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MODBUS & BACNET Communication with ELNET PowerMeters
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MODBUS Protocol

The ***ElNet*** Energy & Power Multimeter has a serial interface port allowing direct interface with an external communication network supporting the MODBUS Protocol.

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 powermeters the **slaves.** The PC initiates the transaction (either a query or broadcast) and the Powermeter/s responds. Powermeters respond to the **master** PC's request, but will not iniate any transmission on its own. The PC sends a single Query transaction and the Powermeter responds in a single response frame and is capable of only one query and one response at a time

1.1 — MODBUS Framing

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 ***ElNet*** Energy & Power Multimeter 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 includuing 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 ***ElNet*** Energy & Power Multimeter 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 particuler 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 *ElNet* Multimeter

The ***ElNet*** Energy & Power Multimeter is 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 Powermeter can be either in Format 03 or Format 04 but will depend on which Format the qeuery was originally sent.

The difference is significant because by using Function 03 the ELNet will only send the INTEGER part of the field value requested and the PC **master** will only display the INTEGER 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).

E.G. 1 If the user's PC **master** supports Function 03, then the reply will contain the INTEGER part of the field only.

The PC **master** requests the Voltage from Line1, and the actual Voltage in that field is 230.5 Volts.

Function 03 will respond with the INTEGER only i.e. 230V.

E.G. 2 If the user PC **master** supports Function 04, then the reply will contain the information stored in the two registers asssigned to that field and will contain the full, accurate reply.

The PC master requests the Voltage from Line1, and the actual Voltage in that field is 230.5 Volts.

Function 04 will respond with a composite reply of both register 1 and 2 giving the full FLOAT value (in IEEE Format) from that field i.e. 230.5V.

When Writing The Clock Registers (151-157) –
User must write special value (123) in register 99.

Bacnet Protocol

The Elnet powermeters supports Bacnet IP.
The information that can be read\write from the Elnets is:

- Time and Date
- Analog values

When using ElNet TXT (System B) – User must add 2000 to item (4000 to Register)
(e.g Current Line 1 - System B = ModBus Register # 4013-14)

MODBUS Register	Field Description	Type	GR	GRC	TXT	LT	MC	LTE	LTC	ITEM # (UniArt\ Bacnet)
1-2	Voltage Line 1	R	✓	✓	✓	✓	✓	✓	✓	1
3-4	Voltage Line 2	R	✓	✓	✓	✓	✓	✓	✓	2
5-6	Voltage Line 3	R	✓	✓	✓	✓	✓	✓	✓	3
7-8	Voltage between line 1 and Line 2	R	✓	✓	✓	✓	✓	✓	✓	4
9-10	Voltage between line 2 and Line 3	R	✓	✓	✓	✓	✓	✓	✓	5
11-12	Voltage between line 3 and Line 1	R	✓	✓	✓	✓	✓	✓	✓	6
13-14	Current in Line 1	R	✓	✓	✓	✓	✓	✓	✓	7
15-16	Current in Line 2	R	✓	✓	✓	✓	✓	✓	✓	8
17-18	Current in Line 3	R	✓	✓	✓	✓	✓	✓	✓	9
19-20	Active Power Line 1 (Watt)	R	✓	✓	✓	✓	✓	✓	✓	10
21-22	Active Power Line 2 (Watt)	R	✓	✓	✓	✓	✓	✓	✓	11
23-24	Active Power Line 3 (watt)	R	✓	✓	✓	✓	✓	✓	✓	12
25-26	Combined Active Power Line 1+2 +3	R	✓	✓	✓	✓	✓	✓	✓	13
27-28	Apparent Power Line 1 (VA)	R	✓	✓	✓	✓	✓	✓	✓	14
29-30	Apparent Power Line 2 (VA)	R	✓	✓	✓	✓	✓	✓	✓	15
31-32	Apparent Power Line 3 (VA)	R	✓	✓	✓	✓	✓	✓	✓	16
33-34	Combined Apparent Power Line 1+2+3	R	✓	✓	✓	✓	✓	✓	✓	17
35-36	Reactive Power Line 1 (VAR)	R	✓	✓	✓	✓	✓	✓	✓	18
37-38	Reactive Power Line 2 (VAR)	R	✓	✓	✓	✓	✓	✓	✓	19
39-40	Reactive Power Line 3 (VAR)	R	✓	✓	✓	✓	✓	✓	✓	20
41-42	Combined Reactive Power Line 1+2+3	R	✓	✓	✓	✓	✓	✓	✓	21

MODBUS Register	Field Description	Type	GR	GRC	TXT	LT	MC	LTE	LTC	ITEM # (UniArt\ Bacnet)
43-44	Power Factor Line 1 (PF)	R	✓	✓	✓	✓	✓	✓	✓	22
45-46	Power Factor Line 2 (PF)	R	✓	✓	✓	✓	✓	✓	✓	23
47-48	Power Factor Line 3 (PF)	R	✓	✓	✓	✓	✓	✓	✓	24
49-50	Combined Power Factor for Line 1+2+3	R	✓	✓	✓	✓	✓	✓	✓	25
51-52	Frequency Line 1 (Hrz)	R	✓	✓	✓	✓	✓	✓	✓	26
53-54	Frequency Line 2 (Hrz)	R	✓	✓	✓	✓	✓	✓	✓	27
55-56	Frequency Line 3 (Hrz)	R	✓	✓	✓	✓	✓	✓	✓	28
57-58	Current Neutral Line	R	✓	✓	✓	✓	✓	✓	✓	29
59-60	Power Factor Line 1 (L & C)	R	✓	✓						30
61-62	Power Factor Line 2 (L & C)	R	✓	✓						31
63-64	Power Factor Line 3 (L & C)	R	✓	✓						32
65-66	Combined Power Factor for Line 1+2+3 (L & C)	R	✓	✓						33
77-78	TOU (Taoz) rate	R/W	✓	✓	✓	✓	✓		✓	39
79-80	Active Total Energy (Wh)	R	✓	✓	✓	✓	✓	✓	✓	40
81-82	Reactive Total Energy (VARh)	R	✓	✓	✓	✓	✓	✓	✓	41
83-84	Apparent Total Energy (Vah)	R	✓	✓	✓	✓	✓	✓	✓	42
85-86	Date Time (Win Format)	R	✓	✓						43
87-88	Time from 01 01 2000 in seconds	R	✓	✓	✓	✓	✓	✓	✓	44
89-90	ADDRESS	R	✓	✓	✓	✓	✓	✓	✓	45
91-92	BAUD RATE	R	✓	✓	✓	✓	✓	✓	✓	46
93-94	PARITY	R	✓	✓	✓	✓	✓	✓	✓	47
95-96	Current Transformer Ratio	R/W	✓	✓	✓	✓	✓	✓	✓	48
97-98	Timed average Voltage	R/W	✓	✓	✓	✓	✓	✓	✓	49
99-100	Timed average Current	R/W	✓	✓	✓	✓	✓	✓	✓	50

MODBUS Register	Field Description	Type	GR	GRC	TXT	LT	MC	LTE	LTC	ITEM # (UniArt\ Bacnet)
101-102	Timed average Power	R/W	✓	✓	✓	✓	✓	✓	✓	51
103-104	Timed avaerge Frequqncy	R/W	✓	✓	✓	✓	✓	✓	✓	52
105-106	THD for Volts Line 1	R	✓	✓		✓[1]		✓	✓[1]	53
107-108	THD for Volts Line 2	R	✓	✓		✓[1]		✓	✓[1]	54
109-110	THD for Volts Line 3	R	✓	✓		✓[1]		✓	✓[1]	55
111-112	THD for Current Line 1	R	✓	✓		✓[1]		✓	✓[1]	56
113-114	THD for Current Line 2	R	✓	✓		✓[1]		✓	✓[1]	57
115-116	THD for Current Line 3	R	✓	✓		✓[1]		✓	✓[1]	58
117-118	Active Rate (1,2,3)	R	✓	✓		✓	✓		✓	59
119-120	Active Energy Line 1 (W-Import)	R	✓	✓	✓	✓	✓	✓	✓	60
121-122	Active Energy Line 2 (W-Import)	R	✓	✓	✓	✓	✓	✓	✓	61
123-124	Active Energy Line 3 (W-Import)	R	✓	✓	✓	✓	✓	✓	✓	62
125-126	Reactive Energy Line 1 (VAR-Import)	R	✓	✓	✓	✓	✓	✓	✓	63
127-128	Reactive Energy Line 2 (VAR-Import)	R	✓	✓	✓	✓	✓	✓	✓	64
129-130	Reactive Energy Line 3 (VAR-Import)	R	✓	✓	✓	✓	✓	✓	✓	65
131-132	Apparant Energy Line 1 (VA-Import)	R	✓	✓	✓	✓	✓	✓	✓	66
133-134	Apparant Energy Line 2 (VA-Import)	R	✓	✓	✓	✓	✓	✓	✓	67
135-136	Apparant Energy Line 3 (VA-Import)	R	✓	✓	✓	✓	✓	✓	✓	68
137-138	Active Energy Line 1 – Rate 1 (Imp)	R	✓	✓	✓	✓	✓		✓	69
139-140	Active Energy Line 2 – Rate 1 (Imp)	R	✓	✓	✓	✓	✓		✓	70
141-142	Active Energy Line 3 – Rate 1 (Imp)	R	✓	✓	✓	✓	✓		✓	71
143-144	Active Energy Line 1 – Rate 2 (Imp)	R	✓	✓	✓	✓	✓		✓	72
145-146	Active Energy Line 2 – Rate 2 (Imp)	R	✓	✓	✓	✓	✓		✓	73
147-148	Active Energy Line 3 – Rate 2 (Imp)	R	✓	✓	✓	✓	✓		✓	74

MODBUS Register	Field Description	Type	GR	GRC	TXT	LT	MC	LTE	LTC	ITEM # (UniArt\ Bacnet)
149-150	Active Energy Line 1 – Rate 3 (Imp)	R	✓	✓	✓	✓	✓		✓	75
151-152	Active Energy Line 2 – Rate 3 (Imp)	R	✓	✓	✓	✓	✓		✓	76
153-154	Active Energy Line 3 – Rate 3 (Imp)	R	✓	✓	✓	✓	✓		✓	77
155-156	Active Energy Line 1+2+3 – Rate 1 (I)	R	✓	✓	✓	✓	✓		✓	78
157-158	Active Energy Line 1+2+3 – Rate 2 (I)	R	✓	✓	✓	✓	✓		✓	79
159-160	Active Energy Line 1+2+3 – Rate 3 (I)	R	✓	✓	✓	✓	✓		✓	80
161-162	Apparant Energy Line 1 – Rate 1 (I)	R	✓	✓	✓	✓	✓		✓	81
163-164	Apparant Energy Line 2 – Rate 1 (I)	R	✓	✓	✓	✓	✓		✓	82
165-166	Apparant Energy Line 3 – Rate 1 (I)	R	✓	✓	✓	✓	✓		✓	83
167-168	Apparant Energy Line 1 – Rate 2 (I)	R	✓	✓	✓	✓	✓		✓	84
169-170	Apparant Energy Line 2 – Rate 2 (I)	R	✓	✓	✓	✓	✓		✓	85
171-172	Apparant Energy Line 3 – Rate 2 (I)	R	✓	✓	✓	✓	✓		✓	86
173-174	Apparant Energy Line 1 – Rate 3 (I)	R	✓	✓	✓	✓	✓		✓	87
175-176	Apparant Energy Line 2 – Rate 3 (I)	R	✓	✓	✓	✓	✓		✓	88
177-178	Apparant Energy Line 3 – Rate 3 (I)	R	✓	✓	✓	✓	✓		✓	89
179-180	Apparant Energy 1+2+3 – Rate 1 (I)	R	✓	✓	✓	✓	✓		✓	90
181-182	Apparant Energy 1+2+3 – Rate 2 (I)	R	✓	✓	✓	✓	✓		✓	91
183-184	Apparant Energy 1+2+3 – Rate 3 (I)	R	✓	✓	✓	✓	✓		✓	92
185-186	Voltage Transformer Ratio	R/W	✓	✓	✓	✓	✓	✓	✓	93
187-188	Epeom Revision	R	✓	✓	✓	✓	✓	✓	✓	94
189-190	Demo Mode	R/W*	✓	✓	✓	✓	✓	✓	✓	95
191-192	Configuration PassWord	R/W	✓	✓	✓	✓	✓		✓	96
193-194	Min. Current To Accumulate Energy	R/W	✓	✓	✓	✓	✓		✓	97
195-196	MuliMeter ID	R	✓	✓	✓	✓	✓		✓	98

MODBUS Register	Field Description	Type	GR	GRC	TXT	LT	MC	LTE	LTC	ITEM # (UniArt\ Bacnet)
197-198	User Function Mode (Technical)	R/W	✓	✓	✓	✓	✓	✓	✓	99
201-202	Demand – KW Max (Watt)	R				✓			✓	101
203-204	Demand – PF (KW)	R				✓			✓	102
205-206	Demand – Date (KW)	R				✓			✓	103
207-208	Demand – KVA (Watt)	R				✓			✓	104
209-210	Demand – PF (KVA)	R				✓			✓	105
211-212	Demand – Date (KVA)	R				✓			✓	106
213-214	Demand – Current (A) L1	R/W*	✓	✓		✓			✓	107
215-216	Demand – Current (A) L2	R/W*	✓	✓		✓			✓	108
217-218	Demand – Current (A) L3	R/W*	✓	✓		✓			✓	109
219-220	Demand – Current (A) L1+L2+L3	R/W*	✓	✓		✓			✓	110
221-222	Demand – Current (A) L1 – Date	R	✓	✓		✓			✓	111
223-224	Demand – Current (A) L2 – Date	R	✓	✓		✓			✓	112
225-226	Demand – Current (A) L3 – Date	R	✓	✓		✓			✓	113
227-228	Demand – Current (A) L1+2+3 – Date	R	✓	✓		✓			✓	114
233-234	Clear All Current Demand	W	✓	✓		✓			✓	117
235-236	Current Demand – KW Max	R				✓			✓	118
241-242	PFC – Power Factor	R/W							✓	121
243-244	PFC – On Time	R/W							✓	122
245-246	PFC – Off Time	R/W							✓	123
247-248	PFC – Avarege Time (Minute)	R/W							✓	124
249-250	PFC – Stages	R/W							✓	125

MODBUS Register	Field Description	Type	GR	GRC	TXT	LT	MC	LTE	LTC	ITEM # (UniArt\ Bacnet)
251-252	PFC – Mode Of Operation	R/W							✓	126
253-254	PFC – THD (Volt)	R/W							✓	127
255-256	PFC – Capacitor #1 (KVAR)	R/W							✓	128
257-258	PFC – Capacitor #2 (KVAR)	R/W							✓	129
259-260	PFC – Capacitor #3 (KVAR)	R/W							✓	130
261-262	PFC – Capacitor #4 (KVAR)	R/W							✓	131
263-264	PFC – Capacitor #5 (KVAR)	R/W							✓	132
265-266	PFC – Capacitor #6 (KVAR)	R/W							✓	133
267-268	PFC – THD (Current)	R/W							✓	134
271-272	PFC – PF Avarrage Time	R/W							✓	136
273-274	PFC – Comb. Stayble Time	R/W							✓	137
275-276	PFC – Hysteresis	R/W							✓	138
277-278	PFC – % Voltage (VT) For OK	R/W							✓	139
279-280	PFC – % Current (CT) To Stop	R/W							✓	140
281-282	PFC – Capacitor #1 Status	R							✓	141
283-284	PFC – Capacitor #2 Status	R							✓	142
285-286	PFC – Capacitor #3 Status	R							✓	143
287-288	PFC – Capacitor #4 Status	R							✓	144
289-290	PFC – Capacitor #5 Status	R							✓	145
291-292	PFC – Capacitor #6 Status	R							✓	146
293-294	Pulse Value (KW-IMP) Relay 1	R/W	✓	✓						147
295-296	Pulse Value (KW-EXP) Relay 2	R/W	✓	✓						148
297-298	Pulse Value (KQ-IMP) Relay 3	R/W	✓	✓						149

MODBUS Register	Field Description	Type	GR	GRC	TXT	LT	MC	LTE	LTC	ITEM # (UniArt\ Bacnet)
299-300	Pulse Duration (Seconds)	R/W	✓	✓						150
301-302	Clock : Seconds	R/W*	✓	✓	✓	✓	✓	✓	✓	151
303-304	Clock : Minutes	R/W*	✓	✓	✓	✓	✓	✓	✓	152
305-306	Clock : Hours	R/W*	✓	✓	✓	✓	✓	✓	✓	153
307-308	Clock : Week Day (1-7)	R/W*	✓	✓	✓	✓	✓	✓	✓	154
309-310	Clock : Day	R/W*	✓	✓	✓	✓	✓	✓	✓	155
311-312	Clock : Month	R/W*	✓	✓	✓	✓	✓	✓	✓	156
313-314	Clock : Year (20xx)	R/W*	✓	✓	✓	✓	✓	✓	✓	157
315-316	Run Time (Seconds With Current)	R/W*				✓	✓		✓	158
317-318	Day Time (Win Format)	R	✓	✓						159
319-320	Force Cpu To response in MC	R/W					✓			160
321-322	Type Of Din 1	R/W*			✓					161
323-324	Type Of Din 2	R/W*			✓					162
325-326	Type Of Din 3	R/W*			✓					163
327-328	Type Of Din 4	R/W*			✓					164
333-334	K.Factor – Current – Line 1	R	✓	✓						167
335-336	K.Factor – Current – Line 2	R	✓	✓						168
337-338	K.Factor – Current – Line 3	R	✓	✓						169
339-340	K.Factor – Current – Line 1+2+3	R	✓	✓						170
341-342	Din 1 Energy Total – Rate 1	R			✓					171
343-344	Din 2 Energy Total – Rate 1	R			✓					172
345-346	Din 3 Energy Total – Rate 1	R			✓					173

MODBUS Register	Field Description	Type	GR	GRC	TXT	LT	MC	LTE	LTC	ITEM # (UniArt\ Bacnet)
347-348	Din 4 Energy Total – Rate 1	R			✓					174
349-350	Din 1 Energy Total – Rate 2	R			✓					175
351-352	Din 2 Energy Total – Rate 2	R			✓					176
353-354	Din 3 Energy Total – Rate 2	R			✓					177
355-356	Din 4 Energy Total – Rate 2	R			✓					178
357-358	Din 1 Energy Total – Rate 3	R			✓					179
359-360	Din 2 Energy Total – Rate 3	R			✓					180
361-362	Din 3 Energy Total – Rate 3	R			✓					181
363-364	Din 4 Energy Total – Rate 3	R			✓					182
365-366	Din 1 Energy Total – Rate 1+2+3	R			✓					183
367-368	Din 2 Energy Total – Rate 1+2+3	R			✓					184
369-370	Din 3 Energy Total – Rate 1+2+3	R			✓					185
371-372	Din 4 Energy Total – Rate 1+2+3	R			✓					186
379-380	Temprature Sensor	R/W*	✓	✓		✓	✓		✓	190
381-382	Digital In 1 - Status	R	✓	✓	✓	✓			✓	191
383-384	Digital In 2 - Status	R	✓	✓	✓	✓			✓	192
385-386	Digital In 3 - Status	R	✓	✓	✓					193
387-388	Digital In 4 - Status	R	✓	✓	✓					194
395-396	Web Authentication (User=admin)	R/W				✓	✓			198
397-398	Fast Trend Cycle Time (Seconds)	R/W	✓	✓						199
399-400	History - Date	W	✓	✓	✓	✓	✓		✓	200
401-402	History – Day	W	✓	✓	✓	✓	✓		✓	201

MODBUS Register	Field Description	Type	GR	GRC	TXT	LT	MC	LTE	LTC	ITEM # (UniArt\ Bacnet)
403-404	History – Month	W	✓	✓	✓	✓	✓		✓	202
405-406	History - Year	W	✓	✓	✓	✓	✓		✓	203
407-408	History-Active Energy Line 1 – Rate 1	R	✓	✓	✓	✓	✓		✓	204
409-410	History-Active Energy Line 2 – Rate 1	R	✓	✓	✓	✓	✓		✓	205
411-412	History-Active Energy Line 3 – Rate 1	R	✓	✓	✓	✓	✓		✓	206
413-414	History-Active Energy Line 1 – Rate 2	R	✓	✓	✓	✓	✓		✓	207
415-416	History-Active Energy Line 2 – Rate 2	R	✓	✓	✓	✓	✓		✓	208
417-418	History-Active Energy Line 3 – Rate 2	R	✓	✓	✓	✓	✓		✓	209
419-420	History-Active Energy Line 1 – Rate 3	R	✓	✓	✓	✓	✓		✓	210
421-422	History-Active Energy Line 2 – Rate 3	R	✓	✓	✓	✓	✓		✓	211
423-424	History-Active Energy Line 3 – Rate 3	R	✓	✓	✓	✓	✓		✓	212
425-426	History-ReActive Energy Ln 1–Rate 1	R	✓	✓	✓	✓	✓		✓	213
427-428	History-ReActive Energy Ln 2–Rate 1	R	✓	✓	✓	✓	✓		✓	214
429-430	History-ReActive Energy Ln 3–Rate 1	R	✓	✓	✓	✓	✓		✓	215
431-432	History-ReActive Energy Ln 1–Rate 2	R	✓	✓	✓	✓	✓		✓	216
433-434	History-ReActive Energy Ln 2–Rate 2	R	✓	✓	✓	✓	✓		✓	217
435-436	History-ReActive Energy Ln 3–Rate 2	R	✓	✓	✓	✓	✓		✓	218
437-438	History-ReActive Energy Ln 1–Rate 3	R	✓	✓	✓	✓	✓		✓	219
439-440	History-ReActive Energy Ln 2–Rate 3	R	✓	✓	✓	✓	✓		✓	220
441-442	History-ReActive Energy Ln 3–Rate 3	R	✓	✓	✓	✓	✓		✓	221
443-444	History-Din 1 Energy – Rate 1	R			✓					222
445-446	History-Din 2 Energy – Rate 1	R			✓					223
447-448	History-Din 3 Energy – Rate 1	R			✓					224
449-450	History-Din 4 Energy – Rate 1	R			✓					225

MODBUS Register	Field Description	Type	GR	GRC	TXT	LT	MC	LTE	LTC	ITEM # (UniArt\ Bacnet)
451-452	History-Din 1 Energy – Rate 2	R			✓					226
453-454	History-Din 2 Energy – Rate 2	R			✓					227
455-456	History-Din 3 Energy – Rate 2	R			✓					228
457-458	History-Din 4 Energy – Rate 2	R			✓					229
459-460	History-Din 1 Energy – Rate 3	R			✓					230
461-462	History-Din 2 Energy – Rate 3	R			✓					231
463-464	History-Din 3 Energy – Rate 3	R			✓					232
465-466	History-Din 4 Energy – Rate 3	R			✓					233
491-492	History – Reading Date	R	✓	✓	✓	✓	✓		✓	246
493-494	Debug Counter 1	R/W			✓	✓	✓		✓	247
495-496	Debug Counter 2	R/W			✓	✓	✓		✓	248
497-498	Debug Counter 3	R/W			✓	✓	✓		✓	249
499-500	Debug Counter 4	R/W			✓	✓	✓		✓	250
501-502	Technical Calibration Value 1	R	✓	✓	✓	✓	✓		✓	251
503-504	Technical Calibration Value 2	R	✓	✓	✓	✓	✓		✓	252
505-506	Technical Calibration Value 3	R	✓	✓	✓	✓	✓		✓	253
507-508	Technical Calibration Value 4	R	✓	✓	✓	✓	✓		✓	254
509-510	Float Format (0,1,2)	R/W				✓	✓		✓	255
511-512	Compatibility Mode (0,130,170)	R/W				✓	✓		✓	256
513-514	Technical Current Calibration	R/W				✓	✓		✓	257
519-520	Start Time1 For Period Alarm	R/W	✓	✓						260
521-522	Stop Time1 For Period Alarm	R/W	✓	✓						261

MODBUS Register	Field Description	Type	GR	GRC	TXT	LT	MC	LTE	LTC	ITEM # (UniArt\ Bacnet)
523-524	High Power (KW) (Period)	R/W	✓	✓						262
525-526	Low Power (KW) (Period)	R/W	✓	✓						263
527-528	Time Table For Period Alarm High	R/W	✓	✓						264
529-530	Time Table For Period Alarm Low	R/W	✓	✓						265
531-532	Start2 Time For Period Alarm	R/W	✓	✓						266
533-534	Stop2 Time For Period Alarm	R/W	✓	✓						267
537-538	ReActive Energy Line 1 –Rate 1 (Imp)	R	✓	✓		✓	✓			269
539-540	ReActive Energy Line 2 –Rate 1 (Imp)	R	✓	✓		✓	✓			270
541-542	ReActive Energy Line 3 –Rate 1 (Imp)	R	✓	✓		✓	✓			271
543-544	ReActive Energy Line 1 –Rate 2 (Imp)	R	✓	✓		✓	✓			272
545-546	ReActive Energy Line 2 –Rate 2 (Imp)	R	✓	✓		✓	✓			273
547-548	ReActive Energy Line 3 –Rate 2 (Imp)	R	✓	✓		✓	✓			274
549-550	ReActive Energy Line 1 –Rate 3 (Imp)	R	✓	✓		✓	✓			275
551-552	ReActive Energy Line 2 –Rate 3 (Imp)	R	✓	✓		✓	✓			276
553-554	ReActive Energy Line 3 –Rate 3 (Imp)	R	✓	✓		✓	✓			277
555-556	ReActive E. Line 1+2+3 –Rate 1 (I)	R	✓	✓		✓	✓			278
557-558	ReActive E. Line 1+2+3 –Rate 2 (I)	R	✓	✓		✓	✓			279
559-560	ReActive E. Line 1+2+3 –Rate 3 (I)	R	✓	✓		✓	✓			280
561-562	Virtual Pulse Value (KW) P-Total	R/W	✓	✓						281
563-564	Virtual Pulse Counter	R/W	✓	✓						282
565-566	Fix Value (Debug) 123.4	R	✓	✓						283
567-568	Float Order (0=LM),(1=ML)	R/W	✓	✓						284
569-570	ReActive E.Total In Capacitor Mode	R				✓				285

MODBUS Register	Field Description	Type	GR	GRC	TXT	LT	MC	LTE	LTC	ITEM # (UniArt\ Bacnet)
571-572	ReActive E.Total In Non Capacitor Mode	R				✓				286
579-580	Delay (MS) for response time (RS485)	R/W	✓							290
581-582	Current Line 1 Opposite Error	R	✓	✓	✓	✓	✓		✓	291
583-584	Current Line 2 Opposite Error	R	✓	✓	✓	✓	✓		✓	292
585-586	Current Line 3 Opposite Error	R	✓	✓	✓	✓	✓		✓	293
587-588	Voltage Seq. Error	R	✓	✓	✓	✓	✓		✓	294
601-602	1st Harmonics for Volts **Line 1**	R	✓	✓		✓[1]			✓[1]	301
603-604	2nd Harmonics for Volts **Line 1**	R	✓	✓		✓[1]			✓[1]	302
⇓	⇓	⇓				✓[1]			✓[1]	⇓
661-662	31st Harmonics for Volts **Line 1**	R	✓	✓		✓[1]			✓[1]	331
663-664	32nd Harmonics for Volts **Line 1**	R	✓	✓		✓[1]			✓[1]	332
665-666	1st Harmonics for Volts **Line 2**	R	✓	✓		✓[1]			✓[1]	333
667-668	2nd Harmonics for Volts **Line 2**	R	✓	✓		✓[1]			✓[1]	334
⇓	⇓	⇓				✓[1]			✓[1]	⇓
725-726	31st Harmonics for Volts **Line 2**	R	✓	✓		✓[1]			✓[1]	363
727-728	32nd Harmonics for Volts **Line 2**	R	✓	✓		✓[1]			✓[1]	364
729-730	1st Harmonic for Volts **Line 3**	R	✓	✓		✓[1]			✓[1]	365
731-732	2nd Harmonics for Volts **Line 3**	R	✓	✓		✓[1]			✓[1]	366
⇓	⇓	⇓								⇓
789-790	31st Harmonics for Vots **Line 3**	R	✓	✓		✓[1]			✓[1]	395

MODBUS Register	Field Description	Type	GR	GRC	TXT	LT	MC	LTE	LTC	ITEM # (UniArt\ Bacnet)
791-792	32nd Harmonics for Volts **Line 3**	R	✓	✓		✓[1]			✓[1]	396
793-794	1st Harmonics for Current **Line 1**	R	✓	✓		✓[1]			✓[1]	397
795-796	2nd Harmonics for Current **Line 1**	R	✓	✓		✓[1]			✓[1]	398
⇓	⇓	⇓				✓[1]			✓[1]	⇓
853-854	31st Harmonics for Current **Line 1**	R	✓	✓		✓[1]			✓[1]	427
855-856	32nd Harmonics for Current **Line 1**	R	✓	✓		✓[1]			✓[1]	428
857-858	1st Harmonics for Current **Line 2**	R	✓	✓		✓[1]			✓[1]	429
859-860	2nd Harmonics for Current **Line 2**	R	✓	✓		✓[1]			✓[1]	430
⇓	⇓	⇓				✓[1]			✓[1]	⇓
917-918	31st Harmonics for Current **line 2**	R	✓	✓		✓[1]			✓[1]	459
919-920	32nd Harmonicsfor Current **Line 2**	R	✓	✓		✓[1]			✓[1]	460
921-922	1st Harmonics for Current **Line 3**	R	✓	✓		✓[1]			✓[1]	461
923-924	2nd Harmonics for Current **Line 3**	R	✓	✓		✓[1]			✓[1]	462
⇓	⇓	⇓				✓[1]			✓[1]	⇓
981-982	31st Harmonics for Current **Line 3**	R	✓	✓		✓[1]			✓[1]	491
983-984	32nd Harmonics for Current **Line 3**	R	✓	✓		✓[1]			✓[1]	492
1001-2	User Alarm #1	R	✓	✓						501
1003-4	User Alarm #2	R	✓	✓						502
1005-6	User Alarm #3	R	✓	✓						503
⇓	⇓	⇓								⇓
1253-4	User Alarm #1**27**	R	✓	✓						627

MODBUS Register	Field Description	Type	GR	GRC	TXT	LT	MC	LTE	LTC	ITEM # (UniArt\ Bacnet)
1255-6	User Alarm #1**28**	R	✓	✓						628
1261-62	Demand – Watt L1	R	✓	✓						631
1263-64	Demand – Watt L2	R	✓	✓						632
1265-66	Demand – Watt L3	R	✓	✓						633
1267-68	Demand – VAR L1	R	✓	✓						634
1269-70	Demand – VAR L2	R	✓	✓						635
1271-72	Demand – VAR L3	R	✓	✓						636
1273-74	Demand – VA L1	R	✓	✓						637
1275-76	Demand – VA L2	R	✓	✓						638
1277-78	Demand – VA L3	R	✓	✓						639
1279-80	Demand – Watt L1+L2+L3	R	✓	✓						640
1281-82	Demand – VAR L1+L2+L3	R	✓	✓						641
1283-84	Demand – VA L1+L2+L3	R	✓	✓						642
1285-86	Demand – Current (A) L1	R	✓	✓						643
1287-88	Demand – Current (A) L2	R	✓	✓						644
1289-90	Demand – Current (A) L3	R	✓	✓						645
1291-92	Demand – Current (A) L1+L2+L3	R	✓	✓						646
1299-00	Long Wave Write Now !!	W		✓						650
1301-02	Long Wave Event (Before) - Seconds	R/W		✓						651
1303-04	Long Wave Event (Total) - Seconds	R/W		✓						652

MODBUS Register	Field Description	Type	GR	GRC	TXT	LT	MC	LTE	LTC	ITEM # (UniArt\ Bacnet)
1305-06	Current L1 – High - Write Long Wave Event	R/W		✓						653
1307-08	Current L1 – Hysteresis (Long Wave Event)	R/W		✓						654
1315-16	PQ – V.Nominal	R/W		✓						658
1317-18	PQ – Enable (Active)	R/W		✓						659
1319-20	Active Energy Line 1 (Export)	R	✓	✓		✓	✓			660
1321-22	Active Energy Line 2 (Export)	R	✓	✓		✓	✓			661
1323-24	Active Energy Line 3 (Export)	R	✓	✓		✓	✓			662
1325-26	Reactive Energy Line 1 (Export)	R	✓	✓		✓	✓			663
1327-28	Reactive Energy Line 2 (Export)	R	✓	✓		✓	✓			664
1329-30	Reactive Energy Line 3 (Export)	R	✓	✓		✓	✓			665
1331-32	Apparant Energy Line 1 (Export)	R	✓	✓		✓	✓			666
1333-34	Apparant Energy Line 2 (Export)	R	✓	✓		✓	✓			667
1335-36	Apparant Energy Line 3 (Export)	R	✓	✓		✓	✓			668
1337-38	Active Energy Line 1 – Rate 1 (Exp)	R	✓	✓		✓	✓			669
1339-40	Active Energy Line 2 – Rate 1 (Exp)	R	✓	✓		✓	✓			670
1341-42	Active Energy Line 3 – Rate 1 (Exp)	R	✓	✓		✓	✓			671
1343-44	Active Energy Line 1 – Rate 2 (Exp)	R	✓	✓		✓	✓			672
1345-46	Active Energy Line 2 – Rate 2 (Exp)	R	✓	✓		✓	✓			673
1347-48	Active Energy Line 3 – Rate 2 (Exp)	R	✓	✓		✓	✓			674
1349-50	Active Energy Line 1 – Rate 3 (Exp)	R	✓	✓		✓	✓			675
1351-52	Active Energy Line 2 – Rate 3 (Exp)	R	✓	✓		✓	✓			676
1353-54	Active Energy Line 3 – Rate 3 (Exp)	R	✓	✓		✓	✓			677
1355-56	Active Energy Line 1+2+3 –Rate 1 (E)	R	✓	✓		✓	✓			678

MODBUS Register	Field Description	Type	GR	GRC	TXT	LT	MC	LTE	LTC	ITEM # (UniArt\ Bacnet)
1357-58	Active Energy Line 1+2+3 –Rate 2 (E)	R	✓	✓		✓	✓			679
1359-60	Active Energy Line 1+2+3 –Rate 3 (E)	R	✓	✓		✓	✓			680
1361-62	Apparant Energy Line 1 – Rate 1 (E)	R	✓	✓		✓	✓			681
1363-64	Apparant Energy Line 2 – Rate 1 (E)	R	✓	✓		✓	✓			682
1365-66	Apparant Energy Line 3 – Rate 1 (E)	R	✓	✓		✓	✓			683
1367-68	Apparant Energy Line 1 – Rate 2 (E)	R	✓	✓		✓	✓			684
1369-70	Apparant Energy Line 2 – Rate 2 (E)	R	✓	✓		✓	✓			685
1371-72	Apparant Energy Line 3 – Rate 2 (E)	R	✓	✓		✓	✓			686
1373-74	Apparant Energy Line 1 – Rate 3 (E)	R	✓	✓		✓	✓			687
1375-76	Apparant Energy Line 2 – Rate 3 (E)	R	✓	✓		✓	✓			688
1377-78	Apparant Energy Line 3 – Rate 3 (E)	R	✓	✓		✓	✓			689
1379-80	Apparant Energy 1+2+3 – Rate 1 (E)	R	✓	✓		✓	✓			690
1381-82	Apparant Energy 1+2+3 – Rate 2 (E)	R	✓	✓		✓	✓			691
1383-84	Apparant Energy 1+2+3 – Rate 3 (E)	R	✓	✓		✓	✓			692
1385-86	Active Energy (Export)	R	✓	✓		✓	✓			693
1387-88	Reactive Energy (Export)	R	✓	✓		✓	✓			694
1389-90	Apparant Energy (Export)	R	✓	✓		✓	✓			695
1401-2	EN50160 SetUp Value #1	R/W	✓	✓						701
⇓	⇓	⇓								⇓
1519-20	EN50160 SetUp Value #60	R/W	✓	✓						760
1521-22	EN50160 Alarm 1(Phase Bit 1,2,3)	R	✓	✓						761

MODBUS Register	Field Description	Type	GR	GRC	TXT	LT	MC	LTE	LTC	ITEM # (UniArt\ Bacnet)
⇓	⇓	⇓								⇓
1599-00	EN50160 Alarm 40(Phase Bit 1,2,3)	R	✓	✓						800
1601-2	EN50160 Daily Cnt Alrm #1 (L1)	R	✓	✓						801
1603-4	EN50160 Daily Cnt Alrm #1 (L2)	R	✓	✓						802
1605-6	EN50160 Daily Cnt Alrm #1 (L3)	R	✓	✓						803
1607-8	EN50160 Daily Cnt Alrm #2 (L1)	R	✓	✓						804
1609-10	EN50160 Daily Cnt Alrm #2 (L2)	R	✓	✓						805
1611-12	EN50160 Daily Cnt Alrm #2 (L3)	R	✓	✓						806
⇓	⇓	⇓								⇓
1835-6	EN50160 Daily Cnt Alrm #40 (L1)	R	✓	✓						918
1837-8	EN50160 Daily Cnt Alrm #40 (L2)	R	✓	✓						919
1839-40	EN50160 Daily Cnt Alrm #40 (L3)	R	✓	✓						920
2001-2	EN50160 Daily MaxVal Alrm #1 (L1)	R	✓	✓						1001
2003-4	EN50160 Daily MaxVal Alrm #1 (L2)	R	✓	✓						1002
2005-6	EN50160 Daily MaxVal Alrm #1 (L3)	R	✓	✓						1003
2007-8	EN50160 Daily MaxVal Alrm #2 (L1)	R	✓	✓						1004
2009-10	EN50160 Daily MaxVal Alrm #2 (L2)	R	✓	✓						1005
2011-12	EN50160 Daily MaxVal Alrm #2 (L3)	R	✓	✓						1006
⇓	⇓	⇓								⇓
2235-6	EN50160 Daily MaxVal Alrm#40(L1)	R	✓	✓						1118

MODBUS Register	Field Description	Type	GR	GRC	TXT	LT	MC	LTE	LTC	ITEM # (UniArt\ Bacnet)
2237-8	EN50160 Daily MaxVal Alrm#40(L2)	R	✓	✓						1119
2239-40	EN50160 Daily MaxVal Alrm#40(L3)	R	✓	✓						1120
2401-2	EN50160 Daily Time Alrm #1 (L1)	R	✓	✓						1201
2403-4	EN50160 Daily Time Alrm #1 (L2)	R	✓	✓						1202
2405-6	EN50160 Daily Time Alrm #1 (L3)	R	✓	✓						1203
2407-8	EN50160 Daily Time Alrm #2 (L1)	R	✓	✓						1204
2409-10	EN50160 Daily Time Alrm #2 (L2)	R	✓	✓						1205
2411-12	EN50160 Daily Time Alrm #2 (L3)	R	✓	✓						1206
⇓	⇓	⇓								⇓
2635-6	EN50160 Daily Time Alrm#40(L1)	R	✓	✓						1318
2637-8	EN50160 Daily Time Alrm#40(L2)	R	✓	✓						1319
2639-40	EN50160 Daily Time Alrm#40(L3)	R	✓	✓						1320
2801-2	EN Yesterday Cnt Alrm #1 (L1)	R	✓	✓						1401
2803-4	EN Yesterday Cnt Alrm #1 (L2)	R	✓	✓						1402
2805-6	EN Yesterday Cnt Alrm #1 (L3)	R	✓	✓						1403
2807-8	EN Yesterday Cnt Alrm #2 (L1)	R	✓	✓						1404
2809-10	EN Yesterday Cnt Alrm #2 (L2)	R	✓	✓						1405
2811-12	EN Yesterday Cnt Alrm #2 (L3)	R	✓	✓						1406
⇓	⇓	⇓								⇓
3035-6	EN Yesterday Cnt Alrm#40(L1)	R	✓	✓						1518
3037-8	EN Yesterday Cnt Alrm#40(L2)	R	✓	✓						1519

MODBUS Register	Field Description	Type	GR	GRC	TXT	LT	MC	LTE	LTC	ITEM # (UniArt\ Bacnet)
3039-40	EN Yesterday Cnt Alrm#40(L3)	R	✓	✓						1520
3201-2	EN Yesterday MaxVal Alrm #1 (L1)	R	✓	✓						1601
3203-4	EN Yesterday MaxVal Alrm #1 (L2)	R	✓	✓						1602
3205-6	EN Yesterday MaxVal Alrm #1 (L3)	R	✓	✓						1603
3207-8	EN Yesterday MaxVal Alrm #2 (L1)	R	✓	✓						1604
3209-10	EN Yesterday MaxVal Alrm #2 (L2)	R	✓	✓						1605
3211-12	EN Yesterday MaxVal Alrm #2 (L3)	R	✓	✓						1606
⇓	⇓	⇓								⇓
3435-6	EN Yesterday MaxVal Alrm#40(L1)	R	✓	✓						1718
3437-8	EN Yesterday MaxVal Alrm#40(L2)	R	✓	✓						1719
3439-40	EN Yesterday MaxVal Alrm#40(L3)	R	✓	✓						1720
3601-2	EN Yesterday Time Alrm #1 (L1)	R	✓	✓						1801
3603-4	EN Yesterday Time Alrm #1 (L2)	R	✓	✓						1802
3605-6	EN Yesterday Time Alrm #1 (L3)	R	✓	✓						1803
3607-8	EN Yesterday Time Alrm #2 (L1)	R	✓	✓						1804
3609-10	EN Yesterday Time Alrm #2 (L2)	R	✓	✓						1805
3611-12	EN Yesterday Time Alrm #2 (L3)	R	✓	✓						1806
⇓	⇓	⇓								⇓
3835-6	EN Yesterday Time Alrm#40(L1)	R	✓	✓						1918
3837-8	EN Yesterday Time Alrm#40(L2)	R	✓	✓						1919
3839-40	EN Yesterday Time Alrm#40(L3)	R	✓	✓						1920

MODBUS Register	Field Description	Type	GR	GRC	TXT	LT	MC	LTE	LTC	ITEM # (UniArt\ Bacnet)
3841-42	Summer Clock DTE #1 (Sec)	R/W				✓	✓		✓	1921
3843-44	Summer Clock DTE #2 (Sec)	R/W				✓	✓		✓	1922
⇓	⇓	⇓								⇓
3879-80	Summer Clock DTE #20 (Sec)	R/W				✓	✓		✓	1940
3881-82	Summer Clock #1 – Minute To Add	R/W				✓	✓		✓	1941
3883-84	Summer Clock #2 – Minute To Add	R/W				✓	✓		✓	1942
⇓	⇓	⇓								⇓
3919-20	Summer Clock #20 – Minute To Add	R/W				✓	✓		✓	1960
3921-22	Summer Clock DTE #1 (Hour)	R/W				✓	✓		✓	1961
3923-24	Summer Clock DTE #2 (Hour)	R/W				✓	✓		✓	1962
⇓	⇓	⇓								⇓
3959-60	Summer Clock DTE #20 (Hour)	R/W				✓	✓		✓	1980
4001-2	Active Energy (L123)- Month 1 -KWh	R	✓	✓		✓	✓		✓	2001
4003-4	Active Energy (L123)- Month 2-KWh	R	✓	✓		✓	✓		✓	2002
⇓	⇓	⇓								⇓
4071-72	Active Energy(L123)- Month 36-KWh	R	✓	✓		✓	✓		✓	2036
4073-74	Month # 1 (1-12) (For Register 2001)	R	✓	✓		✓			✓	2037
4075-76	Month # 2 (1-12) (For Register 2002)	R	✓	✓		✓			✓	2038
⇓	⇓	⇓								⇓

MODBUS Register	Field Description	Type	GR	GRC	TXT	LT	MC	LTE	LTC	ITEM # (UniArt\ Bacnet)
4143-44	Month #36 (1-12) (For Register 2036)	R	✓	✓		✓			✓	2072
4145-46	Year # 1 (2001-99) (Register 2001)	R	✓	✓		✓			✓	2073
4147-48	Year # 2 (2001-99) (Register 2002)	R	✓	✓		✓			✓	2074
⇓	⇓	⇓								⇓
4215-16	Year #36 (2001-99) (Register 2036)	R	✓	✓		✓			✓	2108
4241-42	U.Alarm – High Current Value	R/W				✓				2121
4243-44	U.Alarm – High Voltage Value	R/W				✓				2122
4245-46	U.Alarm – Low Voltage Value	R/W				✓				2123
4247-48	U.Alarm – Low PF Value	R/W				✓				2124
4249-50	U.Alarm – High V.THD Value	R/W				✓				2125
4251-52	U.Alarm – High I.THD Value	R/W				✓				2126
4261-62	U.Alarm – High Current DelayOn	R/W				✓				2131
4263-64	U.Alarm – High Voltage DelayOn	R/W				✓				2132
4265-66	U.Alarm – Low Voltage DelayOn	R/W				✓				2133
4267-68	U.Alarm – Low PF DelayOn	R/W				✓				2134
4269-70	U.Alarm – High V.THD DelayOn	R/W				✓				2135
4271-72	U.Alarm – High I.THD DelayOn	R/W				✓				2136
4281-82	Demand – THD Current (A) L1	R/W*				✓			✓	2141
4283-84	Demand – THD Current (A) L2	R/W*				✓			✓	2142
4285-86	Demand – THD Current (A) L3	R/W*				✓			✓	2143
4287-88	Demand – THD Current (A) L1 | L2 | l3	R/W*				✓			✓	2144

MODBUS Register	Field Description	Type	GR	GRC	TXT	LT	MC	LTE	LTC	ITEM # (UniArt\ Bacnet)
4289-90	Demand – THD Current (A) L1 - Date	R				✓			✓	2145
4291-92	Demand – THD Current (A) L2 - Date	R				✓			✓	2146
4293-94	Demand – THD Current (A) L3 - Date	R				✓			✓	2147
4295-96	Demand – THD Current (A) L123 - Date	R				✓			✓	2148
4297-98	Demand – THD Voltage (A) L1	R/W*				✓			✓	2149
4299-300	Demand – THD Voltage (A) L2	R/W*				✓			✓	2150
4301-02	Demand – THD Voltage (A) L3	R/W*				✓			✓	2151
4303-04	Demand – THD Voltage (A) L1 | L2 | l3	R/W*				✓			✓	2152
4305-06	Demand – THD Voltage (A) L1 - Date	R				✓			✓	2153
4307-08	Demand – THD Voltage (A) L2 - Date	R				✓			✓	2154
4309-10	Demand – THD Voltage (A) L3 - Date	R				✓			✓	2155
4311-12	Demand – THD Voltage (A) L123 - Date	R				✓			✓	2156
4313-14	Clear All THD Demand	W	✓	✓		✓			✓	2157
4413-14	Alarm- High Voltage L1	R/W	✓	✓						2207
4415-16	Alarm- High Voltage L2	R/W	✓	✓						2208
4417-18	Alarm- High Voltage L3	R/W	✓	✓						2209
4419-20	Alarm- High Voltage L1-2	R/W	✓	✓						2210
4421-22	Alarm- High Voltage L2-3	R/W	✓	✓						2211
4423-24	Alarm- High Voltage L3-1	R/W	✓	✓						2212
4427-28	Alarm- High Current L1	R/W	✓	✓						2214
4429-30	Alarm- High Current L2	R/W	✓	✓						2215
4431-32	Alarm- High Current L3	R/W	✓	✓						2216
4433-34	Alarm- High Current L0	R/W	✓	✓						2217

MODBUS Register	Field Description	Type	GR	GRC	TXT	LT	MC	LTE	LTC	ITEM # (UniArt\ Bacnet)
4437-38	Alarm- High PF L1	R/W	✓	✓						2219
4439-40	Alarm- High PF L2	R/W	✓	✓						2220
4441-42	Alarm- High PF L3	R/W	✓	✓						2221
4443-44	Alarm- High PF (L1-2-3)	R/W	✓	✓						2222
4453-54	Alarm- High Voltage THD L1	R/W	✓	✓						2227
4455-56	Alarm- High Voltage THD L2	R/W	✓	✓						2228
4457-58	Alarm- High Voltage THD L3	R/W	✓	✓						2229
4469-70	Alarm- High Current THD L1	R/W	✓	✓						2235
4471-72	Alarm- High Current THD L2	R/W	✓	✓						2236
4473-74	Alarm- High Current THD L3	R/W	✓	✓						2237
4475-76	Alarm- High Current THD L0	R/W	✓	✓						2238
4479-80	Alarm- High Current TDD L1	R/W	✓	✓						2240
4481-82	Alarm- High Current TDD L2	R/W	✓	✓						2241
4483-84	Alarm- High Current TDD L3	R/W	✓	✓						2242
4485-86	Alarm- High Current TDD L0	R/W	✓	✓						2243
4489-90	Alarm- High Current KF L1	R/W	✓	✓						2245
4491-92	Alarm- High Current KF L2	R/W	✓	✓						2246
4493-94	Alarm- High Current KF L3	R/W	✓	✓						2247
4495-96	Alarm- High Current KF L0	R/W	✓	✓						2248
4613-14	Alarm- Low Voltage L1	R/W	✓	✓						2307
4615-16	Alarm- Low Voltage L2	R/W	✓	✓						2308
4617-18	Alarm- Low Voltage L3	R/W	✓	✓						2309
4619-20	Alarm- Low Voltage L1-2	R/W	✓	✓						2310

MODBUS Register	Field Description	Type	GR	GRC	TXT	LT	MC	LTE	LTC	ITEM # (UniArt\ Bacnet)
4621-22	Alarm- Low Voltage L2-3	R/W	✓	✓						2311
4623-24	Alarm- Low Voltage L3-1	R/W	✓	✓						2312
4627-28	Alarm- Low Current L1	R/W	✓	✓						2314
4629-30	Alarm- Low Current L2	R/W	✓	✓						2315
4631-32	Alarm- Low Current L3	R/W	✓	✓						2316
4633-34	Alarm- Low Current L0	R/W	✓	✓						2317
4637-38	Alarm- Low PF L1	R/W	✓	✓						2319
4639-40	Alarm- Low PF L2	R/W	✓	✓						2320
4641-42	Alarm- Low PF L3	R/W	✓	✓						2321
4643-44	Alarm- Low PF (L1-2-3)	R/W	✓	✓						2322
4653-54	Alarm- Low Voltage THD L1	R/W	✓	✓						2327
4655-56	Alarm- Low Voltage THD L2	R/W	✓	✓						2328
4657-58	Alarm- Low Voltage THD L3	R/W	✓	✓						2329
4669-70	Alarm- Low Current THD L1	R/W	✓	✓						2335
4671-72	Alarm- Low Current THD L2	R/W	✓	✓						2336
4673-74	Alarm- Low Current THD L3	R/W	✓	✓						2337
4675-76	Alarm- Low Current THD L0	R/W	✓	✓						2338
4679-80	Alarm- Low Current TDD L1	R/W	✓	✓						2340
4681-82	Alarm- Low Current TDD L2	R/W	✓	✓						2341
4683-84	Alarm- Low Current TDD L3	R/W	✓	✓						2342
4685-86	Alarm- Low Current TDD L0	R/W	✓	✓						2343
4689-90	Alarm- Low Current KF L1	R/W	✓	✓						2345
4691-92	Alarm- Low Current KF L2	R/W	✓	✓						2346
4693-94	Alarm- Low Current KF L3	R/W	✓	✓						2347

MODBUS Register	Field Description	Type	GR	GRC	TXT	LT	MC	LTE	LTC	ITEM # (UniArt\ Bacnet)
4695-96	Alarm- Low Current KF L0	R/W	✓	✓						2348
4813-14	Alarm- Relay High Voltage L1	R/W	✓	✓						2407
4815-16	Alarm- Relay High Voltage L2	R/W	✓	✓						2408
4817-18	Alarm- Relay High Voltage L3	R/W	✓	✓						2409
4819-20	Alarm- Relay High Voltage L1-2	R/W	✓	✓						2410
4821-22	Alarm- Relay High Voltage L2-3	R/W	✓	✓						2411
4823-24	Alarm- Relay High Voltage L3-1	R/W	✓	✓						2412
4827-28	Alarm- Relay High Current L1	R/W	✓	✓						2414
4829-30	Alarm- Relay High Current L2	R/W	✓	✓						2415
4831-32	Alarm- Relay High Current L3	R/W	✓	✓						2416
4833-34	Alarm- Relay High Current L0	R/W	✓	✓						2417
4837-38	Alarm- Relay High PF L1	R/W	✓	✓						2419
4839-40	Alarm- Relay High PF L2	R/W	✓	✓						2420
4841-42	Alarm- Relay High PF L3	R/W	✓	✓						2421
4843-44	Alarm- Relay High PF (L1-2-3)	R/W	✓	✓						2422
4853-54	Alarm- Relay High Voltage THD L1	R/W	✓	✓						2427
4855-56	Alarm- Relay High Voltage THD L2	R/W	✓	✓						2428
4857-58	Alarm- Relay High Voltage THD L3	R/W	✓	✓						2429
4869-70	Alarm- Relay High Current THD L1	R/W	✓	✓						2435
4871-72	Alarm- Relay High Current THD L2	R/W	✓	✓						2436
4873-74	Alarm- Relay High Current THD L3	R/W	✓	✓						2437
4875-76	Alarm- Relay High Current THD L0	R/W	✓	✓						2438
4879-80	Alarm- Relay High Current TDD L1	R/W	✓	✓						2440

MODBUS Register	Field Description	Type	GR	GRC	TXT	LT	MC	LTE	LTC	ITEM # (UniArt\ Bacnet)
4881-82	Alarm- Relay High Current TDD L2	R/W	✓	✓						2441
4883-84	Alarm- Relay High Current TDD L3	R/W	✓	✓						2442
4885-86	Alarm- Relay High Current TDD L0	R/W	✓	✓						2443
4889-90	Alarm- Relay High Current KF L1	R/W	✓	✓						2445
4891-92	Alarm- Relay High Current KF L2	R/W	✓	✓						2446
4893-94	Alarm- Relay High Current KF L3	R/W	✓	✓						2447
4895-96	Alarm- Relay High Current KF L0	R/W	✓	✓						2448
5013-14	Alarm- Relay Low Voltage L1	R/W	✓	✓						2507
5015-16	Alarm- Relay Low Voltage L2	R/W	✓	✓						2508
5017-18	Alarm- Relay Low Voltage L3	R/W	✓	✓						2509
5019-20	Alarm- Relay Low Voltage L1-2	R/W	✓	✓						2510
5021-22	Alarm- Relay Low Voltage L2-3	R/W	✓	✓						2511
5023-24	Alarm- Relay Low Voltage L3-1	R/W	✓	✓						2512
5027-28	Alarm- Relay Low Current L1	R/W	✓	✓						2514
5029-30	Alarm- Relay Low Current L2	R/W	✓	✓						2515
5031-32	Alarm- Relay Low Current L3	R/W	✓	✓						2516
5033-34	Alarm- Relay Low Current L0	R/W	✓	✓						2517
5037-38	Alarm- Relay Low PF L1	R/W	✓	✓						2519
5039-40	Alarm- Relay Low PF L2	R/W	✓	✓						2520
5041-42	Alarm- Relay Low PF L3	R/W	✓	✓						2521
5043-44	Alarm- Relay Low PF (L1-2-3)	R/W	✓	✓						2522
5053-54	Alarm- Relay Low Voltage THD L1	R/W	✓	✓						2527
5055-56	Alarm- Relay Low Voltage THD L2	R/W	✓	✓						2528

MODBUS Register	Field Description	Type	GR	GRC	TXT	LT	MC	LTE	LTC	ITEM # (UniArt\ Bacnet)
5057-58	Alarm- Relay Low Voltage THD L3	R/W	✓	✓						2529
5069-70	Alarm- Relay Low Current THD L1	R/W	✓	✓						2535
5071-72	Alarm- Relay Low Current THD L2	R/W	✓	✓						2536
5073-74	Alarm- Relay Low Current THD L3	R/W	✓	✓						2537
5075-76	Alarm- Relay Low Current THD L0	R/W	✓	✓						2538
5079-80	Alarm- Relay Low Current TDD L1	R/W	✓	✓						2540
5081-82	Alarm- Relay Low Current TDD L2	R/W	✓	✓						2541
5083-84	Alarm- Relay Low Current TDD L3	R/W	✓	✓						2542
5085-86	Alarm- Relay Low Current TDD L0	R/W	✓	✓						2543
5089-90	Alarm- Relay Low Current KF L1	R/W	✓	✓						2545
5091-92	Alarm- Relay Low Current KF L2	R/W	✓	✓						2546
5093-94	Alarm- Relay Low Current KF L3	R/W	✓	✓						2547
5095-96	Alarm- Relay Low Current KF L0	R/W	✓	✓						2548
5213-14	Alarm- T.Tbl Voltage L1	R/W	✓	✓						2607
5215-16	Alarm- T.Tbl Voltage L2	R/W	✓	✓						2608
5217-18	Alarm- T.Tbl Voltage L3	R/W	✓	✓						2609
5219-20	Alarm- T.Tbl Voltage L1-2	R/W	✓	✓						2610
5221-22	Alarm- T.Tbl Voltage L2-3	R/W	✓	✓						2611
5223-24	Alarm- T.Tbl Voltage L3-1	R/W	✓	✓						2612
5227-28	Alarm- T.Tbl Current L1	R/W	✓	✓						2614
5229-30	Alarm- T.Tbl Current L2	R/W	✓	✓						2615
5231-32	Alarm- T.Tbl Current L3	R/W	✓	✓						2616
5233-34	Alarm- T.Tbl Current L0	R/W	✓	✓						2617

MODBUS Register	Field Description	Type	GR	GRC	TXT	LT	MC	LTE	LTC	ITEM # (UniArt\ Bacnet)
5237-38	Alarm- T.Tbl PF L1	R/W	✓	✓						2619
5239-40	Alarm- T.Tbl PF L2	R/W	✓	✓						2620
5241-42	Alarm- T.Tbl PF L3	R/W	✓	✓						2621
5243-44	Alarm- T.Tbl PF (L1-2-3)	R/W	✓	✓						2622
5253-54	Alarm- T.Tbl Voltage THD L1	R/W	✓	✓						2627
5255-56	Alarm- T.Tbl Voltage THD L2	R/W	✓	✓						2628
5257-58	Alarm- T.Tbl Voltage THD L3	R/W	✓	✓						2629
5269-70	Alarm- T.Tbl Current THD L1	R/W	✓	✓						2635
5271-72	Alarm- T.Tbl Current THD L2	R/W	✓	✓						2636
5273-74	Alarm- T.Tbl Current THD L3	R/W	✓	✓						2637
5275-76	Alarm- T.Tbl Current THD L0	R/W	✓	✓						2638
5279-80	Alarm- T.Tbl Current TDD L1	R/W	✓	✓						2640
5281-82	Alarm- T.Tbl Current TDD L2	R/W	✓	✓						2641
5283-84	Alarm- T.Tbl Current TDD L3	R/W	✓	✓						2642
5285-86	Alarm- T.Tbl Current TDD L0	R/W	✓	✓						2643
5289-90	Alarm- T.Tbl Current KF L1	R/W	✓	✓						2645
5291-92	Alarm- T.Tbl Current KF L2	R/W	✓	✓						2646
5293-94	Alarm- T.Tbl Current KF L3	R/W	✓	✓						2647
5295-96	Alarm- T.Tbl Current KF L0	R/W	✓	✓						2648
5401-2	Alarm- T.Tbl #1	R/W	✓	✓						2701
⇓	⇓	⇓								⇓
5431-32	Alarm- T.Tbl #16	R/W	✓	✓						2716

MODBUS Register	Field Description	Type	GR	GRC	TXT	LT	MC	LTE	LTC	ITEM # (UniArt\ Bacnet)
5601-2	TOU- Uruguay (Dbl) Low - From	R/W	✓	✓						2801
5603-4	TOU- Uruguay (Dbl) Low - To	R/W	✓	✓						2802
5605-6	TOU- Uruguay (Dbl) Low - From	R/W	✓	✓						2803
5607-8	TOU- Uruguay (Dbl) Low - To	R/W	✓	✓						2804
5609-10	TOU- Uruguay (Dbl) Med - From	R/W	✓	✓						2805
5611-12	TOU- Uruguay (Dbl) Med - To	R/W	✓	✓						2806
5613-14	TOU- Uruguay (Dbl) Med - From	R/W	✓	✓						2807
5615-16	TOU- Uruguay (Dbl) Med - To	R/W	✓	✓						2808
5617-18	TOU- Uruguay (Dbl) High - From	R/W	✓	✓						2809
5619-20	TOU- Uruguay (Dbl) High - To	R/W	✓	✓						2810
5621-22	TOU- Uruguay (Dbl) High - From	R/W	✓	✓						2811
5623-24	TOU- Uruguay (Dbl) High - To	R/W	✓	✓						2812
5625-26	TOU- Uruguay (Trpl) Low - From	R/W	✓	✓						2813
5627-28	TOU- Uruguay (Trpl) Low - To	R/W	✓	✓						2814
5629-30	TOU- Uruguay (Trpl) Low - From	R/W	✓	✓						2815
5631-32	TOU- Uruguay (Trpl) Low - To	R/W	✓	✓						2816
5633-34	TOU- Uruguay (Trpl) Med - From	R/W	✓	✓						2817
5635-36	TOU- Uruguay (Trpl) Med - To	R/W	✓	✓						2818
5637-38	TOU- Uruguay (Trpl) Med - From	R/W	✓	✓						2819
5639-40	TOU- Uruguay (Trpl) Med - To	R/W	✓	✓						2820
5641-42	TOU- Uruguay (Trpl) High - From	R/W	✓	✓						2821
5643-44	TOU- Uruguay (Trpl) High - To	R/W	✓	✓						2822
5645-46	TOU- Uruguay (Trpl) High - From	R/W	✓	✓						2823

MODBUS Register	Field Description	Type	GR	GRC	TXT	LT	MC	LTE	LTC	ITEM # (UniArt\ Bacnet)
5647-48	TOU- Uruguay (Trpl) High - To	R/W	✓	✓						2824
6001-2	Relay # 1 Force Start Time	R/W	✓	✓						3001
6003-4	Relay # 1 Force Stop Time	R/W	✓	✓						3002
6005-6	Relay # 1 Force Start Time	R/W	✓	✓						3003
6007-8	Relay # 1 Force Stop Time	R/W	✓	✓						3004
6009-10	Relay # 1 Force Start Time	R/W	✓	✓						3005
6011-12	Relay # 1 Force Stop Time	R/W	✓	✓						3006
6017-18	Relay # 2 Force Start Time	R/W	✓	✓						3009
6019-20	Relay # 2 Force Stop Time	R/W	✓	✓						3010
6021-22	Relay # 2 Force Start Time	R/W	✓	✓						3011
6023-24	Relay # 2 Force Stop Time	R/W	✓	✓						3012
6025-26	Relay # 2 Force Start Time	R/W	✓	✓						3013
6027-28	Relay # 2 Force Stop Time	R/W	✓	✓						3014
6033-34	Relay # 3 Force Start Time	R/W	✓	✓						3017
6035-36	Relay # 3 Force Stop Time	R/W	✓	✓						3018
6037-38	Relay # 3 Force Start Time	R/W	✓	✓						3019
6039-40	Relay # 3 Force Stop Time	R/W	✓	✓						3020
6041-42	Relay # 3 Force Start Time	R/W	✓	✓						3021
6043-44	Relay # 3 Force Stop Time	R/W	✓	✓						3022
6049-50	Flg To Clear SST At MidNight	R/W	✓	✓						3025

MODBUS Register	Field Description	Type	GR	GRC	TXT	LT	MC	LTE	LTC	ITEM # (UniArt\ Bacnet)
6061-62	Digital Out #1 (Status)	R	✓	✓						3031
6063-64	Digital Out #2 (Status)	R	✓	✓						3032
6065-66	Digital Out #3 (Status)	R	✓	✓						3033
6067-68	Digital Out #4 (Status)	R	✓	✓						3034
6101-2	TOU – January Type	R/W*	✓	✓		✓	✓		✓	3101
6103-4	TOU – February Type	R/W*	✓	✓		✓	✓		✓	3102
⇓	⇓	⇓								⇓
6123-24	TOU – December Type	R/W*	✓	✓		✓	✓		✓	3112
6125-26	TOU – Hour Details	R/W*	✓	✓		✓	✓		✓	3113
⇓	⇓	⇓								⇓
6655-56	TOU – Hour Details	R/W*	✓	✓		✓	✓		✓	3328
6799-0	Active Total Energy (KWh)	R		✓		✓	✓	✓		3400
6801-2	Reactive Total Energy (KVARh)	R		✓		✓	✓	✓		3401
6803-4	Apparent Total Energy (KVah)	R		✓		✓	✓	✓		3402
6805-6	Active Energy Line 1 (KWh-Import)	R		✓		✓	✓	✓		3403
6807-8	Active Energy Line 2 (KWh-Import)	R		✓		✓	✓	✓		3404
6809-10	Active Energy Line 3 (KWh-Import)	R		✓		✓	✓	✓		3405
6811-12	Reactive Energy Line 1 (KVARh-Import)	R		✓		✓	✓	✓		3406
6813-14	Reactive Energy Line 2 (KVARh-Import)	R		✓		✓	✓	✓		3407

MODBUS Register	Field Description	Type	GR	GRC	TXT	LT	MC	LTE	LTC	ITEM # (UniArt\ Bacnet)
6815-16	Reactive Energy Line 3 (KVARh-Import)	R		✓		✓	✓	✓		3408
6817-18	Apparant Energy Line 1 (KVAh-Import)	R		✓		✓	✓	✓		3409
6819-20	Apparant Energy Line 2 (KVAh-Import)	R		✓		✓	✓	✓		3410
6821-22	Apparant Energy Line 3 (KVAh-Import)	R		✓		✓	✓	✓		3411
6823-24	Active Energy Line 1 – Rate 1 – KWh (Imp)	R		✓		✓	✓			3412
6825-26	Active Energy Line 2 – Rate 1 – KWh (Imp)	R		✓		✓	✓			3413
6827-28	Active Energy Line 3 – Rate 1 – KWh (Imp)	R		✓		✓	✓			3414
6829-30	Active Energy Line 1 – Rate 2 – KWh (Imp)	R		✓		✓	✓			3415
6831-32	Active Energy Line 2 – Rate 2 – KWh (Imp)	R		✓		✓	✓			3416
6833-34	Active Energy Line 3 – Rate 2 – KWh (Imp)	R		✓		✓	✓			3417
6835-36	Active Energy Line 1 – Rate 3 – KWh (Imp)	R		✓		✓	✓			3418
6837-38	Active Energy Line 2 – Rate 3 – KWh (Imp)	R		✓		✓	✓			3419
6839-40	Active Energy Line 3 – Rate 3 – KWh (Imp)	R		✓		✓	✓			3420
6841-42	Active Energy Line 1+2+3 – Rate 1 – KWh (I)	R		✓		✓	✓			3421
6843-44	Active Energy Line 1+2+3 – Rate 2 – KWh (I)	R		✓		✓	✓			3422
6845-46	Active Energy Line 1+2+3 – Rate 3 – KWh (I)	R		✓		✓	✓			3423
6847-48	ReActive Energy Line 1 –Rate 1 – KVARh (Imp)	R		✓		✓	✓			3424
6849-50	ReActive Energy Line 2 –Rate 1 – KVARh (Imp)	R		✓		✓	✓			3425
6851-52	ReActive Energy Line 3 –Rate 1 – KVARh (Imp)	R		✓		✓	✓			3426
6853-54	ReActive Energy Line 1 –Rate 2 – KVARh (Imp)	R		✓		✓	✓			3427
6855-56	ReActive Energy Line 2 –Rate 2 – KVARh (Imp)	R		✓		✓	✓			3428
6857-58	ReActive Energy Line 3 –Rate 2 – KVARh (Imp)	R		✓		✓	✓			3429
6859-60	ReActive Energy Line 1 –Rate 3 – KVARh (Imp)	R		✓		✓	✓			3430
6861-62	ReActive Energy Line 2 –Rate 3 – KVARh (Imp)	R		✓		✓	✓			3431

MODBUS Register	Field Description	Type	GR	GRC	TXT	LT	MC	LTE	LTC	ITEM # (UniArt\ Bacnet)
6863-64	ReActive Energy Line 3 –Rate 3 – KVARh (Imp)	R		✓		✓	✓			3432
6865-66	ReActive E. Line 1+2+3 –Rate 1 – KVARh (I)	R		✓		✓	✓			3433
6867-68	ReActive E. Line 1+2+3 –Rate 2 – KVARh (I)	R		✓		✓	✓			3434
6869-70	ReActive E. Line 1+2+3 –Rate 3 – KVARh (I)	R		✓		✓	✓			3435
6879-80	Active Total Energy (Wh) -Meter B	R				✓				3440
6881-82	Reactive Total Energy (VARh) -Meter B	R				✓				3441
6883-84	Apparent Total Energy (Vah) -Meter B	R				✓				3442
6919-20	Active Energy Line 1 (W-Import) -Meter B	R				✓				3460
6921-22	Active Energy Line 2 (W-Import) -Meter B	R				✓				3461
6923-24	Active Energy Line 3 (W-Import) -Meter B	R				✓				3462
6925-26	Reactive Energy Line 1 (VAR-Import) -Meter B	R				✓				3463
6927-28	Reactive Energy Line 2 (VAR-Import) -Meter B	R				✓				3464
6929-30	Reactive Energy Line 3 (VAR-Import) -Meter B	R				✓				3465
6931-32	Apparant Energy Line 1 (VA-Import) -Meter B	R				✓				3466
6933-34	Apparant Energy Line 2 (VA-Import) -Meter B	R				✓				3467
6935-36	Apparant Energy Line 3 (VA-Import) -Meter B	R				✓				3468
6937-38	Active Energy Line 1 – Rate 1 (Imp) -Meter B	R				✓				3469
6939-40	Active Energy Line 2 – Rate 1 (Imp) -Meter B	R				✓				3470
6941-42	Active Energy Line 3 – Rate 1 (Imp) -Meter B	R				✓				3471
6943-44	Active Energy Line 1 – Rate 2 (Imp) -Meter B	R				✓				3472
6945-46	Active Energy Line 2 – Rate 2 (Imp) -Meter B	R				✓				3473
6947-48	Active Energy Line 3 – Rate 2 (Imp) -Meter B	R				✓				3474
6949-50	Active Energy Line 1 – Rate 3 (Imp) -Meter B	R				✓				3475

MODBUS Register	Field Description	Type	GR	GRC	TXT	LT	MC	LTE	LTC	ITEM # (UniArt\ Bacnet)
6951-52	Active Energy Line 2 – Rate 3 (Imp) -Meter B	R				✓				3476
6953-54	Active Energy Line 3 – Rate 3 (Imp) -Meter B	R				✓				3477
7001-2	33 Harmonics for Volts **Line 1**	R	✓	✓						3501
7003-4	34 Harmonics for Volts **Line 1**	R	✓	✓						3502
⇓	⇓	⇓								⇓
7061-62	63 Harmonics for Volts **Line 1**	R	✓	✓						3531
7063-64	64 Harmonics for Volts **Line 1**	R	✓	✓						3532
7065-66	33 Harmonics for Volts **Line 2**	R	✓	✓						3533
7067-68	34 Harmonics for Volts **Line 2**	R	✓	✓						3534
⇓	⇓	⇓								⇓
7125-26	63 Harmonics for Volts **Line 2**	R	✓	✓						3563
7127-28	64 Harmonics for Volts **Line 2**	R	✓	✓						3564
7129-30	33 Harmonic for Volts **Line 3**	R	✓	✓						3565
7131-32	34 Harmonics for Volts **Line 3**	R	✓	✓						3566
⇓	⇓	⇓								⇓
7189-90	63 Harmonics for Vots **Line 3**	R	✓	✓						3595
7191-92	64 Harmonics for Volts **Line 3**	R	✓	✓						3596
7193-94	33 Harmonics for Current **Line 1**	R	✓	✓						3597
7195-96	34 Harmonics for Current **Line 1**	R	✓	✓						3598
⇓	⇓	⇓								⇓
7253-54	63 Harmonics for Current **Line 1**	R	✓	✓						3627

MODBUS Register	Field Description	Type	GR	GRC	TXT	LT	MC	LTE	LTC	ITEM # (UniArt\ Bacnet)
7255-56	64 Harmonics for Current **Line 1**	R	✓	✓						3628
7257-58	33 Harmonics for Current **Line 2**	R	✓	✓						3629
7259-60	34 Harmonics for Current **Line 2**	R	✓	✓						3630
⇓	⇓	⇓								⇓
7317-18	63 Harmonics for Current **line 2**	R	✓	✓						3659
7319-20	64 Harmonicsfor Current **Line 2**	R	✓	✓						3660
7321-22	33 Harmonics for Current **Line 3**	R	✓	✓						3661
7323-24	34 Harmonics for Current **Line 3**	R	✓	✓						3662
⇓	⇓	⇓								⇓
7381-82	63 Harmonics for Current **Line 3**	R	✓	✓						3691
7383-84	64 Harmonics for Current **Line 3**	R	✓	✓						3692

Table 1-4 **Registers Table**

1.3 — UniArt Alarms for *ElNet* Multimeter

The ***ElNet*** Energy & Power Multimeter is capable of working with UNIART software. When working with UNIART software user can get specific alarms from the unit as described in Table 1-5.

Alarm #	Description	Phase	GR	LT	MC	PICO
1	Low Voltage (Line To N)	1	✓			
2	High Voltage (Line To N)	1	✓			
3	Low Voltage (Line To N)	2	✓			
4	High Voltage (Line To N)	2	✓			
5	Low Voltage (Line To N)	3	✓			
6	High Voltage (Line To N)	3	✓			
7	Low Voltage (Line To Line)	1-2	✓			
8	High Voltage (Line To Line)	1-2	✓			
9	Low Voltage (Line To Line)	2-3	✓			
10	High Voltage (Line To Line)	2-3	✓			
11	Low Voltage (Line To Line)	3-1	✓			
12	High Voltage (Line To Line)	3-1	✓			
13	Low Current	1	✓			
14	High Current	1	✓			
15	Low Current	2	✓			
16	High Current	2	✓			
17	Low Current	3	✓			
18	High Current	3	✓			
19	Low Current	L0 (N)	✓			
20	High Current	L0 (N)	✓			
21	Low Power Factor	1	✓			
22	High Power Factor	1	✓			
23	Low Power Factor	2	✓			

Alarm #	Description	Phase	GR	LT	MC	PICO
24	High Power Factor	2	✓			
25	Low Power Factor	3	✓			
26	High Power Factor	3	✓			
27	Low Power Factor	1+2+3	✓			
28	High Power Factor	1+2+3	✓			
39	High Power Period (Item 262)	1+2+3	✓			
40	Low Power Period (Item 263)	1+2+3	✓			
41	Low Voltage THD	1	✓			
42	High Voltage THD	1	✓			
43	Low Voltage THD	2	✓			
43	High Voltage THD	2	✓			
45	Low Voltage THD	3	✓			
46	High Voltage THD	3	✓			
47	Low Current THD	1	✓			
48	High Current THD	1	✓			
49	Low Current THD	2	✓			
50	High Current THD	2	✓			
51	Low Current THD	3	✓			
52	High Current THD	3	✓			
53	Low Current THD	L0 (N)	✓			
54	High Current THD	L0 (N)	✓			
55	Low Current TDD	1	✓			
56	High Current TDD	1	✓			
57	Low Current TDD	2	✓			

Alarm #	Description	Phase	GR	LT	MC	PICO
58	High Current TDD	2	✓			
59	Low Current TDD	3	✓			
60	High Current TDD	3	✓			
61	Low Current TDD	L0 (N)	✓			
62	High Current TDD	L0 (N)	✓			
63	Low Current K.Factor	1	✓			
64	High Current K.Factor	1	✓			
65	Low Current K.Factor	2	✓			
66	High Current K.Factor	2	✓			
67	Low Current K.Factor	3	✓			
68	High Current K.Factor	3	✓			
69	Low Current K.Factor	L0 (N)	✓			
70	High Current K.Factor	L0 (N)	✓			
81	U.Alarm – High Current	1		✓		
82	U.Alarm – High Current	2		✓		
83	U.Alarm – High Current	3		✓		
84	U.Alarm – High Voltage	1		✓		
85	U.Alarm – High Voltage	2		✓		
86	U.Alarm – High Voltage	3		✓		
87	U.Alarm – Low Voltage	1		✓		
88	U.Alarm – Low Voltage	2		✓		
89	U.Alarm – Low Voltage	3		✓		
90	U.Alarm – Low PF	1+2+3		✓		
91	U.Alarm – High V.THD	1+2+3		✓		

Alarm #	Description	Phase	GR	LT	MC	PICO
92	U.Alarm – High I.THD	1+2+3		✓		

Table 1-5 **Alarm Table**

What's New?

24.10.2006 : Add Registers 151-157 (Time & Date)
23.01.2007 : Add PFC Registers 121-146
14.02.2007 : Add Month Energy 2001-2012
27.02.2007 : Add Export Energy 660-692
20.03.2007 : Add Reactive Energy 269-280
21.03.2007 : Add Month Energy 2001-2108
03.05.2007 : Add Registers 30-33
24.05.2007 : Add Summer Clock Registers 1921-1980
19.06.2007 : Add Current Phase Order - Registers 291-294 (LT-0.58, Txt–0.47, Gr-1.09)
09.07.2007 : Add Demo Mode - Registers 95
07.08.2007 : Add Rate Registers (59)
21.08.2007 : Add Eprom Revision (94)
07.11.2007 : Add Note About ElNet Txt Registers (System B)
09.11.2007 : Add Clock Calibration (159)
18.05.2008 : Add Alarms Parameters (2201-2700)
06.07.2008 : Add Taoz Type (Par 39)
20.08.2008 : Add Virtual Pulse & Swap Float Mode (281-284)
05.09.2008 : Add Float Format (Item 255) + Exp Total (Item 693-695)
19.09.2008 : Add Digital In (Gr) (Item 191-194)
29.10.2008 : Add Export Energy 660-692 (LT)
03.12.2008 : Add Eng Units To Some Registers
05.03.2009 : Add Period Alarm (Items 260-263)
17.03.2009 : Adjust Items 107-114
20.03.2009 : Add TOU Uruguay (Items 2801-2824)
31.03.2009 : Add Force Relay (Items 3001-3022)
01.06.2009 : Add D.Out Status (Items 3031-3034)
19.06.2009 : Add Current Demand To LT & PFC
24.06.2009 : Add Current Demand Reset (Item 117)
18.09.2009 : Add LTE Registers
23.09.2009 : Add Demand Register (Item 631-646)
16.10.2009 : Add Web Authentication (Item 198)
25.10.2009 : Add LT Reactive (Item 269-280)
05.11.2009 : Add LTE - THD Values
01.03.2010 : Add LT –Demand THD Values (2141-2157)
08.03.2010 : Add GR –KFactor (167-170)
31.05.2010 : Add MC
06.06.2010 : Add Temp Sensor (190)
22.07.2010 : Add Modbus Response Delay (290)
01.09.2010 : Add TOU Registers (3101-3328)
06.06.2010 : Add Energy in KW (3400-3435)
15.06.2010 : Add Energy in KW (3400-3411) in LTE
08.09.2011 : Add Total Q For C & L Mode (285 & 286)
12.09.2011 : Add Meter B (3440 & 3477)
10.11.2011 : Add Fast Trend Cycle (GR) (199)
23.11.2011 : Add Long Wave Events (PQ) (650-654)
10.12.2011 : Update Alarm Table