

Interface Control Document - AT30TSE75#

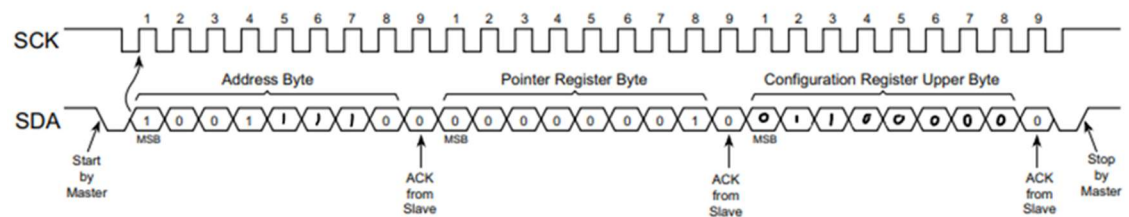
Temperature Sensor (Lab A4)

09/24/2024 Reese Ford

Specific Order of Signals

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

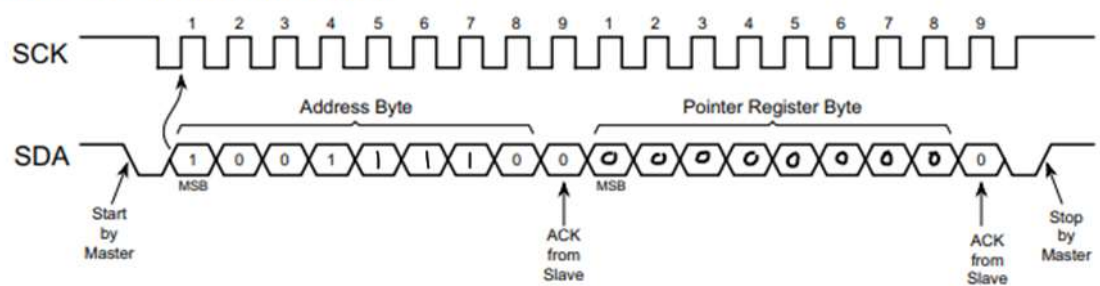
Figure 6-4. Write to Configuration Register



- a.
- b. 10011110 00000001 01100000

2. Set Pointer Register to "Temperature Register"

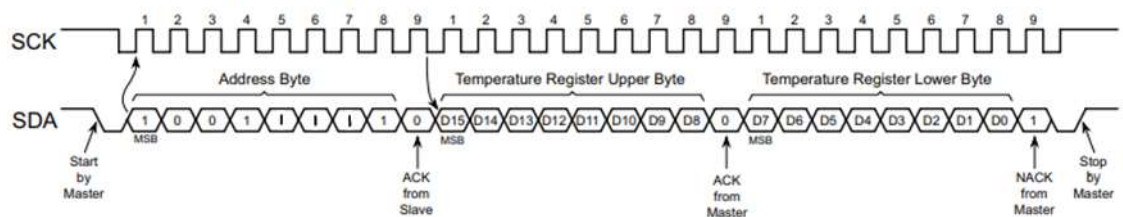
Figure 6-1. Write Pointer Register



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