

# Technical Document

Revision 0.0

November, 2008

## *PLC Connection Guide*

### **TN504D**

Communication settings between

**SAIA PCD3.M5540/ PCD3.M3120 and PanelMaster**

**Driver Name: C31003**



**Designed to be Outstanding**

#### ©Revision Record

Revision	Date	Content	Owner

## Preface

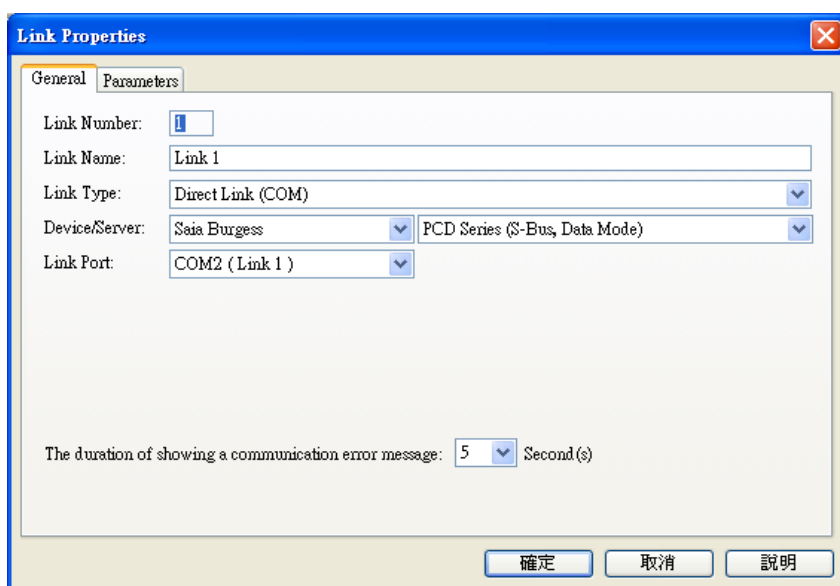
This tech note introduces how to connect **SAIA PCD3** series PLC with PanelMaster HMI.

**SAIA PCD PLC : We used the SAIA PCD3.M5540 & PCD3.M3120 to test.**

**PanelMaster Version: Ver 1.1.53**

### 1. HMI Setting:

#### 1.1 Communication Setting:



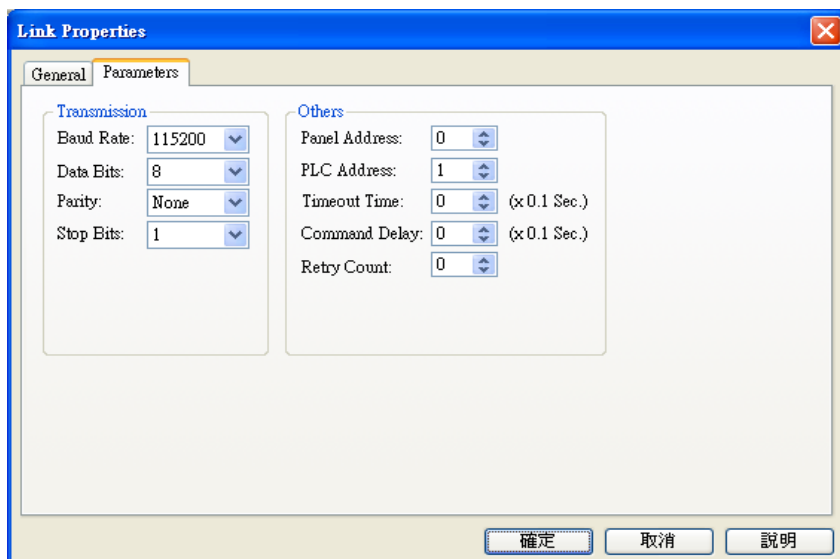
The screenshot shows the 'Link Properties' dialog box with the 'General' tab selected. The fields are as follows:

Field	Value
Link Number:	1
Link Name:	Link 1
Link Type:	Direct Link (COM)
Device/Server:	Saia Burgess
PCD Series (\$-Bus, Data Mode)	PCD Series (\$-Bus, Data Mode)
Link Port:	COM2 (Link 1)
The duration of showing a communication error message:	5 Second(s)

Buttons at the bottom: 確定 (OK), 取消 (Cancel), 説明 (Help).

#### 1.2 Communication Parameter Setting:

(Please make sure this setting the same as PLC parameter setting)



The screenshot shows the 'Link Properties' dialog box with the 'Parameters' tab selected. The fields are organized into two sections:

Section	Field	Value
Transmission	Baud Rate:	115200
	Data Bits:	8
	Parity:	None
	Stop Bits:	1
	Panel Address:	0
Others	PLC Address:	1
	Timeout Time:	0 (x 0.1 Sec.)
	Command Delay:	0 (x 0.1 Sec.)
	Retry Count:	0

Buttons at the bottom: 確定 (OK), 取消 (Cancel), 説明 (Help).

### 1.3 PLC Memory Address (Word Devices):

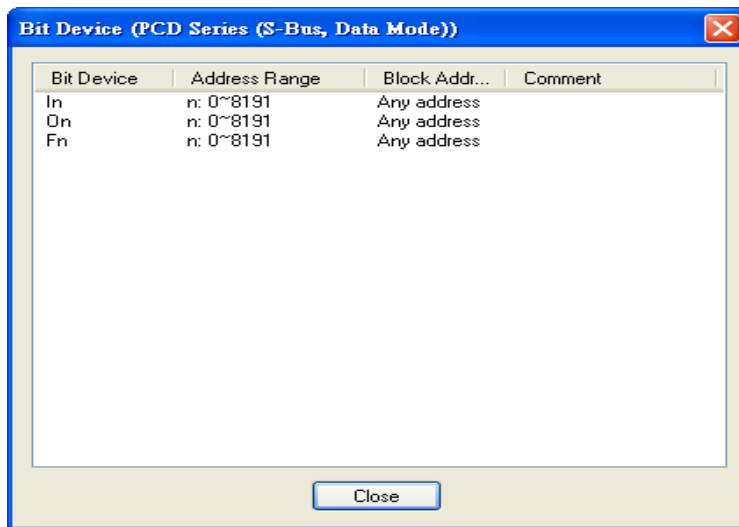
Word Device (PCD Series (S-Bus, Data Mode))			
Word Device	Address Range	Size	Comment
Rn	n: 0~16383	32 bits	(old PCD types are 0..4095)
Cn	n: 0~1599	32 bits	
Tn	n: 0~1599	32 bits	
DBm.n	m: 0~3999; n: 0~383	32 bits	DBm.n
DBm.n	m: 4000~7999; n: 0~16383	32 bits	DBm.n
RTIME n	n: 0~7	Word	Read only, RTIME0 available as PLC clock
RFn	n: 0~16383	32 bits	Floating point
DBFm.n	m: 0~3999; n: 0~383	32 bits	Floating point
DBFm.n	m: 4000~7999; n: 0~16383	32 bits	Floating point

Note 1: Because the floating point format of SAIS PLC is not a standard format, please select RFn & DBFm.n for the floating point device using.

Note 2: RTIME is **read only** and the format is BCD/Unsigned Binary, please refer to below address information:

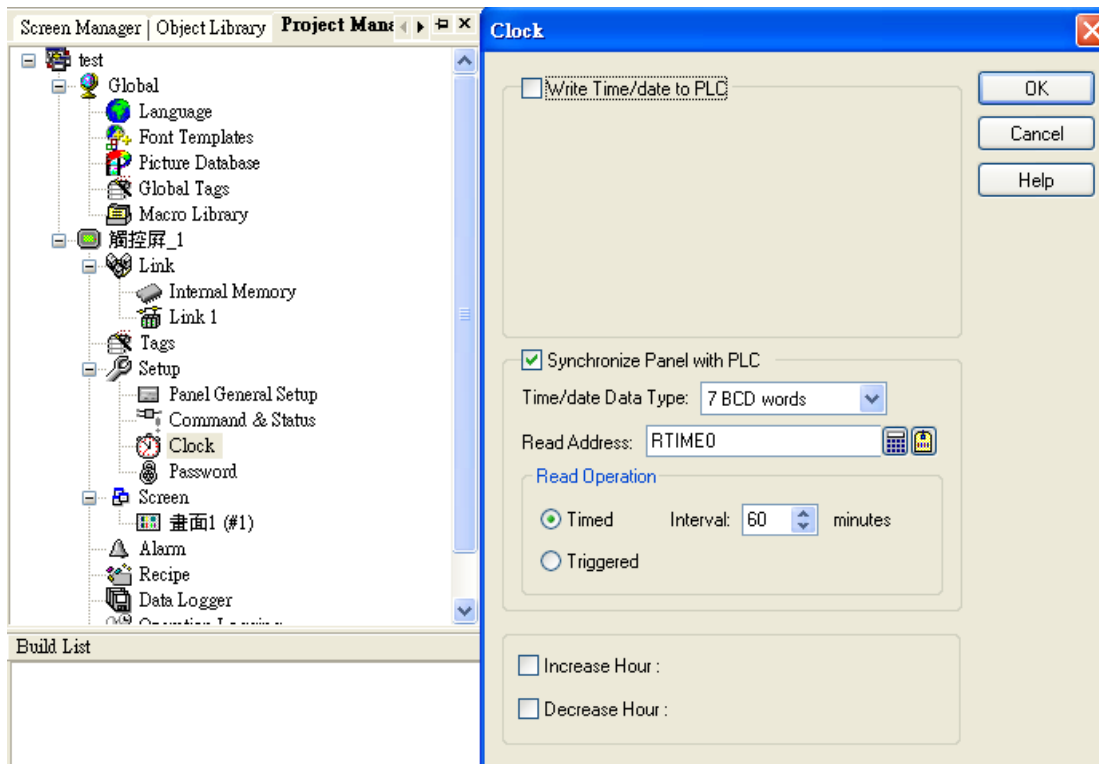
Address	Unit	Range
RTIME0	Second	0 - 59
RTIME1	Minute	0 - 59
RTIME2	Hour	0 - 23
RTIME3	Day	1 – 31 (according to month decided)
RTIME4	Month	1 - 12
RTIME5	Year	00-99
RTIME6	Day of a Week	0 - Sunday 1 – 6 Monday...Saturday
RTIME7	Week of a Year	1 - 52

### 1.4 PLC Memory Address (Bit Devices):



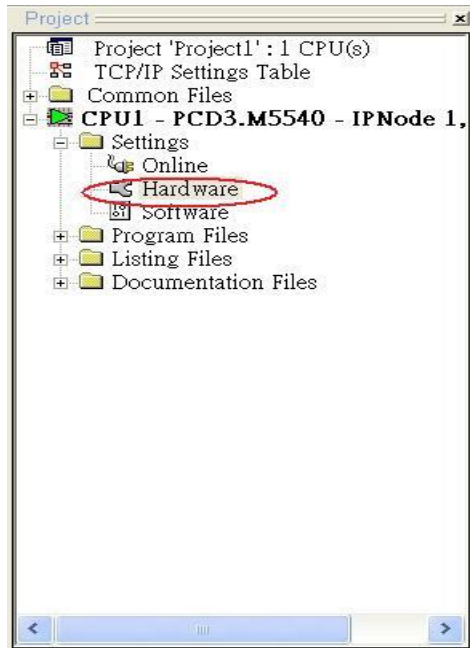
### 1.5 Colck Setting:

Please refer to below picture to set the “Synchronize Panel with PLC” function.

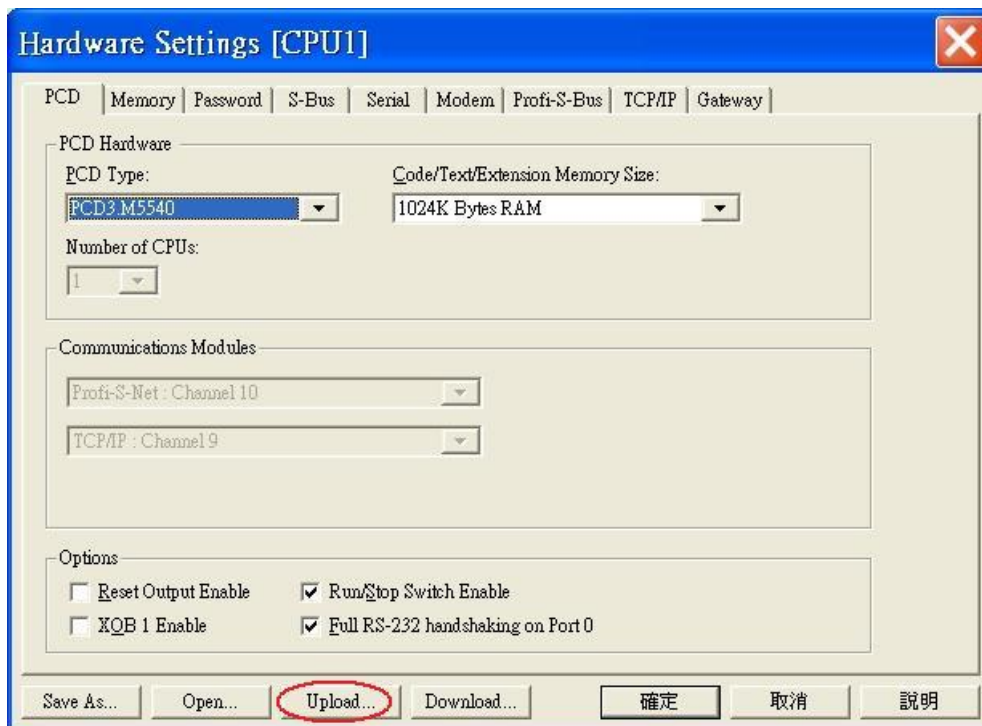


## 2. PLC Setting:

2.1 You can see there is a “Hardware” option from SAIA program tool.



Double click “Hardware”, and then you can see the dialog box below:



Before setting the parameter, please execute “Upload...” function to load the present setting from PLC side.

## 2.2 "S-Bus" setting:

PCD | Memory | Password | S-Bus | Serial | Modem | Profi-S-Bus | TCP/IP | Gateway

☒ S-Bus Support

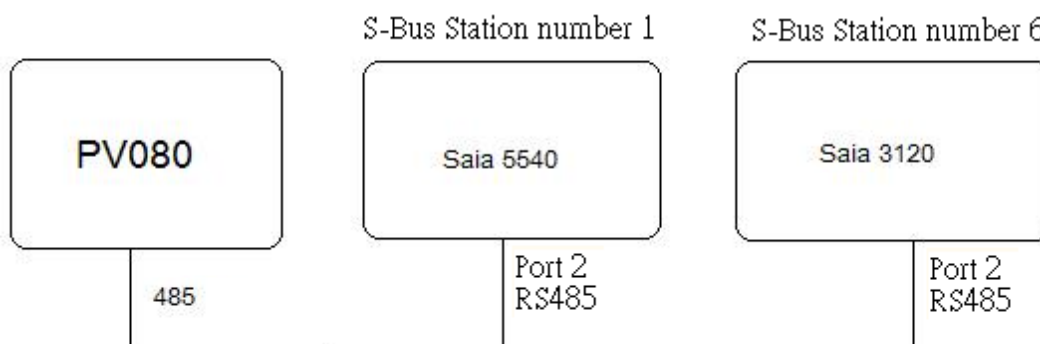
S-Bus Station Number: 1 S.PRJ.CPU1.SbusStation

2.2.1 Select the "S-Bus Support" to enable the S-Bus function.

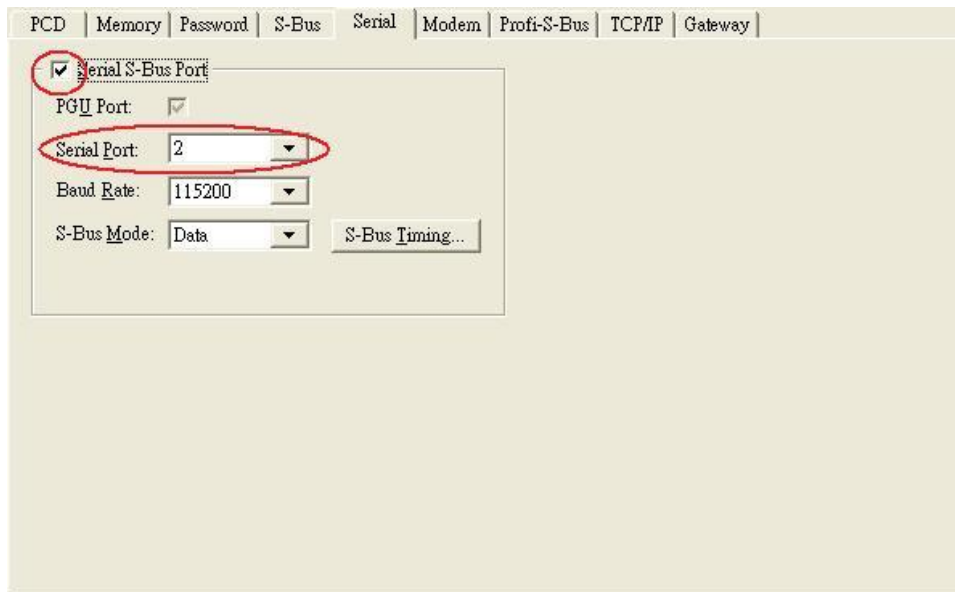
2.2.2 Key-in the address number under "S-Bus Station Number"(Initial is "0").

2.2.3 If you wish to link with multi-PLCs, please set different PLC address for each PLC.

Please refer to below network system configuration.



### 2.3 Serial Port Setting:



PCD | Memory | Password | S-Bus | Serial | Modem | Profi-S-Bus | TCP/IP | Gateway

☒ Serial S-Bus Port

PGU Port: ☒

Serial Port: 2

Baud Rate: 115200

S-Bus Mode: Data S-Bus Timing...

2.3.1 Select the “Serial S-Bus Port”to enable the Serial S-Bus Port function.

2.3.2 Serial Port : Key-in the Port Number

0=COM/PGU(Not Support for PCD3.M3120 model) ,

1= F121 module , 2=RS485 D; /D °

2.3.3 Set the Baud Rate & S-Bus Mode: **Data** °

2.3.4 After all settings are ok, please press “Download”key to download to PLC.

2.3.5 At this moment, we success to make the PLC communication setting.

## 2.4 Gateway Setting:

If PV HMI link multi-PLCs via one Master unit, it's necessary to execute the gateway setting:

(See Below Configuration)



PCD | Memory | Password | S-Bus | Serial | Modem | Profi-S-Bus | TCP/IP | Gateway

☒ **Serial S-Bus Master Gateway**

Serial Port:  Baud Rate:

Port on CPU:  S-Bus Mode:

S-Bus Stations:  to

☐ **Profi-S-Bus Master Gateway** (Settings defined on Profi-S-Bus page)

Channel/Slot:

S-Bus Stations:  to

☐ **TCP/IP S-Bus Master Gateway** (Settings defined on TCP/IP page)

Channel/Slot:

S-Bus Stations:  to

2.4.1 Select the “Serial S-Bus Master Gateway” to enable the gateway function.

2.4.2 Select the port for Gateway using and set the Baud Rate / S-Bus Mode: Data °

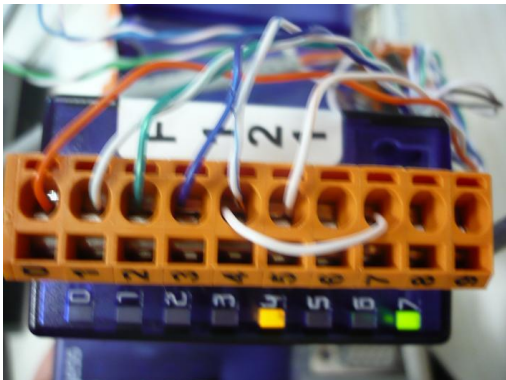
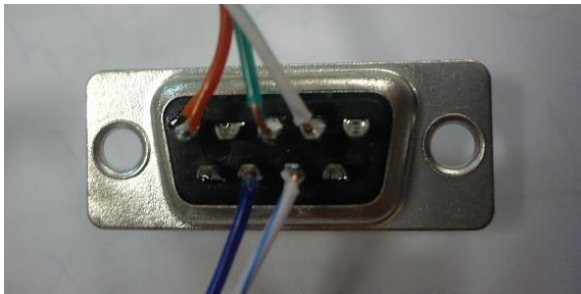
2.4.3 All settings are ok, please press “Download”key to download to PLC.



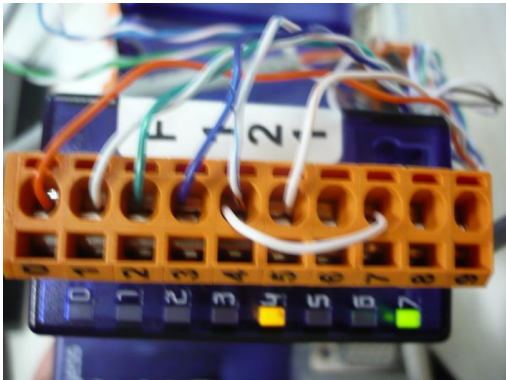
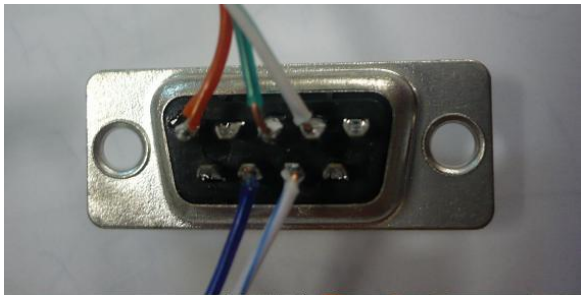
3. Cable Diagram : (HMI & Saia PCD3)

3.1 F121 RS232 Module

PV COM 2 9-PIN D-Sub Female			Saia F121 RS232 Module		
2	RS232 RXD	-----	1	Tx	
3	RS232 TXD	-----	2	Rx	
5	GND	-----	0	PGND	
7	RS232 RTS	-----	4	CTS	┌ └
8	RS232 CTS	-----	3	RTS	
			7	DSR	

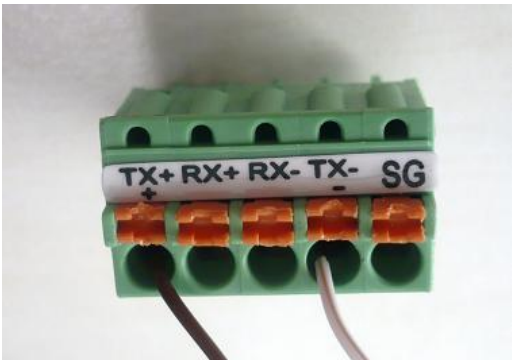


PV COM 1 9-PIN D-Sub Male			Saia F121 RS232 Module		
2	RS232 RXD	-----	1	Tx	
3	RS232 TXD	-----	2	Rx	
5	GND	-----	0	PGND	
7	RS232 RTS	-----	4	CTS	┌ └
	RS232 CTS	-----	3	RTS	
			7	DSR	



3.2 RS 485

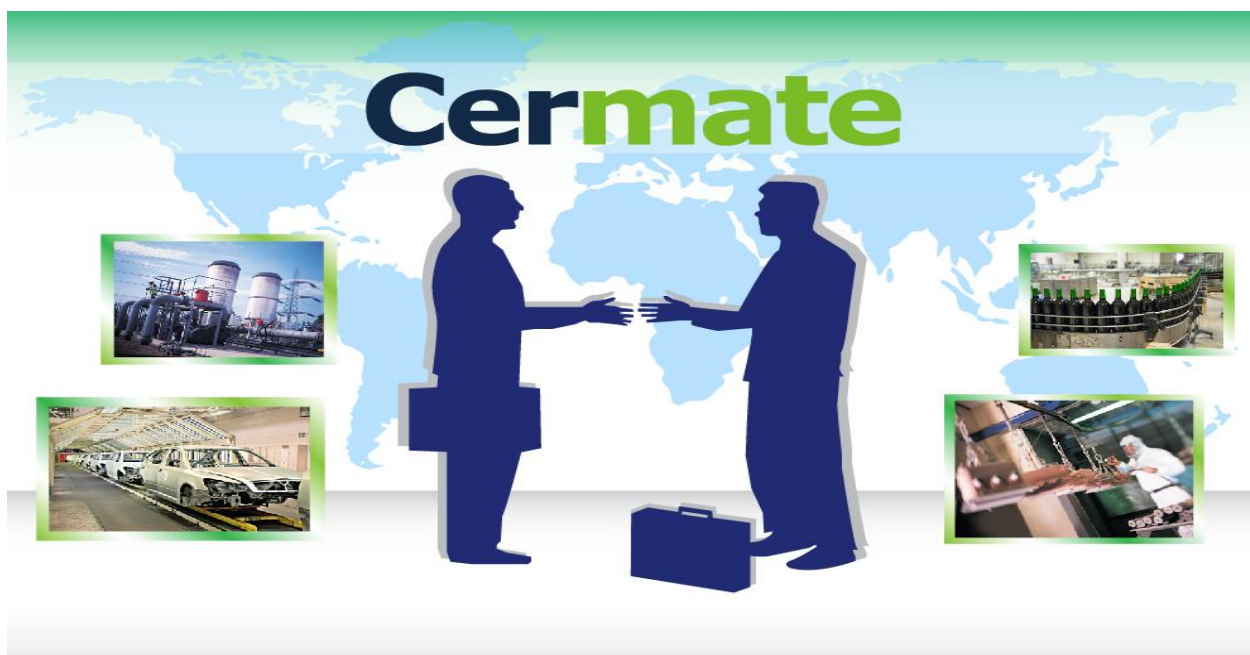
PV COM2	5-PIN Male	Saia RS 485-terminator switch
1	(TXD+) -----	/D (RS 485 RxD/TxD-P)
4	(TXD-) -----	D (RS 485 RxD/TxD-N)
5	SG	



3.3 COM/PGU Port0

PV COM2	9-PIN D-Sub Female	Saia COM/PGU Port0
2	RS232 RXD -----	3 TXD
3	RS232 TXD -----	2 RXD
5	GND -----	5 GND
7	RS232 RTS -----	8 CTS
8	RS232 CTS -----	7 RTS
		6 DSR

~Thank You~



## *Technical Support Information*

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