VIGOR VS Series Communication Exp. Card Brief Introduction

Forward

The VS Series PLC Main Unit has a built-in USB interface (mini USB connector) programming communication port to link and communicate with programming software.

The VS Series PLC Main Unit also has a built-in multi-function RS-485 interface communication port that is named the CP1, could support various types of communication applications. Therefore, linking with plenty of external equipments is satisfiable via this port. If more communication ports are required, the extra communication Expansion (CP) card is available to get more communication ports. In addition, the expanded communication ports are all multi-functional and able respectively to select and perform an application from numerous communication modes.

The VS Series PLC Main Unit not only has a built-in CP1 communication port, but also at the EC1 Expansion Card Socket is available to install a communication expansion card. Therefore, at the VS1 series, the CP2 is expandable; at the VS2, VSM and VS3 series, the CP2 and CP3 are expandable. Moreover, the VS3 can use the EC3 Expansion Card Socket to expand the CP4 and CP5.
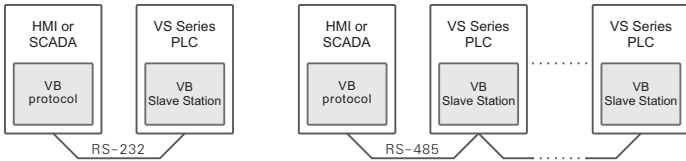
Communication Application Mode

- **VS Computer Link Slave (VS Slave Station)**
  When the communication port of VS Series PLC is executing the application type as "VS Computer Link Slave", a HMI or SCADA is able to access data in the VS PLC(s) via the "VS Computer Link protocol" (VS protocol).
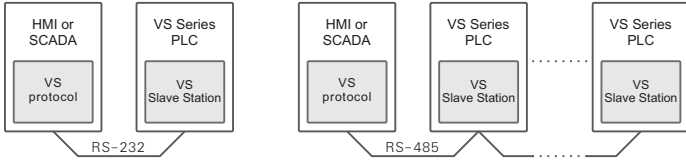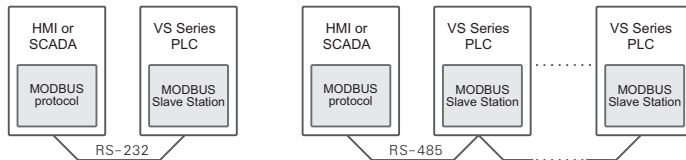

- **VS Computer Link Master (VS Master Station)**
  When the communication port of VS Series PLC is executing the application type as "VS Computer Link Master", it works with the LINK instruction and LINK communication table to execute communication procedure. This Master Station communicates with VS Slave Station(s) via the "VS Computer Link protocol" (VS protocol).
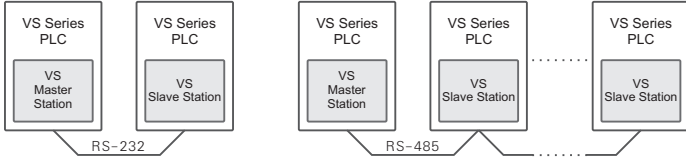

- **VB Computer Link Slave (VB Slave Station)**
  When the communication port of VS Series PLC is executing the application type as "VB Computer Link Slave", the HMI or SCADA is able to access data in the VS PLC(s) via the "VB Computer Link protocol" (VB protocol).


- **MODBUS Slave**
  When the communication port of VS Series PLC is executing the application type as "MODBUS Slave", a HMI or SCADA is able to access data in the VS series PLC(s) via the "MODBUS protocol".


- **MODBUS Master**
  When the communication port of VS Series PLC is executing the application type as "MODBUS Master", it works with the MBUS instruction and MBUS communication table to execute communication procedure. This Master station can communicate with various peripheral equipments those all use the MODBUS protocol (such as the inverter, temperature controller, power meter...) via the standard "MODBUS protocol".
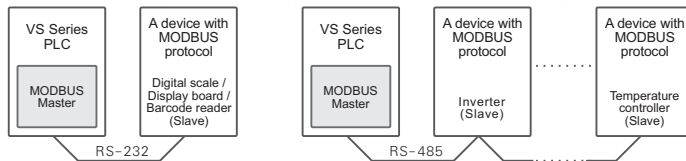

- **CPU Link**
  In order to achieve distributed control, VS Series PLCs use this type of application to have real-time data sharing among PLCs. When the connected VS Series PLCs are executing this type of application, one of them should use the CPUL instruction and CPUL communication table to have real-time data sharing via the dedicated communication protocol.
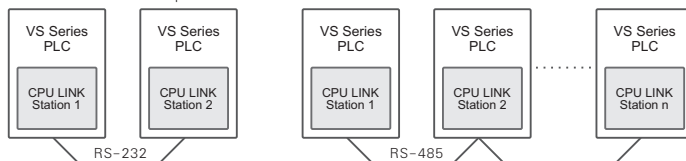
- **Non Protocol Communication**
  When the communication port of VS Series PLC is executing the application type as "Non Protocol", non standardization communication protocol is executed at this port. The customized communication process needs to be completed by PLC's program, through the RS instruction to make receiving and sending communication operation thus communication task is completed.
  This type of application is usually used to link with other peripherals in market, such as temperature controller, inverter, barcode reader...
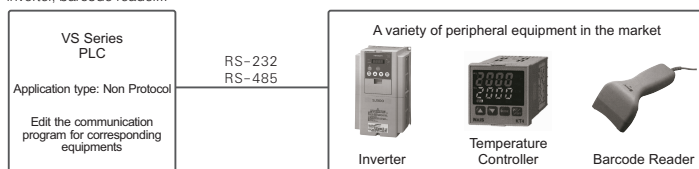

Component Designation
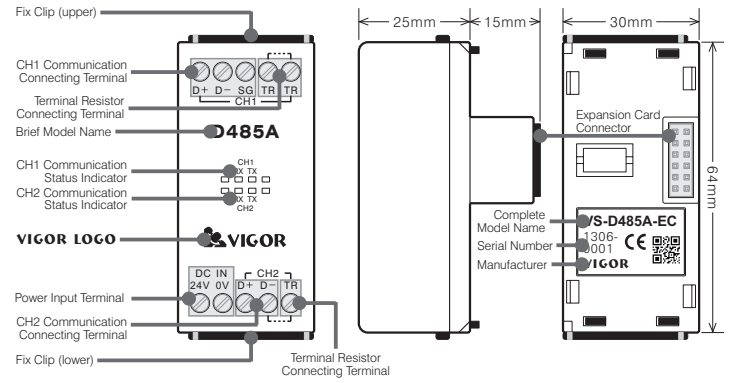
Specification

Item	VS-485-EC	VS-D485-EC	VS-485A-EC	VS-D485A-EC	VS-D52A-EC	VS-D232-EC
Comm. Interference	RS-485	RS-485×2	RS-485	RS-485×2	RS-485	RS-232C	RS-232C×2
Isolation Method	No Isolation	No Isolation	Magnetic-coupler isolation		No Isolation	
LED Indicator	TX (transmitting) and RX (receiving) indicators					
Distance	50 Meters	50 Meters	1000 Meters	1000 Meters	15 Meters	
Comm. Method	Half-duplex	Half-duplex	Half-duplex	Half-duplex	Half-duplex	Half-duplex
Baud Rate	By the setting of installed project (up to 115,200 bps.)					
Connection Method	Fixed 5mm Screw-Clamp terminal block					
Power Consumption※	DC5V 50mA	DC5V 100mA	DC24V 25mA	DC24V 50mA	DC24V 25mA / DC5V 25mA	DC5V 25mA
Terminal Resistor	120Ω, enabled when two TR terminals are short-connected				—	
Parameter Configuration	By the installed project (via the "COM Port setting" page in the programming software)					

※ DC 5V from PLC Main Unit; DC 24V from the external DC input terminal

Terminal Layout
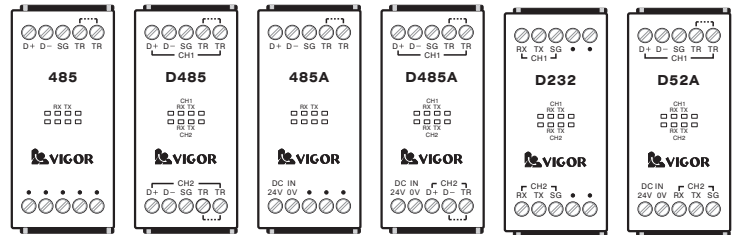
Expansion Card Installation Guide

- Every VS Series Expansion Card has 2 black fix clips (upper & lower), those have symbols and grooves.

  Use a slot head screwdriver to slide the fix clips.

  LOCK ◄► OPEN

  Fix clip moves left to fasten card on PLC. / Fix clip moves right to loosen card from PLC.

- To install an expansion card, firstly, slide both the fix clips to the right, and insert the card to EC Socket on the Main Unit, then slide the fix clips to the left to fix the card.

- To remove an expansion card from the Main Unit, must slide both the fix clips to the right first, then pull the card from the Main Unit out.