

PowerCEMS100

EFFICIENT SYSTEM FOR CONTINUOUS EMISSION MONITORING IN POWER PLANTS

Customized analyzer systems



POWERCEMS100: CERTIFIED QUALITY - SIMPLE INSTALLATION AND OPERATION

The PowerCEMS100 power plant analyzer system is the modular solution in the portfolio for customized analyzer systems. PowerCEMS100 meets all relevant standards and legal requirements for continuous emission monitoring systems and is certified according to EN-15267. During the development the top priority is placed on user-friendliness and low maintenance effort. This is reflected in the modular system structure and in the control elements in the analyzer cabinet.

Minimal spatial requirements – can be installed anywhere

The analyzer cabinet is 2100 mm high, 800 mm wide and 600 mm deep. PowerCEMS100 can easily be integrated into existing analyzer rooms. The cabinet is made of rugged steel with corrosion protection paint and meets enclosure rating IP 54. If the ambient temperature exceeds 40 °C, an air conditions can be attached optionally, to protect the electronic components from overheating and thus create reliable working conditions for the system. The PowerCEMS100 can also be delivered with a GFK cabinet for setting up outside or in aggressive environmental conditions.

GMS800 - the core of the PowerCEMS100

The modular gas analyzer GMS800 measures IR absorbing gases, such as CO, NO or oxygen. With the UV analyzer DEFOR it is possible to implement the measurement of SO2, NO and NO2 without converter. According to it's certification the GMS800 has a maintenance interval of up to 6 months. That means more time for the analysis and less downtime due to adjustment or maintenance work.

Multilingual – it is easy to communicate with the PowerCEMS100

The device is operated by the control unit BCU (Basic Control Unit) installed in the cabinet door. Clearly structured operator menus and the integrated keyboard facilitate work with the PowerCEMS100. The following menu languages are standard for selection: German, English, French, Spanish, Dutch, Swedish, Italian and Polish. This means that important functions can be performed in the respective language of the operator and parameters set easily corresponding to the requirements on site.



The user friendly control unit (BCU) makes working with the PowerCEMS100 easier.



As the core of the PowerCEMS100, the modular gas analyzer GMS800 measures IR absorbing gases, such as CO, NO or oxygen.

EFFICIENT SYSTEM FOR CONTINUOUS EMISSION MONITORING IN POWER PLANTS



Product description

The PowerCEMS100 modular analyzer system is an economic and technically perfect solution for extractive measuring tasks. The fully configurable design of the complete system with high quality standard sub-assemblies and components allows the equipment to be customized to provide the ideal solution for prevailing requirements. Retrofitting

with analyzer modules or gas conditioners is easy and inexpensive. The innovative PowerCEMS100 system is certified according to European s tandards EN 15267-1/3 and EN 14181. It provides solutions for emission measurement and process applications that are fit for the future.

At a glance

- Cold-extractive analyzer system certified according to EN 15267 and EN 14181
- Plug-and-play analyzer module with 24 V power supply
- Control unit for displaying all measured values and status information on a monitor
- External sensors can be connected via interfaces

Your benefits

- Your investment is secure, as the system can be adapted easily to meet future needs
- Easy commissioning and trouble-free on-site approval of the measuring system by the relevant authorities
- Easy service due to clear separation of the electrical system and the analyzer component
- Easy and quick module replacement for high availability with CAN bus technology



Additional information

Fields of application5	5
Detailed technical data	5
Ordering information	6

→ www.sick.com/PowerCEMS100

For more information, simply visit the above link to obtain direct access to technical data, CAD design models, operating instructions, software, application examples, and much more.

Fields of application

- Emission monitoring for plants with lignite or hard coal firing
- Emission monitoring for gas-fired power plants, gas turbines, or combined cycle plants
- Emission monitoring for small and medium boilers
- Measurement of greenhouse gases

Detailed technical data

The exact device specifications and performance data of the product may deviate from the information provided here, and depend on the application in which the product is being used and the relevant customer specifications.

PowerCEMS100 system

Gas flow rate 60 l/h With bypass pump: ≤ 250 l/h Frocess temperature ≤ ±1,000 °C pepending on sampling probe 5 ample gas temperature ≤ ±200 °C Temperature at cabinet inlet Process gas humidity Non-condensing Ambient temperature ±5 °C ±40 °C With cooling device: ±5 °C ±50 °C Storage temperature ±20 °C ±55 °C Ambient humidity ≤ 75 % Relative humidity; non-condensing Conformities Approved for plants requiring approval 2001/80/EC (13. BlmSchV) 2000/76/EC (17. BlmSchV) 2000/76/EC (17. BlmSchV) Electrical safety CE Electricals safety CE	Measured values	CH ₄ , CO, CO ₂ , NO, NO ₂ , N ₂ O, O ₂ , SO ₂ , other components on request
With typass pump: ≤ 250 l/h For short response times \$ ±1,000 ° C Depending on sampling probe \$ ±200 ° C Temperature at cabinet inlet Process gas humidity Non-condensing Ambient temperature # 5 ° C ±40 ° C With cooling device: ±5 ° C ±50 ° C \$ Electrical setemperature # 5 ° C ±40 ° C With cooling device: ±5 ° C ±50 ° C Ambient humidity # 5 ° C ±40 ° C # 8 Relative humidity; non-condensing # 8 Paproved for plants requiring approval 2001/80/E € 13. BlmSchV) 2001/80/E € 13. BlmSchV) EN 15267 EN 14181 # 10 Electrical safety # 10 Electrical safety # 2 CE # 2 Electrical safety # 3 Outputs: # 4 Outputs: # 4 Outputs: # 4 Outputs: # 4 Outputs: # 5 Potential-free outputs (change-over contacts): # 34 V AC, 500 mA / 48 V DC, 500 mA # Analog inputs # 5 Potential-free outputs (change-over contacts): # 34 V AC, 500 mA / 48 V DC, 500 mA # Ax. number of inputs depends on application # 5 Digital inputs # 5 Potential-free outputs depends on application # 5 Potential-free outputs depends o	Measuring methode	Extractive measurement
Depending on sampling probe	Gas flow rate	With bypass pump: ≤ 250 l/h
Temperature at cabinet inlet Non-condensing Ambient temperature +5 ° C +40 ° C With cooling device: +5 ° C +50 ° C Storage temperature -20 ° C +55 ° C Ambient humidity ≤ 75 % Relative humidity; non-condensing Conformities Approved for plants requiring approval 2001/80/EC (13. BlmSchV) 2007/6/EC (17. BlmSchV) EN 15267 EN 14181 Electrical safety CE Enclosure rating IP 54 With cooling device: IP 44 Analog outputs 0/2/ 20 mA, 50 Ω Electrically isolated Analog inputs 2 inputs: 0/4 20 mA, 10 Ω Not electrically isolated B potential-free outputs (change-over contacts): 34 ∨ AC, 500 mA / 48 ∨ DC, 500 mA Max. number of outputs depends on application Interfaces RS-422 (option) RS-485 (option) Ethernet TCP/IP Modbus TCP OPC CAN Model Weight 250 kg 350 kg Depending on version	Process temperature	,
Ambient temperature	Sample gas temperature	
With cooling device: +5 °C +50 °C Storage temperature -20 °C +55 °C Ambient humidity Selative humidity; non-condensing Conformities Approved for plants requiring approval 2001/80/EC (1.3 BimSchV) 2000/76/EC (1.7 BimSchV) EN 15267 EN 14181 Electrical safety CE Enclosure rating IP 54 With cooling device: IP 44 Analog outputs Analog outputs Analog inputs 2 inputs: 0/2 /4 20 mA, 500 Ω Electrically isolated Analog inputs 2 inputs: 0/4 20 mA, 100 Ω Not electrically isolated Not electrically isolated B potential-free outputs (change-over contacts): 34 V AC, 500 mA / 48 V DC, 500 mA Max. number of outputs depends on application Binputs Binputs Silputs: 42 V Max. number of inputs depends on application Interfaces S-42 (option) RS-485 (option)	Process gas humidity	Non-condensing
Ambient humidity S 75 % Relative humidity; non-condensing Approved for plants requiring approval 2001/80/EC (13. BimSchV) 2000/76/EC (17. BimSchV) EN 15267 EN 14181 Electrical safety CE Enclosure rating IP 54 With cooling device: IP 44 Analog outputs O(2/4 20 mA, 500 Ω Electrically isolated Analog inputs O(3/4 20 mA, 100 Ω Not electrically isolated Digital outputs S potential-free outputs (change-over contacts): 34 VAC, 500 mA / 48 V DC, 500 mA Max. number of outputs depends on application Digital inputs S inputs: 42 V Max. number of inputs depends on application Interfaces RS-422 (option) RS-485 (option) Ethernet TCP/IP Bus protocol Model Steel sheet cabinet Versions with NO₂-converter (option) Versions with NO₂-converter (option) Versions with NO₂-converter (option) Versions with cooling or heating device (option) Weight Digital on with a provided in the control of the control	Ambient temperature	
Relative humidity; non-condensing Conformities Approved for plants requiring approval 2001/80/EC (13. BimSchV) 2000/76/EC (17. BimSchV) EN 15267 EN 14181 Electrical safety CE Enclosure rating IP 54 With cooling device: IP 44 Analog outputs Analog outputs Analog inputs Cipy 4 20 mA, 500 \(\Omega \) Electrically isolated Analog inputs Cipy 4 20 mA, 500 \(\Omega \) Electrically isolated Analog inputs Siputs Analog outputs Siputs Si	Storage temperature	-20 °C +55 °C
2001/80/EC (13. BlmSchV) 2000/76/EC (17. BlmSchV) EN 15267 EN 14181 Electrical safety CE Enclosure rating IP 54 With cooling device: IP 44 Analog outputs Analog outputs Analog inputs Ciectrically isolated 2 inputs: 0/4 20 mA, 500 Ω Electrically isolated 2 inputs: 0/4 20 mA, 100 Ω Not electrically isolated By open and analog outputs Analog inputs Sinputs: 0/4 20 mA, 100 Ω Not electrically isolated By open analog outputs (change-over contacts): 34 V AC, 500 mA / 48 V DC, 500 mA Max. number of outputs depends on application Interfaces RS-422 (option) RS-485 (option) Ethernet TCP/IP Modbus TCP OPC CAN Model Steel sheet cabinet Versions with Noconverter (option) Versions with cooling or heating device (option) Weight Depending on version	Ambient humidity	
P 54 With cooling device: IP 44	Conformities	2001/80/EC (13. BImSchV) 2000/76/EC (17. BImSchV) EN 15267
With cooling device: IP 44 Analog outputs 4 outputs: 0/2/4 20 mA, 500 Ω Electrically isolated Analog inputs 2 inputs: 0/4 20 mA, 100 Ω Not electrically isolated 8 potential-free outputs (change-over contacts): 34 ∨ AC, 500 mA / 48 ∨ DC, 500 mA Max. number of outputs depends on application Biglital inputs 8 inputs: 42 ∨ Max. number of inputs depends on application RS-422 (option) RS-485 (option) Ethernet TCP/IP Bus protocol Model Steel sheet cabinet Versions with NO₂-converter (option) Versions with NO₂-converter (option) Versions with cooling or heating device (option) Weight Weight	Electrical safety	CE
O/2/4 20 mA, 500 Ω	Enclosure rating	
O/4 20 mA, 100 Ω Not electrically isolated S potential-free outputs (change-over contacts): 34 V AC, 500 mA / 48 V DC, 500 mA Max. number of outputs depends on application Max. number of inputs depends on application Max. number of inputs depends on application Interfaces	Analog outputs	$0/2/4 \dots 20$ mA, 500Ω
34 V AC, 500 mA / 48 V DC, 500 mA Max. number of outputs depends on application 8 inputs: 42 V Max. number of inputs depends on application Interfaces RS-422 (option) RS-485 (option) Ethernet TCP/IP Bus protocol Modbus TCP OPC CAN Model Steel sheet cabinet Versions with NO _x -converter (option) Versions with cooling or heating device (option) Weight 250 kg 350 kg Depending on version	Analog inputs	0/4 20 mA, 100 Ω
42 V Max. number of inputs depends on application	Digital outputs	34 V AC, 500 mA / 48 V DC, 500 mA
RS-485 (option) Ethernet TCP/IP Bus protocol Modbus TCP OPC CAN Model Steel sheet cabinet Versions with NO _x -converter (option) Versions with cooling or heating device (option) Weight 250 kg 350 kg Depending on version	Digital inputs	42 V
OPC CAN Model Steel sheet cabinet Versions with NO _x -converter (option) Versions with cooling or heating device (option) Weight 250 kg 350 kg Depending on version	Interfaces	RS-485 (option)
Versions with NO _x -converter (option) Versions with cooling or heating device (option) Weight 250 kg 350 kg Depending on version	Bus protocol	OPC
Depending on version	Model	Versions with NO _x -converter (option)
Mounting Indoor, with protection against corrosive atmospheres	Weight	
	Mounting	Indoor, with protection against corrosive atmospheres

PowerCEMS100 CUSTOMIZED ANALYZER SYSTEMS

Power supply	Depending on version
Corrective functions	Manual adjustment with test gases Automatic testing and adjustment with test gases
Options	NO _x -converter Cooling device Heating Bypass pump

Ordering information

Our regional sales organization will help you to select the optimum device configuration.

REGISTER AT WWW.SICK.COM TODAY AND ENJOY ALL THE BENEFITS

- Select products, accessories, documentation and software quickly and easily.
- ▼ Create, save and share personalized wish lists.
- View the net price and date of delivery for every product.
- Requests for quotation, ordering and delivery tracking made easy.
- Overview of all quotations and orders.
- Direct ordering: submit even very complex orders in moments
- View the status of quotations and orders at any time. Receive e-mail notifications of status changes.
- ▼ Easily repeat previous orders.
- Conveniently export quotations and orders to work with your systems.



SERVICES FOR MACHINES AND SYSTEMS: SICK LifeTime Services

Our comprehensive and versatile LifeTime Services are the perfect addition to the comprehensive range of products from SICK. The services range from product-independent consulting to traditional product services.





Consulting and design

Safe and professional



Product and system support

Reliable, fast and on-site



Verification and optimization

Safe and regularly inspected



Upgrade and retrofits

Easy, safe and economical



Training and education

Practical, focused and professional

SICK AT A GLANCE

SICK is a leading manufacturer of intelligent sensors and sensor solutions for industrial applications. With more than 7,400 employees and over 50 subsidiaries and equity investments as well as numerous representative offices worldwide, we are always close to our customers. A unique range of products and services creates the perfect basis for controlling processes securely and efficiently, protecting individuals from accidents and preventing damage to the environment.

We have extensive experience in various industries and understand their processes and requirements. With intelligent sensors, we can deliver exactly what our customers need. In application centers in Europe, Asia and North America, system solutions are tested and optimized in accordance with customer specifications. All this makes us a reliable supplier and development partner.

Comprehensive services round out our offering: SICK LifeTime Services provide support throughout the machine life cycle and ensure safety and productivity.

For us, that is "Sensor Intelligence."

Worldwide presence:

Australia, Austria, Belgium, Brazil, Canada, Chile, China, Czech Republic, Denmark, Finland, France, Germany, Great Britain, Hungary, India, Israel, Italy, Japan, Malaysia, Mexico, Netherlands, New Zealand, Norway, Poland, Romania, Russia, Singapore, Slovakia, Slovenia, South Africa, South Korea, Spain, Sweden, Switzerland, Taiwan, Thailand, Turkey, United Arab Emirates, USA, Vietnam.

Detailed addresses and additional representatives → www.sick.com

