Lauritzen Inc.
Bringing new ideas to renewable energy

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Sif™

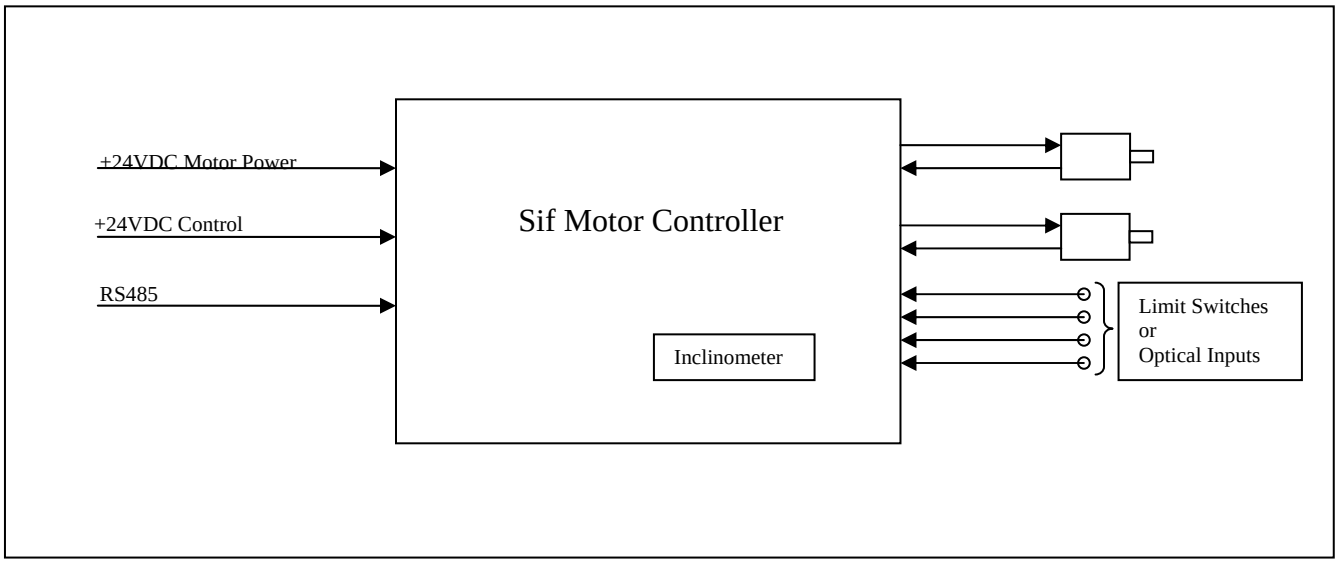
Solar Tracker Motor Controller

Summary:

Sif™ is the ideal motor controller to point a field of single or dual axis solar trackers directly at the sun for maximum energy harvesting while providing full operational accountability.

Features

- Separate motor and electronics power
- Built-in high precision inclinometer
- Dual H-Bridge DC motor drivers
- Built-in motor current sensing
- Built-in support for single and dual encoders per motor
- Built-in support for single and dual limit switches per motor
- Built-in support for optional optical or potentiometer feedback
- Built-in support for emergency stop
- RS-485 optically isolated network interface
- For use with 24V DC systems
- Support for remote monitor and control
- Remote re-program capability
- Large supply voltage range
- Push buttons for manual operation
- Connector for remote control box
- Available in Polycarbonate or Aluminum enclosure



Description:

Microprocessor Based Control: *Sif*™ is a cost effective, microprocessor based motor controller suitable for single or dual axis applications. It is networked via an RS-485 bus with the *Utgard*™ Master Tracker Controller, from which it receives positional data and site management commands. The *Sif* controller typically operates the tracker motors in a closed loop using position feedback.

Modulated Power Output: Each of the two DC motor drivers contains circuitry to regulate motor power and detect overloads. Both motor voltage and current is recorded by the *Sif* controller, and made available for data upload.

RS-485 Network Interface: *Sif* uses the industry wide RS485 network standard as communication means. The RS485 network transceiver is electrically isolated from the main *Utgard*™, thus providing a high degree of protection and noise immunity. The *Sif*™ */Utgard*™ communication protocol is Modbus™ based.

Low Voltage Power
To ease installation, the controller is operated by a dual 24V DC power supply. By using a dual supply scheme, it is possible to operate the *Sif*™ electronics even though the motor power may be off, thus offering advanced fault diagnostics options.

Sensory Inputs
A *Sif*™ has 4 encoder, 4 limit switches, and 1 stop button inputs. The encoder inputs can be either reed switch or Hall sensory based. An optional dual analog input can be used for additional analog sensors.

Electrical Ratings

Parameter	Min	Typ	Max	Units
Controller Voltage Supply	6	24	40	V
Controller Power Consumption	0.05		0.25	W
Motor Voltage Supply	10	24	40	V
Motor Current	NA	3	10[1]	A
RS-485 Isolation			2.5	KV

Notes:
1. Sustained motor current should not exceed 4A over a 10 minute period

Thermal Characteristics

Parameter	Min	Typ	Max	Units
Storage Temperature	-40		120	C
Operating Temperature	-10		60	C

Inclinometer Characteristics

Parameter	Value	Units
Number of Axis	2	
Absolute accuracy	<0.1	Degree
Linearity	<0.1	

Mechanical

Parameter	Value	Units
Weight	1	Kg (Polycarbonate)
Dimensions	25x18x9	Cm
Enclosure	NEMA4x	Polycarbonate or Aluminum

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Sif; is the name of Thor's wife in Norse Mythology.
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