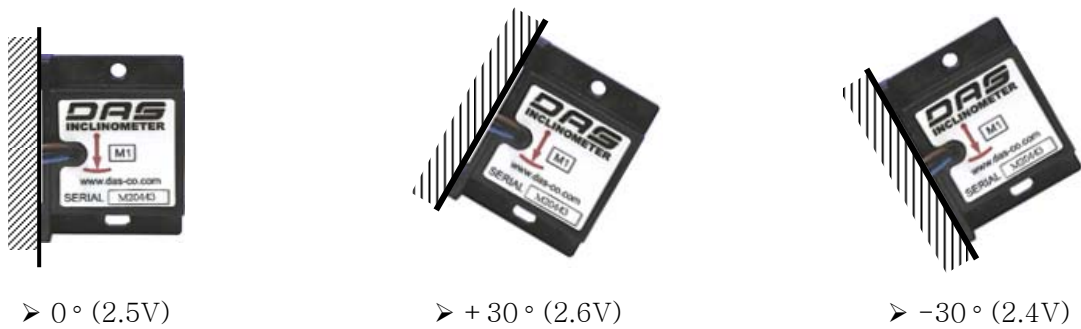


Establishment method example of M series sensors

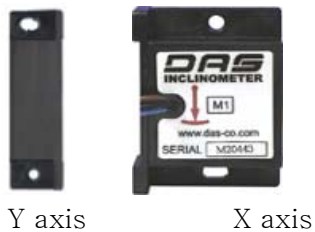
1. x axis direction establishment



2. y axis direction establishment

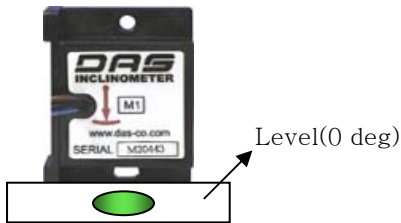


3. X, Y dual axis Sensing



■ **M Serise Calibration Procedure and Program Examples(PIC)**

1. Zero Calibration



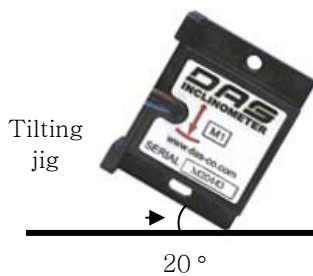
Place tilt sensor in the level(zero)position.
 Wait at least 20 seconds for sensor to settle.
 Adjustment potentiometer Zero Offset
 Until output volt read 2.500Vdc.

*** Program Example**

```
//Zero position read the AD conveter value
// channel is 0
set_adc_channel(0);
zero_offset = read_adc( );

//Zero Offset value save to the EEPROM .
write_exit_eeprom(0x00, zero_offset);
```

2. SPAN Calibration



Place tilt sensor in the level(20°)position
 Wait at least 20 seconds for sensor to settle.
 Adjustment potentiometer Gain
 Until output volt read 3.200Vdc.
 $1^\circ \text{ span} = 3.200 - 2.500 = 0.7\text{V}/20^\circ = 35\text{mV}$
 calibration end.

*** Program Example**

```
//At angle 20 deg read the AD conveter value
SPAN=(read_adc( )-zero_offset)/20;

//Span value save to the EEPROM .
write_exit_eeprom(0x01, SPAN);
```

3. Angle Caculation



If read voltage output is 2.85vdc
 then $\angle^\circ = (\text{read value} - \text{zerooffset}) / \text{Span}$
 $\angle^\circ = (2.85\text{V} - 2.5\text{V}) / 35\text{mV}$
 $\angle^\circ = 10^\circ$

*** Program Example**

```
//read from EEPROM data
zero_offset=read_exit_eeprom(0x00);
SPAN=(read_exit_eeprom(0x01);

// Angle Caculation
angle=(read_adc( )-zero_offset)/SPAN;
```

■ Tilt Sensor Offset and Gain AMP Circuit Diagram

