested on the rail)	-	IEC 60068-2-6 (Random wave, 10-500 Hz, 1Grms, ea. X, Y, Z axis, 20 min each axis)			
Shock (tested off the rail)	-	IEC 60068-2-27 (Half sine wave, 4G, 22ms, 3 axes, 6 Faces, 3 times for each face)			
Safety Agency Approvals	-	UL508, UL1310 Class 2(1), IEC/UL/CSA/EN62368-1, 60950-1, CE Mark			
Immunity	-	EN61000-4-2, -3, -4, -5, -6, -8 & -11			
Conducted & Radiated EMI	-	DSP10: EN55022 Class B; DSP30-100: EN55022 Class A			
Weight (Typ)	g	60	200	250	320
Size (WxHxD)	in	0.71 x 3.58 x 2.19"	2.09 x 3.58 x 2.19"	2.8 x 3.58 x 2.19"	3.54 x 3.58 x 2.24"
Case material	-	Flame Retardant Polycarbonate (UL94 V-0)			
Warranty	yrs	Three years			

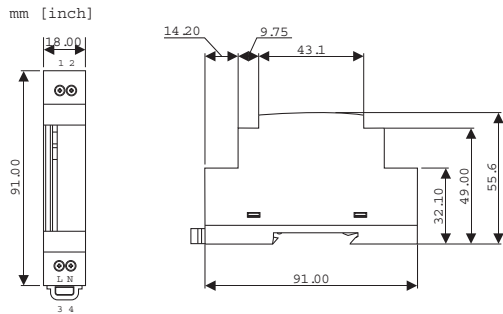
(1) See model selector on page 2.

\*Safety certified for AC only

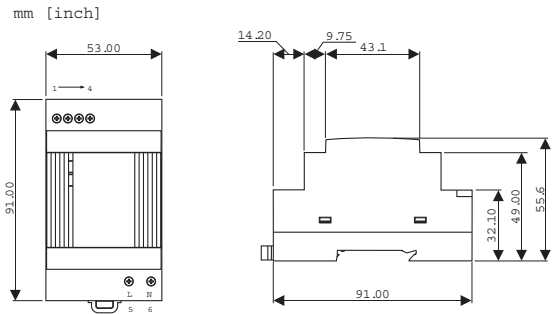
## Model Selector

Model	Voltage (V)	Voltage Adjust (V)	Current (A)	Power (W)	Efficiency (Typ %)	Hold Up Time 115VAC in (ms)	UL1310 Class 2
DSP10-5	5	None	1.50	7.5	74	10	Yes
DSP30-5	5	5 - 5.5	3.00	15.0	74	25	Yes
DSP60-5	5	5 - 5.5	7.00	35.0	80	16	-
DSP10-12	12	None	0.83	10.0	78	10	Yes
DSP30-12	12	12 - 14	2.10	25.2	82	25	Yes
DSP60-12	12	12 - 14	4.50	54.0	84	16	Yes
DSP100-12	12	12 - 14	6.00	72.0	82	16	-
DSP10-15	15	None	0.67	10.1	78	60	Yes
DSP30-15	15	13.5 - 16.5	2.00	30.0	83	25	Yes
DSP60-15	15	13.5 - 16.5	4.00	60.0	85	12	Yes
DSP100-15	15	13.5 - 16.5	5.00	75.0	85	16	-
DSP10-24	24	None	0.42	10.1	80	60	Yes
DSP30-24	24	24 - 28	1.30	31.2	83	25	Yes
DSP60-24	24	24 - 28	2.50	60.0	86	12	Yes
DSP100-24/C2	24	20 - 24.2	3.80	91.2	89	10	Yes
DSP100-24	24	24 - 28	4.20	100.8	85	10	-

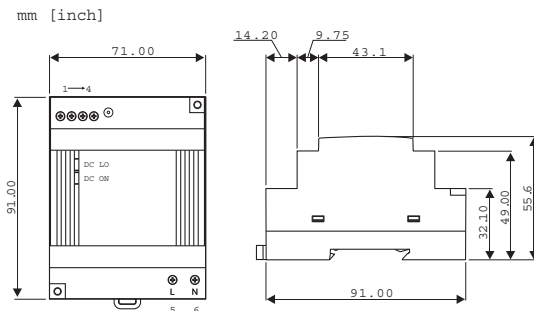
### DSP10 Outline Drawing



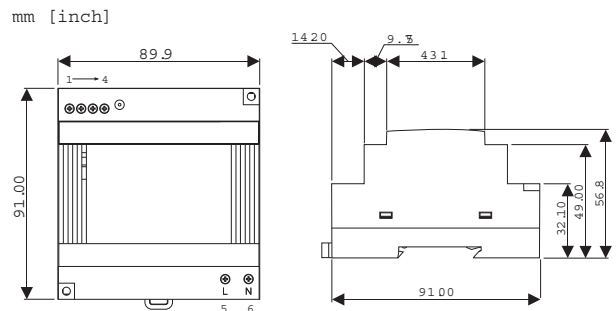
### DSP30 Outline Drawing



### DSP60 Outline Drawing



### DSP100 Outline Drawing



### Other DIN Rail Products

DSP/DPP	10W to 480W, 5V to 48V power supplies
DLP	75W to 240W power supplies
DLP-PU	Redundancy Module (20A)
R Series	3A to 30A single & three phase EMI Filters

**Snap-on Mounting:** snap onto DIN Rail TS35/7.5 or TS35/15.  
(no tools required)

For Additional Information, please visit  
<https://product.tdk.com/info/en/products/power/index.html>



## 30W 100-277VAC Input DIN Rail Power Supply

### Features

- ◆ Low Profile for Building Automation
- ◆ 24V Output
- ◆ Wide Range AC Input (100-277VAC)
- ◆ Evaluated to NEC NFPA70 Class 2 Output
- ◆ Class II Double Insulation
- ◆ AC Line Frequency Sync Signal
- ◆ -25 to +71°C Operation
- ◆ DIN Rail Mount



### Key Market Segments & Applications



Industrial



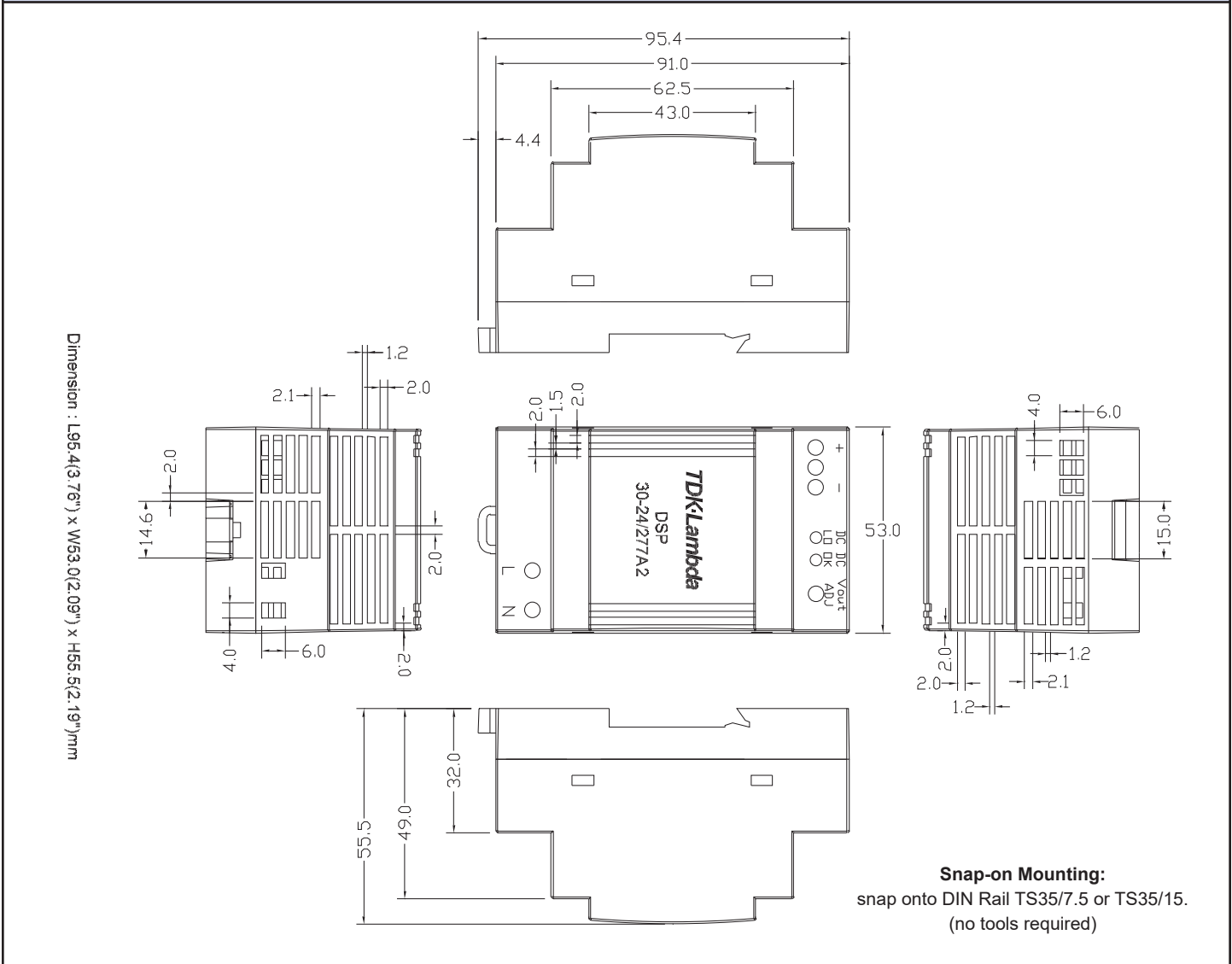
RoHS

Specifications		
Model	DSP30-24/277A2	
AC Input Voltage range	VAC	90 - 304VAC, Class II double insulated (No ground connection required)
Input Frequency	Hz	47 - 63Hz
DC Input Voltage range	VDC	120 - 370VDC
Input Current	A	1.5A at 90VAC input
Inrush Current	A	65A at 230VAC, Cold start, 25°C ambient
Power Factor & Flicker	-	Meets EN61000-3-2, EN61000-3-3
Output Voltage Accuracy	%	±1% of Nominal
Line Regulation	mV	240mV
Load Regulation	mV	240mV
Ripple and Noise (20MHz BW)	mV	120mV
Overcurrent Protection (Typ)	-	<160%
Overvoltage Protection	V	30 - 36VDC
Hold Up Time (115VAC input)	ms	25ms
LED Indicators	-	Green LED = On, Red LED = DC Output Low
Operating Temperature	-	-25 to +71°C (Derate linearly 2.5%/°C from 61 to 71°C)
Temperature Coefficient	%/°C	±0.05%/°C
Storage Temperature	°C	-25 to +85°C
Operating Humidity	%RH	20 - 90% RH (non condensing)
Cooling	-	Convection
Withstand Voltage	-	Input to Output 3kVAC for 1 min.
Isolation Resistance	-	>20M at 25°C, 70%RH & 500VDC
Safety Agency Approvals	-	IEC/UL/CSA/EN62368-1, 60950-1. Evaluated to NEC NFPA70 Class 2 output per UL1310, CE Mark
Immunity	-	EN61000-4-2, -3, -4, -5, -6, -8 & -11, EN55024
Conducted & Radiated EMI	-	EN55032 class A
MTBF	Hours	> 100,000 Hours
Weight (Typ)	g	200
Size (WxHxD)	in	2.09 x 3.76 x 2.19"
Case material	-	Flame Retardant Polycarbonate (UL94 V-0)
Line sync signal (secondary)	-	24V peak to peak square wave, synchronized to input line frequency
Warranty	yrs	Two years

## Model Selector

Model	Voltage (V)	Voltage Adjust (V)	Current (A)	Power (W)	Eff. (Typ %)
DSP30-24/277A2	24V	24 - 28V	1.25A	30W	87%

## Outline Drawing



## Output Cable Harness

Connector: AMP 3-640440-3  
 Cable length 50mm  
 Red = +24V, Black = 0V, White = Sync Signal

For additional information, please visit  
<https://product.tdk.com/en/power/>

