

# Operator Interface

## NT2S

### Powerful and Compact Alphanumeric Operator Interface

- High visibility LED backlit LCD display shows 2 lines of 16 characters.
- Choose either a programmable or PLC message display model.
- 6 or 8 function keys available for screen and project level assignment.
- Easy numeric entry using arrow or numeric keypad.
- Two bit-assignable LED indicators on 6-F key models.
- Power from PLC peripheral port or external 24 VDC power.
- Password protect any programmable function key.
- Bar graph display.
- cULus and CE approvals, Class I, Division 2 ratings for all models.
- IP65 enclosure rating.
- Programming software available FREE in the Products section of our web site at [www.omron.com/oei](http://www.omron.com/oei).



## Ordering Information

| Description                                                                         | Model           |
|-------------------------------------------------------------------------------------|-----------------|
| 6 function key, 2x16 character LCD, Programmable, RTC, external 24 VDC              | NT2S-SF121B-EV2 |
| 6 function key, 2x16 character LCD, Programmable, 5 VDC                             | NT2S-SF122B-EV2 |
| 6 function key, 2x16 character LCD, PLC ASCII-based program, 5 VDC                  | NT2S-SF123B-EV2 |
| 8 function key+numpad, 2x16 character LCD, Programmable, RTC, external 24 VDC       | NT2S-SF125B-E   |
| 8 function key+numpad, 2x16 character LCD, Programmable, 5 VDC                      | NT2S-SF126B-E   |
| 8 function key+numpad, 2x16 character LCD, PLC ASCII-based program, 5 VDC           | NT2S-SF127B-E   |
| 2 m Cable SF121 model - 9-PIN to PLC peripheral (CPM1A, CPM2A)                      | NT2S-CN212      |
| 5 m Cable SF121 model - 9-PIN to PLC peripheral (CPM1A, CPM2A)                      | NT2S-CN215      |
| 2 m Cable SF121 model - 9-PIN to PLC mini-peripheral (CPM2C, CQM1H, CJ1, CS1)       | NT2S-CN223-V1   |
| 2 m Cable SF122/SF123 model - 9-PIN to PLC peripheral (CPM1A, CPM2A)                | NT2S-CN222-V1   |
| 5 m Cable SF122/SF123 model - 9-PIN to PLC peripheral (CPM1A, CPM2A)                | NT2S-CN225-V1   |
| 2 m Cable SF122/SF123 model - 9-PIN to PLC mini-peripheral (CPM2C, CQM1H, CJ1, CS1) | NT2S-CN224-V1   |
| 2 m Cable SF121 model - 9-PIN to DH485 network                                      | NT2S-CN212-485  |
| 2 m Programming Cable - PC to NT2S-SF121/SF122 models                               | C200H-CN229-EU  |

# Specifications

**Note:** Where applicable, specifications for part numbers in parentheses will be given in parentheses.

## ■ Features

| Item                                                              | NT2S-SF121B-EV2<br>(NT2S-SF125-E)                                                                                                    | NT2S-SF122B-EV2<br>(NT2S-SF126-E) | NT2S-SF123B-EV2<br>(NT2S-SF127-E)                                                                                                                                                            |
|-------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Programming package                                               | Windows® Software Package NT2ST                                                                                                      |                                   | Not programmable                                                                                                                                                                             |
| ASCII controlled messages                                         | ---                                                                                                                                  |                                   | ASCII in PLC registers is displayed on the NT2S screen. Pointer in PLC memory tells NT2S which register to display. Pointers placed in that PLC register point to data value to be displayed |
| Multi-vendor support                                              | Omron, Allen-Bradley Micrologix and SLC 5/0x, GE Micro, Modicon, Keyence KV Series, Toshiba T Series, Koyo 305, 405 and DL205 Series | ---                               |                                                                                                                                                                                              |
| Memory                                                            | Type EEPROM: 8K (24K)                                                                                                                |                                   |                                                                                                                                                                                              |
| Enclosure ratings                                                 | IP65                                                                                                                                 |                                   |                                                                                                                                                                                              |
| Standards                                                         | cULus, CE, Class I Div 2                                                                                                             |                                   |                                                                                                                                                                                              |
| Ambient operating rating                                          | 0° to 50°C                                                                                                                           |                                   |                                                                                                                                                                                              |
| Storage temperature                                               | -20°C to 60°C                                                                                                                        |                                   |                                                                                                                                                                                              |
| Ambient operating humidity                                        | 35% to 85% with no condensation                                                                                                      |                                   |                                                                                                                                                                                              |
| Ambient operating environment                                     | No corrosive gases                                                                                                                   |                                   |                                                                                                                                                                                              |
| Power: Supplied voltage and power consumption                     | 1.5W @ 24 VDC                                                                                                                        | 0.75W @ 5 VDC                     |                                                                                                                                                                                              |
| Weight                                                            | 400 g                                                                                                                                |                                   |                                                                                                                                                                                              |
| Panel fitting                                                     | 2 clamps                                                                                                                             |                                   |                                                                                                                                                                                              |
| Face dimensions: dimensions of front bezel                        | 109W x 60H mm (107W x 107H mm)                                                                                                       |                                   |                                                                                                                                                                                              |
| Rear unit dimensions: dimensions of portion that enters the panel | 91W x 44H x 28D mm (91W x 91H x 26D mm)                                                                                              |                                   |                                                                                                                                                                                              |
| Recommended panel cutout dimensions                               | 92W x 45H mm (92W x 92H mm)                                                                                                          |                                   |                                                                                                                                                                                              |

## ■ Display

| Item                                                                                                                                                               | NT2S-SF121B-EV2<br>(NT2S-SF125-E)    | NT2S-SF122B-EV2<br>(NT2S-SF126-E) | NT2S-SF123B-EV2<br>(NT2S-SF127-E) |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|-----------------------------------|-----------------------------------|
| Display: lines x characters                                                                                                                                        | 2 x 16                               |                                   |                                   |
| Character height                                                                                                                                                   | 4.35 mm                              |                                   |                                   |
| Backlit                                                                                                                                                            | LED                                  |                                   |                                   |
| Effective display area                                                                                                                                             | 60 x 13 mm                           |                                   |                                   |
| Indicators                                                                                                                                                         | Red and green LED indicators (N/A)   |                                   |                                   |
| Number of screens:<br>Max number of screens if only text messages are used for each screen. Adding function keys, scrolling messages, etc. decreases the capacity. | 250 (750)                            |                                   |                                   |
| Data format                                                                                                                                                        | HEX, BCD, OCT, BIN, signed, unsigned |                                   | Controlled by PLC                 |

## ■ Function Keys

| Item                                                                                                                       | NT2S-SF121B-EV2<br>(NT2S-SF125-E)                                                                                                                                | NT2S-SF122B-EV2<br>(NT2S-SF126-E) | NT2S-SF123B-EV2<br>(NT2S-SF127-E) |
|----------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|-----------------------------------|
| Available function keys:<br>Number of user programmable function keys                                                      | 6 (8)                                                                                                                                                            |                                   | 6 (8) fixed function              |
| Global function key program                                                                                                | Function key can be programmed for global functions. key program is effective throughout the NT2S program. Local program can override.                           |                                   | N/A                               |
| Local function key program                                                                                                 | Function key can be programmed uniquely for each screen                                                                                                          |                                   | N/A                               |
| Function key binary action                                                                                                 | Momentary, toggle on, toggle off, set on, set off                                                                                                                |                                   | N/A                               |
| Function key numeric action                                                                                                | Set constant value, increment or decrement by a constant value to PLC register                                                                                   |                                   | N/A                               |
| Numeric entry:<br>Special screen allows numeric entry into one formatted field which is assigned to a PLC memory location. | Arrow keys, Enter, Clear<br>(Numpad, Enter, Clear)                                                                                                               |                                   |                                   |
| Function key screen                                                                                                        | Global function key actions can be linked to a function key screen that displays upon activation of that function key. This can be used to confirm function key. |                                   | N/A                               |
| Password protect any key                                                                                                   | Password can be activated for any function key                                                                                                                   |                                   | N/A                               |

## ■ Communications

| Item                                         | NT2S-SF121B-EV2<br>(NT2S-SF125-E) | NT2S-SF122B-EV2<br>(NT2S-SF126-E) | NT2S-SF123B-EV2<br>(NT2S-SF127-E) |
|----------------------------------------------|-----------------------------------|-----------------------------------|-----------------------------------|
| COM port 1:<br>Programming and printing port | DB9 connector, RS-232 port        |                                   | N/A                               |
| COM port 2:<br>Host PLC communications       | DB9 connector, CMOS/RS-232 port   |                                   | N/A                               |

## ■ Special Functions

| Item                  | NT2S-SF121B-EV2<br>(NT2S-SF125-E)                                                                   | NT2S-SF122B-EV2<br>(NT2S-SF126-E) | NT2S-SF123B-EV2<br>(NT2S-SF127-E) |
|-----------------------|-----------------------------------------------------------------------------------------------------|-----------------------------------|-----------------------------------|
| Real time clock       | 2-digit year, month, date, hour, minute, second                                                     | N/A                               |                                   |
| 2 user definable LEDs | Red and green LED on -EV2 models can be controlled from PLC (N/A on -E models)                      |                                   |                                   |
| Scrolling messages    | Scroll messages up to 256 characters                                                                |                                   | N/A                               |
| Flashing display      | Specify for backlight to flash                                                                      |                                   | N/A                               |
| Minimum display time  | Define minimum display time for a screen                                                            |                                   | N/A                               |
| Screen chaining       | Chained screen will display in sequential fashion, each displaying for the set minimum display time |                                   | N/A                               |
| Link screen           | Create a list of screens that can be navigated using the NEXT (F1) and PREVIOUS (F2) keys           |                                   | N/A                               |
| Bar graph display     | Display numeric values as a bar graph                                                               |                                   |                                   |

## ■ Print Functions

| Item         | NT2S-SF121B-EV2<br>(NT2S-SF125-E)                                                                                                  | NT2S-SF122B-EV2<br>(NT2S-SF126-E) | NT2S-SF123B-EV2<br>(NT2S-SF127-E) |
|--------------|------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|-----------------------------------|
| Print screen | Configure serial communications port to communicate with a printer. Print screen text and displayed PLC data values can be printed |                                   | --                                |

# Operations

## ■ NT2S-SF121B-EV2 NT2S-SF125B-E

### Key Features

- Unit programmed with Windows®-based software included with each unit at no charge.
- 24 VDC from external power supply.
- Real time clock - year, month, date, hour, minute, and second sent to specified PLC registers.
- Supports Omron PLCs.
- Supported multi-vendor PLCs
  - Omron Host Link
  - Allen-Bradley Mirologix and SLC 5/0X (DF1)
  - GE Micro
  - Modicon (Modbus Master)
  - Keyence KV Series
  - Toshiba T Series
  - Koyo 305, 405 and DL205 Series

## ■ NT2S-SF122B-EV2 NT2S-SF126B-E

### Key Features

- Unit Programmed with Windows®-based software included with each unit at no charge.
- 5 VDC power supplied by PLC peripheral support.
- For use with Omron PLCs.

## ■ NT2S-SF123B-EV2 NT2S-SF127B-E

### Key Features

This is not a typical message display. These message displays have function keys that provide data entry and screen changing capability. The unit displays ASCII characters that are stored in the PLC registers. The displayed data register is controlled by a command register which specifies the register number to be viewed. PLC registers can be programmed to display text or numeric values from other PLC memory locations using pointers. Numeric values displayed on screen can be modified by entering the DATA mode and using the up and down arrow function keys.

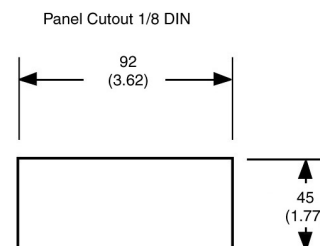
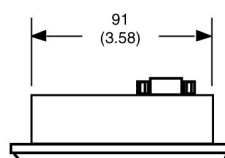
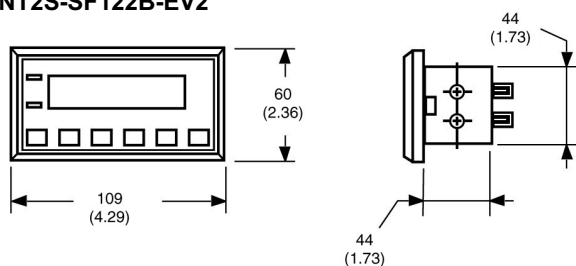
- 5 VDC power supplied by PLC peripheral port.
- Supports all Omron PLCs.
- Preset function keys allow navigation through PLC register, selection of data for modifications and entry of new values.

# Dimensions

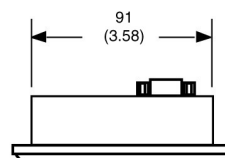
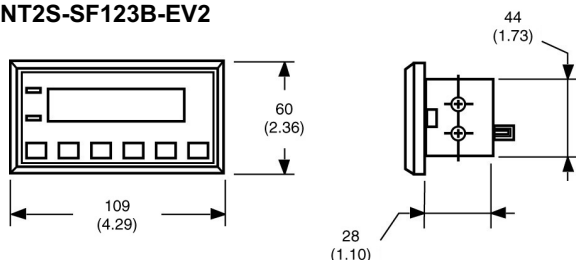
Unit: mm (inch)

## ■ Operator Interfaces

### NT2S-SF121B-EV2 NT2S-SF122B-EV2

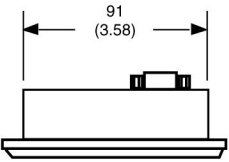
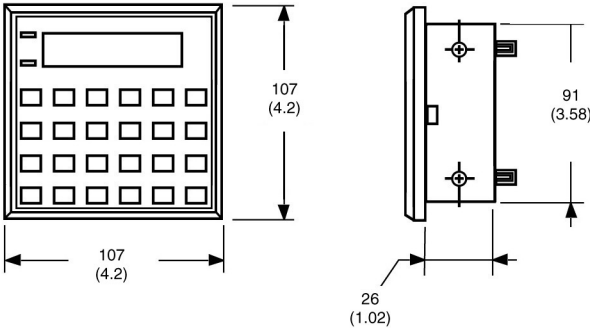


### NT2S-SF123B-EV2

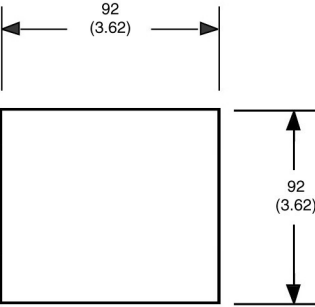


Unit: mm (inch)

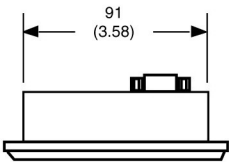
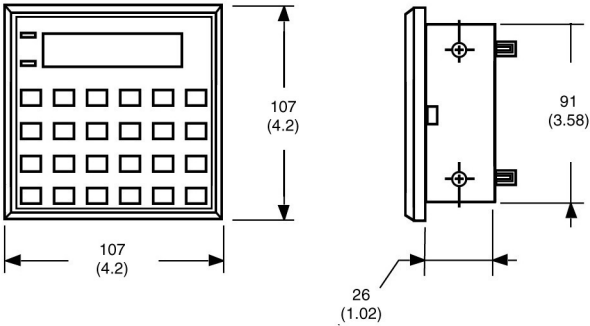
**NT2S-SF125B-E**  
**NT2S-SF126B-E**



Panel Cutout 1/8 DIN



**NT2S-SF127B-E**



ALL DIMENSIONS SHOWN ARE IN MILLIMETERS. To convert millimeters into inches, divide by 25.4



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