

SnowPure

High Technology Water

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DC Power Supply Requirements

The EDI power supply should be a regulated DC power supply with enough power to cover typical and extreme operating conditions.

SnowPure recommends setting the voltage to be constant, and allowing the current to float with varying EDI feedwater conditions. Voltage set range should include the standard and occasional regeneration conditions. The power supply should have current-limiting capability to protect itself and the EDI module(s). Each module may be separately fused.

Current draw depends on the conductivity of the EDI feed and the water recovery. There should be excess capability designed in to cover higher currents in case module regeneration is needed, or if RO permeate conductivity increases with system age.

For protection it must have a system interlock to turn the POWER OFF in case of NO WATER FLOW. It may be controllable from a remote source such as a PLC or the system control computer. Or use a set of simple switches in series connected to the DC supply interlock.

The power supply may have internal diagnostics and an alarm relay output.

AC noise (ripple) can be up to 5%. AC low- and high-frequency ripple may affect the readings of local electronic instruments, such as conductivity or resistivity meters.

Power supply should conform to UL, CSA, or CE requirements as local code requires. Local code may require features such as Power Factor Correction (PFC) and EMI shielding. If NEMA rating is required, the NEMA enclosure must have enough heat removal to keep the power supply cool.

Typical power supply efficiency is about 90%, so AC input power will be about 10% higher than the rated power of the supply.

Module(s)	Typical Operating Voltage, DC	Typical Current with 4 ppm RO feed	Maximum Voltage	Maximum Current with 10 ppm RO feed
1 XL-100	48V (30-60V)	3 Amps	75V	8 Amps
1 XL-200	100V (60-120V)	3 Amps	150V	8 Amps
1 XL-300	150V (120-160V)	3 Amps	240V	8 Amps
1 XL-400	200V (150-220V)	3 Amps	300V	8 Amps
1 XL-500	300V (250-320V)	3 Amps	400V	8 Amps
3 XL-500	300V (250-320V)	9 Amps	400V	24 Amps
20 XL-500	300V (250-320V)	60 Amps	400V	160 Amps

Note: the power supply should be sized for the maximum requirements if possible.