

Series Miniswitches®

200 Series with Wire Leads

Series 700 with PCB

QPL approved to MIL-S-22710/15 and MIL-S-22710/20
 8, 10, 12 and 16 standard dial positions
 Rear mounted
 Switch O.D. size 12.7 (.500) wide x 29.21 (1.15) high
 Representative or factory direct

When ordering qualified switches in accordance to MIL-S-22710 you must state this requirement on your order for proper processing by the factory.

DESCRIPTION

The Series 200 and 700 Miniswitch® are engineered for hostile environments. All switching elements are enclosed in a chamber which is completely sealed by an "O" ring around the actuator shaft, and a window that seals the front of the case. The back of the case is potted around the wire leads of the Series 200 and around the PCB of the Series 700.

Both series are identical except for their termination features and are impervious to sand, dust, salt spray, high humidity or temperature and explosive atmospheres.

FEATURES

- QPL approved to MIL-S-22710/15 and MIL-S-22710/20
- *Special dial characters
- Factory installed dial stops
- *Fully sealed switch chamber, and panel sealing on request
- *Double modules
- *19.05 (.750) and 25.4 (1.0) message units
- 6.35 (.250) spacer
- *Optional markings on switch case and spacers
- *Lighted decimal on spacer
- Replaceable lighting
- *RFI shielding
- *Provisions for mounting components (Series 700)

*See switch parameters for details and consult factory for ordering information.

SPECIFICATIONS

MECHANICAL

Operating force: 7 to 14 ounces.

Life: Over 1,000,000 detent operations at rated temperature and electrical loads.

Dial character height: .170" on 8 or 10 position units, .143" on 12 position units, .120" on 16 position units.

Weight: .50 ounce per module (approximately).

ELECTRICAL:

Rated electrical loads: 28V AC or 28V DC at 125 milliamps. Non-switching 3 amps max.

Contact resistance: Series 200, 200 milliohms max.; Series 700, 160 milliohms max.

Insulation resistance: 1000 megohms.

Dielectric strength: 750 VRMS.

ENVIRONMENTAL:

Shock: 100 G's per MIL-STD-202, Method 213, Test Condition I.

Vibration: 15 G's at 70-2000Hz; .06" double amplitude at 0-70Hz. (Ref: MIL-STD-202, Method 204, Test Condition B.)

Altitude: 70,000 feet with corresponding derating of dielectric strength to 250 volts.

Operating temperature: -65°C to +85°C, unlighted versions only. -65°C to +71°C 5V, -65°C to +65°C 28V, lighted.

Moisture resistance: Per MIL-STD-202, Method 106.

Thermal shock: Per MIL-STD-202, Method 107, Test Condition A.

Salt spray: Per MIL-STD-202, Method 101, Test Condition B.

Explosion proof: Per MIL-STD-202, Method 109. (per MIL-S-22710, Method 1.)

Sand and dust: Per MIL-STD-202, Method 110, Test Condition B. (Sealed modules only.)

MATERIALS:

Plastic parts: Thermoplastic (polycarbonate, nylon or teflon as required).

Printed circuit board: Laminate per MIL-P-13949, Type GF, plated with nickel per Fed. Spec. QQ-N-290, Class 2, and gold plated per MIL-G-45204, Type 11, Class 1.

Contacts: Precious metal alloy.

Brush base and detent spring: Beryllium copper.

Hardware: Corrosion protected or corrosion resistant steel.

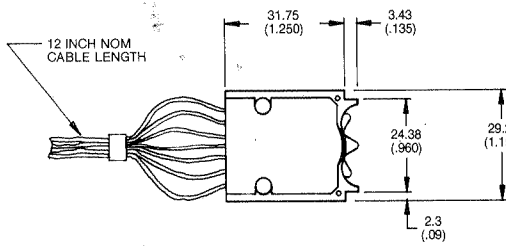
IMPORTANT NOTICE:

Do not allow flux or cleaning agent to enter switch. Use only 40% isopropyl alcohol in distilled water for cleaning agents. For additional information about recommended cleaning methods, contact Digitran.

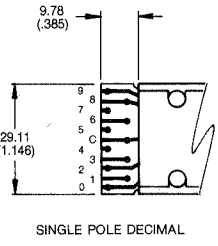
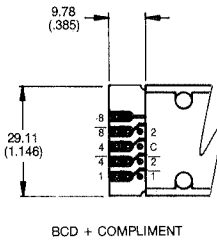
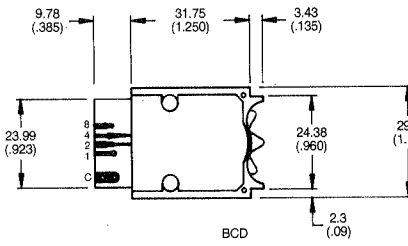
TRUTH TABLE CODES SERIES 200/700

Truth Tables Positions	001 2	002 8	003 8	004 8	006 8	007 8	008 10	011 10	013 10	014 10	016 10	017 10	021 10	022 10	023 10	024 10	025 10	038 10	039 10	041 12	043 12	047 16	048 16	049 16	050 16	
Code Series																										
• 02 = 200	•	•	—	•	•	•	•	—	•	•	•	•	—	—	•	—	•	—	—	—	•	—	—	—	—	
X = wire leads — 200 Series only	X	X	—	X	X	X	X	—	X	X	X	X	—	—	X	—	X	—	—	—	X	—	—	—	—	
• 07 = 700	•	•	—	•	•	•	•	•	•	•	•	•	—	•	•	—	•	•	•	•	•	•	•	—	•	
PC Terminations per Truth Table Code	S — L	P S W — L	— — — —	S — L	S — L	S P — —	S P W — —	S — — —	S P W — L	S — — L	S — — L	S P W — L	S P W — —	— — —	— — L	S — —	S — —	S — —	S — —	S — —	S — —	S — —	S P W — L	— — —	— — —	S P W — —

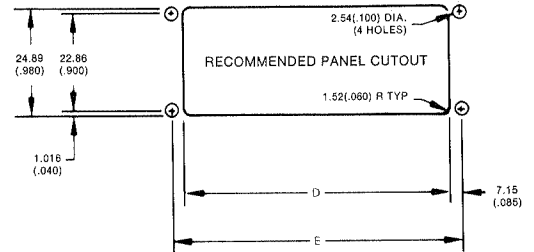
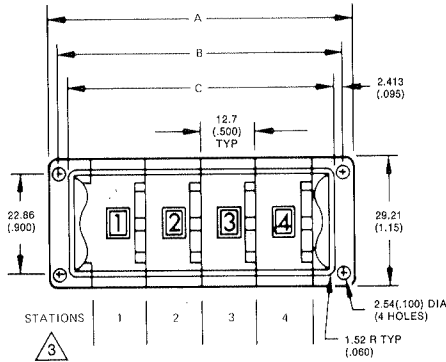
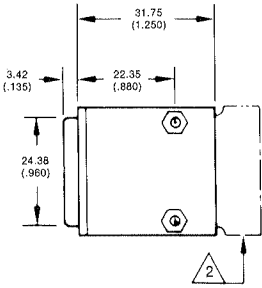
SERIES 200



SERIES 700



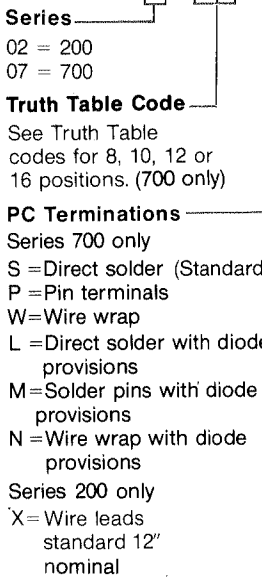
TYPICAL TERMINAL AND ELECTRICAL OUTPUT DETAILS SERIES 200/700 MINISWITCH®



How to order standard switch modules

See page 79 for Assembly Ordering Instructions
All spaces must be filled for a complete part (switch) number

Example: 0 2 / 0 2 5 / X / N S / S / F / G



Lighting*
COLOR
O = No Lighting
E = Clear 5
G = Clear 28
H = Red 5
K = Red 28
Z = Lighting provisions red filter no lamp.
Y = Lighting provisions clear filter no lamp.

Color**
F = Matte black case, satin black dial, white characters.

Dial Options
S = Standard dial characters.
A = 0-9, A-F (16 position only).
B = -, + repeating
C = 0, 5 repeating

RECOMMENDED ASSEMBLY PANEL CUTOUT DIMENSIONS

Number of 12.7 (.5") Stations	A	B	C	D	E
1	32.0(1.26)	27.7(1.09)	22.9(.90)	23.4(.92)	27.7(1.09)
2	44.7(1.76)	40.4(1.59)	35.6(1.40)	36.1(1.42)	40.4(1.59)
3	57.4(2.26)	53.1(2.09)	48.3(1.90)	43.8(1.92)	53.1(2.09)
4	70.1(2.76)	65.8(2.59)	61.0(2.40)	61.5(2.42)	65.8(2.59)
5	82.8(3.26)	78.5(3.09)	73.7(2.90)	74.2(2.92)	78.5(3.09)
6	95.5(3.76)	91.2(3.59)	86.4(3.40)	86.9(3.42)	91.2(3.59)
7	108.2(4.26)	103.9(4.09)	99.1(3.90)	99.6(3.92)	103.9(4.09)
8	120.9(4.76)	116.6(4.59)	111.8(4.40)	112.3(4.42)	116.6(4.59)
9	133.6(5.26)	129.3(5.09)	124.5(4.90)	125.0(4.92)	129.3(5.09)
10	146.3(5.76)	142.0(5.59)	137.2(5.40)	137.7(5.42)	142.0(5.59)

CONSULT DIGITRAN FOR DIMENSIONS ON LONGER ASSEMBLIES

NOTES:

- Drawing tolerances; .X = ±.8(.03), .XX = ±.25(.010).
- For termination details, see drawing of specific module. See truth table for output circuit details.
- Add 6.35(.250) to dimensions A, B, C, D and E for each spacer used in assembly.
- Four No. 2-56 x 3/8" screws with nuts and lockwashers furnished with each assembly of one or more modules with end brackets and assembly studs.
- Prime dimensions are metric.

WINDOW AND CHARACTER DIMENSIONS

Positions	Window Dimensions		Max. character Height	Visual Comparison
	H	W		
8	5.79 (.228)	4.06 (.160)	4.32 (.170)	3
10	5.79 (.228)	4.06 (.160)	4.32 (.170)	3
12	5.79 (.228)	4.06 (.160)	3.63 (.143)	3
16	4.06 (.160)	4.06 (.160)	3.04 (.120)	3

Character heights cannot be increased from those shown. For maximum usable window width, consult factory.

Not all options are available in all series or codes. Some tooling charges may be required.

*When ordering a lighted switch, top lighting is standard. For other positions consult factory.

**For nonstandard colors and combinations consult factory.

***For stops on 12 or 16 position switches see modified standard ordering instructions, page 78, or consult factory.

Notes 1 — For nonstandard switch options and features not covered in the how to order chart, see modified ordering instruction section, page 78, or consult factory.