



PRODUCT FEATURES EMB8000

- Modular control panel with digital bus technology and power supply for 24 V DC drives for use in smoke and heat exhausting ventilation (SHEV) and in controlled natural ventilation systems
- Control panel compliant with prEN 12101-9
- Power supply compliant with EN 12101-10
- VdS certification no.: G 512005
- Low residual ripple output voltage (<2 Vpp)
- Easy and space saving installation on 35-mm snap-on mounting rail with many combination options
- Easy configuration of SHEV and ventilation groups w/o software by selective lining up of the modules
- System components for individual assembly consisting of functional basic control units each with one SHEV and one ventilation group, as well as a variety of modules and components that can be ordered either as factory-installed or for customer-side yourself installation
- Various settings of the basic functions via software offered by download free of charge
- Software licences for enabling and configuration of complex integrated special functions as well as for the interconnection of multiple control units to a network with higher-ranking functions for SHEV, ventilation and weather groups
- Steel sheet housing, protection class IP40/IP54 alternatively available with wall fixing brackets, cable exit from above
- Prepared for connection of backup batteries (72 hours)

SCOPE OF THE CONFIGURATION SOFTWARE EMB8000 (EXCERPT)

Functions	Standard	Lizenz
Load configuration / Safe / Safe as	✓	✓
Print settings / Print / Create PDF	✓	✓
Authorization / Password	--	✓
System configuration / Load settings / Save settings	✓	✓
Read RealTime LOG-Data	✓	✓
Edit RealTime LOG-Data	--	✓
Firmware update	--	✓
Show system-status / Save / Print	✓	✓
Get thresholds and on-off delay of wind sensor	✓	✓
Set thresholds and on-off delay of wind sensor	--	✓
Set thresholds of wind direction sensor	--	✓
System time synchronisation / updating	--	✓
Backup battery monitoring: Performance and fault indications (active, windows OPEN / CLOSE)	--	✓
Set backup battery type and charging characteristics (temperature dependent / constant)	--	✓
Power supply loss: Performance and fault indication (Energy saving mode, CLOSE, ventilation mode)	--	✓
Vent. push button in dead-man or jog-switch mode (OPEN or/and CLOSE direction)	--	✓
Vent. push button as one rocker push-button (OPEN/STOP or CLOSE/STOP with one button)	--	✓
Set step-automatic in OPEN-direction (Automatic enabled / Time setting)	--	✓
Enable reset of smoke detector lines with emergency-CLOSE button	--	✓
Enable control of smoke detector line by fire alarm system „FAS“	--	✓
Disable alarms caused by detector line monitoring failures (Automatic and manual detectors)	--	✓
Disable fault detection of detector lines (Automatic and manual detectors)	--	✓
Set functions of PM, CM and SM relay contact	--	✓
Set service and maintenance interval and system behaviour	--	✓
Set drive line mode for use with motors, magnets or gas pressure generators	--	✓
Disable retriggering of drive line in alarm mode	--	✓
Set switch-off time of drive lines	--	✓
Enable and set automatic time-controlled drive line closing mode for ventilation purpose	--	✓
Enable drive closing mode on primary power loss	--	✓
Set drive run time and opening stroke limit for ventilation purpose	--	✓
Set failures of drive line monitoring as alarm signal	--	✓
Set drive running direction in alarm mode from open to close	--	✓
Set signal input of DM drive line (feedback input / inhibiting input)	--	✓
Set wind direction dependent OPENING / CLOSING of drive lines	--	✓
Reset switch positions to the status before the weather control were activated	--	✓
Set emergency close button from jog-switch mode to dead-man mode	--	✓
Set functions of RM6 relays	--	✓
Set assignment of detector and drive lines to SHEV, ventilation and weather groups	--	✓
Interconnection of several control units to a network with higher-ranking functions	--	✓
Integration into digital networks with additional plug-in interface modules (LON, CAN, Z-WAVE)	--	✓

IMPORTANT NOTES

The modular design of EMB8000 in combination with digital network technology makes it possible for our customers to size, assemble and configure the control units by themselves. For this AUMÜLLER is providing the required hardware and software.

The minimum equipment of a fully functional control unit:

- 1x Switch mode power supply PS 5 A up to 24 A – the installation up to 3 identical power supplies up to a maximum of 72 A is possible
- 2x Backup Prepared for batteries 12 V DC from 7 Ah to 38 Ah to ensure the emergency power supply for 72 hours
- 1x Power-Module PM for the charging control of batteries – completed with up to 2 Power-Module-Extensions PME
- 1x Control-Module CM with 3 detector input lines for automatic and manual smoke detectors and 1 ventilation button input line
- 1x Drive-Module DM or DMX for connection of 24 V DC drives with a total current consumption of 10 A respectively 20 A and 1 ventilation button input line

The control units on the following pages are intended for individual configuration and are prepared for 1 SHEV group with 1 ventilation line (10 A or 20 A) and are preprogrammed for basic functions. AUMÜLLER does not assume any liability for further changes and configurations of these control units.

PLANNING NOTES

The build-in modules of EMB8000 are connected to each other and communicate via the digital network bus. On delivery respectively as long as the delivered software configuration is not changed, the modules are self-learning. SHEV groups can be easily and flexibly configured by selective lining up of the modules. A new SHEV group is created by adding a Sensor-Module (SM) into the row. All following Drive-Modules (DM / DMX) belong to the new SHEV group.

In the control units with 2 or 3 switch mode power supplies in one housing (48 A and 72 A), the interconnection of Drive-Modules (DM / DMX) and their total current consumption has to be adapted to the current consumption of the individual switch mode power supply at which they are connected. This can be done by replugging the power supply of the modules. The SHEV group to which the DM/DMX belongs is irrelevant. To ensure the optimum of safety in case of a failure of a switch mode power supply, it is recommended to power the DM/DMX of one SHEV group from only one switch mode power supply. The maximum switching capacity of the DM-modules is to be noted.

Due to the compact design of the modules, the module connection terminals for peripheral devices are limited to 1 mm² and for drive lines to 2,5 mm² rigid wire conductors. The cross sections of the wires between control unit and drives depend on the cable length, the current consumption as well as the voltage drop on the line. A 35-mm snap-on mounting rail is provided inside the housing, for additional bigger connection terminals if the required cable cross section is larger than the module-own connection terminals. Suitable connection terminals will be found under „accessories“. The cross sections of the cables may be calculated with the formula indicated in chart 6.

LIMITATIONS OF EXPANDABLE BASIC VERSIONS

Please note the data in the following when sizing control units:

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|--|-------------|
| ▪ Number of smoke detectors per CM / SM | 10 |
| ▪ Number of break-glass units per CM / SM | 10 |
| ▪ Number of smoke detectors per control unit | 60 |
| ▪ Number of break-glass units per control unit | 60 |
| ▪ Number of networkable control units via CAN-BUS | 35 |
| ▪ Maximum no. of modules per control unit | see chart 4 |
| ▪ Internal current consumption of modules | see chart 3 |
| ▪ Battery capacity / max. power consumption per control unit | see chart 3 |
| ▪ Dimensions of housing | see chart 4 |
| ▪ No. of cable entries | see chart 4 |

The values in the charts are referring to the use of all module inputs and outputs. The current values are calculated to ensure the backup power supply for 72 hours. Further calculation criteria on request.

The internal current consumption of all used modules may not exceed the maximum current value of the control unit. Please add the current values of all modules to receive the total consumption.

All information of outside diameters of the cables are referring to the cable types used in Germany. The wire cross sections are indicated in mm². To obtain the electric protection rating of the housing is per cable entry only one cable allowed. The total numbers of the needed cables is to be calculated (see chart 1) and to be compared with the number of cable entries (see chart 4).

CONFIGURATION

The basic configuration software for EMB8000 control units is available for download on www.aumueller-gmbh.de free of charge for. For the configuration of special functions or integration of control units into networks, a software license (with extra costs) is required.

CHART 1: PARAMETER OF MODULES EMB8000												
Features					Cables for inputs and outputs							
Module	Module width [mm]	Module units [ME]	Internal current consumption [mA]	Cable entries when using all inputs/outputs [pcs.]	Smoke detectors, FAS	Manual detectors Break-glass units	Drive line	Ventilation button with display	Ventilation button w/o display, other inputs	Volt free contact, drive feedback signal	Wind/Rain/Wind direction	Power supply
PM	46	2	16,0	1								1
PME	46	2	0,0	0								
CM	23	1	20,6	5	2	1			1	1		
SM	23	1	12,6	5	2	1			1	1		
DM	23	1	5,3	3			1	1		1		
DMX	46	2	5,3	3			1	1		1		
RM6	23	1	5,3	1						1-6		
WM	23	1	13,0	4					2	1	1	
CAN			6,0	2					2			
Rec. Number of wires (w/o protective earth conductor)					4	8	4	8	4	4	7	3

CHART 2: INTERNAL CURRENT CONSUMPTION OF BACKUP BATTERY POWERED DETECTORS	
Break-glass main unit (HSE)	1,2 mA
Break-glass secondary unit (HSE-N)	0,0 mA
Smoke detector	0,1 mA
Wind direction sensor (WRG)	7,1 mA

CHART 3: MAXIMUM CURRENT CONSUMPTION PER CONTROL UNIT					
PS / Battery	7 Ah	12 Ah	17 Ah	24 Ah	38 Ah
10 A	42 mA	120 mA	140 mA	240 mA	350 mA
24 A	✗	70 mA	120 mA	200 mA	300 mA
48 A	✗	✗	80 mA	170 mA	300 mA
72 A	✗	✗	✗	100 mA	300 mA

CHART 4: PARAMETERS OF THE HOUSINGS					
Housing dimensions		400 x 500 x 200	600 x 600 x 250	600 x 800 x 250	800 x 800 x 250
Number of cable entries		29 pcs.	48 pcs.	48 pcs.	58 pcs.
Maximum battery capacity		12 Ah	38 Ah	38 Ah	38 Ah
Module units / mounting rail	EMB8000 5 A	12 ME / 300 mm	23 ME / 500 mm	✗	✗
Module units / mounting rail	EMB8000 10 A	11 ME / 300 mm	23 ME / 500 mm	✗	✗
Module units / mounting rail	EMB8000 24 A	✗	23 ME / 500 mm	23 ME / 1000 mm	✗
Module units / mounting rail	EMB8000 48 A	✗	15 ME / 500 mm	23 ME / 500 mm	✗
Module units / mounting rail	EMB8000 72 A	✗	✗	23 ME / 500 mm	30 ME / 1400 mm

CHART 5: DIMENSIONS OF CONNECTION TERMINALS (pull spring feed through terminal blocks)					
Terminal size [mm]		6 mm ²	10 mm ²	16 mm ²	End bracket
Cross section of the wire (rigid wire)		0,13–6 mm ²	2,5–10 mm ²	4–16 mm ²	✗
External width (feed through terminal)		6 mm	10 mm	12 mm	8 mm
Width of set with 5 terminals + end bracket		38 mm	58 mm	✗	✗

CHART 6: CALCULATION OF DRIVE CABLES	
A = 2 * L * I / (56 * ΔU)	
A	Cross section of wire [mm ²]
L	Length of the line [m]
I	Current of the drives [A]
ΔU	Voltage drop on the line [V] = max. 2 V



