

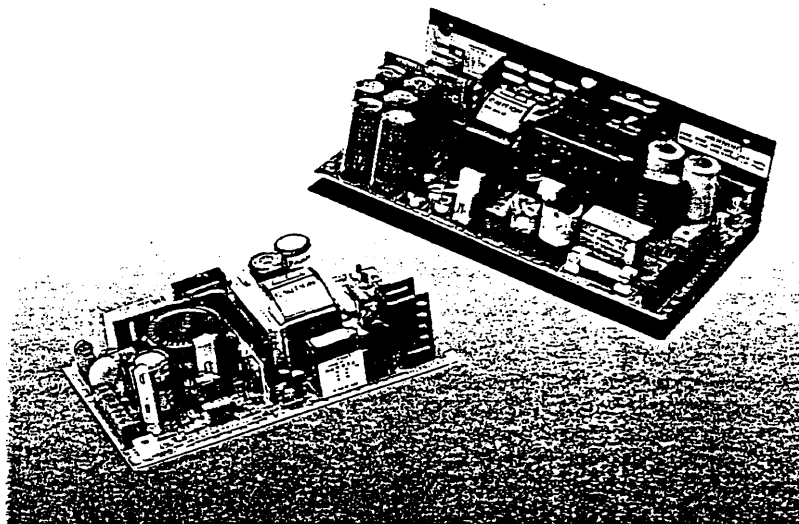
330 115 + 127 - Y

NS Series

55 to 150 Watt Range



VDE



SINGLE OUTPUT

13

MODELS AVAILABLE

Model Number	Output Voltage	Adjustment Range	Current
NS055005	5V	4.0 - 5.1V	0.2 - 11A (13.75A)
NS075005	5V	4.0 - 5.1V	0 - 15A
NS110005	5V	4.0 - 5.1V	0 - 22A [30A]
NS140005	5V	4.0 - 5.1V	0 - 28A
NS055012	12V	9.6 - 12.25V	0.1 - 4.6A (5.7A)
NS075012	12V	9.6 - 12.25V	0 - 6.25A
NS110012	12V	9.6 - 12.25V	0 - 9.2A [12.5A]
NS140012	12V	9.6 - 12.25V	0 - 12A
NS055015	15V	12 - 15.3V	0.1 - 3.7A (4.6A)
NS075015	15V	12 - 15.3V	0 - 5A
NS110015	15V	12 - 15.3V	0 - 7.5A [10A]
NS140015	15V	12 - 15.3V	0 - 10A

Model Number	Output Voltage	Adjustment Range	Current
NS055024	24V	19.2 - 24.5V	0 - 2.3A (2.9A)
NS075024	24V	19.2 - 24.5V	0 - 3.2A
NS110024	24V	19.2 - 24.5V	0 - 4.6A [6.25A]
NS140024	24V	19.2 - 24.5V	0 - 6A
NS140030	30V	24 - 30.6V	0 - 5A
NS055048	48V	38.4 - 49V	0 - 1.15A (1.4A)
NS075048	48V	38.4 - 49V	0 - 1.6A
NS140048	48V	38.4 - 49V	0 - 3A
NS055056	56V	45 - 57V	0 - 1.0A (1.2A)
NS075056	56V	45 - 57V	0 - 1.4A
NS110056	56V	45 - 57V	0 - 2.0A [2.7A]
NS140056	56V	45 - 57V	0 - 2.5A

() - Surge current ratings

[] - Forced air cooled ratings

INPUT SPECIFICATION

Input Voltage	92 - 132V a.c. on 115V tap. 176 - 264V a.c. or 249 - 373V d.c. on 230V tap.
Frequency	45 - 440Hz.
Supply Type	Single phase TN-S systems (as defined in IEC364). i.e. systems with a separate earth conductor which is directly connected to the neutral conductor at the source.
Efficiency	Minimum 70 - 75% dependant on model, when loaded to maximum rated output power.

OUTPUT SPECIFICATION

Voltage	Nominal output voltages and adjustment ranges are shown in the table of models above.
Current	Recommended minimum operating current and maximum continuous current ratings (I_{MAX}) are shown in the table of models above. Values in parentheses, (), are surge current ratings only. Values in brackets, [], are applicable when forced air cooling is used. All maximum current ratings, except as indicated below, are applicable up to 50°C and must be derated by 2.5%/°C from 50°C to 70°C. Exceptions are: NS055005 must be derated linearly from 11A at 40°C to 10A at 50°C and then by 0.25A/°C from 50°C to 70°C. NS075005 without cover, derate by 2.2%/°C from 47°C to 70°C; all other NS075 range models without cover, derate by 2.7%/°C from 60°C to 70°C.

Load Regulation

NS075005 with cover, derate by 2.2%/°C from 35°C to 50°C; all other NS075 range models with cover, derate by 1.8%/°C from 50°C to 70°C.

The output load is varied from I_{MIN} to I_{MAX} . Maximum voltage deviation as a percentage of nominal is 2% on NS055 range units and 0.4% on all other units.

Line Regulation

An input variation from 198V to 264V or from 103.5V to 132V with the output loaded to I_{MAX} causes a maximum output voltage variation of 0.1% of nominal on NS055 and NS075 ranges and 0.2% of nominal on NS110 and NS140 ranges.

Ripple and Noise

With the output loaded to I_{MAX} : The differential ripple voltage over the frequency range 10Hz–100kHz does not exceed 50mV pk-pk except on NS055100, where the maximum ripple voltage is 100mV pk-pk; the differential noise voltage over the frequency range 10Hz–30MHz does not exceed 100mV pk-pk on models with output voltages below 35V, and 150mV pk-pk on models with output voltages above 35V.

PROTECTION

Input Overvoltage

NS140 range units are protected by gas discharge devices which, under severe input overvoltage conditions, will break down and may cause the input fuse to rupture.

Hold Up

All units have sufficient energy storage to ride through a missing mains cycle when supplying full rated output power at nominal input. At low mains input, 198V or 103.5V hold up >18ms; at nominal input, 240V or 115V hold up >28ms.

Output Overvoltage

The output is protected against overvoltage. Unit shutdown will occur at between:

5.8V and 7.0V on 5V outputs;
13V and 16V on 12V outputs;
16V and 19V on 15V outputs;
26V and 31V on 24V outputs;
33V and 48V on 30V outputs;
56V and 68V on 48V outputs;
60V and 75V on 56V outputs;

Output Overcurrent

All units have protection against output overload.

AUXILIARY FUNCTIONS

Remote Sense

Available on all units.

Parallel Operation

NS110 and NS140 range units are suitable for operation in parallel with other units of the same model number.

Series Operation

Units may be connected in series to provide higher output voltages.

External Inhibit

The output current of NS075, NS110 and NS140 range units may be inhibited by a logic signal.

Power Fail Signal

Available on 5V units when A or B option is specified. A logic output providing warning of failure due to loss of input.

DC OK Signal

Available on 5V units when option B is specified. A logic output providing an indication of output presence.

ISOLATION

Primary to Secondary

Input to output isolation barriers, including layout and wiring, are specified to 4kV a.c. r.m.s. for one minute. Where a safety earth is interposed between primary and secondary, this potential is applied as 2kV a.c. r.m.s. input to earth and 2kV a.c. r.m.s. output to earth. Complete units are tested to 1.5kV a.c. r.m.s. between input and output, with all output terminals connected together and connected to earth.

Secondary to Earth

Units are tested to 500V a.c. r.m.s. from output to earth, with all output terminals connected together.

Earth Leakage Current

The earth current is measured as the voltage across a 1.5kΩ resistor in parallel with a 1.5nF capacitor, inserted in series with the earth line. Under full load the leakage current does not exceed:

NS055:	0.4mA at 50Hz;
	0.4mA at 60Hz;
	2.8mA at 440Hz.
NS075 & NS110:	0.5mA at 50Hz
	0.6mA at 60Hz;
	4.3mA at 440Hz.
NS140:	1mA at 50Hz;
	1.2mA at 60Hz;
	8.2mA at 440Hz.

ELECTROMAGNETIC COMPATIBILITY

Exported Noise

All units except NS110 range meet the requirements of BS6527 Class B; EEC Directive 82/499/EEC; FCC Rules Part 15 Subpart J Class B; VDE0871 Class B. NS110 range meet the requirements of BS6527 Class A; EEC Directive 82/499/EEC; FCC Rules Part 15 Subpart J Class A; VDE0871 Class A.

MECHANICAL SPECIFICATION

Mechanical Format	NS055 and NS075 range units are supplied in card form as standard and NS110 and NS140 range units are supplied on 'L' chassis as standard. A metal chassis (where appropriate) and mesh cover is available and is specified by adding 'M' to the end of the model number.
Mounting Orientation	Units may be mounted in any orientation.
Ventilation and Cooling	All faces requiring free air flow are indicated on the outline drawing. Faces marked 'A' are fully ventilated; faces marked 'B' are partially ventilated. Units are convection cooled except for the NS110 range which may be convection cooled or forced air cooled at 1ms ⁻¹ .

ENVIRONMENTAL CONDITIONS

Operating Temperature	0 to 70°C. See current ratings in output specifications for any deratings required.
Operating Humidity	0 to 95% R.H. non-condensing.

RELIABILITY

MTBF	In excess of 100,000 hrs. when calculated in accordance with MIL HBK 217D.
-------------	--

INTERNATIONAL SAFETY STANDARDS

Units indicated below have been tested by the following approval bodies to the standards listed and have been approved as being compliant with those standards or with the relevant sections of those standards.

NS055 and NS075 ranges:

BABT	EN41003.
BSI	BS5850; BS6204; IEC380; IEC435.
CSA	C22.2 #234 Level 3.
TUV	VDE0806. NS075 range only.
UL	UL1950.
VDE	VDE0805; EN60950. NS055 range only.

NS110 and NS140 ranges:

BABT	BS6301; BS6484
BSI	BS5850; IEC380; IEC950.
CSA	C22.2 #234 Level 3.
TUV	EN60950.
UL	UL1950.

More detailed information is available on these units from your local sales office or agent. Please refer to Section L at the end of your catalogue for your local contact.

ORDERING INFORMATION

The order code consists of 5 fields:

1. Source code: 13
2. Series: NS
3. Range: 055, 075, 110, or 140
4. Version: From table of models
5. Options (as required)
 - a) Signals options: A or B (005 versions only)
 - b) Mechanical options: M

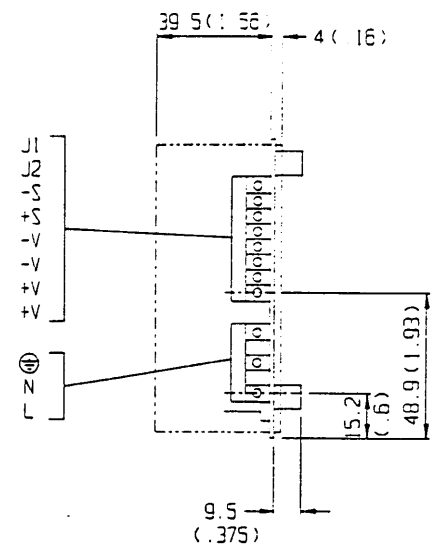
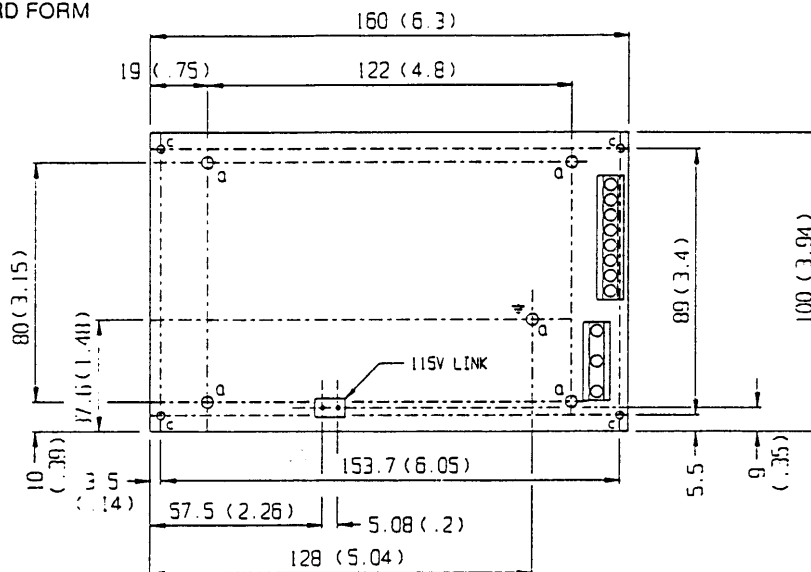
Note that fields 2, 3 and 4 comprise the basic model number of the unit. e.g. to order model NS075005 with power fail warning and with chassis and cover, the order code is:

13 NS 075 005 AM

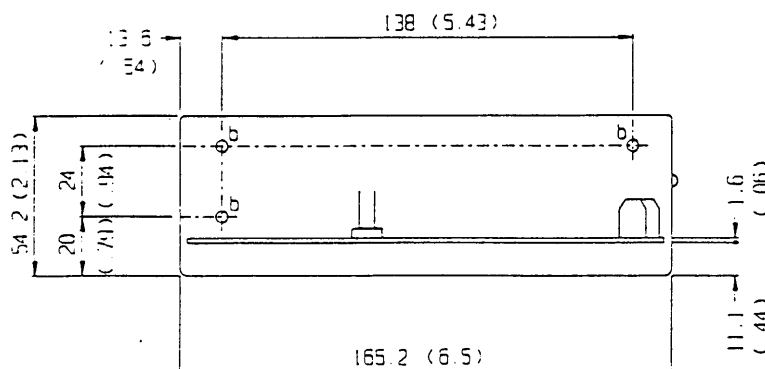
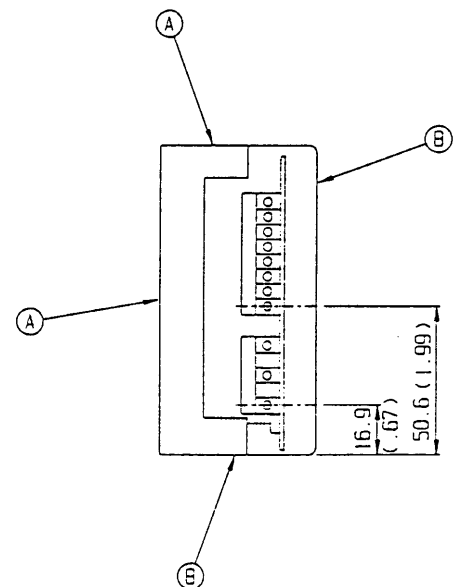
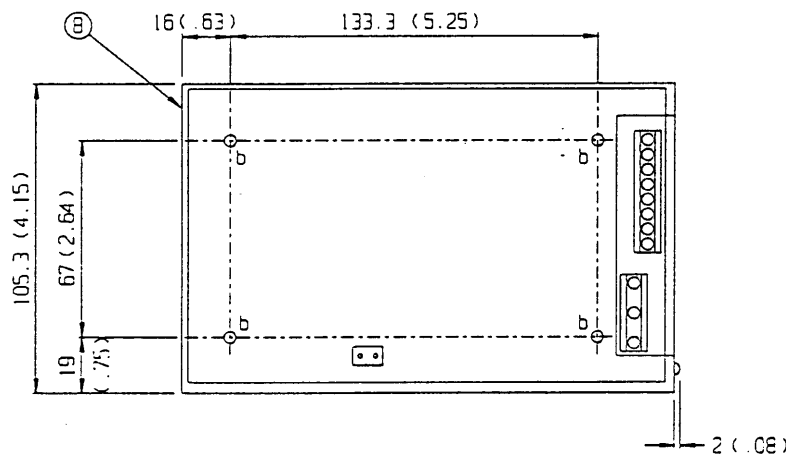
NS055 RANGE OUTLINE DRAWING

All dimensions are nominal and are given in mm (inches).

CARD FORM



ENCLOSED FORM



External Dimensions and Mass

Card Form: 160(6.30) x 100(3.94) x 41.6(1.64).

Enclosed: 165.2(6.50) x 105.3(4.15) x 54.2(2.13).

0.65kg (1.43lb).

Fixings

Card form units have 4 x 4mm (0.16in) clearance holes marked 'a' on the outline drawing. 7 x M3 ISO standard threaded inserts are provided on the chassis and are marked 'b' on the outline drawing.

Connectors

The following connectors are provided on the power supply:

Input Metway ref. 972/03DS.

Output Metway ref. 970/08DS.

Input Voltage Selector Tap selector link provided.

Auxiliary Functions Included on the output connector.

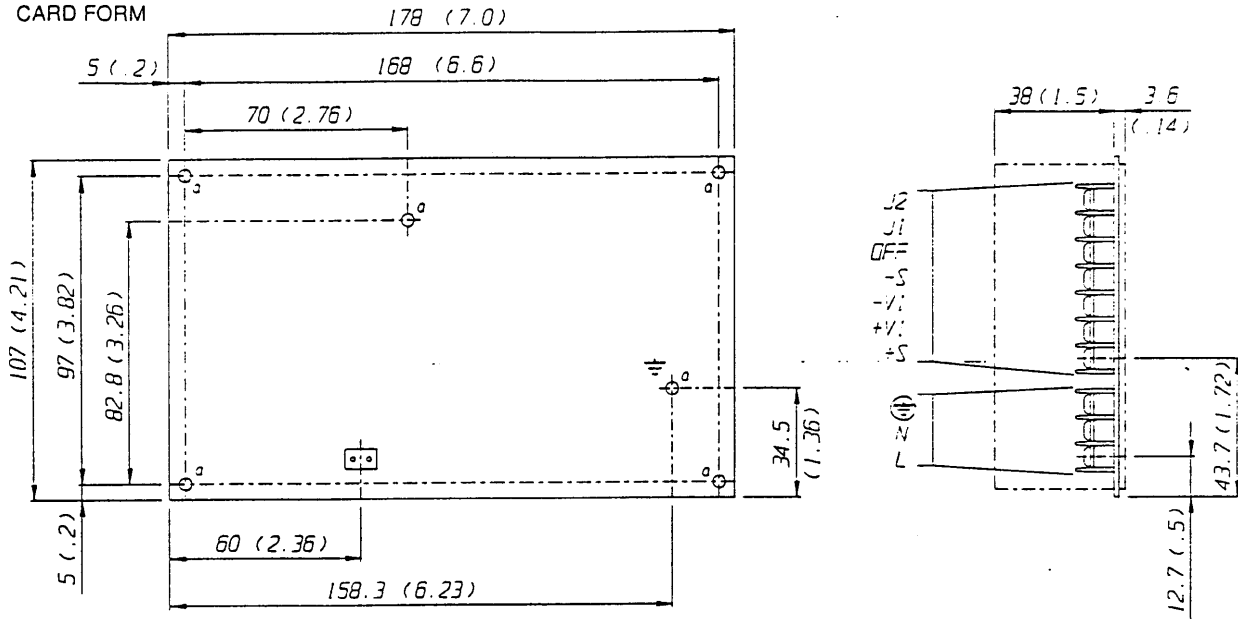
SINGLE OUTPUT

9 M

NS075 RANGE OUTLINE DRAWING

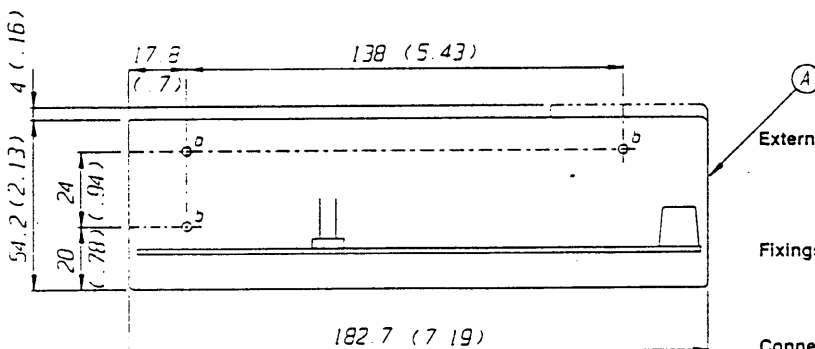
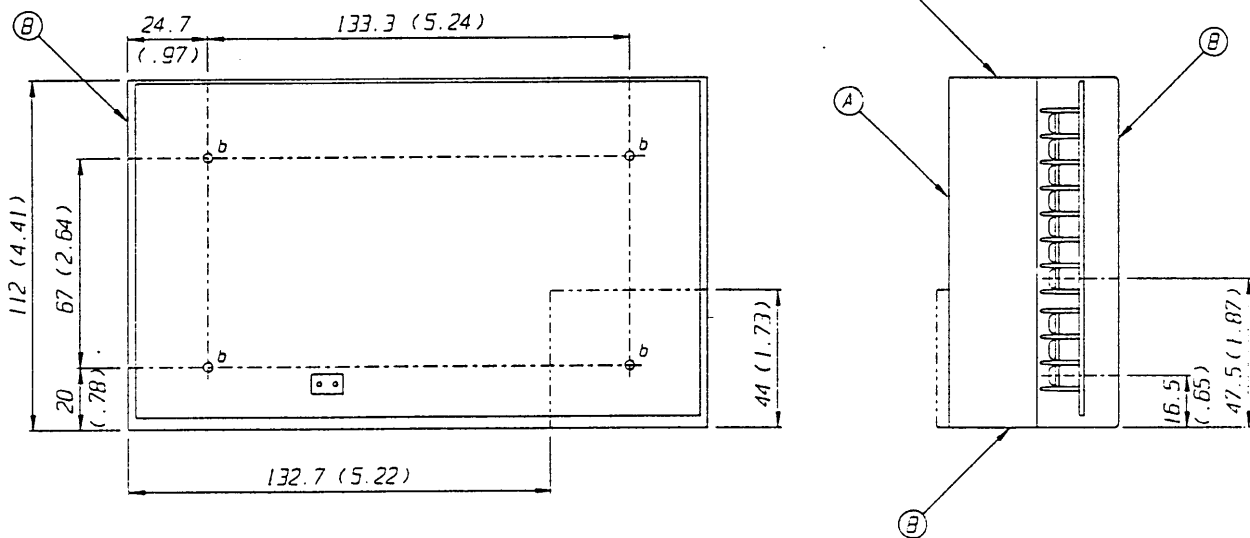
All dimensions are nominal and are given in mm (inches).

CARD FORM



SINGLE OUTPUT

ENCLOSED FORM



External Dimensions and Mass

Card Form: 178(7.01) x 107(4.21) x 48(1.90).

Enclosed: 182.7(7.19) x 122(4.41) x 64.8(2.55).
0.85kg (1.87lb).

Fixings

Card form units have 4 x 4mm (0.16in) clearance holes marked 'a' on the outline drawing. 7 x M3 ISO standard threaded inserts are provided on the chassis and are marked 'b' on the outline drawing.

Connectors

The following connectors are provided on the power supply:

Input Beau 70000 series, ref. 70503CV.

Output Beau 70000 series, ref. 70507C.

Input Voltage Selector Tap selector link provided.

Auxiliary Functions Included on output connector.

