

SPID Azimuth & Elevation antenna rotator

P/N: BIG-RAS/HR



MD-01 Controller / Option MD-02 Controller



PS-01 Power Supply / Option PS-02 Controller

NEW SPID BIG-RAS/HR XXL Heavy Duty Azimuth and Elevation Rotator system is an solution to Rotate in Azimuth and Elevation your Antenna, Dish antenna , Astronomy Tele scope, Camera, Light Box and many more which must be rotated in 2 axes, Resolution is 0.1 degree.

This rotor can be mount on a vertical mast and the elevation section can hold a ~50mm round pipe to place the antennas.

Each rotor is supplied **including an controller** High Resolution Model: **MD-01*** or **MD-02*** and all comes with an build in Track interface (USB), lot of tracking program available and easy to install on your Lap-Top or PC and connect the Controller through USB.

You can now auto track Moon, Sun, stars, constellations, galaxies, planets, etc etc.

But if you prefer, you can operate manual by pressing the buttons on the front of the panel or supplied mouse (option MD-0X Controller). The degree readout is displayed on the front LED display in 0.1 degree steps.

SPID BIG-RAS/HR Rotator is supplied including:

| |
|---|
| BIG-RAS/HR rotor 0.1 degree resolution |
| Controller incl. build in track interface (USB) MD-01 or MD-02 * |
| Connectors to connect control cables and power supply (Connectors outside door IP-68) |
| Quick start guide |
| Option: TCP/IP Module (Ethernet) + Mouse |
| * MD-01 and MD-02 are Electric exactly equal, only the housing is different, controller specification on page 2 |



New Connectors / pulse count electronics BIG-RAS/HR

We recommend to use module PS-01 or PS-02 to supply the MD-01 or MD-02 and Rotor. This module is a dual voltage power supply which will be connected to the MD-0X module

| Specifications: SPID BIG RAS/HR Azimuth and Elevation Rotator | |
|--|---|
| Turning torque in-lbs/Nm | 5398 in lb/ 610 Nm |
| Brake Torque in lbs/Nm | 24,000 in lb/ 2,712 Nm |
| Brake Construction | Double Worm Gears |
| Vertical Load lbs/Kg | 700 lbs/318 Kg |
| Rotation Speed 360 Degree (Operation voltage 24Volts DC) | 2.5 degree / sec. (Note: Rotation speed can vary if the mounted antenna system has high mass and not in balance !) |
| Resolution | 0.1 degree / step |
| Backlash | <0.5 degree |
| Rotation Range AZ / EL | 360 /180 deg |
| Weight lbs / Mass Kg | 51 lbs/23 Kg |
| Position Sensor | HALL Sensors |
| Mast size inches/mm Bottom mount | 2.6 in/66 mm |
| Mast size inches/mm Elevation | 2.0 in/50 mm |
| Environment | Ground / Mobile free air and / or Sheltered |
| MTBF | 12500 hours @ -20 to +55°C |
| Control cable Engine | 4-core / 1.5mm2 un-screened |
| Control cable Sensors | 6-core / 0.25mm2 screened Note: Long length sensor cable needs screened cable |

Specifications Supplied controller:

| | MD-01 (19" Rack mount model) | MD-02 (desk-top model) |
|----------------------|---|---|
| Supply voltage: | 12.....18 Volts & 20...24 Volts DC | 12.....18 Volts & 20...24 Volts DC |
| Current consumption: | 3 ...20 A (Max current depends on load) | 3 ...20 A (Max current depends on load) |
| Supplied including: | Digital controller, build in PC track interface, software, Connectors | Digital controller, build in PC track interface, software, Connectors |
| Dimensions: | (483x366x45mm) | (386x306x70mm) |
| Weight: | 5 Kg | 4.5 Kg |
| Housing: | Aluminium / steel | Aluminium / steel |
| Environment: | Ground / Mobile Sheltered | Ground / Mobile Sheltered |
| MTBF: | 15000 hours @ -5 to +40°C | 15000 hours @ -5 to +40°C |
| Display: | LCD 2*20 digit (green) | LCD 2*20 digit (green) |
| Connectors: | Supplied for Rotor and Sensors | Supplied for Rotor and Sensors |

Note: Controller MD-01 and MD-02 are Electric exactly equal, only enclosure is different !

RF HAMDESIGN & SPID Controllers will support the following software ** :

- ✓ PST Rotor (Also /HR controllers MD-0X)
- ✓ MacDoppler (MacDoppler Ham Radio Satellite Tracking for Macintosh)
- ✓ N1MM Logger
- ✓ Ham Radio Deluxe
- ✓ Logic 7 Version => 7.0.45
- ✓ Gpredict Satellite Tracking Linux and MAC
- ✓ SatPC32 Satellite Tracking - works on windows only
- ✓ DXLab (DX View)
- ✓ TRXmanager

Most software should also work if it supports Yaesu type rotators !

Note: #1 Software may have new versions and some options may have changed. #2 We have not tested all this software !

#3 Most software is for use with Rot2Prog (Dual-Ax rotor AZ&EL), but some also work with the single Ax rotor system Rot1Prog.



** Note: On request we can provide you the Rot2Prog protocol to write your own driver / control software.

Short summary specifications MD-01 & MD-02 controller

(MD-01 = 19" Rack mount / MD-02 = Desktop model housing)



MD-02 Controller

The MD-0X rotor controller has a built-in backlight Display which shows Azimuth & Elevation real time at 0.1 degree resolution. This means the rotor can also be used as a stand-alone configuration and the Azimuth & Elevation engine can be moved using the arrow buttons on the front panel. The menu can also be entered on the front panel and changes can be made to all available functions.

Note: The MD-0X controller can handle 2 rotor systems, this means you can also drive 2 Azimuth or 2 Elevation rotators at the same time !

Built in the MD-0X rotor controller is a **track interface** which will be connected through USB (Win OS) WIN OS will recognize the MD-0x controller and create a virtual COM port. (/HR = High Resolution)

Lots of new functions are available now and can be configured by the user through MD01dde.exe PC interface:

MD-0x (UI) User Interface (Picture right) can be used to control the AZ & EL rotor by Personal Computer.

One of the most used track program PST rotor is the easiest option to start with this rotor set for auto track



More available functions MD-0X

- ✓ Most used and special function is the integrated function: Soft Start and Soft Stop ! Soft start and stop has available a 3 step Delay time and a 3 step acceleration time. Both Delay and acceleration can be set by the user step by step. This function is very helpful for large dishes
- ✓ Firmware update free of charge
- ✓ Short way function for Satellite track
- ✓ USB controlled
- ✓ Mouse option: control AZ and EL movement by a mouse connected to MD-01 or MD-02
- ✓ Minimum and maximum angle free adjustable for Azimuth and Elevation
- ✓ Write your own protocol and/or PC application (protocol available for download)
- ✓ Ethernet module option (ready to build in)
- ✓ Free of charge software update available at our High Resolution support page (need password to access)
- ✓ Track software support lot of program, your favorite track software should be able to support the Rot2Prog protocol, or the SPID protocol.
- ✓ MD-0x Rotor Controller can emulate Yaesu rotor drivers. (Note: control is only for basic commands)



We recommend to use Power supply module PS-01 to drive the MD-01 controller + Rotor
And PS-02 Power supply to drive the MD-02 + Rotor

This Power module is a dual voltage output power supply which will be connected to the controller.

SPID Power Supply Module, PS-01 & PS-02



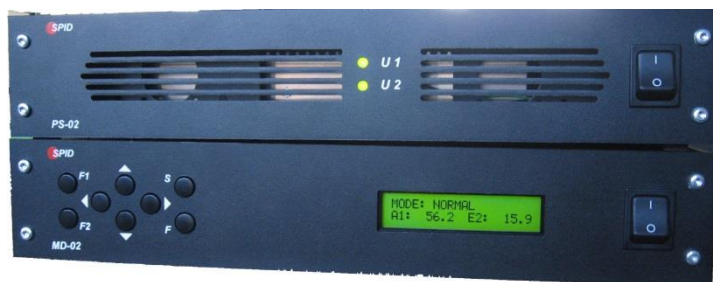
Model: SPID PS-01



Model: SPID PS-02

This Module, PS-0X is a Dual Voltage PSU which should be connected to MD-0X High Resolution rotor system SPID BIG-RAS/HR

Standard build in is an professional 15Volt / 10A and a 22Volt / 22A Power Supply unit. The Power supply units PS-01 / PS-02 do have the same dimensions as MD-01 / MD-02 Controllers.



Model: SPID PS-02 and MD-02

| Specifications: SPID PS-01 / PS-02 power supply | | |
|---|---|---|
| Model: | PS-01 (19" Rack mount) | PS-02 (Desktop model) |
| AC input | 50/60Hz – 100-240VAC | 50/60Hz – 100-240VAC |
| Dimensions | (483x366x45mm) | (386x306x70mm) |
| Weight lbs / Mass Kg | 6 Kg | 6 Kg |
| Environment | Ground / Mobile free air and / or Sheltered | Ground / Mobile free air and / or Sheltered |
| MTBF | 32000 hours @ -20 to +55°C | 32000 hours @ -20 to +55°C |
| Supplied including | Connectors and mains cable | Connectors and mains cable |

Note: Actual Prices can be found in our price list, download link at our web-site: www.rfhamdesign.com



The elevation section of this rotor must be relieved and balanced by using a counterweight. Without this method, there is a risk of (very) rapid damage to the gears and/or the motor itself.

Model: UA-02 bracket model is very suitable for this purpose.

Available accesories

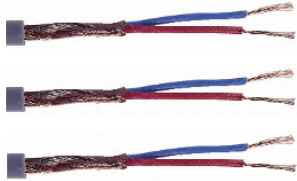
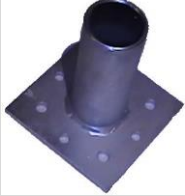

Parts below not included with BIG-RAS/HR rotor system. Need to be ordered separately.

| Accessoires | Part Number | |
|---|---|---|
| <p>Mounting bracket</p> | <p>FPD-BR01 Or FPD-BR03 (picture right)</p> |  |
| <p>SPID Ethernet Module Remote control Rotor setup through Ethernet (TCP/IP) This unit is supplied ready to place in the MD-01 or MD-02 controller</p> | <p>SPID-ET</p> |  |
| <p>SPID-CCM CCM - CURRENT CONTROL MODULE measurement module to measure Amp's during use direct in MD-0x controllers. (Perfect to find out rotor balance)</p> | <p>SPID-CCM</p> |  |
| <p>Control cable 4-core Engines rotor (4x1,5mm2) Available in: 25, 50, 75 & 100 meter length</p> | <p>CC4-001/25</p> |  |
| <p>Sensor Control Cable Screened (6x0,25mm2) Reel: 25 meter max length Note: This control cable must be assembled with great care using the provided connectors; soldering experience is required for this process.</p> | <p>CC6-004/25</p> |  |
| <p>Advised to order: Plug and Play Sensor Control Cable Screened (6x0,25mm2) Incl mounted connectors and tested. Reel: 25 meter length</p> | <p>CC6-004/ASSY/25</p> |  |

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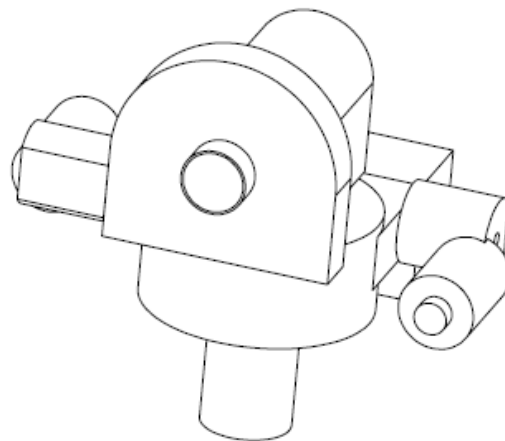
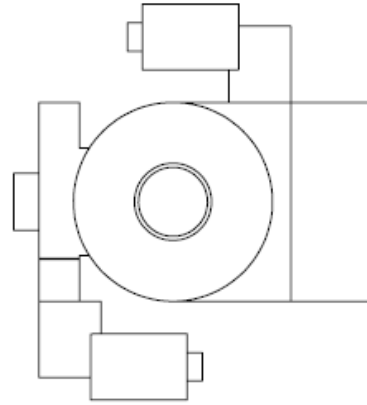
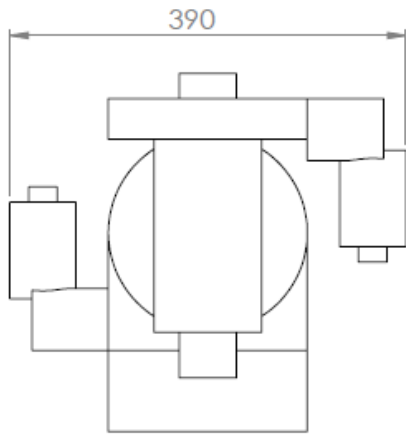
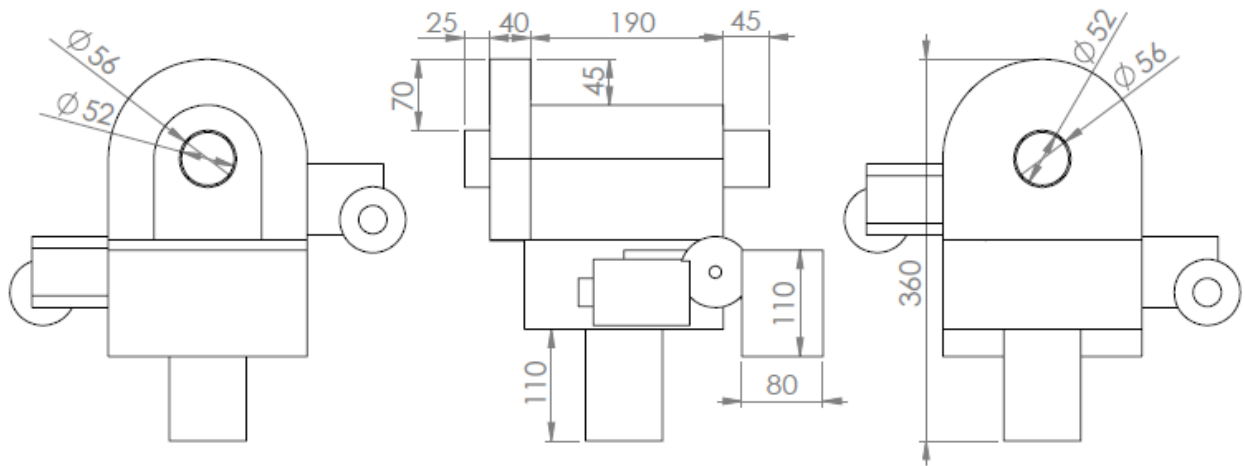
Available accesories

Parts below not included with BIG-RAS/HR rotor system. Need to be ordered separately.

| | | |
|---|--------------------------|---|
| <p>Sensor Control Cable Screened Needed if control cable longer than 25 meter !</p> <p>3 x 2 core screened cable (1x EL / 1x AZ / 1x Power / 0.14mm2 each)</p> <p>Available in: 25, 50, 75 & 100 meter length</p> | <p>CC6-003/50</p> |  |
| <p>SPID ADAPTOR Plate</p> <p>Used to Mount the rotator at a base-plate</p> | <p>SPID-ADAPT</p> |  |
| <p>MOUSE</p> <p>Control AZ & EL movement by mouse connected to MD01</p> | <p>SPID MOUSE</p> |  |

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Overall dimensions in mm SPID BIG-RAS/HR



ROTOR BIG-RAS/HR
Dimmension: mm

Dimension SPID ADAPTOR Plate in mm.

