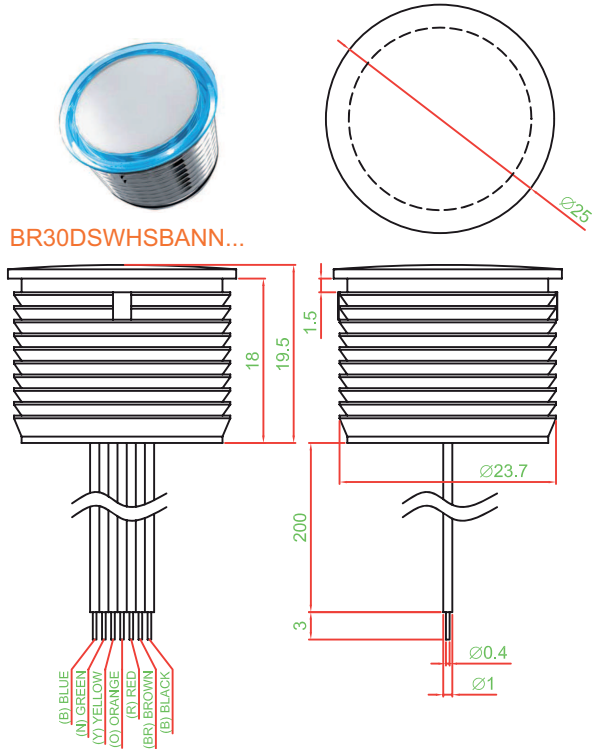


Touch Switches

Touch-Sensitive Switch with LED Illumination

BR30 Series

DIMENSIONS (Unit: MM)



SWITCH SPECIFICATIONS

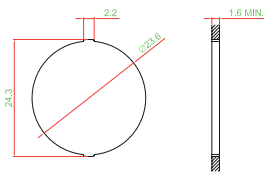
Poles and Positions: One channel
 Protection: Moisture and dust-tight
 Circuit: Capacitive analog signal
 Operating Temperature: -20°C to +70°C

Electrical Characteristics						
Symbol	Parameter	Conditions	Min.	Typ.	Max.	Units
V _{CC}	Operating Voltage		2.0	3.0	5.5	V
F	System Oscillator	V _{CC} = 3V		16		KHz
F _{SEN}	Sensor Oscillator	V _{CC} = 3V, Output no load		1M		Hz
V _{IH}	Input Ports	V _{CC} = 3V, Output no load		1.5	3.0	μA
V _{IL}	Input Ports	Input low Voltage	0		0.2	V
I _{OP}	Operating Current	Input high Voltage	0.8		1.0	V
I _{OL}	Output Port Sink Current	V _{CC} = 3V, VOL=0.6V		8		mA
I _{OH}	Output Port Source Current	V _{CC} = 3V, VOH=2.4V		-4		mA
T _R	Output Response Time	V _{CC} = 3V			220	ms
R _{PH}	Input Pin Pull-High Resistor	V _{CC} = 3V		35K		Ω
R _{PL}	Input Pin Pull-Low Resistor	V _{CC} = 3V		28K		Ω

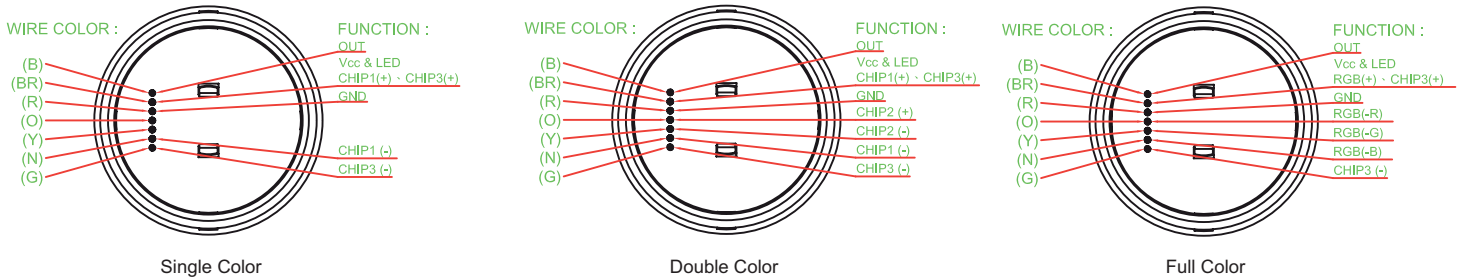
LED SPECIFICATIONS

	Unit	Value / LED Color		
		Green	Yellow	Red
Forward Current	I _f mA	20	20	20
Reverse Voltage	V _r V	5.0	5.0	5.0
Reverse Current	I _r μA	10	10	10
Forward Voltage @ 20mA	V _f V	2.1 to 2.5	2.0 to 2.5	2.0 to 2.5
Luminous Intensity @ 20mA	I _v mcd	60	120	150

PANEL CUTOUT



SCHEMATIC



How to order:

BR30

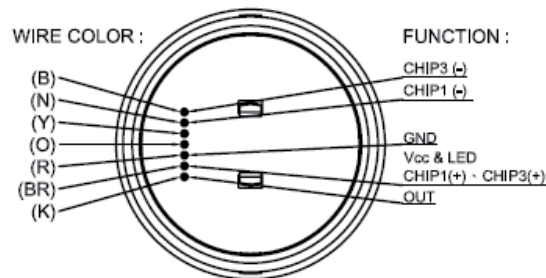
- | | | | | |
|---|---|---|---|--|
| <p>1 OPERATING TYPE</p> <p>D Direct Mode (Standard)</p> <p>T Toggle Mode</p> <p>2 POLE:</p> <p>S Single Pole (Standard)</p> <p>3 TERMINATION:</p> <p>W Wire Type</p> <p>4 ACTIVITY:</p> <p>H High Active (Standard)</p> <p>L Low Active</p> <p>5 FRAME:</p> <p>S Standard Type</p> | <p>6 HOUSING COLOR:</p> <p>B White Light (Standard)</p> <p>7 DIFFUSER PLATE COLOR:</p> <p>A Black(Standard)</p> <p>8 CAP SYMBOL:</p> <p>N Without Symbol</p> <p>... Please refer to appendix in the last page for example:</p> <p>K3 </p> <p>E1 </p> | <p>9 CAP SYMBOL TYPE:</p> <p>N Without Symbol</p> <p>P Printed Symbol</p> <p>L Laser Carved Symbol</p> <p>10 COLOR LED 1 (Chip 1 Inside):</p> <p>N Without LED</p> <p>G Blue</p> <p>F Green</p> <p>C Red</p> <p>B White</p> <p>E Yellow</p> <p>D Orange</p> <p>V Full Color</p> | <p>11 COLOR LED 2 (Chip 2 Inside):</p> <p>N Without LED</p> <p>G Blue</p> <p>F Green</p> <p>C Red</p> <p>B White</p> <p>E Yellow</p> <p>D Orange</p> <p>V Full Color</p> <p>12 COLOR LED OUTER RING (Chip 3):</p> <p>N Without LED</p> <p>G Blue</p> <p>F Green</p> <p>C Red</p> <p>B White</p> <p>E Yellow</p> <p>D Orange</p> | <p>13 SENSITIVITY:</p> <p>18 18 pF (Standard)</p> <p>16 16 pF</p> <p>20 20 pF</p> <p>14 CABLE & CONNECTOR:</p> <p>N Without Cable</p> <p>S Cable Length 200 mm (Standard)</p> <p>... Other Length...</p> |
|---|---|---|---|--|

All specifications are restricted to QA test criteria. DRW: D.L. JIN, CHK: D.F. LEE, APP: H.Z. QIU

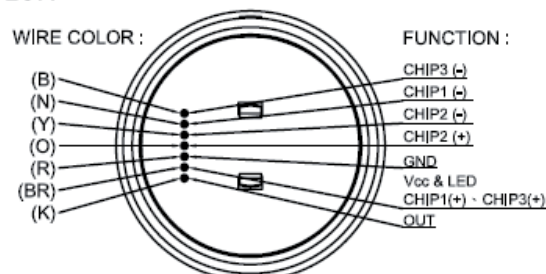
SPECIFICATIONS

1. POLE - POSITION : One-Chanel
2. CIRCUIT FEATURE : Capacitive analog signal
3. FEATURES OF LED TOUCH SWITCH :
 - 3.1 Operating voltage recommended 3.5~5.5 V(DC)
 - 3.2 Built-in regulator for touch sensor (2.0V)
 - 3.3 The response time max about 220mS @VCC=3V.
 - 3.4 Sampling length time about 1.6mS.
 - 3.5 Provides direct mode or toggle mode by pad option.
 - 3.6 Output modes can be selected active high or active low by pad option.
 - 3.7 the surface can display in two different designs: 1. symbol display in the middle by RGB LED 2. outer circle background controlled by single chip of LED; the LED is independent installed and both can be reacted by external chips.
 - 3.8 Auto calibration for life, the re-calibration period is about 4.0sec, when key has not be touched.
4. DESCRIPTION OF LED TOUCH SWITCH :

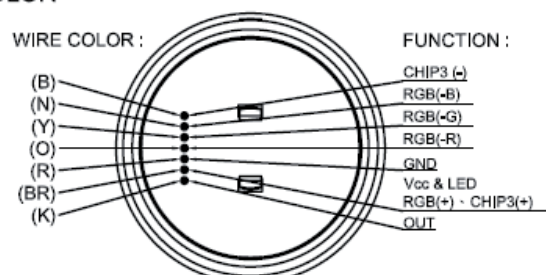
SINGLE COLOR



TWO COLOR



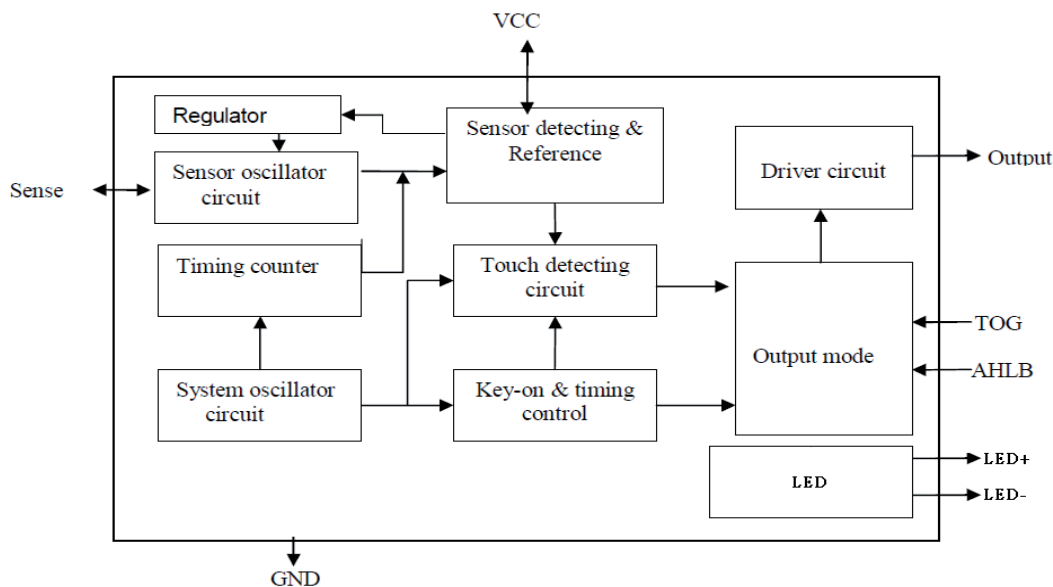
FULL COLOR



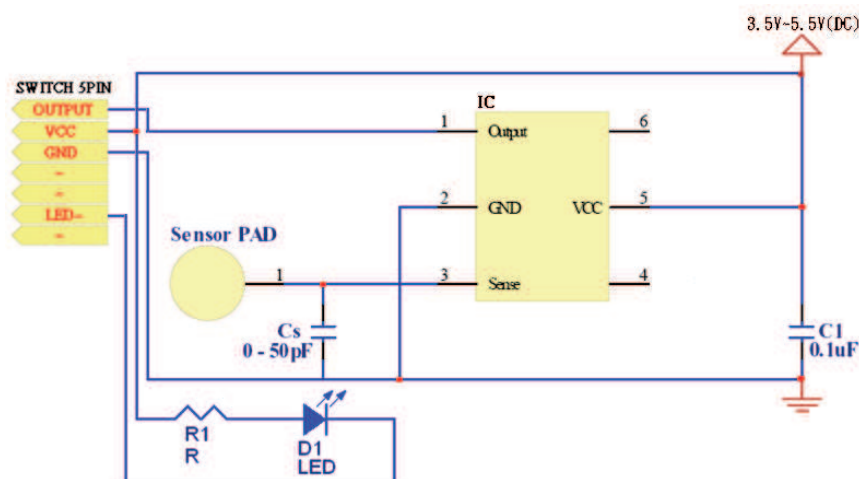
5. PIN DESCRIPTION OF LED TOUCH SWITCH :

Pin No.	Wire Color	Pin Function Description		
Con1	B(Black)	Vcc 、 chip1+(chip1.1+) 、 chip2+		
Con2	BR(Brown)	VCC		
Con3	R(Red)	GND		
		Full Color	Single Color	Two Color
Con4	O(Orange)	chip1 R-	-	chip1.2+
Con5	Y(Yellow)	chip1 G-	-	chip1.2-
Con6	N(Green)	chip1 B-	chip1-	chip1.1-
Con7	B(Blue)	chip2-		

6. BLOCK SCHEMATIC OF LED TOUCH SWITCH :



7. TYPICAL APPLICATION OF LED TOUCH SWITCH :



8. ABSOLUTE MAXIMUM RATINGS OF LED TOUCH SWITCH :

Parameter	Symbol	Conditions	Value	Unit
Operating Temperature	TOP	-	-20 ~ +70	?
Storage Temperature	TSTG	-	-50 ~ +125	?
Power Supply Voltage	VCC	Ta=25?	GND-0.3 ~ GND+5.5	V
Input Voltage(TOG / AHLB)	VIN	Ta=25?	GND-0.3 ~ VCC+0.3	V
ESD	ESD	-	? 4	KV

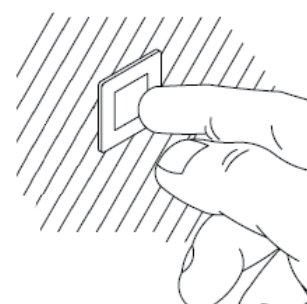
Note : GND is system ground

9. ELECTRICAL CHARACTERISTICS :

Symbol	Parameter	Conditions	Min	Typ.	Max	Units
VCC	Operating Voltage		3	3.5	5.5	V
F	System oscillator	VCC=3V		16		KHz
FSEN	Sensor oscillator	VCC=3V ,Output no load		1M		Hz
VIH	Input Ports	VCC=3V ,Output no load		1.5	3.0	uA
VIL	Input Ports	Input Low Voltage	0		0.2	V
IOP	Operating Current	Input High Voltage	0.8		1.0	V
IOL	Output Port Sink Current	VCC=3V, VOL=0.6V		8		mA
IOH	Output Port Source Current	VCC=3V, VOH=2.4V		-4		mA
TR	Output Response Time	VCC=3V			220	mS
RPH	Input Pin Pull-high Resistor	VCC=3V		35K		Ω
RPL	Input Pin Pull-low Resistor	VCC=3V		28K		Ω

10. SENSITIVITY MODE :

1	Standard	Conductive distance.								
2	Capacitance	How to order : (16pF : H ; 20pF : L)								
<table border="1"> <thead> <tr> <th colspan="2">SENSITIVITY</th> </tr> </thead> <tbody> <tr> <td><input type="checkbox"/></td> <td>18 pF (std.)</td> </tr> <tr> <td>-16P</td> <td>16 pF</td> </tr> <tr> <td>-20P</td> <td>20 pF</td> </tr> </tbody> </table>			SENSITIVITY		<input type="checkbox"/>	18 pF (std.)	-16P	16 pF	-20P	20 pF
SENSITIVITY										
<input type="checkbox"/>	18 pF (std.)									
-16P	16 pF									
-20P	20 pF									



11. APPLICATION NOTE :

11.1 After power-on have about 0.5sec stable-time, during this time do not touch the key pad. And the function is disabled. If the supply voltage drift or shift quickly, maybe causing false detections.

11.2 The material of panel covering on the Switch can not include the metal or the electric element.

11.3 At Direct mode: IC Maximum on time about 80 Sec.

12. MATERIALS :

Cover: PC

Actuator: POM

Base Frame: PA + GF

Terminals: Phosphor bronze silver plated

Spring: Phosphor bronze silver plated

Touch Switches

Touch-Sensitive Switch with LED Illumination

BR30 Series

13. SYMBOLS :

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
A	0	1	2	3	4	5	6	7	8	9										
B	A	B	C	D	E	F	G	H	I	J										
C	K	L	M	N	O	P	Q	R	S	T										
D	U	V	W	X	Y	Z	POWER	ON OFF	ON	OFF										
E	OK		Auto	Enter	Start	STOP	OPEN	CLOSE	Exit	Move										
F	SET	Reset	Light	Alarm	Menu	Next	Back	Delete	Motor	Save										
G	Up	Down	Right	Left	Test	End	Insert	Lock	Print	+/-										
H	ESC	BC.	HOME	Health	D-LED 2	OC GENIE	VIDEO INPUT	clr CMOS	Green Power	Save OK										
I	B/R +	Uncl Cancel	T/L -	F1	F2	F3	F4	F5	F6	F7										
J	F8	F9	F10	F11	F12	F13	F14	IN 1	IN 2	IN 3										
K	IN 4	IN 5	IN 6																	
L	+	-	x	÷	=	↑	→	≡	▶	⏪										
M							↑	→	↑	⇒										
N	↑	→	↗	↖	▲	▶	◀	▶	◀	▶										
O	■	⏪	↔	◀	▶	🔊	🔊	📶	📶											
P				x	✓	⏹	Config.	TIME LINE	ME1	ME2										
Q	ME3	ME4	BGND 3D DVE1	BGND 3D DVE2	BUS COLOR	ME BUTTON LINK	*	INSERT ←	WIPE											
R	⏪	ALL		VP		COPY		RECORD MODE	↕											
S		♥	mute																	
T		hold	group	m1	m2	m3	m4	m5	e1	e2										
U	e1	e2	chair	undo	redo	touch	store	recall	e1	e2										
V	e3	e4				CLEAR	CROSS WIND	AMMO TEMP	BARO PRESS	AIR TEMP										
W	BORE- SIGHT	CANT	LEAD	RANGE	MRS	ZERO	TEST	UD	LR											
X	ID	Disp																		