

COMPLIANCE TEST REPORT

for

**Chevron Products Company
Port Everglades, Florida
on**

VOC Continuous Emissions Monitoring Systems (CEMS)

Performed

Relative Accuracy Test: July 14th, 2011

Seven Day Drift Test: July 7th, 2010 through July 13th, 2011

Terminal Info:

**Chevron Product Company
1400 SE 24th Street
Ft. Lauderdale, Florida 33316
Phone: 954-764-2309
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Test Performed by:

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EXECUTIVE SUMMARY

Jordan Technologies, Inc. was contracted by Chevron Products Co. to perform a Relative Accuracy / Calibration Drift Test on the Continuous Emission Monitoring System (CEMS) at their Port Everglades, Florida Bulk Marketing Terminal. The test is broken down into two separate parts: The Relative Accuracy Test, which took place on July 8, th 2011; and the Seven Day Drift Test, which took place between July 7, 2011 and July 13, 2011.

Tony Fenton of Jordan Technologies, Inc. performed testing.

Relative Accuracy testing which compared reference method testing to the CEMS output showed the CEMS to be in compliance by meeting the less than 10% of applicable standard requirement. . The calculated value was 1.65 % which shows the CEMS to be in compliance by testing at less than 10% of the applicable standard requirement. Rata Test data is given on pages 7 and 8 of this report.

All seven days of the seven-day drift testing comply with the 2.5% drift requirement. A summary of the Seven-Day Drift Test appears on page 9 of the test report.

NOTE: The DATA for the RATA test was extracted from the (Jordan) test data strip chart recorder. This is the data that was recorded during the Compliance Test. And Chevron Products data was extracted from their strip chart recorder.

CEMS UNIT / TERMINAL DESCRIPTION

The Chevron Products terminal, located in Port Everglades, Florida is a bulk terminal for the loading and unloading of petroleum products. On site is a Carbon Adsorption / Gasoline Absorption Hydrocarbon Vapor Recovery Unit (VRU). Hydrocarbon vapors, generated from truck loading, enter the VRU into one of two carbon adsorbers. The hydrocarbon and air vapors flow through the adsorber where the bulk of the hydrocarbons are adsorbed. The air continues through the carbon adsorber and is vented to the atmosphere. While this carbon adsorber is on-line processing the hydrocarbon vapors, the other carbon adsorber is off-line being vacuum regenerated (i.e. cleaned). The purpose of regeneration is to restore the carbon to a level where it will effectively adsorb hydrocarbons again. The two carbon adsorbers alternate between adsorption and regeneration at 15-minute intervals.

When a carbon adsorber is being regenerated, the liquid ring vacuum pump desorbs the hydrocarbons from the carbon. The hydrocarbon vapors, (from the carbon adsorber) are mixed with the vacuum pump seal fluid and are discharged to the separator / absorber.

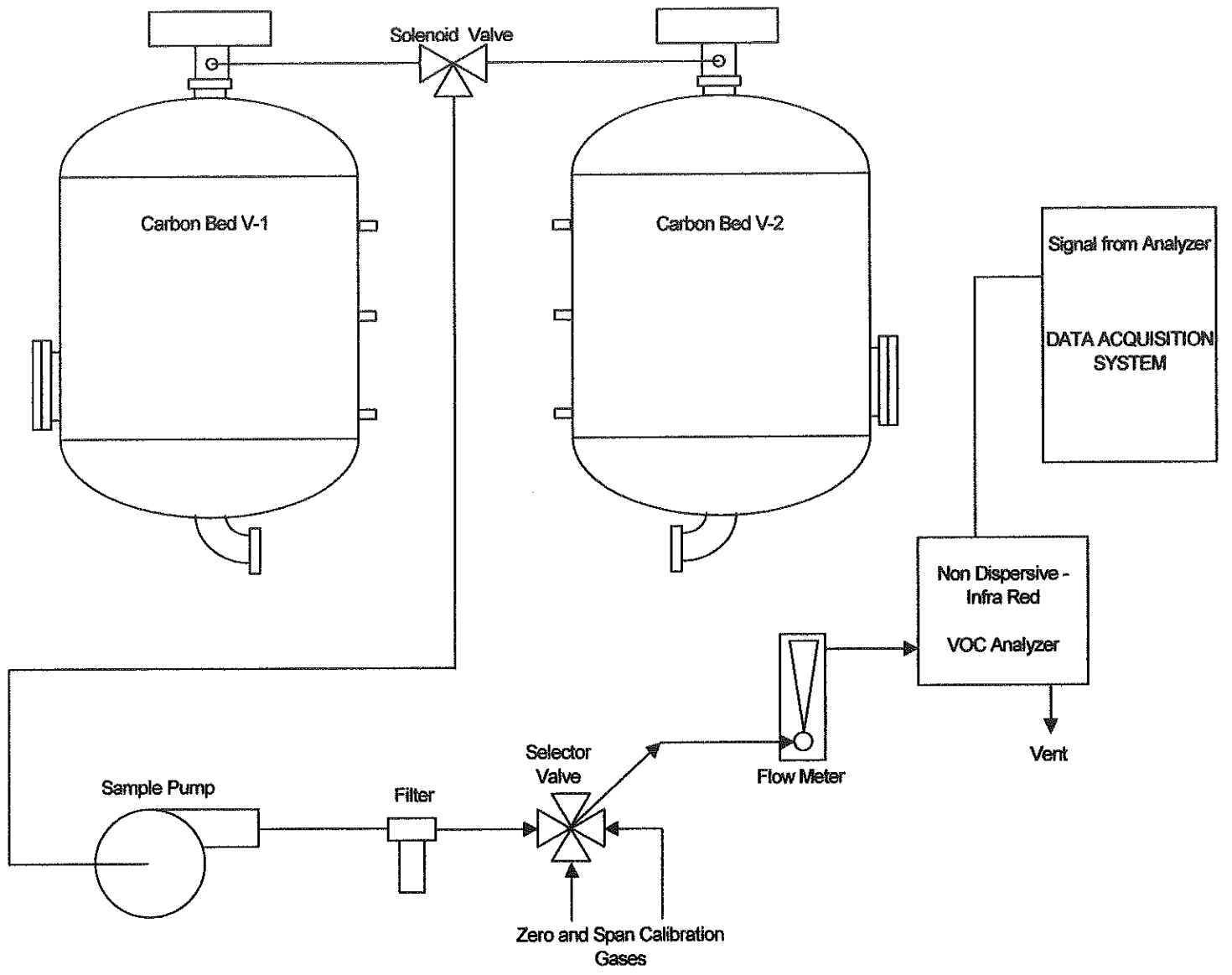
The hydrocarbons are condensed and separated from the seal fluid in the separator and are pumped back to the terminal's gasoline storage tank. Hydrocarbons that are not condensed pass up through the packed absorber tower and are contacted by a fresh stream of gasoline which absorbs most of the remaining hydrocarbons. Any hydrocarbons that are not absorbed are routed to the on-line carbon adsorber.

The Continuous Emission Monitoring System (CEMS) analyzes the concentration of volatile hydrocarbons being emitted from the VRU exhaust stacks. The system is designed for 24-hour operation.

The CEMS's PLC continuously monitors the emitted VOC concentration and imports the data into a series of calculations which translate the VOC concentration, Reid Vapor Pressure, and ambient temperature into an approximate emission rate. If the emission rate is above a set mg/L then an alarm is sounded to alert terminal personnel along with loading rack shutdown. VOC Concentration, VOC Emission Rates are recorded on PLC located in the terminal office.

The CEMS employs a vacuum pump and associated sampling apparatus (tubing, filters, pressure relief valve, flow and pressure regulators, etc.) to obtain a representative exhaust sample. The sample is introduced to a Non Dispersive Infrared Gas Analyzer (NDIR) for concentration determination and signal output from the NDIR is connected to a strip chart recorder and PLC in the terminal office.

CEMS Unit Layout



TESTING DESCRIPTION

Testing of the CEMS Unit was made up of two separate parts: The Relative Accuracy Test and the Seven Day Drift Test.

Testing was conducted using following Reference Methods found in Title 40, Part 60 of the CFR:

- | | |
|---|--|
| - Appendix A, Method 25B | VOC Emissions - Non Dispersive Infrared Analyzer method. |
| - Appendix B, Performance Specification 8 | VOC CEMS in Stationary Sources |

Seven Day Calibration Drift Test:

The purpose of the Seven Day Drift Test was to demonstrate the stability of the CEMS calibration over a period of seven (7) consecutive calendar days. No repairs or adjustments were made during this period. The calibration drift did not exceed $\pm 2.5\%$ of the span value.

Two calibration gases were used for the calibration drift test. Both gases are the normal calibration gases used on-site for routine calibration procedures. One gas is a zero grade Nitrogen gas and the other is approximately 80 to 90% of the analyzers full scale span.

The calibration gases were introduced into the sampling system directly before the analyzer, bypassing the tubing from the sample port. No adjustments were made before the drift test and any adjustments needed are conducted after the drift test is performed. At 24-hour intervals the calibration gases were introduced to the CEMS and the response was recorded and subtracted from the reference value. The reference value is the value the analyzer was corrected to the previous day. The data was recorded on a field data sheet on a daily basis.

To meet Performance Specification requirements the difference between the response value and the reference value must not exceed $\pm 2.5\%$. After data is recorded the analyzer can be adjusted to the reference gas value.

Relative Accuracy Test:

The purpose of the Relative Accuracy Test was to measure the absolute mean difference between the gas concentration determined by the CEMS and the value determined by the Reference Method. This was accomplished by calculating the 2.5% error confidence coefficient from a series of nine (minimum) data sets between the CEMS analyzer and Reference Method analyzer.

The Reference Method Analyzer, in this case - Method 25B (NDIR), was connected parallel to the CEMS analyzer. The reference analyzer has its own sample train and is calibrated through the entire sample collection systems. The voltage output of both analyzers is sent to a strip chart recorders for recording as hard data. The following gas values were used to document calibration of the Reference Method analyzer.

Zero Span Gas	Zero Grade Nitrogen	0.00 %
Low Span Gas	Propane/Balance Nitrogen	1.59%
Mid Span Gas	Propane/Balance Nitrogen	2.54%
High Span Gas	Propane/Balance Nitrogen	4.63%

TESTING DESCRIPTION (CONTINUED)

After the reference analyzers is calibrated, the CEMS was placed on-line and nine (9) test runs were performed comparing concentration readings from the CEMS and Reference Method analyzers. Test runs were twenty-one minutes in duration and both analyzers were monitored and concentration readings manually recorded every sixty (sixty) seconds. This produced Twenty One (21) readings each of the CEMS and Reference Method analyzers for each test run. These readings were averaged and one set of concentrations per test run were obtained. This data was retrieved from the actual Compliance Test data.

These data sets were used to calculate the relative accuracy using the formulas contained in 40 CFR, Part 60, Appendix B, Performance Specification 2, Section 8.

The relative accuracy of the CEMS must be no greater than 20% of the mean value of the reference method test data, or 10 % of the applicable standard to be considered valid.

TEST EQUIPMENT for VRU's

<u>Quantity</u>	<u>Item</u>
1	Strip Chart Recorder: Yokogawa DX1000n Paperless Recorder
1	VOC Gas Analyzes: Horiba VIA 510 HC Non Dispersive Infra Red Analyzer
3	Propane Calibration Gases - Primary Standard 1 - 25 - 35% Full Scale 1 - 45 - 55% Full Scale 1 - 80 - 90% Full Scale
1	Zero Grade Nitrogen Gas

Chevron Products Port Everglades - July 14, 2011 - CEMS Relative Accuracy Test

Number	Run Number 1		Run Number 2		Run Number 3		Run Number 4		Run Number 5		Run Number 6		Run Number 7		Run Number 8		Run Number 9	
	REF	CEM	REF	CEM	REF	CEM	REF	CEM	REF	CEM	REF	CEM	REF	CEM	REF	CEM	REF	CEM
1.00	0.01	0.01	0.01	0.01	0.00	0.01	0.00	0.01	0.00	0.02	0.01	0.01	0.00	0.02	0.01	0.01	0.02	0.03
2.00	0.01	0.02	0.01	0.02	0.00	0.01	0.00	0.01	0.00	0.02	0.01	0.00	0.00	0.02	0.01	0.01	0.02	0.03
3.00	0.01	0.02	0.01	0.02	0.06	0.03	0.01	0.02	0.01	0.03	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02
4.00	0.01	0.02	0.01	0.02	0.02	0.03	0.01	0.02	0.01	0.03	0.01	0.00	0.04	0.01	0.01	0.01	0.03	0.02
5.00	0.01	0.02	0.01	0.02	0.04	0.03	0.01	0.03	0.01	0.02	0.01	0.01	0.01	0.00	0.01	0.01	0.03	0.02
6.00	0.01	0.02	0.01	0.02	0.02	0.02	0.01	0.03	0.01	0.02	0.01	0.01	0.02	0.01	0.01	0.02	0.00	0.01
7.00	0.02	0.02	0.02	0.02	0.02	0.00	0.01	0.03	0.01	0.03	0.01	0.01	0.01	0.01	0.01	0.02	0.01	0.01
8.00	0.01	0.02	0.01	0.02	0.02	0.00	0.01	0.03	0.01	0.02	0.01	0.00	0.02	0.00	0.01	0.02	0.00	0.00
9.00	0.00	0.03	0.00	0.03	0.01	0.00	0.01	0.03	0.01	0.03	0.01	0.00	0.00	0.00	0.01	0.02	0.01	0.00
10.00	0.00	0.03	0.00	0.03	0.00	0.00	0.01	0.03	0.01	0.02	0.01	0.01	0.00	0.00	0.01	0.02	0.04	0.00
11.00	0.01	0.03	0.01	0.03	0.02	0.01	0.00	0.03	0.02	0.00	0.01	0.01	0.01	0.01	0.01	0.02	0.04	0.00
12.00	0.02	0.03	0.02	0.03	0.01	0.01	0.03	0.04	0.00	0.00	0.02	0.01	0.01	0.01	0.01	0.01	0.02	0.00
13.00	0.03	0.01	0.03	0.01	0.01	0.01	0.03	0.03	0.02	0.00	0.01	0.01	0.01	0.01	0.01	0.00	0.01	0.00
14.00	0.00	0.00	0.00	0.00	0.01	0.01	0.03	0.04	0.01	0.01	0.00	0.02	0.01	0.01	0.01	0.01	0.01	0.00
15.00	0.03	0.00	0.03	0.00	0.01	0.01	0.01	0.02	0.01	0.01	0.00	0.02	0.01	0.02	0.01	0.01	0.01	0.00
16.00	0.02	0.00	0.02	0.00	0.01	0.00	0.01	0.00	0.00	0.02	0.01	0.02	0.01	0.02	0.01	0.01	0.00	0.00
17.00	0.04	0.00	0.04	0.00	0.01	0.01	0.00	0.00	0.00	0.03	0.01	0.02	0.01	0.01	0.01	0.01	0.01	0.00
18.00	0.04	0.00	0.04	0.00	0.01	0.01	0.02	0.00	0.00	0.04	0.01	0.02	0.01	0.01	0.01	0.01	0.01	0.00
19.00	0.01	0.01	0.01	0.01	0.03	0.01	0.03	0.00	0.01	0.04	0.01	0.02	0.01	0.01	0.01	0.01	0.01	0.01
20.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.03	0.01	0.03	0.00	0.01	0.01	0.02	0.01	0.01
21.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.03	0.01	0.02	-0.01	0.00	0.01	0.02	0.01	0.01
SUM	0.31	0.30	0.31	0.30	0.26	0.42	0.42	0.18	0.44	0.22	0.24	0.24	0.21	0.21	0.18	0.27	0.32	0.18
Averages	0.01	0.01	0.01	0.01	0.01	0.02	0.02	0.01	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.01
Differences	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01

Reference Method Data
 Average of CEMS Data
 Difference

0.01
 0.01
 0.00

10.40 PM

Chevron Products Port Everglades - July 14, 2011 - CEMS Relative Accuracy Test

<u>Run Number</u>	<u>Difference of Values (CEMS - Reference)</u>	<u>Differences Squared</u>
1	0.00029	0.0000000816
2	0.00029	0.0000000816
3	0.00900	0.0000810000
4	-0.00774	0.0000598781
5	-0.01260	0.0001586400
6	-0.00079	0.0000006173
7	0.00010	0.0000000091
8	-0.00429	0.0000183673
9	0.00638	0.0000407166
Average	-0.00104	
Sum of the Differences	-0.00936	0.0003593917

From CFR 40 Part 60, Appendix B Performance Specification 2:

Equation 2-1: Calculate the arithmetic mean of the difference, d , of the nine data sets.

$$d_{avg} = \frac{1}{n} \sum_{i=1}^n d_i$$

$$d_{avg} = -0.00104$$

Equation 2-2: Calculate the standard deviation, S_d .

$$S_d = \sqrt{\frac{\sum_{i=1}^n d_i^2 - \frac{\left(\sum_{i=1}^n d_i\right)^2}{n}}{n-1}}$$

$$S_d = 0.00661$$

Equation 2-3: Calculate the 2.5 percent error confidence coefficient, CC.

$$CC = t_{0.975} \left(\frac{S_d}{\sqrt{n}} \right) \quad \text{where } t_{0.975} = 2.306$$

$$CC = 0.00508$$

Equation 2-4: Calculate the relative accuracy of the data.

$$RA = \frac{\left| \overline{d} \right| + \left| CC \right|}{AppStd} \times 100$$

where Applicable Standard is 0.37%

RA =	1.65446 %
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SEVEN DAY CALIBRATION DRIFT TEST

Chevron Products Port Everglades - July 14, 2011 - CEMS Relative Accuracy Test

ZERO GAS

Day	Date	Time	Bottle Value	CEMS Reading	Difference	Percent of Span
1	7/7/2011	14:17	0.00	0.02	0.00	0.0
2	7/8/2011	14:17	0.00	0.02	0.00	0.0
3	7/9/2011	14:17	0.00	0.02	0.00	0.0
4	7/10/2011	14:17	0.00	0.02	0.00	0.0
5	7/11/2011	14:17	0.00	0.02	0.00	0.0
6	7/12/2011	14:17	0.00	0.02	0.00	0.0
7	7/13/2011	14:17	0.00	0.02	0.00	0.0

Zero Gas Information: Zero Grade Nitrogen

SPAN GAS

Day	Date	Time	Bottle Value	CEMS Reading	Difference	Percent of Span
1	7/7/2011	14:42	4.50	4.43	-0.07	-1.40
2	7/8/2011	14:42	4.50	4.59	0.09	1.80
3	7/9/2011	14:42	4.50	4.59	0.09	1.80
4	7/10/2011	14:42	4.50	4.46	-0.04	-0.80
5	7/11/2011	14:42	4.50	4.46	-0.04	-0.80
6	7/12/2011	14:42	4.50	4.46	-0.04	-0.80
7	7/13/2011	14:42	4.50	4.45	-0.05	-1.00

Span Gas Information: 5.0% % Propane / Balance Nitrogen Bottle # as-25548

Manufacturer of Analyzer: Drager Polytron Serial# 8312979

CEMS Analyzer Span Value: 5.00 % as Propane

Names of Test Personnel: Tony Fenton - Jordan Technologies, Inc.

Appendix A
Field Test Data Sheets

OUTLET CALIBRATION GAS INFORMATION FOR 7/14/11

Outlet analyzer range is 0 - 5%

Allowable range is + or - 5% of actual span gas concentration

Low range span gas concentration	1.59 %	Cylinder	FF-34583
Mid range span gas concentration	2.54 %	Cylinder	FF-24216
Hi range span gas concentration	4.63 %	Cylinder	FF-29457
Zero span analyzer reading	0.00 %		
Low range analyzer reading	1.62 %		
Low range analyzer error	1.89 %		
Mid range analyzer reading	2.52 %		
Mid range analyzer error	-0.79 %		
Hi range analyzer reading	4.61 %		
Hi range analyzer error	-0.43 %		

Appendix B

Test Equipment Literature

HORIBA ENVIRONMENTAL AND PROCESS INSTRUMENTS

Products Contact Financing Service Company News

VIA-510 Gas Analyzer

Features

- Selectable response time
- Selectable outputs: 0–1 VDC or 4–20 mA
- Digital outputs indicate malfunctions or calibration failure)
- Measures CO, CO₂, NO_x, SO₂, CH₄, C₂H₄, and NO₂; others upon request



Overview

The VIA-510 series of general-purpose gas analyzers provide continuous monitoring of concentrations of the specific sample gas. The analyzers can be operated from controls on the front panel or by commands from a remote computer. Measurement results are displayed on the front panel and are available to remote data logging systems through an industry-standard interface.

The VIA-510 series can be used for a wide variety of analyses and tests, such as industrial process control and composition analysis, environment-related atmospheric and fixed-source emissions monitoring, and automobile emission analysis.

These analyzers use the infrared absorption method which offers superior sensitivity, selectivity, and stability.

They are compact and compatible with a variety of OEM analysis equipment.

A high level of sensitivity is achieved through the use of a dual-beam NDIR analysis method. Horiba's patented chopper motor assures continuous long-term stable monitoring. The analysis mechanism and the amplifier are combined in a single unit. The highly accurate performance makes the analyzers suitable for process monitoring and control.

Specifications

Standard Ranges

Gas	Minimum	Maximum
Carbon monoxide	0-50 ppm	0-100%

(CO)		
Carbon dioxide (CO ₂)	0-50 ppm	0-100%
Nitrogen monoxide (NO)	0-100 ppm	0-100%
Sulfur dioxide (SO ₂)	0-100 ppm	0-100%
Methane (CH ₄)	0-100 ppm	0-100%
Ethene (C ₂ H ₄)	0-100 ppm	0-100%
Nitrous Oxide (N ₂ O)	0-100 ppm	0-100%

Performance

Lowest detection limit:	1.0 ppm
Repeatability:	± 1% of full-scale
Response time:	Selectable
Zero drift:	< 1% (full scale) per day
Span drift:	< 2% (full scale) per week

HORIBA

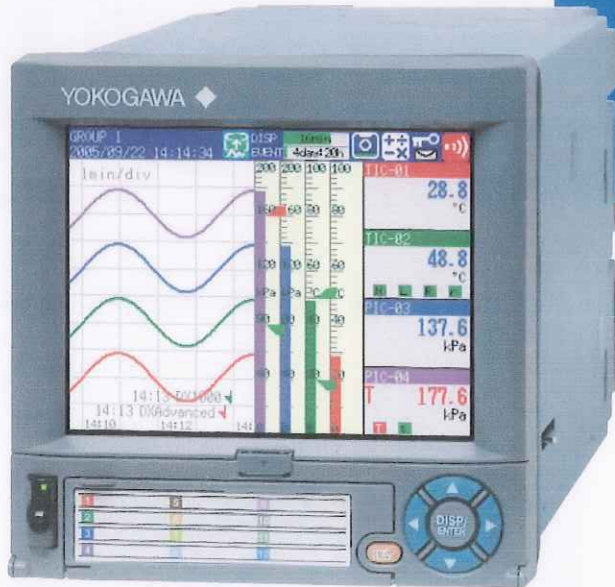
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DXAdvanced[®]

DXAdvanced DX1000N Removable Chassis Model

A removable chassis model has been added to the Yokogawa's latest DXAdvanced Video Graphic Recorder featuring easy maintenance.



The new DXAdvanced DX1000N features an inner chassis that can be removed from the case via the front panel of the instrument. This provides access to all of the internal components of the DX1000N from the control panel without having to access the rear of the unit or disturb any of the field and power supply wiring. Functionality, appearance, and panel cutout dimensions are the same as those of the standard DX1000.

Advanced Performance

- High-speed measurement

- * High-speed measurement of up to 25 ms (DX1002N or DX1004N using fast sampling mode)

Advanced Memory

- High Capacity Internal Memory and Removable Media

- * Supports up to 200 MB of non-volatile, internal flash memory for reliable, long-term data storage
- * All models include a CompactFlash drive. Rugged and readily available CompactFlash cards (CF cards) serve as the removable media, and are available as optional accessories.
- * Supports USB Flash drive with optional USB interface.

Advanced Display and User Interface Functions

- Easy configuration and menu navigation

- * USB keyboard & remote control options for text entry
- * Versatile, standard display modes
- * Jump to your favorite screen with the Favorite key

Advanced Connectivity

- Powerful Ethernet connectivity and convenience functions

- * Standard Ethernet interface
- * Includes Web server and E-mail messaging functions, time synchronization (SNTP), automatic network setup (DHCP), file transfer (FTP) and more.

Bulletin 04L43B01-01E



Advanced Reliability and Security

- Rugged construction and data security

- * Water and dust-proof front panel (complies with IEC529-IP65 and NEMA No.250 TYPE4*) *Except for external icing test.
- * A mechanical lock with removable key is provided to securely latch the front panel door. This forbids access to the power switch and removable media.
- * Reliable, non-volatile flash memory is used for internal data storage operations with ECC* function. * ECC: Error Check and Correct

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DXAdvanced DX1000N Removable Chassis Model

Application Software (DAQSTANDARD for DXAdvanced)

Every DXAdvanced unit includes a DAQSTANDARD software, which is used for all data file display and reporting functions, including printing and conversion to common file formats. In addition, it includes a configuration tool that is used to fully configure the unit in both on-line (via Ethernet communications) and off-line (saving and loading files from the media) modes. Configuration files can also be archived on the PC.



Models and Suffix Codes

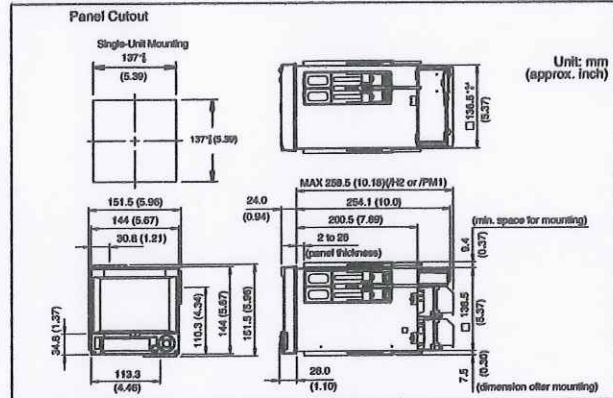
Model code	Suffix code	Option code	Description
DX1002N			2 ch, 125 ms (Fast sampling mode: 25 ms)
DX1004N			4 ch, 125 ms (Fast sampling mode: 25 ms)
DX1006N			6 ch, 1 s (Fast sampling mode: 125 ms)
DX1012N			12 ch, 1 s (Fast sampling mode: 125ms)
Internal memory	-1		Standard memory (80 MB)
	-2		Large memory (200 MB)
External media		-4	CF card (with media)
Display language		-2	English/German/French, degF, DST (summer/winter time)
Options		/A1	Alarm output 2 points *1
		/A2	Alarm output 4 points *1
		/A3	Alarm output 6 points *1 *2
		/C2	RS-232 interface *3
		/C3	RS-422A/485 interface *3
		/F1	FAIL/Status output *2
		/H2	Clamped input terminal (detachable)
		/M1	Mathematical functions
		/N1	Cu10, Cu25 RTD input/3 leg isolated RTD
		/N2	3 leg isolated RTD *4
		/N3	Extended input type (PR40-20, Pt50, etc.)
		/P1	24 VDC/AC power supply
		/R1	Remote control
		/TPS2	24VDC transmitter power supply (2 loops) *5
		/TPS4	24VDC transmitter power supply (4 loops) *6
	/KB1	Easy text entry (with input terminal) *7 *8	
	/KB2	Easy text entry (without input terminal) *7	
	/USB1	USB interface	
	/PM1	Pulse input (including remote control and mathematical functions) *9	
	/CC1	Calibration correction function	

*1 /A1, /A2 and /A3 cannot be specified together. *2 /A3 and /F1 cannot be specified together.
 *3 /C2 and /C3 cannot be specified together. *4 /N2 can be specified for only DX1006N and DX1012N.
 *5 In case that /TPS2 is specified, /TPS4, /A2, /A3 or /F1 cannot be specified together.
 *6 In case that /TPS4 is specified, /TPS2, /A1, /A2, /A3 or /F1 cannot be specified together.
 *7 /KB1 and /KB2 cannot be specified together. *8 In case that /KB1 is specified, remote input terminal (438227) is included.
 *9 In case that /PM1 is specified, /A3, /M1, /R1, /TPS2 or /TPS4 cannot be specified. And combination of /A2/F1 cannot be specified together.

Accessories

Product	Model code (part number)	Specification
Shunt resistor (for screw input terminal)	415820	250Ω±0.1%
	415821	100Ω±0.1%
	415822	10Ω±0.1%
Shunt resistor (for clamped input terminal)	438920	250Ω±0.1%
	438921	100Ω±0.1%
	438922	10Ω±0.1%
CF card adapter	772090	-
	772091	128 MB
CF card	772092	256 MB
	772093	512 MB
	772094	1 GB
Mounting bracket	B9900BX	-
Door lock key	B8706FX	-
Remote control terminal	438227	For /KB1, /KB2 option

Dimensions



For more details on all functions, see the DX1000/DX2000 catalog (Bulletin 04L1B01-01E).
 For more details on all specifications, see the DX1000N General Specifications (GS 04L43B01-01E).

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Application Software

Model code	Description	OS
DXA120	DAQSTANDARD for DXAdvanced	Windows 2000/XP

A Yokogawa Commitment to Industry

vigilance



What does Yokogawa vigilance mean to the future of your business? **Quality.** Through products that are built from the ground up and tested to the last hour, you're ensured continuous operation and more uptime. **Innovation.** Your business will benefit from new insights and capabilities, bringing true predictability to your process. **Foresight.** As the market changes, you'll have solutions that give you the continuity and flexibility to plan ahead and grow. Our partners know the difference. With Yokogawa, you can count on a lifetime of plant efficiency, from instrumentation to operation support. Let us be vigilant about your business.

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Vig-RS-1E

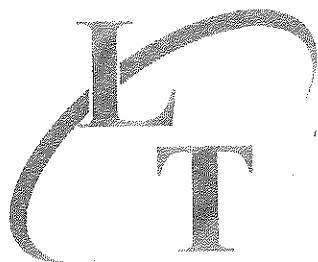
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Appendix C

Gas Cylinder Certifications



LIQUID TECHNOLOGY CORPORATION
"INDUSTRY LEADER IN SPECIALTY GASES"

1-25-11

Certificate of Analysis
- EPA PROTOCOL GAS -

Customer: Welders Supply Company (Louisville, KY)
Date: May 24, 2010
Delivery Receipt: DR-29400
Product: 4.50% Propane/Nitrogen - EPA PROTOCOL
Final Analysis Date: May 17, 2010
Expiration Date: May 17, 2013 **DO NOT USE BELOW 150 PSIG**

Cylinder Data

Cylinder Serial Number: FF-29457 Cylinder Outlet: CGA 350
Cylinder Volume: 30 Cubic Feet Cylinder Pressure: 2000 psig, 70°F
Expiration Date: May 17, 2013

Analytical Data

EPA PROTOCOL, Section No. 2.2, Procedure G-1

Replicate Concentrations

Propane: 4.63% +/- 0.046%

Nitrogen: Balance

Reference Standard(s):

SRM/GMIS: GMIS
Cylinder Number: CC-70316
Concentration: 3.52% Propane/Nitrogen
Expiration Date: June 24, 2011

Certification Instrumentation

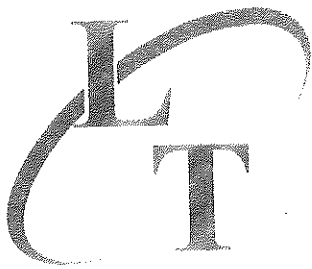
Component: Propane
Make/Model: Agilent 7890A
Serial Number: CN10736166
Principal of Measurement: GC-FID
Last Calibration: April 26, 2010

Analytical uncertainty and NIST Traceability are in compliance with EPA-600/R-97/121.

Certified by:

Mike Duncan

"UNMATCHED EXCELLENCE"



LIQUID TECHNOLOGY CORPORATION
"INDUSTRY LEADER IN SPECIALTY GASES"

Certificate of Analysis
- EPA PROTOCOL GAS -

Customer: Welders Supply Company (Louisville, KY)
Date: April 25, 2011
Delivery Receipt: DR-37004
Product: 2.50% Propane/Nitrogen - EPA PROTOCOL
Final Analysis Date: April 12, 2011
Expiration Date: April 12, 2014 **DO NOT USE BELOW 150 PSIG**

Cylinder Data
Cylinder Serial Number: FF-24216 Cylinder Outlet: CGA 350
Cylinder Volume: 30 Cubic Feet Cylinder Pressure: 2000 psig, 70°F
Expiration Date: April 12, 2014

Analytical Data
EPA PROTOCOL, Section No. 2.2, Procedure G-1

Replicate Concentrations
Propane: 2.54% +/- 0.025%
Nitrogen: Balance

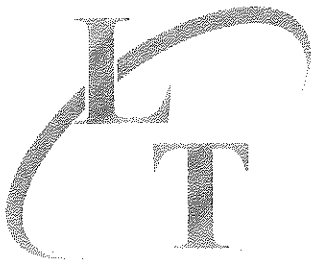
Reference Standard(s):
SRM/GMIS: GMIS
Cylinder Number: CC-116013
Concentration: 2.465% Propane/Nitrogen
Expiration Date: 05/17/12

Certification Instrumentation
Component: Propane
Make/Model: Agilent 7890A
Serial Number: CN10736166
Principal of Measurement: GC-FID
Last Calibration: April 01, 2011

Analytical uncertainty and NIST Traceability are in compliance with EPA-600/R-97/121.

Certified by: 
Adam Strickland

"UNMATCHED EXCELLENCE"



LIQUID TECHNOLOGY CORPORATION

"INDUSTRY LEADER IN SPECIALTY GASES"

Certificate of Analysis - EPA PROTOCOL GAS -

Customer Welders Supply Co (Louisville, KY)
Date March 14, 2011
Delivery Receipt DR-36591
Gas Standard 1.50% Propane/Nitrogen - EPA PROTOCOL
Final Analysis Date March 04, 2011
Expiration Date March 04, 2014

Component Propane
Balance Gas Nitrogen

Analytical Data: **DO NOT USE BELOW 150 psig**
EPA Protocol, Section No. 2.2, Procedure G-1

Reported Concentrations
Propane: 1.59% +/- 0.01%
Nitrogen: Balance

Reference Standards:

SRM/GMIS:	GMIS	GMIS
Cylinder Number:	CC-166394	CC-116013
Concentration:	9709.18 ppm Propane/Nitrogen	2.465% Propane/Nitrogen
Expiration Date:	07/21/11	05/07/12

Certification Instrumentation

Component: Propane
Make/Model: Agilent 7890A
Serial Number: CN10736166
Principal of Measurement: GC-FID
Last Calibration: March 03, 2011

Cylinder Data

<u>Cylinder Serial Number:</u>	FF-34583	<u>Cylinder Outlet:</u>	CGA 350
<u>Cylinder Volume:</u>	29 Cubic Feet	<u>Cylinder Pressure:</u>	1950 psig, 70°F
<u>Expiration Date:</u>	March 14, 2014		

Analytical Uncertainty and NIST Traceability are in compliance with EPA-600/R-97/121.

Certified by:


Adam Strickland

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Appendix D

Strip Chart Recordings

- **Reference Method / CEMS Analyzer Chart Recording**

CHEVRON PRODUCTS - RATA TEST - PORT EVERGLADES, FL - 7/14/11

