

Wireless Receiver ModBus / 0-10V / ES 1061



Used with;

Wireless Sensors T-RH, and T-RH-CO₂

Function:

Receiver for wireless sensors for either ModBus interface or 0-10V output.

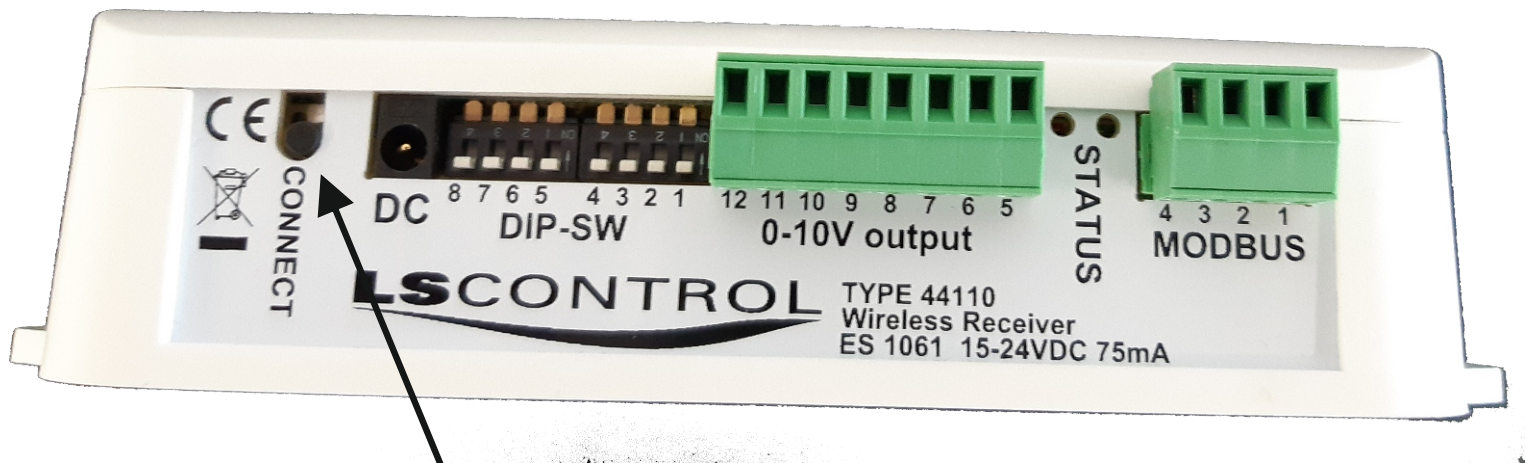
See picture below and dip-switch tables on next pages for correct setup of receiver.

Features:

When the receiver is set up for ModBus interface it is possible to connect and regulate on signals from up to 16 wireless sensors per receiver.

When sensor is set up to give a 0-10V output signal it is only possible to regulate on signal from one wireless sensor - this is most useable in smaller installations.

Hence most air handling units (AHUs) and heat pumps comes in metal cabinets which blocks the signal from the wireless sensors, the receiver is delivered in its own external box and must be placed outside of the AHU or heat pump cabinet.



Connect button

Dip-switch Configuration

ModBus

Baud rate	SW1
9600	OFF
19200	ON

Mode	RTU
Data bits	8
Parity	Even
Stop bit(s)	1

	Node-ID	SW2	SW3	SW4
Emulation Mode (Emulation of wired sensors)	102-106 (Note1)	OFF	OFF	OFF
Normal Mode	102	ON	OFF	OFF
	103	OFF	ON	OFF
	104	ON	ON	OFF
	105	OFF	OFF	ON
	106	ON	OFF	ON
	4	OFF	ON	ON
	5	ON	ON	ON

Note 1: (Emulation Mode)

ID102 = Sensor1

ID103 = Sensor2

ID104 = Sensor3

ID105 = Sensor4

ID106 = Sensor5

Description of Terminal Connections

ModBus

Terminal	Description
1	ModBus A (D+)
2	ModBus B (D-)
3	GND (0Volt)
4	12-24V DC (If 0-10V output is NOT used) 15-24V DC (If 0-10V output IS used)

Connection to terminal 4 may be omitted if DC plug is used for supply connection.

0-10Volt

Terminal	Description
5	0-10V out. Temperature (0-50°C)
6	GND (0Volt)
7	0-10V out. Relative Humidity (0-100%)
8	GND (0Volt)
9	0-10V out. CO ₂ (0-2000ppm)
10	GND (0Volt)
11	0-10V(No function - for future use)
12	GND (0Volt)

0-10V output may be used for sensor 0 and only when emulation mode is not used. (Emulation of wired sensors).

ModBus Register: (Emulation Mode)

Register	Description	Formatting
30000	CO ₂ Level (0-2000ppm)	ppm
30001	Temperature (0.0-50.0°C)	°C med 2 decimal (5000 = 50,00°C)
30002	RH (0-100%)	%RH (0 = 0%RH, 100 = 100%RH)
30003	Bat. Voltage	Volt with 3 decimals (4500 = 4.500V)
30004	Firmware Version	

Note:No response if data from sensor is older than 10minuttes.

Modbus register: (Normal mode)

Sensor 0

Register	Description	Formatting
30000	How old is data	Seconds
30001	Sensor type ID	1=RH Temp, 2=CO2 RH Temp
30002	Sensor DIP sw	
30003	Co2	ppm
30004	Temp	°C with 2 decimals (2100 = 21.00°C)
30005	RH	% relative humidity with 1 decimal (500 = 50,0%RH)
30006	Bat. Voltage	Volt with 3 decimals (4500 = 4.500V)
30007	Firmware Version	
30008	Spare	
30009	LQI	
30010	RSSI	
30011	Sensor item number	44120 = RH Temp, 44121 = CO2 RH Temp
30012	Payload size	
30013	Spare	
30014	Spare	
30015	Spare	

Sensor 1

Register	Description	Formatting
30016	How old is data	Seconds
30017	Sensor type ID	1=RH Temp, 2=CO2 RH Temp
30018	Sensor DIP sw	
30019	Co2	ppm
30020	Temp	°C with 2 decimals (2100 = 21.00°C)
30021	RH	% relative humidity with 1 decimal (500 = 50,0%RH)
30022	Bat. Voltage	Volt with 3 decimals (4500 = 4.500V)
30023	Firmware Version	
30024	Spare	
30025	LQI	
30026	RSSI	
30027	Sensor item number	44120 = RH Temp, 44121 = CO2 RH Temp
30028	Payload size	
30029	Spare	
30030	Spare	
30031	Spare	

Sensor 15

Register	Description	Formatting
30240	How old is data	Seconds
30241	Sensor type ID	1=RH Temp, 2=CO2 RH Temp
30242	Sensor DIP sw	
30243	Co2	ppm
30244	Temp	°C with 2 decimals (2100 = 21.00°C)
30245	RH	% relative humidity with 1 decimal (500 = 50,0%RH)
30246	Bat. Voltage	Volt with 3 decimals (4500 = 4.500V)
30247	Firmware Version	
30248	Spare	
30249	LQI	
30250	RSSI	
30251	Sensor item number	44120 = RH Temp, 44121 = CO2 RH Temp
30252	Payload size	
30253	Spare	
30254	Spare	
30255	Spare	

Connect Button

Press briefly to open for connection of sensor fir 10 seconds (LED flashes red).
If LED has a constant red light it means that total numbers of sensors for connection to this receiver is reached.

Pressing the connect button for 10 seconds will erase all existing connections and open for connection of new sensors within 10 seconds.

Technical Data:

Supply Voltage:	15-24V DC
Operating Temperature	0 - 40°C
Enclosure	IP 20
Dimensions (HxBxD)	64x138x30mm
Number of 0-10V outputs	4
Communication Interface	ModBus
Communication Interface 2	MiWi Mesh 868MHz

WEEE



Electrical and electronic equipment contains material which may be hazardous to human health and environment if it is not handled correctly at disposal.

Electrical and electronic equipment is marked with a crossed out wheeled bin logo. This logo symbolizes that electrical and electronic equipment must not be disposed together with normal household waste but must be collected separately.

Contact your local authorities for further information on disposal of equipment under the WEEE directive.

Applicable Standards

EN61000-6-3:2007, EN61000-6-3/A1:2011 and EN61000-6-1:2007.



Date:	9/6-2021
Manual Identification: (Nbr.+Titel)	950-207485 WirelessReceiver_ModBus_0-10V_ES1061
Written by: (initials of authors)	BSJ/DF
Version / Revision:	4.0
Manufacturer:	LS Control A/S Industrivej 12, DK-4160 Herlufmagle Denmark