

# EECO® 1776/1976 SERIES THUMBWHEEL SWITCHES

*EECO's 1776 and 1976 Series thumbwheel switches are the standards of the industry. Both Series offer 8, 10, 12 or 16 position binary or decimal output codes for every possible application.*

The **1776 Series** is a standard .500" wide, while the **1976 Series** is .350" wide to save valuable front panel space. Optional notched terminals allow motherboards to be easily attached. The list of available options includes custom legends, lighting options, doublewide message units and fast-mount installation hardware. Many switch models offer mounting provisions for diodes. The **1776 and 1976 Series** both offer proven reliability at an economical price, and both are backed by EECO's one-year warranty.



## SPECIFICATIONS

### MECHANICAL

|                            |                                                 |
|----------------------------|-------------------------------------------------|
| No. of Switching Positions | 8, 10, 12, 16                                   |
| Life                       | Minimum 1,000,000 Detents @ 10 mA, 5 VDC, +25°C |
| Tangential Operating Force | 1776 Series: 6-18 Oz., 1976 Series 5-16 Oz.     |
| Weight                     | 0.35 Oz.                                        |

### ELECTRICAL

|                                           |                                   |
|-------------------------------------------|-----------------------------------|
| Maximum Electrical Current, Non-Switching | 3A Per Common Terminal            |
| Maximum Rated Load, Switching             | 125 mA at 28 VDC or 115 VAC       |
| Contact Resistance (Initial)              | 100 mΩ Maximum                    |
| (After Life)                              | 200 mΩ Maximum                    |
| Insulation Resistance                     | 1,000 MΩ Minimum At 100 VDC       |
| Dielectric Withstanding Voltage           | 1000 VAC (RMS) Single Pole Models |
|                                           | 500 VAC (RMS) Double Pole Models  |

### ENVIRONMENTAL

|                       |                 |
|-----------------------|-----------------|
| Operating Temperature | -20°C To +75°C  |
| Storage Temperature   | -40°C To +100°C |
| Seal                  | Dust Resistant  |

### MATERIALS

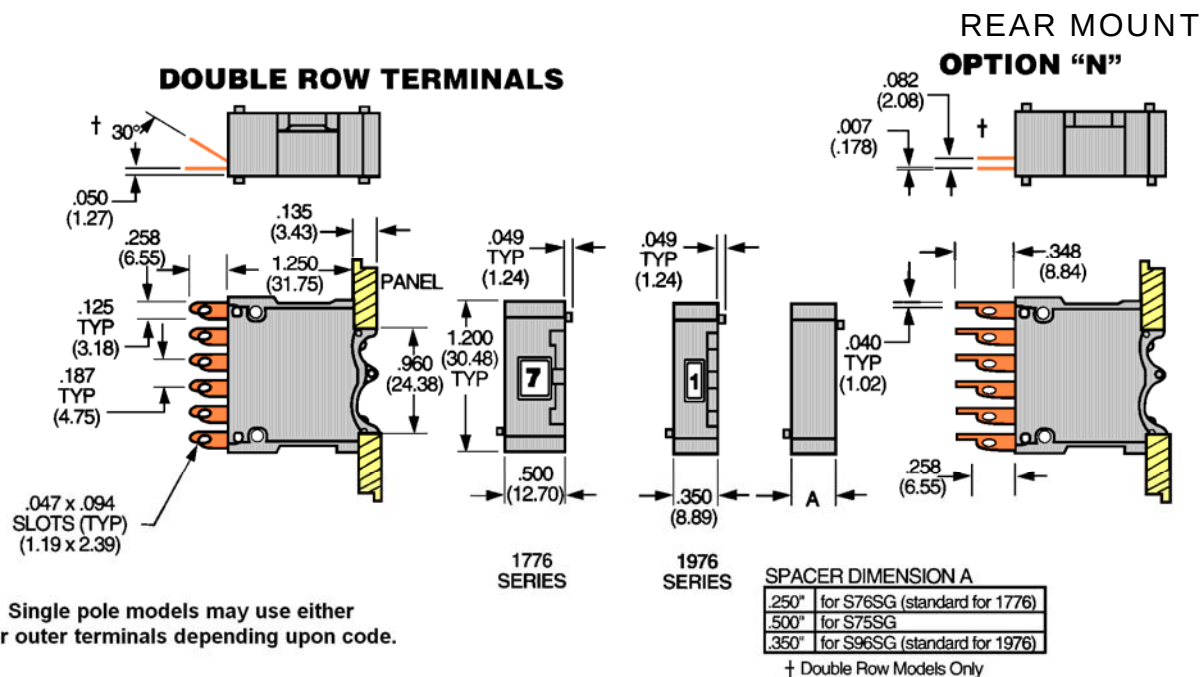
|                         |                                        |
|-------------------------|----------------------------------------|
| Plastic                 | Polycarbonate per Federal Spec LP-393A |
| Metals                  | Corrosion Resistant                    |
| Circuit Disc - Material | Glass Epoxy                            |
| Plating                 | Gold Over Nickel Plating               |
| Terminals               | Copper Alloy, Plated for Soldering     |
| Contacts                | Copper Alloy, Gold Over Nickel Plating |

## RoHS COMPLIANCE

EECO Switch is fully committed to complying with the European Lead-Free and RoHS directives. The 1776 and 1976 series are Lead Free and RoHS compliant.

## 1776/1976 Series

### OUTLINE DIMENSIONS



### 1776/1976 HARDWARE AND ACCESSORIES

**77SG-X/97SG-X** Standard Hardware Kit: Endpieces, Threaded Rods, Screws, Nuts and Washers

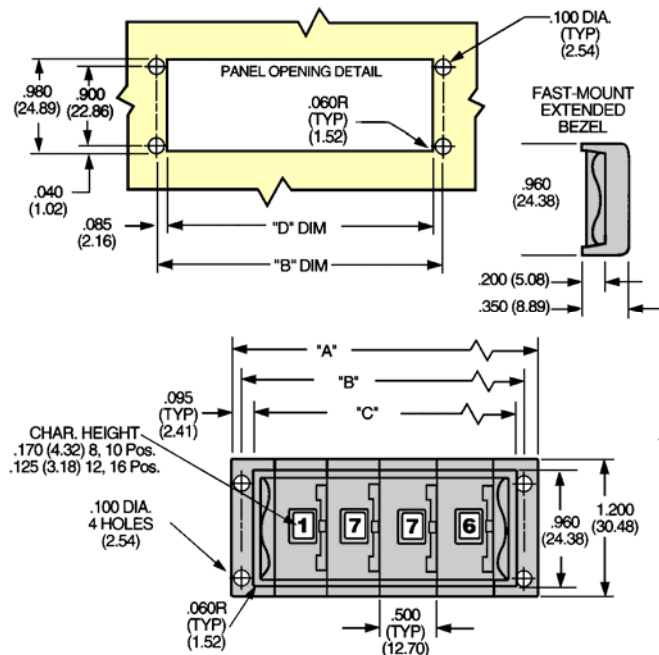
**78SG-X/98SG-X** Fast Mount Hardware Kit: Endpieces, Bezels Threaded Rods, Screws, Nuts and Washers (Option Y)

**NOTE:** REPLACE "G" WITH "M" TO ORDER SPRAY MATTE HARDWARE  
REPLACE "X" WITH THE APPROPRIATE NUMBER OF SWITCHES IN ASSEMBLY

| SERIES    | CATALOG NUMBER | PART NUMBER | DESCRIPTION               |
|-----------|----------------|-------------|---------------------------|
| 1776/1976 | E76SG          | 195934-00   | Endpiece Gloss            |
| 1776/1976 | E76SM          | 195970-00   | Endpiece Matte            |
| 1776/1976 | Option Y       | 233658-01   | Fast Mount Endpiece Gloss |
| 1776/1976 | Option Y       | 233659-01   | Fast Mount Bezel Gloss    |
| 1776/1976 | Option Y       | 233659-02   | Fast Mount Bezel Matte    |
| 1776      | S75SG          | 233875-01   | .500" Spacer Gloss        |
| 1776      | S75SM          | 233875-02   | .500" Spacer Matte        |
| 1776      | S76SG          | 195954-00   | .250" Spacer Gloss        |
| 1776      | S76SM          | 195972-00   | .250" Spacer Matte        |
| 1976      | S96SG          | 234104-01   | .350" Spacer Gloss        |
| 1976      | S96SM          | 234104-03   | .350" Spacer Matte        |
| 1776      | SW7600DP       | 196992-01   | Diode/Resistor Module     |

# PANEL MOUNTING INFORMATION

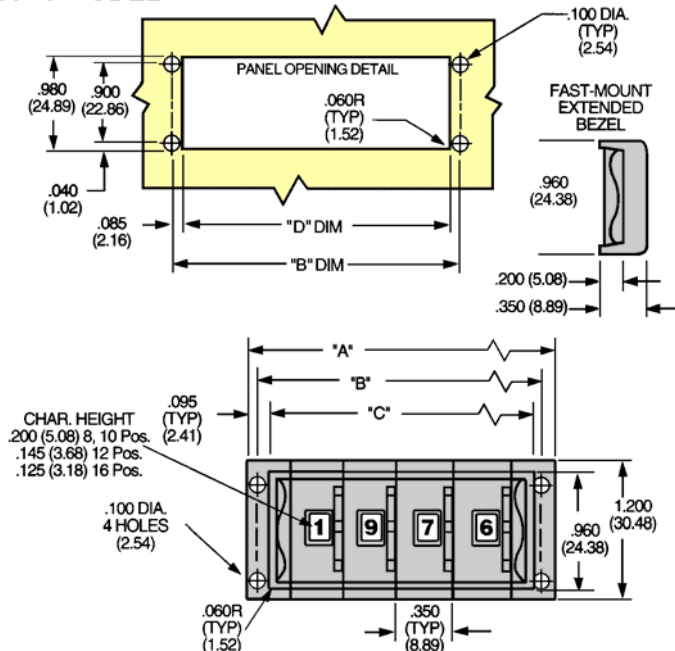
## 1776 MODEL



| NO. OF STATIONS | A               | B               | C               | D               |
|-----------------|-----------------|-----------------|-----------------|-----------------|
| 1               | 1.26<br>(32.0)  | 1.09<br>(27.7)  | 0.90<br>(22.9)  | 0.92<br>(23.4)  |
| 2               | 1.76<br>(44.7)  | 1.59<br>(40.4)  | 1.40<br>(35.6)  | 1.42<br>(36.1)  |
| 3               | 2.26<br>(57.4)  | 2.09<br>(53.1)  | 1.90<br>(48.3)  | 1.92<br>(48.8)  |
| 4               | 2.76<br>(70.1)  | 2.59<br>(65.8)  | 2.40<br>(61.0)  | 2.42<br>(61.5)  |
| 5               | 3.26<br>(82.8)  | 3.09<br>(78.5)  | 2.90<br>(73.7)  | 2.92<br>(74.2)  |
| 6               | 3.76<br>(95.5)  | 3.59<br>(91.2)  | 3.40<br>(86.4)  | 3.42<br>(86.9)  |
| 7               | 4.26<br>(108.2) | 4.09<br>(103.9) | 3.90<br>(99.1)  | 3.92<br>(99.6)  |
| 8               | 4.76<br>(120.9) | 4.59<br>(116.6) | 4.40<br>(111.8) | 4.42<br>(112.3) |
| 9               | 5.26<br>(133.6) | 5.09<br>(129.3) | 4.90<br>(124.5) | 4.92<br>(125.0) |
| 10              | 5.76<br>(146.3) | 5.59<br>(142.0) | 5.40<br>(137.2) | 5.42<br>(137.7) |

Assembly dimensions may exhibit expansion of 0.003" per station before installation, but will adjust to recommended panel dimensions shown once installed. Subtract 0.250" from each dimension shown for each S76SG spacer included in the assembly. Add 0.500" to each dimension per switch for assemblies over 10 stations. Tolerances .XXX ± 0.010", .XX ± 0.030. Metric equivalents shown in ( ).

## 1976 MODEL



| NO. OF STATIONS | A               | B               | C              | D              |
|-----------------|-----------------|-----------------|----------------|----------------|
| 1               | 1.11<br>(28.2)  | 0.94<br>(23.9)  | 0.75<br>(19.1) | 0.77<br>(19.6) |
| 2               | 1.46<br>(37.1)  | 1.29<br>(32.8)  | 1.10<br>(27.9) | 1.12<br>(28.4) |
| 3               | 1.81<br>(46.0)  | 1.64<br>(41.7)  | 1.45<br>(36.8) | 1.47<br>(37.3) |
| 4               | 2.16<br>(54.9)  | 1.99<br>(50.5)  | 1.80<br>(45.7) | 1.82<br>(46.2) |
| 5               | 2.51<br>(63.8)  | 2.34<br>(59.4)  | 2.15<br>(54.6) | 2.17<br>(55.1) |
| 6               | 2.86<br>(72.6)  | 2.69<br>(68.3)  | 2.50<br>(63.5) | 2.52<br>(64.0) |
| 7               | 3.21<br>(81.5)  | 3.04<br>(77.2)  | 2.85<br>(72.4) | 2.87<br>(72.9) |
| 8               | 3.56<br>(90.4)  | 3.39<br>(86.1)  | 3.20<br>(81.3) | 3.22<br>(81.8) |
| 9               | 3.91<br>(99.3)  | 3.74<br>(95.0)  | 3.55<br>(90.2) | 3.57<br>(90.7) |
| 10              | 4.26<br>(108.2) | 4.09<br>(103.9) | 3.90<br>(99.1) | 3.92<br>(99.6) |

Assembly dimensions may exhibit expansion of 0.003" per station before installation, but will adjust to recommended panel dimensions shown once installed. Add 0.350" to each dimension per switch for assemblies over 10 stations.

Tolerances .XXX ± 0.010", .XX ± 0.030. Metric equivalents shown in ( ).

## 1776/1976 Series

### STANDARD SWITCH MODELS

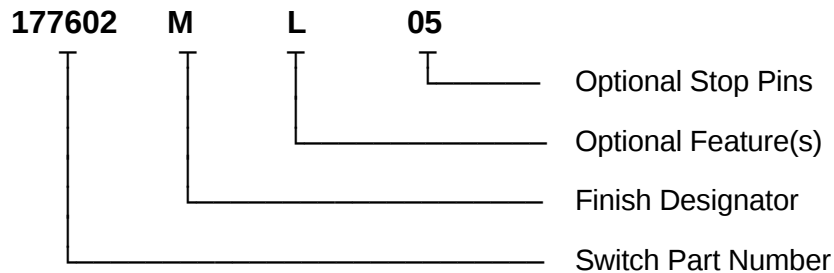
| TRUTH<br>TABLE | 1776 SERIES | 1976 SERIES | PRODUCT<br>DESCRIPTION                        | NO. Of<br>POSITIONS |
|----------------|-------------|-------------|-----------------------------------------------|---------------------|
| A02            | 177601G     | 197601G     | 1 Pole Decimal                                | 10                  |
| A02            | 177641G     | 197641G     | 1 Pole Decimal Make-Before Break              | 10                  |
| A08            | 177640G     | 197640G     | 2 Pole 5 Pos. Decimal Mkd. 0-4                | 5                   |
| B01            | 177608G     | 197608G     | 1 Pole BCO                                    | 8                   |
| B01            | 177658G†    | 197658G†    | 1 Pole BCO w/Diode Provision                  | 8                   |
| B02            | 177602G     | 197602G     | 1 Pole BCD                                    | 10                  |
| B02            | 177652G†    | 197652G†    | 1 Pole BCD Diode Provision                    | 10                  |
| B04            | 177632G     | 197632G     | 1 Pole 12 Position Binary                     | 12                  |
| B04            | 177682G†    | 197682G†    | 1 Pole 12 Binary w/Diode Provision            | 12                  |
| B07            | 177633G     | 197633G     | 1 Pole BCH Marked 0-15                        | 16                  |
| B07            | 177634G     | 197634G     | 1 Pole BCH Marked 0-9-A-F                     | 16                  |
| C10            | 177603G     | 197603G     | 1 Pole Excess 3                               | 10                  |
| C10            | 177653G†    | 197653G†    | 1 Pole Excess 3 w/Diode Provision             | 10                  |
| C11            | 177618G     | 197618G     | 1 Pole BCO Complement                         | 8                   |
| C11            | 177668G†    | 197668G†    | 1 Pole BCO Complement w/Diode Provision       | 8                   |
| C12            | 177612G     | 197612G     | 1 Pole BCD Complement                         | 10                  |
| C12            | 177662G†    | 197662G†    | 1 Pole BCD Complement w/Diode Provision       | 10                  |
| C13            | 177619G     | 197619G     | 1 Pole 9's Complement                         | 10                  |
| C13            | 177669G†    | 197669G†    | 1 Pole 9's Complement w/Diode Provision       | 10                  |
| C14            | 177621G     | 197621G     | 1 Pole 10's Complement                        | 10                  |
| C14            | 177671G†    | 197671G†    | 1 Pole 10's Complement w/Diode Provision      | 10                  |
| C15            | 177617G     | 197617G     | 1 Pole Complement of 9's Complement           | 10                  |
| C15            | 177667G†    | 197667G†    | 1 Pole Complement of 9's Compl. w/Diode Prov. | 10                  |
| D02            | 177656G     | 197656G     | 2 Pole BCD w/Separate Common to Not True Bits | 10                  |
| D03            | 177626G     | 197626G     | 2 Pole Dual BCD                               | 10                  |
| D04            | 177637G     | 197637G     | 2 Pole BCH Marked 0-15w/Complement            | 16                  |
| D04            | 177638G     | 197638G     | 2 Pole BCH Marked 0-9-A-F w/Complement        | 16                  |
| E01            | 177609G     | 197609G     | 1 Pole BCO w/Complement                       | 8                   |
| E02            | 177606G     | 197606G     | 2 Pole BCD w/Complement                       | 10                  |
| E04            | 177620G     | 197620G     | 2 Pole 9's Complement w/Complement            | 10                  |
| E05            | 177622G     | 197622G     | 2 Pole 10's Complement w/Complement           | 10                  |
| E05            | 177623G     | 197623G     | 1 Pole Complement of 10's Complement          | 10                  |
| E06            | 177636G     | 197636G     | 2 Pole 12 Pos. Binary w/Complement            | 12                  |
| E07            | 177614G     | 197614G     | 2 Pole Excess 3 w/Complement                  | 10                  |
| E08            | 177646G     | 197646G     | 4 Pole Special BCD w/Complement               | 10                  |
| G02            | 177615G     | 197615G     | 1 Pole 1-2-4-2' Code                          | 10                  |
| N/A            | 177691G     | 197691G     | Non Functional Switch                         | 10                  |
| S01            | 177605G     | 197605G     | 2 Pole Repeating Marked 0-5                   | 10                  |
| S01            | 177610G     | 197610G     | 2 Pole Repeating Marked 0-1                   | 10                  |
| S01            | 177611G     | 197611G     | 2 Pole Repeating Marked +/-                   | 10                  |
| S08            | 177616G     | 197616G     | Wolff-Poggendorf Voltage Divider              | 10                  |
| S10            | 177604G     | 197604G     | Resistor Decade(1-2-3-6)                      | 10                  |
| S11            | 177607G     | 197607G     | 7 Bar Indicator                               | 10                  |
| S15            | 177642G     | 197642G     | 1 Pole Mod. Teletype Code                     | 10                  |
| S17            | 177624G     | 197624G     | Resistor Decade 1-2-4-2' Code                 | 10                  |
| S18            | 177625G     | 197625G     | Resistor Decade 1-2-2-2-2 Code                | 10                  |
| S20            | 177645G     | 197645G     | 2 Pole 1-1'-2-5 w/Complement                  | 10                  |
| S21            | 177676GN    | 197676GN    | Thumbpot Voltage Divider                      | 10                  |
| S22            | 177627G     | 197627G     | 1 Pole 1-2-4-5 Code                           | 10                  |
| S23            | 177674G     | 197674G     | 1 Pole Johnson Code                           | 10                  |

NOTE: † Includes row of inactive terminals for mounting components. Consult factory for additional information.

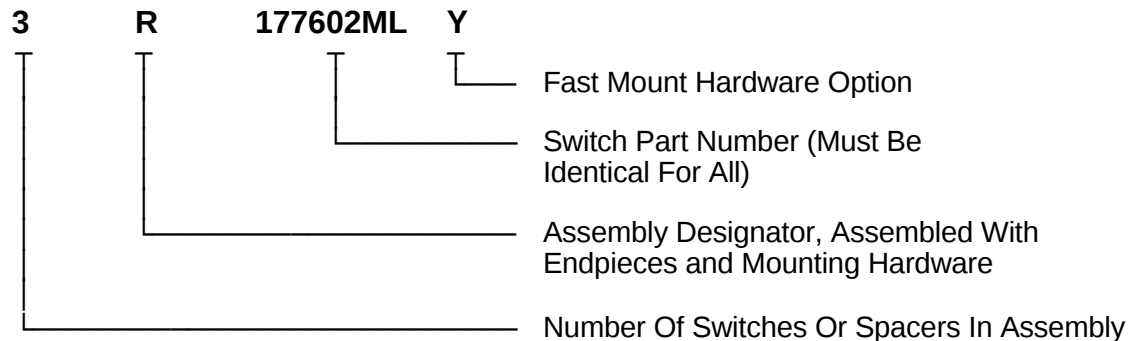
## AVAILABLE OPTIONS

|   |                                                                                                                                              |
|---|----------------------------------------------------------------------------------------------------------------------------------------------|
| A | Diodes Installed Anode To Common                                                                                                             |
| C | Diodes Installed Cathode To Common                                                                                                           |
| D | Decimal Point                                                                                                                                |
| G | Gloss Finish (Standard)                                                                                                                      |
| K | Lighted Decimal Point                                                                                                                        |
| L | Lighted Switch Legend, black hot-stamped character on white translucent background. 5 Volt lamp standard, consult factory for other voltages |
| M | Spray Matte Finish                                                                                                                           |
| N | Notched Terminals – Required to attach PC boards. Also accepts soldered cable connection                                                     |
| P | +/-Rotor Marking                                                                                                                             |
| R | Reverse Lighting – Illuminated white character on black background                                                                           |
| T | Alphabet Marking                                                                                                                             |
| U | EMI/RFI Shielding                                                                                                                            |
| Y | Fast Mount Hardware (applies to assembly part number)                                                                                        |
|   | Stop Pins                                                                                                                                    |
|   | Consult Factory for Custom Rotor Marking, Double-Wide Switch Modules, Custom Output Codes and Other Special Requests                         |

## ORDERING EXAMPLE - SWITCH



## ORDERING EXAMPLE – SWITCH ASSEMBLY



Assemblies of mixed switches and/or certain options require a special assembly number. Consult factory for additional ordering information.

# EECO SWITCH STANDARD TRUTH TABLES

EECO Switch offers over 60 binary, decimal, and special purpose electrical output codes. The code designations (e.g. B02) are common to all EECO Switch products. Not all codes are offered in every switch series.

Using the truth tables on the following pages, select the electrical code that suits your circuit. Then select the corresponding 1776/1776 Series part number from the table on page 4. The most common output codes are highlighted in *red*

Contact the factory for additional information and availability of other codes and options.

## SINGLE POLE DECIMAL CODES

A01

| OCTAL 1 Pole 8 Position                     |                 |
|---------------------------------------------|-----------------|
| Common (C) connected to terminals indicated |                 |
| D I A L                                     | 0 1 2 3 4 5 6 7 |
| 0                                           | ●               |
| 1                                           | ●               |
| 2                                           | ●               |
| 3                                           | ●               |
| 4                                           | ●               |
| 5                                           | ●               |
| 6                                           | ●               |
| 7                                           | ●               |

A02

| DECIMAL 1 Pole 10 Position                  |                     |
|---------------------------------------------|---------------------|
| Common (C) connected to terminals indicated |                     |
| D I A L                                     | 0 1 2 3 4 5 6 7 8 9 |
| 0                                           | ●                   |
| 1                                           | ●                   |
| 2                                           | ●                   |
| 3                                           | ●                   |
| 4                                           | ●                   |
| 5                                           | ●                   |
| 6                                           | ●                   |
| 7                                           | ●                   |
| 8                                           | ●                   |
| 9                                           | ●                   |

A03

| 1 Pole 12 Position                          |                           |
|---------------------------------------------|---------------------------|
| Common (C) connected to terminals indicated |                           |
| D I A L                                     | 0 1 2 3 4 5 6 7 8 9 10 11 |
| 0                                           | ●                         |
| 1                                           | ●                         |
| 2                                           | ●                         |
| 3                                           | ●                         |
| 4                                           | ●                         |
| 5                                           | ●                         |
| 6                                           | ●                         |
| 7                                           | ●                         |
| 8                                           | ●                         |
| 9                                           | ●                         |
| 10                                          | ●                         |
| 11                                          | ●                         |

A04

| 1 Pole 16 Position                          |                                       |
|---------------------------------------------|---------------------------------------|
| Common (C) connected to terminals indicated |                                       |
| D I A L                                     | 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 |
| 0                                           | ●                                     |
| 1                                           | ●                                     |
| 2                                           | ●                                     |
| 3                                           | ●                                     |
| 4                                           | ●                                     |
| 5                                           | ●                                     |
| 6                                           | ●                                     |
| 7                                           | ●                                     |
| 8                                           | ●                                     |
| 9                                           | ●                                     |
| 10                                          | ●                                     |
| 11                                          | ●                                     |
| 12                                          | ●                                     |
| 13                                          | ●                                     |
| 14                                          | ●                                     |
| 15                                          | ●                                     |

## DOUBLE POLE DECIMAL CODES

A05

| DECIMAL 2 Pole 10 Position                  |                     |
|---------------------------------------------|---------------------|
| Common (C) connected to terminals indicated |                     |
| D I A L                                     | 0 1 2 3 4 5 6 7 8 9 |
| 0                                           | ●                   |
| 1                                           | ●                   |
| 2                                           | ●                   |
| 3                                           | ●                   |
| 4                                           | ●                   |
| 5                                           | ●                   |
| 6                                           | ●                   |
| 7                                           | ●                   |
| 8                                           | ●                   |
| 9                                           | ●                   |

A06

| DECIMAL 2 Pole 10 Position                  |                     |
|---------------------------------------------|---------------------|
| One Pole Shorting One Pole Non-Shorting     |                     |
| Common (C) connected to terminals indicated |                     |
| D I A L                                     | 0 1 2 3 4 5 6 7 8 9 |
| 0                                           | ●                   |
| 1                                           | ●                   |
| 2                                           | ●                   |
| 3                                           | ●                   |
| 4                                           | ●                   |
| 5                                           | ●                   |
| 6                                           | ●                   |
| 7                                           | ●                   |
| 8                                           | ●                   |
| 9                                           | ●                   |

A07

| DECIMAL 1 Pole 12 Position                  |                           |
|---------------------------------------------|---------------------------|
| Common (C) connected to terminals indicated |                           |
| D I A L                                     | 0 1 2 3 4 5 6 7 8 9 10 11 |
| 0                                           | ●                         |
| 1                                           | ●                         |
| 2                                           | ●                         |
| 3                                           | ●                         |
| 4                                           | ●                         |
| 5                                           | ●                         |
| 6                                           | ●                         |
| 7                                           | ●                         |
| 8                                           | ●                         |
| 9                                           | ●                         |
| 10                                          | ●                         |
| 11                                          | ●                         |

A08

| 2 Pole 5 Position                                    |           |
|------------------------------------------------------|-----------|
| Common (C) and (C') connected to terminals indicated |           |
| D I A L                                              | 0 1 2 3 4 |
| 0                                                    | ●         |
| 1                                                    | ●         |
| 2                                                    | ●         |
| 3                                                    | ●         |
| 4                                                    | ●         |

**B01**

| BCD<br>1 Pole 8 Position |   |                                                   |   |   |
|--------------------------|---|---------------------------------------------------|---|---|
| D                        | I | Common (C)<br>connected to<br>terminals indicated |   |   |
| A                        | L | 1                                                 | 2 | 4 |
| 0                        |   |                                                   |   |   |
| 1                        | ● |                                                   |   |   |
| 2                        |   | ●                                                 |   |   |
| 3                        | ● |                                                   |   |   |
| 4                        |   |                                                   | ● |   |
| 5                        | ● |                                                   | ● |   |
| 6                        |   | ●                                                 | ● |   |
| 7                        | ● | ●                                                 | ● |   |

**B02**

| BCD<br>1 Pole 10 Position |   |                                                   |   |     |
|---------------------------|---|---------------------------------------------------|---|-----|
| D                         | I | Common (C)<br>connected to<br>terminals indicated |   |     |
| A                         | L | 1                                                 | 2 | 4 8 |
| 0                         |   |                                                   |   |     |
| 1                         | ● |                                                   |   |     |
| 2                         |   | ●                                                 |   |     |
| 3                         | ● |                                                   |   |     |
| 4                         |   |                                                   | ● |     |
| 5                         | ● |                                                   | ● |     |
| 6                         |   | ●                                                 | ● |     |
| 7                         | ● | ●                                                 | ● |     |
| 8                         |   |                                                   |   | ●   |
| 9                         | ● |                                                   | ● |     |

**B03**

| BCD, binary 10 at 0<br>1 Pole 10 Position |   |                                                   |   |     |
|-------------------------------------------|---|---------------------------------------------------|---|-----|
| D                                         | I | Common (C)<br>connected to<br>terminals indicated |   |     |
| A                                         | L | 1                                                 | 2 | 4 8 |
| 1                                         | ● |                                                   |   |     |
| 2                                         |   | ●                                                 |   |     |
| 3                                         | ● |                                                   |   |     |
| 4                                         |   |                                                   | ● |     |
| 5                                         | ● |                                                   | ● |     |
| 6                                         |   | ●                                                 | ● |     |
| 7                                         | ● | ●                                                 | ● |     |
| 8                                         |   |                                                   |   | ●   |
| 9                                         | ● |                                                   | ● |     |
| 0                                         |   | ●                                                 | ● |     |

**B04**

| BINARY CODE<br>1 Pole 12 Position |   |                                                   |   |     |
|-----------------------------------|---|---------------------------------------------------|---|-----|
| D                                 | I | Common (C)<br>connected to<br>terminals indicated |   |     |
| A                                 | L | 1                                                 | 2 | 4 8 |
| 0                                 |   |                                                   |   |     |
| 1                                 | ● |                                                   |   |     |
| 2                                 |   | ●                                                 |   |     |
| 3                                 | ● |                                                   |   |     |
| 4                                 |   |                                                   | ● |     |
| 5                                 | ● |                                                   | ● |     |
| 6                                 |   | ●                                                 | ● |     |
| 7                                 | ● | ●                                                 | ● |     |
| 8                                 |   |                                                   |   | ●   |
| 9                                 | ● |                                                   | ● |     |
| 10                                |   | ●                                                 | ● |     |
| 11                                | ● | ●                                                 | ● |     |

**B05**

| BCD, with Odd Bit Parity<br>1 Pole 10 Position |   |                                                   |   |     |   |
|------------------------------------------------|---|---------------------------------------------------|---|-----|---|
| D                                              | I | Common (C)<br>connected to<br>terminals indicated |   |     |   |
| A                                              | L | 1                                                 | 2 | 4 8 | P |
| 0                                              |   |                                                   |   |     |   |
| 1                                              | ● |                                                   |   |     | ● |
| 2                                              |   | ●                                                 |   |     |   |
| 3                                              | ● |                                                   |   |     | ● |
| 4                                              |   |                                                   | ● |     |   |
| 5                                              | ● |                                                   | ● |     | ● |
| 6                                              |   | ●                                                 | ● |     | ● |
| 7                                              | ● | ●                                                 | ● |     | ● |
| 8                                              |   |                                                   |   | ●   |   |
| 9                                              | ● |                                                   | ● | ●   |   |

**B06**

| BCD, with Even Bit Parity<br>1 Pole 10 Position |   |                                                   |   |     |   |
|-------------------------------------------------|---|---------------------------------------------------|---|-----|---|
| D                                               | I | Common (C)<br>connected to<br>terminals indicated |   |     |   |
| A                                               | L | 1                                                 | 2 | 4 8 | P |
| 0                                               |   |                                                   |   |     |   |
| 1                                               | ● |                                                   |   |     | ● |
| 2                                               |   | ●                                                 |   |     | ● |
| 3                                               | ● |                                                   |   |     | ● |
| 4                                               |   |                                                   | ● |     | ● |
| 5                                               | ● |                                                   | ● |     | ● |
| 6                                               |   | ●                                                 | ● |     | ● |
| 7                                               | ● | ●                                                 | ● |     | ● |
| 8                                               |   |                                                   |   | ●   | ● |
| 9                                               | ● |                                                   | ● | ●   | ● |

**B07**

| Binary Code<br>1-Pole 16-Position |    |                                                   |   |     |
|-----------------------------------|----|---------------------------------------------------|---|-----|
| D                                 | I  | Common (C)<br>connected to<br>terminals indicated |   |     |
| A                                 | L  | 1                                                 | 2 | 4 8 |
| 0                                 | 0  |                                                   |   |     |
| 1                                 | 1  | ●                                                 |   |     |
| 2                                 | 2  |                                                   | ● |     |
| 3                                 | 3  | ●                                                 |   |     |
| 4                                 | 4  |                                                   |   | ●   |
| 5                                 | 5  | ●                                                 |   | ●   |
| 6                                 | 6  |                                                   | ● | ●   |
| 7                                 | 7  | ●                                                 | ● |     |
| 8                                 | 8  |                                                   |   | ●   |
| 9                                 | 9  | ●                                                 |   | ●   |
| A                                 | 10 |                                                   | ● | ●   |
| B                                 | 11 | ●                                                 | ● |     |
| C                                 | 12 |                                                   |   | ●   |
| D                                 | 13 | ●                                                 |   | ●   |
| E                                 | 14 |                                                   | ● | ●   |
| F                                 | 15 | ●                                                 | ● | ●   |

**C02**

| BCD w/Complement<br>1 Pole 10 Position |   |                                                   |   |             |
|----------------------------------------|---|---------------------------------------------------|---|-------------|
| D                                      | I | Common (C)<br>connected to<br>terminals indicated |   |             |
| A                                      | L | 1                                                 | 2 | 4 8 1 2 4 8 |
| 0                                      |   |                                                   |   |             |
| 1                                      |   |                                                   |   | ●           |
| 2                                      |   | ●                                                 |   | ●           |
| 3                                      |   |                                                   |   | ●           |
| 4                                      |   |                                                   | ● | ●           |
| 5                                      |   | ●                                                 |   | ●           |
| 6                                      |   |                                                   | ● | ●           |
| 7                                      |   | ●                                                 | ● | ●           |
| 8                                      |   |                                                   |   | ●           |
| 9                                      |   | ●                                                 |   | ●           |

**C03**

| BCD w/Complement<br>Binary 10 at 0<br>1 Pole 10 Position |   |                                                   |   |             |
|----------------------------------------------------------|---|---------------------------------------------------|---|-------------|
| D                                                        | I | Common (C)<br>connected to<br>terminals indicated |   |             |
| A                                                        | L | 1                                                 | 2 | 4 8 1 2 4 8 |
| 1                                                        | ● |                                                   |   |             |
| 2                                                        |   | ●                                                 |   |             |
| 3                                                        | ● |                                                   |   |             |
| 4                                                        |   |                                                   | ● |             |
| 5                                                        | ● |                                                   | ● |             |
| 6                                                        |   | ●                                                 | ● |             |
| 7                                                        | ● | ●                                                 | ● |             |
| 8                                                        |   |                                                   |   | ●           |
| 9                                                        | ● |                                                   | ● | ●           |
| 0                                                        |   | ●                                                 | ● | ●           |

**C04**

| Binary Code w/Complement<br>1 Pole 12 Position |   |                                                   |   |             |
|------------------------------------------------|---|---------------------------------------------------|---|-------------|
| D                                              | I | Common (C)<br>connected to<br>terminals indicated |   |             |
| A                                              | L | 1                                                 | 2 | 4 8 1 2 4 8 |
| 0                                              |   |                                                   |   |             |
| 1                                              |   |                                                   |   | ●           |
| 2                                              |   | ●                                                 |   | ●           |
| 3                                              |   |                                                   |   | ●           |
| 4                                              |   |                                                   | ● | ●           |
| 5                                              |   | ●                                                 |   | ●           |
| 6                                              |   |                                                   | ● | ●           |
| 7                                              |   | ●                                                 | ● | ●           |
| 8                                              |   |                                                   |   | ●           |
| 9                                              | ● |                                                   | ● | ●           |
| 10                                             |   | ●                                                 | ● | ●           |
| 11                                             | ● | ●                                                 | ● | ●           |

**C06**

| Binary Code W/Complement<br>1-Pole, 16-Position |    |                                                   |   |             |
|-------------------------------------------------|----|---------------------------------------------------|---|-------------|
| D                                               | I  | Common (C)<br>connected to<br>terminals indicated |   |             |
| A                                               | L  | 1                                                 | 2 | 4 8 1 2 4 8 |
| 0                                               | 0  |                                                   |   |             |
| 1                                               | 1  | ●                                                 |   |             |
| 2                                               | 2  |                                                   | ● |             |
| 3                                               | 3  | ●                                                 |   |             |
| 4                                               | 4  |                                                   |   | ●           |
| 5                                               | 5  | ●                                                 |   | ●           |
| 6                                               | 6  |                                                   | ● | ●           |
| 7                                               | 7  | ●                                                 | ● |             |
| 8                                               | 8  |                                                   |   | ●           |
| 9                                               | 9  | ●                                                 |   | ●           |
| A                                               | 10 |                                                   | ● | ●           |
| B                                               | 11 | ●                                                 | ● |             |
| C                                               | 12 |                                                   |   | ●           |
| D                                               | 13 | ●                                                 |   | ●           |
| E                                               | 14 |                                                   | ● | ●           |
| F                                               | 15 | ●                                                 | ● | ●           |

**C07**

| BCD Excess 3, w/Complement<br>1 Pole 10 Position |   |                                                   |   |             |
|--------------------------------------------------|---|---------------------------------------------------|---|-------------|
| D                                                | I | Common (C)<br>connected to<br>terminals indicated |   |             |
| A                                                | L | 1                                                 | 2 | 4 8 1 2 4 8 |
| 0                                                |   | ●                                                 |   |             |
| 1                                                |   |                                                   |   | ●           |
| 2                                                |   | ●                                                 |   | ●           |
| 3                                                |   |                                                   |   | ●           |
| 4                                                |   | ●                                                 |   | ●           |
| 5                                                |   |                                                   | ● | ●           |
| 6                                                |   | ●                                                 | ● | ●           |
| 7                                                |   |                                                   |   | ●           |
| 8                                                |   | ●                                                 |   | ●           |
| 9                                                |   | ●                                                 | ● | ●           |

**C08**

| 9's Complement BCD,<br>w/Complement<br>1 Pole 10 Position |   |                                                   |   |             |
|-----------------------------------------------------------|---|---------------------------------------------------|---|-------------|
| D                                                         | I | Common (C)<br>connected to<br>terminals indicated |   |             |
| A                                                         | L | 1                                                 | 2 | 4 8 1 2 4 8 |
| 0                                                         |   |                                                   |   |             |
| 1                                                         |   |                                                   |   | ●           |
| 2                                                         |   | ●                                                 |   | ●           |
| 3                                                         |   |                                                   |   | ●           |
| 4                                                         |   |                                                   | ● | ●           |
| 5                                                         |   | ●                                                 |   | ●           |
| 6                                                         |   |                                                   | ● | ●           |
| 7                                                         |   | ●                                                 | ● | ●           |
| 8                                                         |   |                                                   |   | ●           |
| 9                                                         |   | ●                                                 |   | ●           |

**C09**

| 10's Complement BCD,<br>w/Complement<br>1 Pole 10 Position |   |                                                   |   |             |
|------------------------------------------------------------|---|---------------------------------------------------|---|-------------|
| D                                                          | I | Common (C)<br>connected to<br>terminals indicated |   |             |
| A                                                          | L | 1                                                 | 2 | 4 8 1 2 4 8 |
| 1                                                          | ● |                                                   |   |             |
| 2                                                          |   | ●                                                 |   |             |
| 3                                                          | ● |                                                   |   |             |
| 4                                                          |   |                                                   | ● |             |
| 5                                                          | ● |                                                   | ● |             |
| 6                                                          |   | ●                                                 | ● |             |
| 7                                                          | ● | ●                                                 | ● |             |
| 8                                                          |   |                                                   |   | ●           |
| 9                                                          | ● |                                                   | ● | ●           |
| 0                                                          |   | ●                                                 | ● | ●           |

**C10**

| BCD Excess 3<br>1 Pole 10 Position |   |                                                   |   |     |
|------------------------------------|---|---------------------------------------------------|---|-----|
| D                                  | I | Common (C)<br>connected to<br>terminals indicated |   |     |
| A                                  | L | 1                                                 | 2 | 4 8 |
| 0                                  |   | ●                                                 |   |     |
| 1                                  |   |                                                   |   | ●   |
| 2                                  |   | ●                                                 |   |     |
| 3                                  |   |                                                   |   | ●   |
| 4                                  |   | ●                                                 |   | ●   |
| 5                                  |   |                                                   | ● | ●   |
| 6                                  |   | ●                                                 | ● | ●   |
| 7                                  |   |                                                   |   | ●   |
| 8                                  |   | ●                                                 |   | ●   |
| 9                                  |   | ●                                                 | ● | ●   |

**C16**

| Binary Complement only<br>1-Pole 16-Position |    |                                                   |   |     |
|----------------------------------------------|----|---------------------------------------------------|---|-----|
| D                                            | I  | Common (C)<br>connected to<br>terminals indicated |   |     |
| A                                            | L  | 1                                                 | 2 | 4 8 |
| 0                                            | 0  |                                                   |   |     |
| 1                                            | 1  | ●                                                 |   |     |
| 2                                            | 2  |                                                   | ● |     |
| 3                                            | 3  | ●                                                 |   |     |
| 4                                            | 4  |                                                   |   | ●   |
| 5                                            | 5  | ●                                                 |   | ●   |
| 6                                            | 6  |                                                   | ● | ●   |
| 7                                            | 7  |                                                   |   | ●   |
| 8                                            | 8  | ●                                                 | ● |     |
| 9                                            | 9  |                                                   |   | ●   |
| A                                            | 10 | ●                                                 |   | ●   |
| B                                            | 11 |                                                   | ● | ●   |
| C                                            | 12 | ●                                                 | ● |     |
| D                                            | 13 |                                                   |   | ●   |
| E                                            | 14 | ●                                                 |   | ●   |
| F                                            | 15 |                                                   | ● | ●   |

**C11**

| BCD Complement Only<br>1 Pole 8 Position |   |                                                   |   |   |
|------------------------------------------|---|---------------------------------------------------|---|---|
| D                                        | I | Common (C)<br>connected to<br>terminals indicated |   |   |
| A                                        | L | 1                                                 | 2 | 4 |
| 0                                        |   |                                                   |   |   |
| 1                                        | ● |                                                   |   |   |
| 2                                        |   | ●                                                 |   |   |
| 3                                        | ● |                                                   |   |   |
| 4                                        |   |                                                   | ● |   |
| 5                                        | ● |                                                   | ● |   |
| 6                                        |   | ●                                                 | ● |   |
| 7                                        |   |                                                   |   | ● |

**C12**

| BCD Complement Only<br>1 Pole 10 Position |   |                                                   |   |     |
|-------------------------------------------|---|---------------------------------------------------|---|-----|
| D                                         | I | Common (C)<br>connected to<br>terminals indicated |   |     |
| A                                         | L | 1                                                 | 2 | 4 8 |
| 0                                         |   |                                                   |   |     |
| 1                                         | ● |                                                   |   |     |
| 2                                         |   | ●                                                 |   |     |
| 3                                         | ● |                                                   |   |     |
| 4                                         |   |                                                   | ● |     |
| 5                                         | ● |                                                   | ● |     |
| 6                                         |   | ●                                                 | ● |     |
| 7                                         |   |                                                   |   | ●   |
| 8                                         | ● |                                                   |   | ●   |
| 9                                         |   | ●                                                 | ● | ●   |

**C13**

| 9's Complement BCD<br>1 Pole 10 Position |   |                                                   |   |     |
|------------------------------------------|---|---------------------------------------------------|---|-----|
| D                                        | I | Common (C)<br>connected to<br>terminals indicated |   |     |
| A                                        | L | 1                                                 | 2 | 4 8 |
| 0                                        |   |                                                   |   |     |
| 1                                        |   |                                                   |   | ●   |
| 2                                        |   | ●                                                 |   | ●   |
| 3                                        |   |                                                   |   | ●   |
| 4                                        |   |                                                   | ● | ●   |
| 5                                        |   | ●                                                 |   | ●   |
| 6                                        |   |                                                   | ● | ●   |
| 7                                        |   | ●                                                 | ● | ●   |
| 8                                        |   |                                                   |   | ●   |
| 9                                        |   | ●                                                 |   | ●   |

**C14**

| 10's Complement BCD<br>1 Pole 10 Position |   |                                                   |   |     |
|-------------------------------------------|---|---------------------------------------------------|---|-----|
| D                                         | I | Common (C)<br>connected to<br>terminals indicated |   |     |
| A                                         | L | 1                                                 | 2 | 4 8 |
| 1                                         | ● |                                                   |   |     |
| 2                                         |   | ●                                                 |   |     |
| 3                                         | ● |                                                   |   |     |
| 4                                         |   |                                                   | ● |     |
| 5                                         | ● |                                                   | ● |     |
| 6                                         |   | ●                                                 | ● |     |
| 7                                         | ● | ●                                                 | ● |     |
| 8                                         |   |                                                   |   | ●   |
| 9                                         | ● |                                                   | ● | ●   |
| 0                                         |   | ●                                                 | ● | ●   |

**C15**

| 9's Complement<br>1 Pole 10 Position |   |                                                   |   |     |
|--------------------------------------|---|---------------------------------------------------|---|-----|
| D                                    | I | Common (C)<br>connected to<br>terminals indicated |   |     |
| A                                    | L | 1                                                 | 2 | 4 8 |
| 0                                    |   |                                                   |   |     |
| 1                                    |   |                                                   |   | ●   |
| 2                                    |   | ●                                                 |   | ●   |
| 3                                    |   |                                                   |   | ●   |
| 4                                    |   |                                                   | ● | ●   |
| 5                                    |   | ●                                                 |   | ●   |
| 6                                    |   |                                                   | ● | ●   |
| 7                                    |   | ●                                                 | ● | ●   |
| 8                                    |   |                                                   |   | ●   |
| 9                                    |   | ●                                                 |   | ●   |

**D01**

| BCD 2 Pole 8 Position<br>w/Sep Com to NT Bits |                                                               |   |   |  |  |  |  |  |  |
|-----------------------------------------------|---------------------------------------------------------------|---|---|--|--|--|--|--|--|
| D<br>I<br>A<br>L                              | Common C (●) and<br>C (★) connected to<br>terminals indicated |   |   |  |  |  |  |  |  |
|                                               | 1                                                             | 2 | 4 |  |  |  |  |  |  |
| 0                                             | ★                                                             | ★ | ★ |  |  |  |  |  |  |
| 1                                             | ●                                                             | ★ | ★ |  |  |  |  |  |  |
| 2                                             | ★                                                             | ● | ★ |  |  |  |  |  |  |
| 3                                             | ●                                                             | ● | ★ |  |  |  |  |  |  |
| 4                                             | ★                                                             | ★ | ● |  |  |  |  |  |  |
| 5                                             | ●                                                             | ★ | ● |  |  |  |  |  |  |
| 6                                             | ★                                                             | ● | ● |  |  |  |  |  |  |
| 7                                             | ●                                                             | ● | ● |  |  |  |  |  |  |

**D02**

| BCD 2 Pole 10 Position<br>Sep Com to NT Bits |                                                               |   |   |   |  |  |  |  |  |
|----------------------------------------------|---------------------------------------------------------------|---|---|---|--|--|--|--|--|
| D<br>I<br>A<br>L                             | Common C (●) and<br>C (★) connected to<br>terminals indicated |   |   |   |  |  |  |  |  |
|                                              | 1                                                             | 2 | 4 | 8 |  |  |  |  |  |
| 0                                            | ★                                                             | ★ | ★ | ★ |  |  |  |  |  |
| 1                                            | ●                                                             | ★ | ★ | ★ |  |  |  |  |  |
| 2                                            | ★                                                             | ● | ★ | ★ |  |  |  |  |  |
| 3                                            | ●                                                             | ● | ★ | ★ |  |  |  |  |  |
| 4                                            | ★                                                             | ★ | ● | ★ |  |  |  |  |  |
| 5                                            | ●                                                             | ★ | ● | ★ |  |  |  |  |  |
| 6                                            | ★                                                             | ● | ● | ★ |  |  |  |  |  |
| 7                                            | ●                                                             | ★ | ★ | ★ |  |  |  |  |  |
| 8                                            | ★                                                             | ★ | ★ | ★ |  |  |  |  |  |
| 9                                            | ●                                                             | ● | ● | ● |  |  |  |  |  |

**D03**

| BCD Dual,<br>2 Pole 10 Position |                                                             |   |   |   |    |   |   |   |  |
|---------------------------------|-------------------------------------------------------------|---|---|---|----|---|---|---|--|
| D<br>I<br>A<br>L                | Common (C1) and<br>(C2) connected to<br>terminals indicated |   |   |   |    |   |   |   |  |
|                                 | C1                                                          |   |   |   | C2 |   |   |   |  |
|                                 | 1                                                           | 2 | 4 | 8 | 1  | 2 | 4 | 8 |  |
| 0                               |                                                             |   |   |   |    |   |   |   |  |
| 1                               | ●                                                           |   |   |   | ●  |   |   |   |  |
| 2                               |                                                             | ● |   |   |    | ● |   |   |  |
| 3                               |                                                             |   | ● |   |    |   | ● |   |  |
| 4                               |                                                             |   |   | ● |    |   |   | ● |  |
| 5                               | ●                                                           |   |   |   | ●  |   |   |   |  |
| 6                               |                                                             | ● |   |   |    | ● |   |   |  |
| 7                               | ●                                                           |   |   |   | ●  |   |   |   |  |
| 8                               |                                                             |   | ● |   |    |   | ● |   |  |
| 9                               |                                                             |   |   | ● |    |   |   | ● |  |

**D04**

| Binary Code w/Complement<br>2 Pole 16 Position |                                                            |   |   |   |   |   |   |   |   |
|------------------------------------------------|------------------------------------------------------------|---|---|---|---|---|---|---|---|
| D<br>I<br>A<br>L                               | Common (C) and<br>(C̄) connected to<br>terminals indicated |   |   |   |   |   |   |   |   |
|                                                | 1                                                          | 2 | 4 | 8 | 1 | 2 | 4 | 8 |   |
| 0                                              | 0                                                          |   |   |   | ● | ● | ● | ● |   |
| 1                                              | 1                                                          | ● |   |   |   | ● | ● | ● |   |
| 2                                              | 2                                                          |   | ● |   |   |   | ● | ● |   |
| 3                                              | 3                                                          | ● |   | ● |   |   |   | ● |   |
| 4                                              | 4                                                          |   |   |   | ● |   |   |   | ● |
| 5                                              | 5                                                          | ● |   |   |   | ● |   |   | ● |
| 6                                              | 6                                                          |   | ● |   |   |   | ● |   | ● |
| 7                                              | 7                                                          |   |   | ● |   |   |   | ● | ● |
| 8                                              | 8                                                          |   |   |   | ● |   |   |   | ● |
| 9                                              | 9                                                          | ● |   |   |   | ● |   |   | ● |
| A                                              | 10                                                         |   | ● |   |   |   | ● |   | ● |
| B                                              | 11                                                         | ● |   |   |   |   |   | ● | ● |
| C                                              | 12                                                         |   |   | ● |   |   |   |   | ● |
| D                                              | 13                                                         |   | ● |   |   |   |   |   | ● |
| E                                              | 14                                                         |   |   |   | ● |   |   |   | ● |
| F                                              | 15                                                         | ● |   |   |   | ● |   |   | ● |

**D06**

| 2 Pole Binary with<br>Sep Com to NT Bits |                                                               |   |   |   |  |  |  |  |  |
|------------------------------------------|---------------------------------------------------------------|---|---|---|--|--|--|--|--|
| D<br>I<br>A<br>L                         | Common C (●) and<br>C (★) connected to<br>terminals indicated |   |   |   |  |  |  |  |  |
|                                          | 1                                                             | 2 | 4 | 8 |  |  |  |  |  |
| 0                                        | 0                                                             | ★ | ★ | ★ |  |  |  |  |  |
| 1                                        | 1                                                             | ● | ★ | ★ |  |  |  |  |  |
| 2                                        | 2                                                             | ★ | ● | ★ |  |  |  |  |  |
| 3                                        | 3                                                             | ● | ● | ★ |  |  |  |  |  |
| 4                                        | 4                                                             | ★ | ★ | ● |  |  |  |  |  |
| 5                                        | 5                                                             | ● | ★ | ● |  |  |  |  |  |
| 6                                        | 6                                                             | ★ | ● | ● |  |  |  |  |  |
| 7                                        | 7                                                             | ● | ● | ● |  |  |  |  |  |
| 8                                        | 8                                                             | ★ | ★ | ★ |  |  |  |  |  |
| 9                                        | 9                                                             | ● | ★ | ★ |  |  |  |  |  |
| A                                        | 10                                                            | ★ | ★ | ★ |  |  |  |  |  |
| B                                        | 11                                                            | ● | ★ | ★ |  |  |  |  |  |
| C                                        | 12                                                            | ★ | ★ | ★ |  |  |  |  |  |
| D                                        | 13                                                            | ★ | ★ | ★ |  |  |  |  |  |
| E                                        | 14                                                            | ★ | ★ | ★ |  |  |  |  |  |
| F                                        | 15                                                            | ● | ● | ● |  |  |  |  |  |

**E01**

| BCD w/Complement<br>2 Pole 8 Position |                                                            |   |   |   |    |   |   |   |  |
|---------------------------------------|------------------------------------------------------------|---|---|---|----|---|---|---|--|
| D<br>I<br>A<br>L                      | Common (C) and<br>(C̄) connected to<br>terminals indicated |   |   |   |    |   |   |   |  |
|                                       | C                                                          |   |   |   | C̄ |   |   |   |  |
|                                       | 1                                                          | 2 | 4 |   | 1  | 2 | 4 |   |  |
| 0                                     |                                                            |   |   |   | ●  | ● | ● |   |  |
| 1                                     | ●                                                          |   |   |   |    | ● | ● |   |  |
| 2                                     |                                                            | ● |   |   |    |   | ● |   |  |
| 3                                     | ●                                                          | ● |   |   |    |   |   | ● |  |
| 4                                     |                                                            |   | ● |   |    | ● |   |   |  |
| 5                                     | ●                                                          |   |   | ● |    |   |   |   |  |
| 6                                     |                                                            | ● | ● |   |    |   |   |   |  |
| 7                                     | ●                                                          | ● |   |   |    |   |   |   |  |

**E02**

| BCD w/Complement<br>2 Pole 10 Position |                                                            |   |   |   |    |   |   |   |  |
|----------------------------------------|------------------------------------------------------------|---|---|---|----|---|---|---|--|
| D<br>I<br>A<br>L                       | Common (C) and<br>(C̄) connected to<br>terminals indicated |   |   |   |    |   |   |   |  |
|                                        | C                                                          |   |   |   | C̄ |   |   |   |  |
|                                        | 1                                                          | 2 | 4 | 8 | 1  | 2 | 4 | 8 |  |
| 0                                      |                                                            |   |   |   | ●  | ● | ● | ● |  |
| 1                                      | ●                                                          |   |   |   |    | ● | ● | ● |  |
| 2                                      |                                                            | ● |   |   |    |   | ● | ● |  |
| 3                                      | ●                                                          | ● |   |   |    |   |   | ● |  |
| 4                                      |                                                            |   | ● |   |    | ● |   |   |  |
| 5                                      | ●                                                          |   |   | ● |    |   |   |   |  |
| 6                                      |                                                            | ● | ● |   |    |   |   |   |  |
| 7                                      | ●                                                          | ● |   |   |    |   |   |   |  |
| 8                                      |                                                            |   |   | ● |    | ● | ● | ● |  |
| 9                                      | ●                                                          |   |   |   | ●  | ● | ● | ● |  |

**E04**

| 9's Complement BCD,<br>w/Complement<br>2 Pole 10 Position |                                                            |   |   |   |    |   |   |   |   |
|-----------------------------------------------------------|------------------------------------------------------------|---|---|---|----|---|---|---|---|
| D<br>I<br>A<br>L                                          | Common (C) and<br>(C̄) connected to<br>terminals indicated |   |   |   |    |   |   |   |   |
|                                                           | C                                                          |   |   |   | C̄ |   |   |   |   |
|                                                           | 1                                                          | 2 | 4 | 8 | 1  | 2 | 4 | 8 |   |
| 0                                                         |                                                            |   |   |   | ●  | ● | ● | ● |   |
| 1                                                         |                                                            |   |   |   |    | ● | ● | ● |   |
| 2                                                         | ●                                                          | ● |   |   |    |   | ● | ● |   |
| 3                                                         | ●                                                          |   | ● |   |    |   |   | ● |   |
| 4                                                         | ●                                                          |   |   | ● |    |   |   |   | ● |
| 5                                                         |                                                            | ● |   |   | ●  | ● | ● | ● |   |
| 6                                                         | ●                                                          | ● |   |   |    |   | ● | ● |   |
| 7                                                         | ●                                                          |   |   | ● |    |   |   | ● |   |
| 8                                                         | ●                                                          |   |   |   |    | ● | ● | ● |   |
| 9                                                         |                                                            |   |   | ● |    | ● | ● | ● |   |

**E05**

| 10's Complement BCD,<br>w/Complement<br>2 Pole 10 Position |                                                            |   |   |   |    |   |   |   |   |
|------------------------------------------------------------|------------------------------------------------------------|---|---|---|----|---|---|---|---|
| D<br>I<br>A<br>L                                           | Common (C) and<br>(C̄) connected to<br>terminals indicated |   |   |   |    |   |   |   |   |
|                                                            | C                                                          |   |   |   | C̄ |   |   |   |   |
|                                                            | 1                                                          | 2 | 4 | 8 | 1  | 2 | 4 | 8 |   |
| 1                                                          | ●                                                          |   |   |   |    | ● | ● | ● |   |
| 2                                                          |                                                            | ● |   |   |    |   | ● | ● |   |
| 3                                                          | ●                                                          | ● |   |   |    |   |   | ● |   |
| 4                                                          |                                                            |   | ● |   |    | ● |   |   | ● |
| 5                                                          | ●                                                          |   |   | ● |    |   |   |   | ● |
| 6                                                          |                                                            | ● | ● |   |    |   |   |   | ● |
| 7                                                          | ●                                                          | ● |   |   |    |   |   |   | ● |
| 8                                                          |                                                            |   |   | ● |    | ● | ● | ● |   |
| 9                                                          | ●                                                          |   |   |   | ●  | ● | ● | ● |   |
| 0                                                          |                                                            |   |   |   |    | ● | ● | ● |   |

**E06**

| Binary Code w/Complement<br>2 Pole 12 Position |                                                            |   |   |   |    |   |   |   |   |
|------------------------------------------------|------------------------------------------------------------|---|---|---|----|---|---|---|---|
| D<br>I<br>A<br>L                               | Common (C) and<br>(C̄) connected to<br>terminals indicated |   |   |   |    |   |   |   |   |
|                                                | C                                                          |   |   |   | C̄ |   |   |   |   |
|                                                | 1                                                          | 2 | 4 | 8 | 1  | 2 | 4 | 8 |   |
| 0                                              |                                                            |   |   |   | ●  | ● | ● | ● |   |
| 1                                              | ●                                                          |   |   |   |    | ● | ● | ● |   |
| 2                                              |                                                            | ● |   |   |    |   | ● | ● |   |
| 3                                              | ●                                                          | ● |   |   |    |   |   | ● |   |
| 4                                              |                                                            |   | ● |   |    | ● |   |   | ● |
| 5                                              | ●                                                          |   |   | ● |    |   |   |   | ● |
| 6                                              |                                                            | ● | ● |   |    |   |   |   | ● |
| 7                                              | ●                                                          | ● |   |   |    |   |   |   | ● |
| 8                                              |                                                            |   |   | ● |    | ● | ● | ● |   |
| 9                                              | ●                                                          |   |   |   | ●  | ● | ● | ● |   |
| 10                                             |                                                            | ● |   |   |    |   | ● | ● |   |
| 11                                             | ●                                                          | ● |   |   |    |   |   | ● |   |

**E07**

| BCD Excess 3,<br>w/Complement<br>2 Pole 10 Position |                                                            |   |   |   |    |   |   |   |   |
|-----------------------------------------------------|------------------------------------------------------------|---|---|---|----|---|---|---|---|
| D<br>I<br>A<br>L                                    | Common (C) and<br>(C̄) connected to<br>terminals indicated |   |   |   |    |   |   |   |   |
|                                                     | C                                                          |   |   |   | C̄ |   |   |   |   |
|                                                     | 1                                                          | 2 | 4 | 8 | 1  | 2 | 4 | 8 |   |
| 0                                                   | ●                                                          | ● |   |   |    |   | ● | ● |   |
| 1                                                   |                                                            | ● |   |   |    |   | ● | ● |   |
| 2                                                   | ●                                                          | ● |   |   |    |   | ● | ● |   |
| 3                                                   | ●                                                          |   | ● |   |    |   |   | ● |   |
| 4                                                   | ●                                                          | ● |   |   |    |   |   |   | ● |
| 5                                                   |                                                            |   | ● |   |    | ● | ● | ● |   |
| 6                                                   | ●                                                          |   |   | ● |    |   |   |   | ● |
| 7                                                   | ●                                                          | ● |   |   |    |   |   |   | ● |
| 8                                                   | ●                                                          |   |   |   | ●  | ● | ● | ● |   |
| 9                                                   |                                                            |   |   | ● |    | ● | ● | ● |   |

**E08**

| Special 4 Pole, BCD<br>w/Complement |                                                                         |    |    |    |   |   |   |   |   |
|-------------------------------------|-------------------------------------------------------------------------|----|----|----|---|---|---|---|---|
| D<br>I<br>A<br>L                    | Common (C1), (C2), (C3)<br>and (C4) connected to<br>terminals indicated |    |    |    |   |   |   |   |   |
|                                     | C1                                                                      | C2 | C3 | C4 |   |   |   |   |   |
|                                     | 1                                                                       | 2  | 4  | 8  | 1 | 2 | 4 | 8 |   |
| 0                                   | ●                                                                       |    | ●  |    | ● |   |   | ● |   |
| 1                                   |                                                                         | ●  |    |    |   | ● |   |   | ● |
| 2                                   | ●                                                                       |    |    |    |   |   | ● |   | ● |
| 3                                   | ●                                                                       | ●  |    |    |   |   |   | ● |   |
| 4                                   |                                                                         |    | ●  |    |   | ● |   |   | ● |
| 5                                   | ●                                                                       |    |    | ●  |   |   |   |   | ● |
| 6                                   | ●                                                                       | ●  |    |    |   |   |   |   | ● |
| 7                                   | ●                                                                       |    |    |    | ● | ● | ● | ● |   |
| 8                                   |                                                                         |    |    | ●  |   | ● | ● | ● |   |
| 9                                   | ●                                                                       |    |    |    | ● |   | ● | ● |   |

**F01**

| BCD and Non-Shorting DECIMAL<br>2 Pole 10 Position |                                                       |   |   |   |   |    |   |   |   |   |   |   |   |   |
|----------------------------------------------------|-------------------------------------------------------|---|---|---|---|----|---|---|---|---|---|---|---|---|
| DIAL                                               | Common (C1) and (C2) connected to terminals indicated |   |   |   |   |    |   |   |   |   |   |   |   |   |
|                                                    | C1                                                    |   |   |   |   | C2 |   |   |   |   |   |   |   |   |
|                                                    | 1                                                     | 2 | 4 | 8 | 0 | 1  | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 0                                                  |                                                       |   |   |   |   |    |   |   |   |   |   |   |   |   |
| 1                                                  |                                                       |   |   |   |   |    |   |   |   |   |   |   |   |   |
| 2                                                  |                                                       |   |   |   |   |    |   |   |   |   |   |   |   |   |
| 3                                                  |                                                       |   |   |   |   |    |   |   |   |   |   |   |   |   |
| 4                                                  |                                                       |   |   |   |   |    |   |   |   |   |   |   |   |   |
| 5                                                  |                                                       |   |   |   |   |    |   |   |   |   |   |   |   |   |
| 6                                                  |                                                       |   |   |   |   |    |   |   |   |   |   |   |   |   |
| 7                                                  |                                                       |   |   |   |   |    |   |   |   |   |   |   |   |   |
| 8                                                  |                                                       |   |   |   |   |    |   |   |   |   |   |   |   |   |
| 9                                                  |                                                       |   |   |   |   |    |   |   |   |   |   |   |   |   |

**G01**

| 1-2-2'-4 Berkeley Code<br>1 Pole 10 Position |                                             |   |    |   |   |   |   |  |  |
|----------------------------------------------|---------------------------------------------|---|----|---|---|---|---|--|--|
| DIAL                                         | Common (C) connected to terminals indicated |   |    |   |   |   |   |  |  |
|                                              | 1                                           | 2 | 2' | 4 |   |   |   |  |  |
| 0                                            |                                             |   |    |   |   |   |   |  |  |
| 1                                            | ●                                           |   |    |   |   |   |   |  |  |
| 2                                            |                                             | ● |    |   |   |   |   |  |  |
| 3                                            | ●                                           | ● |    |   |   |   |   |  |  |
| 4                                            |                                             |   |    |   | ● | ● |   |  |  |
| 5                                            | ●                                           | ● | ●  |   |   |   |   |  |  |
| 6                                            |                                             |   |    |   |   | ● | ● |  |  |
| 7                                            | ●                                           |   |    |   |   | ● | ● |  |  |
| 8                                            |                                             | ● | ●  |   |   |   |   |  |  |
| 9                                            | ●                                           | ● | ●  | ● |   |   |   |  |  |

**G02**

| 1-2-4-2' Berkeley Code<br>1 Pole 10 Position |                                             |   |   |    |  |  |  |  |  |
|----------------------------------------------|---------------------------------------------|---|---|----|--|--|--|--|--|
| DIAL                                         | Common (C) connected to terminals indicated |   |   |    |  |  |  |  |  |
|                                              | 1                                           | 2 | 4 | 2' |  |  |  |  |  |
| 0                                            |                                             |   |   |    |  |  |  |  |  |
| 1                                            | ●                                           |   |   |    |  |  |  |  |  |
| 2                                            |                                             | ● |   |    |  |  |  |  |  |
| 3                                            | ●                                           | ● |   |    |  |  |  |  |  |
| 4                                            |                                             |   |   | ●  |  |  |  |  |  |
| 5                                            | ●                                           |   | ● |    |  |  |  |  |  |
| 6                                            |                                             | ● | ● |    |  |  |  |  |  |
| 7                                            | ●                                           | ● | ● |    |  |  |  |  |  |
| 8                                            |                                             |   |   | ●  |  |  |  |  |  |
| 9                                            | ●                                           | ● | ● | ●  |  |  |  |  |  |

**H01**

| 1-2-4-2' Berkeley Code<br>w/Complement<br>1 Pole 10 Position |                                                   |   |   |    |   |   |   |    |   |  |
|--------------------------------------------------------------|---------------------------------------------------|---|---|----|---|---|---|----|---|--|
| DIAL                                                         | Common (C)<br>connected to<br>terminals indicated |   |   |    |   |   |   |    |   |  |
|                                                              | 1                                                 | 2 | 4 | 2' | 1 | 2 | 4 | 2' |   |  |
| 0                                                            |                                                   |   |   |    |   |   |   |    |   |  |
| 1                                                            | ●                                                 |   |   |    |   |   |   |    |   |  |
| 2                                                            |                                                   | ● |   |    |   |   |   |    |   |  |
| 3                                                            |                                                   |   | ● |    |   |   |   |    |   |  |
| 4                                                            |                                                   |   |   | ●  |   |   |   |    |   |  |
| 5                                                            |                                                   |   |   |    | ● |   |   |    |   |  |
| 6                                                            |                                                   |   |   |    |   | ● |   |    |   |  |
| 7                                                            | ●                                                 |   |   |    |   |   | ● |    |   |  |
| 8                                                            |                                                   | ● |   |    |   |   |   | ●  |   |  |
| 9                                                            |                                                   |   | ● |    |   |   |   |    | ● |  |

**S01**

| 1 or 2 Pole 2 Throw<br>Common (C1) and (C2)<br>connected to terminals<br>indicated |    |   |   |  |    |    |    |    |  |
|------------------------------------------------------------------------------------|----|---|---|--|----|----|----|----|--|
| DIAL                                                                               | C1 |   |   |  | C2 |    |    |    |  |
|                                                                                    | 0  | 1 | + |  | A1 | B1 | A2 | B2 |  |
| 0                                                                                  |    |   |   |  |    |    |    |    |  |
| 1                                                                                  |    |   |   |  |    |    |    |    |  |
| 2                                                                                  |    |   |   |  |    |    |    |    |  |
| 3                                                                                  |    |   |   |  |    |    |    |    |  |
| 4                                                                                  |    |   |   |  |    |    |    |    |  |
| 5                                                                                  |    |   |   |  |    |    |    |    |  |
| 6                                                                                  |    |   |   |  |    |    |    |    |  |
| 7                                                                                  |    |   |   |  |    |    |    |    |  |
| 8                                                                                  |    |   |   |  |    |    |    |    |  |
| 9                                                                                  |    |   |   |  |    |    |    |    |  |

**S03**

| 5-Line TELETYPE<br>1 Pole 10 Position |                                                   |   |   |   |   |   |  |   |   |  |
|---------------------------------------|---------------------------------------------------|---|---|---|---|---|--|---|---|--|
| DIAL                                  | Common (C)<br>connected to<br>terminals indicated |   |   |   |   |   |  |   |   |  |
|                                       | 1                                                 | 2 | 3 | 4 | 5 |   |  |   |   |  |
| 0                                     |                                                   | ● | ● |   | ● |   |  |   |   |  |
| 1                                     | ●                                                 |   | ● |   | ● |   |  |   |   |  |
| 2                                     | ●                                                 | ● |   |   |   |   |  |   | ● |  |
| 3                                     | ●                                                 |   |   |   |   |   |  |   |   |  |
| 4                                     |                                                   |   | ● |   |   | ● |  |   |   |  |
| 5                                     |                                                   |   |   |   |   |   |  |   | ● |  |
| 6                                     | ●                                                 |   |   | ● |   |   |  |   | ● |  |
| 7                                     | ●                                                 | ● |   | ● |   |   |  |   |   |  |
| 8                                     |                                                   | ● | ● |   |   |   |  |   |   |  |
| 9                                     |                                                   |   |   |   |   | ● |  | ● |   |  |

**S04**

| 5-Line TELETYPE<br>w/even bit parity<br>1 Pole 10 Position |                                                   |   |   |   |   |   |
|------------------------------------------------------------|---------------------------------------------------|---|---|---|---|---|
| DIAL                                                       | Common (C)<br>connected to<br>terminals indicated |   |   |   |   |   |
|                                                            | 1                                                 | 2 | 3 | 4 | 5 | P |
| 0                                                          |                                                   | ● | ● |   | ● | ● |
| 1                                                          | ●                                                 | ● |   |   | ● | ● |
| 2                                                          | ●                                                 | ● |   |   | ● | ● |
| 3                                                          | ●                                                 |   |   |   |   | ● |
| 4                                                          |                                                   | ● |   | ● |   |   |
| 5                                                          |                                                   |   |   |   |   |   |
| 6                                                          | ●                                                 |   | ● |   | ● | ● |
| 7                                                          |                                                   |   |   |   |   | ● |
| 8                                                          |                                                   | ● | ● |   |   | ● |
| 9                                                          |                                                   |   |   | ● | ● |   |

**S05**

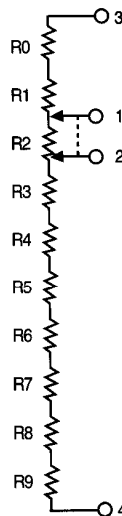
| BIQUINARY<br>1 Pole 10 Position |                                                   |      |   |   |   |   |   |   |   |   |   |   |
|---------------------------------|---------------------------------------------------|------|---|---|---|---|---|---|---|---|---|---|
| D<br>I<br>A<br>L                | Common (C)<br>connected to<br>terminals indicated |      |   |   |   |   |   |   |   |   |   |   |
|                                 | ODD                                               | EVEN | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 0                               |                                                   |      | ● |   | ● |   |   |   |   |   |   |   |
| 1                               | ●                                                 |      |   |   | ● |   |   |   |   |   |   |   |
| 2                               |                                                   |      | ● |   |   |   | ● |   |   |   |   |   |
| 3                               | ●                                                 |      |   |   |   |   | ● |   |   |   |   |   |
| 4                               |                                                   |      | ● |   |   |   |   | ● |   |   |   |   |
| 5                               |                                                   |      |   | ● |   |   |   |   | ● |   |   |   |
| 6                               |                                                   |      | ● |   |   |   |   |   |   | ● |   |   |
| 7                               | ●                                                 |      |   |   |   |   |   |   |   |   | ● |   |
| 8                               |                                                   |      | ● |   |   |   |   |   |   |   |   | ● |
| 9                               | ●                                                 |      |   |   |   |   |   |   |   |   |   | ● |

**S06**

| NOT/NOR SWITCH 1 Pole 12 Position<br>(All Positions Shorted except Position<br>indicated on Dial) |                                                |   |   |   |   |   |   |   |   |   |    |    |
|---------------------------------------------------------------------------------------------------|------------------------------------------------|---|---|---|---|---|---|---|---|---|----|----|
| D<br>I<br>A<br>L                                                                                  | Common (C) connected<br>to terminals indicated |   |   |   |   |   |   |   |   |   |    |    |
|                                                                                                   | 0                                              | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
| 0                                                                                                 |                                                | ● | ● | ● | ● | ● | ● | ● | ● | ● | ●  | ●  |
| 1                                                                                                 | ●                                              |   |   |   |   |   |   |   |   |   |    |    |
| 2                                                                                                 | ●                                              |   |   |   |   |   |   |   | ● | ● | ●  | ●  |
| 3                                                                                                 | ●                                              | ● | ● |   |   |   |   | ● | ● | ● | ●  | ●  |
| 4                                                                                                 | ●                                              | ● | ● |   |   |   |   | ● | ● | ● | ●  | ●  |
| 5                                                                                                 | ●                                              | ● | ● | ● |   |   |   | ● | ● | ● | ●  | ●  |
| 6                                                                                                 | ●                                              | ● | ● | ● |   |   |   |   | ● | ● | ●  | ●  |
| 7                                                                                                 | ●                                              | ● | ● | ● |   |   |   |   | ● | ● | ●  | ●  |
| 8                                                                                                 | ●                                              | ● | ● | ● |   |   |   |   |   | ● | ●  | ●  |
| 9                                                                                                 | ●                                              | ● | ● | ● |   |   |   |   |   |   | ●  | ●  |
| 10                                                                                                | ●                                              | ● | ● | ● |   |   |   |   |   |   |    | ●  |
| 11                                                                                                | ●                                              | ● | ● | ● |   |   |   |   |   |   |    | ●  |

**S07**

| INCREMENTAL Voltage Divider<br>2 Pole 10 Position |                                                     |    |    |    |    |    |    |    |    |    |
|---------------------------------------------------|-----------------------------------------------------|----|----|----|----|----|----|----|----|----|
| DIAL                                              | Pins 1 and 2 connected<br>across resistor indicated |    |    |    |    |    |    |    |    |    |
|                                                   | R0                                                  | R1 | R2 | R3 | R4 | R5 | R6 | R7 | R8 | R9 |
| 0                                                 | ●                                                   |    |    |    |    |    |    |    |    |    |
| 1                                                 |                                                     | ●  |    |    |    |    |    |    |    |    |
| 2                                                 |                                                     |    | ●  |    |    |    |    |    |    |    |
| 3                                                 |                                                     |    |    | ●  |    |    |    |    |    |    |
| 4                                                 |                                                     |    |    |    | ●  |    |    |    |    |    |
| 5                                                 |                                                     |    |    |    |    | ●  |    |    |    |    |
| 6                                                 |                                                     |    |    |    |    |    | ●  |    |    |    |
| 7                                                 |                                                     |    |    |    |    |    |    | ●  |    |    |
| 8                                                 |                                                     |    |    |    |    |    |    |    | ●  |    |
| 9                                                 |                                                     |    |    |    |    |    |    |    |    | ●  |



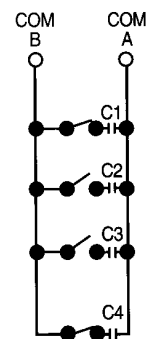
SCHEMATIC  
Dial set at  
Position no. 2

**S08**

| WOLFF POGGENDORF Voltage Divider |                      |    |    |    |    |    |    |    |    |   |
|----------------------------------|----------------------|----|----|----|----|----|----|----|----|---|
| 10 Position                      |                      |    |    |    |    |    |    |    |    |   |
| D<br>I<br>A<br>L                 | Resistors in circuit |    |    |    |    |    |    |    |    |   |
|                                  | 1                    | 2  | 4  | 2' | 1  | 2  | 4  | 2' |    |   |
|                                  | R1                   | R3 | R4 | R7 | R8 | R5 | R6 | R2 | R9 |   |
| 0                                |                      | ●  | ●  | ●  | ●  |    |    |    |    | ● |
| 1                                |                      |    | ●  |    |    |    |    |    |    |   |
| 2                                | ●                    |    |    | ●  | ●  |    | ●  |    |    | ● |
| 3                                |                      |    |    | ●  | ●  | ●  |    |    |    |   |
| 4                                | ●                    |    |    |    | ●  |    |    | ●  |    | ● |
| 5                                |                      | ●  |    |    |    |    |    |    |    |   |
| 6                                | ●                    |    |    |    |    |    | ●  |    |    | ● |
| 7                                |                      |    |    |    |    |    | ●  | ●  |    |   |
| 8                                | ●                    |    |    |    |    |    | ●  | ●  | ●  | ● |
| 9                                |                      |    |    |    |    | ●  | ●  | ●  | ●  | ● |

**S09**

| CAPACITOR DECADE |                       |    |    |             |   |   |   |   |   |  |
|------------------|-----------------------|----|----|-------------|---|---|---|---|---|--|
| 1-2-3-4 Code     |                       |    |    | 10 Position |   |   |   |   |   |  |
| DIAL             | Capacitors in Circuit |    |    |             |   |   |   |   |   |  |
|                  | C1                    | C2 | C3 | C4          |   |   |   |   |   |  |
| 0                |                       |    |    |             |   |   |   |   |   |  |
| 1                | ●                     |    |    |             |   |   |   |   |   |  |
| 2                |                       | ●  |    |             |   |   |   |   |   |  |
| 3                |                       |    | ●  |             |   |   |   |   |   |  |
| 4                |                       |    |    | ●           |   |   |   |   |   |  |
| 5                | ●                     |    |    |             | ● |   |   |   |   |  |
| 6                |                       | ●  |    |             |   | ● |   |   |   |  |
| 7                |                       |    | ●  |             |   |   | ● |   |   |  |
| 8                | ●                     |    |    |             |   |   |   | ● |   |  |
| 9                |                       | ●  |    |             |   |   |   |   | ● |  |

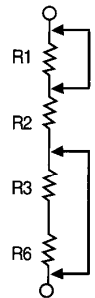


SCHEMATIC  
Dial set at Position no. 5  
(C1 and C4 Active)

**S10**

| RESISTOR DECADE          |    |    |    |    |  |  |   |  |  |
|--------------------------|----|----|----|----|--|--|---|--|--|
| 1-2-3-6 Code 10 Position |    |    |    |    |  |  |   |  |  |
| Resistors in circuit     |    |    |    |    |  |  |   |  |  |
| DIAL                     | R1 | R2 | R3 | R6 |  |  |   |  |  |
| 0                        |    |    |    |    |  |  |   |  |  |
| 1                        | ●  |    |    |    |  |  |   |  |  |
| 2                        |    | ●  |    |    |  |  |   |  |  |
| 3                        |    |    | ●  |    |  |  |   |  |  |
| 4                        | ●  |    | ●  |    |  |  |   |  |  |
| 5                        |    | ●  | ●  |    |  |  |   |  |  |
| 6                        |    |    |    |    |  |  | ● |  |  |
| 7                        | ●  |    |    |    |  |  | ● |  |  |
| 8                        |    | ●  |    |    |  |  |   |  |  |
| 9                        |    |    | ●  | ●  |  |  |   |  |  |

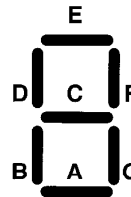
**B COM**



A COM  
SCHEMATIC  
Dial set at  
Position no. 2  
(R2 Active)

**S11**

| 7 BAR INDICATOR    |                                         |   |   |   |   |   |   |   |  |
|--------------------|-----------------------------------------|---|---|---|---|---|---|---|--|
| 1 Pole 10 Position |                                         |   |   |   |   |   |   |   |  |
| DIAL               | Common connected to terminals indicated |   |   |   |   |   |   |   |  |
| Label              | A                                       | B | C | D | E | F | G |   |  |
| 0                  |                                         | ● |   | ● | ● | ● | ● |   |  |
| 1                  |                                         |   |   |   |   |   | ● | ● |  |
| 2                  | ●                                       | ● |   |   |   |   |   |   |  |
| 3                  | ●                                       |   | ● |   |   |   | ● | ● |  |
| 4                  |                                         |   |   |   |   |   |   |   |  |
| 5                  | ●                                       |   | ● | ● | ● |   | ● |   |  |
| 6                  | ●                                       | ● |   | ● | ● |   |   | ● |  |
| 7                  |                                         |   |   |   |   |   | ● | ● |  |
| 8                  | ●                                       | ● |   |   |   |   |   |   |  |
| 9                  | ●                                       |   |   |   |   |   |   |   |  |



**S12**

| KELVIN VARLEY: Voltage Divider<br>10 Position |                                                   |    |    |    |    |    |    |    |    |
|-----------------------------------------------|---------------------------------------------------|----|----|----|----|----|----|----|----|
| DIAL                                          | Pins 1 and 2 connected across resistors indicated |    |    |    |    |    |    |    |    |
| A                                             | R0                                                | R1 | R2 | R3 | R4 | R5 | R6 | R7 | R8 |
| L                                             | R9                                                |    |    |    |    |    |    |    |    |
| 0                                             |                                                   |    |    |    |    |    |    |    |    |
| 1                                             |                                                   |    |    |    |    |    |    |    |    |
| 2                                             |                                                   |    |    |    |    |    |    |    |    |
| 3                                             |                                                   |    |    |    |    |    |    |    |    |
| 4                                             |                                                   |    |    |    |    |    |    |    |    |
| 5                                             |                                                   |    |    |    |    |    |    |    |    |
| 6                                             |                                                   |    |    |    |    |    |    |    |    |
| 7                                             |                                                   |    |    |    |    |    |    |    |    |
| 8                                             |                                                   |    |    |    |    |    |    |    |    |
| 9                                             |                                                   |    |    |    |    |    |    |    |    |

**S15**

| Modified 5 Bit<br>TELETYPE<br>10 Position |                                                   |   |   |   |   |
|-------------------------------------------|---------------------------------------------------|---|---|---|---|
| DIAL                                      | Common (C)<br>connected to<br>terminals indicated |   |   |   |   |
| A                                         | 1                                                 | 2 | 3 | 4 | 5 |
| L                                         |                                                   |   |   |   |   |
| 0                                         |                                                   |   |   | ● | ● |
| 1                                         |                                                   |   | ● | ● | ● |
| 2                                         |                                                   | ● |   |   | ● |
| 3                                         | ●                                                 |   |   |   |   |
| 4                                         | ●                                                 | ● |   | ● |   |
| 5                                         | ●                                                 |   |   |   | ● |
| 6                                         | ●                                                 |   | ● |   | ● |
| 7                                         | ●                                                 | ● | ● |   |   |
| 8                                         |                                                   | ● | ● |   |   |
| 9                                         |                                                   |   |   | ● | ● |

**S17**

| Resistor DECADE<br>1-2-4-2' Code<br>10 Position |                         |    |    |     |
|-------------------------------------------------|-------------------------|----|----|-----|
| DIAL                                            | Resistors<br>in circuit |    |    |     |
| A                                               | R1                      | R2 | R4 | R2' |
| 0                                               |                         |    |    |     |
| 1                                               | ●                       |    |    |     |
| 2                                               |                         | ●  |    |     |
| 3                                               | ●                       | ●  |    |     |
| 4                                               |                         |    | ●  |     |
| 5                                               | ●                       |    | ●  |     |
| 6                                               |                         | ●  | ●  |     |
| 7                                               | ●                       | ●  | ●  |     |
| 8                                               |                         | ●  | ●  | ●   |
| 9                                               | ●                       | ●  | ●  |     |

**S18**

| Resistor DECADE<br>1-2-2-2-2 Code<br>10 Position |                         |    |    |    |    |
|--------------------------------------------------|-------------------------|----|----|----|----|
| DIAL                                             | Resistors<br>in circuit |    |    |    |    |
| A                                                | R1                      | R2 | R3 | R4 | R5 |
| L                                                |                         |    |    |    |    |
| 0                                                |                         |    |    |    |    |
| 1                                                | ●                       |    |    |    |    |
| 2                                                |                         |    |    |    | ●  |
| 3                                                | ●                       |    |    |    | ●  |
| 4                                                |                         |    |    |    |    |
| 5                                                | ●                       |    |    | ●  | ●  |
| 6                                                |                         |    | ●  | ●  |    |
| 7                                                | ●                       |    | ●  | ●  | ●  |
| 8                                                |                         |    |    |    |    |
| 9                                                | ●                       | ●  | ●  | ●  |    |

**S19**

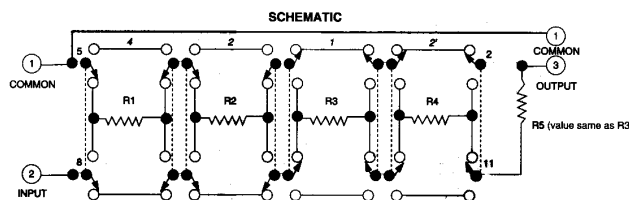
| 2 Pole 2 Throw                                           |   |     |  |  |
|----------------------------------------------------------|---|-----|--|--|
| Commons C (●) and C (★) connected to terminals indicated |   |     |  |  |
| DIAL                                                     | A | B   |  |  |
| 0 0                                                      | + | ● ★ |  |  |
| 1 5                                                      | - | ★ ● |  |  |
| 0 0                                                      | + | ● ★ |  |  |
| 1 5                                                      | - | ★ ● |  |  |
| 0 0                                                      | + | ● ★ |  |  |
| 1 5                                                      | - | ★ ● |  |  |
| 0 0                                                      | + | ● ★ |  |  |
| 1 5                                                      | - | ★ ● |  |  |
| 0 0                                                      | + | ● ★ |  |  |
| 1 5                                                      | - | ★ ● |  |  |

**S20**

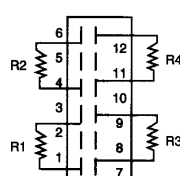
| 2 Pole 1-1'-2-5 with Complement                       |   |   |    |   |   |   |    |   |  |
|-------------------------------------------------------|---|---|----|---|---|---|----|---|--|
| Commons (C) and (C') connected to terminals indicated |   |   |    |   |   |   |    |   |  |
| DIAL                                                  |   |   |    |   |   |   |    |   |  |
| A                                                     | 5 | 2 | 1' | 1 | 5 | 2 | 1' | 1 |  |
| L                                                     |   |   |    |   |   |   |    |   |  |
| 0                                                     |   |   |    |   |   |   |    |   |  |
| 1                                                     |   |   |    |   |   |   |    |   |  |
| 2                                                     |   |   |    |   |   |   |    |   |  |
| 3                                                     |   |   |    |   |   |   |    |   |  |
| 4                                                     |   |   |    |   |   |   |    |   |  |
| 5                                                     |   |   |    |   |   |   |    |   |  |
| 6                                                     |   |   |    |   |   |   |    |   |  |
| 7                                                     |   |   |    |   |   |   |    |   |  |
| 8                                                     |   |   |    |   |   |   |    |   |  |
| 9                                                     |   |   |    |   |   |   |    |   |  |

**S21**

| EECO Voltage Divider<br>(THUMBPOW) 10 Position |    |    |    |    |                                          |    |    |    |  |
|------------------------------------------------|----|----|----|----|------------------------------------------|----|----|----|--|
| Resistors in circuit between term 2 & 5        |    |    |    |    | Resistors in circuit between term 8 & 11 |    |    |    |  |
| DIAL                                           | 4  | 2  | 1  | 2' | 4                                        | 2  | 1  | 2' |  |
| A                                              | R1 | R2 | R3 | R4 | R1                                       | R2 | R3 | R4 |  |
| L                                              |    |    |    |    |                                          |    |    |    |  |
| 0                                              |    |    |    |    |                                          |    |    |    |  |
| 1                                              |    |    |    |    |                                          |    |    |    |  |
| 2                                              |    |    |    |    |                                          |    |    |    |  |
| 3                                              |    |    |    |    |                                          |    |    |    |  |
| 4                                              |    |    |    |    |                                          |    |    |    |  |
| 5                                              |    |    |    |    |                                          |    |    |    |  |
| 6                                              |    |    |    |    |                                          |    |    |    |  |
| 7                                              |    |    |    |    |                                          |    |    |    |  |
| 8                                              |    |    |    |    |                                          |    |    |    |  |
| 9                                              |    |    |    |    |                                          |    |    |    |  |



SWITCH REAR VIEW



Dial set at position no. 6

Schematic pin numbers in circles are on motherboard. Others are on switch  
Italic numbers are switching code.

**S22**

| 1-2-4-5 Code |                                             |   |   |   |   |  |   |   |  |
|--------------|---------------------------------------------|---|---|---|---|--|---|---|--|
| DIAL         | Common (C) connected to terminals indicated |   |   |   |   |  |   |   |  |
|              | 1                                           | 2 | 4 | 5 |   |  |   |   |  |
| 0            |                                             |   |   |   |   |  |   |   |  |
| 1            | ●                                           |   |   |   |   |  |   |   |  |
| 2            |                                             | ● |   |   |   |  |   |   |  |
| 3            | ●                                           | ● |   |   |   |  |   |   |  |
| 4            |                                             |   |   | ● |   |  |   |   |  |
| 5            |                                             |   |   |   |   |  | ● |   |  |
| 6            |                                             |   |   |   |   |  |   | ● |  |
| 7            |                                             | ● |   |   |   |  | ● |   |  |
| 8            | ●                                           | ● |   |   |   |  | ● |   |  |
| 9            |                                             |   |   | ● | ● |  |   |   |  |

**S23**

| JOHNSON CODE |                                             |   |   |   |   |   |
|--------------|---------------------------------------------|---|---|---|---|---|
| DIAL         | Common (C) connected to terminals indicated |   |   |   |   |   |
|              | A                                           | B | C | D | E | F |
| 0            | ●                                           | ● | ● | ● |   |   |
| 1            | ●                                           | ● | ● |   |   |   |
| 2            |                                             | ● |   |   |   |   |
| 3            | ●                                           |   |   |   |   |   |
| 4            |                                             |   |   |   |   |   |
| 5            |                                             |   |   |   |   | ● |
| 6            |                                             |   |   |   | ● | ● |
| 7            |                                             |   | ● | ● | ● |   |
| 8            |                                             | ● | ● | ● | ● |   |
| 9            | ●                                           | ● | ● | ● | ● |   |

Consult factory for additional information.

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