PVTRK2Px

Field Slave Solar Tracker Controller

The PVTRK2Px Field Slave Solar Tracker Controller is based on the CX2x hardware with software designed to operate one dual-axis, or two single-axes, solar trackers. It is intended to operate as a slave managed by a FXCX2Px field controller. The PVTRK2x system features a ready-to-use RS485 interface intended for system management from a central FXCX2x controller, as well as Internet connectivity for purposes of initial software installation.

Features

- Supports dual-axis, up to two single-axis, roll-and-tilt, or dual-axis synchronous trackers.
- Calculated solar position using NREL solar ephemeral algorithm.
- Storm action through RS485 broadcast.
- Field level parameterized fixed positions for Stow, Storm or Clean positions.
- Tracker calibration mode, on-sun, south and/or horizontal
- Extensive fault handling and recovery in case of electro-mechanical failure.

- Manual control of Storm and Clean mode.
- Automatic AC-power fail detection
- Support of Service Mode for tracker movement.
- Tracker positional feedback through encoder, integrated or external inclinometer.
- Parameterized geographic location, or automatic geographic location acquisition through external GPS radio.
- Integrated support to remote worldwide software initialization through Valhalla central server.
- Autonomously from central FXCX controller.

Description

One Parameterized Controller, Many Applications – The PVTRK solar tracker 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 PVTRK controller is capable of managing a single dual-axis tracker through the integrated two motor channels. The tracker can either be of the traditional azimuth/elevation type, roll (east-to-west) and elevation type, or dual-axis-synchronous (dual-slewing drives with sandwiched wedge).

Single-Axis Trackers – One PVTRK 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 – Using the integrated RS485 interface, the PVTRK2Px is fully managed from the central FXCX field supervisory controller including software updating, configuration, monitoring and remote control.

Local Control – Basic local tracker control can be done through onboard push-buttons, or more extensively through the iPhone/Android app Heimdal via FXCX field supervisory controller.

Electrical Ratings

Parameter	Min	Typ	Max	Units
Controller Voltage Supply	8	24	70	V
Controller Power Consumption		0.4	1.0	W
Motor Voltage Supply	10	24	40	V
Motor Current	NA	3	10	A

Thermal/Mechanical Characteristics

Parameter	Min	Typical	Max	Units
Storage Temperature	-40	40	120	^{o}C
Operating Temperature	-10	40	70	^{o}C
Controller Dimensions		155 x 160		mm
Controller Weight		0.275		kg