No.EX##-OMI0036-A

Operation Manual

Reduced wiring system
(CC-Link compliant SI unit)

PRODUCT NAME

EX180-SMJ1 *Series*

MODEL/ Series

SMC Corporation

Table of Contents

SAFETY

This manual contains essential information to prevent possible injury and damage to (users and other people, and property) and to ensure correct handling.
Please confirm understanding the definition of the following messages (signs) before going on to read the text, and always follow the instructions.
Also read carefully the instruction manual of relevant equipment or apparatus before use.

♦Indications

IMPORTANT MESSAGES	
Read this manual and follow its instructions. Signal words such as WARNING, CAUTION and NOTE, will be followed by important safety information that must be carefully reviewed.	
⚠WARNING	Indicates a potentially hazardous situation which could result in death or serious injury if you do not follow instructions.
⚠CAUTION	Indicates a potentially hazardous situation which if not avoided, may result in minor injury or moderate injury.
NOTE	Gives you helpful information.

♦Operator

- ♦This operation manual has been written for those who have knowledge of machinery and apparatus that use pneumatic equipment and have full knowledge of assembly, operation and maintenance of such equipment.
- ♦Please read this operation manual carefully and understand it before assembling, operating or providing maintenance to the SI Unit.

♦Usage Restrictions

- ♦This product is designed for use in general equipment for factory automation. Never use this product with equipment or apparatus that directly concerns human lives*1, or which malfunction or failure can cause a huge loss.

  *1: Equipment or apparatus that directly matters human lives means the following:
  - Medical equipment such as life support systems or equipment used in operating rooms
  - Compulsory equipment required by law such as the Fire Prevention Law, Construction Law and etc.
  - Equipment or apparatus that conforms with those mentioned above.

- ♦Contact our sales department when plans are made for the product to be used for the system*2 including equipment that concerns itself with the safety of persons or that seriously affects the public. This usage needs special consideration*3.

  *2: The system including equipment that concerns itself with the safety of persons or that seriously affects the public means the following:
  - Nuclear reactor control systems in nuclear power plants, safety protection systems or other systems important for safety in nuclear power facilities
  - Driving control systems of mass transportation systems, and flight control systems
  - Equipment or apparatus that comes into contact with foods or beverages

  *3: Special consideration means discussing usage with our engineers to establish a safe system designed as fool-proof, fail-safe, redundant and etc.

- ♦Special consideration of safety or maintainability should be taken to prevent hazard or loss caused by a failure or malfunction that is likely to occur in certain probability due to environmental stress (deterioration).
  The special consideration means to fully review the equipment or apparatus in design stage and to establish a backup system in advance such as a redundant system or fail-safe system.

⚠WARNING

- The compatibility of pneumatic equipment is the responsibility of the person who designs the pneumatic system or decides its specifications.
  Since the products specified here are used in various operating conditions, their compatibility with the specific pneumatic system must be based on specifications or after analysis and / or tests to meet your specific requirements.
- Only trained personnel should operate pneumatically operated machinery and equipment.
  Compressed air can be dangerous if an operator is unfamiliar with it. Assembly, handling or repair of pneumatic systems should be performed by trained and experienced operators.
- Do not service machinery / equipment or attempt to remove components until safety is confirmed.
  1. Inspection and maintenance of machinery /equipment should only be performed after confirmation of safe locked-out control positions.
  2. When equipment is to be removed, confirm the safety process as mentioned above. Cut the supply pressure for the equipment and exhaust all residual compressed air in the system.
  3. Before machinery / equipment is re-started, take measures to prevent quick extensions of the cylinder piston rod etc. (Bleed air info the system gradually to create back-pressure.)
- Contact SMC if the product is to be used in any of the following conditions:
  1. Conditions and environments beyond the given specifications, or if product is used outdoors.
  2. Installation on equipment in conjunction with atomic energy, railway, air navigation, vehicles, medical equipment, food and beverage, recreation equipment, emergency stop circuits, press applications, or safety equipment.
  3. An application which has the possibility of having negative effects on people, property, or animals, requiring special safety analysis.

⚠WARNING

♦ Do not disassemble, modify (including change of printed circuit board) or repair.
It may result in injury or failure.

♦ Do not operate the product beyond specification range.
Operation at a range that exceeds the specifications can cause a fire, malfunction, or damage to the unit.
Verify the specifications before use.

♦ Do not use the product in an atmosphere containing combustible, explosive or corrosive gas.
It can cause a fire, explosion or corrosion.
The unit is not designed as explosion-proof.

♦ The following instructions must be kept when using the product in an interlocking circuit:
- Provide double interlocking by another system such as mechanical protection
- Check the product regularly to ensure proper operation

Otherwise malfunction may cause an accident.

♦ The following instructions must be kept during maintenance:
- Turn off the power supply
- Stop the supplied air, exhaust the residual pressure, and confirm the release to atmosphere before performing maintenance

Otherwise it may cause injury.

⚠CAUTION

♦ Perform proper functional checks after maintenance.
Stop operation when an abnormality is observed such that the unit does not work properly.
Safety may not be able to secured if unexpected incorrect operation occurs.

♦ Provide grounding for securing safety and noise resistance of reduced-wiring system.
Provide an individual grounding as possible, and place it near the unit to shorten the distance between the grounding and the unit.

NOTE

♦Follow the instructions given below for selecting and handling reduced-wiring system :

♦Selection (Follow the installation, wiring, environment of use, adjustment, operation, and maintenance described below, too.)

∗**Product specifications**

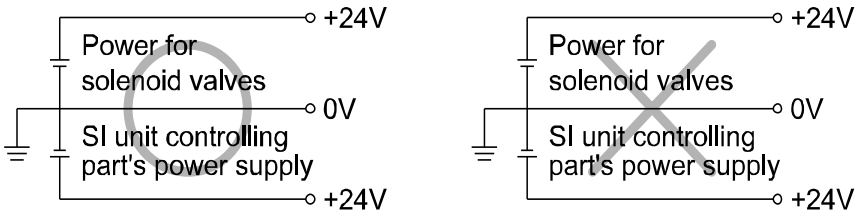
- Use the following UL recognized direct-current power supply for direct power supplies to combine.

(1) Limited voltage current circuit in accordance with UL508
A circuit whose power is supplied by secondary coil of a insulating transformer that meets the following conditions
- Maximum voltage (with no load) : less than 30Vrms (42.4V peak)
- Maximum current : (1) less than 8A(including when short circuited)
(2) limited by circuit protector (such as fuse) with the following ratings

No load voltage (V peak)	Max. current rating (A)
0 ~ 20 [V]	5.0
Above 20 to 30 [V]	100 / peak voltage

(2) A circuit using max. 30Vrms or less (Class-2 circuit), whose power is supplied by Class-2 power supply unit in accordance with UL1310, or Class-2 power supply unit in accordance with UL1585

- The reference of power supply for SI unit is 0V for both powers for solenoid valves and SI unit controlling part.



- Operate reduced-wiring system with the specified voltage.
Operation with a voltage beyond specifications could cause malfunction or damage of the unit.
- Reserve a space for maintenance
Keep space for maintenance for the layout of the unit.
- Do not remove nameplate.
Otherwise maintenance error and misreading of an operation manual could cause damage or malfunction.
It may also result in nonconformity to the safety standards.

♦Precautions on handling

∗Installation

- Do not drop, hit or apply excessive shock to the unit.
Otherwise the unit could be damaged, and cause failure and malfunction.
- Follow the specified tightening torque.
Excessive tightening torque can break screws.

∗Wiring (including plugging in/out of connector)

- Do not bend the cables or apply excessive force to them by pulling or placing heavy load.
Wiring subject to bending or tensile stress could cause breakage of a cable.
- Connect wires and cables correctly.
Incorrect wiring could cause damage or malfunction to the reduced-wiring system.

- Do not connect wires while the power is supplied.
  Otherwise, the reduced-wiring system could be damaged or malfunction.
- Do not connect power cable or high-voltage cable in the same wiring route as the unit.
  Otherwise the wires to the reduced-wiring system can be interrupted with noise or induced surge voltage from power lines or high-voltage lines and malfunction could be caused.
  Separate wiring of the unit and each I/O device from that of power line and high voltage line.
- Verify the insulation of wiring.
  Insulation failure (interference with other circuit, poor insulation between terminals and etc.) could introduce excessive voltage or current to the reduced-wiring system or each I/O device and damage them.
- Separate power line for solenoid valves from power line for input and control unit.
  Otherwise wires can be interrupted with noise or induced surge voltage causing malfunction.
- Take proper measure against noise such as noise filter when the reduced-wiring system is incorporated in equipment or devices.
  Otherwise contamination with noise can cause malfunction.

∗Environment

- Consider using the reduced-wiring system in operating environment suitable for enclosure.
  In case of IP20, avoid use in the place where water and oil scatter.
- Take sufficient shielding measures when the unit is installed.
  Insufficient measures could cause malfunction or failure.
  Verify the effect of the measures after incorporation of the unit in equipment or devices:
  (1) A place where noise due to static electricity is generated
  (2) A place where electric field strength is high
  (3) A place where there is radioactive irradiation
  (4) A place near power line
- Do not use the unit near a place where electric surge is generated.
  Internal circuit elements of the reduced-wiring system can deteriorate or break when equipment generating a large surge (electromagnetic lifter, high frequency induction furnace, motor, etc.) is located near the reduced-wiring system. Provide surge preventives, and avoid interference with line for the equipment.
- Use the reduced-wiring system equipped with surge absorber when a surge-generating load such as solenoid valve is driven directly.
  Direct drive of a load generating surge voltage can damage reduced wiring system.
- Prevent foreign matters such as remnant of wires from entering the unit.
  Take proper measures for the remnant not to enter the reduced-wiring system in order to prevent failure or malfunction.
- Do not expose the reduced-wiring system to vibration and impact.
  Otherwise failure or malfunction could be caused.
- Keep the specified ambient temperature range.
  Otherwise malfunction could be caused.
  Do not use reduced-wiring system in a place where temperature suddenly changes even within the specified range.
- Do not expose the reduced-wiring system to heat radiation from a heat source located nearby.
  Malfunction could be caused.

∗Adjustment and Operation

- Use precision screwdriver with for small flat blade for setting DIP switch.

∗Maintenance

- Perform maintenance and check regularly.
  Otherwise an unexpected malfunction of components could of the unit occur due to a malfunction of the whole unit.
- Perform a proper functional check.
  Stop operation when an abnormality is observed such that the device doesn't work properly.
  Otherwise an unexpected malfunction of the unit component can occur.

- Do not use solvents such as benzene, thinner or other to clean the reduced-wiring system.
  They could damage the surface of the body and erase the indication on the body.
  Use a soft cloth to remove stains. For heavy stains, use a cloth soaked with diluted neutral detergent and fully squeezed, then wipe up the stains again with a dry cloth.
- Do not use solvents such as benzene, thinner or other to clean the reduced-wiring system.
  They could damage the surface of the body and erase the indication on the body.
  Use a soft cloth to remove stains. For heavy stains, use a cloth soaked with diluted neutral detergent and fully squeezed, then wipe up the stains again with a dry cloth.

Product Summary

♦Terms definition

No.	Term	Definiton
1	Total of station	Total number of occupied stations among the all slave stations connected with CC-Link.
2	Station number	Numbers from 1 to 64, which are assigned to the slave stations. No. 0 is assigned to the master of CC-Link. The slave stations must be assigned concerning the number of occupied stations so that they will not duplicate.
3	Slave station	General term for a station excepting the master station.
4	Number of occupied slaves	Number of stations on a network used by a slave. Depending on the data, 1 to 4 stations can be set. Remote I/O occupies 1 station only.
5	Remote I/O	A slave which can only use bit data. Occupy 1 station only. (Example : digital unit, solenoid valves, sensors, etc)

Model indication method / How to order

• SI unit series EX180

EX180-S MJ1 □

● Communication connector type specification

Nil	T branch type
A	Straight type

● Applicable network, output point specification

MJ1	CC-Link type, output 32 points

• Accessory : Communuication

EX180-CMJ □

● Communication connector type specification

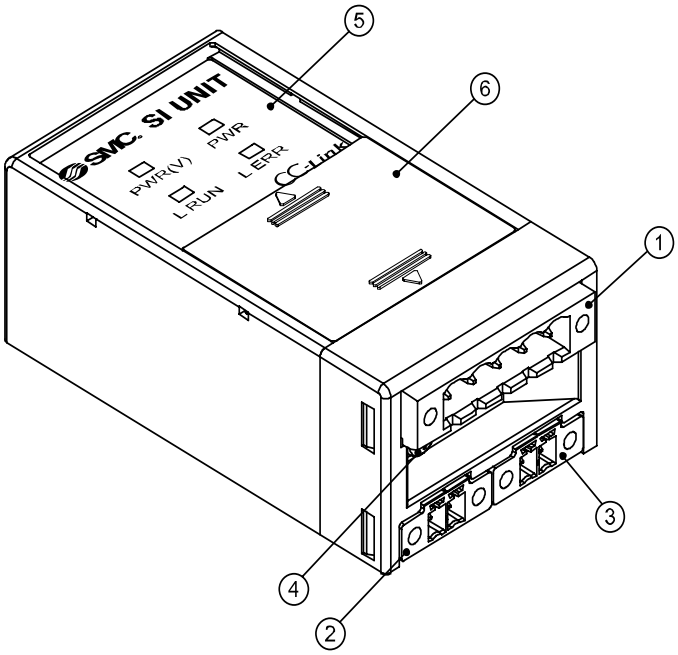
1	T branch type
2	Straight type

• Accessory : Power supply connector

EX180-CP1

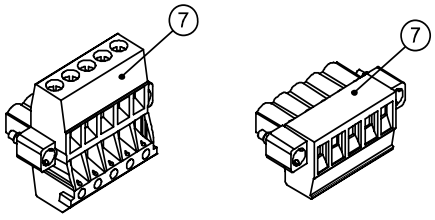
Parts and functions description

♦Parts and functions description



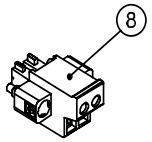
Communication connector for CC-Link
(1 piece)

EX180-SMJ1 EX180-SMJ1A



(EX180-CMJ1) (EX180-CMJ2)

Power supply connector (2 pieces)



(EX180-CP1)

Accessory

№	Parts	Purpose
1	Communication socket (BUS)	Connect to CC-Link line with an accessory connector for CC-Link (⑦).
2	Power supply socket (PWR(V))	Supply the power for solenoid valve with an accessory connector (⑧).
3	Power supply socket (PWR)	Supply power for SI unit control with an accessory connector (⑧).
4	FG terminal	Used for functional ground.
5	Display	The status of the unit is indicated with LED.
6	Setting switch area	The station number and transmission speed are set.

Mounting / Installation

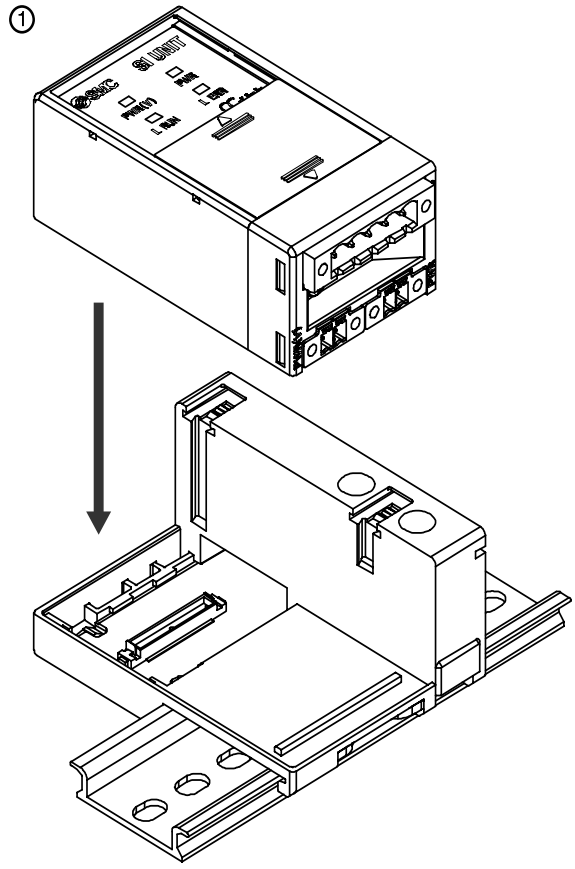
♦Installation

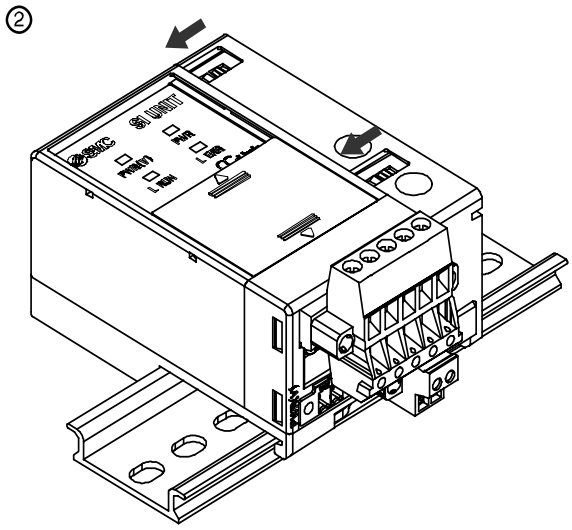
- Applicable manifold valve
  The SI unit series EX180 can have the following manifold valve only.

  - Manifold
    - Series SJ2000/3000

    * Refer to a catalog for each valve series and Technical Specifications for the detail of the solenoid valve and manifold.

  - Mounting to the manifold
    1. Put the mounting guide of the SI unit case to the manifold groove.
    2. Slide the 2 locks on the top of the manifold.

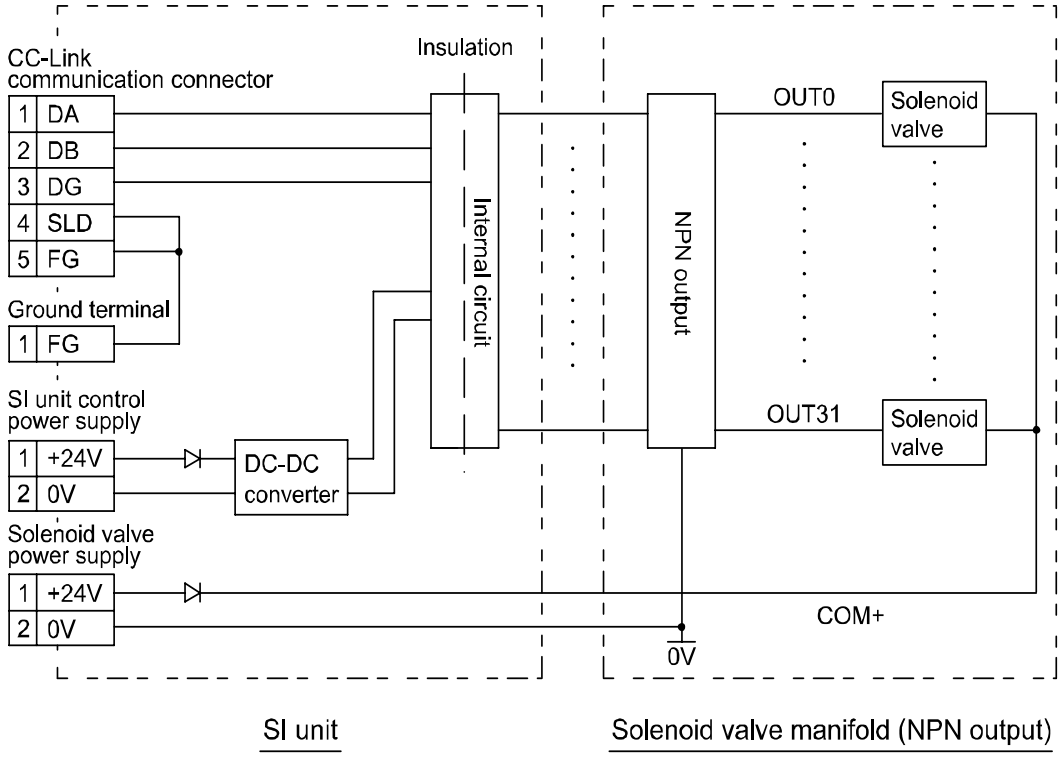




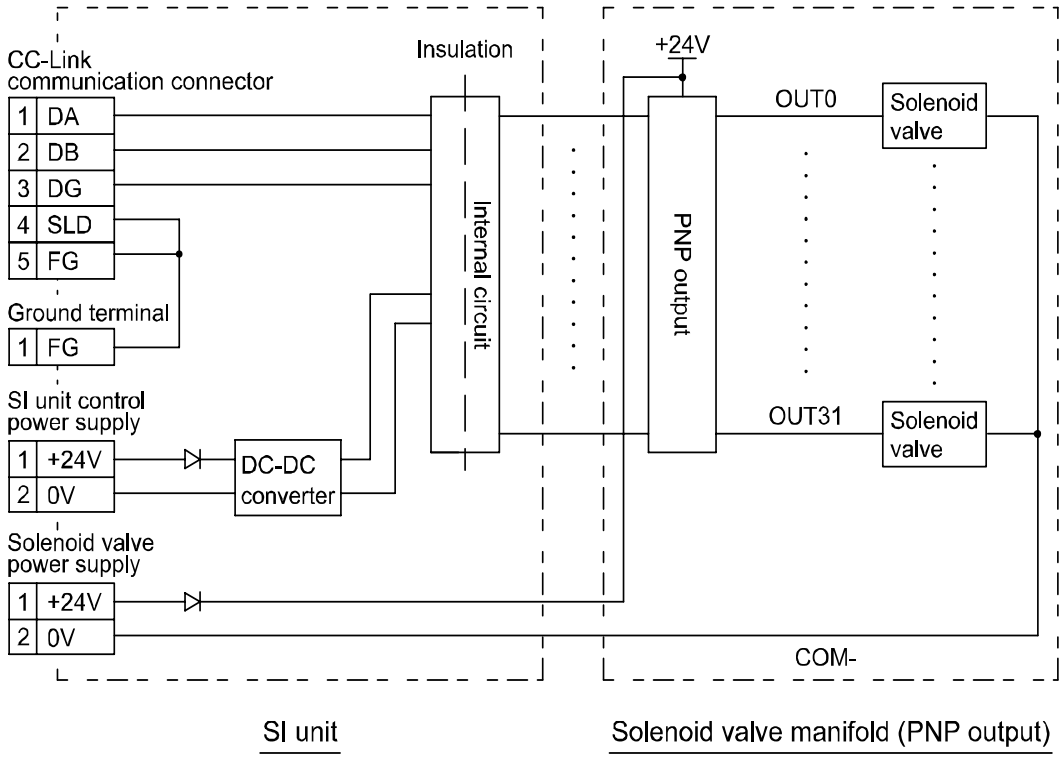
♦Wiring method

• Internal circuit

• NPN output



• PNP output



1. Communication wiring

The method to connect CC-Link dedicated cable to the communication connector of SI unit for CC-Link is shown on the following table.

(1) Make sure to connect the signal cables to designated pins. (Refer to Fig.1)

Tighten properly with 0.5 to 0.6[N•m] of tightening torque.

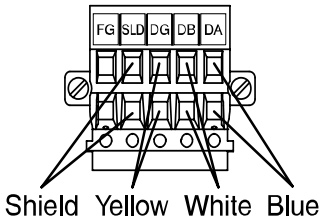


Fig.1

(2) Make sure to connect a "Terminating resistor" between "DA" and "DB" of the unit at both ends of CC-Link system. (Refer to Fig.2) For CC-Link detected cable, use the cable with same specifications as it. If mixed, the normal data transmission is not guaranteed.

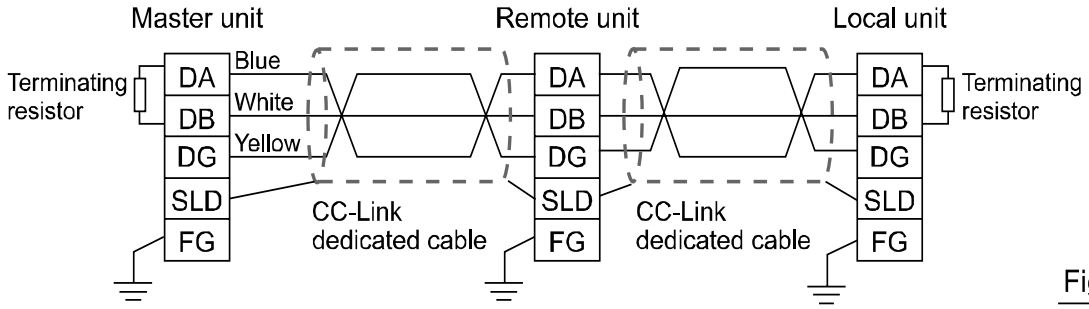


Fig.2

(3) The terminating resistor to connect differs depending on a cable to use at CC-Link system. (Refer to the following table and Fig.3)

Cable type	Terminating resistor	
CC-Link detected cable	110Ω 1/2W (Brown, Brown, Brown)	Built-in terminating resistor (SW2-No.2) ON
CC-Link dedicated cable compatible to Ver.1.10		
CC-Link dedicated high performance cable	130Ω 1/2W (Brown, Orange, Brown)	

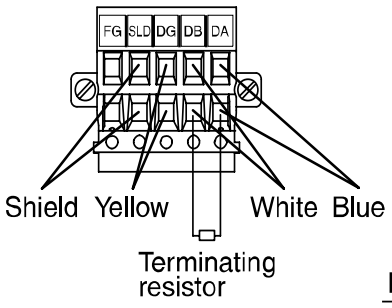


Fig.3

(4) Refer to Fig.4 about how toconnect to the unit.

Note

Connect the shield line of CC-Link dedicated cable to "SLD" of each unit.

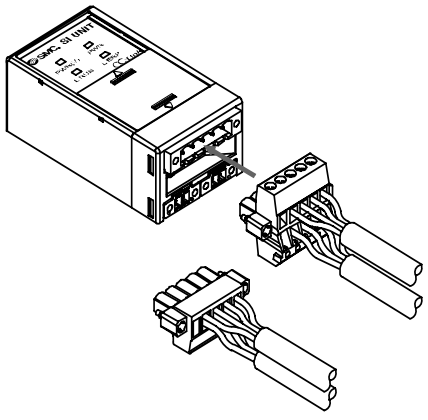


Fig.4

2. Power supply wiring

Connect power supply wiring to the power supply connector (2pcs) which are delivered as accessory of the SI unit.
Power supply structure consists of 2 systems, but it can be used with both single power supply and dual power supply.
Make sure to connect the designated pin. (Refer to Fig.5)
Tighten properly with 0.22 to 0.25[N•m] of tightening torque.

Note

D type grounding (Third-type grounding) should be performed for FG terminal.
(The connection to SLD and FG terminal is provided inside the unit.)

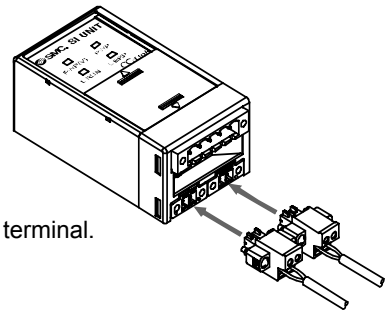
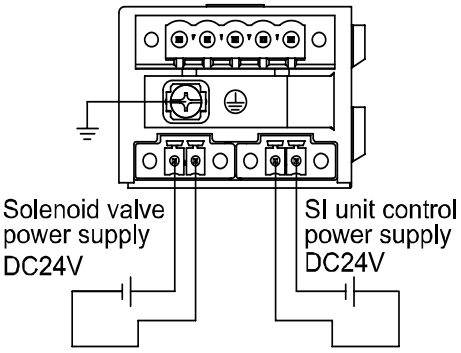
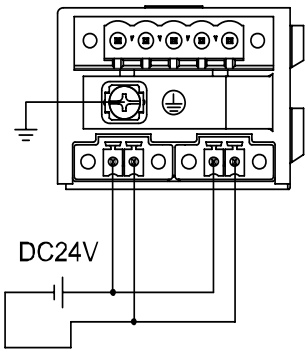


Fig.5

A. For dual power supply use

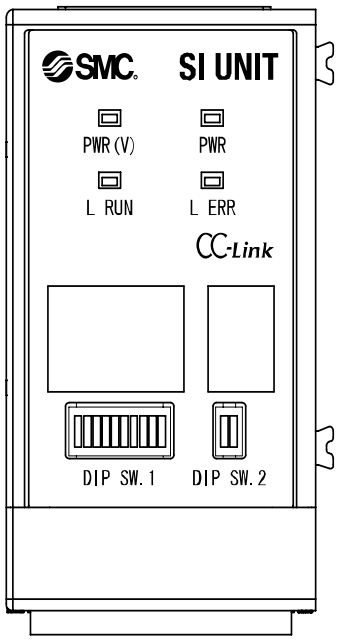


B. For single power supply use



Setting

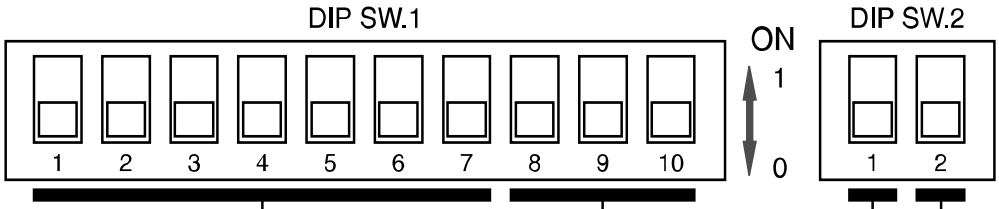
- **Settings for display**



Display	Meaning
PWR (V)	The solenoid valve power supply is supplied with specified voltage : Lights up The solenoid valve power supply is not supplied with specified voltage : Goes off
PWR	Power supply for the SI unit is supplied : Lights up Power supply for the SI unit is not supplied : Goes off
L RUN	Normally communicating : Lights up Communicating intercepted : Goes off
L ERR	Communication error : Lights up Setting of station number setting/ transmitting speed setting switch is changed during powered : Lights up (Blink with 0.4s interval) Normally communicating : Goes off

• Switch setting

- Make sure that switch setting is done with power supply turned off.
- Open the cover, and use a precision screwdriver with small flat blade when setting DIP switch, etc.



Setting of transmitting speed

Transmitting speed	No.8	No.9	No.10
156kbps	0	0	0
625kbps	0	0	1
2.5Mbps	0	1	0
5Mbps	0	1	1
10Mbps	1	0	0

HOLD/CLR setting

HOLD/CLR	No.1	Function
CLR	0	Output is cleared when an error happens.
HOLD	1	Output is held when an error happens.

Setting of terminating resistor

Terminating resistor	No.2	Function
With	1	The built-in terminating resistor (110Ω) is connected.
Without	0	Built-in terminating resistor not connected.

Station number setting

Station number	Tens digit (Switch No.)			Ones digit (Switch No.)			
	40(No.1)	20(No.2)	10(No.3)	8(No.4)	4(No.5)	2(No.6)	1(No.7)
1	0	0	0	0	0	0	1
2	0	0	0	0	0	1	0
3	0	0	0	0	0	1	1
⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮
63	1	1	0	0	0	1	1
64	1	1	0	0	1	0	0

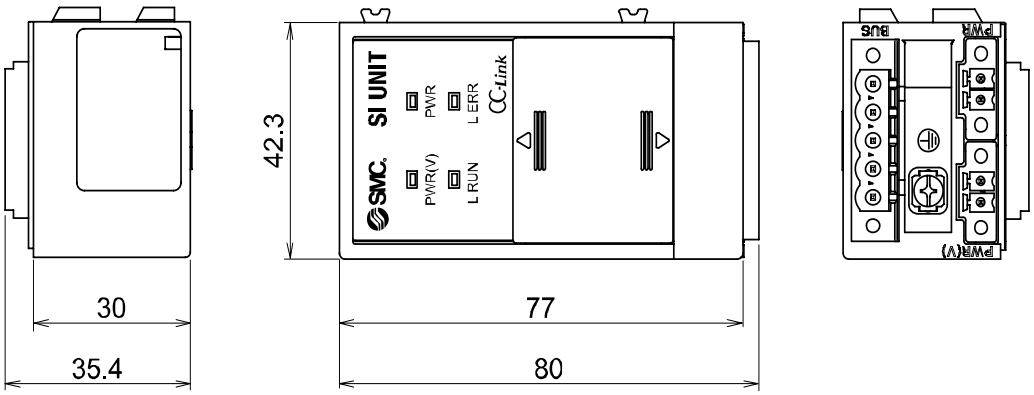
Specification

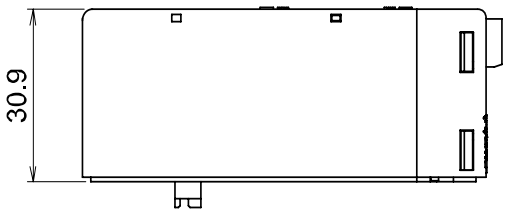
♦**Specifications**

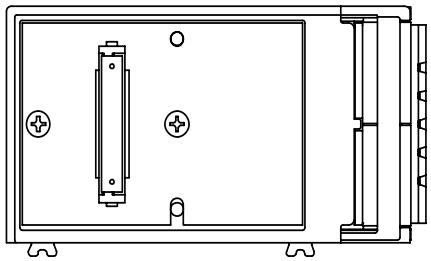
Item		Specifications				
Communication specification	Applicable system	CC-Link Ver.1.10				
	Occupied station	1 station				
	Station number setting range	1 to 64				
	Station type	Remote I/O				
	Communication speed	156kbps	625kbps	2.5Mbps	5Mbps	10Mbps
	Cable length between stations	20cm or more				
	Max. cable length	1200m	900m	400m	160m	100m
Rated voltage		24VDC				
Power supply voltage range		SI unit controlling part's power supply : 24VDC ±10% Power supply for solenoid valve : 24VDC +10%/-5% (Alarm for declined voltage under 20V)				
Output		32 points				
Short-circuit protection		Applicable				
Current consumption		50mA or less				
Tolerant instantaneous interruption in power		1msec. or less				
Environ. resistance	Enclosure	IP20				
	Withstand voltage	500VAC 1min. (Between FG and external terminal)				
	Insulation resistance	10MΩ or more (500VDC between FG and external terminal)				
	Ambient temperature	Operation temperature : -10℃ to 50℃ Storage : -20℃ to 60℃				
	Ambient humidity	35% to 85%RH (No due condensation)				
	Vibration resistance	5Hx to 9Hz (Constant amplitude) 1.75mm 9Hx to 150Hz (Constant acceleration) 4.9m/s 2 hrs for each X, Y, and Z direction (Per JIS B3502, IEC6113102)				
	Impact resistance	147m/s^2 3 times for each X, Y, and Z direction (Per JIS B3502, IEC6113102)				
	Operation atmosphere	No corrosive gas				
Standard		UL/CSA (E209424), CE marking (Note 1)				
Weight		110g or less (Including accessory)				

Note 1 : EMC directive (89/336/EEC)
EN61000-6-2：2001
EN55011 : 1998+A1 : 1999+A2 : 2002

♦Dimensions (unit : mm)







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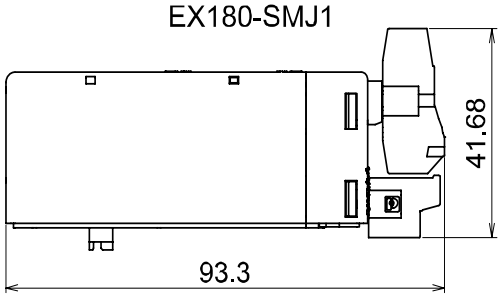
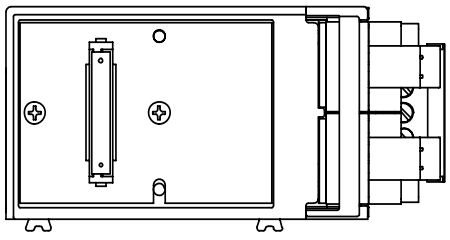
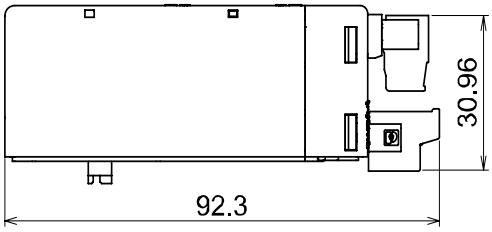
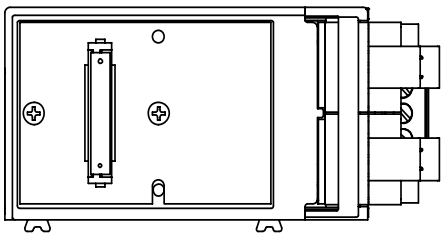




EX180-SMJ1A





Maintenance

♦Maintenance

• Mounting and wiring

Item to inspect	Criteria	Countermeasure
Are connectors (communication, power supply) of SI unit securely connected?	No looseness.	Tighten the connector. (refer to this Technical Specifications)
Are the terminating resistance securely connected to the both ends of the CC-Link system? (in case this system is at the end of the network)	No looseness.	Tighten the resistance.
Isn't the connecting cable broken.	No appearance error	If any error is found on the appearance, replace the cable.

• Replacement parts

Item to inspect	Criteria	Countermeasure
CC-Link applicable cable for moving part (when used)	No error on the appearance and conductive resistance value	If any error is found on the appearance or the conductive resistance, replace the cable. See the specification of a cable to be used for the conductive resistance.
SI unit	No error in operation and display	If any error is found in the operation or on the display, replace the unit.

• Power supply

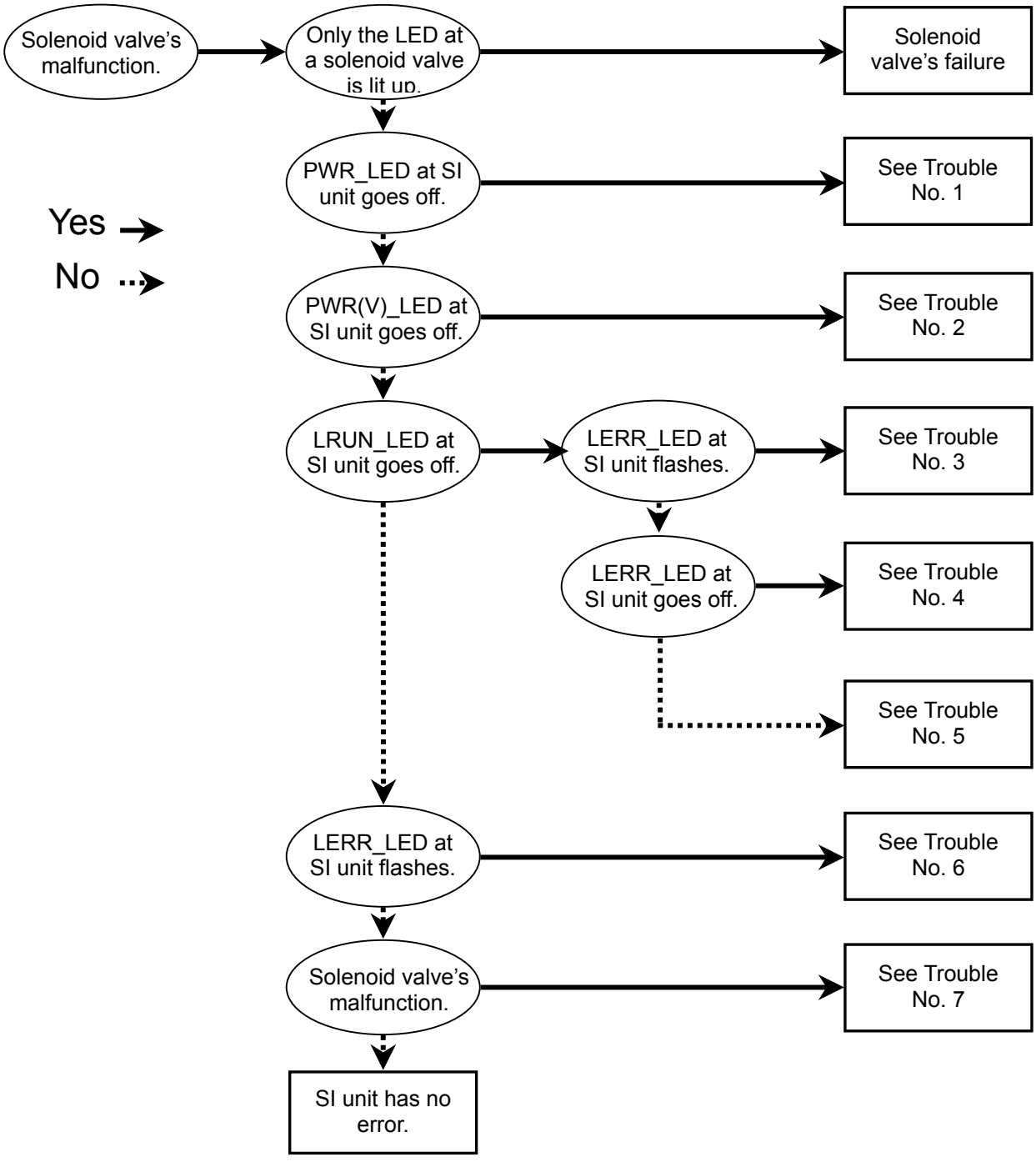
Item to inspect	Criteria	Countermeasure
Does the voltage satisfy the specified range? Measure the voltages at the both sides of SI unit controlling part's power supply.	24VDC ±10%	Investigate into the cause of voltage fluctuation, and take a countermeasure against it.
Does the voltage satisfy the specified range? Measure the voltages at the both sides of the power supply for solenoid valves.	24VDC +10% / -5%	Investigate into the cause of voltage fluctuation, and take a countermeasure against it.

Troubleshooting

♦Troubleshoot

Applicable model : EX180-SMJ1, EX180-SMJ1A

If a SI unit gets an operation failure, look for the problem using the following flow chart.
If any cause of the problem cannot be found, and a new SI unit can operate well after replaced with the old one, the failure of SI unit is conceivable. As the failure of SI unit may happen due to the operation environment (network construction etc), consult us about the countermeasure against that case.
If neither cause of the problem nor failure of SI unit can be found, inconsistency between parameter setting and the network construction at the master station is conceivable. In this case, refer to "Troubleshooting" in a user's manual (CC-Link system) by Mitsubishi.



♦List of Troubles and Countermeasures

Trouble No.	Problem	Possible cause	Investigation method	Countermeasure
1	PWR_LED at SI unit goes off.	SI unit controller's power supply wiring failure.	Check the cables for SI unit controller's power supply for breaking, and also check the connection between the power supply cable and the connector for looseness. Check there is no repeated bending and pulling force applied to the cable, which will cause breakage.	Connect the power supply cable correctly.
			Check the SI unit controller's power supply wiring for any error.	Correct the wiring.
		SI unit controller's power supply failure.	Check the SI unit controller's power supply for supply voltage.	Supply 24VDC ±10% to SI unit controller's power supply.
2	PWR(V)_LED at SI unit goes off.	Solenoid valve's power supply wiring failure.	Check the solenoid valve's power supply cable for breaking, and also check the connection between the power supply cable and the connector for looseness. Check there is no repeated bending and pulling force applied to the cable, which will cause breakage.	Connect the power supply cable correctly.
			Check the solenoid valve's power supply wiring for any error.	Correct the wiring.
		Solenoid valve's power supply failure.	Check the solenoid valve's power supply for supply voltage.	Supply 24VDC +10% /-5% to the solenoid valve's power supply.

Trouble No.	Problem		Possible cause	Investigation method	Countermeasure
3	LRUN_LED at SI unit goes off.	LERR_LED at SI unit flashes.	Error of the length of wiring or terminating resistance.	Check the communication line length, the existence of terminating resistances at the both ends of main line, and the cable is CC-Link designated one.	Correct the wiring and the setting.
			Changed communication speed setting.	Check the communication speed setting is not changed after supplying power for SI unit controller.	Cut the SI unit controller's power supply, and supply the power again after correcting the setting.
			Changed station number setting.	Check the station number setting is not changed after supplying power for SI unit controller.	
			Communication failure.	Check the existence of equipment and high voltage line, which cause noise, around the communication and power supply lines.	Separate the communication and power supply cables from the noise sources.
			Solenoid valve output HOLD.	Check HOLD/CLR setting at SI unit.	Correct HOLD/CRL setting.

Trouble No.	Problem		Possible cause	Investigation method	Countermeasure
4	LRUN_LED at SI unit goes off.	LERR_LED at SI unit goes off.	Master station's power supply failure.	Check the power is supplied to the master station.	Supply power for the master station correctly.
			Communication line wiring failure.	Check the communication line cable for breaking, and also check the connection between communication cable and the connector for looseness. Check there is no repeated bending and pulling force applied to the cable, which will cause breakage.	Connect the communication cable correctly.
				Check the communication line wiring for any error.	Correct the wiring.
			Communication failure.	Check the existence of equipment and high voltage line, which cause noise, around the communication and power supply lines.	Separate the communication and power supply cables from the noise sources.
			Solenoid valve output HOLD.	Check HOLD/CLR setting at SI unit.	Correct HOLD/CRL setting.
			Station number setting failure.	Check there is no difference between the set station number at SI unit and the station info. at the master station.	Correct the setting.
			Communication speed setting failure.	Check there is no difference between the set communication speed at SI unit and the set communication speed at the master station.	

Trouble No.	Problem		Possible cause	Investigation method	Countermeasure
5	LRUN_LED at SI unit is lit up.	LERR_LED at SI unit is lit up.	Station number setting failure. Station number duplicating failure.	Check the set station number at SI unit has no error and duplication.	Correct the setting.
			Communication speed setting failure.	Check the set communication speed at SI unit has no error.	
6	LRUN_LED at SI unit is lit up.	LERR_LED at SI unit flashes.	Changed communication speed setting.	Check the communication speed setting is not changed after supplying power for SI unit controller.	Cut the SI unit controller's power supply, and supply the power again after correcting the setting.
			Changed station number setting.	Check the station number setting is not changed after supplying power for SI unit controller.	
			Communication failure.	Check the existence of equipment and high voltage line, which cause noise, around the communication and power supply lines.	Separate the communication and power supply cables from the noise sources.
			Solenoid valve output HOLD.	Check HOLD/CLR setting at SI unit.	Correct HOLD/CRL setting.

Trouble No.	Problem	Possible cause	Investigation method	Countermeasure
7	Solenoid valve malfunction.	Solenoid valve failure.	Check the operation with another solenoid valve, or check the troubleshooting for a solenoid valve.	Check the troubleshooting for a solenoid valve, or consult our responsible division.
		Connection failure between SI unit and manifold solenoid valves.	Check the connector between SI unit and manifold solenoid valves for the connection failure such as a bent pin	Correct the connection between SI unit and manifold solenoid valves.
		Solenoid valves whose total output points are 32 or more malfunction.	Check the total output points of the solenoid valves connected to a manifold are 32 or less.	As EX180-SMJ1, EX180-SMJ1A max. output points are 32, the output points must be 32 or less.

Revision history

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