

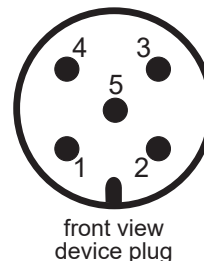
QUICK GUIDE

EE872 - Modular CO₂ Probe for Demanding Applications

(Full User Guide at www.epluse.com/EE872)

Connection Diagram

Pin number	Function	Wire colors for accessories: - Couplig flange HA010705 - Connection cable HA010819/820/821
1	Supply voltage	brown
2	B RS485 (D-) or voltage output	white
3	GND	blue
4	A RS485 (D+) or current output	black
5	Configuration pin	gray



Selection between Analogue Output and RS485 Interface

Configuration pin connected to GND:

- EE872 features analogue outputs independently of its original setup.

Configuration pin not connected:

- EE872 set to RS485 interface (option P1 in the order code) features RS485 interface.
- EE872 set to analogue outputs (option GA7 or GA11 in the order code): the RS485 interface is active for the first 10 seconds after power on and awaits connection with the EE-PCS Product Configuration Software. This allows for setup changes or adjustment of the EE872. If the connection to EE-PCS is not established within 10 seconds, the device automatically changes to analogue output.

Modbus Setup

	Factory settings	Selectable values
Baud rate	9600	9600, 19200, 38400, 57600
Data bits	8	8
Parity	Even	None, odd, even
Stop bits	1	1, 2
Slave address	237	1...247

The recommended settings for multiple devices in a Modbus RTU network are 9600, 8, Even, 1
The EE872 represents 1/10 unit load in a Modbus network.

Device address, baud rate, parity and stop bits can be set via:

- EE-PCS, Product Configuration Software and the appropriate configuration cable HA011018.
The EE-PCS can be downloaded free of charge from www.epluse.com/Configurator.
- Modbus protocol in the register 60001 (0x00) and 60002 (0x01).
See Application Note Modbus AN0103 (available on www.epluse.com/EE872)

The serial number as ASCII-code is located at read register address 30001-30008 (16 bit per address).

The firmware version is located at register address 30009 (bit 15...8 = major release; bit 7...0 = minor release).

The sensor name is located at register address 30010.

INTEGER 16 bit		
Parameter	Register number ¹⁾ [DEC]	Protocol Address ²⁾ [HEX]
Read and write register: function code 0x03 / 0x06		
Slave-ID Modbus address	0001	0x00
Modbus protocol settings ⁴⁾	0002	0x01
INFO (read register):		
Parameter	Register number ¹⁾ [DEC]	Protocol Address ²⁾ [HEX]
Read and write register: function code 0x03 / 0x04		
Serial number (as ASCII)	0001	0x00
Firmware version	0009	0x08
Sensor Name	0010	0x09

1) Register number starts from 1.

2) Protocol address starts from 0.

3) 1xx is scale. E.g. for 100, reading of 2550 is equivalent to 25.5. For 50, reading of 2550 is equivalent to 51.

4) For Modbus protocol settings see Application Note Modbus AN0103 (available on www.epluse.com/EE872).

Modbus Register Map

The measured data is saved as a 32 bit float and as 16 bit signed integer:

FLOAT 32 bit			
Parameter	Unit	Register number ¹⁾ [DEC]	Protocol Address ²⁾ [HEX]
Read register: function code 0x03 / 0x04			
CO2 (average)	ppm	1061	0x424
CO2 (raw)	ppm	1063	0x426
Pressure p*	mbar	1201	0x4B0
Pressure p*	psi	1203	0x4B2
Relative humidity RH**	%	1021	0x3FC
Temperature T**	° C	1003	0x3EA
Temperature T**	° F	1005	0x3EC
Temperature T**	K	1009	0x3F0
Dew point temperature Td***	° C	1105	0x450
Dew point temperature Td***	° F	1107	0x452
Dew point temperature Td***	K	1147	0x47A

INTEGER 16 bit				
Parameter	Unit	Scale ³⁾	Register number ¹⁾ [DEC]	Protocol Address ²⁾ [HEX]
Read register: function code 0x03 / 0x04				
CO2 (average)	ppm	1	4031	0xFBE
CO2 (raw)	ppm	1	4032	0xFBF
Pressure p*	mbar	10	4101	0x1004
Pressure p*	psi	100	4102	0x1005
Relative humidity RH**	%	100	4011	0xFAA
Temperature T**	° C	100	4002	0xFA1
Temperature T**	° F	50	4003	0xFA2
Temperature T**	K	50	4005	0xFA4
Dew point temperature Td***	° C	100	4053	0xFD4
Dew point temperature Td***	° F	100	4054	0xFD5
Dew point temperature Td***	K	100	4074	0xFE9

*available for versions M13, M15

**available for version M13 only when probe is not heated (default setting)

***available for version M13 always: enabling or disabling the probe heating does not affect the Td measurement

1) Register number starts from 1.

2) Protocol address starts from 0.

3) 1xx is scale. E.g. for 100, reading of 2550 is equivalent to 25.5. For 50, reading of 2550 is equivalent to 51.

4) For Modbus protocol settings see Application Note Modbus AN0103 (available on www.epluse.com/EE872).

INFORMATION

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