

1. Connect the HCD to a AC3001 or AC3001-XD adapter cable
2. Open the modbus manual of the HCD probe (DV31.11065.004.3.Modbus_Manual_V1.1)
3. Install and open the modbus Master (ModbusMaster.msi)
 - a. Choose RTU
 - b. Port settings Baud 19200 8N1
 - c. Slave ID247 (default – otherwise the probe individual programmed ID)
 - d. Choose the Display Format (e. g. HEX)
 - e. Click Connect

The screenshot shows the Modbus Master software interface. The 'Communication' tab is active, with 'RTU' selected under 'Mode' (labeled 'a'). The 'Port Name' is set to 'COM14' (labeled 'b'). The 'Baud' rate is '19200', 'Data Bits' are '8 Bits', and 'Parity' is 'None'. The 'Slave ID' is set to '247' (labeled 'c'). The 'Display Format' is set to 'Hex' (labeled 'd'). The 'Connect' button is highlighted with a red box (labeled 'e').

Below the communication settings, there are buttons for various Modbus functions: Read coils, Read holding register, Write single coil, Write multiple coils, Read discrete, Read input register, Write single register, and Write multiple register.

The main data area shows a table of addresses and values. The 'Start Address' is '30000' and the 'Size' is '2'. The table contains 20 rows of data, each with 10 columns of addresses and values. All values are '0x0000'.

At the bottom, the 'Communication Log' shows a message: '>15:54:34: Connected using RTU to COM14' (labeled 'f').

4. Example Read out serial number (SN):

- Address: 30001 -> 30000 (see note on page 4 chapter 2.Commands and chapter 2.1.1 Device Data)
Type Start Address 30000 and Size 2
- Click Apply
- Click Read Input Register

The screenshot shows the Modbus Master software interface. The 'Communication' tab is selected, with 'RTU' mode chosen. The 'Port' is set to 'COM14', 'Baud' is '19200', 'Data Bits' is '8 Bits', 'Stop Bits' is '1 Bit', and 'Parity' is 'None'. The 'Display Format' is set to 'Hex'. The 'Functions' tab is selected, and the 'Read input register' button is highlighted. The 'Start Address' is set to '30000' and the 'Size' is set to '2'. The 'Apply' button is highlighted. The 'Slave ID' is set to '247'. The 'Communication Log' at the bottom shows the following messages:

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>15:54:34: Connected using RTU to COM14
>16:06:11: TX: f7 04 75 30 00 02 7f 5e
>16:06:11: RX: f7 04 04 8d 82 31 01 32 9f
>16:06:11: Read succeeded: Function code:4.
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The 'Read input register' button is highlighted in blue. The 'Start Address' and 'Size' fields are highlighted in red. The 'Apply' button is highlighted in red. The 'Communication Log' is highlighted in red.

SN in hex code

30000	0x8d82	30012	0x0000	30024	0x0000	30036	0x0000	30048	0x0000	30060	0x0000	30072	0x0000	30084	0x0000
30001	0x3101	30013	0x0000	30025	0x0000	30037	0x0000	30049	0x0000	30061	0x0000	30073	0x0000	30085	0x0000
30002	0x0000	30014	0x0000	30026	0x0000	30038	0x0000	30050	0x0000	30062	0x0000	30074	0x0000	30086	0x0000
30003	0x0000	30015	0x0000	30027	0x0000	30039	0x0000	30051	0x0000	30063	0x0000	30075	0x0000	30087	0x0000
30004	0x0000	30016	0x0000	30028	0x0000	30040	0x0000	30052	0x0000	30064	0x0000	30076	0x0000	30088	0x0000
30005	0x0000	30017	0x0000	30029	0x0000	30041	0x0000	30053	0x0000	30065	0x0000	30077	0x0000	30089	0x0000
30006	0x0000	30018	0x0000	30030	0x0000	30042	0x0000	30054	0x0000	30066	0x0000	30078	0x0000	30090	0x0000
30007	0x0000	30019	0x0000	30031	0x0000	30043	0x0000	30055	0x0000	30067	0x0000	30079	0x0000	30091	0x0000
30008	0x0000	30020	0x0000	30032	0x0000	30044	0x0000	30056	0x0000	30068	0x0000	30080	0x0000	30092	0x0000
30009	0x0000	30021	0x0000	30033	0x0000	30045	0x0000	30057	0x0000	30069	0x0000	30081	0x0000	30093	0x0000
30010	0x0000	30022	0x0000	30034	0x0000	30046	0x0000	30058	0x0000	30070	0x0000	30082	0x0000	30094	0x0000
30011	0x0000	30023	0x0000	30035	0x0000	30047	0x0000	30059	0x0000	30071	0x0000	30083	0x0000	30095	0x0000

TX: sent string
RX: answer from the probe with SN
Read succeeded message

How to get the SN out of the hex code?

- Compare the green marked address
Address 30000: 0x8d82
Address 30001: 0x3101
- Put this information into the right sequence:
Open the MS Windows calculator and set it for programmer
- Type the 4 Bytes starting with the MSB: 0x01 -> 0x31 -> 0x82 -> 0x8d (see modbus manual chapter 2.2.2 *Byte Order / Swap modes*)
and you can see the serial number of the probe

