

# CEMTREX

## T100 Continuous SO2 Analyzer Offer CEMS BID DOCUMENT

Submitted To: State of West Virginia  
Department of Administration Purchasing  
Division

06/23/14 10:07:07AM  
West Virginia Purchasing Division

Project RFQ No.: DEP16574  
Due Date: 06/26/14 at 1:30PM

Our Offer No.: PM14-9510

Offer Submitted on: 20 June 2014

Offer Submitted by: Ronald Monte

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Specifications & Details for RFQ DEP16574

State of WY Ref No: DEP16574  
Cemtrex Ref: PM14-9510  
Date: 20 June 2014

Frank Whittaker  
Buyer Supervisor  
304-558-2316  
[Frank.M.Whittaker@wv.gov](mailto:Frank.M.Whittaker@wv.gov)

In response to the State of West Virginia Department of Administration Purchasing Division Solicitation Number "DEP16574", Cemtrex is proposing the following:

**Qty 3 Teledyne Model T100 UV Fluorescence SO2 Analyzer**

- Ranges: 0-50 ppb to 0-20 ppm (user selectable)
- Includes: Internal Pump, Particulate Filter
- 120VAC, 60 Hz, Single Phase
- Analog Outputs: 10V, 5V, 1V, 0.1V DC, selectable
- Product manuals on CD
- Two Year Standard Warranty

**Qty 3 Expendables Kit for Analyzer, One year operation**

**Qty 3 USB Com Port**

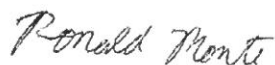
**Qty 6 Kit, UV Lamp, w/Adapter (BIR)**

**Qty 12 Akit, Replacement (3187)214NM Filter (BF)**

The above complies with the "Specifications" section of DEP16574. Along with our proposal, please find enclosed the T100 datasheet for your viewing and reference. Cemtrex is pleased to submit our proposal and please do contact us if you have any questions or to discuss this opportunity further.

Assuring our best services as always,

Yours truly,



Ronald Monte, Marketing & Sales Assistant

Cemtrex Inc  
19 Engineers Lane · Farmingdale, NY 11735 · USA  
Tel: (631) 756-9116 · Fax: (631) 420-8052  
www.cemtrex.com E-mail: [sales@cemtrex.com](mailto:sales@cemtrex.com)



## Cemtrex Profile

Cemtrex Inc ([www.cemtrex.com](http://www.cemtrex.com)) (OTC: CTEI.OB) is a Ducon Group Company ([www.ducon.com](http://www.ducon.com)) serving the air pollution control and monitoring market since 1938. Cemtrex through various M&A from the 1990s, have grown to provide state-of-the art process and emissions monitoring systems, Instrumentation & Control services and EPA Emissions Reporting systems apart from our offerings in other countries like the Middle East, India, South America and China.

Cemtrex acquired KVB Enertec a subsidiary of General Electric in 1990 to expand the Laser opacity / dust monitoring product line for EPA COMS Reporting. Our partnership with Mercury Instruments in Germany has enabled us to offer the Mercury CEMS for the CAMR and various other Mercury control applications in the US and worldwide. Our CEMS line provides complete system integration and services for 40CR60 and 75 based regulations for Acid Rain program and Nox Budget facilities. We have installed our COMS and CEMS in over 500 facilities in the US and word wide and most of our US clients are reporting EPA emissions and complying with the regulations.

Cemtrex CDM [Clean Development Mechanism] Division provides Carbon Credit Management services for UNFCCC type of projects worldwide and we are an active member of Chicago Climate Exchange [CCX]. We have installed few MDCR [Methane Destruction and Capture Reactor] for coal bed methane applications.

Our Parent company Ducon Technologies has been in this business for the last several decades and our dry scrubbers can be found in college textbook illustrations. Ducon has over 10,000 installations since 1938 with a wide range of APC systems from scrubbers, FGD, SCR, Bag House, ESP and Acid gas removal systems.

Cemtrex Inc. is a worldwide market leader in manufacturing and selling the most advanced instruments, equipment and systems for emissions monitoring and control for the industry. The Company's products are sold to power plants, refineries, chemical plants, cement plants and other industries, including federal and state governmental agencies.



State of West Virginia  
 Department of Administration  
 Purchasing Division  
 2019 Washington Street East  
 Post Office Box 50130  
 Charleston, WV 25305-0130

**Solicitation**

NUMBER
DEP16574

PAGE
1

ADDRESS CORRESPONDENCE TO ATTENTION OF:
FRANK WHITTAKER 304-558-2316

RFQ COPY  
 TYPE NAME/ADDRESS HERE

VENDOR

**Centrex, Inc.**  
 19 Engineers Lane  
 Farmingdale, NY 11735 USA  
 Tel: 631-756-9116 Fax: 631-420-4985

SHIP TO

ENVIRONMENTAL PROTECTION  
 DEPARTMENT OF  
 OFFICE OF AIR QUALITY  
 601 57TH STREET  
 CHARLESTON, WV  
 25304 304-926-0499

DATE PRINTED
05/29/2014

BID OPENING DATE 06/26/2014 BID OPENING TIME 1:30PM

LINE	QUANTITY	UOP	CAT. NO.	ITEM NUMBER	UNIT PRICE	AMOUNT
THE WEST VIRGINIA PURCHASING DIVISION IS SOLICITING BIDS ON BEHALF OF THE WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION, DIVISION OF AIR QUALITY (AG) TO PURCHASE (3) CONTINUOUS SULFUR DIOXIDE (S02) ANALYZERS, TELEDYNE ADVANCED POLLUTION INSTRUMENTATION MODEL T100 OR EQUIVALENT.						
0001	3	EA		885-95	\$15,408.05	\$46,224.15
				S02 SULFUR DIOXIDE ANALYZERS		
0002	1	LS		962-24-00-000	\$200	\$200
				FREIGHT/SHIPPING		
***** THIS IS THE END OF RFQ DEP16574 ***** TOTAL:						\$46,424.15

SIGNATURE <i>Ronald Monte</i>	TELEPHONE 631-756-9116	DATE 06/19/14
TITLE Marketing & Sales Assistant	FEIN 30-0399914	ADDRESS CHANGES TO BE NOTED ABOVE

WHEN RESPONDING TO SOLICITATION, INSERT NAME AND ADDRESS IN SPACE ABOVE LABELED 'VENDOR'

# DEP16574

## Bid Schedule

The WVDEP reserves the right to request additional information and supporting documentation regarding unit prices when the unit price appears to be unreasonable.

Item No.	Quantity	Unit	Description	Unit Price	Amount
1	3	EA	Continuous Sulfur Dioxide (SO <sub>2</sub> ) Analyzers, Teledyne Advanced Pollution Instrumentation model T100 or equivalent	\$15,408.05	\$46,224.15
2	1	LS	Freight/Shipping	\$200	\$200
			<b>Total</b>		\$46,424.15

Company

Name: Cemtrex, Inc.

Signature: Ronald Monte

Date: 06/19/14

**CERTIFICATION AND SIGNATURE PAGE**

By signing below, I certify that I have reviewed this Solicitation in its entirety, understand the requirements, terms and conditions, and other information contained herein; that I am submitting this bid or proposal for review and consideration; that I am authorized by the bidder to execute this bid or any documents related thereto on bidder's behalf; that I am authorized to bind the bidder in a contractual relationship; and that to the best of my knowledge, the bidder has properly registered with any State agency that may require registration.

**Cemtrex, Inc.**

(Company)

*Ronald Monte*

(Authorized Signature)

Ronald Monte, Marketing & Sales Assistant

(Representative Name, Title)

**631-756-9116 631-420-4985**

(Phone Number)

(Fax Number)

**06/19/14**

(Date)

**ADDENDUM ACKNOWLEDGEMENT FORM**  
**SOLICITATION NO.: DEP16574**

**Instructions:** Please acknowledge receipt of all addenda issued with this solicitation by completing this addendum acknowledgment form. Check the box next to each addendum received and sign below. Failure to acknowledge addenda may result in bid disqualification.

**Acknowledgment:** I hereby acknowledge receipt of the following addenda and have made the necessary revisions to my proposal, plans and/or specification, etc.

**Addendum Numbers Received:**

(Check the box next to each addendum received)

- |   |  |
|---|--|
| <input type="checkbox"/> Addendum No. 1 | <input type="checkbox"/> Addendum No. 6  |
| <input type="checkbox"/> Addendum No. 2 | <input type="checkbox"/> Addendum No. 7  |
| <input type="checkbox"/> Addendum No. 3 | <input type="checkbox"/> Addendum No. 8  |
| <input type="checkbox"/> Addendum No. 4 | <input type="checkbox"/> Addendum No. 9  |
| <input type="checkbox"/> Addendum No. 5 | <input type="checkbox"/> Addendum No. 10 |

I understand that failure to confirm the receipt of addenda may be cause for rejection of this bid. I further understand that any verbal representation made or assumed to be made during any oral discussion held between Vendor's representatives and any state personnel is not binding. Only the information issued in writing and added to the specifications by an official addendum is binding.

**Cemtrex, Inc.**

\_\_\_\_\_  
Company

*Ronald Monte*

\_\_\_\_\_  
Authorized Signature

**06/19/14**

\_\_\_\_\_  
Date

NOTE: This addendum acknowledgment should be submitted with the bid to expedite document processing.



## COMPANY PROFILE

Cemtrex, Inc. (OTC: CTEI) is a leading environmental engineering company in Farmingdale, New York. Established in 2000, Cemtrex has emerged as a worldwide market leader in developing the most advanced instruments for emission monitoring for manufacturing and utility industries.

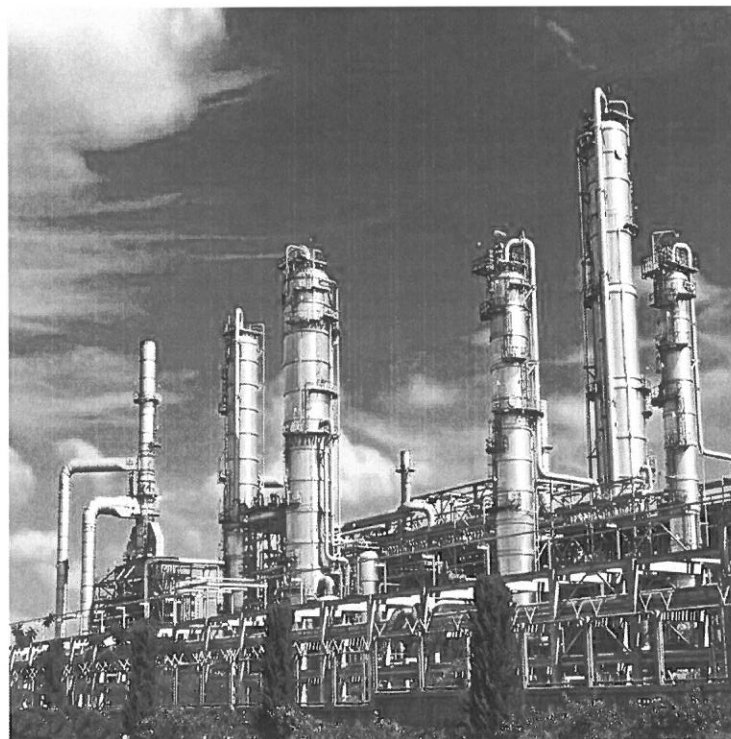
Cemtrex provides complete emission monitoring instruments, equipment, software & systems for a wide variety of industries such as power, steel, ferrous & non-ferrous metals, mining, cement, fertilizer, chemicals and refining. Cemtrex MIP division has hundreds of installations at power plants and industrial facilities for measuring sulfur dioxide, carbon dioxide, oxygen, mercury, opacity, particulate, nitrogen oxides, hydrocarbons, etc.

Apart from our CEMS & Opacity offerings, Cemtrex also offers a wide range of process gas and liquid analyzers for petroleum refineries, petrochemicals natural gas processing, steel, wastewater treatment plants and other key industrial applications. Our systems monitor various properties like sulfur, salt, water, olefins, aromatics, BTX, calorific value, VOCs, etc. in both fuel and gas streams.

In accordance to the Kyoto Protocol, Cemtrex provides turnkey services for carbon creation projects and assistance to project owners in carbon credit selling. Cemtrex's state-of-the-art products are distributed globally to power plants, refineries, chemical plants, cement facilities and federal and state agencies.

Cemtrex offers energy efficiency solutions for commercial buildings to reduce energy consumption and improve Indoor Air Quality. Cemtrex has also developed high efficiency PV Technology to meet the growing demand for renewable energy.

At Cemtrex, we believe that investing in the future of renewable technologies will impact a sustainable and safe environment for the next generation and our planet. We are committed to providing reliable, clean, safe and secure energy for tomorrow.



"Technologies for  
Safeguarding Our Planet"

## AREAS OF EXPERTISE

Our activities are divided into 3 segments:

- Monitoring Instruments & Products (MIP)
  - Continuous Emissions Monitoring Systems (CEMS)
  - Ambient Air Quality Systems (AAQS)
  - Mercury Monitoring
  - Laser Opacity Monitors
  - Gas Analyzers & Sensors
- On-Line Process Analyzers
  - Process Gas Analyzers
  - Process Liquid Analyzers
  - Process Dust Analyzers
  - Natural Gas Quality Analysis Systems
- Energy Efficiency & Renewable Technology
  - Green Demand Control Ventilation (GDCV)
  - PV Solar Technology
  - Energy Efficiency Auditing

## HISTORY

Year	Events
2000	Established/Incorporated
2005	Purchase of Griffin Environmental
2006	Established Carbon Credit Division
2007	Listed for Public Offering
2008	Breakthrough Greenhouse Gas Remediation Technology
2008	Expands into Renewable Energy Efficiency Market
2009	Cemtrex Stock Converts to OTC: CTEI
2012	Signs Representative Agreement with Modcon Systems Ltd.
2013	Signs Distribution Agreement with SensEvolution®

## CAPABILITIES

- Air Pollution Monitoring
- Process Analysis & Optimization
- Environmental Engineering & Consulting
- Turnkey CDM Solutions
- Energy Reduction & Efficiency Technology
- Control Systems & Instruments

19 Engineers Ln, Farmingdale NY 11735 USA  
Tel: +631.756.9116 Fax: +631.420.4985  
www.cemtrex.com





Technologies for safeguarding our Planet



IntelliCEMS™

# IntelliCEMS™ Emissions & Process Monitoring

Make an Intelligent Choice – When it comes to CEMS go IntelliCEMS™

## APPLICATIONS:

- Coal and Other Fossil Fuel Power Stations
- Cement & Lime Kilns and Generation Facilities
- Bio-Mass Fuelled Power Plants
- Steel Mills & Metal Industries
- Cogeneration Facilities
- Paper & Pulp Industries
- Gas Fired Turbines and Boilers
- Chemical & Pharmaceutical Industries
- Refuse and Waste Incinerators
- Refineries and Oil Processing Plants



## FEATURES:

- Quality and consistency of measurements in demanding sample matrix environments at the maximum achievable monitoring limits
- Durable, reliable low maintenance equipment performing with minimum downtime, demanding less of your attention so you can concentrate on your primary business
- Professional CEMS support beginning from application design and lasting throughout the entire lifecycle of your equipment
- A spectrum of products capable of optimising and balancing your technological, compliance and budgetary concerns

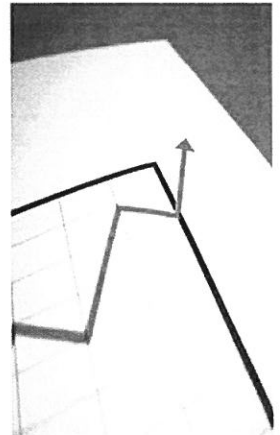


## PRODUCT DESCRIPTION:

The Cemtrex, Inc. IntelliCEMS™ IC Series offers a comprehensive, efficient and well-engineered package of Continuous Emissions Monitoring Solutions. Coupled with our Freedom Services Package™ it allows you to relax with confidence, while entrusting your CEMS challenges in our competent hands.

With a variety of technologies out there and constant innovations, revolutionizing the monitoring field it takes a dedicated professional team of CEMS experts to design the optimal solutions for your monitoring needs. Benefiting from long-term experience both in the monitoring and pollution control equipment our CEMS Professional Engineers are capable of designing, integrating and applying turnkey solutions, using the right blend of proven technology and innovation.

We offer our expertise in designing and supporting customized systems for virtually any application, whether it is simple or challenging. We use state of the art measurement and sampling equipment, applying proven performance technologies. The result is a turnkey Continuous Monitoring Solution. Whether your application is in Stack Gas Monitoring or Process Monitoring choosing the right technology will result in efficiency and long-term satisfaction.



### Sampling Modules:

Full Extractive - Hot Wet  
 Full Extractive - Cold Dry  
 Dilution Extractive  
 In-Situ Cross Stack  
 In-Situ Probe

### Analyser Modules:

Non-Dispersive Infrared (NDIR)  
 Ultraviolet (UV)  
 Chemiluminescent (ChL)  
 Heated Total Hydrocarbon (THC)  
 Paramagnetic  
 Cold Vapour Atomic Absorption Spectroscopy (CVAAS)  
 Laser

### CEMS components and accessories:

Control Systems and Software  
 DAHS and AB  
 LaserSOFT™  
 Calibration Systems  
 Shelters and Enclosures  
 Parts & Accessories

### Types of Gases & Parameters Monitored:

Hg(0), Hg(2)  
 H2, HCL, HF, H2S, THC,  
 CO, CO2 CH4, O2  
 NO, NO2, NOx, NH3,  
 SO, SO2, SO3, SOx  
 Opacity, Dust, PM  
 Acid Dew Point  
 Flow, Temperature & Pressure  
 Custom Applications



Technologies for  
safeguarding our Planet



Freedom Services™

## Cemtrex Freedom Services™ Package

- Professional Engineering resulting in Proprietary Monitoring Solutions with Proven Performance and Minimal Support Requirements
- Extensive Engineering Experience, providing Environmental Technology Solutions to Fortune 500 Industries and Companies
- Individualized Custom Design, addressing Monitoring and Reporting Requirements & Challenges in Specific Industrial Environments
- Reduced Acquisition and Ownership Cost as a result of Optimisation and Innovation
- Uncompromised Durability, Quality and Reliability of Measurements
- Highly skilled CEMS Professionals performing Fast, Responsive Installation, Maintenance and Emergency Services and Certification Support
- On-site and Factory Training for your Operations, Service and Maintenance Personnel
- A Comprehensive Inventory of Spare Parts and Accessories to support our Equipment
- Personalized Phone and E-mail Support, 24 hour Emergency Line
- A Network of Representatives covering most of the United States Territory and offering Local Sales and Service Support. International Representatives in Canada, Mexico, The Middle East, India and China



### Applications Engineering

Cemtrex's expert engineers use decades of industry experience to provide the perfect solution for each customer. We understand that each application is unique and take a customized personal approach to designing the right CEMS for the application. With this in mind, all the systems we provide are extremely durable and engineered to last.

### Turnkey CEMS systems Integration

Cemtrex provides turnkey Continuous Emissions Monitoring Systems solutions. With every CEMS we engineer, Cemtrex will also offer installation, start-up support, on-site training, and initial calibration. In addition Cemtrex provides complete project management to keep you up to speed throughout the entire start up process. With this kind of support Cemtrex ensures that with the purchase of any CEMS you will be up and running in no time.

### System Installation and Start-up

Cemtrex believes in providing its customers complete solutions with all our products. This means that Cemtrex will have your system working effectively with full installation and start up services.

### Preventive Maintenance

Cemtrex provides maintenance programs that work for our customers on a monthly, quarterly, semi-annual, or annual basis. Our nationwide team of service technicians is always available at your convenience, should you need an emergency site visit. Our service technicians are trained and certified in accordance with applicable industry safety requirements (OSHA), EPA reporting and certification, and have experience with analysers and CEM systems, whether its our own Cemtrex models, or third party equipment.



### CEMS Training

Cemtrex knowledgeable engineers will provide your staff with comprehensive on-site training to make them experts in the operation and routine maintenance of your system. Whether it's a calibration or creating a compliance report, after our extensive training sessions your staff will have no problem keeping your monitoring system working effectively on a daily basis.

### Emergency "Rapid Response" Support

With the Freedom Services™ Program, Cemtrex provides immediate and efficient service and support to help solve whatever dilemma your CEMS may be experiencing. We have 24/7 technical support, a large inventory of spare parts, and most importantly on-hand service technicians ready to assist at a moment's notice should you require an on-site visit.

### Quarterly & RATA Certifications

Every Cemtrex engineered system is designed to meet your compliance needs. Throughout the design and installation process Cemtrex will ensure that your system meets EPA compliance regulations such as 40CFR60, 40CFR75, among others. Cemtrex has been providing compliance reporting for decades and is a recognized leader in the industry. Speak to our representatives today to find our why.



## Model T100 UV Fluorescence SO<sub>2</sub> Analyzer

The Model T100 uses the proven UV fluorescence principle, coupled with a state of the art user interface to provide easy, accurate, and dependable measurements of low level SO<sub>2</sub>.

Exceptional stability is achieved with the use of an optical shutter to compensate for PMT drift and a reference detector to correct for changes in UV lamp intensity. A hydrocarbon 'kicker' and advanced optical design combine to prevent inaccuracies due to interferences.

All T Series instruments offer an advanced color display, capacitive touch screen, intuitive user interface, flexible I/O, and built-in data acquisition capability. All instrument set up, control and access to stored data and diagnostic information is available through the front panel, or via RS232, Ethernet, or USB com ports either locally or by remote connection using the included APIcom™ software.

- » **Ranges: 0-50 ppb to 0-20 ppm, user selectable**
- » **Dual ranges and auto ranging**
- » **Large, vivid, and durable color graphics display with touch screen interface**
- » **Ethernet, RS-232, and (optional) USB com ports**
- » **Front panel USB connections for peripheral devices and firmware upgrades**
- » **8 analog inputs (optional)**
- » **Adaptive signal filtering optimizes response time**
- » **Temperature & pressure compensation**
- » **Internal zero & span check (optional)**
- » **Comprehensive internal data logging with programmable averaging periods**
- » **Ability to log virtually any operating parameter**
- » **Two-year warranty**

# Model T100 UV Fluorescence SO<sub>2</sub> Analyzer

## Specifications

### General

Ranges:	Min: 0-50 ppb Full scale Max: 0-20,000 ppb Full scale (selectable, dual ranges and auto ranging supported)
Measurement Units:	ppb, ppm, µg/m <sup>3</sup> , mg/m <sup>3</sup> (selectable)
Zero Noise:	< 0.2 ppb (RMS)
Span Noise:	< 0.5% of reading (RMS) above 50 ppb
Lower Detectable Limit:	0.4 ppb
Zero Drift:	< 0.5 ppb/24 hours
Span Drift:	< 0.5% of full scale/24 hours
Lag Time:	20 seconds
Rise and Fall Time:	< 100 seconds to 95%
Linearity:	1% of full scale
Precision:	0.5% of reading above 50 ppb
Sample Flow Rate:	650 cm <sup>3</sup> /min ±10%

### Electrical Specifications

Power Requirements:	100V-120V, 220V-240V, 50/60 Hz
Analog Output Ranges:	10V, 5V, 1V, 0.1V (selectable)
Recorder Offset:	±10%

### Communication Specifications

Included I/O:	1 x Ethernet: 10/100Base-T 2 x RS232 (300-115,200 baud) 2 x USB device ports 8 x opto-isolated digital outputs 6 x opto-isolated digital inputs 4 x analog outputs
Optional I/O:	1 x USB com port 1 x RS485 8 x analog inputs (0-10V, 12-bit) 4 x digital alarm outputs Multidrop RS232 3 x 4-20mA current outputs

### Physical Specifications

Operating Temperature Range:	5 - 40°C (with EPA Equivalency)
Dimensions (HxWxD):	7" x 17" x 23.5" (178 x 432 x 597 mm)
Weight:	35.7 lbs (16.2 kg)

### Certifications

US EPA:	EQSA-0495-100
MCERTS:	Sira MC 050067/04
EN 14212	TÜV Rheinland

The values expressed above are in accordance with EPA definitions. All error specifications are based on constant conditions. Specifications exceed US EPA and Eignungsgeprüft requirements. Specifications subject to change without notice. Printed documents are uncontrolled. SAL000039C (DCN 6582) T100/01.23.13



9480 Carroll Park Drive ■ San Diego, CA 92121-5201  
Ph. 858-657-9800 Fax 858-657-9816  
Email [api-sales@teledyne.com](mailto:api-sales@teledyne.com)

## How to Order

### Model T100 includes:

- Two year warranty
- Internal pump or external pump (optional)
- Dual ranges and auto ranging
- 47mm diameter particulate filter
- 8 isolated digital outputs
- 6 isolated digital inputs
- RS-232 ports
- Ethernet port
- USB ports for peripheral devices
- APicom™ remote control software
- Select AC input voltage
  - 100V - 120V  50Hz
  - 220V - 240V  60Hz
- Select DC output voltage
  - 10V  5V
  - 1V  0.1V

### Calibration Options:

- Ambient zero and ambient span
- Zero scrubber and pressurized span
- Zero scrubber and internal span source (ZSS)

### Mounting Options:

- Rack mount brackets with chassis slides
- Rack mount brackets only
- Handle

### I/O Options:

- 4-20mA outputs (up to three channels)
- USB com port
- 8 Analog Inputs
- Multi-drop RS232
- RS485

### Other Options:

- NO optical filter (Recommended for high NO<sub>x</sub> applications. Required for EN14212 approved configuration.)
- Concentration alarm relays
- Expendables kit

For more information about the Teledyne API family of monitoring instrumentation products, call us or visit our website at

[www.teledyne-api.com](http://www.teledyne-api.com)

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