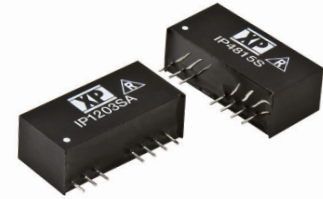


The IP series is housed in a SIP8 plastic case. Featuring a 4:1 input voltage range of 4.5 to 18VDC, 9 to 36VDC or 18 to 75VDC with both single and dual outputs, singles have 3.3, 5, 12 or 15VDC with duals having  $\pm 5$ ,  $\pm 12$  &  $\pm 15$ VDC.

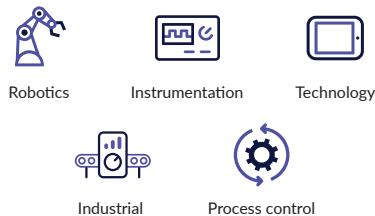
The 3W IP provides 1.6kVDC isolation between input and output, the output has short circuit protection, remote On/Off is standard. The operating temperature range is from  $-40^{\circ}\text{C}$  to  $+85^{\circ}\text{C}$ , with derating above  $+70^{\circ}\text{C}$ .



### Features

- ▶ Regulated single & dual outputs
- ▶ 4:1 input range
- ▶ Single outputs 3.3 to 15VDC
- ▶ Dual outputs  $\pm 5.0$  to  $\pm 15$ VDC
- ▶ SIP8 package
- ▶ 1.6kVDC isolation
- ▶ Remote On/Off
- ▶  $-40^{\circ}\text{C}$  to  $+85^{\circ}\text{C}$  operating temperature
- ▶ Full power to  $+70^{\circ}\text{C}$
- ▶ 3 year warranty

### Applications



### Dimensions

21.85 x 9.20 x 11.10 (0.86" x 0.36" x 0.44")

### Models & ratings

Model number	Input voltage	No load input current <sup>(1)</sup>	Output voltage	Max capacitive load	Output current	Efficiency
IP1203SA	4.5-18.0VDC	40mA	3.3VDC	1760 $\mu\text{F}$	700mA	72%
IP1205SA			5.0VDC	1000 $\mu\text{F}$	600mA	77%
IP1212SA			12.0VDC	170 $\mu\text{F}$	250mA	81%
IP1215SA			15.0VDC	110 $\mu\text{F}$	200mA	81%
IP1205S			$\pm 5.0$ VDC	$\pm 470$ $\mu\text{F}$	$\pm 300$ mA	77%
IP1212S			$\pm 12.0$ VDC	$\pm 100$ $\mu\text{F}$	$\pm 125$ mA	80%
IP1215S			$\pm 15.0$ VDC	$\pm 47$ $\mu\text{F}$	$\pm 100$ mA	80%

Continued on page 2

#### Notes:

1. Operation at no load will not damage the converter but may not meet all specifications.
2. When one output is set to 100% load and the other varies between 25%-100% load.

## Models & ratings

Model number	Input voltage	No load input current <sup>(1)</sup>	Output voltage	Max capacitive load	Output current	Efficiency
IP2403SA	9.0-36.0VDC	25mA	3.3VDC	1760 $\mu$ F	700mA	75%
IP2405SA			5.0VDC	1000 $\mu$ F	600mA	79%
IP2412SA			12.0VDC	170 $\mu$ F	250mA	82%
IP2415SA			15.0VDC	110 $\mu$ F	200mA	82%
IP2405S			$\pm$ 5.0VDC	$\pm$ 470 $\mu$ F	$\pm$ 300mA	79%
IP2412S			$\pm$ 12.0 VDC	$\pm$ 100 $\mu$ F	$\pm$ 125mA	79%
IP2415S			$\pm$ 15.0 VDC	$\pm$ 47 $\mu$ F	$\pm$ 100mA	80%
IP4803SA	18.0-75.0VDC	15mA	3.3VDC	1760 $\mu$ F	700mA	74%
IP4805SA			5.0VDC	1000 $\mu$ F	600mA	78%
IP4812SA			12.0VDC	170 $\mu$ F	250mA	80%
IP4815SA			15.0VDC	110 $\mu$ F	200mA	81%
IP4805S			$\pm$ 5.0VDC	$\pm$ 470 $\mu$ F	$\pm$ 300mA	79%
IP4812S			$\pm$ 12.0 VDC	$\pm$ 100 $\mu$ F	$\pm$ 125mA	79%
IP4815S			$\pm$ 15.0 VDC	$\pm$ 47 $\mu$ F	$\pm$ 100mA	79%

### Notes:

1. Operation at no load will not damage the converter but may not meet all specifications.
2. When one output is set to 100% load and the other varies between 25%-100% load.

## Input

Characteristic	Minimum	Typical	Maximum	Units	Notes & conditions
Input voltage range	See models and ratings table				
Input reflected ripple current		20		mA pk-pk	12 $\mu$ H inductor and 47 $\mu$ F capacitor, 5Hz to 20MHz
Input surge		25		VDC	12V models
		50			24V models
		100			48V models
Input filter	Capacitor				

## Output

Characteristic	Minimum	Typical	Maximum	Units	Notes & conditions
Output voltage	See models & ratings table				
Minimum load	0			%	Operation at no load will not damage unit but it may not meet all specifications.
Line regulation			$\pm$ 0.2	%	
Load regulation			$\pm$ 1.0	%	10-100% load change, operation at no load will not damage unit but it may not meet all specifications.
Setpoint accuracy			$\pm$ 1.0	%	
Ripple & noise		30		mV pk-pk	20MHz bandwidth
Temperature coefficient		0.02		%/ $^{\circ}$ C	
Short circuit protection	Continuous with auto recovery (foldback)				
Cross regulation		$\pm$ 5		%	On dual output models, when one output is set to 100% load and the other varies between 25%-100% load.
Remote on/off	Apply 2 to 4mA to pin 3 to turn off output				

## General

Characteristic	Minimum	Typical	Maximum	Units	Notes & conditions
Efficiency	See models & ratings table				
Isolation voltage		1600		VDC	
Isolation resistance		10 <sup>9</sup>		Ω	
Isolation capacitance		200		pF	
Switching frequency	100		600	kHz	Variable
Mean time between failure		>1.7		Mhrs	MIL-HDBK-217F, +25°C GB

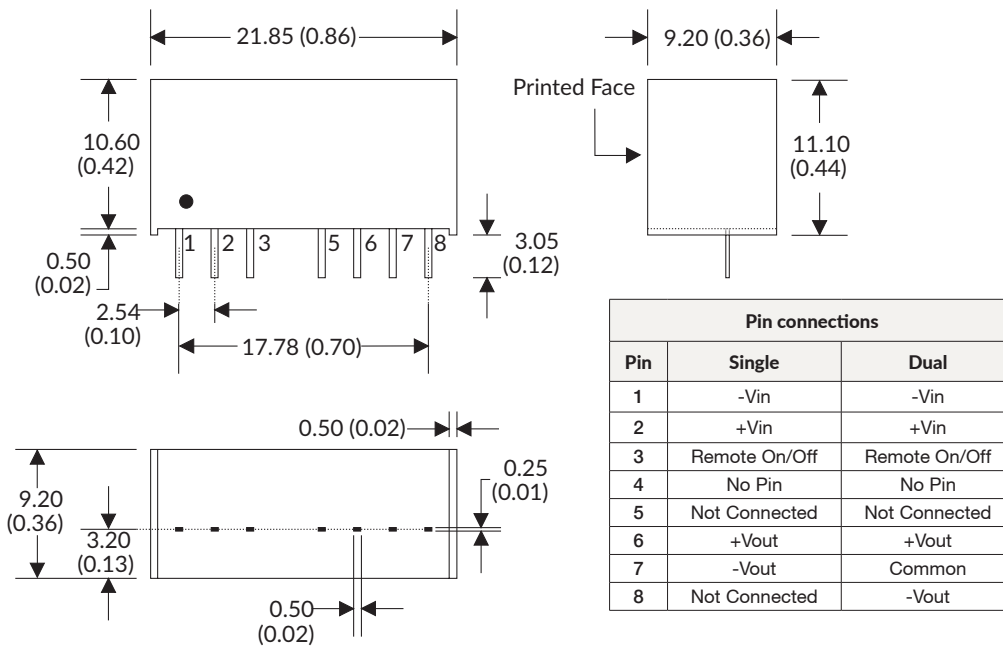
## Environmental

Characteristic	Minimum	Typical	Maximum	Units	Notes & conditions
Operating temperature	-40		+85	°C	Derate from 100% load at +70°C to 30% load at +85°C
Storage temperature	-40		+125	°C	
Case temperature			+100	°C	
Cooling	Convection cooled				

## Safety approvals

Certification	Standard	Notes & conditions
CE	Meets all applicable directives	
UKCA	Meets all applicable legislation	

## Mechanical details



### Notes:

- All dimensions in mm (inches)
- Pin pitch tolerance:  $\pm 0.35$  ( $\pm 0.014$ )
- Case tolerance:  $\pm 0.5$  ( $\pm 0.02$ )
- Weight: 6.5g (0.014lbs)

Specifications subject to change without notice.