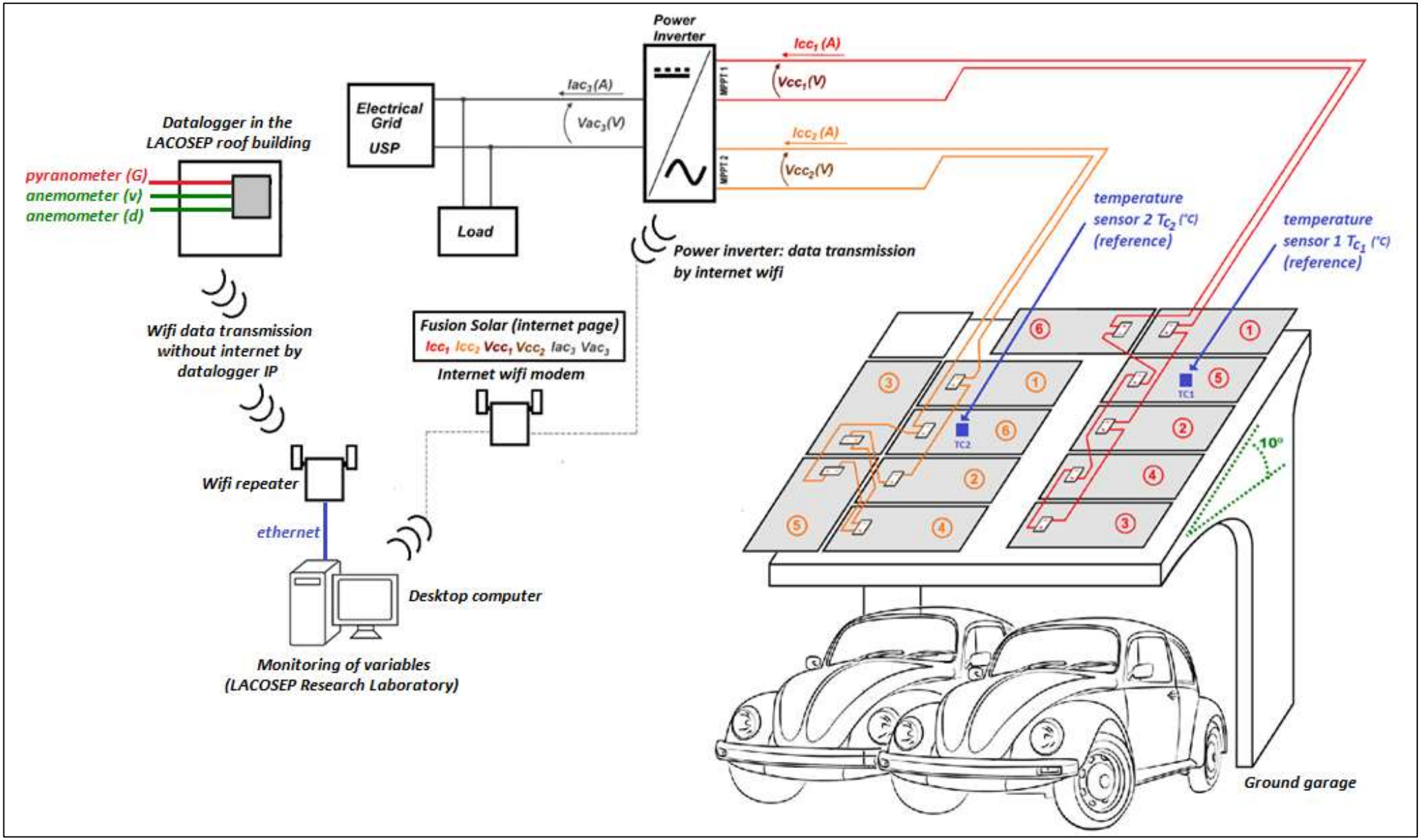
Schematic of Solar Garage Photovoltaic Power and Meteorological Monitoring System



Nomenclature:

Timestamp = data (dd/mm/yyyy) and hour (hh:mm)

Tc_1 = Reference panels temperature of circuit 1 (ºC)

Tc_2 = Reference panels temperature of circuit 2 (ºC)

v = Wind speed (m/s)

d = Wind direction (degree)

G = Solar radiation (W/m^2)

Icc_1 = DC current (A) of circuit 1

Icc_2 = DC current (A) of circuit 2 Vcc_1 = DC voltage (V) of circuit 1

Vcc_2 = DC voltage (V) of circuit 2

Pcc_1 = DC power (W) of circuit 1 obtained by $Vcc_1 * Icc_1$

Pcc_2 = DC power (W) of circuit 2 obtained by $Vcc_2 * Icc_2$

Iac_3 = AC current (A) output of power inverter

Vac_3 = AC voltage (V) output of power inverter

Ec_1 = Power energy (Wh) of circuit 1

Ec_2 = Power energy (Wh) of circuit 2

Ec_t = Total power energy (Wh) obtained by $Ec_1 + Ec_2$

T = Ambient temperature (ºC)

RH = Relative Humidity (%)

INMET = National Institute of Meteorology (http://www.inmet.gov.br/)

Observation: The power inverter power factor is cosΦ = 1, therefore the AC output of power inverter is: Pac3 = Iac3 * Vac3 * cosΦ

Solar garage photovoltaic system monthly report

Photovoltaic Power and Meteorological Measurements

(Data from São Paulo University in São Carlos/SP)

Timestamp (date, hour)	Tc_1 (ºC)	Tc_2 (ºC)	v (m/s)	d (degree)	G (W/m^2)	Icc_1 (A)	Icc_2 (A)	Vcc_1 (V)	Vcc_2 (V)	Pcc_1 (W)	Pcc_2 (W)	Iac_3 (A)	Vac_3 (V)	E_{c1} (Wh)	E_{c2} (Wh)	E_{ct} (Wh)

INMET Measurements

(Data from São Carlos/SP)

Timestamp (date, hour)	T (ºC)	RH (%)	G (W/m^2)