

DOBLE ON-LINE MONITORING

doblePRIME DELPHI MINI

Dissolved Gas Analysis Monitor

FOR SINGLE-VALUE,
ON-LINE DISSOLVED GAS
ANALYSIS IN REAL TIME

The doblePRIME Delphi Mini is a dissolved gas analysis (DGA) monitor that helps you track transformer health by providing early warning signs of problems such as overheating, insulation degradation or mechanical movement within the transformer. The doblePRIME Delphi Mini provides this valuable information in real time, second by second, through analysis of the insulating oil.

The Delphi Mini is immune to oil surges and vacuums that may affect other sensors; in addition, the Delphi Mini contains self-testing diagnostics to monitor its own performance. Designed to fit your monitoring program, the doblePRIME Delphi Mini can operate as a standalone device or as part of a doblePRIME Condition Monitoring Platform.



FEATURES

- Patented vacuum resistant membrane prevents failure during oil surges, maintenance or other activities
- Available as a composite gas monitor or hydrogen monitor
- Self-testing provides assurance of reliable results
- Single valve application—useful when there are limited valves
- Optional pump for situations where there is a possibility of poor oil circulation
- Rapid response—less than 8 minutes for 90% response to step change
- Alarms and closing contacts—relays, digital and analog outputs

BENEFITS

- Cost-effective updates on transformer health between regular DGA samples
- Alerts you when there is a sudden change in dissolved gas levels due to a developing fault within the transformer
- Notifications give you time to plan instead of reacting to a failure
- Actionable intelligence helps you determine what steps to take: maintenance, testing, load management or replacement
- Use as a standalone product, networked to existing SCADA system, or as part of a doblePRIME Condition Monitoring Platform

doublePRIME DELPHI MINI TECHNICAL SPECIFICATIONS

MEASURED VALUES (RELATIVE SENSITIVITY)

Gas	Percentage	Range
Hydrogen	100%	0-5000 ppm
If composite, Hydrogen and these additional gases:		
Carbon Monoxide*		10-20%
Acetylene*		10-20%
Ethylene*		2-8%

*Sensitivity to this gas is calculated during manufacture and may vary between sensors

ACCURACY, LIMIT OF DETECTION, RESPONSE

Accuracy	± 10% reading or ± 20 uL/L (ppm), whichever is greater	
Limit of Detection	H2 = 10 uL/L (ppm) at 99% confidence level	
Response time to 80% step change	≤ 10 minutes	
Response time to 100% step change	≤ 60 minutes	

OPERATING ENVIRONMENT

Oil Pressure at Sensor	Can withstand absolute vacuum to 0.7 Mpa (100 psi)
Outdoor Protection	Meets IEC 60529, IP 55
Vibration	Meets IEC 68-2-5
Mechanical	Brushed aluminum enclosure
EMC	Meets IEC 61000-4-2/4/5/8, Grade 4
High & Low Temperatures	Meets IEC 68-2-1 & 68-2-2
Electronics Temperature Range	-40°C to 60°C (-40°F to 140°F)

SENSOR TEMPERATURE RANGE

Gas Sensor	-20°C to 70°C (-4°F to 158°F) at sensor face, -20°C to 105°C (-4°F to 221°F) with finned attachment
Standards	CE marked RoHS compliant

INPUTS AND OUTPUTS

Standard Outputs	RS485, Modbus RTU, 2 channels 4-20mA, relays contacts
4-20 mA Channel 1	Gas Level (Scaled 0 - 5000 ppm)
4-20 mA Channel 2	Hourly Trend (Scaled 0 - 5000 ppm)
Dry Contacts	2 Rating: 5A/240VAC
Alarm Types	Normal Gas Hi Gas Hi-Hi (also indicated on front panel)
External Alarm Indicators	Green = Normal Orange = High Red = High-High
Optional Host PC Software	Support Networking Windows 2000/XP/7

ADDITIONAL DETAILS

Weight	6.4 lbs/ 2.9 kgs
Hardware & Firmware	Microprocessor, watchdog and real-time clock with embedded firmware
Popular Valve Mounting Options	DN50 (Metric) 1.5 inch NPT (English)
Data Storage	Built in short term, long term and status
Power Supply	50/60 Hz 110/220 V



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