

**TI HealthTech**

Engineering components for life.

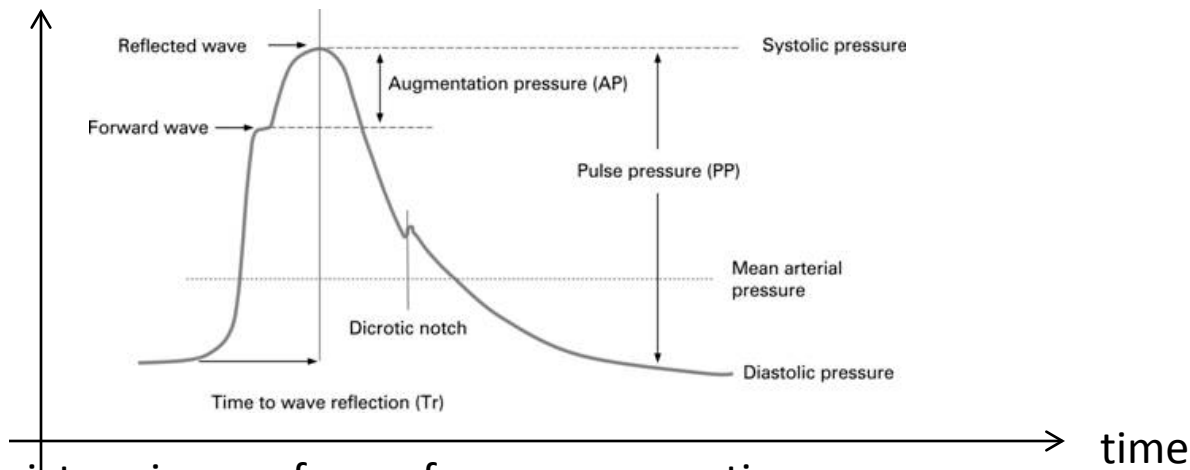
# PPG Waveform using AFE4400 / AFE4490



 Health, Fitness, Imaging

 **TEXAS INSTRUMENTS**

Pressure,  
Volume



The above picture is waveform of pressure over time.

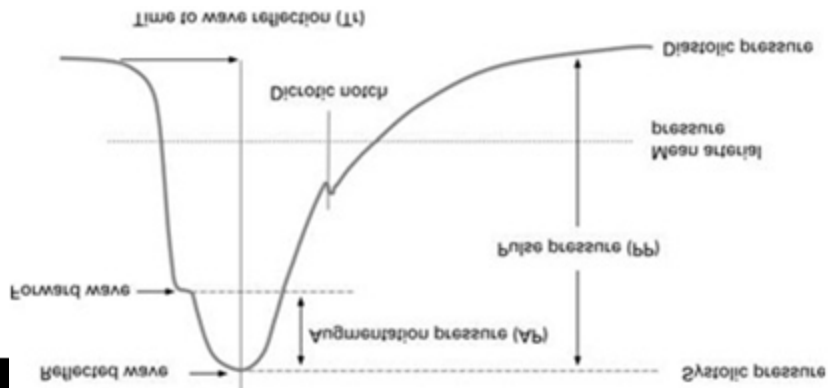
Now, blood volume is directly proportional to pressure.

Hence the systolic pressure above is the point at which blood volume is highest.

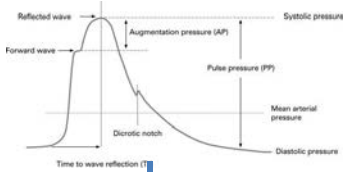
Higher blood volume results in greater attenuation of light & -> lower light current.

Hence the light current output corresponding to above picture is actually inverted and should look like the one below.

The AFE44x0 faithfully reproduces the light current waveform WITHOUT any inversion.

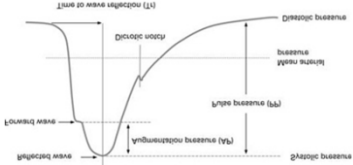


INM should be connected to anode of PD  
And INP to cathode of PD

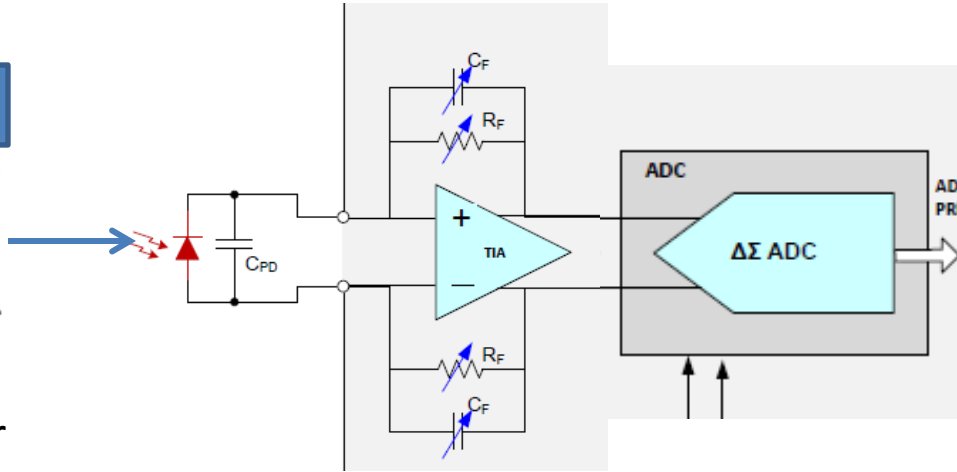


Pressure of blood/blood volume in finger

finger



Intensity of light output from finger



Digital output corresponding to light input as received by Photodiode