



Product Service

CERTIFICATE

No. B 057396 0917 Rev. 00

Holder of Certificate: **XP Power LLC.**
15641 Red Hill Avenue, Suite 100
Tustin CA 92780
USA

Certification Mark:



Product: **Converter**
Component DC to DC Converter for use in medical equipment

The product was tested on a voluntary basis and complies with the essential requirements. The certification mark shown above can be affixed on the product. It is not permitted to alter the certification mark in any way. In addition, the certification holder must not transfer the certificate to third parties. This certificate is valid until the listed date, unless it is cancelled earlier. All applicable requirements of the testing and certification regulations of TÜV SÜD Group have to be complied. For details see: www.tuvsud.com/ps-cert

Test report no.: 095-72193256-000

Valid until: 2028-10-01

Date, 2023-10-27

(Antony Young-Taylor)



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Model(s): JMR20xyzz, where xx can be 24 (9-36) or 48 (18-75) for input voltage, y can be S (single) or D (dual) for number of outputs, zz can be 05, 12, or 15 for output voltage.

Brand Name: XP

Parameters:

Model	Input Voltage rating	Output rating
JMR2024S05	9-36 VDC	5 VDC / 4000 mA
JMR2024S12		12 VDC / 1670 mA
JMR2024S15		15 VDC / 1330 mA
JMR2024D05		±5 VDC / ±2000 mA
JMR2024D12		±12 VDC / ±833 mA
JMR2024D15		±15 VDC / ±667 mA
JMR2048S05	18-75 VDC	5 VDC / 4000 mA
JMR2048S12		12 VDC / 1670 mA
JMR2048S15		15 VDC / 1330 mA
JMR2048D05		±5 VDC / ±2000 mA
JMR2048D12		±12 VDC / ±833 mA
JMR2048D15		±15 VDC / ±667 mA

Pollution Degree: 2
 Degree of Protection: IPX0
 Ambient Rating: 55°C Max, 5% to 95% RH
 Elevation for use: 0-5000 m above sea level

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Conditions of acceptability:

When installed in an end- product, consideration must be given to the following:

Technical considerations:

1. Scope of power supply evaluation defers the following clauses to be determined as part of the end product investigation:

- All clauses related to Risk Management
- Clause 4.3 (Essential performance)
- Clause 7.2 (Marking on the outside of ME Equipment or ME equipment parts)
- Clause 7.5 (Safety signs)
- Clause 7.9 (Accompanying Documents)
- Clause 8.7 (LEAKAGE CURRENTS and PATIENT AUXILIARY CURRENTS)
- Clause 9 (Mechanical Hazard)
- Clause 10 (Radiation)
- Clause 11.6 (Overflow, spillage leakage ingress of water or particulate matter, cleaning, disinfection, sterilization, and compatibility with substances used with the ME EQUIPMENT)
- Clauses 11.8 (Interruption of the power supply / SUPPLY MAINS to ME EQUIPMENT)
- Clause 14 (PEMS),
- Clause 15.3 (Mechanical Strength)
- Clause 16 (ME systems)
- All clauses related Usability

When installed in an end-product, consideration must be given to the following:

1. The power supply terminals and /or connectors are: Suitable for factory wiring only

2. The output circuits have not been evaluated for direct patient connections.

3. The power supply has been evaluated for use up to a max altitude 5000 meters, Multiplication factor 1.29 used for MOPP air clearances.

4. The power supply provides the following Means of protection:

- 2MOPP based upon a working voltage of 250 Vrms/354 Vpk between primary and Secondary for Models JMR2024S05, JMR2024S12, JMR2024S15, JMR2024D05, JMR2024D12, JMR2024D15
- 2MOPP based upon a working voltage of 250 Vrms/354 Vpk between primary and Secondary for Models JMR2048S05, JMR2048S12, JMR2048S15, JMR2048D05, JMR2048D12, JMR2048D15

5. The dielectric strength test was conducted based on the peak working voltages and means of the protection above.

6. Marking legibility (CI 7.1.2) and durability (CI 7.1.3) have not been evaluated.

7. Printed wiring boards(s) in the power supply are rated a minimum of 130 °C and a minimum flame rating of V-1

8. Transformer T1 employs a Class F insulation system.

9. The investigated Pollution degree is 2

10. Manufacturer's specified maximum operating ambient is 55°C

11. Overcurrent releases of adequate breaking capacity must be employed in the end product

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12. Testing was conducted with external fuse rated 125 VDC / 4 A for models input rated 9 – 36 VDC
125 VDC / 2 A fuse for model input rated 18-75 VDC. IF different fusing is provided in the end product, additional testing shall be considered.
13. The power supply was subjected to an elevated humidity test at 30°C, 93% RH for 48 h
14. The unit is a DC DC converter intended to be powered by isolated regulated secondary DC source and has not been evaluated for connection to SUPPLY MAINS; suitable MAINS separation shall be provided during final installation.
15. Temperature, Leakage Current, Protective Earthing, Dielectric Voltage Withstands and interruption of the Power Supply tests should be considered as part of the end product evaluation
16. The following end-product enclosures are required: Electrical / Fire
17. Proper cleaning requirements shall be evaluated within the end-product application
18. Interruption of power supply shall be evaluated in end-product application
19. Usability shall be evaluated in end product application
20. The Risk Management Requirements were not addressed.

Tested according to: EN 60601-1:2006/A2:2021