

## Base HD connection configuration for hotel systems

Devices used for opening doors and power switching in the room are: BASE HD (Master), Base HD (Slave) and Power Control Board.  
Connection schematics is displayed in photo 1.

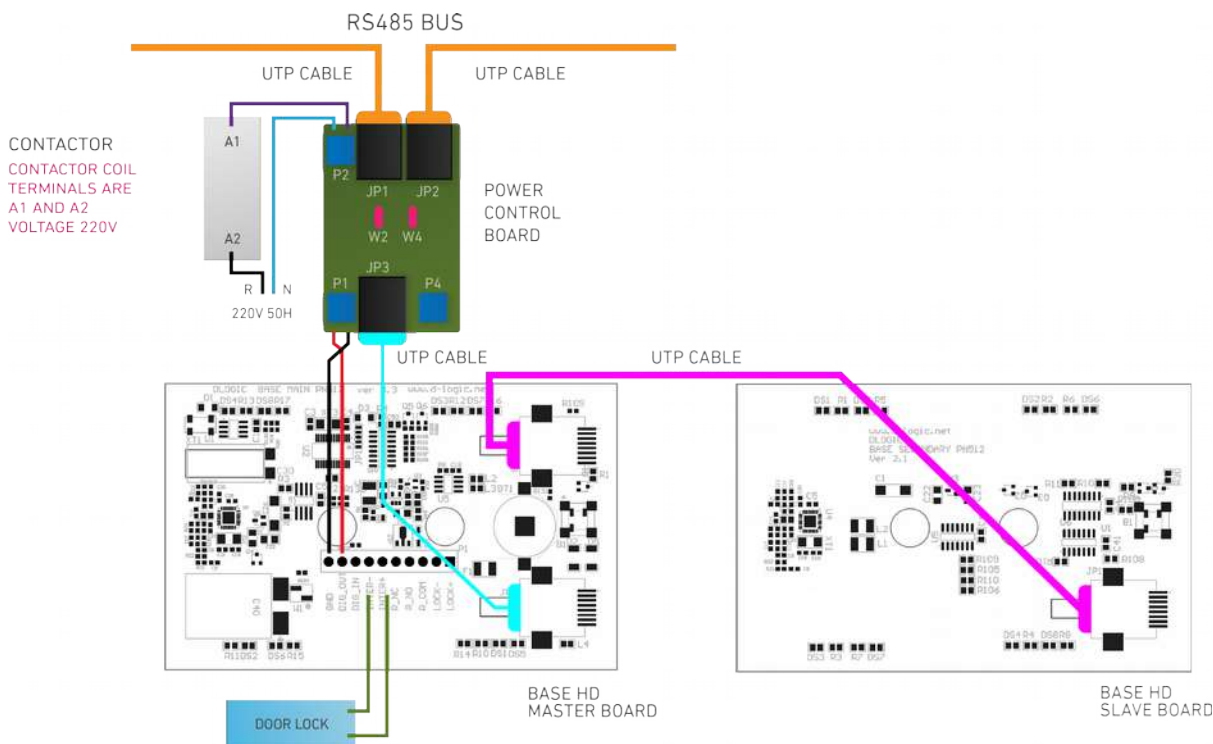


Photo 1

Devices are powered over RS485 Bus. Photo 1 shows a case of „passing“ configuration, which is most frequent.

With this kind of configuration power supply is brought from one side of the RS485 Bus (JP1 connector on the Power Control Board), and transferred to the other side of the RS485 Bus (JP2 connector on the Power Control Board). Cables are connected to JP1 and JP2 connectors on the Power Control Board. To enable the power supply transfer from JP1 to JP2, W2 and W4 jumpers must be connected as well. These jumpers also enable the power transfer to JP3 connector over which the Base HD (Master) is powered.

If the RS485 Bus voltage is higher than 5V, Power Control Board is fitted with either a chopper circuit (OKI-78SR-5) or a linear voltage stabilizer.

If the RS485 Bus is powered with 5V, no voltage stabilizers are necessary. Instead, W1 jumper must be placed.

Base HD (Master) connects to the RS485 Bus using UTP cable via connectors JP2 on Base HD (Master) and JP3 on Power Control Board.

Base HD (Slave) connects to Base HD (Master) using UTP cable via connectors JP1 on Base HD (Master) and JP1 on Base HD (Slave)

Following schematics show two cases of connecting readers to a segment of the RS485 Bus.

Blue square represents a set of devices comprised of Base HD (Master), Base HD (Slave) and Power Control Board. Connectors on the blue square represent connectors JP1 and JP2 of the Power Control Board from the device set.

RS485 Bus segment is a group of devices connected to the RS485 Bus between two termination resistors.

One of the termination resistors (120 Ohm) is located on the USB-RS485 Hub, while the other termination resistor (120 Ohm) is located on the Power Control Board of the farthest reader (photo 2).

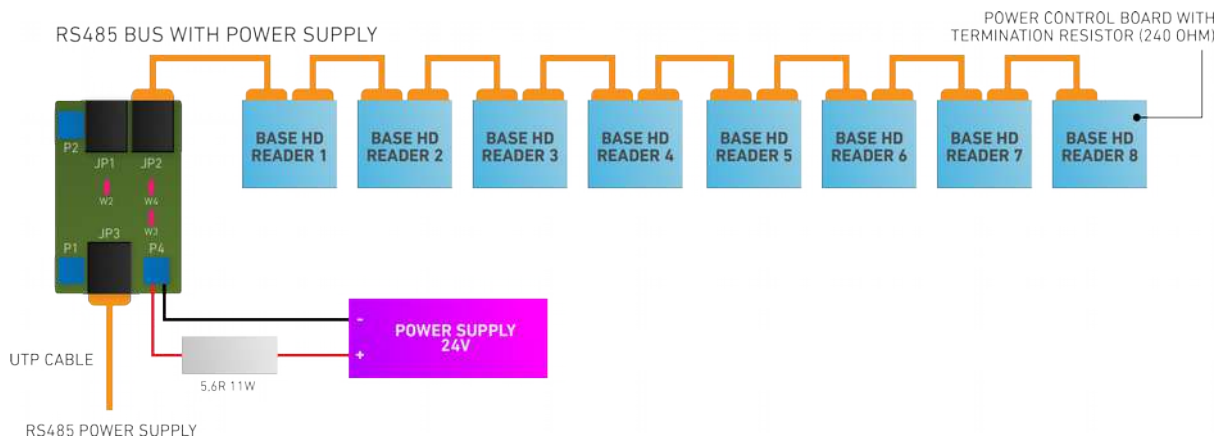


Photo 2

In case the readers are divided into two branches (photo 3), termination resistors have double value (240 Ohm) so they do not burden the RS485 Bus segment.

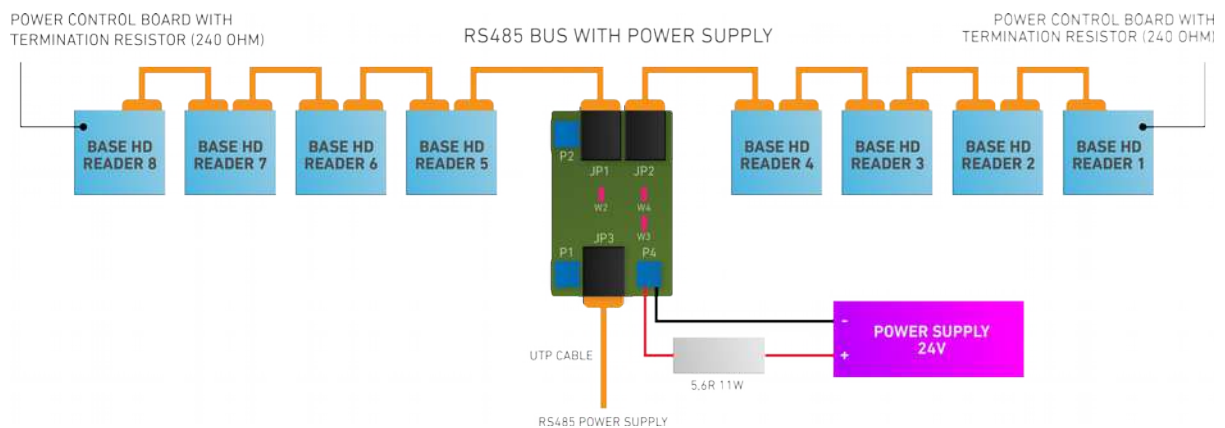


Photo 3

RS485 Bus power supply is injected via special Power Control Board. This board doesn't have a voltage stabilizer. Power supply is brought to P4 connector. Power supply line should have an inline wire resistor (5.6 Ohm, 11W) to counter large initial currents of charging super-capacitors on Base HD Readers.

Power Control Board should have W3 and W4 jumpers connected (photo 2) and W2 jumper if power is transferred to connector JP1 (photo 3).

It is very important to remove W1 jumper so the power supply doesn't reach the USB-RS485 Hub.

Next schematics (photo 4) shows an example of a system with three RS485 Bus segments. This corresponds to a three-story building with eight rooms per story. System is controlled by a PC connected to a USB+RS485 hub via USB cable. USB-RS485 hub is connected via UTP cables to JP3 connectors of the Power Control Boards. Power Control Boards are connected to the power supplies for RS485 Bus segments.

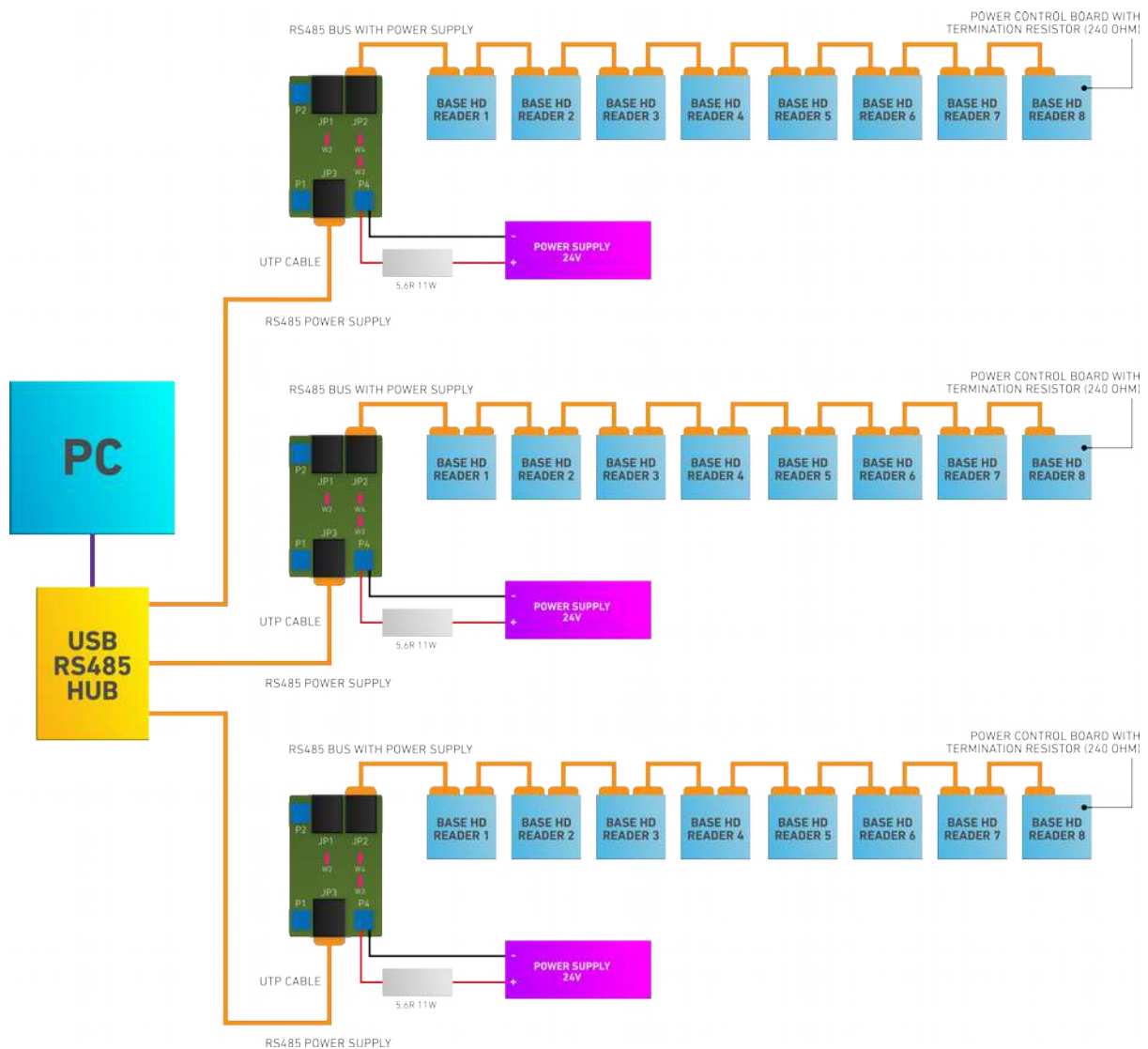


Photo 4