



Installation & Maintenance Manual

SI unit - CC-Link compatible

Series **EX120-SMJ1/EX121-SMJ1**
EX122-SMJ1/EX124D/U-SMJ1
EX126D-SMJ1



Safety Instructions

This manual contains essential information for the protection of users and others from possible injury and/or equipment damage.

- Read this manual before using the product, to ensure correct handling, and read the manuals of related apparatus before use.
- Keep this manual in a safe place for future reference.
- These instructions indicate the level of potential hazard with the labels of "Caution", "Warning" or "Danger", followed by important safety information which must be carefully followed.
- To ensure safety of personnel and equipment the safety instructions in this manual and the product catalogue must be observed, along with other relevant safety practices.

Caution	CAUTION indicates a hazard with a low level of risk which, if not avoided, could result in minor or moderate injury.
Warning	WARNING indicates a hazard with a medium level of risk which, if not avoided, could result in death or serious injury.
Danger	DANGER indicates a hazard with a high level of risk which, if not avoided, will result in death or serious injury.

This product is class A equipment that is intended for use in an industrial environment. There may be potential difficulties in ensuring electromagnetic compatibility in other environments due to conducted as well as radiated disturbances.

Warning

- **Do not disassemble, modify (including change of printed circuit board) or repair the product.**
An injury or product failure may result.
- **Do not operate the product beyond the specification range.**
Fire, malfunction or equipment damage may result. Use the product only after confirming the specifications.
- **Do not use the product in the presence of flammable, explosive or corrosive gas.**
Fire, explosion or corrosion may result. This product does not have an explosion proof construction.
- **When using the product as part of an interlocking system:**
 - 1) Provide a double interlocking system, for example a mechanical system.
 - 2) Check the product regularly to ensure proper operation.
- **Before performing maintenance, be sure of the following:**
 - 1) Turn off the power supply.
 - 2) Stop the air supply, exhaust the residual pressure and verify the release of air from the system.

Caution

- **Always perform a system check after maintenance.**
Do not use the product if any error occurs.
Safety cannot be assured if caused by un-intentional malfunction.
- **Provide grounding to ensure correct operation and to improve noise resistance of the product.**
This product should be individually grounded using a short cable.
- **Follow the instructions given below when handling the product.**
Failing to do so may result in product damage.
 - Maintenance space should always be provided around the product.
 - Do not remove labels from the product.
 - Do not drop, hit or apply excessive shock to the product.
 - Follow all specified tightening torques.

Safety Instructions (continue)

- Do not bend, apply tensile force, or apply force by placing heavy loads, on the cables.
- Connect wires and cables correctly, and do not connect while the power is ON.
- Do not route wires and cables together with power or high-voltage cables.
- Check the insulation of wires and cables.
- Take proper measures against noise, such as noise filters, when the product is incorporated in equipment or devices.
- Select the required protection (IP) rating according to the environment of operation.
- Take sufficient shielding measures when the product is to be used in the following conditions:
 - (1) where noise due to static electricity is generated.
 - (2) where electro-magnetic field strength is high.
 - (3) where radioactivity is present.
 - (4) where power lines are located.
- Do not use the product in a place where electric surges are generated.
- Use suitable surge protection when a surge generating load such as a solenoid valve are to be directly driven.
- Prevent any foreign matter from entering this product.
- Do not expose the product to vibration or impact.
- Use the product within the specified ambient temperature range.
- Do not expose the product to any heat radiation.
- Use a precision screwdriver with flat blade to adjust the Rotary switch.
- Close the cover over the switches before power is applied.
- Do not clean the product with chemicals such as benzene or thinners.

NOTE

- When conformity to UL is necessary the SI unit must be used with a UL 1310 Class2 power supply.

How to Order

EX □□□ - S[MJ]1

- Applicable PLC

MJ	Mitsubishi Electric Corp. CC-Link System
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- SI unit

120	VQ1000/2000/SV Direct mounting
121	DIN rail mounting
122	SX/SY Direct mounting
124D 124U	VQ2000 (IP65 type) /4000/5000
126D	SY/SV/VQC

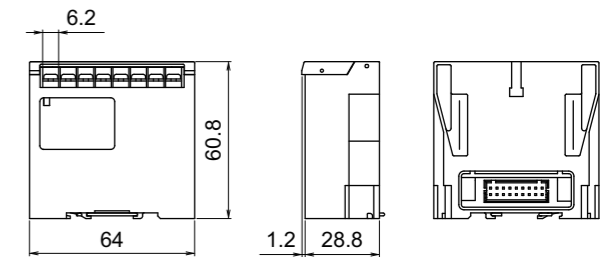
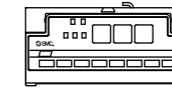
Specifications

Item	Specifications
Applicable system	CC-Link Ver1.10
Supply voltage for communication	15 V to 30 VDC
Supply voltage for solenoid valve	24 VDC +10%/-5%
Power consumption	Communication, Internal power supply : 24 VDC, 0.1 A or less Solenoid valve power supply : 24 VDC, 1.5 A or less
Output number	16 points
Output type	NPN (positive common)
Connected load	24 VDC, SMC solenoid valve with 2.1 W or less of light/surge voltage suppressor

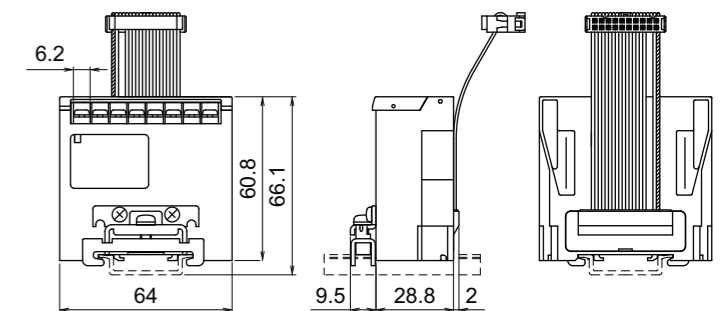
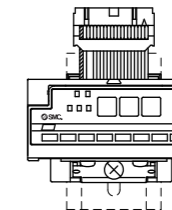
Item	Specifications
Withstand voltage	Between external terminal package and ground, 1500 VAC for 1min.
Insulation resistance	Between all the live terminals and ground, 2 MΩ (with insulation resistance tester of 500 VDC)
Vibration resistance	49 m/s ² (10 to 55 Hz, 0.5 mm of one-side amplitude)
Shock resistance	98 m/s ²
Ambient temperature	0 to +55 °C (when 8 points of valves are ON) 0 to +50 °C (when 16 points of valves are ON)
Ambient humidity	35 to 85% RH (without dew condensation)
Environment	No corrosive gas
Storage temperature	-10 to +60 °C
Weight	EX120: 110 g or less EX121, EX122: 140 g or less EX124D/U: 240 g or less EX126D: 240 g or less
Dimensions	EX120: 64×30×60.8 mm EX121, EX122: 64×40×60.8 mm EX124D/U: 114×67×53.8 mm EX126D: 114×67×65.2 mm

Outline dimensions(mm)

• EX120-SMJ1

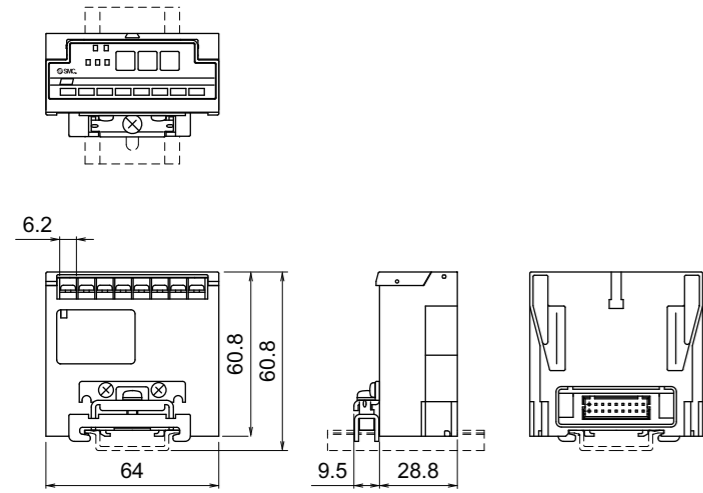


• EX121-SMJ1

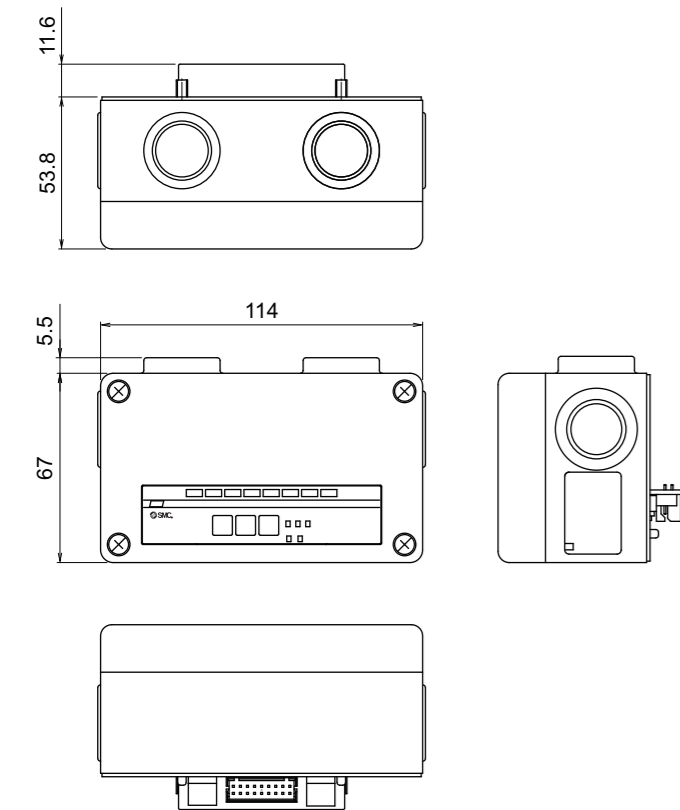


Outline dimensions(mm) (continue)

• EX122-SMJ1

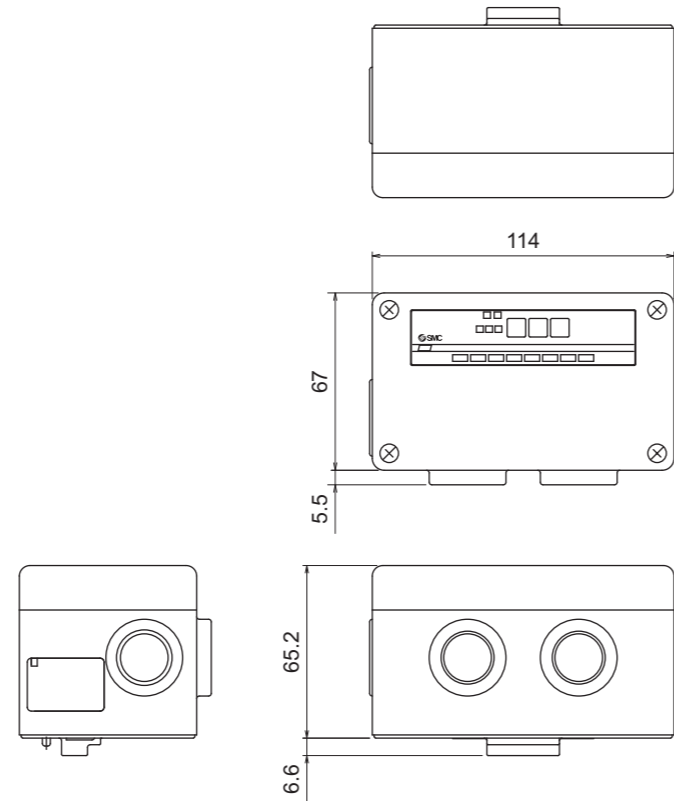


• EX124D/U-SMJ1



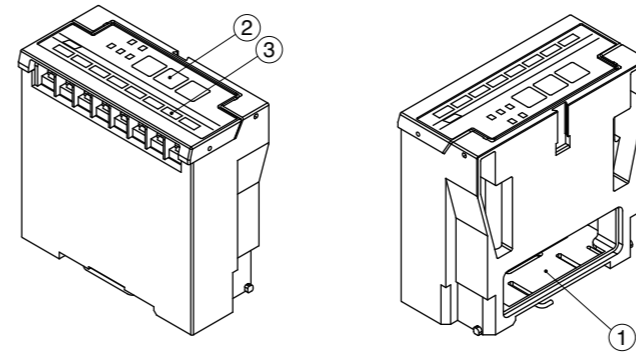
Outline dimensions(mm) (continue)

• EX126D-SMJ1

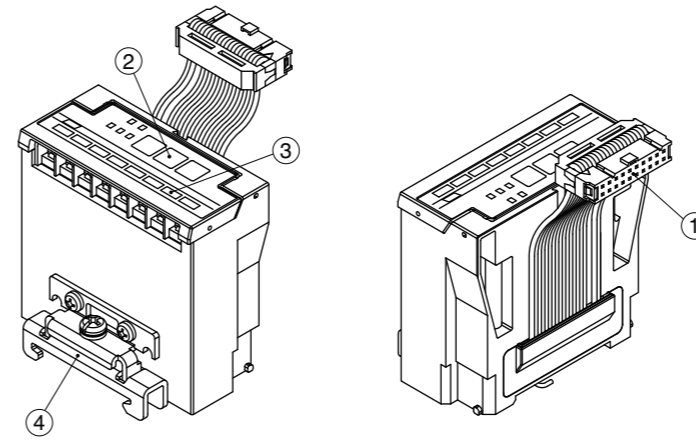


Names and Functions of individual Parts

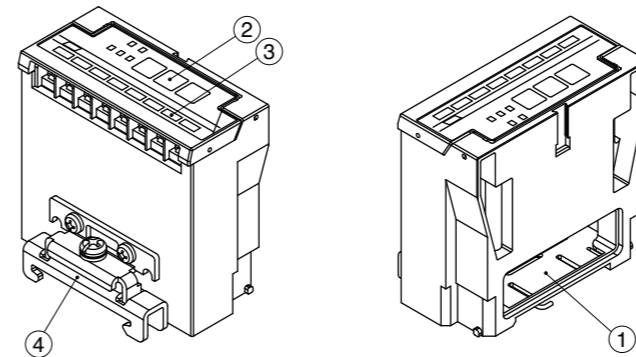
• EX120-SMJ1



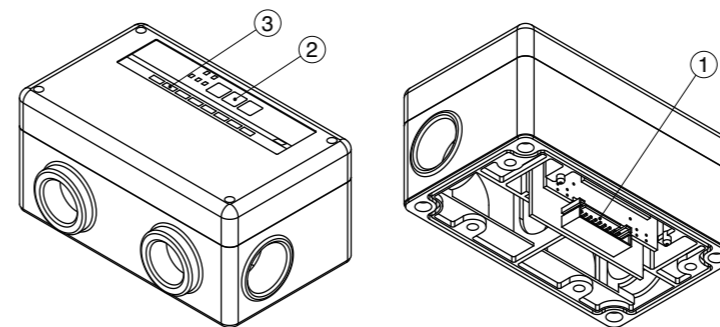
• EX121-SMJ1



• EX122-SMJ1

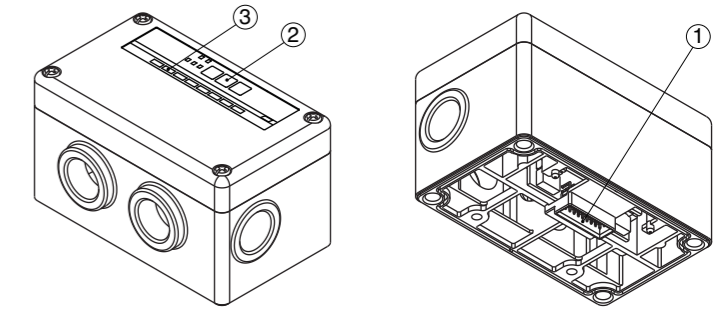


• EX124D/U-SMJ1



Names and Functions of individual Parts (continue)

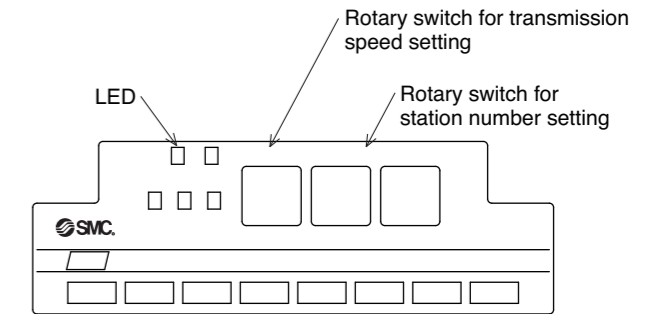
• EX126DSMJ1



No.	Parts	Purpose
1	Output equipment connector	To connect the output equipment such as a solenoid valve.
2	Indication and address setting panel	To provide LED's to indicate the unit status, setting of address and communication speed. (Baud Rate)
3	Terminal	To connect the power line and communication line.
4	DIN rail mounting bracket	To mount on DIN rail.

Setting

Setting for Display



Display	Meaning
PW	LED is ON when power supply for communication is supplied.
L RUN	LED is ON when SI unit communicates data with master station normally. LED is OFF when communication is terminated (overtime error).
SD	LED is ON when sending data.
RD	LED is ON when receiving data.
L ERR.	LED is ON when a transmission error (CRC error) occurs, or if there is an error in station number setting or transmission speed setting. LED flashing indicates the setting of station number or transmission speed has changed. LED is OFF when communication is normal.

* "PW", "L RUN", "SD" and "RD" ON when data linked normally.

Setting (continue)**• Transmission speed setting switch : "B RATE"**

Setting	Transmission speed
0	156kbps
1	625kbps
2	2.5Mbps
3	5Mbps
4	10Mbps

Set transmission speed within the range of 0 to 4.

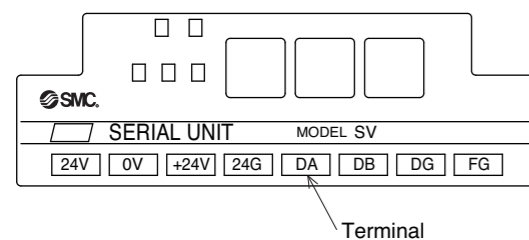
• Station number setting switch : "STATION NO."

Set station number within the range of 01 to 64.

(Overlapped station number setting is not allowed.)

"×10" is to set the tens digit of a station number.

"×1" is to set the units digit of a station number.

Internal Circuit and Wiring**Terminal block for external wiring**

Terminal	Connect to
24V	24VDC power supply line for solenoid valve
0V	0VDC power supply line for solenoid valve
+24V	24VDC power supply line for communication
24G	0VDC power supply line for communication
DA	Communication line DA
DB	Communication line DB
DG	Communication line DG
FG	Grounding conductor

* Terminal screws are M3 thread.

Contacts

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FINLAND	(358) 207 513513	SLOVAKIA	(421) 2 444 56725
FRANCE	(33) 1 6476 1000	SLOVENIA	(386) 73 885 412
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GREECE	(30) 210 271 7265	SWEDEN	(46) 8 603 1200
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SMC Corporation

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