

NGVS Optical Voltage Sensor

PERFORMANCE

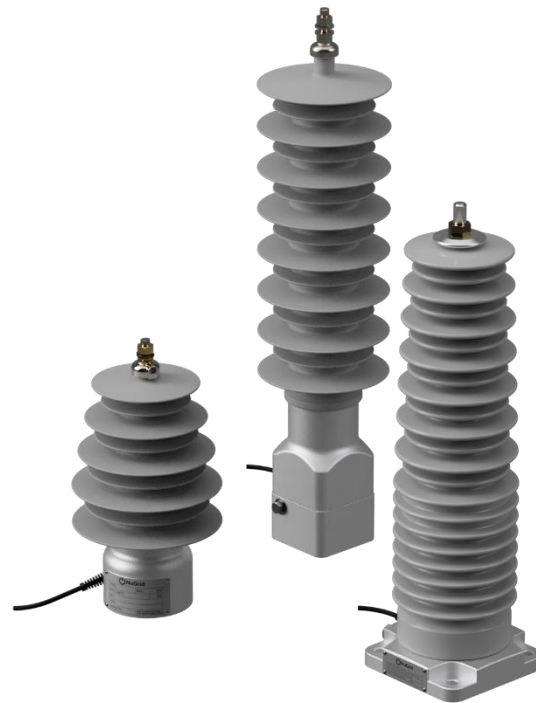
High accuracy with bandwidth to faithfully reproduce harmonics and transients.

ALL OPTICAL

Passive optics at line potential with complete galvanic isolation between instrumentation and medium voltage environment.

DIGITAL & ANALOG

61850-9-2 digital out with low energy analog as well as voltage PMU outputs.



- Passive optical primary sensor with no electronics at line potential for long term reliability and stability.
- Class 0.5 accuracy with excellent frequency response, 3-dB bandwidth up to 200 kHz available.
- Versatile digital platform with merging unit output and available voltage synchrophasors.
- Optional low voltage analog output for ease of interface to legacy instrumentation system.

The NGVS Optical Voltage Sensor is an ideal tool for adding visibility to the distribution grid or generation facilities. It features high accuracy and wide bandwidth - suitable for renewables integration allowing deep understanding of harmonic content at the point of measurement.

Each system has an advanced electronics package which sends light through optical fibers to up to 3 primary sensors, processes the returning light signals, and outputs a scaled representation of the primary voltage including all harmonics detail in both digital and analog formats. With the option of external timing signal, the NGVS can also synchronize its digital outputs with absolute timestamps for synchrophasor and merging unit applications.

The NGVS is designed for safety with complete optical galvanic isolation between the primary sensor and all secondary equipment.



NuGrid Power Corp.
info@nugridpower.com
www.nugridpower.com

© 2024 NuGrid Power Corp.
900-0183 rev A

NGVS Specifications



System

IEEE Accuracy Class	0.3, 0.6
IEC Accuracy Class	0.2, 0.5, 1.0
Rated Frequency	50/60 Hz
3-dB Bandwidth	>100 kHz ¹

Primary Sensors	NGVS015	NGVS025	NGVS036	NGVS052
Nominal Class	15 kV	25 kV	36 kV	52 kV
Dry Arc Distance	11.1" (284 mm)	11.1" (284 mm)	20.1" (511 mm)	21.3" (541 mm)
Creepage	31.1" (791 mm)	31.1" (791mm)	54.0" (1380 mm)	53.3" (1356 mm)
Impulse Level	110 kV	150 kV	200 kV	250 kV
Cantilever	500 N	500 N	500 N	1000 N
A/C 1 Min Withstand	38 kV _{rms}	50 kV _{rms}	70 kV _{rms}	95 kV _{rms}
Height	13.9" (353 mm)	13.9" (353 mm)	28.3" (719 mm)	23.6" (599 mm)
Weight	13.4 lbs (6.1 kg)	13.4 lbs (6.1 kg)	23.5 lbs (10.7 kg)	32 lbs (14.5 kg)
Fiber Optic Cable	All-dielectric connectorized cable			
Standard Cable Length	80 feet (25 m)			
Max Cable Length	3 miles (5 km)			
Operating Temp	-40°C to +50°C			

Secondary Converter

Power Input	24 V _{dc}
Analog Signal Output	+/- 10 V _{peak}
Digital Output	IEC 61850-9-2 (Sampled Values)
Voltage PMU	P or M Class up to 60/s
Timing Input	IEEE 1588 / IEC 61588 PTP or IRIG-B

Optional analog inputs provide merging unit upgrade paths

¹ Bandwidth depends on which output is used



NuGrid Power Corp.
info@nugridpower.com
www.nugridpower.com