

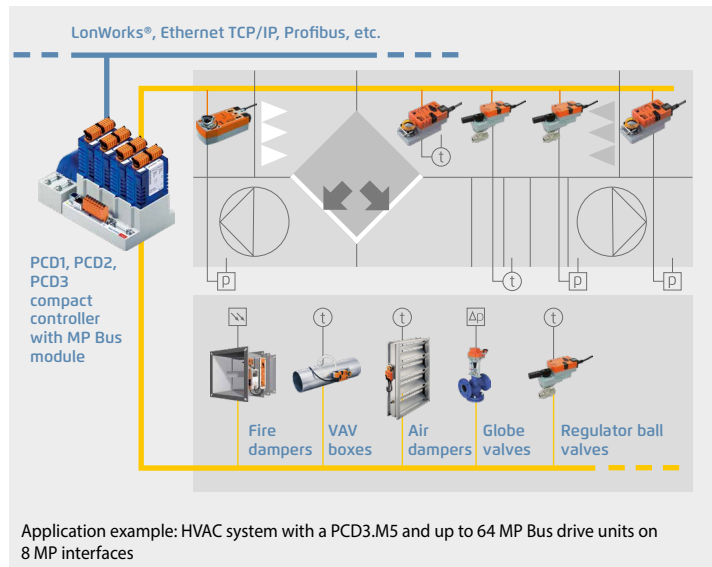
2.6.8 MP Bus

field bus module for Belimo MP Bus devices

MP Bus master interface module

MP Bus is a Belimo communication system used to connect Belimo MP* field devices such as valve and shutter position drives or VAV controllers and room air sensors in building automation systems. Installation is easy. In addition to the 24 V AC/DC power supply, the MP Bus needs just one unshielded wire which can be run through the same cable.

Up to 8 drives can be attached to one communication channel. The total length of the mains cable depends on the diameter of the selected cable and the number and output of the connected drives**. A total length of approx. 100 m is usually reached. Since the length of the connection and the number of drives is limited, no other demands such as termination resistors or shielded cable are placed on the bus topology. In addition to the connected drives, sensors can be connected direct via a drive or MP Bus add-on modules. The extensive Saia PG5® FBox library has function modules for communicating with the PLC program. The drives are addressed using the communication driver FBox and can then exchange data with the application program via the respective FBoxes. The Belimo components are generally commissioned from the application program using the SBC FBoxes. Only a few components such as VAV controllers require additional Belimo parameterisation tools to adjust their operational parameters.



* MP is a Belimo designation. MP = multi-point

** For further information on the system layout, see the Belimo documentation, www.belimo.com

Overview

| Automation station | Onboard; Slot A, A1 and A2 | | | | I/O slot #0...#3 | | | |
|-------------------------|----------------------------|-------|------------------|--------|------------------------------------|-------|------------------|--------|
| | MP Bus module | Total | Number of MP Bus | | MP Bus module | Total | Number of MP Bus | |
| | | | Cables | Drives | | | Cables | Drives |
| PCD3.M3xxx / M5xxx | - | - | - | - | PCD3.F21x, PCD3.F221, PCD3.F240 | 4 | - | - |
| | | | | | + PCD7.F180S | + 4 | + 32 | |
| PCD3.F281 | - | - | - | - | PCD3.F281 | 4 | 4 | 32 |
| | | | | | + PCD7.F180S* | + 2 | + 16 | |
| PCD3.Compact PCD3.WAC | PCD7.F180S | 1 | 1 | 8 | - | - | - | - |
| PCD2.M5xxx | PCD7.F180S | 2 | 2 | 16 | PCD2.F21x0, PCD2.F2210, PCD2.F2400 | 4 | - | - |
| | | | | | + PCD7.F180S | + 4 | + 32 | |
| PCD2.F2810 | - | - | - | - | PCD2.F2810 | 4 | 4 | 32 |
| | | | | | + PCD7.F180S | + 4 | + 32 | |
| PCD1.M2x20 / PCD1.M2x60 | PCD7.F180S | 1 | 1 | 8 | PCD2.F21x0, PCD2.F2210, PCD2.F2400 | 2 | - | - |
| | | | | | + PCD7.F180S | + 2 | + 16 | |
| PCD2.F2810 | - | - | - | - | PCD2.F2810 | 2 | 2 | 16 |
| | | | | | + PCD7.F180S | + 2 | + 16 | |
| PCD1.Room | PCD7.F180S | 1 | 1 | 8 | PCD2.F21x0, PCD2.F2210, PCD2.F2400 | 1 | - | - |
| | | | | | + PCD7.F180S | + 1 | + 8 | |
| PCD2.F2810 | - | - | - | - | PCD2.F2810 | 1 | 1 | 8 |
| | | | | | + PCD7.F180S | + 1 | + 8 | |
| PCD1.M0160E0 | PCD7.F180S | 1 | 1 | 8 | - | - | - | - |

* With 4 PCD3.F281 only 2 additional PCD1.F180S can be used, because the load on +V would be too large

MP Bus | Function modules (FBox)

All Belimo MP drives can exchange data with the PCD application program via a suitable FBox from the MP Bus FBox library. The master communication FBox must be positioned once at the start of the application program. It controls the communication and fault recognition and creates ways of addressing the MP drives available for commissioning and service. Some MP drives also have an input for connecting sensors. R: Temperature sensor NI1000, PT1000..., U:voltage 0–32 V or 0–10 V and DI: Potential-free contact.

| Type/performance categories | Sensors | MP Bus FBox |
|--|----------------------|--|
| Communication drivers | | MP Single |
| Ventilation applications Damper drives with no safety function: LM24A-MP (5 Nm), NM24A-MP (10 Nm), SM24A-MP (20 Nm), GM24A-MP (40 Nm) Damper drives with safety function: TF24-MFT (2 Nm), LF24-MFT2 (4 Nm), SF24A-MP (20 Nm) Linear damper drives: LH24A-MP100 / 200 / 300 (150 N), SH24A-MP100 / 200 / 300 (450 N) Damper drives rotary: LU24A-MP (3 Nm) | R, U, DI | MP Air |
| Safety applications Drives for fire dampers: BF24TL-T-ST (18 Nm), BFG24TL-T-ST (11 Nm) Gateway for conventional fire damper drives: BKN230-24-C-MP | Thermo-element | MP BS |
| Room and system applications VAV compact controller: LMV-D3-MP (5 Nm), NMV-D3-MP (10 Nm), SMV-D3-MP (20 Nm) VAV compact controller linear: LHV-D3-MP (150 N) | R, U, DI | MP VAV... |
| VAV universal controller: VRP-M | R, U, DI | VRP-M |
| Water applications Lift drives with no emergency function: LV24A-MP-TPC (500 N), LVC24A-MP-TPC (500 N), NV24A-MP-TPC (1000 N), NVC24A-MP-TPC (1000 N), SV24A-MP-TPC (1500 N), SVC24A-MP-TPC (1500 N), EV24A-MP-TPC (2500 N) Lift drives with emergency function: NVK24A-MP-TPC (1000 N), NVKC24A-MP-TPC (1000 N), AVK24A-MP-TPC (2000 N), adjustable closing point, adjustable emergency setting | R, U, DI | MP Linear |
| Drives for control ball valve with no emergency function: LR24A-MP (5 Nm), NR24A-MP (10 Nm), SR24A-MP (20 Nm) Drives for control ball valve with emergency function: TRF24-MFT* (2 Nm), LRF24-MP (4 Nm), NRF24A-MP (10 Nm) Drives for butterfly valves with no emergency function: SR24A-MP-5 (20 Nm), GR24A-MP-5/-7 (40 Nm) | R, U, DI | MP Air |
| Drives for 6-way control ball valve: LR24A-MP (5 Nm), NR24A-MP (10 Nm) | R, U, DI | MP 6 Way |
| Electronic pressure-independent control ball valve (EPIV): P6...W...E-MP*, EPO..R+MP* | U, DI | MP EPIV... |
| Belimo EnergyValve: EV..R+BAC, P6..W..EV-BAC | U, DI | Energy Valve P6 |
| Rotary actuator: CQ24A-MPL (MP-Bus light) | — | MP MPL |
| Room sensors Room combi-sensor, depending on design with temperature, CO₂, VOC and relative humidity: MS24A R... MPX | R, DL, U (0–10 V) | MP THC24 MP THCV |
| Generic data transfer For reading and transmitting data points not contained in the device-specific FBox. This FBox is used as a functional extension for MP Bus FBoxes and can only be used with a device FBox specific to that device or a generic device FBox. | | MP Generic MP PEEK MP POKE |
| Third party devices FBoxes are available for the following third party MP Bus devices: PTH sensor from wmag AG, Switzerland, UST-3, UST-5 from wmag AG, Switzerland. Each MP Bus device can also be connected via generic devices and peek/poke FBoxes in PCD application programs. | | MP PTH MP UST-3 MP Generic MP PEEK MP POKE |

* only active sensors and switches can be connected