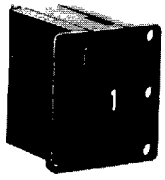
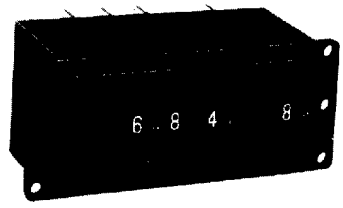
# 3 Series NEW ILLUMINATED MODELS Thumbwheel Switches

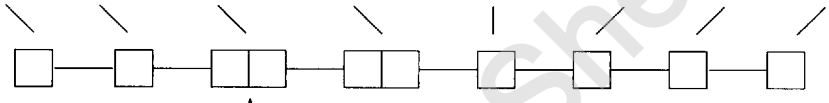




## *Easy Build-A-Switch:*

Below is a complete listing of available options for 3 SERIES THUMBWHEEL SWITCHES. Build-A-Switch allows you to mix and match options to create the switch you need—simply select desired option from each category. All available options are described on pages F-33 thru F-43. Dashes, hyphens or spaces in the part number are not significant, and are shown for clarity only. Complete HOW TO ORDER information is at the end of this section, page F-43. Use CONFIGURATION FORM, page F-44, for special instructions. Hardware is available separately, see catalog section H.

| SERIES | NUMBER OF SECTIONS | FUNCTION CODE | MOUNTING STYLE | TERMINATIONS | COLOR/ MARKING/ STOPS | SEALS | ILLUMINATION |
|---|---|---|---|---|---|---|---|
| 3 | One | Decimal 1 Pole | Front Mount | | Black w/ white Markings | Unsealed | None |



Special switch no. assigned by C&K.

Configuration form required, see page F-44.

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 3 | 0 | 11 | 42 | 00 | 0 | 0 | 0 | (NONE) |
| | 1 | 12 | 45 | 03 | 1 | 1 | 1 | 3 |
| | 2 | 13 | 51 | 04 | 3 | 9 | 2 | 5 |
| | 3 | 14 | 52 | 09 | 4 | | 3 | 6 |
| | 4 | 16 | 58 | 10 | 5 | | 9 | |
| | 5 | 21 | 59 | 14 | 6 | | | |
| | 6 | 22 | 61 | 19 | 7 | | | |
| | 7 | 23 | 70 | 20 | 9 | | | |
| | 8 | 24 | 71 | 24 | A | | | |
| | 9 | 26 | 72 | 29 | B | | | |
| | | 27 | 81 | 30 | C | | | |
| | | 28 | 83 | 33 | D | | | |
| | | 29 | 91 | 34 | E | | | |
| | | 31 | 92 | | F | | | |
| | | 32 | 99 | | G | | | |
| | | 33 | | | H | | | |
| | | 34 | | | J | | | |
| | | 35 | | | M | | | |
| | | 41 | | | U | | | |

F

## SERIES

**3** Series thumbwheel switches

## NUMBER OF SECTIONS

**0** Switch section only, no assembly (Blank bodies are considered sections. Endplates are not sections). Must be ordered with 09, 19, mounting style options, see pages F-37 and F-38.

**1-8** Number of switch sections in assembly, includes endplates.

**9** More than 8 switch sections, specify on CONFIGURATION FORM, page F-44 and consult factory.

**NOTE**: Endplates and blank sections available separately, see catalog section H.

## FUNCTION CODE

For terminal location diagram, see page F-42.

### 11 DECIMAL—1 POLE; 10 POSITION

AVAILABLE TERMINATIONS

0, 1, 3, A

| WHEEL | SIGNALS CONNECTED TO COMMON SIGNAL C | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 0 | ● | | | | | | | | | ● |
| 1 | | ● | | | | | | | | ● |
| 2 | | | ● | | | | | | | ● |
| 3 | | | | ● | | | | | | ● |
| 4 | | | | | ● | | | | | ● |
| 5 | | | | | | ● | | | | ● |
| 6 | | | | | | | ● | | | ● |
| 7 | | | | | | | | ● | | ● |
| 8 | | | | | | | | | ● | ● |
| 9 | | | | | | | | | | ● ● |
| | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 12 |
| | TERM. LOCATION | | | | | | | | | |

See fig.1, page F-42.

### 12 DECIMAL—1 POLE; 10 POSITION

AVAILABLE TERMINATIONS

1, 4, 5, A, D, E

| WHEEL | SIGNALS CONNECTED TO COMMON SIGNAL C | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 0 | ● | | | | | | | | | ● |
| 1 | | ● | | | | | | | | ● |
| 2 | | | ● | | | | | | | ● |
| 3 | | | | ● | | | | | | ● |
| 4 | | | | | ● | | | | | ● |
| 5 | | | | | | ● | | | | ● |
| 6 | | | | | | | ● | | | ● |
| 7 | | | | | | | | ● | | ● |
| 8 | | | | | | | | | ● | ● |
| 9 | | | | | | | | | | ● ● |
| | 2 | 3 | 4 | 5 | 7 | 8 | 9 | 10 | 11 | 12 6 |
| | TERM. LOCATION | | | | | | | | | |

See fig.1, page F-42.

### 13 DECIMAL—2 POLE; 10 POSITION

AVAILABLE TERMINATIONS

M, U

| WHEEL | COMMON A CONN. TO: | COMMON B CONN. TO: |
|---|---|---|
| 0 | 0 | 0 |
| 1 | 1 | 1 |
| 2 | 2 | 2 |
| 3 | 3 | 3 |
| 4 | 4 | 4 |
| 5 | 5 | 5 |
| 6 | 6 | 6 |
| 7 | 7 | 7 |
| 8 | 8 | 8 |
| 9 | 9 | 9 |
| FOR TERM. LOC. CONSULT C&K | | |

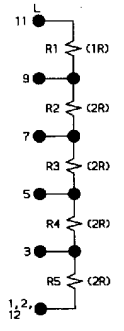
Special board, request terminal location, mechanical and electrical specifications from factory.

### 14 RESISTOR DECADE; 1-2-2-2-2 CODE (RESISTORS NOT SUPPLIED)

AVAILABLE TERMINATIONS

1, A

| WHEEL | SWITCH CIRCUIT | | | | | |
|---|---|---|---|---|---|---|
| 0 | ● | | | | | ● |
| 1 | ● | ● | | | | ● |
| 2 | ● | ● | | | ● | ● |
| 3 | ● | ● | | | ● | ● |
| 4 | ● | ● | | ● | ● | ● |
| 5 | ● | ● | | ● | ● | ● |
| 6 | ● | ● | ● | ● | ● | ● |
| 7 | ● | ● | ● | ● | ● | ● |
| 8 | ● | ● | ● | ● | ● | ● |
| 9 | ● | ● | ● | ● | ● | ● |
| | 11 | 9 | 7 | 5 | 3 | 1,2 12 |
| | TERM. LOCATION | | | | | |




See fig.1, page F-42.

F

## FUNCTION CODE

For terminal location diagram, see page F-42 .

**16** DECIMAL—1 POLE; 11 POSITION

AVAILABLE TERMINATIONS

4, D

| WHEEL | SIGNALS CONNECTED TO COMMON SIGNAL A | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | A |
| 0 | ● | | | | | | | | | | | ● |
| 1 | | ● | | | | | | | | | | ● |
| 2 | | | ● | | | | | | | | | ● |
| 3 | | | | ● | | | | | | | | ● |
| 4 | | | | | ● | | | | | | | ● |
| 5 | | | | | | ● | | | | | | ● |
| 6 | | | | | | | ● | | | | | ● |
| 7 | | | | | | | | ● | | | | ● |
| 8 | | | | | | | | | ● | | | ● |
| 9 | | | | | | | | | | ● | | ● |
| 10 | | | | | | | | | | | ● | ● |
| | 1 | 2 | 3 | 4 | 5 | 7 | 8 | 9 | 10 | 11 | 12 | 6 |
| | TERM. LOCATION | | | | | | | | | | | |

See fig.1, page F-42.

**21** BCD 1-2-4-8; 10 POSITION

**22** OCTAL 1-2-4; 8 POSITION (STOPPED BETWEEN 0-7 INCL.)

AVAILABLE TERMINATIONS

0, 1, 3, A

| WHEEL | SIGNALS CONN. TO COMM. SIG. C | | | | |
|---|---|---|---|---|---|
| | 1 | 2 | 4 | 8 | C |
| 0 | | | | | ● |
| 1 | ● | | | | ● |
| 2 | | ● | | | ● |
| 3 | ● | ● | | | ● |
| 4 | | | ● | | ● |
| 5 | ● | | ● | | ● |
| 6 | | ● | ● | | ● |
| 7 | ● | ● | ● | | ● |
| 8 | | | | ● | ● |
| 9 | ● | | | ● | ● |
| | 3 | 5 | 7 | 11 | 9 |
| | TERM. LOCATION | | | | |

See fig.1, page F-42.

**23** COMPLEMENT OF BCD 1-2-4-8; 10 POSITION

**24** COMPLEMENT OF OCTAL 1-2-4; 8 POSITION (STOPPED BETWEEN 0-7 INCL.)

AVAILABLE TERMINATIONS

0, 1, 3, A

| WHEEL | SIGNALS CONN. TO COMM. SIG. C | | | | |
|---|---|---|---|---|---|
| | 1 | 2 | 4 | 8 | C |
| 0 | ● | ● | ● | ● | ● |
| 1 | | ● | ● | ● | ● |
| 2 | ● | | ● | ● | ● |
| 3 | | | ● | ● | ● |
| 4 | ● | ● | | ● | ● |
| 5 | | ● | | ● | ● |
| 6 | ● | | | ● | ● |
| 7 | | | | ● | ● |
| 8 | ● | ● | ● | | ● |
| 9 | | ● | ● | | ● |
| | 3 | 9 | 11 | 5 | 7 |
| | TERM. LOCATION | | | | |

See fig.1, page F-42.

**26** COMPLEMENT OF BCD 1-2-4-8; 10 POSITION

AVAILABLE TERMINATIONS

6, B

| WHEEL | SIGNALS CONN. TO COMM. SIG. C | | | | |
|---|---|---|---|---|---|
| | 1 | 2 | 4 | 8 | C |
| 0 | ● | ● | ● | ● | ● |
| 1 | | ● | ● | ● | ● |
| 2 | ● | | ● | ● | ● |
| 3 | | | ● | ● | ● |
| 4 | ● | ● | | ● | ● |
| 5 | | ● | | ● | ● |
| 6 | ● | | | ● | ● |
| 7 | | | | ● | ● |
| 8 | ● | ● | ● | | ● |
| 9 | | ● | ● | | ● |
| | 4 | 5 | 1 | 2 | 3 |
| | TERM. LOCATION | | | | |

See fig.2, page F-42.

**27** BCD 1-2-4-8; 10 POSITION

AVAILABLE TERMINATIONS

6, B

| WHEEL | SIGNALS CONN. TO COMM. SIG. C | | | | |
|---|---|---|---|---|---|
| | 1 | 2 | 4 | 8 | C |
| 0 | | | | | ● |
| 1 | ● | | | | ● |
| 2 | | ● | | | ● |
| 3 | ● | ● | | | ● |
| 4 | | | ● | | ● |
| 5 | ● | | ● | | ● |
| 6 | | ● | ● | | ● |
| 7 | ● | ● | ● | | ● |
| 8 | | | | ● | ● |
| 9 | ● | | | ● | ● |
| | 4 | 5 | 1 | 2 | 3 |
| | TERM. LOCATION | | | | |

See fig.2, page F-42.

**28** COMPLEMENT OF 9'S COMPLEMENT; 10 POSITION

AVAILABLE TERMINATIONS

7, C

| WHEEL | SIGNALS CONN. TO COMM. SIG. C | | | | |
|---|---|---|---|---|---|
| | 1 | 2 | 4 | 8 | C |
| 0 | | ● | ● | | ● |
| 1 | ● | ● | ● | | ● |
| 2 | | | | ● | ● |
| 3 | ● | | | ● | ● |
| 4 | | ● | | ● | ● |
| 5 | ● | ● | | ● | ● |
| 6 | | | ● | ● | ● |
| 7 | ● | | ● | ● | ● |
| 8 | | ● | ● | ● | ● |
| 9 | ● | ● | ● | ● | ● |
| | 2 | 1 | 5 | 4 | 3 |
| | TERM. LOCATION | | | | |

See fig.2, page F-42.

**29** BCD 1-2-4-8; 10 POSITION

AVAILABLE TERMINATIONS

6, B

| WHEEL | SIGNALS CONN. TO COMM. SIG. C | | | | |
|---|---|---|---|---|---|
| | 1 | 2 | 4 | 8 | C |
| 0 | | | | | ● |
| 1 | ● | | | | ● |
| 2 | | ● | | | ● |
| 3 | ● | ● | | | ● |
| 4 | | | ● | | ● |
| 5 | ● | | ● | | ● |
| 6 | | ● | ● | | ● |
| 7 | ● | ● | ● | | ● |
| 8 | | | | ● | ● |
| 9 | ● | | | ● | ● |
| | 2 | 3 | 4 | 5 | 1 |
| | TERM. LOCATION | | | | |

See fig.2, page F-42.

**31** BCD 1-2-4-8; 10 POSITION

**32** OCTAL 1-2-4; 8 POSITION (STOPPED BETWEEN 0-7 INCL.)

AVAILABLE TERMINATIONS

0, 1, 3, 4, 5, A, D, E

| WHEEL | SIGNALS CONN. TO COMM. SIG. C | | | | |
|---|---|---|---|---|---|
| | 1 | 2 | 4 | 8 | C |
| 0 | | | | | ● |
| 1 | ● | | | | ● |
| 2 | | ● | | | ● |
| 3 | ● | ● | | | ● |
| 4 | | | ● | | ● |
| 5 | ● | | ● | | ● |
| 6 | | ● | ● | | ● |
| 7 | ● | ● | ● | | ● |
| 8 | | | | ● | ● |
| 9 | ● | | | ● | ● |
| | 2 | 3 | 11 | 9 | 8 |
| | TERM. LOCATION | | | | |

See fig.1, page F-42.

F

## FUNCTION CODE ■■□□-□-□-□-□-□

For terminal location diagram, see page F-42.

**33** COMPLEMENT OF BCD 1-2-4-8; 10 POSITION

**34** COMPLEMENT OF OCTAL 1-2-4; 8 POSITION (STOPPED BETWEEN 0-7 INCL.)

AVAILABLE TERMINATIONS

1, 4, 5, A, D, E

| WHEEL | SIGNALS CONN. TO COMM. SIG. C | | | | |
|---|---|---|---|---|---|
| | $\overline{1}$ | $\overline{2}$ | $\overline{4}$ | $\overline{8}$ | C |
| 0 | ● | ● | ● | ● | ● |
| 1 | | ● | ● | ● | ● |
| 2 | ● | | ● | ● | ● |
| 3 | | | ● | ● | ● |
| 4 | ● | ● | | ● | ● |
| 5 | | ● | | ● | ● |
| 6 | ● | | | ● | ● |
| 7 | | | | ● | ● |
| 8 | ● | ● | ● | | ● |
| 9 | | ● | ● | | ● |
| | 2 | 3 | 11 | 9 | 8 |
| | TERM. LOCATION | | | | |

See fig.1, page F-42.

**35** BCD 1-2-4-8 W/ SEPARATE COMMON TO NOT TRUE BITS, 10 POSITION

AVAILABLE TERMINATIONS

0, 1, 3, A

| WHEEL | SIGNALS CONN. TO COMMON COMMON COMMON SIGNALS | | | | | |
|---|---|---|---|---|---|---|
| | 1 | 2 | 4 | 8 | X | Y |
| 0 | ○ | ○ | ○ | ○ | ● | ○ |
| 1 | ● | ○ | ○ | ○ | ● | ○ |
| 2 | ○ | ● | ○ | ○ | ● | ○ |
| 3 | ● | ● | ○ | ○ | ● | ○ |
| 4 | ○ | ○ | ● | ○ | ● | ○ |
| 5 | ● | ○ | ● | ○ | ● | ○ |
| 6 | ○ | ● | ● | ○ | ● | ○ |
| 7 | ● | ● | ● | ○ | ● | ○ |
| 8 | ○ | ○ | ○ | ● | ● | ○ |
| 9 | ● | ○ | ○ | ● | ● | ○ |
| | 8 | 6 | 4 | 2 | 12 | 10 |
| | TERM. LOCATION | | | | | |

See fig.1, page F-42.

**41** BCD 1-2-4-8 W/ COMPLEMENT, 10 POSITION

**42** OCTAL 1-2-4 W/ COMPLEMENT, 8 POSITION (STOPPED BETWEEN 0-7 INCL.)

AVAILABLE TERMINATIONS

0, 1, 3, A

| WHEEL | SIGNALS CONN. TO COMM. SIG. C | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 4 | 8 | $\overline{1}$ | $\overline{2}$ | $\overline{4}$ | $\overline{8}$ | C |
| 0 | | | | | ● | ● | ● | ● | ● |
| 1 | ● | | | | | ● | ● | ● | ● |
| 2 | | ● | | | ● | | ● | ● | ● |
| 3 | ● | ● | | | | | ● | ● | ● |
| 4 | | | ● | | ● | ● | | ● | ● |
| 5 | ● | | ● | | | ● | | ● | ● |
| 6 | | ● | ● | | ● | | | ● | ● |
| 7 | ● | ● | ● | | | | | ● | ● |
| 8 | | | | ● | ● | ● | ● | | ● |
| 9 | ● | | | ● | | ● | ● | | ● |
| | 10 | 9 | 8 | 7 | 3 | 4 | 5 | 6 | 11 |
| | TERM. LOCATION | | | | | | | | |

See fig.1, page F-42.

**45** BCD 1-2-4-8; 10 POSITION

AVAILABLE TERMINATIONS

0,3

| WHEEL | SIGNALS CONN. TO COMM. SIG. C | | | | |
|---|---|---|---|---|---|
| | 1 | 2 | 4 | 8 | C |
| 0 | | | | | ● |
| 1 | ● | | | | ● |
| 2 | | ● | | | ● |
| 3 | ● | ● | | | ● |
| 4 | | | ● | | ● |
| 5 | ● | | ● | | ● |
| 6 | | ● | ● | | ● |
| 7 | ● | ● | ● | | ● |
| 8 | | | | ● | ● |
| 9 | ● | | | ● | ● |
| | 5 | 6 | 7 | 8 | 9 |
| | TERM. LOCATION | | | | |

See fig.1, page F-42.

**51** BCD 1-2-4-8 W/ COMPLEMENT, ONE COMMON, 10 POSITION

**52** OCTAL 1-2-4 W/ COMPLEMENT, ONE COMMON, 8 POSITION (STOPPED BETWEEN 0-7 INCL.)

AVAILABLE TERMINATIONS

0, 1, 3, 4, 5, A, D, E

| WHEEL | SIGNALS CONN. TO COMM. SIG. C | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 4 | 8 | $\overline{1}$ | $\overline{2}$ | $\overline{4}$ | $\overline{8}$ | C |
| 0 | | | | | ● | ● | ● | ● | ● |
| 1 | ● | | | | | ● | ● | ● | ● |
| 2 | | ● | | | ● | | ● | ● | ● |
| 3 | ● | ● | | | | | ● | ● | ● |
| 4 | | | ● | | ● | ● | | ● | ● |
| 5 | ● | | ● | | | ● | | ● | ● |
| 6 | | ● | ● | | ● | | | ● | ● |
| 7 | ● | ● | ● | | | | | ● | ● |
| 8 | | | | ● | ● | ● | ● | | ● |
| 9 | ● | | | ● | | ● | ● | | ● |
| | 5 | 4 | 3 | 2 | 10 | 9 | 8 | 7 | 6 |
| | TERM. LOCATION | | | | | | | | |

See fig.1, page F-42.

**58** SEVEN SEGMENT DECODER W/ BLANK AND BCD OUTPUT (TTL) SPECIAL BOARD, I.C. NOT SUPPLIED, CONSULT FACTORY

AVAILABLE TERMINATIONS

F, H

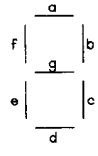
| WHEEL | SIGNALS CONNECT TO COMMON GROUND | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | a | b | c | d | e | f | g | Gnd | Vcc | 1 | 2 | 4 | 8 |
| 0 | ● | ● | ● | ● | ● | ● | | ● | | | | | |
| 1 | | ● | ● | | | | | ● | | ● | | | |
| 2 | ● | ● | | ● | ● | | ● | ● | | | ● | | |
| 3 | ● | ● | ● | ● | | | ● | ● | | ● | ● | | |
| 4 | | ● | ● | | | ● | ● | ● | | | | ● | |
| 5 | ● | | ● | ● | | ● | ● | ● | | ● | | ● | |
| 6 | ● | | ● | ● | ● | ● | ● | ● | | | ● | ● | |
| 7 | ● | ● | ● | | | | | ● | | ● | ● | ● | |
| 8 | ● | ● | ● | ● | ● | ● | ● | ● | | | | | ● |
| 9 | ● | ● | ● | ● | | ● | ● | ● | | ● | | | ● |
| | FOR TERMINAL LOCATIONS CONSULT C&K | | | | | | | | | | | | |

NOTE: Connections for RBO and RBI supplied.

**59** SEVEN SEGMENT DECODER (TTL) SPECIAL BOARD, I.C. NOT SUPPLIED, CONSULT FACTORY

AVAILABLE TERMINATIONS

G, J




| WHEEL | COMMON (C) CONNECTED TO TERMINAL INDICATED | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | a | b | c | d | e | f | g | Gnd | Vcc |
| 0 | ● | ● | ● | ● | ● | ● | | ● | |
| 1 | | ● | ● | | | | | ● | |
| 2 | ● | ● | | ● | ● | | ● | ● | |
| 3 | ● | ● | ● | ● | | | ● | ● | |
| 4 | | ● | ● | | | ● | ● | ● | |
| 5 | ● | | ● | ● | | ● | ● | ● | |
| 6 | ● | | ● | ● | ● | ● | ● | ● | |
| 7 | ● | ● | ● | | | | | ● | |
| 8 | ● | ● | ● | ● | ● | ● | ● | ● | |
| 9 | ● | ● | ● | ● | | ● | ● | ● | |
| | 6 | 5 | 4 | 3 | 2 | 8 | 7 | 1 | 12 |
| | TERM. LOCATION | | | | | | | | |

See fig.1, page F-42.

NOTE: IC not supplied, use decoder type 7446/7 or equivalent.

F

## FUNCTION CODE ■■□□-□-□-□-□

For terminal location diagram, see page F-42 .

**61** SPDT REPEATING; PLUS (+) AND MINUS (–) ALTERNATING, 10 POSITION

AVAILABLE TERMINATIONS

0, 1, 3, 4, 5, A, D, E

| WHEEL | SIG. CONN. TO C | | |
|---|---|---|---|
| | + | - | C |
| + | ● | | ● |
| - | | ● | ● |
| + | ● | | ● |
| - | | ● | ● |
| + | ● | | ● |
| - | | ● | ● |
| + | ● | | ● |
| - | | ● | ● |
| + | ● | | ● |
| - | | ● | ● |
| | 9 | 8 | 2 |
| | TERM. LOC | | |

See fig.1, page F-42.

**70** COMPLEMENT OF BINARY CODED HEXADECIMAL W/ PARITY BIT, 16 POSITION

AVAILABLE TERMINATIONS

0, 3

| WHEEL | SIGNALS CONN. TO COMM. SIG. C | | | | | |
|---|---|---|---|---|---|---|
| | 1 | 2 | 4 | 8 | P | C |
| 0 | ● | ● | ● | ● | ● | ● |
| 1 | | | ● | ● | ● | ● |
| 2 | ● | | | ● | ● | ● |
| 3 | | | | ● | ● | ● |
| 4 | ● | ● | | | ● | ● |
| 5 | | | ● | | ● | ● |
| 6 | ● | | | | ● | ● |
| 7 | | | | | ● | ● |
| 8 | ● | ● | ● | | | ● |
| 9 | | | ● | ● | | ● |
| A | ● | | | ● | | ● |
| B | | | | ● | | ● |
| C | ● | ● | | | ● | ● |
| D | | | ● | | | ● |
| E | ● | | | | | ● |
| F | | | | | ● | ● |
| | 3 | 5 | 7 | 11 | 1 | 9 |
| | TERM. LOCATION | | | | | |

See fig.1, page F-42.

**71** BINARY CODED HEXADECIMAL, 16 POSITION

AVAILABLE TERMINATIONS

0, 1, 3, A

| WHEEL | SIGNALS CONN. TO COMM. SIG. C | | | | |
|---|---|---|---|---|---|
| | 1 | 2 | 4 | 8 | C |
| 0 | | | | | ● |
| 1 | ● | | | | ● |
| 2 | | ● | | | ● |
| 3 | ● | ● | | | ● |
| 4 | | | ● | | ● |
| 5 | ● | | ● | | ● |
| 6 | | ● | ● | | ● |
| 7 | ● | ● | ● | | ● |
| 8 | | | | ● | ● |
| 9 | ● | | | ● | ● |
| A | | ● | | ● | ● |
| B | ● | ● | | ● | ● |
| C | | | ● | ● | ● |
| D | ● | | ● | ● | ● |
| E | | ● | ● | ● | ● |
| F | ● | ● | ● | ● | ● |
| | 3 | 5 | 7 | 11 | 9 |
| | TERM. LOCATION | | | | |

See fig.1, page F-42.

**72** BINARY CODED HEXADECIMAL, 16 POSITION

AVAILABLE TERMINATIONS

6, B

| WHEEL | SIGNALS CONN. TO COMM. SIG. C | | | | |
|---|---|---|---|---|---|
| | 1 | 2 | 4 | 8 | 8 |
| 0 | | | | | ● |
| 1 | ● | | | | ● |
| 2 | | ● | | | ● |
| 3 | ● | ● | | | ● |
| 4 | | | ● | | ● |
| 5 | ● | | ● | | ● |
| 6 | | ● | ● | | ● |
| 7 | ● | ● | ● | | ● |
| 8 | | | | ● | ● |
| 9 | ● | | | ● | ● |
| A | | ● | | ● | ● |
| B | ● | ● | | ● | ● |
| C | | | ● | ● | ● |
| D | ● | | ● | ● | ● |
| E | | ● | ● | ● | ● |
| F | ● | ● | ● | ● | ● |
| | 2 | 3 | 4 | 5 | 1 |
| | TERM. LOCATION | | | | |

See fig.2, page F-42.

**81** BCD 1-2-4-8; 10 POSITION

AVAILABLE TERMINATIONS

6, B

| WHEEL | SIGNALS CONN. TO COMM. SIG. C | | | | |
|---|---|---|---|---|---|
| | 1 | 2 | 4 | 8 | C |
| 0 | | | | | ● |
| 1 | ● | | | | ● |
| 2 | | ● | | | ● |
| 3 | ● | ● | | | ● |
| 4 | | | ● | | ● |
| 5 | ● | | ● | | ● |
| 6 | | ● | ● | | ● |
| 7 | ● | ● | ● | | ● |
| 8 | | | | ● | ● |
| 9 | ● | | | ● | ● |
| | 1 | 2 | 3 | 5 | 4 |
| | TERM. LOCATION | | | | |

See fig.2, page F-42.

**83** BINARY CODED HEXADECIMAL, 16 POSITION

AVAILABLE TERMINATIONS

6, B

| WHEEL | SIGNALS CONN. TO COMM. SIG. C | | | | |
|---|---|---|---|---|---|
| | 1 | 2 | 4 | 8 | C |
| 0 | | | | | ● |
| 1 | ● | | | | ● |
| 2 | | ● | | | ● |
| 3 | ● | ● | | | ● |
| 4 | | | ● | | ● |
| 5 | ● | | ● | | ● |
| 6 | | ● | ● | | ● |
| 7 | ● | ● | ● | | ● |
| 8 | | | | ● | ● |
| 9 | ● | | | ● | ● |
| A | | ● | | ● | ● |
| B | ● | ● | | ● | ● |
| C | | | ● | ● | ● |
| D | ● | | ● | ● | ● |
| E | | ● | ● | ● | ● |
| F | ● | ● | ● | ● | ● |
| | 1 | 2 | 3 | 5 | 4 |
| | TERM. LOCATION | | | | |

See fig.2, page F-42.

**91** BLANK SECTION (INACTIVE)

AVAILABLE TERMINATIONS

9

**92** BLANK SECTION W/ RIBBED CENTER (INACTIVE)

AVAILABLE TERMINATIONS

9

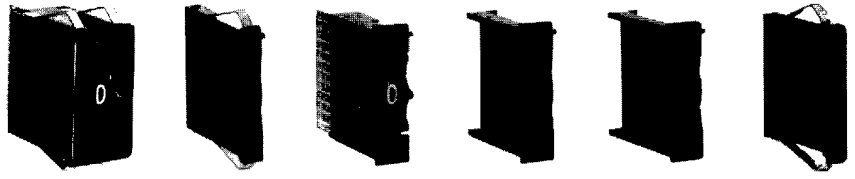
**99** INTERMIXED SECTIONS, SPECIFY ON CONFIGURATION FORM, PAGE F-44 AND CONSULT FACTORY

AVAILABLE TERMINATIONS

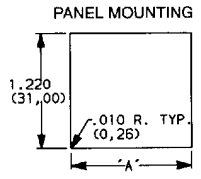
CONSULT FACTORY.

## MOUNTING STYLE

### TYPE 0 SNAP-IN FRONT MOUNTING



PANEL MOUNTING

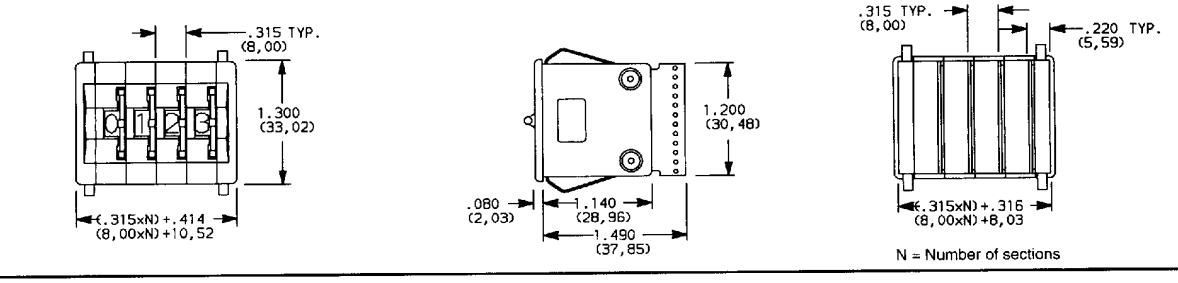



| DIM. A | MOUNTING STYLE |
|---|---|
| (.315 x N) + .326<br>(8,0 x N) + (8,28) | 00 |
| (.394 x N) + .326<br>(10,0 x N) + (8,28) | 03 |
| (.500 x N) + .326<br>(12,7 x N) + (8,28) | 04 |

N = Number of sections

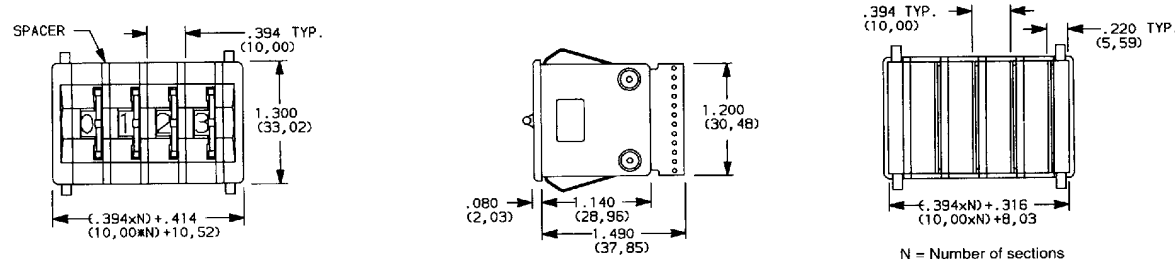
Recommended Panel Thickness:
.046 – .125 (1,16 – 3,18)

**00** SWITCH ASSEMBLY W/ ENDPLATES — .315 (8,00) SECTION PITCH



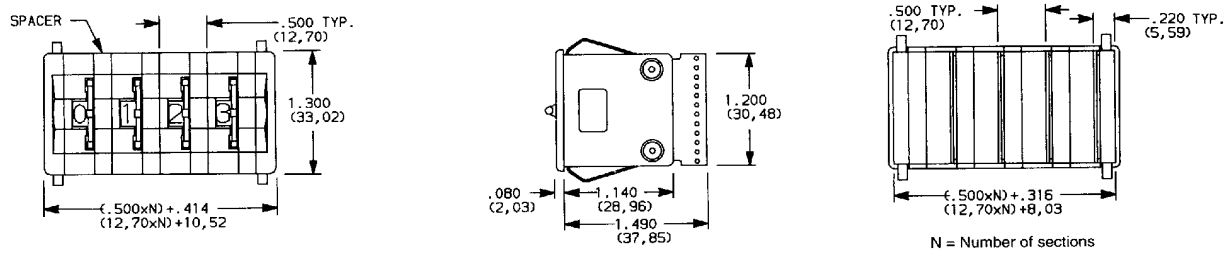

N = Number of sections

**03** SWITCH ASSEMBLY W/ ENDPLATES AND SPACER(S) — 10mm SECTION PITCH




N = Number of sections

**04** SWITCH ASSEMBLY W/ ENDPLATES AND SPACER(S) — .500 (12,70) SECTION PITCH




N = Number of sections

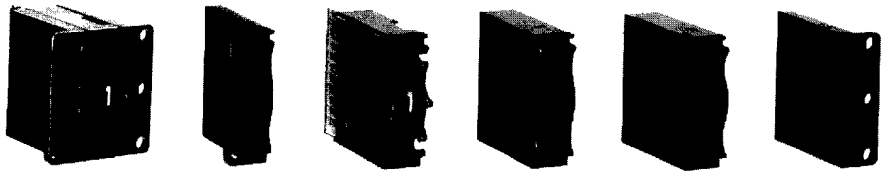
**09**

Switch section only—unassembled, without endplates or spacers (must be ordered with 0 number of sections, see page F-33).

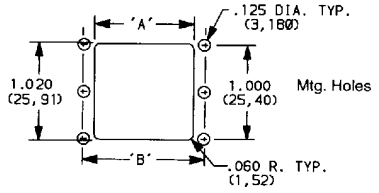
**NOTE:** Endplates, blank sections, spacers and assembly hardware available separately, see catalog section H.

## MOUNTING STYLE

### TYPE 1 REAR MOUNTING



PANEL MOUNTING

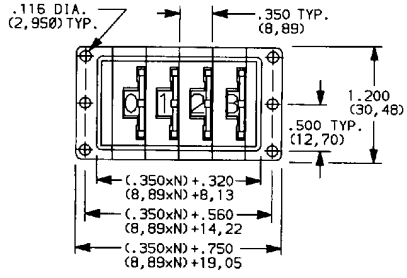


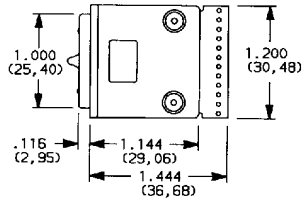

N = Number of sections

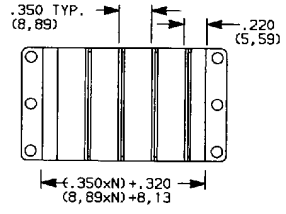
Recommended Panel Thickness:
.046 – .125 (1,16 – 3,18)

| DIM. A | DIM. B | MOUNTING STYLE |
|---|---|---|
| (.350 x N) + .340<br>(8,89 x N) + (8,64) | (.350 x N) + .560<br>(8,89) x N) + (14,22) | 10 |
| (.500 x N) + .340<br>(12,7 x N) + (8,64) | (.500 x N) + .560<br>(12,7 x N) + (14,22) | 14 |

### 10 SWITCH ASSEMBLY W/ ENDPLATES — .350 (8,89) SECTION PITCH

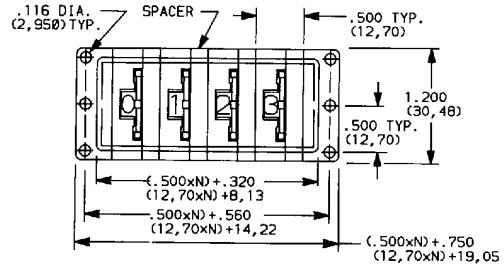


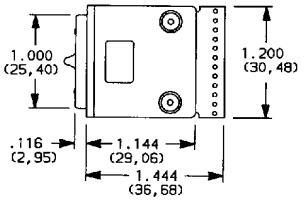



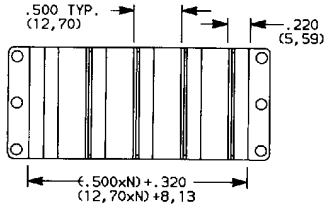




N = Number of sections

### 14 SWITCH ASSEMBLY W/ ENDPLATES AND SPACER(S) — .500 (12,70) SECTION PITCH




N = Number of sections

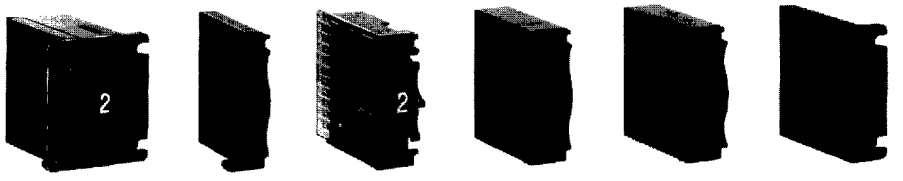
### 19

Switch section only — unassembled, without endplates or spacers (must be ordered with 0 number of sections, see page F-33).

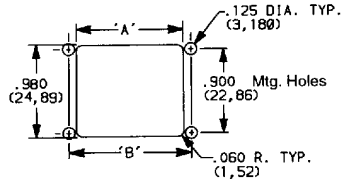
**NOTE**: Endplates, blank sections, spacers and assembly hardware available separately, see catalog section H.

## MOUNTING STYLE

### TYPE 2 REAR MOUNTING



PANEL MOUNTING

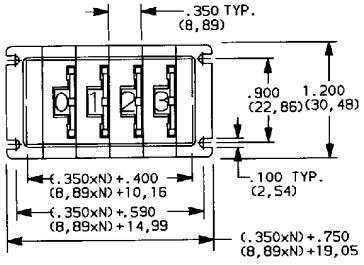


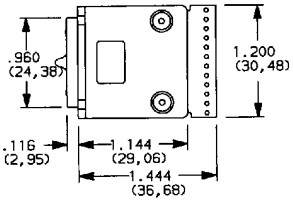

N = Number of sections

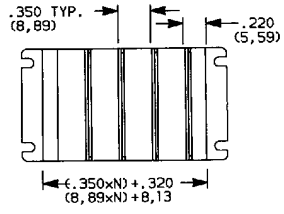
Recommended Panel Thickness:
.046 – .125 (1,16 – 3,18)

| DIM. A | DIM. B | MOUNTING STYLE |
|---|---|---|
| (.350 x N) + .420<br>(8,89 x N) + (10,67) | (.350 x N) + .590<br>(8,89 x N) + (14,99) | 20 |
| (.500 x N) + .420<br>(12,7 x N) + (10,67) | (.500 x N) + .590<br>(12,7 x N) + (14,99) | 24 |

### 20 SWITCH ASSEMBLY W/ ENDPLATES — .350 (8,89) SECTION PITCH

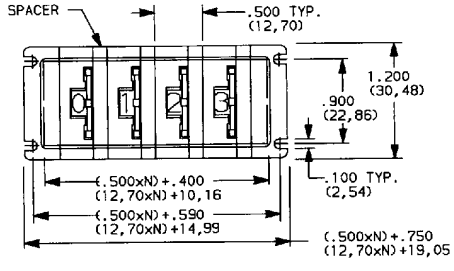


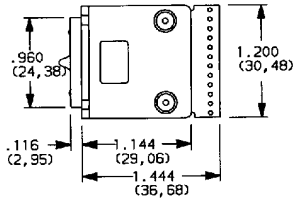



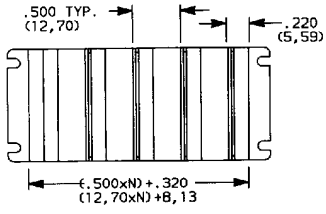




N = Number of sections

### 24 SWITCH ASSEMBLY W/ ENDPLATES AND SPACER(S) — .500 (12,70) SECTION PITCH




N = Number of sections

### 29

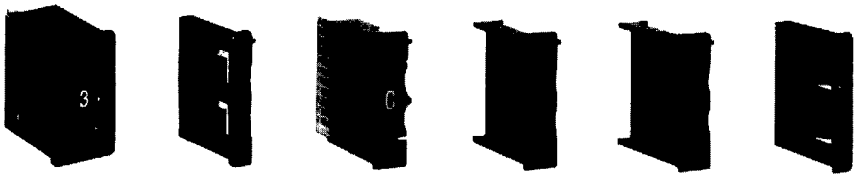
Switch section only—unassembled, without endplates or spacers (must be ordered with 0 number of sections, see page F-33).

**NOTE**: Endplates, blank sections, spacers and assembly hardware available separately, see catalog section H.

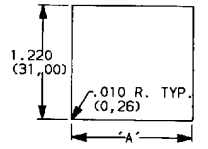
F

## MOUNTING STYLE

### TYPE 3 SNAP-IN FRONT MOUNTING



PANEL MOUNTING

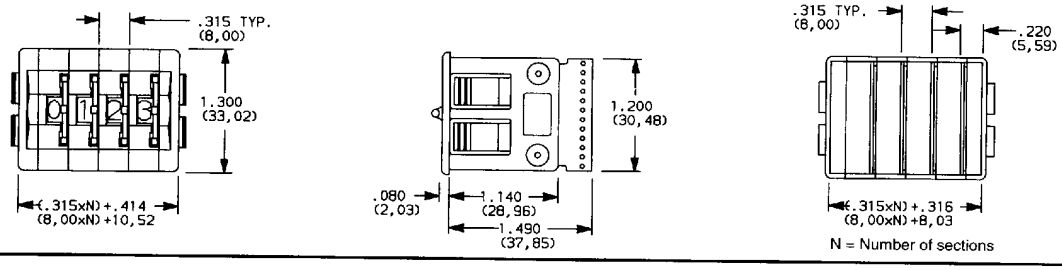



| DIM. A | MOUNTING STYLE |
|---|---|
| (.315 x N) + .360<br>(8,0 x N) + (9,14) | 30 |
| (.394 x N) + .360<br>(10,0 x N) + (9,14) | 33 |
| (.500 x N) + .360<br>(12,7 x N) + (9,14) | 34 |

N = Number of sections

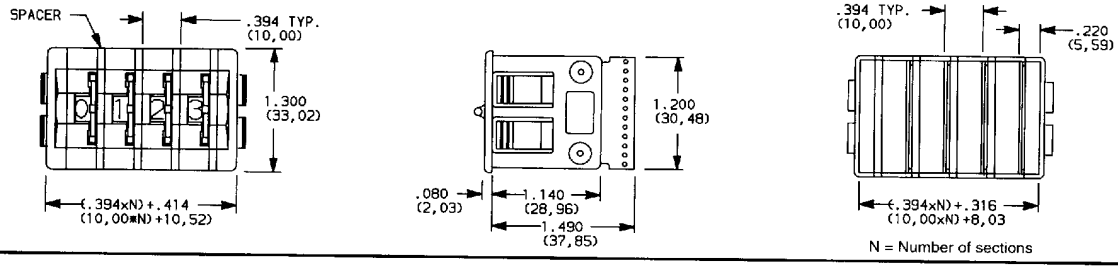
Recommended Panel Thickness:
.046 – .125 (1,16 – 3,18)

**30** SWITCH ASSEMBLY W/ ENDPLATES — .315 (8,00) SECTION PITCH



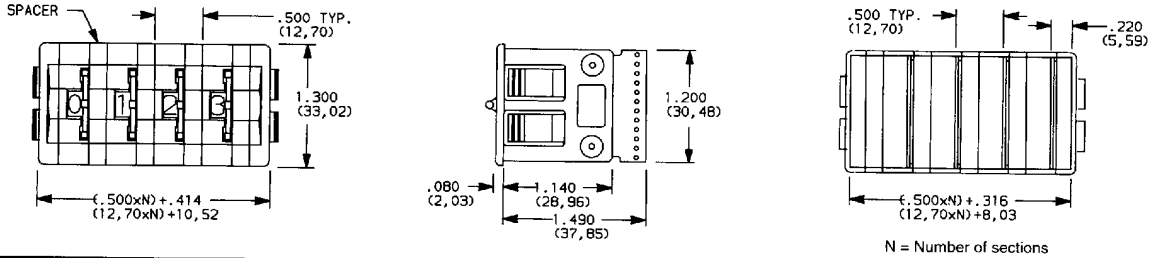

N = Number of sections

**33** SWITCH ASSEMBLY W/ ENDPLATES AND SPACER(S) — 10mm SECTION PITCH




N = Number of sections

**34** SWITCH ASSEMBLY W/ ENDPLATES AND SPACER(S) — .500 (12,70) SECTION PITCH




N = Number of sections

**09**

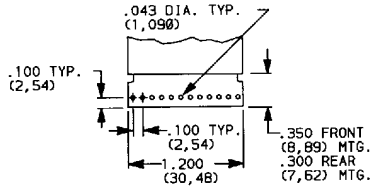
Switch section only—unassembled, without endplates or spacers (must be ordered with 0 number of sections, see page F-33).

**NOTE**: Endplates, blank sections, spacers and assembly hardware available separately, see catalog section H.

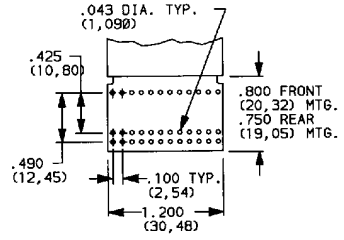
## TERMINATIONS

NOTE: All terminal holes shown may not be present for all function codes, consult factory.

### 0 (STD.)



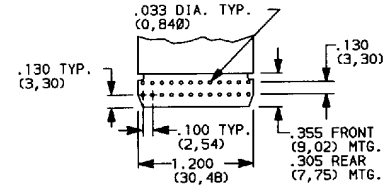

### 1



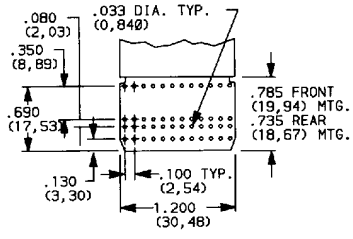

Signal traces cut except for common(s).

P.C. BOARD 1/32" (0,79) THK.

### 4

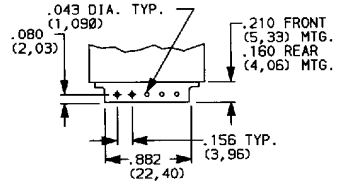



### 5

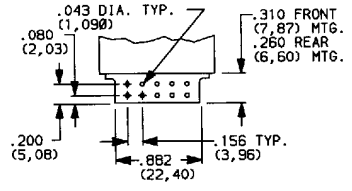



Signal traces cut except for common(s).

### 6

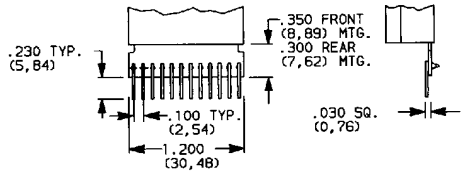



### 7

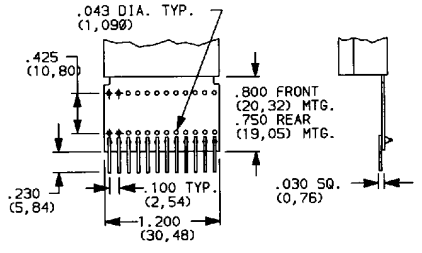



P.C. BOARD 1/32" (0,79) THK

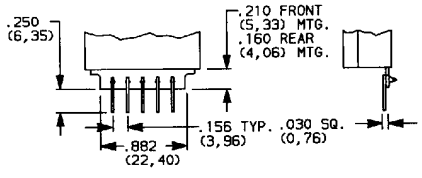
### 3 TYPE 0 WITH SOLDER PINS




### A TYPE 1 WITH SOLDER PINS



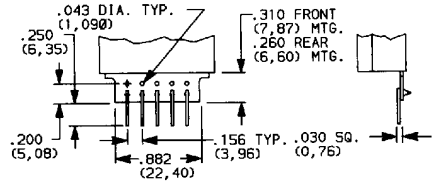

### B TYPE 6 WITH SOLDER PINS



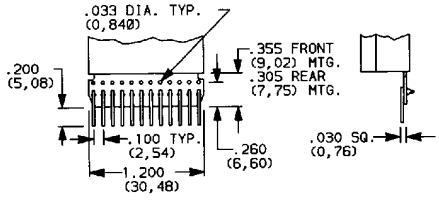

Signal traces cut except for common(s).

P.C. BOARD 1/32" (0,79) THK.

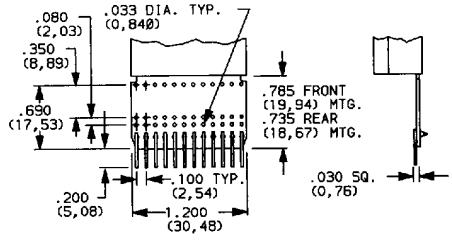
### C TYPE 7 WITH SOLDER PINS




### D TYPE 4 WITH SOLDER PINS




### E TYPE 5 WITH SOLDER PINS




Signal traces cut except for common(s).

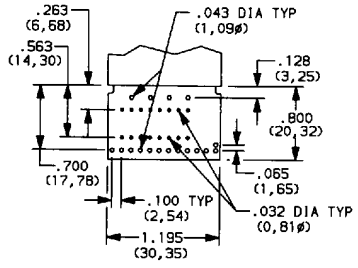
P.C. BOARD 1/32" (0,79) THK.

F

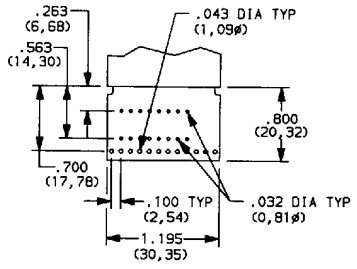
## TERMINATIONS

**NOTE:** All terminal holes shown may not be present for all function codes, consult factory.

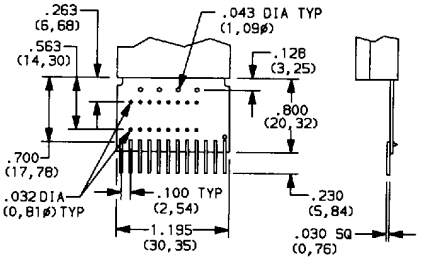
**F** FOR 58 CODE ONLY



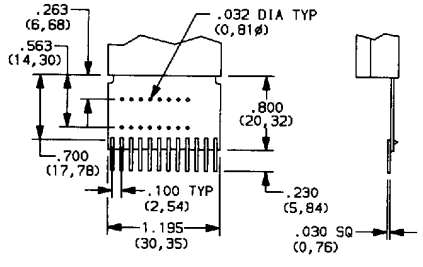

**G** FOR 59 CODE ONLY



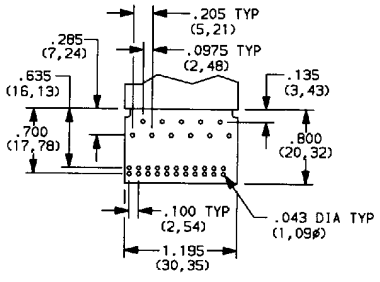

**H** TYPE F WITH SOLDER PINS FOR 58 CODE ONLY



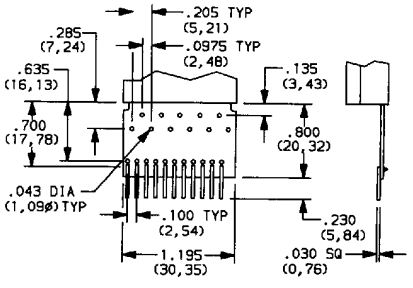

**J** TYPE G WITH SOLDER PINS FOR 59 CODE ONLY




**M** FOR 13 CODE ONLY




**U** TYPE M WITH SOLDER PINS FOR 13 CODE ONLY




**9** ANY COMBINATION OF TERMINATION CONFIGURATIONS OR SPECIAL TERMINATIONS. ALSO USED WITH FUNCTION CODES 91 AND 92.

SPECIFY ON CONFIGURATION FORM, PAGE F-44 AND CONSULT FACTORY.

CONNECTOR

TERMINAL CONNECTOR AVAILABLE FOR TERMINATION OPTIONS 0, 1, 4, 5, SEE CATALOG SECTION H.

**TERMINAL LOCATION NUMBERS**

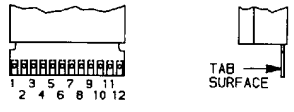



Fig. 1


Fig. 2

See function codes, pages F-33 thru F-36, for signal locations.

## COLOR/MARKING/STOPS

**0** (STD.) Matte black housing, Gloss black wheel with white characters; No stops.

**1** Matte gray housing, Gloss black wheel with white characters; No stops.

**5** Matte black housing, translucent off-white wheel with black characters; No stops (recommended with ILLUMINATION option)

**6** Matte gray housing, translucent off-white wheel with black characters; No stops (recommended with ILLUMINATION option)

**9** Special color or markings for housing or wheel, stops, specify on CONFIGURATION FORM, page F-44 and consult factory. AVAILABLE COLORS: MARKING—White, Black.
BODY—Black, Gray (matte finish).
WHEEL—White, Black, Red, Orange, Yellow, Green, Blue, Brown, Gray (gloss finish).

Stop pins are available separately, see catalog section H.

## SEAL

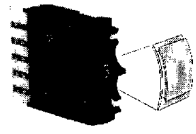
**0** (STD.) Unsealed switching contacts.

**1** Sealed switching contacts. Sealing is by means of an o-ring rotary seal and a cured-in-place elastomer gasket. Switching contact area is protected from moisture, oil, and airborne contaminants.

**2** Dust lens. Protects the character face of the wheel from abrasion and dirt (recommended with ILLUMINATION option).

**3** Sealed switching contacts and dust lens. (Options 1 and 2 recommended with ILLUMINATION option).

**9** Sealing variations, section to section within assembly. Specify on CONFIGURATION FORM, page F-44 and consult factory. (Also specify with blank sections, where seal is not applicable).



DUST LENS

## ILLUMINATION

NEW **(NONE)** (STD.) No illumination

**3** Red LED

**5** Yellow LED

**6** Green LED

COLOR/MARKINGS/STOPS option 5, 6 and SEAL option 2, 3 recommended with ILLUMINATION option.

**NOTE:** Illumination option not available with termination options with solder pins. Internal LED illuminates wheel character for low-light visibility.

### HOW TO ORDER

All available 3 SERIES THUMBWHEEL SWITCH options are listed on page F-32, and are described on pages F-33 thru F-43. Dashes, hyphens or spaces in the part number are not significant, and are shown for clarity only. Use CONFIGURATION FORM, page F-44, for special instructions.

Endplates, blank sections, spacers, and assembly hardware are available separately, see catalog section H.

F

### SPECIFICATIONS

CONTACT RATING:
CARRY: 1 AMP continuous.
SWITCH: 100 mA max.

OPERATING VOLTAGE: 50 mV to 28 V DC or 120 V AC.

ELECTRICAL LIFE: $10^5$ detent operations between any two adjacent positions @ 25°C.

CONTACT RESISTANCE: Below 100 milliohms typ. initial @ 2-4 V DC, 100 mA.

INSULATION RESISTANCE: $10^9$ ohms min.

DIELECTRIC STRENGTH: 500 V RMS min. @ sea level between common terminal and any output.

OPERATING TEMPERATURE: -10°C to 65°C.

### MATERIALS

HOUSING: ABS plastic.

THUMBWHEEL: ABS plastic.

ROTOR CONTACTS: Precious metal on copper alloy.

STATOR CONTACTS: Hard gold over nickel over copper on epoxy fiberglass.

**NOTE:** Specifications and materials listed above are general specifications. Specifications available for specific and custom switches, consult factory.