P36 SERIES
ROTARY DIP SWITCHES

FEATURES
- **Improved temperature withstanding.**
- **Completely sealed for process compatibility.**
- **10 or 16 positions.**
- **Precision designed detent action.**
- **Ultra compact size through hole and SMT models.**
- **High reliability & long life.**
- **Clockwise or counterclockwise settable.**
- **Solder coated terminals.**

MATERIALS

Base	UL94V-O, high temperature thermoplastic
Cover	UL94V-O, high temperature thermoplastic
Actuator	Nylon
Contacts	Gold over nickel plated phosphor bronze
Terminals	Solder coated brass
Terminal sealing	Molded-in
Actuator seal	'O'-ring, Viton (FPM)

GENERAL SPECIFICATIONS

ELECTRICALS

Operating voltage	24 VDC max.
Contact rating, static	400 mA max.
Contact rating, dynamic	100 mA max.
Switching capacity	1.5 VA max.
Initial contact resistance	< 250 milliohms
Insulation resistance	> 100 megohms

MECHANICALS, THERMALS

Torque	0.98 inch-oz. min. (0.7 Ncm min.)
Expected life	10,000 switching operations
Contact force	15 grams min.
Operating temperature range	-30°C to 90°C

SOLDERING RECOMMENDATIONS

Hand soldering	340°C max. for 2 seconds max. (40 watt iron max.)
Wave soldering	260°C max. for 10 seconds max.
Solvent washing	Freons or alcohol. (Do not use chlorinated solvents)
Aqueous cleaning	Deionized water preferred

G

TRUTH TABLES

(see page G21)

NOTE: For each dial position in tables, Common terminals (C) are connected to terminal number(s) indicated - i.e. - none or combinations of 1, 2, 4 or 8. Each model in this series has 2 Common terminals.

Thru-hole and SMT Printed Circuit Models		Model No. Thru-hole Mounting	Model No. Surface Mounting
Code (see truth tables pg. G21)	Positions	(see fig. 1)	(see fig. 2)
Binary Coded Decimal	10	P36101	P36S101
Complement of BCD	10	P36102	P36S102
Binary Coded Hexadecimal	16	P36103	P36S103
Complement of BCH	16	P36106	P36S106

Figure 1

Mechanical outline   P.C. hole pattern

Figure 2

Mechanical outline   P.C. pad layout

APEM, PO BOX 544, WAKEFIELD, MA USA 01880   TEL: (781) 246-1007 FAX: (781) 245-4531 TOLL FREE SALES: (877) 246-7890

PT65 SERIES
ROTARY DIP SWITCHES

FEATURES
- Improved temperature withstanding.
- Completely sealed for process compatibility.
- 4, 6, 8, 10 or 16 positions w/extensive codings.
- Precision designed detent action.
- Compact size.
- High reliability & long life.
- Clockwise or counterclockwise settable.
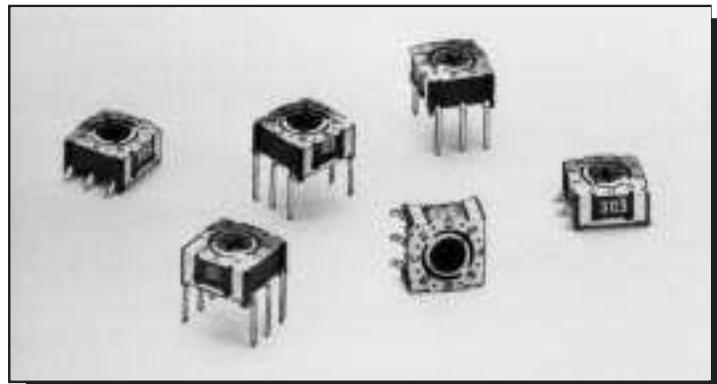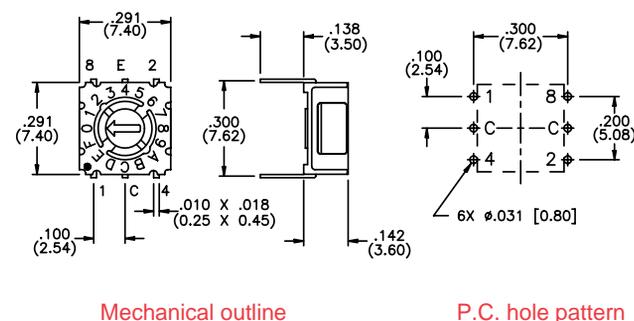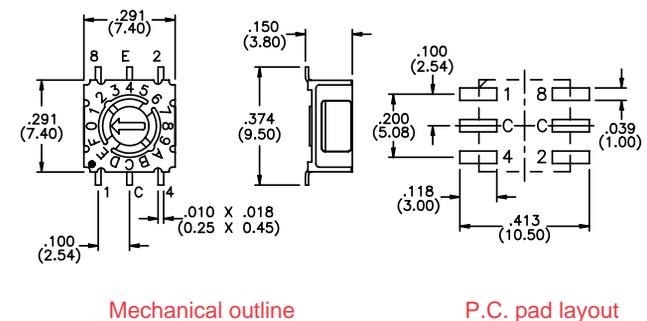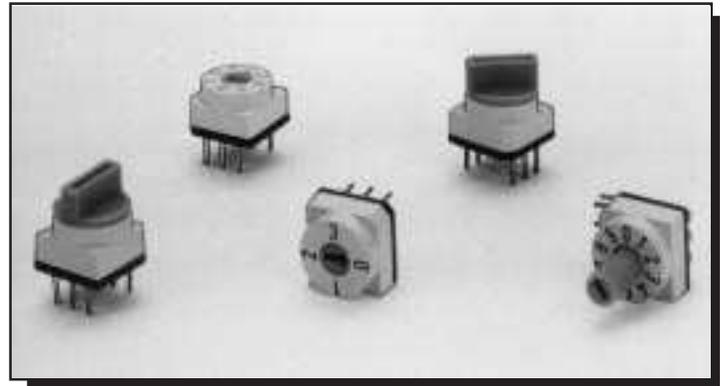- Solder coated terminals.

GENERAL SPECIFICATIONS

ELECTRICALS
Operating voltage	24 VDC max.
Contact rating, static	400 mA max.
Contact rating, dynamic	150 mA max.
Switching capacity	1.5 VA max.
Initial contact resistance	< 80 milliohms
Insulation resistance	> 100 megohms

MECHANICALS, THERMALS
Torque	1.4 inch-oz. min. (1.0 Ncm min.)
Expected life	10,000 switching operations
Contact force	15 grams min.
Operating temperature range	-20°C to 70°C

SOLDERING RECOMMENDATIONS
Hand soldering	340°C max. for 2 seconds max. (40 watt iron max.)
Wave soldering	260°C max. for 10 seconds max.
Solvent washing	Freons or alcohol. (Do not use chlorinated solvents)
Aqueous cleaning	Deionized water preferred

MATERIALS
Base	UL94V-O, high temperature thermoplastic
Cover	UL94V-O, high temperature thermoplastic
Actuator	POM
Contacts	Gold over nickel plated phosphor bronze
Terminals	Solder coated brass
Terminal sealing	Molded-in
Actuator seal	'O'-ring, Buna-N

CODE 05 GRAY CODE — 16 Positions

Dial No.	1	2	4	8
0				
1	●			
2	●	●		
3		●		
4		●	●	
5	●	●	●	
6	●		●	
7			●	
8			●	●
9	●		●	●
A	●	●	●	●
B		●	●	●
C		●		●
D	●	●		●
E	●			●
F				●

G

TRUTH TABLES

CODE 11 ON/OFF — 4 Positions

Dial No.	1
0	
1	●
0	
1	●

CODE 12 BCD — 4 Positions

Dial No.	1	2
0		
1	●	
2		●
3	●	●

CODE 21 DECIMAL — 4 Positions

Dial No.	1	2	3	4
1	●			
2		●		
3			●	
0				●

CODES 24 & 25 BCD — 6 Positions

Dial No.	1	2	4
0			
1	●		
2		●	
3	●	●	
4			●
5	●		●

CODE 26 OCTAL — 8 Positions

Dial No.	1	2	4
0			
1	●		
2		●	
3	●	●	
4			●
5	●		●
6		●	●
7	●	●	●

CODE 27 OCTAL COMPLEMENT — 8 Positions

Dial No.	$\overline{1}$	$\overline{2}$	$\overline{4}$	$\overline{8}$
0	●	●	●	●
1		●	●	●
2	●		●	●
3			●	●
4	●	●		●
5		●		●
6	●			●
7				●

BINARY CODED DECIMAL — 10 Positions

Dial No.	1	2	4	8
0				
1	●			
2		●		
3	●	●		
4			●	
5	●		●	
6		●	●	
7	●	●	●	
8				●
9	●			●

COMP. OF BINARY CODED DECIMAL — 10 Positions

Dial No.	1	2	4	8
0	●	●	●	●
1		●	●	●
2	●		●	●
3			●	●
4	●	●		●
5		●		●
6	●			●
7				●
8	●	●	●	
9		●	●	

BINARY CODED HEXADECIMAL — 16 Positions

Dial No.	1	2	4	8
0				
1	●			
2		●		
3	●	●		
4			●	
5	●		●	
6		●	●	
7	●	●	●	
8				●
9	●			●
A		●		●
B	●	●		●
C			●	●
D	●		●	●
E		●	●	●
F	●	●	●	●

COMP. OF BINARY CODED HEXADECIMAL — 16 Positions

| Dial No.	1	2	4	8
0	●	●	●	●
1		●	●	●
2	●		●	●
3			●	●
4	●	●		●
5		●		●
6	●			●
7				●
8	●	●	●	
9		●	●	
A	●		●	
B			●	
C	●	●		
D		●		
E	●			
F				

NOTE: For each dial position in tables, Common terminal(s) (C) are connected to terminal number(s) indicated - i.e. - none or combinations of 1, 2, 3, 4 or 8. Each model in this series has 2 Common terminals except CODES 11 and 24 which have one.
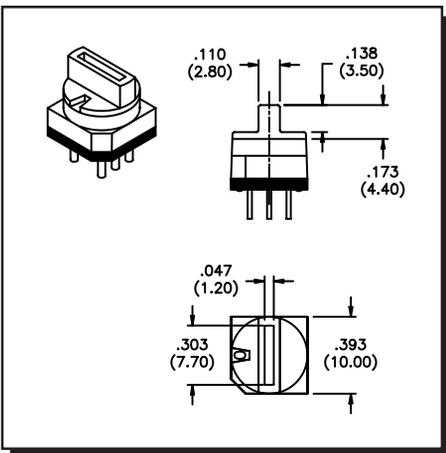
PT65 SERIES - 4, 6, 8, 10 & 16 POSITION MODELS
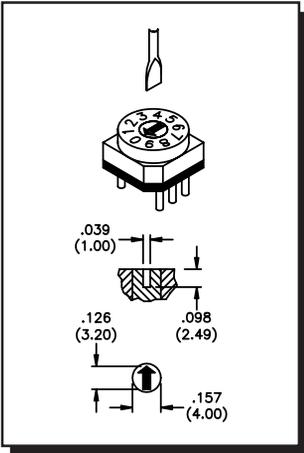
Screwdriver Actuator Models			Right Angle	
		Straight	Pitch	
Code (see truth tables)	Positions		.100" (2,54)	.200"(5,08)
Binary Coded Decimal	10	PT65101	PT65101L254	PT65101L508
Comp. of Binary Coded Dec.	10	PT65102	PT65102L254	PT65102L508
Binary Coded Hexadecimal	16	PT65103	PT65103L254	PT65103L508
Code 05, Gray Code	16	PT65105	PT65105L254	PT65105L508
Comp. of Binary Coded Hex.	16	PT65106	PT65106L254	PT65106L508
Code 11, ON/OFF	4	PT65111	PT65111L254	PT65111L508
Code 12, Binary Coded Dec.	4	PT65112	PT65112L254	PT65112L508
Code 21, Decimal	4	PT65121	PT65121L254	PT65121L508
Code 24, Binary Coded Dec.	6	PT65124	PT65124L254	PT65124L508
Code 25, Binary Coded Dec.	6	PT65125	PT65125L254	PT65125L508
Code 26, Octal	8	PT65126	PT65126L254	PT65126L508
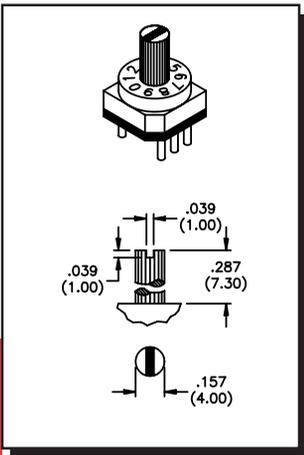
Spindle Actuator Models		Complete Model No. by Terminal Style		
			Right Angle	
		Straight	Pitch	
Code (see truth tables)	Positions		.100" (2,54)	.200"(5,08)
Binary Coded Decimal	10	PT65301	PT65301L254	PT65301L508
Comp. of Binary Coded Dec.	10	PT65302	PT65302L254	PT65302L508
Binary Coded Hexadecimal	16	PT65303	PT65303L254	PT65303L508
Code 05, Gray Code	16	PT65305	PT65305L254	PT65305L508
Comp. of Binary Coded Hex.	16	PT65306	PT65306L254	PT65306L508
Code 11, ON/OFF	4	PT65311	PT65311L254	PT65311L508
Code 12, Binary Coded Dec.	4	PT65312	PT65312L254	PT65312L508
Code 21, Decimal	4	PT65321	PT65321L254	PT65321L508
Code 24, Binary Coded Dec.	6	PT65324	PT65324L254	PT65324L508
Code 25, Binary Coded Dec.	6	PT65325	PT65325L254	PT65325L508
Code 26, Octal	8	PT65326	PT65326L254	PT65326L508

Segment Wheel Actuator Models		Complete Model No. by Terminal Style		
			Right Angle	
		Straight	Pitch	
Code (see truth tables)	Positions		.100" (2,54)	.200"(5,08)
Binary Coded Decimal	10	PT65501	PT65501L254	PT65501L508
Comp. of Binary Coded Dec.	10	PT65502	PT65502L254	PT65502L508
Binary Coded Hexadecimal	16	PT65503	PT65503L254	PT65503L508
Code 05, Gray Code	16	PT65505	PT65505L254	PT65505L508
Comp. of Binary Coded Hex.	16	PT65506	PT65506L254	PT65506L508
Code 11, ON/OFF	4	PT65511	PT65511L254	PT65511L508
Code 12, Binary Coded Dec.	4	PT65512	PT65512L254	PT65512L508
Code 21, Decimal	4	PT65521	PT65521L254	PT65521L508
Code 24, Binary Coded Dec.	6	PT65524	PT65524L254	PT65524L508
Code 25, Binary Coded Dec.	6	PT65525	PT65525L254	PT65525L508
Code 26, Octal	8	PT65526	PT65526L254	PT65526L508

All models listed on this page have 2 Common terminals except Code 11 and Code 24 which have one.

Other codes are available - consult factory.

G

.126
(3.20)

.041
(1.05)

.041
(1.05)

SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE.
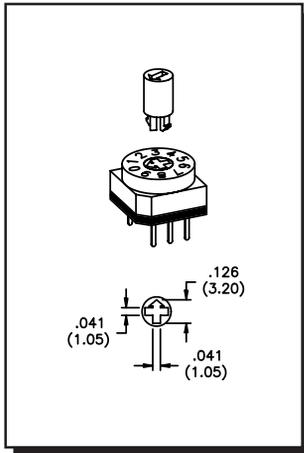
| Models for use with separate Actuator selections shown below		Complete Model No. by Terminal Style		
		Straight	Right Angle	
			Pitch	
Code (see truth tables)	Positions		.100" (2,54)	.200"(5,08)
Binary Coded Decimal	10	PT65701	PT65701L254	PT65701L508
Comp. of Binary Coded Dec.	10	PT65702	PT65702L254	PT65702L508
Binary Coded Hexadecimal	16	PT65703	PT65703L254	PT65703L508
Code 05, Gray Code	16	PT65705	PT65705L254	PT65705L508
Comp. of Binary Coded Hex.	16	PT65706	PT65706L254	PT65706L508
Code 11, ON/OFF	4	PT65711	PT65711L254	PT65711L508
Code 12, Hexadecimal	4	PT65712	PT65712L254	PT65712L508
Code 21, Decimal	4	PT65721	PT65721L254	PT65721L508
Code 24, Binary Coded Dec.	6	PT65724	PT65724L254	PT65724L508
Code 25, Binary Coded Dec.	6	PT65725	PT65725L254	PT65725L508
Code 26, Octal	8	PT65726	PT65726L254	PT65726L508
Code 27, Octal complement	8	PT65727	PT65727L254	PT65727L508

New!

Actuators shown snap-fit securely into PT657.. switch models above.
Order separately by Model number shown.
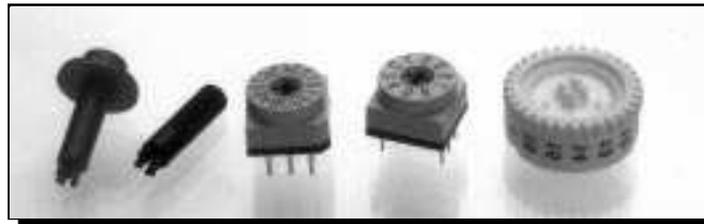
Spindle color: gray

Model No.	Dim. A
SAPT65454	.213
SAPT65473	.287
SAPT654116	.457
SAPT654133	.524

.157
(4.00)

.157
(4.00)

.094
(2.40)

A

A
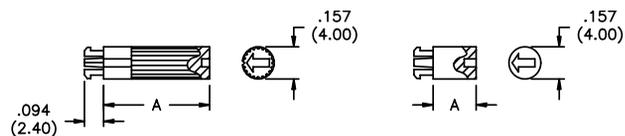
Short spindle above applies
to model SAPT65454 only

Other colors available - consult factory

G

Knob color: red

Model No.	Dim. A
DKPT6510553	.209
DKPT65105157	.618
DKPT65105291	1.146

A

.039
(1.00)

.126
(3.10)

.083
(2.10)

A

.039
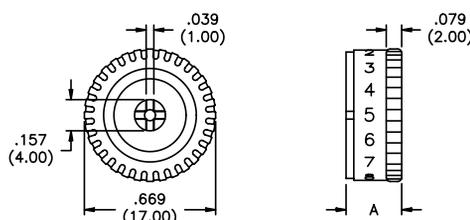(1.00)

.160
(4.10)

.122
(3.10)

Ø.247
(3.10)

Ø.413
(10.50)
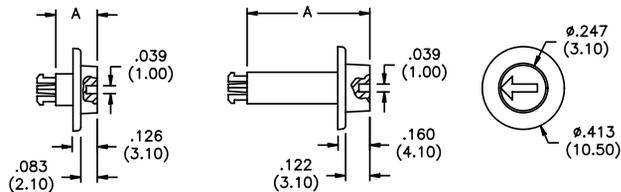
Short knob above applies
to model DKPT6510553 only

Other colors available - consult factory
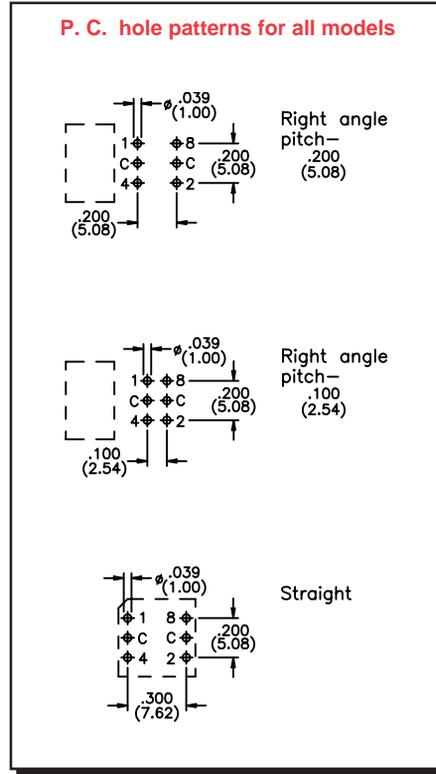
Knurled Wheel color: white

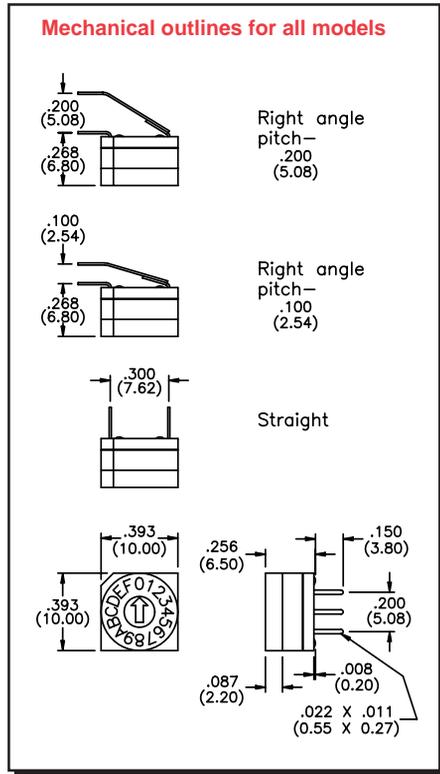| Model No.	Dim. A
DRPT651772	.283

.039
(1.00)

.079
(2.00)

.157
(4.00)

.669
(17.00)

2
3
4
5
6
7

A

Other colors available. Customer to specify marking. Consult factory.

PT65 SERIES - 4, 6, 8, 10 & 16 POSITION MODELS

Mechanical outlines for all models

Right angle pitch—.200 (5.08)
.200 (5.08)
.268 (6.80)

Right angle pitch—.100 (2.54)
.100 (2.54)
.268 (6.80)

Straight
.300 (7.62)

.393 (10.00)
.393 (10.00)
.256 (6.50)
.150 (3.80)
.200 (5.08)
.087 (2.20)
.008 (0.20)
.022 X .011 (0.55 X 0.27)

P. C. hole patterns for all models

Right angle pitch—.200 (5.08)
ø.039 (1.00)
.200 (5.08)
.200 (5.08)
1 8
C C
4 2

Right angle pitch—.100 (2.54)
ø.039 (1.00)
.200 (5.08)
1 8
C C
4 2
.100 (2.54)

Straight
ø.039 (1.00)
.200 (5.08)
1 8
C C
4 2
.300 (7.62)

TERMINAL IDENTIFICATION FOR ALL MODELS
(viewed from top of switch inserted into printed circuit board).

Refer to TRUTH TABLES on page G21.

| 1 | | C |
| C | 1 | |

Code 11

	2	
C	C	
1		

Code 12

1	2	
C	C	
4	3	

Code 21

1	2	
C	4	

Code 24

1		
C	C	
4	2	

Codes 25 & 26

1	8	
C	C	
4	2	
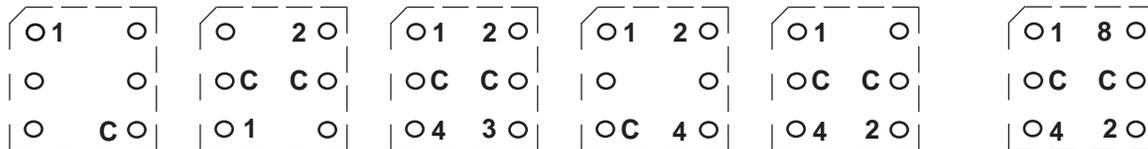
Code 27 and 10 & 16 pos. models