

DELPHI



Technical Specifications

The Doble Delphi is an intelligent and robust on-line dissolved gas analysis (DGA) instrument.

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Measured Values (2 types available):

Type CG4, Gases - Composite:

Hydrogen:	
Percent	100%
Output	uL/L (ppm)
Range	0-2000
Carbon Monoxide:	
Percent	10-20%
Output	uL/L (ppm)
Acetylene:	
Percent	10-20%
Output	uL/L (ppm)
Ethylene:	
Percent	2-8%
Output	uL/L (ppm)

Type H2, Gases:

Hydrogen:	
Percent	100%
Output	uL/L (ppm)
Range	0-2000

All other gases:

Percent	<1%
Output	uL/L (ppm)

Options:

Moisture:	
Output	RS%
Range	0-100%

Accuracy, Limit of Detection, Response:

Accuracy: H2 ± 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: ≤ 7 minutes

Response time, to 90% step change: ≤ 8 minutes

Self Test: monthly sensor self test for sensor diagnostic

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: Aluminum enclosure

High and low temperature: Meets IEC 68-2-1 & 68-2-2

Electronics Temperature range: -40 to 60°C (-40 to 140°F)

Sensor Temperature Range:
Gas Sensor: -20 to 70°C (-4 to 158°F) at sensor face, -20 to 105°C (-4 to 221°F) with cooling attachment

Water sensor -40 to 180°C (-40 to 356°F)

EMC: Meets IEC61000-4-2/4/5/8, Grade 4

Standards:

 marked
RoHS compliant



Inputs and Outputs:

Standard Output:	RS485, (1200m) and Two (2) 4 to 20 mA:
Channel 1:	Gas Level (Scaled 0...2000 ppm)
Channel 2:	Gas Alarm Level (Scaled 0...2000 ppm), or
Channel 2:	Water Content, %RS (Scaled 0...100%) if it is an installed option
Optional Output:	RS485/232 or RS485/TCP-IP
Dry Contacts:	4
Rating:	5A/240VAC
Power Supply:	110 or 220 VAC +/- 15%, 50/60 Hz, 500 VA Max.
Alarm Types:	Gas level, hourly trend, daily trend, sensor temperature, sensor
Alarm Types:	Normal, Gas Hi, Gas Hi-Hi (also indicated on front panel)
External Alarm Indicators:	Green Normal Orange High Red High-High
Diagnose PC Software:	Support Networking, Windows 2000/XP/2007

Dimensions, Weights, Miscellaneous:

Enclosure Size:	(W x H x D)
Valve Mounted	272 x 350 x 272 mm 10.7 x 13.8 x 10.7 in
Stand Mounted	381 x 610 x 246 mm 15 x 24 x 9.7 in
Weight:	
Valve Mounted	≈ 15 kg / 34 lbs
Stand Mounted	≈ 20 kg / 45 lbs
Hardware and Firmware:	Microprocessor, watchdog and real-time clock with embedded firmware
Enhanced Oil Flow:	Use of micro-pump with inlet and outlet ports to force circulation
Popular Valve Mounting Options	DN50 (Metric) 2 inch NPT (English) 1.5 inch NPT (English)

Model Option Selection:

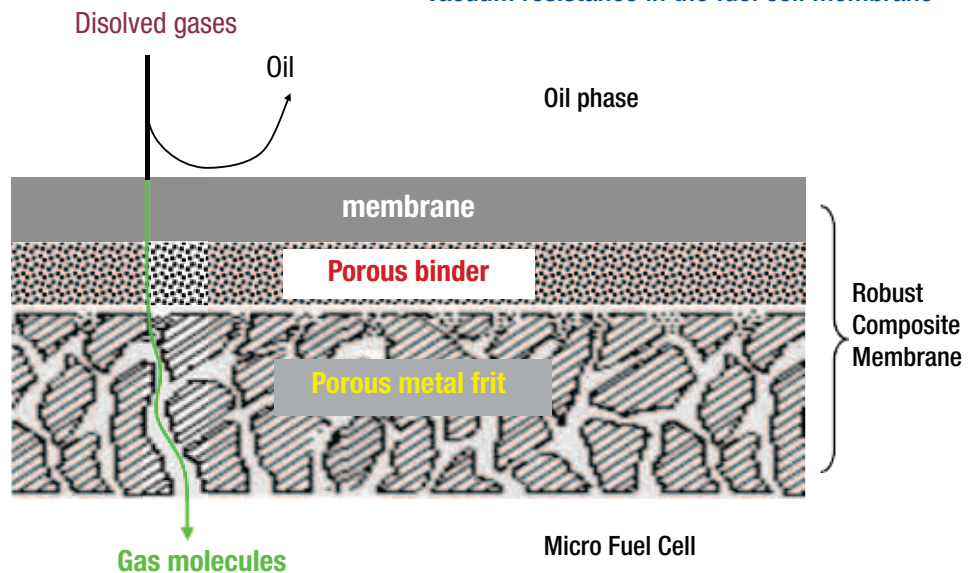
Base Unit		D
Forced Oil Flow:	Yes No	F
Valve Mounted Stand Mounted		V S
Composite Gas (H ₂ , CO, C ₂ H ₂ , C ₂ H ₄) Hydrogen only		CG H
Input Power:	110VAC 220VAC	1 2
Moisture:	Yes No	N

Example

For a unit with forced oil flow, valve mounted, no moisture, Composite gas and 110VAC operation the following ordering code would apply:

DFV	-	CG1
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Patented membrane arrangement allows for vacuum resistance in the fuel cell membrane



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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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