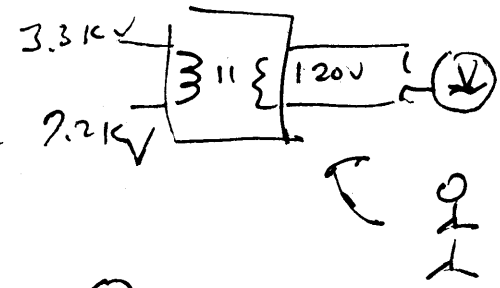
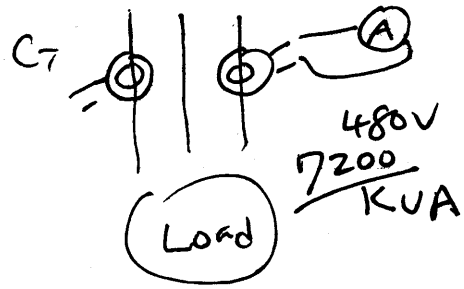
ECET/CPET 491 2012/10/16 ①

* Briefing on your project
  Each team
  - PPT presentation slide — due 23
  - 10 ~15 minutes / Oct. 23 / Oct 30

* Tim
  Add-on Embedded Internet Server for Measurement
  HTTP → Application
  ~~SAP~~

*
CT ~ Current Transformer
PT – Potential Transformer



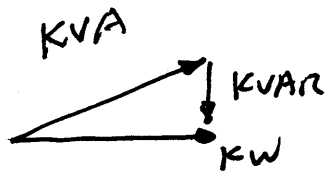


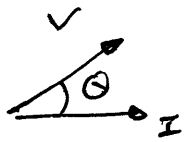
7200 KVA P.F 1.0 – Cos θ

$P = \sqrt{3} \cdot V_L \cdot I_L \cdot \cos\theta$ KW

$= (V_p \cdot I_p \cdot \cos\theta) * 3$

KVA = KW + j KVAR





Motor, Coil — Inductive Load

C_T → Measurement of Load current

1Φ circuit
220V/120V / 200A

$P = V \cdot I \cdot \cos\theta$

$KWH = P_{kw} \cdot Hour$ – Recorded

1 KWH ~ $0.09.

Load Management

Generation (Capacity Issues)
* 75% ~ 80% usage

Transmission

Distribution

Systems

H1
H2
:
HN

B1
Bin

I1
:
In

SMART GRID
wind power
Solar
:

• Andanced Metering Inf... (AMI)
° Smart meter

5 HP motor – 1hp = 746 w × 5
= 3.8 kw

SmartShift — SouthBend

Pilot Program

like in

Privacy { Name
IO

$

* Lesson Learned
* Engineering experience
* Technology

Pat

Power → 5V

Solar

→

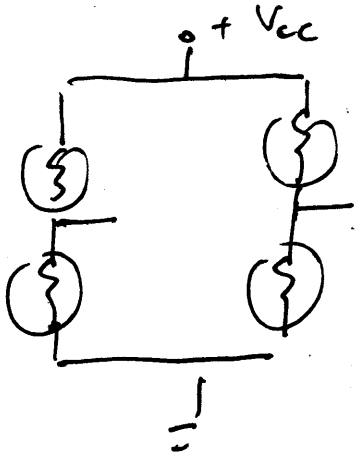
wind

A/D

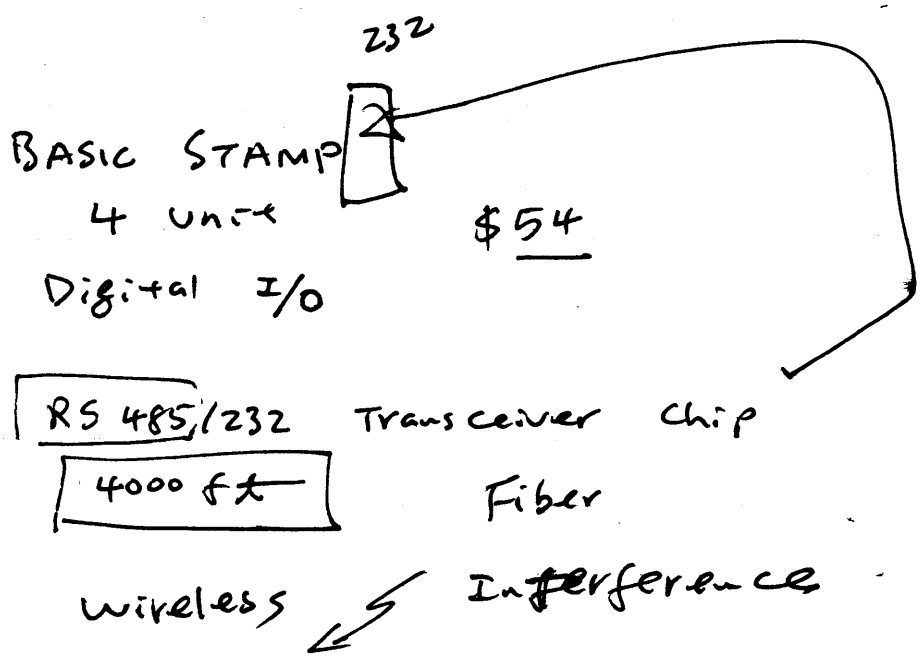
* MOTORS CCW CW

HARL

Tracking ⊏⊐ Sun light



Bridge.


232
BASIC STAMP 2
4 unit
Digital I/O
$54
RS 485/232 Transceiver Chip
4000 ft
Fiber
wireless
Interference