MEAC300

Data Acquisition System for clear and cost-efficient emissions data management

Cost-efficient emissions data management

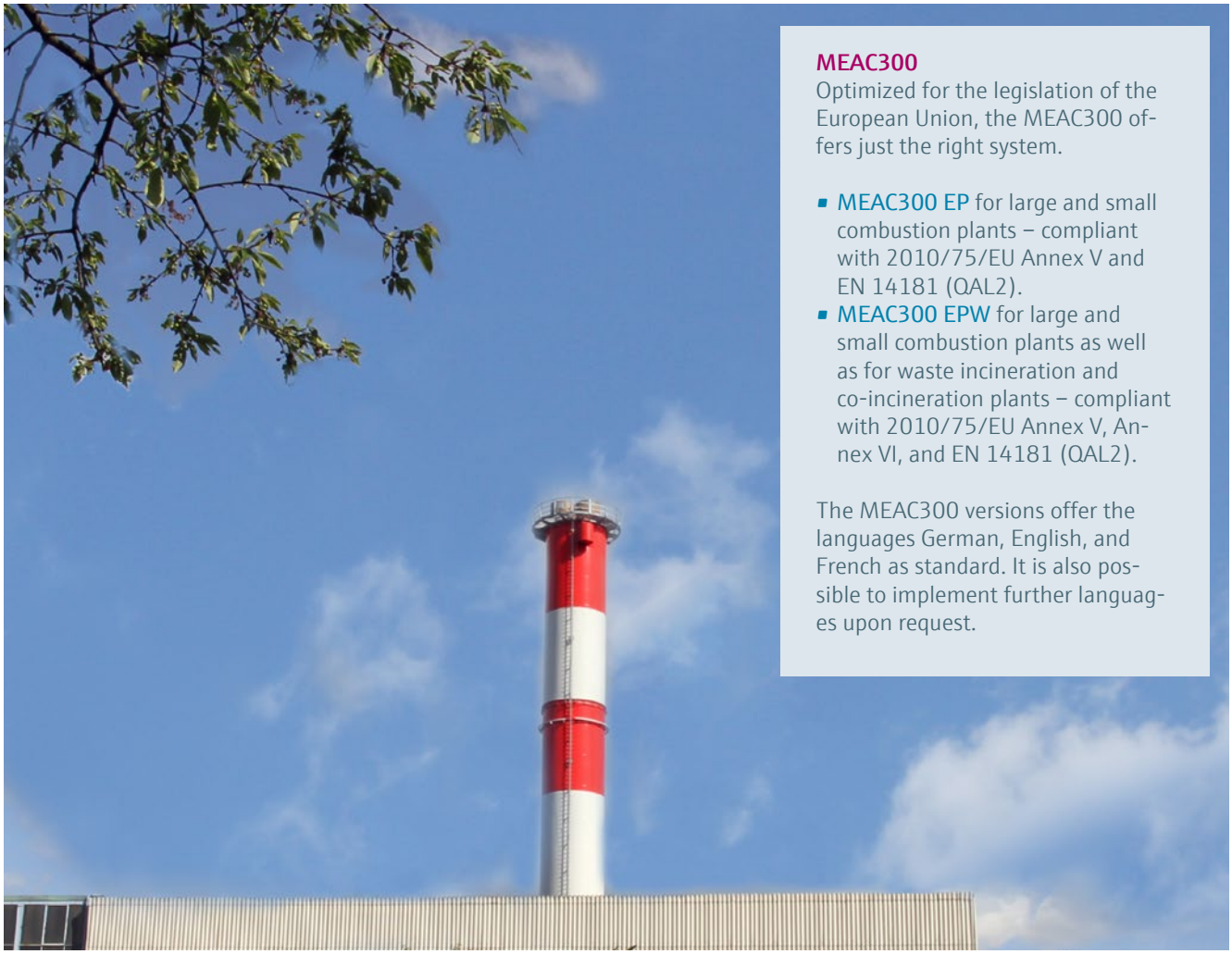
- Easy installation
- Easy commissioning without wiring for all Modbus-capable measuring devices
- Continued use of existing data and configurations from earlier MEAC versions
- Savings on service costs thanks to a flexible configuration interface for users
- Time savings through simulation mode for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

Endress+Hauser

People for Process Automation

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. We have long-term experience in the continuous measurement, monitoring and remote transmission of emission data.



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.

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.

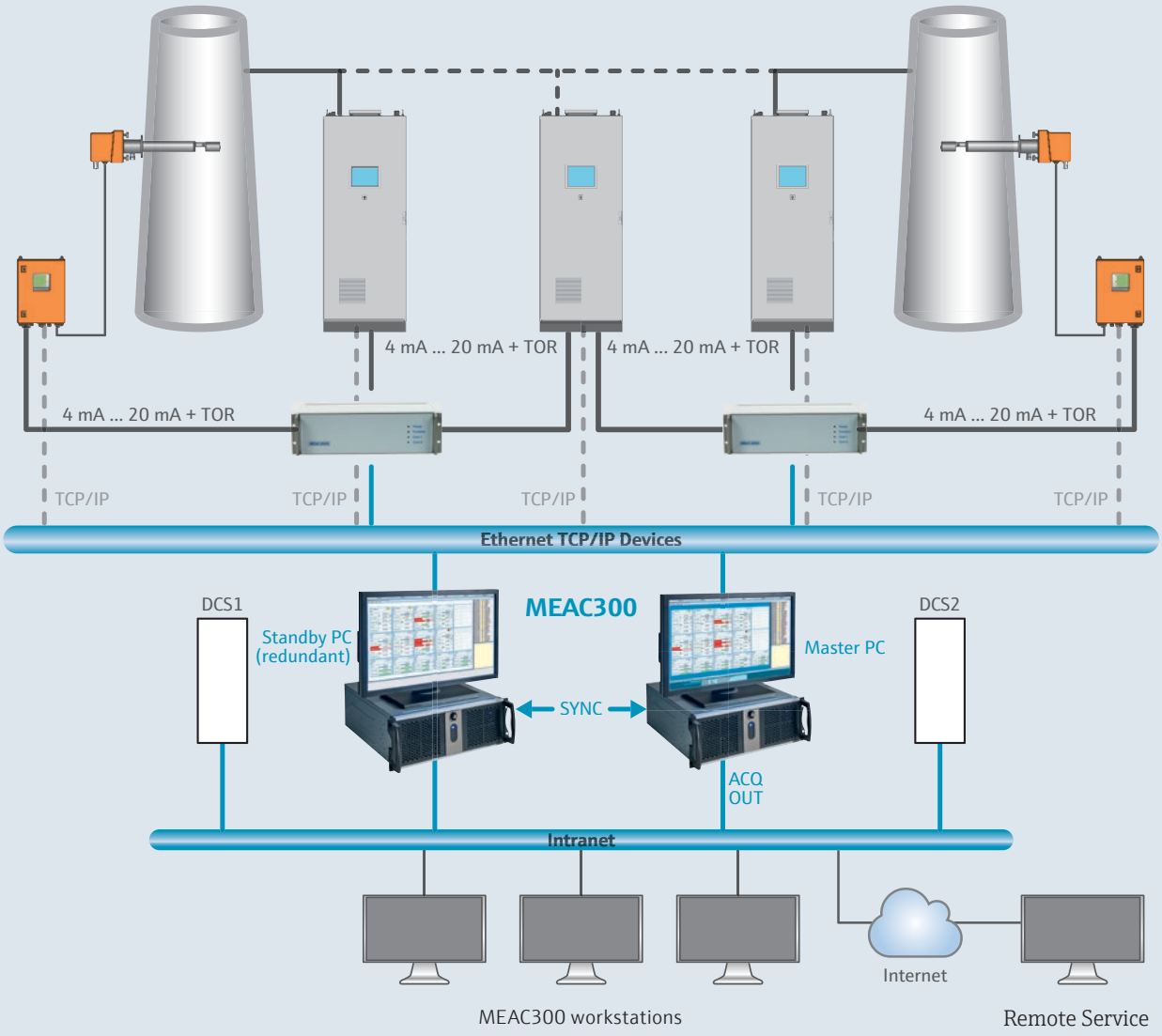
Calculation and evaluation

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	SO2 Day	SO2 Year	CO Day	CO Year
		AL	70		200	
		RG% p.a.	70 für 95%		200 für 95%	
		DLV	1,1* 35		1,1* 100	
		Unit	mg/Nm³		mg/Nm³	
		Availability	100,0	84,7	100,0	100,0
M	1	AV <= 0,05 * AL	0	1	0	0
M	20	AV <= 1,00 * AL	0	30	0	0
S	1	AL overrun	0	13	0	0
S	2	MD<2/3 other	0	0	0	0
S	3	Subst. val. for ref. var.	0	0	0	0
S	4	Malfunction AMS	0	24	0	0
S	5	Maintenance AMS	0	9	0	0
S	6	Plant in operation	24	216	24	216
S	7	MD<2/3 due to plant	0	1	0	1
S	8	Implausible/unclassified	0	0	0	0
S	9	Cal. range short storage	0	2	0	0
S	10	Cal. range long storage	1	1	0	0
S	11	FGP failure	0	0	0	0
S	12	FGP failure current	0		0	
S	13	FGP failure moving year	0	0	0	0
S	14	AV>AL by start/stop	0	0	0	0
T	1	DV < 0.1*DLV	0	0	0	0
T	2	DV < 0.2*DLV	0	0	0	0
T	3	DV < 0.3*DLV	0	0	0	0
T	4	DV < 0.4*DLV	0	0	0	0
T	5	DV < 0.5*DLV	0	0	0	0
T	6	DV < 0.6*DLV	0	0	0	0
T	7	DV < 0.7*DLV	0	0	0	0
T	8	DV < 0.8*DLV	0	0	0	0
T	9	DV < 0.9*DLV	0	0	0	0
T	10	DV < 1.0*DLV	0	0	0	0
TS	1	DLV overrun	1	7	1	8
TS	2	Unable to create DV	0	2	0	1
TS	3	Availability not maintained.	0	0	0	0
MM	1	count MAV <= MAL		0		0
MMS	1	count MAV > MAL		0		0
J	1	AV <= ALV		93%		100%
JS	1	AV < 95%		1		

System software

- The software on the emissions PC runs on Windows 7 and Windows 10
- Direct acquistion of the measured data on modbus-compatible measuring devices via bus or network
- Optional analog measured data acquistion 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 remote service platform

MEAC300
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 sec. 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)

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

CE

More Information online

For more information, enter the link or scan the QR code to get direct access to technical data, operating instructions, software, application examples, and much more.
www.endress.com/meac300

Technical data

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

MEAC300 EP system software

Conformities	EN 14181 (QAL2) 2010/75/EU (Annex V)
Calculation interval	5 s
Integration time	1 min, 3 min, 10 min, 20 min, 30 min, 60 min, 120 min, 240 min, 480 min
Value type	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
Software modules	"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) 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)
Menu languages	German, English, French

MEAC300 EPW system software

Conformities	EN 14181 (QAL2) 2010/75/EU (Annex V) 2010/75/EU (Annex VI)
Calculation interval	5 s
Integration time	1 min, 3 min, 10 min, 20 min, 30 min, 60 min, 120 min, 240 min, 480 min
Value type	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
Software modules	"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) 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)
Menu languages	German, English, French

Emissions PC

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

Customer's PC [minimum requirements, alternative to emissions PC]

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

Data acquisition unit DAU

Ambient temperature	–5 °C ... +50 °C
Electrical safety	CE
Enclosure rating	IP 20
Analog outputs	8 outputs: 0 to 25 mA Max. 32 outputs, not volt-free
Analog inputs	16 inputs: –5 to 30 mA, 100 Ω Max. 80 inputs, volt-free to ±10 V
Digital outputs	12 changeover contacts: ≤ 48 V DC, 500 mA Max. 96 outputs
Digital inputs	32 inputs: ≤ 48 V DC Max. 256 inputs, volt-free
Interfaces and bus protocols	
RS-232	Proprietary interface
Operation	via emissions PC and MEAC software
Dimensions (W x H x D)	See dimensional drawings
Weight	12 kg
Power supply	
Voltage	115 V AC / 230 V AC

Field module FM

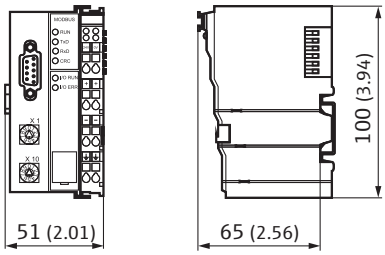
Ambient temperature	–10 °C ... +50 °C
Electrical safety	CE
Enclosure rating	IP 20
Analog outputs	2 outputs: 0 ... 20 mA Max. 16 outputs, not volt-free
Analog inputs	2 outputs: 0 to 20 mA Max. 16 outputs, single-pole grounded, not volt-free
Digital outputs	4 outputs: 24 V, 500 mA Max. 24 outputs
Digital inputs	4 inputs: 24 V Max. 32 inputs
Interfaces and bus protocols	
RS-485	Modbus RTU
Operation	via emissions PC and MEAC software
Dimensions (W x H x D)	See dimensional drawings
Power supply	
Voltage	24 V DC

Ordering information

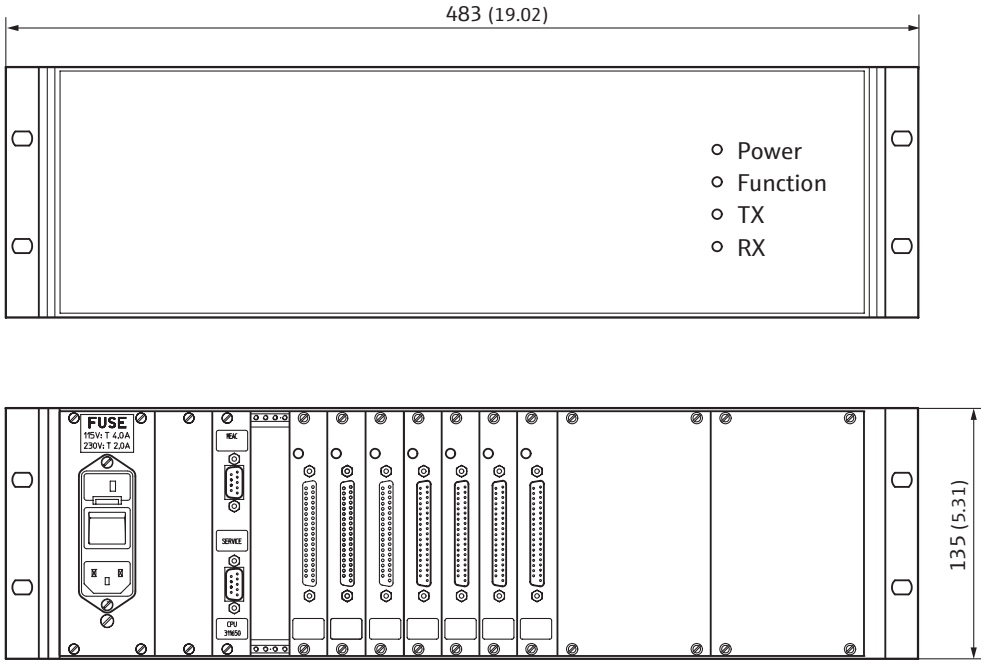
Our regional sales organization will help you to select the optimum device configuration.

Dimensional drawings

Field module FM (dimensions in mm (inch))



Data acquisition unit DAE (dimensions in mm (inch))



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