

MPR 3X-4X Register table

✓	is used for available for this version
○	is used for not available for this version
○	is used for optional with I/O module

		START ADDRESS	FINISH ADDRESS	REGISTER COUNTS
1	Measurements	0	161	162
2	Energy	200	377	178
3	Wearable Energy	1500	1659	160
4	Energy Per Tariff	500	541	42
5	Min-Max, Max Demand, Demand Measurement	800	1373	574
6	THD	2000	2035	36
7	THD I Harmonic Order	3000	3250	251
8	THD V Harmonic Order	4000	4200	201
9	THD VLI Harmonic Order	5000	5150	151
10	NETWORK SETTINGS	16384	16401	18
11	SETUP	17000	17179	180
12	ETHERNET SETUP	18000	18026	27
13	DATE/HOUR	6000	6017	18
14	TARIFF SETTINGS OF SATURDAY	22000	22015	16
15	TARIFF SETTINGS OF SUNDAY	9000	9015	16
16	TARIFF SETTINGS OF WEEKDAY	10000	10015	16
17	ALARM STATUS	20000	20035	36
18	EVENT LOG RECORD	8016	8034	19
19	RESET	14000	14000	1
20	Record Settings	21000	21014	15
21	Records Index Register	21200	21211	12
22	Profile Records	23000	23027	28
23	Current Records	24000	24035	36
24	Voltage Records	25000	25053	54
25	Power Records	26000	26061	62
26	THD Records	27000	27059	60
27	Device Records	28000	28029	30
28	Device Identification	60416	60455	40
29	Enter Identification	65032	65047	16
30	MODBUS Description			

Supported Functions	Start Address	Register Counts	
Read holding registers	0	162	is used for optional with I/O module

Address Dec	Address Hex	Format	Word Counts	Unit	Remarks	Multiplier	Register Counts										
							MPR345-11	MPR325	MPR345-20	MPR455	MPR465	MPR475	MPR42-OGT	MPR47-SE			
0	0000	uint32	2	V	Voltage L1-N	0.1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
2	0002	uint32	2	V	Voltage L2-N	0.1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
4	0004	uint32	2	V	Voltage L3-N	0.1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
6	0006	uint32	2	V	Voltage L4-N	0.1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
8	0008	uint32	2	V	Voltage L1-L2	0.1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
10	000A	uint32	2	V	Voltage L2-L3	0.1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
12	000C	uint32	2	V	Voltage L3-L4	0.1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
14	000E	uint32	2	A	Current L1	0.001	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
16	0010	uint32	2	A	Current L2	0.001	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
18	0012	uint32	2	A	Current L3	0.001	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
20	0014	uint32	2	A	Current L4	0.001	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
22	0016	uint32	2	A	Neutral Current = I(L1)+I(L2)+I(L3)	0.001	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
24	0018	uint32	2	Hz	Measured frequency	0.01	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
26	001A	float	2	W	Active power L1-N	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
28	001C	float	2	W	Active power L2-N	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
30	001E	float	2	W	Active power L3-N	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
32	0020	float	2	W	Active power L4-N	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
34	0022	float	2	W	Total import active power	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
36	0024	float	2	W	Total export active power	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
38	0026	float	2	W	Reactive power +/- 3P=I1*U1+I2*U2+I3*U3	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
40	0028	float	2	VAR	Reactive power L1	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
42	002A	float	2	VAR	Reactive power L2	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
44	002C	float	2	VAR	Reactive power L3	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
46	002E	float	2	VAR	Reactive power L4	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
48	0030	float	2	VAR	Quadrant 1 total reactive power	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
50	0032	float	2	VAR	Quadrant 2 total reactive power	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
52	0034	float	2	VAR	Quadrant 3 total reactive power	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
54	0036	float	2	VAR	Quadrant 4 total reactive power	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
56	0038	float	2	VAR	2 reactive power +/- 2*(I1*U1+I2*U2+I3*U3)	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
58	003A	float	2	VA	Apparent power L1-N	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
60	003C	float	2	VA	Apparent power L2-N	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
62	003E	float	2	VA	Apparent power L3-N	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
64	0040	float	2	VA	Apparent power L4-N	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
66	0042	float	2	VA	Total import apparent power	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
68	0044	float	2	VA	Total export apparent power	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
70	0046	float	2	VA	Apparent Power +/- 3P=I1*U1+I2*U2+I3*U3	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
72	0048	int32	2		Power Factor L1	0.001	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
74	004A	int32	2		Power Factor L2	0.001	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
76	004C	int32	2		Power Factor L3	0.001	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
78	004E	int32	2		Power Factor L4	0.001	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
80	0050	int32	2		3POWER FACTOR +/- 3P=PF(L1)+PF(L2)+PF(L3)	0.001	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
82	0052	int32	2		cosPhi L1	0.001	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
84	0054	int32	2		cosPhi L2	0.001	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
86	0056	int32	2		cosPhi L3	0.001	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
88	0058	int32	2		cosPhi L4	0.001	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
90	005A	int32	2		100*Phi cos(L1 - L2) + 100*(L2 - L3) + 100*(L3 - L4)	0.001	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
92	005C	int32	2		Rotation field: 1=right, 0=none, -1=left	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
94	005E	uint32	2	%	Voltage Unbalance	0.1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
96	0060	uint32	2	%	Current Unbalance	0.1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
98	0062	uint64	2	Angle	L1 Phase Voltage Angle	0.1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
100	0064	uint64	2	Angle	L2 Phase Voltage Angle	0.1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
102	0066	uint64	2	Angle	L3 Phase Voltage Angle	0.1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
104	0068	uint64	2	Angle	L4 Phase Voltage Angle	0.1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
106	006A	uint64	2	Angle	L1 Phase Current Angle	0.1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
108	006C	uint64	2	Angle	L2 Phase Current Angle	0.1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
110	006E	uint64	2	Angle	L3 Phase Current Angle	0.1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
112	0070	uint64	2	Angle	L4 Phase Current Angle	0.1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
114	0072	float	2		Analog Input 1	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
116	0074	float	2		Analog Input 2	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
118	0076	float	2		Analog Input 3	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
120	0078	float	2		Analog Input 4	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
122	007A	float	2		Analog Input 5	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
124	007C	float	2		Analog Input 6	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
126	007E	float	2		Analog Input 7	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
128	0080	float	2		Analog Input 8	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
130	0082	float	2		Analog Output 1	1	○	○	○	○	○	○	○	○	○	○	
132	0084	float	2		Analog Output 2	1	○	○	○	○	○	○	○	○	○	○	
134	0086	float	2		Analog Output 3	1	○	○	○	○	○	○	○	○	○	○	
136	0088	float	2		Analog Output 4	1	○	○	○	○	○	○	○	○	○	○	
138	008A	float	2	°C	Temperature Input 1	1	○	○	○	○	○	○	○	○	○	○	
140	008C	float	2	°C	Temperature Input 2	1	○	○	○	○	○	○	○	○	○	○	
142	008E	float	2	°C	Temperature Input 3	1	○	○	○	○	○	○	○	○	○	○	
144	0090	float	2	°C	Temperature Input 4	1	○	○	○	○	○	○	○	○	○	○	
146	0092	float	2	°C	Temperature Input 5	1	○	○	○	○	○	○	○	○	○	○	
148	0094	float	2	°C	Temperature Input 6	1	○	○	○	○	○	○	○	○	○	○	
150	0096	float	2	°C	Temperature Input 7	1	○	○	○	○	○	○	○	○	○	○	
152	0098	float	2	°C	Temperature Input 8	1	○	○	○	○	○	○	○	○	○	○	
154	009A	uint32	2	h	Hour Meter (Non Resettable)	0.001	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
156	009C	uint32	2	h	Working Hour Counter	0.001	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
158	009E	uint32	2		Input Status	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
160	00A0	uint32	2		Output Status	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	

Energy																	
Supported Functions			Start Address				Register Counts										
Read holding registers			200				178										
Address Dec	Address Hex	Format	Word Counts	Unit	Remarks	Multiplier	MPR345-11	MPR325	MPR345-20	MPR455	MPR465	MPR475	MPR42-OGT	MPR47-SE			
200	00C0	uint64	4	Wh	Consumed Active Energy L1	1	✓	✓	✓	✓	✓	✓	✓	✓			
204	00C4	uint64	4	Wh	Consumed Active Energy L2	1	✓	✓	✓	✓	✓	✓	✓	✓			
208	00C8	uint64	4	Wh	Consumed Active Energy L3	1	✓	✓	✓	✓	✓						

332	014C	uint64	4	VAh	Quadrant 3 Reactive Energy L4	1													
336	0150	uint64	4	VAh	Quadrant 3 total reactive Energy	1													
340	0154	uint64	4	VAh	Quadrant 4 Reactive Energy L1	1													
344	0158	uint64	4	VAh	Quadrant 4 Reactive Energy L2	1													
348	015C	uint64	4	VAh	Quadrant 4 Reactive Energy L3	1													
352	0160	uint64	4	VAh	Quadrant 4 Reactive Energy L4	1													
356	0164	uint64	4	VAh	Quadrant 4 total reactive Energy	1													
360	0168	uint32	2	-	Number Of pulse Meter (Max 8)	1													
364	016C	uint32	2	-	Total pulse meter input 3	1													
368	0170	uint32	2	-	Total pulse meter input 4	1													
372	0174	uint32	2	-	Total pulse meter input 5	1													
376	0178	uint32	2	-	Total pulse meter input 6	1													
376	0178	uint32	2	-	Total pulse meter input 7	1													
376	0178	uint32	2	-	Total pulse meter input 8	1													

Energy				
Supported Functions	Start Address	Register Counts		
Write single register	1500	160		

Address Dec	Address Hex	Format	Word Counts	Unit	Remarks	Multiplier	MPR345-11	MPR325	MPR345-20	MPR455	MPR465	MPR475	MPR42-OGT	MPR47-SE
1500	050C	uint64	4	Wh	Consumed Active Energy L1	1								
1504	0510	uint64	4	Wh	Consumed Active Energy L2	1								
1508	0514	uint64	4	Wh	Consumed Active Energy L3	1								
1512	0518	uint64	4	Wh	Consumed Active Energy L4	1								
1516	051C	uint64	4	Wh	Total Consumed Energy L1, L3	1								
1520	0520	uint64	4	Wh	Delivered Active Energy L1	1								
1524	0524	uint64	4	Wh	Delivered Active Energy L2	1								
1528	0528	uint64	4	Wh	Delivered Active Energy L3	1								
1532	052C	uint64	4	Wh	Delivered Active Energy L4	1								
1536	0530	uint64	4	Wh	Total Delivered Energy L1, L3	1								
1540	0534	uint64	4	VAh	Consumed Apparent energy L1	1								
1544	0538	uint64	4	VAh	Consumed Apparent energy L2	1								
1548	053C	uint64	4	VAh	Consumed Apparent energy L3	1								
1552	0540	uint64	4	VAh	Consumed Apparent energy L4	1								
1556	0544	uint64	4	VAh	Total Consumed Apparent Energy L1, L3	1								
1560	0548	uint64	4	VAh	Delivered Apparent Energy L1	1								
1564	054C	uint64	4	VAh	Delivered Apparent Energy L2	1								
1568	0550	uint64	4	VAh	Delivered Apparent Energy L3	1								
1572	0554	uint64	4	VAh	Delivered Apparent Energy L4	1								
1576	0558	uint64	4	VAh	Total Delivered Apparent energy L1, L3	1								
1580	055C	uint64	4	VAh	Quadrant 1 Reactive Energy L1	1								
1584	0560	uint64	4	VAh	Quadrant 1 Reactive Energy L2	1								
1588	0564	uint64	4	VAh	Quadrant 1 Reactive Energy L3	1								
1592	0568	uint64	4	VAh	Quadrant 1 Reactive Energy L4	1								
1596	056C	uint64	4	VAh	Quadrant 1 total reactive Energy	1								
1600	0570	uint64	4	VAh	Quadrant 2 Reactive Energy L1	1								
1604	0574	uint64	4	VAh	Quadrant 2 Reactive Energy L2	1								
1608	0578	uint64	4	VAh	Quadrant 2 Reactive Energy L3	1								
1612	057C	uint64	4	VAh	Quadrant 2 Reactive Energy L4	1								
1616	0580	uint64	4	VAh	Quadrant 2 total reactive Energy	1								
1620	0584	uint64	4	VAh	Quadrant 3 Reactive Energy L1	1								
1624	0588	uint64	4	VAh	Quadrant 3 Reactive Energy L2	1								
1628	058C	uint64	4	VAh	Quadrant 3 Reactive Energy L3	1								
1632	0590	uint64	4	VAh	Quadrant 3 Reactive Energy L4	1								
1636	0594	uint64	4	VAh	Quadrant 3 total reactive Energy	1								
1640	0598	uint64	4	VAh	Quadrant 4 Reactive Energy L1	1								
1644	059C	uint64	4	VAh	Quadrant 4 Reactive Energy L2	1								
1648	05A0	uint64	4	VAh	Quadrant 4 Reactive Energy L3	1								
1652	05A4	uint64	4	VAh	Quadrant 4 Reactive Energy L4	1								
1656	05A8	uint64	4	VAh	Quadrant 4 total reactive Energy	1								

Energy per Tariff				
Supported Functions	Start Address	Register Counts		
Read holding registers	500	42		

Address Dec	Address Hex	Format	Word Counts	Unit	Remarks	Multiplier	MPR345-11	MPR325	MPR345-20	MPR455	MPR465	MPR475	MPR42-OGT	MPR47-SE
500	01F4	uint16	1	-	Number Of Tariff	1								
501	01F5	uint16	1	-	Tariff Number In Progress	1								
502	01F6	uint64	4	kWh	Positive Active Energies Tariff#1	1								
506	01FA	uint64	4	kWh	Positive Active Energies Tariff#2	1								
510	01FE	uint64	4	kWh	Positive Active Energies Tariff#3	1								
514	0202	uint64	4	kWh	Positive Active Energies Tariff#4	1								
518	0206	uint64	4	kWh	Positive Active Energies Tariff#5	1								
522	020A	uint64	4	kWh	Positive Active Energies Tariff#6	1								
526	020E	uint64	4	kWh	Positive Active Energies Tariff#7	1								
530	0212	uint64	4	kWh	Positive Active Energies Tariff#8	1								
534	0216	uint64	4	kWh	Generator Energies	1								
538	021A	uint64	4	kWh	Total tariff energies	1								

Min-Max, Max Demand, Demand Measurement				
Supported Functions	Start Address	Register Counts		
Read holding registers	800	574		

Address Dec	Address Hex	Format	Word Counts	Unit	Remarks	Multiplier	MPR345-11	MPR325	MPR345-20	MPR455	MPR465	MPR475	MPR42-OGT	MPR47-SE
800	0320	uint32	2	V	L1 Phase Max Voltage	0.1								
802	0322	uint32	2	Time	L1 Phase Max Voltage Time	Unix Time Stamp								
804	0324	uint32	2	V	L2 Phase Max Voltage	0.1								
806	0326	uint32	2	Time	L2 Phase Max Voltage Time	Unix Time Stamp								
808	0328	uint32	2	V	L3 Phase Max Voltage	0.1								
810	032A	uint32	2	Time	L3 Phase Max Voltage Time	Unix Time Stamp								
812	032C	uint32	2	V	L4 Phase Max Voltage	0.1								
814	032E	uint32	2	Time	L4 Phase Max Voltage Time	Unix Time Stamp								
816	0330	uint32	2	V	L1-2 Max Voltage	0.1								
818	0332	uint32	2	Time	L1-2 Max Voltage Time	Unix Time Stamp								
820	0334	uint32	2	V	L2-3 Max Voltage	0.1								
822	0336	uint32	2	Time	L2-3 Max Voltage Time	Unix Time Stamp								
824	0338	uint32	2	V	L3-4 Max Voltage	0.1								
826	033A	uint32	2	Time	L3-4 Max Voltage Time	Unix Time Stamp								
828	033C	uint32	2	A	L1 Phase Max Current	0.001								
830	033E	uint32	2	Time	L1 Phase Max Current Time	Unix Time Stamp								
832	0340	uint32	2	A	L2 Phase Max Current	0.001								
834	0342	uint32	2	Time	L2 Phase Max Current Time	Unix Time Stamp								
836	0344	uint32	2	A	L3 Phase Max Current	0.001								
838	0346	uint32	2	Time	L3 Phase Max Current Time	Unix Time Stamp								
840	0348	uint32	2	A	L4 Phase Max Current	0.001								
842	034A	uint32	2	Time	L4 Phase Max Current Time	Unix Time Stamp								
844	034C	uint32	2	A	N Max Current	0.001								
846	034E	uint32	2	Time	N Max Current Time	Unix Time Stamp								
848	0350	float	2	W	L1 Phase Max Active Power	1								
850	0352	float	2	Time	L1 Phase Max Active Power Time	Unix Time Stamp								
852	0354	float	2	W	L2 Phase Max Active Power	1								
854	0356	uint32	2	Time	L2 Phase Max Active Power Time	Unix Time Stamp								
856	0358	float	2	W	L3 Phase Max Active Power	1								
858	035A	uint32	2	Time	L3 Phase Max Active Power Time	Unix Time Stamp								
860	035C	float	2	W	L4 Phase Max Active Power	1								
862	035E	uint32	2	Time	L4 Phase Max Active Power Time	Unix Time Stamp								
864	0360	float	2	W	Max Total Import Active Power	1								
866	0362	uint32	2	Time	Max Total Import Active Power Time	Unix Time Stamp								
868	0364	float	2	W	Max Total Export Active Power	1								
870	0366	uint32	2	Time	Max Total Export Active Power Time	Unix Time Stamp								
872	0368	float	2	W	Max Total Active Power	1								
874	036A	uint32	2	Time	Max Total Active Power Time	Unix Time Stamp								
876	036C	float	2	VAR	L1 Phase Max Reactive Power	1								
878	036E	uint32	2	Time	L1 Phase Max Reactive Power Time	Unix Time Stamp								
880	0370	float	2	VAR	L2 Phase Max Reactive Power	1								
882	0372	uint32	2	Time	L2 Phase Max Reactive Power Time	Unix Time Stamp								
884	0374	float	2	VAR	L3 Phase Max Reactive Power	1								
886	0376	uint32	2	Time	L3 Phase Max Reactive Power Time	Unix Time Stamp								
888	0378	float	2	VAR	L4 Phase Max Reactive Power	1								
890	037A	uint32	2	Time	L4 Phase Max Reactive Power Time	Unix Time Stamp								
892	037C	float	2	VAR	Quadrant 1 Max Reactive Power	1								
894	037E	uint32	2	Time	Quadrant 1 Max Reactive Power Time	Unix Time Stamp								
896	0380	float	2	VAR	Quadrant 2 Max Reactive Power	1								
898	0382	uint32	2	Time	Quadrant 2 Max Reactive Power Time	Unix Time Stamp								
900	0384	float	2	VAR	Quadrant 3 Max Reactive Power	1								
902	0386	uint32	2	Time	Quadrant 3 Max Reactive Power Time	Unix Time Stamp								
904	0388	float	2	VAR	Quadrant 4 Max Reactive Power	1								
906	038A	uint32	2	Time	Quadrant 4 Max Reactive Power Time	Unix Time Stamp								
908														

Address Dec	Address Hex	Format	Word Counts	Unit	Remarks	Multiplier	MPR345-11	MPR325	MPR345-20	MPR455	MPR465	MPR475	MPR42-OGT	MPR47-SE
16384	4000	uint16	1	-	Network Type: 0:3P4W 1:3P3W 2:ARON 3:3P4W Balanced 4:3P3W Balanced	1	✓	✓	✓	✓	✓	✓	✓	✓
16385	4001	uint16	1	A	Current Transformer Secondary: 0:1A 1:5A	1	✓	✓	✓	✓	✓	✓	✓	✓
16386	4002	uint16	1	A	Current Transformer Primary: 0:9999	1	✓	✓	✓	✓	✓	✓	✓	✓
16387	4003	uint16	1	-	Voltage Transformer Present: 0:None 1:Present	1	✓	✓	✓	✓	✓	✓	✓	✓
16388	4004	uint16	1	V	Voltage Transformer Secondary: 50 - 300	1	✓	✓	✓	✓	✓	✓	✓	✓
16389	4005	uint32	2	V	Voltage Transformer Primary: 50 - 999999	1	✓	✓	✓	✓	✓	✓	✓	✓
16391	4007	uint16	1	Minutes	D Demand Time: 1:1 Minute 5:5 Minutes 10:10 Minutes 15:15 Minutes 20:20 Minutes 30:30 Minutes 60:60 Minutes	1								
16392	4008	uint16	1	Minutes	D Demand Time: 1:1 Minute 5:5 Minutes 10:10 Minutes 15:15 Minutes 20:20 Minutes 30:30 Minutes 60:60 Minutes	1	✓	✓	✓	✓	✓	✓	✓	✓
16393	4009	uint16	1	Minutes	V Average Time: 1:1 Minute 5:5 Minutes 10:10 Minutes 15:15 Minutes 20:20 Minutes 30:30 Minutes 60:60 Minutes	1								
16394	400A	uint16	1	Hz	System Frequency: 0:50 Hz 1:60 Hz	1	✓	✓	✓	✓	✓	✓	✓	✓
16395	400B	uint32	2	V	System Voltage: VT Primary - 25V* primary/secondary	1	✓	✓	✓	✓	✓	✓	✓	✓
16397	4000	uint16	1	A	System Current: CT Primary - 1A	1	✓	✓	✓	✓	✓	✓	✓	✓
16398	400E	uint16	1	%	Sag Level: 70% - 98%	0.1						✓		✓
16399	400F	uint16	1	%	Sag Hysteresis: 0.5% - 5%	0.1						✓		✓
16400	4010	uint16	1	%	Swell Level: 102% - 130%	0.1						✓		✓
16401	4011	uint16	1	%	Swell Hysteresis: 0.5% - 5%	0.1						✓		✓

Supported Functions		Start Address	Register Counts
Read holding registers		17000	180
Write single register			
Write multiple registers			

Address Dec	Address Hex	Format	Word Counts	Unit	Remarks	Multiplier	MPR345-11	MPR325	MPR345-20	MPR455	MPR465	MPR475	MPR42-OGT	MPR47-SE
17000	4268	uint16	1	-	Network Type: 0:3P4W 1:3P3W 2:ARON 3:3P4W Balanced 4:3P3W Balanced	1	✓	✓	✓	✓	✓	✓	✓	✓
17001	4269	uint16	1	A	Current Transformer Secondary: 0:1A 1:5A	1	✓	✓	✓	✓	✓	✓	✓	✓
17002	426A	uint16	1	A	Current Transformer Primary: 0:9999	1	✓	✓	✓	✓	✓	✓	✓	✓
17003	426B	uint16	1	-	Voltage Transformer Present: 0:None 1:Present	1	✓	✓	✓	✓	✓	✓	✓	✓
17004	426C	uint16	1	V	Voltage Transformer Secondary: 50 - 300	1	✓	✓	✓	✓	✓	✓	✓	✓
17005	426D	uint32	2	V	Voltage Transformer Primary: 50 - 999999	1	✓	✓	✓	✓	✓	✓	✓	✓
17007	426F	uint16	1	Minutes	D Demand Time: 1:1 Minute 5:5 Minutes 10:10 Minutes 15:15 Minutes 20:20 Minutes 30:30 Minutes 60:60 Minutes	1								
17008	4270	uint16	1	Minutes	D Demand Time: 1:1 Minute 5:5 Minutes 10:10 Minutes 15:15 Minutes 20:20 Minutes 30:30 Minutes 60:60 Minutes	1	✓	✓	✓	✓	✓	✓	✓	✓
17009	4271	uint16	1	Minutes	V Average Time: 1:1 Minute 5:5 Minutes 10:10 Minutes 15:15 Minutes 20:20 Minutes 30:30 Minutes 60:60 Minutes	1								
17010	4272	uint16	1	Hz	System Frequency: 0:50 Hz 1:60 Hz	1	✓	✓	✓	✓	✓	✓	✓	✓
17011	4273	uint32	2	V	System Voltage: VT Primary - 25V* primary/secondary	1	✓	✓	✓	✓	✓	✓	✓	✓
17013	4275	uint16	1	A	System Current: CT Primary - 1A	1	✓	✓	✓	✓	✓	✓	✓	✓
17014	4276	uint16	1	%	Sag Level: 70% - 98%	0.1						✓		✓
17015	4277	uint16	1	%	Sag Hysteresis: 0.5% - 5%	0.1						✓		✓
17016	4278	uint16	1	%	Swell Level: 102% - 130%	0.1						✓		✓
17017	4279	uint16	1	%	Swell Hysteresis: 0.5% - 5%	0.1						✓		✓
17018	427A	uint16	1	-	OUT3 Type: 0:REMOTE 1:PULSE 2:ALARM	1	✓			0	0	0	0	0
17019	427B	uint16	1	-	OUT2 Type: 0:REMOTE 1:PULSE 2:ALARM	1				0	0	0	0	0
17020	427C	uint16	1	-	OUT1 Type: 0:REMOTE 1:PULSE 2:ALARM	1				0	0	0	0	0
17021	427D	uint16	1	-	OUT4 Type: 0:REMOTE 1:PULSE 2:ALARM	1				0	0	0	0	0
17022	427E	uint16	1	-	OUT5 Type: 0:REMOTE 1:PULSE 2:ALARM	1								
17023	427F	uint16	1	-	OUT6 Type: 0:REMOTE 1:PULSE 2:ALARM	1								
17024	4280	uint16	1	-	OUT7 Type: 0:REMOTE 1:PULSE 2:ALARM	1								
17025	4281	uint16	1	-	OUT8 Type: 0:REMOTE 1:PULSE 2:ALARM	1								
17026	4282	uint16	1	-	INPUT1 Type: 0:digital 1:PULSE 2:Generator	1	✓		✓	0	0	0	0	0
17027	4283	uint16	1	-	INPUT2 Type: 0:digital 1:PULSE 2:Generator	1			✓	0	0	0	0	0
17028	4284	uint16	1	-	INPUT3 Type: 0:digital 1:PULSE 2:Generator	1				0	0	0	0	0

17029	4285	uint16	1	-	INPUT4 Type: 0: digital 1: PULSE 2: Generator	1					0	0	0	0	0	
17030	4286	uint16	1	-	INPUT5 Type: 0: digital 1: PULSE 2: Generator											
17031	4287	uint16	1	-	INPUT6 Type: 0: digital 1: PULSE 2: Generator											
17032	4288	uint16	1	-	INPUT7 Type: 0: digital 1: PULSE 2: Generator											
17033	4289	uint16	1	-	INPUT8 Type: 0: digital 1: PULSE 2: Generator											
17034	428A	uint16	1	-	Analog Output 1 Type: 0: -5 V 1: 0 - 10 V 2: -5 - 5 V 3: -10 - 10 V 4: null 5: 4 - 20 mA 6: 0 - 20 mA 7: 0 - 24 mA	1					0	0	0	0	0	
17035	428B	uint16	1	-	Analog Output 1 Parameter: 0: VLN1, 1: VLN2, 2: VLN3, 3: VLN4 4: VLI1, 5: VLI2, 6: VLI3, 7: IL1, 8: IL2, 9: IL3, 10: IL4, 11: ILN 12: IL1 Demand, 13: IL2 Demand, 14: IL3 Demand 15: IL4 Demand, 16: ILN Demand, 17: P1, 18: P2, 19: P3, 20: Q1, 21: Q2, 22: Q3, 23: S1, 24: S2, 25: S3, 26: SUMP, 27: SUMP IMP, 28: SUMP EXP, 29: SUMPQ, 30: SUM QUAD1, 31: SUM QUAD2, 32: SUM QUAD3, 33: SUM QUAD4, 34: SUM S, 35: SUM S IMP, 36: SUM S EXP, 37: SUM P IMP Demand, 38: SUM P EXP Demand, 39: SUM S IMP Demand, 40: SUM S EXP Demand, 41: Cos Phi 1, 42: Cos Phi 2, 43: Cos Phi 3, 44: SUM Cos Phi, 45: Itt 46: Remote	1						0	0	0	0	0
17036	428C	uint32	2	Depends on parameter	Analog Output1 High	Depends on parameter					0	0	0	0	0	
17038	428E	uint32	2	Depends on parameter	Analog Output1 Low	Depends on parameter					0	0	0	0	0	
17040	4290	uint16	1	-	Analog Output 2 Type:	1					0	0	0	0	0	
17041	4291	uint16	1	-	Analog Output 2 Parameter:	1					0	0	0	0	0	
17042	4292	uint32	2	Depends on parameter	Analog Output2 High	Depends on parameter					0	0	0	0	0	
17044	4294	uint32	2	Depends on parameter	Analog Output2 Low	Depends on parameter					0	0	0	0	0	
17046	4296	uint16	1	-	Analog Output 3 Type:	1					0	0	0	0	0	
17047	4297	uint16	1	-	Analog Output 3 Parameter:	1					0	0	0	0	0	
17048	4298	uint32	2	Depends on parameter	Analog Output3 High	Depends on parameter					0	0	0	0	0	
17050	429A	uint32	2	Depends on parameter	Analog Output3 Low	Depends on parameter					0	0	0	0	0	
17052	429C	uint16	1	-	Analog Output 4 Type:	1					0	0	0	0	0	
17053	429D	uint16	1	-	Analog Output 4 Parameter:	1					0	0	0	0	0	
17054	429E	uint32	2	Depends on parameter	Analog Output4 High	Depends on parameter					0	0	0	0	0	
17056	42A0	uint32	2	Depends on parameter	Analog Output4 Low	Depends on parameter					0	0	0	0	0	
17058	42A2	uint16	1	-	Pulse Input 1: 0: Passive 1: Active	1										
17059	42A3	uint16	1	-	Pulse Input 1 Ratio: 1 - 20000	1					0	0	0	0	0	
17060	42A4	uint16	1	-	Pulse Input 2: 0: Passive 1: Active	1										
17061	42A5	uint16	1	-	Pulse Input 2 Ratio: 1 - 20000	1					0	0	0	0	0	
17062	42A6	uint16	1	-	Pulse Input 3: 0: Passive 1: Active	1					0	0	0	0	0	
17063	42A7	uint16	1	-	Pulse Input 3 Ratio: 1 - 20000	1					0	0	0	0	0	
17064	42A8	uint16	1	-	Pulse Input 4: 0: Passive 1: Active	1					0	0	0	0	0	
17065	42A9	uint16	1	-	Pulse Input 4 Ratio: 1 - 20000	1					0	0	0	0	0	
17066	42AA	uint16	1	-	Pulse Input 5: 0: Passive 1: Active											
17067	42AB	uint16	1	-	Pulse Input 5 Ratio: 1 - 20000											
17068	42AC	uint16	1	-	Pulse Input 6: 0: Passive 1: Active											
17069	42AD	uint16	1	-	Pulse Input 6 Ratio: 1 - 20000											
17070	42AE	uint16	1	-	Pulse Input 7: 0: Passive 1: Active											
17071	42AF	uint16	1	-	Pulse Input 7 Ratio: 1 - 20000											
17072	42B0	uint16	1	-	Pulse Input 8: 0: Passive 1: Active											
17073	42B1	uint16	1	-	Pulse Input 8 Ratio: 1 - 20000											
17074	42B2	uint16	1	ms	Pulse Width: 0: 20 ms 1: 40 ms 2: 60 ms 3: 80 ms 4: 100 ms 5: 150 ms 6: 200 ms 7: 300 ms 8: 400 ms 9: 500 ms	1					0	0	0	0	0	
17075	42B3	uint16	1	-	Pulse-Output1 Parameter: 0: Disable 1: Total Import Active Energy (Q14) 2: Total Export Active Energy (Q23) 3: Total Import reactive energy (Q1) 4: Total Export Reactive Energy (Q4) 5: Total Import Reactive Energy (Q2) 6: Total Export Reactive Energy (Q3) 7: Total Import Apparent Energy(Q14) 8: Total Export Apparent Energy(Q23) 9: Total Import Active Energy (Q1) 10: Total Import Active Energy (Q2) 11: Total Import Active Energy (Q3)	1	✓	✓				0	0	0	0	0
17076	42B4	uint16	1	Wh	Pulse Output 1 Ratio: 0: 1 1: 10 2: 100 3: 1000 4: 10000 5: 100000 6: 1000000	1	✓	✓			0	0	0	0	0	
17077	42B5	uint16	1	ms	Pulse Output 1 Pulse Width: between 20 - 1000 ms	1	✓	✓			0	0	0	0	0	
17078	42B6	uint16	1	ms	Pulse Output 1 Pulse Duty: between 20 - 1000 ms	1	✓	✓			0	0	0	0	0	
17079	42B7	uint16	1	-	Pulse Output 2 Parameter:	1					0	0	0	0	0	
17080	42B8	uint16	1	-	Pulse Output 2 Ratio:	1					0	0	0	0	0	
17081	42B9	uint16	1	ms	Pulse Output 2 Pulse Width:	1					0	0	0	0	0	
17082	42BA	uint16	1	ms	Pulse Output 2 Pulse Duty:	1					0	0	0	0	0	
17083	42BB	uint16	1	-	Pulse-Output3 Parameter:	1					0	0	0	0	0	
17084	42BC	uint16	1	-	Pulse Output 3 Ratio:	1					0	0	0	0	0	
17085	42BD	uint16	1	ms	Pulse Output 3 Pulse Width:	1					0	0	0	0	0	
17086	42BE	uint16	1	ms	Pulse Output 3 Pulse Duty:	1					0	0	0	0	0	
17087	42BF	uint16	1	-	Pulse-Output4 Parameter:	1					0	0	0	0	0	
17088	42C0	uint16	1	-	Pulse Output 4 Ratio:	1					0	0	0	0	0	
17089	42C1	uint16	1	ms	Pulse Output 4 Pulse Width:	1					0	0	0	0	0	

6006	1776	uint16	1	DAY	0: SUNDAY 1: MONDAY 2: TUESDAY 3: WEDNESDAY 4: THURSDAY 5: FRIDAY 6: SATURDAY	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
6007	1777	uint16	1	-	0: DISABLE 1: EUROPE 2: AMERICA 3: MANUAL DST Start Month: 1-12	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
6008	1778	uint16	1	-	0: DISABLE 1: EUROPE 2: AMERICA 3: MANUAL DST Start Month: 1-12	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
6009	1779	uint16	1	month	DST Start Week: 0: First 1: Second 2: Third 3: Fourth 4: Last	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
6010	177A	uint16	1	week	DST Start DAY: 0: SUNDAY 1: MONDAY 2: TUESDAY 3: WEDNESDAY 4: THURSDAY 5: FRIDAY 6: SATURDAY	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
6011	177B	uint16	1	DAY	0: SUNDAY 1: MONDAY 2: TUESDAY 3: WEDNESDAY 4: THURSDAY 5: FRIDAY 6: SATURDAY	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
6012	177C	uint16	1	hour	DST Start Hour: 0-23	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
6013	177D	uint16	1	month	DST End Month: 1-12	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
6014	177E	uint16	1	week	DST End Week: 0: First 1: Second 2: Third 3: Fourth 4: Last	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
6015	177F	uint16	1	DAY	DST END DAY: 0: SUNDAY 1: MONDAY 2: TUESDAY 3: WEDNESDAY 4: THURSDAY 5: FRIDAY 6: SATURDAY	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
6016	1780	uint16	1	hour	DST End Hour: 0-23	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
6017	1781	uint16	1	-	DST STATUS	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

TARIFF SETTINGS OF SATURDAY		
Supported Functions	Start Address	Register Counts
Read holding registers	22000	16
Write single register		
Write multiple registers		

Address Dec.	Address Hex	Format	Word Counts	Unit	Remarks	Multiplier	MPR345-11	MPR325	MPR345-20	MPR455	MPR465	MPR475	MPR42-OGT	MPR47-SE
22000	55F0	uint16	1	Hour/Minutes	Start Hour and Start Minutes Settings: Hour * 256 + Minute	Hour Value: Register Value / 256 Minute Value: Register Value % 256					✓	✓	✓	✓
22001	55F1	uint16	1	-	Tariff Number Settings: 0-8	1					✓	✓	✓	✓
22002	55F2	uint16	1	Hour/Minutes	Start Hour and Start Minutes Settings: Hour * 256 + Minute	Hour Value: Register Value / 256 Minute Value: Register Value % 256					✓	✓	✓	✓
22003	55F3	uint16	1	-	Tariff Number Settings: 0-8	1					✓	✓	✓	✓
22004	55F4	uint16	1	Hour/Minutes	Start Hour and Start Minutes Settings: Hour * 256 + Minute	Hour Value: Register Value / 256 Minute Value: Register Value % 256					✓	✓	✓	✓
22005	55F5	uint16	1	-	Tariff Number Settings: 0-8	1					✓	✓	✓	✓
22006	55F6	uint16	1	Hour/Minutes	Start Hour and Start Minutes Settings: Hour * 256 + Minute	Hour Value: Register Value / 256 Minute Value: Register Value % 256					✓	✓	✓	✓
22007	55F7	uint16	1	-	Tariff Number Settings: 0-8	1					✓	✓	✓	✓
22008	55F8	uint16	1	Hour/Minutes	Start Hour and Start Minutes Settings: Hour * 256 + Minute	Hour Value: Register Value / 256 Minute Value: Register Value % 256					✓	✓	✓	✓
22009	55F9	uint16	1	-	Tariff Number Settings: 0-8	1					✓	✓	✓	✓
22010	55FA	uint16	1	Hour/Minutes	Start Hour and Start Minutes Settings: Hour * 256 + Minute	Hour Value: Register Value / 256 Minute Value: Register Value % 256					✓	✓	✓	✓
22011	55FB	uint16	1	-	Tariff Number Settings: 0-8	1					✓	✓	✓	✓
22012	55FC	uint16	1	Hour/Minutes	Start Hour and Start Minutes Settings: Hour * 256 + Minute	Hour Value: Register Value / 256 Minute Value: Register Value % 256					✓	✓	✓	✓
22013	55FD	uint16	1	-	Tariff Number Settings: 0-8	1					✓	✓	✓	✓
22014	55FE	uint16	1	Hour/Minutes	Start Hour and Start Minutes Settings: Hour * 256 + Minute	Hour Value: Register Value / 256 Minute Value: Register Value % 256					✓	✓	✓	✓
22015	55FF	uint16	1	-	Tariff Number Settings: 0-8	1					✓	✓	✓	✓

TARIFF SETTINGS OF SUNDAY		
Supported Functions	Start Address	Register Counts
Read holding registers	9000	16
Write single register		
Write multiple registers		

Address Dec.	Address Hex	Format	Word Counts	Unit	Remarks	Multiplier	MPR345-11	MPR325	MPR345-20	MPR455	MPR465	MPR475	MPR42-OGT	MPR47-SE
9000	2328	uint16	1	Hour/Minutes	Start Hour and Start Minutes Settings: Hour * 256 + Minute	Hour Value: Register Value / 256 Minute Value: Register Value % 256					✓	✓	✓	✓
9001	2329	uint16	1	-	Tariff Number Settings: 0-8	1					✓	✓	✓	✓
9002	232A	uint16	1	Hour/Minutes	Start Hour and Start Minutes Settings: Hour * 256 + Minute	Hour Value: Register Value / 256 Minute Value: Register Value % 256					✓	✓	✓	✓
9003	232B	uint16	1	-	Tariff Number Settings: 0-8	1					✓	✓	✓	✓
9004	232C	uint16	1	Hour/Minutes	Start Hour and Start Minutes Settings: Hour * 256 + Minute	Hour Value: Register Value / 256 Minute Value: Register Value % 256					✓	✓	✓	✓
9005	232D	uint16	1	-	Tariff Number Settings: 0-8	1					✓	✓	✓	✓
9006	232E	uint16	1	Hour/Minutes	Start Hour and Start Minutes Settings: Hour * 256 + Minute	Hour Value: Register Value / 256 Minute Value: Register Value % 256					✓	✓	✓	✓
9007	232F	uint16	1	-	Tariff Number Settings: 0-8	1					✓	✓	✓	✓
9008	2330	uint16	1	Hour/Minutes	Start Hour and Start Minutes Settings: Hour * 256 + Minute	Hour Value: Register Value / 256 Minute Value: Register Value % 256					✓	✓	✓	✓
9009	2331	uint16	1	-	Tariff Number Settings: 0-8	1					✓	✓	✓	✓
9010	2332	uint16	1	Hour/Minutes	Start Hour and Start Minutes Settings: Hour * 256 + Minute	Hour Value: Register Value / 256 Minute Value: Register Value % 256					✓	✓	✓	✓
9011	2333	uint16	1	-	Tariff Number Settings: 0-8	1					✓	✓	✓	✓
9012	2334	uint16	1	Hour/Minutes	Start Hour and Start Minutes Settings: Hour * 256 + Minute	Hour Value: Register Value / 256 Minute Value: Register Value % 256					✓	✓	✓	✓
9013	2335	uint16	1	-	Tariff Number Settings: 0-8	1					✓	✓	✓	✓
9014	2336	uint16	1	Hour/Minutes	Start Hour and Start Minutes Settings: Hour * 256 + Minute	Hour Value: Register Value / 256 Minute Value: Register Value % 256					✓	✓	✓	✓
9015	2337	uint16	1	-	Tariff Number Settings: 0-8	1					✓	✓	✓	✓

TARIFF SETTINGS OF WEEKDAY		
Supported Functions	Start Address	Register Counts
Read holding registers	10000	16
Write single register		
Write multiple registers		

Write single register
Write multiple registers

Address Dec	Address Hex	Format	Word Counts	Unit	Remarks	Multiplier	MPR345-L1	MPR3Z5	MPK345-2D	MPR455	MPR465	MPR475	MPR42-OGT	MPR47-SE
10000	2710	uint16	1	Hour/Minutes	Start Hour and Start Minutes Settings: Hour * 256 + Minute Tariff Number Settings: 0-8	Hour Value: Register Value / 256 Minute Value: Register Value % 256					✓	✓	✓	✓
10001	2711	uint16	1	-	-	1					✓	✓	✓	✓
10002	2712	uint16	1	Hour/Minutes	Start Hour and Start Minutes Settings: Hour * 256 + Minute	Hour Value: Register Value / 256 Minute Value: Register Value % 256					✓	✓	✓	✓
10003	2713	uint16	1	-	-	1					✓	✓	✓	✓
10004	2714	uint16	1	Hour/Minutes	Start Hour and Start Minutes Settings: Hour * 256 + Minute Tariff Number Settings: 0-8	Hour Value: Register Value / 256 Minute Value: Register Value % 256					✓	✓	✓	✓
10005	2715	uint16	1	-	-	1					✓	✓	✓	✓
10006	2716	uint16	1	Hour/Minutes	Start Hour and Start Minutes Settings: Hour * 256 + Minute	Hour Value: Register Value / 256 Minute Value: Register Value % 256					✓	✓	✓	✓
10007	2717	uint16	1	-	-	1					✓	✓	✓	✓
10008	2718	uint16	1	Hour/Minutes	Start Hour and Start Minutes Settings: Hour * 256 + Minute Tariff Number Settings: 0-8	Hour Value: Register Value / 256 Minute Value: Register Value % 256					✓	✓	✓	✓
10009	2719	uint16	1	-	-	1					✓	✓	✓	✓
10010	271A	uint16	1	Hour/Minutes	Start Hour and Start Minutes Settings: Hour * 256 + Minute	Hour Value: Register Value / 256 Minute Value: Register Value % 256					✓	✓	✓	✓
10011	271B	uint16	1	-	-	1					✓	✓	✓	✓
10012	271C	uint16	1	Hour/Minutes	Start Hour and Start Minutes Settings: Hour * 256 + Minute	Hour Value: Register Value / 256 Minute Value: Register Value % 256					✓	✓	✓	✓
10013	271D	uint16	1	-	-	1					✓	✓	✓	✓
10014	271E	uint16	1	Hour/Minutes	Start Hour and Start Minutes Settings: Hour * 256 + Minute Tariff Number Settings: 0-8	Hour Value: Register Value / 256 Minute Value: Register Value % 256					✓	✓	✓	✓
10015	271F	uint16	1	-	-	1					✓	✓	✓	✓

ALARM STATUS

Supported functions: Read holding registers

Start Address: 20000

Register Counts: 36

Address Dec	Address Hex	Format	Word Counts	Unit	Remarks	Multiplier	MPR345-L1	MPR3Z5	MPK345-2D	MPR455	MPR465	MPR475	MPR42-OGT	MPR47-SE			
20000	4E20	uint16	1	-	Alarm Output Number: 0-3	1	✓	✓	✓	✓	✓	✓	✓	✓			
20001	4E21	uint16	1	-	Alarm 1 on lower threshold cause: 0x000: Alarm Yok 0x001: VLN1, 0x0012: VLN2, 0x0013: VLN1 + VLN2 0x0014: VLN3, 0x0015: VLN1 + VLN3, 0x0016: VLN2 + VLN3 0x0017: VLN1 + VLN2 + VLN3, 0x0018: VLN4 0x0019: VLN1, 0x0020: VLN2, 0x0021: VLN1 + VLN2, 0x0024: VLN3 0x0025: VLN1 + VLN3, 0x0026: VLN2 + VLN3, 0x0027: VLN1 + VLN2 + VLN3 0x0031: I1, 0x0032: I2, 0x0033: I1 + I2, 0x0034: I3, 0x0035: I1 + I3 0x0036: I2 + I3, 0x0037: I1 + I2 + I3 0x0038: I4 0x0040: IN 0x0051: P1, 0x0052: P2, 0x0053: P1 + P2, 0x0054: P3, 0x0055: P1 + P3 0x0056: P2 + P3, 0x0057: P1 + P2 + P3, 0x0058: P4 0x0060: PSUM IMP 0x0070: PSUM EXP, 0x0080: PSUM 0x0091: Q1, 0x0092: Q2, 0x0093: Q1 + Q2, 0x0094: Q3, 0x0095: Q1 + Q3 0x0096: Q2 + Q3, 0x0097: Q1 + Q2 + Q3, 0x0098: Q4 0x00A0: CSLM IMP, 0x00B0: CSLM EXP, 0x00C0: CSLM 0x00D1: S1, 0x00D2: S2, 0x00D3: S1 + S2, 0x00D4: S3, 0x00D5: S1 + S3 0x00D6: S2 + S3, 0x00D7: S1 + S2 + S3, 0x00D8: S4 0x00E0: SSUM IMP, 0x00F0: SSUM EXP, 0x0100: SSUM, 0x0111: I1 Demand, 0x0112: I2 Demand, 0x0113: I1 + I2 Demand, 0x0114: I3 Demand, 0x0115: I1 + I3 Demand, 0x0116: I2 + I3 Demand, 0x0117: I1 + I2 + I3 Demand, 0x0118: I4 Demand, 0x0120: IN Demand, 0x0131: P1 Demand, 0x0132: P2 Demand, 0x0133: P1 + P2 Demand, 0x0134: P3 Demand, 0x0135: P1 + P3, 0x0136: P2 + P3 Demand, 0x0137: P1 + P2 + P3 Demand, 0x0138: IN Demand 0x0140: PSUM Demand Imp, 0x0150: PSUM Demand Exp, 0x0160: PSUM Demand, 0x0171: S1 Demand, 0x0172: S2 Demand, 0x0173: S1 + S2 Demand, 0x0174: S3 Demand, 0x0175: S1 + S3 Demand, 0x0176: S2 + S3 Demand, 0x0177: S1 + S2 + S3 Demand, 0x0178: S4 Demand 0x0180: SSUM Demand Imp, 0x0190: SSUM Demand Exp, 0x01A0: SSUM Demand, 0x01B1: COS1, 0x01B2: COS2, 0x01B3: COS1 + COS2, 0x01B4: COS3, 0x01B5: COS1 + COS2, 0x01B6: COS2 + COS3, 0x01B7: COS1 + COS2 + COS3, 0x01B8: COS4, 0x01C0: COS SUM IMP, 0x01D0: COS SUM EXP, 0x01E0: COS SUM, 0x01F0: Hour Alarm, 0x0201: THD VLN1, 0x0202: THD VLN2, 0x0203: THD VLN1 + VLN2, 0x0204: THD VLN3, 0x0205: THD VLN1 + VLN3, 0x0206: THD VLN2 + VLN3, 0x0207: THD VLN1 + VLN2 + VLN3, 0x0208: THD VLN4, 0x0211: THD VLN1, 0x0212: THD VLN2, 0x0213: THD VLN1 + VLN2, 0x0214: THD VLN3, 0x0215: THD VLN1 + VLN3, 0x0216: THD VLN2 + VLN3, 0x0217: THD VLN1 + VLN2 + VLN3, 0x0218: THD VLN4, 0x0221: THD I1, 0x0222: THD I2, 0x0223: THD I1 + I2, 0x0224: THD I3, 0x0225: THD I1 + I3, 0x0226: THD I2 + I3, 0x0227: THD I1 + I2 + I3, 0x0228: THD I4 0x0230: Hour Alarm	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
20002	4E22	int32	2	Depends on parameter	Alarm 1 on lower threshold min value	Depends on parameter	✓	✓	✓	✓	✓	✓	✓	✓			
20003	4E23	uint16	1	-	Alarm 1 on upper threshold cause: 0x000: Alarm Yok 0x001: VLN1, 0x0012: VLN2, 0x0013: VLN1 + VLN2 0x0014: VLN3, 0x0015: VLN1 + VLN3, 0x0016: VLN2 + VLN3 0x0017: VLN1 + VLN2 + VLN3, 0x0018: VLN4 0x0019: VLN1, 0x0020: VLN2, 0x0021: VLN1 + VLN2, 0x0024: VLN3 0x0025: VLN1 + VLN3, 0x0026: VLN2 + VLN3, 0x0027: VLN1 + VLN2 + VLN3 0x0031: I1, 0x0032: I2, 0x0033: I1 + I2, 0x0034: I3, 0x0035: I1 + I3 0x0036: I2 + I3, 0x0037: I1 + I2 + I3 0x0038: I4 0x0040: IN 0x0051: P1, 0x0052: P2, 0x0053: P1 + P2, 0x0054: P3, 0x0055: P1 + P3 0x0056: P2 + P3, 0x0057: P1 + P2 + P3, 0x0058: P4 0x0060: PSUM IMP 0x0070: PSUM EXP, 0x0080: PSUM 0x0091: Q1, 0x0092: Q2, 0x0093: Q1 + Q2, 0x0094: Q3, 0x0095: Q1 + Q3 0x0096: Q2 + Q3, 0x0097: Q1 + Q2 + Q3, 0x0098: Q4 0x00A0: CSLM IMP, 0x00B0: CSLM EXP, 0x00C0: CSLM 0x00D1: S1, 0x00D2: S2, 0x00D3: S1 + S2, 0x00D4: S3, 0x00D5: S1 + S3 0x00D6: S2 + S3, 0x00D7: S1 + S2 + S3, 0x00D8: S4 0x00E0: SSUM IMP, 0x00F0: SSUM EXP, 0x0100: SSUM, 0x0111: I1 Demand, 0x0112: I2 Demand, 0x0113: I1 + I2 Demand, 0x0114: I3 Demand, 0x0115: I1 + I3 Demand, 0x0116: I2 + I3 Demand, 0x0117: I1 + I2 + I3 Demand, 0x0118: I4 Demand, 0x0120: IN Demand, 0x0131: P1 Demand, 0x0132: P2 Demand, 0x0133: P1 + P2 Demand, 0x0134: P3 Demand, 0x0135: P1 + P3, 0x0136: P2 + P3 Demand, 0x0137: P1 + P2 + P3 Demand, 0x0138: IN Demand	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
20004	4E24	uint16	1	-	Alarm 1 on upper threshold max. value	Depends on parameter	✓	✓	✓	✓	✓	✓	✓	✓			
20005	4E25	int32	2	Depends on parameter	Alarm 1 on upper threshold max. value	Depends on parameter	✓	✓	✓	✓	✓	✓	✓	✓			
20007	4E27	uint32	2	s	Alarm 1 Duration	1	✓	✓	✓	✓	✓	✓	✓	✓			
20008	4E28	uint16	1	-	Alarm Output Number: 0-3	1	✓	✓	✓	✓	✓	✓	✓	✓			

Same parameters continue for

Address Dec	Address Hex	Format	Word Counts	Unit	Remarks	Multiplier	MPR345-11	MPR325	MPR345-20	MPR455	MPR465	MPR475	MPR42-OGT	MPR47-SE
26002	6592	uint32	2	Unk Time	Record Start Time	1								
26004	6594	float	2	W	Total Import Active Power	1								
26006	6596	float	2	VAR	Total Export Active Power	1								
26008	6598	float	2	VAR	Quadrant 1 average total reactive power	1								
26010	659A	float	2	VAR	Quadrant 2 average total reactive power	1								
26012	659C	float	2	VAR	Quadrant 3 average total reactive power	1								
26014	659E	float	2	VAR	Quadrant 4 average total reactive power	1								
26016	65A0	float	2	VA	Average total import apparent power	1								
26018	65A2	float	2	W	Average total inport active power	1								
26020	65A4	uint32	2	-	Average total inductive import cosphi value	0.001								
26022	65A6	uint32	2	-	Average total capacitive import cosphi value	0.001								
26024	65A8	uint32	2	-	Average total inductive export cosphi value	0.001								
26026	65AA	uint32	2	-	Average total capacitive export cosphi value	0.001								
26028	65AC	float	2	W	Max. Total import active power	1								
26030	65AE	float	2	VAR	Max. Total Q3 Reactive Power	1								
26032	65B0	float	2	VAR	Max. Total Q2 Reactive Power	1								
26034	65B2	float	2	VAR	Max. Total Q1 Reactive Power	1								
26036	65B4	float	2	VAR	Max. Total Q3 Reactive Power	1								
26038	65B6	float	2	VAR	Max. Total Q2 Reactive Power	1								
26040	65B8	float	2	VA	Max. Total Import Apparent Power	1								
26042	65BA	float	2	VA	Max. Total Export Apparent Power	1								
26044	65BC	float	2	W	Min. Total Import Active Power	1								
26046	65BE	float	2	VAR	Min. Total Q3 Reactive Power	1								
26048	65C0	float	2	VAR	Min. Total Q2 Reactive Power	1								
26050	65C2	float	2	VAR	Min. Total Q1 Reactive Power	1								
26052	65C4	float	2	VAR	Min. Total Q3 Reactive Power	1								
26054	65C6	float	2	VAR	Min. Total Q2 Reactive Power	1								
26056	65C8	float	2	VA	Min. Total Import Apparent Power	1								
26058	65CA	float	2	VA	Min. Total Export Apparent Power	1								
26060	65CC	uint32	2	-	Record Index	1								

THD Records

Supported Functions: Read holding registers

Start Address: 27000

Register Counts: 60

Address Dec	Address Hex	Format	Word Counts	Unit	Remarks	Multiplier	MPR345-11	MPR325	MPR345-20	MPR455	MPR465	MPR475	MPR42-OGT	MPR47-SE
27000	6978	uint32	2	Unk Time	Record Start Time	1								
27002	697A	uint32	2	Unk Time	Record End Time	1								
27004	697C	uint32	2	%	Average Total Harmonic Distortion VL1	0.1								
27006	697E	uint32	2	%	Average Total Harmonic Distortion VL2	0.1								
27008	6980	uint32	2	%	Average Total Harmonic Distortion VL3	0.1								
27010	6982	uint32	2	%	Average Total Harmonic Distortion VL1L2	0.1								
27012	6984	uint32	2	%	Average Total Harmonic Distortion VL1L3	0.1								
27014	6986	uint32	2	%	Average Total Harmonic Distortion VL1L3L1	0.1								
27016	6988	uint32	2	%	Average Total Harmonic Distortion IL1	0.1								
27018	698A	uint32	2	%	Average Total Harmonic Distortion IL2	0.1								
27020	698C	uint32	2	%	Average Total Harmonic Distortion IL3	0.1								
27022	698E	uint32	2	%	Max Total Harmonic Distortion VL1	0.1								
27024	6990	uint32	2	%	Max Total Harmonic Distortion VL2	0.1								
27026	6992	uint32	2	%	Max Total Harmonic Distortion VL3	0.1								
27028	6994	uint32	2	%	Max Total Harmonic Distortion VL1L2	0.1								
27030	6996	uint32	2	%	Max Total Harmonic Distortion VL1L3	0.1								
27032	6998	uint32	2	%	Max Total Harmonic Distortion VL1L3L1	0.1								
27034	699A	uint32	2	%	Max Total Harmonic Distortion IL1	0.1								
27036	699C	uint32	2	%	Max Total Harmonic Distortion IL2	0.1								
27038	699E	uint32	2	%	Max Total Harmonic Distortion IL3	0.1								
27040	69A0	uint32	2	%	Min Total Harmonic Distortion VL1	0.1								
27042	69A2	uint32	2	%	Min Total Harmonic Distortion VL2	0.1								
27044	69A4	uint32	2	%	Min Total Harmonic Distortion VL3	0.1								
27046	69A6	uint32	2	%	Min Total Harmonic Distortion VL1L2	0.1								
27048	69A8	uint32	2	%	Min Total Harmonic Distortion VL1L3	0.1								
27050	69AA	uint32	2	%	Min Total Harmonic Distortion VL1L3L1	0.1								
27052	69AC	uint32	2	%	Min Total Harmonic Distortion IL1	0.1								
27054	69AE	uint32	2	%	Min Total Harmonic Distortion IL2	0.1								
27056	69B0	uint32	2	%	Min Total Harmonic Distortion IL3	0.1								
27058	69B2	uint32	2	-	Record Index	1								

Analog Records

Supported Functions: Read holding registers

Start Address: 28000

Register Counts: 30

Address Dec	Address Hex	Format	Word Counts	Unit	Remarks	Multiplier	MPR345-11	MPR325	MPR345-20	MPR455	MPR465	MPR475	MPR42-OGT	MPR47-SE
28000	6D60	uint32	2	Unk Time	Record End Time	1								
28002	6D62	uint32	2	Unk Time	Record Start Time	1								
28004	6D64	float	2	C	Average Analog Channel 1	1								
28006	6D66	float	2	C	Average Analog Channel 2	1								
28008	6D68	float	2	C	Average Analog Channel 3	1								
28010	6D6A	float	2	C	Average Analog Channel 4	1								
28012	6D6C	float	2	C	Max Analog Channel 1	1								
28014	6D6E	float	2	C	Max Analog Channel 2	1								
28016	6D70	float	2	C	Max Analog Channel 3	1								
28018	6D72	float	2	C	Max Analog Channel 4	1								
28020	6D74	float	2	C	Min Analog Channel 1	1								
28022	6D76	float	2	C	Min Analog Channel 2	1								
28024	6D78	float	2	C	Min Analog Channel 3	1								
28026	6D7A	float	2	C	Min Analog Channel 4	1								
28028	6D7C	uint32	2	-	Record Index	1								

Device Identification

Supported Functions: Read holding registers

Start Address: 60416

Register Counts: 40

Address Dec	Address Hex	Format	Word Counts	Unit	Remarks	Multiplier	MPR345-11	MPR325	MPR345-20	MPR455	MPR465	MPR475	MPR42-OGT	MPR47-SE
60416	EC00	uint16	1	-	Device ID	1								
60418	EC02	uint32	2	-	Device ID & Version No	1								
60420	EC04	uint32	2	-	Serial Number	1								
60422	EC06	uint32	2	-	Software Version	1								
60424	EC08	uint32	2	-	Hardware Version	1								
60426	EC0A	uint32	2	-	Modbus Table Version	1								
60428	EC0C	uint32	2	-	Boot loader version	1								
60430	EC0E	uint32	2	Unk Time	Fabrication Date	1								
60432	EC10	uint32	2	Unk Time	Calibration Date	1								
60434	EC12	uint16	1	-	Bağlantı Test Sonucu	1								
60436	EC14	uint16	1	-	MAC Address Part 1	1								
60438	EC16	uint16	1	-	MAC Address Part 2	1								
60440	EC18	uint16	1	-	MAC Address Part 3	1								
60442	EC1A	uint16	1	-	System Start Time	1								
60444	EC1C	uint32	2	-	ETH Software Version	1								
60446	EC1E	uint32	2	-	ETH Boot loader version	1								
60448	EC20	uint32	2	-	Reserved	1								
60450	EC22	uint32	2	-	In Address	1								
60452	EC24	uint32	2	-	Subnet Mask Address	1								
60454	EC26	uint32	2	-	Gateway Address	1								
60456	EC28	uint32	2	-	DNS 1	1								
60458	EC2A	uint32	2	-	DNS Alter	1								
60460	EC2C	uint32	2	-	Connection Status	1								

Enties Identification

Supported Functions: Read holding registers

Start Address: 65032

Register Counts: 16

Address Dec	Address Hex	Format	Word Counts	Unit	Remarks	Multiplier	MPR345-11	MPR325	MPR345-20	MPR455	MPR465	MPR475	MPR42-OGT	MPR47-SE
65032	FE08	string	4	-	Product Code	1								
65036	FE0C	string	2	-	Revision	1								
65038	FE0E	string	3	-	Fabrication Date	1								
65040	FE10	string	1	-	Fab ID	1								
65042	FE12	uint32	1	-	Product Line ID	1								
65048	FE18	uint32	5	-	Serial Number	1								

MODEL	Available Features
MPR42	Alarm
MPR45	Alarm, RS-485
MPR34-11	Alarm, THD I&V, Tariff, 1DU/1DD
MPR345-11	Alarm, RS-485, THD I&V, Tariff, 1DU/1DD
MPR34-20	Alarm, THD I&V, Tariff, 2DU
MPR345-20	Alarm, RS-485, THD I&V, Tariff, 2DU
MPR45	Work Hour, Event Logs
MPR45S	Work Hour, Alarm, Records, Event Logs
MPR46	Work Hour, Event Logs
MPR46S	Work Hour, Alarm, Records, Event Logs
MPR47	Work Hour, Event Logs
MPR47S	Work Hour, Alarm, Records, Event Logs
MPR47SE	Work Hour, Alarm, Records, Event Logs, Ethernet

MODBUS DESCRIPTION

Çizim aitt bütün register adresleri "base 0" baz almaktadır yani adres kısmında yazılan değerler direk olarak kullanılmaktadır. Baz modbus kütüphaneleri "base 1" sisteminde göre çalışmaktadır. Bu durumlarda adres kısmında yazılan değerleri 1 eklemesi gerekmektedir. Tüm register adreslerinde bulunan datalar "MSB first" olarak gönderilmektedir. Çizimden okunan register'ların birleştirilmesi buna göre yapılmalıdır.

Çizimde bulunan data işlemleri ve byte karşılıkları:
short, ushort: 16 bit, 2 Byte
uint, int, float: 32 bit, 4 Byte
ulong: 64 Bit, 8 Byte

USHORT okuma örneği (Tüm 16 bit (2 Byte) okumalarda geçerlidir):
Gün değeri: MODBUS Holding Register Fonksiyonu ile okunak için gönderilecek olan sorgu aşağıdaki şekildedir:
Sorgu: 01 03 17 00 00 01 65 86

Cevap: 01 03 02 00 1E 4C 38
Gün değeri aitt değerler 00 1E

Alınan bu datadan geçen değerin elde edilmesi için aşağıdaki şekilde birleştirilmesi gerekmektedir:
High Byte: 0x00
Low Byte: 0x1E

1. Aşağıdaki işlemlerin gerçekleştirilmesi için aşağıdaki işlemlerin yapılması gerekmektedir.

Sorgu: 01 03 00 00 00 02 08 C4

Cevap: 01 03 04 00 00 08 EE BF 7D

Faz 1 gerilimine ait değerler 00 00 08 EE.

Alınan bu datanın gerçeğe değerini elde edilmesi için aşağıdaki şekilde birleştirilmesi gerekmektedir:

High Word : 0x0000

Low Word: 0x08EE

Hexadecimal karşılığı: 0x00008EE. Data sıralaması HighWord,LowWord şeklinde yapılır.

Decimal karşılığı: 2286

Gerçek değeri (Volts) karşılığı: (Decimal karşılığı)*Multiplier = 2286*0,1 = 228,6V

Referanslar:

Modbus okuması yaparken aşağıdaki sitelerden yararlanabilirsiniz:

LOG READING EXPLANATION

Cihaz üzerinde alınan log kayıtlarını okumak için aşağıdaki işlemlerin yapılması gerekmektedir:

1. Okunmak istenen log kaydına ait index register'in istenen değere kurulması gerekmektedir. En son alınan kaydı okumak için ilgili log index register'ına 0xFFFFFFF değeri yazılmaldır. Cihaz reseti sonrası default olarak index register'ın 0xFFFFFFF değeri ile başlar.
2. Okunmak istenen log kaydı ile ilgili register index'i kurulduktan sonra log'a ait olan register'lar bütün olarak "Read Holding Register" fonksiyonu ile okunmalıdır. Log register'ın parçaları olarak okunamaz yani bir log'a ait register sayısı 20 ise 20 adet register bir arada okunmalıdır. Daha az okuma yapılmasını izin verilmez. Her bir okuma sonrasında ilgili log'a ait index register değeri 1 azalacaktır. Okunacak log kalmadığında ilgili log'a ait tüm register değerleri 0xFFFF olarak okunacaktır. Bu durumda kayıtlı olan tüm kayıtların okunduğunu anlayabilecektir.

Aşağıdaki adımlardan biri yapıldığında ilgili kayda ait kayıtlar okuyabilmek için log index register'ına 0xFFFFFFF değeri yazılmaldır. Bu işlemin ardından record index değeri kayıtlı edilmiş olan en yeni log'un index'ine getirilmiş olur. Ayrıca özellikle okunmak istenen bir kayıt index'i varsa index register'ına bu değeri yazarak o index'e ait kayıt okunabilecektir.

1. İlgili kayda ait kayıtların bir kısmı okunduğu durumda
2. İlgili kayda ait tüm kayıtlar okundu ve bundan önceki 135 ile son yeni kayıtlar oluştuğu durumda
3. İlgili kayda ait tüm kayıtlar okundu ve bundan sonra yeni kayıtlar alınmadığı durumda

NOT: Yukarıdaki açıklamalar sadece MB_VER_0_2_0 için geçerlidir.