

# COMBUSTION GAS ANALYZERS

A new degree of efficiency



# Combustion gas analyzers

A new degree of efficiency



Our combustion gas analyzers are ideal for maintaining combustion equipment, covering the full range of operations in residential, commercial and industrial applications.

**Sauermann offers a range of compact and intuitive analyzers manufactured with the HVAC technician in mind.**

Sauermann's combustion gas analyzers feature the latest digital and metrology technologies, making measurements more reliable and cutting the amount of time heating technicians need to spend on-site. A user experience like no other!

## Applications

- Boilers
- Burners
- Water heaters
- Gas and diesel engines
- Furnaces
- Industrial kilns
- Industrial heating systems
- Incinerators



Residential



Commercial



Industrial

# Features

Add a digital edge to your combustion analysis



**Auto pump cut-off for high CO levels (adjustable)**



**Predictive maintenance with estimated sensor life & calibration reminders**



**Draft & differential pressure measurements**



**Mobile phone app for real-time remote display & control**



**Calculations for Combustion Efficiency, Excess Air, & CO<sub>2</sub>%**



**Data management with automatic logging & report creation**



**Si-CA 030**



**Si-CA 130**



**Si-CA 230**

|  |   |   |   |
|--|---|---|---|
| LCD display size                         | 2.8 inches                              | 4.3 inches                                      | 4.3 inches  |
| Display resolution                       | 320 x 240 pixels                        | 480 x 272 pixels                                | 480 x 272 pixels  |
| Touch-screen display                     | No (5 buttons)                          | Yes (+ on/off button)                           | Yes (+ on/off button)   |
| Dimensions (H x W x D)                   | 9,9 x 19,4 x 4,9 cm<br>7.5 x 3.5 x 1.6" | 9,9 x 19,4 x 4,9 cm<br>7.5 x 3.5 x 1.6"         | 11,2 x 28 x 5,5 cm<br>11 x 4.3 x 2"   |
| Weight                                   | 350 g - 12 oz                           | 350 g - 12 oz                                   | 825 g - 30 oz   |
| No. of cells                             | Up to 3 (O <sub>2</sub> , CO, NO)       | Up to 3 (O <sub>2</sub> , CO, NO, Low NO)       | Up to 6 (O <sub>2</sub> , CO, NO, Low NO, NO <sub>2</sub> , Low NO <sub>2</sub> , SO <sub>2</sub> , Low SO <sub>2</sub> , CxHy, H <sub>2</sub> S) |
| Max. CO measurement                      | 8,000 ppm                               | 8,000 ppm                                       | 50,000 ppm (with dilution)  |
| CO dilution                              | -                                       | -   | ✓   |
| Field replaceable pre-calibrated sensors | -                                       | ✓   | ✓   |
| Flue gas velocity with Pitot tube        | -                                       | ✓   | ✓   |
| Measurement storage                      | Smartphone                              | Internal: 2,000 data points + Smartphone and PC | Internal: 2,000 data points + Smartphone and PC   |
| PC software (wireless & USB)             | -                                       | ✓   | ✓   |
| Smartphone app (wireless)                | ✓                                       | ✓   | ✓   |
| Combustion Applications                  | Residential, Commercial                 | Residential, Commercial                         | Commercial, Industrial  |



To see our extensive range of other measurement instruments for heating applications, go to [www.sauermanngroup.com](http://www.sauermanngroup.com)



# Si-CA 030

## All the essentials for combustion gas analysis

The Si-CA 030 offers everything heating technicians need to inspect and maintain residential and commercial boilers, with wireless connection to our smartphone app and automatic generation of servicing reports and certificates.



Up to three gas sensors:  
O<sub>2</sub>, CO and NO (for NO<sub>x</sub>)



Auto pump cut-off  
for high CO levels

- NO<sub>x</sub> capable with NO sensor
- Quick and easy pump On/Off control
- CO safety monitoring in ambient air

LIGHTWEIGHT  
12 oz



### Common features Si-CA 030 / Si-CA 130

- Predictive maintenance with estimated sensor life & calibration reminders
- Draft & differential pressure measurements
- Calculated CO<sub>2</sub> % value
- CO safety monitoring in ambient air



CO measurement up to  
8,000 ppm



Color display



# Si-CA 130

## Comprehensive, versatile analyzer with touch-screen display

The Si-CA 130 features a touch-screen display and comes with PC-based management software (in addition to the smartphone app) for more in-depth combustion gas analysis. The three field-replaceable cells and sensors offer expanded measurement capability.



**Up to three gas sensors O<sub>2</sub>, CO, and NO or Low NO (for NO<sub>x</sub>)**



**Field replaceable precalibrated sensors**

- Auto pump cut-off for high CO levels (user-adjustable)
- NO<sub>x</sub> capable with NO sensor (optional)
- One Touch Pump On/Off with Purge
- PC software with wireless and USB connectivity
- Graphical data display
- Customizable gas analysis screen

- Combustion efficiency and excess air calculations
- Protective rubber casing
- Maintenance agreements and extended warranties available
- Emissions values adjusted for reference O<sub>2</sub>

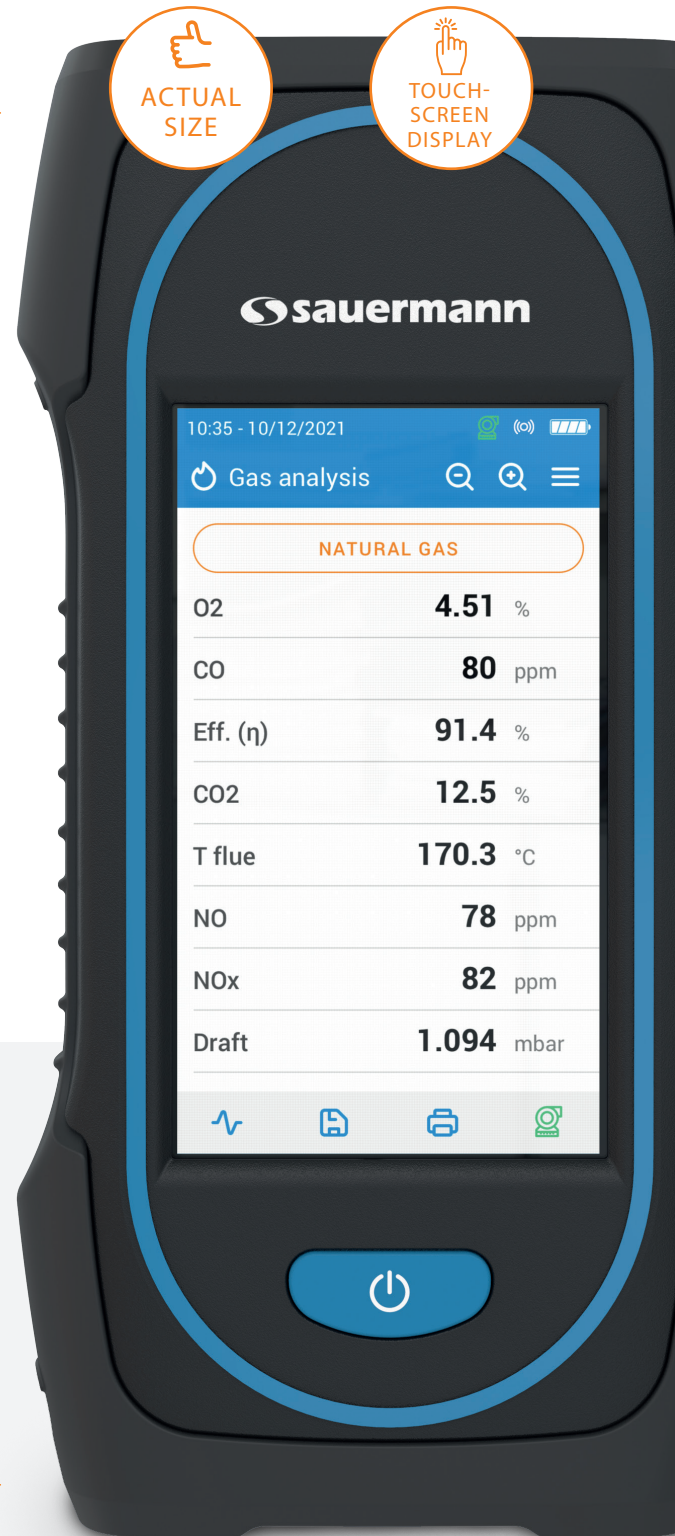


**Data management with automatic logging & report creation through app/PC software**



**Lightweight, only 12 oz (350 g)**

19.4 cm - 7.5"



# Si-CA 230

## State-of-the-art, industrial emissions analyzer

With up to six gas sensors and expanded measurement capabilities, the Si-CA 230 is well suited for boilers, burners, engines, and other industrial combustion applications. And with support for more gases and a high CO tolerance threshold, its versatility makes it the ideal choice across commercial and industrial applications.



**Up to Six Gas Sensors. Can include O<sub>2</sub>, CO, NO, Low NO, NO<sub>2</sub>, Low NO<sub>2</sub>, SO<sub>2</sub>, Low SO<sub>2</sub>, H<sub>2</sub>S, and CxHy**



**CO Dilution auto-range with measurements to 50,000 ppm**



**Total NOx & Low NOx Capable**



**Field Replaceable Pre-Calibrated Sensors**



### Features: Si-CA 230

- Ergonomic, light weight, & durable design
- Data management with automatic logging & report creation
- Predictive maintenance with estimated sensor life & calibration reminders
- One touch pump On/Off with purge
- PC software with wireless and USB connectivity
- Auto pump cut-off for high CO levels
- Graphical data display
- Customizable gas analysis screen
- Stack gas velocity with Pitot tube
- Draft and differential pressure measurements
- Emissions values adjusted for reference O<sub>2</sub>
- CO safety monitoring in ambient air
- Protective rubber holster
- Maintenance contracts and extended warranties available

# Mobile app

## Sauermann Combustion

The Sauermann Combustion app lets you control your Si-CA analyzer remotely, view measurement results in real time, and customize them before exporting in the format of your choice.



- Free apps for iOS & Android mobile devices
- PC software with USB & wireless connectivity
- Fast, easy wireless connection
- Remote live view of combustion analysis data as list or graph
- Remote control to change settings
- Data saving, including automatic logging
- Report creation in PDF, CSV (for Excel) and XML formats
- Databases for customers, operators, & equipment

## Download Sauermann Combustion app



# Warranty

All analyzers come with a two-year warranty against manufacturing defects (subject to assessment by our after-sales department).

To find out more about our extended warranties and maintenance plans, please visit our website, or contact our Customer Service Department.





# Selection guide

## Technical information





Si-CA 030

Si-CA 130

Si-CA 230

| Parameter                    | Measuring range                                 | Si-CA 030                        | Si-CA 130                  | Si-CA 230                 |
|------------------------------|---|----------------------------------|----------------------------|---------------------------|
| # of Gas Sensors             |   | 2 - 3                            | 2 - 3                      | 2 - 6                     |
| O <sub>2</sub>               | 0 to 25%  | ✓                                | ✓                          | ✓                         |
| CO                           | 0 to 8000 ppm                                   | ✓                                | ✓                          | -                         |
| CO (H <sub>2</sub> comp.)    | 0 to 10,000 ppm                                 | -                                | -                          | ✓                         |
| CO (with dilution)           | 100 to 50,000 ppm                               | -                                | -                          | ✓                         |
| CO <sub>2</sub> (calculated) | 0 to 99.9%                                      | ✓                                | ✓                          | ✓                         |
| NO                           | 0 to 5000 ppm                                   | ✓                                | ✓                          | ✓                         |
| Low NO                       | 0 to 300 ppm                                    | -                                | ✓                          | ✓                         |
| NO <sub>2</sub>              | 0 to 1000 ppm                                   | -                                | -                          | ✓                         |
| Low NO <sub>2</sub>          | 0 to 100 ppm                                    | -                                | -                          | ✓                         |
| NOx (calculated)             | 0 to 7500 ppm                                   | ✓                                | ✓                          | ✓                         |
| Low NOx (calculated)         | 0 to 450 ppm                                    | -                                | ✓                          | ✓                         |
| SO <sub>2</sub>              | 0 to 5000 ppm                                   | -                                | -                          | ✓                         |
| Low SO <sub>2</sub>          | 0 to 100 ppm                                    | -                                | -                          | ✓                         |
| CxHy (HC)                    | 0 to 5%   | -                                | -                          | ✓                         |
| H <sub>2</sub> S             | 0 to 500 ppm                                    | -                                | -                          | ✓                         |
| Flue temperature             | -4 to 2282 °F / -20 to 1250 °C                  | ✓                                | ✓                          | ✓                         |
| Air temperature              | -4 to 248 °F / -20 to 120 °C                    | ✓                                | ✓                          | ✓                         |
| Differential temperature     | 0 to 2282 °F / 0 to 1250 °C                     | ✓                                | ✓                          | ✓                         |
| Pressure/Draft               | -80 to 80 inH <sub>2</sub> O / -200 to 200 mbar | ✓                                | ✓                          | ✓                         |
| High accuracy draft          | -500 to +500 Pa                                 | -                                | ✓                          | ✓                         |
| Excess air                   | 0 to 999%                                       | ✓                                | ✓                          | ✓                         |
| Efficiency                   | 0 to 100% (Gross/HHV)                           | ✓                                | ✓                          | ✓                         |
| Efficiency (condensation)    | 0 to 125% (Net/LHV)                             | ✓                                | ✓                          | ✓                         |
| Stack Gas velocity           | 0 to 19,500 fpm / 0 to 99 m/s                   | -                                | ✓                          | ✓                         |
| Application                  |   | Residential/<br>Light Commercial | Residential/<br>Commercial | Commercial/<br>Industrial |

### Features

|   |   |          |          |          |
|---|---|----------|----------|----------|
| Wireless Printer                            |   | Optional | Optional | Optional |
| Field-Replaceable Pre-Calibrated Sensors    |   | -        | ✓        | ✓        |
| Real time display of data on the smartphone |   | ✓        | ✓        | ✓        |
| PC Software                                 |   | -        | ✓        | ✓        |
| Automatic Data Logging                      |   | ✓        | ✓        | ✓        |
| Rechargeable Battery w/ AC Charger          |   | ✓        | ✓        | ✓        |

# Accessories

## Customize your analyzer



Our combustion gas analyzers are available in many different configurations, with a wide range of accessories to choose from. Contact our Customer Service team for more information about our kits and accessories, and for guidance on choosing the right options for your needs.

| Part number  | Description   | Si-CA 030 | Si-CA 130 | Si-CA 230 |   |
|--|---|-----------|-----------|-----------|---|
| 27544  | Draft probe   | ✓         | ✓         | ✓         |     |
| 27532 (180 mm)<br>27533 (300 mm)<br>27534 (750 mm)<br>27535 (1 m)<br>27536 (1.5 m) | Probe sizes: 180 mm, 300 mm & 750 mm, and 1 m & 1.5 m | ✓         | ✓         | ✓         |    |
| 27546  | Wireless printer                                      | ✓         | ✓         | ✓         |  |
| 27537  | Double tube extension, 3 m                            | ✓         | ✓         | ✓         |   |
| 27538  | Differential pressure kit                             | ✓         | ✓         | ✓         |  |
| 24646  | Smart air temperature probe with 2 m cable            | ✓         | ✓         | ✓         |  |
| 11994  | Smoke pump  | ✓         | ✓         | ✓         |  |
| 27547  | Ambient CO probe                                      | ✓         | ✓         | ✓         |  |
| 27548  | Ambient CO <sub>2</sub> probe                         | ✓         | ✓         | ✓         |  |
| 26811  | SCU for condensate removal                            | ✓         | ✓         | ✓         |  |

# HVAC essentials

## The extra tools you need

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**Thermo-hygrometer with integrated thermo-hygrometry probe**

### Si-HH3

The Si-HH3 thermo-hygrometer: relative humidity and temperature



**Digital Differential Pressure Manometer**

### Si-PM3

The Si-PM3 digital differential pressure manometer: pressure, air velocity, and airflow



**Infrared thermometer**

### Si-TI3

The Si-TI3 infrared thermometer: infrared and ambient temperature



**Dual Input Thermometer K Thermocouple Temperature**

### Si-TT3

The Si-TT3 dual input thermometer: T1 and T2 thermocouple temperature



**Vane Thermo-anemometer with integrated vane probe**

### Si-VV3

The Si-VV3 vane thermo-anemometer: air velocity, airflow and temperature



**Portable Gas Leak Detector**

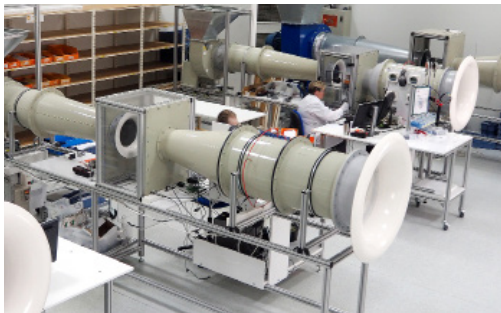
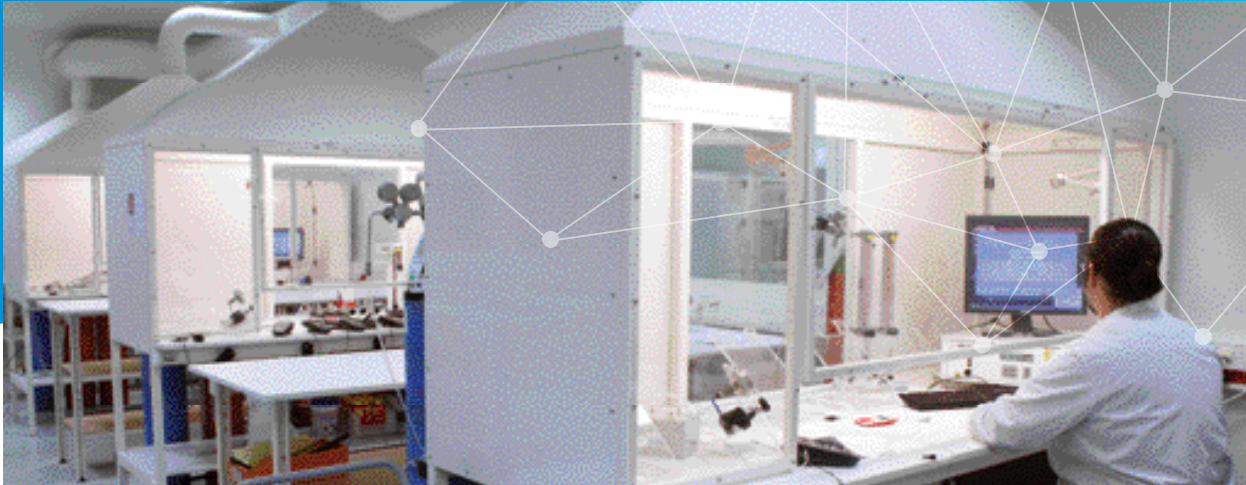
### Model 7899

The Model 7899 gas leak detector is highly-sensitive, accurate and easy-to-use to effectively pinpoint small leaks of combustible gas hydrocarbons



# Services

Calibration / Hotline / Maintenance



To complement our range of measuring instruments, a team of more than 40 people offers a wide range of services, such as calibration and adjustments, after-sales support, hotline, on-site services and training.

Our team of experts will accompany you throughout your project and will adapt to your needs thanks to more than 40 years of experience and our sophisticated laboratory equipment.



Calibration and adjustments



After-sales services



Hotline



On-site services



Training

**Our laboratories, spanning over 16,000 sq ft, allow us to offer you all kinds of metrological services related to:**

- Temperature
- Humidity
- Air velocity
- Air flow
- Pressure
- Gases (O<sub>2</sub>, CO, NO, SO<sub>2</sub>, NO<sub>2</sub>, C<sub>x</sub>H<sub>y</sub>, refrigerants)
- Weighing
- Radiometry
- Tachometry
- Light measurement
- Electrical current



In Person or Virtual

# Training

## Technical Training Classes

### Safety, Combustion Analysis, & Air Quality Testing

Residential / Commercial / Industrial



### Class Topics Include

- What is combustion?
- 3 T's of combustion
- Excess air
- CO<sub>2</sub> (carbon dioxide)
- Direct O<sub>2</sub> vs. CO<sub>2</sub> (why measuring is important)
- CO (carbon monoxide)
- Draft
- Heat exchanger test
- How to use an analyzer
- Why perform combustion tests and why use analyzers?
- Why do we need to measure?
- How contractors can make money (\$\$) using an analyzer
- Atmospheric vs. High Efficiency condensing boilers / furnaces!
- Combustible gas leak detection: soap bubbles vs. actual detection
- Sauermann's series of analyzers and HVAC instruments

## Class Counts

for 2 NATE CEU Hours!

The Gold Standard for HVACR  
Technician Certification



More information  
[www.sauer mann group.com](http://www.sauer mann group.com)



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