QUICK GUIDE

EE211 - Humidity and Temperature Sensor for Continuous High Humidity
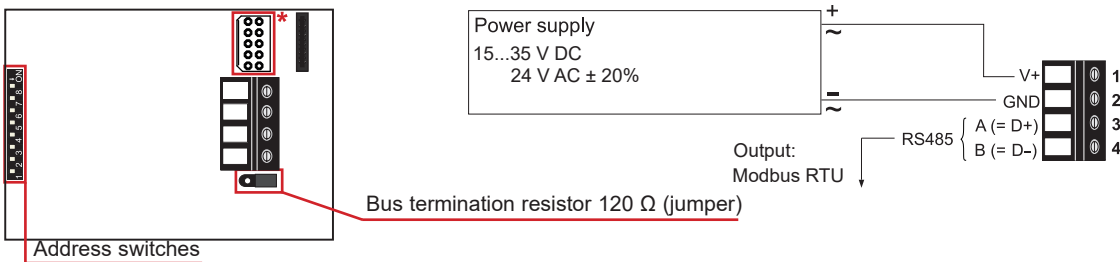**(Full User Guide at www.epluse.com/EE211)**
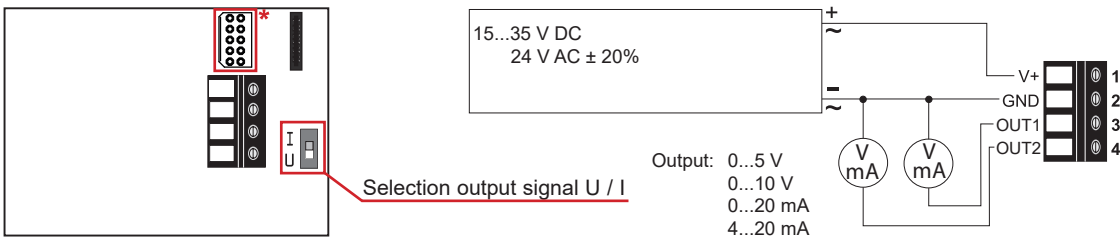
Assembly and Installation

- Insert the M20 cable gland included in the scope of supply into the corresponding opening of the EE211 basis unit and fix it tight with the nut.
- Install the EE07-MT temperature probe either directly onto the M12 connector of the EE211 basis unit or using the optional probe cable.

Connection Diagram

EE211-M1J3 - Digital Output

Power supply
15...35 V DC
24 V AC ± 20%

Output:
Modbus RTU

RS485 { A (= D+) / B (= D−) }

V+ 1
GND 2
A (= D+) 3
B (= D−) 4

Bus termination resistor 120 Ω (jumper)

Address switches

EE211-M1A2/3/5/6 - Analogue Output

15...35 V DC
24 V AC ± 20%

Selection output signal U / I

Output: 0...5 V
0...10 V
0...20 mA
4...20 mA

V+ 1
GND 2
OUT1 3
OUT2 4

* Setup interface

Analogue Settings

Selection Output Signal Voltage / Current
The factory setup of the output signal and scaling corresponds to the type number as ordered.
The output signal voltage (U) or current 3-wire (I) can be selected with the DIP switch on the main electronics board (see Connection Diagram - EE211-M1A2/3/5/6). This does not impact on the scaling of the outputs, which can be changed using the EE-PCS Product Configuration Software and the optional USB configuration adapter HA011066.

Digital Settings - RS485 Interface with Modbus RTU Protocol

Hardware Bus Termination
If required, the bus termination shall be realized with 120 Ohm resistor, jumper on the board.
Jumper mounted   = bus terminated
Jumper not mounted   = bus not terminated

Address setting via EE-PCS Product Configuration Software
All DIP switches at position 0 → address has to be set via Product Configuration Software
Factory setting: 239 (permitted values: 1…247).
Example: Slave address is set via configuration software.

Address setting via DIP switch
Setting the DIP switches to any other address than 0, overrules the slave address set via configuration software (permitted values: 1…247).
Example: Slave address set to 11 (= 0000 1011 binary).

Address Switch:

1 2 3 4 5 6 7 8 ON
0 0 0 0 0 0 0 0

Address Switch:

1 2 3 4 5 6 7 8 ON
1 1 0 1 0 0 0 0
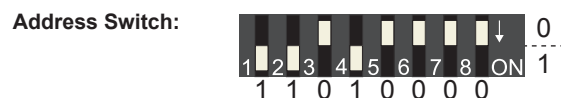
Digital Settings

	Factory settings	Selectable values
Baud rate	9600	9600, 19200, 38400, 57600, 76800, 115200
Data bits	8	8
Parity	EVEN	None, odd, even
Stop bits	1	1 or 2
Slave address	239	1...247

For details how to set the ID address, baud rate, parity and stop bits, please see **Full User Guide at www.epluse.com/EE211**.

Modbus Register Map

FLOAT 32 bit (read register):

Function code / Register number[1] [Dec]	Register address[2] [Hex]	Parameter name	Unit[3]
30026	0x19	temperature	[°C], [°F]
30028	0x1B	relative humidity	[%]
30030	0x1D	water vapour partial pressure	[mbar], [psi]
30032	0x1F	dew point temperature	[°C], [°F]
30034	0x21	wet bulb temperature	[°C], [°F]
30036	0x23	absolute humidity	[g/m³], [g/ft³]
30038	0x25	mixing ratio	[g/kg], [gr/lb]
30040	0x27	specific enthalpy	[kJ/kg], [BTU/lb]
30042	0x29	frost point temperature	[°C], [°F]

INTEGER 16 bit (read register):

Function code / Register number[1] [Dec]	Register address[2] [Hex]	Parameter name	Unit[3]	Scale[4]
30301	0x12C	temperature	[°C], [°F]	100
30302	0x12D	relative humidity	[%]	100
30303	0x12E	water vapour partial pressure	[mbar], [psi]	100
30304	0x12F	dew point temperature	[°C], [°F]	100
30305	0x130	wet bulb temperature	[°C], [°F]	100
30306	0x131	absolute humidity	[g/m³], [g/ft³]	100
30307	0x132	mixing ratio	[g/kg], [gr/lb]	100
30308	0x133	specific enthalpy	[kJ/kg], [BTU/lb]	100
30309	0x134	frost point temperature	[°C], [°F]	100

INTEGER 16 bit (read and write register):

Function code / Register number[1] [Dec]	Register address[2] [Hex]	Parameter name
60001	0x00	Slave-ID[5] modbus address
60002	0x01	Modbus protocol settings[6]

INFO (read register):

Function code / Register number[1] [Dec]	Register address[2] [Hex]	Parameter name
30001	0x00	Serial number (as ASCII)
30009	0x01	Firmware version
30010	0x09	Sensor name

1) Register number starts from 1
2) Register address starts from 0
3) The choice of measurement units (metric or non-metric) must be done in the ordering guide, see EE211 data sheet.
   Switching from metric to non-metric or vice versa by using the EE-PCS is not possible.
4) 100 is scale 1:100 (2550 is equivalent to 25.5 °C)
5) If the ID is set via DIP-switch the response will be NAK
6) For Modbus protocol settings please see Application Note Modbus AN0103 (available on www.epluse.com/EE211)

USA
FCC notice:

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the installation manual, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which thereceiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

CANADIAN
ICES-003 Issue 5:
CAN ICES-3 B / NMB-3 B