

Switchmode power supply

# INDUSTRIAL / ITE

with interchangeable adapter system.  
All products conform to IEC 60950.

**FRIWO**<sup>®</sup>

## FOX30-X



30 W INDUSTRIAL / ITE POWER SUPPLY



UL US  
LISTED 6P85



### Characteristics

- High efficiency: up to 88%
- Low no load power consumption <100mW
- Meets DoE efficiency level VI
- CoC version 5 ready
- Ultra-low leakage current  $\leq 10\mu\text{A}$
- IEC 60950-1
- Wide operating temperature range 0 - 45°C
- Double housing safety: snapped & welded
- IP42 approved interchangeable plug system as additional accessories
- Also available as version with fixed plugs: FOX30-F

## FOX30-X 30 W INDUSTRIAL / ITE POWER SUPPLY

FOX power supply units are smaller, more powerful and more efficient than their predecessors. FRIWO's new technical concept has again increased energy density. Thanks to a patented interchangeable adapter system, its devices are suitable for use under the toughest conditions and in the harshest environments. New: the optional IP42 adapter from FRIWO is an interchangeable adapter system that offers additional protection for use in damp environments.

Minimal leakage current means that FRIWO's power supply units are also ideally suited for use with measurement technologies, because they prevent unwanted influences that distort measured values. The FOX product family already meets the U.S. Department of Energy's stringent 2016 DOE energy-efficiency standards, which include stricter requirements regarding the efficiency and standby loss of power supply units. As a result, FRIWO already offers devices that exceed future statutory requirements, ensuring the worldwide use of your application. Choosing FOX today is an investment in the future, offering security tomorrow and beyond.

### Model Selection: Output Specifications

Article no.	FW Type	Voltage	Current	Power	Ripple voltage*	Efficiency (typ)	No-Load Power
1898151	FW8030/5	5 V	5000 mA	25 W	150 mV pp	84,5%	<80mW
1898152	FW8030/6	5.9 V	4200 mA	24.78 W	150 mV pp	85,0%	<90mW
1898153	FW8030/8	7.5 V	4000 mA	30 W	150 mV pp	87,0%	<70mW
1898154	FW8030/9	9 V	3300 mA	29.7 W	120 mV pp	87,2%	<80mW
1898155	FW8030/12	12 V	2500 mA	30 W	120 mV pp	87,0%	<90mW
1898156	FW8030/15	15 V	2000 mA	30 W	150 mV pp	87,5%	<100mW
1898157	FW8030/18	18 V	1670 mA	30.06 W	180 mV pp	88,1%	<100mW
1898158	FW8030/24	24 V	1250 mA	30 W	180 mV pp	87,8%	<100mW
1898159	FW8030/48	48 V	625 mA	30 W	300 mV pp	87,5%	<100mW

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



### Input Specifications

Input voltage	100-240 V ±10%
Frequency	50-60 Hz
Input current	600-300 mA
Inrush current (@240V)	< 50 A

### General Specifications

Operating temperature	0..+45°C
Operating humidity	10..95 %
Operating altitude	3000 m
Storage temperature	-40°C..+70°C
Storage humidity	10..95 %
Non-operating altitude	3000 m
Atmospheric pressure	70-106kPa
Output voltage tolerance	±5 %
Line regulation	±1 %
Load regulation	±4 %
Turn-on delay	≤2 s
Hold-up time	>10 ms (120 V) >50 ms (230 V)
MTBF calculation	200.000 h acc. Mil217F (based on calculations at 120Vac/60Hz & 230Vac/50Hz, ambient 25°C and 100% load)
Housing material	PC-ABS
Dimensions	90x55x34 mm
Weight	187 g
AC input	FRIWO interchangeable mains plug system: see Primary Adapters
DC output	FRIWO Universal output plug system: see Secondary Adapters

### Safety

Safety standards	IEC/EN/UL60950-1
Approbations	Europe, USA, Australia, Japan
Protection class	II
Isolation	Input - Output 2xMOPP, Input - Ground 1xMOPP
Leakage Current	≤ 10 µA
Flame class	UL 94 V0
IP code	IP40 (IP42 adapters optionally available)
Overload protection	Yes
Overvoltage protection	Yes
Short circuit protection	Yes

### EMC Compliance

Conducted and radiated Emissions	EN55032, FCC15, Class B,			
Immunity	EN55024			
Harmonics	EN61000-3-2	Class A		
Flicker noise	EN61000-3-3	Yes		
ESD (contact / air)	EN61000-4-2	8kV / 15kV	Criteria B 100V	Criteria B 240V
Immunity against radiated field	EN61000-4-3	10V/m	Criteria A 100V	Criteria A 240V
ETF / Burst	EN61000-4-4	2kV	Criteria B 100V	Criteria B 240V
Surge	EN61000-4-5	2kV / 2kV	Criteria B 100V	Criteria B 240V
Immunity against conducted disturbances	EN61000-4-6	10V	Criteria A 100V	Criteria A 240V
Voltage dips	EN61000-4-11	0% 0,5 Cycle	Criteria B 100V	Criteria A 240V
		40% 5 Cycle	Criteria B 100V	Criteria B 240V
		70% 25 Cycle	Criteria B 100V	Criteria B 240V
		0% 5s	Criteria B 100V	Criteria B 240V
Immunity against magnetic field	EN61000-4-8	30A/m	Criteria A 100V	Criteria A 240V

**Drop Test**

**Standard**  
**Surface**  
**Drop height**  
**Numbers of Drops (total)**

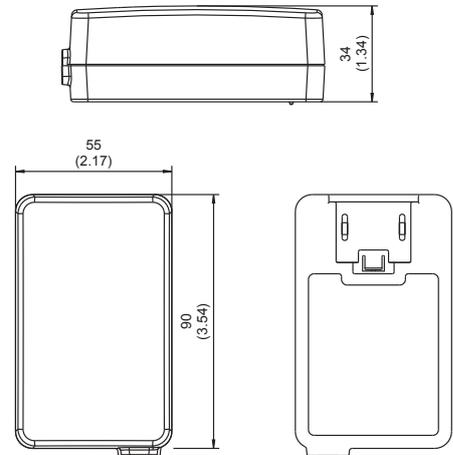
IEC 60068-2-32  
 Steel  
 1 m  
 3

**Vibration**

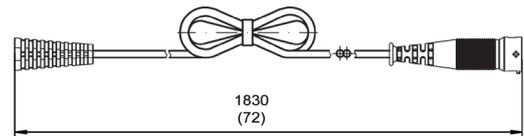
**Standard**  
**Frequency range**  
**Cross-over-frequency**  
**Displacement amplitude**  
**Peak acceleration**  
**Number of cycles**

IEC 60068-2-6  
 10 – 500 Hz  
 58 – 62 Hz  
 0.2 mm  
 3 g  
 10 per axis

**Mechanical Drawings**

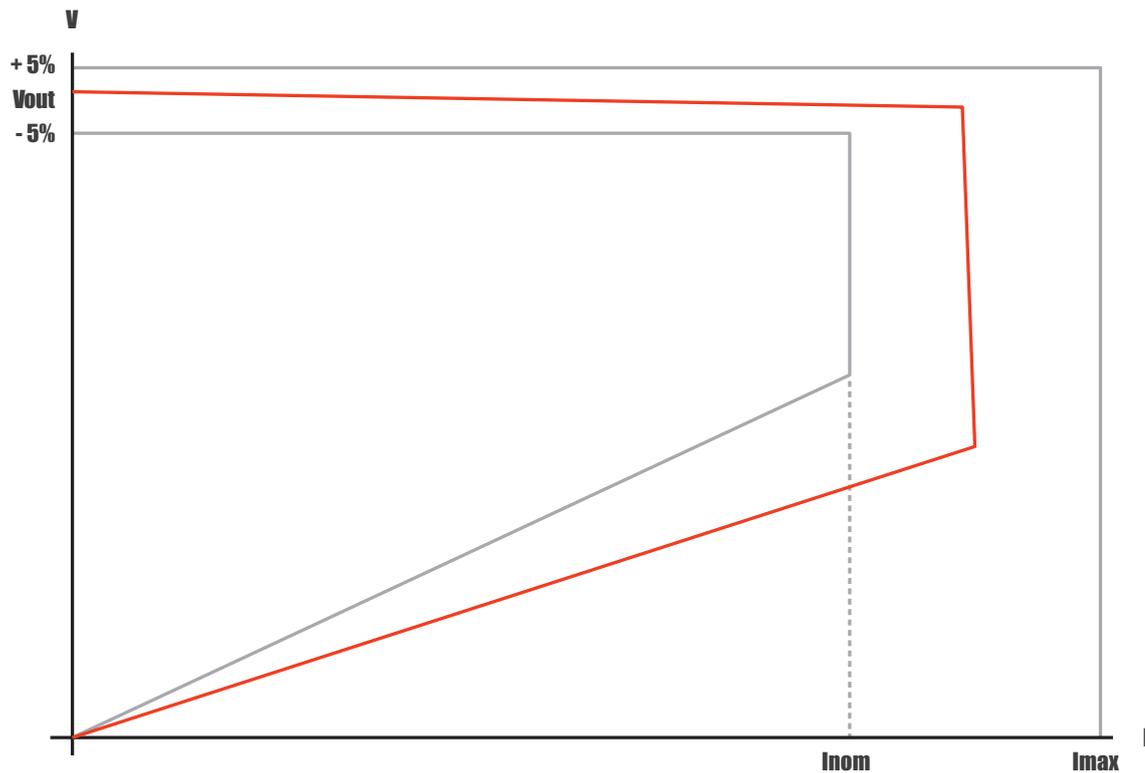


Alle Abmessungen in Millimeter (Inch), Abweichung ± 0,5 (0.02)  
 All Dimensions in Millimeter (Inch), Deviation ± 0,5 (0.02)



Alle Abmessungen in Millimeter (Inch), Abweichung ± 0,5 (0.02)  
 All Dimensions in Millimeter (Inch), Deviation ± 0,5 (0.02)

**Output Characteristics**





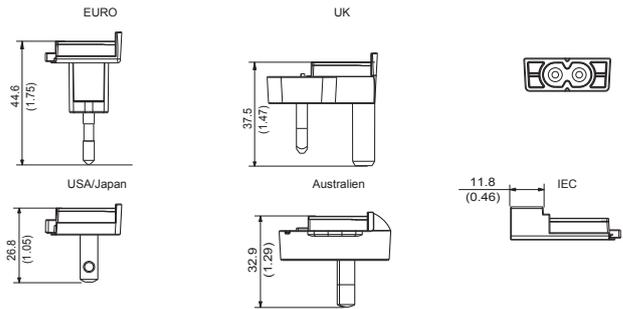
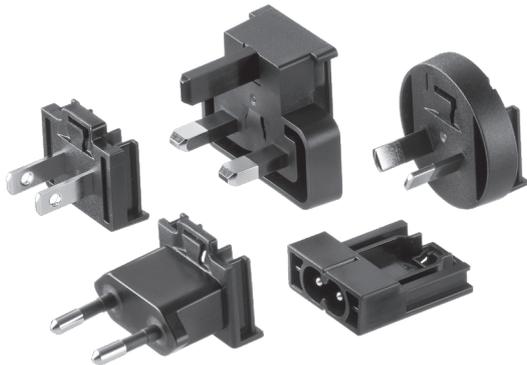
FRIWO Gerätebau GmbH  
 Von-Liebig-Straße 11 · 48346 Ostbevern · Germany  
 Tel. +49 2532 81-0 · www.friwo.com

Do you already know our free newsletter?



Primary Adapters

Mechanical Drawings



Alle Abmessungen in Millimeter (Inch), Abweichung ± 0,5 (0.02)  
 All Dimensions in Millimeter (Inch), Deviation ± 0.5 (0.02)

FOX	IPx0	IPx2	FOX	IPx0	IPx2	FOX	IPx0	IPx2
Country	Article no.	Article no.	Country	Article no.	Article no.	Country	Article no.	Article no.
<b>EURO</b>	<b>1847556</b>	<b>1847618</b>	<b>IEC</b>	<b>1847552</b>	–	<b>IND 2-polig</b>	<b>1847547</b>	–
<b>UK</b>	<b>1847544</b>	<b>1847606</b>	<b>ARG</b>	<b>1847548</b>	–	<b>IND 3-polig</b>	<b>1847546</b>	–
<b>USA / JPN</b>	<b>1847554</b>	<b>1847604</b>	<b>BRA</b>	<b>1847551</b>	–	<b>KOR</b>	<b>1847545</b>	–
<b>AUS</b>	<b>1847553</b>	<b>1847624</b>	<b>CHN</b>	<b>1847550</b>	–	<b>ZAF</b>	<b>1847549</b>	–

Secondary Adapters

Straight coaxial connectors				Angled coaxial connectors				Straight jack connectors			Connectors / Sockets	
Ø out.	Ø in.	Length mm	Article no.	Ø out.	Ø in.	Length mm	Article no.	Ø out.	Length mm	Article no.	Model	Article no.
3.5	1.3	9.5	1807699	3.5	1.3	9.5	1822478	2.5	13	1807704	<b>Texas connector</b>	
4.0	1.7	9.5	1822557	4.0	1.7	9.5	1822558	3.5	14	1807705	<b>Straight texas connector</b>	<b>1807706</b>
4.0	1.7	11.0	1811994	4.0	1.7	11.0	1822482				<b>Angled texas connector</b>	<b>1822486</b>
4.8	1.7	9.5	1822559	4.8	1.7	9.5	1822560					
5.5	2.1	9.5	1807700	5.5	2.1	9.5	1822479				<b>Texas sockets 2-pin</b>	
5.5	2.1	11.5	1807701	5.5	2.1	11.5	1822480				<b>Snap-in type</b>	<b>1323938</b>
5.5	2.1	14.0	1807697	5.5	2.1	14.0	1822476				<b>PCB type</b>	<b>1321609</b>
5.5	2.5	9.5	1807698	5.5	2.5	9.5	1822477					
5.5	2.5	11.5	1807702	5.5	2.5	11.5	1822481				<b>Texas sockets 3-pin</b>	
5.5	3.3	9.5	1822561	5.5	3.3	9.5	1822562	2.5	13	1822484	<b>Snap-in type</b>	<b>1327259</b>
			<b>DIN 45323</b>	1807703			<b>DIN 45323</b>	3.5	14	1822485	<b>PCB type</b>	<b>1363506</b>