



# MEAC300 DATA ACQUISITION SYSTEM

Clear and cost-efficient emissions data management

CEMS solutions

**SICK**  
Sensor Intelligence.



## MEAC300

Optimized for the legislation of the European Union, the MEAC300 offers just the right system.

- **MEAC300 EP** for large and small combustion plants – compliant with 2010/75/EU Annex V and EN 14181 (QAL2).
- **MEAC300 EPW** for large and small combustion plants as well as for waste incineration and co-incineration plants – compliant with 2010/75/EU Annex V, Annex VI, and EN 14181 (QAL2).

The MEAC300 versions offer the languages German, English, and French as standard. It is also possible to implement further languages upon request.

### Clear and cost-efficient emissions data management

Environmentally relevant emissions must be recorded 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 transmission of emission data.

#### Safe data collection

The MEAC300 data acquisition system ensures the acquisition of measured values and operating data every second – both by analog and digital means with in-process storage. A buffer close to the measuring point can also be used for analog data collection. MEAC300 automatically performs a local backup or a backup to a remote computer on the network. Maximum availability offers a redundant solution (option) with fully automated switching of the data acquisition.

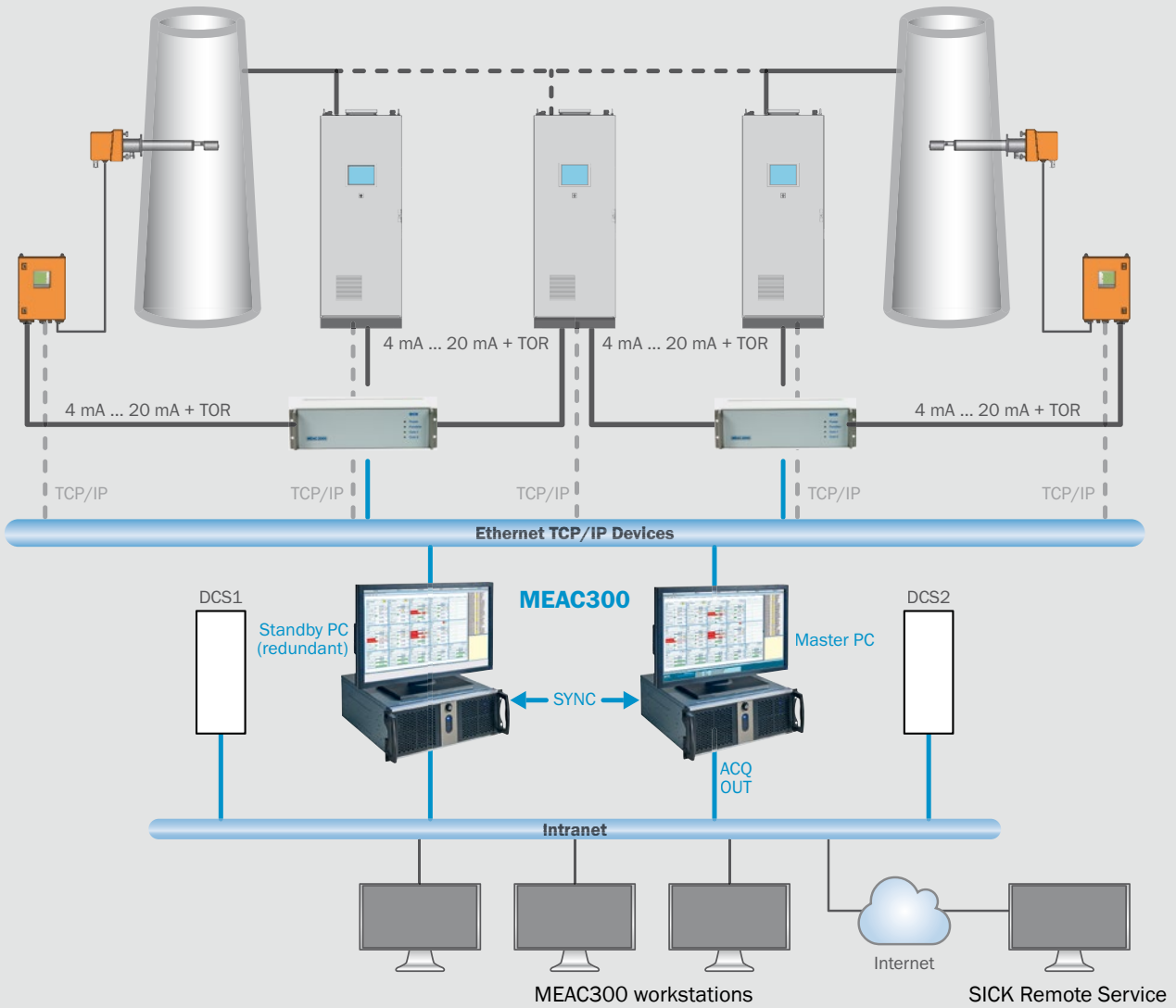
#### Calculation and evaluation

Based on the current legislation and regulations in the European Union, MEAC300 calculates, classifies, and evaluates the recorded data in cycles of 5 s. MEAC300 manages the transparent handling of all relevant measured values and operating data as well as the archiving of the calculated results and their automated reporting in the required format and as an export to MS Excel (option).

#### Data output and notification

The MEAC300 data acquisition system supports a multitude of interfaces. These include analog signal output, fieldbus and client server connections, or data transmission to a remote MEAC300 data server. The data can be displayed on the screen either as a graph or a table depending on your selection. Any emission messages are automatically reported, e.g., conveniently via e-mail (option).

# MEAC300 system overview



## Example of an emission report

Class	Description	SO <sub>2</sub>		CO	
		Day	Year	Day	Year
AL	70	200			
RG8 p.a.		70 für 95%	200 für 95%		
DLV		1,1* 35	1,1* 100		
Unit		mg/Nm <sup>3</sup>	mg/Nm <sup>3</sup>		
Availability		100,0	84,7	100,0	100,0
M	1AV <= 0,05 * AL	0	1	0	0
..					
M	20AV <= 1,00 * AL	0	30	0	0
S	1AL overrun	0	13	0	0
S	2MD<2/3 other	0	0	0	0
S	3Subst. val. for ref. var.	0	0	0	0
S	4Malfunction AMS	0	24	0	0
S	5Maintenance AMS	0	9	0	0
S	6Plant in operation	24	216	24	216
S	7MD<2/3 due to plant	0	1	0	1
S	8Implausible/unclassified	0	0	0	0
S	9cal. range short storage	0	2	0	0
S	10cal. range long storage	1	1	0	0
S	11FGP failure	0	0	0	0
S	12FGP failure current	0	0	0	0
S	13FGP failure moving year	0	0	0	0
S	14AV>AL by start/stop	0	0	0	0
T	1DV < 0.1*DLV	0	0	0	0
T	2DV < 0.2*DLV	0	0	0	0
T	3DV < 0.3*DLV	0	0	0	0
T	4DV < 0.4*DLV	0	0	0	0
T	5DV < 0.5*DLV	0	0	0	0
T	6DV < 0.6*DLV	0	0	0	0
T	7DV < 0.7*DLV	0	0	0	0
T	8DV < 0.8*DLV	0	0	0	0
T	9DV < 0.9*DLV	0	0	0	0
T	10DV < 1.0*DLV	0	0	0	0
TS	1DLV overrun	1	7	1	8
TS	2Unable to create DV	0	2	0	1
TS	3Availability not maintained.	0	0	0	0
MM	1count MAV <= MAL	0	0	0	0
MMS	1count MAV > MAL	0	0	0	0
J	1AV <= ALV		93%		100%
US	1AV < 95%	1			

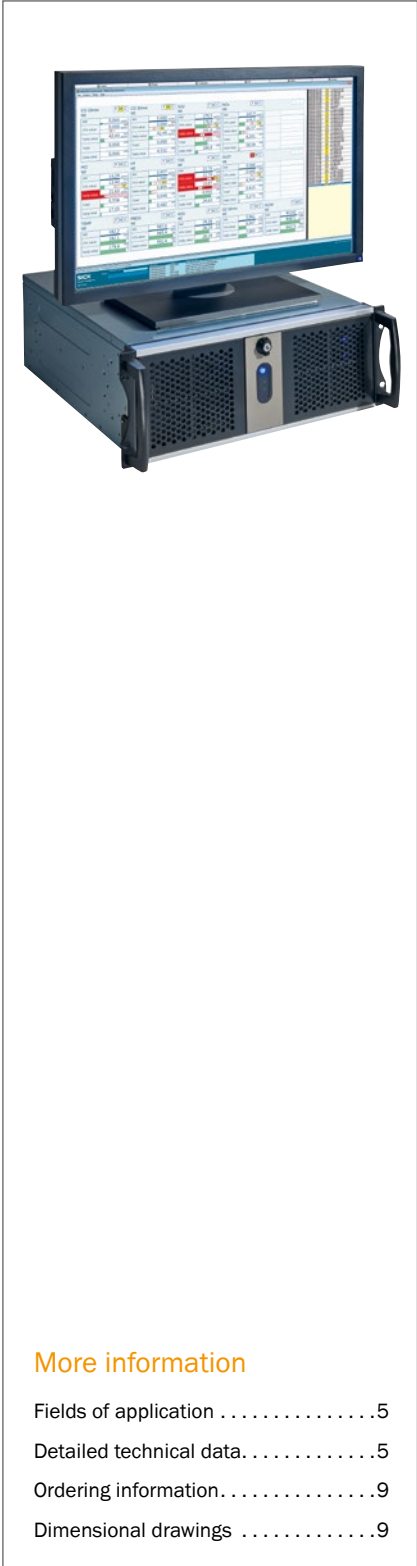
## System software

- The software on the emissions PC runs on Windows 7 and Windows 10
- Direct acquisition of the measured data on modbus-compatible measuring devices via bus or network
- Optional analog measured data acquisition via field modules or a data acquisition unit with storage in the event of an emissions PC failure
- Processing, storage, and display of all acquired values
- Optional redundant operation on master and standby PC

## Emissions PC

- PC in industrial housing with Windows 10 and system software
- Up to 16 communication interfaces available in parallel (modbus as standard; optional: OPC, data acquisition units, field modules)
- Network connection for providing data for workstations and central system
- Can be connected to a process control system
- Easy-to-use remote control via the web-based SICK Remote Service platform

# CLEAR AND COST-EFFICIENT EMISSIONS DATA MANAGEMENT



## Product description

The MEAC300 offers continuous acquisition, evaluation, storage, and visualization, as well as transmission of emissions data for modern emissions data management. The central emissions PC can acquire and output data on up to 16 different interfaces at the same time. The measuring devices are connected both directly and via analog data acquisition units, which are each equipped with

a ring buffer for data security purposes. It is also possible to integrate into process control systems.

The MEAC300 EP variant is designed to meet European evaluation guidelines for combustion plants; the MEAC300 EPW is also suitable for waste incineration and co-incineration plants.

## At a glance

- Bus-capable data acquisition from measuring devices and plants
- Evaluation conforming to the Industrial Emissions Directive, EN 14181 QAL2, and optionally QAL3 (CUSUM)
- Secure storage with automated backup
- Ergonomic display for constant monitoring of evaluation rules and device statuses
- Fast data transmission to the plant control in a 5 s cycle

## Your benefits

- Easy installation of the MEAC300 software on any commercially available PC running Windows 7 or 10
- Easy commissioning without wiring for all Modbus-capable measuring devices
- Continued use of existing data and configurations from earlier MEAC versions
- Savings on service costs thanks to a flexible configuration interface for users
- Time savings through simulation mode for installation and function checks
- High availability through automated redundancy for data acquisition and output (optional)
- Free design of protocols in MS Excel format by the user (optional)
- Parallel GHG or QAL3 evaluation in the same system (optional)

## More information

Fields of application . . . . .	5
Detailed technical data . . . . .	5
Ordering information . . . . .	9
Dimensional drawings . . . . .	9

→ [www.sick.com/MEAC300](http://www.sick.com/MEAC300)

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

- Emissions evaluation for waste incineration and co-incineration plants
- Emissions evaluation for energy generators
- Emissions evaluation for combustion plants in the metal, chemical, oil and gas, paper, wood, glass, and cement industries, as well as for paint shops
- Emissions evaluation for biological waste treatment and crematories

## Detailed technical data

The precise device specifications and product performance data may vary and are dependent on the respective application and customer specifications.

### MEAC300 EP system software

<b>Conformities</b>	EN 14181 (QAL2) 2010/75/EU (Annex V)
<b>Calculation interval</b>	5 s
<b>Integration time</b>	1 min, 3 min, 10 min, 20 min, 30 min, 60 min, 120 min, 240 min, 480 min
<b>Value type</b>	5 s value Average value Daily average Monthly average Annual average Moving average Total emissions Daily total emissions Monthly total emissions Annual total emissions Annual number of monthly averages > emissions limit Annual number of daily averages > 110% emissions limit 95% annual percentile of average values < 200% emissions limit Annual number of invalid daily averages
<b>Software modules</b>	“European Power” evaluation software, Version 4.x (configuration required) Analog data acquisition software (data acquisition unit DAE or field module FM required) Modbus RTU/TCP data acquisition software master and slave OPC DA 2.0 client data acquisition software (option) Workstation software for PC workstation (option) Central system software via TCP for central PC (option) SICK Remote Service remote maintenance (option) Process images display software (configuration required) Process image configurator (option) Manual input (option) MEx automatic protocol export to MS Excel (option; Excel template and configuration required) MEx configurator (option) QAL3 master CUSUM (option) GHG master MVO (option) Redundancy system software with automated switching (option) Workplace server system software (option) E-mail alarms (option) Analog data output software (data acquisition unit DAE or field module FM required) Modbus RTU/TCP data output software master and slave (PROFIBUS DP slave via optional converter) OPC DA 2.0 client data output software (option) Multi-display (Option; max. 5 windows)
<b>Menu languages</b>	German, English, French

MEAC300 EPW system software

<b>Conformities</b>	EN 14181 (QAL2) 2010/75/EU (Annex V) 2010/75/EU (Annex VI)
<b>Calculation interval</b>	5 s
<b>Integration time</b>	1 min, 3 min, 10 min, 20 min, 30 min, 60 min, 120 min, 240 min, 480 min
<b>Value type</b>	5 s value Average value Daily average Monthly average Annual average Moving average Total emissions Daily total emissions Monthly total emissions Annual total emissions Annual number of monthly averages > emissions limit Annual number of daily averages > 110% emissions limit 95% annual percentile of average values < 200% emissions limit Annual number of invalid daily averages Annual number of daily averages > daily limit Annual number of average values > average limit 97% annual percentile of averages < limit value 97% annual percentile of CO daily averages < limit value Daily number of the CO 30 min averages > average limit 95% daily percentile of the CO 10 min averages < limit value
<b>Software modules</b>	“European Power and Waste” evaluation software, Version 4.x (configuration required) Analog data acquisition software (data acquisition unit DAE or field module FM required) Modbus RTU/TCP data acquisition software master and slave OPC DA 2.0 client data acquisition software (option) Workstation software for PC workstation (option) Central system software via TCP for central PC (option) SICK Remote Service remote maintenance (option) Process images display software (configuration required) Process image configurator (option) Manual input (option) MEx automatic protocol export to MS Excel (option; Excel template and configuration required) MEx configurator (option) QAL3 master CUSUM (option) GHG master MVO (option) Redundancy system software with automated switching (option) Workplace server system software (option) E-mail alarms (option) Analog data output software (data acquisition unit DAE or field module FM required) Modbus RTU/TCP data output software master and slave (PROFIBUS DP slave via optional converter) OPC DA 2.0 client data output software (option) Multi-display (Option; max. 5 windows)
<b>Menu languages</b>	German, English, French

## Emissions PC

<b>Ambient temperature</b>	+5 °C ... +30 °C
<b>Electrical safety</b>	CE
<b>Enclosure rating</b>	IP 20
<b>Operating system</b>	Windows 10 Professional 64bit
<b>Frequency and RAM</b>	3.7 GHz, 8 GB RAM
<b>Hard drive</b>	2 x 1 TB RAID 1 1 x 1 TB backup
<b>I/O expansions</b>	2 x Ethernet 4 x RS-232/RS-422/RS-485 2 x USB 1 x DVI 1 x display port 3x PCI slots
<b>Monitor</b>	19" LED monitor
<b>Peripherals</b>	1x DVD writer Keyboard Mouse
<b>Dimensions (W x H x D)</b>	483 mm x 177 mm x 466 mm
<b>Weight</b>	25 kg
<b>Power supply</b>	
	Voltage 230 V AC

## Customer's PC (minimum requirements, alternative to emissions PC)

<b>Ambient temperature</b>	+5 °C ... +30 °C
<b>Electrical safety</b>	CE
<b>Enclosure rating</b>	IP 20
<b>Operating system</b>	Windows 7, Windows 10
<b>Frequency and RAM</b>	2.5 GHz, 2 GB RAM
<b>Hard drive</b>	1 x 300 GB 1 x 300 GB backup
<b>I/O expansions</b>	1 x Ethernet 1 x RS-232 2 x USB 1 x VGA 1x PCI slot (for radio clock)
<b>Monitor</b>	VGA or higher resolution
<b>Peripherals</b>	Keyboard Mouse

## Data acquisition unit DAU

<b>Ambient temperature</b>	-5 °C ... +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, volt-free to ±10 V
<b>Digital outputs</b>	12 changeover contacts: ≤ 48 V DC, 500 mA Max. 96 outputs
<b>Digital inputs</b>	32 inputs: ≤ 48 V DC Max. 256 inputs, volt-free
<b>Interfaces and bus protocols</b>	
	RS-232 Proprietary interface
<b>Operation</b>	via emissions PC and MEAC software
<b>Dimensions (W x H x D)</b>	See dimensional drawings
<b>Weight</b>	12 kg
<b>Power supply</b>	
	Voltage 115 V AC / 230 V AC

## Field module FM

<b>Ambient temperature</b>	-10 °C ... +50 °C
<b>Electrical safety</b>	CE
<b>Enclosure rating</b>	IP 20
<b>Analog outputs</b>	2 outputs: 0 ... 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 and bus protocols</b>	
	RS-485 Modbus RTU
<b>Operation</b>	via emissions PC and MEAC software
<b>Dimensions (W x H x D)</b>	See dimensional drawings
<b>Power supply</b>	
	Voltage 24 V DC

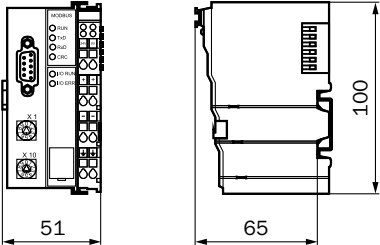


Ordering information

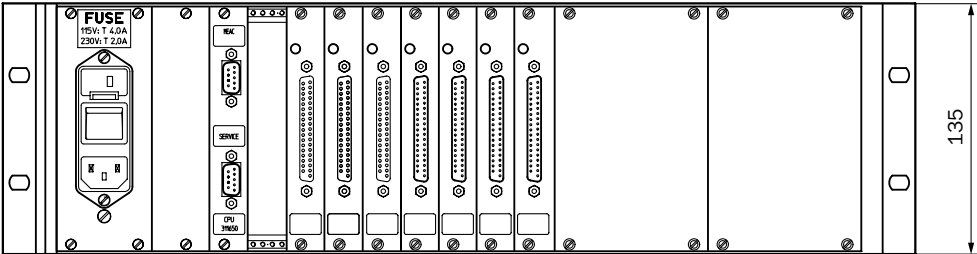
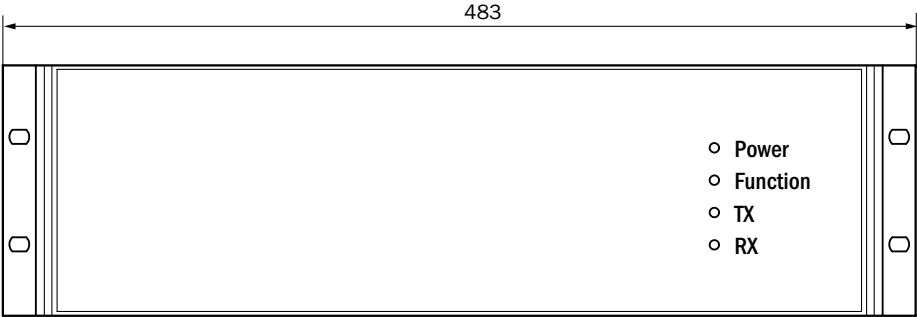
Our regional sales organization will be glad to advise you on which device configuration is best for you.

Dimensional drawings (dimensions in mm)

Field module FM



Data acquisition unit DAE





## 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 agencies 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 further locations → [www.sick.com](http://www.sick.com)