ANR-PRF **COMMUNICATION PROTOCOL**

ANR MULTIFUNCTION ANALYZER PROFIBUS DP-V0

PROFIBUS AND ANR-PRF

Profibus-DP is a multi-master systems. In the networks it's possible to have up to 126 devices on the same bus.
In profibus-DP networks, the interchange of data between peripheral modules and the master is made automatically by the profibus controller, which 'virtualise' the data exchange memory of the DP devices in the memory of the master.

ANR-PRF Address Setting
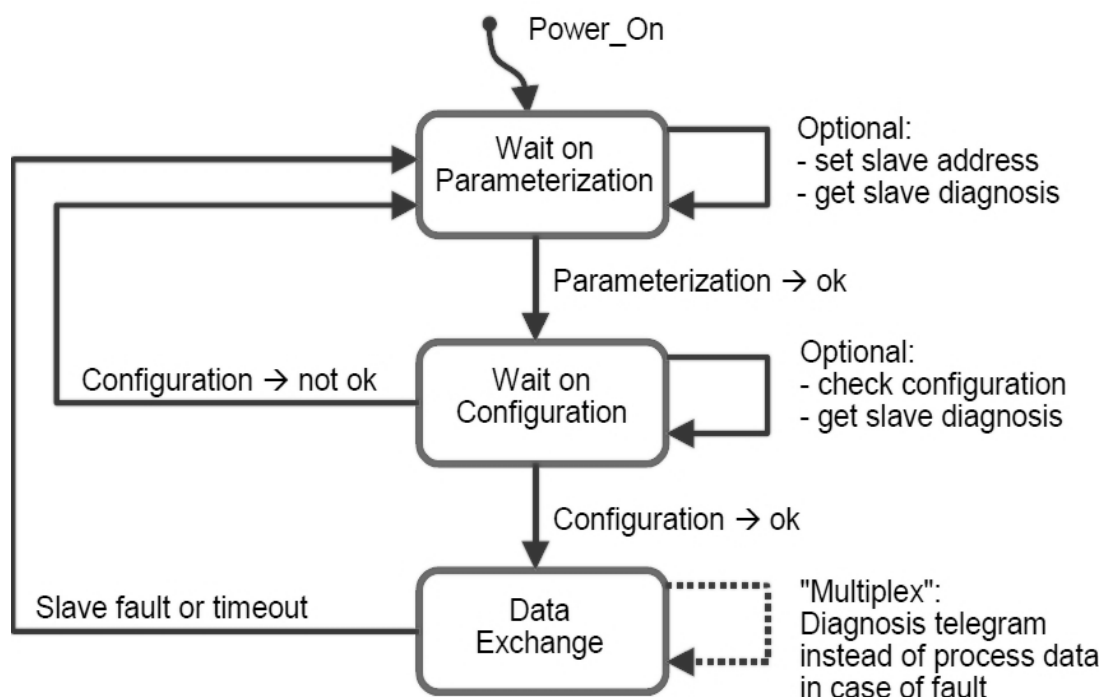
See ANR User Manual (only display setup)

ANR-PRF Baudrate Supported

The ANR-PRF supported the following communication baud rate:
- **9,6**   **Kbit/s**
- **19.2**   **Kbit/s**
- **45,45** **Kbit/s**
- **93,75** **Kbit/s**
- **187.5** **Kbit/s**
- **500**   **Kbit/s**
- **1.5**   **Mbit/s**
- **3**   **Mbit/s**

The ANR-PRF detect the baud rate network automatically.

## Example of Profibus Parameterization and Configuration Sequence:

Data exchange handshake from Master to ANR-PRF:

1) The Master place in output memory the indexes (or indexes + values)
2) Data are transferred from output memory of the master to input memory of the ANR-PRF slave
3) ANR-PRF read the indexes send by the master and write on its output memory area the data (measures) requested
4) Measures are transferred from output data of the ANR-PRF to profibus master input memory area.
5) The application program, present in the master profibus, read the data from input memory and show the measures to the user
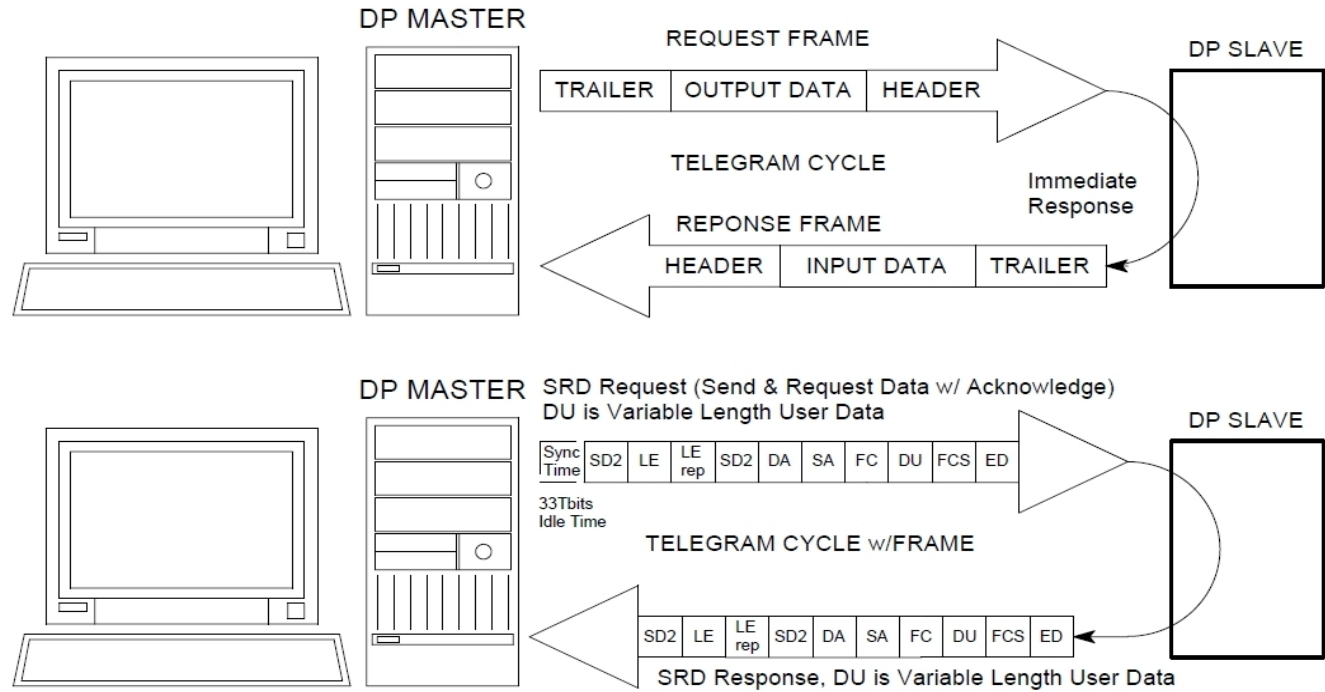
Format Message - Data Exchange
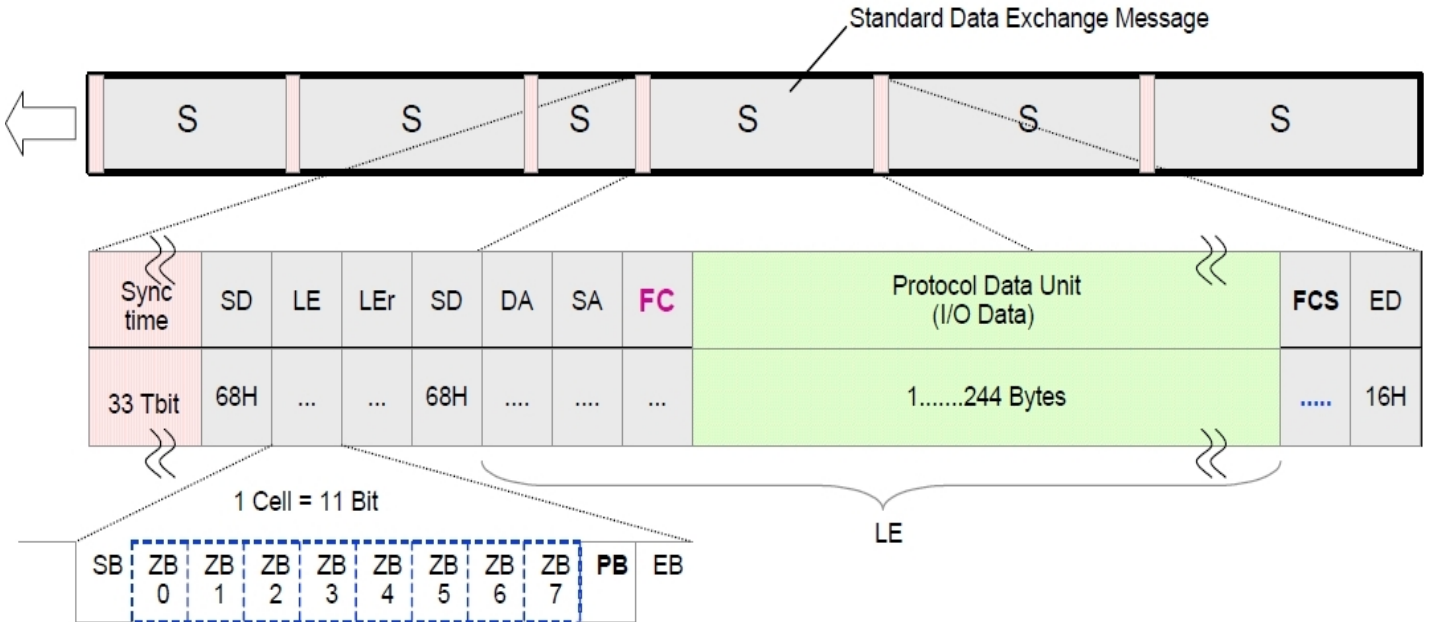
Tbit	= Clock-Bit = 1 / Baudrate	Data Unit	= I/O Data, max. 244 Bytes
SD	= Start Delimiter (here SD2, var. data length)	FCS	= Frame Checking Sequence (across data within LE)
LE	= Length of Process Data		
LEr	= Repetition of Length; no check in FCS	ED	= End Delimiter
DA	= Destination Address	SB	= Start-Bit
SA	= Source Address	ZB0...7	= Character-Bit
FC	= **Frame Control** (Message type)	PB	= (even) Parity Bit
		EB	= Stop-Bit

Communication Structure ANR-PRF:

The communication with the instrument is projected "in Module". The input (master) module is 16 byte long and the output (master) module is 16 byte long. Each "write" module allow to send one index (see Read Commands Table) corresponding at the measure that it must read from master module (input). If it sent the index value in the *first master* output module the read value will be return in the *first master input module*, if it sent the index value in the *second master output module* the read value will be return in the *second master input module*, etc.

<div align="center">

Master Output ***Master Input***

</div>

Write "Master Output Module 1" in the 1° Write Module	▸	*Read "Master Input Module 1" in the 1° Read Module*
Write "Master Output Module 2" in the 2° Write Module	▸	*Read "Master Input Module 2" in the 2° Read Module*
Write "Master Output Module n" in the n° Write Module	▸	*Read "Master Input Module n" in the n° Read Module*

<div align="center">
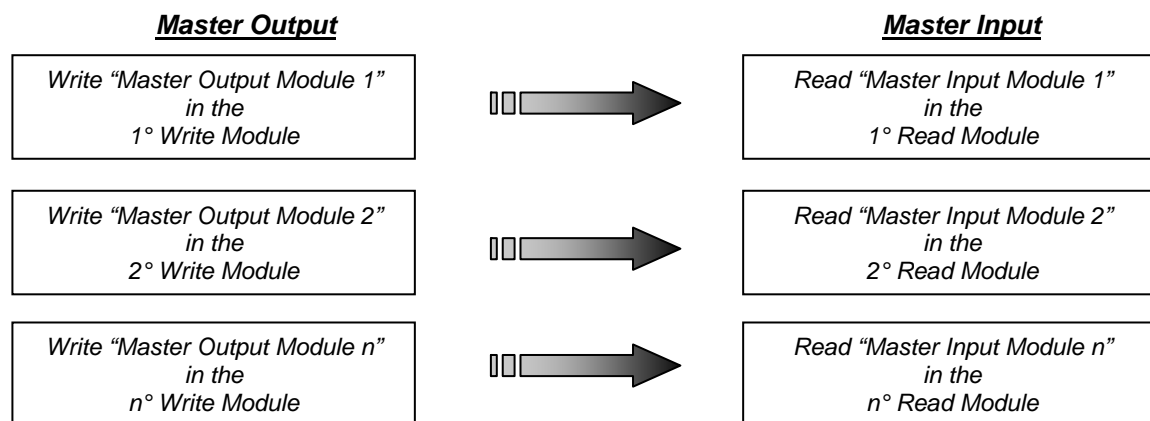
Comunication Structure Example

</div>

This structure allow to change in "real time" order and type of measure to read from ANR-PRF instrument .
Each Read Module is formed by **16 Byte / 8 Word** (it's possible to read max 15 module at the same time) and the Write Module is format by **16 Byte / 8 Word** (it's possible to write max 15 module at the same time).

*WARNING: Before read the measures (***Master Input Module***), the Master must send the indexes corresponding (***Master Output Module***). From Firmware V01r01 If you don't send any indexes the ANR-PRF will be return the first 15 measures.*

WARNING: If it send a only wrong Index or Parameter the instrument won't return any value until all Indexes and Parameters will be corrected. The ANR-PRF will produce a Diagnostic Message for notify the error presence.

For example if you send:

n° Write Module	Index Value	Measure to Read	n° Read Module	Measure Value
1	0x0002	PHASE VOLTAGE L_{1-N}	1	Long Value (16 byte)
2	0x0006	LINE TO LINE VOLTAGE L_{2-3}	2	Long Value (16 byte)
3	0x0001	3-PHASE SYSTEM VOLTAGE	3	Long Value (16 byte)
4	0x0008	3-PHASE SYSTEM CURRENT	4	Long Value (16 byte)

This is the Write Commands Structure for Read the measures.

| N° Module	N° Measure	Measure	Command Type	Used Byte
RESERVED	RESERVED	RESERVED	RESERVED	1° - 2° Byte
Index 1	0x0001	3-PHASE SYSTEM VOLTAGE	Read	3° - 4° Byte
Parameter 1p1	xxxx	Not Necessary		5° - 6° Byte
Parameter 1p2	xxxx	Not Necessary		7° - 8° Byte
Parameter 1p3	xxxx	Not Necessary		9° - 10° Byte
Parameter 1p4	xxxx	Not Necessary		11° - 12° Byte
Parameter 1p5	xxxx	Not Necessary		13° - 14° Byte
Parameter 1p6	xxxx	Not Necessary		15° - 16° Byte
Parameter 1p7	xxxx	Not Necessary		17° - 18° Byte
Index 2	0x0002	PHASE VOLTAGE L1-N	Read	19° - 20° Byte
Parameter 2p1	xxxx	Not Necessary		21° - 22° Byte
Parameter 2p2	xxxx	Not Necessary		23° - 24° Byte
Parameter 2p3	xxxx	Not Necessary		25° - 26° Byte
Parameter 2p4	xxxx	Not Necessary		27° - 28° Byte
Parameter 2p5	xxxx	Not Necessary		29° - 30° Byte
Parameter 2p6	xxxx	Not Necessary		31° - 32° Byte
Parameter 2p7	xxxx	Not Necessary		33° - 34° Byte

GSD File

3 GSD files are supplied with the ANR-PRF instrument:
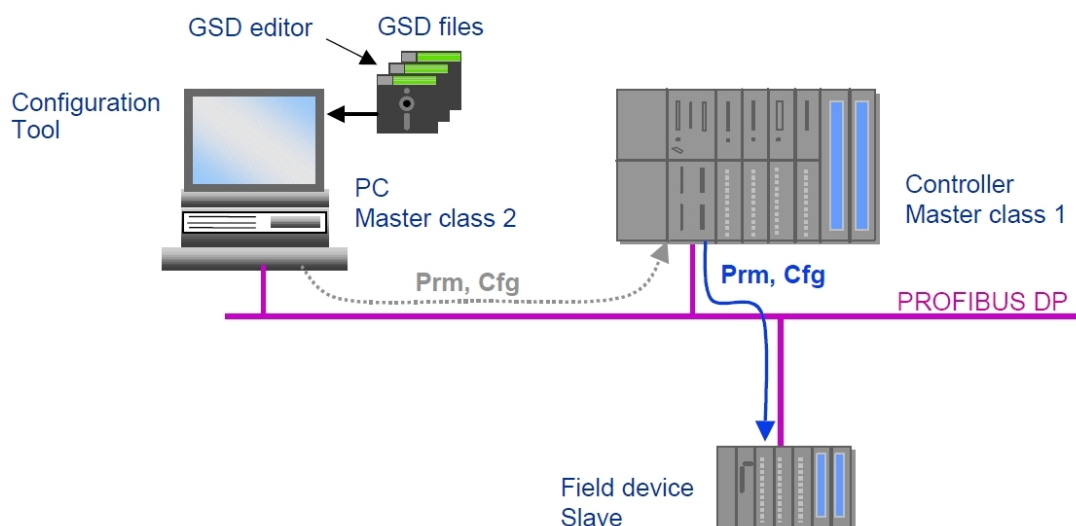
GSD Name	N° Input Byte	N° Input Module	N° Output Byte	N° Input Module	N° Tot Module
ANRPRF	242 Byte	15	242 Byte	15	31

The GSD file designed for improve the input/output space and speed on profibus master, because it is possible to insert from 1 to 15 module for input and from 1 to 15 module to output.
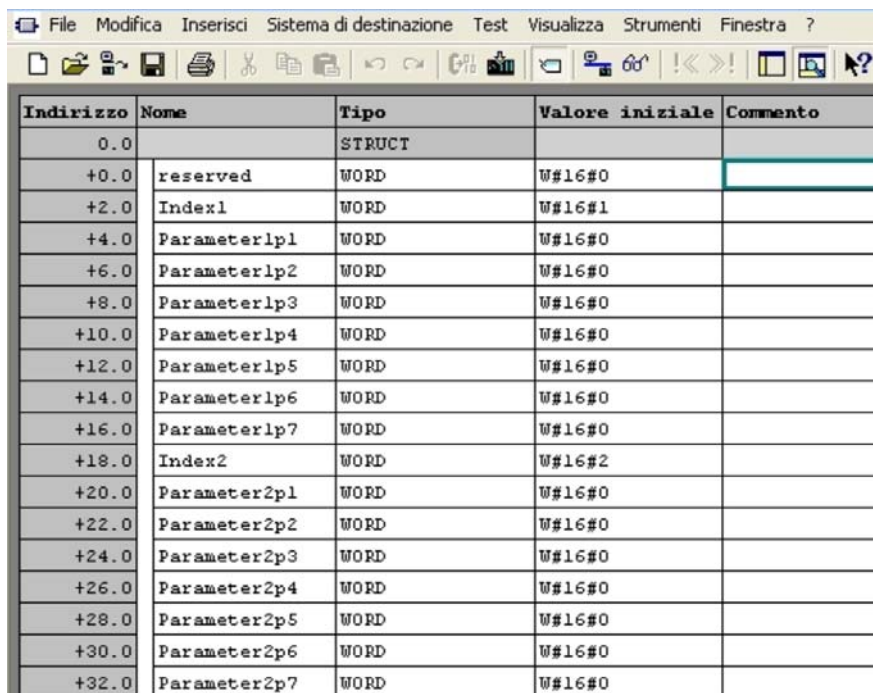
Flow Chart Configuration ANR-PRF
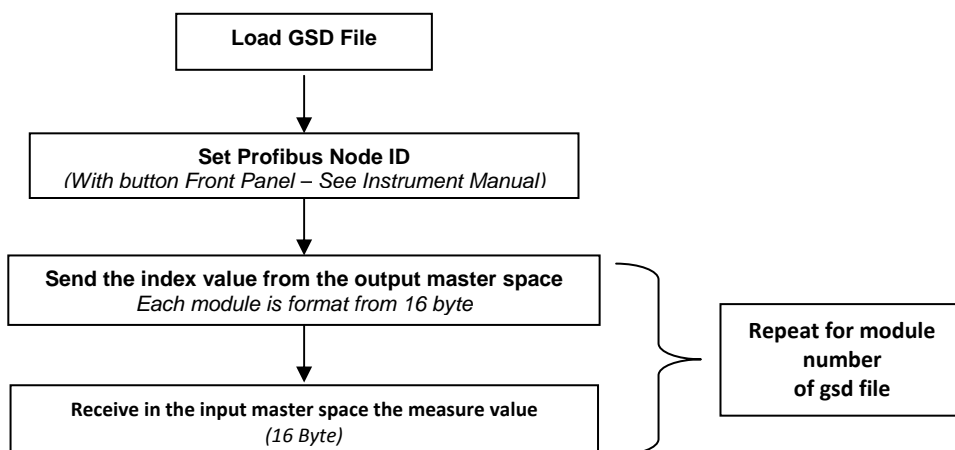
In the Master Program:

1) Load GSD File.
2) Setting the ANR-PRF Node Id in you project (Node ID on the instrument is setting with frontal panel).
3) Insert the Module that it necessary for application (if not insert automatically from program during loading gsd file).
4) Write the module index (corresponding at the measure that must read) in the master output space.
5) Receive in the master the measure value (first module if you send the first module in master output).
6) Repeat point 4 and 5 for all modules.

For example see the following figure (Master Output – **DB2** Step 7 File):

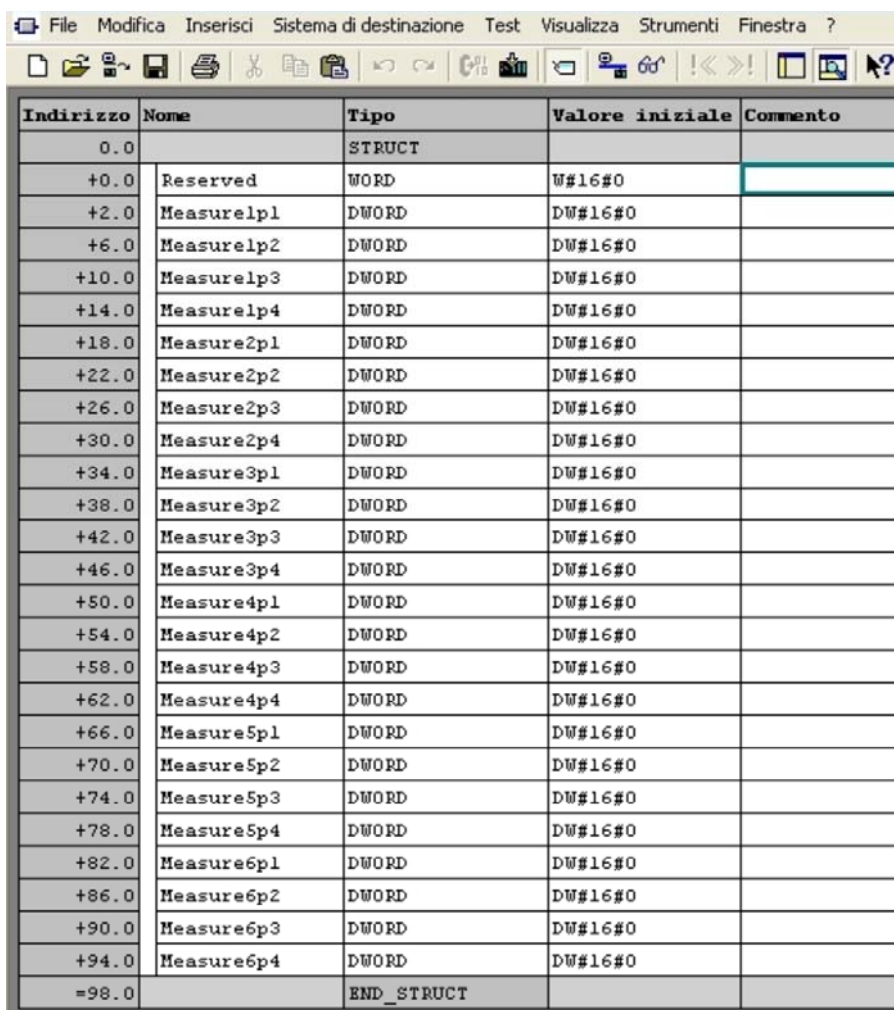| Indirizzo	Nome	Tipo	Valore iniziale	Commento
0.0		STRUCT		
+0.0	reserved	WORD	W#16#0	
+2.0	Index1	WORD	W#16#1	
+4.0	Parameter1p1	WORD	W#16#0	
+6.0	Parameter1p2	WORD	W#16#0	
+8.0	Parameter1p3	WORD	W#16#0	
+10.0	Parameter1p4	WORD	W#16#0	
+12.0	Parameter1p5	WORD	W#16#0	
+14.0	Parameter1p6	WORD	W#16#0	
+16.0	Parameter1p7	WORD	W#16#0	
+18.0	Index2	WORD	W#16#2	
+20.0	Parameter2p1	WORD	W#16#0	
+22.0	Parameter2p2	WORD	W#16#0	
+24.0	Parameter2p3	WORD	W#16#0	
+26.0	Parameter2p4	WORD	W#16#0	
+28.0	Parameter2p5	WORD	W#16#0	
+30.0	Parameter2p6	WORD	W#16#0	
+32.0	Parameter2p7	WORD	W#16#0	

Fig.1: File DB2 (Step7)

For each measure to read it's necessary to send the corresponding index (the first 2 bytes for each module). In this example are read the first three measures, but it's possible to read any measure (max 15) in any order.
In this way it's possible to read the measures in the Master input space (**DB1** Step 7 File).

Indirizzo	Nome	Tipo	Valore iniziale	Commento
0.0		STRUCT		
+0.0	Reserved	WORD	W#16#0	
+2.0	Measure1p1	DWORD	DW#16#0	
+6.0	Measure1p2	DWORD	DW#16#0	
+10.0	Measure1p3	DWORD	DW#16#0	
+14.0	Measure1p4	DWORD	DW#16#0	
+18.0	Measure2p1	DWORD	DW#16#0	
+22.0	Measure2p2	DWORD	DW#16#0	
+26.0	Measure2p3	DWORD	DW#16#0	
+30.0	Measure2p4	DWORD	DW#16#0	
+34.0	Measure3p1	DWORD	DW#16#0	
+38.0	Measure3p2	DWORD	DW#16#0	
+42.0	Measure3p3	DWORD	DW#16#0	
+46.0	Measure3p4	DWORD	DW#16#0	
+50.0	Measure4p1	DWORD	DW#16#0	
+54.0	Measure4p2	DWORD	DW#16#0	
+58.0	Measure4p3	DWORD	DW#16#0	
+62.0	Measure4p4	DWORD	DW#16#0	
+66.0	Measure5p1	DWORD	DW#16#0	
+70.0	Measure5p2	DWORD	DW#16#0	
+74.0	Measure5p3	DWORD	DW#16#0	
+78.0	Measure5p4	DWORD	DW#16#0	
+82.0	Measure6p1	DWORD	DW#16#0	
+86.0	Measure6p2	DWORD	DW#16#0	
+90.0	Measure6p3	DWORD	DW#16#0	
+94.0	Measure6p4	DWORD	DW#16#0	
=98.0		END_STRUCT		

Fig.2: File DB1 (Step7)

N° Module	Master Input
RESERVED	1°- 2° Byte
Measure1p1	3°-4°- 5°-6° Byte
Measure1p2	7°- 8°- 9°-10°Byte
Measure1p3	11°-12 -13°-14° Byte
Measure1p4	15°-16 -17°-18° Byte
Measure2p1	19°-20 -21°-22° Byte
Measure2p2	23°-24 -25°-26° Byte
Measure2p3	27°-28 -29°-30° Byte
Measure2p4	31°-32 -33°-34° Byte
.....	.....

Byte Order for the Master Input

If, for example, it sent the index value 2 ,3 and 4 (Phase Voltage L1-N, Phase Voltage L2-N, Phase Voltage L3-N) in the Index2,Index3 and Index4 positions the response will be long 4 word. So, must be valid only 8 byte (Measure2p4 - long):

18.0	Measure2p1	DWORD	DW#16#0	DW#16#00000000	}	Not Used for Phase Voltage Value
22.0	Measure2p2	DWORD	DW#16#0	DW#16#00000000		
26.0	Measure2p3	DWORD	DW#16#0	DW#16#00000000	}	0x00000000000369A8 - 223656mV
30.0	Measure2p4	DWORD	DW#16#0	DW#16#000369A8		
34.0	Measure3p1	DWORD	DW#16#0	DW#16#00000000	}	Not Used for Phase Voltage Value
38.0	Measure3p2	DWORD	DW#16#0	DW#16#00000000		
42.0	Measure3p3	DWORD	DW#16#0	DW#16#00000000	}	0x0000000000036795 - 223125mV
46.0	Measure3p4	DWORD	DW#16#0	DW#16#00036795		
50.0	Measure4p1	DWORD	DW#16#0	DW#16#00000000	}	Not Used for Phase Voltage Value
54.0	Measure4p2	DWORD	DW#16#0	DW#16#00000000		
58.0	Measure4p3	DWORD	DW#16#0	DW#16#00000000	}	0x0000000000036943 - 223555mV
62.0	Measure4p4	DWORD	DW#16#0	DW#16#00036943		

In the same way the master can write the parameter. The master must send the corresponding indexes, followed by the seven parameters (Index [2 byte] + Parameter1p1 [2 byte] + … + Parameter1p7 [2 byte]).

This is the Write Commands Structure for Write the measure.

N° Module	N° Measure	Measure	Command Type	Used Byte
RESERVED	RESERVED	RESERVED	RESERVED	1° - 2° Byte
Index 1	xxxx	Write Index	Write	3° - 4° Byte
Parameter 1p1	xxxx	Parameter	-	5° - 6° Byte
Parameter 1p2	xxxx	Parameter	-	7° - 8° Byte
Parameter 1p3	xxxx	Parameter	-	9° - 10° Byte
Parameter 1p4	xxxx	Parameter	-	11° - 12° Byte
Parameter 1p5	xxxx	Parameter	-	13° - 14° Byte
Parameter 1p6	xxxx	Parameter	-	15° - 16° Byte
Parameter 1p7	xxxx	Parameter	-	17° - 18° Byte

Write Example:

+2.0	Index1	WORD	W#16#7D2
+4.0	Parameter1p1	WORD	W#16#0
+6.0	Parameter1p2	WORD	W#16#0
+8.0	Parameter1p3	WORD	W#16#0
+10.0	Parameter1p4	WORD	W#16#0
+12.0	Parameter1p5	WORD	W#16#9
+14.0	Parameter1p6	WORD	W#16#1
+16.0	Parameter1p7	WORD	W#16#1

Date Index 2002 Dec

Not Used for Phase Voltage Value

Year [YY]

Month [MM]

Day [DD]

Fig.4: Detail - Example Date Setting [01/01/2009]

N° Module	N° Measure	Measure	Command Type	Used Byte
RESERVED	RESERVED	RESERVED	RESERVED	1° - 2° Byte
Index 1	0x07D2 (2002 Dec)	DATE	Write	3° - 4° Byte
Parameter 1p1	xxxx	Not Used	-	5° - 6° Byte
Parameter 1p2	xxxx	Not Used	-	7° - 8° Byte
Parameter 1p3	xxxx	Not Used	-	9° - 10° Byte
Parameter 1p4	xxxx	Not Used	-	11° - 12° Byte
Parameter 1p5	0x0009	YY	-	13° - 14° Byte
Parameter 1p6	0x0001	MM	-	15° - 16° Byte
Parameter 1p7	0x0001	DD	-	17° - 18° Byte

NOTE: For all measures it is valid the previous setting order and data position.

Index Measures Table

ANR-PRF Indexes corresponding at the measures.

READ COMMANDS

Index [Dec]	Word	Description	M.U.	Type
1	4	3-PHASE SYSTEM VOLTAGE	[mV]	(Uns.) MSB=0
2	4	PHASE VOLTAGE L_{1-N}	[mV]	(Unsigned)
3	4	PHASE VOLTAGE L_{2-N}	[mV]	(Unsigned)
4	4	PHASE VOLTAGE L_{3-N}	[mV]	(Unsigned)
5	4	LINE VOLTAGE L_{1-2}	[mV]	(Unsigned)
6	4	LINE VOLTAGE L_{2-3}	[mV]	(Unsigned)
7	4	LINE VOLTAGE L_{3-1}	[mV]	(Unsigned)
8	4	3-PHASE SYSTEM CURRENT	[mA]	(Signed) MSB=1
9	4	LINE CURRENT L_1	[mA]	(Signed)
10	4	LINE CURRENT L_2	[mA]	(Signed)
11	4	LINE CURRENT L_3	[mA]	(Signed)
12	4	3-PHASE SYS. POWER FACTOR	[-]	(Signed)
13	4	POWER FACTOR L_1	[-]	(Signed)
14	4	POWER FACTOR L_2	[-]	(Signed)
15	4	POWER FACTOR L_3	[-]	(Signed)
16	4	3-PHASE SYSTEM COS∅	[-]	(Signed)
17	4	PHASE COS$\varnothing_1$	[-]	(Signed)
18	4	PHASE COS$\varnothing_2$	[-]	(Signed)
19	4	PHASE COS$\varnothing_3$	[-]	(Signed)
20	4	3-PHASE S. APPARENT POWER	[mVA]	(Signed)
21	4	APPARENT POWER L_1	[mVA]	(Signed)
22	4	APPARENT POWER L_2	[mVA]	(Signed)
23	4	APPARENT POWER L_3	[mVA]	(Signed)
24	4	3-PHASE SYS. ACTIVE POWER	[mW]	(Signed)
25	4	ACTIVE POWER L_1	[mW]	(Signed)
26	4	ACTIVE POWER L_2	[mW]	(Signed)
27	4	ACTIVE POWER L_3	[mW]	(Signed)
28	4	3-PHASE S. REACTIVE POWER	[mVAR]	(Signed)
29	4	REACTIVE POWER L_1	[mVAR]	(Signed)
30	4	REACTIVE POWER L_2	[mVAR]	(Signed)
31	4	REACTIVE POWER L_3	[mVAR]	(Signed)
32	4	3-PHASE SYS. ACTIVE ENERGY+	[Wh]	(Unsigned)
33	4	3-PHASE S. REACTIVE ENERGY+	[VARh]	(Unsigned)
34	4	3-PHASE SYS.ACTIVE EN.	[Wh]	(Unsigned)
35	4	3-PHASE SYS.REACT.EN.	[VARh]	(Unsigned)
36	4	FREQUENCY	[mHz]	(Unsigned)
37	4	THD VOLTAGE L_1	[m%]	(Unsigned)
38	4	THD VOLTAGE L_2	[m%]	(Unsigned)
39	4	THD VOLTAGE L_3	[m%]	(Unsigned)
40	4	THD CURRENT L_1	[m%]	(Unsigned)
41	4	THD CURRENT L_2	[m%]	(Unsigned)
42	4	THD CURRENT L_3	[m%]	(Unsigned)
43	4	3-PHASE AVG. ACTIVE POWER	[mW]	(Unsigned)
44	4	3-PHASE AVERAGE CURRENT	[mA]	(Unsigned)
45	4	TEMPERATURE	[m°C]	(Signed)
46	4	NEUTRAL CURRENT	[mA]	(Signed)
47	4	3 PHASE AVG. REACTIVE POWER	[mVAR]	(Signed)
48	4	AVERAGE LINE CURRENT L_1	[mA]	(Signed)
49	4	AVERAGE LINE CURRENT L_2	[mA]	(Signed)
50	4	AVERAGE LINE CURRENT L_3	[mA]	(Signed)
51	4	MAX AVERAGE 3-PH. CURRENT	[mA]	(Signed)
52	4	MAX AVERAGE LINE CURRENT L_1	[mA]	(Signed)
53	4	MAX AVERAGE LINE CURRENT L_2	[mA]	(Signed)
54	4	MAX AVERAGE LINE CURRENT L_3	[mA]	(Signed)
55	4	MAX AVG NEUTRAL CURRENT L_N	[mA]	(Signed)
56	4	AVERAGE NEUTRAL CURRENT L_N	[mA]	(Signed)
57	4	VOLTAGE UNBALANCE	[m%]	(Unsigned)
58	4	CURRENT UNBALANCE	[m%]	(Unsigned)

NOTE: WHEN THE INSTRUMENT CAN'T MEASURE IT SEND ZERO AS VALUE

MIN/MAX VALUES

Index [Dec]	Word	Description	M.U.	Type
59	3	YY MM DD	[-]	(Unsigned)
60	3	HH MM SS	[-]	(Unsigned)
61	4	MIN 3-PHASE SYSTEM VOLTAGE	[mV]	(Unsigned)
62	3	YY MM DD	[-]	(Unsigned)
63	3	HH MM SS	[-]	(Unsigned)
64	4	MAX 3-PHASE SYSTEM VOLTAGE	[mV]	(Unsigned)
65	3	YY MM DD	[-]	(Unsigned)
66	3	HH MM SS	[-]	(Unsigned)
67	4	MIN 1-PHASE VOLTAGE L_{1-N}	[mV]	(Unsigned)
68	3	YY MM DD	[-]	(Unsigned)
69	3	HH MM SS	[-]	(Unsigned)
70	4	MAX 1-PHASE VOLTAGE L_{1-N}	[mV]	(Unsigned)
71	3	YY MM DD	[-]	(Unsigned)
72	3	HH MM SS	[-]	(Unsigned)
73	4	MIN 1-PHASE VOLTAGE L_{2-N}	[mV]	(Unsigned)
74	3	YY MM DD	[-]	(Unsigned)
75	3	HH MM SS	[-]	(Unsigned)
76	4	MAX 1-PHASE VOLTAGE L_{2-N}	[mV]	(Unsigned)
77	3	YY MM DD	[-]	(Unsigned)
78	3	HH MM SS	[-]	(Unsigned)
79	4	MINIMUN 1-PHASE VOLTAGE L_{3-N}	[mV]	(Unsigned)
80	3	YY MM DD	[-]	(Unsigned)
81	3	HH MM SS	[-]	(Unsigned)
82	4	MAXIMUM 1-PHASE VOLTAGE L_{3-N}	[mV]	(Unsigned)
83	3	YY MM DD	[-]	(Unsigned)
84	3	HH MM SS	[-]	(Unsigned)
85	4	MIN 3-PHASE SYSTEM CURRENT	[mA]	(Signed)
86	3	YY MM DD	[-]	(Unsigned)
87	3	HH MM SS	[-]	(Unsigned)
88	4	MAX 3-PHASE SYSTEM CURRENT	[mA]	(Signed)
89	3	YY MM DD	[-]	(Unsigned)
90	3	HH MM SS	[-]	(Unsigned)
91	4	MINIMUN LINE CURRENT L_1	[mA]	(Signed)
92	3	YY MM DD	[-]	(Unsigned)
93	3	HH MM SS	[-]	(Unsigned)
94	4	MAXIMUM LINE CURRENT L_1	[mA]	(Signed)
95	3	YY MM DD	[-]	(Unsigned)
96	3	HH MM SS	[-]	(Unsigned)
97	4	MINIMUN LINE CURRENT L_2	[mA]	(Signed)
98	3	YY MM DD	[-]	(Unsigned)
99	3	HH MM SS	[-]	(Unsigned)
100	4	MAXIMUM LINE CURRENT L_2	[mA]	(Signed)
101	3	YY MM DD	[-]	(Unsigned)
102	3	HH MM SS	[-]	(Unsigned)
103	4	MINIMUN LINE CURRENT L_3	[mA]	(Signed)
104	3	YY MM DD	[-]	(Unsigned)
105	3	HH MM SS	[-]	(Unsigned)
106	4	MAXIMUM LINE CURRENT L_3	[mA]	(Signed)
107	3	YY MM DD	[-]	(Unsigned)
108	3	HH MM SS	[-]	(Unsigned)
109	4	MIN.3 PHASE SYS. ACTIVE POWER	[mW]	(Signed)
110	3	YY MM DD	[-]	(Unsigned)
111	3	HH MM SS	[-]	(Unsigned)
112	4	MAX.3 PHASE SYS.ACTIVE POWER	[mW]	(Signed)
113	3	YY MM DD	[-]	(Unsigned)
114	3	HH MM SS	[-]	(Unsigned)
115	4	MIN.3 PHASE S.APPARENT POWER	[mVA]	(Signed)
116	3	YY MM DD	[-]	(Unsigned)
117	3	HH MM SS	[-]	(Unsigned)
118	4	MAX.3 PHASE S.APPARENT POWER	[mVA]	(Signed)
119	3	YY MM DD	[-]	(Unsigned)
120	3	HH MM SS	[-]	(Unsigned)
121	4	MIN.3 PHASE S..POWER FACTOR	[-]	(Signed)
122	3	YY MM DD	[-]	(Unsigned)
123	3	HH MM SS	[-]	(Unsigned)
124	4	MAX.3 PHASE S..POWER FACTOR	[-]	(Signed)
125	3	YY MM DD	[-]	(Unsigned)
126	3	HH MM SS	[-]	(Unsigned)

Index [Dec]	Word	Description	M.U.	Type
127	4	MIN.3 PHASE AVERAGE POWER	[mW]	(Unsigned)
128	3	YY MM DD	[-]	(Unsigned)
129	3	HH MM SS	[-]	(Unsigned)
130	4	MAX 3 PHASE AVERAGE POWER	[mW]	(Unsigned)

HARMONICS VALUES

Index [Dec]	Word	Description	M.U.	Type
131	4	1ST VOLTAGE HARMONIC OF THE L_1 PHASE	[%]	(Unsigned)
132	4	2ND VOLTAGE HARMONIC OF THE L_1 PHASE	[%]	(Unsigned)
133	4	3RD VOLTAGE HARMONIC OF THE L_1 PHASE	[%]	(Unsigned)
134	4	4TH VOLTAGE HARMONIC OF THE L_1 PHASE	[%]	(Unsigned)
135	4	5TH VOLTAGE HARMONIC OF THE L_1 PHASE	[%]	(Unsigned)
136	4	6TH VOLTAGE HARMONIC OF THE L_1 PHASE	[%]	(Unsigned)
137	4	7TH VOLTAGE HARMONIC OF THE L_1 PHASE	[%]	(Unsigned)
138	4	8TH VOLTAGE HARMONIC OF THE L_1 PHASE	[%]	(Unsigned)
139	4	9TH VOLTAGE HARMONIC OF THE L_1 PHASE	[%]	(Unsigned)
140	4	10TH VOLTAGE HARMONIC OF THE L_1 PHASE	[%]	(Unsigned)
141	4	11TH VOLTAGE HARMONIC OF THE L_1 PHASE	[%]	(Unsigned)
142	4	12TH VOLTAGE HARMONIC OF THE L_1 PHASE	[%]	(Unsigned)
143	4	13TH VOLTAGE HARMONIC OF THE L_1 PHASE	[%]	(Unsigned)
144	4	14TH VOLTAGE HARMONIC OF THE L_1 PHASE	[%]	(Unsigned)
145	4	15TH VOLTAGE HARMONIC OF THE L_1 PHASE	[%]	(Unsigned)
146	4	16TH VOLTAGE HARMONIC OF THE L_1 PHASE	[%]	(Unsigned)
147	4	17TH VOLTAGE HARMONIC OF THE L_1 PHASE	[%]	(Unsigned)
148	4	18TH VOLTAGE HARMONIC OF THE L_1 PHASE	[%]	(Unsigned)
149	4	19TH VOLTAGE HARMONIC OF THE L_1 PHASE	[%]	(Unsigned)
150	4	20TH VOLTAGE HARMONIC OF THE L_1 PHASE	[%]	(Unsigned)
151	4	21TH VOLTAGE HARMONIC OF THE L_1 PHASE	[%]	(Unsigned)
152	4	22TH VOLTAGE HARMONIC OF THE L_1 PHASE	[%]	(Unsigned)
153	4	23TH VOLTAGE HARMONIC OF THE L_1 PHASE	[%]	(Unsigned)
154	4	24TH VOLTAGE HARMONIC OF THE L_1 PHASE	[%]	(Unsigned)
155	4	25TH VOLTAGE HARMONIC OF THE L_1 PHASE	[%]	(Unsigned)
156	4	26TH VOLTAGE HARMONIC OF THE L_1 PHASE	[%]	(Unsigned)
157	4	27TH VOLTAGE HARMONIC OF THE L_1 PHASE	[%]	(Unsigned)
158	4	28TH VOLTAGE HARMONIC OF THE L_1 PHASE	[%]	(Unsigned)
159	4	29TH VOLTAGE HARMONIC OF THE L_1 PHASE	[%]	(Unsigned)
160	4	30TH VOLTAGE HARMONIC OF THE L_1 PHASE	[%]	(Unsigned)
161	4	31TH VOLTAGE HARMONIC OF THE L_1 PHASE	[%]	(Unsigned)
162	4	1ST VOLTAGE HARMONIC OF THE L_2 PHASE	[%]	(Unsigned)
163	4	2ND VOLTAGE HARMONIC OF THE L_2 PHASE	[%]	(Unsigned)
164	4	3RD VOLTAGE HARMONIC OF THE L_2 PHASE	[%]	(Unsigned)
165	4	4TH VOLTAGE HARMONIC OF THE L_2 PHASE	[%]	(Unsigned)
166	4	5TH VOLTAGE HARMONIC OF THE L_2 PHASE	[%]	(Unsigned)
167	4	6TH VOLTAGE HARMONIC OF THE L_2 PHASE	[%]	(Unsigned)
168	4	7TH VOLTAGE HARMONIC OF THE L_2 PHASE	[%]	(Unsigned)
169	4	8TH VOLTAGE HARMONIC OF THE L_2 PHASE	[%]	(Unsigned)
170	4	9TH VOLTAGE HARMONIC OF THE L_2 PHASE	[%]	(Unsigned)
171	4	10TH VOLTAGE HARMONIC OF THE L_2 PHASE	[%]	(Unsigned)
172	4	11TH VOLTAGE HARMONIC OF THE L_2 PHASE	[%]	(Unsigned)
173	4	12TH VOLTAGE HARMONIC OF THE L_2 PHASE	[%]	(Unsigned)
174	4	13TH VOLTAGE HARMONIC OF THE L_2 PHASE	[%]	(Unsigned)
175	4	14TH VOLTAGE HARMONIC OF THE L_2 PHASE	[%]	(Unsigned)
176	4	15TH VOLTAGE HARMONIC OF THE L_2 PHASE	[%]	(Unsigned)
177	4	16TH VOLTAGE HARMONIC OF THE L_2 PHASE	[%]	(Unsigned)
178	4	17TH VOLTAGE HARMONIC OF THE L_2 PHASE	[%]	(Unsigned)
179	4	18TH VOLTAGE HARMONIC OF THE L_2 PHASE	[%]	(Unsigned)
180	4	19TH VOLTAGE HARMONIC OF THE L_2 PHASE	[%]	(Unsigned)
181	4	20TH VOLTAGE HARMONIC OF THE L_2 PHASE	[%]	(Unsigned)
182	4	21TH VOLTAGE HARMONIC OF THE L_2 PHASE	[%]	(Unsigned)
183	4	22TH VOLTAGE HARMONIC OF THE L_2 PHASE	[%]	(Unsigned)
184	4	23TH VOLTAGE HARMONIC OF THE L_2 PHASE	[%]	(Unsigned)
185	4	24TH VOLTAGE HARMONIC OF THE L_2 PHASE	[%]	(Unsigned)
186	4	25TH VOLTAGE HARMONIC OF THE L_2 PHASE	[%]	(Unsigned)
187	4	26TH VOLTAGE HARMONIC OF THE L_2 PHASE	[%]	(Unsigned)
188	4	27TH VOLTAGE HARMONIC OF THE L_2 PHASE	[%]	(Unsigned)
189	4	28TH VOLTAGE HARMONIC OF THE L_2 PHASE	[%]	(Unsigned)
190	4	29TH VOLTAGE HARMONIC OF THE L_2 PHASE	[%]	(Unsigned)
191	4	30TH VOLTAGE HARMONIC OF THE L_2 PHASE	[%]	(Unsigned)
192	4	31TH VOLTAGE HARMONIC OF THE L_2 PHASE	[%]	(Unsigned)

193	4	1ST VOLTAGE HARMONIC OF THE L3 PHASE	[%]	(Unsigned)
194	4	2ND VOLTAGE HARMONIC OF THE L3 PHASE	[%]	(Unsigned)
195	4	3RD VOLTAGE HARMONIC OF THE L3 PHASE	[%]	(Unsigned)
196	4	4TH VOLTAGE HARMONIC OF THE L3 PHASE	[%]	(Unsigned)
197	4	5TH VOLTAGE HARMONIC OF THE L3 PHASE	[%]	(Unsigned)
198	4	6TH VOLTAGE HARMONIC OF THE L3 PHASE	[%]	(Unsigned)
199	4	7TH VOLTAGE HARMONIC OF THE L3 PHASE	[%]	(Unsigned)
200	4	8TH VOLTAGE HARMONIC OF THE L3 PHASE	[%]	(Unsigned)
201	4	9TH VOLTAGE HARMONIC OF THE L3 PHASE	[%]	(Unsigned)
202	4	10TH VOLTAGE HARMONIC OF THE L3 PHASE	[%]	(Unsigned)
203	4	11TH VOLTAGE HARMONIC OF THE L3 PHASE	[%]	(Unsigned)
204	4	12TH VOLTAGE HARMONIC OF THE L3 PHASE	[%]	(Unsigned)
205	4	13TH VOLTAGE HARMONIC OF THE L3 PHASE	[%]	(Unsigned)
206	4	14TH VOLTAGE HARMONIC OF THE L3 PHASE	[%]	(Unsigned)
207	4	15TH VOLTAGE HARMONIC OF THE L3 PHASE	[%]	(Unsigned)
208	4	16TH VOLTAGE HARMONIC OF THE L3 PHASE	[%]	(Unsigned)
209	4	17TH VOLTAGE HARMONIC OF THE L3 PHASE	[%]	(Unsigned)
210	4	18TH VOLTAGE HARMONIC OF THE L3 PHASE	[%]	(Unsigned)
211	4	19TH VOLTAGE HARMONIC OF THE L3 PHASE	[%]	(Unsigned)
212	4	20TH VOLTAGE HARMONIC OF THE L3 PHASE	[%]	(Unsigned)
213	4	21TH VOLTAGE HARMONIC OF THE L3 PHASE	[%]	(Unsigned)
214	4	22TH VOLTAGE HARMONIC OF THE L3 PHASE	[%]	(Unsigned)
215	4	23TH VOLTAGE HARMONIC OF THE L3 PHASE	[%]	(Unsigned)
216	4	24TH VOLTAGE HARMONIC OF THE L3 PHASE	[%]	(Unsigned)
217	4	25TH VOLTAGE HARMONIC OF THE L3 PHASE	[%]	(Unsigned)
218	4	26TH VOLTAGE HARMONIC OF THE L3 PHASE	[%]	(Unsigned)
219	4	27TH VOLTAGE HARMONIC OF THE L3 PHASE	[%]	(Unsigned)
220	4	28TH VOLTAGE HARMONIC OF THE L3 PHASE	[%]	(Unsigned)
221	4	29TH VOLTAGE HARMONIC OF THE L3 PHASE	[%]	(Unsigned)
222	4	30TH VOLTAGE HARMONIC OF THE L3 PHASE	[%]	(Unsigned)
223	4	31TH VOLTAGE HARMONIC OF THE L3 PHASE	[%]	(Unsigned)

224	4	1ST CURRENT HARMONIC OF THE L1 PHASE	[%]	(Unsigned)
225	4	2ND CURRENT HARMONIC OF THE L1 PHASE	[%]	(Unsigned)
226	4	3RD CURRENT HARMONIC OF THE L1 PHASE	[%]	(Unsigned)
227	4	4TH CURRENT HARMONIC OF THE L1 PHASE	[%]	(Unsigned)
228	4	5TH CURRENT HARMONIC OF THE L1 PHASE	[%]	(Unsigned)
229	4	6TH CURRENT HARMONIC OF THE L1 PHASE	[%]	(Unsigned)
230	4	7TH CURRENT HARMONIC OF THE L1 PHASE	[%]	(Unsigned)
231	4	8TH CURRENT HARMONIC OF THE L1 PHASE	[%]	(Unsigned)
232	4	9TH CURRENT HARMONIC OF THE L1 PHASE	[%]	(Unsigned)
233	4	10TH CURRENT HARMONIC OF THE L1 PHASE	[%]	(Unsigned)
234	4	11TH CURRENT HARMONIC OF THE L1 PHASE	[%]	(Unsigned)
235	4	12TH CURRENT HARMONIC OF THE L1 PHASE	[%]	(Unsigned)
236	4	13TH CURRENT HARMONIC OF THE L1 PHASE	[%]	(Unsigned)
237	4	14TH CURRENT HARMONIC OF THE L1 PHASE	[%]	(Unsigned)
238	4	15TH CURRENT HARMONIC OF THE L1 PHASE	[%]	(Unsigned)
239	4	16TH CURRENT HARMONIC OF THE L1 PHASE	[%]	(Unsigned)
240	4	17TH CURRENT HARMONIC OF THE L1 PHASE	[%]	(Unsigned)
241	4	18TH CURRENT HARMONIC OF THE L1 PHASE	[%]	(Unsigned)
242	4	19TH CURRENT HARMONIC OF THE L1 PHASE	[%]	(Unsigned)
243	4	20TH CURRENT HARMONIC OF THE L1 PHASE	[%]	(Unsigned)
244	4	21TH CURRENT HARMONIC OF THE L1 PHASE	[%]	(Unsigned)
245	4	22TH CURRENT HARMONIC OF THE L1 PHASE	[%]	(Unsigned)
246	4	23TH CURRENT HARMONIC OF THE L1 PHASE	[%]	(Unsigned)
247	4	24TH CURRENT HARMONIC OF THE L1 PHASE	[%]	(Unsigned)
248	4	25TH CURRENT HARMONIC OF THE L1 PHASE	[%]	(Unsigned)
249	4	26TH CURRENT HARMONIC OF THE L1 PHASE	[%]	(Unsigned)
250	4	27TH CURRENT HARMONIC OF THE L1 PHASE	[%]	(Unsigned)
251	4	28TH CURRENT HARMONIC OF THE L1 PHASE	[%]	(Unsigned)
252	4	29TH CURRENT HARMONIC OF THE L1 PHASE	[%]	(Unsigned)
253	4	30TH CURRENT HARMONIC OF THE L1 PHASE	[%]	(Unsigned)
254	4	31TH CURRENT HARMONIC OF THE L1 PHASE	[%]	(Unsigned)

255	4	1ST CURRENT HARMONIC OF THE L_2 PHASE	[%]	(Unsigned)
256	4	2ND CURRENT HARMONIC OF THE L_2 PHASE	[%]	(Unsigned)
257	4	3RD CURRENT HARMONIC OF THE L_2 PHASE	[%]	(Unsigned)
258	4	4TH CURRENT HARMONIC OF THE L_2 PHASE	[%]	(Unsigned)
259	4	5TH CURRENT HARMONIC OF THE L_2 PHASE	[%]	(Unsigned)
260	4	6TH CURRENT HARMONIC OF THE L_2 PHASE	[%]	(Unsigned)
261	4	7TH CURRENT HARMONIC OF THE L_2 PHASE	[%]	(Unsigned)
262	4	8TH CURRENT HARMONIC OF THE L_2 PHASE	[%]	(Unsigned)
263	4	9TH CURRENT HARMONIC OF THE L_2 PHASE	[%]	(Unsigned)
264	4	10TH CURRENT HARMONIC OF THE L_2 PHASE	[%]	(Unsigned)
265	4	11TH CURRENT HARMONIC OF THE L_2 PHASE	[%]	(Unsigned)
266	4	12TH CURRENT HARMONIC OF THE L_2 PHASE	[%]	(Unsigned)
267	4	13TH CURRENT HARMONIC OF THE L_2 PHASE	[%]	(Unsigned)
268	4	14TH CURRENT HARMONIC OF THE L_2 PHASE	[%]	(Unsigned)
269	4	15TH CURRENT HARMONIC OF THE L_2 PHASE	[%]	(Unsigned)
270	4	16TH CURRENT HARMONIC OF THE L_2 PHASE	[%]	(Unsigned)
271	4	17TH CURRENT HARMONIC OF THE L_2 PHASE	[%]	(Unsigned)
272	4	18TH CURRENT HARMONIC OF THE L_2 PHASE	[%]	(Unsigned)
273	4	19TH CURRENT HARMONIC OF THE L_2 PHASE	[%]	(Unsigned)
274	4	20TH CURRENT HARMONIC OF THE L_2 PHASE	[%]	(Unsigned)
275	4	21TH CURRENT HARMONIC OF THE L_2 PHASE	[%]	(Unsigned)
276	4	22TH CURRENT HARMONIC OF THE L_2 PHASE	[%]	(Unsigned)
277	4	23TH CURRENT HARMONIC OF THE L_2 PHASE	[%]	(Unsigned)
278	4	24TH CURRENT HARMONIC OF THE L_2 PHASE	[%]	(Unsigned)
279	4	25TH CURRENT HARMONIC OF THE L_2 PHASE	[%]	(Unsigned)
280	4	26TH CURRENT HARMONIC OF THE L_2 PHASE	[%]	(Unsigned)
281	4	27TH CURRENT HARMONIC OF THE L_2 PHASE	[%]	(Unsigned)
282	4	28TH CURRENT HARMONIC OF THE L_2 PHASE	[%]	(Unsigned)
283	4	29TH CURRENT HARMONIC OF THE L_2 PHASE	[%]	(Unsigned)
284	4	30TH CURRENT HARMONIC OF THE L_2 PHASE	[%]	(Unsigned)
285	4	31TH CURRENT HARMONIC OF THE L_2 PHASE	[%]	(Unsigned)

286	4	1ST CURRENT HARMONIC OF THE L_3 PHASE	[%]	(Unsigned)
287	4	2ND CURRENT HARMONIC OF THE L_3 PHASE	[%]	(Unsigned)
288	4	3RD CURRENT HARMONIC OF THE L_3 PHASE	[%]	(Unsigned)
289	4	4TH CURRENT HARMONIC OF THE L_3 PHASE	[%]	(Unsigned)
290	4	5TH CURRENT HARMONIC OF THE L_3 PHASE	[%]	(Unsigned)
291	4	6TH CURRENT HARMONIC OF THE L_3 PHASE	[%]	(Unsigned)
292	4	7TH CURRENT HARMONIC OF THE L_3 PHASE	[%]	(Unsigned)
293	4	8TH CURRENT HARMONIC OF THE L_3 PHASE	[%]	(Unsigned)
294	4	9TH CURRENT HARMONIC OF THE L_3 PHASE	[%]	(Unsigned)
295	4	10TH CURRENT HARMONIC OF THE L_3 PHASE	[%]	(Unsigned)
296	4	11TH CURRENT HARMONIC OF THE L_3 PHASE	[%]	(Unsigned)
297	4	12TH CURRENT HARMONIC OF THE L_3 PHASE	[%]	(Unsigned)
298	4	13TH CURRENT HARMONIC OF THE L_3 PHASE	[%]	(Unsigned)
299	4	14TH CURRENT HARMONIC OF THE L_3 PHASE	[%]	(Unsigned)
300	4	15TH CURRENT HARMONIC OF THE L_3 PHASE	[%]	(Unsigned)
301	4	16TH CURRENT HARMONIC OF THE L_3 PHASE	[%]	(Unsigned)
302	4	17TH CURRENT HARMONIC OF THE L_3 PHASE	[%]	(Unsigned)
303	4	18TH CURRENT HARMONIC OF THE L_3 PHASE	[%]	(Unsigned)
304	4	19TH CURRENT HARMONIC OF THE L_3 PHASE	[%]	(Unsigned)
305	4	20TH CURRENT HARMONIC OF THE L_3 PHASE	[%]	(Unsigned)
306	4	21TH CURRENT HARMONIC OF THE L_3 PHASE	[%]	(Unsigned)
307	4	22TH CURRENT HARMONIC OF THE L_3 PHASE	[%]	(Unsigned)
308	4	23TH CURRENT HARMONIC OF THE L_3 PHASE	[%]	(Unsigned)
309	4	24TH CURRENT HARMONIC OF THE L_3 PHASE	[%]	(Unsigned)
310	4	25TH CURRENT HARMONIC OF THE L_3 PHASE	[%]	(Unsigned)
311	4	26TH CURRENT HARMONIC OF THE L_3 PHASE	[%]	(Unsigned)
312	4	27TH CURRENT HARMONIC OF THE L_3 PHASE	[%]	(Unsigned)
313	4	28TH CURRENT HARMONIC OF THE L_3 PHASE	[%]	(Unsigned)
314	4	29TH CURRENT HARMONIC OF THE L_3 PHASE	[%]	(Unsigned)
315	4	30TH CURRENT HARMONIC OF THE L_3 PHASE	[%]	(Unsigned)
316	4	31TH CURRENT HARMONIC OF THE L_3 PHASE	[%]	(Unsigned)

TIME BAND ENERGY COUNTER

Index [Dec]	Word	Description	M.U.	Type
317	4	Acquired active energy previous month band 1	[mWh]	(Unsigned)
318	4	Inductive reactive energy previous month band 1	[mVArh]	(Unsigned)
319	4	Transferred active energy previous month band 1	[mWh]	(Unsigned)
320	4	Capacitive reactive energy previous month band 1	[mVArh]	(Unsigned)
321	4	Acquired active energy previous month band 2	[mWh]	(Unsigned)
322	4	Inductive reactive energy previous month band 2	[mVArh]	(Unsigned)
323	4	Transferred active energy previous month band 2	[mWh]	(Unsigned)
324	4	Capacitive reactive energy previous month band 2	[mVArh]	(Unsigned)
325	4	Acquired active energy previous month band 3	[mWh]	(Unsigned)
326	4	Inductive reactive energy previous month band 3	[mVArh]	(Unsigned)
327	4	Transferred active energy previous month band 3	[mWh]	(Unsigned)
328	4	Capacitive reactive energy previous month band 3	[mVArh]	(Unsigned)
329	4	Acquired active energy previous month band 4	[mWh]	(Unsigned)
330	4	Inductive reactive energy previous month band 4	[mVArh]	(Unsigned)
331	4	Transferred active energy previous month band 4	[mWh]	(Unsigned)
332	4	Capacitive reactive energy previous month band 4	[mVArh]	(Unsigned)
333	4	Acquired active energy current month band 1	[mWh]	(Unsigned)
334	4	Inductive reactive energy current month band 1	[mVArh]	(Unsigned)
335	4	Transferred active energy current month band 1	[mWh]	(Unsigned)
336	4	Capacitive reactive energy current month band 1	[mVArh]	(Unsigned)
337	4	Acquired active energy current month band 2	[mWh]	(Unsigned)
338	4	Inductive reactive energy current month band 2	[mVArh]	(Unsigned)
339	4	Transferred active energy current month band 2	[mWh]	(Unsigned)
340	4	Capacitive reactive energy current month band 2	[mVArh]	(Unsigned)
341	4	Acquired active energy current month band 3	[mWh]	(Unsigned)
342	4	Inductive reactive energy current month band 3	[mVArh]	(Unsigned)
343	4	Transferred active energy current month band 3	[mWh]	(Unsigned)
344	4	Capacitive reactive energy current month band 3	[mVArh]	(Unsigned)
345	4	Acquired active energy current month band 4	[mWh]	(Unsigned)
346	4	Inductive reactive energy current month band 4	[mVArh]	(Unsigned)
347	4	Transferred active energy current month band 4	[mWh]	(Unsigned)
348	4	Capacitive reactive energy current month band 4	[mVArh]	(Unsigned)
349	4	Acquired active energy previous day band 1	[mWh]	(Unsigned)
350	4	Inductive reactive energy previous day band 1	[mVArh]	(Unsigned)
351	4	Transferred active energy previous day band 1	[mWh]	(Unsigned)
352	4	Capacitive reactive energy previous day band 1	[mVArh]	(Unsigned)
353	4	Acquired active energy previous day band 2	[mWh]	(Unsigned)
354	4	Inductive reactive energy previous day band 2	[mVArh]	(Unsigned)
355	4	Transferred active energy previous day band 2	[mWh]	(Unsigned)
356	4	Capacitive reactive energy previous day band 2	[mVArh]	(Unsigned)
357	4	Acquired active energy previous day band 3	[mWh]	(Unsigned)
358	4	Inductive reactive energy previous day band 3	[mVArh]	(Unsigned)
359	4	Transferred active energy previous day band 3	[mWh]	(Unsigned)
360	4	Capacitive reactive energy previous day band 3	[mVArh]	(Unsigned)
361	4	Acquired active energy previous day band 4	[mWh]	(Unsigned)
362	4	Inductive reactive energy previous day band 4	[mVArh]	(Unsigned)
363	4	Transferred active energy previous day band 4	[mWh]	(Unsigned)
364	4	Capacitive reactive energy previous day band 4	[mVArh]	(Unsigned)
365	4	Acquired active energy current day band 1	[mWh]	(Unsigned)
366	4	Inductive reactive energy current day band 1	[mVArh]	(Unsigned)
367	4	Transferred active energy current day band 1	[mWh]	(Unsigned)
368	4	Capacitive reactive energy current day band 1	[mVArh]	(Unsigned)
369	4	Acquired active energy current day band 2	[mWh]	(Unsigned)
370	4	Inductive reactive energy current day band 2	[mVArh]	(Unsigned)
371	4	Transferred active energy current day band 2	[mWh]	(Unsigned)
372	4	Capacitive reactive energy current day band 2	[mVArh]	(Unsigned)
373	4	Acquired active energy current day band 3	[mWh]	(Unsigned)
374	4	Inductive reactive energy current day band 3	[mVArh]	(Unsigned)
375	4	Transferred active energy current day band 3	[mWh]	(Unsigned)
376	4	Capacitive reactive energy current day band 3	[mVArh]	(Unsigned)
377	4	Acquired active energy current day band 4	[mWh]	(Unsigned)
378	4	Inductive reactive energy current day band 4	[mVArh]	(Unsigned)
379	4	Transferred active energy current day band 4	[mWh]	(Unsigned)
380	4	Capacitive reactive energy current day band 4	[mVArh]	(Unsigned)

381	4	Acquired active energy previous year band 1	[mWh]	(Unsigned)
382	4	Inductive reactive energy previous year band 1	[mVArh]	(Unsigned)
383	4	Transferred active energy previous year band 1	[mWh]	(Unsigned)
384	4	Capacitive reactive energy previous year band 1	[mVArh]	(Unsigned)
385	4	Acquired active energy previous year band 2	[mWh]	(Unsigned)
386	4	Inductive reactive energy previous year band 2	[mVArh]	(Unsigned)
387	4	Transferred active energy previous year band 2	[mWh]	(Unsigned)
388	4	Capacitive reactive energy previous year band 2	[mVArh]	(Unsigned)
389	4	Acquired active energy previous year band 3	[mWh]	(Unsigned)
390	4	Inductive reactive energy previous year band 3	[mVArh]	(Unsigned)
391	4	Transferred active energy previous year band 3	[mWh]	(Unsigned)
392	4	Capacitive reactive energy previous year band 3	[mVArh]	(Unsigned)
393	4	Acquired active energy previous year band 4	[mWh]	(Unsigned)
394	4	Inductive reactive energy previous year band 4	[mVArh]	(Unsigned)
395	4	Transferred active energy previous year band 4	[mWh]	(Unsigned)
396	4	Capacitive reactive energy previous year band 4	[mVArh	(Unsigned)

397	4	Acquired active energy current year band 1	[mWh]	(Unsigned)
398	4	Inductive reactive energy current year band 1	[mVArh]	(Unsigned)
399	4	Transferred active energy current year band 1	[mWh]	(Unsigned)
400	4	Capacitive reactive energy current year band 1	[mVArh]	(Unsigned)
401	4	Acquired active energy current year band 2	[mWh]	(Unsigned)
402	4	Inductive reactive energy current year band 2	[mVArh]	(Unsigned)
403	4	Transferred active energy current year band 2	[mWh]	(Unsigned)
404	4	Capacitive reactive energy current year band 2	[mVArh]	(Unsigned)
405	4	Acquired active energy current year band 3	[mWh]	(Unsigned)
406	4	Inductive reactive energy current year band 3	[mVArh]	(Unsigned)
407	4	Transferred active energy current year band 3	[mWh]	(Unsigned)
408	4	Capacitive reactive energy current year band 3	[mVArh]	(Unsigned)
409	4	Acquired active energy current year band 4	[mWh]	(Unsigned)
410	4	Inductive reactive energy current year band 4	[mVArh]	(Unsigned)
411	4	Transferred active energy current year band 4	[mWh]	(Unsigned)
412	4	Capacitive reactive energy current year band 4	[mVArh]	(Unsigned)

VALUES STORED IN RAM

Index [Dec]	Word	Description	M.U.	Type
413	1	LOGICAL NUMBER	[-]	(Unsigned)
414	3	YYMMDD	[-]	(Unsigned)
415	1	nn= order no. of 15'energy value stored in a day	[-]	(Unsigned)
416	4	ACTIVE 15'	[mWh]	(Unsigned)
417	4	REACTIVE 15'	[mVArh]	(Unsigned)

MIN/MAX VALUES STORED IN RAM

HEADER

Index [Dec]	Word	Description	M.U.	Type
418	3	YY MM DD	[-]	(Unsigned)
419	3	HH MM SS	[-]	(Unsigned)
420	1	time of mem	[min]	(Unsigned)

1st DATA BLOCK

Index [Dec]	Word	Description	M.U.	Type
421	4	Block num.(2 word) + $0 (1 word) + Block full of 0=NO/1=Yes (1 word)		
422	4	MIN 3-PHASE SYSTEM VOLTAGE	[mV]	(Unsigned)
423	4	MAX 3-PHASE SYSTEM VOLTAGE	[mV]	(Unsigned)
424	4	MIN PHASE VOLTAGE L_{1-N}	[mV]	(Unsigned)
425	4	MAX PHASE VOLTAGE L_{1-N}	[mV]	(Unsigned)
426	4	MIN PHASE VOLTAGE L_{2-N}	[mV]	(Unsigned)
427	4	MAX PHASE VOLTAGE L_{2-N}	[mV]	(Unsigned)
428	4	MIN PHASE VOLTAGE L_{3-N}	[mV]	(Unsigned)
429	4	MIN PHASE VOLTAGE L_{3-N}	[mV]	(Unsigned)
430	4	MIN 3-PHASE SYSTEM CURRENT	[mA]	(Signed)
431	4	MAX 3-PHASE SYSTEM CURRENT	[mA]	(Signed)
432	4	MIN LINE CURRENT L_1	[mA]	(Signed)
433	4	MAX LINE CURRENT L_1	[mA]	(Signed)
434	4	MIN LINE CURRENT L_2	[mA]	(Signed)
435	4	MAX LINE CURRENT L_2	[mA]	(Signed)
436	4	MIN LINE CURRENT L_3	[mA]	(Signed)
437	4	MAX LINE CURRENT L_3	[mA]	(Signed)
438	4	MIN 3 PHASE SYSTEM ACTIVE POWER	[mW]	(Signed)
439	4	MAX 3 PHASE SYSTEM ACTIVE POWER	[mW]	(Signed)
440	4	MIN 3 PHASE SYSTEM REACTIVE POWER	[mW]	(Signed)
441	4	MAX 3 PHASE SYSTEM REACTIVE POWER	[mW]	(Signed)
442	4	MIN 3 PHASE SYSTEM POWER FACTOR	[-]	(Signed)
443	4	MAX 3 PHASE SYSTEM POWER FACTOR	[-]	(Signed)
444	4	MIN 3 PHASE SYSTEM AVERAGE POWER	[mW]	(Signed)
445	4	MAX 3 PHASE SYSTEM AVERAGE POWER	[mW]	(Signed)

2ND DATA BLOCK

Index [Dec]	Word	Description	M.U.	Type
446	4	Block num.(2 word) + $0 (1 word) + Block full of 0=NO/1=Yes (1 word)		
447	4	MIN 3 PHASE SYSTEM VOLTAGE	[mV]	(Unsigned)
448	4	MAX 3 PHASE SYSTEM VOLTAGE	[mV]	(Unsigned)
449	4	MIN PHASE VOLTAGE L_{1-N}	[mV]	(Unsigned)
450	4	MAX PHASE VOLTAGE L_{1-N}	[mV]	(Unsigned)
451	4	MIN PHASE VOLTAGE L_{2-N}	[mV]	(Unsigned)
452	4	MAX PHASE VOLTAGE L_{2-N}	[mV]	(Unsigned)
453	4	MIN PHASE VOLTAGE L_{3-N}	[mV]	(Unsigned)
454	4	MAX PHASE VOLTAGE L_{3-N}	[mV]	(Unsigned)
455	4	MIN 3-PHASE SYSTEM CURRENT	[mA]	(Signed)
456	4	MAX 3-PHASE SYSTEM CURRENT	[mA]	(Signed)
457	4	MIN LINE CURRENT L_1	[mA]	(Signed)
458	4	MAX LINE CURRENT L_1	[mA]	(Signed)
459	4	MIN LINE CURRENT L_2	[mA]	(Signed)
460	4	MAX LINE CURRENT L_2	[mA]	(Signed)
461	4	MIN LINE CURRENT L_3	[mA]	(Signed)
462	4	MAX LINE CURRENT L_3	[mA]	(Signed)
463	4	MIN 3-PHASE SYSTEM ACTIVE POWER	[mW]	(Signed)
464	4	MAX 3-PHASE SYSTEM ACTIVE POWER	[mW]	(Signed)
465	4	MIN 3-PHASE SYSTEM REACTIVE POWER	[mW]	(Signed)
466	4	MAX 3-PHASE SYSTEM REACTIVE POWER	[mW]	(Signed)
467	4	MIN 3-PHASE SYSTEM POWER FACTOR	[-]	(Signed)
468	4	MAX 3-PHASE SYSTEM POWER FACTOR	[-]	(Signed)
469	4	MIN 3-PHASE SYSTEM AVERAGE POWER	[mW]	(Signed)
470	4	MAX 3-PHASE SYSTEM AVERAGE POWER	[mW]	(Signed)

3RD.......10TH DATA BLOCK

(3RD DATA BLOCK)

Index [Dec]	Word	Description	M.U.	Type
471	4	Block num.(2 word) + $0 (1 word) + Block full of 0=NO/1=Yes (1 word)		
....	...	....	....	....
....	...	....	....	....
495	4	MAX 3-PHASE SYSTEM AVERAGE POWER	[mW]	(Signed)

(4TH DATA BLOCK)

Index [Dec]	Word	Description	M.U.	Type
496	4	Block num.(2 word) + $0 (1 word) + Block full of 0=NO/1=Yes (1 word)		
....	...	....	....	....
....	...	....	....	....
520	4	MAX 3-PHASE SYSTEM AVERAGE POWER	[mW]	(Signed)

(5TH DATA BLOCK)

Index [Dec]	Word	Description	M.U.	Type
521	4	Block num.(2 word) + $0 (1 word) + Block full of 0=NO/1=Yes (1 word)		
....	...	....	....	....
....	...	....	....	....
545	4	MAX 3-PHASE SYSTEM AVERAGE POWER	[mW]	(Signed)

(6TH DATA BLOCK)

Index [Dec]	Word	Description	M.U.	Type
546	4	Block num.(2 word) + $0 (1 word) + Block full of 0=NO/1=Yes (1 word)		
....	...	....	....	....
....	...	....	....	....
570	4	MAX 3-PHASE SYSTEM AVERAGE POWER	[mW]	(Signed)

(7TH DATA BLOCK)

Index [Dec]	Word	Description	M.U.	Type
571	4	Block num.(2 word) + $0 (1 word) + Block full of 0=NO/1=Yes (1 word)		
....	...	....	....	....
....	...	....	....	....
595	4	MAX 3-PHASE SYSTEM AVERAGE POWER	[mW]	(Signed)

(8TH DATA BLOCK)

Index [Dec]	Word	Description	M.U.	Type
596	4	Block num.(2 word) + $0 (1 word) + Block full of 0=NO/1=Yes (1 word)		
....	...	....	....	....
....	...	....	....	....
620	4	MAX 3-PHASE SYSTEM AVERAGE POWER	[mW]	(Signed)

(9TH DATA BLOCK)

Index [Dec]	Word	Description	M.U.	Type
621	4	Block num.(2 word) + $0 (1 word) + Block full of 0=NO/1=Yes (1 word)		
....	...	....	....	....
....	...	....	....	....
645	4	MAX 3-PHASE SYSTEM AVERAGE POWER	[mW]	(Signed)

(10TH DATA BLOCK)

Index [Dec]	Word	Description	M.U.	Type
646	4	Block num.(2 word) + $0 (1 word) + Block full of 0=NO/1=Yes (1 word)		
....	...	....	....	....
....	...	....	....	....
670	4	MAX 3-PHASE SYSTEM AVERAGE POWER	[mW]	(Signed)

HARMONICS VALUES STORED IN RAM

Index [Dec]	Word	Description	M.U.	Type
671	1	LOGICAL NUMBER	[-]	(Unsigned)
672	3	YY MM DD	[-]	(Unsigned)
673	1	nn=order number of 15' in a day	[-]	(Unsigned)
674	4	1ST VOLTAGE HARMONIC OF THE L_1 PHASE	[%]	(Unsigned)
675	4	2ND VOLTAGE HARMONIC OF THE L_1 PHASE	[%]	(Unsigned)
676	4	3RD VOLTAGE HARMONIC OF THE L_1 PHASE	[%]	(Unsigned)
677	4	4TH VOLTAGE HARMONIC OF THE L_1 PHASE	[%]	(Unsigned)
678	4	5TH VOLTAGE HARMONIC OF THE L_1 PHASE	[%]	(Unsigned)
679	4	6TH VOLTAGE HARMONIC OF THE L_1 PHASE	[%]	(Unsigned)
680	4	7TH VOLTAGE HARMONIC OF THE L_1 PHASE	[%]	(Unsigned)
681	4	8TH VOLTAGE HARMONIC OF THE L_1 PHASE	[%]	(Unsigned)
682	4	9TH VOLTAGE HARMONIC OF THE L_1 PHASE	[%]	(Unsigned)
683	4	10TH VOLTAGE HARMONIC OF THE L_1 PHASE	[%]	(Unsigned)
684	4	11TH VOLTAGE HARMONIC OF THE L_1 PHASE	[%]	(Unsigned)
685	4	12TH VOLTAGE HARMONIC OF THE L_1 PHASE	[%]	(Unsigned)
686	4	13TH VOLTAGE HARMONIC OF THE L_1 PHASE	[%]	(Unsigned)
687	4	14TH VOLTAGE HARMONIC OF THE L_1 PHASE	[%]	(Unsigned)
688	4	15TH VOLTAGE HARMONIC OF THE L_1 PHASE	[%]	(Unsigned)
689	4	16TH VOLTAGE HARMONIC OF THE L_1 PHASE	[%]	(Unsigned)
690	4	17TH VOLTAGE HARMONIC OF THE L_1 PHASE	[%]	(Unsigned)
691	4	18TH VOLTAGE HARMONIC OF THE L_1 PHASE	[%]	(Unsigned)
692	4	19TH VOLTAGE HARMONIC OF THE L_1 PHASE	[%]	(Unsigned)
693	4	20TH VOLTAGE HARMONIC OF THE L_1 PHASE	[%]	(Unsigned)
694	4	21TH VOLTAGE HARMONIC OF THE L_1 PHASE	[%]	(Unsigned)
695	4	22TH VOLTAGE HARMONIC OF THE L_1 PHASE	[%]	(Unsigned)
696	4	23TH VOLTAGE HARMONIC OF THE L_1 PHASE	[%]	(Unsigned)
697	4	24TH VOLTAGE HARMONIC OF THE L_1 PHASE	[%]	(Unsigned)
698	4	25TH VOLTAGE HARMONIC OF THE L_1 PHASE	[%]	(Unsigned)
699	4	26TH VOLTAGE HARMONIC OF THE L_1 PHASE	[%]	(Unsigned)
700	4	27TH VOLTAGE HARMONIC OF THE L_1 PHASE	[%]	(Unsigned)
701	4	28TH VOLTAGE HARMONIC OF THE L_1 PHASE	[%]	(Unsigned)
702	4	29TH VOLTAGE HARMONIC OF THE L_1 PHASE	[%]	(Unsigned)
703	4	30TH VOLTAGE HARMONIC OF THE L_1 PHASE	[%]	(Unsigned)
704	4	31TH VOLTAGE HARMONIC OF THE L_1 PHASE	[%]	(Unsigned)
705	4	1st VOLTAGE HARMONIC OF THE L_2 PHASE	[%]	(Unsigned)
706	4	2ND VOLTAGE HARMONIC OF THE L_2 PHASE	[%]	(Unsigned)
707	4	3RD VOLTAGE HARMONIC OF THE L_2 PHASE	[%]	(Unsigned)
708	4	4TH VOLTAGE HARMONIC OF THE L_2 PHASE	[%]	(Unsigned)
709	4	5TH VOLTAGE HARMONIC OF THE L_2 PHASE	[%]	(Unsigned)
710	4	6TH VOLTAGE HARMONIC OF THE L_2 PHASE	[%]	(Unsigned)
711	4	7TH VOLTAGE HARMONIC OF THE L_2 PHASE	[%]	(Unsigned)
712	4	8TH VOLTAGE HARMONIC OF THE L_2 PHASE	[%]	(Unsigned)
713	4	9TH VOLTAGE HARMONIC OF THE L_2 PHASE	[%]	(Unsigned)
714	4	10TH VOLTAGE HARMONIC OF THE L_2 PHASE	[%]	(Unsigned)
715	4	11TH VOLTAGE HARMONIC OF THE L_2 PHASE	[%]	(Unsigned)
716	4	12TH VOLTAGE HARMONIC OF THE L_2 PHASE	[%]	(Unsigned)
717	4	13TH VOLTAGE HARMONIC OF THE L_2 PHASE	[%]	(Unsigned)
718	4	14TH VOLTAGE HARMONIC OF THE L_2 PHASE	[%]	(Unsigned)
719	4	15TH VOLTAGE HARMONIC OF THE L_2 PHASE	[%]	(Unsigned)
720	4	16TH VOLTAGE HARMONIC OF THE L_2 PHASE	[%]	(Unsigned)
721	4	17TH VOLTAGE HARMONIC OF THE L_2 PHASE	[%]	(Unsigned)
722	4	18TH VOLTAGE HARMONIC OF THE L_2 PHASE	[%]	(Unsigned)
723	4	19TH VOLTAGE HARMONIC OF THE L_2 PHASE	[%]	(Unsigned)
724	4	20TH VOLTAGE HARMONIC OF THE L_2 PHASE	[%]	(Unsigned)
725	4	21TH VOLTAGE HARMONIC OF THE L_2 PHASE	[%]	(Unsigned)
726	4	22TH VOLTAGE HARMONIC OF THE L_2 PHASE	[%]	(Unsigned)
727	4	23TH VOLTAGE HARMONIC OF THE L_2 PHASE	[%]	(Unsigned)
728	4	24TH VOLTAGE HARMONIC OF THE L_2 PHASE	[%]	(Unsigned)
729	4	25TH VOLTAGE HARMONIC OF THE L_2 PHASE	[%]	(Unsigned)
730	4	26TH VOLTAGE HARMONIC OF THE L_2 PHASE	[%]	(Unsigned)
731	4	27TH VOLTAGE HARMONIC OF THE L_2 PHASE	[%]	(Unsigned)
732	4	28TH VOLTAGE HARMONIC OF THE L_2 PHASE	[%]	(Unsigned)
733	4	29TH VOLTAGE HARMONIC OF THE L_2 PHASE	[%]	(Unsigned)
734	4	30TH VOLTAGE HARMONIC OF THE L_2 PHASE	[%]	(Unsigned)
735	4	31TH VOLTAGE HARMONIC OF THE L_2 PHASE	[%]	(Unsigned)

736	4	1ST VOLTAGE HARMONIC OF THE L$_3$ PHASE	[%]	(Unsigned)
737	4	2ND VOLTAGE HARMONIC OF THE L$_3$ PHASE	[%]	(Unsigned)
738	4	3RD VOLTAGE HARMONIC OF THE L$_3$ PHASE	[%]	(Unsigned)
739	4	4TH VOLTAGE HARMONIC OF THE L$_3$ PHASE	[%]	(Unsigned)
740	4	5TH VOLTAGE HARMONIC OF THE L$_3$ PHASE	[%]	(Unsigned)
741	4	6TH VOLTAGE HARMONIC OF THE L$_3$ PHASE	[%]	(Unsigned)
742	4	7TH VOLTAGE HARMONIC OF THE L$_3$ PHASE	[%]	(Unsigned)
743	4	8TH VOLTAGE HARMONIC OF THE L$_3$ PHASE	[%]	(Unsigned)
744	4	9TH VOLTAGE HARMONIC OF THE L$_3$ PHASE	[%]	(Unsigned)
745	4	10TH VOLTAGE HARMONIC OF THE L$_3$ PHASE	[%]	(Unsigned)
746	4	11TH VOLTAGE HARMONIC OF THE L$_3$ PHASE	[%]	(Unsigned)
747	4	12TH VOLTAGE HARMONIC OF THE L$_3$ PHASE	[%]	(Unsigned)
748	4	13TH VOLTAGE HARMONIC OF THE L$_3$ PHASE	[%]	(Unsigned)
749	4	14TH VOLTAGE HARMONIC OF THE L$_3$ PHASE	[%]	(Unsigned)
750	4	15TH VOLTAGE HARMONIC OF THE L$_3$ PHASE	[%]	(Unsigned)
751	4	16TH VOLTAGE HARMONIC OF THE L$_3$ PHASE	[%]	(Unsigned)
752	4	17TH VOLTAGE HARMONIC OF THE L$_3$ PHASE	[%]	(Unsigned)
753	4	18TH VOLTAGE HARMONIC OF THE L$_3$ PHASE	[%]	(Unsigned)
754	4	19TH VOLTAGE HARMONIC OF THE L$_3$ PHASE	[%]	(Unsigned)
755	4	20TH VOLTAGE HARMONIC OF THE L$_3$ PHASE	[%]	(Unsigned)
756	4	21TH VOLTAGE HARMONIC OF THE L$_3$ PHASE	[%]	(Unsigned)
757	4	22TH VOLTAGE HARMONIC OF THE L$_3$ PHASE	[%]	(Unsigned)
758	4	23TH VOLTAGE HARMONIC OF THE L$_3$ PHASE	[%]	(Unsigned)
759	4	24TH VOLTAGE HARMONIC OF THE L$_3$ PHASE	[%]	(Unsigned)
760	4	25TH VOLTAGE HARMONIC OF THE L$_3$ PHASE	[%]	(Unsigned)
761	4	26TH OLTAGE HARMONIC OF THE L$_3$ PHASE	[%]	(Unsigned)
762	4	27TH VOLTAGE HARMONIC OF THE L$_3$ PHASE	[%]	(Unsigned)
763	4	28TH OLTAGE HARMONIC OF THE L$_3$ PHASE	[%]	(Unsigned)
764	4	29TH OLTAGE HARMONIC OF THE L$_3$ PHASE	[%]	(Unsigned)
765	4	30TH VOLTAGE HARMONIC OF THE L$_3$ PHASE	[%]	(Unsigned)
766	4	31TH VOLTAGE HARMONIC OF THE L$_3$ PHASE	[%]	(Unsigned)

767	4	1ST CURRENT HARMONIC OF THE L$_1$ PHASE	[%]	(Unsigned)
768	4	2ND CURRENT HARMONIC OF THE L$_1$ PHASE	[%]	(Unsigned)
769	4	3RD CURRENT HARMONIC OF THE L$_1$ PHASE	[%]	(Unsigned)
770	4	4TH CURRENT HARMONIC OF THE L$_1$ PHASE	[%]	(Unsigned)
771	4	5TH CURRENT HARMONIC OF THE L$_1$ PHASE	[%]	(Unsigned)
772	4	6TH CURRENT HARMONIC OF THE L$_1$ PHASE	[%]	(Unsigned)
773	4	7TH CURRENT HARMONIC OF THE L$_1$ PHASE	[%]	(Unsigned)
774	4	8TH CURRENT HARMONIC OF THE L$_1$ PHASE	[%]	(Unsigned)
775	4	9TH CURRENT HARMONIC OF THE L$_1$ PHASE	[%]	(Unsigned)
776	4	10TH CURRENT HARMONIC OF THE L$_1$ PHASE	[%]	(Unsigned)
777	4	11TH CURRENT HARMONIC OF THE L$_1$ PHASE	[%]	(Unsigned)
778	4	12TH CURRENT HARMONIC OF THE L$_1$ PHASE	[%]	(Unsigned)
779	4	13TH CURRENT HARMONIC OF THE L$_1$ PHASE	[%]	(Unsigned)
780	4	14TH CURRENT HARMONIC OF THE L$_1$ PHASE	[%]	(Unsigned)
781	4	15TH CURRENT HARMONIC OF THE L$_1$ PHASE	[%]	(Unsigned)
782	4	16TH CURRENT HARMONIC OF THE L$_1$ PHASE	[%]	(Unsigned)
783	4	17TH CURRENT HARMONIC OF THE L$_1$ PHASE	[%]	(Unsigned)
784	4	18TH CURRENT HARMONIC OF THE L$_1$ PHASE	[%]	(Unsigned)
785	4	19TH CURRENT HARMONIC OF THE L$_1$ PHASE	[%]	(Unsigned)
786	4	20TH CURRENT HARMONIC OF THE L$_1$ PHASE	[%]	(Unsigned)
787	4	21TH CURRENT HARMONIC OF THE L$_1$ PHASE	[%]	(Unsigned)
788	4	22TH CURRENT HARMONIC OF THE L$_1$ PHASE	[%]	(Unsigned)
789	4	23TH CURRENT HARMONIC OF THE L$_1$ PHASE	[%]	(Unsigned)
790	4	24TH CURRENT HARMONIC OF THE L$_1$ PHASE	[%]	(Unsigned)
791	4	25TH CURRENT HARMONIC OF THE L$_1$ PHASE	[%]	(Unsigned)
792	4	26TH CURRENT HARMONIC OF THE L$_1$ PHASE	[%]	(Unsigned)
793	4	27TH CURRENT HARMONIC OF THE L$_1$ PHASE	[%]	(Unsigned)
794	4	28TH CURRENT HARMONIC OF THE L$_1$ PHASE	[%]	(Unsigned)
795	4	29TH CURRENT HARMONIC OF THE L$_1$ PHASE	[%]	(Unsigned)
796	4	30TH CURRENT HARMONIC OF THE L$_1$ PHASE	[%]	(Unsigned)
797	4	31TH CURRENT HARMONIC OF THE L$_1$ PHASE	[%]	(Unsigned)

798	4	1ST CURRENT HARMONIC OF THE L_2 PHASE	[%]	(Unsigned)
799	4	2ND CURRENT HARMONIC OF THE L_2 PHASE	[%]	(Unsigned)
800	4	3RD CURRENT HARMONIC OF THE L_2 PHASE	[%]	(Unsigned)
801	4	4TH CURRENT HARMONIC OF THE L_2 PHASE	[%]	(Unsigned)
802	4	5TH CURRENT HARMONIC OF THE L_2 PHASE	[%]	(Unsigned)
803	4	6TH CURRENT HARMONIC OF THE L_2 PHASE	[%]	(Unsigned)
804	4	7TH CURRENT HARMONIC OF THE L_2 PHASE	[%]	(Unsigned)
805	4	8TH CURRENT HARMONIC OF THE L_2 PHASE	[%]	(Unsigned)
806	4	9TH CURRENT HARMONIC OF THE L_2 PHASE	[%]	(Unsigned)
807	4	10TH CURRENT HARMONIC OF THE L_2 PHASE	[%]	(Unsigned)
808	4	11TH CURRENT HARMONIC OF THE L_2 PHASE	[%]	(Unsigned)
809	4	12TH CURRENT HARMONIC OF THE L_2 PHASE	[%]	(Unsigned)
810	4	13TH CURRENT HARMONIC OF THE L_2 PHASE	[%]	(Unsigned)
811	4	14TH CURRENT HARMONIC OF THE L_2 PHASE	[%]	(Unsigned)
812	4	15TH CURRENT HARMONIC OF THE L_2 PHASE	[%]	(Unsigned)
813	4	16TH CURRENT HARMONIC OF THE L_2 PHASE	[%]	(Unsigned)
814	4	17TH CURRENT HARMONIC OF THE L_2 PHASE	[%]	(Unsigned)
815	4	18TH CURRENT HARMONIC OF THE L_2 PHASE	[%]	(Unsigned)
816	4	19TH CURRENT HARMONIC OF THE L_2 PHASE	[%]	(Unsigned)
817	4	20TH CURRENT HARMONIC OF THE L_2 PHASE	[%]	(Unsigned)
818	4	21TH CURRENT HARMONIC OF THE L_2 PHASE	[%]	(Unsigned)
819	4	22TH CURRENT HARMONIC OF THE L_2 PHASE	[%]	(Unsigned)
820	4	23TH CURRENT HARMONIC OF THE L_2 PHASE	[%]	(Unsigned)
821	4	24TH CURRENT HARMONIC OF THE L_2 PHASE	[%]	(Unsigned)
822	4	25TH CURRENT HARMONIC OF THE L_2 PHASE	[%]	(Unsigned)
823	4	26TH CURRENT HARMONIC OF THE L_2 PHASE	[%]	(Unsigned)
824	4	27TH CURRENT HARMONIC OF THE L_2 PHASE	[%]	(Unsigned)
825	4	28TH CURRENT HARMONIC OF THE L_2 PHASE	[%]	(Unsigned)
826	4	29TH CURRENT HARMONIC OF THE L_2 PHASE	[%]	(Unsigned)
827	4	30TH CURRENT HARMONIC OF THE L_2 PHASE	[%]	(Unsigned)
828	4	31TH CURRENT HARMONIC OF THE L_2 PHASE	[%]	(Unsigned)

829	4	1ST CURRENT HARMONIC OF THE L_3 PHASE	[%]	(Unsigned)
830	4	2ND CURRENT HARMONIC OF THE L_3 PHASE	[%]	(Unsigned)
831	4	3RD CURRENT HARMONIC OF THE L_3 PHASE	[%]	(Unsigned)
832	4	4TH CURRENT HARMONIC OF THE L_3 PHASE	[%]	(Unsigned)
833	4	5TH CURRENT HARMONIC OF THE L_3 PHASE	[%]	(Unsigned)
834	4	6TH CURRENT HARMONIC OF THE L_3 PHASE	[%]	(Unsigned)
835	4	7TH CURRENT HARMONIC OF THE L_3 PHASE	[%]	(Unsigned)
836	4	8TH CURRENT HARMONIC OF THE L_3 PHASE	[%]	(Unsigned)
837	4	9TH CURRENT HARMONIC OF THE L_3 PHASE	[%]	(Unsigned)
838	4	10TH CURRENT HARMONIC OF THE L_3 PHASE	[%]	(Unsigned)
839	4	11TH CURRENT HARMONIC OF THE L_3 PHASE	[%]	(Unsigned)
840	4	12TH CURRENT HARMONIC OF THE L_3 PHASE	[%]	(Unsigned)
841	4	13TH CURRENT HARMONIC OF THE L_3 PHASE	[%]	(Unsigned)
842	4	14TH CURRENT HARMONIC OF THE L_3 PHASE	[%]	(Unsigned)
843	4	15TH CURRENT HARMONIC OF THE L_3 PHASE	[%]	(Unsigned)
844	4	16TH CURRENT HARMONIC OF THE L_3 PHASE	[%]	(Unsigned)
845	4	17TH CURRENT HARMONIC OF THE L_3 PHASE	[%]	(Unsigned)
846	4	18TH CURRENT HARMONIC OF THE L_3 PHASE	[%]	(Unsigned)
847	4	19TH CURRENT HARMONIC OF THE L_3 PHASE	[%]	(Unsigned)
848	4	20TH CURRENT HARMONIC OF THE L_3 PHASE	[%]	(Unsigned)
849	4	21TH CURRENT HARMONIC OF THE L_3 PHASE	[%]	(Unsigned)
850	4	22TH CURRENT HARMONIC OF THE L_3 PHASE	[%]	(Unsigned)
851	4	23TH CURRENT HARMONIC OF THE L_3 PHASE	[%]	(Unsigned)
852	4	24TH CURRENT HARMONIC OF THE L_3 PHASE	[%]	(Unsigned)
853	4	25TH CURRENT HARMONIC OF THE L_3 PHASE	[%]	(Unsigned)
854	4	26TH CURRENT HARMONIC OF THE L_3 PHASE	[%]	(Unsigned)
855	4	27TH CURRENT HARMONIC OF THE L_3 PHASE	[%]	(Unsigned)
856	4	28TH CURRENT HARMONIC OF THE L_3 PHASE	[%]	(Unsigned)
857	4	29TH CURRENT HARMONIC OF THE L_3 PHASE	[%]	(Unsigned)
858	4	30TH CURRENT HARMONIC OF THE L_3 PHASE	[%]	(Unsigned)
859	4	31TH CURRENT HARMONIC OF THE L_3 PHASE	[%]	(Unsigned)

SAMPLES VALUES STORED IN RAM

Index [Dec]	Word	Description	M.U.	Type
860	3	YY MM DD	[-]	(Unsigned)
861	3	HH MM SS	[-]	(Unsigned)
862	1	time of mem	[min]	(Unsigned)
863	4	3-PHASE SYSTEM VOLTAGE	[mV]	(Unsigned)
864	4	PHASE VOLTAGE L_{1-N}	[mV]	(Unsigned)
865	4	PHASE VOLTAGE L_{2-N}	[mV]	(Unsigned)
866	4	PHASE VOLTAGE L_{3-N}	[mV]	(Unsigned)
867	4	LINE VOLTAGE L_{1-2}	[mV]	(Unsigned)
868	4	LINE VOLTAGE L_{2-3}	[mV]	(Unsigned)
869	4	LINE VOLTAGE L_{3-1}	[mV]	(Unsigned)
870	4	3-PHASE SYSTEM CURRENT	[mA]	(Signed)
871	4	LINE CURRENT L_1	[mA]	(Signed)
872	4	LINE CURRENT L_2	[mA]	(Signed)
873	4	LINE CURRENT L_3	[mA]	(Signed)
874	4	3-PHASE SYS. POWER FACTOR	[-]	(Signed)
875	4	POWER FACTOR L_1	[-]	(Signed)
876	4	POWER FACTOR L_2	[-]	(Signed)
877	4	POWER FACTOR L_3	[-]	(Signed)
878	4	3-PHASE S. APPARENT POWER	[mVA]	(Signed)
879	4	APPARENT POWER L_1	[mVA]	(Signed)
880	4	APPARENT POWER L_2	[mVA]	(Signed)
881	4	APPARENT POWER L_3	[mVA]	(Signed)
882	4	3-PHASE SYS. ACTIVE POWER	[mW]	(Signed)
883	4	ACTIVE POWER L_1	[mW]	(Signed)
884	4	ACTIVE POWER L_2	[mW]	(Signed)
885	4	ACTIVE POWER L_3	[mW]	(Signed)
886	4	3-PHASE S. REACTIVE POWER	[mVAR]	(Signed)
887	4	REACTIVE POWER L_1	[mVAR]	(Signed)
888	4	REACTIVE POWER L_2	[mVAR]	(Signed)
889	4	REACTIVE POWER L_3	[mVAR]	(Signed)
890	4	FREQUENCY	[mHz]	(Unsigned)
891	4	THD VOLTAGE L_1	[m%]	(Unsigned)
892	4	THD VOLTAGE L_2	[m%]	(Unsigned)
893	4	THD VOLTAGE L_3	[m%]	(Unsigned)
894	4	THD CURRENT L_1	[m%]	(Unsigned)
895	4	THD CURRENT L_2	[m%]	(Unsigned)
896	4	THD CURRENT L_3	[m%]	(Unsigned)
897	4	3-PHASE AVG. ACTIVE POWER	[mW]	(Unsigned)

WAVEFORM'S SAMPLES (64 x integer value)

Index [Dec]	Word	Description	M.U.	Type
898	8	SAMPLES OF LINE VOLTAGE L_1 from 1 to 8	[-]	[-]
-	-	---	-	-
905	8	SAMPLES OF LINE VOLTAGE L_1 from 57 to 64	[-]	[-]
906	8	SAMPLES OF LINE VOLTAGE L_2 from 1 to 8	[-]	[-]
-	-	---	-	-
913	8	SAMPLES OF LINE VOLTAGE L_2 from 57 to 64	[-]	[-]
914	8	SAMPLES OF LINE VOLTAGE L_3 from 1 to 8	[-]	[-]
-	-	---	-	-
921	8	SAMPLES OF LINE VOLTAGE L_3 from 57 to 64	[-]	[-]
922	8	SAMPLES OF LINE CURRENT L_1 from 1 to 8	[-]	[-]
-	-	---	-	-
929	8	SAMPLES OF LINE CURRENT L_1 from 57 to 64	[-]	[-]
930	8	SAMPLES OF LINE CURRENT L_2 from 1 to 8	[-]	[-]
-	-	---	-	-
937	8	SAMPLES OF LINE CURRENT L_2 from 57 to 64	[-]	[-]
938	8	SAMPLES OF LINE CURRENT L_3 from 1 to 8	[-]	[-]
-	-	---	-	-
945	8	SAMPLES OF LINE CURRENT L_3 from 57 to 64	[-]	[-]

ANR PARAMETERS

Index	Word	Description	Range
946	5	SERIAL NUMBER	XXXXXXXXX
947	7	VERSION NUMBER	XXX.XXXX
948	1	TYPE OF RAM	1=32 kB 2=128 kB 3=256 kB 4=512 kB 5=1024 Kb
949	1	BI/MO DIRECTIONAL	1=mono 2=bidir.
950	1	NUMBER OF DIGITAL OUTPUTS	0=none 1=1 ecc.=ecc.
951	1	NUMBER OF ANALOG OUTPUTS	0=none 1=1 ecc.=ecc.
952	1	NUMBER OF DIGITAL INPUTS	0=none 1=1 ecc.=ecc.
953	1	INFO STORAGE AVG.POWERS High	Byte 15÷18: memory free (KB) (float)
954	8	INFO STORAGE AVG.POWERS Low	Byte 11÷14: memory used (KB) (float) Byte 7÷10: memory reserved (KB) (float) Byte 3÷6: number of records (long) Byte 1÷2: status (0=OFF; 1= ON) (int)
955	1	INFO STORAGE MIN./MAX High	as before
956	8	INFO STORAGE MIN./MAX Low	as before
957	1	INFO STORAGE HARMONICS High	as before
958	8	INFO STORAGE HARMONICS Low	as before
959	1	INFO STORAGE SAMPLES High	as before
960	8	INFO STORAGE SAMPLES Low	as before
961	2	HARDWARE & OPTIONS INFO	bit0: harmonics (0=dis.; 1=en.) bit1: time bands (0=dis.; 1=en.) bit2÷3: N.A. bit4÷7: number of Dig.Inp (0÷15) bit8÷11: number of Dig.Out (0÷15) bit12÷15: number of An.Out (0÷15) bit16÷31: N.A.
962	1	SUB-VERSION FIRMWARE	XX
963	1	BAUD RATE	2=1200 baud 3=2400 baud 4=4800 baud 5=9600 baud 6=19200 baud
964	1	PARITY	0=none 1=even parity 2=odd parity
965	1	BIT	7=7 bit 8=8 bit
966	2	DIGITAL OUTPUT STATUS	bit(n)=DI(n+1) n=0..5 (0=OFF; 1=ON)
967	2	DIGITAL INPUT STATUS	bit(n)=DI(n+1) n=0..5 (0=OFF; 1=ON)

ANR PARAMETERS

Index [Dec]	Word	Description	Range
968	2	ENERGY TYPE	0=normal(kWh-kVArh) 1=heavy (MWh-MVArh)
969	1	LOGICAL NUMBER	01-255
970	3	DATE	YY MMDD
971	1	DAY OF WEEK	1=monday 2=tuesday 3=wednesday 4=thursday 5=friday 6=saturday 7=sunday
972	3	TIME	HH MM SS
973	1	TRANSFORM RATIO KCT	1÷2500
974	1	TRANSFORM RATIO KVT	1÷3000
975	1	SYNCHRO TYPE	0=internal 1=external
976	1	FREQUENCY	5÷500
977	1	TIME FOR AVERAGE	1÷99
978	1	BACKLIGHT ON TIME (sec)	0÷360
979	1	MIN/MAX TIME TO STORE IN RAM	1-9999
980	1	MIN/MAX 3-PH.VOLTAGE STORE	0=do not store 1=store
981	1	MIN/MAX VOLTAGE L_{1-N} STORE	0=do not store 1=store
982	1	MIN/MAX VOLTAGE L_{2-N} STORE	0=do not store 1=store
983	1	MIN/MAX VOLTAGE L_{3-N} STORE	0=do not store 1=store
984	1	MIN/MAX 3PH.CURRENT STORE	0=do not store 1=store
985	1	MIN/MAX CURRENT L_1 STORE	0=do not store 1=store
986	1	MIN/MAX CURRENT L_2 STORE	0=do not store 1=store
987	1	MIN/MAX CURRENT L_3 STORE	0=do not store 1=store
988	1	MIN/MAX ACTIVE POWER STORE	0=do not store 1=store
989	1	MIN/MAX APP.POWER STORE	0=do not store 1=store
990	1	MIN/MAX POWER FACT.STORE	0=do not store 1=store
991	1	MIN/MAX AV.POWER STORE	0=do not store 1=store
992	2	DIGITAL INPUT TYPE	0=not used 1=sync.rtc 2=periods 3=generic counters 4=GMC 5=GME 6=ELKO
993	2	WIRING MODE	0=4 wire 1=3 wire 2=Aron

TIMEBANDS- TARIFF PERIOD 1

Index[Dec]	Word	Description	Range
994	3	Hours and Minutes and band of begin the 1st tariff band	(1)
995	3	Hours and Minutes and band of begin the 2nd tariff band	(1)
996	3	Hours and Minutes and band of begin the 3rd tariff band	(1)
997	3	Hours and Minutes and band of begin the 4th tariff band	(1)
998	3	Hours and Minutes and band of begin the 5th tariff band	(1)
999	3	Hours and Minutes and band of begin the 6th tariff band	(1)
1000	3	Hours and Minutes and band of begin the 7th tariff band	(1)
1001	3	Hours and Minutes and band of begin the 8th tariff band	(1)
1002	3	Hours and Minutes and band of begin the 9th tariff band	(1)
1003	3	Hours and Minutes and band of begin the 10th tariff band	(1)
1004	3	Hours and Minutes and band of begin the 11th tariff band	(1)
1005	3	Hours and Minutes and band of begin the 12th tariff band	(1)
1006	1	DAY selecting	(2)
1007	1	StartMonth	(3)
1008	1	StartDay	(3)
1009	1	StopMonth	(3)
1010	1	StopDay	(3)

(1) it defines the beginning (hours and minutes) of each tariff band during the day.
it is possible to input up to 12 changes during the day.
it is possible to set four different bands (0,1,2,3).
i.e.: to program the start of 2st tariff band (1) at 06:00 send $0006,$0000,$0001

(2) DAY: Programming: put to 1 the Bit relative to the day which are selected.

X	X	X	X	X	X	X	0	0	0	0	0	0	0	0	0
Mo	**Tu**	**We**	**Th**	**Fr**	**Sa**	**Su**									

i.e.:to program all day from Monday to Friday send $F800

(3) it defines the beginning (month and day) and the ending (month and day) of the period.
Month: 1=January, …, 12=December.
Day: 1…31.

TIMEBANDS- TARIFF PERIOD 2

Index[Dec]	Word	Description	Range
1011	3	Hours and Minutes and band of begin the 1st tariff band	(1)
1012	3	Hours and Minutes and band of begin the 2nd tariff band	(1)
1013	3	Hours and Minutes and band of begin the 3rd tariff band	(1)
1014	3	Hours and Minutes and band of begin the 4th tariff band	(1)
1015	3	Hours and Minutes and band of begin the 5th tariff band	(1)
1016	3	Hours and Minutes and band of begin the 6th tariff band	(1)
1017	3	Hours and Minutes and band of begin the 7th tariff band	(1)
1018	3	Hours and Minutes and band of begin the 8th tariff band	(1)
1019	3	Hours and Minutes and band of begin the 9th tariff band	(1)
1020	3	Hours and Minutes and band of begin the 10th tariff band	(1)
1021	3	Hours and Minutes and band of begin the 11th tariff band	(1)
1022	3	Hours and Minutes and band of begin the 12th tariff band	(1)
1023	1	DAY selecting	(2)
1024	1	StartMonth	(3)
1025	1	StartDay	(3)
1026	1	StopMonth	(3)
1027	1	StopDay	(3)

TIMEBANDS- TARIFF PERIOD 3

Index[Dec]	Word	Description	Range
1028	3	Hours and Minutes and band of begin the 1st tariff band	(1)
1029	3	Hours and Minutes and band of begin the 2nd tariff band	(1)
1030	3	Hours and Minutes and band of begin the 3rd tariff band	(1)
1031	3	Hours and Minutes and band of begin the 4th tariff band	(1)
1032	3	Hours and Minutes and band of begin the 5th tariff band	(1)
1033	3	Hours and Minutes and band of begin the 6th tariff band	(1)
1034	3	Hours and Minutes and band of begin the 7th tariff band	(1)
1035	3	Hours and Minutes and band of begin the 8th tariff band	(1)
1036	3	Hours and Minutes and band of begin the 9th tariff band	(1)
1037	3	Hours and Minutes and band of begin the 10th tariff band	(1)
1038	3	Hours and Minutes and band of begin the 11th tariff band	(1)
1039	3	Hours and Minutes and band of begin the 12th tariff band	(1)
1040	1	DAY selecting	(2)
1041	1	StartMonth	(3)
1042	1	StartDay	(3)
1043	1	StopMonth	(3)
1044	1	StopDay	(3)

TIMEBANDS- TARIFF PERIOD 4

Index[Dec]	Word	Description	Range
1045	3	Hours and Minutes and band of begin the 1st tariff band	(1)
1046	3	Hours and Minutes and band of begin the 2nd tariff band	(1)
1047	3	Hours and Minutes and band of begin the 3rd tariff band	(1)
1048	3	Hours and Minutes and band of begin the 4th tariff band	(1)
1049	3	Hours and Minutes and band of begin the 5th tariff band	(1)
1050	3	Hours and Minutes and band of begin the 6th tariff band	(1)
1051	3	Hours and Minutes and band of begin the 7th tariff band	(1)
1052	3	Hours and Minutes and band of begin the 8th tariff band	(1)
1053	3	Hours and Minutes and band of begin the 9th tariff band	(1)
1054	3	Hours and Minutes and band of begin the 10th tariff band	(1)
1055	3	Hours and Minutes and band of begin the 11th tariff band	(1)
1056	3	Hours and Minutes and band of begin the 12th tariff band	(1)
1057	1	DAY selecting	(2)
1058	1	StartMonth	(3)
1059	1	StartDay	(3)
1060	1	StopMonth	(3)
1061	1	StopDay	(3)

TIMEBANDS- TARIFF PERIOD 5

Index[Dec]	Word	Description	Range
1062	3	Hours and Minutes and band of begin the 1st tariff band	(1)
1063	3	Hours and Minutes and band of begin the 2nd tariff band	(1)
1064	3	Hours and Minutes and band of begin the 3rd tariff band	(1)
1065	3	Hours and Minutes and band of begin the 4th tariff band	(1)
1066	3	Hours and Minutes and band of begin the 5th tariff band	(1)
1067	3	Hours and Minutes and band of begin the 6th tariff band	(1)
1068	3	Hours and Minutes and band of begin the 7th tariff band	(1)
1069	3	Hours and Minutes and band of begin the 8th tariff band	(1)
1070	3	Hours and Minutes and band of begin the 9th tariff band	(1)
1071	3	Hours and Minutes and band of begin the 10th tariff band	(1)
1072	3	Hours and Minutes and band of begin the 11th tariff band	(1)
1073	3	Hours and Minutes and band of begin the 12th tariff band	(1)
1074	1	DAY selecting	(2)
1075	1	StartMonth	(3)
1076	1	StartDay	(3)
1077	1	StopMonth	(3)
1078	1	StopDay	(3)

TIMEBANDS- TARIFF PERIOD 6

Index[Dec]	Word	Description	Range
1079	3	Hours and Minutes and band of begin the 1st tariff band	(1)
1080	3	Hours and Minutes and band of begin the 2nd tariff band	(1)
1081	3	Hours and Minutes and band of begin the 3rd tariff band	(1)
1082	3	Hours and Minutes and band of begin the 4th tariff band	(1)
1083	3	Hours and Minutes and band of begin the 5th tariff band	(1)
1084	3	Hours and Minutes and band of begin the 6th tariff band	(1)
1085	3	Hours and Minutes and band of begin the 7th tariff band	(1)
1086	3	Hours and Minutes and band of begin the 8th tariff band	(1)
1087	3	Hours and Minutes and band of begin the 9th tariff band	(1)
1088	3	Hours and Minutes and band of begin the 10th tariff band	(1)
1089	3	Hours and Minutes and band of begin the 11th tariff band	(1)
1090	3	Hours and Minutes and band of begin the 12th tariff band	(1)
1091	1	DAY selecting	(2)
1092	1	StartMonth	(3)
1093	1	StartDay	(3)
1094	1	StopMonth	(3)
1095	1	StopDay	(3)

TIMEBANDS- TARIFF PERIOD 7

Index[Dec]	Word	Description	Range
1096	3	Hours and Minutes and band of begin the 1st tariff band	(1)
1097	3	Hours and Minutes and band of begin the 2nd tariff band	(1)
1098	3	Hours and Minutes and band of begin the 3rd tariff band	(1)
1099	3	Hours and Minutes and band of begin the 4th tariff band	(1)
1100	3	Hours and Minutes and band of begin the 5th tariff band	(1)
1101	3	Hours and Minutes and band of begin the 6th tariff band	(1)
1102	3	Hours and Minutes and band of begin the 7th tariff band	(1)
1103	3	Hours and Minutes and band of begin the 8th tariff band	(1)
1104	3	Hours and Minutes and band of begin the 9th tariff band	(1)
1105	3	Hours and Minutes and band of begin the 10th tariff band	(1)
1106	3	Hours and Minutes and band of begin the 11th tariff band	(1)
1107	3	Hours and Minutes and band of begin the 12th tariff band	(1)
1108	1	DAY selecting	(2)
1109	1	StartMonth	(3)
1110	1	StartDay	(3)
1111	1	StopMonth	(3)
1112	1	StopDay	(3)

TIMEBANDS- TARIFF PERIOD 8

Index[Dec]	Word	Description	Range
1113	3	Hours and Minutes and band of begin the 1st tariff band	(1)
1114	3	Hours and Minutes and band of begin the 2nd tariff band	(1)
1115	3	Hours and Minutes and band of begin the 3rd tariff band	(1)
1116	3	Hours and Minutes and band of begin the 4th tariff band	(1)
1117	3	Hours and Minutes and band of begin the 5th tariff band	(1)
1118	3	Hours and Minutes and band of begin the 6th tariff band	(1)
1119	3	Hours and Minutes and band of begin the 7th tariff band	(1)
1120	3	Hours and Minutes and band of begin the 8th tariff band	(1)
1121	3	Hours and Minutes and band of begin the 9th tariff band	(1)
1122	3	Hours and Minutes and band of begin the 10th tariff band	(1)
1123	3	Hours and Minutes and band of begin the 11th tariff band	(1)
1124	3	Hours and Minutes and band of begin the 12th tariff band	(1)
1125	1	DAY selecting	(2)
1126	1	StartMonth	(3)
1127	1	StartDay	(3)
1128	1	StopMonth	(3)
1129	1	StopDay	(3)

TIMEBANDS- TARIFF PERIOD 9

Index[Dec]	Word	Description	Range
1130	3	Hours and Minutes and band of begin the 1st tariff band	(1)
1131	3	Hours and Minutes and band of begin the 2nd tariff band	(1)
1132	3	Hours and Minutes and band of begin the 3rd tariff band	(1)
1133	3	Hours and Minutes and band of begin the 4th tariff band	(1)
1134	3	Hours and Minutes and band of begin the 5th tariff band	(1)
1135	3	Hours and Minutes and band of begin the 6th tariff band	(1)
1136	3	Hours and Minutes and band of begin the 7th tariff band	(1)
1137	3	Hours and Minutes and band of begin the 8th tariff band	(1)
1138	3	Hours and Minutes and band of begin the 9th tariff band	(1)
1139	3	Hours and Minutes and band of begin the 10th tariff band	(1)
1140	3	Hours and Minutes and band of begin the 11th tariff band	(1)
1141	3	Hours and Minutes and band of begin the 12th tariff band	(1)
1142	1	DAY selecting	(2)
1143	1	StartMonth	(3)
1144	1	StartDay	(3)
1145	1	StopMonth	(3)
1146	1	StopDay	(3)

TIMEBANDS- TARIFF PERIOD 10

Index[Dec]	Word	Description	Range
1147	3	Hours and Minutes and band of begin the 1st tariff band	(1)
1148	3	Hours and Minutes and band of begin the 2nd tariff band	(1)
1149	3	Hours and Minutes and band of begin the 3rd tariff band	(1)
1150	3	Hours and Minutes and band of begin the 4th tariff band	(1)
1151	3	Hours and Minutes and band of begin the 5th tariff band	(1)
1152	3	Hours and Minutes and band of begin the 6th tariff band	(1)
1153	3	Hours and Minutes and band of begin the 7th tariff band	(1)
1154	3	Hours and Minutes and band of begin the 8th tariff band	(1)
1155	3	Hours and Minutes and band of begin the 9th tariff band	(1)
1156	3	Hours and Minutes and band of begin the 10th tariff band	(1)
1157	3	Hours and Minutes and band of begin the 11th tariff band	(1)
1158	3	Hours and Minutes and band of begin the 12th tariff band	(1)
1159	1	DAY selecting	(2)
1160	1	StartMonth	(3)
1161	1	StartDay	(3)
1162	1	StopMonth	(3)
1163	1	StopDay	(3)

TIMEBANDS- TARIFF PERIOD 11

Index[Dec]	Word	Description	Range
1164	3	Hours and Minutes and band of begin the 1st tariff band	(1)
1165	3	Hours and Minutes and band of begin the 2nd tariff band	(1)
1166	3	Hours and Minutes and band of begin the 3rd tariff band	(1)
1167	3	Hours and Minutes and band of begin the 4th tariff band	(1)
1168	3	Hours and Minutes and band of begin the 5th tariff band	(1)
1169	3	Hours and Minutes and band of begin the 6th tariff band	(1)
1170	3	Hours and Minutes and band of begin the 7th tariff band	(1)
1171	3	Hours and Minutes and band of begin the 8th tariff band	(1)
1172	3	Hours and Minutes and band of begin the 9th tariff band	(1)
1173	3	Hours and Minutes and band of begin the 10th tariff band	(1)
1174	3	Hours and Minutes and band of begin the 11th tariff band	(1)
1175	3	Hours and Minutes and band of begin the 12th tariff band	(1)
1176	1	DAY selecting	(2)
1177	1	StartMonth	(3)
1178	1	StartDay	(3)
1179	1	StopMonth	(3)
1180	1	StopDay	(3)

TIMEBANDS- TARIFF PERIOD 12

Index[Dec]	Word	Description	Range
1181	3	Hours and Minutes and band of begin the 1st tariff band	(1)
1182	3	Hours and Minutes and band of begin the 2nd tariff band	(1)
1183	3	Hours and Minutes and band of begin the 3rd tariff band	(1)
1184	3	Hours and Minutes and band of begin the 4th tariff band	(1)
1185	3	Hours and Minutes and band of begin the 5th tariff band	(1)
1186	3	Hours and Minutes and band of begin the 6th tariff band	(1)
1187	3	Hours and Minutes and band of begin the 7th tariff band	(1)
1188	3	Hours and Minutes and band of begin the 8th tariff band	(1)
1189	3	Hours and Minutes and band of begin the 9th tariff band	(1)
1190	3	Hours and Minutes and band of begin the 10th tariff band	(1)
1191	3	Hours and Minutes and band of begin the 11th tariff band	(1)
1192	3	Hours and Minutes and band of begin the 12th tariff band	(1)
1193	1	DAY selecting	(2)
1194	1	StartMonth	(3)
1195	1	StartDay	(3)
1196	1	StopMonth	(3)
1197	1	StopDay	(3)

TIMEBANDS- TARIFF PERIOD 13

Index[Dec]	Word	Description	Range
1198	3	Hours and Minutes and band of begin the 1st tariff band	(1)
1199	3	Hours and Minutes and band of begin the 2nd tariff band	(1)
1200	3	Hours and Minutes and band of begin the 3rd tariff band	(1)
1201	3	Hours and Minutes and band of begin the 4th tariff band	(1)
1202	3	Hours and Minutes and band of begin the 5th tariff band	(1)
1203	3	Hours and Minutes and band of begin the 6th tariff band	(1)
1204	3	Hours and Minutes and band of begin the 7th tariff band	(1)
1205	3	Hours and Minutes and band of begin the 8th tariff band	(1)
1206	3	Hours and Minutes and band of begin the 9th tariff band	(1)
1207	3	Hours and Minutes and band of begin the 10th tariff band	(1)
1208	3	Hours and Minutes and band of begin the 11th tariff band	(1)
1209	3	Hours and Minutes and band of begin the 12th tariff band	(1)
1210	1	DAY selecting	(2)
1211	1	StartMonth	(3)
1212	1	StartDay	(3)
1213	1	StopMonth	(3)
1214	1	StopDay	(3)

TIMEBANDS- TARIFF PERIOD 14

Index[Dec]	Word	Description	Range
1215	3	Hours and Minutes and band of begin the 1st tariff band	(1)
1216	3	Hours and Minutes and band of begin the 2nd tariff band	(1)
1217	3	Hours and Minutes and band of begin the 3rd tariff band	(1)
1218	3	Hours and Minutes and band of begin the 4th tariff band	(1)
1219	3	Hours and Minutes and band of begin the 5th tariff band	(1)
1220	3	Hours and Minutes and band of begin the 6th tariff band	(1)
1221	3	Hours and Minutes and band of begin the 7th tariff band	(1)
1222	3	Hours and Minutes and band of begin the 8th tariff band	(1)
1223	3	Hours and Minutes and band of begin the 9th tariff band	(1)
1224	3	Hours and Minutes and band of begin the 10th tariff band	(1)
1225	3	Hours and Minutes and band of begin the 11th tariff band	(1)
1226	3	Hours and Minutes and band of begin the 12th tariff band	(1)
1227	1	DAY selecting	(2)
1228	1	StartMonth	(3)
1229	1	StartDay	(3)
1230	1	StopMonth	(3)
1231	1	StopDay	(3)

TIMEBANDS- TARIFF PERIOD 15

Index[Dec]	Word	Description	Range
1232	3	Hours and Minutes and band of begin the 1st tariff band	(1)
1233	3	Hours and Minutes and band of begin the 2nd tariff band	(1)
1234	3	Hours and Minutes and band of begin the 3rd tariff band	(1)
1235	3	Hours and Minutes and band of begin the 4th tariff band	(1)
1236	3	Hours and Minutes and band of begin the 5th tariff band	(1)
1237	3	Hours and Minutes and band of begin the 6th tariff band	(1)
1238	3	Hours and Minutes and band of begin the 7th tariff band	(1)
1239	3	Hours and Minutes and band of begin the 8th tariff band	(1)
1240	3	Hours and Minutes and band of begin the 9th tariff band	(1)
1241	3	Hours and Minutes and band of begin the 10th tariff band	(1)
1242	3	Hours and Minutes and band of begin the 11th tariff band	(1)
1243	3	Hours and Minutes and band of begin the 12th tariff band	(1)
1244	1	DAY selecting	(2)
1245	1	StartMonth	(3)
1246	1	StartDay	(3)
1247	1	StopMonth	(3)
1248	1	StopDay	(3)

HOLYDAYS

Index	Word	Description
1249	1	day of holyday no. 1
1250	1	month of holyday no. 1
1251	1	day of holyday no. 2
1252	1	month of holyday no. 2
1253	1	day of holyday no. 3
1254	1	month of holyday no. 3
1255	1	day of holyday no. 4
1256	1	month of holyday no. 4
1257	1	day of holyday no. 5
1258	1	month of holyday no. 5
1259	1	day of holyday no. 6
1260	1	month of holyday no. 6
1261	1	day of holyday no. 7
1262	1	month of holyday no. 7
1263	1	day of holyday no. 8
1264	1	month of holyday no. 8
1265	1	day of holyday no. 9
1266	1	month of holyday no. 9
1267	1	day of holyday no. 10
1268	1	month of holyday no. 10
1269	1	day of holyday no. 11
1270	1	month of holyday no. 11
1271	1	day of holyday no. 12
1272	1	month of holyday no. 12
1273	1	day of holyday no. 13
1274	1	month of holyday no. 13
1275	1	day of holyday no. 14
1276	1	month of holyday no. 14
1277	1	day of holyday no. 15
1278	1	month of holyday no. 15
1279	1	day of holyday no. 16
1280	1	month of holyday no. 16
1281	1	day of holyday no. 17
1282	1	month of holyday no. 17
1283	1	day of holyday no. 18
1284	1	month of holyday no. 18
1285	1	day of holyday no. 19
1286	1	month of holyday no. 19
1287	1	day of holyday no. 20
1288	1	month of holyday no. 20
1289	1	day of holyday no. 21
1290	1	month of holyday no. 21
1291	1	day of holyday no. 22
1292	1	month of holyday no. 22
1293	1	day of holyday no. 23
1294	1	month of holyday no. 23
1295	1	day of holyday no. 24
1296	1	month of holyday no. 24
1297	1	day of holyday no. 25
1298	1	month of holyday no. 25
1299	1	day of holyday no. 26
1300	1	month of holyday no. 26
1301	1	day of holyday no. 27
1302	1	month of holyday no. 27
1303	1	day of holyday no. 28
1304	1	month of holyday no. 28
1305	1	day of holyday no. 29
1306	1	month of holyday no. 29
1307	1	day of holyday no. 30
1308	1	month of holyday no. 30
1309	1	day of holyday no. 31
1310	1	month of holyday no. 31
1311	1	day of holyday no. 32
1312	1	month of holyday no. 32
1313	1	day of holyday no. 33
1314	1	month of holyday no. 33
1315	1	day of holyday no. 34
1316	1	month of holyday no. 34

1317	1	day of holyday no. 35
1318	1	month of holyday no. 35
1319	1	day of holyday no. 36
1320	1	month of holyday no. 36
1321	1	day of holyday no. 37
1322	1	month of holyday no. 37
1323	1	day of holyday no. 38
1324	1	month of holyday no. 38
1325	1	day of holyday no. 39
1326	1	month of holyday no. 39
1327	1	day of holyday no. 40
1328	1	month of holyday no. 40

GENERIC COUNTERS VALUES-   Double format

Index	Word	Description	Range
1329	4	Generic Counter 1 Value	0÷99999999.9
1330	4	Generic Counter 2 Value	0÷99999999.9
1331	4	Generic Counter 3 Value	0÷99999999.9
1332	4	Generic Counter 4 Value	0÷99999999.9
1333	4	Generic Counter 5 Value	0÷99999999.9
1334	4	Generic Counter 6 Value	0÷99999999.9
1335	4	Generic Counter 7 Value	0÷99999999.9
1336	4	Generic Counter 8 Value	0÷99999999.9

GENERIC COUNTERS SETTINGS

Index	Word	Description	Range
1337	7	Generic Counter 1 Setting	(*)
1338	7	Generic Counter 2 Setting High	(*)
1339	7	Generic Counter 3 Setting High	(*)
1340	7	Generic Counter 4 Setting High	(*)
1341	7	Generic Counter 5 Setting High	(*)
1342	7	Generic Counter 6 Setting High	(*)
1343	7	Generic Counter 7 Setting High	(*)
1344	7	Generic Counter 8 Setting High	(*)

(*)
Description:

Byte(s)   Read
1:          Counter (i) -> Digital Input association
2:          Counter's name type (0=kWh+; 1=kWh-; 2=kVArh+; 3=kVArh-; 4=Water; 5=Gas; 6=User.)
3÷10:   Counter's name (ASCII codes)
11÷14:   Pulse's weight (0÷1999.99)

WRITE COMMANDS

Index	Word	Description	Range	Reset
2000	2	ENERGY TYPE	0=normal(kWh-kVArh) 1=heavy (MWh-MVArh)	YES
2001	1	LOGICAL NUMBER	01-255	YES
2002	3	DATE	YY MMDD	YES
2003	1	DAY OF WEEK	1=monday 2=tuesday 3=wednesday 4=thursday 5=friday 6=saturday 7=sunday	NO
2004	3	TIME	HH MM SS	NO
2005	1	TRANSFORM RATIO KCT	1÷2500	YES
2006	1	TRANSFORM RATIO KVT	1÷3000	YES
2007	1	SYNCHRO TYPE	0=internal 1=external	NO
2008	1	FREQUENCY	5÷500	NO
2009	1	TIME FOR AVERAGE	1÷99	YES
2010	1	BACKLIGHT ON TIME (sec)	0÷360	NO
2011	1	MIN/MAX TIME TO STORE IN RAM	1-9999	NO
2012	1	MIN/MAX 3-PH.VOLTAGE STORE	0=do not store 1=store	NO
2013	1	MIN/MAX VOLTAGE L_{1-N} STORE	0=do not store 1=store	NO
2014	1	MIN/MAX VOLTAGE L_{2-N} STORE	0=do not store 1=store	NO
2015	1	MIN/MAX VOLTAGE L_{3-N} STORE	0=do not store 1=store	NO
2016	1	MIN/MAX 3PH.CURRENT STORE	0=do not store 1=store	NO
2017	1	MIN/MAX CURRENT L_1 STORE	0=do not store 1=store	NO
2018	1	MIN/MAX CURRENT L_2 STORE	0=do not store 1=store	NO
2019	1	MIN/MAX CURRENT L_3 STORE	0=do not store 1=store	NO
2020	1	MIN/MAX ACTIVE POWER STORE	0=do not store 1=store	NO
2021	1	MIN/MAX APP.POWER STORE	0=do not store 1=store	NO
2022	1	MIN/MAX POWER FACT.STORE	0=do not store 1=store	NO
2023	1	MIN/MAX AV.POWER STORE	0=do not store 1=store	NO
2024	2	DIGITAL INPUT TYPE	0=not used 1=sync.rtc 2=periods 3=generic counters 4=GMC 5=GME 6=ELKO	YES
2025	2	WIRING MODE	0=4 wire 1=3 wire 2=Aron	YES

TIMEBANDS- TARIFF PERIOD 1

Index[Dec]	Word	Description	Range	Reset
2026	3	Hours and Minutes and band of begin the 1st tariff band	(1)	NO
2027	3	Hours and Minutes and band of begin the 2nd tariff band	(1)	NO
2028	3	Hours and Minutes and band of begin the 3rd tariff band	(1)	NO
2029	3	Hours and Minutes and band of begin the 4th tariff band	(1)	NO
2030	3	Hours and Minutes and band of begin the 5th tariff band	(1)	NO
2031	3	Hours and Minutes and band of begin the 6th tariff band	(1)	NO
2032	3	Hours and Minutes and band of begin the 7th tariff band	(1)	NO
2033	3	Hours and Minutes and band of begin the 8th tariff band	(1)	NO
2034	3	Hours and Minutes and band of begin the 9th tariff band	(1)	NO
2035	3	Hours and Minutes and band of begin the 10th tariff band	(1)	NO
2036	3	Hours and Minutes and band of begin the 11th tariff band	(1)	NO
2037	3	Hours and Minutes and band of begin the 12th tariff band	(1)	NO
2038	1	DAY selecting	(2)	NO
2039	1	StartMonth	(3)	NO
2040	1	StartDay	(3)	NO
2041	1	StopMonth	(3)	NO
2042	1	StopDay	(3)	NO

(1) it defines the beginning (hours and minutes) of each tariff band during the day.
it is possible to input up to 12 changes during the day.
it is possible to set four different bands (0,1,2,3).
i.e.: to program the start of 2st tariff band (1) at 06:00 send $0006,$0000,$0001

(2) DAY: Programming: put to 1 the Bit relative to the day which are selected.

X	X	X	X	X	X	X	0	0	0	0	0	0	0	0	0
Mo	Tu	We	Th	Fr	Sa	Su									

i.e.:to program all day from Monday to Friday send $F800

(3) it defines the beginning (month and day) and the ending (month and day) of the period.
Month: 1=January, …, 12=December.
Day: 1…31.

TIMEBANDS- TARIFF PERIOD 2

Index[Dec]	Word	Description	Range	Reset
2043	3	Hours and Minutes and band of begin the 1st tariff band	(1)	NO
2044	3	Hours and Minutes and band of begin the 2nd tariff band	(1)	NO
2045	3	Hours and Minutes and band of begin the 3rd tariff band	(1)	NO
2046	3	Hours and Minutes and band of begin the 4th tariff band	(1)	NO
2047	3	Hours and Minutes and band of begin the 5th tariff band	(1)	NO
2048	3	Hours and Minutes and band of begin the 6th tariff band	(1)	NO
2049	3	Hours and Minutes and band of begin the 7th tariff band	(1)	NO
2050	3	Hours and Minutes and band of begin the 8th tariff band	(1)	NO
2051	3	Hours and Minutes and band of begin the 9th tariff band	(1)	NO
2052	3	Hours and Minutes and band of begin the 10th tariff band	(1)	NO
2053	3	Hours and Minutes and band of begin the 11th tariff band	(1)	NO
2054	3	Hours and Minutes and band of begin the 12th tariff band	(1)	NO
2055	1	DAY selecting	(2)	NO
2056	1	StartMonth	(3)	NO
2057	1	StartDay	(3)	NO
2058	1	StopMonth	(3)	NO
2059	1	StopDay	(3)	NO

TIMEBANDS- TARIFF PERIOD 3

Index[Dec]	Word	Description	Range	Reset
2060	3	Hours and Minutes and band of begin the 1st tariff band	(1)	NO
2061	3	Hours and Minutes and band of begin the 2nd tariff band	(1)	NO
2062	3	Hours and Minutes and band of begin the 3rd tariff band	(1)	NO
2063	3	Hours and Minutes and band of begin the 4th tariff band	(1)	NO
2064	3	Hours and Minutes and band of begin the 5th tariff band	(1)	NO
2065	3	Hours and Minutes and band of begin the 6th tariff band	(1)	NO
2066	3	Hours and Minutes and band of begin the 7th tariff band	(1)	NO
2067	3	Hours and Minutes and band of begin the 8th tariff band	(1)	NO
2068	3	Hours and Minutes and band of begin the 9th tariff band	(1)	NO
2069	3	Hours and Minutes and band of begin the 10th tariff band	(1)	NO
2070	3	Hours and Minutes and band of begin the 11th tariff band	(1)	NO
2071	3	Hours and Minutes and band of begin the 12th tariff band	(1)	NO
2072	1	DAY selecting	(2)	NO
2073	1	StartMonth	(3)	NO
2074	1	StartDay	(3)	NO
2075	1	StopMonth	(3)	NO
2076	1	StopDay	(3)	NO

TIMEBANDS- TARIFF PERIOD 4

Index[Dec]	Word	Description	Range	Reset
2077	3	Hours and Minutes and band of begin the 1st tariff band	(1)	NO
2078	3	Hours and Minutes and band of begin the 2nd tariff band	(1)	NO
2079	3	Hours and Minutes and band of begin the 3rd tariff band	(1)	NO
2080	3	Hours and Minutes and band of begin the 4th tariff band	(1)	NO
2081	3	Hours and Minutes and band of begin the 5th tariff band	(1)	NO
2082	3	Hours and Minutes and band of begin the 6th tariff band	(1)	NO
2083	3	Hours and Minutes and band of begin the 7th tariff band	(1)	NO
2084	3	Hours and Minutes and band of begin the 8th tariff band	(1)	NO
2085	3	Hours and Minutes and band of begin the 9th tariff band	(1)	NO
2086	3	Hours and Minutes and band of begin the 10th tariff band	(1)	NO
2087	3	Hours and Minutes and band of begin the 11th tariff band	(1)	NO
2088	3	Hours and Minutes and band of begin the 12th tariff band	(1)	NO
2089	1	DAY selecting	(2)	NO
2090	1	StartMonth	(3)	NO
2091	1	StartDay	(3)	NO
2092	1	StopMonth	(3)	NO
2093	1	StopDay	(3)	NO

TIMEBANDS- TARIFF PERIOD 5

Index[Dec]	Word	Description	Range	Reset
2094	3	Hours and Minutes and band of begin the 1st tariff band	(1)	NO
2095	3	Hours and Minutes and band of begin the 2nd tariff band	(1)	NO
2096	3	Hours and Minutes and band of begin the 3rd tariff band	(1)	NO
2097	3	Hours and Minutes and band of begin the 4th tariff band	(1)	NO
2098	3	Hours and Minutes and band of begin the 5th tariff band	(1)	NO
2099	3	Hours and Minutes and band of begin the 6th tariff band	(1)	NO
2100	3	Hours and Minutes and band of begin the 7th tariff band	(1)	NO
2101	3	Hours and Minutes and band of begin the 8th tariff band	(1)	NO
2102	3	Hours and Minutes and band of begin the 9th tariff band	(1)	NO
2103	3	Hours and Minutes and band of begin the 10th tariff band	(1)	NO
2104	3	Hours and Minutes and band of begin the 11th tariff band	(1)	NO
2105	3	Hours and Minutes and band of begin the 12th tariff band	(1)	NO
2106	1	DAY selecting	(2)	NO
2107	1	StartMonth	(3)	NO
2108	1	StartDay	(3)	NO
2109	1	StopMonth	(3)	NO
2110	1	StopDay	(3)	NO

TIMEBANDS- TARIFF PERIOD 6

Index[Dec]	Word	Description	Range	Reset
2111	3	Hours and Minutes and band of begin the 1st tariff band	(1)	NO
2112	3	Hours and Minutes and band of begin the 2nd tariff band	(1)	NO
2113	3	Hours and Minutes and band of begin the 3rd tariff band	(1)	NO
2114	3	Hours and Minutes and band of begin the 4th tariff band	(1)	NO
2115	3	Hours and Minutes and band of begin the 5th tariff band	(1)	NO
2116	3	Hours and Minutes and band of begin the 6th tariff band	(1)	NO
2117	3	Hours and Minutes and band of begin the 7th tariff band	(1)	NO
2118	3	Hours and Minutes and band of begin the 8th tariff band	(1)	NO
2119	3	Hours and Minutes and band of begin the 9th tariff band	(1)	NO
2120	3	Hours and Minutes and band of begin the 10th tariff band	(1)	NO
2121	3	Hours and Minutes and band of begin the 11th tariff band	(1)	NO
2122	3	Hours and Minutes and band of begin the 12th tariff band	(1)	NO
2123	1	DAY selecting	(2)	NO
2124	1	StartMonth	(3)	NO
2125	1	StartDay	(3)	NO
2126	1	StopMonth	(3)	NO
2127	1	StopDay	(3)	NO

TIMEBANDS- TARIFF PERIOD 7

Index[Dec]	Word	Description	Range	Reset
2128	3	Hours and Minutes and band of begin the 1st tariff band	(1)	NO
2129	3	Hours and Minutes and band of begin the 2nd tariff band	(1)	NO
2130	3	Hours and Minutes and band of begin the 3rd tariff band	(1)	NO
2131	3	Hours and Minutes and band of begin the 4th tariff band	(1)	NO
2132	3	Hours and Minutes and band of begin the 5th tariff band	(1)	NO
2133	3	Hours and Minutes and band of begin the 6th tariff band	(1)	NO
2134	3	Hours and Minutes and band of begin the 7th tariff band	(1)	NO
2135	3	Hours and Minutes and band of begin the 8th tariff band	(1)	NO
2136	3	Hours and Minutes and band of begin the 9th tariff band	(1)	NO
2137	3	Hours and Minutes and band of begin the 10th tariff band	(1)	NO
2138	3	Hours and Minutes and band of begin the 11th tariff band	(1)	NO
2139	3	Hours and Minutes and band of begin the 12th tariff band	(1)	NO
2140	1	DAY selecting	(2)	NO
2141	1	StartMonth	(3)	NO
2142	1	StartDay	(3)	NO
2143	1	StopMonth	(3)	NO
2144	1	StopDay	(3)	NO

TIMEBANDS- TARIFF PERIOD 8

Index[Dec]	Word	Description	Range	Reset
2145	3	Hours and Minutes and band of begin the 1st tariff band	(1)	NO
2146	3	Hours and Minutes and band of begin the 2nd tariff band	(1)	NO
2147	3	Hours and Minutes and band of begin the 3rd tariff band	(1)	NO
2148	3	Hours and Minutes and band of begin the 4th tariff band	(1)	NO
2149	3	Hours and Minutes and band of begin the 5th tariff band	(1)	NO
2150	3	Hours and Minutes and band of begin the 6th tariff band	(1)	NO
2151	3	Hours and Minutes and band of begin the 7th tariff band	(1)	NO
2152	3	Hours and Minutes and band of begin the 8th tariff band	(1)	NO
2153	3	Hours and Minutes and band of begin the 9th tariff band	(1)	NO
2154	3	Hours and Minutes and band of begin the 10th tariff band	(1)	NO
2155	3	Hours and Minutes and band of begin the 11th tariff band	(1)	NO
2156	3	Hours and Minutes and band of begin the 12th tariff band	(1)	NO
2157	1	DAY selecting	(2)	NO
2158	1	StartMonth	(3)	NO
2159	1	StartDay	(3)	NO
2160	1	StopMonth	(3)	NO
2161	1	StopDay	(3)	NO

TIMEBANDS- TARIFF PERIOD 9

Index[Dec]	Word	Description	Range	Reset
2162	3	Hours and Minutes and band of begin the 1st tariff band	(1)	NO
2163	3	Hours and Minutes and band of begin the 2nd tariff band	(1)	NO
2164	3	Hours and Minutes and band of begin the 3rd tariff band	(1)	NO
2165	3	Hours and Minutes and band of begin the 4th tariff band	(1)	NO
2166	3	Hours and Minutes and band of begin the 5th tariff band	(1)	NO
2167	3	Hours and Minutes and band of begin the 6th tariff band	(1)	NO
2168	3	Hours and Minutes and band of begin the 7th tariff band	(1)	NO
2169	3	Hours and Minutes and band of begin the 8th tariff band	(1)	NO
2170	3	Hours and Minutes and band of begin the 9th tariff band	(1)	NO
2171	3	Hours and Minutes and band of begin the 10th tariff band	(1)	NO
2172	3	Hours and Minutes and band of begin the 11th tariff band	(1)	NO
2173	3	Hours and Minutes and band of begin the 12th tariff band	(1)	NO
2174	1	DAY selecting	(2)	NO
2175	1	StartMonth	(3)	NO
2176	1	StartDay	(3)	NO
2177	1	StopMonth	(3)	NO
2178	1	StopDay	(3)	NO

TIMEBANDS- TARIFF PERIOD 10

Index[Dec]	Word	Description	Range	Reset
2179	3	Hours and Minutes and band of begin the 1st tariff band	(1)	NO
2180	3	Hours and Minutes and band of begin the 2nd tariff band	(1)	NO
2181	3	Hours and Minutes and band of begin the 3rd tariff band	(1)	NO
2182	3	Hours and Minutes and band of begin the 4th tariff band	(1)	NO
2183	3	Hours and Minutes and band of begin the 5th tariff band	(1)	NO
2184	3	Hours and Minutes and band of begin the 6th tariff band	(1)	NO
2185	3	Hours and Minutes and band of begin the 7th tariff band	(1)	NO
2186	3	Hours and Minutes and band of begin the 8th tariff band	(1)	NO
2187	3	Hours and Minutes and band of begin the 9th tariff band	(1)	NO
2188	3	Hours and Minutes and band of begin the 10th tariff band	(1)	NO
2189	3	Hours and Minutes and band of begin the 11th tariff band	(1)	NO
2190	3	Hours and Minutes and band of begin the 12th tariff band	(1)	NO
2191	1	DAY selecting	(2)	NO
2192	1	StartMonth	(3)	NO
2193	1	StartDay	(3)	NO
2194	1	StopMonth	(3)	NO
2195	1	StopDay	(3)	NO

TIMEBANDS- TARIFF PERIOD 11

Index[Dec]	Word	Description	Range	Reset
2196	3	Hours and Minutes and band of begin the 1st tariff band	(1)	NO
2197	3	Hours and Minutes and band of begin the 2nd tariff band	(1)	NO
2198	3	Hours and Minutes and band of begin the 3rd tariff band	(1)	NO
2199	3	Hours and Minutes and band of begin the 4th tariff band	(1)	NO
2200	3	Hours and Minutes and band of begin the 5th tariff band	(1)	NO
2201	3	Hours and Minutes and band of begin the 6th tariff band	(1)	NO
2202	3	Hours and Minutes and band of begin the 7th tariff band	(1)	NO
2203	3	Hours and Minutes and band of begin the 8th tariff band	(1)	NO
2204	3	Hours and Minutes and band of begin the 9th tariff band	(1)	NO
2205	3	Hours and Minutes and band of begin the 10th tariff band	(1)	NO
2206	3	Hours and Minutes and band of begin the 11th tariff band	(1)	NO
2207	3	Hours and Minutes and band of begin the 12th tariff band	(1)	NO
2208	1	DAY selecting	(2)	NO
2209	1	StartMonth	(3)	NO
2210	1	StartDay	(3)	NO
2211	1	StopMonth	(3)	NO
2212	1	StopDay	(3)	NO

TIMEBANDS- TARIFF PERIOD 12

Index[Dec]	Word	Description	Range	Reset
2213	3	Hours and Minutes and band of begin the 1st tariff band	(1)	NO
2214	3	Hours and Minutes and band of begin the 2nd tariff band	(1)	NO
2215	3	Hours and Minutes and band of begin the 3rd tariff band	(1)	NO
2216	3	Hours and Minutes and band of begin the 4th tariff band	(1)	NO
2217	3	Hours and Minutes and band of begin the 5th tariff band	(1)	NO
2218	3	Hours and Minutes and band of begin the 6th tariff band	(1)	NO
2219	3	Hours and Minutes and band of begin the 7th tariff band	(1)	NO
2220	3	Hours and Minutes and band of begin the 8th tariff band	(1)	NO
2221	3	Hours and Minutes and band of begin the 9th tariff band	(1)	NO
2222	3	Hours and Minutes and band of begin the 10th tariff band	(1)	NO
2223	3	Hours and Minutes and band of begin the 11th tariff band	(1)	NO
2224	3	Hours and Minutes and band of begin the 12th tariff band	(1)	NO
2225	1	DAY selecting	(2)	NO
2226	1	StartMonth	(3)	NO
2227	1	StartDay	(3)	NO
2228	1	StopMonth	(3)	NO
2229	1	StopDay	(3)	NO

TIMEBANDS- TARIFF PERIOD 13

Index[Dec]	Word	Description	Range	Reset
2230	3	Hours and Minutes and band of begin the 1st tariff band	(1)	NO
2231	3	Hours and Minutes and band of begin the 2nd tariff band	(1)	NO
2232	3	Hours and Minutes and band of begin the 3rd tariff band	(1)	NO
2233	3	Hours and Minutes and band of begin the 4th tariff band	(1)	NO
2234	3	Hours and Minutes and band of begin the 5th tariff band	(1)	NO
2235	3	Hours and Minutes and band of begin the 6th tariff band	(1)	NO
2236	3	Hours and Minutes and band of begin the 7th tariff band	(1)	NO
2237	3	Hours and Minutes and band of begin the 8th tariff band	(1)	NO
2238	3	Hours and Minutes and band of begin the 9th tariff band	(1)	NO
2239	3	Hours and Minutes and band of begin the 10th tariff band	(1)	NO
2240	3	Hours and Minutes and band of begin the 11th tariff band	(1)	NO
2241	3	Hours and Minutes and band of begin the 12th tariff band	(1)	NO
2242	1	DAY selecting	(2)	NO
2243	1	StartMonth	(3)	NO
2244	1	StartDay	(3)	NO
2245	1	StopMonth	(3)	NO
2246	1	StopDay	(3)	NO

TIMEBANDS- TARIFF PERIOD 14

Index[Dec]	Word	Description	Range	Reset
2247	3	Hours and Minutes and band of begin the 1st tariff band	(1)	NO
2248	3	Hours and Minutes and band of begin the 2nd tariff band	(1)	NO
2249	3	Hours and Minutes and band of begin the 3rd tariff band	(1)	NO
2250	3	Hours and Minutes and band of begin the 4th tariff band	(1)	NO
2251	3	Hours and Minutes and band of begin the 5th tariff band	(1)	NO
2252	3	Hours and Minutes and band of begin the 6th tariff band	(1)	NO
2253	3	Hours and Minutes and band of begin the 7th tariff band	(1)	NO
2254	3	Hours and Minutes and band of begin the 8th tariff band	(1)	NO
2255	3	Hours and Minutes and band of begin the 9th tariff band	(1)	NO
2256	3	Hours and Minutes and band of begin the 10th tariff band	(1)	NO
2257	3	Hours and Minutes and band of begin the 11th tariff band	(1)	NO
2258	3	Hours and Minutes and band of begin the 12th tariff band	(1)	NO
2259	1	DAY selecting	(2)	NO
2260	1	StartMonth	(3)	NO
2261	1	StartDay	(3)	NO
2262	1	StopMonth	(3)	NO
2263	1	StopDay	(3)	NO

TIMEBANDS- TARIFF PERIOD 15

Index[Dec]	Word	Description	Range	Reset
2264	3	Hours and Minutes and band of begin the 1st tariff band	(1)	NO
2265	3	Hours and Minutes and band of begin the 2nd tariff band	(1)	NO
2266	3	Hours and Minutes and band of begin the 3rd tariff band	(1)	NO
2267	3	Hours and Minutes and band of begin the 4th tariff band	(1)	NO
2268	3	Hours and Minutes and band of begin the 5th tariff band	(1)	NO
2269	3	Hours and Minutes and band of begin the 6th tariff band	(1)	NO
2270	3	Hours and Minutes and band of begin the 7th tariff band	(1)	NO
2271	3	Hours and Minutes and band of begin the 8th tariff band	(1)	NO
2272	3	Hours and Minutes and band of begin the 9th tariff band	(1)	NO
2273	3	Hours and Minutes and band of begin the 10th tariff band	(1)	NO
2274	3	Hours and Minutes and band of begin the 11th tariff band	(1)	NO
2275	3	Hours and Minutes and band of begin the 12th tariff band	(1)	NO
2276	1	DAY selecting	(2)	NO
2277	1	StartMonth	(3)	NO
2278	1	StartDay	(3)	NO
2279	1	StopMonth	(3)	NO
2280	1	StopDay	(3)	NO

GENERIC COUNTERS VALUES- Double format

Index	Word	Description	Range	Reset
2281	4	Generic Counter 1 Value	0÷99999999.9	NO
2282	4	Generic Counter 2 Value	0÷99999999.9	NO
2283	4	Generic Counter 3 Value	0÷99999999.9	NO
2284	4	Generic Counter 4 Value	0÷99999999.9	NO
2285	4	Generic Counter 5 Value	0÷99999999.9	NO
2286	4	Generic Counter 6 Value	0÷99999999.9	NO
2287	4	Generic Counter 7 Value	0÷99999999.9	NO
2288	4	Generic Counter 8 Value	0÷99999999.9	NO

GENERIC COUNTERS SETTINGS

Index	Word	Description	Range	Reset
2289	7	Generic Counter 1 Setting	(*)	NO
2290	7	Generic Counter 2 Setting	(*)	NO
2291	7	Generic Counter 3 Setting	(*)	NO
2292	7	Generic Counter 4 Setting	(*)	NO
2293	7	Generic Counter 5 Setting	(*)	NO
2294	7	Generic Counter 6 Setting	(*)	NO
2295	7	Generic Counter 7 Setting	(*)	NO
2296	7	Generic Counter 8 Setting	(*)	NO

(*)
Description:
Byte(s)   Write
1:         Counter (i) -> Digital Input association
2:         Counter's name type (0=kWh+; 1=kWh-; 2=kVArh+; 3=kVArh-; 4=Water; 5=Gas; 6=User.)
3÷10:   Counter's name (ASCII codes)
11÷14:   Pulse's weight (0÷1999.99)

ANR PARAMETERS

Index [Dec]	Word	Description	Range	Reset
2297	1	DELETING RAM	9=deleting all archives	YES
2298	1	SET RAM STORING	0=nothing 1=15' 2=min/max 3=15'+min/max 4=armonics 5=15'+armonics 6=min/max+armonics 7=15'+min/max+armonics 8=sample 9=15'+sample A=min/max+sample B=15'+min/max+sample C=armonics+sample D=15'+armonics+sample E=min/max+armonics+sample F=15'+min/max+armonics+sample	YES
2299	1	15' STORED IN RAM	0=nothing 1=delete first one	YES
2300	1	MIN/MAX STORED IN RAM	0=nothing 1=sending the following block 2=deleting all min/max value in RAM	NO
2301	1	HARMONICS STORED IN RAM	0=nothing 1=delete first one	NO
2302	1	SAMPLES STORED IN RAM	0=nothing 1=delete first one	NO
2303	1	CONSUMPTION ENERGY COUNTER	1=reset count B0...B3 2=reset timebands 3=reset all	YES
2304	1	MIN/MAX VALUES	1=reset all	NO
2305	4	SAMPLES RATE + SET VARIABLE	See Example for setting struct	YES

DIGITAL OUT 1

Index [Dec]	Word	Description	Range	Reset
2306	1	MODE	0= off 1= upper limit 2= lower limit 3= pulse 4= band 5= always on	YES
2307	1	VARIABLE	80-BC	YES
2308	1	PULSE COEFFICIENT	0÷9.999	YES
2309	1	PULSE DURATION (msec)	50÷999	YES
2310	1	INTERVENTION VALUE (integer)		YES
2311	1	HYSTERISIS	0-99	YES
2312	1	DELAY TIME in sec	0-999	YES

DIGITAL OUT 2

Index [Dec]	Word	Description	Range	Reset
2313	1	MODE	0= off 1= upper limit 2= lower limit 3= pulse 4= band 5= always on	YES
2314	1	VARIABLE	80-BC	YES
2315	1	PULSE COEFFICIENT	0÷9.999	YES
2316	1	PULSE DURATION (msec)	50÷999	YES
2317	1	INTERVENTION VALUE		YES
2318	1	HYSTERISIS	0-99	YES
2319	1	DELAY TIME in sec	0-999	YES

DIGITAL IN 1

Index [Dec]	Word	Description	Range	Reset
2320	1	MODE	0= off 1= sync. RTC 2= Timeband (with Digital In 2)	YES

DIGITAL IN 2

Index [Dec]	Word	Description	Range	Reset
2321	1	MODE	0= off 1= sync. RTC 2= Timeband (with Digital In 2)	YES

DIAGNOSTIC

The ANR-PRF is able to generate, in case of errors, some diagnostics, automatically. These diagnostics can be send to the Master profibus through a standard mechanism expected from the profibus protocol.

Format Diagnostic message (data transfert)

DSAP = Destination Service Access Point
SSAP = Source Service Access Point
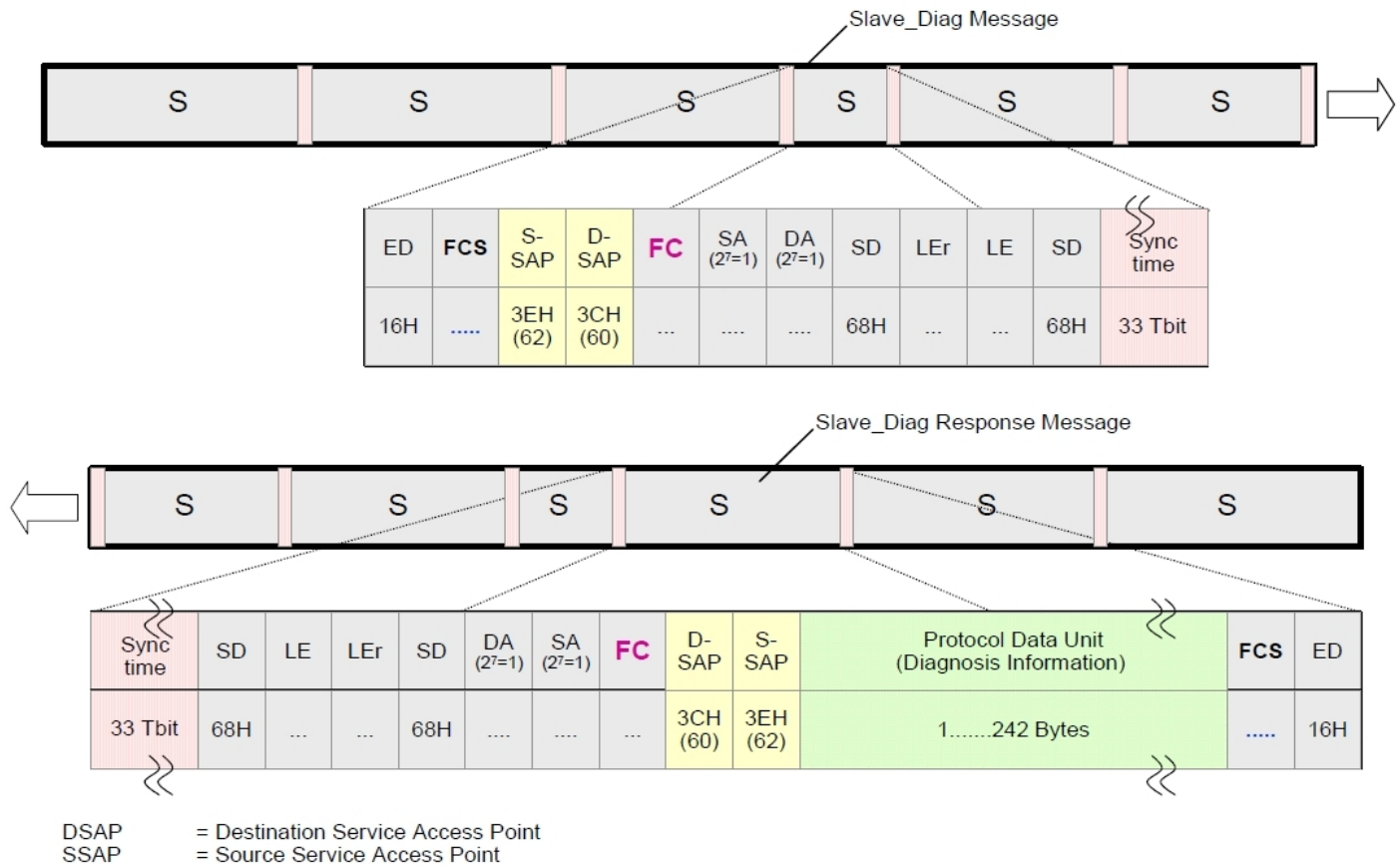
Diagnostics generation mechanism

In the polling normal cycle, done by a Master station, there is not the request of the diagnostics message. It is the slave that informs the master that a diagnostics variation is occurred and that this message has to be asked.

When there is a diagnostics variation (appears or disappears), during the formatting of the answer message from a normal data request, the ANR-PRF set the field FC (Frame Control).

The ANR-PRF generates a diagnostic message with this format (6+12 Byte long):

Default Profibus Diagnostic Data-Unit:

1° Byte	2° Byte	3° Byte	4° Byte	5° Byte	6° Byte
Station Status 1	Station Status 2	Station Status 3	Diag. Master Add	Ident Number High	Ident Number Low

Specific Profibus Diagnostic:

7° Byte	8° Byte	9° Byte	10° Byte	11° Byte	12° Byte
N° Byte Instrument Diag	Status High 31-24 bit	Status High 23-16 bit	Status High 15-8 bit	Status High 7-0 bit	Status Low 31-24 bit

13° Byte	14° Byte	15° Byte	16° Byte	17° Byte	18° Byte
Status Low 23-16 bit	Status Low 15-8 bit	Status Low 7-0 bit	In/out error	Module	N° Error

The Master could receive the following error:

- Internal Communication break   31° bit = 1 in Status Low
- Communication fail   30° bit = 1 in Status Low
- Illegal index   29° bit = 1 in Status Low
- Illegal data   28° bit = 1 in Status Low
- Archives Void   27° bit = 1 in Status Low

Examples Read and Write Command

READING OF THE VALUES OF CURRENT

QUERY

Field Name	Example (Hex)
Index Number	0x0008 [Index Number – 8 Dec]

Note:
setting in <u>DB2</u> Step 7 project file
ParameterNp1, ParameterNp2, ParameterNp3, ParameterNp4, ParameterNp5, ParameterNp6, ParameterNp6 don't used in read operation.

RESPONSE

Field Name	Example (Hex)	
Data Hi	| Value	[MeasureNp3]
Data Lo	| with	
Data Hi	| 4	
Data Lo	| word	
Data Hi	| for	[MeasureNp4]
Data Lo	| each	
Data Hi	| current	
Data Lo	|	

Note:
Read in <u>DB1</u> Step 7 project file
MesureNp1,MeasureNp2 don't used.

SET UP OF THE DATE/HOUR/DAY

SEND WRITE COMMAND

Field Name	Example (Hex)	
Index Number	0x07D2 [Index Number – 2002 Dec]	
Year Hi	00	[ParameterNp5]
Year Lo	09 (1)	
Month Hi	00	[ParameterNp6]
Month Lo	0A(2)	
Day Hi	00	[ParameterNp7]
Day Lo	05 (3)	

Note:
ParameterNp1, ParameterNp2, ParameterNp3, ParameterNp4 don't used.

SEND WRITE COMMAND

Field Name	Example (Hex)	
Index Number	0x07D4 [Index Number – 2004 Dec]	
Hours Hi	00	[ParameterNp5]
Hours Lo	09 (4)	
Minutes Hi	00	[ParameterNp6]
Minutes Lo	2A(5)	
Second Hi	00	[ParameterNp7]
Second Lo	00 (6)	

Note: ParameterNp1, ParameterNp2, ParameterNp3, ParameterNp4 don't used.

SEND WRITE COMMAND

Field Name	Example (Hex)	
Index Number	0x07D3 [Index Number – 2003 Dec]	
Day of Week Hi	00	[ParameterNp7]
Day of Week Lo	04 (7)	

Note:
ParameterNp1, ParameterNp2, ParameterNp3, ParameterNp4, ParameterNp5, ParameterNp6 don't used.

(1): Year=09 (2009)
(2): Month=10
(3): Day=05
(4): Hours=09
(5): Minutes=42
(6). Second=00
(7):   Day Of Week= THURSDAY

SET UP OF THE CTS & VTS TRANSFORM RATIOS

SEND WRITE COMMAND

Field Name	Example (Hex)
Index Number	0x07D5 [Index Number – 2005 Dec]
CTS Hi	01 [ParameterNp7]
CTS Lo	2C(1)

Note:
ParameterNp1, ParameterNp2, ParameterNp3, ParameterNp4, ParameterNp5, ParameterNp6 don't used.

SEND WRITE COMMAND

Field Name	Example (Hex)
Index Number	0x07D6 [Index Number- 2006 Dec]
VTS Hi	00 [ParameterNp7]
VTS Lo	64(2)

Note:
ParameterNp1, ParameterNp2, ParameterNp3, ParameterNp4, ParameterNp5, ParameterNp6 don't used.

(1): CTS=300 (1.500/5)
(2): VTS=100 (10.000/100)

SET UP OF THE PULSE DIGITAL OUTPUTS PARAM.

SEND WRITE COMMAND

Field Name	Example (Hex)
Index Number	0x0902 [Index Number – 2306 Dec]
Mode Hi	00 [ParameterNp7]
Mode Lo	03(1)

Note:
ParameterNp1, ParameterNp2, ParameterNp3, ParameterNp4, ParameterNp5, ParameterNp6 don't used.

SEND WRITE COMMAND

Field Name	Example (Hex)
Index Number	0x0903 [Index Number – 2307 Dec]
Associated Variable Hi	00 [ParameterNp7]
Associated Variable Lo	B0(2)

Note:
ParameterNp1, ParameterNp2, ParameterNp3, ParameterNp4, ParameterNp5, ParameterNp6 don't used.

SEND WRITE COMMAND

Field Name	Example (Hex)
Index Number	0x0904 [Index Number – 2308 Dec]
Pulse Coefficient Hi	00 [ParameterNp7]
Pulse Coefficient Lo	7D(3)

Note:
ParameterNp1, ParameterNp2, ParameterNp3, ParameterNp4, ParameterNp5, ParameterNp6 don't used.

SEND WRITE COMMAND

Field Name	Example (Hex)
Index Number	0x0905 [Index Number 2309 Dec]
Pulse Duration Time Hi	00
Pulse Duration Time Lo	FA(4)

Note:
ParameterNp1, ParameterNp2, ParameterNp3, ParameterNp4, ParameterNp5, ParameterNp6 don't used.

(1): Mode = Pulse
(2): Associated Variable = 3-Phase System Active Energy
(3): Pulse Coefficient = 0,125
(4): Pulse Duration Time = 250 msec.

SET UP OF THE THRESHOLD DIGITAL OUTPUTS

SEND WRITE COMMAND

Field Name	Example (Hex)
Index Number	0x0902 [Index Number – 2306 Dec]
Mode Hi	00
Mode Lo	01(1)

Note:
ParameterNp1, ParameterNp2, ParameterNp3, ParameterNp4, ParameterNp5, ParameterNp6 don't used.

SEND WRITE COMMAND

Field Name	Example (Hex)
Index Number	0x0903 [Index Number – 2307 Dec]
Associated Variable Hi	00
Associated Variable Lo	81(2)

Note:
ParameterNp1, ParameterNp2, ParameterNp3, ParameterNp4, ParameterNp5, ParameterNp6 don't used.

SEND WRITE COMMAND

Field Name	Example (Hex)
Index Number	0x0904 [Index Number – 2308 Dec]
Pulse Coefficient Hi	00
Pulse Coefficient Lo	00(3)

Note:
ParameterNp1, ParameterNp2, ParameterNp3, ParameterNp4, ParameterNp5, ParameterNp6 don't used.

SEND WRITE COMMAND

Field Name	Example (Hex)
Index Number	0x0905 [Index Number – 2309 Dec]
Pulse Duration Time Hi	00
Pulse Duration Time Lo	00(4)

Note:
ParameterNp1, ParameterNp2, ParameterNp3, ParameterNp4, ParameterNp5, ParameterNp6 don't used.

SEND WRITE COMMAND

Field Name	Example (Hex)
Index Number	0x0906 [Index Number – 2310 Dec]
Intervention Percentage Value (Set) Hi	0B
Intervention Percentage Value (Set) Lo	B8(5)

Note:
ParameterNp1, ParameterNp2, ParameterNp3, ParameterNp4, ParameterNp5, ParameterNp6 don't used.

SEND WRITE COMMAND

Field Name	Example (Hex)
Index Number	0x0907 [Index Number – 2311 Dec]
Histeresys Percentage Value Hi	00
Histeresys Percentage Value Lo	05(6)

SEND WRITE COMMAND

Field Name	Example (Hex)
Index Number	0x0908 [Index Number – 2312 Dec]
Delay Time On Threshold Intervention Hi	00
Delay Time On Threshold Intervention Lo	10(7)

Note:
ParameterNp1, ParameterNp2, ParameterNp3, ParameterNp4, ParameterNp5, ParameterNp6 don't used.

(1): Mode = Upper limit
(2): Associated Variable = Phase Vloltage L_{1-N}
(3): Pulse Coefficient = it has not effect in upper limit mode
(4): Pulse Duration Time = it has not effect in upper limit mode
(5): Intervention Value (Set) = 3000V
(6): Histeresys Percentage Value = 5 %
(7): Delay Time On Threshold Intervention = 16 sec.

SETUP THE 15' AV.POWER STORING

SEND WRITE COMMAND

Field Name	Example (Hex)
Index Number	0x08FA [Index Number – 2298 Dec]
Data stored in RAM Hi	00
Data stored in Ram Lo	01

Note: ParameterNp1, ParameterNp2, ParameterNp3, ParameterNp4, ParameterNp5, ParameterNp6 don't used.

15' AV.POWER VALUES STORED IN RAM TRANSFER

QUERY

Field Name	Example (Hex)
Index Number	0x019D [Index Number – 413 Dec]

Note:
setting in <u>DB2</u> Step 7 project file
ParameterNp1, ParameterNp2, ParameterNp3, ParameterNp4, ParameterNp5, ParameterNp6, ParameterNp7 don't used in read operation.

RESPONSE A (if the questioned ANR has stored more than one 15' energy value)

Field Name	Example (Hex)
Logical number Hi	00 [MeasureNp4 – low word]
Logical number Lo	01

Read in <u>DB1</u> Step 7 project file
MesureNp1,MeasureNp2, MeasureNp3 don't used.

RESPONSE B (if the questioned ANR has no value stored in memory)
ANR send the diagnostic error message (see Diagnostic Section – Archives Void)

QUERY

Field Name	Example (Hex)
Index Number	0x019E [Index Number – 414 Dec]

Note:
setting in <u>DB2</u> Step 7 project file
ParameterNp1, ParameterNp2, ParameterNp3, ParameterNp4, ParameterNp5, ParameterNp6, ParameterNp7 don't used in read operation.

RESPONSE A (if the questioned ANR has stored more than one 15' energy value)

Field Name	Example (Hex)
Year Hi	00 [MeasureNp3 – low word]
Year Lo	5F = 96
Mounth Hi	00 [MeasureNp4]
Mounth Lo	08 = 08
Day Hi	00
Day Lo	1A = 26

RESPONSE B (if the questioned ANR has no value stored in memory)
ANR send the diagnostic error message (see Diagnostic Section – Archives Void)

QUERY

Field Name	Example (Hex)
Index Number	0x19F [Index Number – 415 Dec]

Note:
setting in <u>DB2</u> Step 7 project file
ParameterNp1, ParameterNp2, ParameterNp3, ParameterNp4, ParameterNp5, ParameterNp6, ParameterNp7 don't used in read operation.

RESPONSE A (if the questioned ANR has stored more than one 15' energy value)

Field Name	Example (Hex)
order number of 15' energy value Hi	00 [MeasureNp4 – low word]
order number of 15' energy value Lo	05 = 05

RESPONSE B (if the questioned ANR has no value stored in memory)
ANR send the diagnostic error message (see Diagnostic Section – Archives Void)

QUERY

Field Name	Example (Hex)
Index Number	0x01A0 [Index Number – 416 Dec]

Note:
setting in <u>DB2</u> Step 7 project file
ParameterNp1, ParameterNp2, ParameterNp3, ParameterNp4, ParameterNp5, ParameterNp6, ParameterNp7 don't used in read operation.

RESPONSE A (if the questioned ANR has stored more than one 15' energy value)

Field Name	Example (Hex)
Data Hi	| Value with 4 word x 15' [MeasureNp4]
Data Lo	| active energy
Data Hi	|
Data Lo	|

RESPONSE B (if the questioned ANR has no value stored in memory)
ANR send the diagnostic error message (see Diagnostic Section – Archives Void)

QUERY

Field Name	Example (Hex)
Index Number	0x01A1 [Index Number – 417 Dec]

Note:
setting in <u>DB2</u> Step 7 project file
ParameterNp1, ParameterNp2, ParameterNp3, ParameterNp4, ParameterNp5, ParameterNp6, ParameterNp7 don't used in read operation.

RESPONSE A (if the questioned ANR has stored more than one 15' energy value)

Field Name	Example (Hex)
Data Hi	| Value with 4 word x 15' [MeasureNp4]
Data Lo	| reactive energy
Data Hi	|
Data Lo	|

RESPONSE B (if the questioned ANR has no value stored in memory)
ANR send the diagnostic error message (see Diagnostic Section – Archives Void)

SEND WRITE COMMAND
  (Erasing from the instrument the value just read. It's necessary to archive the following value)

Field Name	Example (Hex)
Index Number	0x08FB [Index Number – 2299 Dec]
Delate first 15' stored in Ram Hi	00 [ParameterNp7]
Delete first 15' stored in Ram Lo	01

SEND WRITE COMMAND

Field Name	Example (Hex)
Index Number	0x08FA [Index Number – 2298 Dec]
Data stored in RAM Hi	00 [ParameterNp7]
Data stored in RAM Lo	02

Note:
setting in <u>DB2</u> Step 7 project file
ParameterNp1, ParameterNp2, ParameterNp3, ParameterNp4, ParameterNp5, ParameterNp6 don't used in read operation

SEND WRITE COMMAND
(setup the MIN/MAX value and time to store in RAM)

Field Name	Example (Hex)
Index Number	0x07DB [Index Number – 2011 Dec]
Time to store in RAM HI	00 [ParameterNp7]
Time to store in RAM Lo	02

Note:
setting in <u>DB2</u> Step 7 project file
ParameterNp1, ParameterNp2, ParameterNp3, ParameterNp4, ParameterNp5, ParameterNp6 don't used in read operation

SEND WRITE COMMAND

Field Name	Example (Hex)
Index Number	0x07DC [Index Number – 2012 Dec]
3-Phase System Voltage Hi	00 [ParameterNp7]
3-Phase System Voltage Lo	01=Store ON

Note:
setting in <u>DB2</u> Step 7 project file
ParameterNp1, ParameterNp2, ParameterNp3, ParameterNp4, ParameterNp5, ParameterNp6 don't used in read operation

SEND WRITE COMMAND

Field Name	Example (Hex)
Index Number	0x07DD [Index Number – 2013 Dec]
Phase L_{1-N} Voltage Hi	00 [ParameterNp7]
Phase L_{1-N} Voltage Lo	00=Store OFF

Note:
setting in <u>DB2</u> Step 7 project file
ParameterNp1, ParameterNp2, ParameterNp3, ParameterNp4, ParameterNp5, ParameterNp6 don't used in read operation

SEND WRITE COMMAND

Field Name	Example (Hex)
Index Number	0x07DE [Index Number – 2014 Dec]
Phase L_{2-N} Voltage Hi	00 [ParameterNp7]
Phase L_{2-N} Voltage Lo	00=Store OFF

Note:
setting in <u>DB2</u> Step 7 project file
ParameterNp1, ParameterNp2, ParameterNp3, ParameterNp4, ParameterNp5, ParameterNp6 don't used in read operation

SEND WRITE COMMAND

Field Name	Example (Hex)
Index Number	0x07DF [Index Number – 2015 Dec]
Phase L_{3-N} Voltage Hi	00 [ParameterNp7]
Phase L_{3-N} Voltage Lo	00=Store OFF

Note:
setting in <u>DB2</u> Step 7 project file
ParameterNp1, ParameterNp2, ParameterNp3, ParameterNp4, ParameterNp5, ParameterNp6 don't used in read operation

SEND WRITE COMMAND

Field Name	Example (Hex)
Index Number	0x07E0 [Index Number – 2016 Dec]
3-Phase System Current Hi	00 [ParameterNp7]
3-Phase System Current Lo	01=Store ON

Note:
setting in <u>DB2</u> Step 7 project file
ParameterNp1, ParameterNp2, ParameterNp3, ParameterNp4, ParameterNp5, ParameterNp6 don't used in read operation

SEND WRITE COMMAND

Field Name	Example (Hex)
Index Number	0x07E1 [Index Number – 2017 Dec]
Phase L_1 Current Hi	00 [ParameterNp7]
Phase L_1 Current Lo	00 =Store OFF

Note:
setting in <u>DB2</u> Step 7 project file
ParameterNp1, ParameterNp2, ParameterNp3, ParameterNp4, ParameterNp5, ParameterNp6 don't used in read operation

SEND WRITE COMMAND

Field Name	Example (Hex)
Index Number	0x07E2 [Index Number – 2018 Dec]
Phase L_2 Current Hi	00 [ParameterNp7]
Phase L_2 Current Lo	00 =Store OFF

Note:
setting in <u>DB2</u> Step 7 project file
ParameterNp1, ParameterNp2, ParameterNp3, ParameterNp4, ParameterNp5, ParameterNp6 don't used in read operation

SEND WRITE COMMAND

Field Name	Example (Hex)
Index Number	0x07E3 [Index Number – 2019 Dec]
Phase L$_3$ Current Hi	00 [ParameterNp7]
Phase L$_3$ Current Lo	00 =Store OFF

Note:
 setting in <u>DB2</u> Step 7 project file
ParameterNp1, ParameterNp2, ParameterNp3, ParameterNp4, ParameterNp5, ParameterNp6 don't used in read operation

SEND WRITE COMMAND

Field Name	Example (Hex)
Index Number	0x07E4 [Index Number – 2020 Dec]
3-Phase System Active Power Hi	00 [ParameterNp7]
3-Phase System Active Power Lo	01 =Store ON

Note:
 setting in <u>DB2</u> Step 7 project file
ParameterNp1, ParameterNp2, ParameterNp3, ParameterNp4, ParameterNp5, ParameterNp6 don't used in read operation

SEND WRITE COMMAND

Field Name	Example (Hex)
Index Number	0x07E5 [Index Number – 2021 Dec]
3-Phase System Apparent Power Hi	00 [ParameterNp7]
3-Phase System Apparent Power Lo	01=Store ON

Note:
 setting in <u>DB2</u> Step 7 project file
ParameterNp1, ParameterNp2, ParameterNp3, ParameterNp4, ParameterNp5, ParameterNp6 don't used in read operation

SEND WRITE COMMAND

Field Name	Example (Hex)
Index Number	0x07E6 [Index Number – 2022 Dec]
3-Phase System Power Factor Hi	00 [ParameterNp7]
3-Phase System Power Factor Lo	01 =Store ON

Note:
 setting in <u>DB2</u> Step 7 project file
ParameterNp1, ParameterNp2, ParameterNp3, ParameterNp4, ParameterNp5, ParameterNp6 don't used in read operation

SEND WRITE COMMAND

Field Name	Example (Hex)
Index Number	0x07E7 [Index Number – 2023 Dec]
3-Phase System Average Power Hi	00 [ParameterNp7]
3-Phase System Average Power Lo	01=Store ON

Note:
 setting in <u>DB2</u> Step 7 project file
ParameterNp1, ParameterNp2, ParameterNp3, ParameterNp4, ParameterNp5, ParameterNp6 don't used in read operation

MIN/MAX VALUES STORED IN RAM TRANSFER

QUERY (reading of the data format of the MIN/MAX values stored in the RAM of the instrument ANR)

Field Name   Example (Hex)
Index Number   0x01A2 [Index Number – 418 Dec]
Note:
setting in <u>DB2</u> Step 7 project file
ParameterNp1, ParameterNp2, ParameterNp3, ParameterNp4, ParameterNp5, ParameterNp6, ParameterNp7 don't used in read operation

RESPONSE A (if the questioned ANR has stored more than one MIN/MAX value)

Field Name   Example (Hex)
Start recorder Year Hi   00   [MeasureNp3 – low word]
Start recorder Year Lo   5F = 95
Start recorder Mounth Hi   00   [MeasureNp4]
Start recorder Mounth Lo   08 = 08
Start recorder Day Hi   00
Start recorder Day Lo   1A = 26
Note:
Read in <u>DB1</u> Step 7 project file
MesureNp1,MeasureNp2 don't used.

RESPONSE B (if the questioned ANR has no value stored in memory)
ANR send the diagnostic error message (see Diagnostic Section – Archives Void)

QUERY (reading of the data format of the MIN/MAX values stored in the RAM of the instrument ANR)
Field Name   Example (Hex)
Index Number   0x01A3 [Index Number – 419 Dec]
Note:
setting in <u>DB2</u> Step 7 project file
ParameterNp1, ParameterNp2, ParameterNp3, ParameterNp4, ParameterNp5, ParameterNp6, ParameterNp7 don't used in read operation

RESPONSE A (if the questioned ANR has stored more than one MIN/MAX value)
Field Name   Example (Hex)
Start recorder Hour Hi   00   [MeasureNp3 – low word]
Start recorder Hour Lo   10 = 10
Start recorder Minute Hi   00   [MeasureNp4]
Start recorder Minute Lo   2A = 42
Start recorder Second Hi   00
Start recorder Second Lo   2D = 45
Note:
Read in <u>DB1</u> Step 7 project file
MesureNp1,MeasureNp2 don't used.

RESPONSE B (if the questioned ANR has no value stored in memory)
ANR send the diagnostic error message (see Diagnostic Section – Archives Void)

QUERY (reading of the data format of the MIN/MAX values stored in the RAM of the instrument ANR)
Field Name   Example (Hex)
Index Number   0x01A4 [Index Number – 420 Dec]
Note:
setting in <u>DB2</u> Step 7 project file
ParameterNp1, ParameterNp2, ParameterNp3, ParameterNp4, ParameterNp5, ParameterNp6, ParameterNp7 don't used in read operation

RESPONSE A (if the questioned ANR has stored more than one MIN/MAX value)
Field Name   Example (Hex)
Storing time (minutes) Hi   00   [MeasureNp4 – low word]
Storing time (minutes) Lo   02 = 02
Note:
Read in <u>DB1</u> Step 7 project file
MesureNp1,MeasureNp2, MeasureNp3 don't used.

RESPONSE B (if the questioned ANR has no value stored in memory)
ANR send the diagnostic error message (see Diagnostic Section – Archives Void)

QUERY (reading of the first group of MIN/MAX stored data in the RAM of the instrument ANR)
Field Name   Example (Hex)
Index Number   0x01A5 [Index Number – 421 Dec]
Note:
setting in <u>DB2</u> Step 7 project file
ParameterNp1, ParameterNp2, ParameterNp3, ParameterNp4, ParameterNp5, ParameterNp6, ParameterNp7 don't used in read operation

RESPONSE
Field Name   Example (Hex)
Block num(4TH word)   00 [MeasureNp4]
Block num(3RD word)   00
Block num(2ND word)   00
Block num(1ST word)   01
Note:
Read in <u>DB1</u> Step 7 project file
MesureNp1,MeasureNp2, MeasureNp3 don't used.

QUERY (reading of the first group of MIN/MAX stored data in the RAM of the instrument ANR)

Field Name	Example (Hex)
Index Number	0x01A6 [Index Number – 422 Dec]

Note:
setting in <u>DB2</u> Step 7 project file
ParameterNp1, ParameterNp2, ParameterNp3, ParameterNp4, ParameterNp5, ParameterNp6, ParameterNp7 don't used in read operation

RESPONSE

Field Name	Example (Hex)
Min 3-Ph Sys Voltage(1ST word)	value [MeasureNp4]
Min 3-Ph Sys Voltage(2ND word)	value
Min 3-Ph Sys Voltage(3RD word)	value
Min 3-Ph Sys Voltage(4TH word)	value

Note:
Read in <u>DB1</u> Step 7 project file
MesureNp1,MeasureNp2, MeasureNp3 don't used.

SEND WRITE COMMAND
 (presetting the instrument to send the following ten groups of MIN/MAX stored data. It's necessary to archive the following value)

Field Name	Example (Hex)
Index Number	0x01A6 [Index Number – 422 Dec]
Delete first ten groups of MIN/MAX stored Hi	00 [ParameterNp7]
Delete first ten groups of MIN/MAX stored Lo	01

 Note:
 setting in <u>DB2</u> Step 7 project file
ParameterNp1, ParameterNp2, ParameterNp3, ParameterNp4, ParameterNp5, ParameterNp6 don't used in read operation

QUERY (reading of the eleventh group of MIN/MAX stored data in the RAM of the instrument ANR)

Field Name	Example (Hex)
Index Number	0x01A5 [Index Number – 421 Dec]

Note:
setting in <u>DB2</u> Step 7 project file
ParameterNp1, ParameterNp2, ParameterNp3, ParameterNp4, ParameterNp5, ParameterNp6, ParameterNp7 don't used in read operation

RESPONSE

Field Name	Example (Hex)
Block num(4TH word)	00 [MeasureNp4]
Block num(3RD word)	00
Block num(2ND word)	00
Block num(1ST word)	01

Note:
Read in <u>DB1</u> Step 7 project file
MesureNp1,MeasureNp2, MeasureNp3 don't used.

SETUP THE 15' HARMONICS STORING

SEND WRITE COMMAND

Field Name	Example (Hex)
Index Number	0x08FA [Index Number – 2298 Dec]
Data stored in RAM Hi	00 [ParameterNp7]
Data stored in RAM Lo	04

 Note:
 setting in <u>DB2</u> Step 7 project file
ParameterNp1, ParameterNp2, ParameterNp3, ParameterNp4, ParameterNp5, ParameterNp6 don't used in read operation

QUERY (reading the value of voltage V harmonics stored in the RAM of the instrument ANR)

Field Name	Example (Hex)
Index Number	0x029F [Index Number – 671 Dec]

Note:
setting in <u>DB2</u> Step 7 project file
ParameterNp1, ParameterNp2, ParameterNp3, ParameterNp4, ParameterNp5, ParameterNp6, ParameterNp7 don't used in read operation

RESPONSE A (if the questioned ANR has stored more then one 15' harmonics)

Field Name	Example (Hex)	
Logical number Hi	00	[MeasureNp4 – low word]
Logical number Lo	01	

Note:
Read in <u>DB1</u> Step 7 project file
MesureNp1,MeasureNp2, MeasureNp3 don't used.

RESPONSE B (if the questioned ANR has no value stored in memory)
ANR send the diagnostic error message (see Diagnostic Section – Archives Void)

QUERY (reading the value of voltage V harmonics stored in the RAM of the instrument ANR)

Field Name	Example (Hex)
Index Number	0x02A0 [Index Number – 672 Dec]

Note:
setting in <u>DB2</u> Step 7 project file
ParameterNp1, ParameterNp2, ParameterNp3, ParameterNp4, ParameterNp5, ParameterNp6, ParameterNp7 don't used in read operation

RESPONSE A (if the questioned ANR has stored more then one 15' harmonics)

Field Name	Example (Hex)	
Year Hi	00	[MeasureNp3 – low word]
Year Lo	5F = 96	
Mounth Hi	00	[MeasureNp4]
Mounth Lo	08 = 08	
Day Hi	00	
Day Lo	1A = 26	

Note:
Read in <u>DB1</u> Step 7 project file
MesureNp1,MeasureNp2 don't used.

RESPONSE B (if the questioned ANR has no value stored in memory)
ANR send the diagnostic error message (see Diagnostic Section – Archives Void)

QUERY (reading the value of voltage V harmonics stored in the RAM of the instrument ANR)

Field Name	Example (Hex)
Index Number	0x02A1 [Index Number – 673 Dec]

Note:
setting in <u>DB2</u> Step 7 project file
ParameterNp1, ParameterNp2, ParameterNp3, ParameterNp4, ParameterNp5, ParameterNp6, ParameterNp7 don't used in read operation

RESPONSE A (if the questioned ANR has stored more then one 15' harmonics)

Field Name	Example (Hex)	
Order number Hi	00	[MeasureNp4 – low word]
Order Number Lo	05 = 05	

Note:
Read in <u>DB1</u> Step 7 project file
MesureNp1,MeasureNp2, MeasureNp3 don't used.

RESPONSE B (if the questioned ANR has no value stored in memory)
ANR send the diagnostic error message (see Diagnostic Section – Archives Void)

QUERY (reading the value of voltage V harmonics stored in the RAM of the instrument ANR)

Field Name	Example (Hex)
Index Number	0x02A2 [Index Number – 674 Dec]

Note:
setting in <u>DB2</u> Step 7 project file
ParameterNp1, ParameterNp2, ParameterNp3, ParameterNp4, ParameterNp5, ParameterNp6, ParameterNp7 don't used in read operation

RESPONSE A (if the questioned ANR has stored more then one 15' harmonics)

Field Name	Example (Hex)	
15'harmonics stored value	| with 4	MeasureNp4]
:	| word for	
:	| each	
:	|	

Note:
Read in <u>DB1</u> Step 7 project file
MesureNp1,MeasureNp2, MeasureNp3 don't used.

RESPONSE B (if the questioned ANR has no value stored in memory)
ANR send the diagnostic error message (see Diagnostic Section – Archives Void)

SETUP THE SAMPLES STORING - Detail	
The measure bits that it must set for store the variables into the RAM are the following:	
Parameter Np4	
The Rate in Seconds	1Word
	Corresponding Bit
Parameter Np5 - High Byte	
Not Used	Bit 47
Not Used	Bit 46
Not Used	Bit 45
Not Used	Bit 44
Not Used	Bit 43
Not Used	Bit 42
Not Used	Bit 41
Not Used	Bit 40
Parameter Np5 - Low Byte	
Not Used	Bit 39
Not Used	Bit 38
Not Used	Bit 37
Not Used	Bit 36
Not Used	Bit 35
3-PHASE SYSTEM VOLTAGE	Bit 34
PHASE VOLTAGE L_{1-N}	Bit 33
PHASE VOLTAGE L_{2-N}	Bit 32
Parameter Np6 - High Byte	
PHASE VOLTAGE L_{3-N}	Bit 31
LINE VOLTAGE L_{1-2}	Bit 30
LINE VOLTAGE L_{2-3}	Bit 29
LINE VOLTAGE L_{3-1}	Bit 28
3-PHASE SYSTEM CURRENT	Bit 27
LINE CURRENT L_1	Bit 26
LINE CURRENT L_2	Bit 25
LINE CURRENT L_3	Bit 24
Parameter Np6 - Low Byte	
3-PHASE SYS. POWER FACTOR	Bit 23
POWER FACTOR L_1	Bit 22
POWER FACTOR L_2	Bit 21
POWER FACTOR L_3	Bit 20
3-PHASE S. APPARENT POWER	Bit 19
APPARENT POWER L_1	Bit 18
APPARENT POWER L_2	Bit 17
APPARENT POWER L_3	Bit 16
Parameter Np7 - High Byte	
3-PHASE SYS. ACTIVE POWER	Bit 15
ACTIVE POWER L_1	Bit 14
ACTIVE POWER L_2	Bit 13
ACTIVE POWER L_3	Bit 12
3-PHASE S. REACTIVE POWER	Bit 11
REACTIVE POWER L_1	Bit 10
REACTIVE POWER L_2	Bit 09
REACTIVE POWER L_3	Bit 08
Parameter Np7 - Low Byte	
FREQUENCY	Bit 07
THD VOLTAGE L_1	Bit 06
THD VOLTAGE L_2	Bit 05
THD VOLTAGE L_3	Bit 04
THD CURRENT L_1	Bit 03
THD CURRENT L_2	Bit 02
THD CURRENT L_3	Bit 01
3-PHASE AVG. ACTIVE POWER	Bit 00

GSD File:

```
;
;****************************** GSD for ANR-PRF **********************************
;* ==================================================================================== *
;*                                                          *
;* Vendor:   ABB S.p.a. SACE Division                    *
;*                                           *
;* history GSD                                 *
;* ==================================================================================== *
;* - 07.01.2009: V1.00                           *
;* - 08.04.2009: V1.01                           *
;*                              *
;*                                   *
;* ==================================================================================== *
#Profibus_DP
;==============================================================================
;==== General DP Keywords ============================================
;==============================================================================
GSD_Revision = 2
Vendor_Name = "ABB spa SACE Division"
Model_Name = "ANR-PRF"
Revision = "1.01"
Ident_Number = 0xAFFE
Protocol_Ident = 0
Station_Type = 0
FMS_supp = 0
Hardware_Release = "ANR-PRF V 1.00"
Software_Release = "ANR-PRF V 1.00"
Redundancy = 0
Repeater_Ctrl_Sig = 2
24V_Pins = 0
;==============================================================================
;==== Supported baudrates ============================================
;==============================================================================
9.6_supp = 1
19.2_supp = 1
45.45_supp = 1
93.75_supp = 1
187.5_supp = 1
500_supp = 1
1.5M_supp = 1
3M_supp = 1
6M_supp = 0
12M_supp = 0

MaxTsdr_9.6=15
MaxTsdr_19.2=15
MaxTsdr_45.45=15
MaxTsdr_93.75=15
MaxTsdr_187.5=15
MaxTsdr_500=15
MaxTsdr_1.5M=20
MaxTsdr_3M=35
MaxTsdr_6M=50
MaxTsdr_12M=95
;==============================================================================
;==== Slave specific values ============================================
;==============================================================================
Slave_Family = 3@profichip
Implementation_Type = "VPC3+"
Info_Text="ANR-PRF - slave modular system"

Bitmap_Device = "ANRPRF"
Bitmap_SF= "EMAPFS"

Freeze_Mode_supp=1
Sync_Mode_supp=1
Fail_Safe=1
Auto_Baud_supp=1
Set_Slave_Add_supp=0

Min_Slave_Intervall=6

Modular_Station=1
Max_Module=31
Modul_Offset=1
Max_Input_Len=242
Max_Output_Len=242
Max_Data_Len=484
Max_Diag_Data_Len=18

WD_Base_1ms_supp = 1
Publisher_supp = 1
;==============================================================================
;==== User-Prm-Data ============================================
;==============================================================================
User_Prm_Data_Len = 12
User_Prm_Data = 0x00,0x00,0x00,0x09,0x01,0x00,0x00,0x01,0xFF,0xFF,0x00,0x00
;==============================================================================
;==== Module-Definition-List ============================================
;==============================================================================
Module="Reserved"             0xC1,0x01,0x01,0x01
```

1
EndModule

Module="Master Input Module 1"   0x42,0x0F,0x00,0x02
2
EndModule

Module="Master Output Module 1"   0x82,0x0F,0x00,0x03
3
EndModule

Module="Master Input Module 2"   0x42,0x0F,0x00,0x04
4
EndModule

Module="Master Output Module 2"   0x82,0x0F,0x00,0x05
5
EndModule

Module="Master Input Module 3"   0x42,0x0F,0x00,0x06
6
EndModule

Module="Master Output Module 3"   0x82,0x0F,0x00,0x07
7
EndModule

Module="Master Input Module 4"   0x42,0x0F,0x00,0x08
8
EndModule

Module="Master Output Module 4"   0x82,0x0F,0x00,0x09
9
EndModule

Module="Master Input Module 5"   0x42,0x0F,0x00,0x0A
10
EndModule

Module="Master Output Module 5"   0x82,0x0F,0x00,0x0B
11
EndModule

Module="Master Input Module 6"   0x42,0x0F,0x00,0x0C
12
EndModule

Module="Master Output Module 6"   0x82,0x0F,0x00,0x0D
13
EndModule

Module="Master Input Module 7"   0x42,0x0F,0x00,0x0E
14
EndModule

Module="Master Output Module 7"   0x82,0x0F,0x00,0x0F
15
EndModule

Module="Master Input Module 8"   0x42,0x0F,0x00,0x10
16
EndModule

Module="Master Output Module 8"   0x82,0x0F,0x00,0x11
17
EndModule

Module="Master Input Module 9"   0x42,0x0F,0x00,0x12
18
EndModule

Module="Master Output Module 9"   0x82,0x0F,0x00,0x13
19
EndModule

Module="Master Input Module 10"   0x42,0x0F,0x00,0x14
20
EndModule

Module="Master Output Module 10"   0x82,0x0F,0x00,0x15
21
EndModule

Module="Master Input Module 11"   0x42,0x0F,0x00,0x16
22
EndModule

Module="Master Output Module 11"   0x82,0x0F,0x00,0x17
23
EndModule

Module="Master Input Module 12"   0x42,0x0F,0x00,0x18
24
EndModule

```
Module="Master Output Module 12"        0x82,0x0F,0x00,0x19
25
EndModule

Module="Master Input Module 13"         0x42,0x0F,0x00,0x1A
26
EndModule

Module="Master Output Module 13"        0x82,0x0F,0x00,0x1B
27
EndModule

Module="Master Input Module 14"         0x42,0x0F,0x00,0x1C
28
EndModule

Module="Master Output Module 14"        0x82,0x0F,0x00,0x1D
29
EndModule

Module="Master Input Module 15"         0x42,0x0F,0x00,0x1E
30
EndModule

Module="Master Output Module 15"        0x82,0x0F,0x00,0x1F
31
EndModule
```