

DOBLE ON-LINE MONITORING

# doblePRIME IDD

Bushing Monitor

## FOR ON-LINE MONITORING OF BUSHINGS AND CURRENT TRANSFORMERS

The doblePRIME IDD Bushing Monitor detects deterioration in bushings, finding abnormalities in the insulation and issuing actionable alerts. Over almost 20 years of successful monitoring Doble has identified two distinct failure modes—rapid onset and graceful decay—and have cases of averting bushing failures in both modes. The doblePRIME IDD Bushing Monitor provides leakage current and phase analysis for up to 12 bushings, measuring parameters for each bushing individually and together. This intelligent device uses its embedded Expert System to provide you with notifications and alarms based on comparisons between off-line and calculated on-line data. Designed to fit your monitoring program, the doblePRIME IDD Bushing Monitor can operate as a standalone device or as part of a doblePRIME Condition Monitoring Platform.



### FEATURES

- Capture bushing current waveforms in real time
- Calculates values for power factor and capacitance
- Records data at user specified intervals, or ad hoc
- Displays alerts locally and remotely
- Intelligent Expert System learns what is normal for your bushings
- Responds to and creates a history of subtle changes in bushing condition
- Modular system available in six or twelve channel versions
- Voltage ratio capability
- Optional armored cables & junction boxes for optimal performance in harsh environments
- Optional external voltage reference inputs

### BENEFITS

- Save costly equipment by quickly reacting to rapid deterioration warnings
- Identify problem bushings and diagnose the severity of the situation
- Plan for bushing replacements in a proactive, risk management approach
- Monitor up to 12 bushings, either individually or in sets of three
- Use as a standalone product, networked to existing SCADA system, or as part of a doblePRIME Condition Monitoring Platform
- Records both raw waveforms and derived values to allow for deep analysis
- Notifications based on latest analysis techniques—and built on Doble's decades of experience in the field

## doblePRIME IDD TECHNICAL SPECIFICATIONS

### DATA ACQUISITION

Inputs	6 or 12 channel options
Connector	Screw terminal
Measurement method	Leakage current raw waveform and relative phase
Tap Current Range	1 - 200 mA
Bushings Monitored	Up to 4 sets of 3 bushings
Bushing-Bushing Isolation	>2500 V
Bushing-Host Isolation	>2500 V
Magnitude Accuracy	± 1% of reading
Phase Accuracy	0.01 Degrees
Resolution	0.1% of input signal peak
Voltage reference	Optional input as digital or analog

### CPU, MEMORY AND BUSES

Host CPU	ARM11 700MHz
Memory	512MB RAM, 4GB Flash
Core CPU	ARM Cortex 180MHz
Memory	32MB RAM, 16MB flash

### STORAGE

4GB eMMC Flash for application and data storage

### PERIPHERALS

USB 2.0  
 Isolated RS485 (Modbus RTU)  
 10/100 BaseT Ethernet (DNP3, Modbus TCP, HTTP, WebDAV Server)  
 GPS 1PPS time sync (RS232/Fibre/IRIG)  
 Alert LED (Status, Info, Warning, Action)  
 Status Relay, 240VAC 5A (Status, Info, Warning, Action)

### ENVIRONMENTAL

Humidity	0-95% non-condensing
Operating temperature	-20°C to +50°C
Storage temperature	-20°C to +70°C

### MECHANICAL DATA

Height	200mm / 7.9 in
Width	330mm / 13.0 in
Depth	82mm / 3.2 in
Weight	2kg / 4.4 lbs
Construction	Anodized aluminium

### MOUNTING OPTIONS

Panel mount | DIN Rail | Rubber feet

### POWER SUPPLY

External supply	24 V DC @ 1 A
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An optional power adapter can be supplied to suit global mains voltage

*Ask about complete enclosure solutions with specific environment, network and power options.*

### Detect Slow or Rapid Failures

Bushings can fail slowly, giving you time to plan for replacement; they can also fail rapidly, leaving little time to act. With intelligent monitoring from Doble Engineering Company you can proactively manage risk in both situations and plan for replacements.

### Safety Starting at Installation

The doblePRIME IDD uses multiple redundant safety systems & ground paths, including transorbs & sparkgaps, to ensure transients are safely conducted to ground. During an installation, the tap cap is replaced with an IDD bushing adapter; the grounding of the tap is then maintained through the doblePRIME IDD. For harsh environments, armored cables are available, meeting full military specification protection. For high criticality applications, and for those in areas with significant switching transients, protection remote from the bushing is available.



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Specifications are subject to change without notice. Doble is ISO certified.

Doble is an ESCO Technologies Company.  
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