

SIGNALINE HEAT

HD+ Modbus Manual



Installation Manual



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Overview

The Signaline HD+ Controller can be connected to a Modbus RS-485 network. It is configured as a Modbus slave device and responds to requests from the Modbus master.

The two-wire RS-485 terminals for Modbus network connection are located at the top of the PCB. For detailed installation and commissioning instructions, refer to the Signaline HD+ Controller Installation Manual.

The Signaline HD+ Controller is programmed with the following default Modbus parameters:

Protocol: Modbus RTU

Baud Rate: 19200

Parity: Even

Modbus Address: 1

Each device on the Modbus network must have a unique address. Ensure that the Modbus type, baud rate, and parity settings match those of the Modbus master.

The Signaline HD+ Controller responds to the following Modbus commands:

Read Input Registers (Function Code 4)

Read Coils (Function Code 1)

Write Single Coils (Function Code 5)

Any other function request will result in an "Illegal Function" error response. Requesting data from registers outside the listed Command Reference will trigger an "Illegal Data Address" or "Illegal Data Value" error.

Refer to the Command Reference on the following page for register-specific data.



Modbus Command Reference Table

Read Input Register (FC4 - 40001 to 40011)

Address	Description
0	Average ambient temperature of the sensor cable in °C (x10) (e.g., 253 = +25.3°C, -15 = -1.5°C)
1 & 2 (lower 3 bytes)	Most recent resistance measurement of the sensor cable in kΩ (x10) (e.g., 1961189 =
3	Signaline HD+ Controller temperature in °C (x10). (<i>Temperature sensor located near the Pre-alarm LED</i>) (e.g., 253 = +25.3°C, -23 = -2.3°C)
4 & 5 (lower 3 bytes)	Alarm threshold resistance in kΩ (x10) (e.g., 87942 = 8,794.2 kΩ)
6 & 7 (lower 3 bytes)	Pre-alarm threshold resistance in kΩ (x10) (e.g., 627823 = 62,782.3 kΩ)
8 (lower 1 byte)	User-selected alarm temperature in °C (e.g., 68 = 68°C)
9 (lower 1 byte)	User-selected pre-alarm temperature in °C (e.g., 57 = 57°C)
10	Sensor cable length in metres (x2) (e.g., 100 = 50m, 300 = 150m)

Read Coils (FC1 - 10001 and 10101)

Address	Description
0	Alarm relay status (1 = activated, 0 = normal)
1	Pre-alarm relay status (1 = activated, 0 = normal)

Write Single Coil (FC5 - 50001)

Address	Description
0 or 1	Reset relay (<i>if the current measured resistance is below the (pre) alarm threshold and no rate-of-change alarm condition exists</i>). The alarm relay resets first. The Write Single Coil command must be sent twice to reset both the Alarm and Pre-alarm relays.

This table ensures clarity and ease of reference when configuring the **Signaline HD+ Controller** on a **Modbus** network.