The benefits of improving power quality:

- Improved energy efficiency
- Reduced utility costs
- Reduced waste and improved operations
- Increased productivity
- Minimized downtime
- Increased equipment and power reliability
- Lower operating costs

The negative effects of PQ issues:

- Energy losses
- Unplanned downtime
- Premature aging of equipment
- Utility penalty costs
- Decreased productivity
- Service call costs
- Decreased reliability

Ways to improve power quality:

- Power factor correction
- Voltage stabilization
- Harmonic filtering
- Power conditioning
- Reactive power compensation

Typical Power Quality Symptoms:

- Flickering and blinking lights
- Transformer issues, such as noise, extra hot, or premature failure
- Panels, neutral wiring, and other distribution equipment running hot
- Printed circuit board failures in drives, PLCs, industrial PC, etc.
- Breaker trip and drive shutdown
- High temperatures of motors, distribution equipment, and electrical equipment
- Premature motor failure and unexpected equipment shutdown
- Contactors dropping out
- Poor network communications
- Higher utility bills
- Poor power factor
- Low system capacity

Types of Power Quality Issues:

- RMS voltage variations: sags, swells, interruptions
- Voltage transients: impulsive, oscillatory
- Waveform distortion: harmonics, interharmonics, sub-harmonics
- Voltage imbalance
- Voltage fluctuation
- Power frequency variation

Understanding power quality issues:

- 80% of all power quality problems originate on the customer’s side of the meter or originate from within a facility.
- 80% of all power quality problems originate on the customer’s side of the meter or originate from within a facility.
- 3%–6% of the amount of manufacturing sales money spent to correct PQ problems.
- 50% of the amount of mission-critical power outages attributable to power quality issues.

The negative effects of PQ issues:

- Energy losses
- Unplanned downtime
- Premature aging of equipment

Ways to improve power quality:

- Power factor correction
- Voltage stabilization
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For more information about power quality solutions from Square D™ by Schneider Electric™ Email: powersolutions@schneider-electric.com

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