Lauritzen Inc.
Bringing new ideas to renewable energy

EX3Px

Triple Single-Axis Solar Tracker Controller

The EX3Px platform is designed specifically for row tracker applications, where it can drive up to three single-axis trackers. Like all Lauritzen solar tracker controllers, it has been designed for long-life operation large temperature swing, as well as demanding electrical noise, environments. It features easy to use color coded push buttons, and extensive LED diagnostics for service operators.

Features

- Three channel motor soft start and stop. Short circuit-detect and current control.
- Integrated Battery Management System.
- Support for implied, or inclinometer based absolute, limit switches.
- Support for external Emergency Stop switch
- Support for AC-fail detection
- Intra-field communication:
  - Optically isolated primary RS485 interface for commercial field intra communication
  - Wireless interface for commercial field intra communication
- Extensive LED hardware diagnostics
- Color coded push buttons for Reset, Service/Operational Mode, Calibration, Tracker Select and East/West manual movement.
- Analog input channel for external or battery temperature.
- Digital output for battery heater.
- Integrated battery backup Real-Time-Clock and Non-Volatile memory.

Description

One Platform, Multiple Applications – The EX-controller can be used to drive a one, two, or three 24VDC powered single-axis trackers. In block-tracker applications it can be used to drive one high voltage 3-phase AC motor together with an external Variable Frequency Drive.

Communication – Using the modular intra-field communications module, it can be configured for RS485/Modbus or wireless. Together with a CX3 master controller, complete remote management is an integrated part of the EX3 controller solution. The remote management includes remote control, monitoring, and software updates.

Power Supply – The EX3 can in its simplest application be powered from an AC sourced power supply. It can, however, also be powered from a solar PV sourced power supply. In such applications, it is useful to augment the supply with battery back. For that purpose, the EX3 has an integrated Battery

Management System (BMS). The BMS is designed to monitor battery temperature and can be equipped with a battery heater – thus enabling batteries to withstand high temperature swings.

Modulated Power Output & Sensory Inputs - Each of the three 24VDC motor drivers contains circuitry to regulate motor power such as soft start and stop, detect overloads, and short circuits, prevent burn out, and extend motor life.

Hardware Options

Version	Description
TMEX	Field slave w. RS485 for intra-field comm.
TWEX	Field slave w. RF for intra-field comm.

Electrical Ratings

Parameter	Min	Typ	Max	Units
Controller Voltage Supply	8	24	35	V
Controller Power Consumption		0.4	1.0	W
Motor Current		3	10	A

Thermal/Mechanical Characteristics

Parameter	Min	Typical	Max	Units
Storage Temperature	-40	40	120	°C
Operating Temperature	-20	40	70	°C
Controller Dimensions		14.6 x 14.3 x 3.3		mm
Controller Weight		0.275		kg

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