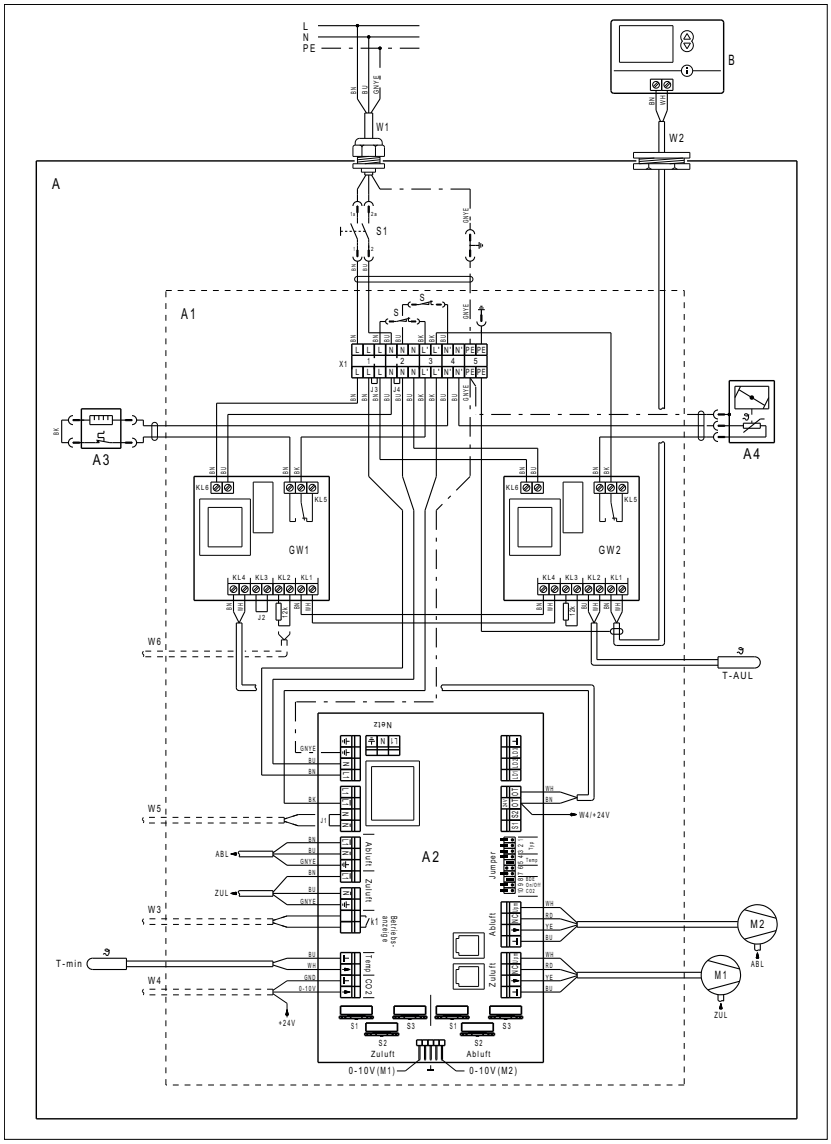
WIRING DIAGRAM

WS 170 KBR

WS 170 KBR and WS 170 KBL wiring diagram



WIRING DIAGRAM

WS 170 KBR

A - WS 170 ventilation unit
A1 - Electronic slide-in module
A2 - Control circuit board
A3 - Frost protection heat register
A4 - Bypass shutter
B - RLS D1 WR room air control
W1 - 230 V AC connection cable
W2 - Shielded control cable provided by customer, e.g. LiYCY 2 x 0.75 mm² for RLS D1 WR room air control; instead of B1 (RLS 1 WR) room air control, B1 (RLS D1 WR) room air control can be connected.
W2´ - Control cable (provided by customer) for RLS 1 WR room air control outer diameter of control cable 3.2...6.5 mm, e.g. LIYY 6x0.34 mm²
S1 - Unit switch
GW1 - Gateway frost protection heat register
GW2 - Gateway bypass shutter
M1 - Supply air fan
M2 - Exhaust fan
S - Door contact switch: activated by front plate
T-min - Frost protection temperature sensor
T-AUL - Outside air temperature sensor

Supply air

Z1 (blue) - potentiometer adjuster, ventilation level 1
Z2 (blue) - potentiometer adjuster, ventilation level 2
Z3 (blue) - potentiometer adjuster, ventilation level 3

Exhaust air

A1 (red) - potentiometer adjuster, ventilation level 1
A2 (red) - potentiometer adjuster, ventilation level 2
A3 (red) - potentiometer adjuster, ventilation level 3

Jumper settings

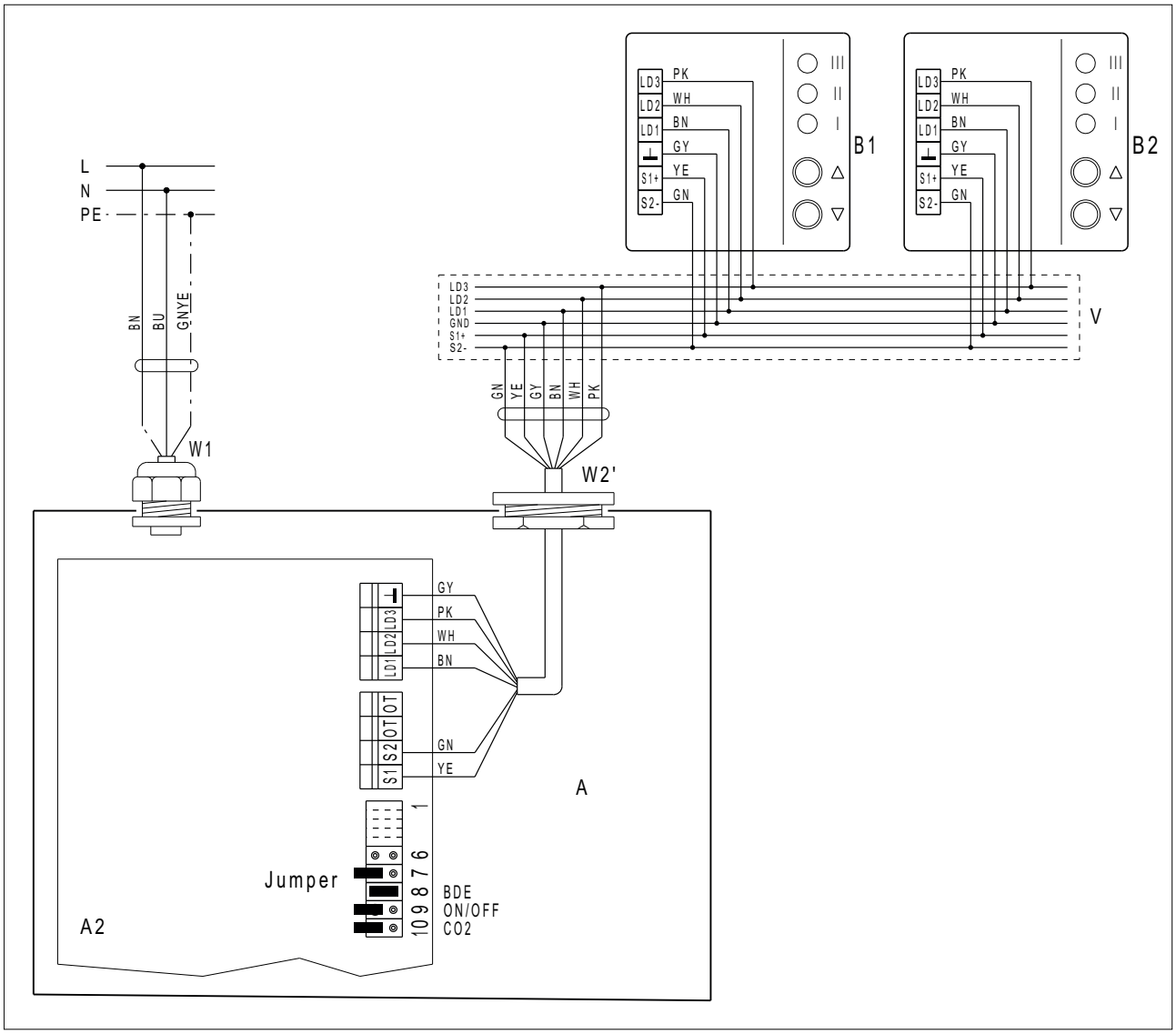
J 1-3 - Unit type, 000 = WS 170
J 4-5 - Frost protection temperature
J 6 - No function
J 7 - Jumper 7 open: Ventilation level 3 is reset after an hour.
J 8 - RLS 1 WR or RLS D1 WR room air control active: Leave factory setting, J8 must be bridged.
J 9 - Jumper 9 open: The ventilation unit can be switched off at the room air control. Jumper 9 bridged: RLS 1 WR: Switch-off function blocked RLS D1 WR: Ventilation unit runs in "Humidity protection ventilation" mode when in the OFF switch position.
J 10 - HY 5 or CO2/VOC sensor: Without a sensor, jumper 10 must be open. Jumper 10 open: Hygrostat released with potential-free contact. Jumper 10 bridged: CO2/VOC sensor (0 to 10 V output) released.

Further connection options

W3 Connection cable (provided by customer) for external operating display.
k1 - Potential-free relay contact (max. 3A / 250 VAC, 2A / 30 VDC). The contact is closed when the ventilation unit is running.
W4 - Connection cable (provided by customer) for external CO2 sensor or external hygrostat (hygrostat with potential-free contact).
W5 -Connection cable (provided by customer) for external differential pressure controller. Differential pressure controller with potential-free relay contact. Minimum switching capacity of relay contact: 230VAC/2A. Remove J1 bridge on A2 control circuit board.
W6 - Connection cable (provided by customer) for external supply air temperature sensor. Sensor type=NTC 10k. Remove 12k resistor on GW1 circuit board.

WS 170 KBR

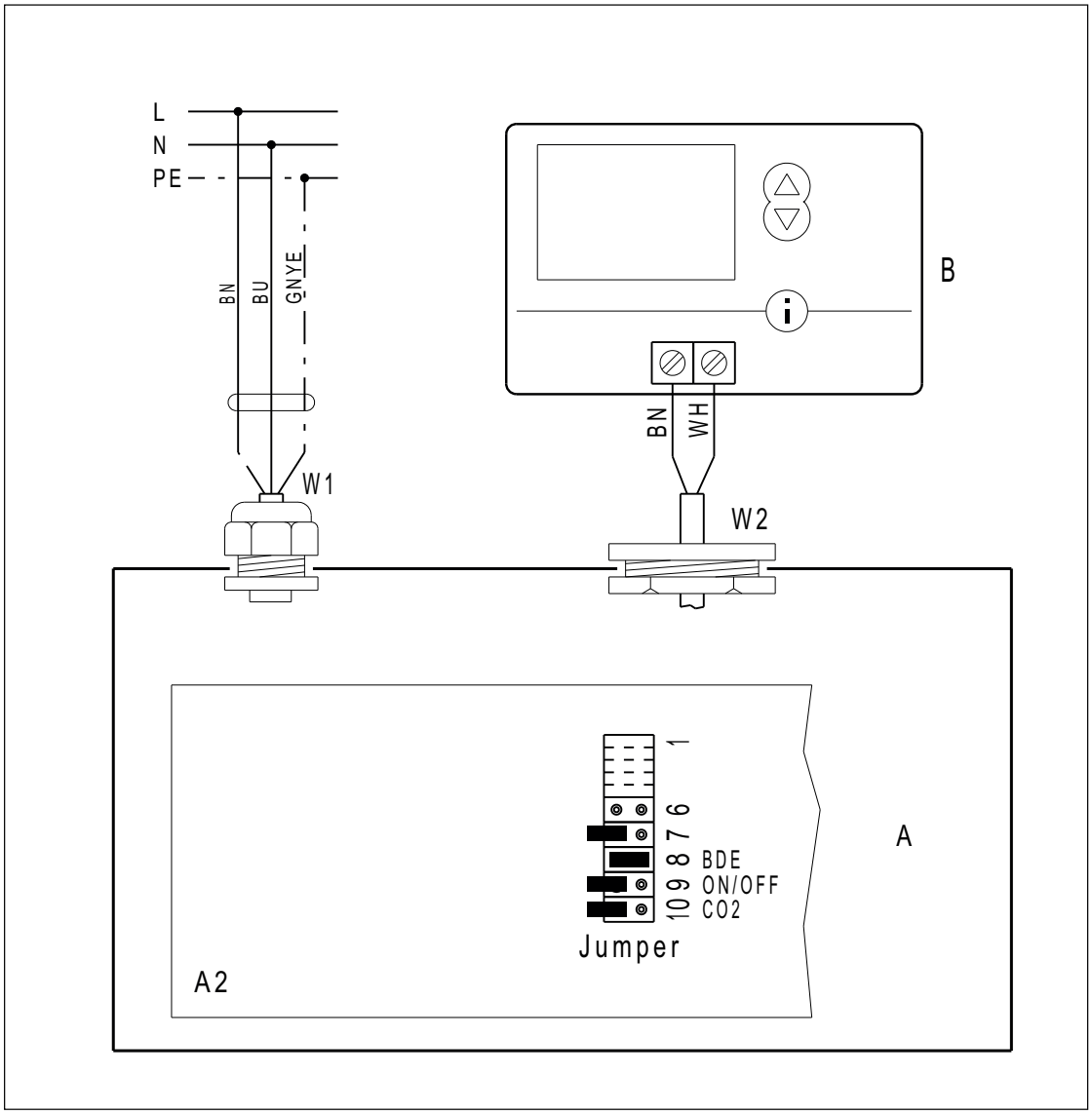
WS 170 ventilation unit with RLS 1 WR room air control



A - WS 170 electronic slide-in module
A2 - Control circuit board: jumper 8 bridged (= factory setting)
B1 - 1. RLS 1 WR room air control
B2 - 2. RLS 1 WR room air control
W1 - 230 V AC connecting cable
W2' - Control cable for room air control
V - Distributor (supplied by the customer)
You can connect up to 5 RLS 1 WR room air controls to the ventilation unit. If several room air controls are used, no CO2 sensor may be connected.
RLS 1 WR room air control can also be connected to RLS D1 WR room air control.
No need for distributor "V" if only one RLS 1 WR room air control is connected.

WS 170 KBR

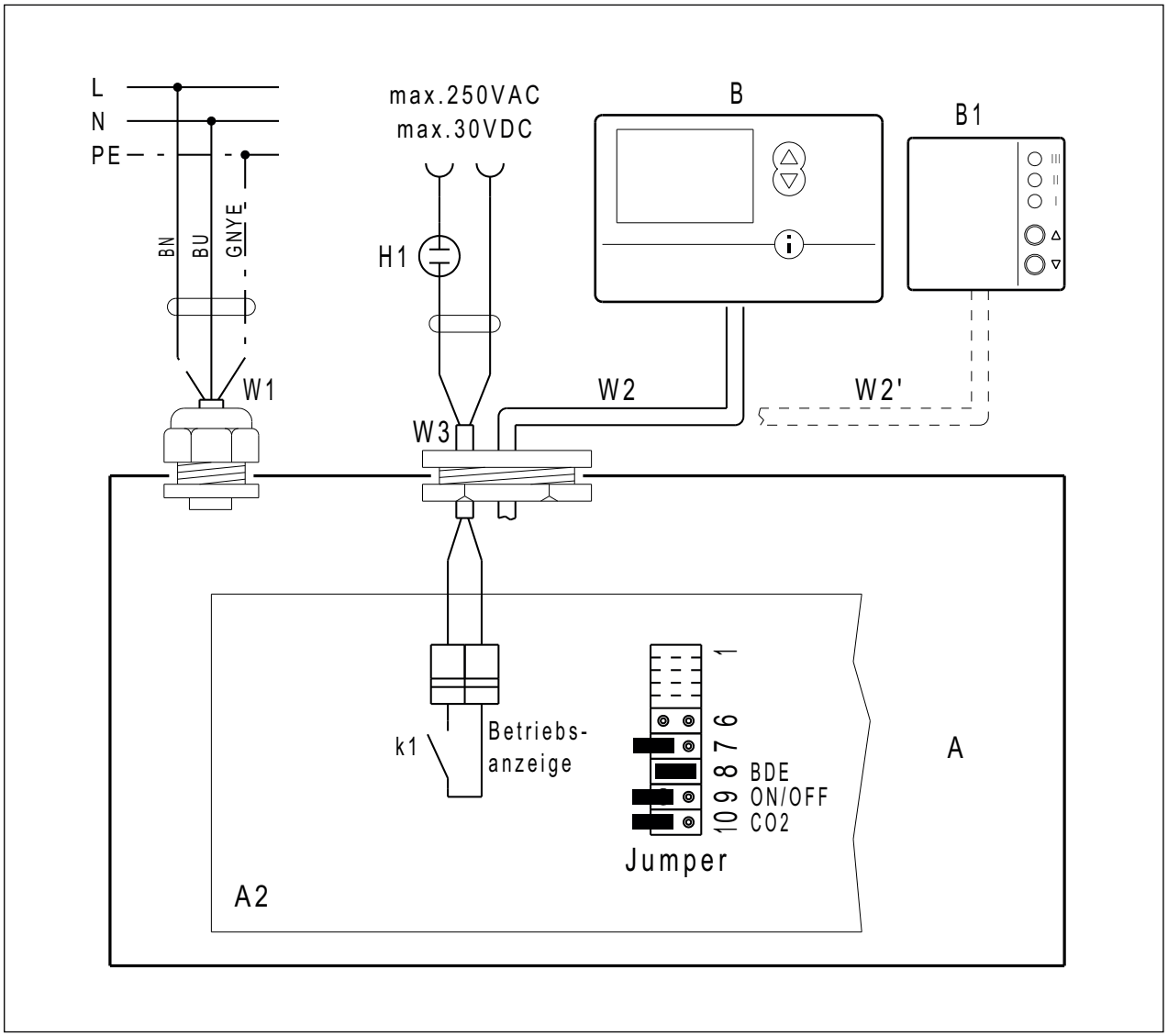
WS 170 ventilation unit with RLS D1 WR room air control



A - WS 170 electronic slide-in module
A2 - Control circuit board: Jumper 8 bridged (= factory setting)
B - RLS D1 WR room air control
W1 - 230 V AC connection cable
W2 - Control cable for room air control, shielded control cable

WS 170 KBR

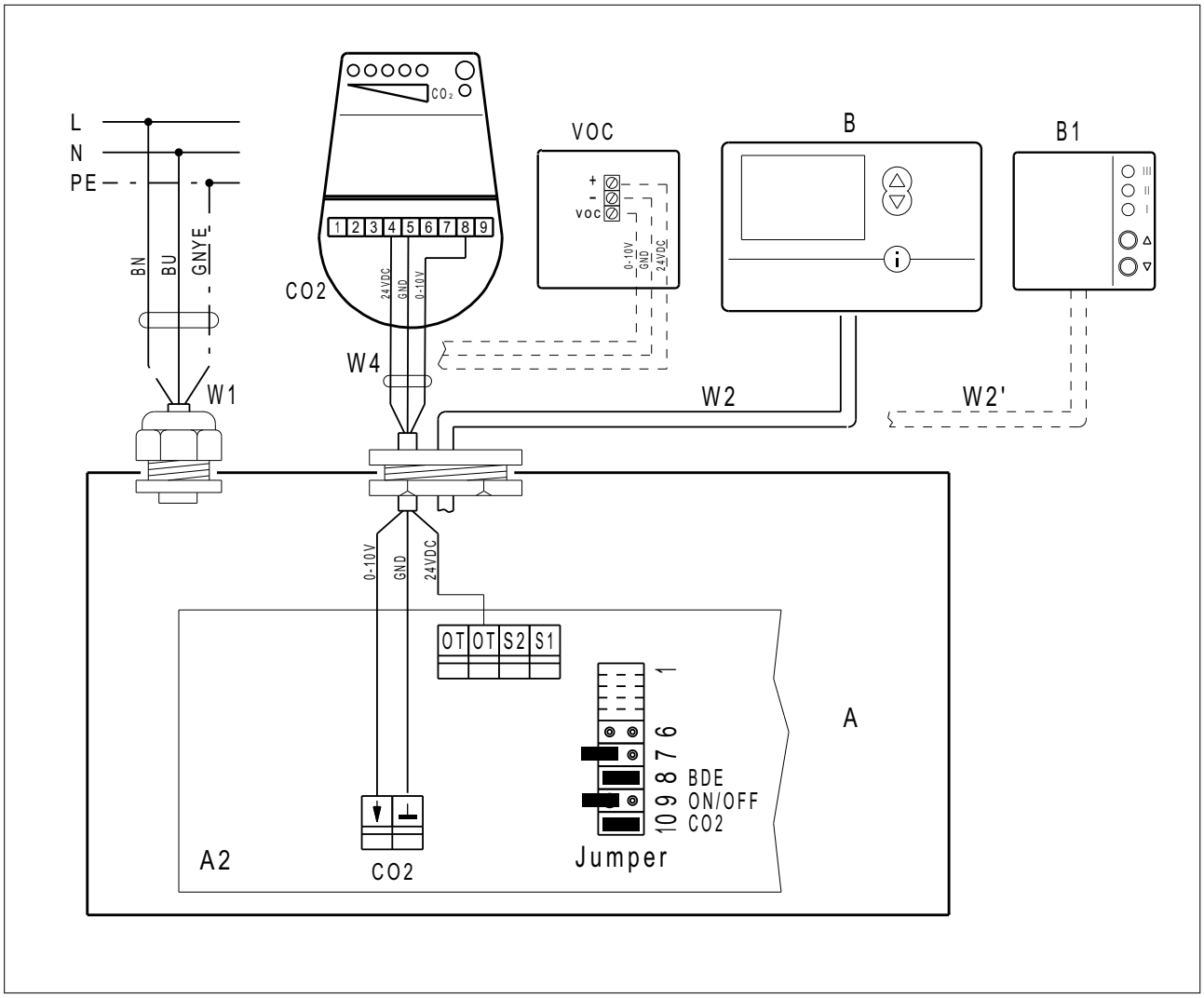
WS 170 ventilation unit with external operating display and RLS 1 WR or RLS D1 WR room air control



A - WS 170 electronic slide-in module
A2 - Control circuit board: Jumper 8 bridged (= factory setting)
B - RLS D1 WR room air control
B1 - RLS 1 WR room air control
H1 - Display element, e.g. glow lamp (to be supplied by the customer)
W1 - 230 V AC connection cable
W2, W2´ - Control cable for room air control
W3 - Cable for an external operating display (to be supplied by the customer). The connection on A2 control circuit board is done at the “Operating display” terminals.
An operating display (lamp, contactor, etc.) can be connected to the control circuit board for external monitoring of the ventilation unit by a building supervisor, for example. For this purpose, there is potential-free relay contact on the control circuit board “k1”.
Relay contact “k1” is closed when the ventilation unit is running. Maximum load-bearing capacity for relay contact k1 = 3A / 250 V AC, 2A / 30 V DC.

WS 170 KBR

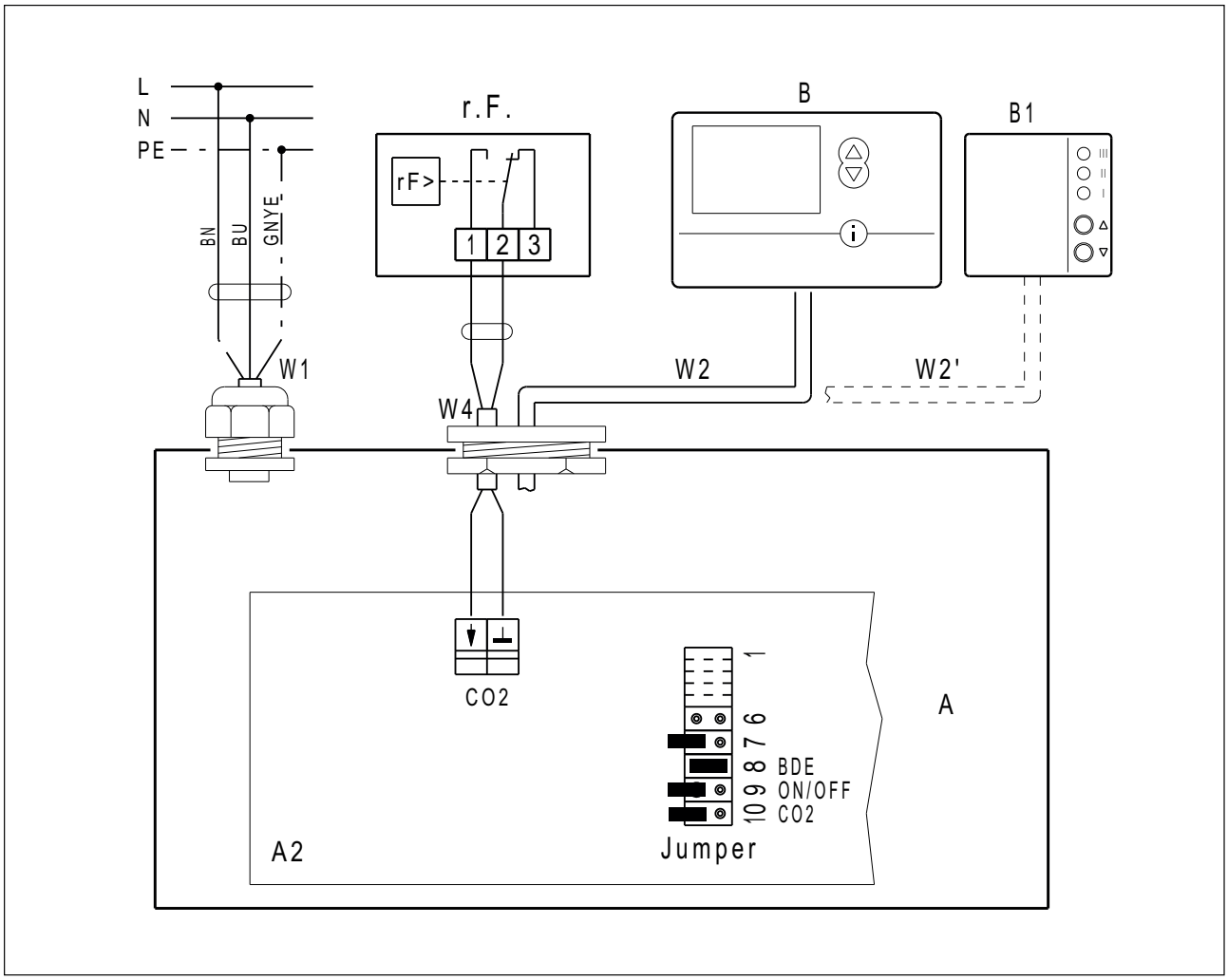
WS 170 ventilation unit with CO2 sensor or VOC sensor and RLS 1 WR or RLS D1 WR room air control



A - WS 170 electronic slide-in module
A2 - Control circuit board: Jumper 8 bridged (= factory setting) Jumper 10 bridged = sensor is detected.
B - RLS D1 WR room air control
B1 - RLS 1 WR room air control
CO2 - SKD CO2 sensor
VOC - EAQ 10/2 air quality controller
W1 - 230 V AC connection cable
W2, W2´ - Control cable for room air control
W4 - Connection cable for external CO2 sensor and/or VOC sensor (provided by customer). Connection to A2 provided by customer at CO2 and OT terminals. Set jumper 10 (CO2) to release the feature
When connecting a CO2 or VOC sensor for the demand-driven fresh air supply. The ventilation unit only reacts to the sensor if ventilation level 2 (nominal ventilation) is selected on the room air control.
If a CO2/VOC sensor is connected, only one RLS 1 WR room air control may be connected.
Never operate an EAQ 10/2 air quality sensor together with a CO2 sensor.

WS 170 KBR

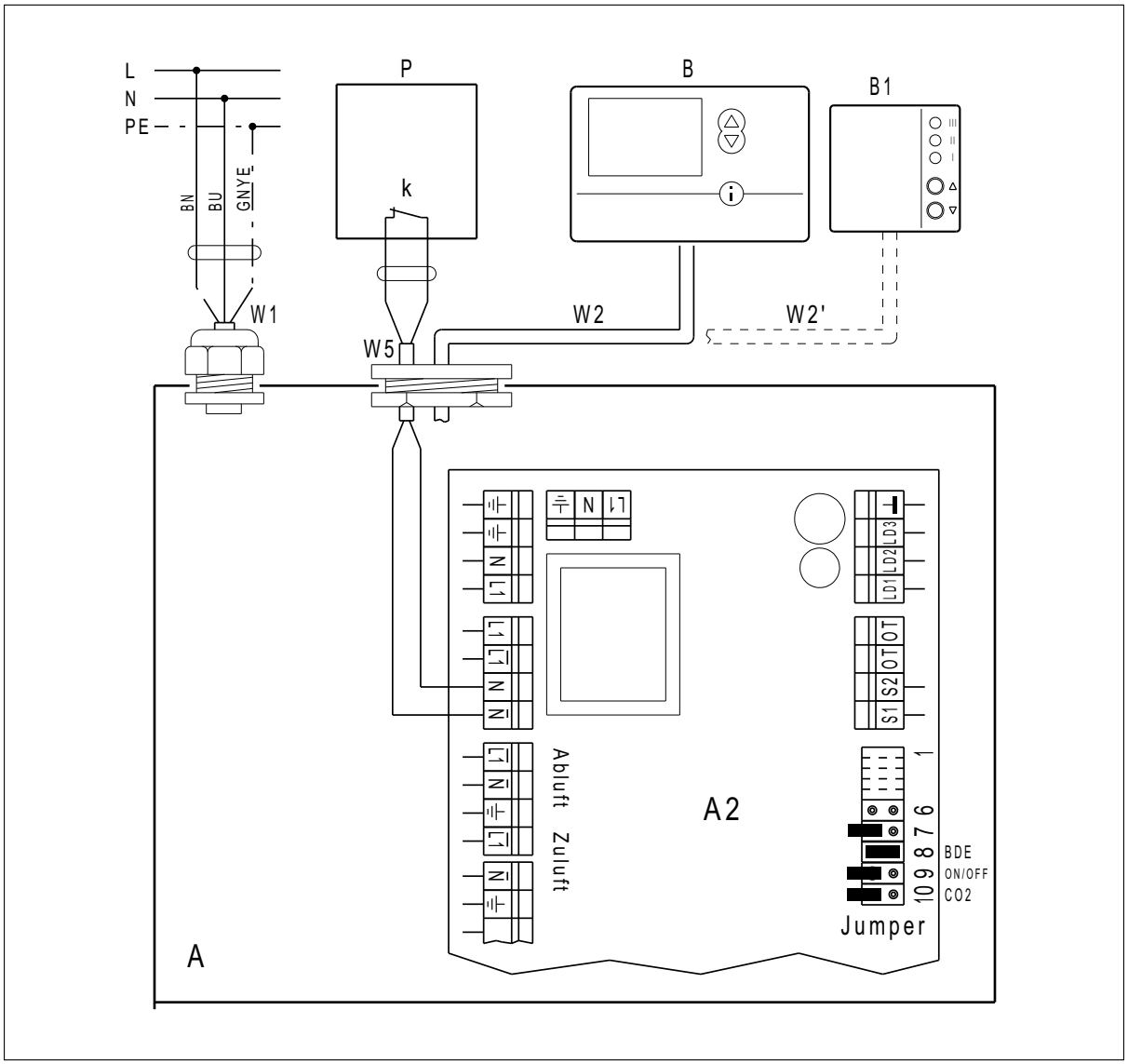
WS 170 ventilation unit with hygrostat and RLS 1 WR or RLS D1 WR room air control



A - WS 170 electronic slide-in module
A2 - Control circuit board: Jumper 8 bridged and jumper 10 (CO2) = open (= factory setting)
B - RLS D1 WR room air control
B1 - RLS 1 WR rH room air control HY 5 or HY 5 I hygrostat
W1 - 230 V AC connection cable
W2, W2´ - Control cable for room air control
W4 - Connection cable for external hygrostats (to be supplied by the customer). Connection to A2 control circuit board at CO2 terminals
When connecting a hygrostat with potential-free contact for demand-driven removal of moisture, the hygrostat must have a potential-free switching output.
The hygrostat always switches the ventilation unit to ventilation level 3 if the set humidity value is exceeded (potential-free contact in hygrostat closes).
If the humidity in the room drops, the ventilation unit switches back to the previously selected ventilation level.
If you switch manually from ventilation level 3 to level 2 or 1, this deactivates the automatic function of the hygrostat temporarily. This is then switched back to active if the level drops below the hygrostat set point once.
Connect the hygrostat to terminal "CO2".
Jumper 10 on the A2 control circuit board must be open.
Set the switching point at the hygrostat manually.
Never connect a hygrostat and a CO2 sensor/VOC sensor at the same time.

WS 170 KBR

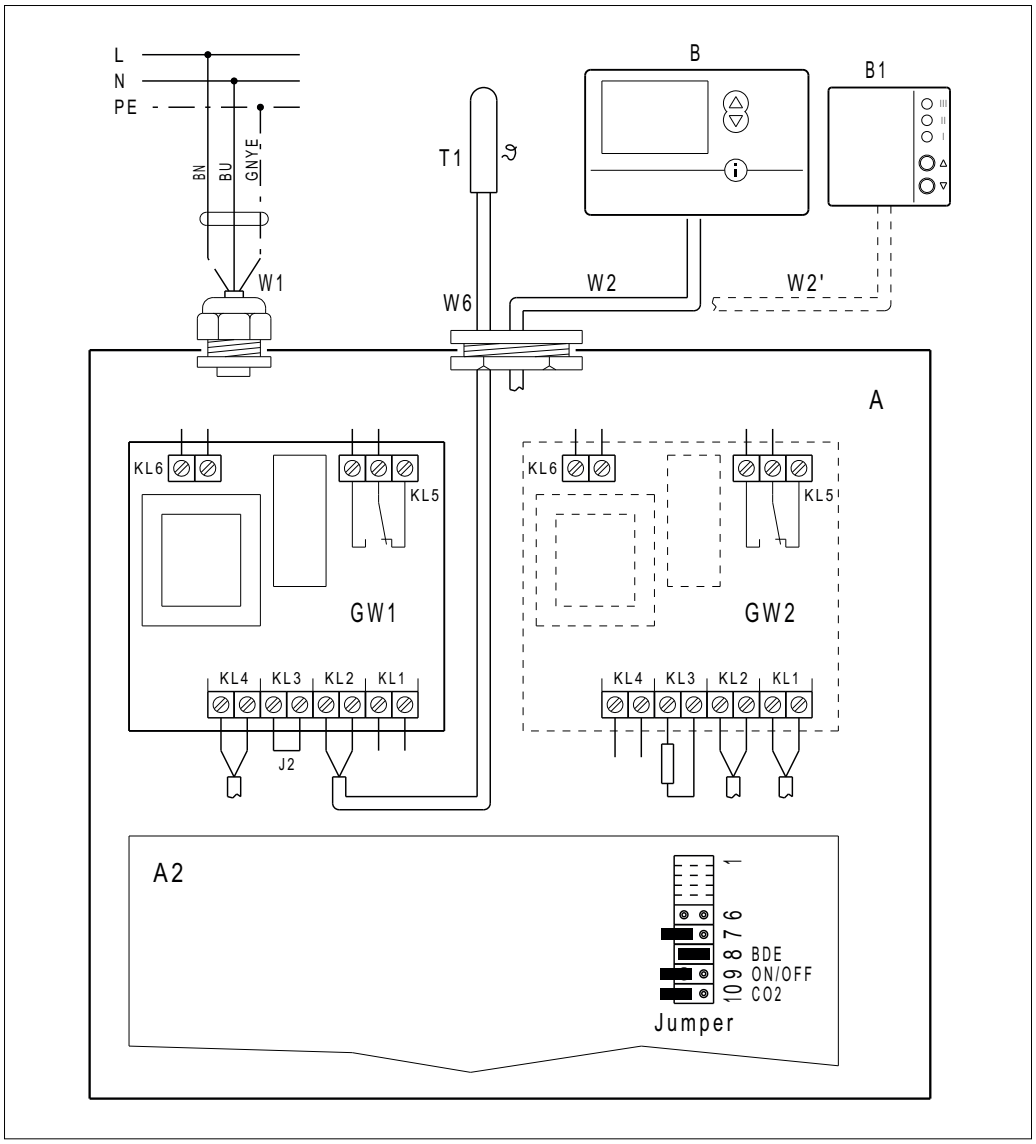
WS 170 ventilation unit with differential pressure controller and RLS 1 WR or RLS D1 WR room air control



A - WS 170 electronic slide-in module
A2 - Control circuit board: Jumper 8 bridged (= factory setting)
B - RLS D1 WR room air control
B1 - RLS 1 WR room air control
P - Differential pressure controller with potential-free relay contact k (provided by customer)
k - Switching output, potential-free relay contact
W5 - Connection cable for differential pressure controller (provided by customer)
If there is negative pressure in the room, the differential pressure controller switches the fans in the ventilation unit off. This blocks the room air control RLS 1 WR. The LED display goes out. The unit is only released again when the differential pressure controller switches the fans back on. The ventilation unit runs again at the same ventilation level as before it was blocked.

WS 170 KBR

WS 170 ventilation unit with NTC 15 supply air temperature sensor and RLS 1 WR or RLS D1 WR room air control



A - WS 170 electronic slide-in module
A2 - Control circuit board: Jumper 8 bridged (= factory setting)
B - RLS D1 WR room air control
B1 - RLS 1 WR room air control
GW1 - Gateway frost protection heat register
GW2 - Gateway bypass shutter (only WS 170 bypass unit)
T1 - Supply air temperature sensor in
supply air channel (provided by customer)
W1 - 230 V AC connection cable
W2, W2´ - Control cable for room air control
W6 - Connection cable of supply air temperature sensor. Connection on GW1 circuit board to KL2 terminals.
For WS 170 in passive-energy houses, an NTC 15 must also be installed to protect against icing over (if the supply air is too cold). The ventilation unit then switches off at supply air temperatures of less than 6 °C.
Only in Comfort and Bypass units when deploying a supply air temperature sensor: Remove the resistor on GW1 circuit board at the KL2 terminals.