



# MEAC DATA ACQUISITION SYSTEM

Tested and reliable emission data management

CEMS solutions

**SICK**  
Sensor Intelligence.

# MEAC: tested and reliable emission data management

Protecting the natural living space is becoming an increasingly important and concrete legal requirement. Environmentally relevant emissions must be recorded permanently and continuously, and checked with utmost reliability. Their qualitative assessment over time is essential, since companies responsible for emissions must adhere to limits and provide the authorities with full documentation. SICK has long-term experience in the continuous measurement, monitoring and remote transfer of emission data.



## Safe data collection

The MEAC ensures the acquisition of measured values and operating data every fifth second and every minute – both by analog and digital means with in-process logging. A buffer close to the measuring point can also be used for analog data collection. MEAC automatically performs local backup or backup to a remote computer. Optionally, a fully-fledged, redundant solution with automatic synchronization service is available.

## Calculation and evaluation

Based on the current legislation and regulations in Germany and the European Union, MEAC calculates, classifies and evaluates the recorded data in cycles of 5 s (MEAC2012) and 1 min (MEAC2000 EU). MEAC manages the transparent handling of all relevant measured values as well as the archiving of the calculated results and their automatic reporting in legally compliant and customer-specific form, e.g. as an export to MS Excel.

## Data output and notification

The MEAC data acquisition system supports numerous interfaces as standard; for example with analog and digital signal output, fieldbus and client server connections or file transfer to the remote MEAC central system. Besides selectable displays for data in the diagrams and tables over screens distributed in the network, event messages are issued automatically, conveniently per e-mail (option) for example. Easy-to-use remote control for the MEAC via modem or Internet is of course also available.

## MEAC system overview

### Data acquisition unit DAU

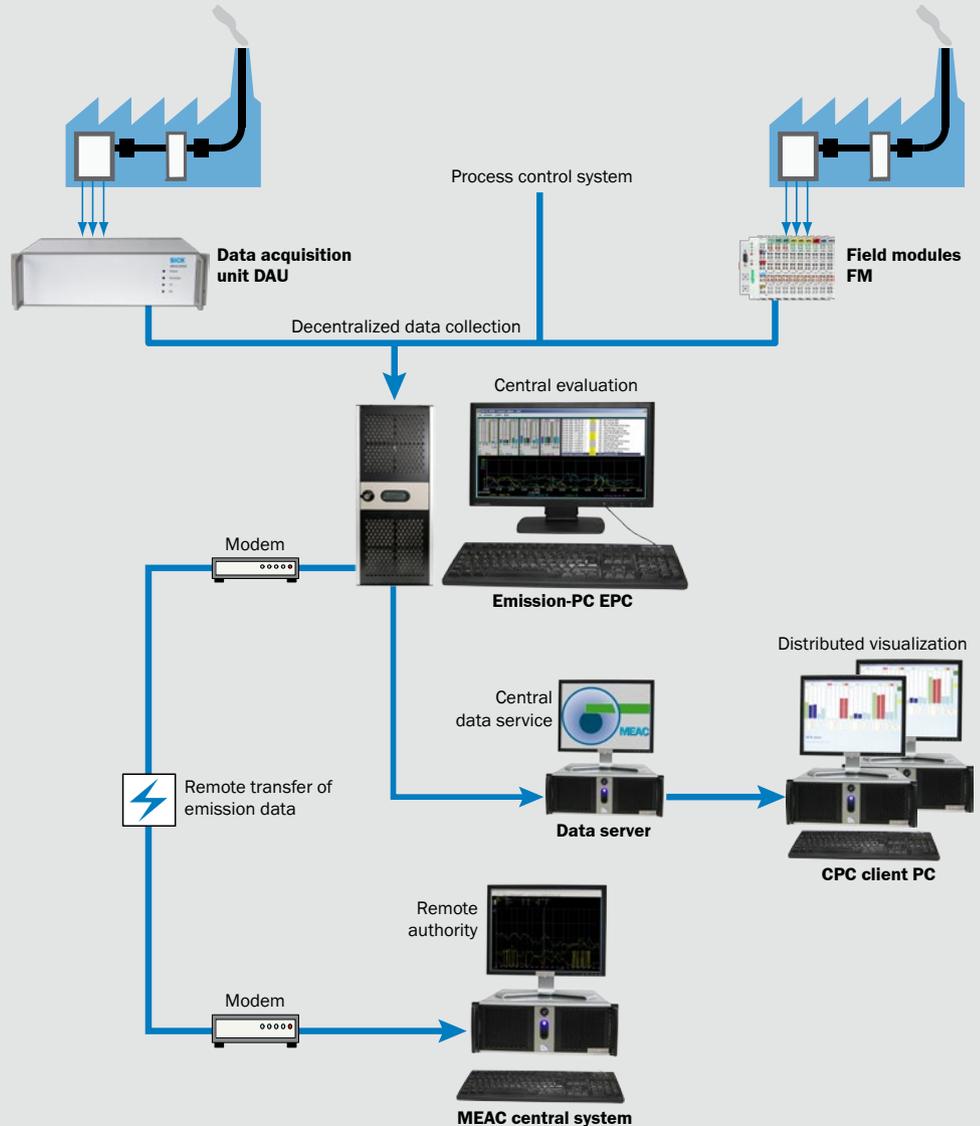
Collection of measured data, preparation and transfer to the Emission-PC, including data buffering in case of failures. Alternatively, use of field modules possible for small applications.

### Emission-PC EPC

PC with Window operating system and evaluation software for the data received. Up to 16 devices (DAU, field modules, Modbus, OPC, etc.) connectable as options. Provision of data via network for workstations and data transfer to authority via modem. Can be connected to a process control system.

### Evaluation software

Window software runs on the Emission PC with modules for processing, storage and display all recorded data.



## MEAC2012

MEAC2012 satisfies the German legislative requirements for plants and system in accordance with TA Luft (Prevention of Air Pollution) and 1., 2., 13., 17., 27., 30. and 31. BImSchV (FICA). Compliant with EN 14181, with the Uniform Federal Practice for Monitoring Emissions (BEP) dated 2010 and with the Status Flagging and Classification (SKK) in the 2012 version. The operator-friendly rules on rounding and monitoring of annual limits are new.

**Option: GHG master**

## MEAC2000 EU

Optimized for the legislation of the European Union, the MEAC2000 EU offers just the right system. It comes with the languages German, English, French and many more, and in a version that is compliant with EN 14181, 2001/80/EC as well as 2000/76/EC.

It is also possible to implement the local requirements of particular countries.

## MEAC GHG

Calculates the total annual greenhouse gas emission in accordance with the monitoring regulation. The MEAC GHG accurately records the greenhouse gas concentrations (CO<sub>2</sub>, CO, N<sub>2</sub>O) and the volumetric flow and evaluates these data. The functions cover calculation of the annual emissions for CO<sub>2</sub> (Äq) mass, daily, monthly and annual reports, trend and substitute value creation.

# TESTED AND RELIABLE EMISSION DATA MANAGEMENT



## Product description

The MEAC offers continuous acquisition, evaluation, storage and visualization, as well as transfer of emission data for modern emission data management. Up to 16 data acquisition units, each equipped with a scalable ring buffer, can be connected to the central Emission-PC. It is also possible to integrate process

control systems. MEAC is TÜV approved and certified. The MEAC2012 version is designed to meet German legislative requirements, while the MEAC2000 EU complies with European directives and regulations.

## At a glance

- Evaluations according to 1, 2, 13, 17, 27, 30, 31 BImSchV and TA Luft
- Analog and digital data collection saved at 5 s/1 min intervals with auto-backup
- Distributed visualization, operation in the network and automatic e-mail alarms
- Flexible data presentation also in process images
- Analog and digital data to the customer system at 5 s/1 min intervals
- Recording of QAL3 cycles

## Your benefits

- Time savings through simulation mode for installation and functions checks
- Savings on service costs through flexible parameterizing interface for users, e.g for device calibration
- High availability through automatic synchronization service for data and parameters
- Parallel calculation of greenhouse gas emissions in the same system
- Fewer limit violations due to special CO evaluation
- User can draft own reports in MS Excel format, to which data are then added automatically
- Customer network can be used to connect to process control systems, no need for new cabling
- Continued use of existing data and parameters from earlier MEAC versions



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→ [www.mysick.com/en/MEAC](http://www.mysick.com/en/MEAC)

For more information, just enter the link and get direct access to technical data, CAD design models, operating instructions, software, application examples, and much more.

## Fields of application

- Acquisition of measured and operating data for continuous emission monitoring
- Data preparation in compliance with legislation
- Free customized and legislative reporting
- Data transmission rate to authority

## Detailed technical data

### System

MEAC2012

<b>Conformities</b>	EN 14181 TA-Luft (Prevention of Air Pollution) 1. BImSchV (FICA) 2. BImSchV (FICA) 13. BImSchV (FICA) 17. BImSchV (FICA) 30. BImSchV (FICA) 31. BImSchV (FICA) BEP 2010 Status Flagging and Classification (SKK) 2012
<b>Calculation interval</b>	5 s
<b>Integration time</b>	1 min, 3 min, 10 min, 30 min, 60 min, 120 min, 240 min, 480 min
<b>Value type</b>	5 s value, short term average (STA), prognosis for STA, floating STA, daily average, prognosis for daily average, floating daily average, monthly average, annual average, daily total emission, monthly total emission, annual total emission
<b>Software modules</b>	Evaluation software version 3.00 (parameterization necessary) Network access software for client PC (option) Remote access software for central PC (option; emission remote transfer software is required for the Emission PC when a modem is used) Remote maintenance (option) Process display configurator (option) Manual input (option) MEx automatic report export to MS-Excel or XML (option; Excel template and configuration required) MEx configurator (option) QAL3 driver (option; SICK QAL3 master required) Synchronization service (option) E-mail alarms (option)
<b>Menu language</b>	German

MEAC2000 EU

<b>Conformities</b>	EN 14181 2001/80/EC 2000/76/EC
<b>Calculation interval</b>	1 min.
<b>Integration time</b>	3 min, 10 min, 20 min, 30 min, 60 min, 120 min, 240 min, 480 min
<b>Value type</b>	1-min. value, short term average (STA), prognosis for STA, daily average, prognosis for daily average, monthly average, annual average, daily total emission, monthly total emission, annual total emission
<b>Software modules</b>	Evaluation software version 1.28 EU (parameterization necessary) Network access software for client PC (option) Remote access software for central PC (option; emission remote transfer software is required for the Emission PC when a modem is used) Remote maintenance (option) Process image configurator (option) Manual input (option) MEx automatic report export to MS-Excel or XML (option; Excel template and configuration required) MEx configurator (option) QAL3 driver (option; SICK QAL3 master required) Synchronization service (option) E-mail alarms (option)
<b>Menu language</b>	German, English, French, Italian, Croatian, Lithuanian, Macedonian, Dutch, Portuguese, Russian, Serbian, Slovakian, Slovenian, Spanish, Hungarian

MEAC GHG

<b>Conformities</b>	ETS 2003/87/EC (Emission Trading System) MVO 601/2012 (Monitoring regulation)
<b>Calculation interval</b>	5 s
<b>Integration time</b>	60 min
<b>Value type</b>	5 s value, hourly average, substitute hourly average, daily average, annual average, hourly total emission, daily total emission, annual total emission
<b>Software modules</b>	Acquisition software version 3.00 (parameterization necessary) MODBUS master Database output MySQL database GHG reporting Remote maintenance (option)
<b>Menu language</b>	German, English

## Control unit

## Emission-PC

<b>Ambient temperature</b>	+5 °C to +30 °C
<b>Electrical safety</b>	CE
<b>Enclosure rating</b>	IP 20
<b>Interfaces</b>	RS-232 (9/25 pole) RS-485 (9 pole) Ethernet (RJ45) USB 2.0
<b>Bus protocol</b>	MODBUS RTU (slave; via RS-232/RS-485) MODBUS TCP (slave; via Ethernet) PROFIBUS DP (save; via RS-485) OPC DA 2.0 (client; via Ethernet)
<b>Operation</b>	Via MEAC software
<b>Electrical connection</b>	
	Voltage 230 V AC
<b>Options</b>	System requirements for customer PC: Operating system: Windows XP Professional SP3, Windows 7 Ultimate 32/64bit SP1 Processor: 2.5 GHz RAM: 2 GB RAM Hard disk: 2 x 300 GB Power supply unit: 500 W Free slots: 3 x PCI for radio clock, modem and watchdog

## I/O module

## Data acquisition unit

<b>Ambient temperature</b>	-5 °C to +50 °C
<b>Electrical safety</b>	CE
<b>Enclosure rating</b>	IP 20
<b>Analog outputs</b>	8 outputs: 0 to 25 mA Max. 32 outputs, not volt-free
<b>Analog inputs</b>	16 inputs: -5 to 30 mA, 100 Ω Max. 80 inputs, zero potential to ±10 V
<b>Digital outputs</b>	12 changeover contacts: 48 V ADC, 500 mA Max. 96 outputs
<b>Digital inputs</b>	32 inputs: 24 V Max. 256 inputs, zero potential
<b>Interfaces</b>	RS-232 (9 pole)
<b>Bus protocol</b>	Proprietary (via RS-232; TTY, RS-485/RS-422, fiber optic, Ethernet as options)
<b>Operation</b>	via Emission-PC and MEAC software
<b>Dimensions (W x H x D)</b>	See dimensional drawings
<b>Weight</b>	≤ approx. 12 kg
<b>Electrical connection</b>	
	Voltage 115 V ADC / 230 V ADC

Field module

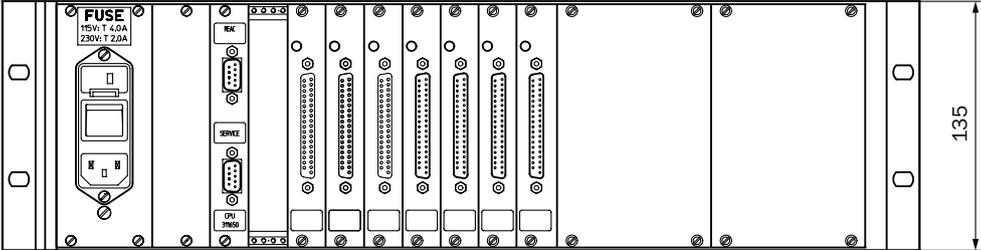
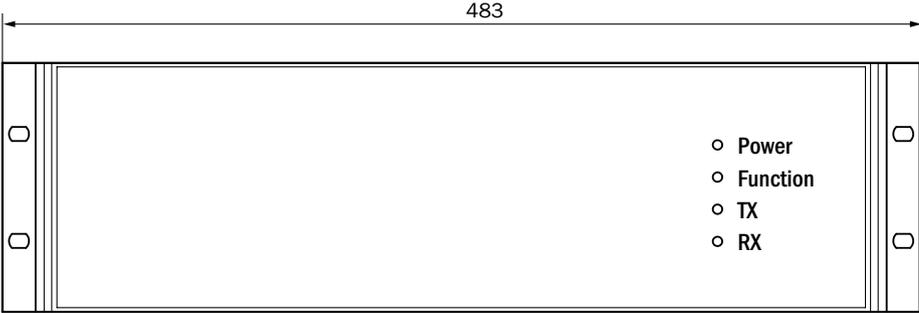
<b>Ambient temperature</b>	-10 °C to +50 °C
<b>Electrical safety</b>	CE
<b>Enclosure rating</b>	IP 20
<b>Analog outputs</b>	2 outputs: 0 to 20 mA Max. 16 outputs, not volt-free
<b>Analog inputs</b>	2 outputs: 0 to 20 mA Max. 16 outputs, single-pole grounded, not volt-free
<b>Digital outputs</b>	4 outputs: 24 V, 500 mA Max. 24 outputs
<b>Digital inputs</b>	4 inputs: 24 V Max. 32 inputs
<b>Interfaces</b>	RS-485 (9 pole)
<b>Bus protocol</b>	MODBUS RTU (slave; via RS-485, Ethernet as option)
<b>Operation</b>	via Emission-PC and MEAC software
<b>Dimensions (W x H x D)</b>	See dimensional drawings
<b>Electrical connection</b>	
	Voltage 24 V DDC

**Ordering information**

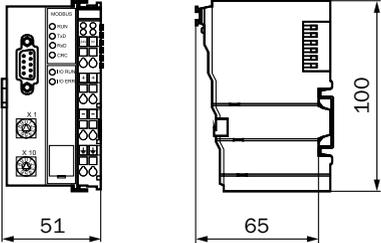
Our regional sales organization will help you to select the optimum device configuration.

Dimensional drawings (dimensions in mm)

Data acquisition unit



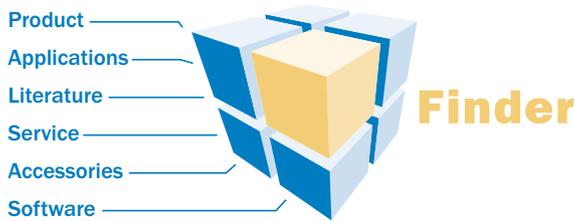
Field module





## WWW.MYSICK.COM – SEARCH ONLINE AND ORDER

Search online quickly and safely – with the SICK “Finders”



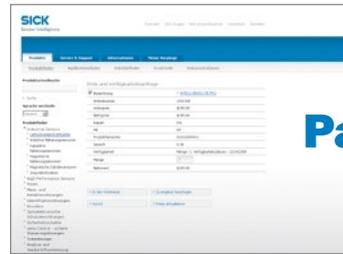
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## SERVICES FOR MACHINES AND SYSTEMS: SICK LifeTime Services

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 & Design**  
Safe and professional



**Product & System Support**  
Reliable, fast and on-site



**Verification & Optimization**  
Safe and regularly inspected



**Upgrade & Retrofits**  
Easy, safe, economical



**Training & 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 6,500 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/Luxembourg, Brazil, Czech Republic, Canada, China, Denmark, Finland, France, Germany, Great Britain, Hungary, India, Israel, Italy, Japan, Mexico, Netherlands, Norway, Poland, Romania, Russia, Singapore, Slovenia, South Africa, South Korea, Spain, Sweden, Switzerland, Taiwan, Turkey, United Arab Emirates, USA

Detailed addresses and additional representatives → [www.sick.com](http://www.sick.com)