

TECHNICAL NOTE



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CHOICE OF UPS (BACKUP SUPPLY) FOR DIGITAL MIXERS

The following notes are to aid selection of suitable UPS (Uninterruptible Power Supply) for use with Soundtracs and Digico mixers systems.

The mixer and racks have separate mains supply that can be fed from a single UPS. The mains to the racks can be fed from a cable running along side (but separate from) the madi links from a UPS located near the worksurface. Alternatively each rack and the Worksurface can have separate UPS units.

In all cases the key feature required is that the UPS has a high purity sine wave output - typically 1% distortion. Cheaper PC/computer UPS's do not provide this. Such supplies will cause hum on the analogue audio sections of the mixer. If in doubt a UPS should be "auditioned" before installation to ensure it does not cause audible problems.

The internal supplies of the Soundtracs-Digico systems work over a wide range of inputs (typically 100-250V 50-60Hz) without adjustment. However control of this is not instant and they will not support the mixer during temporary voltage reductions ("brown outs") and the UPS should be used to provide this function also.

The response to power failure or voltage drop should be within 2 cycles (preferably 1.5) as the mixer supplies will not support the mixer for longer. The very high efficiency (cool running) switchmode supplies used in the mixer and rack have little stored energy and so require a fast external backup.

For units with dual supplies, either mixer or rack, only ONE supply should be connected via the UPS, the other should be fed direct from the mains. This will prevent problems in the event of an earth (ground) fault/impedance or electrical failure in the UPS.

The typical start power consumptions of the mixer and rack range please see list below. Note how power varies across the range and see how these are significantly less than a comparable analogue mixer with a linear PSU. The low power factor means VA is approximately = W

A typical mid size single mixer system with racks therefore requires a 750VA (continuous) UPS to allow a reasonable load margin. If possible use the system at 220V to reduce mains current load (compared to use at 110V) . Dual/RE mixer systems typically use 1.5KVA units.

Note the 1 cycle inrush to worksurface may over 20A (220V) so allow for this in fusing / MCB arrangements.

Whilst Digico UK do not endorse any particular UPS, our customers have used APC and Powerware units with success.

IMPORTANT NOTE: A UPS system is NOT a substitute for a suitable good quality earth (ground) system. Low impedance earths with no or very low earth potential is critical for the correct operation of large digital mixer systems. There should be no difference in the earth (ground) potential between mixer and madi connected racks etc.

TN 70 page 2 Mixer and racks data

SD5		IEC power x 2 550VA (faders idle) 560VA (all faders active) 750VA peak at startup 90V-260V 50-60Hz auto sense	Dual redundant supplies.
SD7		IEC power x 2 550VA (faders idle) 600VA (all faders active) 650VA peak at startup 90V-260V 50-60Hz auto sense	Dual redundant supplies.
EX007		IEC power x 1 260VA (faders idle) 300VA (all faders active) 300VA peak at startup 90V-260V 50-60Hz auto sense	Single supply
SD8		IEC power x 2 230VA (faders idle) 295VA (all faders active) 295VA peak at startup (add Litlite power if used) 90V-260V 50-60Hz auto sense	Dual redundant supplies.
SD9		IEC power x 1 155VA (faders idle) 195VA (all faders active) 225VA peak at startup	Single supply only.
SD9	Optional	IEC power x 2 195VA (faders idle) 225VA (all faders active) 240VA peak at startup (add Litlite power if used) 90V-260V 50-60Hz auto sense	Dual redundant supplies.
SD10		IEC power x 2 235VA (faders idle) 300VA (all faders active) 300VA peak at startup (add Litlite power if used) 90V-260V 50-60Hz auto sense	Dual redundant supplies.
SD11		IEC power x 1 150VA (faders idle) 175VA (all faders active) 195VA peak at startup (add Litlite power if used) 90V-260V 50-60Hz auto sense	Single supply only.
D5		IEC power x 2 250VA (faders idle) 300VA (all faders active) 350VA peak at startup 90V-260V 50-60Hz auto sense	Dual redundant supplies.
SD Rack		IEC power x 2 Stage rack 160VA run FOH rack 200VA run 300VA peak at startup 90V-260V 50-60Hz auto sense	Dual redundant supplies.
SD Mini		IEC power x 2 FOH rack 120VA run 300VA peak at startup 90V-260V 50-60Hz auto sense	Dual redundant supplies.
SD Nano		IEC power x 2 FOH rack 80VA run 300VA peak at startup 90V-260V 50-60Hz auto sense	Dual redundant supplies.
DigiRack		IEC power x 2 Stage rack 175VA run FOH rack 175VA run 90V-260V 50-60Hz auto sense	Dual redundant supplies.
MadiRack		IEC power x 2 Stage rack 175VA run FOH rack 175VA run 90V-260V 50-60Hz auto sense	Dual redundant supplies.
D-Rack		IEC power x 1 100VA run, 280VA start	
D-Rack	Optional	IEC power x 2 115VA run, 350VA start (both figures with fitted optional DAC card) 90V-260V 50-60Hz auto sense	Dual redundant supplies