



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

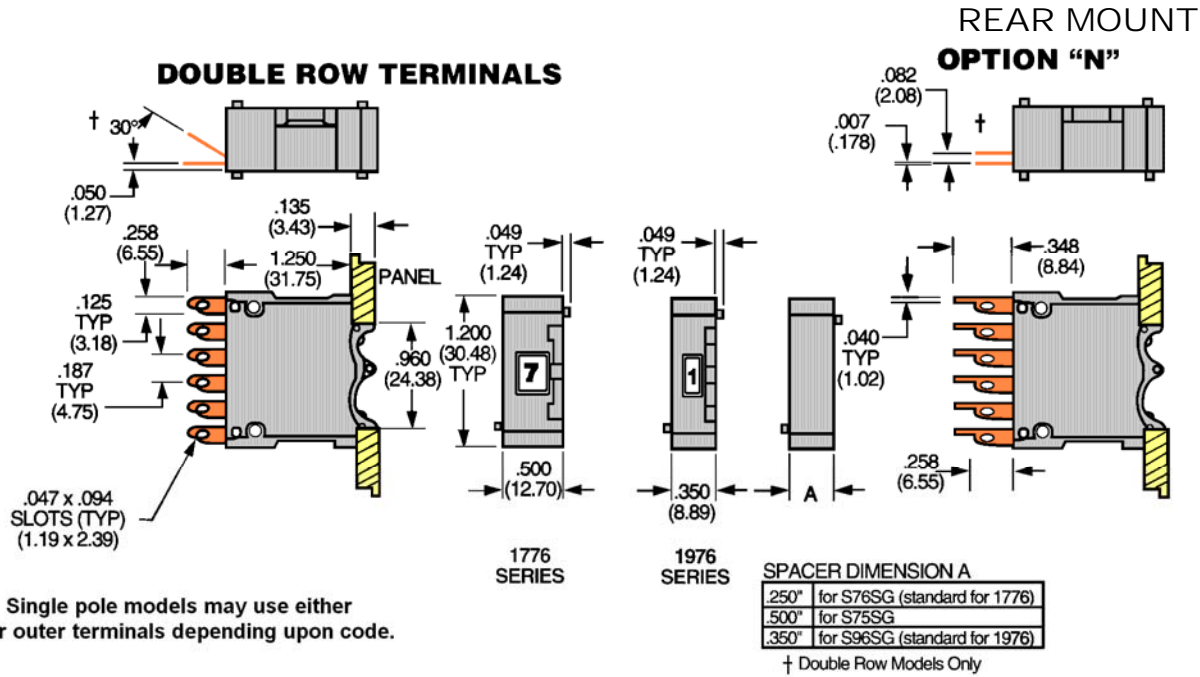
Plastic	Polycarbonate per Federal Spec LP-393A
Metals	Corrosion Resistant
Circuit Disc - Material	Glass Epoxy
Plating	Gold Over Nickel Plating
Terminals	Copper Alloy, Plated for Soldering
Contacts	Copper Alloy, Gold Over Nickel Plating

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

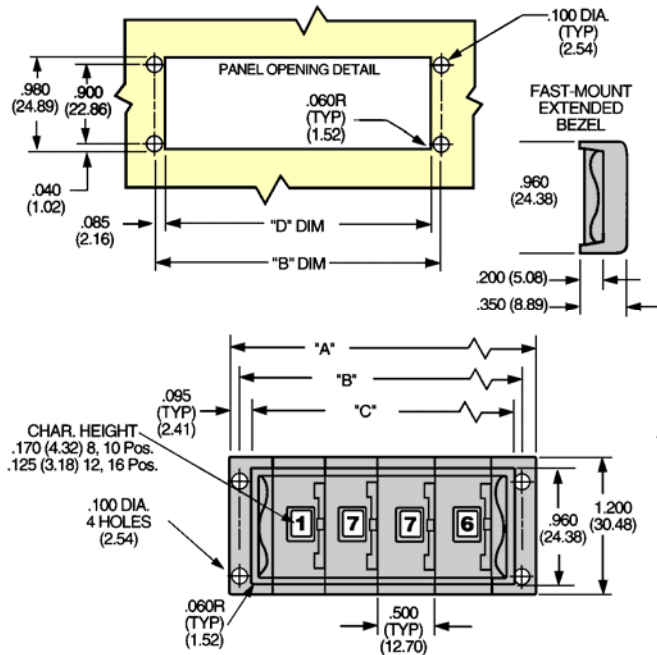
- 77SG-X/97SG-X** Standard Hardware Kit: Endpieces, Threaded Rods, Screws, Nuts and Washers
- 78SG-X/98SG-X** Fast Mount Hardware Kit: Endpieces, Bezels Threaded Rods, Screws, Nuts and Washers (Option Y)

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

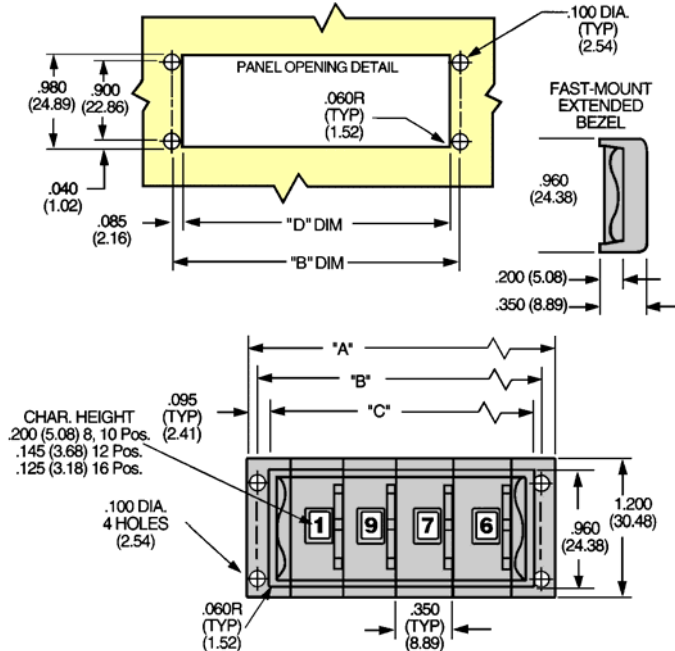
1776 MODEL



NO. OF STATIONS	A	B	C	D
1	1.26 (32.0)	1.09 (27.7)	0.90 (22.9)	0.92 (23.4)
2	1.76 (44.7)	1.59 (40.4)	1.40 (35.6)	1.42 (36.1)
3	2.26 (57.4)	2.09 (53.1)	1.90 (48.3)	1.92 (48.8)
4	2.76 (70.1)	2.59 (65.8)	2.40 (61.0)	2.42 (61.5)
5	3.26 (82.8)	3.09 (78.5)	2.90 (73.7)	2.92 (74.2)
6	3.76 (95.5)	3.59 (91.2)	3.40 (86.4)	3.42 (86.9)
7	4.26 (108.2)	4.09 (103.9)	3.90 (99.1)	3.92 (99.6)
8	4.76 (120.9)	4.59 (116.6)	4.40 (111.8)	4.42 (112.3)
9	5.26 (133.6)	5.09 (129.3)	4.90 (124.5)	4.92 (125.0)
10	5.76 (146.3)	5.59 (142.0)	5.40 (137.2)	5.42 (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 (28.2)	0.94 (23.9)	0.75 (19.1)	0.77 (19.6)
2	1.46 (37.1)	1.29 (32.8)	1.10 (27.9)	1.12 (28.4)
3	1.81 (46.0)	1.64 (41.7)	1.45 (36.8)	1.47 (37.3)
4	2.16 (54.9)	1.99 (50.5)	1.80 (45.7)	1.82 (46.2)
5	2.51 (63.8)	2.34 (59.4)	2.15 (54.6)	2.17 (55.1)
6	2.86 (72.6)	2.69 (68.3)	2.50 (63.5)	2.52 (64.0)
7	3.21 (81.5)	3.04 (77.2)	2.85 (72.4)	2.87 (72.9)
8	3.56 (90.4)	3.39 (86.1)	3.20 (81.3)	3.22 (81.8)
9	3.91 (99.3)	3.74 (95.0)	3.55 (90.2)	3.57 (90.7)
10	4.26 (108.2)	4.09 (103.9)	3.90 (99.1)	3.92 (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

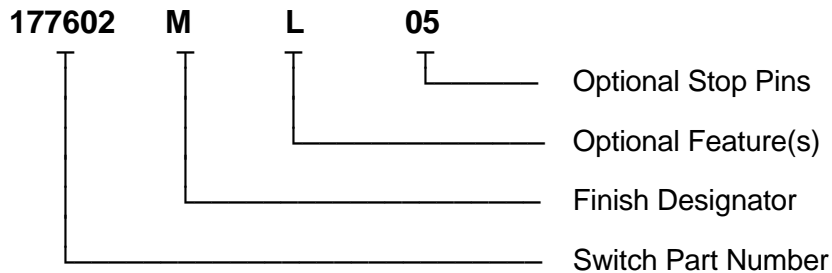
TRUTH TABLE	1776 SERIES	1976 SERIES	PRODUCT DESCRIPTION	NO. Of POSITIONS
A02	177601G	197601G	1 Pole Decimal	10
A02	177641G	197641G	1 Pole Decimal Make-Before Break	10
A08	177640G	197640G	2 Pole 5 Pos. Decimal Mkd. 0-4	5
B01	177608G	197608G	1 Pole BCO	8
B01	177658G†	197658G†	1 Pole BCO w/Diode Provision	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.

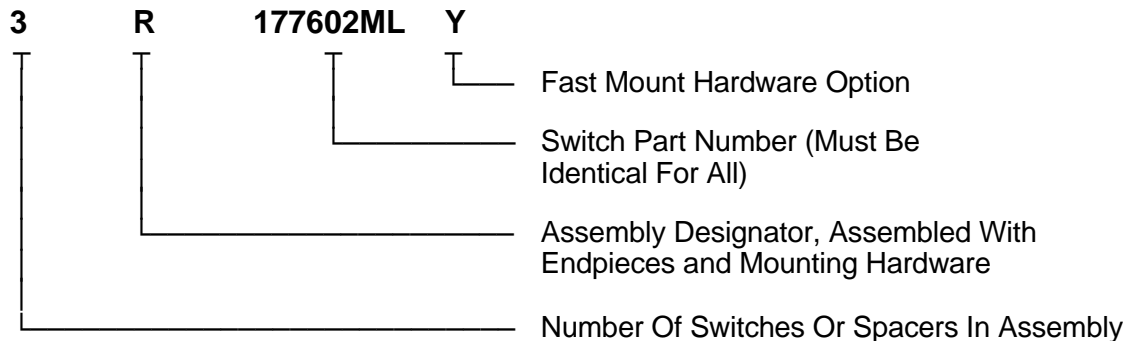
AVAILABLE OPTIONS

- 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 1776/1976 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									
D	Common (C) connected to terminals indicated								
I	0	1	2	3	4	5	6	7	
A	L	0	1	2	3	4	5	6	7
0	●								
1		●							
2			●						
3				●					
4					●				
5						●			
6							●		
7								●	

A02

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

A08

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

B01

BCD
1 Pole 8 Position

D I Common (C) connected to terminals indicated

A	L	1	2	4
0	0			
1	1	●		
2	2		●	
3	3	●	●	
4	4			●
5	5	●		●
6	6		●	●
7	7	●	●	●

B02

BCD
1 Pole 10 Position

D I Common (C) connected to 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	●			●

B03

BCD, binary 10 at 0
1 Pole 10 Position

D I Common (C) connected to 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	●			●
0	0	●			

B04

BINARY CODE
1 Pole 12 Position

D I Common (C) connected to 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	●			●
10	10	●			
11	11	●	●		

B05

BCD, with Odd Bit Parity
1 Pole 10 Position

D I Common (C) connected to terminals indicated

A	L	1	2	4	8	P
0	0					
1	1	●				
2	2		●			
3	3	●	●			●
4	4			●		
5	5	●		●		●
6	6		●	●		●
7	7	●	●	●		●
8	8					●
9	9	●				●

B06

BCD, with Even Bit Parity
1 Pole 10 Position

D I Common (C) connected to terminals indicated

A	L	1	2	4	8	P
0	0					
1	1	●				●
2	2		●			●
3	3	●	●			●
4	4			●		●
5	5	●		●		●
6	6		●	●		●
7	7	●	●	●		●
8	8					●
9	9	●				●

B07

Binary Code
1-Pole 16-Position

D I Common (C) connected to 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
1 Pole 10 Position

D I Common (C) connected to 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	●				●	●	●	●

C03

BCD w/Complement
Binary 10 at 0
1 Pole 10 Position

D I Common (C) connected to 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	●				●	●	●	●
0	0	●							

C04

Binary Code w/Complement
1 Pole 12 Position

D I Common (C) connected to 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	●				●	●	●	●
10	10	●	●						
11	11	●	●	●					

C06

Binary Code w/Complement
1-Pole, 16-Position

D I Common (C) connected to 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
1 Pole 10 Position

D I Common (C) connected to 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	●				●	●	●	●

C08

9's Complement BCD, w/Complement
1 Pole 10 Position

D I Common (C) connected to 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	●				●	●	●	●

C09

10's Complement BCD, w/Complement
1 Pole 10 Position

D I Common (C) connected to 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	●				●	●	●	●
0	0	●							

C10

BCD Excess 3
1 Pole 10 Position

D I Common (C) connected to 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	●			●

C16

Binary Complement only
1-Pole, 16-Position

D I Common (C) connected to 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
1 Pole 8 Position

D I Common (C) connected to terminals indicated

A	L	1	2	4
0	0	●	●	●
1	1	●	●	●
2	2	●	●	●
3	3	●	●	●
4	4	●	●	●
5	5	●	●	●
6	6	●	●	●
7	7	●	●	●

C12

BCD Complement Only
1 Pole 10 Position

D I Common (C) connected to 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	●	●	●	●

C13

9's Complement BCD
1 Pole 10 Position

D I Common (C) connected to 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	●			●

C14

10's Complement BCD
1 Pole 10 Position

D I Common (C) connected to 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	●			●
0	0	●			

D01

BCD 2 Pole 8 Position
w/Sep Com to NT Bits

D I A L	Common C (●) and C (★) connected to terminals indicated							
	1	2	4					
0	★	★	★					
1	●	★	★					
2	★	●	★					
3	●	●	★					
4	★	★	●					
5	●	★	●					
6	★	●	●					
7	●	●	●					

D02

BCD 2 Pole 10 Position
Sep Com to NT Bits

D I A L	Common C (●) and C (★) connected to terminals indicated									
	1	2	4	8						
0	★	★	★	★						
1	●	★	★	★						
2	★	●	★	★						
3	●	●	★	★						
4	★	★	●	★						
5	●	★	●	★						
6	★	●	●	★						
7	●	★	●	★						
8	★	★	★	★						
9	●	●	●	●						

D03

BCD Dual,
2 Pole 10 Position

D I A L	Common (C1) and (C2) connected to 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
2 Pole 16 Position

D I A L	Common (C) and (C̄) connected to 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
Sep Com to NT Bits

D I A L	Common C (●) and C (★) connected to 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
2 Pole 8 Position

D I A L	Common (C) and (C̄) connected to terminals indicated							
	C				C̄			
	1	2	4	8	1	2	4	8
0					●	●	●	●
1	●							●
2		●						●
3	●							●
4			●					●
5	●			●				●
6		●			●			●
7	●					●		●

E02

BCD w/Complement
2 Pole 10 Position

D I A L	Common (C) and (C̄) connected to 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,
w/Complement
2 Pole 10 Position

D I A L	Common (C) and (C̄) connected to 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,
w/Complement
2 Pole 10 Position

D I A L	Common (C) and (C̄) connected to 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
2 Pole 12 Position

D I A L	Common (C) and (C̄) connected to 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,
w/Complement
2 Pole 10 Position

D I A L	Common (C) and (C̄) connected to 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
w/Complement

D I A L	Common (C1), (C2), (C3) and (C4) connected to 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
2 Pole 10 Position

D	Common (C1) and (C2) connected to terminals indicated													
A	C1					C2								
L	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
1 Pole 10 Position

D	Common (C) connected to terminals indicated			
A	1	2	2'	4
L	1	2	2'	4
0				
1	●			
2		●		
3	●	●		
4			●	●
5	●	●	●	
6			●	●
7	●		●	●
8	●	●	●	●
9	●	●	●	●

G02
1-2-4-2' Berkeley Code
1 Pole 10 Position

D	Common (C) connected to terminals indicated			
A	1	2	4	2'
L	1	2	4	2'
0				
1	●			
2		●		
3	●	●		
4			●	
5	●	●	●	
6			●	●
7	●		●	●
8	●	●	●	●
9	●	●	●	●

H01
1-2-4-2' Berkeley Code w/Complement
1 Pole 10 Position

D	Common (C) connected to terminals indicated							
A	1	2	4	2'	1	2	4	2'
L	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
Common (C1) and (C2) connected to terminals indicated

		C1	C2	
DIAL	A1	B1	A2	B2
0	0	+	●	●
5	1	-	●	●
0	0	+	●	●
5	1	-	●	●
0	0	+	●	●
5	1	-	●	●
0	0	+	●	●
5	1	-	●	●
0	0	+	●	●
5	1	-	●	●

S03
5-Line TELETYPE
1 Pole 10 Position

D	Common (C) connected to terminals indicated				
A	1	2	3	4	5
L	1	2	3	4	5
0	●	●	●	●	●
1	●	●	●	●	●
2	●	●	●	●	●
3	●	●	●	●	●
4		●		●	
5				●	
6	●			●	
7	●	●	●	●	●
8	●	●	●	●	●
9			●	●	

S04
5-Line TELETYPE w/even bit parity
1 Pole 10 Position

D	Common (C) connected to terminals indicated					
A	1	2	3	4	5	P
L	1	2	3	4	5	P
0	●	●	●	●	●	●
1	●	●	●	●	●	●
2	●	●	●	●	●	●
3	●	●	●	●	●	●
4		●		●		
5				●		
6	●			●		●
7	●	●	●	●	●	●
8	●	●	●	●	●	●
9			●	●		

S05
BIQUINARY
1 Pole 10 Position

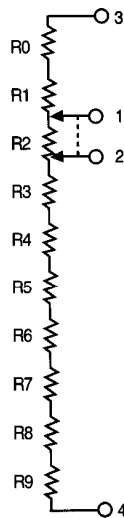
D	Common (C) connected to terminals indicated											
A	1	2	3	4	5	6	7	8	9			
L	ODD	EVEN	0	1	2	3	4	5	6	7	8	9
0		●		●		●		●		●		●
1	●		●		●		●		●		●	
2		●		●		●		●		●		●
3	●		●		●		●		●		●	
4		●		●		●		●		●		●
5	●		●		●		●		●		●	
6		●		●		●		●		●		●
7	●		●		●		●		●		●	
8		●		●		●		●		●		●
9	●		●		●		●		●		●	

S06
NOT/NOR SWITCH 1 Pole 12 Position
(All Positions Shorted except Position indicated on Dial)

D	Common (C) connected to terminals indicated											
A	0	1	2	3	4	5	6	7	8	9	10	11
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	●	●	●	●	●	●	●	●	●	●		●

S07
INCREMENTAL Voltage Divider
2 Pole 10 Position

D	Pins 1 and 2 connected across resistor indicated									
A	R0	R1	R2	R3	R4	R5	R6	R7	R8	R9
L	R0	R1	R2	R3	R4	R5	R6	R7	R8	R9
0	●									
1		●								
2			●							
3				●						
4					●					
5						●				
6							●			
7								●		
8									●	
9										●



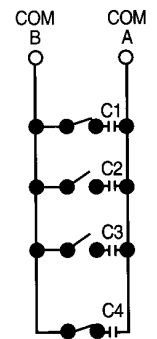
SCHEMATIC
Dial set at
Position no. 2

S08
WOLFF POGGENDORF Voltage Divider
10 Position

D	Resistors in circuit									
A	1	2	4	2'	1	2	4	2'		
L	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

D	Capacitors in Circuit			
A	C1	C2	C3	C4
L	C1	C2	C3	C4
0				
1	●			
2		●		
3			●	
4				●
5	●	●	●	●
6	●	●	●	●
7	●	●	●	●
8	●	●	●	●
9	●	●	●	●

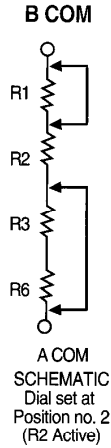


SCHEMATIC
Dial set at Position no. 5
(C1 and C4 Active)

S10

RESISTOR DECADE
1-2-3-6 Code 10 Position

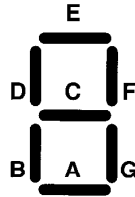
D	Resistors in circuit					
I						
A						
L	R1	R2	R3	R6		
0	●					
1	●					
2	●					
3	●	●				
4	●	●	●			
5	●	●	●	●		
6	●	●	●	●	●	
7	●	●	●	●	●	●
8	●	●	●	●	●	●
9	●	●	●	●	●	●



S11

7 BAR INDICATOR
1 Pole 10 Position

D	Common connected to terminals indicated						
I							
A	A	B	C	D	E	F	G
L							
0	●	●		●	●	●	●
1	●	●	●	●	●	●	●
2	●	●	●	●	●	●	●
3	●	●	●	●	●	●	●
4	●	●	●	●	●	●	●
5	●	●	●	●	●	●	●
6	●	●	●	●	●	●	●
7	●	●	●	●	●	●	●
8	●	●	●	●	●	●	●
9	●	●	●	●	●	●	●



S12

KELVIN VARLEY: Voltage Divider
10 Position

D	Pins 1 and 2 connected across resistors indicated										
I											
A											
L	R0	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10
0	●	●									
1	●	●	●								
2	●	●	●	●							
3	●	●	●	●	●						
4	●	●	●	●	●	●					
5	●	●	●	●	●	●	●				
6	●	●	●	●	●	●	●	●			
7	●	●	●	●	●	●	●	●	●		
8	●	●	●	●	●	●	●	●	●	●	
9	●	●	●	●	●	●	●	●	●	●	●

S15

Modified 5 Bit TELETYPE
10 Position

D	Common (C) connected to terminals indicated				
I					
A					
L	1	2	3	4	5
0	●	●	●	●	●
1	●	●	●	●	●
2	●	●	●	●	●
3	●	●	●	●	●
4	●	●	●	●	●
5	●	●	●	●	●
6	●	●	●	●	●
7	●	●	●	●	●
8	●	●	●	●	●
9	●	●	●	●	●

S17

Resistor DECADE
1-2-4-2' Code 10 Position

D	Resistors in circuit				
I					
A					
L	R1	R2	R4	R2'	
0	●				
1	●				
2	●	●			
3	●	●	●		
4	●	●	●	●	
5	●	●	●	●	●
6	●	●	●	●	●
7	●	●	●	●	●
8	●	●	●	●	●
9	●	●	●	●	●

S18

Resistor DECADE
1-2-2-2-2 Code 10 Position

D	Resistors in circuit				
I					
A					
L	R1	R2	R3	R4	R5
0	●				
1	●				
2	●	●			
3	●	●	●		
4	●	●	●	●	
5	●	●	●	●	●
6	●	●	●	●	●
7	●	●	●	●	●
8	●	●	●	●	●
9	●	●	●	●	●

S19

2 Pole 2 Throw

Commons C(●) and C(*) connected to terminals indicated

D		
I		
A		
L	DIAL	A B
0	0 0 + ● *	
1	1 5 - * ●	
2	0 0 + ● *	
3	1 5 - * ●	
4	0 0 + ● *	
5	1 5 - * ●	
6	0 0 + ● *	
7	1 5 - * ●	
8	0 0 + ● *	
9	1 5 - * ●	

S20

2 Pole 1-1'-2-5 with Complement

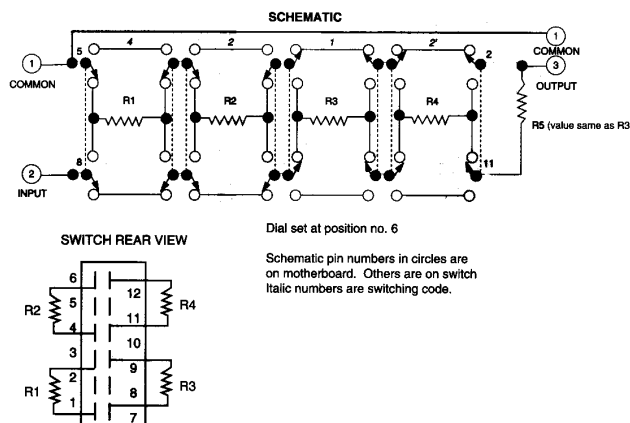
Commons (C) and (C') connected to terminals indicated

D							
I							
A							
L	5	2	1'	1	5	2	1'
0	●	●	●	●	●	●	●
1	●	●	●	●	●	●	●
2	●	●	●	●	●	●	●
3	●	●	●	●	●	●	●
4	●	●	●	●	●	●	●
5	●	●	●	●	●	●	●
6	●	●	●	●	●	●	●
7	●	●	●	●	●	●	●
8	●	●	●	●	●	●	●
9	●	●	●	●	●	●	●

S21

ECCO Voltage Divider (THUMB POT)
10 Position

D	Resistors in circuit between term 2 & 5				Resistors in circuit between term 8 & 11			
I								
A								
L	4	2	1	2'	4	2	1	2'
0	●	●	●	●	●	●	●	●
1	●	●	●	●	●	●	●	●
2	●	●	●	●	●	●	●	●
3	●	●	●	●	●	●	●	●
4	●	●	●	●	●	●	●	●
5	●	●	●	●	●	●	●	●
6	●	●	●	●	●	●	●	●
7	●	●	●	●	●	●	●	●
8	●	●	●	●	●	●	●	●
9	●	●	●	●	●	●	●	●



S22

1-2-4-5 Code

Common (C) connected to terminals indicated

D				
I				
A				
L	1	2	4	5
0	●			
1	●	●		
2	●	●	●	
3	●	●	●	●
4	●	●	●	●
5	●	●	●	●
6	●	●	●	●
7	●	●	●	●
8	●	●	●	●
9	●	●	●	●

S23

JOHNSON CODE

Common (C) connected to terminals indicated

D					
I					
A					
L	A	B	C	D	E
0	●	●	●	●	●
1	●	●	●	●	●
2	●	●	●	●	●
3	●	●	●	●	●
4	●	●	●	●	●
5	●	●	●	●	●
6	●	●	●	●	●
7	●	●	●	●	●
8	●	●	●	●	●
9	●	●	●	●	●

Consult factory for additional information.