



Monitoring



Poseidon



Damocles



IP Serial



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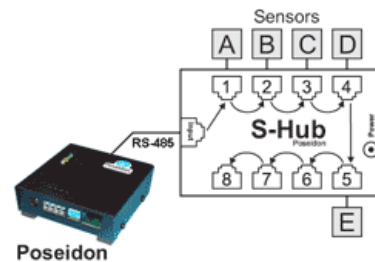
- **Software:** [CapTemp](#), [HWg-PDMS](#) // **3rd party SNMP:** ([Nagios](#), [WhatsUp](#), [Cacti](#), [Zabbix](#), [Zenoss](#)) // [SDK](#)
- **Poseidon models:** [3265](#) / [3266](#) / [3268](#) / [3468](#) / [2250](#) / [4001](#) / [4002](#) // [HWg-STE](#) / [HWg-WLD](#)
- **Sensors:** [Temperature \(Pt100\)](#), [Humidity](#), [Power](#), [Water Flood](#), [Smoke](#), [4-20mA 48V](#) and others..

Poseidon S-Hub

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.

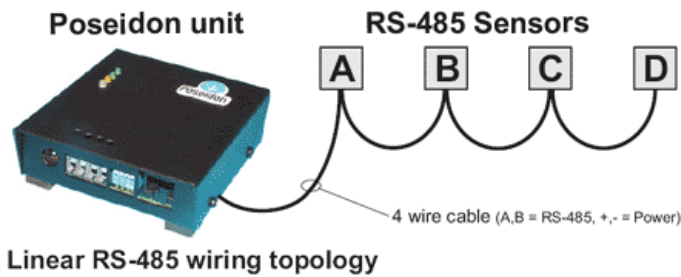


Connecting sensors over RS-485

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.

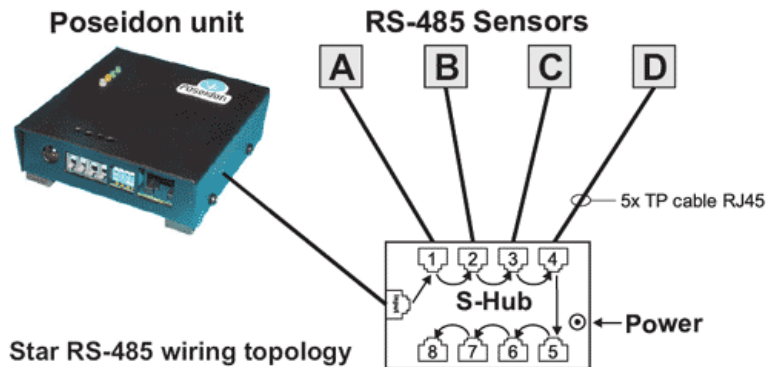


Linear RS-485 wiring topology

- 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

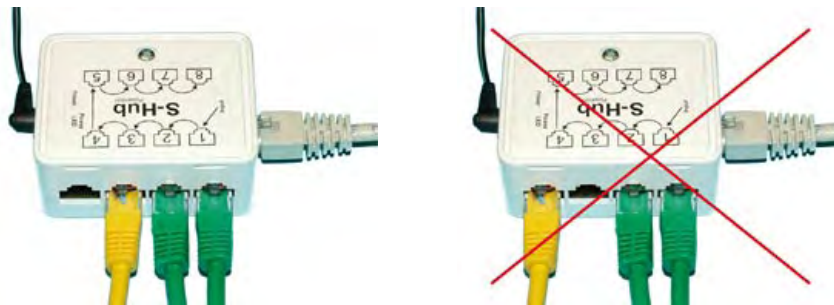
All sensors are connected in one place, working with RJ45 connectors only, S-Hub is located in the centre of the structure.



Star RS-485 wiring topology

Principles for using S-Hub

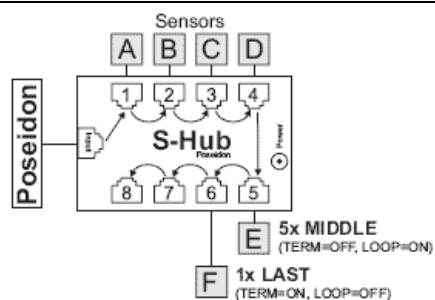
- Connecting with four-pair TP cables
- Full wiring length (sum of all RS-485 cables) cannot exceed 500 meters
- Sensors must be connected to the S-Hub subsequently from port 1 to 8 without empty slots between sensors. See picture



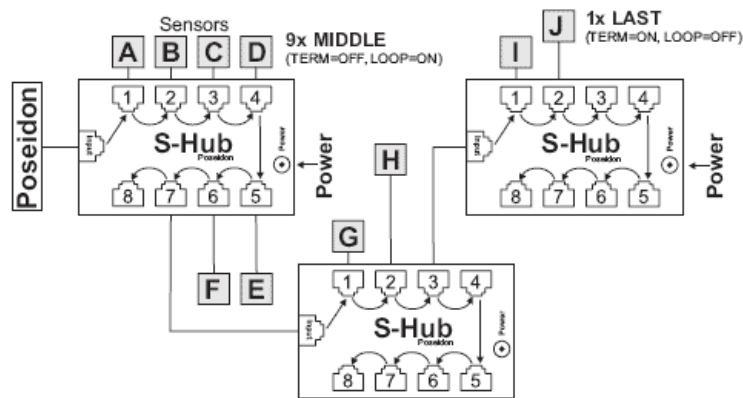
- For connection of more than 3 sensors or longer wiring we recommend connecting power supply of the sensors via S-Hub as depicted above. The LED signalizes power supply from the RS-485 input (green light), or external power supply connected to the unit (red light).
- The jumpers of the last sensor must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

B-Cable - RJ45 / 4. wire connection

Some of the supplied RS-485 sensors already have an RJ45 connector but others have only 4 terminals marked A,B,+,- .

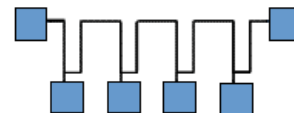
To connect these sensors to the **S-Hub** you can use the **B-Cable** module or connect it directly to the RJ45 cable ([connection scheme](#)).



[..more about the B-Cable](#)

What to do when the RS-485 bus does not work

If you don't use connection using the **S-Hub** and original supplied connectors, you can encounter problems with some sensors or the whole sensor network. When problems appear, check the following:



Line (Daisy chain) RS-485 topology

1. Check whether it all works on a table, within short distance and in ideal conditions.
2. Check sensors' IP address configuration if several sensors do not work properly, more sensors cannot use one same address.
3. Wiring with length of more than several meters must be terminated so check the termination resistance on the last sensor or if a jumper or a DIP switch has TERM=ON.
4. The RS-485 conductors must be differentiated. Check whether A wire leads to pin A, B wire to pin B. In an idle state the voltage of the A should be a little higher than of the B one.
5. When using TP cables (RJ45), note that all sensors have the green cable connected with the white stripe cable (white-blue). Check this connection on all cables where the B-Cables weren't used.
6. If using additional power supply for the sensors, use a galvanically insulated source. Sensors have little power consumption so it is possible to lead the power over TP cable for tens and even hundreds of meters.

Ordering numbers

OID	Popis typu
600 041	Poseidon S-Hub (photo) Splitter for up to 8 sensors to RS-485 bus (8+1x RJ45)
600 044	Poseidon B-Cable (photo) RS-485 converter from 4 terminal pins (A, B, +, -) to connector RJ45
600 233	Sensor RJ45 MIDDLE cable (photo) RS-485 cable 0.5m, RJ45/4 pins to connect 4 terminal pins (A, B, +, -) to connector RJ45 (3 pairs)
600 234	Sensor RJ45 LAST cable RS-485 cable 0.5m, RJ45/4 pins to connect 4 terminal pins (A, B, +, -) to connector RJ45 (2 pairs)

Related pages

- [Poseidon family produkts](#)
 - [Poseidon model 1140](#)
 - [Poseidon model 1140 - Tset](#)
 - [Poseidon model 1140 - THset](#)
 - [Poseidon model 1140 Application](#)

