

# Industrial AC-DC Converters

**POWER**  
**SOLVE**

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INO60/INU60/INB60 Industrial Series  
Single, Dual, Triple & Quad Outputs  
Up to 63 Watts



## Features

- Wide Universal Input Voltage of 81-280 VAC (90-420VDC)
- Single, Dual, Triple or Quad DC Outputs
- Industry Standard 5 x 3" footprint (PCB Version)
- Available as Open PCB, Aluminium U Channel or Fully Enclosed
- Full Safety Approvals
- EMC to FCC Part 15 Class B & CISPR-22 Class B
- Single Output versions available with any voltage from 3V to 48V DC
- Optional Power Fail Detect Signal
- Screw Terminal Connections (Molex type optional)

## Electrical Specification

AC Input	81-280VAC, 47-400Hz
Input Current	1.6A Max, Low Line, Full Load
Inrush Current	30A Max, Cold Start, 230VAC Input
Efficiency	80% Typical
DC Outputs	See table
Line Regulation	0.5% Typical, 1% Max
Load Regulation	See table
Over Voltage Protection	Single Output Models & Output 1 of Multi Output Models, 112-132% V Nominal
Over Current Protection	110-150% Nominal Output Power
Transient Response	5mS, Full Load to 50% Load
Hold Up Time	16mS Min, 110V AC Input, Full Load Output
Start Up Time	1 Sec Typical, 2 Sec Max
Ripple & Noise	1% Typical, 2% Max
Earth Leakage Current	0.45mA Max
Operating Temperature	0 to 70°C, Derate Linearly from 100% Load at 50°C to 50% Load at 70°C
Storage Temperature	-40 to +85°C
Relative Humidity	95% Max Non Condensing
EMC	FCC Part 15 Class B, CISPR-22 Class B
Safety Approvals	UL, cUL60950, TUV/GS(EN60950), CE

**Powersolve Electronics Ltd. Units 8A, Arnhem Road, Newbury, RG14 5RU. England**

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## Output Voltage & Current Ratings (Single Outputs:)

MODEL (OPEN PCB)	MODEL (U CHANNEL)	MODEL (ENCLOSED)	DC OUTPUT	TOTAL REGULATION	MAXIMUM OUTPUT POWER
INO60-3V3	INU60-3V3	INB60-3V3	3.3V 15.15A	5%	50 Watts
INO60-05	INU60-05	INB60-05	5V 11A	5%	55 Watts
INO60-09	INU60-09	INB60-09	9V 7A	3%	63 Watts
INO60-12	INU60-12	INB60-12	12V 5.25A	3%	63 Watts
INO60-15	INU60-15	INB60-15	15V 4.2A	3%	63 Watts
INO60-18	INU60-18	INB60-18	18V 3.5A	3%	63 Watts
INO60-24	INU60-24	INB60-24	24V 2.63A	2%	63 Watts
INO60-36	INU60-36	INB60-36	36V 1.75A	2%	63 Watts
INO60-48	INU60-48	INB60-48	48V 1.31A	2%	63 Watts

Note: Single output models available within any voltage between 3V and 48V – Consult sales office for details

## Output Voltage & Current Ratings (Multi Outputs:)

MODEL (OPEN PCB)	MODEL (U CHANNEL)	MODEL (ENCLOSED)	OUTPUT 1	MAX REG.	OUTPUT 2	MAX REG.	OUTPUT 3	MAX REG.	OUTPUT 4	MAX REG.	MAX POWER
INO60-3V312	INU60-3V312	INB60-3V312	+3.3V 1.4A-7A	7%	+12V 0.6A-3A	5%					59.1W
INO60-512	INU60-512	INB60-512	+5V 0.7A-7A	5%	+12V 0.3A-3A	5%					63W
INO60-515	INU60-515	INB60-515	+5V 0.7A-7A	5%	+15V 0.3A-3A	5%					63W
INO60-524	INU60-524	INB60-524	+5V 0.7A-7A	5%	+24V 0.4A-2A	5%					63W
INO60-3V35	INU60-3V35	INB60-3V35	+3.3V 1.4A-7A	7%	+5V 0.5A-5A	5%					48.1W
INO60-524N	INU60-524N	INB60-524N	+5V 0.1A-5A	5%			-24V 0.2A-2A	5%			63W
INO60-3V31212	INU60-3V31212	INB60-3V31212	+3.3V 1.2A-6A	7%	+12V 0.6A-3A	5%	-12V 0A-0.8A	5%			63W
INO60-3V31212P	INU60-3V31212P	INB60-3V31212P	+3.3V 1.2A-6A	7%	+12V 0.6A-3A	5%	+12V 0A-0.8A	5%			63W
INO60-5125	INU60-5125	INB60-5125	+5V 0.6A-6A	5%	+12V 0.3A-3A	5%	-5V 0A-0.8A	5%			63W
INO60-5125P	INU60-5125P	INB60-5125P	+5V 0.6A-6A	5%	+12V 0.3A-3A	5%	+5V 0A-0.8A	5%			63W
INO60-51212	INU60-51212	INB60-51212	+5V 0.6A-6A	5%	+12V 0.6A-3A	5%	-12V 0A-0.8A	5%			63W
INO60-51212P	INU60-51212P	INB60-51212P	+5V 0.6A-6A	5%	+12V 0.6A-3A	5%	+12V 0A-0.8A	5%			63W
INO60-51515	INU60-51515	INB60-51515	+5V 0.6A-6A	5%	+15V 0.3A-3A	5%	-15V 0A-0.8A	5%			63W
INO60-51515P	INU60-51515P	INB60-51515P	+5V 0.6A-6A	5%	+15V 0.3A-3A	5%	+15V 0A-0.8A	5%			63W
INO60-52412	INU60-52412	INB60-52412	+5V 1.2A-6A	5%	+24V 0.4A-2A	5%	-12V 0A-0.5A	5%			63W
INO60-52412P	INU60-52412P	INB60-52412P	+5V 1.2A-6A	5%	+24V 0.4A-2A	5%	+12V 0A-0.5A	5%			63W
INO60-3V3125	INU60-3V3125	INB60-3V3125	+5V 1.2A-6A	7%	+12V 0.6A-3A	5%	-5V 0A-0.8A	5%			59.8W
INO60-3V3125P	INU60-3V3125P	INB60-3V3125P	+5V 1.2A-6A	7%	+12V 0.6A-3A	5%	+5V 0A-0.8A	5%			59.8W
INO60-3V3512P	INU60-3V3512P	INB60-3V3512P	+3.3V 0.5A-5A	7%	+5V 0.5A-5A	5%	+12V 0A-1A	5%			53.5W
INO60-3V3512	INU60-3V3512	INB60-3V3512	+3.3V 0.5A-5A	7%	+5V 0.5A-5A	5%	-12V 0A-1A	5%			53.5W
INO60-3V312125	INU60-3V312125	INB60-3V312125	+3.3V 1.2A-6A	7%	+12V 0.6A-3A	5%	-12V 0A-0.8A	5%	-5V 0A-0.8A	5%	63W
INO60-3V312125P	INU60-3V312125P	INB60-3V312125P	+3.3V 1.2A-6A	7%	+12V 0.6A-3A	5%	-12V 0A-0.8A	5%	+5V 0A-0.8A	5%	63W
INO60-3V31212P5	INU60-3V31212P5	INB60-3V31212P5	+3.3V 1.2A-6A	7%	+12V 0.6A-3A	5%	+12V 0A-0.8A	5%	-5V 0A-0.8A	5%	63W
INO60-3V31212P5P	INU60-3V31212P5P	INB60-3V31212P5P	+3.3V 1.2A-6A	7%	+12V 0.6A-3A	5%	+12V 0A-0.8A	5%	+5V 0A-0.8A	5%	63W
INO60-512125	INU60-512125	INB60-512125	+5V 0.6A-6A	5%	+12V 0.3A-3A	5%	-12V 0A-0.8A	5%	-5V 0A-0.8A	5%	63W
INO60-512125P	INU60-512125P	INB60-512125P	+5V 0.6A-6A	5%	+12V 0.3A-3A	5%	-12V 0A-0.8A	5%	+5V 0A-0.8A	5%	63W

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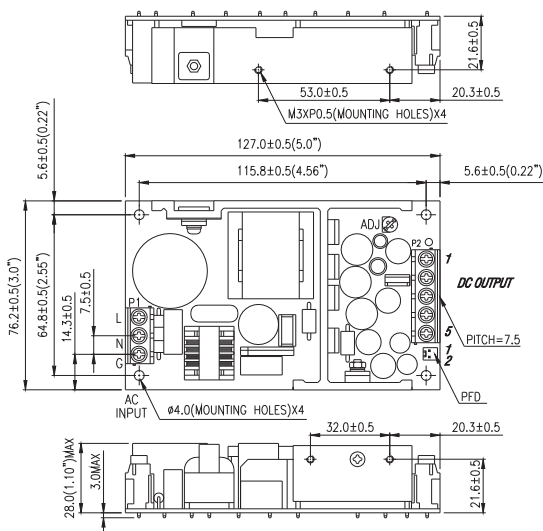


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MODEL (OPEN PCB)	MODEL (U CHANNEL)	MODEL (ENCLOSED)	OUTPUT 1	MAX REG.	OUTPUT 2	MAX REG.	OUTPUT 3	MAX REG.	OUTPUT 4	MAX REG.	MAX POWER
INO60-51212P5	INU60-51212P5	INB60-51212P5	+5V 0.6A-6A	5%	+12V 0.3A-3A	5%	+12V 0A-0.8A	5%	-5V 0A-0.8A	5%	63W
INO60-51212P5P	INU60-51212P5P	INB60-51212P5P	+5V 0.6A-6A	5%	+12V 0.6A-3A	5%	+12V 0A-0.8A	5%	+5V 0A-0.8A	5%	63W
INO60-51212N12	INU60-51212N12	INB60-51212N12	+5V 1.2A-6A	5%	+12V 0.6A-3A	5%	-12V 0A-0.8A	5%	-12V 0A-0.8A	5%	63W
INO60-5121212P	INU60-5121212P	INB60-5121212 P	+5V 1.2A-6A	5%	+12V 0.6A-3A	5%	-12V 0A-0.8A	5%	+12V 0A-0.8A	5%	63W
INO60-51212P12	INU60-51212P12	INB60-51212P12	+5V 1.2A-6A	5%	+12V 0.6A-3A	5%	+12V 0A-0.8A	5%	-12V 0A-0.8A	5%	63W
INO60-51212P12P	INU60-51212P12P	INB60-51212P12P	+5V 1.2A-6A	5%	+12V 0.6A-3A	5%	+12V 0A-0.8A	5%	+12V 0A-0.8A	5%	63W
INO60-5121224N	INU60-5121224N	INB60-5121224N	+5V 1.2A-6A	5%	+12V 0.6A-3A	5%	-12V 0A-0.8A	5%	-24V 0A-0.8A	5%	63W
INO60-5121224	INU60-5121224	INB60-5121224	+5V 1.2A-6A	5%	+12V 0.6A-3A	5%	-12V 0A-0.8A	5%	+24V 0A-0.8A	5%	63W
INO60-51212P24N	INU60-51212P24N	INB60-51212P24N	+5V 1.2A-6A	5%	+12V 0.6A-3A	5%	+12V 0A-0.8A	5%	-24V 0A-0.8A	5%	63W
INO60-51212P24P	INU60-51212P24P	INB60-51212P24P	+5V 1.2A-6A	5%	+12V 0.6A-3A	5%	+12V 0A-0.8A	5%	+24V 0A-0.8A	5%	63W
INO60-515155	INU515155	INB60-515155	+5V 0.6A-6A	5%	+15V 0.6A-3A	5%	-15V 0A-0.8A	5%	-5V 0A-0.8A	5%	63W
INO60-515155P	INU515155P	INB60-515155P	+5V 0.6A-6A	5%	+15V 0.6A-3A	5%	-15V 0A-0.8A	5%	+5V 0A-0.8A	5%	63W
INO60-51515P5N	INU51515P5N	INB60-51515P5N	+5V 0.6A-6A	5%	+15V 0.6A-3A	5%	+15V 0A-0.8A	5%	-5V 0A-0.8A	5%	63W
INO60-51515P5P	INU60-51515P5P	INB60-51515P5P	+5V 0.6A-6A	5%	+15V 0.6A-3A	5%	+15V 0A-0.8A	5%	+5V 0A-0.8A	5%	59.3W

Options: Power Fail Detect – Consult sales office for details  
 Input & Output Molex Connectors – Consult Sales Office

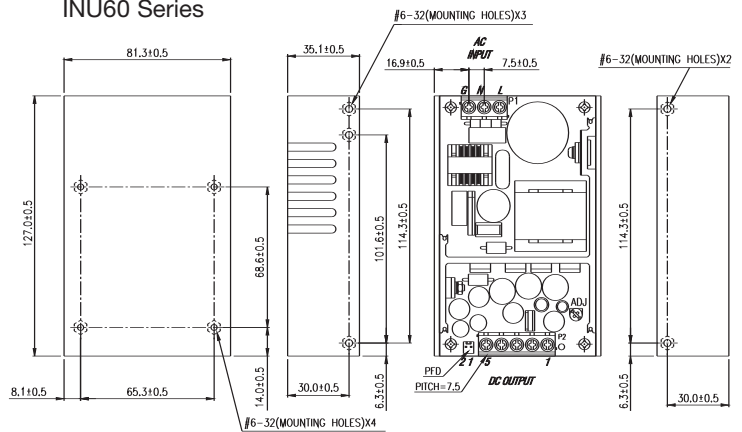
## INO60 Series



### Mechanical Specification - INO60 Series

- Note:
1. Dimensions are shown in inches or mm.
  2. Weight: 300gs approx.

## INU60 Series



### Mechanical Specification - INU60 Series

- Note:
1. Dimensions are shown in inches or mm.
  2. Weight: 425gs approx.

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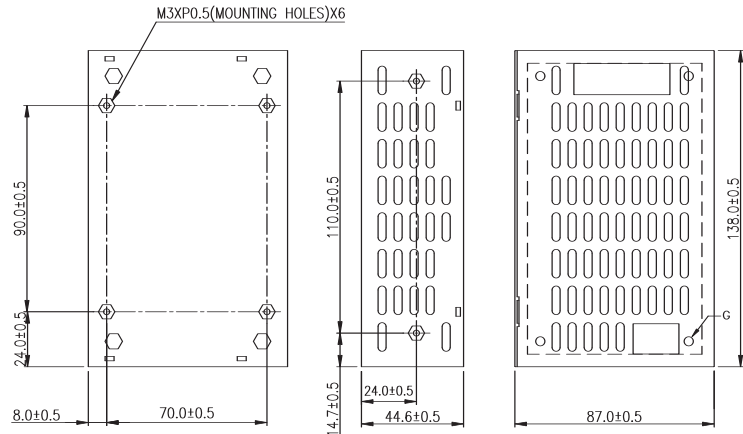
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## INB60 Series

Mechanical Specification - INB60 Series

### Note:

1. Dimensions are shown in inches or mm.
2. Weight: 475gs approx.



Pin	Pin Connection				
	1	2	3	4	5
SINGLE OUTPUT	OUT	OUT	OUT	RTN	RTN
DUAL OUTPUT	Vo2	Vo1	COM	N/C	N/C
INO/INU/INB60-524N	NC	Vo1	COM	Vo3	NC
TRIPLE OUTPUT	Vo2	Vo1	COM	Vo3	N/C
QUAD OUTPUT	Vo2	Vo1	COM	Vo3	Vo4

PFD (Optional) Other Connector	
1	2
OUT	RTN
OUT	RTN
OUT	RTN
OUT	RTN
OUT	RTN