Classes

PZENG eng

```
typedef struct eng_t
{
    float volts;            // as read by the PZEM meter
    float amps;
    float watts;
    float kWh;
} VAP;

void setSimulV( float V );  // specifies simulation voltage
void setSimulW( float W );  // specifies simulation power
VAP getSimul();             // returns simulation voltage & power

VAP readPhase( int ph,      // ph can be 1, 2 or 1+2. Reads PZEM or returns
               float scale,
               bool simul ); // ..simulation settings

VAP getPhase( int ph );     // ph can be 1, 2 or 1+2. Returns previous PZEM
                            // or simulation settings
void zerokWh();
int getError( int ph );     // returns error code as set by readPhase()
const char *getErrorStr( int ph );  // interpretation of the error
```

VWSTATS shortT, longT

```
typedef struct stats_t
{
    float Vmin;
    float Vavg;
    float Wavg;
    float Wmax;
    float kWh;
} STATS;

void updateStats( VAP *n );        // call periodically
STATS getStats();                  // get current stats
const char *getVStats();           // get stats string
const char *getWStats();           // get stats string
void resetStats();
```

TMBASE tmb

```
void setHMS( int h=0, int m=0, int s=0 );     // sets time
uint32 getSecCount();
void update();                                // hook in Ticker every second
const char *getTime();
```