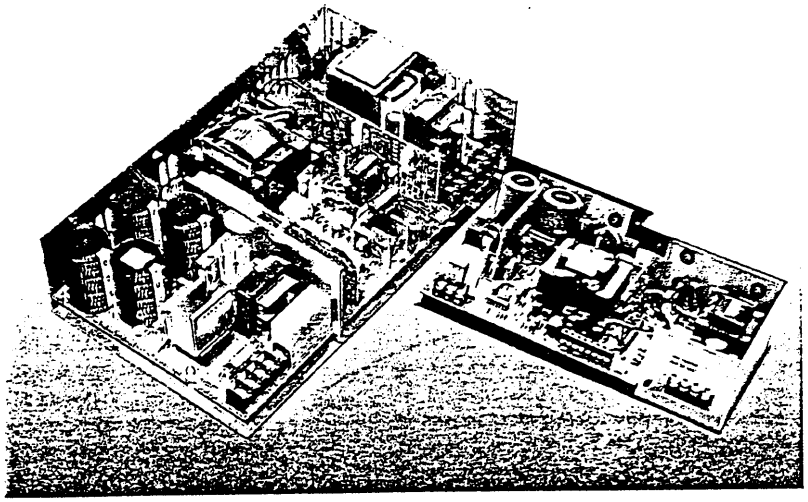


VDE

MODELS AVAILABLE

Model Number	Format	Output Voltage	Adjustment Range	Output Current Convection	Output Current Blown
NS240005	Open or enclosed	5V	4.0 – 5.1V	0 – 48A	
NS360005	Open or enclosed	5V	4.0 – 5.1V	0 – 72A	
NS240012	Open or enclosed	12V	9.6 – 12.25V	0 – 20A	
NS360012	Open or enclosed	12V	9.6 – 12.25V	0 – 30A	
NS700012	Open Frame	12V	11 – 13V	0 – 45A (60A)	60A
	Enclosed	12V	11 – 13V	0 – 35A (60A)	45A (60A)
	Fan Cover	12V	11 – 13V	0 – 60A	
NS240024	Open or enclosed	24V	19.2 – 24.5V	0 – 10A	
NS360024	Open or enclosed	24V	19.2 – 24.5V	0 – 15A	
NS700024	Open Frame	24V	21 – 25V	0 – 24A (36A)	36A
	Enclosed	24V	21 – 25V	0 – 18A (36A)	24A (36A)
	Fan Cover	24V	21 – 25V	0 – 36A	
NS700028	Open Frame	28V	21 – 30V	0 – 24A (36A)	34A (36A)
	Enclosed	28V	21 – 30V	0 – 18A (36A)	24A (36A)
	Fan Cover	28V	21 – 30V	0 – 34A (36A)	
NS240030	Open or enclosed	30V	24 – 30.6V	0 – 8A	
NS360030	Open or enclosed	30V	24 – 30.6V	0 – 12A	
NS240048	Open or enclosed	48V	38.4 – 49V	0 – 5A	
NS360048	Open or enclosed	48V	38.4 – 49V	0 – 7.5A	
NS700048	Open Frame	48V	47 – 53V	0 – 12A (20A)	20A
	Enclosed	48V	47 – 53V	0 – 9A (20A)	12A (20A)
	Fan Cover	48V	47 – 53V	0 – 20A	
NS240056	Open or enclosed	56V	48 – 57V	0 – 4.5A	
NS360056	Open or enclosed	56V	48 – 57V	0 – 6.5A	
NS700056	Open Frame	56V	47 – 60V	0 – 12A (20A)	17A (20A)
	Enclosed	56V	47 – 60V	0 – 9A (20A)	12A (20A)
	Fan Cover	56V	47 – 60V	0 –17A (20A)	

( ) – Surge current ratings

INPUT SPECIFICATION

Input Voltage
NS240 and NS360 range: 92 – 132V a.c. on 115V tap. 176 – 264V a.c. or 249 – 373V d.c. on 230V tap.
NS700 range: 88 – 132V a.c. on 115V tap. 176 – 264V a.c. or 249 – 373V d.c. on 230V tap.

Frequency
45 – 440Hz. On NS700 range, the minimum frequency is increased to 50Hz at 90V input and to 60Hz at 88V input.

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 to 80%, 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.

Current
Recommended maximum continuous current ratings (I_{MAX}) are shown in the table of models. Values in parentheses are surge current ratings only. All maximum current ratings are applicable up to 50°C. From 50°C to 70°C derate maximum current by 2.5%/°C. NS240 and NS360 range units require free air convection cooling. NS700 range units are multiple rated for convection cooling and forced air cooling. See outline drawing and mechanical specification for ventilation requirements.

Load Regulation
The output load is varied by 100% I_{MAX} on NS240 and NS360 range units, 3A to I_{MAX} on NS700012, 024 and 028, 1.2A to I_{MAX} on NS700048 and 056. Maximum voltage deviation as a percentage of nominal is 0.4% of nominal except NS700048 and NS700056, where deviation is 0.2% of nominal.

Line Regulation
An input variation of 198V to 264V or 103.5V to 132V with the output loaded to I_{MAX} causes a maximum output voltage variation of 0.2% of nominal on all models except NS700012, 024, and 028, where the maximum variation is 0.4% of nominal.

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 for NS700048 and 056 at 25mV; the differential noise voltage over the frequency range 10Hz – 30MHz does not exceed the following levels:

NS240005 to 030	100mV pk-pk;
NS240048 and 056	150mV pk-pk;
NS360005 to 030	100mV pk-pk;
NS360048 and 056	150mV pk-pk;
NS700012	150mV pk-pk;
NS700024 and 028	200mV pk-pk;
NS700048 and 056	150mV pk-pk.

PROTECTION

Input Overvoltage
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.

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

5.8V and 7.0V	on 005 versions;
13V and 16V	on 012 versions;
26V and 31V	on 024 versions;
32V and 36V	on 028 versions;
31V and 37V	on 030 versions;
52V and 62V	on 048 versions;
60V and 70V	on 056 versions.

Output Overcurrent
All units are protected against output overload.

AUXILIARY FUNCTIONS

Remote Sense
Available on all units.

Parallel Operation
All units shown 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 all units may be inhibited by a logic signal.

External Shutdown
Available on NS700 range units. Units may be shut down by a logic signal.

Power Fail Signal
Available as standard on NS700 range units. Available on NS240005 and NS360005 when option A or B is specified. A logic output providing warning of failure due to loss of input.

DC OK Signal
Available as standard on NS700 range units. Available on NS240005 and NS360005 units when option B is specified. A logic output providing an indication of output presence.

Indicators
LED indicators are provided on NS240 and NS360 range units for 'Unit Healthy' and 'Out of Regulation'.

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:

NS240:	0.6mA at 50Hz; 0.7mA at 60Hz; 5.1mA at 440Hz.
NS360:	1mA at 50Hz; 1.1mA at 60Hz; 8mA at 440Hz.
NS700:	1mA at 50Hz; 1.2mA at 60Hz; 8.8mA at 440Hz

ELECTROMAGNETIC COMPATIBILITY

Exported Noise All units meet the requirements of BS800; BS6527 Class B; EEC Directive 82/499/EEC; FCC Rules Part 15 Subpart J Class B; VDE0871 Class B.

MECHANICAL SPECIFICATION

Mechanical Format All units are supplied on 'L' chassis as standard. A metal mesh cover is available and is specified by adding 'M' to the end of the model number. A cover with integral fan is also available on NS700 ranges and is specified by adding 'W' to the end of the model number.

Mounting Orientation Units may be mounted in any orientation.

Ventilation and Cooling All faces and areas requiring free air flow are indicated on the outline drawing. Faces marked 'A' are fully ventilated; faces marked 'B' are partially ventilated; areas marked 'D' contain heatsinks or fans and require free air flow. NS240 and NS360 range units are convection cooled. NS700 range units may be convection cooled in open frame form or when fitted with mesh cover (option M). For increased power the NS700 range may be forced air cooled at 1.5ms^{-1}. Alternatively the NS700 range may be fitted with a cover with integral fan.

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.

INTERNATIONAL SAFETY SPECIFICATIONS

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.

BABT	BS6301; BS6484. NS240 and NS700 ranges.
CSA	C22.2 #234. NS240 and NS700 ranges.
UL	UL1950. All models.
VDE	EN60950; VDE0805/05.90. All models.

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:

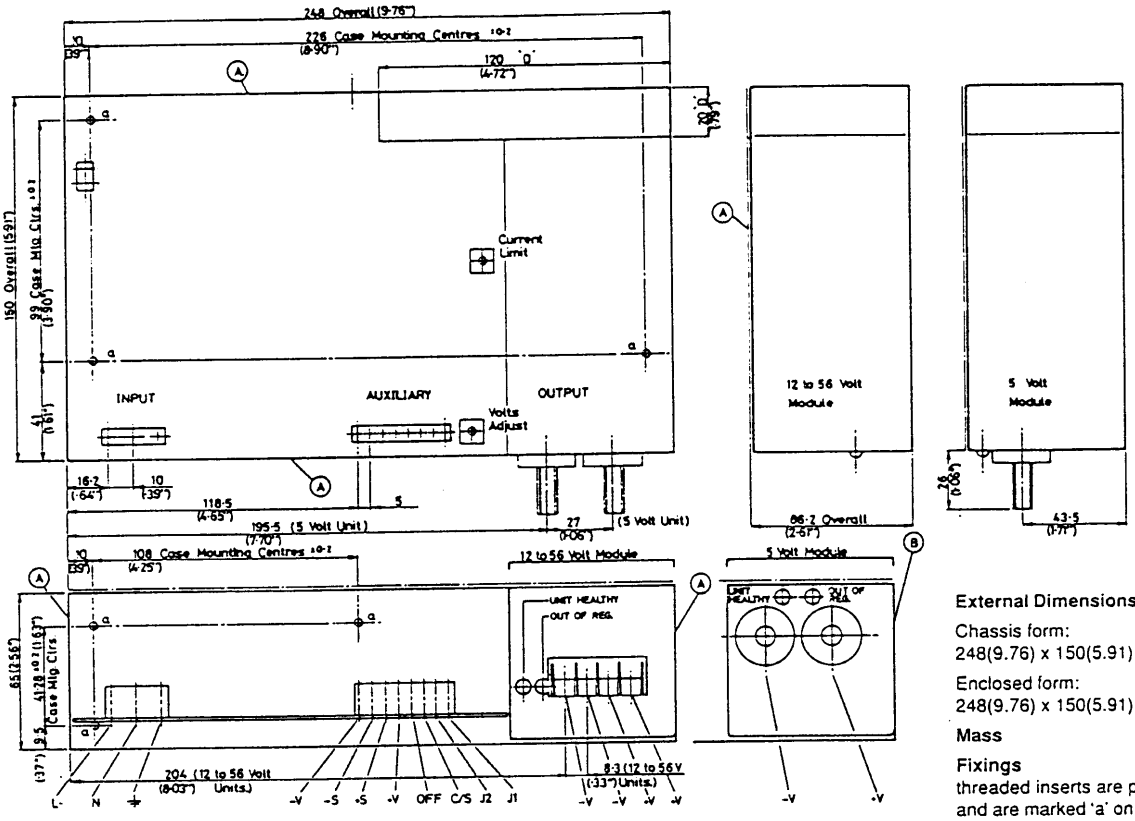
1. Source Code:	13	
2. Series:	NS	
3. Range:	240, 360 or 700	
4. Version:	See table of models	
5. Options (as required)	a) Signal options:	A or B
	b) Mechanical options:	M or W

Note that fields 2, 3 and 4 comprise the basic model number of the unit. e.g. to order model NS240005 with power fail warning and mesh cover the order code is:

13 NS 240 005 AM

NS240 RANGE OUTLINE DRAWING

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



External Dimensions

Chassis form:
248(9.76) x 150(5.91) x 65(2.56).

Enclosed form:
248(9.76) x 150(5.91) x 66.1(2.61).

Mass 1.85kg (4.1lb).

Fixings 6 x M3 ISO standard threaded inserts are provided on the chassis and are marked 'a' on the outline drawing.

Connectors The following connectors are provided on the power supply:

Input Metway 972 series, ref. 972/03 DS

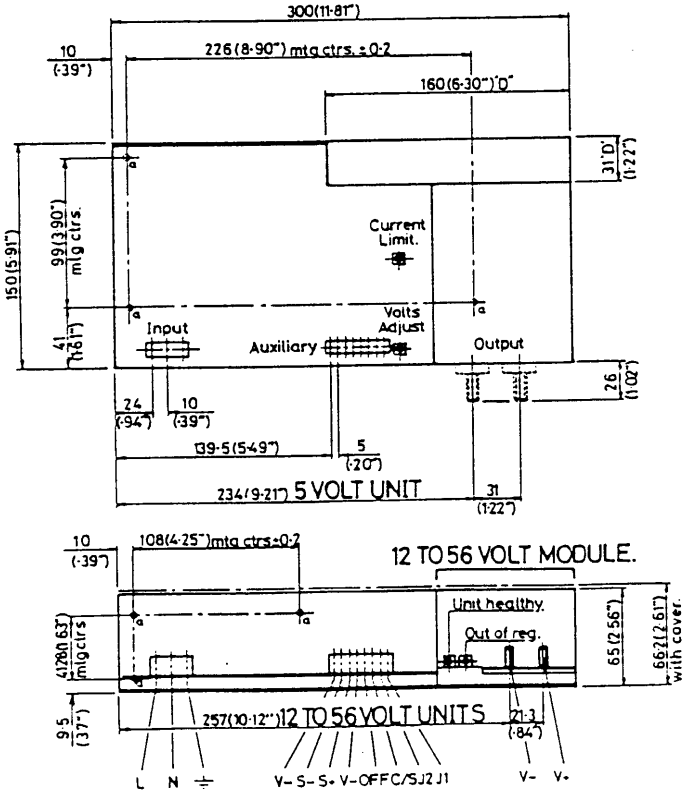
Output NS240005: 2 x M8 ISO standard studs
Other models: Beau 70000 series ref. 70504C

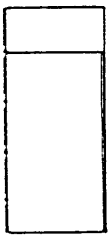
Input Voltage Selector Tap changer link provided.

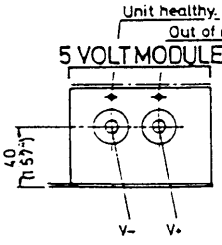
Auxiliary Functions Metway 970 series, ref. 970/08DS

NS360 RANGE OUTLINE DRAWING

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







External Dimensions and Mass

Chassis form:
300(11.81) x 150(5.91) x 65(2.56)

Enclosed form:
300(11.81) x 150(5.91) x 66.2(2.61).

Mass 2.48kg (5.5lb)

Fixings
6 x M3 ISO standard threaded inserts are provided on the chassis and are marked 'a' on the outline drawing.

Connectors
The following connectors are provided on the power supply:

Input
Metway 972 series, ref. 972/03DS

Output
NS360005: 2 x M8 ISO standard studs

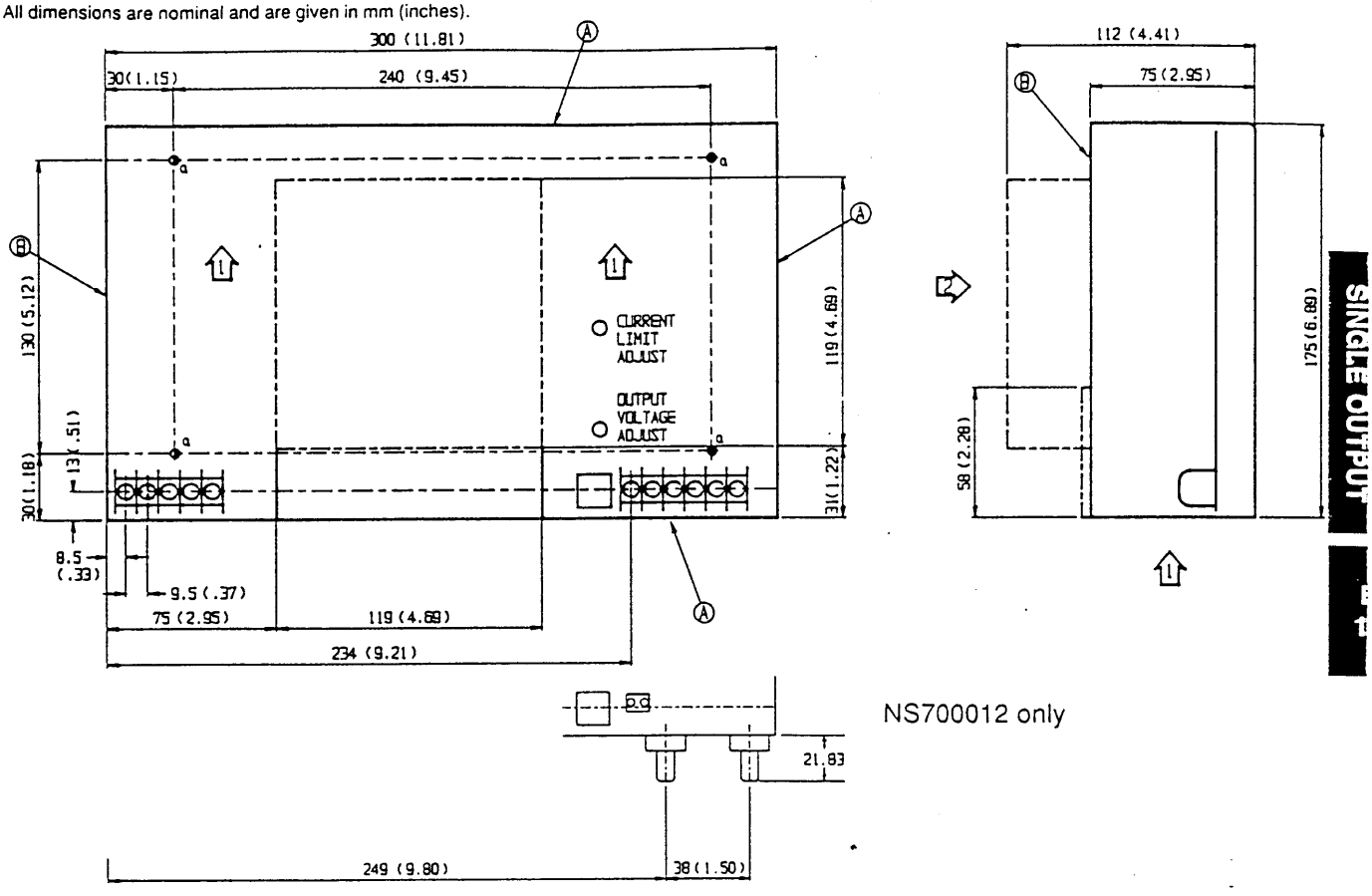
Other models: 2 x M5 ISO standard studs

Input Voltage Selector
Tap changer link provided.

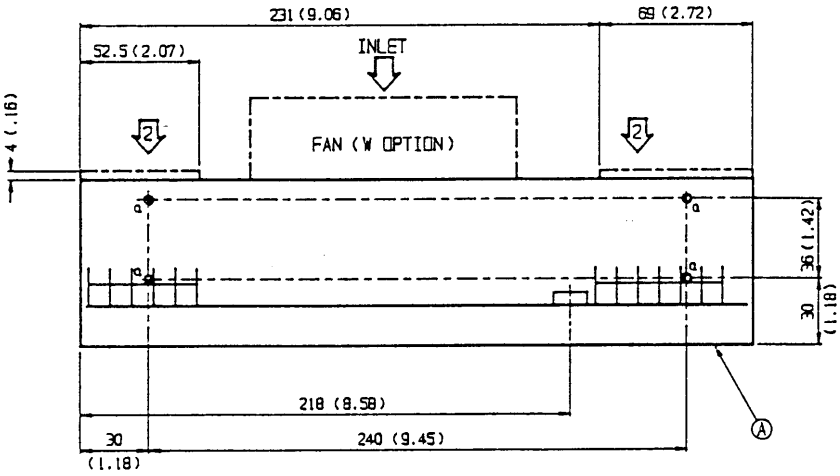
Auxiliary Functions
Metway 970 series, ref. 970/08DS

NS700 RANGE OUTLINE DRAWING

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



NS700012 only



External Dimensions and Mass

Chassis form: 300(11.81) x 175(6.89) x 75(2.95)

Enclosed form: 300(11.81) x 175(6.89) x 75 + 4(2.95 + 0.16)

Enclosed with fan: 300(11.81) x 175(6.89) x 112(4.41).

Mass: 4.7kg(10.4lb)

Fixings

8 x M3 ISO standard threaded inserts are provided on the chassis and are marked 'a' on the outline drawing.

Connectors The following connectors are provided on the power supply:

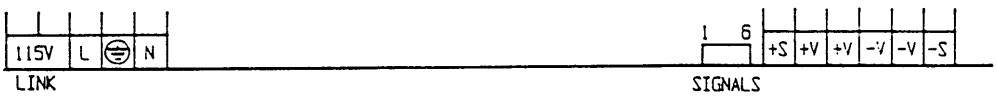
Input Beau 72000 series, ref. 72505CV.

Output:
NS700012: 2 x M8 ISO standard studs.
Others: Beau 72000 series, ref. 72506CV.

Input Voltage Selector
Included on input connector.

Auxiliary Functions
NS700012: Metway P97/2 terminal block for sense connections and a Molex 5046 series, ref. 22-05-1062 for other functions.
Others: Molex 5046 series, ref. 22-05-1062.

NS700024 to 056 Connections



NS700012 Connections