DEOS.AG

Technology for intelligent buildings

MADE IN GERMANY

cloudready

SERVICE & SECURITY Center

MEMBER OF BACnet INTEREST GROUP EUROPE

OPEN EMS DDC-Controller

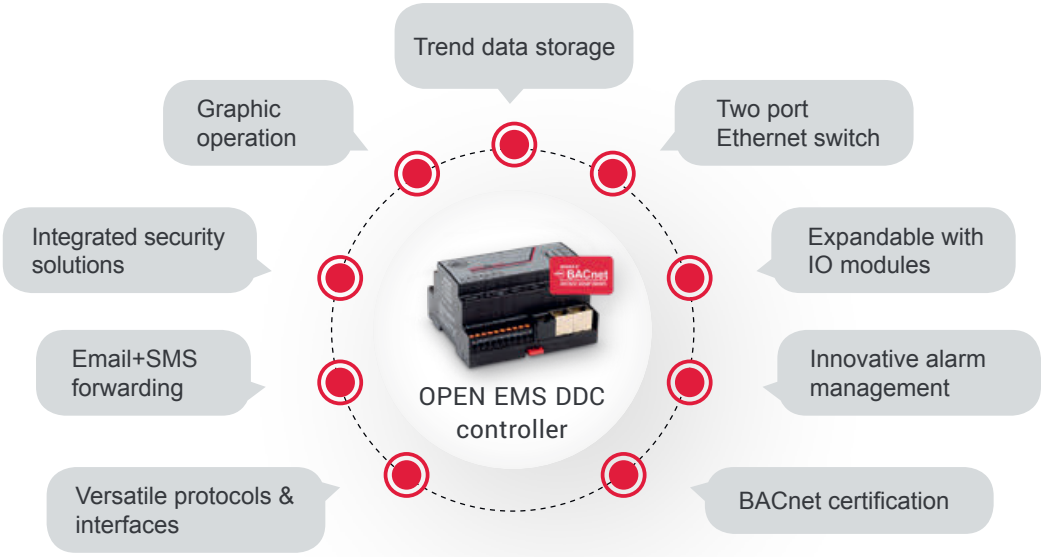
For secure & intelligent building automation

DDC Controller – versatile and secure

Central intelligence in buildings

The OPEN EMS DDC controllers provide the central intelligence in your building as cloud ready controllers. They are used for integrated building and room automation and special HVAC applications. The main task of the controllers is the control, regulation and monitoring of your technical building systems and to ensure optimum energy efficiency.

The OPEN EMS platform promises to reduce energy costs in buildings and at the same time increase comfort for building users. To ensure IT security in the building, our DDC controllers are equipped, among other things, with an innovative firewall according to the highest security standards. System graphics are called up directly on the automation station via the integrated HTML5 web server OPEN*view*. From affordable compact controllers to powerful native BACnet building controllers (B-BC) with redundancy and security solutions, the DEOS portfolio offers you the optimum DDC controller for your project.



Time-saving programming
Realise time savings of up to 90% by using DEOS libraries for system programming

Integrated security solutions
Highest possible operational reliability due to redundant system structure, HTTPS and integrated firewall

Freely programmable
Guarantees you maximum flexibility in your projects

Certified
Certifications according to standards such as BACnet / BTL / AMEV B / WSPcert / Fraport / CSA / CE / VDE

Integrated HTML5 web server
Equipped with integrated HTML5 web server OPEN*view* for system visualisation

IoT & cloud-ready
Ready for use with the new DEOS BMS OPEN*web Cloud*

DIN-rail mounting
DIN-rail mounting allows easy integration into the switch cabinet on site

2 Ethernet ports
Enable easy on-site maintenance without communication failures and the daisy chain cabling of controllers also reduces cabling effort

Controllers at a glance

The right controller for every application

The OPEN EMS controller family uses the system openness of the entire DEOS OPEN EMS platform (IO modules, BMS, energy management, etc.) and is seamlessly integrated into the DEOS overall concept – from room automation to integrated building automation.

	4100 EMS	3100 EMS	810 EMS	710 EMS	600 EMS	500 EMS	600 EMS basic 24	SRU
Interfaces [1]								
BACnet objekte	4.000	–	2.000	–	500	–	250	100
M-Bus data points	250	250	250	250	10	10	10	-
Modbus data points	1.000		1.000		100			50
KNX data points	1.000		1.000		50			50
DALI addresses	–		256 Addresses		–			-
CAN-bus participants	99 / 198		0 / 5 / 12 / 32		0 / 5		–	CAN local
Operation [1]								
Manual operation	–		–		✓	✓	–	–
OPEN *view* (text-based)	✓		✓			✓		–
OPEN *view* (graphical)	optional		optional		optional		✓	–
Features [1]								
Integrated inputs & outputs	–		–		32	32	24	16
HSB ring & hot standby	✓	✓	–		–			–
Service & Security Center	✓		✓		✓			–

1) The exact technical information such as interfaces, operation or features of the product variants can be found in the DEOS product catalogue.

SERVICE & SECURITY Center

Versatile: OPEN 810 EMS also as a data logger

The OPEN 810 EMS (BACnet) is one of the most versatile controllers in the DEOS range of products. In addition to the actual main tasks of controlling, regulating and monitoring technical building systems and ensuring optimum energy efficiency, the controller can also be used as a data logger. In combination with an external level converter, up to 250 meters can be connected without license costs. The DDC controller is equipped with an innovative firewall (*Service & Security Center*) according to the highest security standards in order to guarantee security in the building. Whether for individual buildings or in the property portfolio – the OPEN 810 EMS controller is the right product for your individual application!

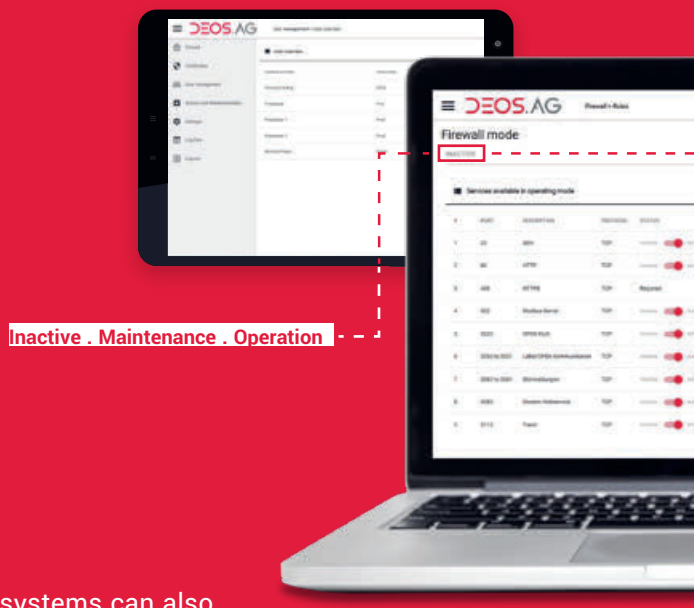
Security in building automation

Secure DDC Controllers with the *Service & Security Center*

Every building automation system requires DDC components that are secure and protect against third-party access. This necessary IT protection is expensive and often requires a lot of IT expertise. With the *Service & Security Center* and its security features, the OPEN EMS DDC controllers from DEOS AG offer a simple and pragmatic solution.

The security settings in the *Service & Security Center* are easy to use. If desired, users on the OPEN EMS can be created and managed with an expiration date. In addition, the user can choose between three firewall modes: inactive, maintenance and operation. Preconfigured security settings for the individual application can also be set. Expert mode offers employees with IT expertise additional firewall settings. Changes to the configuration as well as the login and logout processes are saved and recorded. In summary: the functions of the *Service & Security Center* can be operated by any employee even without prior IT knowledge.

- ✓ Easy-to-use professional IT protection
- ✓ No IT expertise required
- ✓ Security thanks to firewall, certificates and HTTPS
- ✓ Import and export of configuration files
- ✓ Clientless access via standard browser
- ✓ Delivered in preset condition for reliable operation
- ✓ Free security upgrades of older controllers in existing systems can also be carried out



& PLUG PLAY

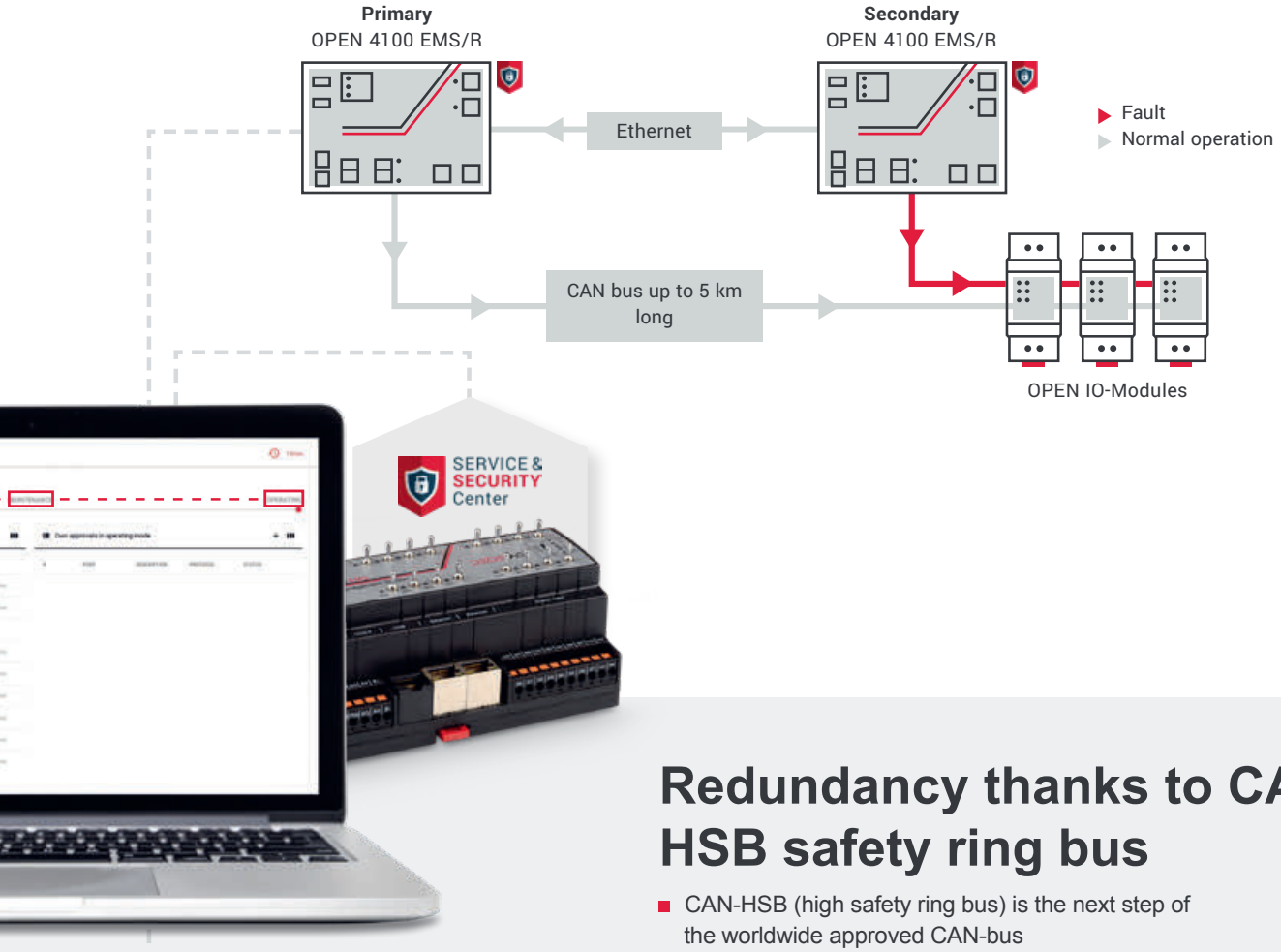
DEOS Connect Boxes

Security in the cloud

With DEOS Connect boxes for the implementation of cloud projects or site networking, we make your building automation network additionally secure against external access! The high security standards such as firewall functions and encrypted communication ensure that your system is optimally protected against cyber attacks. Since the Connect boxes are already preconfigured, you do not need any additional IT know-how to set them up. With the *Service & Security Center* and the firewall functions of the Connect boxes, we protect your building automation network twice over. Building automation has never been so secure!

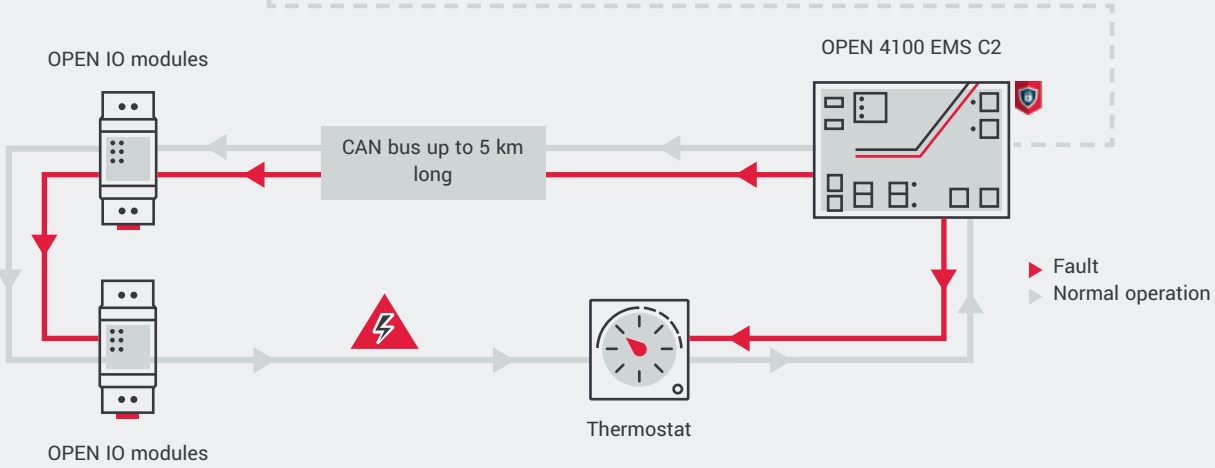
Redundant hot standby controller

- Two redundant OPEN EMS controllers are available to increase operational safety
- The first (primary) controller is normally used for the control tasks
- A secondary controller is in standby mode
- If the primary controller fails, the secondary controller performs the control functions fully automatically



Redundancy thanks to CAN-HSB safety ring bus

- CAN-HSB (high safety ring bus) is the next step of the worldwide approved CAN-bus
- DEOS IO modules at the field level are networked together via a CAN-bus ring topology
- **Advantage: if the ring is interrupted, the connected field devices can still be controlled from the other ring side**



Versatile system integration

Take advantage of the openness of OPEN EMS systems

System integration made easy – the prerequisite for simple and safe operation and control of room and building automation is the combination of BA components to form a complete system. Using standardised communication protocols and interfaces, the OPEN EMS DDC controllers stand for reliable and powerful building automation and enable simple and economical integration of existing systems in buildings (retrofit) as well as in new projects. A large number of standardised interfaces and protocols are available:

DALI-Bus

- ✓ DALI

CAN-Bus

- ✓ CAN-Bus

RS-485

- ✓ BACnet-MS/TP
- ✓ Modbus-RTU
- ✓ Grundfos Pumpen
- ✓ EBM-Papst fans

RS-232

- ✓ BACnet-PTP
- ✓ KNX
- ✓ M-Bus

TCP/IP

- ✓ KNX
- ✓ BACnet
- ✓ Modbus
- ✓ LON

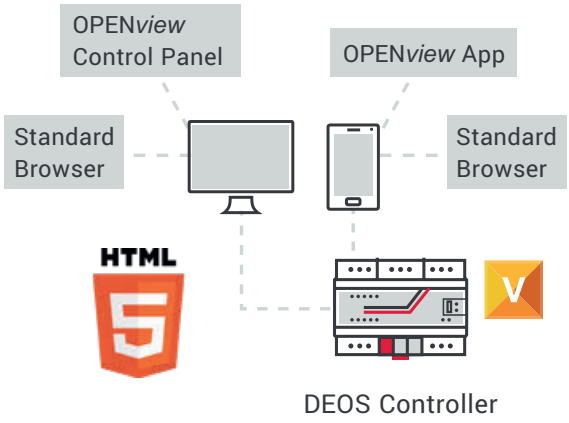
Flexible expandable controllers
Simply contact us if you encounter non-standardised communication interfaces in your project. We are also happy to help you with the connection or successful implementation.

Integrated HTML5 OPEN*view* web server

Graphical system monitoring with BMS basic functions

OPEN*view* is the powerful HTML5 web server from DEOS AG that is available to you on all controllers of the OPEN EMS family. The graphical visualisation and operation with OPEN*view* is particularly user-friendly and simple. Thanks to the basic BMS functions, OPEN*view* is ideal for small projects.

There are no limits to your flexibility – use the OPEN*view* web server platform-independently (PC, tablet or smartphone), and access it decentrally via Internet or Intranet. You can monitor your DEOS controllers at all times and always operate your buildings at the optimum energy efficiency levels.



OPEN*view* enables you to visualise and access the parameters for heating, ventilation and air conditioning as well as light, shading and temperature. It is also easy and intuitive to operate. The range of functions of the HTML5 web server OPEN*view* meets the requirements for simple or singular building structures. If these requirements should increase during the course of the project, you can use our Cloud BMS OPEN*web Cloud* economically from 100 data points. This way, you can benefit from all the features of a comprehensive BMS.

Flexible and user-friendly

For control with OPEN*view*, the user can use any internet browser. The OPEN*view* ControlPanel visualisation program and the OPEN*view* App are also available for the graphical operation of all current android smartphones. In addition to this software solution, DEOS AG offers the Embedded Touch PC 10.1 as a practical control unit for installation in switch cabinets.

OPEN*view*, OPEN*web* or OPEN*web* Cloud?

We will be happy to advise you so that you too can find the right system monitoring for your individual project. Feel free to contact us! Together we will work out a solution for you:

✉ **partner@deos-ag.com**

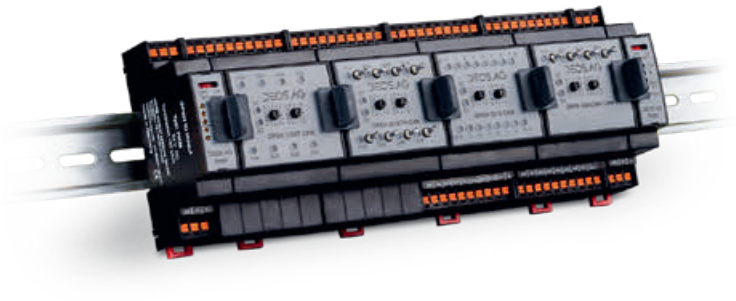
Practical IO modules

More project flexibility

With the DEOS IO modules you can flexibly expand the available inputs and outputs of the OPEN EMS controller family. A total of 16 different versions of the OPEN IO modules are available. Whether as analogue or digital module, as IO combination module or pure input or output module – you will find the right module for your project! The OPEN IO modules, which have a modular design and feature powerful communication properties, are ideally suited for all controller applications for technical building automation. They are compact, easy to install and can be universally used and combined with various measuring elements.

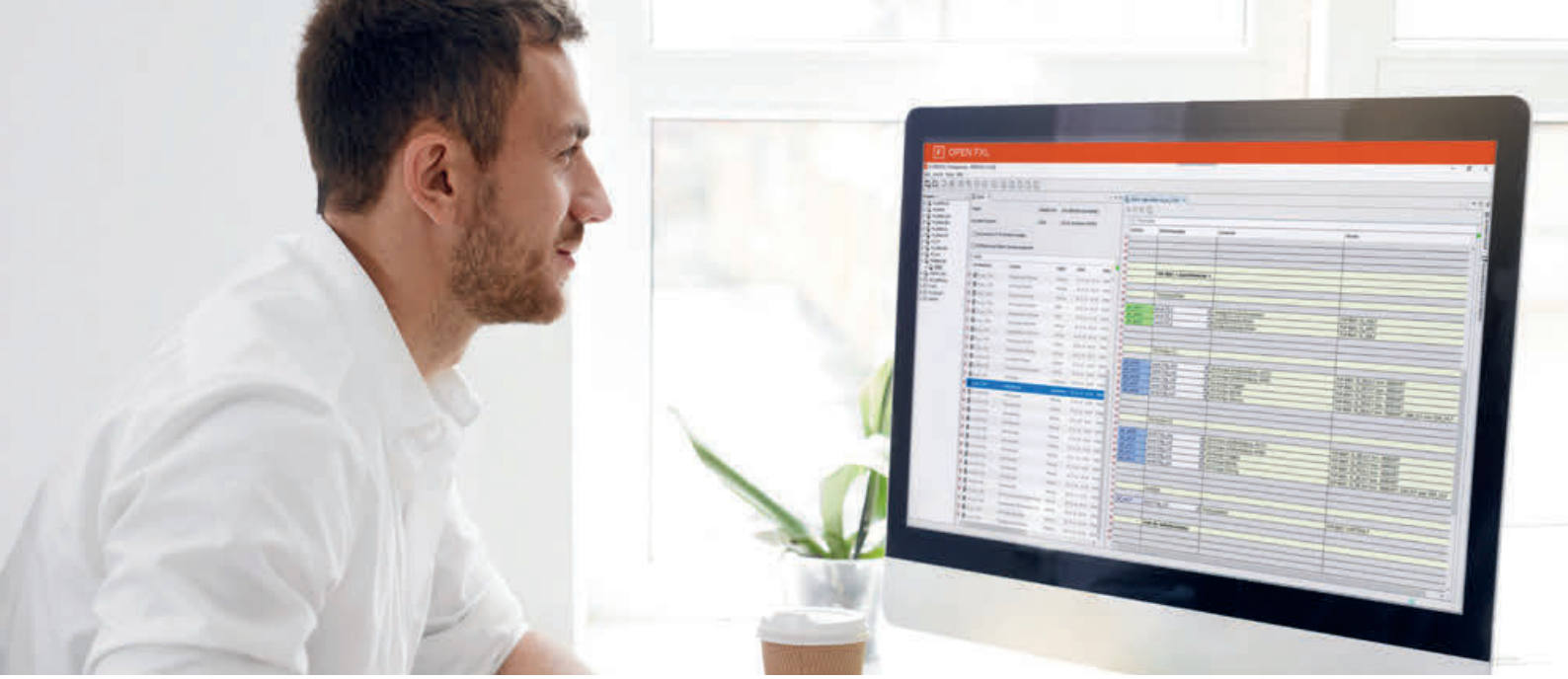
Easy connection in the field

DEOS IO modules are connected to the OPEN EMS controller via the CAN-bus (Controller Area Network) – the most widely used bus system for networking control units. This bus system can accommodate up to 99 DEOS IO modules per line, ensuring high flexibility for future expansion. The bus speed depends on the distance of the IO modules to the controller and is up to 1 Mbit/s depending on the bus quality.



Price benefit
Manual operation via push buttons on the modules enables clever adjustment of the output voltage in the event of service directly on site and fulfils the function of local priority operation.

- Compact design for space-saving integration in the switch cabinet
- Manual CAN-bus address switches on the IO modules
- CAN-bus communication with up to 1 Mbit/s for a length of up to 5 km
- IO modules feature LED status displays
- 24-bit AD converters on digital IO modules, either with transistors or relay outputs
- A total of 16 variants as digital, analogue or combination modules
- Spring terminals enable the quick replacement of IO modules on the DIN rail
- Various IO modules available for wall and DIN rail mounting
- Convenient manual operation that can be overridden from a central location
- According to EN ISO 16484-2:2003 and VDI 3814



Easy programming of the controllers

Time-savings of up to 90% during programming

The FXL is the central tool for comprehensive and time-saving system programming. With this graphical programming tool, you can freely program your systems according to your individual project requirements. This offers maximum flexibility and forms the powerful basis for convenient, fast and reliable system programming.

Your time is precious – that's why we focus on functions that reduce your efforts and make your daily work easier. For example, you can simultaneously load a large number of controllers with ready-made control programs or firmware, even during system operation via an online session. In addition, the program simulation allows functions to be tested and helps with troubleshooting. Programming using the DEOS libraries is also much more time-saving, allowing you to reduce your effort by up to 90%.

Graphical programming with macros and templates

Reach your goal quickly and error-free – that's exactly what graphical programming and the macro and template library from DEOS AG can do. With over 1,000 pre-programmed and tested system modules (macros) and more than 300 completely finished HVAC systems (templates), you can reduce your programming effort by up to 90%. The tools support the programmer in their work, e.g. with the necessary programming steps, troubleshooting and system documentation. In this way with DEOS a total of 4 work processes are completed in one step:

1. Monitoring and control programs are created
2. System graphics are generated automatically
3. User interface for system operation is customised
4. Complete documentation, including a description of the control data

A plausibility check is carried out afterwards to examine the project for possible sources and can then be loaded directly onto the controller. System graphics are also stored on the controller after the upload and are retrieved by the DEOS BMS OPEN*web* or the integrated web server OPEN*view*. In this way, we guarantee a uniform display on your end devices – system programming is only that simple with DEOS!

System topology

DEOS product overview

Management

Cloud

DEOS
Secure Network
- Remote access
- Side networking
- Hosting Services
- IT consulting – plan, build
- IT services – operate

Mobile Apps

Desktop

DEOS *QuickviewApp*
Mobile system access via link

OPEN*view App*
Mobile building automation monitoring

OPEN*web App*
Mobile BACnet building management system

OPEN*energy*
Energy reporting

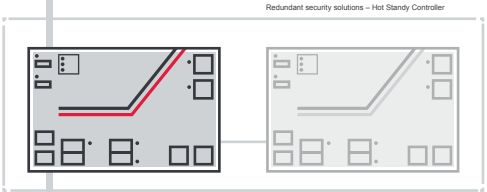
OPEN *web*
Server/Client
BACnet building management system

OPEN*web Cloud*
BACnet building management system

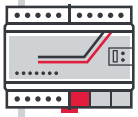
TCP/IP

BACnet/IP

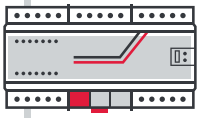
Building automation



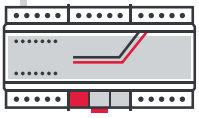
OPEN 3100 EMS
OPEN 4100 EMS (BACnet)
max. 4000 BACnet objects
max. 4000 physical datapoints



OPEN 710 EMS
OPEN 810 EMS (BACnet)
max. 1000 BACnet objects
max. 512 physical datapoints



OPEN 500 EMS
OPEN 600 EMS (BACnet)
max. 250 BACnet objects
max. 112 physical datapoints
32 integrated IOs



OPEN 600 EMS basic24 (BACnet)
max. 250 BACnet objects
max. 24 physical datapoints
24 integrated IOs

OPEN IO modules
(with PK modules)

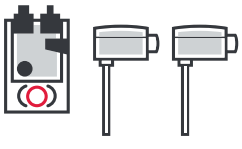
OPEN IO modules
(digital & analogue)

OPEN IO modules
(digital & analogue)

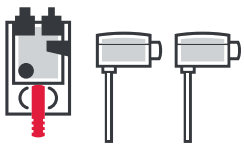
cloudready

All DDC controllers are cloud-ready and can be used together with the DEOS BMS OPEN*web Cloud* for modern and economical cloud projects.

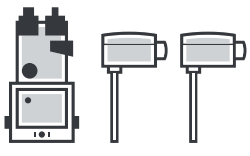
Field devices



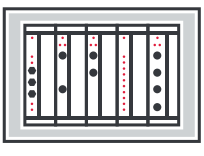
PLDx-24-CAN
PLDx-24-BAC



PWDx-24-CAN
PWDx-24-BAC



DWH10-24Y-CAN
DWH10-24Y-BAC



Local priority operating level

DEOS.AG

Technology for intelligent buildings

DEOS *Secure AlarmApp*
Mobile system messages

DEOS *Secure AlarmApp*
System messages

Room operation

Control units

LED-Touch-Display 15,6" to 21,5"

Embedded Touch-PC 10.1"

TUP 5,7" and 3,5"

FCT/ HCT

Modbus

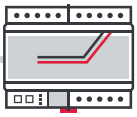
CORA

CAN/BACnet

OPEN GATE
Message gateway

Room automation

BACnet MSTP



OPEN SRU
BACnet Single Room Unit
up to 32 integrated IOs

System integration

BACnet · M-Bus · Modbus · BACnet MSTP · KNX · DALI · ebmpapst · GRUNDFOS

further on request

Certifications

BACnet · BACnet International · FC · BTL · cULus · CE

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