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//_250226_B_Solax_AssignAddress
// Send address assignment to inverter and
// receive an acknowledgement

// Hardware connections
// Arduino  MAX 485                        SOLAX
// 5        DE  Data Enable   (DEPin)
// 4        RE  Receive Enable(REPin)
// 3        RO  Receive Out   (SSerialRX)
// 8        DI  Data In       (SSerialTX)
// 3.3V     VCC               (5V also allowed)
// GND      GND
//          RS485 A                        RJ45 4
//          RS485 B                        RJ45 5

#include <SoftwareSerial.h>
#define SSerialRX 3    // Receive Out
#define REPin 4        // Receive Enable
#define DEPin 5        // Data Enable
#define SSerialTX 6    // Data In
#define RS485Receive LOW
#define RS485Transmit HIGH

SoftwareSerial RS485Serial(SSerialRX, SSerialTX);
byte InByte = 0;
byte byteInput[12]; // the conformation send by the inverter is 12 bytes long
//                  Header   ,AccesPoint, Solax X1 ,Contr, Func, Length,
byte AssignAddress[] = {0xAA,0x55,0x00,0x00, 0x00,0x00, 0x10,  0x01, 0x0F,
    0x31,0x32,0x33,0x34,0x35,0x36,0x37,0x37,0x36,0x35,0x34,0x33,0x32,0x31, 0x0A,0x04,0x01};
// Serialnumber data 0 ------------------------------------------------>13 ,address, checksum
bool DataReceived;

void setup()
{
  Serial.begin(9600);
  Serial.println("_250226_B_Solax_AssignAddress");
  Serial.println();
  pinMode(REPin, OUTPUT);
  pinMode(DEPin, OUTPUT);
  pinMode(SSerialRX, INPUT);
  pinMode(SSerialTX, OUTPUT);
  digitalWrite(REPin, RS485Receive);
  digitalWrite(DEPin, RS485Receive);
  RS485Serial.begin(9600); // set data rate
  DataReceived = false;
}

void GetConformation()
{ // reads the datasstream from the Solax
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  int index = 0;
  while(RS485Serial.available())
  {
    InByte = (byte)RS485Serial.read();
    byteInput[index] = InByte;
    index++;
  }
  for(int i=0; i<12; i++)
  {
    Serial.println();
    Serial.print(i);
    Serial.print("   Dec:  ");
    Serial.print(byteInput[i]);
    Serial.print("   HEX:   ");
    Serial.print(byteInput[i],HEX);
  }
}

void loop()
{
  if(DataReceived == false)
  {
    // * * * SEND A REQUEST TO THE INVERTER * * *
    digitalWrite(REPin, RS485Transmit);
    digitalWrite(DEPin, RS485Transmit);
    RS485Serial.write(AssignAddress,sizeof(AssignAddress));

    // * * * SWITCH TO RECEIVE MODE * * *
    digitalWrite(REPin, RS485Receive);
    digitalWrite(DEPin, RS485Receive);
    if(RS485Serial.available())
    {
      GetConformation();
      Serial.println();
      DataReceived = true;
    }
  }
  delay(10000);
}
```