



STALON Development Power Line Modem (PLM-010)

User's Manual

1. Introduction

STALON development PLM S-010 is a specially designed development node for PLC meter. The bottom part of the PCB with "High Voltage" sign may have high voltage. Please pay attention to the personnel and the equipment safety in the use process.

The development PLM has following components:

- 2 UARTs supporting RS232 interface, the highest baud rate is 115200bps;
- 3 opto-isolated IOs, 5 TTL compatible digital IOs;
- 1 external SPI interface which can be configured as GPIOs;

2. PLM Connection

There are two rows of connectors. The top row has 6 connectors which can be used depending on the different positions of PCB.

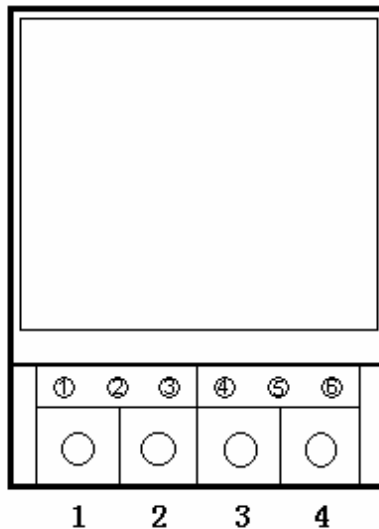
The bottom row has 4 connectors, where:

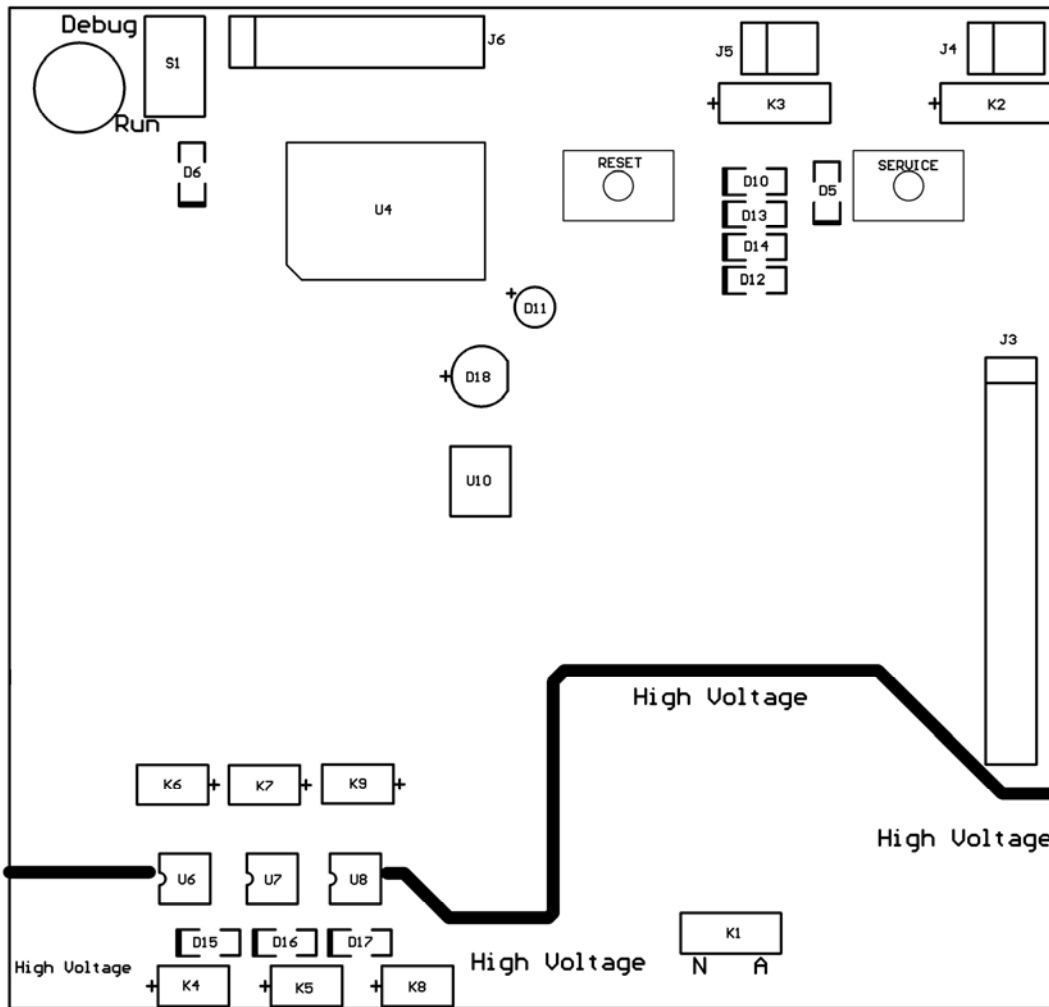
Connector 1: Active in

Connector 2: Active out

Connector 3: Neutral in

Connector 4: Neutral out





3. Function Description

1. D6: Power LED.
2. D5: SERVICE LED, it is on when PA0 is low.
3. D10: Transmitting LED.
4. D12: Receiving LED.
5. D13: Primary channel active LED
6. D14: Secondary channel active LED
7. D11: Customer defined function LED, it is on when PA1 is low.
8. Boot select switch S1: When it is switched to “Debug” position, STALON boots from ROM and code can be downloaded to STALON internal Flash through UART1 at baud rate 57600bps. When it is switched to “Run” position, STALON runs the code in the Flash.
9. RESET button: When this button is pressed, STALON is reset.
10. SERVICE button: This button is connected to PA0. When it is pressed, PA0 is low



and SERVICE LED is on.

11. Relay control interface: The relay is a magnetic latching relay. During idle, PC2 and PC3 are both high. When there is a more than 10ms low level pulse on PC2, the relay is closed. When there is a more than 10ms low level pulse on PC3, the relay is open.
12. RS-232 interface: The socket J4 is connected to STALON UART1 through RS-232 receiver. J5 is connected to STALON UART2 through RS-232 receiver.
13. Connectors on the PCB (all the connectors can be connected to the outside top connector row.)
 - a. Opto-isolation digital input connectors K4 (PC0), K5 (PC1), K8 (PD0):
The connectors with “+” sign are the positive inputs. When high level voltage is provided, the related LED is on. STALON IO PC0, PC1 and PD0 are active high, where R40 and R43 are zero ohm resistors used to connect the three negative inputs. These resistors can be removed if these three inputs are used independently.
 - b. External opto-isolation input connectors K6 (PC0), K7 (PC1), K9 (PD0):
Usually digital meters come with opto-isolated pulse output signals which can be directly connected to these three connectors.
 - c. Extension digital connector J6:

J6 Pin	Description
1	Digital power 3.3V
2	Digital power 3.3V
3	Float
4	PE7/ SPI SS
5	PE6/ SPI SCK
6	PE5/SPI MOSI
7	PE4/ SPI MISO
8	PE3
9	Digital ground
10	Digital ground

- d. Serial COM output connector K2 (UART1), K3 (UART2):
These connectors are isolated by RS-232 receiver circuit and meet RS-232 interface voltage standard.
 - e. Infrared communication function:
D18 is IR transmitter. The IR signal is transmitted from ASK2 output. U10 is IR receiver. IR carrier frequency is 38KHz. Received signal is fed to RD2 of UART2.