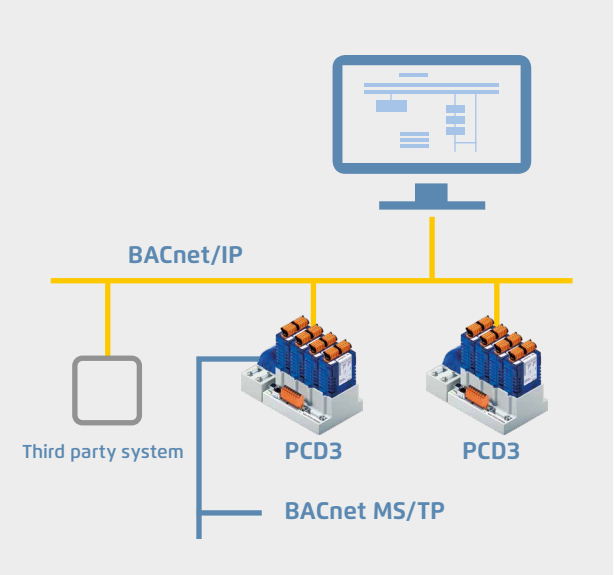
2.6 BA communication systems

2.6.1 BACnet®

The standard for building services

BACnet is a manufacturer-independent, globally standardised communication protocol which is well-established in building automation systems. BACnet is particularly suitable for heterogeneous structures involving automation stations of various manufacturers. The server/client architecture allows each of the BACnet devices to exchange data with one another without having to adjust to the parameterisation of the other devices.
BACnet is far more than a protocol for merely transferring data; BACnet itself defines important building automation functions, such as the recording of historic trends or the monitoring of values against set limit values, for example. Communication services (BIBBs, BACnet Interoperable Building Blocks), such as those for reading and writing content, event-controlled transmission following changes and the handling of alarms/information (events) are available.



PCD systems

BACnet is available for all classic PCD systems with the Saia PCD COSinus operating system as a communication option. The connection is usually direct via BACnet IP (Ethernet). BACnet MS/TP (RS-485) is also possible via a communication module.
BACnet always requires a BACnet option module for firmware expansion. A PCD7.R56x is used for memory slots M1 and M2 for PCD3.M5, PCD2.M5, PCD1.M2 and PCD1.M0 controllers. The PCD3.R562 module is available for I/O slots 0…3 for PCD3.M3 controllers with no M1/2 slots.
PCD2.M5 and PCD1.M2 controllers also require a PCD2.F2150 for connecting BACnet MS/TP, and PCD3 controllers require a PCD3.F215 communication interface. This module also provides controllers with no Ethernet with a BACnet interface. Controllers with Ethernet also take on the function of a BACnet IP MS/TP router. External gateways for connecting MS/TP devices direct to the management system or other BACnet IP devices, for example, are therefore no longer required.

Typical applications of a BACnet infrastructure

- Heating, climate and ventilation control
- Room automation
- Networking dispersed sites
- Recording energy data

BACnet certificates for PCD1, PCD2, PCD3 controllers; see www.sbc-support.com, Certificates, PCD

Recommendations/system limits

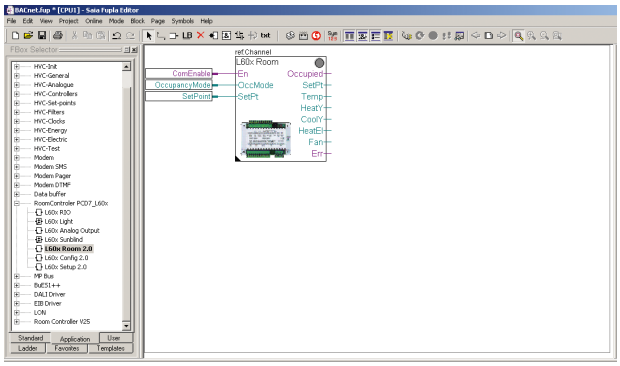
Type	Option	Interface	PG5 configuration, system limits
PCD3.M5560/M6xx0	1× PCD7.R562 4× PCD3.F215	IP MS/TP	Recommended for configurations of up to 1000 BACnet objects
PCD3.M5360	1× PCD7.R562 4× PCD3.F215	IP MS/TP	Recommended for configurations of up to 800 BACnet objects
PCD3.M3160 PCD3.M3360	1× PCD3.R562 3× PCD3.F215	IP MS/TP	Recommended for configurations of up to 500 BACnet objects
PCD2.M4160	1× PCD7.R562 2× PCD2.F2150	IP MS/TP	Recommended for configurations of up to 800 BACnet objects
PCD2.M4560 PCD2.M5540	1× PCD7.R562 4× PCD2.F2150	IP MS/TP	Recommended for configurations of up to 800 BACnet objects
PCD1.M0160E0	1× PCD7.R562	IP	Recommended for configurations of up to 800 BACnet objects
PCD1.M2xx0 PCD1.M2220-C15	1× PCD7.R562 2× PCD2.F2150	IP MS/TP	Recommended for configurations of up to 800 BACnet objects
PCD7.D410VT5F PCD7.D412DT5F	1× PCD7.R562	IP	Recommended for configurations of up to 250 BACnet objects

BACnet®

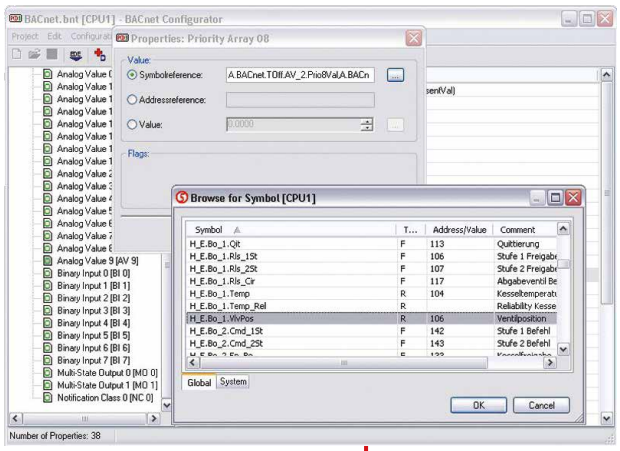
Efficient engineering through automatic generation
The application FBox libraries from DDC Suite v2.0 and Room Controller v2.0 and above make the system integrator even more efficient. An FBox parameter can be used to automatically generate a suitable BACnet® configuration when creating the application program. All the relevant settings are implemented within the application FBoxes.

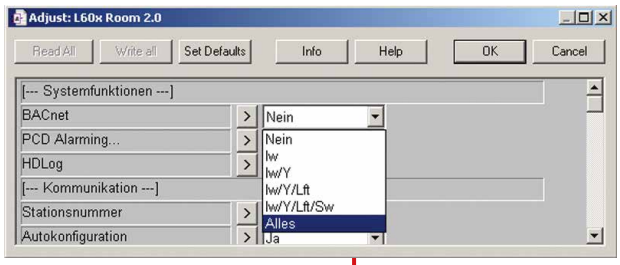
Fully programmable BACnet configuration
The application can be created as normal using the Saia PG5® Controls Suite.
The BACnet® configurator it contains allows the completely free parameterisation of all BACnet® objects. This makes it possible to solve all conceivable tasks.
Clearly structured dialogues make the parameterisation of schedules, trends and alarms easy to understand.

PG5 Fupla Editor



BACnet® configurator in the Saia PG5® Controls Suite





BACnet® Adjust Window

EDE file export for connecting the PCD to master SCADA systems.

Automatic creation of BACnet® objects and PCD resources using FBoxes and templates.

EDE file import for the simple creation of BACnet® clients

Order details

Type	Description
PCD7.R562	BACnet® optional module for PCD1.M0, PCD1.M2, PCD2.M5, PCD3.M5 and PCD3.M6 for M1 or M2 slots incl. 128 MB for program backup and file system
PCD3.R562	BACnet® optional module for PCD3.M3, PCD3.M5 and PCD3.M6 for I/O slot 0…3 incl. 128 MB for program backup and file system