CITEL

SURGE PROTECTORS

FOR

Water and Wastewater Treatment Systems



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CITEL,



the global solutions provider.

Since 1937, Citel has been an innovator in the field of Surge Protection. Today, Citel is a global leader in the development of reliable and adapted Surge Mitigation Solutions for critical applications.

Citel is unique as a manufacturer of Surge Protective Components (SPCs), Surge Protective Devices (SPDs), and coordinated protection systems.

- **Over 1 billion lines protected**
- **Local support in over 200 countries**
- **High current R&D laboratories at your disposal**

THREAT

$26B in Losses due to Power Surges

Today's increased reliance on very sensitive electronics and processes make surge protection an important discussion topic in order to avoid catastrophic business losses. The Insurance Institute for Business & Home Safety study found that $26 billion dollars was lost due to non-lightning power surges. In addition, there are about 25 million lightning strikes in the US each year that cause between $650M to $1B in losses according to the Insurance Information Institute, State Farm©.

1. Direct Strike



2. Earth Potential Rise



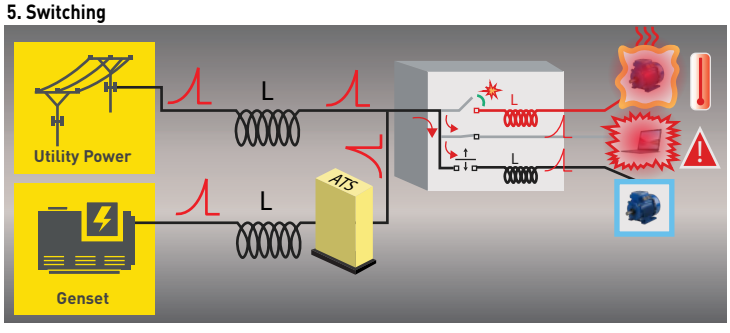
3. Strike on Overhead Lines



4. Coupling



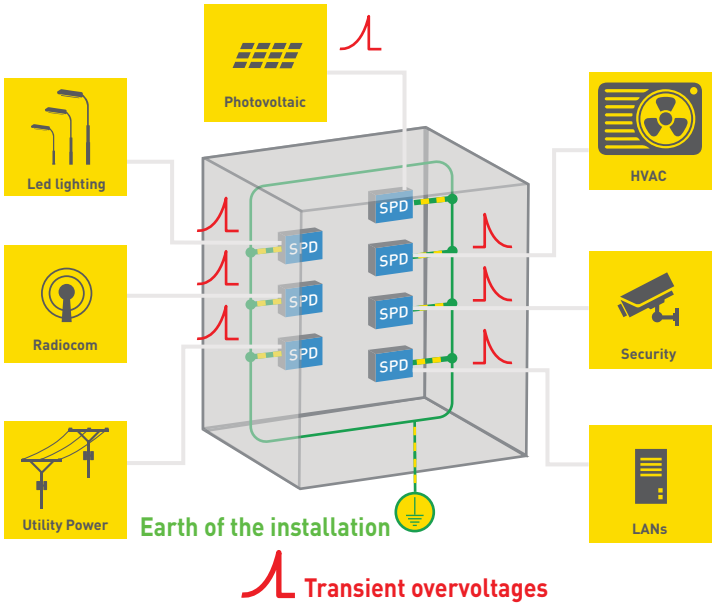
5. Switching



SOLUTION

Global Surge Mitigation Concept

Our philosophy is simple – determine your risk and evaluate every line (power or signal) for vulnerabilities. We call this "The Box Concept." It works equally well for a single piece of equipment or an entire facility. Once you have determined your "boxes", it is simple to develop a coordinated protection scheme to eliminate all threats from lightning and switching surges.



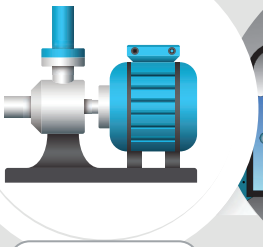
CITEL provides a wide range of surge protectors adapted to every network: **AC Power, DC Power, Telecom, Data and Coaxial.**

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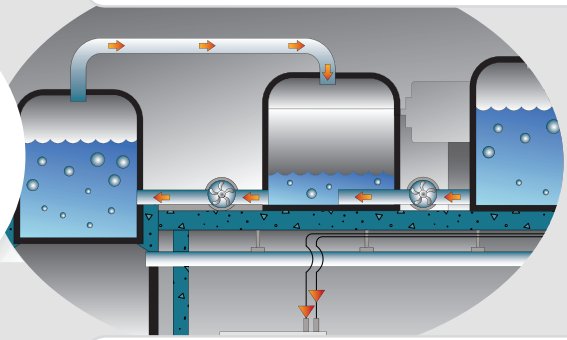
COMMON WATER & WASTEWATER APPLICATIONS

As the systems required for Water & Wastewater Treatment Plants become more sophisticated, the risk of damage caused by lightning strikes and power line disturbances becomes more evident. Vital Treatment Systems must deploy a coordinated system of Surge Protective Devices (SPDs) to ensure continuous operation.

Power Pumps and Drives



Pumps

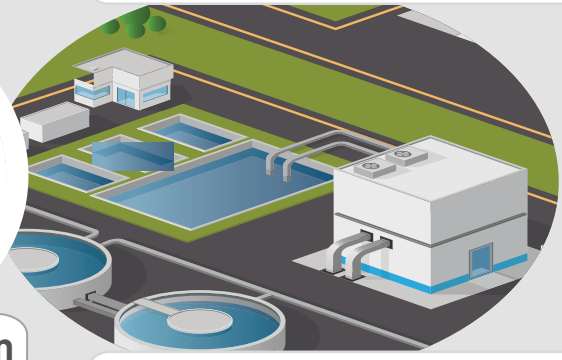


- AC Primary Power
- Pump Power Feeds
- Variable Frequency Drives (VFD)

Treatment Process Monitoring



Instrumentation

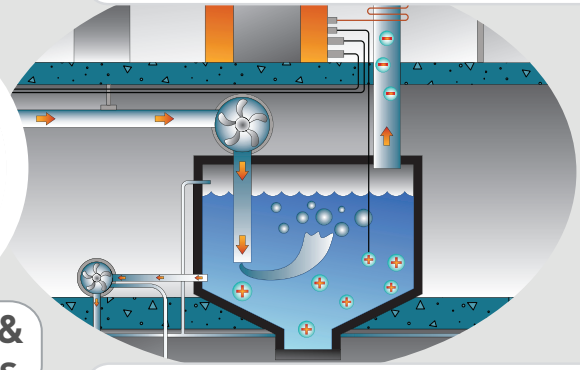


- Flow Meters
- Chlorine Analyzers
- Pressure Sensors
- Temperature Sensors
- Level Sensors

Treatment Process Control



Level Sensors & Valve Actuators



- PLC
- Process Control Valves
- Actuators
- Agitators
- Level Sensors
- Temperature Sensors

SCADA DCS and Communications



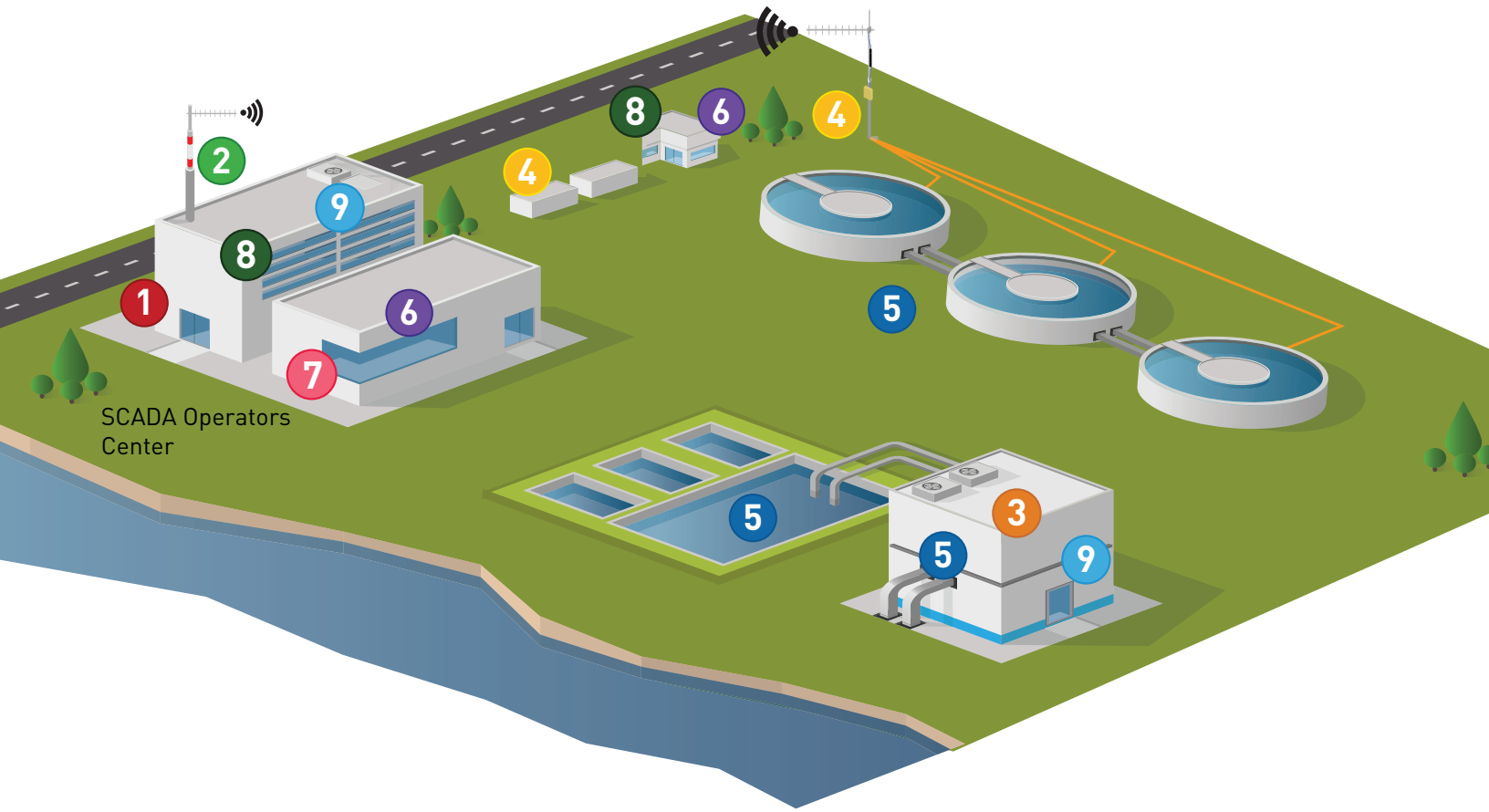
Control System Monitor



- Supervisory Control & Data Acquisition
- Distributed Control Systems
- Communications

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COORDINATED PROTECTION STRATEGY



Description/Location/Model

AC Power - Main Distribution Panel	1	MDS Series
Coaxial - Antenna / Radio Wireless	2	P8AX Series, CGMJ8 Series
AC Power - Pumps & Drives	3	M Series, DAC100US Series
AC Power - Distribution Panels	4	M Series
Field Instrumentation	5	CAD Series, DLA Series, TSP Series
Data - Ethernet / POE	6	MJ8 Series, CGCMJ8 Series
DCS & SCADA Cabinet	7	DAC100US Series, MJ8 Series, DLA Series
AC Power - Lighting Panel	8	DAC100US Series
AC Power - Lighting Fixtures	9	MLPXU Series

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RECOMMENDED PRODUCTS (TECHNICAL CHARACTERISTICS)

AC Power

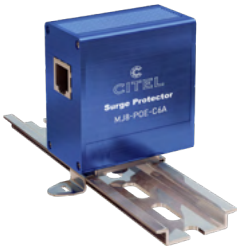






Product	MDS	M50	DAC100US	MLPXU
Application	Main Service Entrance	Distribution Panel	Control Cabinet	Lighting Fixtures
Voltage(s)	240, 277, 480	120, 240, 277, 480		277
Phase	3D, 3Y			Single
In (8/20µs)-kA	20			10
Imax (8/20µs)-kA	440	50	100	20
UL Standard	Listed Type 1			Listed Type 4CA

Dataline



Product	DLA	MJ8-POE	CWMJ8	TSP15M
Application	Dataline	Indoor Gigabit PoE	Outdoor Gigabit PoE	Transducers & Sensors
Connection	Screw Terminal	RJ45		Wired
Voltage(s)-(DC)	12, 24, 48	60		24, 48
Imax (8/20µs)-kA	20	16		15
UL Standard	UL 497B			

DC Power




Product	DS240S	DS220
Application	High Voltage DC	Power Supplies
Voltage(s)-(DC)	up to 350	12, 24
In (8/20µs)-kA	20	10
Imax (8/20µs)-kA	20, 40	40
UL Standard	Recognized Type 4CA	

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