DIMENSIONS (Unit: MM)

BR30DSWHSBANN...

Ø25

1.5
18
19.5
Ø23.7
200
3
Ø0.4
Ø1

(B) BLUE
(N) GREEN
(Y) YELLOW
(O) ORANGE
(R) RED
(BR) BROWN
(B) BLACK

SWITCH SPECIFICATIONS

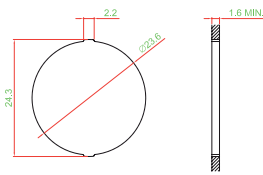Poles and Positions: One channel
Protection: Moisture and dust-tight
Circuit: Capacitive analog signal
Operating Temperature: -20℃ to +70℃

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

PANEL CUTOUT

2.2
Ø23.6
24.3
1.6 MIN.

LED SPECIFICATIONS

		Unit	Value / LED Color		
			Green	Yellow	Red
Forward Current	If	mA	20	20	20
Reverse Voltage	Vr	V	5.0	5.0	5.0
Reverse Current	Ir	μA	10	10	10
Forward Voltage @ 20mA	Vf	V	2.1 to 2.5	2.0 to 2.5	2.0 to 2.5
Luminous Intensity @ 20mA	Iv	mcd	60	120	150

(+)o———o(-)

SCHEMATIC

WIRE COLOR :
(B)
(BR)
(R)
(O)
(Y)
(N)
(G)

FUNCTION :
OUT
Vcc & LED
CHIP1(+) 、CHIP3(+)
GND

CHIP1 (-)
CHIP3 (-)

Single Color

WIRE COLOR :
(B)
(BR)
(R)
(O)
(Y)
(N)
(G)

FUNCTION :
OUT
Vcc & LED
CHIP1(+) 、CHIP3(+)
GND
CHIP2 (+)
CHIP2 (-)
CHIP1 (-)
CHIP3 (-)

Double Color

WIRE COLOR :
(B)
(BR)
(R)
(O)
(Y)
(N)
(G)

FUNCTION :
OUT
Vcc & LED
RGB(+) 、CHIP3(+)
GND
RGB(-R)
RGB(-G)
RGB(-B)
CHIP3 (-)

Full Color

How to order:

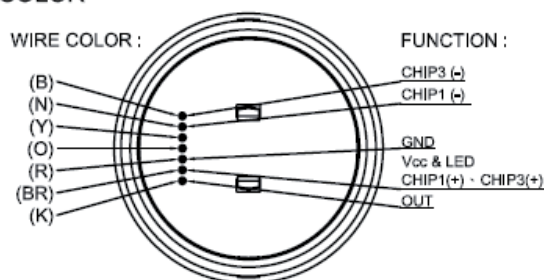**BR30** [1] [2] [3] [4] [5] [6] [7] [8] [9] [10] [11] [12] [13]
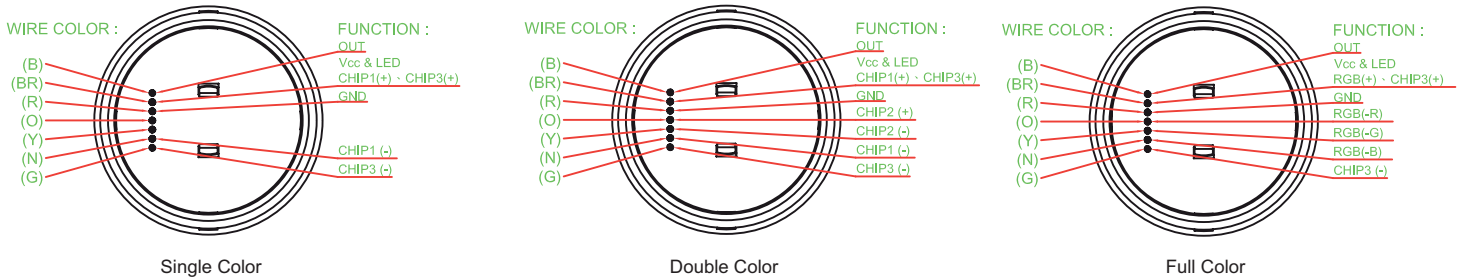
1 OPERATING TYPE
D   Direct Mode (Standard)
T   Toggle Mode

2 POLE:
S   Single Pole (Standard)

3 TERMINATION:
W   Wire Type

4 ACTIVITY:
H   High Active (Standard)
L   Low Active

5 FRAME:
S   Standard Type

6 HOUSING COLOR:
B   White Light (Standard)

7 DIFFUSER PLATE COLOR:
A   Black(Standard)

8 CAP SYMBOL:
N   Without Symbol
... Please refer to appendix
     in the last page
     for example:
K3
E1

9 CAP SYMBOL TYPE:
N   Without Symbol
P   Printed Symbol
L   Laser Carved Symbol

10 COLOR LED 1 (Chip 1 Inside):
N   Without LED
G   Blue
F   Green
C   Red
B   White
E   Yellow
D   Orange
V   Full Color

11 COLOR LED 2 (Chip 2 Inside):
N   Without LED
G   Blue
F   Green
C   Red
B   White
E   Yellow
D   Orange
V   Full Color

12 COLOR LED OUTER RING (Chip 3):
N   Without LED
G   Blue
F   Green
C   Red
B   White
E   Yellow
D   Orange

13 SENSITIVITY:
18   18 pF (Standard)
16   16 pF
20   20 pF

14 CABLE & CONNECTOR:
N   Without Cable
S   Cable Length 200 mm
     (Standard)
... Other Length...

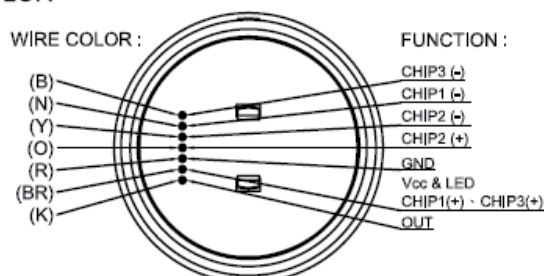## SPECIFICATIONS

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.
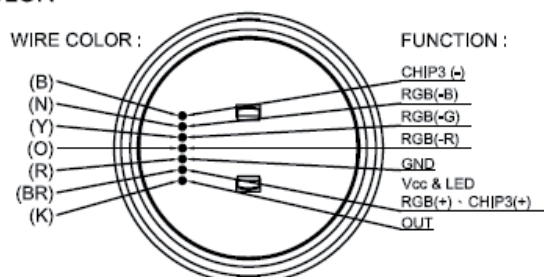
4.   DESCRIPTION OF LED TOUCH SWITCH：

SINGLE COLOR

WIRE COLOR :

(B)
(N)
(Y)
(O)
(R)
(BR)
(K)

FUNCTION :

CHIP3 (-)
CHIP1 (-)

GND
Vcc & LED
CHIP1(+)、CHIP3(+)
OUT

TWO COLOR

WIRE COLOR :

(B)
(N)
(Y)
(O)
(R)
(BR)
(K)

FUNCTION :

CHIP3 (-)
CHIP1 (-)
CHIP2 (-)
CHIP2 (+)
GND
Vcc & LED
CHIP1(+)、CHIP3(+)
OUT

FULL COLOR

WIRE COLOR :

(B)
(N)
(Y)
(O)
(R)
(BR)
(K)

FUNCTION :

CHIP3 (-)
RGB(-B)
RGB(-G)
RGB(-R)
GND
Vcc & LED
RGB(+)、CHIP3(+)
OUT

5. PIN DESCRIPTIONOF 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 :
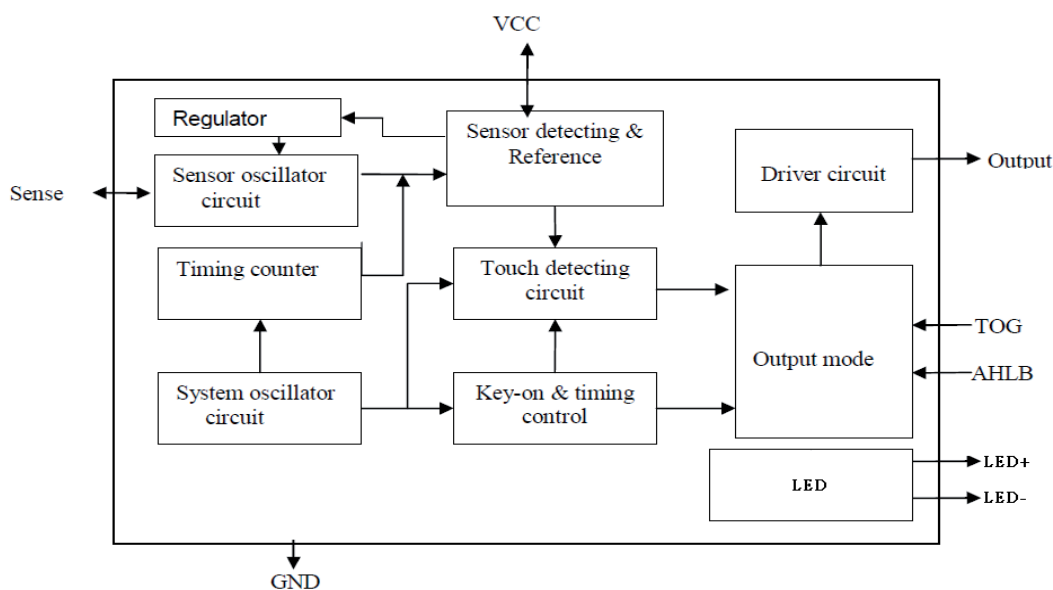
7. TYPICAL APPLICATION OF LED TOUCH SWITCH :
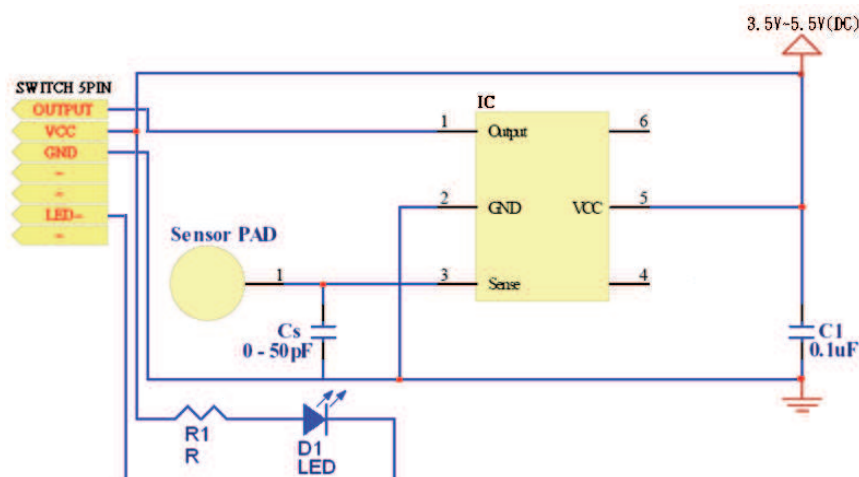
8.   ABSOLUTE MAXIMUM RATINGS OF LED TOUCH SWITCH：

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)

SENSITIVITY	
□	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

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	(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 +	Unclo 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	+	−	✕	÷	=	↑	→	⏏	‖▶	▶‖										
M	✛	✖	↻	↺	↶	↱	↑	→	⇧	⇨										
N	↑	→	⤊	≪	▲	▶	◀◀	▶▶	⏮	⏭										
O	■	‖	◀▶	◆	◆	◀	▶	≣	⊞	▨										
P	⬢	⊶	OC Genie	✕	✓	◐	Config.	TIME LINE	MEI	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	🗄	Multi BIOS	≤	≤	🎥	◎	OC										
T	⍜	hold	group	m1	m2	m3	m4	m5	t1	t2										
U	a1	a2	chair	undo	redo	touch	store	recall	e1	e2										
V	e3	e4	OC	◔	💡	CLEAR	CROSS WIND	AMMO TEMP	BARO PERSS	AIR TEMP										
W	BORE SIGHT	CANT	LEAD	RANGE	MRS	ZERO	TEST	U D	L R	◈										
X	ID	Disp																		