

Pyranometer Modbus Option Pyranometer Mounting Arm External Temp/RH-Sensor



Pyranometer Option: To connect and operate a Modbus Pyranometer with any new ASI-16/5n, for logging of real-time irradiance data (Act, AvP, AvM, Min, Max). Subject to purchase of ASI Pyranometer Option. - Activation after Purchase.

Pyrano Mounting Arm: To mount a Pyranometer directly onto the ASI-16/5n base plate, avoiding any additional third-party mechanical mounting tools. - Allows mechanical sensor adjustments for qualified measurement of GHI or GTI.



ASI-16/5n All Sky Imagers - Options

Pyranometer Modbus Option - Introduction

CMS ASI-16/5n "Pyranometer Modbus Option" allows to connect selected types of Pyranometers (with digital Modbus output) directly to an ASI imager. (This option DOES NOT support Pyranometers with analogue-only output.)

Currently implemented vendor Modbus protocols:
EKO Instruments: MS-80M, MS-60M, MS-40M, ML-01M.

Other vendor's Modbus protocols: Not implemented, yet.
Maybe can be implemented upon request, likely at additional costs.
Implementation subject to clarification and tech support of vendor.

External High Precision Temperature/Humidity Sensor:

The new high-precision Temp/RH sensor (Sensirion SHT85) now comes with a cable and a stainless steel metal tube, ready to be mounted into a professional "Radiation Shield", to ensure high quality Meteo-standard Temp/RH data.

NOTICE: The Temp/RH sensor MUST be connected IN ANY CASE, as it is MANDATORY for operation and control of heating and ventilation functions.

Irradiance Data - Retrieval and Storage (in W/m²):

Internally, ASI PeriCon (Peripheral Controller) retrieves one value per second. Latest 1-second Irradiance data are stored into each JPG image, in the EXIF data set, and are recorded into ASI PeriCon "...PeriData-yymmdd.csv" datalogger files. Maximum logging speed can be configured up to 1 dataset per second.

ASI Software - Installation, Setup, Configuration

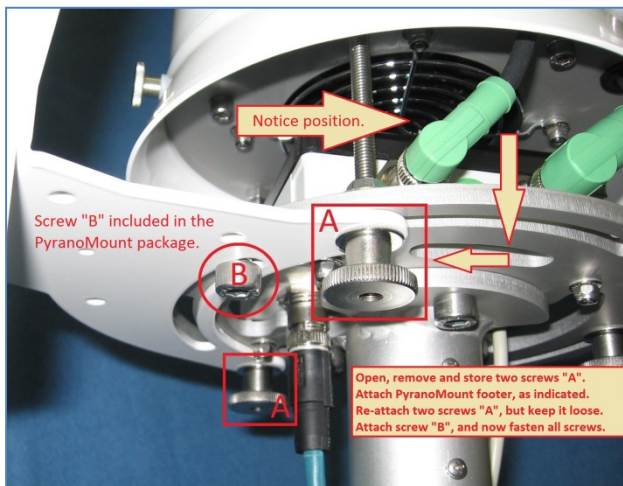
Upon purchase of the "Pyrano Option", please indicate the type of Pyrano. So, at activation, CMS can already pre-define the Pyrano type in CMS-CRM. If you did NOT indicate a Pyrano Type, then set it up in CMS-CRM yourself. We recommend to set the Pyrano-Type in CMS-CRM, before "FULL RESET" Of course, you also can set your Pyrano-Type later on, in the ASI-GUI. BUT, on later "FULL-RESET's", local ASI-GUI settings are reset to CMS-CRM.

ASI PeriCon Firmware Upgrade (for recently added new Pyrano vendors, only):
Requires a special UART/USB cable and software. - Please contact your agent.

Pyranometer Option - Hardware Delivery and Mounting



CMS ASI-16/5n "Pyranometer Mounting Arm" comes with two non-pre-assembled arm components, and small additional parts (screws, washers) for assembly and mounting. - Screws to mount the Pyranometer itself are NOT included. Usual those screws are a part of the Pyranometer supplier scope of supply.



For proper mounting of the "Pyranometer Mounting Arm", follow instructions within the picture. - NOTICE: There are three possible ways of mounting. Only ONE ensures the correct North-South arm orientation, necessary for non 90° tilt angle adjustments, required for GTI.



When mounting the Pyranometer, consider Northern or Southern hemisphere. The plug and cable always shall face "away from sun", to avoid heat by exposure to direct sun radiation, therefore likely corrupt Pyrano irradiance data.

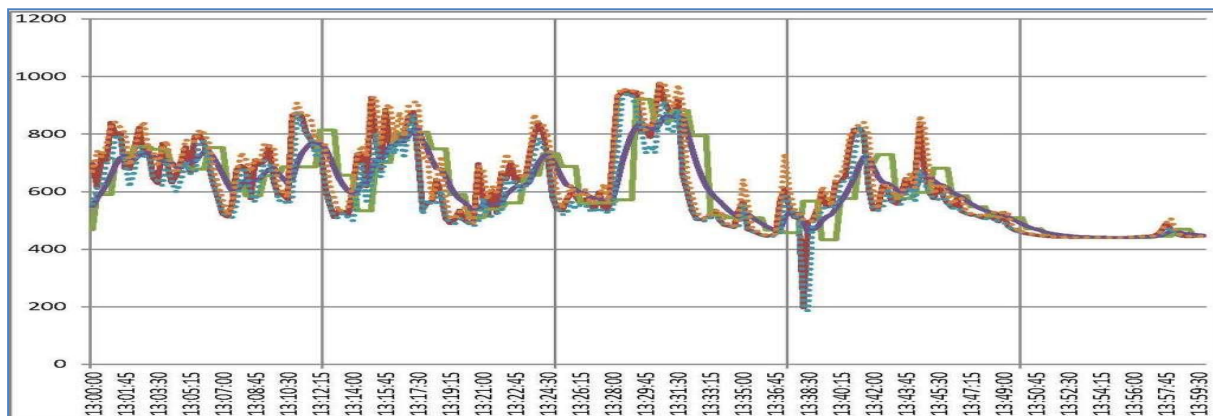
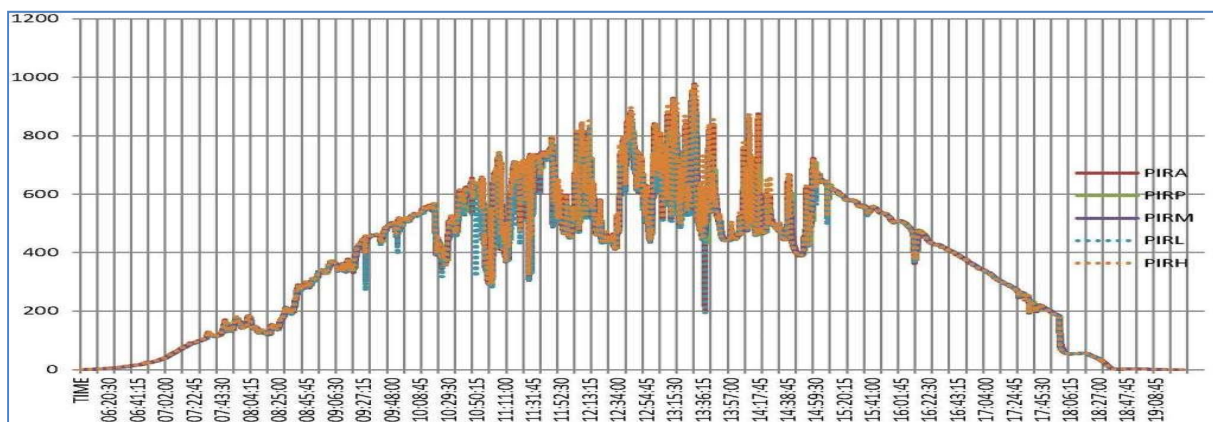
Pyranometer Option - Software Functions

ASI-16/5n "Pyranometer Option" is an OPTION, not part of standard delivery. It supports specified Pyranometer with a digital Modbus output interface, only.

To activate this option, you must purchase and pay the applicable option fee. After CMS-Schreder confirmation, you must run an ASI-Manager "FULL RESET". And, you must purchase and mount an ASI-compatible Modbus Pyranometer. At the moment, CMS ASI-16/5n supports EKO Modbus Pyranometers, only.

Pyranometer Option - Datalogger CSV-File - Irradiance Data

PIRA: Last Second Value "PIR_": Irradiance Values in [W/m²]
 PIRP: Packaged Average PIRM: Moving Average
 PIRH: Last Interval Maximum PIRL: Last Interval Minimum
 Average time period and PIRM weighting to be customized, via parameters.
 ASI Datalogger captures 1/sec raw values, and calculates others there from.



Specifications and designs in this paper are preliminary and for general information purpose, only.