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SUMMARY SPECIFICATION

Model Number	Input Voltage	Output Voltage	Setting Range	Output Current	Current Limit	Cooling	Dimensions
TRE 1200 H 54	176 – 264V a.c.	54.9V	up to 58V	0 – 22A	22 – 26A	Forced Air (External fan)	244 x 80 x 367 mm 9.65 x 3.15 x 14.12 in.
TRE 1200 H 27		27.4V	up to 29V	0 – 44A	44 – 48A		
TWE 1200 H 54	88 – 264V a.c.	54.9V	up to 58V	0 – 22A	22 – 26A	Forced Air (External fan)	244 x 80 x 367 mm 9.65 x 3.15 x 14.12 in.
TWE 1200 H27		27.4V	up to 29V	0 – 44A	44 – 48A		

INPUT SPECIFICATION

Voltage Range	See summary specification.
Frequency	45 to 66Hz.
Supply Type	Single phase TN-S system (as defined in IEC 364).
Efficiency	Greater than 80% for output loads in excess of 50% I_{MAX} . Typically 87% at full load.
Power Factor Correction	Greater than 0.9, typically 0.99.

Combined Regulation

A worst case combination of input voltage variation over the operating range and output load variation between zero and I_{MAX} results in an output voltage change of less than 0.2% nominal.

Optional output droop (specify when ordering): This is available to assist current sharing when rectifiers are connected in parallel in a passive sharing system.

Ripple and Noise

The wideband differential output noise over the frequency range 10Hz – 100MHz does not exceed 50mV r.m.s. individual harmonics do not exceed 2mV r.m.s. (typically 200µV). The psophometrically weighted noise, in accordance with C.C.I.T.T. No 1, does not exceed 2mV r.m.s. The rectifiers output meet "equipment noise limits" of BTR2511 Issue 3.

OUTPUT SPECIFICATION

Voltage	The output voltage is preset to the voltage, V_{NOM} shown in the summary specification. Alternative output voltage settings are possible up to the maxima shown in the summary specification. Please contact your local sales office or agent to discuss your requirement.
Current	Continuous output current is available up to the current limit point, I_{LIM} . For test purposes, measurements are made at the maximum rated output current, I_{MAX} .

PROTECTION

Hold Up	With the output loaded to 1200W, a hold up time of at least 15ms is available when operating at any input within the specified range.
Output Current Limit	These rectifiers are designed to be able to operate continuously in current limit and are fully protected against output overload.
Series Output Diode	Units are supplied with an output diode fitted internally in series with the positive output.
Output Overvoltage	An output voltage in excess of 59.5V on 54V models and 31.5V on 27V models, will cause the rectifier to latch into a shutdown condition. The rectifier is reset by interrupting the mains input.
Parallel Voltage	The rectifier can withstand voltages of up to 63V on 54V models and up to 35V on 27V models applied to the output terminals when it is inoperative.
Thermal Overload	A thermal sensor is fitted to the main heatsink which, under thermal overload conditions, will cause the unit to inhibit until the temperature has reduced to an acceptable level.

AUXILIARY FUNCTIONS

Remote Sense	Available as an option. Standard units have the sense terminals internally linked to the output terminals.
Parallel Operation	Units may be operated with outputs connected in parallel without limitation. Passive or active current sharing can be used.
Remote On/Off	An isolated TTL compatible input is provided to allow for remote switching of the rectifier.
Voltage Trim	An optional facility is available to allow external adjustment of the output voltage to suit battery environment.
Output Healthy Relay	Isolated changeover relay contacts indicating that the output voltage is within the normal operating limits.
Current Signal	Optional analogue output with a voltage proportional to output current.
Logic Supply	12V 100mA output referenced to -SENSE
Input Healthy	LED and isolated open collector output indicating that the mains input is within specification.
Output Healthy	LED and optional isolated open collector output indicating that the output voltage is within the normal operating limits.
Current Limit	LED and optional isolated open collector output indicating that the current limit circuitry is operative.
Overvoltage Trip	LED and optional isolated open collector output indicating that the overvoltage protection circuitry has been triggered.

ELECTRICAL ISOLATION

Primary to Earth	Units are tested to 1.5kV a.c. r.m.s. from input to earth with both input lines connected together.
Secondary to Earth	Units are tested to 500V a.c. r.m.s. from output to earth, with all outputs and secondary ports (signals) connected together.
Primary to Secondary	Input to output isolation barriers, including layout and wiring, are specified to 4kV a.c. r.m.s. for one minute. This is tested prior to assembly by applying an input to earth isolation test voltage of 2.5kV a.c. r.m.s. simultaneously and in phase with a 1.5kV a.c. r.m.s. output to earth test voltage.
Earth Leakage Current	The earth leakage current meets the requirements of EN60950. It is measured as the voltage across a 1.5k Ω resistor in parallel with a 1.5nF capacitor, inserted in series with the earth line.

ELECTROMAGNETIC COMPATIBILITY

Exported Noise	Units have been tested to and found to comply with the requirements of VDE 0871 Curve B, FCC Rules part 15 subpart J Class B, BS6527 Class B, EN55022 B.
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MECHANICAL SPECIFICATION

Mechanical Format	All units are supplied fully enclosed as standard and are intended for rack mounting.
Mounting Orientation	The units are designed to operate with the front panel and side panels vertical.
Ventilation and Cooling	Units require forced air flow from bottom to top for cooling. TRE models require 0.8ms ⁻¹ , TWE models require 2ms ⁻¹ .

ENVIRONMENTAL CONDITIONS

Operating Temperature	-5°C to +55°C operating. Wider temperature ranges are available. Contact the your local sales office or agent to discuss your requirements.
Operating Humidity	0 to 85% R.H. non-condensing operating

INTERNATIONAL SAFETY APPROVALS

Units are designed in accordance with the requirements of EN41003, BS6301, IEC950/EN60950 and UL1950. Please contact your local sales office or agent for up to date information.

CE marked to the Low Voltage Directive**ORDERING INFORMATION**

To order specify the model number. As there are so many optional features it is advisable to contact your local sales office or agent in the first instance. Optional features must be clearly shown on the order.

PROTECTION

Hold Up	With the output loaded to 1500W, a hold up time of at least 28ms is available when operating at 176V input. Typical hold up figures are 50ms for the 54V versions and 40ms for the 27V versions.
Output Overcurrent	Units are designed to operate continuously in current limit and are fully protected against output overload.
Output Overvoltage	An output voltage in excess of 31.5V nominal on 27V versions and 63V nominal on 54V versions will cause the unit to shutdown.
Parallel Voltage	The rectifier can withstand voltages of up to 63V on 54V versions and up to 35V on 27V versions applied to the output terminals when it is inoperative.
Thermal	Units are protected against thermal overload.

AUXILIARY FUNCTIONS

Remote Sense	Available as an option.
Parallel Operation	Units are designed to operate in parallel with other units of the same model number. Passive or active current sharing may be used.
Voltage Trim	An optional facility is available to enable the output voltage to be adjusted to suit the battery environment.
External Inhibit	An isolated TTL input is available for remote switching of the rectifier.
Output Healthy	Isolated relay contacts and isolated TTL output indicate output voltage within normal operating limits.
Input Healthy	Isolated TTL output indicating adequate input voltage for normal operation.
Overvoltage Detect	Isolated TTL output indicating the occurrence of an output overvoltage condition.
Current Limit Detect	Isolated TTL output indicating that the unit is operating in current limit mode.
Current Signal	Analogue output proportional to output current.
Indicators	Front panel LED indicators are provided for Input Healthy; Output Healthy; Current Limit; Output Overvoltage. On SX models, the Output Overvoltage LED is replaced with an Output Current LED which illuminates if more than approximately 2A output current is flowing.

ISOLATION

Primary to Earth	Units are tested to 1.5kV a.c. r.m.s. from input to earth with both input lines connected together.
Secondary to Earth	Units are tested to 500V a.c. r.m.s. from output to earth, with all outputs and secondary ports (signals) connected together.

Primary to Secondary

Reinforced insulation to 3kV a.c. r.m.s. for one minute. Where a safety earth is interposed between primary and secondary, this potential is split equally between input to earth and output to earth. Complete units are tested by applying the input to earth isolation test voltage of 1.5kV a.c. r.m.s. simultaneously and in phase with the 500V a.c. r.m.s. output to earth test voltage.

ELECTROMAGNETIC COMPATIBILITY

Exported Noise	Units have been tested to and found to comply with the requirements of VDE0871 Curve B, FCC Rules part 15 subpart J Class B, EN55022 curve B (conducted).
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MECHANICAL CHARACTERISTICS

Mechanical Format	All units are supplied fully enclosed as standard and are intended for rack mounting. The F2905RX product is in standard 19" rack format.
Mounting Orientation	The units are designed to operate with the front panel and the cooling fins vertical.
Ventilation and Cooling	Units require free air convection cooling. Both top and bottom faces are ventilated and the left hand side of the unit is fitted with a heatsink. The top and bottom of the units are ventilated and must not be obstructed.

ENVIRONMENTAL CONDITIONS

Operating Temperature	-5°C to +55°C
Operating Humidity	0 to 95% R.H. non-condensing.

INTERNATIONAL SAFETY STANDARDS

Units as detailed 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.

F2905SC, SX and SXE**CE marked to the Low Voltage Directive**

BABT	BS6301 and BS6484.
CSA	C22.2 #234 (not F2905SC).
UL	UL1950.
VDE	VDE0805; EN60950.

F2905SCN and SXN**CE marked to the Low Voltage Directive**

BABT	BS6301.
VDE	VDE0805; EN60950.

F2905RX

BABT	BS6301.
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For more detailed information on these units please contact your local sales office or agent.

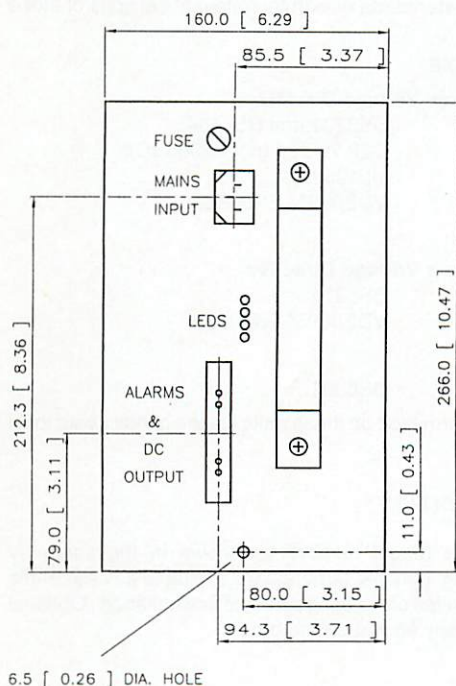
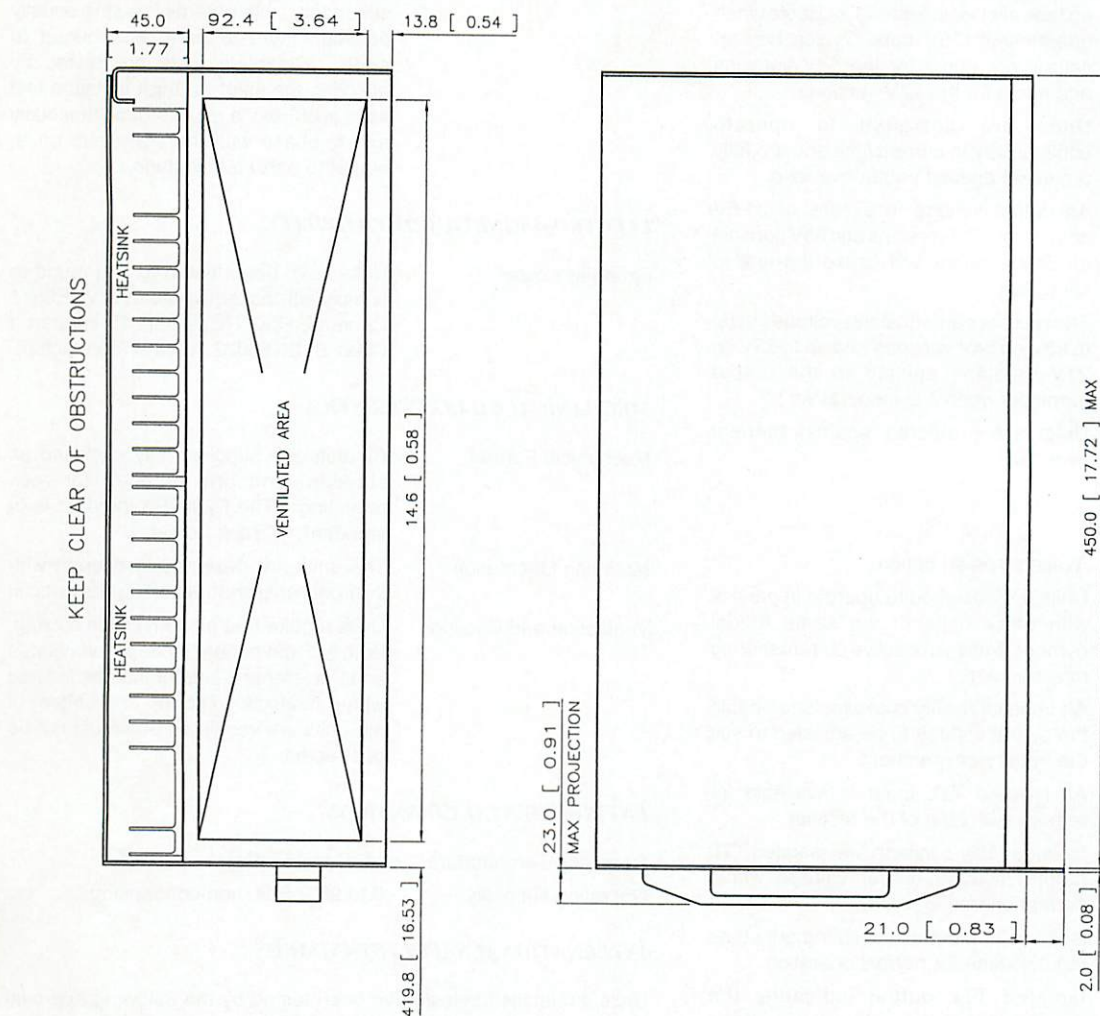
ORDERING INFORMATION

To order specify the model number as shown in the summary specification. As many optional features are available it is advisable to contact your local sales office or agent in the first instance. Optional features must be clearly shown on the order.

F2905SC, SX AND SXE OUTLINE DRAWING

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

TELECOM POWER

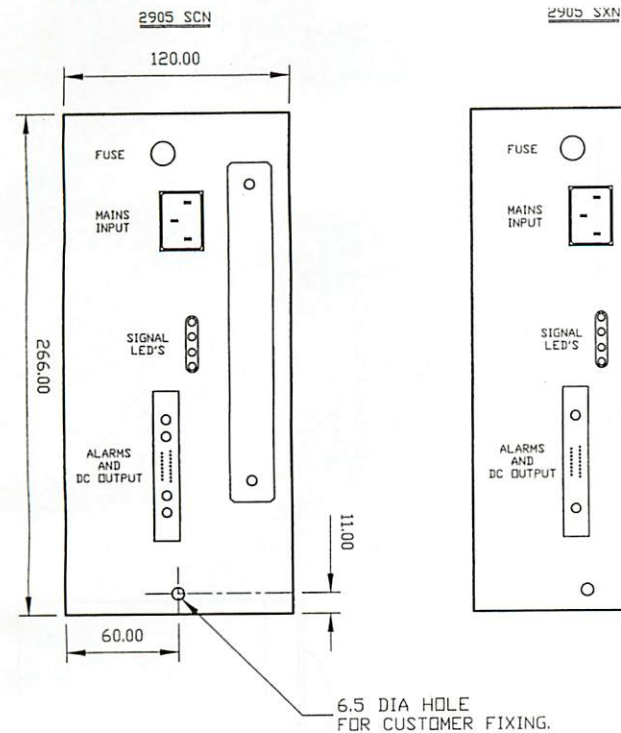


6.5 [0.26] DIA. HOLE

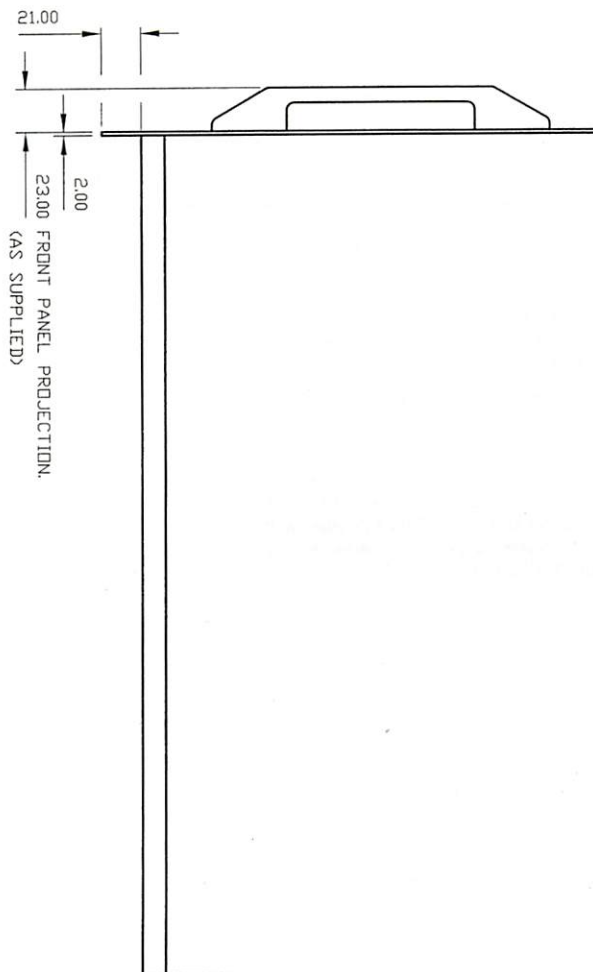
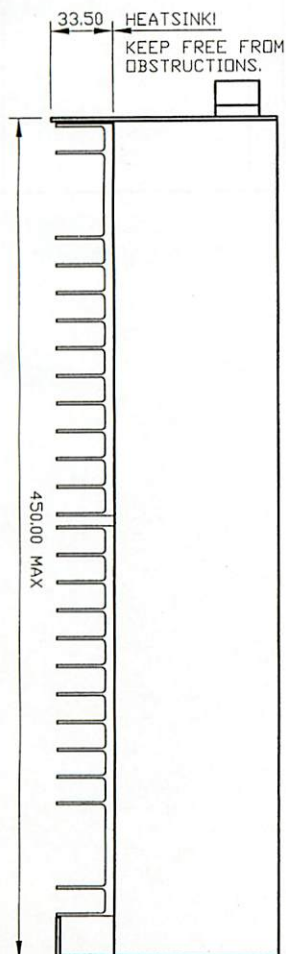
Dimensions and Mass	160(6.3) x 245(9.65) x 450(17.72). 11kg (24.3lb).
Fixings	'DZUS' fastener at the bottom of the front panel for rack mounting applications.
Connectors	The following connectors are required for connection to the rectifier:
Input	IEC 320 10A socket.
Output and Signals	Golden 'D' connector, 'C' shell size, 21WA4 female connector with 2 power receptacles on the SX and SXE versions (available as an accessory kit, part number 1TKD21W01) and 4 power receptacles on the SC version (available as an accessory kit, part number 1TKD21W02) and 17 signal sockets on both, e.g. Canon shell DCM-21WA4S fitted with two DM53744-1 receptacles.

F2905SCN AND SXN OUTLINE DRAWING

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

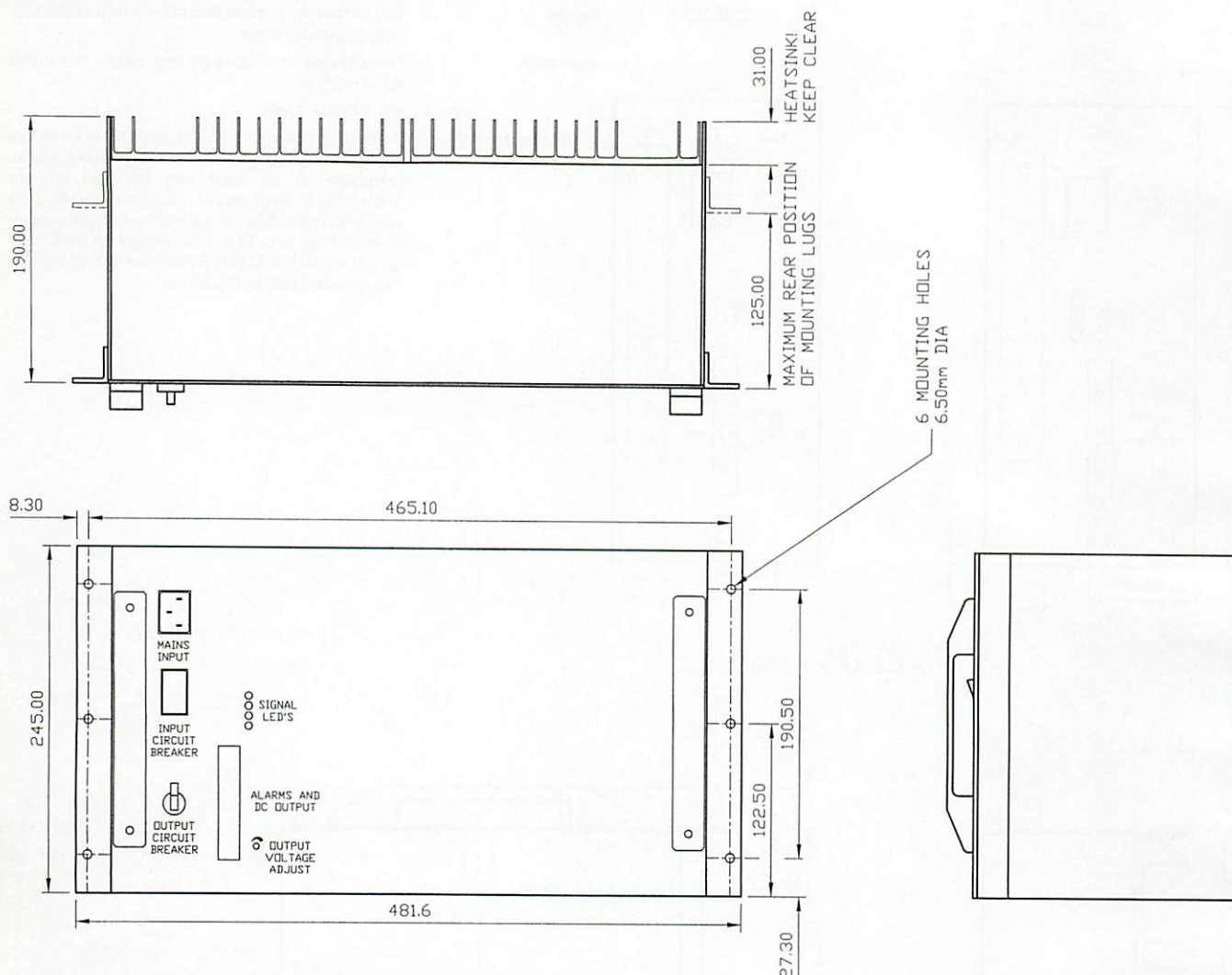


Dimensions and Mass	120(4.72) x 245(9.65) x 450(17.72). 11kg (24.3lb).
Fixings	'DZUS' fastener at the bottom of the front panel for rack mounting applications.
Connectors	The following connectors are required for connection to the rectifier:
Input	IEC 320 10A socket.
Output and Signals	Golden 'D' connector, 'C' shell size, 21WA4 female connector with 2 power receptacles on the SXN version (available as an accessory kit, part number 1TKD21W01) and 4 power receptacles on the SCN version (available as an accessory kit, part number 1TKD21W02) and 17 signal sockets on both, e.g. Canon shell DCM-21WA4S fitted with two DM53744-1 receptacles. Outline Drawings



F2905RX OUTLINE DRAWING

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



Dimensions and Mass	481.6(19) x 245(9.65) x 190(7.48). 11kg (24.3lb).
Fixings	'DZUS' fastener at the bottom of the front panel for rack mounting applications.
Connectors	The following connectors are required for connection to the rectifier:
Input	IEC 320 10A socket.
Output and Signals	Golden 'D' connector, 'C' shell size, 21WA4 female connector with 2 power receptacles and 17 signal sockets, e.g. Canon shell DCM-21WA4S fitted with two DM53744-1 receptacles (available as an accessory kit, part number 1TKD21W01).