MULTIPLIER TABLE

MB POINT	UNIT/ DESCRIP.	100A	200A	300/400A	800A	1600A	2400A
1	kwh	0.007813	0.015625	0.03125	0.0625	0.125	0.25
2	kwh	0.007813	0.015625	0.03125	0.0625	0.125	0.25
3	kw	0.004	0.008	0.016	0.032	0.064	0.128
4	kvar	0.004	0.008	0.016	0.032	0.064	0.128
5	kva	0.004	0.008	0.016	0.032	0.064	0.128
6	pf	3.05E-05	3.05E-05	3.05E-05	3.05E-05	3.05E-05	3.05E-05
7	v_ll	0.03125	0.03125	0.03125	0.03125	0.03125	0.03125
8	v_ln	0.015625	0.015625	0.015625	0.015625	0.015625	0.015625
9	amps	0.003906	0.007813	0.015625	0.03125	0.0625	0.125
10	kw_a	0.001	0.002	0.004	0.008	0.016	0.032
11	kw_b	0.001	0.002	0.004	0.008	0.016	0.032
12	kw_c	0.001	0.002	0.004	0.008	0.016	0.032
13	pf_a	3.05E-05	3.05E-05	3.05E-05	3.05E-05	3.05E-05	3.05E-05
14	pf_b	3.05E-05	3.05E-05	3.05E-05	3.05E-05	3.05E-05	3.05E-05
15	pf_c	3.05E-05	3.05E-05	3.05E-05	3.05E-05	3.05E-05	3.05E-05
16	v_ab	0.03125	0.03125	0.03125	0.03125	0.03125	0.03125
17	v_bc	0.03125	0.03125	0.03125	0.03125	0.03125	0.03125
18	v_ac	0.03125	0.03125	0.03125	0.03125	0.03125	0.03125
19	v_an	0.015625	0.015625	0.015625	0.015625	0.015625	0.015625
20	v_bn	0.015625	0.015625	0.015625	0.015625	0.015625	0.015625
21	v_cn	0.015625	0.015625	0.015625	0.015625	0.015625	0.015625
22	amps_a	0.003906	0.007813	0.015625	0.03125	0.0625	0.125
23	amps_b	0.003906	0.007813	0.015625	0.03125	0.0625	0.125
24	amps_c	0.003906	0.007813	0.015625	0.03125	0.0625	0.125
25	kwd	0.004	0.08	0.016	0.032	0.064	0.128
26	kwd	0.004	0.08	0.016	0.032	0.064	0.128
27	kwd	0.004	0.08	0.016	0.032	0.064	0.128
28	kvard	0.004	0.08	0.016	0.032	0.064	0.128
29	kvard	0.004	0.08	0.016	0.032	0.064	0.128
30	kvard	0.004	0.08	0.016	0.032	0.064	0.128

DIVISOR TABLE

MB POINT	UNIT/ DESCRIP.	100A	200A	300/400A	800A	1600A	2400A
1	kwh	128	64	32	16	8	4
2	kwh	128	64	32	16	8	4
3	kw	250	125	62.5	31.25	15.625	7.8125
4	kvar	250	125	62.5	31.25	15.625	7.8125
5	kva	250	125	62.5	31.25	15.625	7.8125
6	pf	32768	32768	32768	32768	32768	32768
7	v_ll	32	32	32	32	32	32
8	v_ln	64	64	64	64	64	64
9	amps	256	128	64	32	16	8
10	kw_a	1000	500	250	125	62.5	31.25
11	kw_b	1000	500	250	125	62.5	31.25
12	kw_c	1000	500	250	125	62.5	31.25
13	pf_a	32768	32768	32768	32768	32768	32768
14	pf_b	32768	32768	32768	32768	32768	32768
15	pf_c	32768	32768	32768	32768	32768	32768
16	v_ab	32	32	32	32	32	32
17	v_bc	32	32	32	32	32	32
18	v_ac	32	32	32	32	32	32
19	v_an	64	64	64	64	64	64
20	v_bn	64	64	64	64	64	64
21	v_cn	64	64	64	64	64	64
22	amps_a	256	128	64	32	16	8
23	amps_b	256	128	64	32	16	8
24	amps_c	256	128	64	32	16	8
25	kwd	250	125	62.5	31.25	15.625	7.8125
26	kwd	250	125	62.5	31.25	15.625	7.8125
27	kwd	250	125	62.5	31.25	15.625	7.8125
28	kvard	250	125	62.5	31.25	15.625	7.8125
29	kvard	250	125	62.5	31.25	15.625	7.8125
30	kvard	250	125	62.5	31.25	15.625	7.8125

MODBUS POINT MAP NOTES

Notes:
Integer format registers represent the data as 16-bit integer values. Float format registers represent the same data, as 32-bit floating point values. For measured data, the float format registers are recommended. The integer format registers can be difficult to use for the measured data, as a multiplier must be used for each one to get the correct value. Most of the multipliers change, depending on the CT size. Reading the float format registers avoids the need to use multipliers.

MODBUS Block Reads:
There is no maximum block size restriction, as with the 80xx-series power meters, as the entire MODBUS response is fully buffered. However, the total number of registers requested may not exceed 125, as the MODBUS protocol only allows up to 256 bytes.
125 registers * 2 bytes per register + 5 bytes overhead = 255 bytes.

Demand Computation, Internal Algorithm:
The meter will compute average kW/kVar, by accumulating every kW/kVar reading and keeping a count of the number of kW/kVar readings accumulated. This will occur every 200 ms (5 Hz). The accumulated value, divided by the number of kW/kVar readings, will be the present subinterval demand (kW/kVar), which may be read at registers 25 (kW) and 28 (kVar).

A subinterval may be terminated in three ways.
1. If a write to the command register has bit #0 set, it will cause the present subinterval to end.

2. If the Hardware signal (interval reset) is detected.

3. If the subinterval length (register 36) has been set to a nonzero level, and the count of the number of kW readings equals or exceeds the nonzero subinterval length.

Although there are three ways to end a subinterval, it is assumed that applications will use only one of them.

The maximum legal subinterval length is 65535 readings, which corresponds to 3 hours, 38 minutes, 27.2 seconds. When the 65535th reading is taken, the subinterval reading counter will overflow. This condition is detected and causes the subinterval to end. The next subinterval will begin on the next reading. In normal operation, it is expected that a subinterval should not last longer than 1 hour.

When a subinterval ends, the average kW/kVar during that subinterval (which is the accumulated kW/kVar readings divided by the number of readings) is added to a six-value FIFO (first in, first out) that stores the six most recent subintervals. The kW/kVar accumulator and count of kW/kVar readings are cleared to zero, to begin a new subinterval. The count of subintervals (register 34) is incremented. The present demand is recomputed by averaging the first N elements of the FIFO, where N is the value in register 37. If the new present demand is higher than the stored peak demand, then the peak demand is updated to the new present demand.

Miscellaneous
Some registers list a Model suffix. These registers apply only to those models. Registers which are not available for the particular model will read "0xFFFF" for integer points and "NAN" for floating point registers. The kW accumulator may be reset by writing to the command register with bit #1 set. This will clear the kWH accumulator to zero. Any writes to the kWH points will be ignored.

Floating Point Registers
All floating point values are compatible with the "32 bit IEEE real" format. All floating point variables are read-only. All read/write points must be written to their integer registers.