

<h2 style="text-align: center;">TAS APFC Controller / Load Managers with MOD-BUS Interface</h2>							
Designed & Prepared by TAS PowerTek Pvt. Ltd., W-61, MIDC Ambad, Nasik-422010, India.						Updated on: 4th June 2017, Sunday.	
MODBUS Address	Data Parameter Field	Parameter data Size (Bytes)	Values on Controller LCD Display	Values on MODBUS (Hex)	Values on MODBUS (Decimal interpretation)	Remarks	Description
11	R Phase voltage (L-L) : Higher Sixteen bits	2	110.1V	0000	1101	As per Feedback Voltage.	Actual Value = MOD-Bus Decimal Value / 10
12	R Phase voltage (L-L) : Lower Sixteen bits	2		044D			
13	Y Phase voltage (L-L) : Higher Sixteen bits	2	109.7V	0000	1097	As per Feedback Voltage.	Actual Value = MOD-Bus Decimal Value / 10
14	Y Phase voltage (L-L) : Lower Sixteen bits	2		0449			
15	B Phase voltage (L-L) : Higher Sixteen bits	2	109.5V	0000	1095	As per Feedback Voltage.	Actual Value = MOD-Bus Decimal Value / 10
16	B Phase voltage (L-L) : Lower Sixteen bits	2		0447			
17	R phase current (A)	2	1001.7A	2721	10017	As per Supply Current Feedback.	Actual Value = MOD-Bus Decimal Value / 10
18	Y phase current (A)	2	999.4A	270A	9994	As per Supply Current Feedback.	Actual Value = MOD-Bus Decimal Value / 10
19	B phase current (A)	2	997.6A	26F8	9976	As per Supply Current Feedback.	Actual Value = MOD-Bus Decimal Value / 10
20	Neutral current (A), Computed in APFC Unit.	2	27.0	010E	270	APFC Internally Calculated.	Actual Value = MOD-Bus Decimal Value / 10
21	R Phase PF	2	001.000	03E8	1000	+Ve=Inductive, -Ve=Capacitive	Actual Value = MOD-Bus Decimal Value / 1000
22	Y Phase PF	2	001.000	03E8	1000	+Ve=Inductive, -Ve=Capacitive	Actual Value = MOD-Bus Decimal Value / 1000
23	B Phase PF	2	001.000	03E8	1000	+Ve=Inductive, -Ve=Capacitive	Actual Value = MOD-Bus Decimal Value / 1000
24	R Phase Capacitor current, Actual Value = MOD-Bus Decimal Value / 10	2	1000A	2710	10000	As per Total Capacitive Banks Current Feedback.	Provided Capacitor CT(s) are connected. This is, for the TAS APFC Units having Capacitor Current CTs.
25	Y Phase Capacitor current, Actual Value = MOD-Bus Decimal Value / 10	2	999.5A	270B	9995	As per Total Capacitive Banks Current Feedback.	
26	B Phase Capacitor current, Actual Value = MOD-Bus Decimal Value / 10	2	997.6A	26F8	9976	As per Total Capacitive Banks Current Feedback.	

MODBUS Address	Data Parameter Field	Parameter data Size (Bytes)	Values on Controller LCD Display	Values on MODBUS (Hex)	Values on MODBUS (Decimal interpretation)	Remarks	Description
27	Mains Line Supply Frequency of Feedback Meas. Voltage	2	50.1Hz	01F5	501	-	Actual Value = MOD-Bus Decimal Value / 10
28	Capacitor Banks ON status (Max. up to 16 Banks)	2	0	0000	0	lsb-to-msb, as Bank1-to-Bank16. Bit Status = 1 = Bank ON.	Number of Banks ON Status: for example, two banks(B1 & B2) are ON in the system. Recieved values on Modbus is "0003H"
29	Capacitor Banks Faulty Status (Max. up to 16 Banks)	2	0	0000	0	lsb-to-msb, as Bank1-to-Bank16. Bit Status = 1 = Bank FAULTY.	Faulty Banks Status : for example, two banks(B4 & B5) are declare faulty by the APFC then, Recieved values on Modbus is "0018H"
30	System or APFC Unit Fault(s) Status	4	0	00000000	0	System fault Status (Hex Representation)	
						Over voltage fault - 00000001	Provided that all faults kept Enabled in the controller
						Under voltage fault - 00000002	
						Over Load fault - 00000004	
						Under Laod fault - 00000008	
						Over Cap Current fault - 00000010	
						Under Cap Current fault - 00000020	
						Over frequency fault - 00000040	
						Under frequency fault - 00000080	
						Internal Temperature fault - 00000100	
						Cap current THD fault - 00000200	

MODBUS Address	Data Parameter Field	Parameter data Size (Bytes)	Values on Controller LCD Display	Values on MODBUS (Hex)	Values on MODBUS (Decimal interpretation)	Remarks	Description
						OUT_OF_BANKS_FAULT - 00000400	
						Load Unbalance Fault- 00000800	
						OVER MD FAULT - 00001000	Not used
						Over Ext Temperature Fault- 00002000	Provided External PT 100 connections were done
						Not Used -00004000	Not used
						Not Used - 00008000	Not used
						RTC Battery fault 00010000	
						NV RAM CHKSUM ERROR - 00080000	
						AUTO_SYNC_FAIL Fault - 00200000	"AS" Should be enabled in the controller
						Measurement voltage and / or Supply Current absent fault -00400000	
						Auto sync fail due to load variation - 00800000	"AS" Should be enabled in the controller
31	Not used	2					
32	R.T.C.C. Battery Voltage Level	2	2.41	00F1	241	Actual Battery Voltage = MOD-Bus Decimal Value / 100	Applicable for SPF-56, TPF-56 & LM-56 Units.
33	External Temperature, as sensed by PT100 RTD Sensor in the APFC Panel.	2	0	0000	0	-	Provided PT100 is connected in Applicable APFC Units.
34	Active Energy - KWH : Higher Sixteen bits	2	0	0000			
35	Active Energy - KWH : Lower Sixteen bits	2	0	0000	0	-	
36	Apparent Energy - KVAH : Higher Sixteen bits	2	0	0000			
37	Apparent Energy - KVAH : Lower Sixteen bits	2	0	0000	0	-	

MODBUS Address	Data Parameter Field	Parameter data Size (Bytes)	Values on Controller LCD Display	Values on MODBUS (Hex)	Values on MODBUS (Decimal interpretation)	Remarks	Description
38	Inductive Reactive Energy - IND KVARH : Higher Sixteen bits	2	0	0000			Load Dependent Value
39	Inductive Reactive Energy - IND KVARH : Lower Sixteen bits	2	0	0000	0	-	Load Dependent Value
40	Capacitive Reactive Energy - CAP KVARH : Higher Sixteen bits	2	0	0000			Based on the Switched-ON Capacitor Banks.
41	Capacitive Reactive Energy - CAP KVARH : Lower Sixteen bits	2	0	0000	0	-	Based on the Switched-ON Capacitor Banks.
42	Capacitor Reactive Energy - C-KVARH : Higher Sixteen bits	2	0	0000	0		Based on the Switched-ON Capacitor Banks.
43	Capacitor Reactive Energy - C- KVARH : Lower Sixteen bits	2	0	0000	0	-	
44	Maximum Demand (MD) KVA Value: Higher 16 Bits	2				Actual Value = MOD-Bus Decimal Value / 10	Not Applicable for APFC Units, But Applicable for Load Manager LM-56 Units.
45	Maximum Demand (MD) KVA Value: Lower 16 Bits	2					
46	Maximum Demand (MD) KW Value: Higher 16 Bits	2					
47	Maximum Demand (MD) KW Value: Lower 16 Bits	2					
48	R-phase voltage Harmonics (% THD)	2	1.4	000E	14	-	Actual Value = MOD-Bus Decimal Value / 10
49	Y-phase voltage Harmonics (% THD)	2	1.1	000B	11	-	Actual Value = MOD-Bus Decimal Value / 10
50	B-phase voltage Harmonics (% THD)	2	1.2	000C	12	-	Actual Value = MOD-Bus Decimal Value / 10
51	R-phase current Harmonics (% THD)	2	0.3	0003	3	-	Actual Value = MOD-Bus Decimal Value / 10
52	Y-phase current Harmonics (% THD)	2	0.3	0003	3	-	Actual Value = MOD-Bus Decimal Value / 10
53	B-phase current Harmonics (% THD)	2	0.3	0003	3	-	Actual Value = MOD-Bus Decimal Value / 10
54	Neutral current Harmonics (% THD)	2	0.6	0006	6	-	Actual Value = MOD-Bus Decimal Value / 10
55	R-Phase Capacitor current Harmonics (% THD)	2	5.3	0035	53	-	Actual Value = MOD-Bus Decimal Value / 10
56	Y-Phase Capacitor current Harmonics (% THD)	2	1.4	000E	14	-	Actual Value = MOD-Bus Decimal Value / 10
57	B-Phase Capacitor current Harmonics (% THD)	2	7.1	0047	71	-	Actual Value = MOD-Bus Decimal Value / 10

58	Bank-1 KVAR	2	20	00C8	200	-	Actual Value = MOD-Bus Decimal Value / 10
59	Bank-2 KVAR	2	00	0000	0	-	Actual Value = MOD-Bus Decimal Value / 10
60	Bank-3 KVAR	2	00	0000	0	-	Actual Value = MOD-Bus Decimal Value / 10
61	Bank-4 KVAR	2	00	0000	0	-	Actual Value = MOD-Bus Decimal Value / 10
62	Bank-5 KVAR	2	00	0000	0	-	Actual Value = MOD-Bus Decimal Value / 10
63	Bank-6 KVAR	2	00	0000	0	-	Actual Value = MOD-Bus Decimal Value / 10
64	Bank-7 KVAR	2	00	0000	0	-	Actual Value = MOD-Bus Decimal Value / 10
65	Bank-8 KVAR	2	00	0000	0	-	Actual Value = MOD-Bus Decimal Value / 10

MODBUS Address	Data Parameter Field	Parameter data Size (Bytes)	Values on Controller LCD Display	Values on MODBUS (Hex)	Values on MODBUS (Decimal interpretation)	Remarks	Description
66	Bank-9 KVAR	2	00	0000	0	-	Actual Value = MOD-Bus Decimal Value / 10
67	Bank-10 KVAR	2	00	0000	0	-	Actual Value = MOD-Bus Decimal Value / 10
68	Bank-11 KVAR	2	00	0000	0	-	Actual Value = MOD-Bus Decimal Value / 10
69	Bank-12 KVAR	2	00	0000	0	-	Actual Value = MOD-Bus Decimal Value / 10
70	Bank-13 KVAR	2	00	0000	0	-	Actual Value = MOD-Bus Decimal Value / 10
71	Bank-14 KVAR	2	00	0000	0	-	Actual Value = MOD-Bus Decimal Value / 10
72	Bank-15 KVAR	2	00	0000	0	-	Actual Value = MOD-Bus Decimal Value / 10
73	Bank-16 KVAR	2	00	0000	0	-	Actual Value = MOD-Bus Decimal Value / 10
74	R-phase Voltage Third Harmonics	2	0.9	0009	9	-	Actual Value = MOD-Bus Decimal Value / 10
75	Y-phase Voltage Third Harmonics	2	0.5	0005	5	-	Actual Value = MOD-Bus Decimal Value / 10
76	B-phase Voltage Third Harmonics	2	0.6	0006	6	-	Actual Value = MOD-Bus Decimal Value / 10
77	R-Phase Voltage Fifth Harmonics	2	0.9	0009	9	-	Actual Value = MOD-Bus Decimal Value / 10
78	Y-Phase Voltage Fifth Harmonics	2	0.8	0008	8	-	Actual Value = MOD-Bus Decimal Value / 10
79	B-Phase Voltage Fifth Harmonics	2	0.7	0007	7	-	Actual Value = MOD-Bus Decimal Value / 10
80	R-Phase Voltage Seventh Harmonics	2	0.3	0003	3	-	Actual Value = MOD-Bus Decimal Value / 10
81	Y-Phase Voltage Seventh Harmonics	2	0.2	0002	2	-	Actual Value = MOD-Bus Decimal Value / 10
82	B-Phase Voltage Seventh Harmonics	2	0.3	0003	3	-	Actual Value = MOD-Bus Decimal Value / 10

83	R-Phase Voltage Ninth Harmonics	2	0.1	0001	1	-	Actual Value = MOD-Bus Decimal Value / 10
84	Y-Phase Voltage Ninth Harmonics	2	00	0000	0	-	Actual Value = MOD-Bus Decimal Value / 10
85	B-Phase Voltage Ninth Harmonics	2	0.1	0001	1	-	Actual Value = MOD-Bus Decimal Value / 10
86	R-Phase Voltage Eleventh Harmonics	2	0.1	0001	1	-	Actual Value = MOD-Bus Decimal Value / 10
87	Y-Phase Voltage Eleventh Harmonics	2	00	0000	0	-	Actual Value = MOD-Bus Decimal Value / 10
88	B-Phase Voltage Eleventh Harmonics	2	0.1	0001	1	-	Actual Value = MOD-Bus Decimal Value / 10
89	R-Phase Voltage Thirteenth Harmonics	2	00	0000	0	-	Actual Value = MOD-Bus Decimal Value / 10
90	Y-Phase Voltage Thirteenth Harmonics	2	00	0000	0	-	Actual Value = MOD-Bus Decimal Value / 10
91	B-Phase Voltage Thirteenth Harmonics	2	00	0000	0	-	Actual Value = MOD-Bus Decimal Value / 10

MODBUS Address	Data Parameter Field	Parameter data Size (Bytes)	Values on Controller LCD Display	Values on MODBUS (Hex)	Values on MODBUS (Decimal interpretation)	Remarks	Description
92	R-Phase Voltage Fifteenth Harmonics	2	0.1	0001	1	-	Actual Value = MOD-Bus Decimal Value / 10
93	Y-Phase Voltage Fifteenth Harmonics	2	0.1	0001	1	-	Actual Value = MOD-Bus Decimal Value / 10
94	B-Phase Voltage Fifteenth Harmonics	2	00	0000	0	-	Actual Value = MOD-Bus Decimal Value / 10
95	R-Phase Current Third Harmonics	2	0.1	0001	1	-	Actual Value = MOD-Bus Decimal Value / 10
96	Y-Phase Current Third Harmonics	2	0.2	0002	2	-	Actual Value = MOD-Bus Decimal Value / 10
97	B-Phase Current Third Harmonics	2	0.1	0001	1	-	Actual Value = MOD-Bus Decimal Value / 10
98	R-Phase Current Fifth Harmonics	2	00	0000	0	-	Actual Value = MOD-Bus Decimal Value / 10
99	Y-Phase Current Fifth Harmonics	2	00	0000	0	-	Actual Value = MOD-Bus Decimal Value / 10
100	B-Phase Current Fifth Harmonics	2	00	0000	0	-	Actual Value = MOD-Bus Decimal Value / 10
101	R-Phase Current Seventh Harmonics	2	00	0000	0	-	Actual Value = MOD-Bus Decimal Value / 10
102	Y-Phase Current Seventh Harmonics	2	00	0000	0	-	Actual Value = MOD-Bus Decimal Value / 10
103	B-Phase Current Seventh Harmonics	2	00	0000	0	-	Actual Value = MOD-Bus Decimal Value / 10
104	R-Phase Current Ninth Harmonics	2	00	0000	0	-	Actual Value = MOD-Bus Decimal Value / 10
105	Y-Phase Current Ninth Harmonics	2	00	0000	0	-	Actual Value = MOD-Bus Decimal Value / 10
106	B-Phase Current Ninth Harmonics	2	00	0000	0	-	Actual Value = MOD-Bus Decimal Value / 10
107	R-Phase Current Eleventh Harmonics	2	00	'0000	0	-	Actual Value = MOD-Bus Decimal Value / 10
108	Y-Phase Current Eleventh Harmonics	2	00	0000	0	-	Actual Value = MOD-Bus Decimal Value / 10
109	B-Phase Current Eleventh Harmonics	2	00	0000	0	-	Actual Value = MOD-Bus Decimal Value / 10

110	R-Phase Current Thirteenth Harmonics	2	00	0000	0	-	Actual Value = MOD-Bus Decimal Value / 10
111	Y-Phase Current Thirteenth Harmonics	2	00	0000	0	-	Actual Value = MOD-Bus Decimal Value / 10
112	B-Phase Current Thirteenth Harmonics	2	00	0000	0	-	Actual Value = MOD-Bus Decimal Value / 10

MODBUS Address	Data Parameter Field	Parameter data Size (Bytes)	Values on Controller LCD Display	Values on MODBUS (Hex)	Values on MODBUS (Decimal interpretation)	Remarks	Description
113	R-Phase Current Fifteenth Harmonics	2	00	0000	0	-	Actual Value = MOD-Bus Decimal Value / 10
114	Y-Phase Current Fifteenth Harmonics	2	00	0000	0	-	Actual Value = MOD-Bus Decimal Value / 10
115	B-Phase Current Fifteenth Harmonics	2	00	0000	0	-	Actual Value = MOD-Bus Decimal Value / 10
116	Neutral Current Third Harmonics	2	00	0000	0	-	
117	Neutral Current Fifth Harmonics	2	00	0000	0	-	
118	Neutral Current Seventh Harmonics	2	00	0000	0	-	
119	Neutral Current Ninth Harmonics	2	00	0000	0	-	
120	Neutral Current Eleventh Harmonics	2	00	0000	0	-	
121	Neutral Current Thirteenth Harmonics	2	00	0000	0	-	
122	Neutral Current Fifteenth Harmonics	2	00	0000	0	-	
123	Capacitor Current R-Phase Third Harmonics	2	1.1	000B	11	-	
124	Capacitor Current Y-Phase Third Harmonics	2	0.4	0004	4	-	
125	Capacitor Current B-Phase Third Harmonics	2	1.1	000B	11	-	
126	Capacitor Current R-Phase Fifth Harmonics	2	0.9	0009	9	-	
127	Capacitor Current Y-Phase Fifth Harmonics	2	0.2	0002	2	-	
128	Capacitor Current B-Phase Fifth Harmonics	2	1.3	000D	13	-	
129	Capacitor Current R-Phase Seventh Harmonics	2	0.9	0009	9	-	
130	Capacitor Current Y-Phase Seventh Harmonics	2	0.2	0002	2	-	
131	Capacitor Current B-Phase Seventh Harmonics	2	1.2	000C	12	-	
132	Capacitor Current R-Phase Ninth Harmonics	2	0.9	0009	9	-	
133	Capacitor Current Y-Phase Ninth Harmonics	2	0.2	0002	2	-	
134	Capacitor Current B-Phase Ninth Harmonics	2	1.2	000C	12	-	
135	Capacitor Current R-Phase Eleventh Harmonics	2	0.9	0009	9	-	
136	Capacitor Current Y-Phase Eleventh Harmonics	2	0.2	0002	2	-	
137	Capacitor Current B-Phase Eleventh Harmonics	2	1.2	000C	12	-	
138	Capacitor Current R-Phase Thirteenth Harmonics	2	0.9	0009	9	-	
139	Capacitor Current Y-Phase Thirteenth Harmonics	2	0.2	0002	2	-	
140	Capacitor Current B-Phase Thirteenth Harmonics	2	1.2	000C	12	-	
141	Capacitor Current R-Phase Fifteenth Harmonics	2	0.9	0009	9	-	
142	Capacitor Current Y-Phase Fifteenth Harmonics	2	0.2	0002	2	-	
143	Capacitor Current B-Phase Fifteenth Harmonics	2	1.2	000C	12	-	

MODBUS Address	Data Parameter Field	Parameter data Size (Bytes)	Values on Controller LCD Display	Values on MODBUS (Hex)	Values on MODBUS (Decimal interpretation)	Remarks	Description
144	R-Phase Reactive Power : Higher Sixteen bits	2		0000			
145	R-Phase Reactive Power : Lower Sixteen bits	2	5.7	0039	57	+Ve = Inductive, -Ve = Capacitive	Actual Value = MOD-Bus Decimal Value / 10
146	Y-Phase Reactive Power : Higher Sixteen bits	2		0000			
147	Y-Phase Reactive Power : Lower Sixteen bits	2	5.7	0039	57	+Ve = Inductive, -Ve = Capacitive	Actual Value = MOD-Bus Decimal Value / 10
148	B-Phase Reactive Power : Higher Sixteen bits	2		0000			
149	B-Phase Reactive Power : Lower Sixteen bits	2	5.7	0039	57	+Ve = Inductive, -Ve = Capacitive	Actual Value = MOD-Bus Decimal Value / 10
150	R-Phase Active Power : Higher Sixteen bits	2		0000			
151	R-Phase Active Power : Lower Sixteen bits	2	250	09C4	2500	+Ve = Import, -Ve = Export	Actual Value = MOD-Bus Decimal Value / 10
152	Y-Phase Active Power : Higher Sixteen bits	2		0000			
153	Y-Phase Active Power : Lower Sixteen bits	2	250	09C4	2500	+Ve = Import, -Ve = Export	Actual Value = MOD-Bus Decimal Value / 10
154	B-Phase Active Power : Higher Sixteen bits	2		0000			
155	B-Phase Active Power : Lower Sixteen bits	2	250	09C4	2500	+Ve = Import, -Ve = Export	Actual Value = MOD-Bus Decimal Value / 10
156	R-Phase Apparent Power : Higher Sixteen bits	2		0000			
157	R-Phase Apparent Power : Lower Sixteen bits	2	256	0A00	2560	-	Actual Value = MOD-Bus Decimal Value / 10
158	Y-Phase Apparent Power : Higher Sixteen bits	2		0000			
159	Y-Phase Apparent Power : Lower Sixteen bits	2	256	0A00	2560	-	Actual Value = MOD-Bus Decimal Value / 10
160	B-Phase Apparent Power : Higher Sixteen bits	2		0000			
161	B-Phase Apparent Power : Lower Sixteen bits	2	256	0A00	2560	-	Actual Value = MOD-Bus Decimal Value / 10

MODBUS Address	Data Parameter Field	Parameter data Size (Bytes)	Values on Controller LCD Display	Values on MODBUS (Hex)	Values on MODBUS (Decimal interpretation)	Remarks	Description
162	R-Phase Capacitive reactive Power : Higher Sixteen bits	2		0000			
163	R-Phase Capacitive reactive Power : Lower Sixteen bits	2	2.4	0018	24	-	Actual Value = MOD-Bus Decimal Value / 10
164	Y-Phase Capacitive reactive Power : Higher Sixteen bits	2		0000			
165	Y-Phase Capacitive reactive Power : Lower Sixteen bits	2	2.4	0018	24	-	Actual Value = MOD-Bus Decimal Value / 10
166	B-Phase Capacitive reactive Power : Higher Sixteen bits	2		0000			
167	B-Phase Capacitive reactive Power : Lower Sixteen bits	2	2.4	0018	24	-	Actual Value = MOD-Bus Decimal Value / 10
168	Overall Reactive Power : Higher Sixteen bits	2		0000			
169	Overall Reactive Power : Lower Sixteen bits	2	239.1	0957	2391	+Ve = Inductive, -Ve = Capacitive	Actual Value = MOD-Bus Decimal Value / 10
170	Overall Active Power : Higher Sixteen bits	2		0000			
171	Overall Active Power : Lower Sixteen bits	2	750	1D4C	7500	+Ve = Import, -Ve = Export	Actual Value = MOD-Bus Decimal Value / 10
172	Overall Apparent Power : Lower Sixteen bits	2		0000			
173	Overall Apparent Power : Lower Sixteen bits	2	768	1E00	7680	-	Actual Value = MOD-Bus Decimal Value / 10
174	Overall Voltage : Higher Sixteen bits	2		0000			
175	Overall Voltage : Lower Sixteen bits	2	244.5	098D	2445	-	Actual Value = MOD-Bus Decimal Value / 10
176	Overall Supply (Load) Current	2	415.4	103A	4154	-	Actual Value = MOD-Bus Decimal Value / 10
177	Overall Total Capacitor Current	2	1000	2710	10000	-	Actual Value = MOD-Bus Decimal Value / 10
178	Overall PF	2	0.9991	2707	9991	+Ve=Inductive, -Ve=Capacitive	Actual Value = MOD-Bus Decimal Value / 10000
179	Overall Capacitive Reactive Power : Lower Sixteen bits	2		0000			
180	Overall Capacitive Reactive Power : Lower Sixteen bits	2	100	03E8	1000	-	Actual Value = MOD-Bus Decimal Value / 10

181	Overall Voltage harmonics	2	3.4	0022	34	-	Actual Value = MOD-Bus Decimal Value / 10
182	Overall Supply Current Harmonics	2	1.2	000C	12	-	Actual Value = MOD-Bus Decimal Value / 10
183	Overall Capacitor Current Harmonics	2	0.3	0003	3	-	Actual Value = MOD-Bus Decimal Value / 10

MODBUS Address	Data Parameter Field	Parameter data Size (Bytes)	Values on Controller LCD Display	Values on MODBUS (Hex)	Values on MODBUS (Decimal interpretation)	Remarks	Description
184	Signed integer value of Load side P.F.	2	0.47	002F	47	+Ve=Inductive, -Ve=Capacitive	Actual Value = MOD-Bus Decimal Value / 10
185	Load Side Apparent Power: : Higher Sixteen bits	2		0000			
186	Load Side Apparent Power: : Lower Sixteen bits	2	3.22	0142	322	-	Actual Value = MOD-Bus Decimal Value / 100
187	Not Used						
188	Load Side Reactive Power	2	75.89	1DA5	7589	-	Actual Value = MOD-Bus Decimal Value / 100
189	Not Used	1				-	
190	Not Used						
191	Not Used						
192	Not Used						
193	Not Used						
194	Not Used						
195	Not Used						
196	Not Used						
197	Not Used						
198	Not Used						
199	Not Used						
200	Not Used						
201	Not Used						
202	Not Used						
203	Not Used						
204	Not Used						
205	Not Used						
206.5	RTCC - Current Year	1	16	10	16	-	
207	RTCC - Current Month	1	04	04	4	-	
207.5	RTCC - Current Day	1	27	1B	27	-	
208	RTCC - Current Hour	1	17	11	17	-	
208.5	RTCC - Current Minute	1	32	20	32	-	
209	RTCC - Current Second	1	20	14	20	-	
209.5	Internal Temperature of Micro-Controller in APFC / Load Manager Unit	1	24	18	24	-	

Notes:								
For Active Power, +Ve = Import = Consumption and -Ve = Export = Generation.								
For Reactive Power, +Ve = Import = Inductive, and -Ve = Export = Capacitive.								
Four Quadrant Power Diagram Explained:								
First Quadrant: kVAr Import Inductive, PF Lagging								
Second Quadrant: KW Export (Generation), PF Leading								
Third Quadrant: kVAr Export Capacitive, PF Lagging								
Fourth Quadrant: KW Import (Consumption), PF Leading								
First & Second Quadrant: +Ve kVAr (Inductive)								
Third & Fourth Quadrant: -kVAr (Capacitive)								
First & Fourth Quadrant: +Ve KW Import (Consumption)								
Second & Third Quadrant: -Ve KW Export (Generation)								

A) APFC / Load Manager Units - Communication Controller configuration as below:

Edit parameter



Communication Parameter



Select Com2 function as:

Please keep the ASCII/RTU Selection same
At APFC / Load Manager Unit & IBM PC.



Baud Rate of com2:
9600

This is the preferred Baud Rate.

Protocol is:

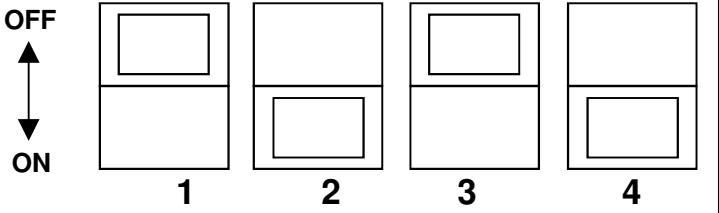
One Start Bit, 8-Bit Data,
1 Stop Bit, No Parity.

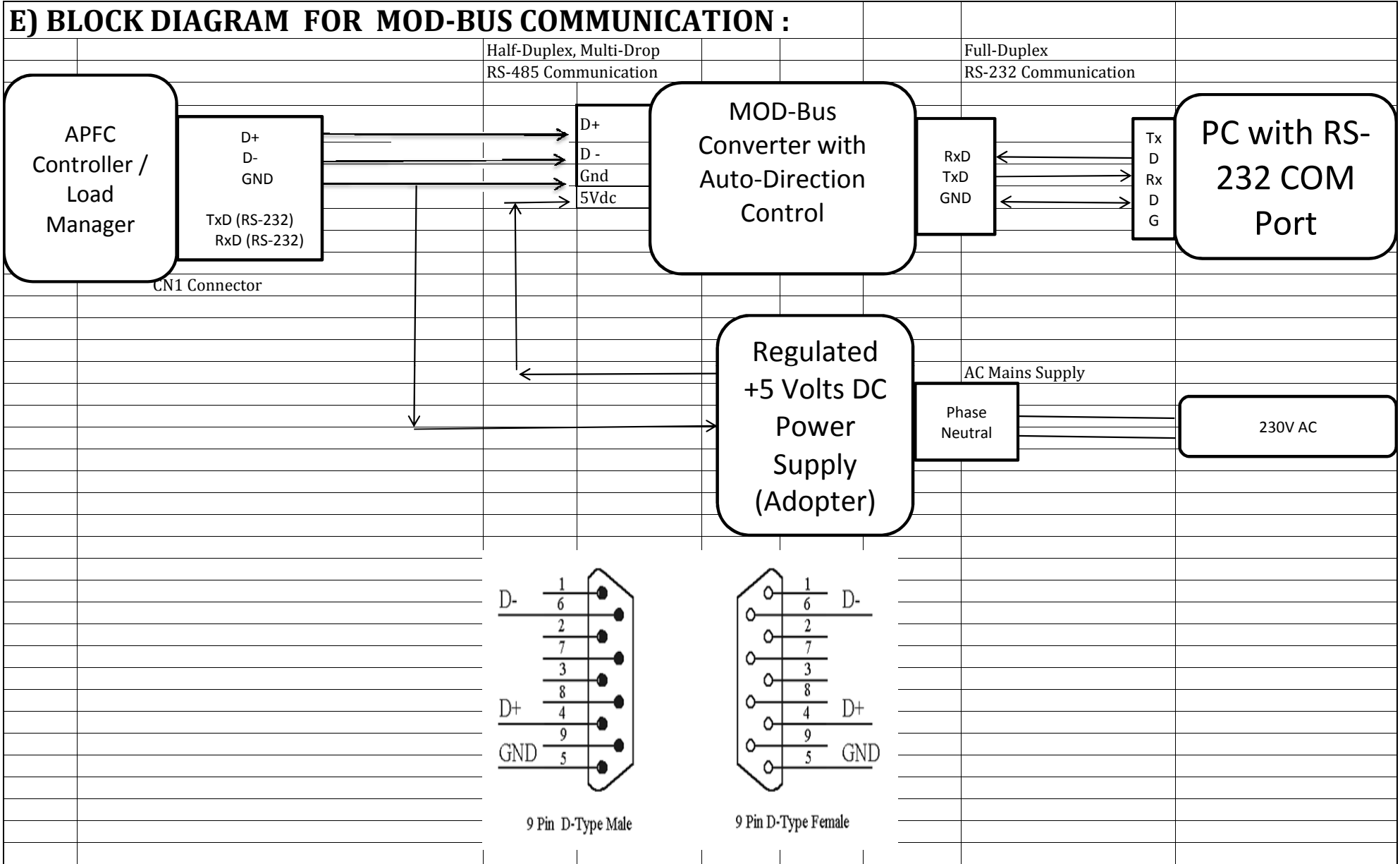
B) For TAS MOD-Bus View, PC side configuration, as below:
Details as explained in the User Manual for the MOD-Bus View Software & in the Software CD
TAS provides their demonstration MOD-BUS VIEW Software "free-of-cost" for the Units Purchase Quantity up to 5 No.s.

C) Comparison Table for Properties of MOD-BUS/ASCII and MOD-BUS RTU

S. N.	Property	MOD-BUS/ASCII	MOD-BUS RTU
1	Characters	ASCII Representation of (0 to 9, A to F) Hexa-Decimal Digits.	Binary (0 to 255 Decimal) = One 8-Bit Byte
2	Error Check	LRC (Longitudinal Redundancy Check)	CRC (Cyclic Redundancy Check)
3	Frame Start	“:”	3.5 characters of silence
4	Frame End	“CR/LF”	3.5 characters of silence
5	Gaps In Message	1 Second	1.5 x character length
6	Start Bit	1	1
7	Number of Data Bits	7 with msb = 0, Total 8 Bit.	8
8	Parity	Even/odd or None	Even/odd or None
9	Stop Bits	1 or 2	1 or 2

D) APFC / Load Manager Units - Communication configuration as below:

<p>Terminals available on sides –</p>	<p>Please refer respective User Manuals.</p>	
<p>4-Position DIP Switch or Selection Jumpers, for selecting communication mode .</p>		
		<p>Terminals on left side of controller – DIP switch for selection of communication protocol through port available on bottom side.</p> <p>Use only 1 of these 2 Modes at a time, with appropriate selection in APFC Unit.</p> <p>1. Positions 1 & 3 ON = RS-485 Mode, for MOD-Bus.</p> <p>2. Positions 2 & 4 ON = GSM Mode enabled, using RS-232.</p>
		<p>3. selecting both sets of terminals will not allow any data down-load or Data Communication.</p>



The difference between MOD-BUS RTU and MOD-BUS/ASCII:

There are two basic transmission modes found in serial MODBUS connections, ASCII and RTU. These transmission modes determine the way in which the MODBUS messages are coded. In ASCII format, the messages are readable, whereas in RTU, the messages are in binary coding and cannot be read while monitoring. The trade-off is that RTU messages are a smaller size, which allows for more data exchange in the same time span. One should be aware that all nodes within one MODBUS network must be of the same transmission mode, meaning MODBUS ASCII cannot communicate with MODBUS RTU and vice versa.

In MODBUS/ASCII, messages are encoded with hexadecimal value, represented with comprehensive ASCII characters. The characters used for this encoding are 0-9 and A-F. For every byte of information, two communication-bytes are used because every communication-byte can only define 4 bits in the hexadecimal system. MODBUS RTU, however, exchanges data in binary format where each byte of data is coded in one communication-byte.

The MODBUS messages on a serial connection are not broadcast in plain format. They are constructed in a way that allows receivers to easily detect the beginning and end of a message. The characters start and end a frame when in ASCII mode. To flag the start of a message, a colon is used, and each message is ended with a CR/LF combination.

MODBUS RTU uses a different method. In RTU, framing is constructed by measuring gaps of silence on the communication line. Before each message, there must be a minimum gap of 3.5 characters. To prepare for new messages, the receiver clears the buffer when a gap of 1.5 characters is detected. One of the main differences between MODBUS/ASCII and MODBUS RTU is that ASCII allows gaps between the bytes of a message with a maximum length of 1 second.

With MODBUS RTU, continuous streams of messages must be sent.