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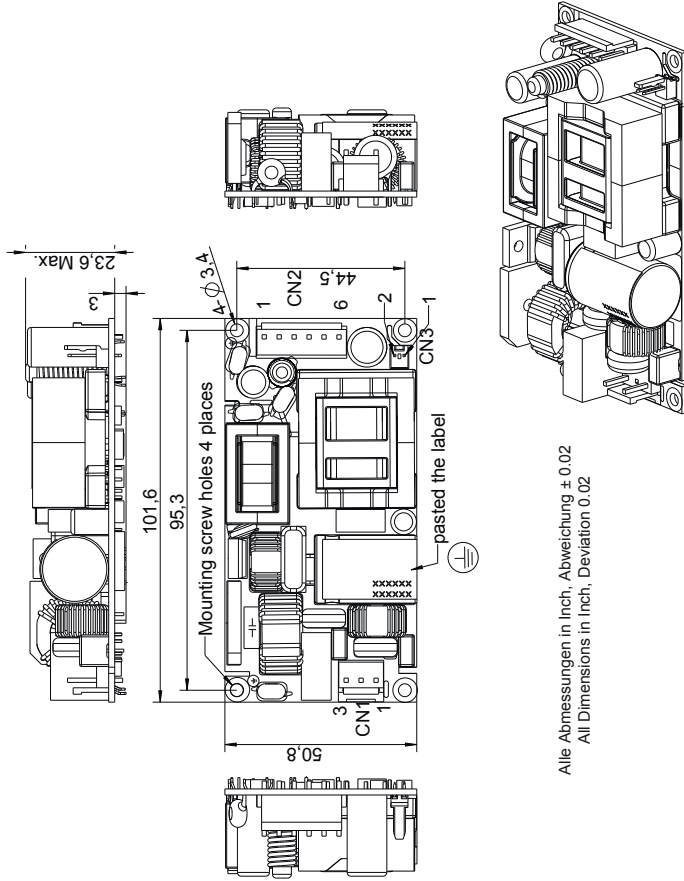


## Switchmode power supply **OPEN FRAME**

All products conform to IEC 60601-1,  
 IEC 60950 and IEC 61558.



### Mechanical Drawings



Alle Abmessungen in Inch, Abweichung ± 0.02  
 All Dimensions in Inch, Deviation 0.02

Connector	P1	P2	P3	P4	P5	P6	Connector type
CN1	L	N	-	-	-	-	JST: b3p-vh
CN2	+	+	+	-	-	-	JST: b6p-vh
CN3	+	-	-	-	-	-	Molex: 022041021

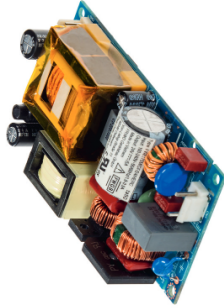
## HERC175

MEDICAL POWER SUPPLY



### Characteristics

- High efficiency: up to 94%
- Low no load power consumption <210mW
- Low leakage current ≤100µA
- IEC 60601-1-2, 4th edition ready
- Wide operating temperature range 0 - 70°C
- Wide input voltage range 85 - 264VAC
- Isolation 2x MOPP
- Operating altitude 5000m
- Convection cooled 120 W / Forced cooled 175 W
- EN 55011/32, Class B conform



### HERC175 175W MEDICAL POWER SUPPLY

FRIWO is revolutionizing its existing open-frame product portfolio by adding the new product line „HERC“. The product name stands for “High Efficiency and Rapid Customization” and features two essential characteristics of the compact built-in components: very high efficiency meets an easy-to adapt open design for fast customer-specific modifications. All this on market standard PCB measures of 3“x2“, 4“x2“ and 5“x3“ for the different power ratings – combined with minimal height of only 1“ - 1.3“.

With up to 94 % efficiency, the power supplies belong to the top tier. FRIWO also sets new standards for idle power consumption: the DOE VI requirements for external power supplies are exceeded, which is quite unusual for open-frame power supplies. The first lines of the new product series include output voltages of 5 - 48VDC for power classes of 18W, 30 W and 175 W. Further power ratings of the new product line are still being engineered and will be launched shortly.

The new HERC series complements FRIWO's established OF product family: compact, open-frame power supplies for the most demanding applications. Designed for maximum vibration, shock and temperature resistance, the incredible operating life of these devices sets new standards. Support also comes from their compact design, which dispenses with active fans. All the devices are purely convection cooled, which makes them far quieter in operation and avoids the need for a component that is prone to failure.

### Model Selection: Output Specifications

Article no.	FW Type	Voltage	Current CC* (Convection Cooled)	Output Power CC*	Current FC (Forced Cooled)	Output Power FC	Ripple voltage**	Efficiency (typ)	No-Load Power Consumption (typ)
1899208	FW8175M/0F/12/HERC	12 V	10000 mA	120 W	14600 mA	175 W	150 mV pp	84.5 %	210 mW
1899209	FW8175M/0F/15/HERC	15 V	8000 mA	120 W	11600 mA	175 W	120 mV pp	84.5 %	210 mW
1899059	FW8175M/0F/24/HERC	24 V	5000 mA	120 W	7300 mA	175 W	150 mV pp	88.5 %	210 mW
1899726	FW8175M/0F/28/HERC	28 V	4300 mA	120 W	6250 mA	175 W	180 mV pp	88.0 %	210 mW
1899210	FW8175M/0F/48/HERC	48 V	2500 mA	120 W	3650 mA	175 W	200 mV pp	89.0 %	210 mW

\* Forced cooled with 200LFM airflow

\*\* Ripple measured with 20MHz bandwidth Oscilloscope and 0.1µF/50V ceramic capacitor and 10µF/47V aluminum electrolytic capacitor across the output terminal.

### Input Specifications

Input voltage 100-240V +10%/-15%  
 Frequency 50-60 Hz  
 Input current 1800-910 mA  
 Inrush current (@240V) <80A

### General Specifications

Operating temperature -20...+70°C (above 50°C derated output power see derating curve)  
 Operating humidity 10...95%  
 Operating altitude ≤5000 m  
 Storage temperature -40°C...+85°C  
 Storage humidity 10...95%  
 Atmospheric pressure 50-106kPa  
 Output voltage tolerance ±3%  
 Line regulation ±0.5%  
 Load regulation ±2.5%  
 Turn-on delay <2s  
 Hold-up time >10ms (120V)  
 PCB Material FR4  
 Dimensions 101.6x50.8x26.6mm (4"x2"x1.1")  
 Weight 160 g  
 AC input JST B3P-VH  
 DC output JST B6P-VH

### Safety

Safety standards IEC/EN/ANSI 60601-1 Edition 3.1, IEC/EN62368:2014  
 Approbations Europe, USA  
 Protection class Class II configuration  
 Isolation Input - Output, 2xMOPP  
 Leakage Current ≤100 µA  
 Flame class UL 94 V0  
 Electric Strength Test 4.2kV Input - Output  
 Overload protection Yes  
 Overvoltage protection Yes  
 Short circuit protection Yes

### EMC Compliance

Conducted and radiated Emissions  
 Immunity EN55032 Class B, EN55011 Class B, FCC15, Class B, EN60601-1-2 4th Edition  
 EN55024, EN60601-1-2 4th Edition  
 Harmonics EN61000-3-2 Class A  
 EN61000-3-3 Class A  
 Flicker noise EN61000-3-3 Yes  
 ESD (contact / air) EN61000-4-2 8kV / 15kV  
 Immunity against radiated field EN61000-4-3 10V/m  
 EN61000-4-4 2kV  
 EN61000-4-5 1kV / 2kV  
 Surge EN61000-4-6 10V  
 Immunity against conducted disturbances EN61000-4-7 0% 0.5 Cycle  
 Voltage dips EN61000-4-11 40% 5 Cycle  
 70% 25 Cycle  
 0% 5s  
 30A/m  
 Immunity against magnetic field EN61000-4-8

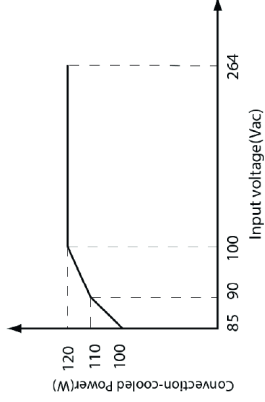
### Shock Test

Standard IEC 60068-2-27  
 Peak acceleration 30g  
 Pulse width 11 ms  
 Numbers of pulses (total) 18

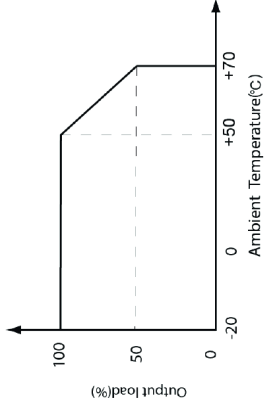
### Vibration

Standard IEC 60068-2-6  
 Frequency range 10 – 500 Hz  
 Cross-over-frequency 58 – 62 Hz  
 Displacement amplitude 0.2 mm  
 Peak acceleration 3g  
 Number of cycles 10 per axis

### Input derating curve



### Thermal derating curve



### Output Characteristics

