CALEFFI
Hydronic Solutions

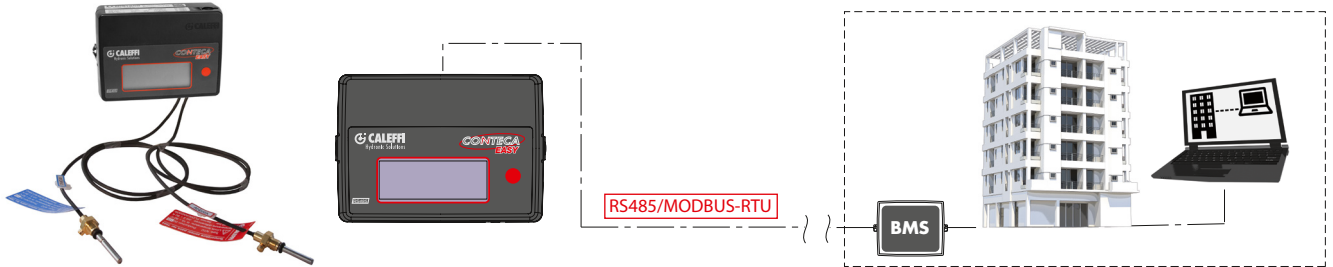# Guide to MODBUS registers for CONTECA 7504/7507 series heat meters

Transmission

Protocol type	BUS	Baud Rate	Data bit	Parity	Stop bit	Handshake	Unit Load
MODBUS–RTU	RS-485	9600	8	EVEN/NONE	1	None	1/8UL

MODBUS functions:

Function 0x03 - Read Holding Registers

Used to read one or more parameters (the size of every parameter is 16 bit)

The frame has the following structure:

dev. Addr.	func	start addr H	start addr L	N.regs H	N.regs L	CRC16H	CRC16L
HH	03	HH	HH	00	HH	HH	HH

dev. Addr. – Address of the device on the RS485 net (1-250)
Func – Function code = 3
start addr H - MSByte of the address of the parameter:
start addr L - LSByte of the address of the parameter
N.regs H - MSByte of the number of registers to read (always 0)
N.regs L - LSByte of the number of registers to read
CRC16H - MSByte of CRC16
CRC16L - LSByte of CRC16

EU/US	Register Number	Description	Type	R/W	Measurement Unit	Values
	0	Product Code	-	R	-	7500
	1	ID	-	R	-	1 ÷ 250
	2	MSB Heating Energy	integer	R	kWh	
	3	LSB Heating Energy		R		
	4	MSB Cooling Energy	integer	R	kWh	
	5	LSB Cooling Energy		R		
	6	MSB 1st Pulse Input Counter	fixed-point (1 decimal)	R	m^3	
	7	LSB 1st Pulse Input Counter		R		
	8	MSB 2nd Pulse Input Counter	fixed-point (1 decimal)	R	m^3	
	9	LSB 2nd Pulse Input Counter		R		
	10	MSB 3rd Pulse Input Counter	fixed-point (1 decimal)	R	m^3 o kWh	
	11	LSB 3rd Pulse Input Counter		R		
	12	MSB 4th Pulse Input Counter	fixed-point (1 decimal)	R	m^3 o kWh	
	13	LSB 4th Pulse Input Counter		R		
EU measurement unit	14	Instantaneous Power	fixed-point (1 decimal)	R	kW	
	15	Instantaneous Flow	fixed-point (2 decimals)	R	m^3/h	
	16	Flow Temperature	fixed-point (1 decimal)	R	°C	
	17	Return Temperature	fixed-point (1 decimal)	R	°C	
	18	Temperature Difference	fixed-point (1 decimal)	R	°C	
	19	Alarm / Status	-	R	-	- bit 0: Error on flow temperature - bit 1: Error on return temperature - bit 6: Low battery alarm - bit 8: Measurement unit mismatch on main counter - bit 9: Measurement unit mismatch on counter 1 - bit 10: Measurement unit mismatch on counter 2 - bit 11 : Measurement unit mismatch on counter 3 - bit 12 : Measurement unit mismatch on counter 4 - bit 2-3-4-5-7-13-14-15: not defined
	20	MSB Secondary Address		R	-	Device Serial Number
	21	LSB Secondary Address		R		
	22	Minute	integer	R	-	0 ÷ 59
	23	Hour	integer	R	-	0 ÷ 23
	24	Day	integer	R	-	1 ÷ 31
	25	Month	integer	R	-	1 ÷ 12
	26	Year	integer	R	-	
	27	MSB Heating Mass Counter	integer	R	m^3	
	28	LSB Heating Mass Counter		R		
	29	MSB Cooling Mass Counter	integer	R	m^3	
	30	LSB Cooling Mass Counter		R		
	31	Maximum Instantaneous Power	integer	R	kW	
	32	Maximum Instantaneous Flow	fixed-point (1 decimal)	R	m^3/h	
	33	Tamper Counter	integer	R	-	
	34	Firmware Version	-	R	-	

EU/US	Register Number	Description	Type	R/W	Measurement Unit	Values
	100	Product Code	-	R	-	7500
	101	ID	-	R	-	1 ÷ 250
	102	MSB Heating Energy	integer	R	kBTU	
	103	LSB Heating Energy		R		
	104	MSB Cooling Energy	integer	R	kBTU	
	105	LSB Cooling Energy		R		
	106	MSB 1st Pulse Input Counter	fixed-point (1 decimal)	R	kGAL	
	107	LSB 1st Pulse Input Counter		R		
	108	MSB 2nd Pulse Input Counter	fixed-point (1 decimal)	R	kGAL	
	109	LSB 2nd Pulse Input Counter		R		
	110	MSB 3rd Pulse Input Counter	fixed-point (1 decimal)	R	kGAL o kBTU	
	111	LSB 3rd Pulse Input Counter		R		
	112	MSB 4th Pulse Input Counter	fixed-point (1 decimal)	R	kGAL o kBTU	
	113	LSB 4th Pulse Input Counter		R		
US measurement unit	114	Instantaneous Power	integer	R	kBTU/h	
	115	Instantaneous Flow	fixed-point (1 decimal)	R	gpm	
	116	Flow Temperature	fixed-point (1 decimal)	R	°F	
	117	Return Temperature	fixed-point (1 decimal)	R	°F	
	118	Temperature Difference	fixed-point (1 decimal)	R	°F	
	119	Alarm / Status	-	R	-	- bit 0: Error on flow temperature - bit 1: Error on return temperature - bit 6: Low battery alarm - bit 8: Measurement unit mismatch on main counter - bit 9: Measurement unit mismatch on counter 1 - bit 10: Measurement unit mismatch on counter 2 - bit 11 : Measurement unit mismatch on counter 3 - bit 12 : Measurement unit mismatch on counter 4 - bit 2-3-4-5-7-13-14-15: not defined
	120	MSB Secondary Address		R	-	Device Serial Number
	121	LSB Secondary Address		R		
	122	Minute	integer	R	-	0 ÷ 59
	123	Hour	integer	R	-	0 ÷ 23
	124	Day	integer	R	-	1 ÷ 31
	125	Month	integer	R	-	1 ÷ 12
	126	Year	integer	R	-	
	127	MSB Heating Mass Counter	integer	R	kGAL	
	128	LSB Heating Mass Counter		R		
	129	MSB Cooling Mass Counter	integer	R	kGAL	
	130	LSB Cooling Mass Counter		R		
	131	Maximum Instantaneous Power	integer	R	kBTU/h	
	132	Maximum Instantaneous Flow	fixed-point (1 decimal)	R	gpm	
	133	Tamper Counter	integer	R	-	
	134	Firmware Version	-	R	-	

Ci riserviamo il diritto di apportare miglioramenti e modifiche ai prodotti descritti ed ai relativi dati tecnici in qualsiasi momento e senza preavviso.