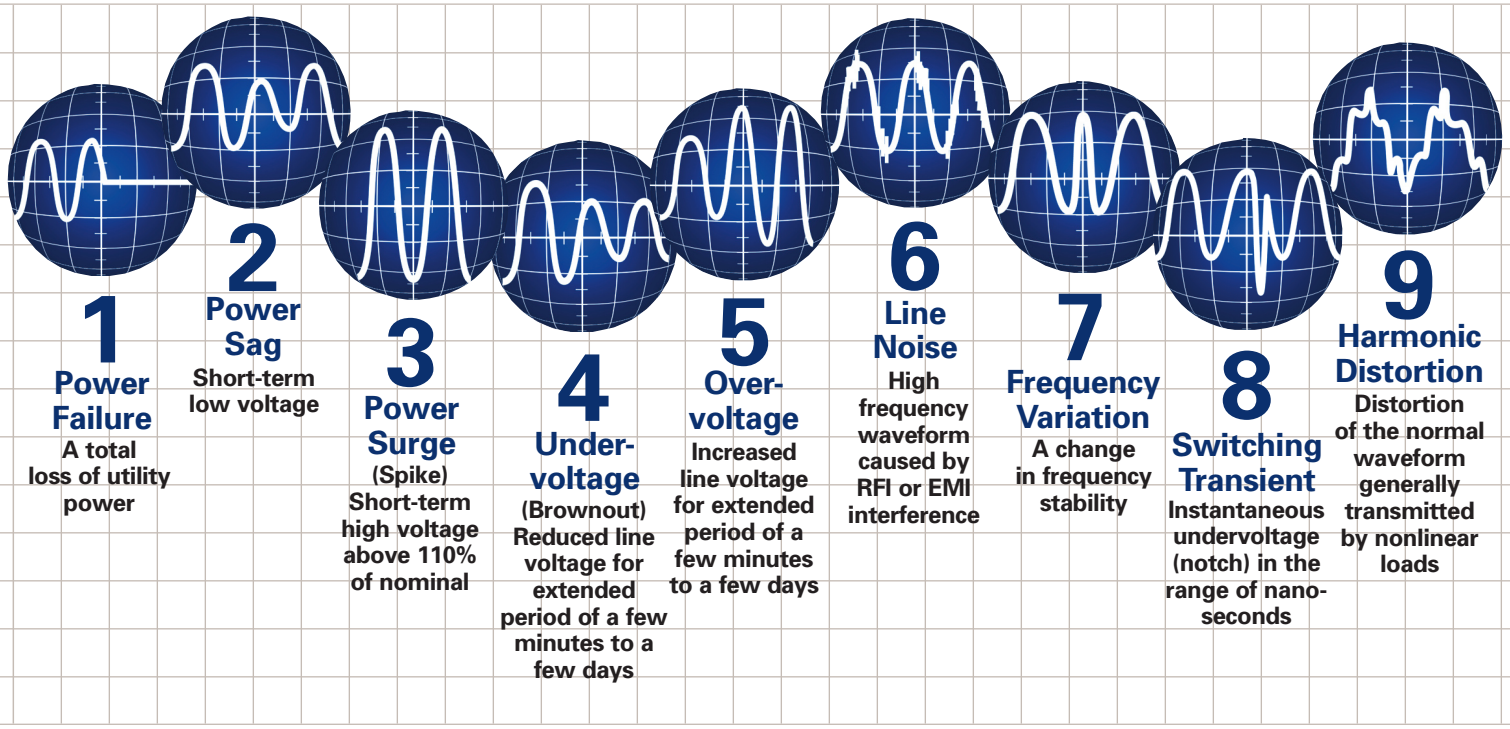
9 Common Power Problems

that can harm your computers and corrupt your data.



1 Power Failure
A total loss of utility power

2 Power Sag
Short-term low voltage

3 Power Surge
(Spike)
Short-term high voltage above 110% of nominal

4 Under-voltage
(Brownout)
Reduced line voltage for extended period of a few minutes to a few days

5 Over-voltage
Increased line voltage for extended period of a few minutes to a few days

6 Line Noise
High frequency waveform caused by RFI or EMI interference

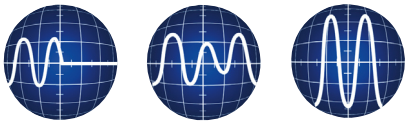
7 Frequency Variation
A change in frequency stability

8 Switching Transient
Instantaneous undervoltage (notch) in the range of nano-seconds

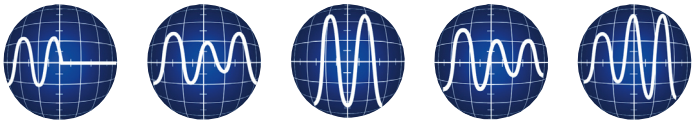
9 Harmonic Distortion
Distortion of the normal waveform generally transmitted by nonlinear loads

Eaton's Powerware series UPSs

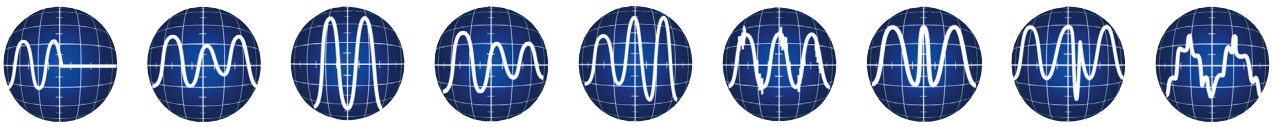
Series **3** — **Essential Solution:** Protection from three problems



Series **5** — **Intermediate Solution:** Protection from five problems



Series **9** — **Complete Solution:** Protection from all nine problems



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Selecting the right UPS

Powerware® series UPS solutions from Eaton® are based on the nine most common power problems that can threaten your data and equipment. This unique approach makes product selection decisions about power protection much simpler. Our UPS products offer three levels of power protection: Series 3, Series 5 and Series 9. From desktops to the largest data centers, we have a complete line of UPS products ranging from 500 VA to 1100 kVA.

Series 3

Series 3 UPSs primarily protect against three of the nine most common power problems. This basic, cost-effective protection is necessary in order to prevent damage such as data loss, file corruption, flickering lights, hardware damage and equipment shutoff. For example, if your utility fails you could lose all of your work in progress. Series 3 UPSs offer a degree of protection against the remaining power problems and are most commonly used to protect single workstations and point-of-sale (POS) equipment.

Eaton 3105

Series 5

Series 5 UPSs are most effective against five of the nine most common power problems and offer a degree of protection against other power problems. Some of the damages you risk by not using a Series 5 UPS include premature hardware failure, data loss and corruption, data error, keyboard lockup, storage loss and system lockup. Series 5 UPSs are recommended for small network systems—all the way up to enterprise networking environments.

Eaton 5130

Series 9

Series 9 UPSs protect against all nine of the most common power problems. Our comprehensive protection minimizes the opportunity for component stress, burned circuit boards, data crashes and program failures. Series 9 UPSs also provide zero-break transfers to battery in the event of a power failure, ensuring your load never knows it happened. Series 9 UPSs offer the highest level of power protection available and are always recommended for critical applications like high-end servers, VoIP equipment, diagnostic imaging and data centers.

Eaton 9390

9 series UPSs range from 700 to 1,100,000 VA

Eaton 9130

Which UPS is right for you?

To determine the level of protection you require from a UPS consider the following criteria:

1) How critical is the application you need to protect?
2) Do you need complete or partial protection?
3) What size UPS do you require? VA, watts, sizing calculations?
4) Battery runtime required in minutes? In hours?
5) What software and network considerations do you have? Platforms, SNMP, remote monitoring etc.?