

## 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

**The 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) <b>MD-01 or MD-02 *</b>
Connectors to connect control cables and power supply
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

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

<b>Specifications: SPID BIG RAS/HR Azimuth and Elevation Rotator</b>	
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	205 sec. (0.57 sec / degree)
Resolution	0.1 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 unscreened
Control cable Sensors	8-core / 0.2mm2 unscreened Note: Long length sensor cable needs screened cable

### Specifications Supplied controller:

	<b>MD-01 (19" Rack mount model)</b>	<b>MD-02 (desk-top model)</b>
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	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 the housing 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
- ✓ Orbiton Satallite Tracking
- ✓ 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 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 also a track interface which will be connected through USB (Win XP...Win 7, 8, 10) USB Driver is available and ready for download at our /HR support page. (/HR = High Resolution)

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

MD-01 (UI) Interface (Picture right) can be used to control the AZ & EL rotor by Personal Computer.

One of the most used track program Orbitron is integrated to select easy.  
(more info at the SPID /HR support page)



### 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 supported: Orbitron and PST rotor (more will be available)
- ✓ MD-01 Rotor Controller can emulate all Yaesu rotor drivers !

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



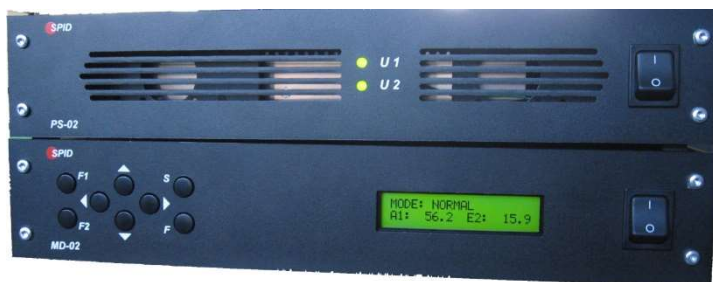
Model: SPID PS-01



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

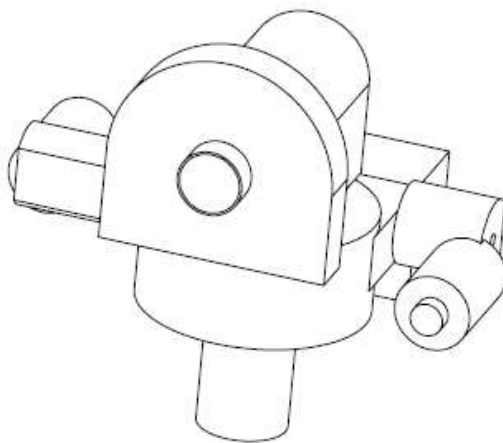
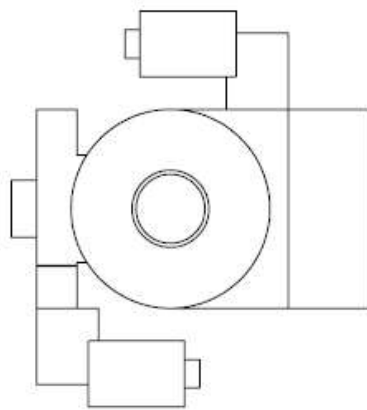
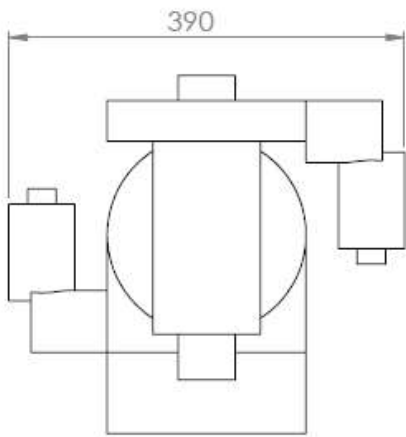
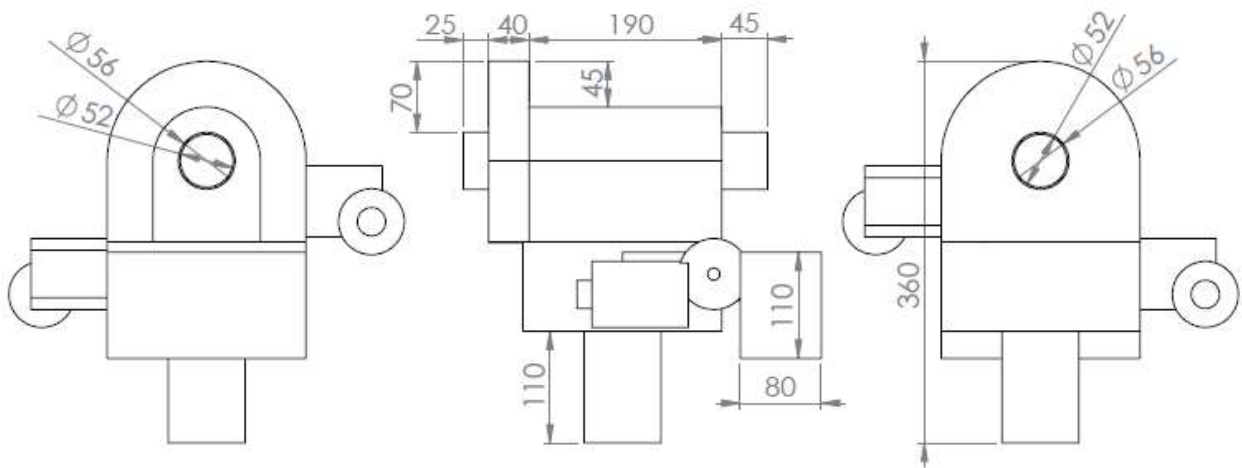
Standard build in is an professional 15Volt / 10A and a 22Volt / 22A Power Supply unit. The Power supply units PS-01 / PS-02 do have the same dimensions as MD-01 / MD-02 Controllers.



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 with:	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](http://www.rfhamdesign.com)



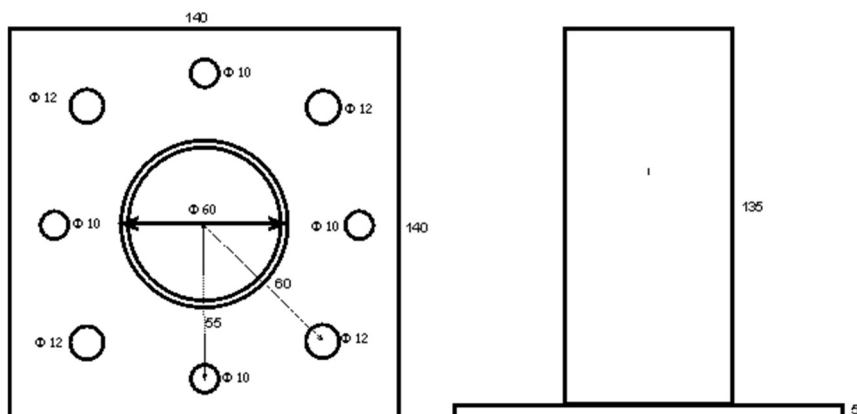
**ROTOR BIG-RAS/HR**  
 Dimmension: mm

## Available accesories

Accesories	Type	
<b>Mounting bracket</b>	<b>FPD-BR01</b> <b>Or</b> <b>FPD-BR03</b> (picture right)	
<b>Control cable 4-core Engines rotor</b> (4x1,5mm2)  Available in: 25, 50, 75 & 100 meter length	<b>CC4-001/25</b>	
<b>Sensor Control Cable Unscreened</b> (8x0,20mm2)  Reel: 25 meter max length	<b>CC8-004/25</b>	
<b>Sensor Control Cable Screened</b> Needed if control cable longer than 25 meter !  <b>3 x 2 core screened cable</b> (1x EL / 1x AZ / 1x Power)  Available in: 25, 50, 75 & 100 meter length	<b>CC6-003/50</b>	
<b>SPID ADAPTOR Plate</b>  Used to Mount the rotator at a base-plate	<b>ALPHA-ADAPT</b>	
<b>MOUSE</b>  Control AZ & EL movement by mouse connected to MD01	<b>SPID MOUSE</b>	

**Note:** Prices can be found in our price list, download link at our web-site: [www.rfhamdesign.com](http://www.rfhamdesign.com)

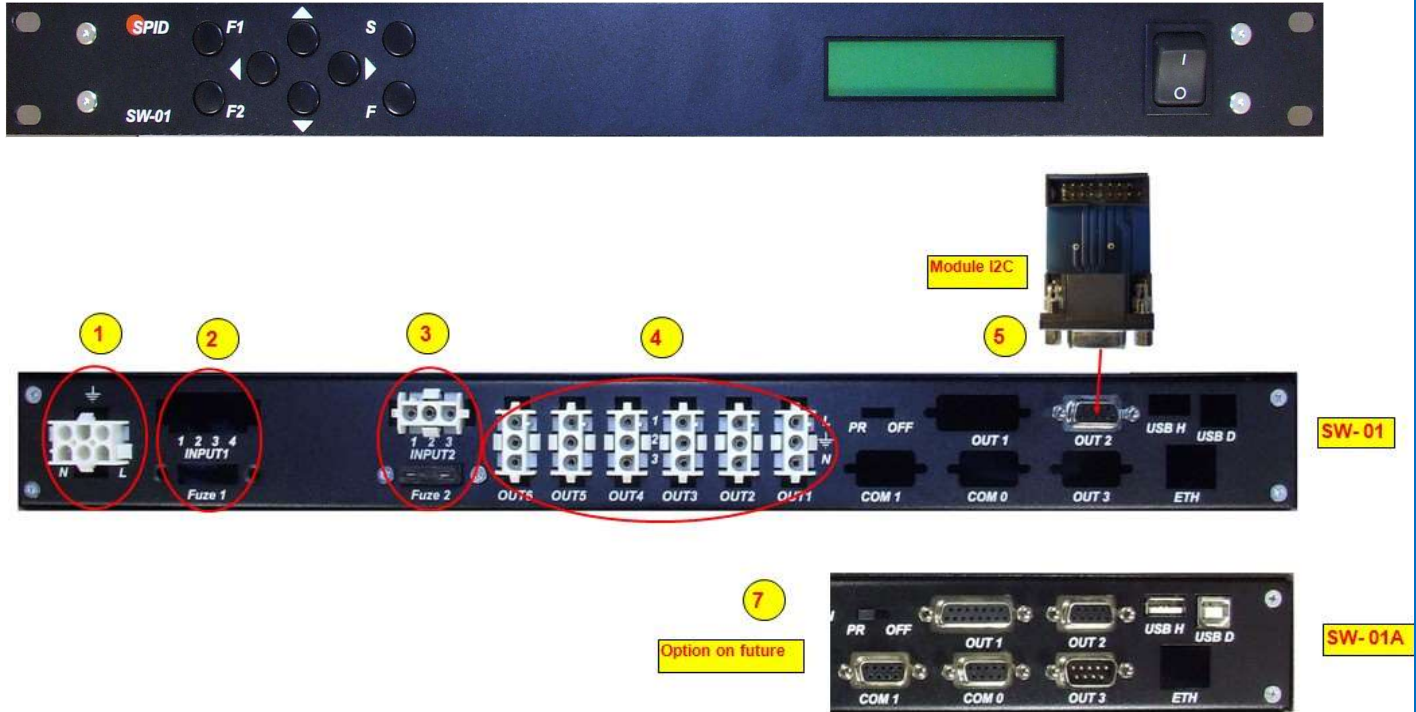
### Dimension SPID ADAPTOR Plate in mm.



## SPID SWITCH Module: SW-01

(Available option only available in 19" rack mount)

This Switch Unit, type SW-01 is an option if you want to switch on/off connected interfaces, amplifiers etc, etc. All can be controlled by the MD-01 program through PC.  
Dimensions: 19 inch rack Mount (483x366x43mm)



### Description by Number:

#### 1# Power supply plug in OUT1-OUT6

For pins N,L is power supply connect ( in this case 220/110 AC ) this circuit is without FUSE .

2# NC, There can be additional power supply from PS-01 connection .

3# Power supplying electronic ( FUSE 2A )

4# Plug out for switcher ( OUT1 -- OUT6 )

On plug out there is voltage from plug in "1"

5# I2C plug in connected to plug out I2C in DRIVER ( OUT2 MD-1 --- OUT2 SW-01 )

6# PCB control, DELAY for turning on plug outs OUT1 - OUT6 ( 30 A, 600V )

7# In the future there is possibility that SW-01 can work as a separate device .

In such case SW-01 instead of module I2C there can be full control motherboard ( just like in MD-01 ) and device will be fully separate .

