Solar positioner NANO-F

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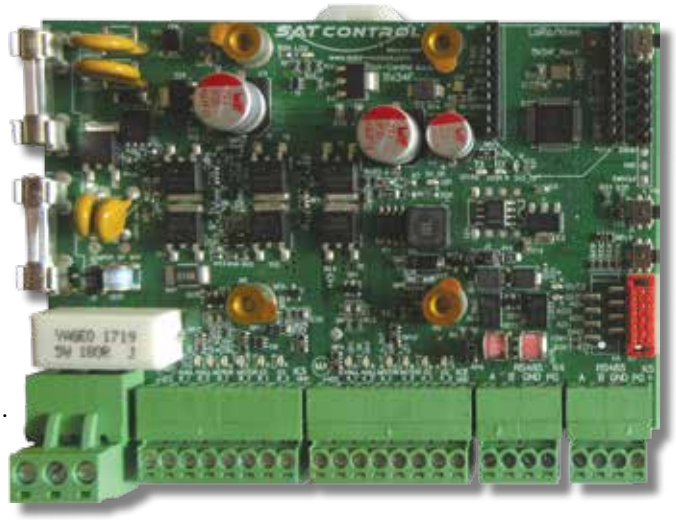
NANO-F Solar Tracker Positioning Controller dual axis, with LoRa interface, RS485, surge protection, DIN rail, TIV34F Rev.1

Code: 0452

Slave field Solar Tracker Positioning Controller NANO-F for PMDC motors

The NANO-F Slave field Solar Tracker Positioning Controller is designed to operate one dual-axis, or two single axis solar trackers with PMDC motors. It is ideally suited for big or medium solar parks where many solar trackers operate. The NANO-F have wired RS485 communication for wired distance monitoring via SIGMA solar server, and embedded wireless interface for optional (*) wireless module LoRa mounted on controller, so you can monitor and manage also wirelessly. Also, with additional connecting on to SIGMA solar server the remote controlling, monitoring, updating and management through internet is possible. Simple and fast installation, high reliability.



Features

- Supports dual axis, up to two single axis, roll-and-tilt trackers with PMDC motors.
- Execute positioning sent from SIGMA solar server via RS485 MODBUS wired or wireless communication
- Embedded wireless interface for optional wireless module LoRa mounted on controller directly, (wireless module with antenna you can mount on is an option (*)).
- Support motor management for PMDC motors via RS485 MODBUS wired /wireless communication.
- Predefined Storm, Stow, or Clean positions are triggered via RS485 MODBUS wired/wireless communication sent from SIGMA solar server.
- Alarming at electro-mechanical failure.
- Manual control of motors with buttons on controller device.
- Power fail detection.
- Tracker position feedback through quadrature encoder without any external sensor or with external inclinometer.
- Additional embedded overvoltage protection for indirect lightning strike impact. Protected power supply input, protected RS485 inputs.
- Additional port for voltage sensing at external devices, like irradiation sensor, wind sensor, temperature sensor or other sensors.

Description

One Controller – Many Applications – The NANO-F Slave field Solar Tracker Positioning Controller can be used in a wide range of solar tracker applications through an extensive set of parameters. It is being used in new applications, but can also be used in the retrofit market.

Dual Axis Trackers – One NANO-F Slave field Solar Tracker Positioning Controller is capable of managing a dual-axis tracker through the two motor channels with PMDC motors. The tracker can either be of the traditional azimuth / elevation type (cartesian coordinate system), roll (east-to-west) and elevation type (polar coordinate system).

Single Axis Trackers – One NANO-F Slave field Solar Tracker Positioning Controller is capable of managing up to two single axis solar trackers through the two integrated motor channels. The tracker(s) can either rotate around the North/South, East/West or Polar Axis.

Communication – 2 communication ports: Via wired RS485 MODBUS or wireless LoRa the NANO-F Slave field Solar Tracker Positioning Controller allow full control, setup, monitoring, and software updates.

Local Control – Basic local tracker control can be done through onboard push-buttons.

Reliability – Additional embedded overvoltage protection for indirect lightning strike impact. Protected power supply input, protected RS485 inputs.

Sat Control d.o.o.

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Made in Europe

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Solar positioner NANO-F

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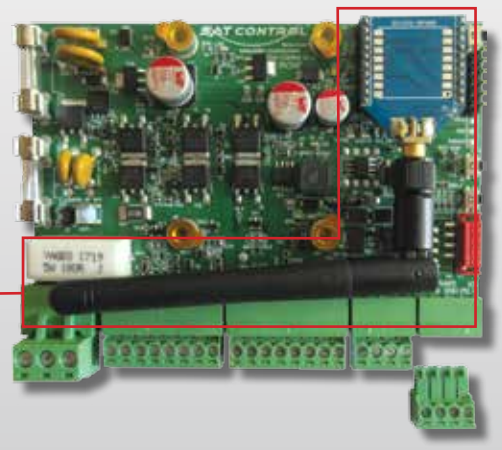
Technical data

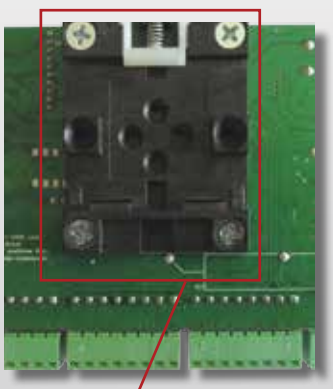
Interfaces	
Max. number of controlled devices	2x PMDC Motors or Slewing drives, (PMDC=Permanent Magnet Direct Current Brush Motor)
Type	Slave Positioning controller
Communication	
Wire communication	wired RS485 MODBUS with 19200 kbps, with surge protection
Wireless communication	embedded interface for LoRa module 433 MHz, w/l module is an option*
Distance	
Wired com. cable distance	RS485 cable distance: 750 m (twisted pair @ 0,5mm cross section wire)
Wireless com distance	>2km @ 20dBm @433 MHz @ 21.875 kbps (depend from visibility)
Power supply	
Power supply	External SMPS type 10A (capacity)
Input voltage	24 VDC +10% / –15%
Rated current	8A, (consider +150 g inrush current capacity)
Power consumption in idle	approx. 1-3W, depend from Radio settings
Environmental conditions in operation	
Ambient temperature	–30°C ... +70°C
Relative air humidity	0% ... 85%, non-condensing
General data	
Dimensions (L / W / H) in mm	112 / 90 / 26
Weight	104 g , *with optional wireless module: 117 g
Mounting location	Indoors
Mounting options	DIN rail mounting
Status display	LEDs for; power (4), communication (4), ES (4), HS (4), Out (4), ERR (2)
Feedback Hall signals	2x Hall signals per axis, 90° shifted (quadrature encoder)
End switches	2x end switches per axis (first required, second not necessary)
Manual buttons	2x (East-West, Reference, switch to Second axis), 1x Wireless module LoRa-Binding-Mode
Upgrading	In the field via RS485 MODBUS or with wireless LoRa module via SIGMA solar server
Languages	
Language versions – manual	English
Features	
Warranty	2 years* extension possible for additional payment
Certificates and approvals	www.solar-motors.com
Life Time	Min. 10 years; typical 20 years

* Options for additionali payment.

Options ordering information
Lora RF TXRX MODUL 433MHz 20dBm RA-01, TIV50, SMA-RP, antenna, WLM-LORA-TIV50-433-A
Code: 0449 Code 2: WLM-LORA-TIV50-433-A
Coax cable LMR 195 w con. RP-SMA-F/RP-SMA-M L=0,5M, water protected, UV stable
Code: 6108 Code 2: KABLMR195L0.5M
Coax cable LMR 195 w con. RP-SMA-F/RP-SMA-M L=2,0M, water protected, UV stable
Code: 6109 Code 2: KABLMR195L2.0M



Rear view



Din rail holder

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