

MODBUS RS485

TECHNICAL INSTRUCTIONS

DESCRIPTION, CONNECTIONS, PRESENTATION, DECIMALS

DESCRIPTION

RS485 has two connections, A and B. Often there is also a protective earth, ground. RS485 units are connected A to A and B to B. You may have to shift A and B in order for Modbus to work.

RS485 is so called half duplex communication:

Communication can only go in one direction at a time;

i. e. the master will first send an enquiry and will then listen for the reply. A and B are used for both transmission and reception.

CONNECTION TO CONTROL BOARD

A to terminal 70

B to terminal 69

Ground to terminal 68

See figure to the right.

Default settings for RS485 communication is:

Com speed 19200

Parity None

Data bits 8

Stop bits 1

PRESENTATION

1 bit status are presented as 0=off and 1=on

1 bit alarm are presented as 0=Normal and 1=Alarm

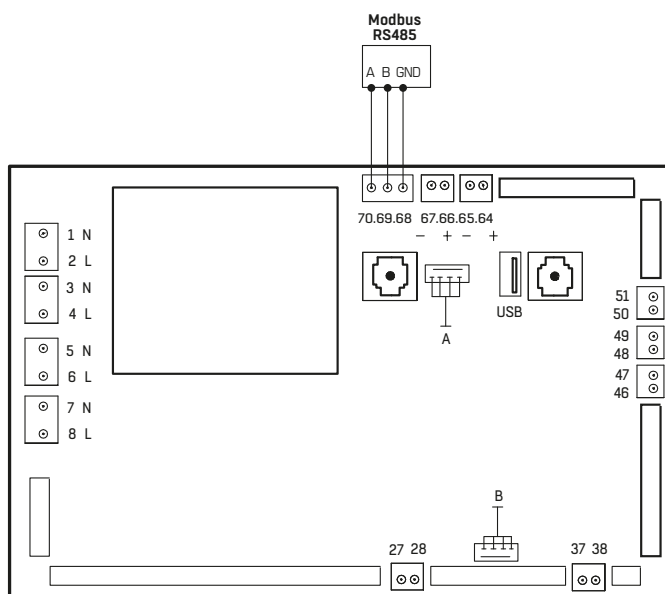
16 bit real values are presented in their actual value.

E.g. %, Pa, l/s

DECIMALS

When Modbus are using a 16 bit register to handle real values, a factor must be used to have decimals.

All temperature values and set points have a factor 10 and must then be divided/multiplied with 10 in the Master device.



PARAMETER LIST

COILS

Address	R / R/W ¹⁾	Description	Comment	I/O	Range	Default	Housing	eCO Premium	eCO Top	VEKC
00013	R	External timer 1		DI1	Yes/No		•	•	•	•
00014	R	External timer 2		DI2	Yes/No		•	•	•	•
00020	R	Pressure switch, supply filter ²⁾		DI5	Yes/No			•	•	•
00022	R	Pressure switch, extract filter ²⁾		DI6	Yes/No			•	•	
00025	R	Cooker hood switch		DI9	Yes/No		•			
00033	R	By-pass Damper		DO5	Yes/No			•		
00085	R	Summer/Winter Mode			1=Summer 0=Winter		•	•	•	•
00094	R	Fire alarm	Alarm		Yes/No		•	•	•	•
00095	R/W	Sensor error supply temperature	Alarm		Yes/No		•	•	•	•
00096	R/W	Sensor error out door temperature	Alarm		Yes/No		•	•	•	
00097	R/W	Sensor error extract/room temperature	Alarm		Yes/No		•	•	•	
00098	R	Sensor error frost protection Post heater.	Alarm		Yes/No			•	•	•
00099	R/W	Sensor error defrost temperature	Alarm		Yes/No			•		
00105	R/W	Dirty filter	Alarm		Yes/No		•			
00106	R/W	Supply fan error	Alarm		Yes/No			•	• ³⁾	
00107	R/W	Extract fan error	Alarm		Yes/No			•	• ³⁾	
00110	R/W	Frost alarm Plate heat exchanger	Alarm		Yes/No			•		
00111	R/W	Rotary heat exchanger failure	Alarm		Yes/No		•		•	
00112	R/W	Filter alarm, supply air ²⁾	Alarm		Yes/No			•	•	•
00113	R/W	Filter alarm, extract air ²⁾	Alarm		Yes/No			•	•	
00114	R/W	Over heating electrical heater	Alarm		Yes/No			•	•	•
00115	R	Pump/ heater malfunction	Alarm		Yes/No			•	•	•
00116	R	Freezing hot water battery	Alarm		Yes/No			•	•	•
00117	R/W	Summary alarm cooler	Alarm		Yes/No			•	•	•
00118	R/W	Pump/cooling malfunction	Alarm		Yes/No			•	•	•
00182	R/W	Acknowledge all	Alarm				•	•	•	•
00184	R/W	Temperature alarm	Alarm		Yes/No		•	•	•	•
00214	R	Humidity control running			Yes/No		•			

¹⁾ R = Read only, R/W = Read/Write

²⁾ Accessory

³⁾ Only when COP/CAV

PARAMETER LIST

HOLDING REGISTER

Address	R / R/W ¹⁾	Description	Comment	I/O	Range	Default	Housing	eCO Premium	eCO Top	VEKC
40025	R	Supply air	Temperature	AI1	-40,0 - +100,0° C		•	•	•	•
40026	R	Out door air	Temperature	AI2	-40,0 - +100,0° C		•	•	•	
40027	R	Extract/room air	Temperature	AI3	-40,0 - +100,0° C		•	•	•	
40028	R	Freezing protection post heater	Temperature	AI4	-40,0 - +100,0° C			•	•	•
40030	R	Defrost air	Temperature	AI5	-40,0 - +100,0° C			•		
40032	R	CO ₂	Air quality	AI6	0-2000 ppm		•	•	•	
40035	R	Humidity 1	Supply	AI9	0-100 %rH		•			
40036	R	Humidity 2	Extract	AI8	0-100 %rH		•			
40037	R	Pressure supply air ⁴⁾		AI7	0-1000 Pa			•	•	
40038	R	Pressure extract air ⁴⁾		AI8	0-1000 Pa			•	•	
40039	R	Airflow supply air ⁵⁾	Calculated		0-10 000 l/s			•	•	
40040	R	Airflow extract air ⁵⁾	Calculated		0-10 000 l/s			•	•	
40041	R	Fan speed, Supply air	Signal	A01	0-100 %		•	•	•	•
40042	R	Fan speed, Extract air	Signal	A02	0-100 %		•	•	•	
40043	R	Post heating	Signal	A03	0-100 %		•	•	•	•
40044	R	Pre heating	Signal	A04	0-100 %		•			
40045	R	Cooling ²⁾	Signal	A05	0-100 %			•	•	•
40046	R	Rotary heat exchanger	Signal	A06	0-100 %		•		•	
40049	R/W	Set point	Temperature		7,0-35,0° C	18	•	•	•	•
40054	R/W	Min supply air temperature	Temperature		15,0-35,0° C	15		•	•	•
40055	R/W	Max supply air temperature	Temperature		15,0-35,0° C	35		•	•	•
40073	R/W	Set point CO ₂	Air quality		0-2000 ppm	800	•	•	•	
40078	R/W	Supply fan speed trickle	Speed low		30-100 %	30	•	•	•	•
40079	R/W	Supply fan speed normal	Speed normal		30-100 %	55	•	•	•	•
40080	R/W	Supply fan speed boost	Speed high		30-100 %	75	•	•	•	•
40081	R/W	Supply fan speed cooker hood	Speed		30-100 %	30	•			
40082	R/W	Supply fan speed fireplace	Speed		30-100 %	100	•			
40083	R/W	Extract fan speed trickle	Speed low		30-100 %	30	•	•	•	
40084	R/W	Extract fan speed normal	Speed normal		30-100 %	55	•	•	•	
40085	R/W	Extract fan speed boost	Speed high		30-100 %	75	•	•	•	
40086	R/W	Extract fan speed cooker hood	Speed		30-100 %	100	•			
40087	R/W	Extract fan speed fireplace	Speed		30-100 %	30	•			
40213	R/W	Main switch	0 = Stop 1 = Auto 2 = Manual 3 = Fire place		0-3		•	•	•	•
40202	R/W	Fan speed	0 = Trickle/low 1 = Normal 2 = Boost/High		0-2		•	•	•	•
40094	R/W	Setpoint air pressure ⁴⁾	Supply air		0-2000 Pa			•	•	
40101	R/W	Setpoint air pressure ⁴⁾	Exhaust air		0-2000 Pa			•	•	
40095	R/W	Setpoint airflow trickle ⁵⁾	Supply air low		0-9999 l/s			•	•	
40222	R/W	Setpoint airflow normal ⁵⁾	Supply air normal		0-9999 l/s			•	•	
40223	R/W	Setpoint airflow boost ⁵⁾	Supply air high		0-9999 l/s			•	•	
40102	R/W	Setpoint airflow trickle ⁵⁾	Exhaust air low		0-9999 l/s			•	•	
40224	R/W	Setpoint airflow normal ⁵⁾	Exhaust air normal		0-9999 l/s			•	•	
40225	R/W	Setpoint airflow boost ⁵⁾	Exhaust air high		0-9999 l/s			•	•	
40275	R	Active Temperature Setpoint	Temperature		0,5-50,5° C		•	•	•	•
40277	R/W	Dirty filter alarm time	0 = Filter alarm disabled		0-600 days	180	•			

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²⁾ Accessory

⁴⁾ Only when COP, Constant Pressure Control

⁵⁾ Only when CAV, Constant Air Volume Control

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