# Modbus Register Map and Operations

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| Holding Registers (03H/06H) |
| |  |  |  |  |  | | --- | --- | --- | --- | --- | | Reg Addr (hex) | PLC Addr | Name | R/W | Description & Notes | | 0x0000 | 40001 | Slave Address | R/W | Valid 1–255; 0 = broadcast (all slaves). Use 0x10 for multi-write. | | 0x0001 | 40002 | Operating Mode | R/W | Mode select: 0=CV,1=CC,2=CW,3=CR,4=CV+CC,5=Dynamic,10=List; 11–15 for list parameters. | | 0x0002 | 40003 | Test Enable Switch | R/W | 0=OFF,1=ON; in dynamic/list writes cycle period (ms). | | 0x0003 | 40004 | Set Voltage (CV) | R/W | Target voltage (V×100). | | 0x0004 | 40005 | Set Current (CC) | R/W | Target current (A×1000). | | 0x0005 | 40006 | Set Power (CW) | R/W | Target power (W×100). | | 0x0006 | 40007 | Set Resistance (CR) | R/W | Target resistance (Ω×10). | | 0x0007 | 40008 | Auxiliary Functions | R/W | 1=buzzer,2=fan,10=reset Wh,70=switch probe,120=save settings. | | 0x0008 | 40009 | Baud Rate | R/W | RS-485 ≤19200bps; TTL unlimited. | | 0x0009 | 40010 | Voltage Cal Offset | R/W | Offset ×100; save with 120 to persist. | | 0x000A | 40011 | Current Cal Offset | R/W | Offset ×1000; save with 120 to persist. | | 0x000B | 40012 | Power Cal Offset | R/W | Offset ×100; save with 120 to persist. | | 0x000C | 40013 | Energy Cal Offset | R/W | Offset ×1; save with 120 to persist. | |

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| Input Registers (04H) |
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| Write Operations and Effects |
| |  |  |  |  | | --- | --- | --- | --- | | Operation | Reg Addr | Data (hex) | Effect | | Set Slave Address → 10 | 0x0000 | 00 0A | Change device Modbus ID to 2 and it saved instatntly | | Mode → CV | 0x0001 | 00 00 | Switch to Constant-Voltage mode | | Mode → CC | 0x0001 | 00 01 | Switch to Constant-Current mode | | Mode → CW | 0x0001 | 00 02 | Switch to Constant-Power mode | | Mode → CR | 0x0001 | 00 03 | Switch to Constant-Resistance mode | | Mode → CV+CC | 0x0001 | 00 04 | Enable hybrid CV+CC mode | | Mode → Dynamic Test | 0x0001 | 00 05 | Enter dynamic sequence mode | | Mode → List Test | 0x0001 | 00 0A | Enter list-test sequence mode | | Test OFF | 0x0002 | 00 00 | Disable running test sequence | | Test ON, 200 ms | 0x0002 | 00 C8 | Enable test cycle with 200 ms period | | Set CV Voltage → 12.34 V | 0x0003 | 04 D2 | Program output voltage to 12.34 V | | Set CC Current → 1.234 A | 0x0004 | 04 D2 | Program output current to 1.234 A | | Set CW Power → 56.78 W | 0x0005 | 16 2E | Program output power to 56.78 W | | Set CR Resistance → 47.0 Ω | 0x0006 | 01 D6 | Program output resistance to 47.0 Ω | | Enable Fan | 0x0007 | 00 01 | Turn on cooling fan | | Enable Buzzer | 0x0007 | 00 02 | Trigger buzzer alert | | Reset Energy Counter | 0x0007 | 00 0A | Clear the Wh counter | | Switch Temp Probe | 0x0007 | 00 46 | Toggle between temp sensors | | Save Settings to NVM | 0x0007 | 00 78 | Commit settings to non-volatile memory | | Set Baud Rate → 57600 | 0x0008 | E1 00 | Set serial speed to 57600 bps | | Voltage Cal +0.05 V | 0x0009 | 00 05 | Add +0.05 V to voltage readings | | Current Cal +0.010 A | 0x000A | 00 0A | Add +0.010 A to current readings | | Power Cal +0.50 W | 0x000B | 00 32 | Add +0.50 W to power readings | | Energy Cal +1 Wh | 0x000C | 00 01 | Add +1 Wh to energy counter | |