

**SmartMon Meter, SmartMon Power Meter Plus, and SmartMon Energy Plus
Modbus (all models) & Modbus/TCP (PowerMeter Plus & Energy Plus) Data Map**

Power Measurement Data

Horner Reference %AI	Type	Traditional Modbus Reference	Expanded Modbus Reference	Modbus Offset	Description
1-2	REAL	30001	300001	00000	Phase A RMS voltage
3-4	REAL	30003	300003	00002	Phase B RMS voltage
5-6	REAL	30005	300005	00004	Phase C RMS voltage
7-8	REAL	30007	300007	00006	Phase A RMS current
9-10	REAL	30009	300009	00008	Phase B RMS current
11-12	REAL	30011	300011	00010	Phase C RMS current
13-14	REAL	30013	300013	00012	Frequency
15-16	REAL	30015	300015	00014	Watts
17-18	REAL	30017	300017	00016	PF Power Factor
19-20	REAL	30019	300019	00018	VA Volt-Amps
21-22	REAL	30021	300021	00020	VAR Volt-Amps Reactive
23-24	REAL	30023	300023	00022	KWahr
25-26	REAL	30025	300025	00024	Vpeak
27-28	REAL	30027	300027	00026	Ipeak

This data is accessible using Read Input Register (Modbus Command 4)

Power Status Data

Horner Reference %I	Type	Traditional Modbus Reference	Expanded Modbus Reference	Modbus Offset	Description
I1	BIT	10001	100001	00000	Watt-Hour accumulator half full.
I2	BIT	10002	100002	00001	VAR-Hour accumulator half full
I3	BIT	10003	100003	00002	VA-Hour accumulator half full
I4	BIT	10004	100004	00003	Voltage sag on Phase A
I5	BIT	10005	100005	00004	Voltage sag on Phase B
I6	BIT	10006	100006	00005	Voltage sag on Phase C
I7	BIT	10007	100007	00006	Zero Cross timeout on Phase A
I8	BIT	10008	100008	00007	Zero Cross timeout on Phase B
I9	BIT	10009	100009	00008	Zero Cross timeout on Phase C
I10	BIT	10010	100010	00009	Zero Cross detected on Phase A
I11	BIT	10011	100011	00010	Zero Cross detected on Phase B
I12	BIT	10012	100012	00011	Zero Cross detected on Phase C
I13	BIT	10013	100013	00012	Reserved
I14	BIT	10014	100014	00013	5V supply rail under 4 volts
I15	BIT	10015	100015	00014	Peak voltage level exceeded
I16	BIT	10016	100016	00015	Peak current level exceeded
I17	BIT	10017	100017	00016	Reserved
I18	BIT	10018	100018	00017	Sign changed occurred in Watt calc
I19	BIT	10019	100019	00018	Sign changed occurred in VAR calc
I20	BIT	10020	100020	00019	A-B-C Rotation

This data is accessible using Read Input Status (Modbus Command 2)

Presets & Setpoints

Horner Reference %AQ	Type	Range	Traditional Modbus Reference	Expanded Modbus Reference	Modbus Offset	Description
1-2	REAL		40001	400001	00000	PT A Ratio
3-4	REAL		40003	400003	00002	PT B Ratio
5-6	REAL		40005	400005	00004	PT C Ratio
7-8	REAL		40007	400007	00006	CT A Ratio
9-10	REAL		40009	400009	00008	CT B Ratio
11-12	REAL		40011	400011	00010	CT C Ratio
13-14	REAL	-1.63° LAG	40013	400013	00012	CT A Phase Shift
15-16	REAL	+3.32° LEAD	40015	400015	00014	CT B Phase Shift
17-18	REAL	at 60Hz	40017	400017	00016	CT C Phase Shift
19-20	REAL	0..2.52	40019	400019	00018	Zero Cross Timeout
21-22	REAL		40021	400021	00020	RMS Sag Voltage Level
23	UINT	0..255	40023	400023	00022	Sag half cycles
24	UINT	0..65535	40024	400024	00023	Peak level half cycles
25-26	REAL		40025	400025	00024	Voltage peak level
27-28	REAL		40027	400027	00026	Current peak level

This data is accessible using Modbus Commands Read Holding Register (3), Preset Single Register (6), and Preset Multiple Registers (16). Writing these values should be done with care – as it will directly affect measurement data and alarm data logged by the SmartMon product.

Discrete Outputs

Horner Reference %Q	Type	Traditional Modbus Reference	Expanded Modbus Reference	Modbus Offset	Description
1	BOOL	00001	000001	00000	Relay output, set to ON to close N.O. and open N.C contacts.
2	BOOL	00002	000002	00001	Spare
3	BOOL	00003	000003	00002	Spare
4	BOOL	00004	000004	00003	Spare
5	BOOL	00005	000005	00004	Spare
6	BOOL	00006	000006	00005	Spare
7	BOOL	00007	000007	00006	Set to ON to clear KWhr, set to OFF to re-enable KWhr accumulator
8	BOOL	00008	000008	00007	Set to ON to clear Status flags, set to OFF to re-enable Status flags

This data is accessible using Modbus Commands Read Coil Status (1), Force Single Coil (5), and Force Multiple Coils (15). Writing to these data locations should be done with care, as it will directly affect measurement data and alarm data logged by the SmartMon product.