DSP Series Datasheets



DSP Series

Pages 1 – 2

Not Recommend for new design
See DRB and D1SE series



DSP/277A2 Series

Pages 3 – 4

TDK·Lambda DSP Series

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(1)
- Class II Double Insulation
- -25 to +71°C Operation



Key Market Segments & Applications

Industrial

RoHS

Specifications

Model		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.

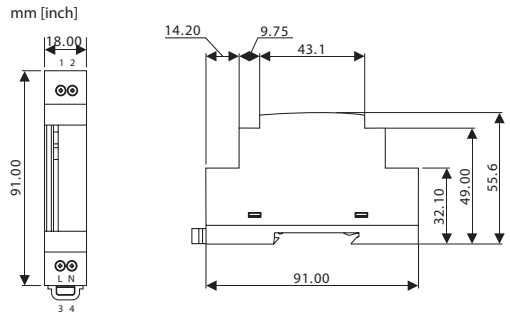
*Safety certified for AC only

NOT RECOMMENDED FOR NEW DESIGN

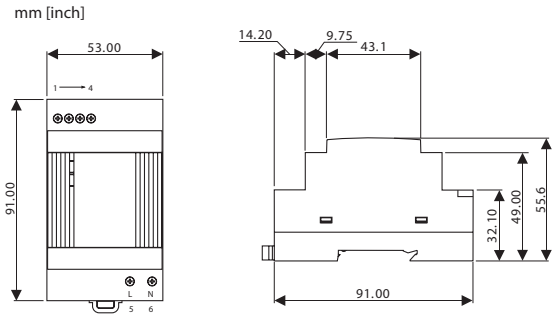
Model Selector

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	-

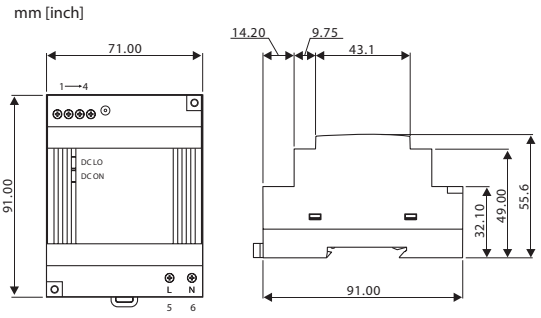
DSP10 Outline Drawing



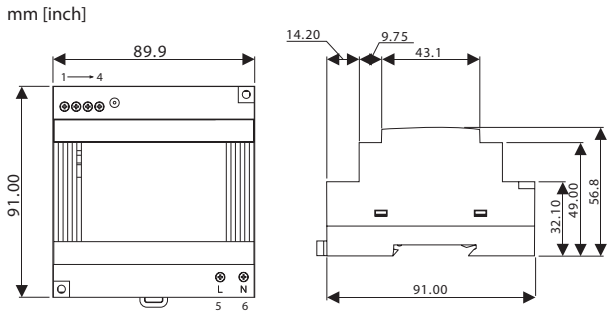
DSP30 Outline Drawing



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

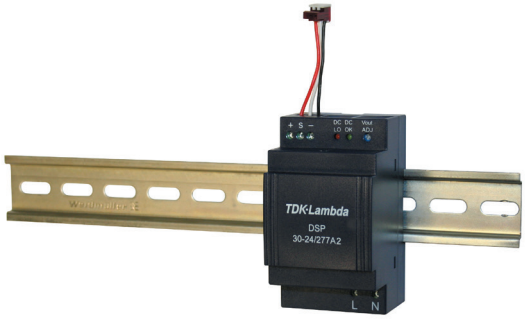
Snap-on Mounting: snap onto DIN Rail TS35/7.5 or TS35/15. (no tools required)

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

NOT RECOMMENDED FOR NEW DESIGN

30W 100-277VAC Input Power Supply

https://product.tdk.com/en/power/dsp
www.emea.lambda.tdk.com/uk/products/dsp



Industrial

RoHS

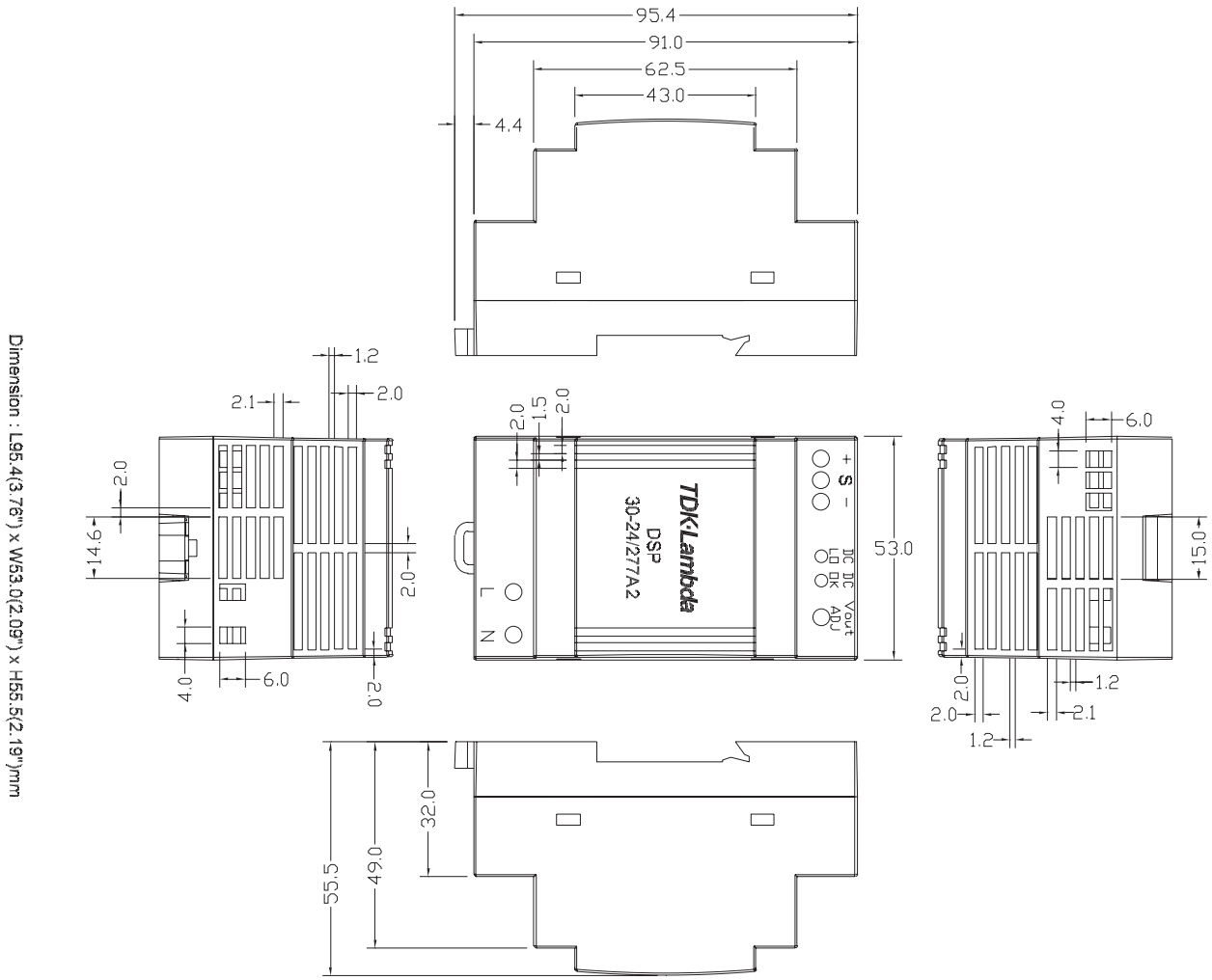
The 30W rated DSP30-24/277A2 AC-DC DIN rail mount power supply can operate from a wide range AC input of 90 up to 305Vac. It is Class II double insulated, requiring no ground connection and has been evaluated to NEC NFPA70 as a Class 2 output. The product also has an isolated AC line frequency synchronizing signal to derive a highly accurate clock signal from for a system timing circuit.

Features	Benefits
• Low 56mm Profile	• Low Profile for Building Automation
• Wide Range AC	• Global use with no input selector switches or transformers
• Class I and Class 2	• No ground wire required, evaluated to NEC NFPA70

Specifications

Model		DSP30-24/277A2
Input		
Input Voltage range	Vac	90 - 305, Class II double insulated (No ground connection required)
Input Frequency	Hz	47 - 63
DC Input Voltage Range	Vdc	120 - 370 (safety certified for AC only)
Input Current	A	1.5 at 90Vac, 50Hz
Inrush Current (230 Vac cold start)	A	65
Power Factor and Flicker	-	Meets EN61000-3-2, EN61000-3-3
Harmonics	-	Not applicable
Hold Up Time (typ) at 115Vac Input	ms	25
Efficiency (Typical)	%	87
Conducted & Radiated EMI	-	EN55032-B class A, FCC Class A
Immunity	-	EN61000-4-2, -3, -4, -5, -6, -8 & -11, EN55024
Safety Agency Certifications	-	IEC/UL/CSA/EN62368-1, 60950-1. Evaluated to NEC NFPA70 Class 2 output per UL1310, UKCA and CE Marks
Output		
Output	-	24V, adjustable from 24 to 28V, 1.25A maximum, 30W maximum
Line Regulation	mV	240
Load Regulation	mV	240
Turn On Time (Maximum)	s	<2.5. when AC input voltage is greater than 115Vac
Temperature Coefficient	%/°C	±0.05
Ripple & Noise (20MHz BW)	mV	120
Minimum Load	A	None
Overcurrent Protection (Typ)	-	<160%
Overvoltage Protection	V	30 - 36
Overtemperature Protection	-	No
Remote Sense	-	No
DC Good		No
Indicators	-	Green LED = On, Red LED = DC Output Low
Parallel Operation	-	Not possible
Series Operation	-	Not possible
AC Sync Signal	-	24V peak to peak square wave, synchronized to input line frequency
Environmental		
Operating Temperature	°C	-25 to +71 (derate linearly 2.5%/°C from 55 to 71)
Storage Temperature	°C	-20 to +85
Humidity Operating (non condensing)	%RH	20 - 90
Cooling	-	Convection
Withstand Voltage (For 1 minute)	Vac	Input to Output 3,000
Isolation Resistance	MΩ	>100 at 25°C & 70%RH, Input to Ground 500Vdc
Other		
Weight (Typ)	g	200
Size (WxHxD)	mm	53 x 95.4 x 2.19
Size (WxHxD)	Inches	2.09 x 3.76 x 2.19
Case Material	-	Flame Retardant Polycarbonate (UL94 V-0)
Mating Connector	-	AMP# 3-640440-3 connector (pitch=2.54mm). Cable length 50mm
DIN Rail type	-	Suitable for mounting on TS-35/7.5 or TS35/15 DIN Rails
MTBF	Hours	>100,000 hours, Ground Benign, 25C, nominal input, 100% load
Warranty	Year	2 years

Outline Drawing DSP30-24/277A2



Output Cable Harness

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



TDK-Lambda France SAS
Tel: +33 1 60 12 71 65
tlf.fr-powersolutions@tdk.com
www.emea.lambda.tdk.com/fr



Italy Sales Office
Tel +39 02 61 29 38 63
tlf.it-powersolutions@tdk.com
www.emea.lambda.tdk.com/it



Netherlands
tlf.nl-powersolutions@tdk.com
www.emea.lambda.tdk.com/nl



TDK-Lambda Europe GmbH
Tel: +49 7841 666 0
tlg.powersolutions@tdk.com
www.emea.lambda.tdk.com/de



Austria Sales Office
Tel: +43 2256 655 84
tlg.at-powersolutions@tdk.com
www.emea.lambda.tdk.com/at



Switzerland Sales Office
Tel: +41 44 850 53 53
tlg.ch-powersolutions@tdk.com
www.emea.lambda.tdk.com/ch



TDK-Lambda Europe GmbH
Tel: Tel. +45 3222 8086
tlg.dk-powersolutions@tdk.com
www.emea.lambda.tdk.com/dk



TDK-Lambda UK Ltd.
Tel: +44 (0) 12 71 85 66 66
tlu.powersolutions@tdk.com
www.emea.lambda.tdk.com/uk



TDK-Lambda Ltd.
Tel: +9 723 902 4333
tli.powersolutions@tdk.com
www.emea.lambda.tdk.com/il-en



TDK-Lambda Americas
Tel: +1 800-LAMBDA-4 or 1-800-526-2324
tla.powersolutions@tdk.com
www.us.lambda.tdk.com



TDK Electronics do Brasil Ltda
Tel: +55 11 3289-9599
sales.br@tdk-electronics.tdk.com
www.tdk-electronics.tdk.com/en



TDK-Lambda Corporation
Tel: +81-3-6778-1113
www.jp.lambda.tdk.com



TDK-Lambda (China) Electronics Co. Ltd.
Tel: +86 21 6485-0777
tlc.powersolutions@tdk.com
www.lambda.tdk.com.cn



TDK-Lambda Singapore Pte Ltd.
Tel: +65 6251 7211
tls.marketing@tdk.com
www.sg.lambda.tdk.com



TDK India Private Limited, Power Supply Division
Tel: +91 80 4039-0660
mathew.philip@tdk.com
www.sg.lambda.tdk.com