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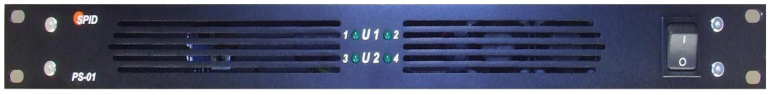
SPID Azimuth & Elevation antenna rotator

P/N: BIG-RAS/HR

MD-01 Controller / Option MD-02 Controller



PS-01 Power Supply / Option PS-02 Power Supply

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 mounted 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 Satallite Tracking Linux and MAC
- ✓ SatPC32 Satallite 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 build 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 !

Build 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.

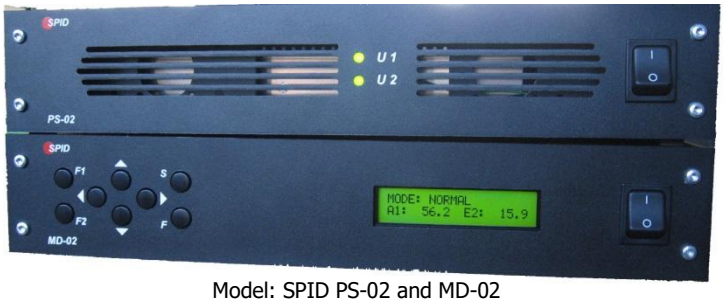
SPID Power Supply Module, PS-01 & PS-02

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

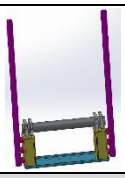
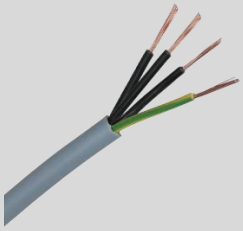
Note: Actual Prices can be found in our price list, download link at our web-site: www.rfhamdesign.com

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	
Mounting bracket This bracket is delivered incl all assembly parts and ready to use as a mounting platform or to interface between dish and rotor. Additional to order: Counterweight arms model CWA-05	**UA-BR**	
Counterweight Arms for UA-BR bracket Supplied incl mounting hardware to mount CWA-05 to UA-BR	**CWA-05**	
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	**SPID-ET**	
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)	**SPID-CCM**	
Control cable 4-core Engines rotor (4x1,5mm2) Available in: 25, 50, 75 & 100 meter length	**CC4-001/25**	
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.	**CC6-004/25**	
Advised to order: **Plug and Play Sensor Control Cable** Screened (6x0,25mm2) **Incl mounted connectors and tested.** Reel: 25 meter length	**CC6-004/ASSY/25**	

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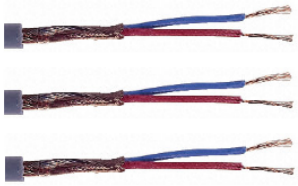
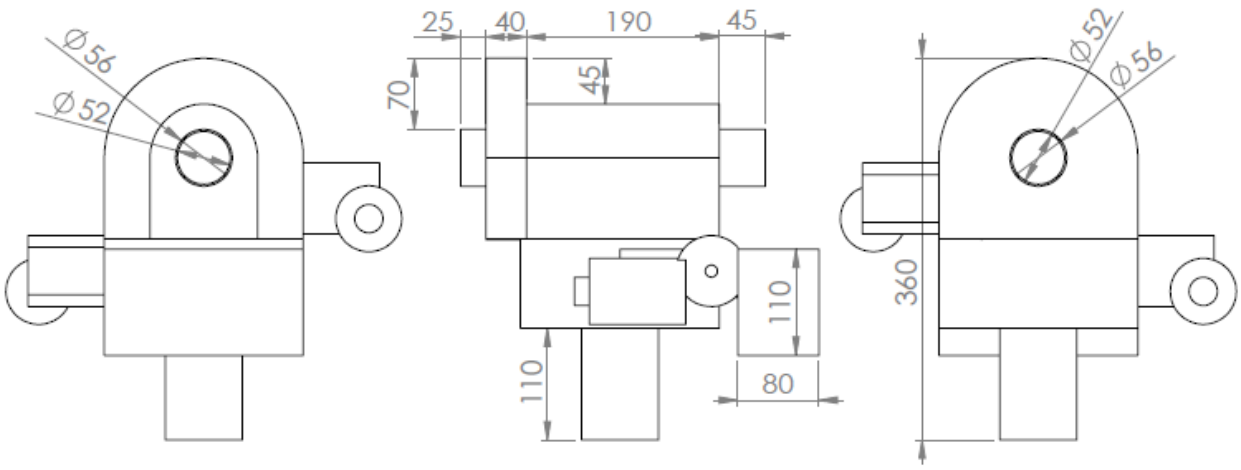
Available accesories

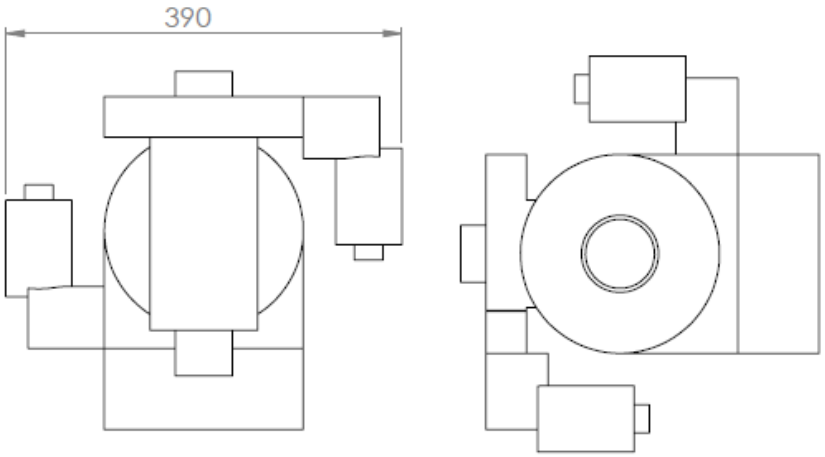
Parts below not included with BIG-RAS/HR rotor system. Need to be ordered separately.

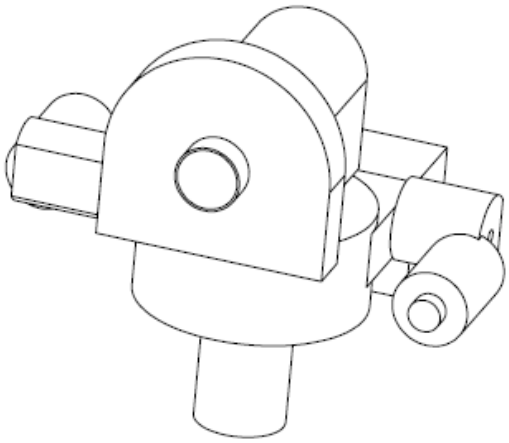
Sensor Control Cable Screened Needed if control cable longer than 25 meter ! **3 x 2 core screened cable** (1x EL / 1x AZ / 1x Power / 0.14mm2 each) Available in: 25, 50, 75 & 100 meter length	**CC6-003/50**	
SPID ADAPTOR Plate Used to Mount the rotator at a base-plate	**SPID-ADAPT**	
MOUSE Control AZ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

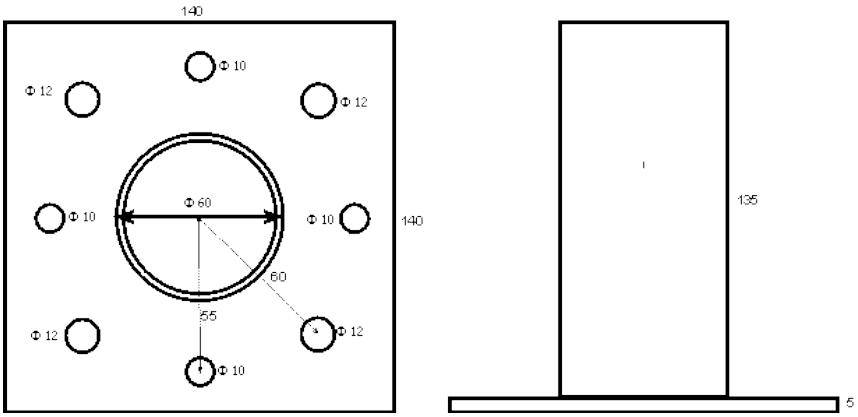
Note: Prices can be found in our price list, download link at our web-site: www.rfhamdesign.com

Overall dimensions in mm SPID BIG-RAS/HR







ROTOR BIG-RAS/HR
Dimmension: mm

Dimension SPID ADAPTOR Plate in mm.