

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.
 Doble is an ESCO Technologies Company.
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