## New Models with Blanking Function Added to the Series

- Single-color (red or green) and two-color (red or green selectable) displays with a character height of 14 mm are available for a variety of applications and locations.
- Miniature design with a $43-\mathrm{mm}$ depth is perfect for saving space in equipment and devices.
- Wide-range power supply from 12 to 24 VDC.
- Negative sign (-) display with signal codes is possible for Decimal-display Models.

- Models with zero suppression function available.


## Model Configuration

Unit Configuration


## Ordering Information

## List of Models

| Displaycontents | Display color | Type | Model |  |
| :---: | :---: | :---: | :---: | :---: |
|  |  |  | Model with Zero Suppression (See note 1.) | Model with Blanking (See note 2.) |
| $\pm 1$ | Red | Positive | --- | M7E-01BRP2 |
|  |  | Negative | --- | M7E-01BRN2 |
|  |  | Dynamic output | --- | M7E-01BRD2 |
|  | Green | Positive | --- | M7E-01BGP2 |
|  |  | Negative | --- | M7E-01BGN2 |
|  |  | Dynamic output | --- | M7E-01BGD2 |
| Decimal <br> 8 | Red | Positive | M7E-01DRP2 | M7E-01DRP2-B |
|  |  | Negative | M7E-01DRN2 | M7E-01DRN2-B |
|  |  | Dynamic output | M7E-01DRD2 | M7E-01DRD2-B |
|  | Green | Positive | M7E-01DGP2 | M7E-01DGP2-B |
|  |  | Negative | M7E-01DGN2 | M7E-01DGN2-B |
|  |  | Dynamic output | M7E-01DGD2 | M7E-01DGD2-B |
|  | Red/green (two colors) | Negative | M7E-01DRGN2 | M7E-01DRGN2-B |
| Hexadecimal | Red | Positive | M7E-01HRP2 | M7E-01HRP2-B |
|  |  | Negative | M7E-01HRN2 | M7E-01HRN2-B |
|  | Green | Positive | M7E-01HGP2 | M7E-01HGP2-B |
|  |  | Negative | M7E-01HGN2 | M7E-01HGN2-B |

## Connectable PLCs

| M7E model |  | PLC output method |  |  |
| :---: | :---: | :---: | :---: | :---: |
| Displaycontents | Type | Static output |  | $\begin{array}{\|c} \text { Dynamic } \\ \text { output } \end{array}$ |
|  |  | $\begin{gathered} \text { PNP } \\ \text { output } \end{gathered}$ | NPN output |  |
| $\begin{array}{\|l\|} \hline \pm 1, \\ \text { decimal } \end{array}$ | Positive | $\bigcirc$ | $\triangle$ | $\triangle$ |
|  | Negative | $\times$ | $\bigcirc$ | $\times$ |
|  | Dynamic output | $\times$ | $\times$ | $\bigcirc$ |
| Hexadecimal | Positive | $\bigcirc$ | $\triangle$ | $\triangle$ |
|  | Negative | $\times$ | $\bigcirc$ | $\times$ |
| Unit | --- | O (only voltage imposed) |  |  |

O: Connectable
$x$ : Not connectable
$\triangle$ : Connectable (See note.)
Note: Connectable but an external resistor is required and only 24 VDC must be supplied.
Refer to External Connections on page 9 and 10 for details.

| Display <br> contents | Display <br> color | Logic | Model |
| :--- | :--- | :--- | :--- |
| Unit | Red | --- | M7E-01UR2- <br> (See note 3.) |
|  | Green | --- | M7E-01UG2- <br> (See note 3.) |

Accessories (Order Separately)

## End Plate

| Case color Item | Model |
| :--- | :--- |
| Light gray | M7E-012M |
| Black | M7E-012M-1 |

Note: The Right and Left Plates form a pair.
Spacer

| Case color $\quad$ Item | Model |
| :--- | :--- |
| Light gray | M7E-012PA |
| Black | M7E-012PA-1 |

Note: 1. Models with zero suppression are blank only when the display is and the decimal is OFF by wiring as shown on page 12.
2. Models with blanking enable turning OFF a user-specified display ( 5 to $9, F$ to $F$ ) by inputting a signal to the blank input terminal.
3. The symbol in the box $(\square)$ indicates the code for the display contents. Refer to page 13.
Connector

| Terminal | Model |
| :---: | :---: |
| Solder terminal | NRT-C |
| Solder terminal | NRT-CN |
| PCB terminal | NRT-CP |

## Mother Board

| Type | Number of digits | Model |
| :--- | :--- | :--- |
| Static | 4 | M7E-01MB4-S2 |
| Static | 3 | M7E-01MB3-S2 |
| Static | 2 | M7E-01MB2-S2 |

Note: Refer to M7E Mother Board for Display Units (Character Height: 14 mm ) for details.

## Specifications

## Ratings

| Rated power supply |  | Wide range from 12 to 24 VDC |
| :---: | :---: | :---: |
| Allowable voltage fluctuation range |  | 90\% to $110 \%$ of rated voltage |
| Current consumption (per Display Unit) |  | Red LED: 35 mA max. at 24 VDC <br>  60 mA max. at 12 VDC <br> Greed LED: 40 mA max. at 24 VDC <br>  75 mA max. at 12 VDC <br> Red/green LED: 45 mA max. at 24 VDC <br>  90 mA max. at 12 VDC |
| Input level | Positive logic | High: 9.6 V to power supply voltage Low: 0 to 3 V |
|  | Negative logic | High: 4 V to power supply voltage Low: 0 to 1.5 V <br> Residual voltage: 1.5 V max. OFF leakage current: 0.1 mA max. |
|  | Dynamic output | High: 4 V to power supply voltage Low: 0 to 1.5 V |
| Ambient temperature |  | Operating: -10 to $55^{\circ} \mathrm{C}$ (with no icing) Storage: -25 to $70^{\circ} \mathrm{C}$ (with no icing) |
| Ambient humidity |  | Operating: $35 \%$ to $85 \%$ (with no condensation) |

## Characteristics

| Insulation <br> resistance | $100 \mathrm{M} \Omega$ min. at 500 VDC (between each <br> terminal and mounting panel) |
| :--- | :--- |
| Dielectric strength | 500 VAC at $50 / 60 \mathrm{~Hz}$ for 1 minute (between <br> each terminal and mounting panel) |
| Noise immunity <br> (See note 2.) | Power terminal: $\pm 500 \mathrm{~V}$ <br> Input terminal: <br> $\pm 500 \mathrm{~V}$ (normal mode) <br> $\pm 1,500 \mathrm{~V}$ (common mode) |
| Vibration resistance | Destruction: 10 to $55 \mathrm{~Hz}, 0.75-\mathrm{mm}$ double <br> amplitude |
| Shock resistance | Destruction: $300 \mathrm{~m} / \mathrm{s}^{2}$ |
| Degree of protection | IEC IP40 (portion on panel surface) |
| Compatible <br> connector | OMRON NRT-C/NRT-CN/NRT-CP |

Note: 1. The above values are initial values.
2. Impulse conditions

Rise time: $1 \mathrm{~ns}+10 \%$ max.
Pulse width: $100 \mathrm{~ms}, 1 \mu \mathrm{~s}$
Polarity: Positive, negative, asynchronous to power frequency, $100-\mathrm{Hz}$ repeat frequency.

## Installation

## Terminal Arrangements and Functions

## Terminal Arrangement

Note: The circled numbers are the connector pin numbers (NRT- $\square$ ).

```
\(\pm 1\). Display Unit
M7E-01B \(\square \square 2\)
```



Unit Display Unit
M7E-01U $\square 2-\square$


Decimal/Hexadecimal Display Unit (Single Color)
Models with Zero Suppression
M7E-01D $\square \square 2 / M 7 E-01 H \square \square 2$
Models with Blanking
M7E-01D $\square \square 2-B / M 7 E-01 H \square \square 2-B$


Decimal Display Unit (Two Colors)
Models with Zero Suppression M7E-01DRGN2

Models with Blanking
M7E-01DRGN2-B



Note: 1. The latch terminal on $\pm 1$. Display Units is provided only on Dynamic Output Models.
2. The terminal numbers of the Unit Display Unit are different from the terminal numbers of the connector.

## Terminal Functions

|  | Name | Function |  |  |
| :---: | :---: | :---: | :---: | :---: |
|  |  | Decimal/Hexadecimal Display Unit |  | $\pm$ Display Unit |
|  |  | Models with Zero Suppression | Models with Blanking |  |
| V | Power supply | Positive power supply input terminal |  |  |
| RBO | Control output | Zero-suppress output (See note 1.) | --- | --- |
| RBI | Control input | Zero-suppress output (See note 1.) | Blanking input (Turns OFF all the displays including decimal point.) | --- |
| BI | Control input | --- | --- | Blanking input (Turns OFF all the displays including decimal point.) |
|  <br> A <br> B <br> C <br> D | Data inputs |  Applicable to Decimal/ <br> Hexadecimal Display Unit <br> A $\left(2^{0}\right)$ <br> B $\left(2^{1}\right)$ <br> C $\left(2^{2}\right)$ <br> D $\left(2^{3}\right)$ <br>  Displays a digit or symbol <br> corresponding to the value of the <br> binary code signal. <br> Decimal display uses 0 to $9 ;$ <br>  <br>  <br> nothing will be displayed for higher <br> values. |  | --- |
| 1+- | Data inputs | --- | --- | Applicable to $\pm 1$. Display Unit only For each input terminal, the input of a signal causes a display to light. |
| DP | Data inputs | The decimal point lights. |  |  |
| LE | Control input | Latch input <br> The immediately preceding display condition is retained. |  |  |
| R/G | Control input | Color selection input (See note 2.) Set low for green display and high for red display. |  | --- |
| G | Power supply | O-V power-supply (ground) input terminal (GND) |  |  |

Decimal/Hexadecimal Display Unit (Single-color Models with Zero Suppression)


Decimal/Hexadecimal Display Unit (Single-color Model with Blanking)


Note: 1. Refer to the input code table for RBO and RBI control.
2. Applicable to the M7E-01DRGN2 and -01DRGN2-B only.

## - Input Codes

## $\pm 1$. Display Unit

## Positive Logic (M7E-01BRP2/M7E-01BGP2)

|  | Input signal |  |  |  |  | Displayconditions |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Connector pin No. | (9) | (7) | (6) | (8) | (4) |  |
| Terminal symbol | BI | + | - | 1 | DP |  |
| Input signals | L | L | L | L | L | Blank |
|  | L | H | L | L | L | $\div$ |
|  | L | L | H | L | L | - |
|  | L | L | L | H | L | i |
|  | L | L | L | L | H | . |
|  | H | * | * | * | * | Blank (See note.) |

Note: BI takes precedence over any input signal.

* Either high or low.


## Unit Display Unit

This display lights when voltage is applied to the power supply terminals ( V and G ).

| V-G terminals | Display |
| :--- | :--- |
| Open circuit | Blank |
| Voltage applied | Lit |

Negative Logic (M7E-01BRN2/M7E-01BGN2)

|  | Input signal |  |  |  |  | Display conditions |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Connector pin No. | (9) | (7) | (6) | (8) | (4) |  |
| Terminal symbol | BI | + | - | 1 | DP |  |
| Input signals | H | H | H | H | H | Blank |
|  | H | L | H | H | H | $\pm$ |
|  | H | H | L | H | H | - |
|  | H | H | H | L | H | 1 |
|  | H | H | H | H | L | - |
|  | L | * | * | * | * | Blank (See note.) |

Note: BI takes precedence over any input signal.

* Either high or low.


## Decimal/Hexadecimal Display Unit

## Models with Zero Suppression

Positive logic (M7E-01DRP2/M7E-01DGP2/M7E-01HRP2/ M7E-01HGP2)

|  | Input |  |  |  |  |  |  | Out- | Display condition |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Connector pin No. | (3) | (5) | (6) | (7) | (8) | (4) | (9) | (10) |  |  |
| Terminal number | 3 | 5 | 6 | 7 | 8 | 4 | 9 | 10 |  |  |
| Terminal symbol | LE | D | C | B | A | DP | RBI | RBO | Decimal | Hexadecimal |
| Input signals | L | L | L | L | L | L | L | L | 0 |  |
|  | L | L | L | L | H | L | * | L | 1 |  |
|  | L | L | L | H | L | L | * | L | 2 |  |
|  | L | L | L | H | H | L | * | L | 3 |  |
|  | L | L | H | L | L | L | * | L | 4 |  |
|  | L | L | H | L | H | L | * | L | 5 |  |
|  | L | L | H | H | L | L | * | L | 5 |  |
|  | L | L | H | H | H | L | * | L | 7 |  |
|  | L | H | L | L | L | L | * | L | 8 |  |
|  | L | H | L | L | H | L | * | L | 9 |  |
|  | L | H | L | H | L | L | * | L | - | 9 |
|  | L | H | L | H | H | L | * | L | Blank | $b$ |
|  | L | H | H | L | L | L | * | L | Blank | $[$ |
|  | L | H | H | L | H | L | * | L | Blank | $d$ |
|  | L | H | H | H | L | L | * | L | Blank | $E$ |
|  | L | H | H | H | H | L | * | L | Blank | $F$ |
|  | L | * | * | * | * | H | * | L | . |  |
|  | * | L | L | L | L | L | H | H | Blank (See note.) |  |
|  | H | * | * | * | * | * | * | * | Retains the display conditions of A through D and DP terminals before LE goes high. RBI is not related. |  |

Note: The display will go blank when the data input is " 0 " and the DP is OFF.

* Either high or low

Negative logic (M7E-01DRN2/M7E-01DGN2/M7E-
01DRGN2/M7E-01HRN2/M7E-01HGN2)

|  | Input |  |  |  |  |  |  | Out- | Display condition |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Connector pin No. | (3) | (5) | (6) | (7) | (8) | (4) | (9) | (10) |  |  |
| Terminal number | 3 | 5 | 6 | 7 | 8 | 4 | 9 | 10 |  |  |
| Terminal symbol | LE | D | C | B | A | DP | RBI | RBO | Decimal | Hexadecimal |
| Input signals | H | H | H | H | H | H | H | H | 0 |  |
|  | H | H | H | H | L | H | * | H | 1 |  |
|  | H | H | H | L | H | H | * | H | 2 |  |
|  | H | H | H | L | L | H | * | H | 3 |  |
|  | H | H | L | H | H | H | * | H | 4 |  |
|  | H | H | L | H | L | H | * | H | 5 |  |
|  | H | H | L | L | H | H | * | H | 5 |  |
|  | H | H | L | L | L | H | * | H | 7 |  |
|  | H | L | H | H | H | H | * | H | 8 |  |
|  | H | L | H | H | L | H | * | H | 9 |  |
|  | H | L | H | L | H | H | * | H | - | 9 |
|  | H | L | H | L | L | H | * | H | Blank | $b$ |
|  | H | L | L | H | H | H | * | H | Blank | [ |
|  | H | L | L | H | L | H | * | H | Blank | $d$ |
|  | H | L | L | L | H | H | * | H | Blank | $E$ |
|  | H | L | L | L | L | H | * | H | Blank | $F$ |
|  | H | * | * | * | * | L | * | H | . |  |
|  | * | H | H | H | H | H | L | L | Blank (See note.) |  |
|  | L | * | * | * | * | * | * | * | Retains the display conditions of $A$ through D, DP and R/G terminals before LE goes low. RBI is not related. |  |

Note: The display will go blank when the data input is " 0 " and the DP is OFF.

* Either high or low


## Models with Blanking

Positive logic (M7E-01DRP2-B/M7E-01DGP2-B/M7E-01HRP2-B/M7E-01HGP2-B)

|  | Input |  |  |  |  |  |  | Display condition |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Connector pin No. | (3) | (9) | (5) | (6) | (7) | (8) | (4) |  |  |
| Terminal number | 3 | 9 | 5 | 6 | 7 | 8 | 4 |  |  |
| Terminal symbol | LE | RBI | D | C | B | A | DP | Decimal | Hexadecimal |
| Input | L | L | L | L | L | L | L | 0 |  |
|  | L | L | L | L | L | H | L |  |  |
|  | L | L | L | L | H | L | L | c |  |
|  | L | L | L | L | H | H | L | 3 |  |
|  | L | L | L | H | L | L | L | 4 |  |
|  | L | L | L | H | L | H | L | 5 |  |
|  | L | L | L | H | H | L | L | 5 |  |
|  | L | L | L | H | H | H | L |  |  |
|  | L | L | H | L | L | L | L |  |  |
|  | L | L | H | L | L | H | L |  |  |
|  | L | L | H | L | H | L | L | - | 9 |
|  | L | L | H | L | H | H | L | Blank | $b$ |
|  | L | L | H | H | L | L | L | Blank | [ |
|  | L | L | H | H | L | H | L | Blank | d |
|  | L | L | H | H | H | L | L | Blank | $\varepsilon$ |
|  | L | L | H | H | H | H | L | Blank | $F$ |
|  | * | L | * | * | * | * | H |  |  |
|  | * | H | * | * | * | * | * | Blank (S | note.) |
|  | H | L | * | * | * | * | * | Retains the conditions of terminals be high. DP is $n$ | play through D LE goes related. |

Note: RBI takes precedence over any input signal.

* Either high or low

Negative logic (M7E-01DRN2-B/M7E-01DGN2-B/M7E-01DRGN2-B/M7E-01HRN2-B/M7E-01HGN2-B)

|  | Input |  |  |  |  |  |  | Display condition |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Connector pin No. | (3) | (9) | (5) | (6) | (7) | (8) | (4) |  |  |
| Terminal number | 3 | 9 | 5 | 6 | 7 | 8 | 4 |  |  |
| Terminal symbol | LE | RBI | D | C | B | A | DP | Decimal | Hexadecimal |
| Input signals | H | H | H | H | H | H | H | 0 |  |
|  | H | H | H | H | H | L | H | 1 |  |
|  | H | H | H | H | L | H | H | 2 |  |
|  | H | H | H | H | L | L | H | 3 |  |
|  | H | H | H | L | H | H | H | 4 |  |
|  | H | H | H | L | H | L | H | 5 |  |
|  | H | H | H | L | L | H | H | 5 |  |
|  | H | H | H | L | L | L | H | 7 |  |
|  | H | H | L | H | H | H | H | 8 |  |
|  | H | H | L | H | H | L | H | 9 |  |
|  | H | H | L | H | L | H | H | - | 9 |
|  | H | H | L | H | L | L | H | Blank | $b$ |
|  | H | H | L | L | H | H | H | Blank | 5 |
|  | H | H | L | L | H | L | H | Blank | $d$ |
|  | H | H | L | L | L | H | H | Blank | $E$ |
|  | H | H | L | L | L | L | H | Blank | $F$ |
|  | * | H | * | * | * | * | L | - |  |
|  | * | L | * | * | * | * | * | Blank (See note.) |  |
|  | L | H | * | * | * | * | * | Retains the display conditions of A through D, and $R / G$ terminals before LE goes low. DP is not related. |  |

Note: RBI takes precedence over any input signal.

* Either high or low

Models with Dynamic Outputs

## $\pm 1$. Display Unit

(M7E-01BRD2/M7E-01BGD2)

|  | Input |  |  |  |  |  | Display condition |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Connector pin No. | (3) | (9) | (7) | (6) | (8) | (4) |  |
| Terminal <br> symbol | LE | BI | + | - | 1 | DP |  |
| Input signals | L | H | L | L | L | H | Blank |
|  | L | H | H | L | L | H | $\div$ |
|  | L | H | L | H | L | H | - |
|  | L | H | L | L | H | H | i |
|  | * | H | * | * | * | L | . |
|  | * | L | * | * | * | * | Blank (See note.) |
|  | H | H | * | * | * | * |  |

Note: BI takes precedence over any input signal.

* Either high or low


## Decimal Display Unit

Models with Zero Suppression (M7E-01DRD2/M7E01DGD2)

|  | Input |  |  |  |  |  |  | Out- | Display condition |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Connector pin No. | (3) | (5) | (6) | (7) | (8) | (4) | (9) | (10) |  |
| Terminal number | 3 | 5 | 6 | 7 | 8 | 4 | 9 | 10 |  |
| Terminal symbol | LE | D | C | B | A | DP | RBI | RBO |  |
| Input signals | L | L | L | L | L | H | L | L | 5 (See note 1.) |
|  | L | L | L | L | H | H | * | L | 1 |
|  | L | L | L | H | L | H | * | L | 2 |
|  | L | L | L | H | H | H | * | L | 3 |
|  | L | L | H | L | L | H | * | L | 4 |
|  | L | L | H | L | H | H | * | L | 5 |
|  | L | L | H | H | L | H | * | L | 5 |
|  | L | L | H | H | H | H | * | L | 7 |
|  | L | H | L | L | L | H | * | L | g |
|  | L | H | L | L | H | H | * | L | 9 |
|  | L | H | L | H | L | H | * | L | - |
|  | L | H | L | H | H | H | * | L | Blank |
|  | L | H | H | L | L | H | * | L | Blank |
|  | L | H | H | L | H | H | * | L | Blank |
|  | L | H | H | H | L | H | * | L | Blank |
|  | L | H | H | H | H | H | * | L | Blank |
|  | L | * | * | * | * | L | * | L | - |
|  | * | L | L | L | L | H | H | H | Blank (See note 2.) |
|  | H | * | * | * | * | * | * | * | Retains the display conditions of A through D, and DP terminals before LE goes high. RBI is not related. |

Note: 1. Input low for RBI when data " 0 " is displayed. RBI will go high in open mode and the zero suppression will function.
2. The display will go blank when the data input is " 0 " and the DP is OFF.

* Either high or low

Models with Blanking (M7E-01DRD2-B/M7E-01DGD2-B)

|  | Input |  |  |  |  |  |  | Display condition |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Connector pin No. | (3) | (9) | (5) | (6) | (7) | (8) | (4) |  |
| Terminal number | 3 | 9 | 5 | 6 | 7 | 8 | 4 |  |
| Terminal symbol | LE | RBI | D | C | B | A | DP |  |
| Input signals | L | H | L | L | L | L | H | 5 |
|  | L | H | L | L | L | H | H | 1 |
|  | L | H | L | L | H | L | H | 2 |
|  | L | H | L | L | H | H | H | 3 |
|  | L | H | L | H | L | L | H | 4 |
|  | L | H | L | H | L | H | H | 5 |
|  | L | H | L | H | H | L | H | 5 |
|  | L | H | L | H | H | H | H | 7 |
|  | L | H | H | L | L | L | H | $\square$ |
|  | L | H | H | L | L | H | H | 9 |
|  | L | H | H | L | H | L | H | - |
|  | L | H | H | L | H | H | H | Blank |
|  | L | H | H | H | L | L | H | Blank |
|  | L | H | H | H | L | H | H | Blank |
|  | L | H | H | H | H | L | H | Blank |
|  | L | H | H | H | H | H | H | Blank |
|  | * | H | * | * | * | * | L | . |
|  | * | L | * | * | * | * | * | Blank (See note.) |
|  | H | H | * | * | * | * | * | Retains the display conditions of A through D terminals before LE goes high. DP is not related. |

Note: RBI takes precedence over any input signal.

* Either high or low

Block Diagram
Note: Circled numbers are the board terminal numbers.


Note: The terminal numbers of the Unit Display Unit are different from the terminal numbers of the connector. Refer to Terminal Arrangements and Functions on page 3 for details.

## External Connections

Refer to the Terminal Arrangement on page 3 and the Block Diagram on page 8 for external connections for each unit.

## Example of connection to a PLC.

- Refer to the PLC operation manual before connecting the PLC.
- The number of wires can be reduced by using a PLC with dynamic outputs.


## Static Output Unit

1. M7E-01 $\square$ P2 Positive Logic Model Use a PNP Transistor Output Unit for the PLC Output Unit.

Connected to C500-OD212 Transistor Output Unit

2. M7E-01 $\square$ N2 Negative Logic Model Use an NPN Transistor Output Unit for the PLC Output Unit.

Connected to C500-OD213 Transistor Output Unit


Using Dynamic Output Units

1. M7E-01 $\square$ D2 Dynamic Output Model
2. Connected to C500-OD211 Transistor Output Unit

3. Connected to C200-OD215 Transistor Output Unit
 OD215, the selector on the rear cover of the C200H-OD21 must be set as follows:

| SW1 (dynamic output mode) | ON |
| :--- | :--- |
| SW2 | OFF |
| SW3 | OFF |
| SW4 | OFF |
| SW5 (positive logic output) | ON |
| SW6 | OFF |

2. Refer to the C 200 H Highdensity l/O Unit operation and refer to the hardware section of the C500 operation
manual for the C500-OD211.
3. M7E-01 $\square \square \mathbf{P} 2$ Positive Logic Model An external pull-up resistor is required.

Connected to C500-OD211 or C200H-OD215


Note: 1. Supply 24 VDC only. The PLC does not operate with the M7E Negative Logic Model.
2. The resistance of the pullup resistor is 2.0 to $3.9 \mathrm{k} \Omega$ (1 W). A resistance of $3.3 \mathrm{k} \Omega$ is recommended.

## Operation

## Operation Timing (Input Signal Timing)

## Positive Logic



Negative logic


| Pulse duration (tw) | 1.5 ms min. |
| :--- | :--- |
| Hold time (th) | 0.75 ms min. |
| Setup time (ts) | 2.25 ms min. |

## Operation Chart

- The following example shows the relationship between each input terminal signal and the display condition for a Negative-logic Decimal Display Unit with Blanking.

- Using the latch input (LE) terminal for each Unit, the data input terminals (A to D) can be used in common yet still enable display on each Unit (example of a 3-digit dynamic-output model with positive logic).



## Example of Zero Suppression Usage: Description Using Negative Logic Model

The zero suppression function operates when the display is $\boldsymbol{B}$, RBI is low and the decimal point is not lit.

Example 1: The RBI input and RBO output of each digit are open when zero suppression is not being used.
Example 2: Wired as shown to display only 5 for the rightmost digit when zero suppression is being used.
Example 3: Zeros are suppressed only for the digits on the left of the digit where the decimal is lit when both zero suppression and a decimal point are being used.
Example 4: Zeros are suppressed to the right of the first digit below the decimal point when both zero suppression and a decimal point are being used. If the first-to-fourth-digit values are all 0 and the decimal point is lit at the fourth digit, $0.0 \square \square$ will be displayed. (There is no data in $\square \square$.)

Note: Use RBO output for the RBI input connection only.


Example 2


Example 4


## Dimensions

Note: All units are in millimeters unless otherwise indicated.
M7E-01 $\square \square \square \square 2$


Values in parentheses are for the two-color (red and green) Digital Display Units.

## Accessories (Order Separately)

## End Plate

M7E-012M(-1)


Note: Tolerance is $\pm 0.4 \mathrm{~mm}$ unless otherwise specified.

## Connector

NRT-C Soldered Terminal


NRT-CN Soldered Terminal


Spacer
M7E-012PA(-1)


## Face Plate

- The required face plate is used with the Unit Display Unit, which incorporates a surface-lighting LED.
- The following face plates are available. When ordering the M7E-01U $\square 2$ - ${ }^{*}$, add the suffix according to your requirement.
- Custom face plates can be made. For the procedure to make face plates, refer to M7E Mother Board for Display Units (Character Height: 14 mm ).

| Symbol | A | B | C | D | E | F | G | H | J | JC1 | K | V | Z1 | Z2 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Display contents | $\begin{aligned} & \text { Blank } \\ & \text { display } \end{aligned}$ | SEC | IIIII | I |  | KO | IIIII | CII | III | m/minili | ${ }^{\circ} \mathrm{C}$ | Fiom | $\%$ | pomil |

## ALL DIMENSIONS SHOWN ARE IN MILLIMETERS.

To convert millimeters into inches, multiply by 0.03937 . To convert grams into ounces, multiply by 0.03527 .
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