Astrodyne TDI
Now you have power.

30 Watt Medical and Industrial Power Supply

ASM30

- ☑ Safety: Medical IEC 60601-1-1 3rd Ed, Amend 1; and IEC 62368-1 (ICT)
- ☑ EMC: Medical IEC 60601-1-2 4th Ed, Class B
- ☑ BF Leakage, 2 MOPP
- ☑ Universal 80-264 VAC Input, 50/60 Hz
- ☑ Class I and Class II Applications
- ☑ Single and Dual Output Models
- ☑ Open Frame and Enclosed Options
- ☑ Compact 3” x 1.6” x 0.97” Open Frame Footprint for single Output Models
- ☑ DoE Efficiency Level VI, RoHS-compliant

PRODUCT DESCRIPTION

The Astrodyne TDI ASM30 series of Switching Power Supplies are designed for medical and industrial applications. These products operate over the input voltage range of 80 to 264 VAC and 50/60Hz frequency and produce up to 30 Watts of regulated DC output. They have safety certification to IEC60601 for use across a wide variety of medical applications, including those within the home. They are compliant with the latest DoE Efficiency Level VI; IEC 60601-1-1, 3rd Edition, Amendment 1 and IEC62368-1 safety; and IEC 60601-1-2, 4th Edition, Class B EMC standards.

PRODUCT MODELS – SINGLE OUTPUT

Model	Output Power	Output Voltage	Output Current	Efficiency
Open Frame Models – Header Connectors				
ASM30-033-BNH-0F0	20W	3.3VDC	6.1A	80%
ASM30-050-BNH-0F0	30W	5VDC	6.0A	85%
ASM30-075-BNH-0F0	30W	7.5VDC	4.0A	86%
ASM30-120-BNH-0F0	30W	12VDC	2.5A	86%
ASM30-150-BNH-0F0	30W	15VDC	2.0A	86%
ASM30-180-BNH-0F0	30W	18VDC	1.67A	86%
ASM30-240-BNH-0F0	30W	24VDC	1.25A	88%
ASM30-280-BNH-0F0	30W	28VDC	1.07A	88%
ASM30-360-BNH-0F0	30W	36VDC	0.83A	89%
ASM30-480-BNH-0F0	30W	48VDC	0.63A	89%

Model	Output Power	Output Voltage	Output Current	Efficiency
Enclosed Models – Header Connectors				
ASM30-033-BEH-0F0	20W	3.3VDC	6.1A	80%
ASM30-050-BEH-0F0	30W	5VDC	6.0A	85%
ASM30-075-BEH-0F0	30W	7.5VDC	4.0A	86%
ASM30-120-BEH-0F0	30W	12VDC	2.5A	86%
ASM30-150-BEH-0F0	30W	15VDC	2.0A	86%
ASM30-180-BEH-0F0	30W	18VDC	1.67A	86%
ASM30-240-BEH-0F0	30W	24VDC	1.25A	88%
ASM30-280-BEH-0F0	30W	28VDC	1.07A	88%
ASM30-360-BEH-0F0	30W	36VDC	0.83A	89%
ASM30-480-BEH-0F0	30W	48VDC	0.63A	89%
Enclosed Models – Terminal Block Connectors				
ASM30-033-BET-0F0	20W	3.3VDC	6.1A	80%
ASM30-050-BET-0F0	30W	5VDC	6.0A	85%
ASM30-075-BET-0F0	30W	7.5VDC	4.0A	86%
ASM30-120-BET-0F0	30W	12VDC	2.5A	86%
ASM30-150-BET-0F0	30W	15VDC	2.0A	86%
ASM30-180-BET-0F0	30W	18VDC	1.67A	86%
ASM30-240-BET-0F0	30W	24VDC	1.25A	88%
ASM30-280-BET-0F0	30W	28VDC	1.07A	88%
ASM30-360-BET-0F0	30W	36VDC	0.83A	89%
ASM30-480-BET-0F0	30W	48VDC	0.63A	89%

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PRODUCT MODELS – DUAL OUTPUT

Model	Output #1 Voltage, Current, Power	Output #2 Voltage, Current, Power
Open Frame Models – Header Connectors		
ASM30D-3306-BNH-0F0	+6VDC, 1.67A, 10W	+3.3VDC, 3.0A, 10W
ASM30D-0524-BNH-0F0	+24VDC, 0.73A, 17.5W	+5VDC, 2.5A, 12.5W
ASM30D-0606-BNH-0F0	+6VDC, 2.5A, 15W	-6VDC, 2.5A, 15W
ASM30D-1212-BNH-0F0	+12VDC, 1.25A, 15W	-12VDC, 1.25A, 15W
ASM30D-1515-BNH-0F0	+15VDC, 1.0A, 15W	-15VDC, 1.0A, 15W
Enclosed Models – Header Connectors		
ASM30D-3306-BEH-0F0	+6VDC, 1.67A, 10W	+3.3VDC, 3.0A, 10W
ASM30D-0524-BEH-0F0	+24VDC, 0.73A, 17.5W	+5VDC, 2.5A, 12.5W
ASM30D-0606-BEH-0F0	+6VDC, 2.5A, 15W	-6VDC, 2.5A, 15W
ASM30D-1212-BEH-0F0	+12VDC, 1.25A, 15W	-12VDC, 1.25A, 15W
ASM30D-1515-BEH-0F0	+15VDC, 1.0A, 15W	-15VDC, 1.0A, 15W
Enclosed Models – Terminal Block Connectors		
ASM30D-3306-BET-0F0	+6VDC, 1.67A, 10W	+3.3VDC, 3.0A, 10W
ASM30D-0524-BET-0F0	+24VDC, 0.73A, 17.5W	+5VDC, 2.5A, 12.5W
ASM30D-0606-BET-0F0	+6VDC, 2.5A, 15W	-6VDC, 2.5A, 15W
ASM30D-1212-BET-0F0	+12VDC, 1.25A, 15W	-12VDC, 1.25A, 15W
ASM30D-1515-BET-0F0	+15VDC, 1.0A, 15W	-15VDC, 1.0A, 15W

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INPUT SPECIFICATIONS

Input Voltage Range	80-264VAC
Input Frequency	47-63 Hz (50/60 Hz nom.)
Input Current (rated)	0.8A max at 100VAC 0.4A max at 240VAC
Input to Earth Leakage	50uA max at 264VAC, 50Hz
Input to Output Leakage	100uA max at 264VAC, 50Hz

MAIN OUTPUT SPECIFICATIONS

Output Voltage	See selection chart
Output Power	See selection chart
No Load Power ASM30:	100mW typ, 210mW max
ASM30D:	1.5W max
Min. Load (ASM30D only)	20% for each output
Set Point Accuracy	±2% max, Vout < 12V ±1% max, Vout ≥ 12V
Load Regulation ASM30:	±2% max, Vout < 12V ±1% max, Vout ≥ 12V
ASM30D:	±5% max
Line Regulation ASM30:	±0.5% max
ASM30D:	±1% max
Efficiency	See selection chart
Over Voltage Protection*	110-135% Vout, recycle power
Over Load Protection*	110 to 160% x Rated Power, Auto Recovery
Short Circuit Protection*	Auto Recovery
Hold-up Time, full load	30ms typ, 230VAC 12ms typ, 115VAC
Ripple/Noise	200mV Pk-Pk max, < 12V out 1% Pk-Pk max, ≥ 12V out

ISOLATION SPECIFICATIONS

Input to Output	4000 VAC, 2 MOPP
Input to Earth	1500 VAC, 1 MOPP
Output to Earth	1500 VAC

MECHANICAL SPECIFICATIONS

Package Types	Open Frame, Enclosed
Size **	3" x 1.6" x 0.97" 76.2 x 40.6 x 24.7 mm
Weight	2.3oz / 65g Open Frame, Single 4.4oz / 125g Open Frame, Dual 2.8oz / 80g Enclosed, Single 5.5oz / 155g Enclosed, Dual

*** Open frame, single output; see Outline Drawings for others*

SAFETY AND COMPLIANCE CERTIFICATIONS (Pending)

Safety Approvals	IEC 60601-1 3rd Ed, Amend 1, IEC 62368-1; cTUVus; CSA C22.2; TUV; CB Scheme
EMC Overall	EN60601-1-2, 4th Ed, Class B
Conducted and Radiated Emissions	EN 55032 (CISPR32), Class B
Harmonic Current	EN 61000-3-2, Class A
Voltage Fluctuations	EN 61000-3-3
ESD Immunity	EN 61000-4-2, Level 4
RF Field Immunity	EN 61000-4-3, Level 3
EFT Burst Immunity	EN 61000-4-4, Level 3
Surge Immunity	EN 61000-4-5, Level 3
Conducted Immunity	EN 61000-4-6, Level 3
Magnet Field Immunity	EN 61000-4-8, Level 4
Voltage Dips and Interruptions	EN 61000-4-11

ENVIRONMENTAL SPECIFICATIONS

Operating Temperature *see derating chart*	-40 to +55°C at Full Load, -40 to +80°C with Derating
Cooling	Free Air Convection
Storage Temperature*	-40 to +85°C
Operating Humidity*	0% to 95%, non-condensing
Operating Altitude	3000m max

** These are stress ratings. Exposure of the devices to any of these conditions may adversely affect long term reliability. Operation under conditions other than the standard operating conditions is neither warrantied nor implied.*

All Specifications are typical at nominal input, full load, 25°C unless specified otherwise.

TEMPERATURE DERATING

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OUTLINE DRAWINGS

Single Output, Open Frame with Headers – ASM30-xxx-BNH-zzz

TERMINAL ASSIGNMENT		
P1	1	ACN
	2	NC
	3	ACL
P2	1	DC_OUTPUT+
	2	DC_OUTPUT+
	3	DC_OUTPUT-
	4	DC_OUTPUT-

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Single Output, Enclosed with Headers – ASM30-xxx-BEH-zzz

TERMINAL ASSIGNMENT		
P1	1	ACN
	2	NC
	3	ACL
P2	1	DC_OUTPUT+
	2	DC_OUTPUT+
	3	DC_OUTPUT-
	4	DC_OUTPUT-

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Single Output, Enclosed with Terminal Blocks – ASM30-xxx-BET-zzz

TERMINAL ASSIGNMENT		
P1	1	ACN
	2	NC
	3	ACL
P2	1	DC_OUTPUT+
	2	DC_OUTPUT+
	3	DC_OUTPUT-
	4	DC_OUTPUT-

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Dual Output, Open Frame with Headers – ASM30D-xxxx-BNH-zzz

TERMINAL ASSIGNMENT		ASM30D-3306-XXX-XXX	ASM30D-0524-XXX-XXX	ASM30D-0606-XXX-XXX	ASM30D-1212-XXX-XXX	ASM30D-1515-XXX-XXX
P1	ACN	ACN	ACN	ACN	ACN	ACN
	NC	NC	NC	NC	NC	NC
	ACL	ACL	ACL	ACL	ACL	ACL
P2	1	+6V	+24V	+6V	+12V	+15V
	2	+3.3V	+5V	AGND	AGND	AGND
	3	+3.3V	+5V	AGND	AGND	AGND
	4	AGND	AGND	-6V	-12V	-15V
	5	AGND	AGND	-6V	-12V	-15V

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Dual Output, Enclosed with Headers – ASM30D-xxxx-BEH-zzz

TERMINAL ASSIGNMENT		ASM30D-3306-XXX-XXX	ASM30D-0524-XXX-XXX	ASM30D-0606-XXX-XXX	ASM30D-1212-XXX-XXX	ASM30D-1515-XXX-XXX
P1	ACN	ACN	ACN	ACN	ACN	ACN
	NC	NC	NC	NC	NC	NC
	ACL	ACL	ACL	ACL	ACL	ACL
P2	1	+6V	+24V	+6V	+12V	+15V
	2	+3.3V	+5V	AGND	AGND	AGND
	3	+3.3V	+5V	AGND	AGND	AGND
	4	AGND	AGND	-6V	-12V	-15V
	5	AGND	AGND	-6V	-12V	-15V

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Dual Output, Enclosed with Terminal Blocks – ASM30D-xxxx-BET-zzz

TERMINAL ASSIGNMENT		ASM30D-3306-XXX-XXX	ASM30D-0524-XXX-XXX	ASM30D-0606-XXX-XXX	ASM30D-1212-XXX-XXX	ASM30D-1515-XXX-XXX
P1	ACN	ACN	ACN	ACN	ACN	ACN
	NC	NC	NC	NC	NC	NC
	ACL	ACL	ACL	ACL	ACL	ACL
P2	1	+6V	+24V	+6V	+12V	+15V
	2	+3.3V	+5V	AGND	AGND	AGND
	3	+3.3V	+5V	AGND	AGND	AGND
	4	AGND	AGND	-6V	-12V	-15V
	5	AGND	AGND	-6V	-12V	-15V

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Headers and Mating Connectors

AC Input Connector (P1)

PCB Header	Mating Housing and equivalents	Terminal Contacts and equivalents
CviLux CI5203P1V00 or equivalent	CviLux CI5203S000M or JST VHR-3N	CviLux CI52T031BE0 (AWG# 18~22) or JST SVH-21T-P1.1 (AWG# 18~22)

DC Output Connector (P2)

PCB Header	Mating Housing and equivalents	Terminal Contacts and equivalents
CviLux CI5204P1V00 or equivalent	CviLux CI5204S000M or JST VHR-4N	CviLux CI52T031BE0 (AWG# 18~22) or JST SVH-21T-P1.1 (AWG# 18~22)

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