***Measuring class parameter [Floating point format data]***

|  |  |
| --- | --- |
|  **Input Register Parameter****[ Function code : 04H ]** |  **Register Address** **[Hex]** |
|  **Description** | **Length****(bytes)** | **Data****Format** | **Units** | **High****Byte** | **Low****Byte** |
| Phase 1 line to neutral volts. | 4 | Float | V | 00 | 00 |
| Phase 2 line to neutral volts. | 4 | Float | V | 00 | 02 |
| Phase 3 line to neutral volts. | 4 | Float | V | 00 | 04 |
| Phase 1 current. | 4 | Float | A | 00 | 06 |
| Phase 2 current. | 4 | Float | A | 00 | 08 |
| Phase 3 current. | 4 | Float | A | 00 | 0A |
| Phase 1 active power. | 4 | Float | W | 00 | 0C |
| Phase 2 active power. | 4 | Float | W | 00 | 0E |
| Phase 3 active power. | 4 | Float | W | 00 | 10 |
| Phase 1 reactive power. | 4 | Float | var | 00 | 12 |
| Phase 2 reactive power. | 4 | Float | var | 00 | 14 |
| Phase 3 reactive power. | 4 | Float | var | 00 | 16 |
| Phase 1 apparent power. | 4 | Float | VA | 00 | 18 |
| Phase 2 apparent power. | 4 | Float | VA | 00 | 1A |
| Phase 3 apparent power. | 4 | Float | VA | 00 | 1C |
| Phase 1 power factor (1). | 4 | Float | None | 00 | 1E |
| Phase 2 power factor (1). | 4 | Float | None | 00 | 20 |
| Phase 3 power factor (1). | 4 | Float | None | 00 | 22 |
| Phase 1 phase angle. | 4 | Float | Degrees | 00 | 24 |
| Phase 2 phase angle. | 4 | Float | Degrees | 00 | 26 |
| Phase 3 phase angle. | 4 | Float | Degrees | 00 | 28 |
| Line 1 to Line 2 volts. | 4 | Float | V | 00 | 2A |
| Line 2 to Line 3 volts. | 4 | Float | V | 00 | 2C |
| Line 3 to Line 1 volts. | 4 | Float | V | 00 | 2E |
| Frequency of supply voltages. | 4 | Float | Hz | 00 | 30 |
| Total system active power. | 4 | Float | W | 00 | 32 |
| Total system reactive power. | 4 | Float | var | 00 | 34 |
| Total system apparent power. | 4 | Float | VA | 00 | 36 |
| Total system power factor (1). | 4 | Float | None | 00 | 38 |
| Total system phase angle. | 4 | Float | Degrees | 00 | 3A |
| Sum of line currents. | 4 | Float | A | 00 | 3C |
| Average line to neutral volts. | 4 | Float | V | 00 | 3E |
| Average line to line volts. | 4 | Float | V | 00 | 40 |
| Average line current. | 4 | Float | A | 00 | 42 |
| Neutral current. | 4 | Float | A | 00 | 44 |
| Nature of L1 load（Resistive=1、inductive=2、capacitive =3） | 4 | Float | None | 00 | 4E |
| Nature of L2 load（Resistive =1、inductive=2、capacitive =3） | 4 | Float | None | 00 | 50 |
| Nature of L3 load（Resistive =1、inductive=2、capacitive =3） | 4 | Float | None | 00 | 52 |
| Nature of the system load（Resistive =1、inductive =2、capacitive =3） | 4 | Float | None | 00 | 54 |
| Voltage phase sequence（normal=1、reverse=2、phase missing =3） | 4 | Float | None | 00 | 56 |
| Current phase sequence（normal=1、reverse=2、phase missing =3） | 4 | Float | None | 00 | 58 |
| Phase 1 voltage THD (2). | 4 | Float | % | 00 | 7C |
| Phase 2 voltage THD (2). | 4 | Float | % | 00 | 7E |
| Phase 3 voltage THD (2). | 4 | Float | % | 00 | 80 |
| Phase 1 current THD | 4 | Float | % | 00 | 82 |
| Phase 2 current THD | 4 | Float | % | 00 | 84 |
| Phase 3 current THD | 4 | Float | % | 00 | 86 |
| Average voltage THD (2). | 4 | Float | ％ | 00 | 88 |
| Average line current THD. | 4 | Float | ％ | 00 | 8A |
| Total system active power demand (3). | 4 | Float | W | 00 | 8C |
| Total system reactive power demand (3). | 4 | Float | var | 00 | 8E |
| Total system apparent power demand. | 4 | Float | VA | 00 | 90 |
| Phase 1 current demand. | 4 | Float | A | 00 | 92 |
| Phase 2 current demand. | 4 | Float | A | 00 | 94 |
| Phase 3 current demand. | 4 | Float | A | 00 | 96 |
| Neutral current demand. | 4 | Float | A | 00 | 98 |
| Import active power demand | 4 | Float | W | 00 | 9A |
| Export active power demand | 4 | Float | W | 00 | 9C |
| Maximum total system active power demand (3). | 4 | Float | W | 00 | A2 |
| Maximum total system reactive power demand (3). | 4 | Float | var | 00 | A4 |
| Maximum total system apparent power demand. | 4 | Float | VA | 00 | A6 |
| Maximum phase 1 current demand. | 4 | Float | A | 00 | A8 |
| Maximum phase 2 current demand. | 4 | Float | A | 00 | AA |
| Maximum phase 3 current demand. | 4 | Float | A | 00 | AC |
| Maximum neutral current demand. | 4 | Float | A | 00 | AE |
| Maximum import active power demand | 4 | Float | W | 00 | B0 |
| Maximum export active power demand | 4 | Float | W | 00 | B2 |
| Voltage 2st~31st Harmonic L1 (2). | 120 | Float | % | 00 | B8 |
| Voltage 2st~31st Harmonic L2 (2). | 120 | Float | % | 01 | 34 |
| Voltage 2st~31st Harmonic L3 (2). | 120 | Float | % | 01 | B0 |
| Current 2st~31st Harmonic L1 | 120 | Float | % | 02 | 2C |
| Current 2st~31st Harmonic L2 | 120 | Float | % | 02 | A8 |
| Current 2st~31st Harmonic L3 | 120 | Float | % | 03 | 24 |
| Maximum value of total active power | 4 | Float | W | 04 | 3C |
| Maximum value of total reactive power | 4 | Float | var | 04 | 3E |
| Maximum value of total apparent power | 4 | Float | VA | 04 | 40 |
| Maximum of the total power factor | 4 | Float | None | 04 | 42 |
| Maximum value of L1 active power | 4 | Float | W | 04 | 44 |
| Maximum value of L2 active power | 4 | Float | W | 04 | 46 |
| Maximum value of L3 active power | 4 | Float | W | 04 | 48 |
| Maximum value of L1 reactive power | 4 | Float | var | 04 | 4A |
| Maximum value of L2 reactive power | 4 | Float | var | 04 | 4C |
| Maximum value of L3 reactive power | 4 | Float | var | 04 | 4E |
| Maximum value of L1 apparent power | 4 | Float | VA | 04 | 50 |
| Maximum value of L2 apparent power | 4 | Float | VA | 04 | 52 |
| Maximum value of L3 apparent power | 4 | Float | VA | 04 | 54 |
| Maximum of the L1 power factor | 4 | Float | None | 04 | 56 |
| Maximum of the L2 power factor | 4 | Float | None | 04 | 58 |
| Maximum of the L3 power factor | 4 | Float | None | 04 | 5A |
| Maximum value of L1 current | 4 | Float | A | 04 | 5C |
| Maximum value of L2 current | 4 | Float | A | 04 | 5E |
| Maximum value of L3 current | 4 | Float | A | 04 | 60 |
| Maximum value of neutral current | 4 | Float | A | 04 | 62 |
| Maximum value of total current | 4 | Float | A | 04 | 64 |
| Maximum value of L1 voltage | 4 | Float | V | 04 | 66 |
| Maximum value of L2 voltage | 4 | Float | V | 04 | 68 |
| Maximum value of L3 voltage | 4 | Float | V | 04 | 6A |
| Maximum value of L1-2 voltage | 4 | Float | V | 04 | 6C |
| Maximum value of L2-3 voltage | 4 | Float | V | 04 | 6E |
| Maximum value of L3-1 voltage | 4 | Float | V | 04 | 70 |
| Maximum value of L1 voltage total harmonic (2). | 4 | Float | % | 04 | 72 |
| Maximum value of L2 voltage total harmonic (2). | 4 | Float | % | 04 | 74 |
| Maximum value of L3 voltage total harmonic (2). | 4 | Float | % | 04 | 76 |
| Maximum value of L1 current total harmonic | 4 | Float | % | 04 | 78 |
| Maximum value of L2 current total harmonic | 4 | Float | % | 04 | 7A |
| Maximum value of L3 current total harmonic | 4 | Float | % | 04 | 7C |
| Minimum value of total active power | 4 | Float | W | 04 | 7E |
| Minimum value of total reactive power | 4 | Float | var | 04 | 80 |
| Minimum value of total apparent power | 4 | Float | VA | 04 | 82 |
| Minimum of the total power factor | 4 | Float | None | 04 | 84 |
| Minimum value of L1 active power | 4 | Float | W | 04 | 86 |
| Minimum value of L2 active power | 4 | Float | W | 04 | 88 |
| Minimum value of L3 active power | 4 | Float | W | 04 | 8A |
| Minimum value of L1 reactive power | 4 | Float | var | 04 | 8C |
| Minimum value of L2 reactive power | 4 | Float | var | 04 | 8E |
| Minimum value of L3 reactive power | 4 | Float | var | 04 | 90 |
| Minimum value of L1 apparent power | 4 | Float | VA | 04 | 92 |
| Minimum value of L2 apparent power | 4 | Float | VA | 04 | 94 |
| Minimum value of L3 apparent power | 4 | Float | VA | 04 | 96 |
| Minimum of the L1 power factor | 4 | Float | None | 04 | 98 |
| Minimum of the L2 power factor | 4 | Float | None | 04 | 9A |
| Minimum of the L3 power factor | 4 | Float | None | 04 | 9C |
| Minimum value of L1 current | 4 | Float | A | 04 | 9E |
| Minimum value of L2 current | 4 | Float | A | 04 | A0 |
| Minimum value of L3 current | 4 | Float | A | 04 | A2 |
| Minimum value of neutral current | 4 | Float | A | 04 | A4 |
| Minimum value of total current | 4 | Float | A | 04 | A6 |
| Minimum value of L1 voltage | 4 | Float | V | 04 | A8 |
| Minimum value of L2 voltage | 4 | Float | V | 04 | AA |
| Minimum value of L3 voltage | 4 | Float | V | 04 | AC |
| Minimum value of L1-2 voltage | 4 | Float | V | 04 | AE |
| Minimum value of L2-3 voltage | 4 | Float | V | 04 | B0 |
| Minimum value of L3-1 voltage | 4 | Float | V | 04 | B2 |
| Minimum value of L1 voltage total harmonic (2). | 4 | Float | % | 04 | B4 |
| Minimum value of L2 voltage total harmonic (2). | 4 | Float | % | 04 | B6 |
| Minimum value of L3 voltage total harmonic (2). | 4 | Float | % | 04 | B8 |
| Minimum value of L1 current total harmonic | 4 | Float | % | 04 | BA |
| Minimum value of L2 current total harmonic | 4 | Float | % | 04 | BC |
| Minimum value of L3 current total harmonic | 4 | Float | % | 04 | BE |
| Total import active energy. | 4 | Float | kWh | 05 | 00 |
| Total export active energy. | 4 | Float | kWh | 05 | 02 |
| Total active Energy (Import + Export). | 4 | Float | kWh | 05 | 04 |
| Net active Energy (Import - Export). | 4 | Float | kWh | 05 | 06 |
| Total import reactive energy. | 4 | Float | kvarh | 05 | 08 |
| Total export reactive energy. | 4 | Float | kvarh | 05 | 0A |
| Total reactive energy (Import + Export). | 4 | Float | kvarh | 05 | 0C |
| Net reactive energy (Import - Export). | 4 | Float | kvarh | 05 | 0E |
| Total apparent energy. | 4 | Float | kVAh | 05 | 10 |
| The Ah of the system current | 4 | Float | Ah | 05 | 12 |
| L1 import active Energy | 4 | Float | kWh | 05 | 14 |
| L2 import active Energy | 4 | Float | kWh | 05 | 16 |
| L3 import active Energy | 4 | Float | kWh | 05 | 18 |
| L1 export active Energy | 4 | Float | kWh | 05 | 1A |
| L2 export active Energy | 4 | Float | kWh | 05 | 1C |
| L3 export active Energy | 4 | Float | kWh | 05 | 1E |
| L1 total active Energy | 4 | Float | kWh | 05 | 20 |
| L2 total active Energy | 4 | Float | kWh | 05 | 22 |
| L3 total active Energy | 4 | Float | kWh | 05 | 24 |
| L1 import reactive energy | 4 | Float | kvarh | 05 | 26 |
| L2 import reactive energy | 4 | Float | kvarh | 05 | 28 |
| L3 import reactive energy | 4 | Float | kvarh | 05 | 2A |
| L1 export reactive energy | 4 | Float | kvarh | 05 | 2C |
| L2 export reactive energy | 4 | Float | kvarh | 05 | 2E |
| L3 export reactive energy | 4 | Float | kvarh | 05 | 30 |
| L1 total reactive energy | 4 | Float | kvarh | 05 | 32 |
| L2 total reactive energy | 4 | Float | kvarh | 05 | 34 |
| L3 total reactive energy | 4 | Float | kvarh | 05 | 36 |
| Reactive energy in the I quadrant | 4 | Float | kvarh | 06 | 28 |
| Reactive energy in the II quadrant | 4 | Float | kvarh | 06 | 2A |
| Reactive energy in the III quadrant | 4 | Float | kvarh | 06 | 2C |
| Reactive energy in the IV quadrant | 4 | Float | kvarh | 06 | 2E |

**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. In 3P3W mode, L1 represents the line voltage THD of L1-2, L2 represents the line voltage harmonic content of L2-3, and L3 represents the Line voltage THD of L3-1. In 3P4W, 1P2W, 1P3W and other modes, L1, L2 and L3 respectively represent the corresponding phase voltage harmonic content

3. The power sum demand calculation is for import – export.

***Measuring class parameter [Integer format data]***

|  |  |  |
| --- | --- | --- |
| **Holding Register Parameter****[ Read : Function code : 03H ]** |  **Register Address** **[Hex]** |  |
|  **Description** | **Length****(bytes)** | **Data****Format** | **Units** | **High****Byte** | **LowByte** | **Mode** |
| Total import active energy. | 8 | INT64 | Wh | 1D | 00 | **R** |
| Total export active energy. | 8 | INT64 | Wh | 1D | 04 | **R** |
| Total active Energy (Import + Export). | 8 | INT64 | Wh | 1D | 08 | **R** |
| Net active Energy (Import - Export). | 8 | INT64 | Wh | 1D | 0C | **R** |
| Total import reactive energy. | 8 | INT64 | varh | 1D | 10 | **R** |
| Total export reactive energy. | 8 | INT64 | varh | 1D | 14 | **R** |
| Total reactive energy (Import + Export). | 8 | INT64 | varh | 1D | 18 | **R** |
| Net reactive energy (Import - Export). | 8 | INT64 | varh | 1D | 1C | **R** |
| Total apparent energy. | 8 | INT64 | VAh | 1D | 20 | **R** |
| L1 import active Energy | 8 | INT64 | Wh | 1D | 24 | **R** |
| L2 import active Energy | 8 | INT64 | Wh | 1D | 28 | **R** |
| L3 import active Energy | 8 | INT64 | Wh | 1D | 2C | **R** |
| L1 export active Energy | 8 | INT64 | Wh | 1D | 30 | **R** |
| L2 export active Energy | 8 | INT64 | Wh | 1D | 34 | **R** |
| L3 export active Energy | 8 | INT64 | Wh | 1D | 38 | **R** |
| L1 total active Energy | 8 | INT64 | Wh | 1D | 3C | **R** |
| L2 total active Energy | 8 | INT64 | Wh | 1D | 40 | **R** |
| L3 total active Energy | 8 | INT64 | Wh | 1D | 44 | **R** |
| L1 import reactive energy | 8 | INT64 | varh | 1D | 48 | **R** |
| L2 import reactive energy | 8 | INT64 | varh | 1D | 4C | **R** |
| L3 import reactive energy | 8 | INT64 | varh | 1D | 50 | **R** |
| L1 export reactive energy | 8 | INT64 | varh | 1D | 54 | **R** |
| L2 export reactive energy | 8 | INT64 | varh | 1D | 58 | **R** |
| L3 export reactive energy | 8 | INT64 | varh | 1D | 5C | **R** |
| L1 total reactive energy | 8 | INT64 | varh | 1D | 60 | **R** |
| L2 total reactive energy | 8 | INT64 | varh | 1D | 64 | **R** |
| L3 total reactive energy | 8 | INT64 | varh | 1D | 68 | **R** |
| Reactive energy in the I quadrant | 8 | INT64 | varh | 1F | 4C | **R** |
| Reactive energy in the II quadrant | 8 | INT64 | varh | 1F | 50 | **R** |
| Reactive energy in the III quadrant | 8 | INT64 | varh | 1F | 54 | **R** |
| Reactive energy in the IV quadrant | 8 | INT64 | varh | 1F | 58 | **R** |

***Set class parameters***

|  |  |  |
| --- | --- | --- |
| **Holding Register Parameter** **[ Read : Function code : 03H ; Write : Function code : 10H ]** |  **Register Address** **[Hex]** |  |
| **Parameter** | **Description** | **Length****(bytes)** | **Data****Format** | **High****Byte** | **Low****Byte** | **Mode** |
| Key Parameter Programming Authorization (KPPA) | Read: to get the status of the KPPA0 = not authorized；1 = authorizedWrite the correct password to get KPPA, enable to program key parameters. | 2 | UINT | 50 | 00 | **R/W** |
| System Type | Write system type: 1 = 1P2W;2 = 3P3W 2CT;3 = 3P4W,(default);4 = 1P3W;5 = 3P3W 3CT;**(KPPA is asked)** | 2 | UINT | 50 | 01 | **R/W** |
| Demand Period | Write demand period: 0~60 minutes, Default 60.Range: 0~60, 0 means function update every second. | 2 | UINT | 50 | 02 | **R/W** |
| Slide time | Default 1, min.Range：1 ~ (Demand Period -1). | 2 | UINT | 50 | 03 | **R/W** |
| Demand calculation method | Default 0，0 = sliding block1 = fixed block | 2 | UINT | 50 | 04 | **R/W** |
| Modbus address | Write the modbus addressRange: 1 to 247 for MODBUS Protocol, default 1. | 2 | UINT | 50 | 05 | **R/W** |
| Network Baud Rate | Write the network port baud rate for MODBUS Protocol, where:0 = 1200 baud. 1 = 2400 baud.2 = 4800 baud.3 = 9600 baud, default.4 = 19200 baud.5 = 38400 baud. | 2 | UINT | 50 | 06 | **R/W** |
| Parity and stop bit | Write the network port parity/stop bits for MODBUS Protocol, where: 0 = One stop bit 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. | 2 | UINT | 50 | 07 | **R/W** |
| Password | Read: to get the password of the meterWrite: to program the new password of the meterDefault : 0000**(KPPA is asked)** | 2 | UINT | 50 | 08 | **R/W** |
| Pulse 1 Energy Type | Write MODBUS Protocolinput parameter for pulseoutput 1：1: import active energy 2: total active energy4: export active energy5: import reactive energy6: total reactive energy, default8: export reactive energy | 2 | UINT | 50 | 09 | **R/W** |
| Pulse 1 Rate | Write pulse rate index: n= 0 to 60 : 0.001 kwh/imp1 : 0.01kwh/imp, default2 : 0.1kwh/imp3 : 1kwh/imp4 : 10kwh/imp5 : 100kwh/imp6 : 1000kwh/imp | 2 | UINT | 50 | 0A | **R/W** |
| Pulse 1 Width | Write pulse on period in milliseconds: 60, 100 or 200, default 200. | 2 | UINT | 50 | 0B | **R/W** |
| Current Direction correction(when the external CT is connected reversely) | 0 = L1 Frd，L2 Frd，L3 Frd1 = L1 Rev，L2 Frd，L3 Frd2 = L1 Frd，L2 Rev，L3 Frd3 = L1 Rev，L2 Rev，L3 Frd4 = L1 Frd，L2 Frd，L3 Rev5 = L1 Rev，L2 Frd，L3 Rev6 = L1 Frd，L2 Rev，L3 Rev7 = L1 Rev，L2 Rev，L3 RevDefault 000 00功能代码（）**(KPPA is asked)** | 2 | UINT | 50 | 0F | **R/W** |
| PT1 | PT1 Range 30 - 600000V, Default 230**(KPPA is asked)** | 4 | ULONG | 50 | 12 | **R/W** |
| PT2 | PT2 Range 30- 600V, Default 230**(KPPA is asked)** | 2 | UINT | 50 | 14 | **R/W** |
| CT1 | CT1 Range 1-9999A，Default 5，**(KPPA is asked)** | 2 | UINT | 50 | 15 | **R/W** |
| CT2 | CT2 Range: 1A or 5A , Default 5A **(KPPA is asked)** | 2 | UINT | 50 | 16 | **R/W** |
| Automatic Scroll Display Time | Automatic scroll display time, unit : secondRange 0~255，default : 0 Note: 0 mean stop automatic scroll display | 2 | UINT | 50 | 18 | **R/W** |
| Backlit time | Backlit time, unit : minute.Default 60.Range 0~120 or 255，0 means backlit always on，255 means backlit always off. | 2 | UINT | 50 | 19 | **R/W** |
| Running time | Running time.Data definition：Day-hour-minute,day=2byte; hour=1byte; minute=1byte**Explame:****04 23 21 57 mean :****Running time=423 day + 21 hour + 57 min****Write 0 to reset the running time. No response if write other value.****Note:** **The meter starts timing when it's powered on** | 4 | BCD | 50 | 2D | **R/W** |
| Running time with load | Running time with load. Data definition：Day-hour-minute,day=2byte; hour=1byte; minute=1byte**Explame:****04 23 21 57代表****Running time=423 day + 21 hour + 57 min****Write 0 to reset the running time with load. No response if write other value.****Note:** **The meter starts timing when power greater than 0 detected** | 4 | BCD | 50 | 2F | **R/W** |
| Running time（Data in units of minutes） | Running time. Unit : minute.**Write 0 to reset the running time with load. No response if write other value.****Note:** **The meter starts timing when it's powered on** | 4 | ULONG | 50 | 3C | **R/W** |
| Running time with load（Data in units of minutes） | Running time with load. Unit : minute.**Write 0 to reset the running time with load. No response if write other value.****Note:** **The meter starts timing when power greater than 0 detected** | 4 | ULONG | 50 | 3E | **R/W** |
| Reset historical data | **0 = reset max. demand****1 = reset active energy****2 = reset reactive energy****3 = reset all energy****4 = reset max. and min. data****(KPPA is asked)** | 2 | UINT | 56 | 00 | **W** |
| Meter code | The code of the meterPAC5000 = 00 01PAC5100 = 00 02PAC5010 = 00 81PAC5110 = 00 82 | 2 | HEX | 56 | 01 | **R** |
| Serial number | The serial number of the meter | 4 | ULONG | 56 | 02 | **R** |
| Software version number | Software version number : XX.YYData definition : The first byte represents XX, and the second byte represents YY | 2 | HEX | 56 | 04 | **R** |
| Hardware version number | Hardware version number : XX.YYData definition : The first byte represents XX, and the second byte represents YY | 2 | HEX | 56 | 05 | **R** |
| version number of displayed | version number of displayed : XX.YYData definition : The first byte represents XX, and the second byte represents YY | 2 | HEX | 56 | 06 | **R** |
| The automatic exit time of the Extends display | The automatic exit time of the Extends display, unit : second.Range : 0 - 255, default 60.Note: 0 means will not automatically quit, only manually operated exit. | 2 | UINT | 56 | 0B | **R/W** |
| Rated voltage of the system | Rated voltage of the system, default:230V。Represents the voltage that is connected to the voltage measuring interface. If a voltage transformer is used, it represents the voltage on the secondary side of the voltage transformer. | 4 | ULONG | 56 | 0C | **R/W** |
| Rated current of the system | Rated current of the system, default:5A。Represents the current that is connected to the current measuring interface. If a current transformer is used, it represents the current on the secondary side of the current transformer. | 4 | ULONG | 56 | 0E | **R/W** |

**Example:**

1, Read Input Registers

Example: Read “Phase 1 line to neutral volts”

Request: 01 04 00 00 00 02 71 CB

Where, 01 = Meter address

04 = Function code

00 = High byte of registers starting address

00 = Low byte of registers starting address

00 = High byte of registers number

02 = Low byte of registers number

71 = CRC Low

CB = CRC High

Response: 01 04 04 43 66 33 34 1B 38

Where, 01 = Meter address

04 = Function code

04= Byte count

43 = Data, (High Word, High Byte)

66 = Data, (High Word, Low Byte)

33 = Data, (Low Word, High Byte)

34 = Data, (Low Word, Low Byte)

1B = CRC Low

38 = CRC High

Note: 43 66 33 34(Hex) = 230.2 (Floating point)

Example: Read “Phase 1 line to neutral volts” (ULONG Format)

Request: 01 03 00 00 00 02 C4 B0

Where, 01 = Meter address

03 = Function code

00 = High byte of registers starting address

00 = Low byte of registers starting address

00 = High byte of registers number

02 = Low byte of registers number

C4 = CRC Low

B0 = CRC High

Response: 01 03 04 00 00 61 AA 53 DC

Where, 01 = Meter address

04 = Function code

04= Byte count

00 = Data, (High Word, High Byte)

00 = Data, (High Word, Low Byte)

61 = Data, (Low Word, High Byte)

AA = Data, (Low Word, Low Byte)

53 = CRC Low

DC = CRC High

Note: 00 00 61 AA(Hex) = 25002(ULONG) \* 0.01V = 250.02V

2, Read Holding Registers

Example: Read “Slide time”

Request: 01 03 50 03 00 01 65 0A

Where, 01 = Meter address

03 = Function code

50 = High byte of registers starting address

03 = Low byte of registers starting address

00 = High byte of registers number

01 = Low byte of registers number

65 = CRC Low

0A = CRC High

Response: 01 03 02 00 05 78 47

Where, 01 = Meter address

03 = Function code

04= Byte Count

00 = Data, (High Byte)

05 = Data, (Low Byte)

78 = CRC Low

47 = CRC High

Note: 00 05 (Hex) = 5 (UINT)

3, Write Holding Registers

Example: Write “Demand Period” = 30

Request: 01 10 50 02 00 01 02 00 1E 77 BF

Where, 01 = Meter address

10 = Function code

50 = High byte of registers starting address

02 = Low byte of registers starting address

00 = High byte of registers number

01 = Low byte of registers number

02 = Byte Count

00 = Data, (High Byte)

1E = Data, (Low Byte)

77 = CRC Low

BF = CRC High

Note: 00 1E (Hex) = 30(UINT)

Response: 01 10 50 02 00 01 B1 09

Where, 01 = Meter address

10 = Function code

50 = High byte of registers starting address

02 = Low byte of registers starting address

00 = High byte of registers number

01 = Low byte of registers number

B1 = CRC Low

09 = CRC High

4, Read Input Status

Example: Read DI1~4 status

Request: 01 02 00 00 00 04 79 C9

Where, 01 = Meter address

02 = Function code

00 = High byte of registers starting address

00 = Low byte of registers starting address

00 = High byte of read DI number

04 = Low byte of read DI number

79 = CRC Low

C9 = CRC High

Response: 01 02 01 03 E1 89

Where, 01 = Meter address

02 = Function code

01 = Byte Count

03 =Data,( DI status)

E1 = CRC Low

89 = CRC High

Note: Data=0x03 = 0000 0011 (Binary Value).

Bit 0 refers to the status of DI-1. The value is 1, which means DI-1 is on.

Bit 1 refers to the status of DI-2. The value is 1, which means DI-2 is on

Bit 2 refers to the status of DI-3. The value is 0, which means DI-3 is off

Bit 3 refers to the status of DI-4. The value is 0, which means DI-4 is off

5, Read Coil Status

Example: Read DO1~2 status

Request: 01 01 00 00 00 02 BD CB

Where, 01 = Meter address

01 = Function code

00 = High byte of registers starting address

00 = Low byte of registers starting address

00 = High byte of read DO number

02 = Low byte of read DO number

BD = CRC Low

CB = CRC High

Response: 01 01 01 02 D0 49

Where, 01 = Meter address

01 = Function code

01 = Byte Count

02 =Data,( DO status)

D0 = CRC Low

49 = CRC High

Note: Data=0x02 = 0000 0010 (Binary Value).

Bit 0 refers to DO-1 status. The value is 0, which means DO-1 is open

Bit 1 refers to DO-2 status. The value is 1, which means DO-1 is close

6, Force Single Coil

Example: Control DO1=ON

Request: 01 05 00 00 FF 00 8C 3A

Where, 01 = Meter address

05 = Function code

00 = High byte of registers starting address

00 = Low byte of registers starting address

FF = High byte of DO control data

00 = Low byte of DO control data

8C = CRC Low

3A = CRC High

Response: 01 05 00 00 FF 00 8C 3A

Where, 01 = Meter address

05 = Function code

00 = High byte of registers starting address

00 = Low byte of registers starting address

FF = High byte of DO control data

00 = Low byte of DO control data

8C = CRC Low

3A = CRC High