

NV-Power

175 Watts



- ◆ High Efficiency
- ◆ High Power Density (9.3W/in³)
- ◆ Up to 5 outputs
- ◆ No minimum load
- ◆ Fits 1U applications
- ◆ Medical Approval

Key Market Segments and Applications

Instrumentation
 Broadcast
 Medical
 ATE
 Automation
 Industrial Computing
 Network Servers and Routers
 Security
 Lifesciences/Laboratory

Features and Benefits

Feature	Benefit
◆ High Efficiency	◆ Minimises heat in system
◆ Low Profile	◆ Fits 1U applications
◆ High Power Density	◆ Less Space

QUICK SELECTOR

Model	CH1	CH2	CH3	CH4	CH5	Global Option ¹
NV1-453TT	5V/25A	3.3V/15A	12V/5A	-12V/1A	-	No
NV1-453FF	5V/25A	3.3V/15A	15V/5A	-15V/1A	-	No
NV1-452TT	5V/25A	2.7V/15A	12V/5A	-12V/1A	-	No
NV1-452FF	5V/25A	2.7V/15A	15V/5A	-15V/1A	-	No
NV1-350TT	5V/25A	-	12V/5A	-12V/1A	-	No
NV1-350FF	5V/25A	-	15V/5A	-15V/1A	-	No
NV1-250T0	5V/25A	-	12V/5A	-	-	No
NV1-453TT-N	5V/25A	3.3V/15A	12V/5A	-12V/1A	5V/2A	Yes
NV1-453FF-N	5V/25A	3.3V/15A	15V/5A	-15V/1A	5V/2A	Yes
NV1-452TT-N	5V/25A	2.7V/15A	12V/5A	-12V/1A	5V/2A	Yes
NV1-452FF-N	5V/25A	2.7V/15A	15V/5A	-15V/1A	5V/2A	Yes
NV1-350TT-N	5V/25A	-	12V/5A	-12V/1A	5V/2A	Yes
NV1-350FF-N	5V/25A	-	15V/5A	-15V/1A	5V/2A	Yes
NV1-250T0-N	5V/25A	-	12V/5A	-	5V/2A	Yes

1. see page 3 for details of global option

Units supplied open frame
 Add:-
 -C for U chassis with cover

SPECIFICATION									
Output Channel	Vout	Adjustment Range	Output Current ₅	Remote Sense ₁	Regulation			Ripple & Noise	Voltage Accuracy
					Line ₂	Load ₃	Cross ₄		
Ch1	5	5 - 5.5	25A	Yes	0.10%	1%	0.10%	50mV	+/-50mV
Ch2	1.8	0.9 - 3.3	15A	Yes	0.10%	1%	0.10%	50mV	+/-50mV
	2.7	2.5 - 3.3	15A	Yes	0.10%	1%	0.10%	50mV	+/-50mV
	3.3	2.5 - 3.3	15A	Yes	0.10%	1%	0.10%	50mV	+/-50mV
Ch3	12	12 - 15	5A	No	0.10%	1%	0.10%	120mV	+/-120mV
	15	12 - 15	5A	No	0.10%	1%	0.10%	150mV	+/-150mV
Ch4	-12	Fixed	1A	No	0.10%	1%	0.10%	120mV	+/-360mV
	-15	Fixed	1A	No	0.10%	1%	0.10%	150mV	+/-450mV

Notes:

- max 0.5V total line drop
- for 90-264Vac input change
- for 0-100% load change
- for 100% load change on any output
- Max op from ch1 & 2 = 25A

INPUT	
Input Voltage	90 - 264Vac
Input Frequency	47 - 63Hz (440Hz with reduced PFC - consult factory)
Input Harmonics	EN61000-3-2 compliant
Inrush Current	<40A at 25°C and 264Vac, (cold start)
Input Fuse	Fast acting (not user accessible)
Leakage Current	300µA max at 264Vac & 63Hz

ISOLATION		
Input to Output	Reinforced	4.3 kV (dc)
Input to Earth	Basic	2.3 kV (dc)
Output to Earth		200 V (dc)

OUTPUT		
Voltage / Current	See output table	
Turn on Time	1.5s max	at 90Vac & 100% rated output power
Efficiency	up to 90%	configuration dependent
Hold up	16ms min	at 90 Vac & 100% rated output power
Minimum Load	0%	on any output
Transient Response	<4%	of set voltage for 50% load change
Recovery	<500µs	for recovery to 1% of set voltage
Over Voltage Protection	120 - 130%	of set voltage (Outputs 1&2)
Over Current Protection	105% (min.)	of rated current, hiccup mode above 2A, foldback below 2A.
Short Circuit Protection	Yes	Protected
Over Temperature Protection	Yes	
Ch1 Good Signal	Standard	Provides a Logic 'low' signal after channel is within 90% (±5%) of nominal.

GLOBAL INTERFACE SIGNALS - N Option Models	
Global on/off	TTL logic level high will inhibit all outputs (except Standby)
Power Good	Open collector output (referenced to PSU 0V) The transistor turns on typically 200ms after channel 1 is within 90% ($\pm 5\%$) of nominal. The transistor turns off 5ms before channel 1 falls below 90% ($\pm 5\%$) of nominal.
Standby Supply	5V / 2A (2.5A peak)

ENVIRONMENT	
Temperature	0 to 50°C operational, -40°C to 85°C storage (max 12 months) Full load with 2m/s air blown from input to output
Derating	50 to 70°C derate each output by 2.5% per °C
Low Temperature Start	-20°C
Humidity	5 - 95% RH non condensing
Shock	+ / - 3 x 30G shocks in each plane, total 18 shocks 30G shock = 11ms (+/-0.5msec), half sine Conforms to EN60068-2-27, EN60068-2-47, IEC68-2-27, IEC68-2-47, JIS C0041-1987.
Vibration	Single axis 10 - 500 Hz at 2G (sweep and endurance at resonance) in all 3 planes
Altitude	3,000 metres operational
Pollution	Degree 2, Material group 3

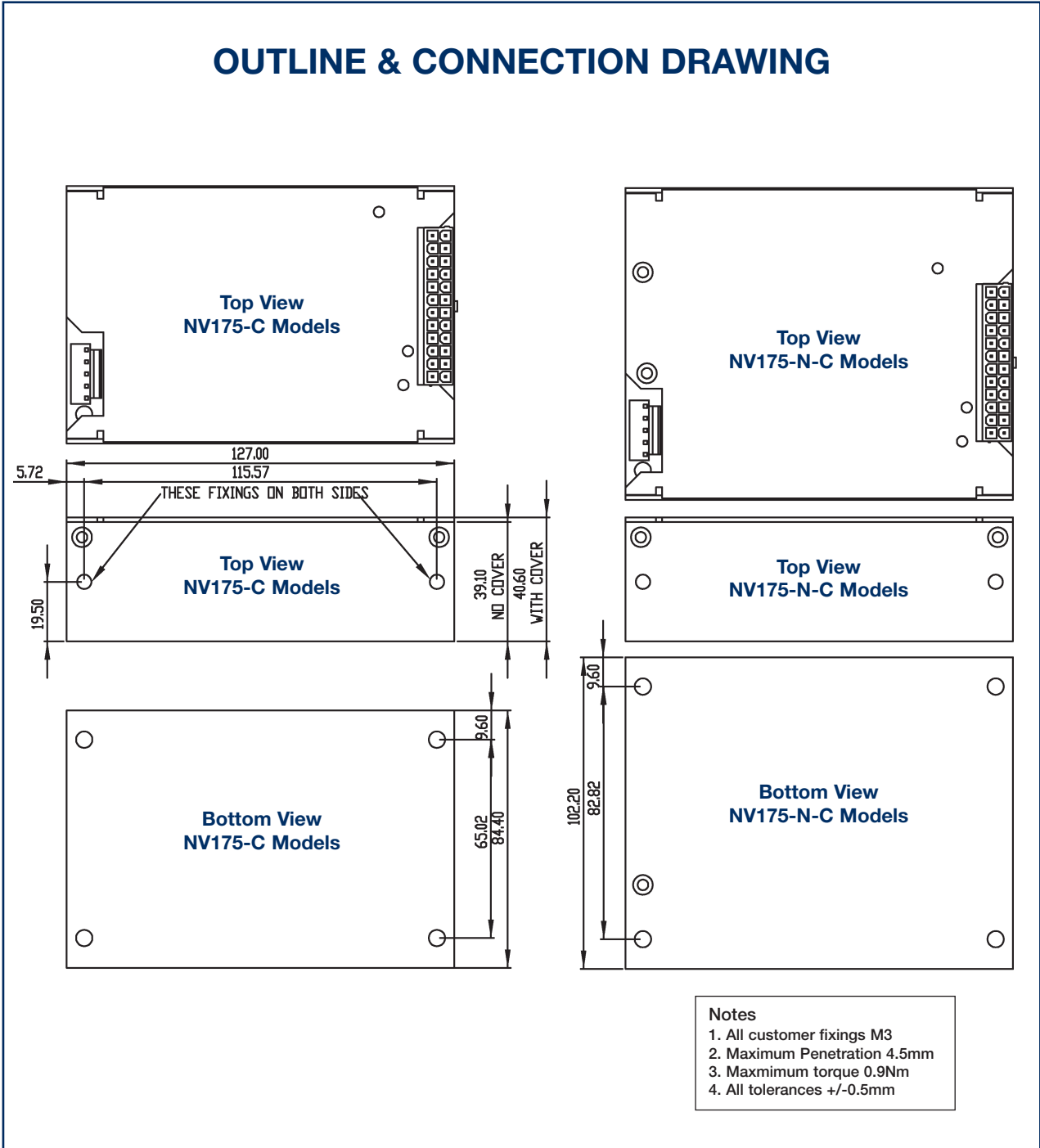
IMMUNITY EN61000-6-2:2001				Criteria
Electrostatic Discharge	EN61000-4-2	Level 3	Air discharge 8kV Contact discharge 4kV	A
Electromagnetic Field	EN61000-4-3	Level 3	(12V/m)	A
Fast / Burst Transient	EN61000-4-4	Level 4	(tested to 4.4kV)	A
Surge Immunity	EN61000-4-5	Level 3	Common mode to 4.4kV Differential mode to 1.1kV	A
Conducted RF Immunity	EN61000-4-6	Level 3	(12V)	A
Power Frequency Magnetic Field	EN61000-4-8	Level 4	(30A/m)	A
Voltage Dips, Variations, Interruptions	EN61000-4-11	Pass		

SAFETY APPROVALS					
	DATE	Amendments		DATE	Amendments
EN 60950-1	2001		EN 61010-1	2001	
UL 60950-1	2003		IEC 61010-1*	2001	
CSA 22.2 No 60950-1	2003		IEC 60601-1	1988	A1: 1991, A2: 1995
IEC 60950-1*	2001		EN 60601-1	1990	A1:1993, A2:1995, A13: 1996
<i>CE Mark LV Directive 73/23/EEC(EN60950-1:2001)</i>					
<i>* CB certificate and Report available on request</i>					
<i>Medical Approvals pending. Check with Technical Sales for status</i>					

EMISSIONS EN61000-6-3:2001

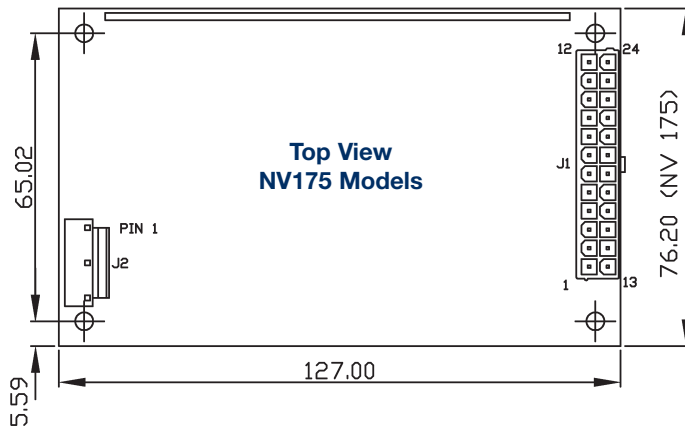
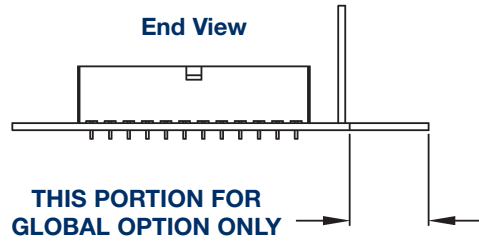
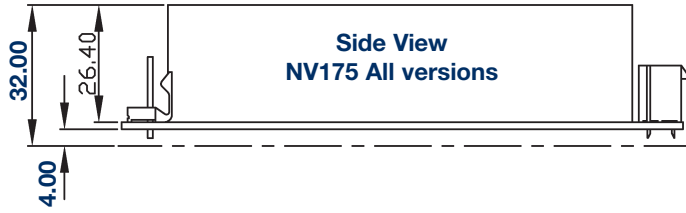
Radiated Electric Field	EN55022	(as per CISPR.22) Class A, Class B see application note for details
Conducted Emissions	EN55022	Class B (as per CISPR.22)
Conducted Harmonics	EN61000-3-2	Compliant
Flicker	EN61000-3-3	Compliant

OUTLINE & CONNECTION DRAWING



OUTLINE & CONNECTION DRAWING

CONTINUED



J2

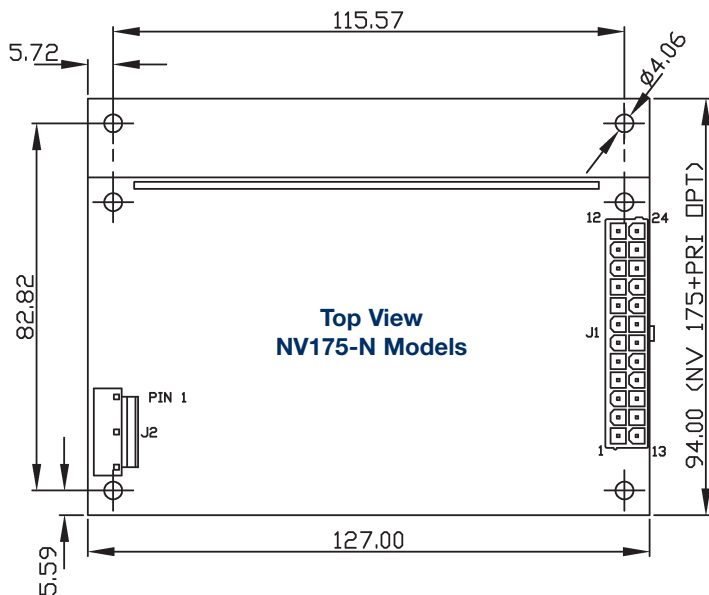
PIN	FUNCTION
1	NEUTRAL
2	N/C
3	LIVE
4	N/C
5	EARTH

J1

PIN	FUNCTION	PIN	FUNCTION
12	STANDBY +VE	24	STANDBY RETURN
11	POWER GOOD	23	REMOTE ON/OFF
10	CH1 OUTPUT	22	CH1 POWER GOOD
9	CH1 OUTPUT	21	CH1 OUTPUT
8	CH1 OUTPUT	20	CH1 OUTPUT
7	+ SENSE CH1	19	- SENSE CH1
6	0V COMMON	18	0V COMMON
5	0V COMMON	17	0V COMMON
4	CH2 OUTPUT	16	0V COMMON
3	CH2 OUTPUT	15	CH2 OUTPUT
2	+ SENSE CH2	14	- SENSE CH2
1	CH3 OUTPUT	13	CH4 OUTPUT

MATING PARTS (MOLEX OR EQUIVALENT)

CONN	HOUSING	PINS
J1	39-01-2240	39-00-0039 (18-24AWG)
J2	09-91-0500	08-52-0072



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