

# Interface Control Document - AT30TSE75#

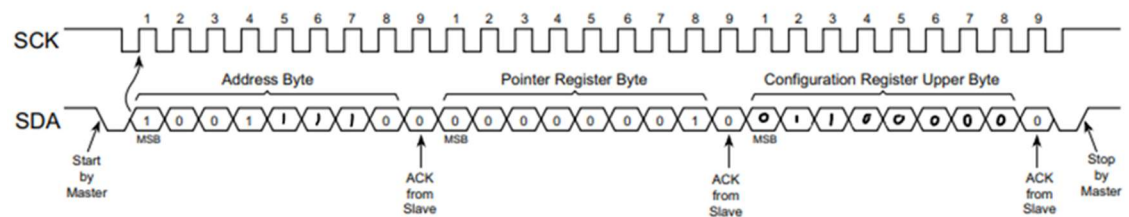
## Temperature Sensor (Lab A4)

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### Specific Order of Signals

1. Set Pointer to Configuration Register AND Write to the Configuration Register

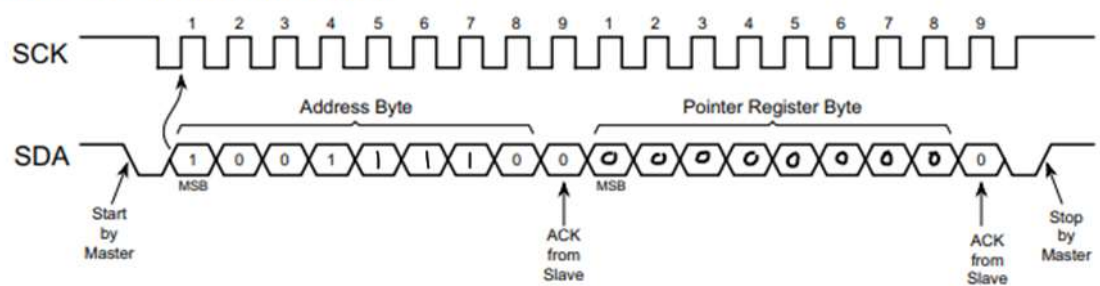
**Figure 6-4. Write to Configuration Register**



- a.
- b. 10011110 00000001 01100000

2. Set Pointer Register to "Temperature Register"

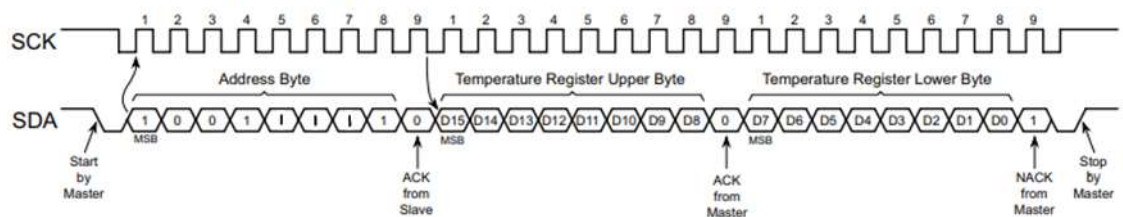
**Figure 6-1. Write Pointer Register**



- a.
- b. 10011110 00000000

3. Read the Temperature Register

**Figure 6-2. Read Temperature Register — 16 Bits**



- a. Note: Assumes the Pointer Register was previously set to point to the Temperature Register.
- b. 10011111 Read(D15:D8) 0 Read(D7:D0) 1

4. Convert Temperature Register Value to Actual Usable Number

- a.  $B_{temp} = D_{15}:D_4$

b. Convert  $B_{temp}$  to Decimal (Not necessary in code)

c.  $R = 0.0625$

d.  $D_{tempC} = B_{temp} * R$

e.  $\left(D_{tempC} * \frac{9}{5}\right) + 32 = D_{tempF}$