

MODBUS REGISTER ADDRESSING

This table lists the addresses assigned to each data point. For floating point format variables, each data point appears twice because two 16-bit addresses are required to hold a 32-bit float value.

Modbus Addr	Typical Offset	Units	Description	Data Type
40001	+0	KWH	Energy Consumption, LSW	Integer (mult req'd)
40002	+1	KWH	Energy Consumption, MSW	Integer (mult req'd)
40003	+2	KW	Demand (power)	Integer (mult req'd)
40257	---	KWH	Energy Consumption	Float, upper 16 bits
40258		KWH	Energy Consumption	Float, lower 16 bits
40259	+0	KWH	Energy Consumption (same 40257)	Float, upper 16 bits
40260		KWH	Energy Consumption (same 40258)	Float, lower 16 bits
40261	+2	KW	Demand (power)	Float, upper 16 bits
40262		KW	Demand (power)	Float, lower 16 bits

Modbus Addr	Typical Offset	Units	Description	Data Type
40001	+0	KWH	Energy Consumption, LSW	Integer (mult req'd)
40002	+1	KWH	Energy Consumption, MSW	Integer (mult req'd)
40003	+2	KW	Demand (power)	Integer (mult req'd)
40004	+3	VAR	Reactive Power	Integer (mult req'd)
40005	+4	VA	Apparent Power	Integer (mult req'd)
40006	+5	---	Power Factor	Integer (mult req'd)
40007	+6	VOLTS	Voltage, line to line	Integer (mult req'd)
40008	+7	VOLTS	Voltage, line to neutral	Integer (mult req'd)
40009	+8	AMPS	Current	Integer (mult req'd)
40010	+9	KW	Demand (power), phase A	Integer (mult req'd)
40011	+10	KW	Demand (power), phase B	Integer (mult req'd)
40012	+11	KW	Demand (power), phase C	Integer (mult req'd)
40013	+12	---	Power Factor, phase A	Integer (mult req'd)
40014	+13	---	Power Factor, phase B	Integer (mult req'd)
40015	+14	---	Power Factor, phase C	Integer (mult req'd)
40016	+15	VOLTS	Voltage, phase A-B	Integer (mult req'd)
40017	+16	VOLTS	Voltage, phase B-C	Integer (mult req'd)
40018	+17	VOLTS	Voltage, phase A-C	Integer (mult req'd)
40019	+18	VOLTS	Voltage, phase A-N	Integer (mult req'd)
40020	+19	VOLTS	Voltage, phase B-N	Integer (mult req'd)
40021	+20	VOLTS	Voltage, phase C-N	Integer (mult req'd)
40022	+21	AMPS	Current, phase A	Integer (mult req'd)
40023	+22	AMPS	Current, phase B	Integer (mult req'd)
40024	+23	AMPS	Current, phase C	Integer (mult req'd)
40025	+24	KW	Average Demand	Integer (mult req'd)
40026	+25	KW	Minimum Demand	Integer (mult req'd)
40027	+26	KW	Maximum Demand	Integer (mult req'd)
40257	---	KWH	Energy Consumption	Float, upper 16 bits
40258		KWH	Energy Consumption	Float, lower 16 bits

40259	+0	KWH	Energy Consumption (same 40257)	Float, upper 16 bits
40260		KWH	Energy Consumption (same 40258)	Float, lower 16 bits
40261	+2	KW	Demand (power)	Float, upper 16 bits
40262		KW	Demand (power)	Float, lower 16 bits
40263	+4	VAR	Reactive Power	Float, upper 16 bits
40264		VAR	Reactive Power	Float, lower 16 bits
40265	+6	VA	Apparent Power	Float, upper 16 bits
40266		VA	Apparent Power	Float, lower 16 bits
40267	+8	---	Power Factor	Float, upper 16 bits
40268		---	Power Factor	Float, lower 16 bits
40269	+10	VOLTS	Voltage, line to line	Float, upper 16 bits
40270		VOLTS	Voltage, line to line	Float, lower 16 bits
40271	+12	VOLTS	Voltage, line to neutral	Float, upper 16 bits
40272		VOLTS	Voltage, line to neutral	Float, lower 16 bits
40273	+14	AMPS	Current	Float, upper 16 bits
40274		AMPS	Current	Float, lower 16 bits
40275	+16	KW	Demand (power), phase A	Float, upper 16 bits
40276		KW	Demand (power), phase A	Float, lower 16 bits
40277	+18	KW	Demand (power), phase B	Float, upper 16 bits
40278		KW	Demand (power), phase B	Float, lower 16 bits
40279	+20	KW	Demand (power), phase C	Float, upper 16 bits
40280		KW	Demand (power), phase C	Float, lower 16 bits
40281	+22	---	Power Factor, phase A	Float, upper 16 bits
40282		---	Power Factor, phase A	Float, lower 16 bits
40283	+24	---	Power Factor, phase B	Float, upper 16 bits
40284		---	Power Factor, phase B	Float, lower 16 bits
40285	+26	---	Power Factor, phase C	Float, upper 16 bits
40286		---	Power Factor, phase C	Float, lower 16 bits
40287	+28	VOLTS	Voltage, phase A-B	Float, upper 16 bits
40288		VOLTS	Voltage, phase A-B	Float, lower 16 bits
40289	+30	VOLTS	Voltage, phase B-C	Float, upper 16 bits
40290		VOLTS	Voltage, phase B-C	Float, lower 16 bits
40291	+32	VOLTS	Voltage, phase A-C	Float, upper 16 bits
40292		VOLTS	Voltage, phase A-C	Float, lower 16 bits
40293	+34	VOLTS	Voltage, phase A-N	Float, upper 16 bits
40294		VOLTS	Voltage, phase A-N	Float, lower 16 bits
40295	+36	VOLTS	Voltage, phase B-N	Float, upper 16 bits
40296		VOLTS	Voltage, phase B-N	Float, lower 16 bits
40297	+38	VOLTS	Voltage, phase C-N	Float, upper 16 bits
40298		VOLTS	Voltage, phase C-N	Float, lower 16 bits
40299	+40	AMPS	Current, phase A	Float, upper 16 bits
40300		AMPS	Current, phase A	Float, lower 16 bits
40301	+42	AMPS	Current, phase B	Float, upper 16 bits
40302		AMPS	Current, phase B	Float, lower 16 bits
40303	+44	AMPS	Current, phase C	Float, upper 16 bits
40304		AMPS	Current, phase C	Float, lower 16 bits
40305	+46	KW	Average Demand	Float, upper 16 bits
40306		KW	Average Demand	Float, lower 16 bits
40307	+48	KW	Minimum Demand	Float, upper 16 bits
40308		KW	Minimum Demand	Float, lower 16 bits
40309	+50	KW	Maximum Demand	Float, upper 16 bits
40310		KW	Maximum Demand	Float, lower 16 bits

Note: Modbus addresses in the 4xxxx format follow the Modicon protocol specification for point addressing. The actual address sent is the value shown - 40001. In other words, the leading "4" is omitted, and the remaining 4-digit number is decremented so that point 40001 is requested with a value of zero in the actual modbus communication.

Some modbus implementations require point addresses to be specified beginning at zero or 40000, instead of 40001. The example C code below, for example, requires addresses which correspond to actual values transmitted, so a value of zero is used to request data beginning at modbus address 40001.

In many applications, a single modbus command is used to read all of the data available from the meter. For integers, the beginning address is 40001 (or zero in the actual modbus command), and for floats the first address used would typically be 40259 (or 258 in the actual modbus protocol). Though the first float appears at address 40257, it is not necessary to read this value because it is a duplicate copy of the kwh value (required by the E/node firmware). When a block of data is read, the "typical offset" values index to the data within the block.