

DFX1512A



- For industrial and residential applications
- Wide input range: 100 - 240 - 277 Vac
- Flexible power continuity up to 20 W
- Output: 12 Vdc
- Wide temperature range: -25 to 70 °C
- Overload, overvoltage and short-circuit protection
- DIN Rail and wall mounted - IP20
- Extremely small size
- 3 years warranty

Input Data

Nominal Input Voltage (2 x Vac)	100 – 240 – 277
AC Input Voltage range (Vac)	85 – 305
DC Input Range (Vdc)	95 – 370
AC Frequency	45 – 65 Hz ± 5%
DC Frequency	0 Hz
Current consumption (Approx.)	0.3 A (120 Vac) 0.2 A (230 Vac)
Inrush Current limitation (Vn and In Load) I ² t	≤ 15 A ≤ 5 msec.
Hold-up Time (Typ.)	>15 msec (120 Vac) >30 msec (230 Vac)
Internal Fuse (slow – blow, Internal)	0.5 A
External Fuse (recommended)	6 A curve B
External Circuit Breaker (recommended)	6A curve B or 2A curve C

Output Data

Output Voltage isolated DC Voltage (Vn)	12 Vdc ± 3%
Adjustment range (Vadj)	10.5 – 14.5 Vdc
Start up with Strong Load (capacitive load)	≤ 30,000µF
Turn-On delay after applying mains voltage	1 sec. (max)
Continuous Current -25 - +55°C In	1.2 A
Continuous Current +55 - +70°C In	Derating 2%/K
Power Boost Current at 12 Vdc 55° C In	2 A ≤ 3 min.
Max Short Circuit current (Icc)	2 A
Enduring Short Circuit current RMS max.	2 A
Residual Ripple (with nominal value)	≤ 100 mV _{ss}
Peak	≤ 150 mV _{ss}
Parallel connection to increase power	No
Series Connection	Yes (max four device)
Redundancy Connection	Yes

Efficiency

Efficiency at Vout – Iout rated, approx.	80 %
Power loss at Vout – Iout rated, approx.	2.8 W
Power loss during no load operation max.	0.3 W
Reliability: MTBF at 40°C IEC 61709	> 980.000 h

Closed-loop control

Dynamic mains compensation (Vin rated ± 15 %), max.	-0.2 %
Dynamic load smoothing (Iout: 10/90/10 %), Uout ± typ.	2 %
Load step setting time 10 to 90%, typ.	1 ms
Load step setting time 90 to 10%, typ.	1 ms

Protection and Monitoring

Over temperature Protection	Hiccup. Shut-down output and automatic restart.
Short-circuit protection	Hiccup. Shut-down output and automatic restart.
Over Load capability	150% In typ. 200ms
Over Voltage Output protection	Yes (typ. 16.5 Vdc)
Status output voltage OK	Green LED

Environmental Conditions

Ambient Temperature operation	-25 up to +70 °C
Ambient Temperature Storage	-40 up to +85 °C
Humidity at 25 °C in acc. to EN 60721	95 % no condensation
Vibration (operation) IEC 60068-2-6	<15 Hz, amplitude ± 2.5mm 2.5mm <15Hz-150Hz, 2.3G 90 min.
Shock IEC 60068-2-6	30g in all directions

Safety

Primary/secondary isolation	Yes
Pollution Degree Environment	2
Insulation voltage (IN/OUT)	4000 Vac
Insulation voltage (Input / Earth, PE)	2000 Vac
Insulation voltage (Out Load & Battery / Earth, PE)	500 Vac
Galvanic isolation to: EN62368 and EN 50178	Safety extra-low output voltage Uout
Degree of protection (EN 60529)	IP20

Mechanics Data

Screw type connection	0.6 - 0.8 Nm
Connections Supply Input: L, N: 1	0.2 - 2.5 mm ² (24 – 12 AWG)
Connections Output: +, -	0.2 - 2.5 mm ² (24 – 12 AWG)
Protection class	II
MTBF at 40°C	> 4.300.000 h
Housing material	Polycarbonate
Dimension (WxHxD) DIN 43880	18 x 90 x 55 mm
Weight (approx.)	0.1 Kg

Regulatory Compliance

- CE mark in conformity with EU Directives: EMC, LVD and RoHS.
- UKCA mark in conformity with UK S.I. 2016/1091, 2016/1101, 2012/3032.
- REACH Regulation 1907/2006.

Approvals (Pending)

- UL 61010-2-201 Safety requirements for electrical equipment for measurement, control and laboratory use.
- UL 1310 NEC class 2 Limited Power Source.

EMC

- EMC Immunity EN 61000-6-2 for industrial environments: EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5, EN 61000-4-6, EN 61000-4-8, EN 61000-4-11.
- EMC Emission EN 61000-6-3 for residential environments (Class B).