APM Professional Telescopes

Advanced Precision Systems

Features

Easy Installation

• DIN rail mount enclosure for seamless cabinet integration

• Effortless wiring with push-in spring terminal blocks for tool-free installation

Versatile Applications

• Compatible with various motor types

Advanced Software Capabilities

• Dedicated software for diagnostics and firmware updates

• Real-time control via integrated web server

High-Performance Hardware

• Fast and reliable microprocessor

• In-house developed RTOS ensuring exceptional speed and stability

Precision and Connectivity

• Homing position detection via induction sensor and encoder

• ASCOM Alpaca support for enhanced interoperability

Expandable Interface

• Possible HMI expansion for enhanced user interaction

Technical Features

Encoder Support

• RS485 Encoders

• Quadrature Encoders

Communication Interfaces

• I2C protocol support

• CAN

• Ethernet

• RS485

• MODBUS TCP/RTU

Additional Features

• Integrated Real-Time Clock (RTC) with battery backup for precise timekeeping

• USB Type-C for fast and reliable connectivity

Wireless Shutter Control Add-on Module

• Supports servo and DC shutter motors

Absolute Maximum Ratings

• Operating temperature: -20°C to +70°C

• Storage temperature: -20°C to +85°C

• Voltage on VIN with respect to GND: -0.3V to +40V

• Maximum current into VIN: 3A

• Maximum board input power: 70W

• Maximum current out of OUT relay outputs: 600mA

• Maximum current out of LS relay output: 2.5A

• Maximum voltage on CAN bus lines: ±58V

• Maximum voltage between CANH and CANL: ±27V

• Maximum voltage on RS-485 lines: -8V to +13V

• Maximum RS-485 driver output current: ±250mA

• Maximum voltage on AI0 input: 30V

• Maximum current through AI1 input: 22mA

• Maximum voltage on limit switch ports: VIN + 0.6V

• Maximum voltage on quadrature encoder ports: VIN + 0.6V

• Maximum current through stepper control outputs: 200mA

• ESD protection on all ports:

- IEC 61000-4-2 Air: 15kV

- IEC 61000-4-2 Contact: 8kV

Recommended Operating Conditions

• Input voltage (VIN): 20–36V

• Supply current (IIN): 1–3A

• Limit switch output voltage (VLMT): VIN

• Output current limit: 300mA

• Threshold voltage: VLMT/2

• Relay output voltage (VOUT): VIN - 2V to VIN

• Relay output current (IOUT): up to 600mA

• Analog input voltage (VAIO): 0–30V

• AI1 input current (IAI1): 0–20mA

• RS-485 encoder supply voltage (VENC): 5V

• RS-485 encoder supply current (IENC): up to 500mA

• Quadrature encoder supply voltage (VREI): VIN

• Quadrature encoder supply current (IQEI): up to 300mA

• I2C supply voltage (V12C): 3.3V or 5V

• Voltage on SDA and SCL: up to V12C

• Stepper control supply voltage (VSTEP): 5V or VIN

• Stepper control supply current limit (ISTEP): up to 300mA

• Stepper control threshold voltage: VSTEP/2

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