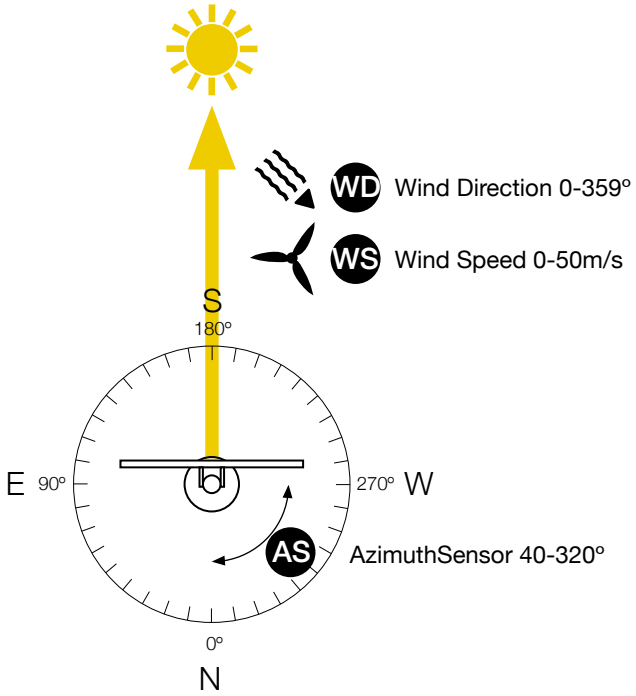
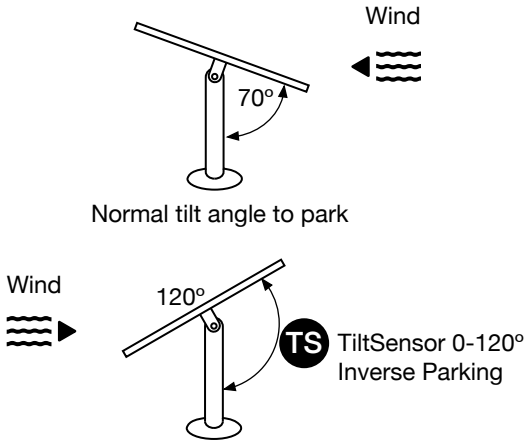
# SOLAR TRACKER SENSORS



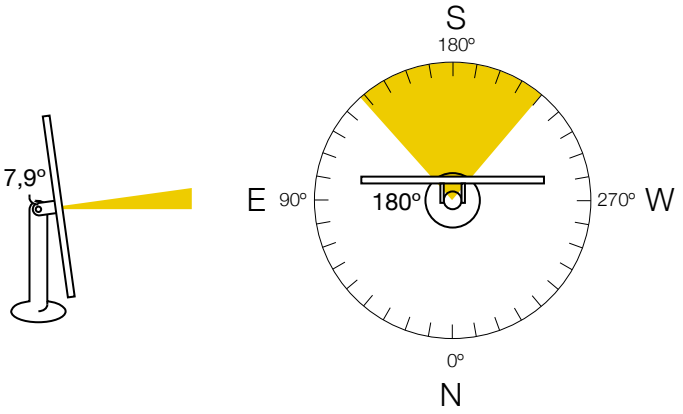




Normally the Azimuth can not turn more than 360°. In my case 40-319°. Therefore IF the wind is from out of range to park the solarpanel against the wind there must be possible to tilt it more than 90°. 120° Inverse Parking.

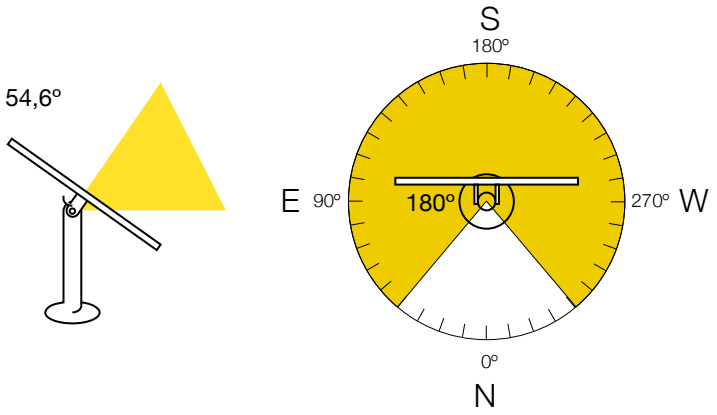
Example:

```
if (If windspeed is >10m/s &&
winddirection <40) {
   ParkInverted;
}

else if(If windspeed is >10m/s
   && winddirection >319) {
   ParkInverted;
}

else {
   ParkNormal;
}
```

**Location Adamsdal, Stigtomta, Sweden**
**LAT: N 58°47'18.53'' 58.78848°**
**LON: E 16°48'11.12'' 16.80309°**




**Winter**
Altitude N-S (tilt) max. 7.9°
Azimuth E-W 138-220°
Sun up in 82° 6 hours and 5 minutes




**Summer**
Altitude N-S (tilt) max. 54.6°
Azimuth Ö-W 40-319°
Sun up in 280° 18 hours and 27 minutes

## Sensors and Input

**NTP** NTP (Network Time Protocol) tell the exact time. Can also have a internal RTC-clock as backup.

**TR** Solar Tilt (Altitude) reference 0-359°
Solar calculated algoritm. What is the Altitude of the Sun now.

**AR** Solar Azimuth reference 0-359°
Solar calculated algoritm. What is the Azimuth of the Sun now.

**AS** AzimuthSensor 40-320°
An electronic compass tells where the solarpanel is pointed
**Magnetometer** HMC5883L

**TS** TiltSensor 0-120°
The angle the solarpanel is tilted Angle sensor **GYRO** MPU6050L or SCA100T-D02

**WD** Wind Direction 0-359°
Magnetic rotation sensor. Allegro A1335 or Melexis MLX90393

**WS** Wind Speed 0-50m/s
Magnetic rotation sensor. Allegro A1335