

# VIGOR VS系列PLC通訊擴充卡

## 前言

VS系列PLC主機內建USB界面(mini USB連接器)編程通訊埠，用來與編程裝置連結通訊。

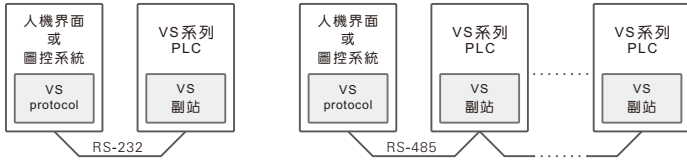
VS系列PLC主機也內建RS-485界面CP1多功能通訊埠，支援多種通訊應用類型，可連結外界各種設備，共同完成控制需求。如果，需要更多的通訊埠，則可安裝通訊擴充卡來增加通訊埠的數目。而且，擴充的通訊埠皆為多功能通訊埠，可執行各種應用。

VS系列PLC主機除內建CP1通訊埠外，可透過EC1擴充槽安裝通訊擴充卡，VS全系列可擴充CP2及CP3(VS1韌體版本V1.6以上支援CP3)。另外，VS3還可透過EC3擴充槽擴充CP4及CP5。

## 通訊應用類型

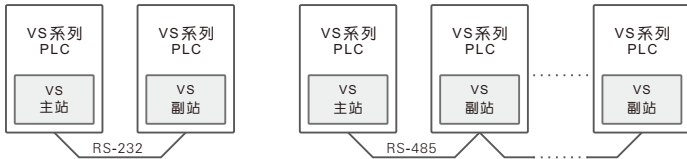
### ● VS Computer Link Slave(簡稱VS副站)

VS系列PLC的通訊埠執行"VS Computer Link Slave"應用類型時，人機界面(HMI)或圖控系統(SCADA)可以透過"VS Computer Link protocol"(簡稱VS protocol)存取VS-PLC的資料。



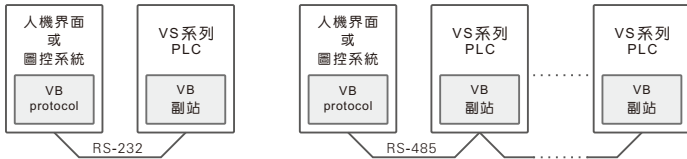
### ● VS Computer Link Master(簡稱VS主站)

VS系列PLC的通訊埠執行"VS Computer Link Master"應用類型時，將配合LINK指令及通訊表格執行通訊程序。本主站透過"VS Computer Link protocol"(簡稱VS protocol)與VS副站連結通訊。



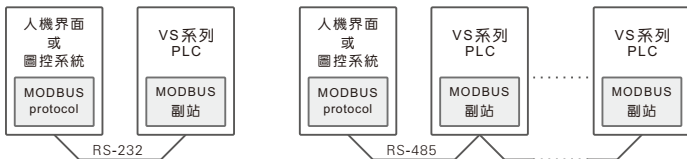
### ● VB Computer Link Slave(簡稱VB副站)

VS系列PLC的通訊埠執行"VB Computer Link Slave"應用類型時，人機界面(HMI)或圖控系統(SCADA)可以透過"VB Computer Link protocol"(簡稱VB protocol)存取VS-PLC的資料。



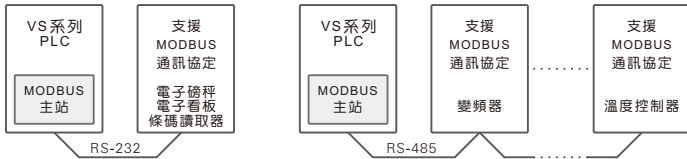
### ● MODBUS Slave

VS系列PLC的通訊埠執行"MODBUS Slave"應用類型時，人機界面(HMI)或圖控系統(SCADA)可以透過"MODBUS protocol"存取VS-PLC的資料。



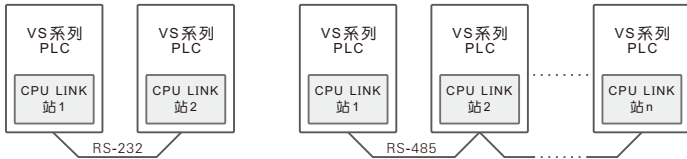
### ● MODBUS Master

VS系列PLC執行"MODBUS Master"應用類型時，將配合MBUS指令及MBUS通訊表格執行通訊程序。本主站透過"MODBUS protocol"與各種具備MODBUS通訊協定的週邊設備(如變頻器、溫度控制器、電力表等)進行通訊。



### ● CPU Link

VS系列PLC利用此應用類型進行PLC間的資料即時共享，以達到分散式控制之目的。VS系列PLC執行此應用類型時，配合CPUL指令及CPUL通訊表格，透過專用通訊協定進行PLC間的資料即時共享。

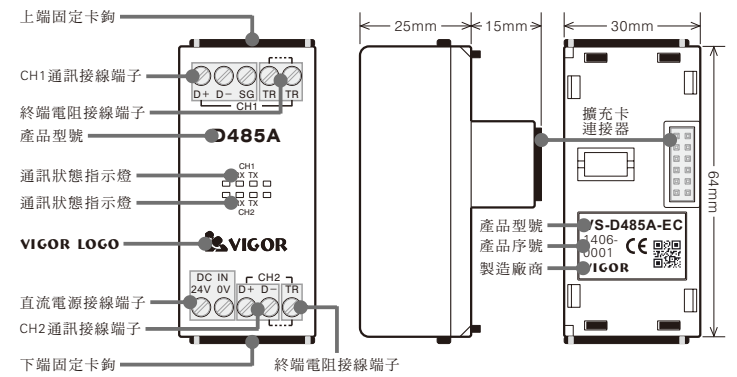


### ● Non Protocol(無通訊協定)通訊

VS系列PLC的通訊埠執行"Non protocol"應用類型時，PLC不執行任何特定的通訊協定。所有通訊程序均由使用者自訂，並以PLC程式完成。再利用RS指令收送通訊資料，完成通訊作業。此應用類型通常用來與市售溫度控制器、變頻器及條碼機等週邊設備取得通訊連結。



## 各部位名稱

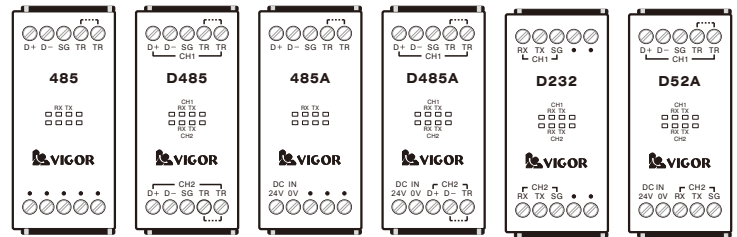


## 規格

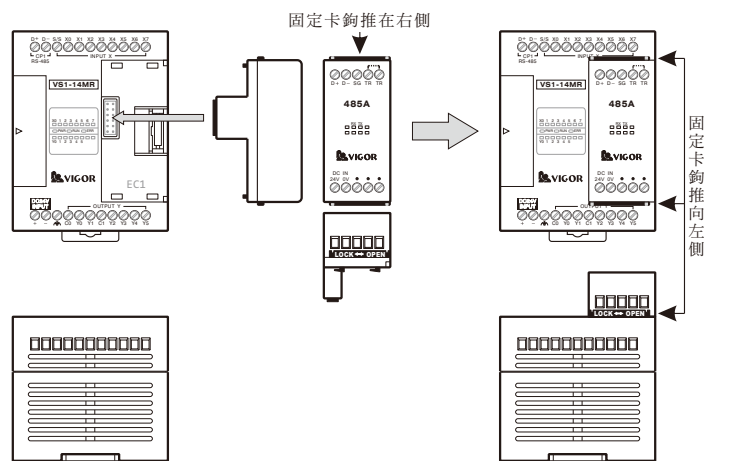
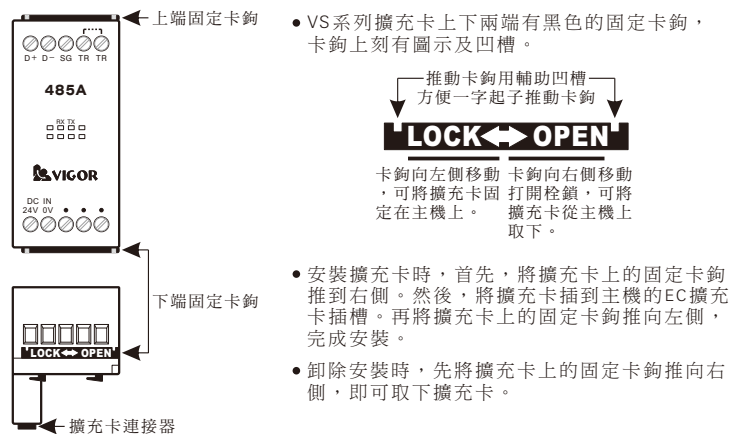
項目	485	D485	485A	D485A	D52A	232	D232
通訊界面	RS-485	RS-485×2	RS-485	RS-485×2	RS-485	RS-232	RS-232×2
隔離方式	無隔離	無隔離	磁耦合器隔離		無隔離		
LED指示燈	RX接收、TX傳送指示						
通訊距離	50公尺	50公尺	1000公尺	1000公尺	15公尺		
通訊方式	半雙工	半雙工	半雙工	半雙工	半雙工	半雙工	半雙工
通訊速率	依系統設定(最高可支援至115,200 bps)						
接線方式	5mm固定式歐規端子台						
電源供給※	DC5V 50mA	DC5V 100mA	DC24V 25mA	DC24V 50mA	DC24V 25mA DC5V 25mA	DC5V 25mA	DC5V 25mA
終端電阻	120Ω，兩個TR端子短接時啟用					—	
參數設定	由編程裝置的"系統設定"功能進行設定						

※DC 5V由PLC內部供給電源，DC 24V由端子台供給電源。

## 端子排列



## 擴充卡安裝方法



# 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.

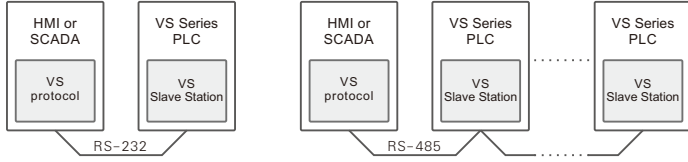
The VS Series PLC Main Unit also has a built-in multi-function RS-485 interface communication port that is named the CP1, could support various types of communication applications. Therefore, linking with plenty of external equipments is satisfiable via this port. If more communication ports are required, 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, this card at the EC1 could provide the CP2 and CP3.

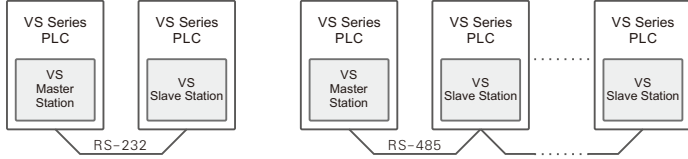
Moreover, the VS3 can use the EC3 Expansion Card Socket to expand the CP4 and CP5.

## Communication Application Mode

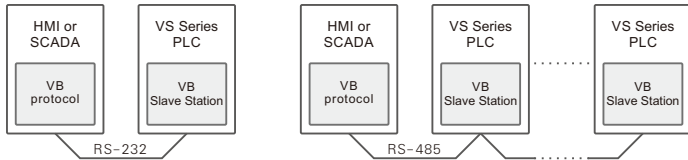
- VS Computer Link Slave (VS Slave Station)**  
When the communication port of VS Series PLC is executing the application type as "VS Computer Link Slave", a HMI or SCADA is able to access data in the VS PLC(s) via the "VS Computer Link protocol" (VS protocol).



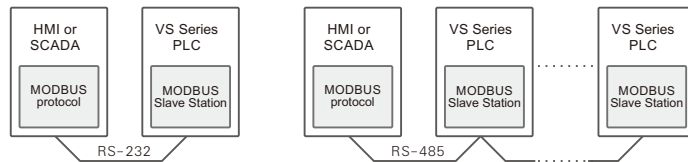
- VS Computer Link Master (VS Master Station)**  
When the communication port of VS Series PLC is executing the application type as "VS Computer Link Master", it works with the LINK instruction and LINK communication table to execute communication procedure. This Master Station communicates with VS Slave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



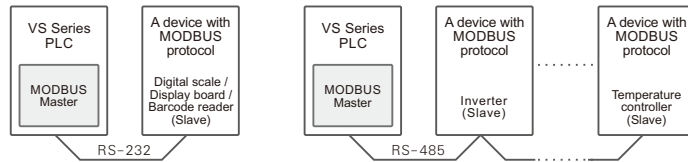
- VB Computer Link Slave (VB Slave Station)**  
When the communication port of VS Series PLC is executing the application type as "VB Computer Link Slave", the HMI or SCADA is able to access data in the VS PLC(s) via the "VB Computer Link protocol" (VB protocol).



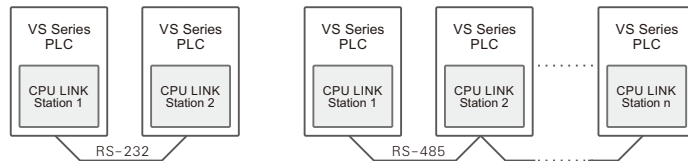
- MODBUS Slave**  
When the communication port of VS Series PLC is executing the application type as "MODBUS Slave", a HMI or SCADA is able to access data in the VS series PLC(s) via the "MODBUS protocol".



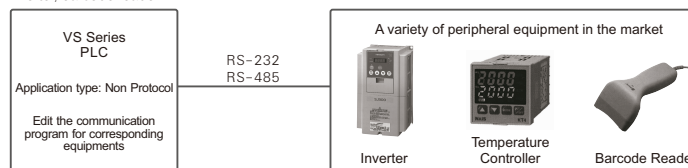
- MODBUS Master**  
When the communication port of VS Series PLC is executing the application type as "MODBUS Master", it works with the MBUS instruction and MBUS communication table to execute communication procedure. This Master station can communicate with various peripheral equipments those all use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



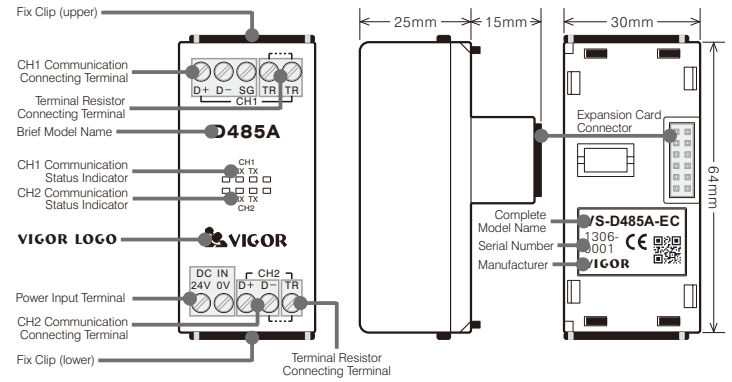
- CPU Link**  
In order to achieve distributed control, VS Series PLCs use this type of application to have real-time data sharing among PLCs. When the connected VS Series PLCs are executing this type of application, one of them should use the CPUL instruction and CPUL communication table to have real-time 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 this 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

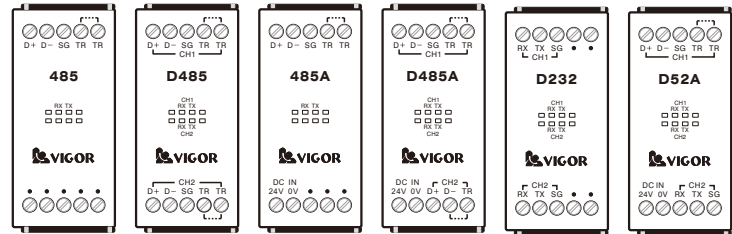


## Specification

Item	485	D485	485A	D485A	D52A	232	D232
Comm. Interference	RS-485	RS-485×2	RS-485	RS-485×2	RS-485	RS-232	RS-232×2
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	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)						

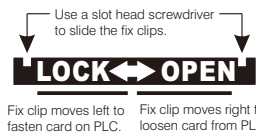
※ DC 5V from PLC Main Unit; DC 24V from the external DC input terminal

## Terminal Layout



## Expansion Card Installation Guide

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



- To install an expansion card from the Main Unit, 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.

