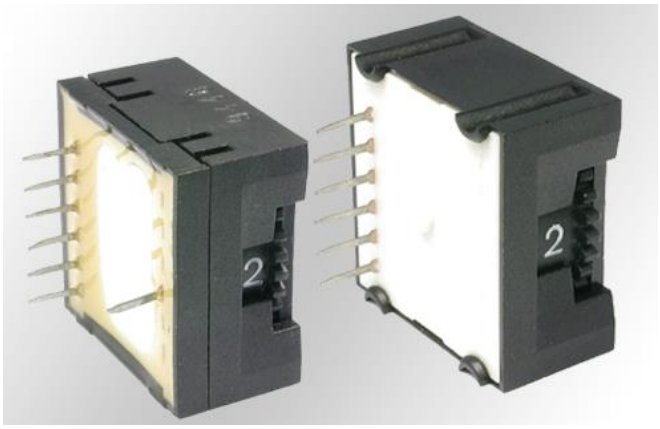
Technical Data Sheet

Rotary Coded Switches TPS and STS

Rotary coded switches, types TPS and STS, offer a multitude of switching codes, build shapes and pin-out configurations. Therefore, they can replace most any competitor's product, fully compatible in respect of electrical output connections.

Switches may be placed on PCBs in vertical or horizontal position and switching range can be limited with stop pin.

TPS and STS are largely identical, yet STS is fully sealed, washable and features a sturdier indexing mechanism.



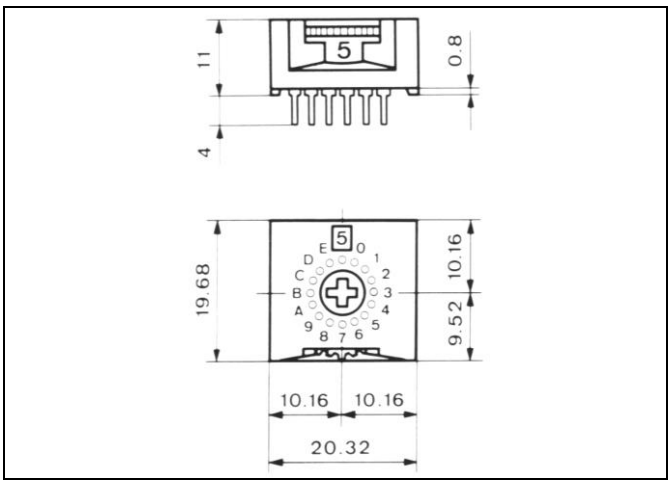
STS (fully sealed and washable) TPS (standard)

Specifications

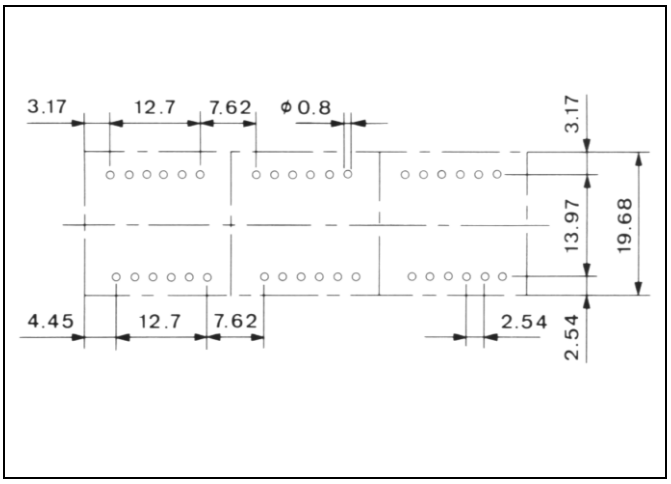
Contact rating:	50 V DC, 25 mA switching
Contact resistance:	< 100 mΩ
Insulation resistance:	≥ 10^7 MΩ
Dielectric strength:	250 V, 50 Hz, for 1 minute
Mechanical life:	> 10^5 revolutions
Permissible ambient temperature δ_U:	-25° . . . +80°C

Terminals on PCB:	Chemical plated, Au over Pd / Ni barrier
Contact spring:	Bronze CuSn 6, contact AuAgNi 71/26/3, rolled 20 µm corrugated
Soldering conditions:	wave soldering max 5 s, 280°C
Lettering and numbering:	Helvetica

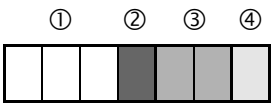
Dimensions



THR Pattern



Ordering Key



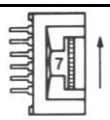
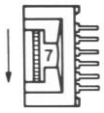
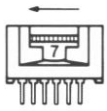
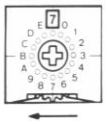
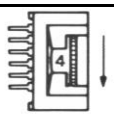
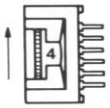
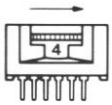
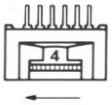
① Type (insert TPS or STS)
② Shape
③ Switching function
④ Soldering connections

Example for ordering TPS

Type > TPS, shape > 1, BCD code > 01, soldering connections double sided > 0

T	P	S	1	0	1	0

Configuration of Rotary Coded Switches, TPS and STS ①

Shape ②	Switching function ③			Soldering connections ④			
	Code	Positions		Double sided	Single sided	Special	Special
 1	BCD code	0 9	01	0	1	8	9
	BCD code	0 9	71	0	1	8	9
	BCD complementary	0 9	02	0	1	8	9
 2	BCD complementary	0 9	72	0	1	8	9
	BCD and BCD compl.	0 9	73	0	–	–	–
	Hexadecimal	0 . . . . . 9 A . . . . . F	06	0	1	8	9
 3	Hexadecimal	0 . . . . . 9 A . . . . . F	74	0	1	8	9
	Hexadecimal compl	0 . . . . . 9 A . . . . . F	76	0	1	8	9
	Hex. and Hex. compl.	0 . . . . . 9 A . . . . . F	78	0	–	–	–
 4	Decimal	0 9	40	0	–	–	–
	Decimal	0 9	70	0	–	–	–
	Dual code	0 15	75	0	1	8	9
	Dual complementary	0 15	77	0	1	8	9
 5	Dual and dual compl.	0 15	79	0	–	–	–
	Changer single pole	+ / –	80	0	1	8	9
	Changer dual pole	+ / –	81	0	1	8	9
 6	BCD code	0 9	91	0	1	8	9
	BCD complementary	0 9	99	0	1	8	9
	BCD and BCD compl.	0 9	82	0	–	–	–
 7	Hexadecimal	0 . . . . . 9 A . . . . . F	94	0	1	8	9
	Hexadecimal compl.	0 . . . . . 9 A . . . . . F	97	0	1	8	9
	Hex. and Hex. compl.	0 . . . . . 9 A . . . . . F	83	0	–	–	–
 8	Decimal	0 9	90	0	–	–	–
	Dual code	0 15	95	0	1	8	9
	Dual complementary	0 15	98	0	1	8	9
	Dual and dual compl.	0 15	84	0	–	–	–
 9	Changer single pole	+ / –	80	0	1	8	9
	Changer dual pole	+ / –	81	0	1	8	9
 0							

If range limiting stop-pin is required, please state in purchase order

Coding Tables (Circuit Characteristics)

Code 01 71 91

Switching postion	Input connected with: 1	2	4	8	C
0					■
1	■				■
2		■			■
3	■	■			■
4			■		■
5	■		■		■
6		■	■		■
7	■	■	■		■
8				■	■
9	■			■	■

Code 02 72 99

Switching postion	Input connected with: $\bar{1}$	$\bar{2}$	$\bar{4}$	$\bar{8}$	C
0	■	■	■	■	■
1		■	■	■	■
2	■		■	■	■
3			■	■	■
4	■	■		■	■
5		■		■	■
6	■			■	■
7				■	■
8	■	■	■		■
9		■	■		■

Code 73 82

Switching postion	Input connected with: 1	2	4	8	$\bar{1}$	$\bar{2}$	$\bar{4}$	$\bar{8}$	C
0					■	■	■	■	■
1	■					■	■	■	■
2		■			■		■	■	■
3	■	■					■	■	■
4			■		■	■		■	■
5	■		■			■		■	■
6		■	■		■			■	■
7	■	■	■					■	■
8				■	■	■	■		■
9	■			■		■	■		■

Code 06 74 75 94 95

Switching postion		Input connected with: 1	2	4	8	C
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	■	■	■	■	■

Code 76 77 97 98

Switching postion		Input connected with: $\bar{1}$	$\bar{2}$	$\bar{4}$	$\bar{8}$	C
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					■

Code 78 79 83 84

Switching postion		Input connected with: 1	2	4	8	$\bar{1}$	$\bar{2}$	$\bar{4}$	$\bar{8}$	C
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	■	■	■	■					■

Code 40 70 90

Switching postion		Input connected with: 0	1	2	3	4	5	6	7	8	9	C
0		■										■
1			■									■
2				■								■
3					■							■
4						■						■
5							■					■
6								■				■
7									■			■
8										■		■
9											■	■

Code 07

Switching postion		Input connected with: +	−	C
+		■		■
−			■	■
+		■		■
−			■	■
+		■		■
−			■	■
+		■		■
−			■	■
+		■		■
−			■	■

Code 08

Switching postion		Input connected with: +	−	$+^1$	$-^1$	C	C^1
+		■		■		■	■
−			■		■	■	■
+		■		■		■	■
−			■		■	■	■
+		■		■		■	■
−			■		■	■	■
+		■		■		■	■
−			■		■	■	■
+		■		■		■	■
−			■		■	■	■

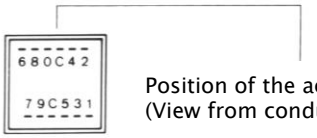
Code 80

Switching postion		Input connected with: A^1	B^1	C^1
+			■	■
−		■		■
+			■	■
−		■		■
+			■	■
−		■		■
+			■	■
−		■		■
+			■	■
−		■		■

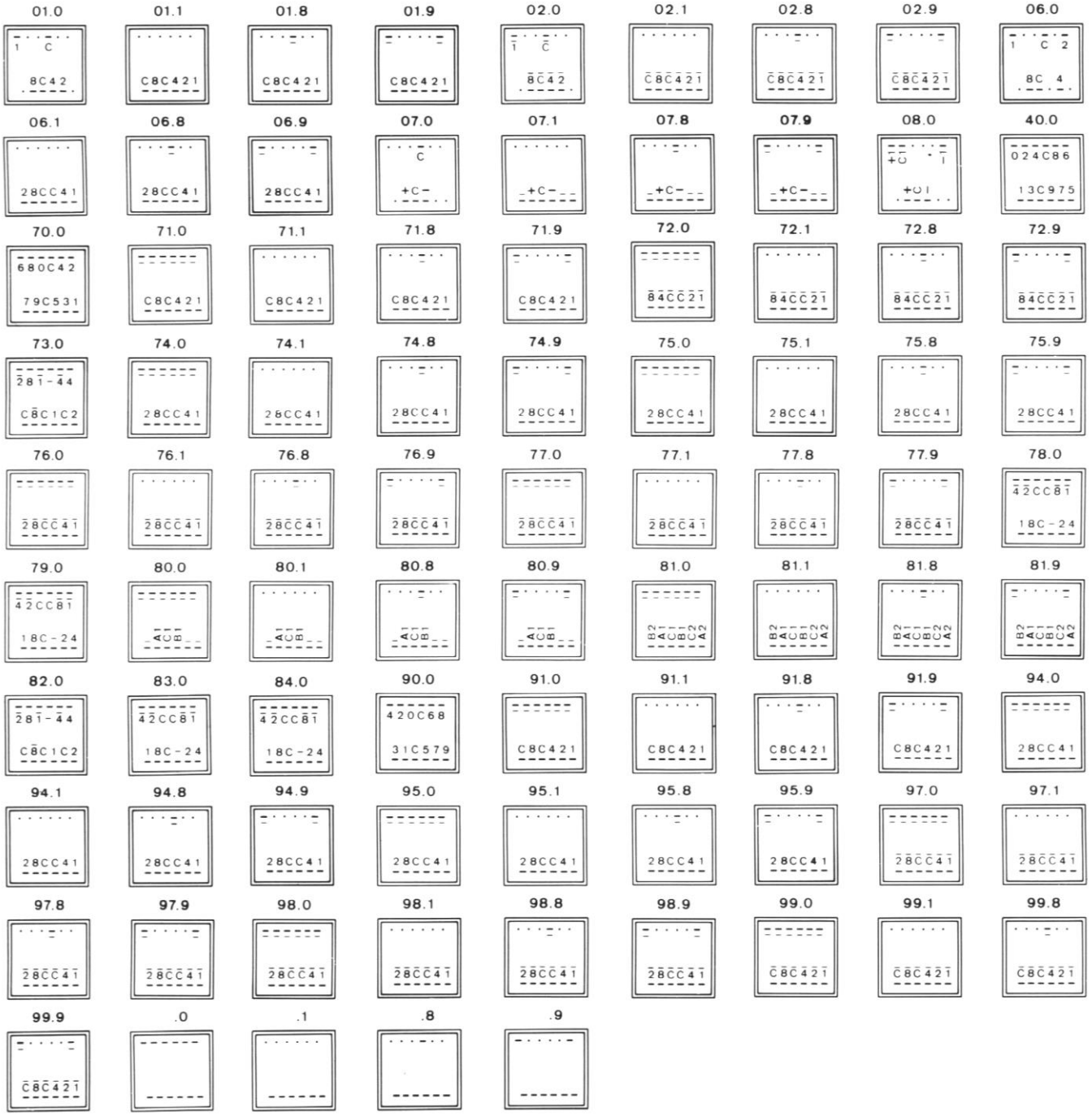
Code 81

Switching postion		Input connected with: A^1	B^1	A^2	B^2	C^1	C^2
+			■		■	■	■
−		■		■		■	■
+			■		■	■	■
−		■		■		■	■
+			■		■	■	■
−		■		■		■	■
+			■		■	■	■
−		■		■		■	■
+			■		■	■	■
−		■		■		■	■

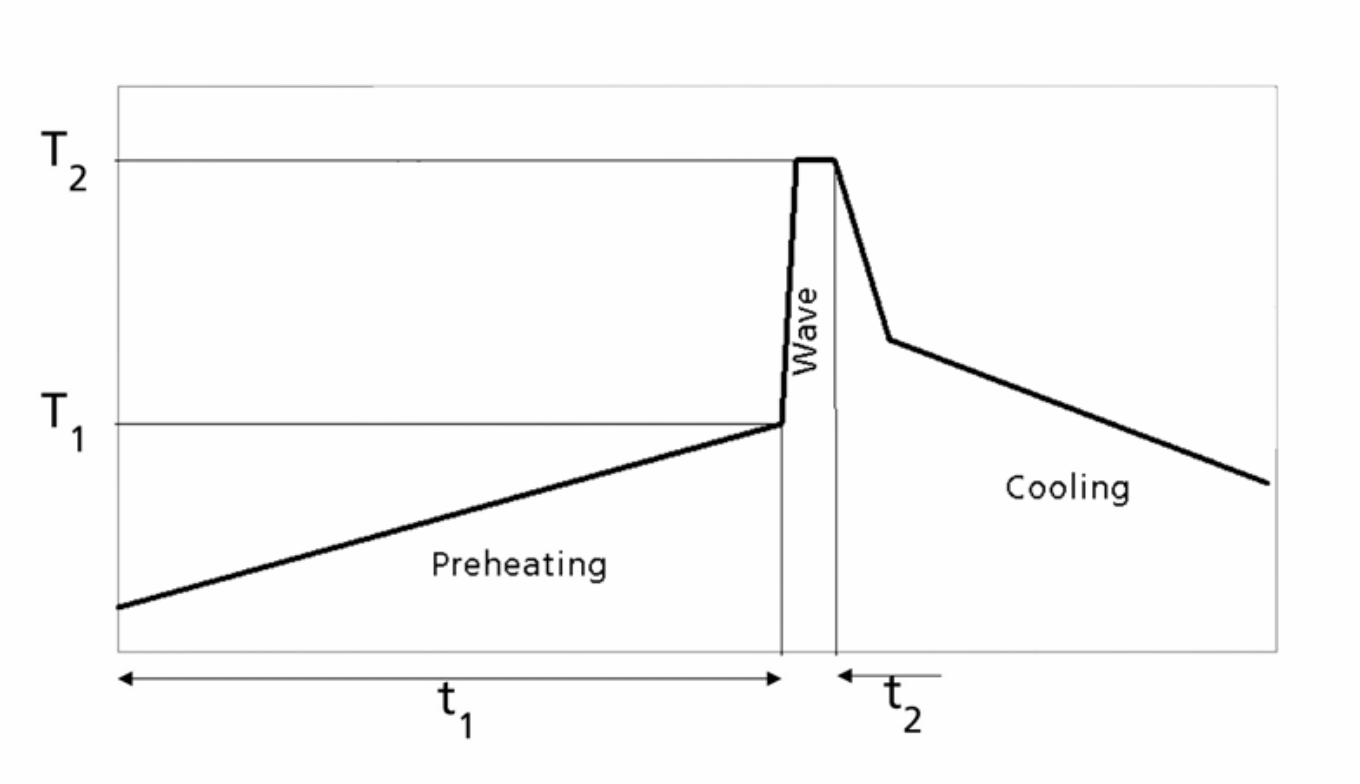
Electrical Connection Patterns



Position of the actuator
(View from conductor side)



Recommended Temperature Profile for lead free Wave Soldering through hole Components



		Recommendation	Maximum
Preheating	T1	110°C	120°C
	t1	80s	80s
Wave Soldering	T2	260°C	280°C
Temperature at PCB side next to heatsource			max. 5s
Gradient preheating			+2°C/s
Gradient cooling			-4°C/s

Specifications are subject to change without notice.