OMRON

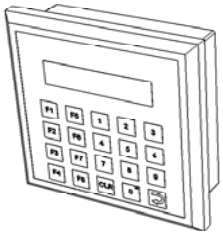
Model

NT2S-SF125B-E
NT2S-SF126B-E
NT2S-SF127B-E

PROGRAMMABLE TERMINAL

INSTRUCTION SHEET

This sheet has important information on how the Unit is used. Please read through this manual thoroughly before using the Unit. And after reading this manual, please keep this manual in a place where others can easily access for future reference.



OMRON Corporation
 Rev. A

Safety Precautions

■ Definition of Precautionary Information

⚠ WARNING Not following a precaution given as a “Warning” may result in fatal or serious injury.

■ Warnings

⚠ WARNING Do not attempt to take the Unit apart and do not touch any internal parts while power is being supplied. Doing either of these may result in electric shock.

Precautions

1. When unpacking the Units, check carefully for any external scratches or other damage. Also, shake the Units gently and check for any abnormal sound.
2. Do not let metal particles enter the Units when preparing the panel.
3. The maximum mounting panel thickness is 4.0 mm.
4. Tighten the Mounting brackets evenly to a torque between 0.7 and 0.9 N·m to maintain water and dust resistance. Make sure the panel is not dirty or warped and that it is strong enough to hold the Units.
5. Do not connect an AC power supply to the power supply terminals.
6. Use a DC power supply with minimal fluctuation voltage.
   Rated power supply voltage: 24 VDC
   (Allowable range: 21.6 to 26.4 VDC)
   Capacity: 2W min.
7. Always tighten the connector screws after connecting communication cables.
8. Use a twisted-pair cable of at least 0.75 mm^2 to connect to the power supply terminals. Make sure the screws are properly tightened.
9. Double-check all the wiring before turning on the power supply.
10. Confirm that the system will respond safely before turning the power supply on or off.
11. Start actual system application only after sufficient checking screen data and the operation of the program in the host computer.
12. Do not attempt to disassemble, repair, or modify the Units in any way.
13. Dispose of the Units, according to local ordinances as they apply.

Correct Use

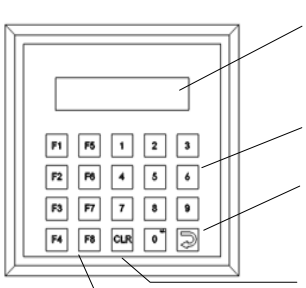
1. Do not install the Unit in any of the following locations.
   • Locations subject to rapid changes in temperature.
   • Locations subject to temperatures or humidities outside the range specified in the specifications.
   • Locations subject to condensation as the result of high humidity.
   • Locations object to splashing chemicals or solvents.
   • Locations subject to corrosive or flammable gasses.
   • Locations subject to strong shock or vibration.
   • Locations outdoors subject to direct wind and rain.
   • Locations subject to strong ultra-violet light.
2. Take appropriate and sufficient countermeasures when installing systems in the following locations.
   • Locations subject to static electricity or other forms of noise.
   • Locations subject to strong electromagnetic or magnetic fields.
   • Locations close to power supply lines.
   • Locations subject to possible exposure to radioactivity.
3. Connect the Unit to a class-3 ground (100Ω or less). Do not use the same ground as equipment that generates noise.
4. Signals from the function keys may not be input if the switches are pressed consecutively at high speed. Confirm each input before proceeding to the next one.
5. Do not use benzene, paint thinner or other volatile solvents, and do not use chemically treated cloths.

1. Parts and Functions

The following diagram shows the front and back panels of the NT2S-SF125B-E/SF126B-E/SF127B-E, and explains the parts and functions.

■ Front Panel

SF125B-E / SF126B-E



2x 16 characters LCD screen with back-light

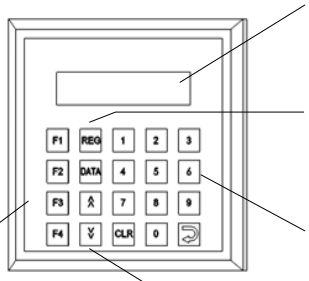
Numeric Keys

Enter key

CLR: Clear contents

Function Keys

SF127B-E



2x 16 characters LCD screen with back-light

REG: View registers in operator mode.
DATA: Enter data entry mode

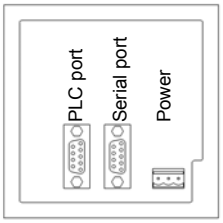
Numeric Keys

Arrow Keys

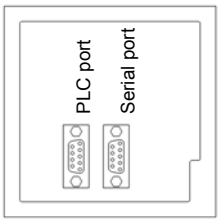
Function Keys

■ Back Panel

SF125B-E

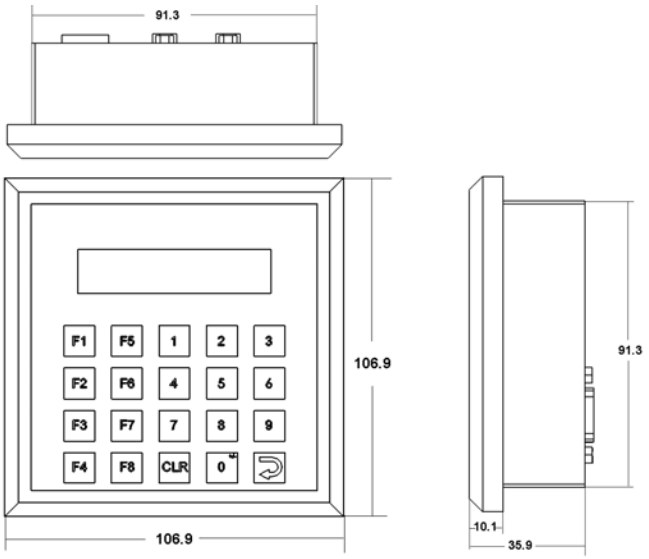


SF126B-E



SF127B-E

2. External Dimensions

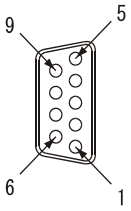


3. Connector and Pin Layout

■ Serial Port Connector

- *SF125B-E, SF126B-E (DB9, Female)*

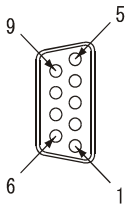
Pin Number	Name	
2	TXD	Transmit Data
3	RXD	Receive Data
9	GND	Ground



■ PLC Port connector

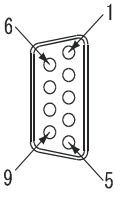
- *SF125B-E (DB9, Female)*

Pin Number	Name	
2	TX232	Transmit RS232
3	RXD	Receive RS232/Cmos
4	GND	Circuit Ground
5	GND	
6	VCC	+5 VDC
7	TXD	Transmit Cmos
8	-	Direction Control
9	-	PLC attach



- *SF126B-E, SF127B-E (DB9, Male)*

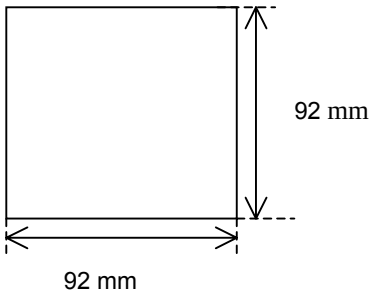
Pin Number	Name	
2	-	Direction Control
3	TX232	Transmit RS232
4	VCC	+5 VDC
5	GND	Circuit Ground
6	TXD	Transmit Cmos
7	RXD	Receive RS232/Cmos
8	RXD	



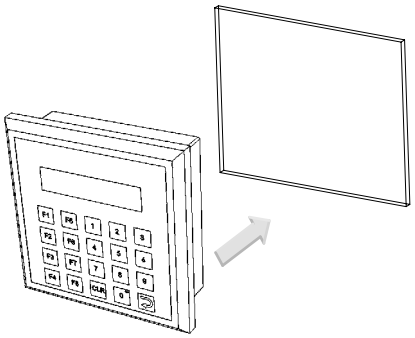
4. Installation in a Panel

The NT2S-SF125B-E/SF126B-E/SF127B-E is normally attached to the panel. Read the following instructions on how to attach the system.

- Create an opening in the panel.
  Panel thickness: 4.0 mm max.



- Install the NT2S from the front of the panel.
  (Make sure that the gasket is properly mounted)

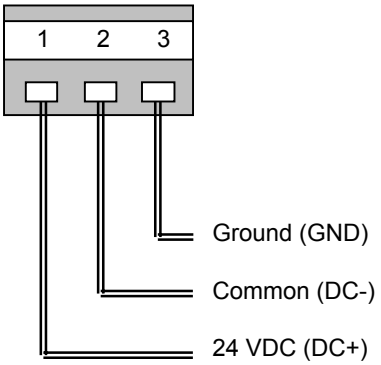


- Secure the NT2S, with the provided attachments to the panel.
  (To maintain water and dust resistant performance, the tightening torque must be 0.7 to 0.9 N•m.

5. SF125B-E Power Cable Connecting

The terminals for connecting the power cables are located on the 3-pin connector.

Connect the 3-pin connector as follows.



6. Real time clock for SF125B-E

The SF125B-E Programming terminal is equiped with a Real Time Clock (RTC).
Within the NT2ST software you will find the value of the RTC download time (the time interval between two downloads of the RTC data to the PLC). If you select 0 in the firmware, the data will be sent as fast as possible to the PLC.
Consider that the operation of the terminal can be slower as usual by selecting a small interval time.
The RTC accuracy may vary up to 3 minutes per month.

Editing the RTC value is only possible at power up of the Programming Terminal. By pressing “ENT” and “0” keys simultaneously during power up you will enter the RTC editing menu. Pressing the F1 and F2 keys will move you through the different fields. Values can be entered by using the “CLR” and numeric keys and stored by using the “ENT” key.
The RTC time can not be set under PLC control.

NOTE:

NT2S-SF127B-E uses a pre-defined area for key definitions and Unit operations.
Therefore do NOT use the NT2S-SF127B-E in combination with CQM1H inner-boards CTB41 and SCB41 mounted in slot 1.

7. Key Definitions for SF127B-E

Each key is mapped from work bits 201.00 to 202.03. As long as a key is pressed, the corresponding bit as shown in the table below will be set.
Only one key can be set at a time.

Key	WorkBit	Key	WorkBit
F1	201.00	**1**	201.08
F2	201.01	**2**	201.12
F3	201.02	**3**	202.00
F4	201.03	**4**	201.09
REG	201.04	**5**	201.13
DATA	201.05	**6**	202.01
UP	201.06	**7**	201.10
DOWN	201.07	**8**	201.14
CLR	201.11	**9**	202.02
ENTER	202.03	**0**	201.15

8. Unit Operations for SF127B-E

The workbits 200.00 to 200.15 control the mode of operation of the Unit.
For correct operation the workbits have to be set in the PLC as shown in the table below.

Work bit	Function
200.00 to 200.03	Not Used
200.04 to 200.07	Reserved for future use
200.09 and 200.08	**Mode selection bits** 00: Screen mode 01: Register mode 10: Operator mode 11: Invalid
200.11 and 200.10	**Time to switch from Operator mode to screen mode.** 00: 10 seconds 01: 20 seconds 10: 30 seconds 11: 40 seconds
200.12 to 200.14	Reserved for future use
200.15	**To disable data entry from screen mode** ON: disable

9. Operating Precautions

⚠ WARNING Do not use an input function such as the function-key of a PT in places where they may endanger human lives or cause serious damage. Also, do not use an input function such as the function key of a PT as an emergency switch.

You must allow sufficient leeway in ratings and performance and provide proper fail-safe and other safety measures when using the Unit in any of the following applications. Be sure also to consult your OMRON representative before actually attempting any of these applications.

1. Applications under conditions or environments not specified in user manuals.
2. Applications for nuclear reactor control, train facilities, aviation facilities, motorised vehicles, furnaces, medical equipment, amusement equipment and safety equipment.
3. Applications strongly related to human life or property, particularly those requiring safety.

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Note: Specification subject to change without notice.
Printed in India.