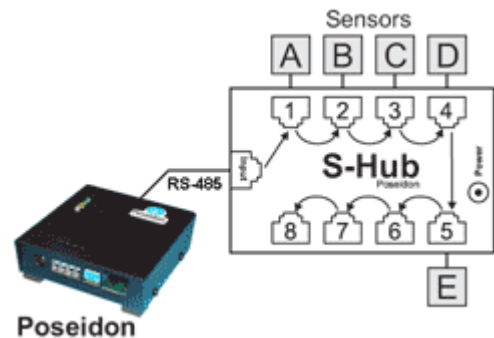


S-Hub represents a device which allows connecting RS-485 sensors to Poseidon Family units. The RS-485 bus is connected to the Poseidon model 1250 via TP cables and RJ45 connectors. S-Hub allows connecting up to 8 sensors over RJ45 to a single Poseidon unit. S-Hubs can be connected in series. Though S-Hub's topology can be found similar to Hub on Ethernet it cannot be commuted.

The RS-485 bus works reliably even over long distances in industrial environment but some principles must be obeyed when making a connection. To make sensor connection easier we supply the S-Hub along with the Poseidon. That is really a great help when it comes to installing sensors.

Standard TP cables in the star connection can be used.

A scheme of specific application with one S-Hub can be found for example in [Poseidon 1140 - Application: Example 02](#)



Advantages of using S-Hub for RS-485 sensors' connection:

- Simplification of cabling (mainly in larger installations)
- Using popular RJ45 sensors
- Easy extension with more sensors
- Simplified power supply connection for individual sensors. Power supply is connected directly to the S-Hub unit. It is possible to use standard power adaptor.

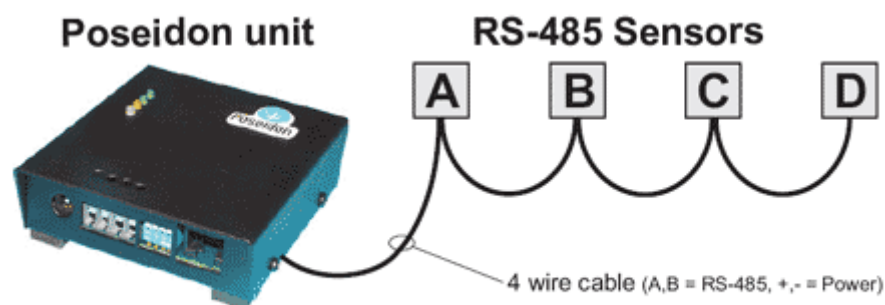


Connecting sensors over RS-485

Generally, the sensors communicating over RS-485 bus can be connected in serial connection or, using S-Hub, in star topology.

Line topology

For this connection you don't need an S-Hub. The individual sensors are interconnected directly. Sometimes this connection is called a Daisy chain. It is sufficient for large buildings and long distances.



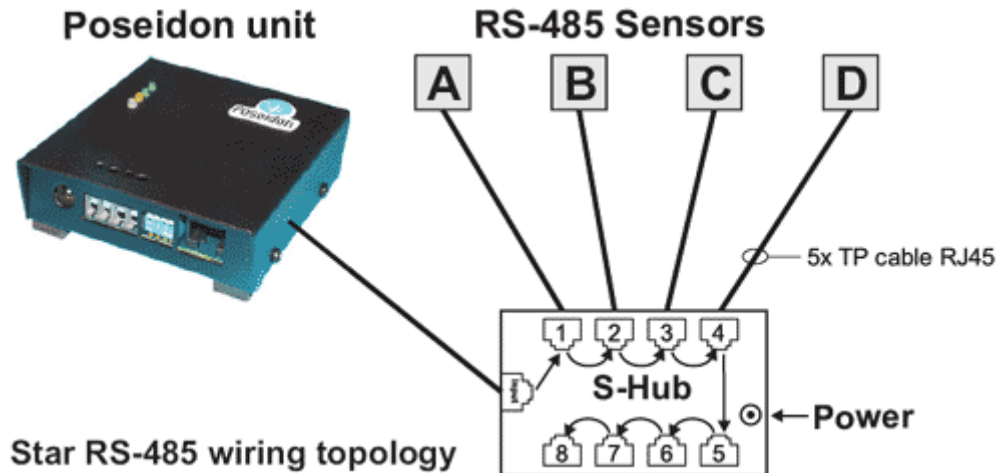
Linear RS-485 wiring topology

- Connection via 4 wires (for RS-485 we recommend twisted pair)

- Full wiring length cannot exceed 1000 meters
- For more than 3 sensors it is necessary to increase power supply of these sensors
- The last sensor must have the RS-485 line terminator turned on (option "LAST")

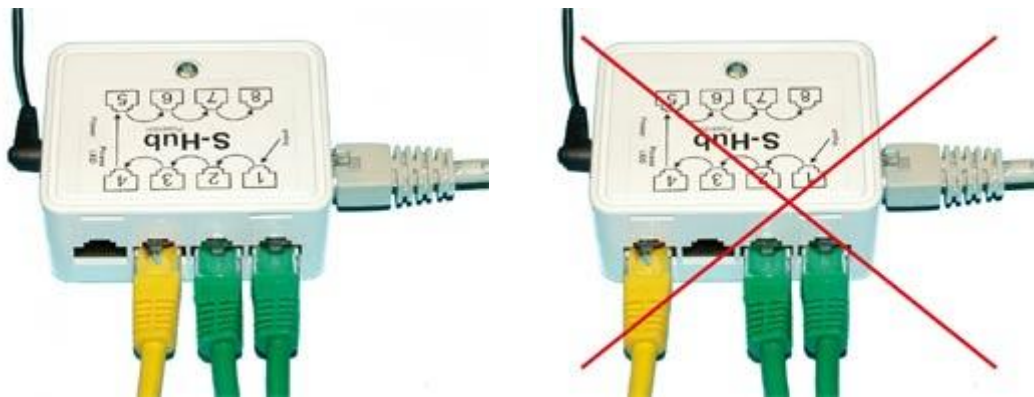
Connection with S-Hub

All sensors are connected in one place, working with RJ45 connectors only, S-Hub is located in the centre of the structure.



Principles for using S-Hub

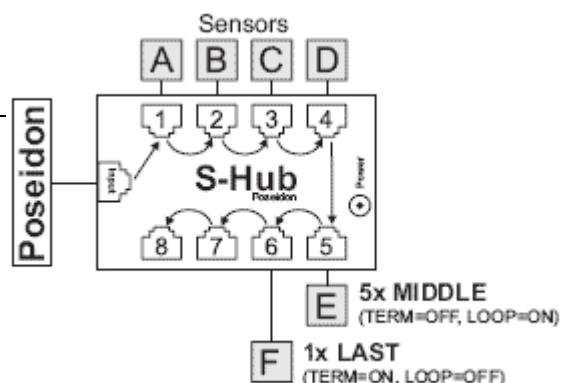
- Connecting with four-pair TP cables
- Full wiring length (sum of all RS-485 cables) cannot exceed 500 meters
- Sensors must be connected to the S-Hub subsequently from port 1 to 8 without empty slots between sensors. See picture



- For connection of more than 3 sensors or longer wiring we recommend connecting power supply of the sensors via S-Hub as depicted above. The LED signalizes power supply from the RS-485 input (green light), or external power supply connected to the unit (red light).
- The jumpers of the last sensor must be set to "LAST" position, all others set to "MIDDLE".

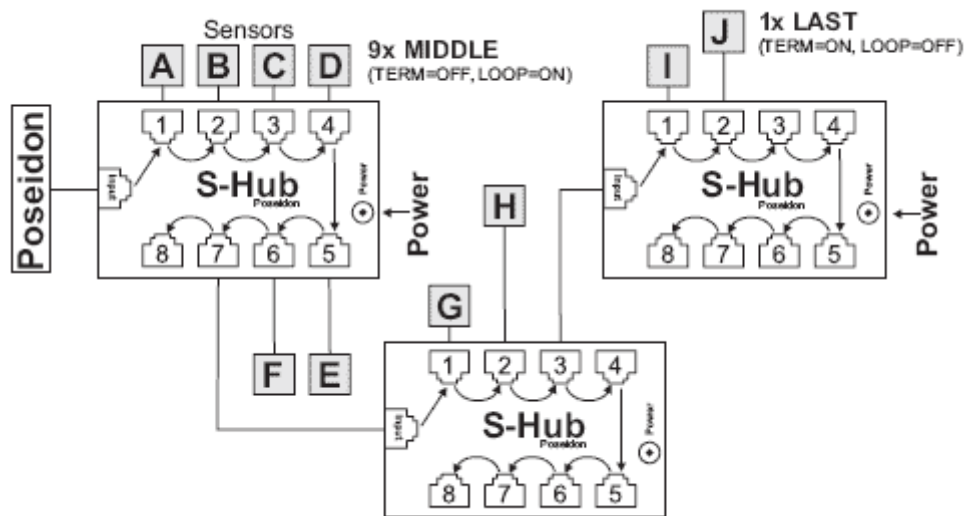
Application examples

Each sensor connected over RS-485 must be equipped with a unique address (here it's A - F). S-Hub



units can be multiplied in series but it's always necessary to verify configuration of the last sensor with its jumpers set to LAST.

A more difficult application is connection of 10 sensors and 3 S-Hubs:



The "J" sensor is the LAST, other sensors set as "MIDDLE". Note that the middle S-Hub does not need power supply, while G and H are powered as well as sensors A - F from the first S-Hub unit. Sensors I - J are powered from the third S-Hub unit

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