

**PROFIBUS Y-Link Module**






**LM210**

**User manual**

**IM19H44-E**














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Symbol Definition	
	<b>WARNING:</b> Indicates information that a potentially hazardous situation which, if not avoided, could result in serious injury or death.
	<b>RISK OF ELECTRICAL SHOCK:</b> Indicates information that Potential shock hazard where HAZARDOUS LIVE voltages greater than 30V RMS, 42.4V peak, or 60V DC may be accessible.
	<b>ESD HAZARD:</b> Indicates information that Danger of an electro-static discharge to which equipment may be sensitive. Observe precautions for handling electrostatic sensitive devices
	<b>ATTENTION:</b> Identifies information that requires special consideration.
	<b>TIP:</b> Identifies advice or hints for the user.

## Security& Caution Symbols

The following table lists Security& Caution symbols used on equipments.

No.	Symbol	Description
1		Direct current (DC)
2		Alternating current (AC)
3		Ground (Earth) terminal
4		Protective earth (ground) terminal
5		Reference ground (Earth) terminal
6		Frame or chassis
7		Equipotentiality
8		On (power)
9		Off (power)
10		Caution, risk of electric shock
11		Caution, hot surface
12		Caution, risk of danger
13		Electrostatic sensitive devices (ESD)

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# PROFIBUS Y-Link Module LM210

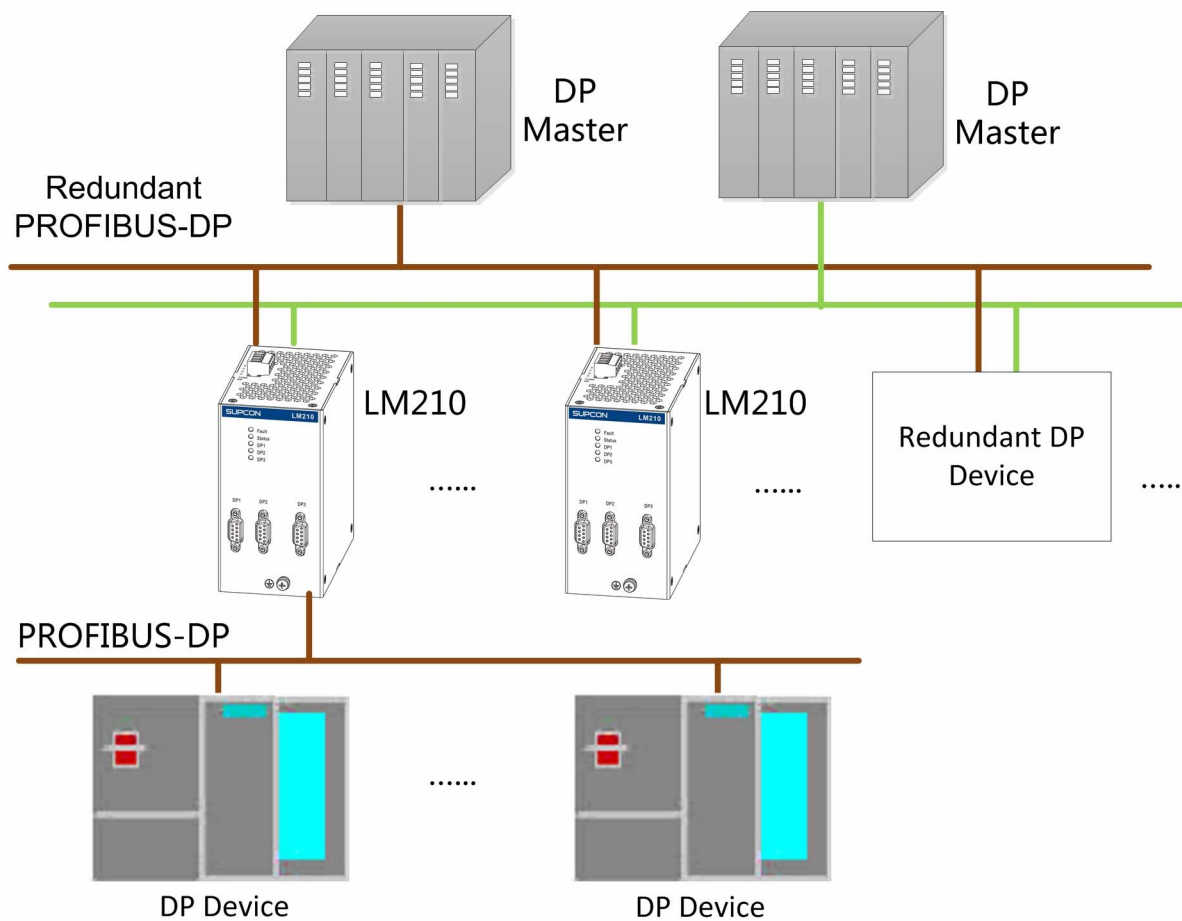
## Section 1 Overview

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PROFIBUS Y-Link module LM210 (LM210 in short below) can connect several non-redundant PROFIBUS-DP devices in slave station with redundant PROFIBUS bus, to satisfy the application requirements in industries such as electric power, metallurgy and papermaking, etc.

## Section 2 Network

PROFIBUS network architecture is shown in Figure 2-1, Use Y-Link module LM210 to connect non-redundant DP slave station device in field with redundant PROFIBUS-DP bus.



**Figure 2-1 LM210 network architecture**

## Section 3 Specifications

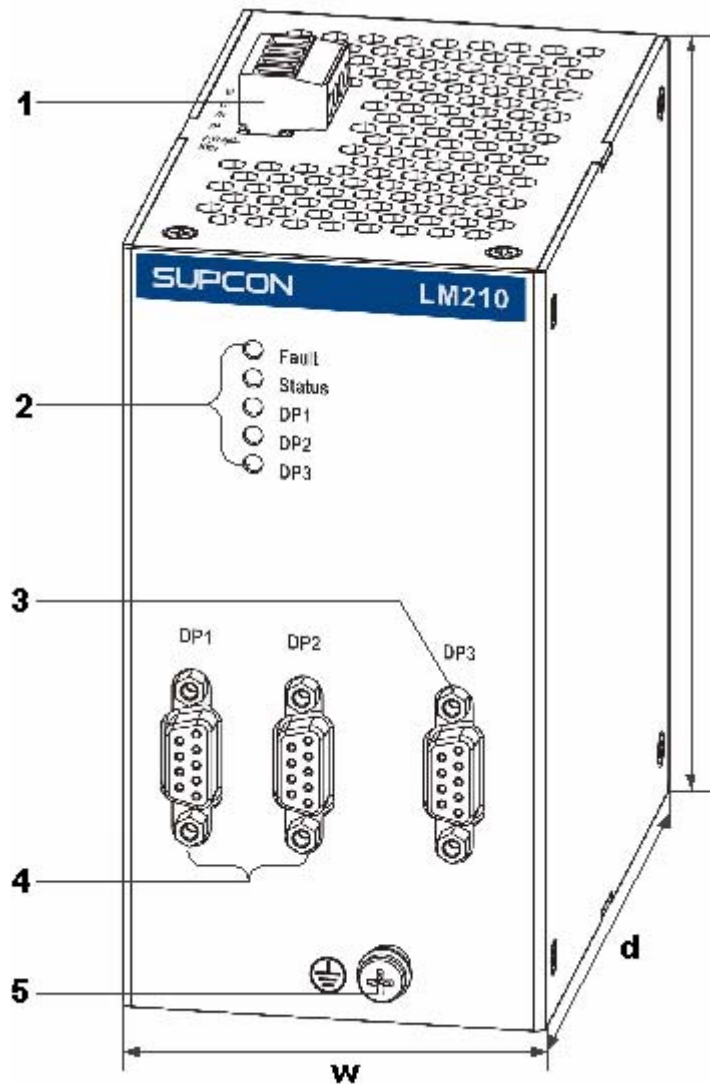
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**Table 3-1 Specifications**

Parameters		Instruction
Temperature	Operating temperature	(-40~75) °C
	Storage temperature	(-40~80) °C
Humidity	Operating humidity	5% RH~90% RH, no condensation
	Storage humidity	5% RH~95% RH, no condensation
System power		24V DC $\pm$ 10%
Rated consumption		1.6W
Devices connecting DP slave station		Maximum 32
Module address		The module does not occupy address in the bus and it is transparent to the master
Baud rate of DP port		45.45 Kbps, 187.5 Kbps, 500 Kbps, 1500Kbps
Slave device address range		3~126
Installation type		Standard DIN guide rail

## Section 4 Appearance

Module appearance structure is shown in Figure 4-1.



**Figure 4-1 Module structure**

As shown in Figure 4-1, dimension (w\*d\*h): (72\*120\*135) mm, instruction for connectors in the module is shown below.

- 1: Power terminal: V1+, V2+, V1-, V2-, connect with 2-channel redundant 24VDC power.
- 2: LED indicators: indicate the working status of module.
- 3: Slave station device connecting port: Connect with DP slave station device in field.
- 4: Redundant DP bus interface: Connect 2-channel dual-redundant PROFIBUS-DP buses separately.
- 5: Earth terminal: Connect with protection ground.



## Section 5 Wiring

This section introduces contents such as wire specifications and wiring method for all interfaces in the module.

### 5.1 Connect with Power

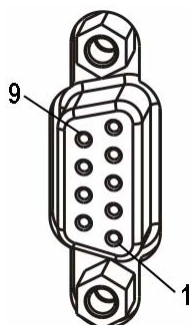
As shown in Figure 4-1, there are 4 power terminals (V1+, V2+, V1-, V2-) on the top of module for connecting with the 2-channel redundant 24VDC power.

Power line terminal allows wire with maximum section of  $2.5\text{mm}^2$ . Wires with section of  $1\text{mm}^2$  or  $1.5\text{mm}^2$  are recommended. The recommended wire stripping length is 8mm, and the tightening torque is (0.5~0.6) Nm.

### 5.2 Connect DP Slave Station Device with DP Bus

Module can connect several non-redundant PROFIBUS devices in slave station with redundant DP bus. Therefore, connecting redundant DP bus has 2 interfaces (DP1 and DP2), connecting slave station device has 1 interface (DP3).

DP interface in module is shown in Figure 5-1, which is the standard DP interface.



**Figure 5-1 DP interface**

Instruction for DP interface pins is shown below:

**Table 5-1 Instruction for DP bus interface pins**

Pin No.	DP1	DP2	DP3	Instruction
1	Empty	Empty	Empty	Empty
2	Empty	Empty	Empty	Empty
3	RXD0/TXD0-P	RXD0/TXD0-P	RXD0/TXD0-P	Signal positive
4	Empty	Empty	Empty	Empty
5	GND	GND	GND	Power negative
6	VCC	VCC	VCC	Power positive
7	Empty	Empty	Empty	Empty
8	RXD0/TXD0-N	RXD0/TXD0-N	RXD0/TXD0-N	Signal negative

Pin No.	DP1	DP2	DP3	Instruction
9	Empty	Empty	Empty	Empty

## 5.3 Grounding

As shown in Figure 4-1, bottom of module has 1 grounding screw to connect with protection ground.

## 5.4 Wiring

The wiring is shown in Figure 5-2. When connecting several DP slave station devices, the first and last DP joint shall pull to terminal resistance.

Usage of standard DP joint shall refer to the DP joint manual selected specifically.

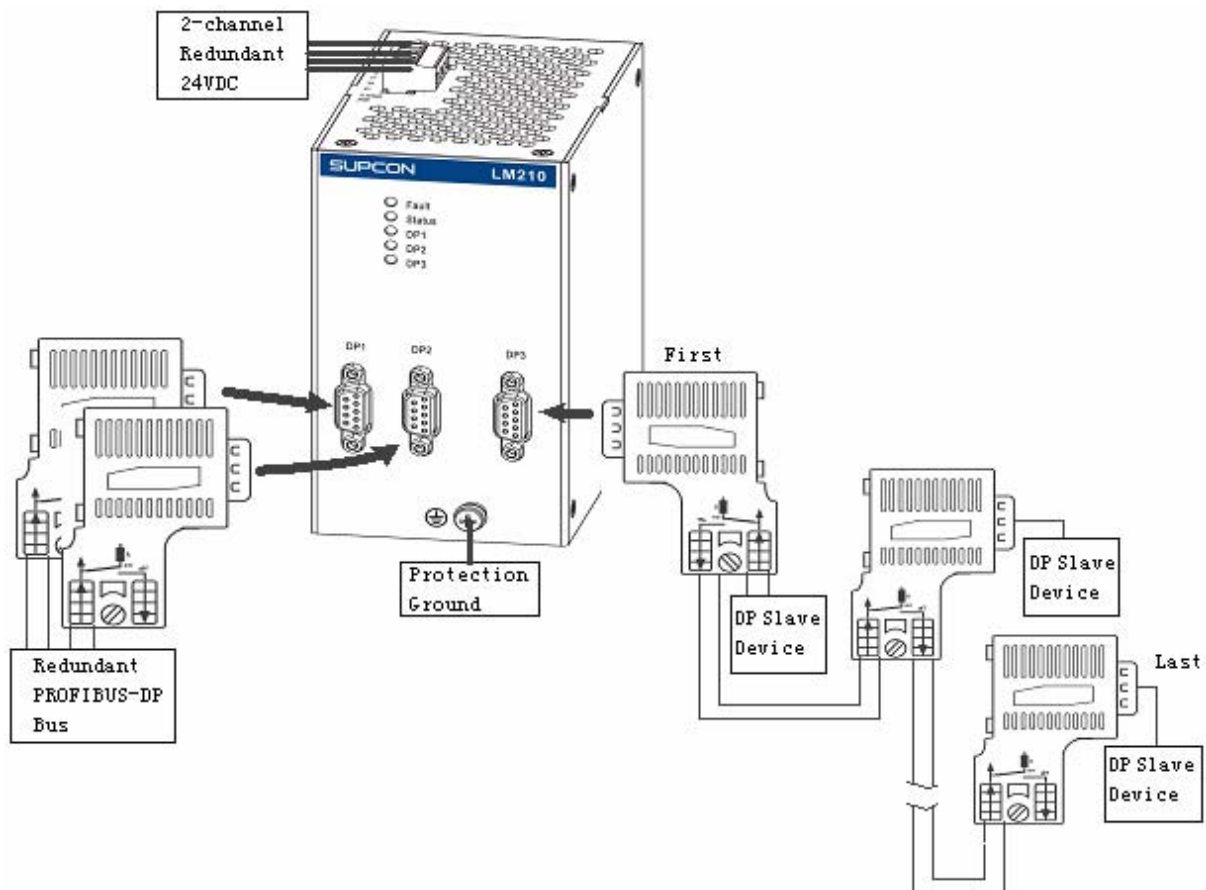


Figure 5-2 LM210 wiring

## Section 6 Running Status

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After power on module, meanings of LED indicator status are shown below.

**Table 6-1 Instruction for running status**

Mark	Status	Meaning
Fault (red)	ON	Fault
	Off	Normal
Status (Green)	ON	At least 1 device configures successfully, in real-time data communication.
	Flash	None device below is configured.
	Off	Running fault
DP1 (Green)	ON	PROFIBUS bus communication connecting with DP1 is normal.
	Off	Communication fault
DP2 (Green)	ON	PROFIBUS bus communication connecting with DP2 is normal.
	Off	Communication fault
DP3 (Green)	ON	Communication with field DP device in slave station is normal.
	Off	Communication fault

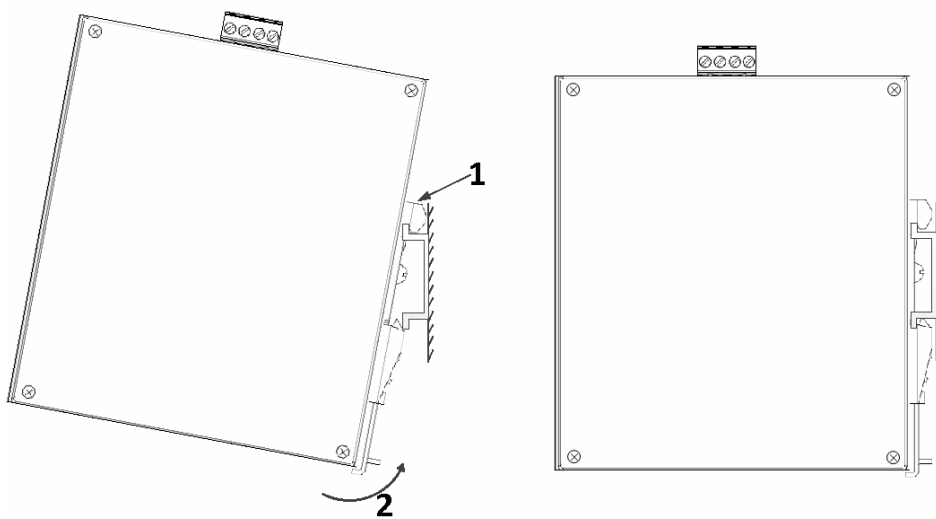
## Section 7 Install and Uninstall

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The module can be installed with standard DIN guide rail.

**Installing steps are as follows:**

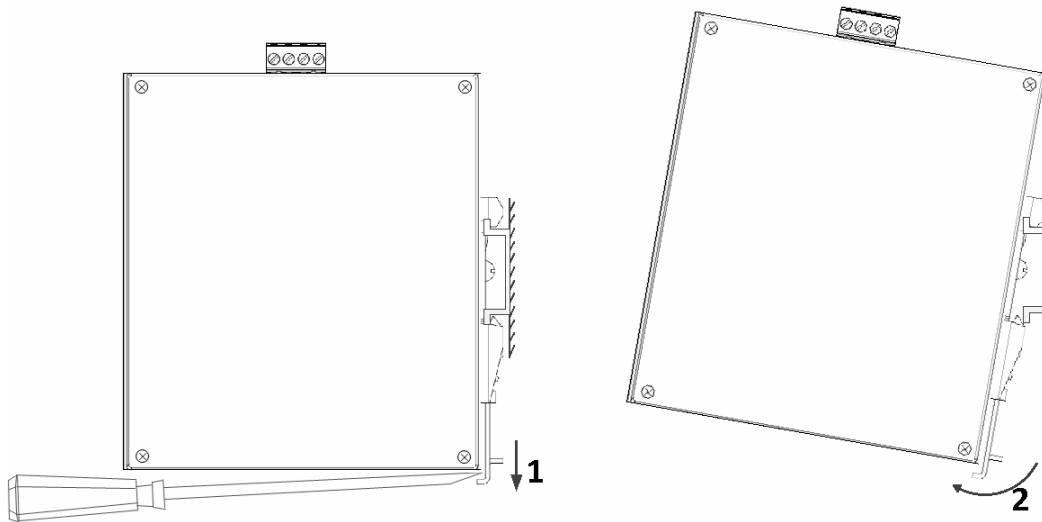
1. Insert one side of module without buckle into rail, as shown in 1 of Figure 7-1.
2. Rotate the module, as shown in 2 of Figure 7-1, to insert another side into the guide rail to complete the installation.
3. Wiring, manage the wires.



**Figure 7-1 Installing steps**

**How to uninstall the module:**

1. Cut off the power, remove wires.
2. Use straight screwdriver (medium or small size) to open the buckle, as shown in 1 of Figure 7-2.
3. Then rotate the module, as shown in 2 of Figure 7-2.
4. Remove the module from guide rail to complete the uninstalling.



**Figure 7-2 Uninstalling steps**

## Section 8 Revision

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*Table 8-1 Retrofit list of the version*

Document Version	Model	Remarks
V1.0(20160122)	LM210V11.10.00 and later versions.	
V1.1(20180830)		Add code
V1.2(20210610)		