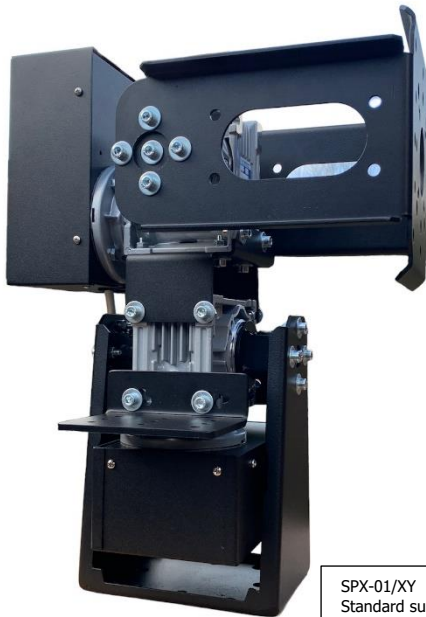


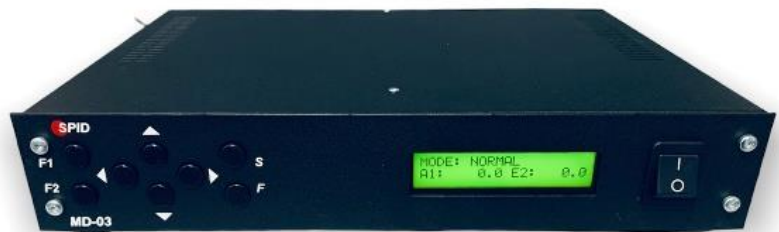
Specifications sheet: SPX-01/XY and MD-03

This specifications sheet is used for SPX Rotators created by RF HAMDESIGN B.V. The Netherlands.
This manual has 100% copyright © and owned by RF HAMDESIGN B.V.

SPX X Y Antenna Rotator System Part Number: SPX-01/XY



SPX-01/XY
Standard supplied model



MD-03 controller
Standard supplied including SPX-01/XY

SPX-01/XY is a 2 engine X Y rotor system and supplied including:

- ✓ **SPX-01/XY rotor 0.5 degree resolution**
- ✓ **Included mounted counter weight plates (2x on Y axe)**
- ✓ **MD-03 rotor controller**
- ✓ **X Y convert software to control MD-03 controller and rotor through PC**
- ✓ **USB connection for PC**
- ✓ **Build in track interface included X Y convert software** (EME, Satellite, or write own app, Protocol available)
- ✓ **All connectors to connect to rotor and PS-03 (Connector rotor side IP-68)**



Unique X Y Rotor System in this price range:.....

This new X Y MD-03 software can control a X/Y rotor by using your favorite Azimuth and Elevation tracking software. Connect the MD-0X controller to your PC trough USB, install you favorite track program, sent Azimuth and Elevation data to the controller and the rotor will rotate in X/Y plane

It is also possible to drive the controller by sending direct X/Y date to MD-0x controller to rotate the rotor in X/Y plane

Why should you use a X Y rotor ?

For tracking slow objects (moon, sun...) it doesn't matter which rotor you use.

But for fast flying objects (LEO satellites or weather satellites) a X Y Rotator is a much better choice.

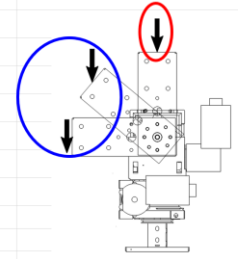
While Azimuth and Elevation rotors still keep moving in Az/EL (step motion) to track objects in a circular orbit around the earth, X Y rotors are positioned on the X axis and only the Y axis moves.

This create a smooth and fast movement. The X axis is at an angle to the orbit of the satellite and only the Y axis is tracking it.

The rotation speed of the rotor is important because, for example, LEO satellite can be visible on the horizon for only 20-30 minutes and the rotor must move as fast as possible to keep up with the satellite. That's why movement speed of 6 or more degrees per second is so important and this is what SPX-02/XY offers with this rotor system

Next advantage is, rotors which track satellites when a satellite passes over the rotor, a Azimuth / Elevation rotor has a problem to track the satellite, X Y rotors do not have this disadvantage, they easy rotate in all directions.

Specifications: SPX-01/XY Antenna Rotator	
Turning torque	50 Nm
Brake Torque	250 Nm
Brake Construction	Double Worm Gear
Maximal Vertical Load = Red Circle	30 Kg = Red Circle Vertical load is max load on Azimuth & Elevation bearing
Maximal mounting weight bracket	11 Kg = Bleu Circle Mass weight 11Kg is without counterweight, if in perfect balance by using counter weight max 30Kg is allowed. (30Kg is Incl weight of counterweight !)
Rotation Speed	3.5 dgr/sec @ 12Volts DC / 5.3 dgr/sec @ 18Volts DC
Resolution Standaard version	0.5 degree / step
Rotation Range Az/EI	180 / 180 degree
Weight Mass Kg	16.6 Kg
Position Sensor Standaard version	Reed Switch = 0.5degree/pulse
Bottom mount Y rotation	Supplied flat plate (base plate mount)
Mounting bracket X rotation	Supplied included heavy duty Ant. mounting bracket
Control cable	2 * 4 Core 1.5mm2 (Part No: CC4/001/25)
Environment	Ground / Mobile free air and / or Sheltered
MTBF	12500 hours @ -20 to +55°C
Rotor Waterproof	IP55
Connectors Y and X rotation	Included IP68 (2 x separate connector)



Specifications Controller MD-03			
Supply voltage	12 Volts	18 Volts = Maximal	
Current consumption	2 ...9 A	2...10 A	
Supplied with	<ul style="list-style-type: none"> • Digital controller and 2 row display (Green) • Build in PC track interface (USB) • X Y convert Software • USB-cable • Connectors • Fast Setup sheet (PDF) 		
Dimensions	34x26x6.5cm		
Weight:	3 Kg		
Case	Aluminium / steel		
Environment	Ground / Mobile Sheltered		
MTBF	15000 hours @ -5 to +40°C		
Display	2* 4 digit (green)		
Buttons front panel	Buttons to setup controller and rotor system		

We recommend to use Power supply module **PS-03 to drive the MD-03 and Rotor**. This PS-03 is a power supply which will be direct connected to the MD-03 controller and drive the rotor as well.
PS-03 is supplied including power supply unit which offer max rotation speed

Introduction SPX-01/XY and controller MD-03

The MD-03 controller is used to control the rotation of your rotor system. MD-03 is a multifunctional device and may be connected to the SPX-X/Y rotor system and display the angles MD-03 direct in degrees on the front LCD display in 0.5....0.1 degree resolution. Operation voltage of this system is 12...18Volts DC / 22Amp. PS-03 Is a perfect solution to drive this rotor system, fits perfect to MD-03 and is a desktop enclose as well.

To start up this X/Y rotor you need to learn about this system.
Max rotation in both axis are 180 degrees, start point of X/Y rotor is difference as AZ/EL rotors.



Information how to setup this X/Y rotor system can be found in the SPID Manual, it is recommended to download this document from our /HR support page once you start installation.

Setup MD-03 and PS-03 down below on picture. (PS-03 is optional)



Short summary MD-03 controller

Build in MD-03 rotor controller is a track interface which will be connected through USB (Win XP...Win 7, 8, 10, 11) USB Driver not needed, WIN OS support SPID products. New functions are available now and can be configured by the user through MD01dde.exe PC interface:

MD-03 (UI) Interface (Picture right) can be used to control the AZ & EL rotor by Personal Computer. You can install your favourite track program and control MD-03 through USB without the MD01dde PC interface as well. (PST rotor is most used)

More available functions MD-03

- ✓ 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
- ✓ Minimum and maximum angle free adjustable for Y and X Axe
- ✓ Write your own protocol and/or PC application (protocol available for download)
- ✓ Ethernet module option (optional unit)
- ✓ Current measure module option, actual current in Amp's of both motors (optional unit)
- ✓ Free of charge software update available at our High Resolution support page (need password to access)
- ✓ Lot of track software is supported: for example Orbitron (quit old) and PST rotor and much more. (Track software should support SPID or Rot2Prog protocol)



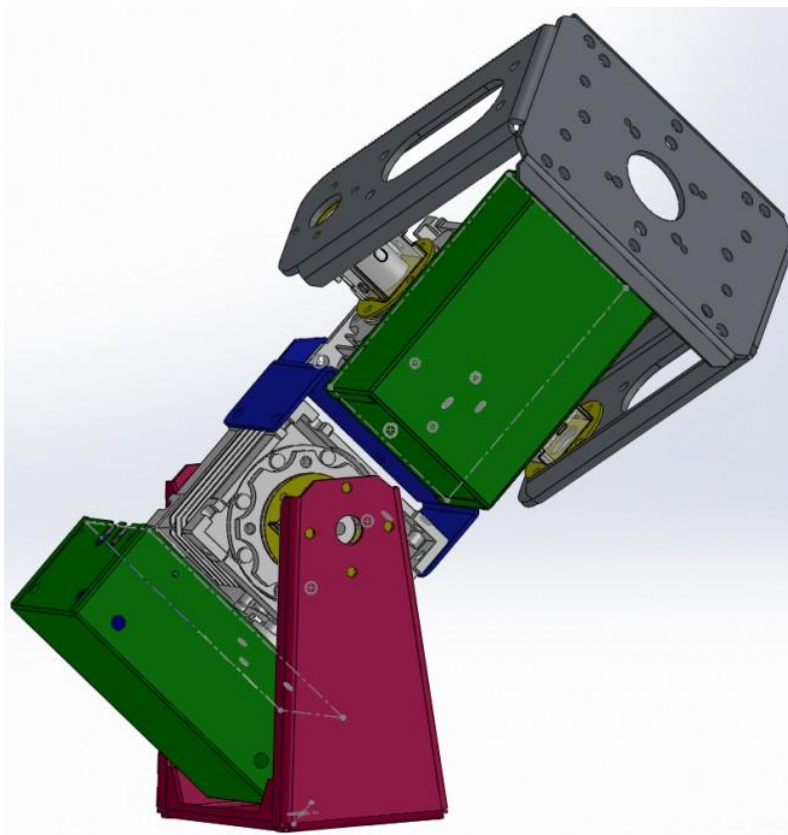
SPID Power Supply Module PS-03



Power supply PS-03 will be direct connected to MD-03.
Control cables are standard supplied including mounted connectors

Build in is an professional 18Volt DC / 33Amp Power Supply unit which offer maximal rotation speed.

PS-03	PS-03 Desk top mount enclosure
AC input	50/60Hz – 100-240VAC
Dimensions	34x26x6.5cm
Weight lbs / Mass Kg	3.7 Kg
Environment	Ground / Mobile free air and / or Sheltered
MTBF	32000 hours @ -20 to +55°C
Supplied with:	Connectors with readymade cables and mains cable



illustrative representation of SPX-01/XY

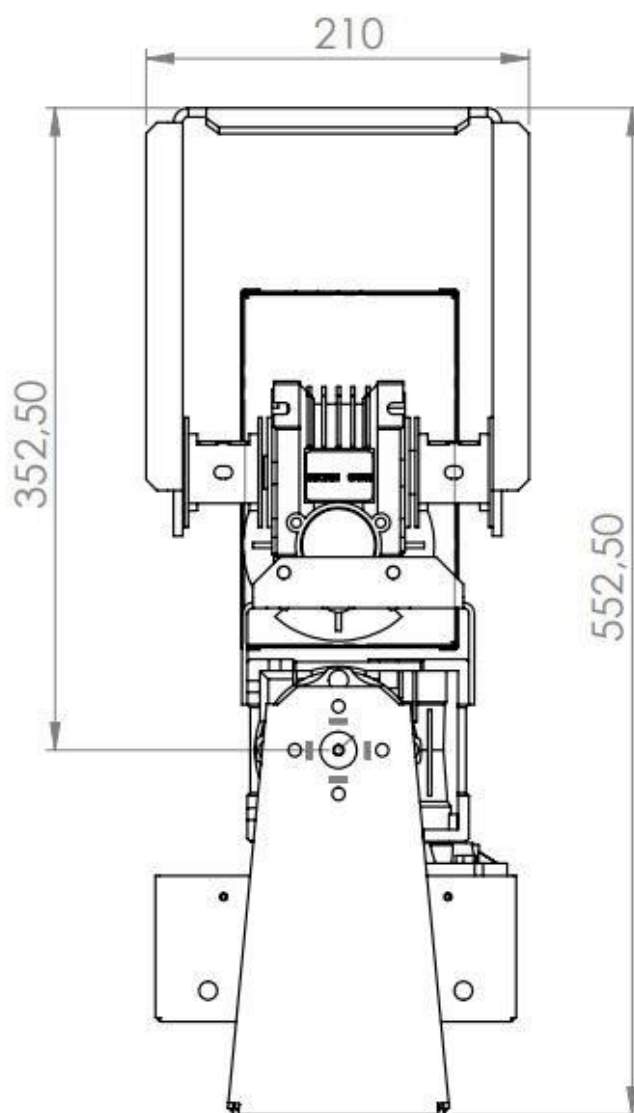
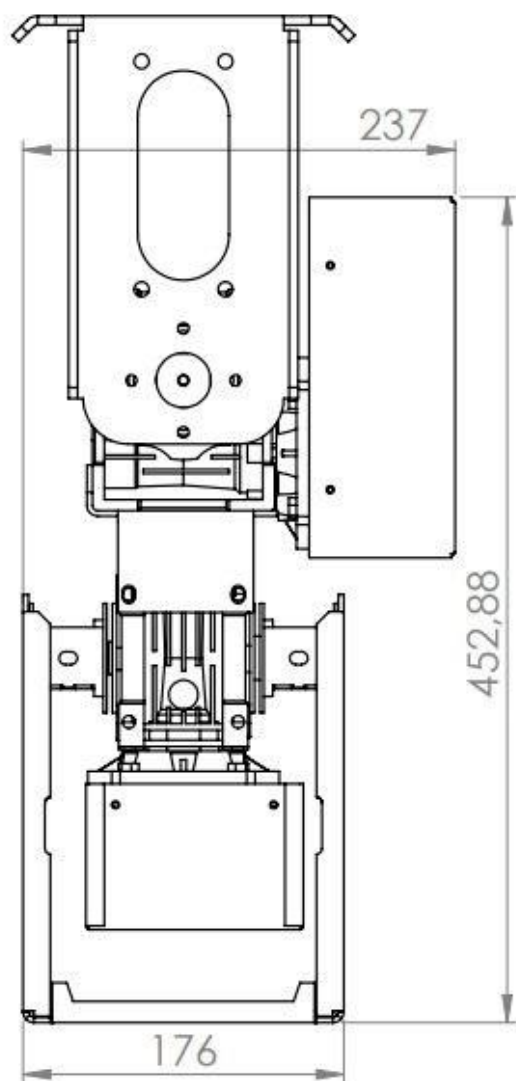
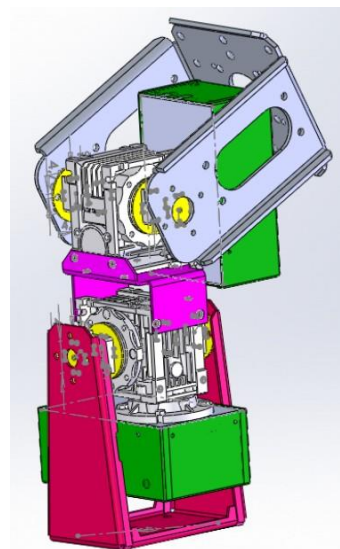
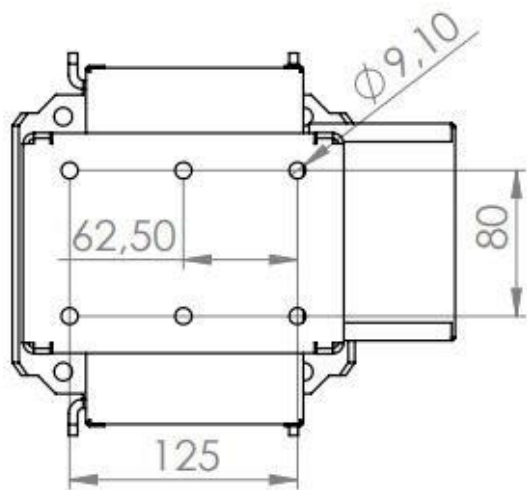
SPX-01/XY Available Accessoires

SPX-01/XY Accessoires	P/N Refer Pricelist	Model
<p>Motor Control Cable 4-core (4x1,5mm²) Reel: 25, 50, 75, 100 meter length <u>XY Rotor needs 2* 4-core length</u></p>	<p>CC4-001/25</p>	
<p>Power Supply PS-03 AC 110-240Volt Output 18Volt 33Amp (Same dimensions as MD-03 controller)</p>	<p>PS-03</p>	
<p>MD-03 Ethernet Module TCP/IP Control rotor system through internet</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>PLATE-04 Mounting bracket to place rotor to vertical pole (mast) Mounting diameter mast: 42 / 65mm Weight: 2.7Kg</p>	<p>PLATE-04</p>	
<p>PLATE-07/STR Mounting bracket to place rotor to vertical pole (mast) Mounting diameter mast max: 38 / 61mm Weight: 2.5Kg</p>	<p>PLATE-07/STR</p>	

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

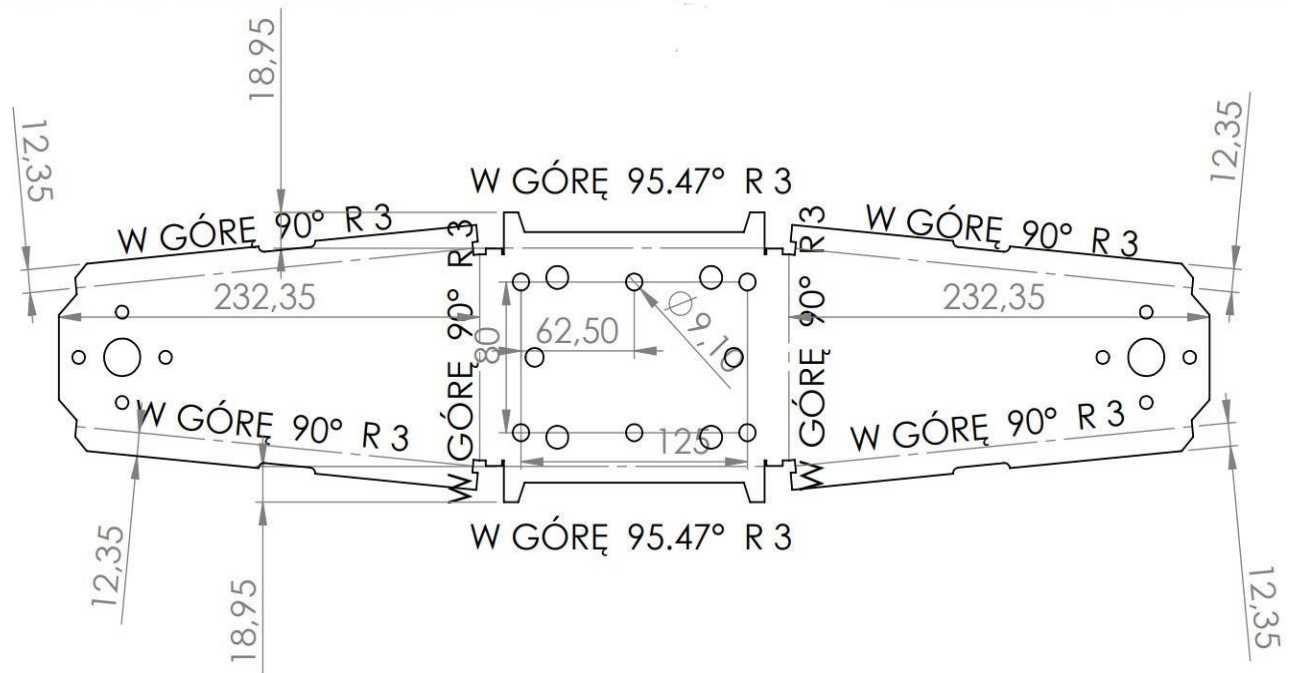
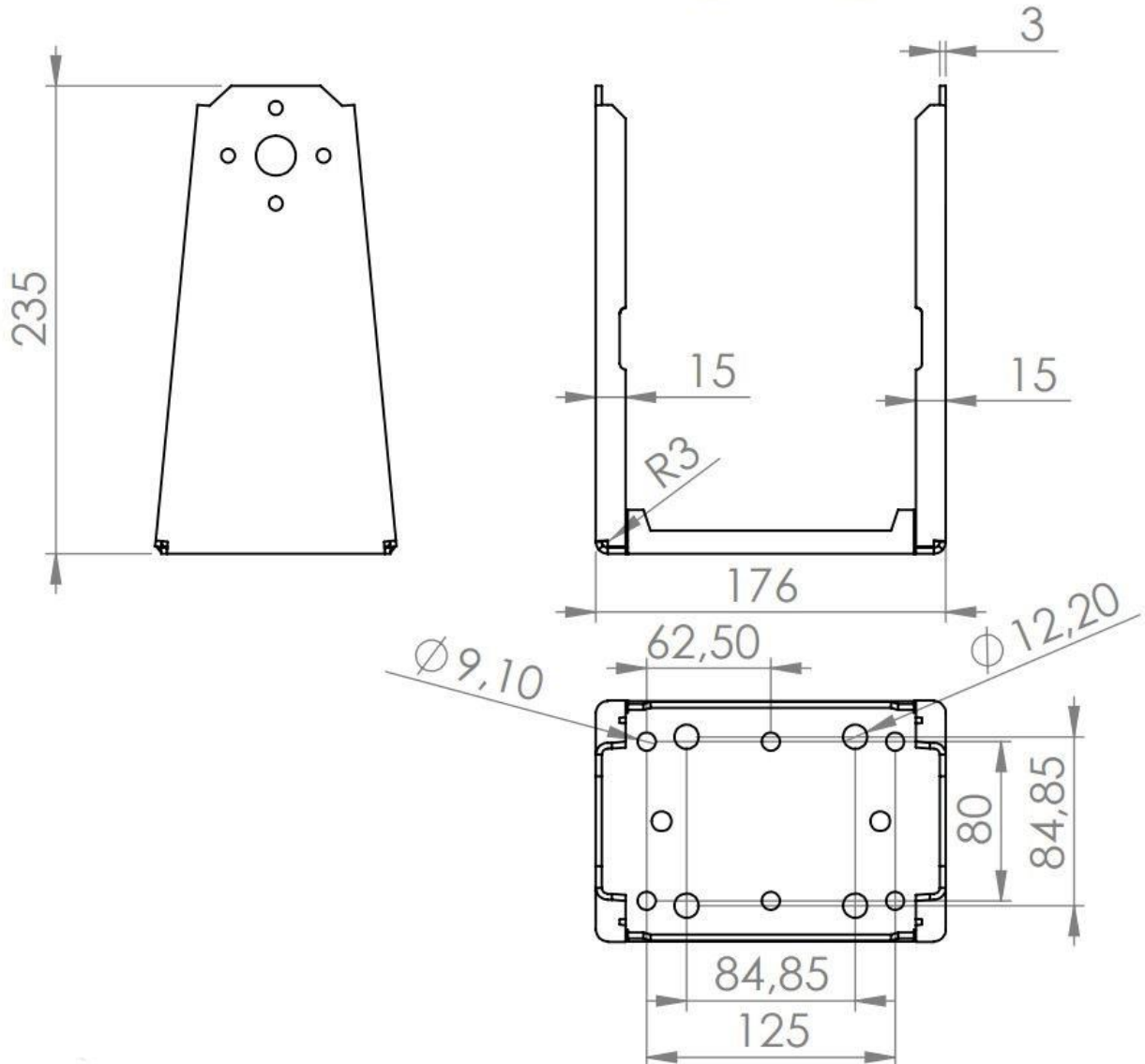
SPX-01/XY Full overview drawing

All dimensions in mm



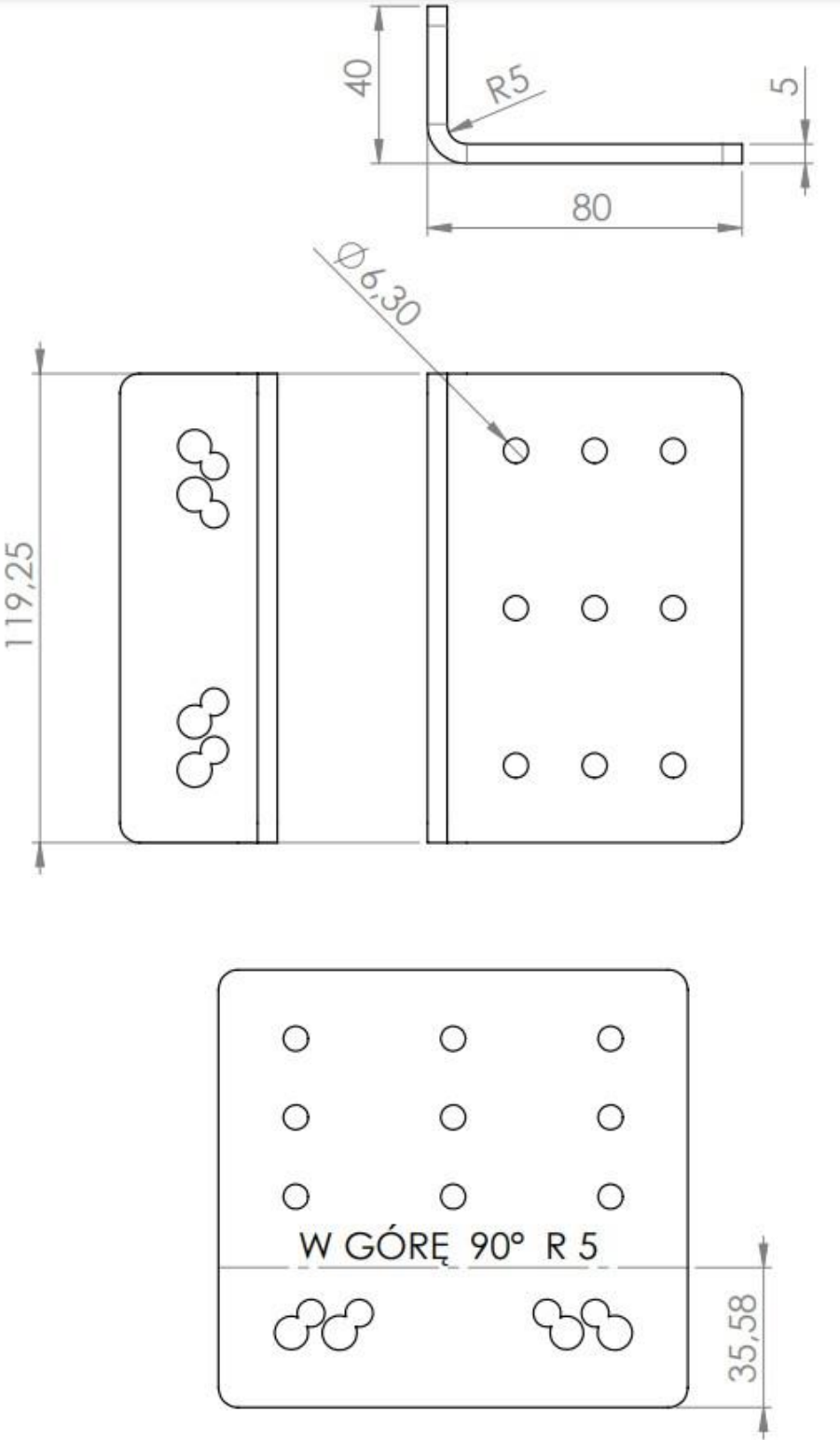
SPX-01/XY Base Plate Mounting Bracket Y Axe

All dimensions in mm



SPX-01/XY Counter weight plate (2 pcs on each side Y axe)

All dimensions in mm



SPX-01/XY vs SPX-02/XY



SPX-01/XY

SPX-02/XY

This specifications sheet is used for SPX Rotators created by RF HAMDESIGN B.V. The Netherlands.
This document has 100% copyright © and owned by RF HAMDESIGN B.V.