

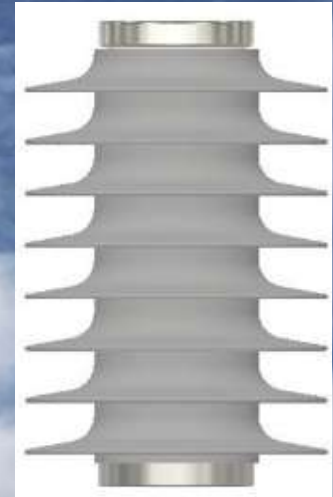
Ultra Fast Surge Arrester – EMProve®

Description

The EMProve® is a device that will shunt to ground more than 97% of a high current pulse caused by an E1 HEMP or an electromagnetic directed energy events induced possibly many miles away. These pulses can occur within a fraction of a cycle and are beyond the capability of ordinary lightning surge protectors. With the addition of a suitable Faraday type enclosure, protection could even be afforded from a high altitude nuclear electromagnetic pulse (EMP). Under normal conditions, the EMProve® acts as an open circuit drawing less than 20µA at 60 Hz.



Indoor



Outdoor

Applications

The EMProve® is ideally suited to provide protection for...

- High value assets.
- Components that have a long replacement lead time or are even obsolete.
- Processes with high consequence of loss such as industrial, utility, critical infrastructure including offshore wind farms, defense, and AI.
- Ancillary downstream internal wind tower components.

Advantages

- Energy security
- Economical
- Long life
- Low maintenance
- Complements standard lightning arresters
- Remains active after a lightning strike

Installation

- Locate within 1 meter of asset to be protected.
- Mount from each phase and neutral to ground using the two NEMA 3/8"-18 mounting holes on each end.
- Do not use as a structural member for other equipment.

Ask about our OEM program

The EMProve® may be mounted at your facility for a fractional overall cost to protect equipment such as generators, turbines, compressors, condensers, fans, switchgear and transformers.

Contact ufsa@nwsignal.com for engineering support.

Table 1 Typical Performance

				Electrical					
Rating	MCOV	Energy Class	¹ Standby Current	Bypass Current	Housing BIL	Reaction time	² DC Holdoff	E1 Protect Level	Megger
6 kV	5.1 kV	H	< 20 µA	5.0 kA	110 kV	<6 nS	14.7 kV	54.6 kV	474 MΩ
10 kV	8.4 kV	H	< 20 µA	5.0 kA	110 kV	<6 nS	28.5 kV	60.5 kV	749 MΩ
15 kV	12.7 kV	H	< 20 µA	5.0 kA	110 kV	<6 nS	36.5 kV	70.0 kV	866 MΩ
*18 kV	15.3 kV	H	< 20 µA	5.0 kA	302 kV	<6 nS	38.5 kV	85.3 kV	870 MΩ

¹ RMS at 60 Hz ² dv/dt of 500 V/S Typical $\sigma = 1.1$ kV (DC Holdoff) and $\sigma = 1.9$ kV (E1 protect level)

* In final development, higher voltages available upon request

		Mechanical		
Rating	Height	Width	Weight	Temperature
6 kV	9 "	3 "/5.76 "	5.5 IB/6.9 IB	-40 C to +65 C
10 kV	9 "	5.76 "	6.9 IB	-40 C to +65 C
15 kV	9 "	5.76 "	6.9 IB	-40 C to +65 C
*18 kV	16 "	5.76 "	11.63 IB	-40 C to +65 C

Ultra Fast Surge Arrester – EMProve®

Assured maintenance free continuity for your mission critical medium voltage assets

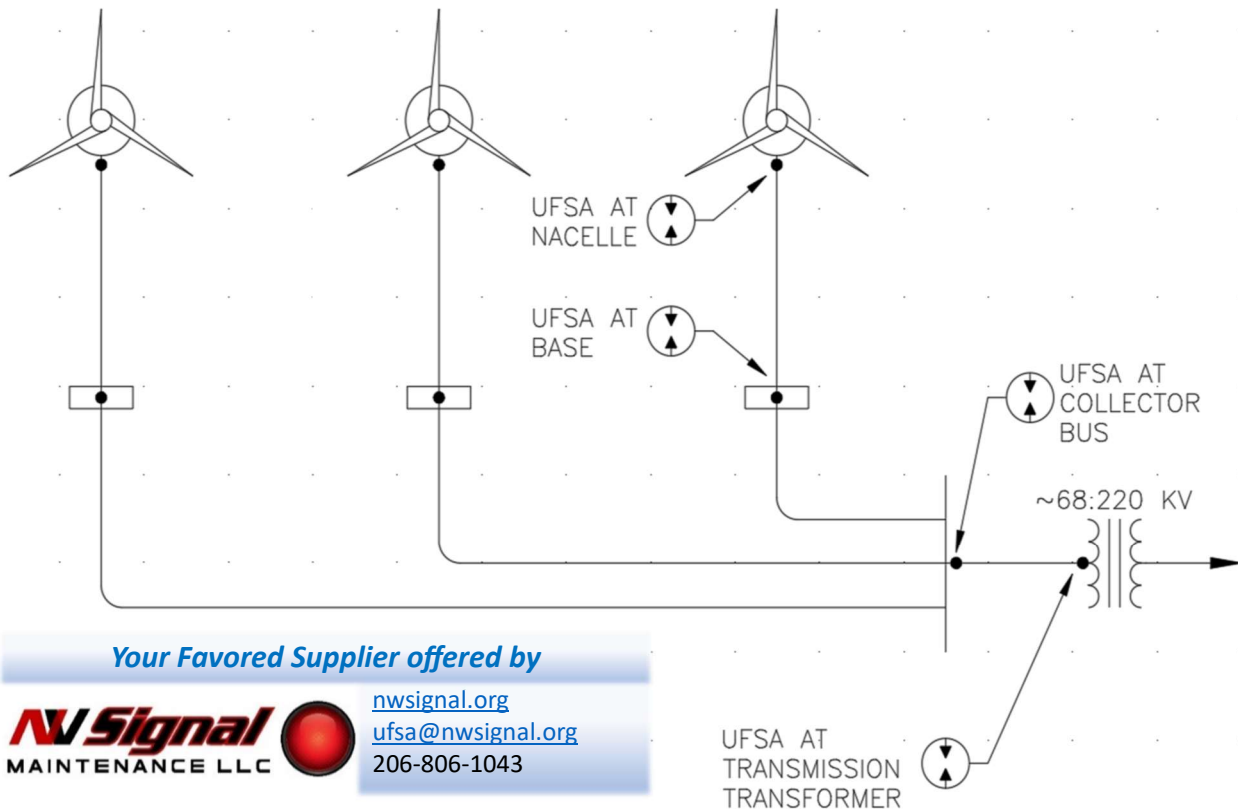
SUGGESTED MOUNTING LOCATIONS

Point of Use and Supply Protection

- Building Points of Entry
- Generator (Prime/Backup)
- Transformer
- Data Center
- Motor
- Chiller/Evaporator
- Water/Waste Pump
- Tunnel Fan
- Tunnel Boring Machine
- Underground Facility
- Bulk Collection Bus Point
- Inverter Station
- Reclosers/Scouts

Applications

- High value assets
- Long replacement lead time or obsolete components
- Processes with high consequence of loss
 - Pipeline
 - Chemical
 - Refining
 - Nuclear
 - Tunnel
 - Railroad
 - Transit
 - Offshore wind
 - Medical
 - Foundry
 - Military
 - Up to 72kV in future



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nwsignal.org
ufsa@nwsignal.org
206-806-1043