

# MODBUS RTU NETWORK STRUCTURE (RS485)

This guide contains information for the Modbus networking of Taconova's TacoTherm Dual heat interface units with the TacoControl P1 S/M controller and an H3000 E controller.

## NETWORK DESIGN

### Network length

The maximum network length depends on the cable quality and the transmission rate (baud rate) used.

### Cable recommendation

- Cross-section: at least  $2 \times 2 \times 0,22 \text{ mm}^2$  or at least  $2 \times 2 \times \text{AWG } 24$
- shielded
- twisted pair lines

### Baud rate vs. line length:

With ideal cable quality, the following line lengths can be achieved depending on the set baud rate:

| Baud rate               | Line length   |
|-------------------------|---------------|
| 115200 (Max)            | Maximal 12m   |
| 600 (Min)               | Maximal 1200m |
| 19200 (Factory setting) | Maximal 200m  |

## CONNECTION OF THE STATIONS

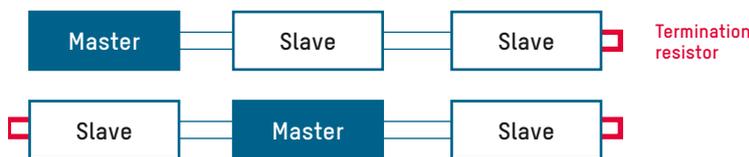
### Wiring

In the ModBus network two wires for MB+ and MB- are looped through at all stations (see picture on the right).

### Termination resistor

At the last station in the bus network, a resistor (1200 hm) must be attached as a termination.

The primary controller (master) can also be built into the bus network as a middle station. In this case, a terminating resistor must be attached to both of the last subsequent stations (slaves):



### Weather-compensated control

If weather-compensated heating control is used, the sensor for the outside temperature is connected to the primary station (master) (see image on the right).

The other stations receive the value automatically via ModBus communication if the controller is set accordingly (see separate controller instructions).

