

# QUICK GUIDE

## Sigma 05

### General Information

Sigma 05 is a host device (Modbus master) for up to three E+E sensing probes / measurement devices with RS485 interface and Modbus RTU protocol.

This Quick Guide focuses on the Sigma 05 plug and play functionality with E+E sensing probes. Please make sure to review the Sigma 05 user manual at [www.epluse.com/Sigma05](http://www.epluse.com/Sigma05) for manual setup and other Sigma 05 features.



**Please note:**

The Sigma 05 must be powered off while connecting or disconnecting probes.

### Plug and Play with E+E Sensing Probes

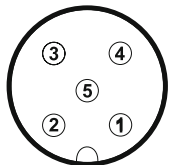
With enabled automatic discovery function (default setting), Sigma 05 automatically recognizes E+E sensing probes and their combinations according to the table below, see "Probe Combinations and Automatic Discovery". Furthermore, the assignment of the measurands to the outputs and display, as well as the scaling of the outputs is performed automatically according to the table. This setup can be changed subsequently by the user as required, see "Manual Setup" below.

### Manual Setup

For manual setup connect Sigma 05 to a personal computer running PCS10 Product Configuration Software, free download from [www.epluse.com/PCS10](http://www.epluse.com/PCS10).

Disable the automatic discovery function and proceed with assigning measurands to the outputs and display as well as with the output scaling. See the user manual at [www.epluse.com/Sigma05](http://www.epluse.com/Sigma05).

### Sensing Probe Connection (RS485 Interface with Modbus RTU Protocol)



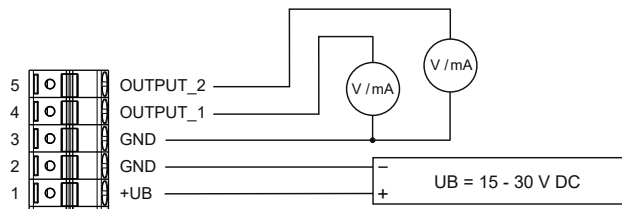
M12 device socket front view

Pin number	Function
1	Supply voltage <sup>*)</sup>
2	B RS485 (D-)
3	GND
4	A RS485 (D+)

<sup>\*)</sup> The supply voltage on the RS485 interface is always equal to the supply voltage applied to Sigma 05.

**Important:** Choose the Sigma 05 supply voltage (in the range 15 - 30 V DC) to match the probe supply requirements.

### Voltage Supply and Outputs



### Modbus Setup

	Factory settings	Selectable values
<b>Baudrate</b>	9600	9600, 19200, 38400, 57600, 115200
<b>Data bits</b>	8	8
<b>Parity</b>	Even	None, even, odd
<b>Stop bits</b>	1	1, 2
<b>Modbus Master</b>	Sigma 05 has no Modbus ID	

The recommended settings for multiple devices in a Modbus RTU network are 9600, 8, Even, 1. The Sigma 05 represents 1 unit load in a Modbus network.

## INFORMATION

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## Probe Combinations and Automatic Discovery

#	Probe	Analogue Output 1			Analogue Output 2			Display Line 1		Display Line 2		Display Line 3	
		Measurand	Scale SI	Scale US	Measurand	Scale SI	Scale US	SI	US	SI	US	SI	US
1	EE072	RH	0...100%	0...100%	T	-40...80 °C	-40...176 °F	RH [%]	RH [%]	T [°C]	T [°F]		
2	EE074	T	-40...80 °C	-40...176 °F				T [°C]	T [°F]				
3	EE872-M13	CO <sub>2</sub>	Range of probe	Range of probe	RH	0...100 %	0...100 %	CO <sub>2</sub> [ppm]	CO <sub>2</sub> [ppm]	RH [%]	RH [%]	T [°C]	T [°F]
4	EE872-M10	CO <sub>2</sub>	Range of probe	Range of probe				CO <sub>2</sub> [ppm]	CO <sub>2</sub> [ppm]				
5	EE671	v	Range of probe	Range of probe				v [m/s]	v [ft/min]				
6	EE680	vn	Range of probe	Range of probe	T	0...50 °C	32...122 °F	vn [m/s]	vn [ft/min]	T [°C]	T [°F]		
7	EE072	RH	0...100%	0...100%				RH [%]	RH [%]				
7	EE074				T	-40...80 °C	-40...176 °F			T [°C]	T [°F]		
8	EE872-M13	CO <sub>2</sub>	Range of probe	Range of probe				CO <sub>2</sub> [ppm]	CO <sub>2</sub> [ppm]				
8	EE072				RH	0...100%	0...100%			RH [%]	RH [%]	T [°C]	T [°F]
9	EE872-M10	CO <sub>2</sub>	Range of probe	Range of probe				CO <sub>2</sub> [ppm]	CO <sub>2</sub> [ppm]				
9	EE072				RH	0...100%	0...100%			RH [%]	RH [%]	T [°C]	T [°F]
10	EE671	v	Range of probe	Range of probe				v [m/s]	v [ft/min]				
10	EE072				RH	0...100%	0...100%			RH [%]	RH [%]	T [°C]	T [°F]
11	EE680	vn	Range of probe	Range of probe				vn [m/s]	vn [ft/min]				
11	EE072				RH	0...100%	0...100%			RH [%]	RH [%]	T [°C]	T [°F]
12	EE872-M13	CO <sub>2</sub>	Range of probe	Range of probe				CO <sub>2</sub> [ppm]	CO <sub>2</sub> [ppm]				
12	EE074				T	-40...80 °C	-40...176 °F			T [°C]	T [°F]		
13	EE872-M10	CO <sub>2</sub>	Range of probe	Range of probe				CO <sub>2</sub> [ppm]	CO <sub>2</sub> [ppm]				
13	EE074				T	-40...80 °C	-40...176 °F			T [°C]	T [°F]		
14	EE671	v	Range of probe	Range of probe				v [m/s]	v [ft/min]				
14	EE074				T	-40...80 °C	-40...176 °F			T [°C]	T [°F]		
15	EE680	vn	Range of probe	Range of probe				vn [m/s]	vn [ft/min]				
15	EE074				T	-40...80 °C	-40...176 °F			T [°C]	T [°F]		
16	EE872-M13	CO <sub>2</sub>	Range of probe	Range of probe				CO <sub>2</sub> [ppm]	CO <sub>2</sub> [ppm]				
16	EE671				v	Range of probe	Range of probe			v [m/s]	v [ft/min]		
17	EE872-M13	CO <sub>2</sub>	Range of probe	Range of probe				CO <sub>2</sub> [ppm]	CO <sub>2</sub> [ppm]				
17	EE680				vn	Range of probe	Range of probe			vn [m/s]	vn [ft/min]		
18	EE872-M10	CO <sub>2</sub>	Range of probe	Range of probe				CO <sub>2</sub> [ppm]	CO <sub>2</sub> [ppm]				
18	EE671				v	Range of probe	Range of probe			v [m/s]	v [ft/min]		
19	EE872-M10	CO <sub>2</sub>	Range of probe	Range of probe				CO <sub>2</sub> [ppm]	CO <sub>2</sub> [ppm]				
19	EE680				vn	Range of probe	Range of probe			vn [m/s]	vn [ft/min]		
20	EE680	vn	Range of probe	Range of probe				vn [m/s]	vn [ft/min]				
20	EE671				v	Range of probe	Range of probe			v [m/s]	v [ft/min]		