

Input Registers, Function Code 04

| Address (Register) | Input Register Parameter | | | | Modbus Protocol Start Address Hex | | 3 Ø | 3 Ø | 1 Ø |
|---------------------------|--------------------------------|-------------------|----------------|---------|---|------------|--------|--------|--------|
| | Description | Length (bytes) | Data Format | Units | Hi Byte | Lo Byte | 4 W | 3 W | 2 W |
| 30001 | Phase 1 line to neutral volts. | 4 | Float | V | 00 | 00 | √ | X | √ |
| 30003 | Phase 2 line to neutral volts. | 4 | Float | V | 00 | 02 | √ | X | X |
| 30005 | Phase 3 line to neutral volts. | 4 | Float | V | 00 | 04 | √ | X | X |
| 30007 | Phase 1 current. | 4 | Float | A | 00 | 06 | √ | √ | √ |
| 30009 | Phase 2 current. | 4 | Float | A | 00 | 08 | √ | √ | X |
| 30011 | Phase 3 current. | 4 | Float | A | 00 | 0A | √ | √ | X |
| 30013 | Phase 1 active power. | 4 | Float | W | 00 | 0C | √ | X | √ |
| 30015 | Phase 2 active power. | 4 | Float | W | 00 | 0E | √ | X | X |
| 30017 | Phase 3 active power. | 4 | Float | W | 00 | 10 | √ | X | X |
| 30019 | Phase 1 apparent power. | 4 | Float | VA | 00 | 12 | √ | X | √ |
| 30021 | Phase 2 apparent power. | 4 | Float | VA | 00 | 14 | √ | X | X |
| 30023 | Phase 3 apparent power. | 4 | Float | VA | 00 | 16 | √ | X | X |
| 30025 | Phase 1 reactive power. | 4 | Float | VAr | 00 | 18 | √ | X | √ |
| 30027 | Phase 2 reactive power. | 4 | Float | VAr | 00 | 1A | √ | X | X |
| 30029 | Phase 3 reactive power. | 4 | Float | VAr | 00 | 1C | √ | X | X |
| 30031 | Phase 1 power factor (1). | 4 | Float | None | 00 | 1E | √ | X | √ |
| 30033 | Phase 2 power factor (1). | 4 | Float | None | 00 | 20 | √ | X | X |
| 30035 | Phase 3 power factor (1). | 4 | Float | None | 00 | 22 | √ | X | X |
| 30037 | Phase 1 phase angle. | 4 | Float | Degrees | 00 | 24 | √ | X | √ |
| 30039 | Phase 2 phase angle. | 4 | Float | Degrees | 00 | 26 | √ | X | X |
| 30041 | Phase 3 phase angle. | 4 | Float | Degrees | 00 | 28 | √ | X | X |
| 30043 | Average line to neutral volts. | 4 | Float | V | 00 | 2A | √ | X | X |
| 30047 | Average line current. | 4 | Float | A | 00 | 2E | √ | √ | √ |
| 30049 | Sum of line currents. | 4 | Float | A | 00 | 30 | √ | √ | √ |
| 30053 | Total system power. | 4 | Float | W | 00 | 34 | √ | √ | √ |
| 30057 | Total system volt amps. | 4 | Float | VA | 00 | 38 | √ | √ | √ |
| 30061 | Total system VAr. | 4 | Float | VAr | 00 | 3C | √ | √ | √ |
| 30063 | Total system power factor (1). | 4 | Float | None | 00 | 3E | √ | √ | √ |
| 30067 | Total system phase angle. | 4 | Float | Degrees | 00 | 42 | √ | √ | √ |
| 30071 | Frequency of supply voltages. | 4 | Float | Hz | 00 | 46 | √ | √ | √ |
| 30073 | Import Wh since last reset . | 4 | Float | kWh | 00 | 48 | √ | √ | √ |
| 30075 | Export Wh since last reset . | 4 | Float | kWh | 00 | 4A | √ | √ | √ |
| 30077 | Import VArh since last reset . | 4 | Float | kVArh | 00 | 4C | √ | √ | √ |
| 30079 | Export VArh since last reset . | 4 | Float | kVArh | 00 | 4E | √ | √ | √ |

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|-------|--|---|-------|------|----|----|---|---|---|
| 30081 | VAh since last reset . | 4 | Float | kVAh | 00 | 50 | √ | √ | √ |
| 30083 | Ah since last reset. | 4 | Float | Ah | 00 | 52 | √ | √ | √ |
| 30085 | Total system power demand (2) . | 4 | Float | W | 00 | 54 | √ | √ | √ |
| 30087 | Maximum total system power demand (2). | 4 | Float | W | 00 | 56 | √ | √ | √ |
| 30089 | Import active power demand | 4 | Float | W | 00 | 58 | √ | √ | √ |
| 30091 | Import active power max. demand | 4 | Float | W | 00 | 5A | √ | √ | √ |
| 30093 | Export active power demand | 4 | Float | W | 00 | 5C | √ | √ | √ |
| 30095 | Export active power max. demand | 4 | Float | W | 00 | 5E | √ | √ | √ |
| 30101 | Total system VA demand. | 4 | Float | VA | 00 | 64 | √ | √ | √ |
| 30103 | Maximum total system VA demand. | 4 | Float | VA | 00 | 66 | √ | √ | √ |
| 30105 | Neutral current demand. | 4 | Float | Amps | 00 | 68 | √ | X | X |
| 30107 | Maximum neutral current demand. | 4 | Float | Amps | 00 | 6A | √ | X | X |
| 30109 | Total system reactive power demand. (2) | 4 | Float | VAr | 00 | 6C | √ | X | √ |
| 30111 | Maximum total system reactive power demand(2) | 4 | Float | VAr | 00 | 6E | √ | X | √ |
| 30161 | Voltage phase sequence (normal=1、reverse=2、缺相=3) | 4 | Float | None | 00 | A0 | √ | √ | X |
| 30163 | Current phase sequence (normal=1、reverse=2、缺相=3) | 4 | Float | None | 00 | A2 | √ | √ | X |
| 30193 | Nature of the load (Resistive =1、inductive =2、capacitive =3) | 4 | Float | None | 00 | C0 | √ | √ | √ |
| 30195 | Nature of L1 load (Resistive=1、inductive=2、capacitive =3) | 4 | Float | None | 00 | C2 | √ | √ | √ |
| 30197 | Nature of L2 load (Resistive =1、inductive=2、capacitive =3) | 4 | Float | None | 00 | C4 | √ | √ | X |
| 30199 | Nature of L3 load (Resistive =1、inductive=2、capacitive =3) | 4 | Float | None | 00 | C6 | √ | √ | X |
| 30201 | Line 1 to Line 2 volts. | 4 | Float | V | 00 | C8 | √ | √ | X |
| 30203 | Line 2 to Line 3 volts. | 4 | Float | V | 00 | CA | √ | √ | X |
| 30205 | Line 3 to Line 1 volts. | 4 | Float | V | 00 | CC | √ | √ | X |
| 30207 | Average line to line volts. | 4 | Float | V | 00 | CE | √ | √ | X |
| 30225 | Neutral current. | 4 | Float | A | 00 | E0 | √ | X | X |
| 30235 | Phase 1 L/N volts THD | 4 | Float | % | 00 | EA | √ | X | √ |
| 30237 | Phase 2 L/N volts THD | 4 | Float | % | 00 | EC | √ | X | X |
| 30239 | Phase 3 L/N volts THD | 4 | Float | % | 00 | EE | √ | X | X |
| 30241 | Phase 1 Current THD | 4 | Float | % | 00 | F0 | √ | √ | √ |
| 30243 | Phase 2 Current THD | 4 | Float | % | 00 | F2 | √ | √ | X |
| 30245 | Phase 3 Current THD | 4 | Float | % | 00 | F4 | √ | √ | X |
| 30249 | Average line to neutral volts THD. | 4 | Float | % | 00 | F8 | √ | X | √ |
| 30251 | Average line current THD. | 4 | Float | % | 00 | FA | √ | √ | √ |
| 30259 | Phase 1 current demand. | 4 | Float | A | 01 | 02 | √ | √ | √ |
| 30261 | Phase 2 current demand. | 4 | Float | A | 01 | 04 | √ | √ | X |
| 30263 | Phase 3 current demand. | 4 | Float | A | 01 | 06 | √ | √ | X |

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|-------------------------|----------------------------------|-----|-------|-------|----|----|---|---|---|
| 30265 | Maximum phase 1 current demand. | 4 | Float | A | 01 | 08 | √ | √ | √ |
| 30267 | Maximum phase 2 current demand. | 4 | Float | A | 01 | 0A | √ | √ | X |
| 30269 | Maximum phase 3 current demand. | 4 | Float | A | 01 | 0C | √ | √ | X |
| 30335 | Line 1 to line 2 volts THD. | 4 | Float | % | 01 | 4E | √ | √ | X |
| 30337 | Line 2 to line 3 volts THD. | 4 | Float | % | 01 | 50 | √ | √ | X |
| 30339 | Line 3 to line 1 volts THD. | 4 | Float | % | 01 | 52 | √ | √ | X |
| 30341 | Average line to line volts THD. | 4 | Float | % | 01 | 54 | √ | √ | X |
| 30343 | Total kwh (3) | 4 | Float | kWh | 01 | 56 | √ | √ | √ |
| 30345 | Total kvarh (3) | 4 | Float | kVArh | 01 | 58 | √ | √ | √ |
| 30347 | L1 import kwh | 4 | Float | kWh | 01 | 5A | √ | √ | √ |
| 30349 | L2 import kwh | 4 | Float | kWh | 01 | 5C | √ | √ | X |
| 30351 | L3 import kWh | 4 | Float | kWh | 01 | 5E | √ | √ | X |
| 30353 | L1 export kWh | 4 | Float | kWh | 01 | 60 | √ | √ | √ |
| 30355 | L2 export kwh | 4 | Float | kWh | 01 | 62 | √ | √ | X |
| 30357 | L3 export kWh | 4 | Float | kWh | 01 | 64 | √ | √ | X |
| 30359 | L1 total kwh | 4 | Float | kWh | 01 | 66 | √ | √ | √ |
| 30361 | L2 total kWh | 4 | Float | kWh | 01 | 68 | √ | √ | X |
| 30363 | L3 total kwh | 4 | Float | kWh | 01 | 6A | √ | √ | X |
| 30365 | L1 import kvarh | 4 | Float | kVArh | 01 | 6C | √ | √ | √ |
| 30367 | L2 import kvarh | 4 | Float | kVArh | 01 | 6E | √ | √ | X |
| 30369 | L3 import kvarh | 4 | Float | kVArh | 01 | 70 | √ | √ | X |
| 30371 | L1 export kvarh | 4 | Float | kVArh | 01 | 72 | √ | √ | √ |
| 30373 | L2 export kvarh | 4 | Float | kVArh | 01 | 74 | √ | √ | X |
| 30375 | L3 export kvarh | 4 | Float | kVArh | 01 | 76 | √ | √ | X |
| 30377 | L1 total kvarh | 4 | Float | kVArh | 01 | 78 | √ | √ | √ |
| 30379 | L2 total kvarh | 4 | Float | kVArh | 01 | 7A | √ | √ | X |
| 30381 | L3 total kvarh | 4 | Float | kVArh | 01 | 7C | √ | √ | X |
| Harmonic (30403~31157) | | | | | | | | | |
| 30403 | Voltage 2st~63st Harmonic L1 | 248 | Float | % | 01 | 92 | √ | √ | √ |
| 30527 | Voltage 2st~63st Harmonic L2 | 248 | Float | % | 02 | 0E | √ | √ | X |
| 30651 | Voltage 2st~63st Harmonic L3 | 248 | Float | % | 02 | 8A | √ | √ | X |
| 30775 | Current 2st~63st Harmonic L1 | 248 | Float | % | 03 | 06 | √ | √ | √ |
| 30899 | Current 2st~63st Harmonic L2 | 248 | Float | % | 03 | 82 | √ | √ | X |
| 31023 | Current 2st~63st Harmonic L3 | 248 | Float | % | 03 | FE | √ | √ | X |
| 31147 | Voltage Total Harmonic L1 | 4 | Float | % | 04 | 7A | √ | √ | √ |
| 31149 | Voltage Total Harmonic L2 | 4 | Float | % | 04 | 7C | √ | √ | X |
| 31151 | Voltage Total Harmonic L3 | 4 | Float | % | 04 | 7E | √ | √ | X |
| 31153 | Current Total Harmonic L1 | 4 | Float | % | 04 | 80 | √ | √ | √ |
| 31155 | Current Total Harmonic L2 | 4 | Float | % | 04 | 82 | √ | √ | X |
| 31157 | Current Total Harmonic L3 | 4 | Float | % | 04 | 84 | √ | √ | X |
| Max & Min (32673~32739) | | | | | | | | | |
| 32673 | Maximum value of phase 1 current | 4 | Float | A | 0A | 70 | √ | √ | √ |
| 32675 | Maximum value of phase 2 current | 4 | Float | A | 0A | 72 | √ | √ | X |

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|-------|--|---|-------|---|----|----|---|---|---|
| 32677 | Maximum value of phase 3 current | 4 | Float | A | 0A | 74 | √ | √ | X |
| 32679 | Maximum value of neutral current | 4 | Float | A | 0A | 76 | √ | √ | √ |
| 32681 | Maximum value of total currents | 4 | Float | A | 0A | 78 | √ | √ | X |
| 32683 | Maximum value of phase 1 line to neutral voltage | 4 | Float | V | 0A | 7A | √ | √ | X |
| 32685 | Maximum value of phase 2 line to neutral voltage | 4 | Float | V | 0A | 7C | √ | √ | X |
| 32687 | Maximum value of phase 3 line to neutral voltage | 4 | Float | V | 0A | 7E | √ | √ | √ |
| 32689 | Maximum value of line 1 to line 2 voltage | 4 | Float | V | 0A | 80 | √ | √ | X |
| 32691 | Maximum value of line 2 to line3 voltage | 4 | Float | V | 0A | 82 | √ | √ | X |
| 32693 | Maximum value of line 3 to line 1 voltage | 4 | Float | V | 0A | 84 | √ | X | X |
| 32719 | Minimum value of phase 1 current | 4 | Float | A | 0A | 9E | √ | √ | √ |
| 32721 | Minimum value of phase 2 current | 4 | Float | A | 0A | A0 | √ | √ | X |
| 32723 | Minimum value of phase 3 current | 4 | Float | A | 0A | A2 | √ | √ | X |
| 32725 | Minimum value of neutral current | 4 | Float | A | 0A | A4 | √ | √ | X |
| 32727 | Minimum value of total currents | 4 | Float | A | 0A | A6 | √ | √ | √ |
| 32729 | Minimum value of phase 1 line to neutral voltage | 4 | Float | V | 0A | A8 | √ | √ | X |
| 32731 | Minimum value of phase 2 line to neutral voltage | 4 | Float | V | 0A | AA | √ | √ | X |
| 32733 | Minimum value of phase 3 line to neutral voltage | 4 | Float | V | 0A | AC | √ | √ | √ |
| 32735 | Minimum value of line 1 to line 2 voltage | 4 | Float | V | 0A | AE | √ | √ | X |
| 32737 | Minimum value of line 2 to line3 voltage | 4 | Float | V | 0A | B0 | √ | √ | X |
| 32739 | Minimum value of line 3 to line 1 voltage | 4 | Float | V | 0A | B2 | √ | X | X |

Notes:

1. The power factor has its sign adjusted to indicate the direction of the current. Positive refers to forward current, negative refers to reverse current.
2. The power sum demand calculation is for import – export.
3. Total kWh / kVarh equals to Import + export.

Holding Register, Function code 03 / 10

| Address Register | Parameter Number | Parameter | Modbus Protocol Start Address Hex | Valid range | Mode |
|------------------|------------------|-----------|-----------------------------------|-------------|------|
|------------------|------------------|-----------|-----------------------------------|-------------|------|

| | | | High Byte | Low Byte | | |
|-------|----|---|--------------|-------------|--|-----|
| 40001 | 1 | Demand Time | 00 | 00 | Read minutes into first demand calculation. When the Demand Time reaches the Demand Period then the demand values are valid. Length : 4 byte Data Format : Float | ro |
| 40003 | 2 | Demand Period | 00 | 02 | Write demand period: 0~60 minutes. Default 60. Setting the period to 0 will cause the "Phase # current demand" parameters to show the "Phase # current values"; and "Max. phase # current demand" to show the maximum value of the "Phase # current" parameter since last demand reset. Length : 4 byte Data Format : Float | r/w |
| 40005 | 3 | Slide time | 00 | 04 | Default 1, min. Range : 1 ~ (Demand Period -1). Length : 4 byte Data Format : Float | r/w |
| 40007 | 4 | Demand Calculation Method | 00 | 06 | Default 0, 0 = Slide time 1 = Fixed time Length : 4 byte Data Format : Float | r/w |
| 40011 | 6 | System Type | 00 | 0A | Write system type: 3p4w = 3, 3p3w = 2 & 1p2w= 1 Default, 3 Length : 4 byte Data Format : Float (KPPA is asked) | r/w |
| 40013 | 7 | Pulse 1 Width | 00 | 0C | Write pulse on period in Milliseconds: 60, 100 or 200, default 200. Length : 4 byte Data Format : Float | r/w |
| 40015 | 8 | Key Parameter Programming Authorization (KPPA) | 00 | 0E | Read: to get the status of the KPPA 0 = not authorized; 1 = authorized Write the correct password to get KPPA, enable to program key parameters. Length : 4 byte Data Format : Float | r/w |
| 40019 | 10 | Parity and Stop bits | 00 | 12 | Write the network port parity/stop bits for MODBUS Protocol, where: 0 = One stop bit | r/w |

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| | | | | | and no parity, default. 1 = One stop bit and even parity. 2 = One stop bit and odd parity.3 = Two stop bits and no parity. Length : 4 byte Data Format : Float | |
| 40021 | 11 | Modbus Address | 00 | 14 | Write the network port node Address: 1 to 247 for MODBUS Protocol, default 1. Length : 4 byte Data Format : Float | r/w |
| 40023 | 12 | Pulse 1 Rate | 00 | 16 | Write pulse rate index: n = 0 to 6 0- - 0.001 kwh/imp,(default) 1--0.01kwh/imp 2--0.1kwh/imp 3--1kwh/imp 4-10kwh/imp 5-100kwh/imp 6-1000kwh/imp Length : 4 byte Data Format : Float | r/w |
| 40025 | 13 | Password | 00 | 18 | Read: to get the password of the meter Write: to program the new password of the meter Default 1000 Length : 4 byte Data Format : Float | r/w |
| 40029 | 15 | Network Baud Rate | 00 | 1C | Write the network port baud rate for MODBUS Protocol, where: 0 = 2400 baud. 1 = 4800 baud. 2 = 9600 baud, (default) 3 = 19200 baud. 4 = 38400 baud Length : 4 byte Data Format : Float | r/w |
| 40047 | 24 | PT1 | 00 | 2E | PT1 Range 100- 500000V, Default 400 Length : 4 byte Data Format : Float (KPPA is asked) | r/w |
| 40049 | 25 | PT2 | 00 | 30 | PT2 Range 100- 480V, Default 400 Length : 4 byte Data Format : Float (KPPA is asked) | r/w |
| 40051 | 26 | CT1 | 00 | 32 | CT1 Range 1-9999A, Default 5, Length : 4 byte | r/w |

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|--------|-------|---|----|----|---|-----|
| | | | | | Data Format : Float (KPPA is asked) | |
| 40053 | 27 | CT2 | 00 | 34 | CT2 Default 5A Range: 1A or 5A Length : 4 byte Data Format : Float (KPPA is asked) | r/w |
| 40057 | 29 | Current Direction correction (when the external CT is connected reversely) | 00 | 38 | Default 0 0 = A Frd, B Frd, C Frd 1 = A Rev, B Frd, C Frd 2 = A Frd, B Rev, C Frd 3 = A Rev, B Rev, C Frd 4 = A Frd, B Frd, C Rev 5 = A Rev, B Frd, C Rev 6 = A Frd, B Rev, C Rev 7 = A Rev, B Rev, C Rev Length : 4 byte Data Format :Float (KPPA is asked) | r/w |
| 40059 | 30 | Automatic Scroll Display Time | 00 | 3A | Default 5, second Range 1~255 Length : 4 byte Data Format : Float | r/w |
| 40061 | 31 | Backlit time | 00 | 3C | Default 0, min Range 0~120, 0 means backlit always on Length : 4byte Data Format : Float | r/w |
| 40087 | 44 | Pulse 1 Energy Type | 00 | 56 | Write MODBUS Protocol input parameter for pulse output 1: 1: import active energy 2: total active energy 4: export active energy, (default) 5: import reactive energy 6: total reactive energy 8: export reactive energy Length : 4 byte Data Format : Float | r/w |
| 461445 | 30723 | Running time | F0 | 04 | Day-hour-minute, day = 2byte;hour = 1byte; minute=1byte Length : 4 byte Data Format:BCD Explane: 04 23 21 57 means: | r/w |

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|--------|-------|---------------|----|----|---|----|
| | | | | | Running time=423 day + 21 hour + 57 min Write: Only allow write 00 00 00 00, which means clearing the running time | |
| 461457 | 30729 | Reset | F0 | 10 | 00 00 : reset demand information 00 03: reset energy informaiton (Non MID) 00 04: reset Max and Min information Length : 2 byte Data Format:Hex | wo |
| 464513 | 32257 | Serial number | FC | 00 | Serial number Length : 4 byte Data Format : unsigned int32 Note: Only read | ro |