VCS50 series

50W Convection Cooled

AC-DC power supplies

The VCS50 series of regulated output convection cooled 50W AC-DC power supplies are designed to provide a cost effective solution for ITE and industrial applications. Features include output voltage adjustment, low no load power consumption, output short circuit protection, over current and over voltage protection.

Applications include auxiliary power sources, security installations, lighting control, smart home or office control systems, ticketing and vending applications.

Features

- 50W convection cooled
- Input voltage range 85 to 264VAC
- Output voltages from 5V to 48VDC
- Output voltage trim: 5V, 12V -15% +10%. 15V to 48V ±10%
- 3.0kVAC input to output isolation
- <0.5W no load input power
- Class B conducted & radiated emissions
- Short circuit, overvoltage & overload protection
- Integrated connector cover
- -25°C to +70°C operating temperature
- Full power to +50°C
- 2 year warranty

Applications

Household appliances

Industrial electronics

Instrumentation

Technology

Dimensions

110.5 x 78.0 x 35.0mm (4.35" x 3.07" x 1.38")

Models & ratings

Model number	Output voltage	Output current	Ripple & Noise[2]	Efficiency[1]	Output power
VCS50US05	5.0VDC	8.00A	50mV	79%	40W
VCS50US12	12.0VDC	4.20A	120mV	85%	50W
VCS50US15	15.0VDC	3.30A	150mV	86%	
VCS50US24	24.0VDC	2.10A	240mV	88%	
VCS50US48	48.0VDC	1.05A	480mV	88%	

Notes:

1. Minimum average of efficiencies measured at 25%, 50%, 75% & 100% load.
2. Ripple & Noise may exceed specified values below -10°C.
3. Level 3 performance criteria A is met for loads >2%. At no load, result is performance criteria A Level 2 or less than 4% output deviation at Level 3.

VCS50 series

Input

Characteristic	Minimum	Typical	Maximum	Units	Notes & conditions
Input voltage	85		264	VAC	127-370VDC
Input frequency	47		63	Hz	
Power factor	EN61000-3-2 class A				
Input current		1.1		A	90VAC
Inrush current			60	A	230VAC, cold start at 25°C
No load input power			<0.5	mW	
Input protection	T3.15 A/250 V, fuse fitted in live line				

Output

Characteristic	Minimum	Typical	Maximum	Units	Notes & conditions
Output voltage	5		48	VDC	See models & ratings
Minimum load	No minimum load required				
Output adjust		±10		%	5VDC & 12VDC versions are -5% to +10%
Output adjust					
Start up delay			1	s	
Hold up time	10			ms	115VAC and full load
Line regulation		±0.5		%	90VAC to 264VAC input
Load regulation		±1		%	5VDC & 12VDC versions (Other versions: ±0.5% 0% to 100% load)
Transient response		<4		%	Deviation with a 50% to 75% load change at 1A/µs. Output returns to within 1% in less than 500µs
Ripple & noise			1	% pk-pk	20MHz bandwidth
Temperature coefficient		±0.003		%/°C	After 20 min warm up
Short circuit protection	Continuous, trip and restart				

General

Characteristic	Minimum	Typical	Maximum	Units	Notes & conditions
Efficiency	See Models & Ratings				
Isolation		3000 1500 500		VAC	Input to output Input to ground Output to ground
Switching frequency		65		kHz	
Mean time between failure		>500		khrs	MIL-HDBK-217F, 25°C GB
Weight		250 (0.55)		g (lb)	

Environmental

Characteristic	Minimum	Typical	Maximum	Units	Notes & conditions
Operating temperature	-25		+70	°C	
Storage temperature	-40		+80	°C	
Cooling	Convection convection				
Operating humidity	0		95	%	RH, non-condensing
Shock	±3 x 30g shocks in each plane, 30g: 11ms (±0.5ms), half sine, compliant to EN60068-2-27 & EN60068-2-47				
Vibration	10		500	Hz	2g sweep and endurance at resonance in all 3 planes. Conforms to EN60068-2-6

EMC: Emissions

Phenomenon	Standard	Test Level	Notes & conditions
Conducted	EN55032	Level B	
Radiated	EN55032	Level B	
Harmonic currents	EN61000-3-2	Class A	
Voltage flicker	EN61000-3-3		

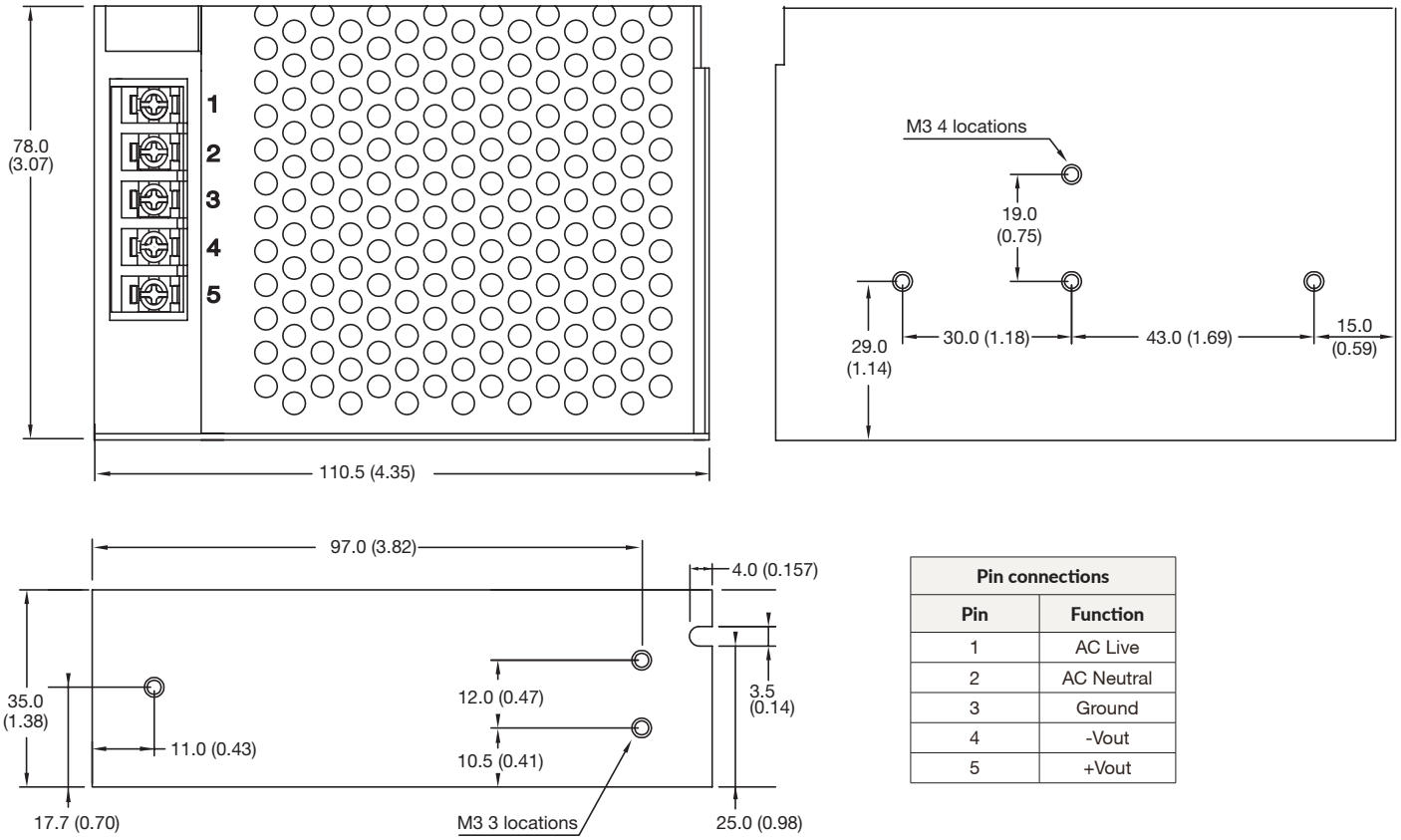
EMC: Immunity

Phenomenon	Standard	Test Level	Criteria	Notes & conditions
ESD immunity	EN61000-4-2	Level 3	A	
Radiated immunity	EN61000-4-3	Level 3	A	
EFT/burst	EN61000-4-4	Level 3	A	
Surge	EN61000-4-5	Inst. Class 3	A	
Conducted	EN61000-4-6	Level 3	A	
Dips and interruptions	EN61000-4-11	Dip: 30% 10ms	A	
		Dip: 36% 100ms	B	
		Int: 100% 5000ms	B	

Safety approvals

Certification	Standard	Notes & conditions
UL	UL60950-1, UL62368-1	
EN	EN62368-1	
CB	IEC60950-1, CSA C22.2 No.60950-1-03, IEC62368-1	
CE	Meets all applicable directives	
UKCA	Meets all applicable legislation	

Mechanical details

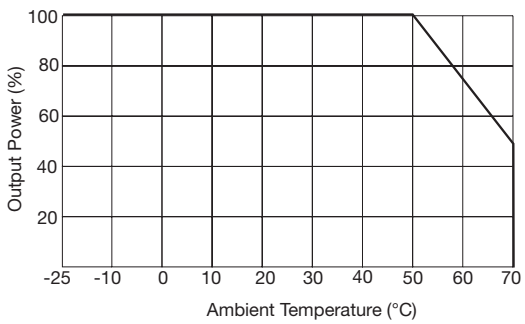


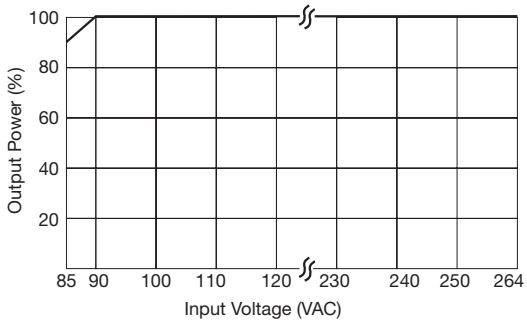
Pin connections	
Pin	**Function**
1	AC Live
2	AC Neutral
3	Ground
4	-Vout
5	+Vout

Notes:

1. All dimensions in mm (inches)
2. Weight: 250g (0.55lbs) approx
3. Tolerance ±0.02 (±0.5)
4. Maximum mounting screw penetration 4.0 (0.157) from outer surface
5. Screw terminal sizes M3

Derating curves





Specifications subject to change without notice

VCS70 series

70W Convection cooled

AC-DC power supplies

The VCS70 series of regulated output convection cooled 70W AC-DC power supplies are designed to provide a cost effective solution for ITE and industrial applications. Features include output voltage adjustment, low no load power consumption, output short circuit protection, over current and over voltage protection.

Applications include auxiliary power sources, security installations, lighting control, smart home or office control systems, ticketing and vending applications.

Features

- 70W convection cooled
- Input voltage range 85 to 264VAC
- Output voltages from 5V to 48VDC
- Output voltage trim: 5V, 12V -15% +10%. 15V to 48V ±10%
- 3.0kVAC input to output isolation
- <0.5 W no load input power
- Class B conducted & radiated emissions
- Short circuit, overvoltage & overload protection
- Integrated connector cover
- -25°C to +70°C operating temperature
- Full power to +50°C
- 2 year warranty

Applications

Household appliances

Industrial electronics

Instrumentation

Technology

Dimensions

110.5 x 78.0 x 35.0mm (4.35" x 3.07" x 1.38")

Models & ratings

Model number	Output voltage	Output current	Ripple & Noise[2]	Efficiency[1]	Output power
VCS70US05	5.0VDC	8.00A	50mV	79%	50W
VCS70US12	12.0VDC	4.20A	120mV	85%	70W
VCS70US15	15.0VDC	3.30A	150mV	86%	
VCS70US24	24.0VDC	2.10A	240mV	88%	
VCS70US48	48.0VDC	1.05A	480mV	88%	

Notes:

1. Minimum average of efficiencies measured at 25%, 50%, 75% & 100% load.
2. Ripple & Noise may exceed specified values below -10°C.
3. Level 3 performance criteria A is met for loads >2%. At no load, result is performance criteria A Level 2 or less than 4% output deviation at Level 3.

VCS70 series

Input

Characteristic	Minimum	Typical	Maximum	Units	Notes & conditions
Input voltage	85		264	VAC	127-370VDC
Input frequency	47		63	Hz	
Power factor	EN61000-3-2 class A				
Input current		1.1		A	90VAC
Inrush current			60	A	230VAC, cold start at 25°C
No load input power			<0.5	mW	
Input protection	T3.15 A/250 V, fuse fitted in live line				

Output

Characteristic	Minimum	Typical	Maximum	Units	Notes & conditions
Output voltage	5		48	VDC	See models & ratings
Minimum load	No minimum load required				
Output adjust		±10		%	5VDC & 12VDC versions are -5% to +10%
Output adjust					
Start up delay			1	s	
Hold up time	10			ms	115VAC and full load
Line regulation		±0.5		%	90VAC to 264VAC input
Load regulation		±1		%	5VDC & 12VDC versions (Other versions: ±0.5% 0% to 100% load)
Transient response		<4		%	Deviation with a 50% to 75% load change at 1A/µs. Output returns to within 1% in less than 500µs
Ripple & noise			1	% pk-pk	20MHz bandwidth
Temperature coefficient		±0.003		%/°C	After 20 min warm up
Short circuit protection	Continuous, trip and restart				

General

Characteristic	Minimum	Typical	Maximum	Units	Notes & conditions
Efficiency	See Models & Ratings				
Isolation		3000 1500 500		VAC	Input to output Input to ground Output to ground
Switching frequency		65		kHz	
Mean time between failure		>500		khrs	MIL-HDBK-217F, 25°C GB
Weight		250 (0.55)		g (lb)	

Environmental

Characteristic	Minimum	Typical	Maximum	Units	Notes & conditions
Operating temperature	-25		+70	°C	
Storage temperature	-40		+80	°C	
Cooling	Convection convection				
Operating humidity	0		95	%	RH, non-condensing
Shock	±3 x 30g shocks in each plane, 30g: 11ms (±0.5ms), half sine, compliant to EN60068-2-27 & EN60068-2-47				
Vibration	10		500	Hz	2g sweep and endurance at resonance in all 3 planes. Conforms to EN60068-2-6

EMC: Emissions

Phenomenon	Standard	Test Level	Notes & conditions
Conducted	EN55032	Level B	
Radiated	EN55032	Level B	
Harmonic currents	EN61000-3-2	Class A	
Voltage flicker	EN61000-3-3		

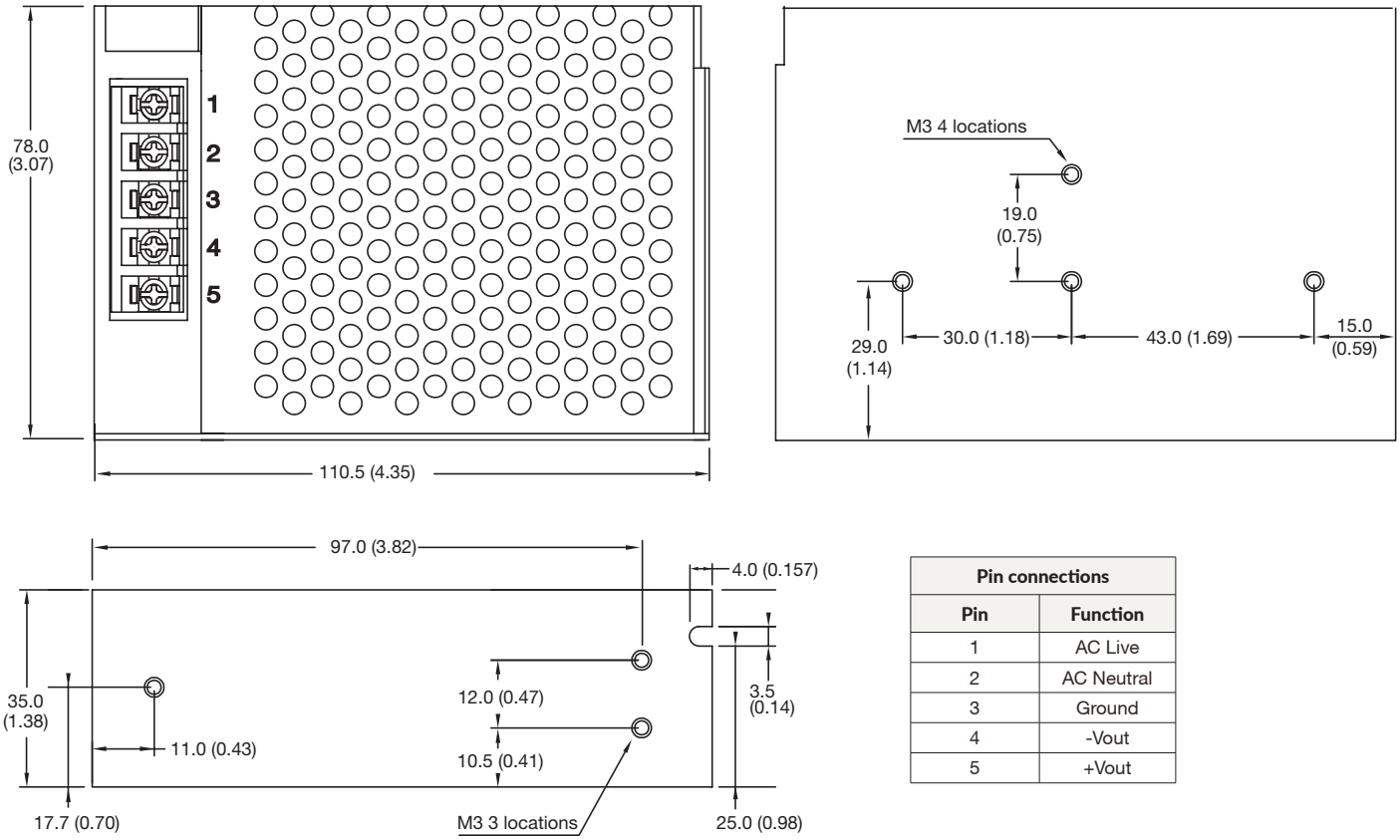
EMC: Immunity

Phenomenon	Standard	Test Level	Criteria	Notes & conditions
ESD immunity	EN61000-4-2	Level 3	A	
Radiated immunity	EN61000-4-3	Level 3	A	
EFT/burst	EN61000-4-4	Level 3	A	
Surge	EN61000-4-5	Inst. Class 3	A	
Conducted	EN61000-4-6	Level 3	A	
Dips and interruptions	EN61000-4-11	Dip: 30% 10ms	A	
		Dip: 36% 100ms	B	
		Int: 100% 5000ms	B	

Safety approvals

Certification	Standard	Notes & conditions
UL	UL60950-1, UL62368-1	
EN	EN62368-1	
CB	IEC60950-1, CSA C22.2 No.60950-1-03, IEC62368-1	
CE	Meets all applicable directives	
UKCA	Meets all applicable legislation	

Mechanical details

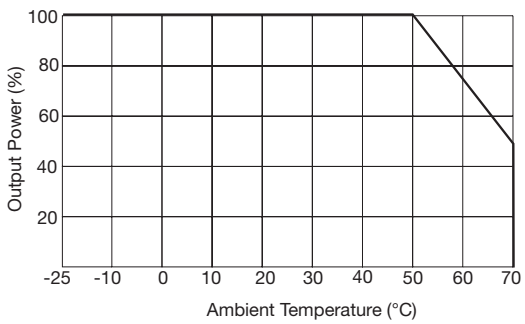


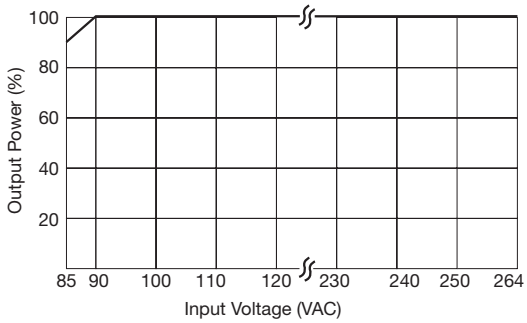
Pin connections	
Pin	**Function**
1	AC Live
2	AC Neutral
3	Ground
4	-Vout
5	+Vout

Notes:

1. All dimensions in mm (inches)
2. Weight: 250g (0.55lbs) approx
3. Tolerance ±0.02 (±0.5)
4. Maximum mounting screw penetration 4.0 (0.157) from outer surface
5. Screw terminal sizes M3

Derating curves





Specifications subject to change without notice.

VCS100 series

100W Convection cooled

AC-DC power supplies

The VCS100 series of regulated output convection cooled 100W AC-DC power supplies are designed to provide a cost effective solution for ITE and industrial applications. Features include output voltage adjustment, low no load power consumption, output short circuit protection, over current and over voltage protection.

Applications include auxiliary power sources, security installations, lighting control, smart home or office control systems, ticketing and vending applications.

Features

- 100W convection cooled
- Input voltage range 85 to 264VAC
- Output Voltages from 5V to 48VDC
- Output voltage trim: 5V, 12V -15% +10%. 15V to 48V ±10%
- 3.0kVAC input to output isolation
- <0.5 W no load input power
- Class B conducted & radiated emissions
- Short circuit, overvoltage & overload protection
- Integrated connector cover
- -25°C to +70°C operating temperature
- Full power to +50°C
- 2 year warranty

Applications

Household appliances

Industrial electronics

Instrumentation

Technology

Dimensions

159.0 x 98.2 x 41.0mm (6.26" x 3.87" x 1.61")

Models & ratings

Model number	Output voltage	Output current	Ripple & Noise[2]	Efficiency[1]	Output power
VCS100US05	5.0VDC	14.0A	50mV	78.0%	70W
VCS100US12	12.0VDC	8.33A	120mV	85.0%	100W
VCS100US15	15.0VDC	6.67A	150mV	86.0%	
VCS100US24	24.0VDC	4.17A	240mV	86.5%	
VCS100US48	48.0VDC	2.08A	480mV	88.0%	

Notes:

1. Minimum average of efficiencies measured at 25%, 50%, 75% & 100% load.
2. Ripple & Noise may exceed specified values below -10˚C.
3. Level 3 performance criteria A is met for loads >10%. At no load, result is performance criteria A at Level 2 or less than 5% output deviation at Level 3.

VCS100 series

Input

Characteristic	Minimum	Typical	Maximum	Units	Notes & conditions
Input voltage	85		264	VAC	127-370VDC
Input frequency	47		63	Hz	
Power factor	EN61000-3-2 class A				
Input current		2.0		A	90VAC
Inrush current			60	A	230VAC, cold start at 25°C
No load input power			<0.5	mW	
Input protection	T4.0A/250V, fuse fitted in live line				

Output

Characteristic	Minimum	Typical	Maximum	Units	Notes & conditions
Output voltage	5		48	VDC	See models & ratings
Minimum load	No minimum load required				
Output adjust		±10		%	5VDC & 12VDC versions are -5% to +10%
Output adjust					
Start up delay			1	s	
Hold up time	10			ms	115VAC and full load
Line regulation		±0.5		%	90VAC to 264VAC input
Load regulation		±1		%	5VDC & 12VDC versions (Other versions: ±0.5% 0% to 100% load)
Transient response		<4		%	Deviation with a 50% to 75% load change at 1A/μs. Output returns to within 1% in less than 500μs
Ripple & noise			1	% pk-pk	20MHz bandwidth
Temperature coefficient		±0.003		%/°C	After 20 min warm up
Short circuit protection	Continuous, trip and restart				

General

Characteristic	Minimum	Typical	Maximum	Units	Notes & conditions
Efficiency	See Models & Ratings				
Isolation		3000 1500 500		VAC	Input to output Input to ground Output to ground
Switching frequency		65		kHz	
Mean time between failure		>500		khrs	MIL-HDBK-217F, 25°C GB
Weight		250 (0.55)		g (lb)	

Environmental

Characteristic	Minimum	Typical	Maximum	Units	Notes & conditions
Operating temperature	-25		+70	°C	
Storage temperature	-40		+80	°C	
Cooling	Convection convection				
Operating humidity	0		95	%	RH, non-condensing
Shock	±3 x 30g shocks in each plane, 30g: 11ms (±0.5ms), half sine, compliant to EN60068-2-27 & EN60068-2-47				
Vibration	10		500	Hz	2g sweep and endurance at resonance in all 3 planes. Conforms to EN60068-2-6

EMC: Emissions

Phenomenon	Standard	Test Level	Notes & conditions
Conducted	EN55032	Level B	
Radiated	EN55032	Level B	
Harmonic currents	EN61000-3-2	Class A	
Voltage flicker	EN61000-3-3		

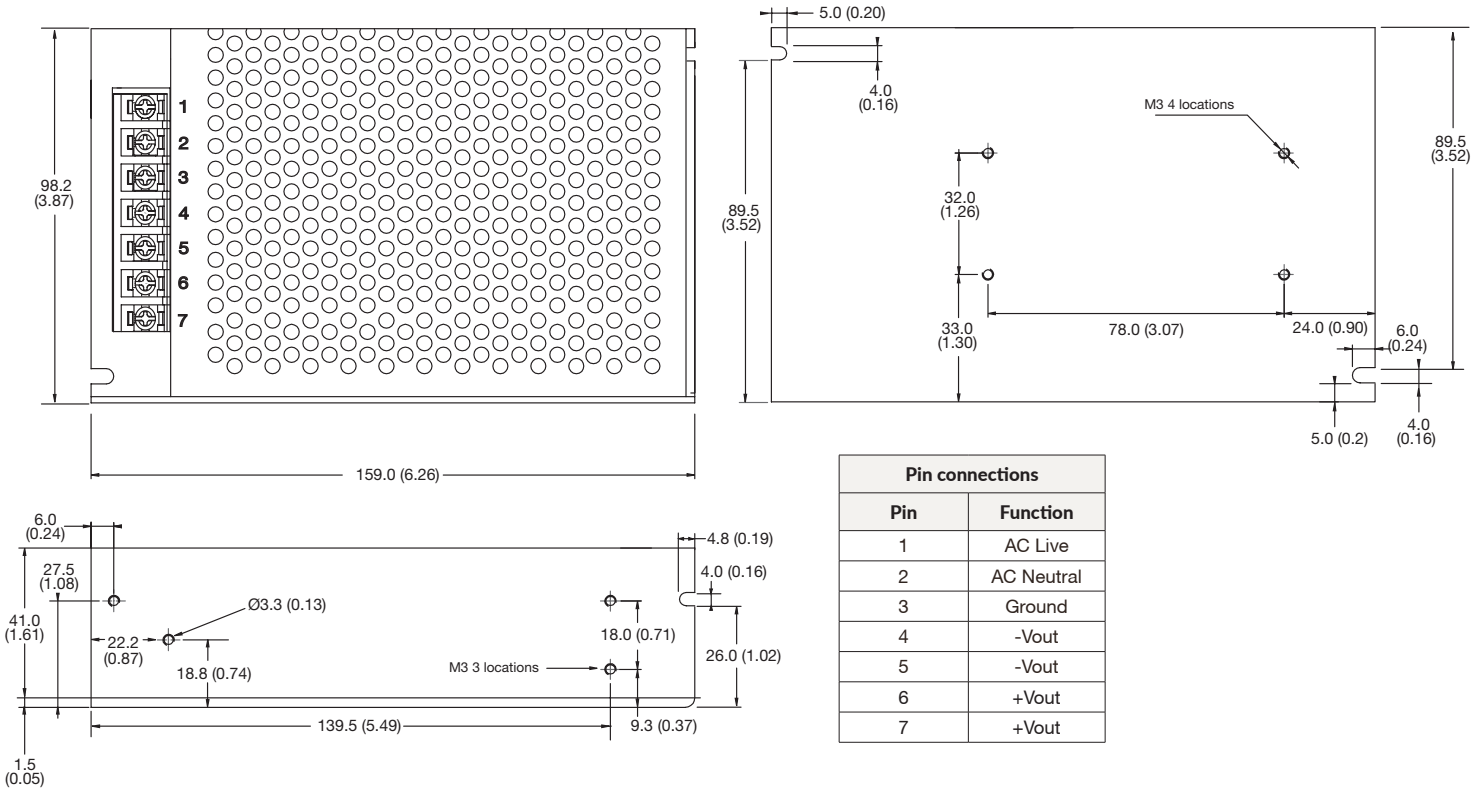
EMC: Immunity

Phenomenon	Standard	Test Level	Criteria	Notes & conditions
ESD immunity	EN61000-4-2	Level 3	A	
Radiated immunity	EN61000-4-3	Level 3	A	
EFT/burst	EN61000-4-4	Level 3	A	
Surge	EN61000-4-5	Inst. Class 3	A	
Conducted	EN61000-4-6	Level 3	A	
Dips and interruptions	EN61000-4-11	Dip: 30% 10ms	A	
		Dip: 36% 100ms	B	
		Int: 100% 5000ms	B	

Safety approvals

Certification	Standard	Notes & conditions
UL	UL60950-1, UL62368-1	
EN	EN62368-1	
CB	IEC60950-1, CSA C22.2 No.60950-1-03, IEC62368-1	
CE	Meets all applicable directives	
UKCA	Meets all applicable legislation	

Mechanical details

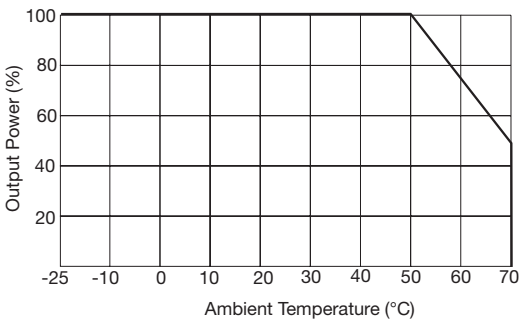


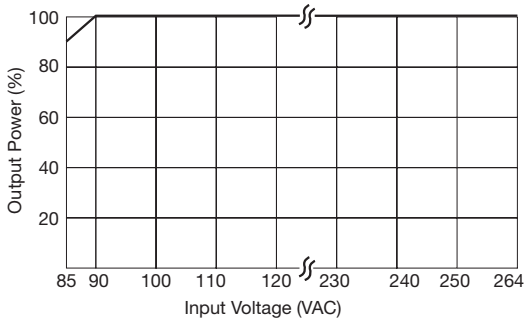
Pin connections	
Pin	**Function**
1	AC Live
2	AC Neutral
3	Ground
4	-Vout
5	-Vout
6	+Vout
7	+Vout

Notes:

1. All dimensions in mm (inches)
2. Weight: 500g (1.1lbs) approx
3. Tolerance ±0.02 (±0.5)
4. Maximum mounting screw penetration 4.0 (0.157) from outer surface
5. Screw terminal sizes M3

Derating curves





Specifications subject to change without notice.