

Micro Data Center

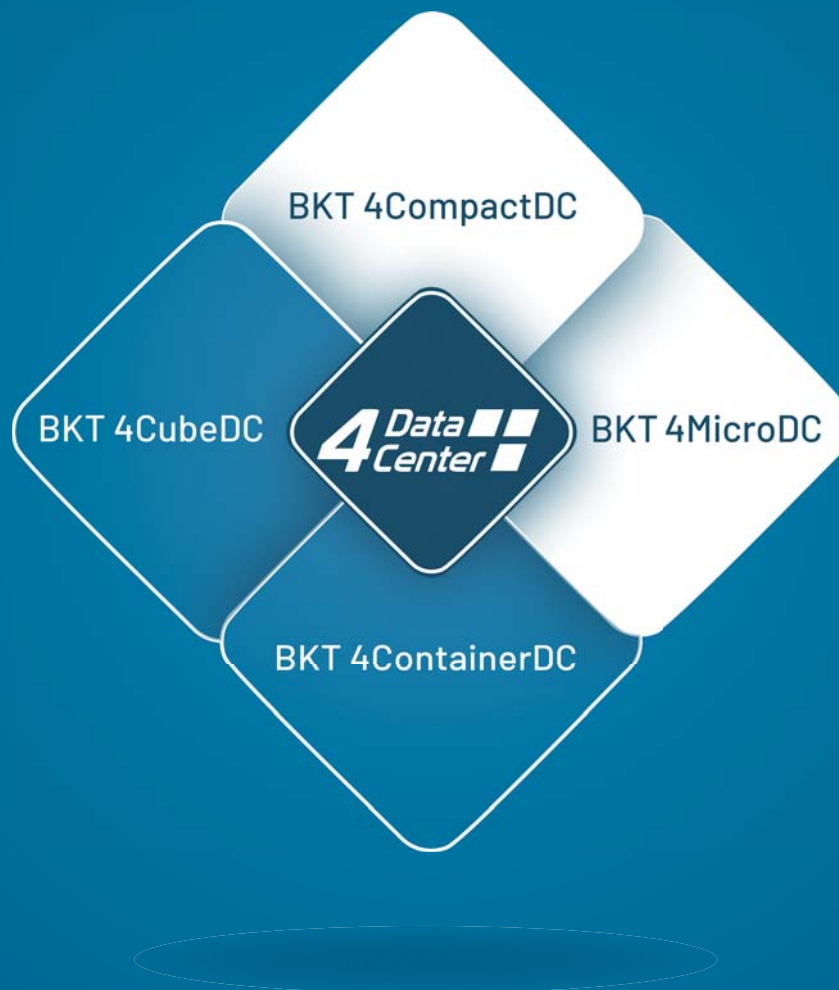




Micro Data Center System

The dynamic development of IT, telecommunications infrastructure, applications, EDGE-computing, data processing archiving services forces entrepreneurs and public institutions to build technical infrastructure and equip server rooms or build Data Centers.

This enables mass access to information, knowledge, entertainment, financial services and online shopping. The processes of automation and robotization and the Internet of Things are a major challenge. This requires the creation of IT equipment (like: servers, switches, recording) in close proximity to production processes and process management infrastructure. Then, server rooms take smaller spaces and are limited to a maximum of several server enclosures. However, the permanent maintenance of critical IT infrastructure remains unchanged. (Availability and reliability, 365/7/24 operation, redundancy of systems).



The lack of capacity to adapt a room to accommodate IT services and the small area necessary for servers resulted in the development of MICRO DATA CENTER systems, i.e. integrated server enclosures combining all required functions necessary for continuous and permanent operation of server applications.

Micro DC are built using sealed enclosures, where air conditioning works in a closed-circuit system (within one or more enclosures). Power supply and distribution is provided by UPS units, including modular ones, together with PDUs in a monitoring or managed version. The fire protection function is performed by an integrated extinguishing panel with an early detection system. The whole configuration is monitored and supervised on a touch panel and by remote access to the DCIM application.

Addressing this challenge, we have created an integrated microserver room > BKT 4MICRODC.

An integrated and mobile data center to address all your needs.

BKT 4MicroDC- full power supply, cooling and access security



- High-density power server rooms,
- High efficiency, redundancy
- Security,
- Scalability,
- Ease of installation and expansion,
- Cooling power between 5 kW and 40 kW.

The MicroDC enclosure is an ideal solution for facilities with high climate and technical restrictions. Wherever the implementation of an air-conditioning and extinguishing system involves adapting large areas to one/several server enclosures generates high adaptation costs.

Thanks to its All-in-One design, the MicroDC enclosure will work perfectly in historic, rented buildings or construction facilities, i.e. in places at risk of relocation in short term.

Furthermore, BKT 4MicroDC is an ideal solution for existing server rooms, whenever large-capacity IT devices (selected server enclosures) need to be expanded.

BKT 4CompactDC - mobile server room in a compact enclosure



- Easy to carry / migrate,
- Space saving,
- Simple extension + N,
- „all in one” - simply provide a power connection,
- Cooling power between 2 kW and 5 kW.

Thanks to its ultra-compact design, CompactDC can be used in spaces which are too small to accommodate full-scale Data Center infrastructure.

Thanks to its All-in-One design, this solution will work perfectly in industrial facilities or production halls close to technological processes.

System elements



InCab Server enclosure resistant to dust and water IP54 42-47U of usable surface
Dimensions 800x1000mm, 800x1200mm
Load capacity of 1500 kg



Precision air conditioning system DX and CW
Power from 2kW to 40kW
Optional FreeCooling function



Power distribution: control-monitoring PDUs
HZ, W, A, V, PF, sockets-ON/OFF,
1- or 3-phase
Load up to 32A



Environmental monitoring 1U, 19" enclosure,
SMS, e-mail, SNMP
Alarms and plot archiving
Configurable logical functions
Ambient sensors



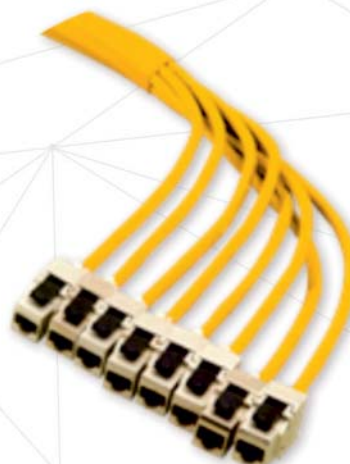
Access control: ACS 1U, 19" enclosure
 Encrypted communication
 Log archiving - Plug & Play solution
 BMS/SM4DC integration capability



BKT EPR extinguishing and detection panel
 19" panel design
 Safe NOVEC extinguishing agent, HFC-236fa
 Double detection system



FO data transmission
 MPO - OS2, OM3, OM4, OM5
 SC, LC, E2000
 High stacking-HD



CU data transmission
 High stacking-HD
 No. 48 1U, HD ports
 Cat. 6A, 7A, 8 trunk cables (preterm)

BKT InCab Rack



- RACK enclosure with improved parameters and functionalities,
 - Enclosure dedicated to servers, disk arrays,
 - modular design.
- Stable, welded frame,
 - IP54 rating (hot-cast gaskets),
 - > Optimization of air flow > components for zone separation (cool/hot) internal cooling capacity,
 - Single-front/double-back doors,
 - Automatic door opening system in the event of failure (power outage),
 - Lock: key locking or access control system,
 - Roof/floor: modular, LAN/POWER cable glands,
 - Chassis for cable routing.

iROW DX SideWall (SW) sealed air-conditioners



Model	110K423005DX0 /H.3	110K423007DX0 /H.3	110K4230012DX0 /H.3	110K4230017DX0 /H.3	110K4230021DX0 /H.3	110K4230025DX0 /H.3	110K4230030DX0 /H.3
Cooling power [kW]	5.6	7.6	12.8	17.6	21.2	25.1	31.1

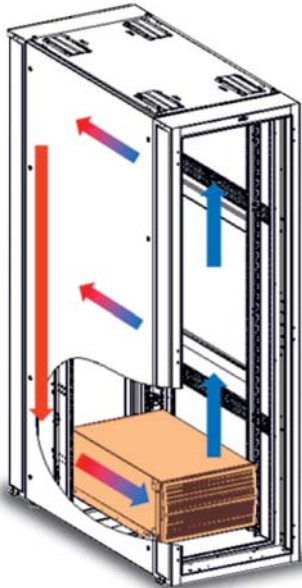
SideWall Integrated condenser

Model	110K423005DXI.3	110K423007DXI.3	110K4230017DXI.3
Cooling power [kW]	5,6 kW	7,6kW	10,8kW

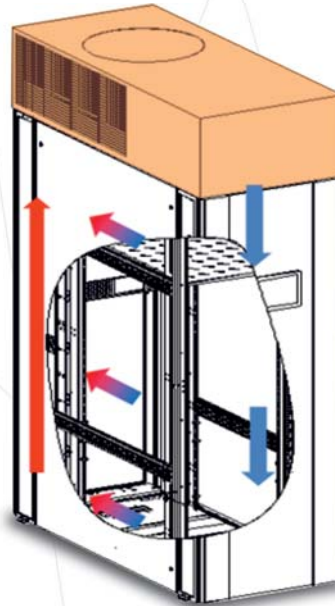
- iROW linear air conditioning system, 300 mm width units,
- Inverter compressor,
- R410A,
- Versions with and without a humidifier,
- Built-in condenser with fan operation control,
- Visualization and control on the touch panel,
- Optionally: FreeCooling - Energy Saver system.

CompactDC cooling

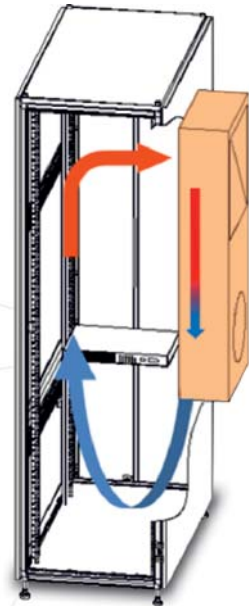
RackMount



TopMount



SideMount



3,9-12,0kW
6-12U
R410a

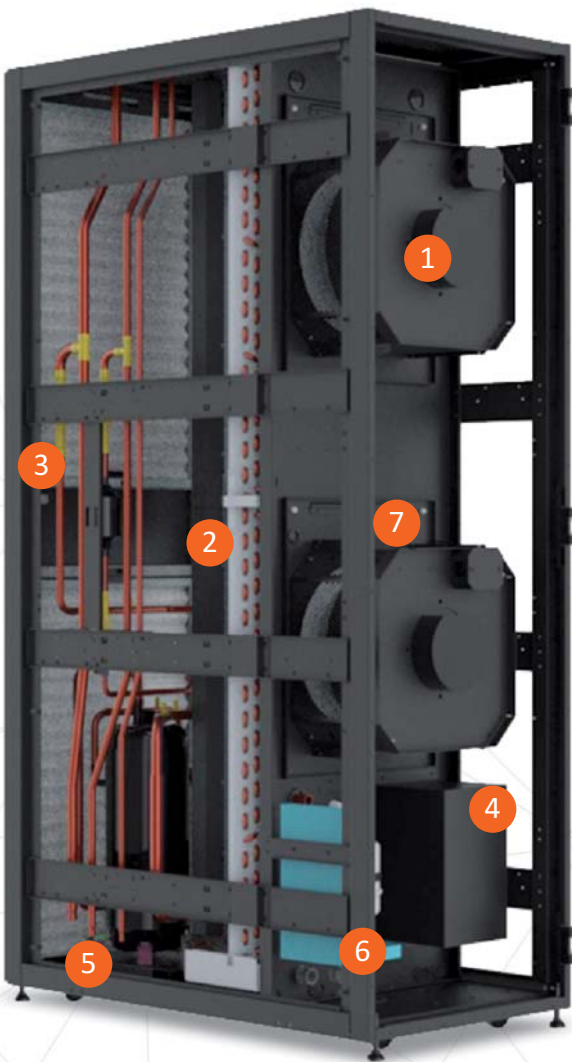
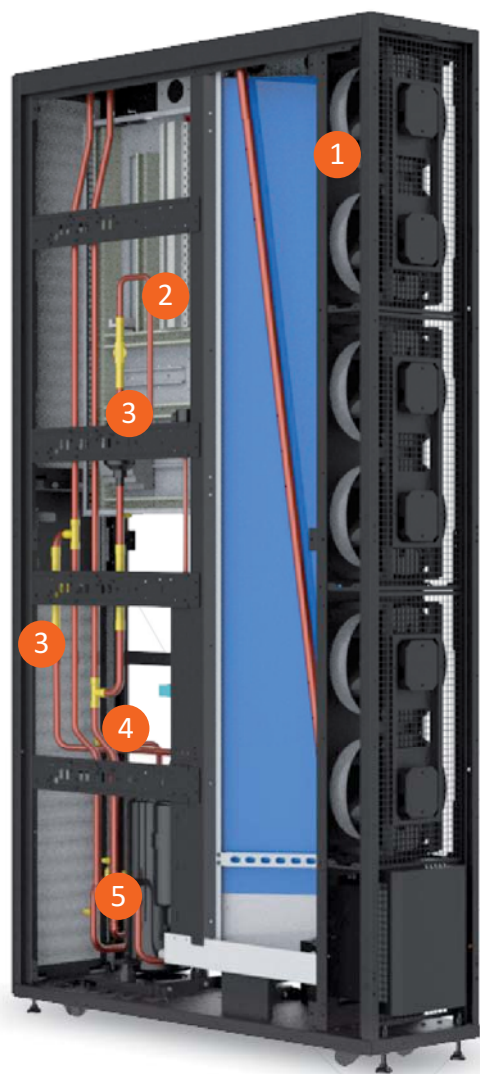


2,5-5,5kW
600x1200mm
R410a



2-5kW
R134a

MicroDC cooling



- 1 Fans
- 2 Controller
- 3 Expansion valve
- 4 Compressor

- 5 AC/EC inverter
- 6 Humidifier
- 7 Heater

BPS2000-power distribution&monitoring

- Supply of an adequate number of power lines (sockets) for the RACK,
- Power supply security, energy quality of IT devices; monitoring of RACK/CUBE electrical parameters.

IN/OUT ports for serial
ModBus RTU/SNMP
connection



“Hot Swappable” replaceable management
module

LED indicators
of the current working state of the strip

LCD display

LCD display navigation keys

Temperature/humidity sensor port

NET port for network communication

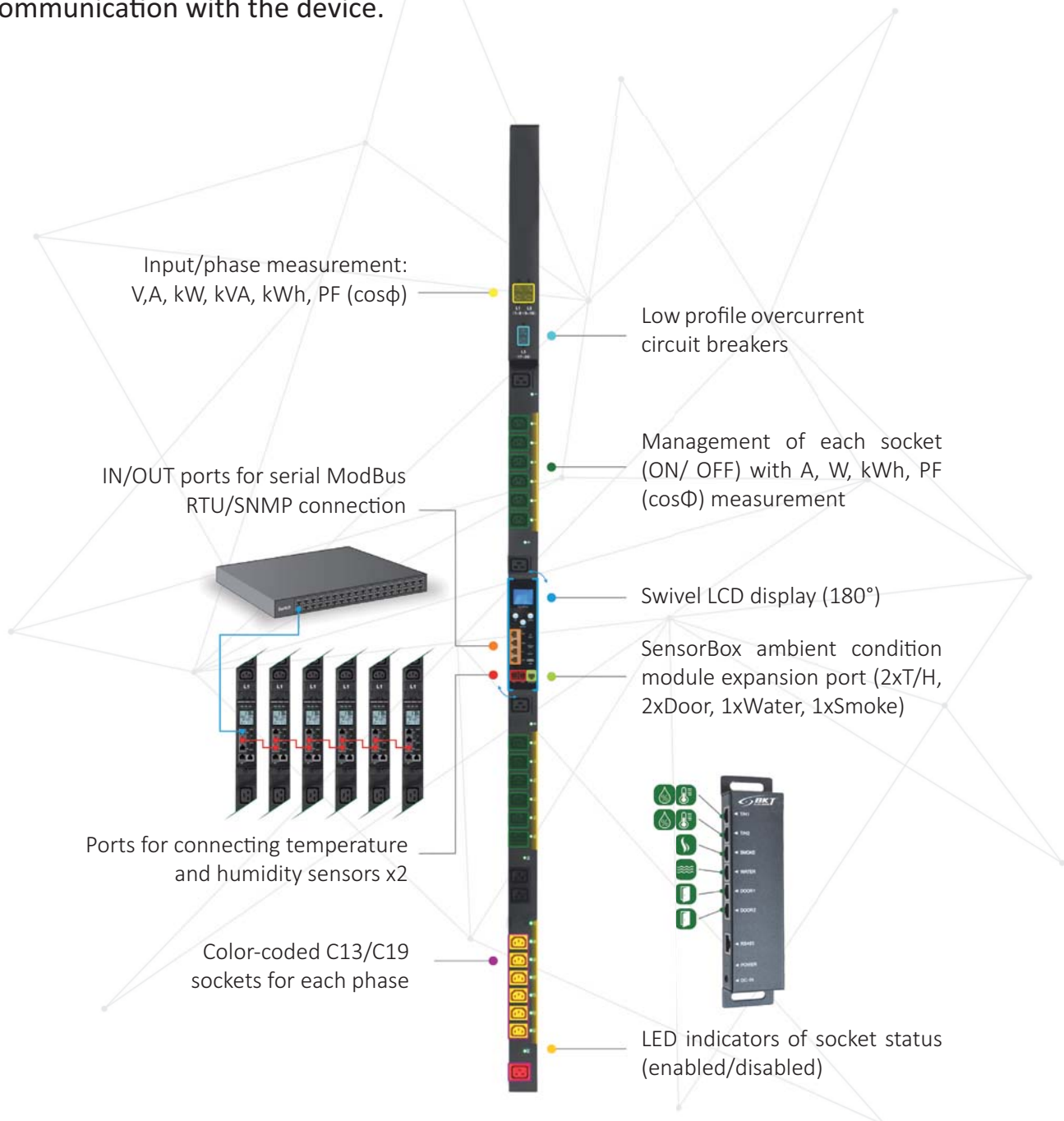


SensorBox ambient condition
module expansion port (2xT/H,
1xSmoke, 1xWater, 2xDoor)

- Custom configuration of sockets,
- Configurable phase layout 1-2-3 / 3-2-1,
- Screwless / Toolless > PDU installation and removal,
- Connection adapters from C13/C19 to SCHUKO,
- Reconfiguration capacity during PDU use - without additional elements,
- ipv6 addressing protocol.

RPDU- power distribution & management

- Supply of an adequate number of power lines (sockets) for the RACK,
- Power supply security, energy quality of IT devices; monitoring of RACK/CUBE electrical parameters.
- Management of equipment security, working state, reduction of risks related to lack of communication with the device.

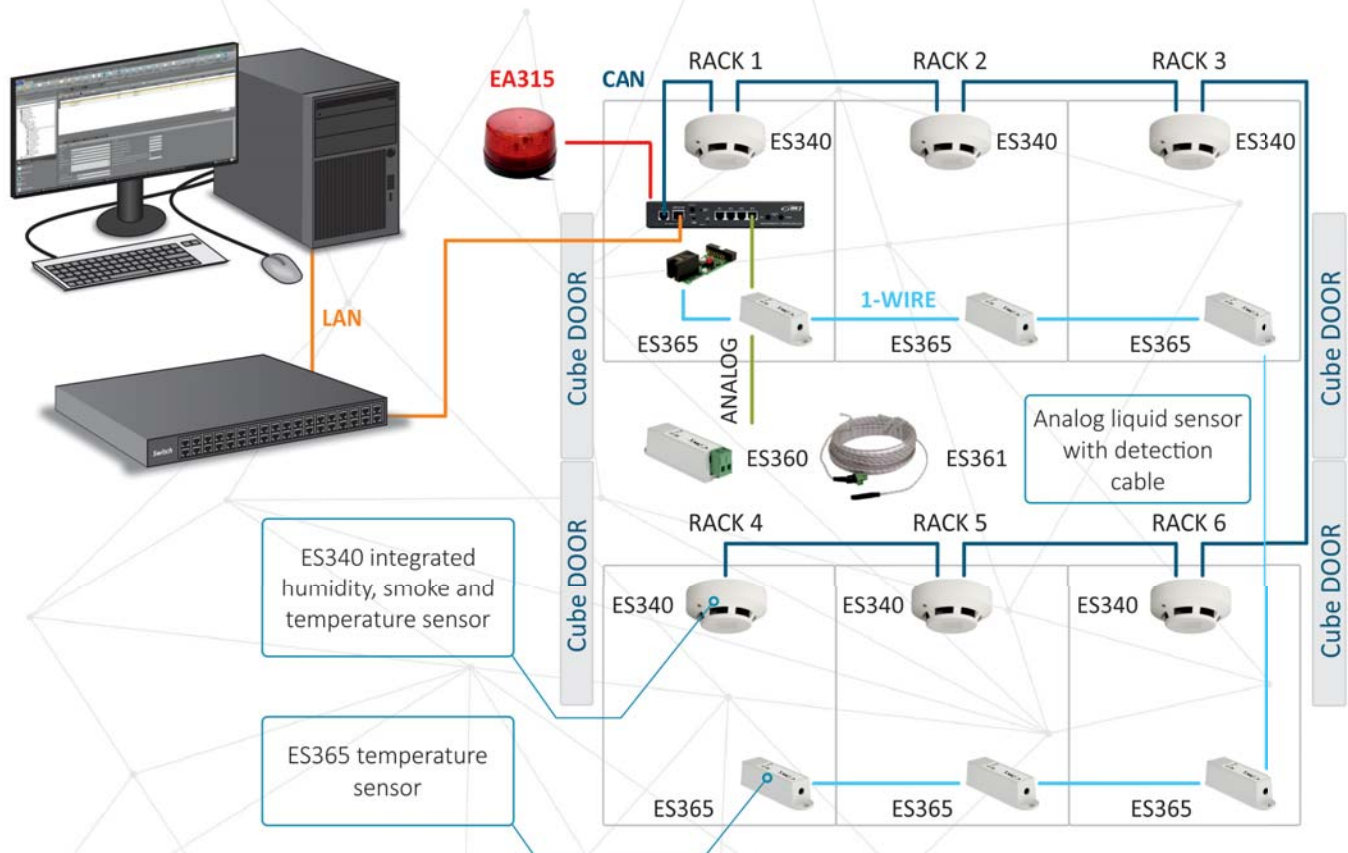


- Overload control for individual sockets (defined thresholds),
- Energy meter with measurement accuracy of +/-1%,
- Up to 10 users with different management rights,
- Screwless / Toolless PDU installation and removal,
- PCP function: automatic IT device pinging, automatic socket restart.

EMS

- Monitoring of environmental conditions of ICT enclosures (4DCRACK),
- Control of stability of IT device operating conditions.

Example solution for rack components

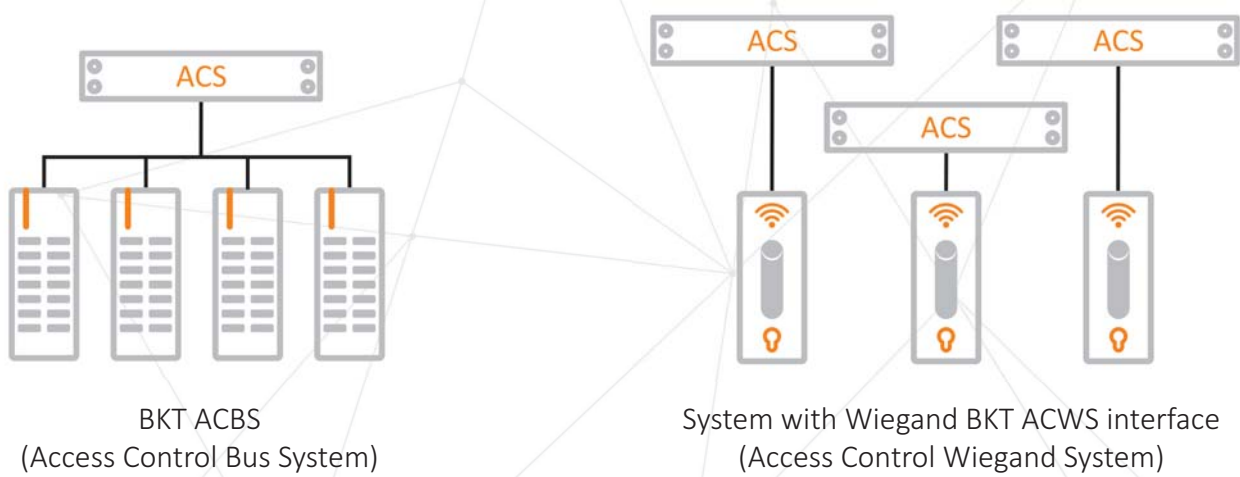


- Modularity and simple expansion,
- Alarms about adverse events, accidents,
- Connection cable length for sensors (50-150m),
- Programming of logical, timer functions,
- Graphic layouts for the distribution of sensors, graphs and statistics,
- Possibility of integration of sensors from other manufacturers (ModBusRTU),
- Ability to control external devices (doors/lighting),
- Users with different access rights,
- Archiving and recording of events,
- Remote website management.

ACS

- Access control system dedicated to RACK/CUBE/IT-room,
- One system=One manufacturer: enclosures/buildings/PDU/EMS/SKD/SM4DC,
- Controlled security of access to IT equipment and its controlled data.

The BKT ACS access control system is available in two variants



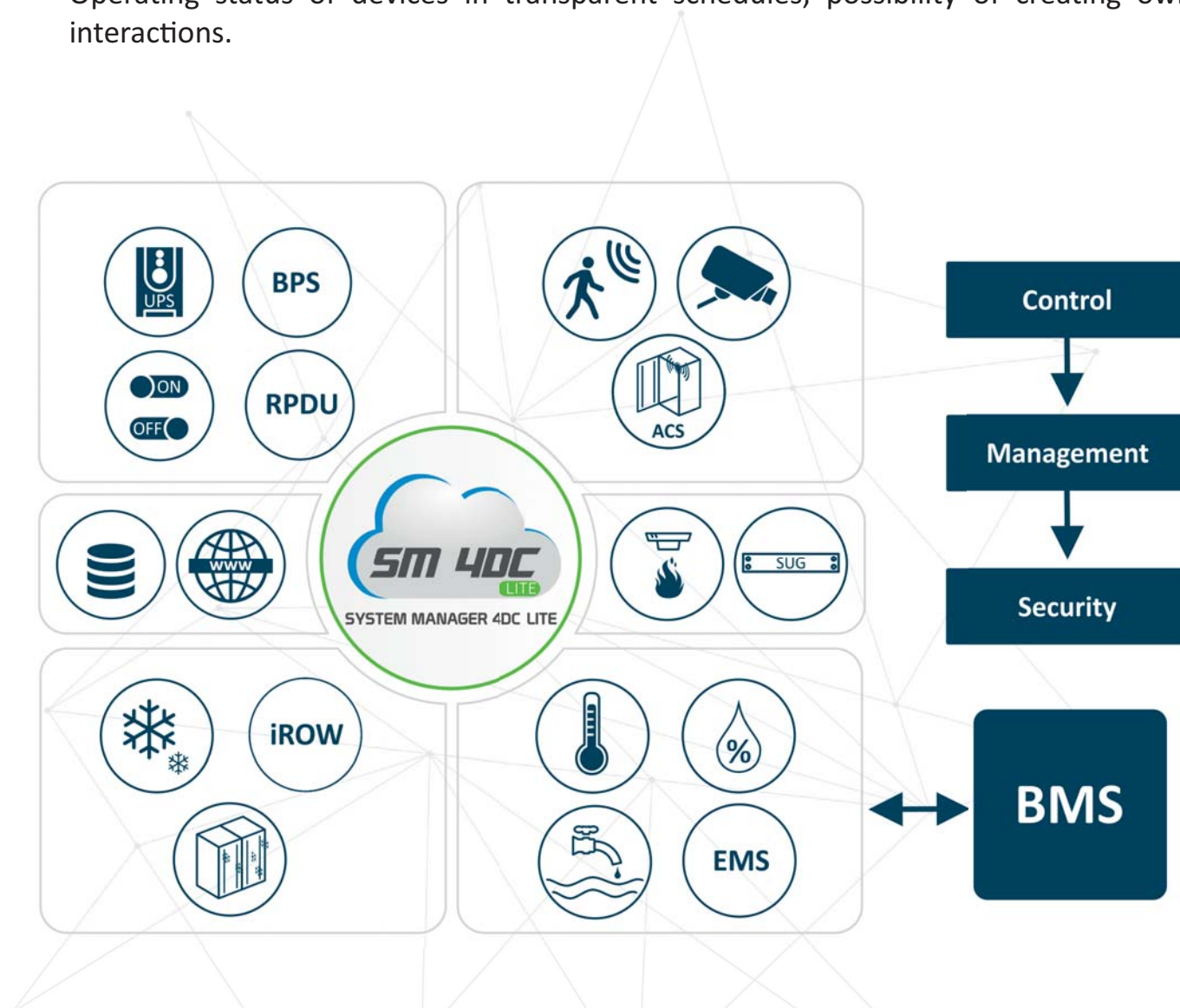
Substantial differences between systems

	System structure	Interface between controller and reader	Supported standard for proximity cards	Possibility to connect a handle with an integrated AL301 reader	Possibility to connect any reader with Wiegand interface	1 Controller (1 IP number) for many enclosure doors	Cost-effective solution
BKTACBS bus system		Bus RS485	UNIQUE 125kHz or Mifare 13.56MHz (Ultralight and Classic)				
BKT ACWS System with Wiegand interface		Wiegand	Any standard depending on the reader				

- Control and recording of events
- Conforms with GRADE-2/3 (PN-EN60839-II-I:2014)
- Remote website management
- RS485/Wiegand readers
- Handle integrated readers (Wiegand, Mifare, HID-iClass)
- Multilinguistic interface
- Notification of events - e-mail
- Possibility of integration/expansion with the building's systems
- Made in Poland

System Manager 4 Data Center **LITE**

- Application for visualization of critical infrastructure parameters for IT,
- Operating status of devices in transparent schedules, possibility of creating own interactions.



- Free app up to approx. 5000 variables,
- Dedicated to 4DC systems: cDC, mDC, CubeDC, CDC,
- Integrates: PDU, ATS, iROW, EMS, EPR, UPS,
- Windows and Linux,
- Interface multiuser; open,
- Communication protocol: SNMP, ModBus TCP/IP, RTU,
- Integration protocol: BACnet IP, HTTP, DNP3 IP, DNP3 serial,
- Alarms for numerical, alphanumerical, binary variables.
- 4 levels: Note, Warning, Danger, Critical.

Examples of configurations



Selection of compact DC system



InCab 42U, IP54, on a 100mm chassis 800mm enclosure width

Enclosure depth

☐ 1000mm ☐ 1200mm

Power of installed equipment

Side air conditioners (WallMount) without condenser

☐ 300W ☐ 380W ☐ 640W ☐ 820W ☐ 1050W ☐ 1250W
☐ 1600W ☐ 2000W ☐ 2900W ☐ 3800W ☐ 5800W

Roof air conditioners (TopMount) without condenser

☐ 2500W ☐ 3500W ☐ 5500W

RACK air conditioners (RackMount) with condenser

☐ 2000W ☐ 3000W ☐ 5000W ☐ 7000W ☐ 9000W ☐ 12000W

SideWall air conditioners without condenser

☐ 5000W ☐ 6000W ☐ 7000W ☐ 8000W ☐ 10800W

Automatic opening system in the event of power outage

☐ Yes ☐ No

Power distribution - Power distribution - (specify the number, type and configuration of sockets)

☐ With monitoring of BPS2000 electrical parameters
☐ With monitoring and management of RPDU sockets

Extinguishing system – E. rack panel

☐ Yes ☐ No

EMS Monitoring of environmental conditions

☐ T ☐ H ☐ Liquid ☐ Smoke ☐ Door opening

ACS - access control (obligatory when an automatic door opening system is used)

☐ Yes ☐ No

The Power Distribution Panel is configured based on the number of circuits, may consist of 1 to 2 3U modules with electrical devices; one power supply - several separate receiving circuits

☐ 1 module ☐ 2 modules

Application for visualization and system management - SM4DC

☐ With a touchscreen on the door ☐ Without a touchscreen

Optional UPS system

Back-up time ☐ UPS provides backup supply to air-conditioning

Other required accessories

www.bkte.pl

Selection of the micro DC system



InCab 47U, IP54, on a 100mm chassis Enclosure: 800mm wide, 100mm deep

Quantity of Racks

Power of installed IT equipment (in total or in the enclosure)

SideWall air conditioners (with an integrated compressor)

☐ 5000W ☐ 6000W ☐ 7000W ☐ 8000W ☐ 10800W

SideWall DX packed type

☐ 5000W ☐ 7000W ☐ 12000W ☐ 17000W ☐ 21000W ☐ 25000W ☐ 30000W

Outdoor temperature range

FreeCooling system required

☐ Yes ☐ No

Redundancy of cooling N+1

☐ Yes ☐ No

Automatic door opening system in the event of power outage

☐ Yes ☐ No

Power distribution - Power distribution - (specify the number, type and configuration of sockets)

☐ With monitoring of BPS2000 electrical parameters

☐ With monitoring and management of RPDUs sockets

Extinguishing system – E. rack panel

☐ Yes ☐ No

Monitoring of environmental conditions

☐ T ☐ H ☐ Liquid ☐ Smoke ☐ Door opening

ACS - access control (obligatory when an automatic door opening system is used)

☐ Yes ☐ No

Application for visualization and system management - SM4DC

☐ With a touchscreen on the door ☐ Without a touchscreen

Optional UPS system

Back-up time ☐ UPS provides backup supply to air-conditioning ☐ Power supply redundancy N+1

Other required accessories

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