

COMMUNICATION WITH THE SuperBrain, DigiPoint & VeroPoint

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MODBUS & BACnet Protocols

The *SuperBrain, DigiPoint & VeroPoint controllers* has a serial interface port allowing direct interface with an external communication network supporting the MODBUS and BACnet Protocols.

MODBUS is an Industry Standard, widely known and commonly used communications protocol. Using MODBUS provides communication between a PC and up to 247 Powermeter slaves on a common line- the PC being the **master** and the controllers the **slaves**. The PC initiates the transaction (either a query or broadcast) and the Controller/s responds. Controllers respond to the **master** PC's request, but will not initiate any transmission on its own. The PC sends a single Query transaction and the Controller responds in a single response frame and is capable of only one query and one response at a time

1.1 — MODBUS Faming

1.1.1— RTU Transmission Mode

MODBUS uses the standard Remote Terminal Unit (RTU) transmission mode. RTU mode sends data in 8-bit binary EVEN parity or 8-bit binary NO parity data format. For the *SuperBrain, DigiPoint & VeroPoint* to successfully communicate, choose one in the communication Set Up.

Field	No. of bits
Start bit	1
Data bits	8
Parity	1
Stop it	1

Table 1-1 **RTU Data Format**

1.1.2 — The RTU Frame Format

Query and response information is sent in frames. Each frame contains:

Address

Function (See Section 1.1.4 for descriptions of functions),

Data

Check.

Address	Function	Data	Check
8 bits	8 bits	N * 8 bits	16 bits

Table 1-2 R T U Message Frame Format

If the receiving device (Powermeter) detects a time laps of five characters, then it will assume the message is incomplete and will flush the frame. The device then assumes that the next byte received will be an address. The maximum query and response message length is 256 bytes including check characters.

1.1.3 — Address Field

Each Powermeter is designated in a network system by a user assigned address. The Address can be any number between 1 and 255. The Powermeter will only respond to it's own specifacally assigned address.

1.1.4 — Function Field

The function field contains the code that tells the Powermeter what action to perform.

The *SuperBrain, DigiPoint & VeroPoint* uses and responds to four standard Message Format Functions.

Function 03

Function 04

Function 06

Function 16

Function	Meaning in MODBUS	Action
Function 03	Read holding register	Obtain data from Powermeter (Read register)
Function 04	Read input register	Obtain data from Powermeter (Read register)
Function 06	Preset single register	Transmit data to Powermeter (Write single register)
Function 16	Preset multiple register	Transmit data to Powermeter (Write multiple register)

Table 1-3 **Function Codes**

1.1.5 — Data Field

The Data field contains the body of the message and contains instructions from the PC **master** to the Powermeter **slave** to perform a particular action or respond to a query. The reply message from the Powermeter will be information contained in one or more of it's registers.

1.1.6 — Check Field

The error check field contains the result of Cyclical Redundancy Check (CRC). The start of the message is ignored in calculating the CRC.

For more detailed information on CRC, refer to the MODBUS Protocol Reference Guide.

1.2 — Registers for SuperBrain, DigiPoint & VeroPoint

The *SuperBrain, DigiPoint & VeroPoint* are capable of supporting either Function 03 or Function 04 Message Format(See Table 1-3). In a reply to a query from the PC **master** for a reading from a particular field, the response from the Controllers can be either in Format 03 or Format 04 but will depend on which Format the query was originally sent.

The difference is significant because by using Function 03 the SuperBrain, DigiPoint & VeroPoint will only send the INTERGER part of the field value requested and the PC **master** will only display the INTERGER part of the field value.

Function 04 on the other hand, is capable of sending two separate halves of the full FLOAT requested information (each half contained in a separate register). Then it is the task of the PC **master** to merge the two halves into a full FLOAT reply. (For more detailed information See IEEE Standard 754 Floating-Point).

BACnet Protocol

The *SuperBrain, DigiPoint & VeroPoint* supports BACnet/IP and MSTP.

The information that can be read & write from the controllers is:

- Time & Date
- Analog Inputs
- Analog Outputs
- Digital (Binary) Inputs
- Digital (Binary) Outputs
- Analog Values - "Uniart Items" in the following registers table.

MODBUS Register	Field Description	Type	ITEM No (Uniart)
1-2	Parameter #1 (File 0)	Read/Write	1
3-4	Parameter #2 (file 0)	Read/Write	2
↓	↓	↓	↓
255-256	Parameter #128 (File 0)	Read/Write	128
257-258	Parameter #1 (File 1)	Read/Write	129
↓	↓	↓	↓
511-512	Parameter #128 (File 1)	Read/Write	256
513-514	Parameter #1 (File 2)	Read/Write	257
↓	↓	↓	↓
767-768	Parameter #128 (File 2)	Read/Write	384
769-770	Parameter #1 (File 3)	Read/Write	385
↓	↓	↓	↓
1023-1024	Parameter #128 (File 3)	Read/Write	512
1025-1026	Parameter #1 (File 4)	Read/Write	513
↓	↓	↓	↓
1279-1280	Parameter #128 (File 4)	Read/Write	640
1281-1282	Parameter #1 (File 5)	Read/Write	641
↓	↓	↓	↓
1535-1536	Parameter #128 (File 5)	Read/Write	768
1537-1538	Parameter #1 (File 6)	Read/Write	769
↓	↓	↓	↓
1791-1792	Parameter #128 (File 6)	Read/Write	896
1793-1794	Parameter #1 (File 7)	Read/Write	897
↓	↓	↓	↓
2047-2048	Parameter #128 (File 7)	Read/Write	1024
2049-2050	Parameter #1 (File 8)	Read/Write	1025
↓	↓	↓	↓
2303-2304	Parameter #128 (File 8)	Read/Write	1152
4097-4098	Parameter #1 (File 16)	Read/Write	2049
↓	↓	↓	↓
4351-4352	Parameter #128 (File 16)	Read/Write	2176
6145-6146	Parameter #1 (File 24)	Read/Write	3073
↓	↓	↓	↓

MODBUS Register	Field Description	Type	ITEM No (Uniart)
6399-6400	Parameter #128 (File 24)	Read/Write	3200
8193-8194	Parameter #1 (File 32)	Read/Write	4097
↓	↓	↓	↓
8447-8448	Parameter #128 (File 32)	Read/Write	4224
10241-10242	Parameter #1 (File 40)	Read/Write	5121
↓	↓	↓	↓
10495-10496	Parameter #128 (File 40)	Read/Write	5248
12289-12290	Parameter #1 (File 48)	Read/Write	6145
↓	↓	↓	↓
12543-12544	Parameter #128 (File 48)	Read/Write	6272
14337-14338	Parameter #1 (File 56)	Read/Write	7169
↓	↓	↓	↓
14591-14592	Parameter #128 (File 56)	Read/Write	7296
14801-14802	CO-MUX – SP1	Read/Write	7401
14803-14804	CO-MUX – SP2	Read/Write	7402
14805-14806	CO-MUX – SP3	Read/Write	7403
14807-14808	CO-MUX – T1	Read/Write	7404
14809-14810	CO-MUX – T2	Read/Write	7405
14811-14812	CO-MUX – T3	Read/Write	7406
14813-14814	CO-MUX – T4	Read/Write	7407
14815-14816	CO-MUX – T5	Read/Write	7408
14817-14818	CO-MUX – T6	Read/Write	7409
14819-14820	CO-MUX – T7	Read/Write	7410
14821-14822	CO-MUX – T8	Read/Write	7411
14823-14824	CO-MUX – T9	Read/Write	7412
14825-14826	CO-MUX – T10	Read/Write	7413
14827-14828	CO-MUX – Use A.Out	Read/Write	7414
14829-14830	CO-MUX – SP4	Read/Write	7415
14831-14832	CO-MUX – A.Out Low	Read/Write	7416
14833-14834	CO-MUX – A.Out High	Read/Write	7417
14835-14836	CO-MUX – Work OffLine	Read/Write	7418
14837-14838	CO-MUX – Time Delay For Alarm #1	Read/Write	7419
14839-14840	CO-MUX – Total Zone (3 or 6)	Read/Write	7420
14841-14842	CO-MUX – Sensor Group # 1	Read/Write	7421
14843-14844	CO-MUX – Sensor Group # 2	Read/Write	7422

MODBUS Register	Field Description	Type	ITEM No (Uniart)
↓	↓	↓	↓
14899-14900	CO-MUX – Sensor Group # 30	Read/Write	7450
14901-14902	CO-MUX – Dout # 1	Read/Write	7451
↓	↓	↓	↓
14915-14916	CO-MUX – Dout # 8	Read/Write	7458
14917-14918	CO-MUX – Aout # 1	Read/Write	7459
↓	↓	↓	↓
14931-14932	CO-MUX – Aout # 8	Read/Write	7466
14933-14934	CO-MUX – Use Modbus Comm	Read/Write	7467
14935-14936	CO-MUX – Vero – Use Comm B	Read/Write	7468
14937-14938	CO-MUX – CO #1 - Alarm	Read/Write	7469
↓	↓	↓	↓
14997-14998	CO-MUX – CO #31 - Alarm	Read/Write	7499
15001-15002	Internal Trend - Item #1	Read/Write	7501
15003-15004	Internal Trend - Item #2	Read/Write	7502
↓	↓	↓	↓
15035-15036	Internal Trend - Item #18	Read/Write	7518
15061-15062	Internal Trend Cycle (Seconds)	Read/Write	7531
15063-15064	Internal Trend Max Records	Read	7532
15065-15066	Internal Trend Used Records	Read	7533
16381-16382	PassWord For Web SetPoint	Read/Write	8191
16383-16384	FC DipSwitch (8 bit)	Read	8192
16385-16386	Force PowerUp Graphic Screen	Read/Write	8193
16387-16388	TCP Reinit RX Error	Read/Write	8194
16389-16390	TCP Reinit Counter (CRC Error)	Read	8195
16391-16392	TCP TimeOut for ReInit	Read/Write	8196
16393-16394	Ignore Offset for Parameters (8000)	Read/Write	8197
16395-16396	Web Authentication (0=Free) (User : admin)	Read/Write	8198
16397-16398	Program Number (110..) (SB_ARM)	Read/Write	8199
16401-16402	Analog Input #1	Read	8201
↓	↓	↓	↓
16415-16416	Analog Input #8	Read	8208

MODBUS Register	Field Description	Type	ITEM No (Uniart)
16417-16418	Analog Input #1 Force Status	Read	8209
↓	↓	↓	↓
16431-16432	Analog Input #8 Force Status	Read	8216
16433-16434	Digital Input #1 (AIn 1)	Read	8217
↓	↓	↓	↓
16447-16448	Digital Input #8 (AIn 8)	Read	8224
16449-16450	Digital Input #1 (AIn 1) Force Status	Read	8225
↓	↓	↓	↓
16463-16464	Digital Input #8 (AIn 8) Force Status	Read	8232
16465-16466	Analog Output #1	Read/Write	8233
↓	↓	↓	↓
16479-16480	Analog Output #8	Read/Write	8240
16481-16482	Analog Output #1 Force Status	Read/Write	8241
↓	↓	↓	↓
16495-16496	Analog Output #8 Force Status	Read/Write	8248
16497-16498	Digital Output #1	Read/Write	8249
↓	↓	↓	↓
16511-16512	Digital Output #8	Read/Write	8256
16513-16514	Digital Output #1 Force Status	Read/Write	8257
↓	↓	↓	↓
16527-16528	Digital Output #8 Force Status	Read/Write	8264
16529-16530	Analog Input #1 (Ofset)	Read/Write	8265
↓	↓	↓	↓
16543-16544	Analog Input #8 (Ofset)	Read/Write	8272
16545-16546	Analog Input #1 (Mode Of Meassure)	Read/Write	8273
↓	↓	↓	↓
16559-16560	Analog Input #8 (Mode Of Meassure)	Read/Write	8280
16561-16562	Analog Input #1 (Constant A)	Read/Write	8281
↓	↓	↓	↓

MODBUS Register	Field Description	Type	ITEM No (Uniart)
16575-16576	Analog Input #8 (Constant A)	Read/Write	8288
16577-16578	Analog Input #1 (Constant B)	Read/Write	8289
↓	↓	↓	↓
16591-16592	Analog Input #8 (Constant B)	Read/Write	8296
16601-16602	Alarm #1	Read	8301
↓	↓	↓	↓
16727-16728	Alarm #64	Read	8364
16741-16742	Digital Input #1	Read/Write	8371
↓	↓	↓	↓
16755-16756	Digital Input #8	Read/Write	8378
16757-16758	Digital Input #1 Force Status	Read/Write	8379
↓	↓	↓	↓
16771-16772	Digital Input #8 Force Status	Read/Write	8386
16801-16802	SST #1 – Start 1 (Mon-Fri) 1-5	Read/Write	8401
16803-16804	SST #1 – Stop 1 (Mon-Fri) 1-5	Read/Write	8402
16805-16806	SST #1 – Start 2 (Mon-Fri) 1-5	Read/Write	8403
16807-16808	SST #1 – Stop 2 (Mon-Fri) 1-5	Read/Write	8404
16809-16810	SST #1 – Start 1 (Saturday) 6	Read/Write	8405
16811-16812	SST #1 – Stop 1 (Saturday) 6	Read/Write	8406
16813-16814	SST #1 – Start 2 (Saturday) 6	Read/Write	8407
16815-16816	SST #1 – Stop 2 (Saturday) 6	Read/Write	8408
16817-16818	SST #1 – Start 1 (Sunday) 7	Read/Write	8409
16819-16820	SST #1 – Stop 1 (Sunday) 7	Read/Write	8410
16821-16822	SST #1 – Start 2 (Sunday) 7	Read/Write	8411
16823-16824	SST #1 – Stop 2 (Sunday) 7	Read/Write	8412
16825-16826	SST #2 – Start 1 (Mon-Fri) 1-5	Read/Write	8413
↓	↓	↓	↓
16847-16848	SST #2 – Stop 2 (Sunday) 7	Read/Write	8424

MODBUS Register	Field Description	Type	ITEM No (Uniart)
↓	↓	↓	↓
16991-16992	SST #8 – Stop 2 (Sunday) ΠΓΩ	Read/Write	8496
17001-17002	SST #1 – Status	Read	8501
17003-17004	SST #2 – Status	Read	8502
↓	↓	↓	↓
17015-17016	SST #8 – Status	Read	8508
17017-17018	SB – Max D.In Counter	Read/Write	8509
17021-17022	Clock : Seconds	Read/Write	8511
17023-17024	Clock : Minutes	Read/Write	8512
17025-17026	Clock : Hour	Read/Write	8513
17027-17028	Clock : Week Day (1-7)	Read/Write	8514
17029-17030	Clock : Day	Read/Write	8515
17031-17032	Clock : Month	Read/Write	8516
17033-17034	Clock : Year (20xx)	Read/Write	8517
17035-17036	Clock : Time (Win Format)	Read	8518
17037-17038	ModBus – Swap Flag.	Read/Write	8519
17039-17040	ModBus – Ignore Read Mode (Write Only)	Read/Write	8520
17041-17042	SST #1 – From 1 (Sun to Thu)	Read/Write	8521
17043-17044	SST #1 – To 1 (Sun to Thu)	Read/Write	8522
17045-17046	SST #1 – From 2 (Fri to Fri)	Read/Write	8523
17047-17048	SST #1 – To 2 (Fri to Fri)	Read/Write	8524
17049-17050	SST #1 – From 3 (Sat to Sat)	Read/Write	8525
17051-17052	SST #1 – To 3 (Sat to Sat)	Read/Write	8526
17053-17054	SST #2 – From 1 (Sun to Thu)	Read/Write	8527
↓	↓	↓	↓
17063-17064	SST #2 – To 3 (Sat to Sat)	Read/Write	8532
↓	↓	↓	↓
17135-17136	SST #8 – To 3 (Sat to Sat)	Read/Write	8568
17201-17202	Filter Avarage for Ain #1	Read/Write	8601
↓	↓	↓	↓
17215-17216	Filter Avarage for Ain #8	Read/Write	8608

MODBUS Register	Field Description	Type	ITEM No (Uniart)
17217-17218	COP Avr Data	Read	8609
↓	↓	↓	↓
17217-17218	COP Avr Data	Read	8609
17401-17402	Digital Input #1	Read/Write	8701
↓	↓	↓	↓
17431-17432	Digital Input #16	Read/Write	8716
17465-17466	Digital Input #1 Force Status	Read/Write	8733
↓	↓	↓	↓
17495-17496	Digital Input #16 Force Status	Read/Write	8748
17529-17530	Digital Output #1	Read/Write	8765
↓	↓	↓	↓
17559-17560	Digital Output #16	Read/Write	8780
17593-17594	Digital Output #1 Force Status	Read/Write	8797
↓	↓	↓	↓
17623-17624	Digital Output #16 Force Status	Read/Write	8812
17923-17924	Graphic Screen Flags (Binary) – Sys A	Read/Write	8962
17925-17926	Graphic Screen Flags (Binary) – Sys B	Read/Write	8963
17941-17942	BACnet MSTP Mode (0=Off,1=Master,2=Slave)	Read/Write	8971
17943-17944	BACnet - MAC Addr	Read/Write	8972
17945-17946	BaudRate	Read/Write	8973
17947-17948	Parity	Read/Write	8974
17949-17950	Unit Number	Read	8975
17951-17952	BACnet - Instance	Read/Write	8976
17953-17954	BACnet – Max Master	Read/Write	8977
17955-17956	BACnet – BBMD Port	Read/Write	8978
17957-17958	BACnet – BBMD Time To Live	Read/Write	8979
17959-17960	BACnet – BBMD IP (1) 1.x.x.x	Read/Write	8980
17961-17962	BACnet – BBMD IP (2) x.2.x.x	Read/Write	8981
17963-17964	BACnet – BBMD IP (3) x.x.3.x	Read/Write	8982
17965-17966	BACnet – BBMD IP (4) x.x.x.4	Read/Write	8983
17969-17970	SNTP – IP (Long)	Read/Write	8985

MODBUS Register	Field Description	Type	ITEM No (Uniart)
17971-17972	SNTP – Port	Read/Write	8986
17973-17974	SNTP – Poll (Seconds)	Read/Write	8987
17975-17976	SNTP – GMT (99 – Set Only Min+Sec)	Read/Write	8988
17977-17978	SNTP – Dst	Read/Write	8989
17979-17980	Modbus/IP Port	Read/Write	8990
17981-17982	HTTP Port	Read/Write	8991
17983-17984	UDP Extended Port	Read/Write	8992
17991-17992	Fix Value: 12.34	Read	8996
17993-17994	Version Num (*100)	Read	8997
17995-17996	Version Num	Read	8998
17997-17998	User Parameter (Technical)	Read/Write	8999
18001-18002	Analog In #1 (Card 0)	Read/Write	9001
↓	↓	↓	↓
18031-18032	Analog In #16 (Card 0)	Read/Write	9016
18033-18034	Analog Out #1 (Card 0)	Read/Write	9017
↓	↓	↓	↓
18063-18064	Analog Out #16 (Card 0)	Read/Write	9032
18065-18066	Digital Out #1 (Card 0)	Read/Write	9033
↓	↓	↓	↓
18095-18096	Digital Out #16 (Card 0)	Read/Write	9048
18097-18098	Digital In #1 (Card 0) (From A.In #1)	Read/Write	9049
↓	↓	↓	↓
18111-18112	Digital In #8 (Card 0) (From A.In #8)	Read/Write	9056
18113-18114	Digital In #1 (Card 0)	Read/Write	9057
↓	↓	↓	↓
18127-18128	Digital In #8 (Card 0)	Read/Write	9064
18201-18202	Analog In #1 (Card 1)	Read/Write	9101
↓	↓	↓	↓
18231-18232	Analog In #16 (Card 1)	Read/Write	9116
18233-18234	Analog Out #1 (Card 1)	Read/Write	9117

MODBUS Register	Field Description	Type	ITEM No (Uniart)
↓	↓	↓	↓
18263-18264	Analog Out #16 (Card 1)	Read/Write	9132
18265-18266	Digital Out #1 (Card 1)	Read/Write	9133
↓	↓	↓	↓
18295-18296	Digital Out #16 (Card 1)	Read/Write	9148
18297-18298	Digital In #1 (Card 1)	Read/Write	9149
↓	↓	↓	↓
18359-18360	Digital In #32 (Card 1)	Read/Write	9180
18401-18402	Analog In #1 (Card 2)	Read/Write	9201
↓	↓	↓	↓
18431-18432	Analog In #16 (Card 2)	Read/Write	9216
18433-18434	Analog Out #1 (Card 2)	Read/Write	9217
↓	↓	↓	↓
18463-18464	Analog Out #16 (Card 2)	Read/Write	9232
18465-18466	Digital Out #1 (Card 2)	Read/Write	9233
↓	↓	↓	↓
18495-18496	Digital Out #16 (Card 2)	Read/Write	9248
18497-18498	Digital In #1 (Card 2) (Din 51=9..)	Read/Write	9249
↓	↓	↓	↓
18559-18560	Digital In #32 (Card 2)	Read/Write	9280
18601-18602	Analog In #1 (Card 3)	Read/Write	9301
↓	↓	↓	↓
18631-18632	Analog In #16 (Card 3)	Read/Write	9316
18633-18634	Analog Out #1 (Card 3)	Read/Write	9317
↓	↓	↓	↓
18663-18664	Analog Out #16 (Card 3)	Read/Write	9332
18665-18666	Digital Out #1 (Card 3)	Read/Write	9333
↓	↓	↓	↓
18695-18696	Digital Out #16 (Card 3)	Read/Write	9348
18697-18698	Digital In #1 (Card 3)	Read/Write	9349

MODBUS Register	Field Description	Type	ITEM No (Uniart)
↓	↓	↓	↓
18759-18760	Digital In #32 (Card 3)	Read/Write	9380
18801-18802	Analog In #1 (Card 4)	Read/Write	9401
↓	↓	↓	↓
18831-18832	Analog In #16 (Card 4)	Read/Write	9416
18833-18834	Analog Out #1 (Card 4)	Read/Write	9417
↓	↓	↓	↓
18863-18864	Analog Out #16 (Card 4)	Read/Write	9432
18865-18866	Digital Out #1 (Card 4)	Read/Write	9433
↓	↓	↓	↓
18895-18896	Digital Out #16 (Card 4)	Read/Write	9448
18897-18898	Digital In #1 (Card 4)	Read/Write	9449
↓	↓	↓	↓
18959-18960	Digital In #32 (Card 4)	Read/Write	9480
19001-19002	Analog In #1 (Card 5)	Read/Write	9501
↓	↓	↓	↓
19031-19032	Analog In #16 (Card 5)	Read/Write	9516
19033-19034	Analog Out #1 (Card 5)	Read/Write	9517
↓	↓	↓	↓
19063-19064	Analog Out #16 (Card 5)	Read/Write	9532
19065-19066	Digital Out #1 (Card 5)	Read/Write	9533
↓	↓	↓	↓
19095-19096	Digital Out #16 (Card 5)	Read/Write	9548
19097-19098	Digital In #1 (Card 5)	Read/Write	9549
↓	↓	↓	↓
19159-19160	Digital In #32 (Card 5)	Read/Write	9580
19201-19202	Analog In #1 (Card 6)	Read/Write	9601
↓	↓	↓	↓
19231-19232	Analog In #16 (Card 6)	Read/Write	9616

MODBUS Register	Field Description	Type	ITEM No (Uniart)
19233-19234	Analog Out #1 (Card 6)	Read/Write	9617
↓	↓	↓	↓
19263-19264	Analog Out #16 (Card 6)	Read/Write	9632
19265-19266	Digital Out #1 (Card 6)	Read/Write	9633
↓	↓	↓	↓
19295-19296	Digital Out #16 (Card 6)	Read/Write	9648
19297-19298	Digital In #1 (Card 6)	Read/Write	9649
↓	↓	↓	↓
19359-19360	Digital In #32 (Card 6)	Read/Write	9680
19401-19402	Analog In #1 (Card 7)	Read/Write	9701
↓	↓	↓	↓
19431-19432	Analog In #16 (Card 7)	Read/Write	9716
19433-19434	Analog Out #1 (Card 7)	Read/Write	9717
↓	↓	↓	↓
19463-19464	Analog Out #16 (Card 7)	Read/Write	9732
19465-19466	Digital Out #1 (Card 7)	Read/Write	9733
↓	↓	↓	↓
19495-19496	Digital Out #16 (Card 7)	Read/Write	9748
19497-19498	Digital In #1 (Card 7)	Read/Write	9749
↓	↓	↓	↓
19559-19560	Digital In #32 (Card 7)	Read/Write	9780
19601-19602	Analog In #1 (Card 8)	Read/Write	9801
↓	↓	↓	↓
19631-19632	Analog In #16 (Card 8)	Read/Write	9816
19633-19634	Analog Out #1 (Card 8)	Read/Write	9817
↓	↓	↓	↓
19663-19664	Analog Out #16 (Card 8)	Read/Write	9832
19665-19666	Digital Out #1 (Card 8)	Read/Write	9833
↓	↓	↓	↓
19695-19696	Digital Out #16 (Card 8)	Read/Write	9848

MODBUS Register	Field Description	Type	ITEM No (Uniart)
19697-19698	Digital In #1 (Card 8)	Read/Write	9849
↓	↓	↓	↓
19759-19760	Digital In #32 (Card 8)	Read/Write	9880
19801-19802	Analog In #1 (Card 9)	Read/Write	9901
↓	↓	↓	↓
19831-19832	Analog In #16 (Card 9)	Read/Write	9916
19833-19834	Analog Out #1 (Card 9)	Read/Write	9917
↓	↓	↓	↓
19863-19864	Analog Out #16 (Card 9)	Read/Write	9932
19865-19866	Digital Out #1 (Card 9)	Read/Write	9933
↓	↓	↓	↓
19895-19896	Digital Out #16 (Card 9)	Read/Write	9948
19897-19898	Digital In #1 (Card 9)	Read/Write	9949
↓	↓	↓	↓
19959-19960	Digital In #32 (Card 9)	Read/Write	9980
20001-20002	Analog In #1 Force (Card 0)	Read/Write	10001
↓	↓	↓	↓
20031-20032	Analog In #16 Force (Card 0)	Read/Write	10016
20033-20034	Analog Out #1 Force (Card 0)	Read/Write	10017
↓	↓	↓	↓
20063-20064	Analog Out #16 Force (Card 0)	Read/Write	10032
20065-20066	Digital Out #1 Force (Card 0)	Read/Write	10033
↓	↓	↓	↓
20095-20096	Digital Out #16 Force (Card 0)	Read/Write	10048
20097-20098	Digital In #1 Force (Card 0)	Read/Write	10049
↓	↓	↓	↓
20159-20160	Digital In #32 Force (Card 0)	Read/Write	10080
20201-20202	Analog In #1 Force (Card 1)	Read/Write	10101
↓	↓	↓	↓

MODBUS Register	Field Description	Type	ITEM No (Uniart)
20231-20232	Analog In #16 Force (Card 1)	Read/Write	10116
20233-20234	Analog Out #1 Force (Card 1)	Read/Write	10117
↓	↓	↓	↓
20263-20264	Analog Out #16 Force (Card 1)	Read/Write	10132
20265-20266	Digital Out #1 Force (Card 1)	Read/Write	10133
↓	↓	↓	↓
20295-20296	Digital Out #16 Force (Card 1)	Read/Write	10148
20297-20298	Digital In #1 Force (Card 1)	Read/Write	10149
↓	↓	↓	↓
20359-20360	Digital In #32 Force (Card 1)	Read/Write	10180
20401-20402	Analog In #1 Force (Card 2)	Read/Write	10201
↓	↓	↓	↓
20431-20432	Analog In #16 Force (Card 2)	Read/Write	10216
20433-20434	Analog Out #1 Force (Card 2)	Read/Write	10217
↓	↓	↓	↓
20463-20464	Analog Out #16 Force (Card 2)	Read/Write	10232
20465-20466	Digital Out #1 Force (Card 2)	Read/Write	10233
↓	↓	↓	↓
20495-20496	Digital Out #16 Force (Card 2)	Read/Write	10248
20497-20498	Digital In #1 Force (Card 2)	Read/Write	10249
↓	↓	↓	↓
20559-20560	Digital In #32 Force (Card 2)	Read/Write	10280
20601-20602	Analog In #1 Force (Card 3)	Read/Write	10301
↓	↓	↓	↓
20631-20632	Analog In #16 Force (Card 3)	Read/Write	10316
20633-20634	Analog Out #1 Force (Card 3)	Read/Write	10317
↓	↓	↓	↓
20663-20664	Analog Out #16 Force (Card 3)	Read/Write	10332
20665-20666	Digital Out #1 Force (Card 3)	Read/Write	10333
↓	↓	↓	↓

MODBUS Register	Field Description	Type	ITEM No (Uniart)
20695-20696	Digital Out #16 Force (Card 3)	Read/Write	10348
20697-20698	Digital In #1 Force (Card 3)	Read/Write	10349
↓	↓	↓	↓
20759-20760	Digital In #32 Force (Card 3)	Read/Write	10380
20801-20802	Analog In #1 Force (Card 4)	Read/Write	10401
↓	↓	↓	↓
20831-20832	Analog In #16 Force (Card 4)	Read/Write	10416
20833-20834	Analog Out #1 Force (Card 4)	Read/Write	10417
↓	↓	↓	↓
20863-20864	Analog Out #16 Force (Card 4)	Read/Write	10432
20865-20866	Digital Out #1 Force (Card 4)	Read/Write	10433
↓	↓	↓	↓
20895-20896	Digital Out #16 Force (Card 4)	Read/Write	10448
20897-20898	Digital In #1 Force (Card 4)	Read/Write	10449
↓	↓	↓	↓
20959-20960	Digital In #32 Force (Card 4)	Read/Write	10480
21001-21002	Analog In #1 Force (Card 5)	Read/Write	10501
↓	↓	↓	↓
21031-21032	Analog In #16 Force (Card 5)	Read/Write	10516
21033-21034	Analog Out #1 Force (Card 5)	Read/Write	10517
↓	↓	↓	↓
21063-21064	Analog Out #16 Force (Card 5)	Read/Write	10532
21065-21066	Digital Out #1 Force (Card 5)	Read/Write	10533
↓	↓	↓	↓
21095-21096	Digital Out #16 Force (Card 5)	Read/Write	10548
21097-21098	Digital In #1 Force (Card 5)	Read/Write	10549
↓	↓	↓	↓
21159-21160	Digital In #32 Force (Card 5)	Read/Write	10580
21201-21202	Analog In #1 Force (Card 6)	Read/Write	10601

MODBUS Register	Field Description	Type	ITEM No (Uniart)
↓	↓	↓	↓
21231-21232	Analog In #16 Force (Card 6)	Read/Write	10616
21233-21234	Analog Out #1 Force (Card 6)	Read/Write	10617
↓	↓	↓	↓
21263-21264	Analog Out #16 Force (Card 6)	Read/Write	10632
21265-21266	Digital Out #1 Force (Card 6)	Read/Write	10633
↓	↓	↓	↓
21295-21296	Digital Out #16 Force (Card 6)	Read/Write	10648
21297-21298	Digital In #1 Force (Card 6)	Read/Write	10649
↓	↓	↓	↓
21359-21360	Digital In #32 Force (Card 6)	Read/Write	10680
21401-21402	Analog In #1 Force (Card 7)	Read/Write	10701
↓	↓	↓	↓
21431-21432	Analog In #16 Force (Card 7)	Read/Write	10716
21433-21434	Analog Out #1 Force (Card 7)	Read/Write	10717
↓	↓	↓	↓
21463-21464	Analog Out #16 Force (Card 7)	Read/Write	10732
21465-21466	Digital Out #1 Force (Card 7)	Read/Write	10733
↓	↓	↓	↓
21495-21496	Digital Out #16 Force (Card 7)	Read/Write	10748
21497-21498	Digital In #1 Force (Card 7)	Read/Write	10749
↓	↓	↓	↓
21559-21560	Digital In #32 Force (Card 7)	Read/Write	10780
21601-21602	Analog In #1 Force (Card 8)	Read/Write	10801
↓	↓	↓	↓
21631-21632	Analog In #16 Force (Card 8)	Read/Write	10816
21633-21634	Analog Out #1 Force (Card 8)	Read/Write	10817
↓	↓	↓	↓
21663-21664	Analog Out #16 Force (Card 8)	Read/Write	10832
21665-21666	Digital Out #1 Force (Card 8)	Read/Write	10833

MODBUS Register	Field Description	Type	ITEM No (Uniart)
↓	↓	↓	↓
21695-21696	Digital Out #16 Force (Card 8)	Read/Write	10848
21697-21698	Digital In #1 Force (Card 8)	Read/Write	10849
↓	↓	↓	↓
21759-21760	Digital In #32 Force (Card 8)	Read/Write	10880
21801-21802	Analog In #1 Force (Card 9)	Read/Write	10901
↓	↓	↓	↓
21831-21832	Analog In #16 Force (Card 9)	Read/Write	10916
21833-21834	Analog Out #1 Force (Card 9)	Read/Write	10917
↓	↓	↓	↓
21863-21864	Analog Out #16 Force (Card 9)	Read/Write	10932
21865-21866	Digital Out #1 Force (Card 9)	Read/Write	10933
↓	↓	↓	↓
21895-21896	Digital Out #16 Force (Card 9)	Read/Write	10948
21897-21898	Digital In #1 Force (Card 9)	Read/Write	10949
↓	↓	↓	↓
21959-21960	Digital In #32 Force (Card 9)	Read/Write	10980
21999-22000	Card 0 Hardware	Read	11000
22001-22002	Card 1 Hardware	Read	11001
22003-22004	Card 2 Hardware	Read	11002
↓	↓	↓	↓
22017-22018	Card 9 Hardware	Read	11009
22019-22020	Card 0 Software	Read	11010
22001-22022	Card 1 Software	Read	11011
22023-22024	Card 2 Software	Read	11012
↓	↓	↓	↓
22037-22038	Card 9 Software	Read	11019
22039-22040	Card 0 Status	Read	11020
22041-22042	Card 1 Status (0=None,1=Ok,2=Err)	Read	11021

MODBUS Register	Field Description	Type	ITEM No (Uniart)
22043-22024	Card 2 Status	Read	11022
↓	↓	↓	↓
22057-22058	Card 9 Status	Read	11029
22201-22202	Alarm #1	Read	11101
↓	↓	↓	↓
22455-22456	Alarm #128	Read	11228
22601-22602	Analog In #1 Calibration (Card 0) Offset	Read/Write	11301
↓	↓	↓	↓
22631-22632	Analog In #16 Calibration (Card 0) Offset	Read/Write	11316
22633-22634	Analog In #1 Calibration (Card 1) Offset	Read/Write	11317
↓	↓	↓	↓
22663-22664	Analog In #16 Calibration (Card 1) Offset	Read/Write	11332
22665-22666	Analog In #1 Calibration (Card 2) Offset	Read/Write	11333
↓	↓	↓	↓
22695-22696	Analog In #16 Calibration (Card 2) Offset	Read/Write	11348
↓	↓	↓	↓
22889-22890	Analog In #1 Calibration (Card 9) Offset	Read/Write	11445
↓	↓	↓	↓
22919-22920	Analog In #16 Calibration (Card 9) Offset	Read/Write	11460
23001-23002	Analog In #1 Calibration (Card 0) Gain	Read/Write	11501
↓	↓	↓	↓
23031-23032	Analog In #16 Calibration (Card 0) Gain	Read/Write	11516
23033-23034	Analog In #1 Calibration (Card 1) Gain	Read/Write	11517
↓	↓	↓	↓
23063-23064	Analog In #16 Calibration (Card 1) Gain	Read/Write	11532
23065-23066	Analog In #1 Calibration (Card 2) Gain	Read/Write	11533
↓	↓	↓	↓
23095-23096	Analog In #16 Calibration (Card 2) Gain	Read/Write	11548
↓	↓	↓	↓
23289-23290	Analog In #1 Calibration (Card 9) Gain	Read/Write	11645

MODBUS Register	Field Description	Type	ITEM No (Uniart)
↓	↓	↓	↓
23319-23320	Analog In #16 Calibration (Card 9) Gain	Read/Write	11660
24001-24002	ModBus Master Record (Line) #1 (Co Sensor #1)	Read/Write	12001
24003-24004	ModBus Master Record (Line) #2 (Co Sensor #2)	Read/Write	12002
↓	↓	↓	↓
24799-24800	ModBus Master Record (Line) #400	Read/Write	12400

Table 1-4 **Registers Table**

What New :

- 24.10.2006 :** First
- 30.01.2007 :** Split System A From B
- 28.05.2008 :** Fix D.In Registers + Add Average
- 08.07.2008 :** Add Regs 996-998 For debug
- 12.01.2010 :** Add Support To Files (Offset 8000)
- 06.10.2010 :** Add Support To BACnet/IP
- 02.02.2011 :** Add Support To From/To SST (8521-8568)
- 07.03.2012 :** Add BACnet & Baudrate (8971-8974)
- 01.07.2012 :** Add Unit Number (8975)
- 28.10.2012 :** Add Modbus Swap Flg (8519)
- 08.11.2012 :** Add Http & Modbus Port (8990)
- 27.11.2012 :** Add Vero Point Cards (9001-10980)
- 24.12.2012 :** Add TCP ReInit (8196)
- 25.12.2012 :** Add TCP Crc Error Counter (8195)
- 03.01.2013 :** Add InTrend Items
- 18.01.2013 :** Add BACnet BBMD
- 09.07.2013 :** Add Alarms (1-128)
- 28.08.2013 :** Add ModBus Records (Also Co) (12001)
- 02.06.2014 :** Add Calibration values (11301)
- 21.08.2017 :** Add SNTP