The inverter communicates via MODBUS RTU over RS485 with the following specifications:

1. Communication Parameters

• Baud Rate: 9600 bps

• Data Bits: 8

• Parity: None

• Stop Bits: 1

• Function Codes Supported:

• 0x03 – Read Holding Registers (for reading inverter data)

• 0x10 – Write Multiple Holding Registers (for setting inverter parameters)

• 0x05 – Write Single Coil (for control actions like turning on/off)

• 0x06 – Write Single Register (for setting specific values)

2. Key MODBUS Commands

• Read Inverter Status & Data (0x03 Function Code)

• Register 0–59 → Read inverter identification and settings

• Register 500–2000 → Read detailed operational data

• Example: Read inverter output voltage, power, battery state, etc.

• Control Inverter (0x10 Function Code)

• Register 60–499 → Write configuration and control settings

• Example:

• Register 60 – Remote Lock (0 = ON, 2 = OFF)

• Register 80 – Switch inverter ON/OFF (0 = OFF, 1 = ON)

• Register 77 – Active Power Regulation

• Battery & Power Control

• Register 108 – Set max charging current (0–185A)

• Register 109 – Set max discharging current (0–185A)

• Register 118 – Battery voltage shutdown limit

• Register 119 – Battery restart voltage

• Factory Reset & Debugging

• Register 81 – Factory reset enable (0 = disable, 1 = enable)

• Register 93 – Factory test control (Enable/Disable internal features)

3. Error Handling & Response

• Errors return with 0x80 + Function Code

• 0x01 – Illegal Function

• 0x02 – Illegal Data Address

• 0x03 – Illegal Data Value

• 0x04 – Device Failure

4. CRC-16 MODBUS Checksum

Each MODBUS message requires a 16-bit CRC checksum, with low byte first, high byte second.