DiSEqC 1.2 Positioner

USER MANUAL

- DiSEqC 1.0/1.2 Receivers Compatible
- Work with any Receiver via Optional Remote Control
- Compatible with any Actuator or H-H Mount
- 99 Programmable Memories
- Easy Operation and Quick Installation
- Fine-tune Function for Better Reception
- Anti-Noise Circuit to avoid miscounting
- Short Circuit and Overload Protection
- Software Limits Protection
- Auto Turn-off Function
- Re-Calculate (Adjust Shift) Function
- Lock Key Protection

DiSEqC 1.0   DiSEqC 1.2

❖Content

The picture and the description maybe different from the practicality pls do on the basis of the practicality. This subject to change without further notice.

Safety Precautions

1 The ventilation should not be impeded by covering the ventilation openings With items,such as newspapers,table-cloths,curtains,etc.

2 No naked flame sources,such as lighted candles,should be placed on the apparatus.

3 The apparatus shall not be exposed to dripping or splashing and no objects filled with liquids,such as vases,shall be placed on the apparatus

4 Notice:Don't Reboot in 15 seconds after AC power down.Or not,you need to Reset the box.

DiSEqC 1.0   DiSEqC 1.2   C E
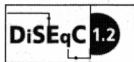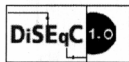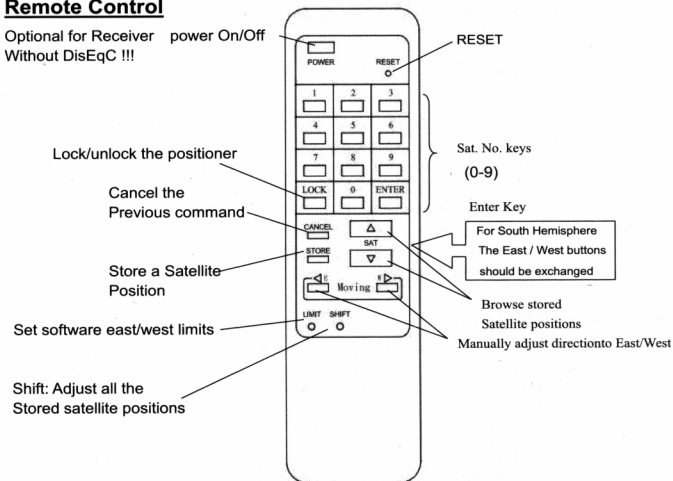
The DiSEqC™ is a trademark of EUTELSAT.

❖ Optional Remote Control v.s. Receiver

Do you need the optional remote control? It is upon your receiver and how many Positions you want. Please check the following table.

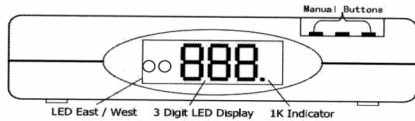| Receiver Type	Remote Control	Positions	Note
DiSEqC 1.2	Not Necessary	99	Fully controlled by receiver
	Yes/Optional	99	Controlled by receiver or Optional remote control.
DiSEqC 1.0	No	4	Controlled by receiver
	Yes/Optional	99	Controlled by receiver or Optional remote control.
No DiSEqC	Yes/Necessary	99	Just like stand-alone Positioner.

Remote Control

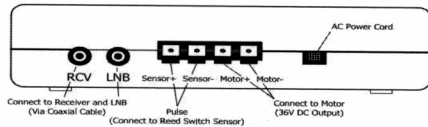Optional for Receiver   power On/Off
Without DiSEqC !!!

RESET

Lock/unlock the positioner

Cancel the
Previous command

Store a Satellite
Position

Set software east/west limits

Shift: Adjust all the
Stored satellite positions

Sat. No. keys
(0-9)

Enter Key

For South Hemisphere
The East / West buttons
should be exchanged

Browse stored
Satellite positions
Manually adjust directionto East/West

POWER   RESET

LOCK   ENTER

CANCEL

STORE   SAT

Moving

LIMIT SHIFT

❖Basic Operation

Front View

LED East / West   3 Digit LED Display   1K Indicator

Manual Buttons

Back View

AC Power Cord

RCV   LNB   Sensor+   Sensor-   Motor+   Motor-

Connect to Receiver and LNB
(Via Coaxial Cable)

Pulse
(Connect to Reed Switch Sensor)

Connect to Motor
(36V DC Output)

Manual Buttons
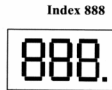

For South Hemisphere:
The East / West buttons
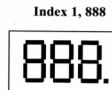Shoult be exchanged.

East   West   Power/
(West)   (East)   Store

✴ 3 Digits LED Display

1.The total **antenna position Index**(pulse counts)is 2,000(0~1,999).
2.For Index 0~999,the lower right dot (1k Indicator)will not light on.
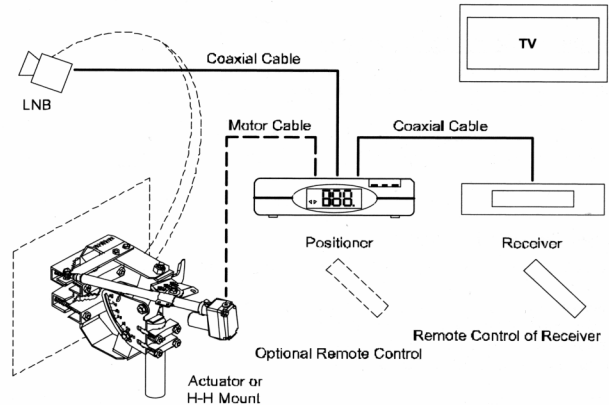3.For Index 1,000~1,999,the lower right dot (1k Indicator) will light on.

Index 888   Index 1, 888

1K Indicator
Lights on

❖ Cable Connection

1. connect the Motor to the terminals printed **M1** & **M2**,and connect the Reed Switch
   Sensor to the terminals printed **SENSOR** via Motor Cable.
   p.s.:**The wrong connection between Motor & Sensor might damage the Reed
   Switch Sensor on the Actuator**.
2. Connect one coaxial cable (RG-6/U is recommended) from the receiver to the rear
   Panel of the positioner printed **To Receiver**. Connect another coaxial cable from the
   Positioner to the LNB.
3. Plug the AC Power Cord into the AC outlet.1 dots of the LED display will light on.
   Now is the stand-by mode. The power of the Positioner will be turned on / off
   automatically while the LNB power of receiver is turned on / off.

TV

Coaxial Cable

LNB

Motor Cable

Coaxial Cable

Positioner

Receiver

Optional Remote Control

Remote Control of Receiver

Actuator or
H-H Mount

◆ For any Receiver optional Remote Control is necessary

*Set the Software High/Low Limits:

Setting the software High/Low limits are recommended for better protection even if there are
Hardware Limit Switches on the actuator or H-H mount. However,the Positioner can be
Operated without setting the software High/Low Limits.

1. Drive the Actuator by Pressing East/West button to the intended lowest/highest
   Position. P.s. For North Hemisphere,the Low limit means East Limit. For South
   Hemisphere,the Low Limit means West Limit.
2. Prod Limit button on the remote control.The Display will show L_ _
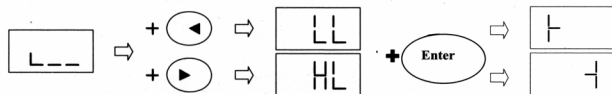
3. Press **East** or **West** button within 5 seconds.The Display will show "L L" or" H L".
   Press **Enter** button within 5 seconds.

*Cancel the Software High/Low Limits:

Prod the Limit button on the remote control twice,the display will show"L_ _"first then
Flashy"LoF",press the Enter button within 5 seconds to cancel the limits.

*Store the Satellits Positions:

1. Drive the Actuator or H-H mount East / West until   the picture on the TV screen is
   Clear.
2. Press **Store** button on the remote control. The Display will show"C_ _".
3. Press no. buttons "1~99"the display will show"C01-C99".
4. press **Enter** button,the display will show"P01~P99".
5. Repeat Step 1 to 4 to set up all the satellites you prefer.


*Recall a Satellite Position:

1.Simply press **Sat ∧** or **sat∨** button to browse.
OR
2.Input specific position number **1~99** on the remote control and press **Enter** button
 Within 10 seconds,the positioner will drive the actuator to the intended position.
p.s. If the position has not been stored yet,the positioner will ignore this command.

*Re-calculate(Adjust Shift) Function:

If only one satellite position is not correct,drive the dish to right position and store this position
again. If all the satellite positions are not correct,then use the this function to correct.

1. Recall one Satellite stored in the positioner, The Display will show"**PXX**"(for
   example"**P03**") for 1 second and then the motor will start moving.
2. After arrived,keep pressing the "shift"button for 3 seconds,the display will show"Sh.F."
   and flash.
3 Drive the actuator East / West until the picture on the TV is clear. The display will show
   the sensor count.(for example"99.9".and flash.)Press the "Enter" button during the
   display is flashing,the display will show"PXX"again(for example"P03").All positions
   are shofted to right angle again.

The following is an example:
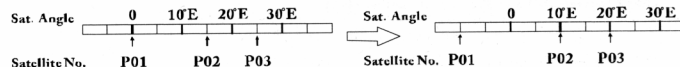
*Lock Key Protection:

LOCK mode is a feature that avoids any trigger on the remote control without purpose or in error.

1. To enter LOCK MODE,press **Lock** key on remote control and then press **Enter** button in 2~3 seconds to lock the positioner.
   The display will show"**Loc**"after blinking,and all the other functions cannot be Triggered **except power on/off,and DiSEqC commands form receiver.**
2. To unlock,press **Lock** key with following **Enter** button again to unlock the Positioner.

$$888 \; + \; (LOCK) \; + \; (Enter) \; \Rightarrow \; \boxed{L \; o \; c}$$

*Restore Factory Default (Reset):

This function will clear all data in the Positioner, includes High/Low Limits, Satellite Positions,…,etc.

1. **Unplug from the AC outlet. Press the Power button on the top of the Positioner and re-plug to the AC outlet.Keep pressing the Power button For 3 seconds. The Display will show 10,9…1 then reset the system.** To stop the Reset process, unplug from the AC outlet before counting to 1.

                                   OR

2. **Keep pressing the "Reset"button on the remote control until the positioner finishes counting down from 10 to 1.** To stop the Reset process,simply stop pressing the **Reset** button before the positioner counts down to 1.
   If reset has been successfully completed.it will show "---"on the LED. After 2 seconds,it shows 000.(count number 1000).

$$\boxed{- - -} \; \Rightarrow \; \boxed{0 \; 0 \; 0}$$

◆ For DiSEqC 1.2 Receiver

The denomination of some commands might be different,but similar. Please refer to the manual of the Receiver.

*Set the Software High/Low Limits:

After sending the commands from the DiSEqC 1.2 receiver,the Display of the positioner will show as below:

$$\boxed{L \; L} \text{ Low Limit} \qquad \boxed{H \; L} \text{ High Limit}$$

	Low Limit	High Limit
North Hemisphere	East Limit	West Limit
South Hemisphere	West Limit	East Limit

*Cancel the Software High/Low Limits:

After sending the command from the DiSEqC 1.2 receiver,the Display of the positioner will show "LoF"

$$\boxed{L \; o \; F}$$

*Stor the Satellite Positions:

1. Drive the Actuator East / West until the picture on the TV screen is clear.
2. Choose a sat.no. 1~99 and then send **Store** command from the receiver.
3. The Display will show **"C01-C99"**then show**"P01-P99".**

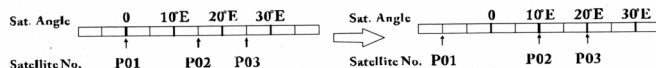   Repeat Step 1 to 3 to set up all the satellites you prefer.

*Recall a Satellite Position:

Change the satellite no. from the receiver,the positioner will drive the actuator to the intended positon.However,if the position has not been stored yet,the positioner will ignore the command.

Note:If the Channels and Satellites are well preset on the receiver,it will drive the actuator to the right position while user changes the Channels. After arriving the right position,the Display will show the Satellite no.as**"P01"~"P99"**.

*Re-calculat (Adjust Shift) Function:

1. Recall one Satellite position stored in the positioner. The Display will show **"PXX"** (for example **"P03"**) for 1 second and then the motor will start moving.
2. After the motor moves,drive the actuator East/West until the picture on the TV for this Satellite is clear for **"P03"**.
3. Send **Shift** command(or re-calculate)from the DiSEqC 1.2 receiver.
4. After setting successfully,the Display will show **"PXX"** again(for example **"P03"**). The position PXX is shift to a new position.

Sat. Angle	0	10°E	20°E	30°E
Satellite No.	P01	P02	P03	

⇒

Sat. Angle	0	10°E	20°E	30°E
Satellite No.	P01		P02	P03

*Go to the mechanical Position 0(Operate by Receiver only):

1. **Before using this function,please make sure the mechanical limit switches of The actuator or H-H mount are well adjusted in order to avoid any damage or injury.**
2. Send **"reset"** or **"Goto 0"** command from the recevier. The positioner will drive the motor toward East .If the motor goes to the wrong direction,just reverse the 2 wires Connecting currently to **M1** & **M2** on the positioner.The position index on the LED Display will be decreased until the motor stops due to the mechanical limit switch, Then the Display will show "Er2" first then "000" which indicates the mechanical 0 Position of the Actuator.

Er2 ⇒ 000

*Restore Factory Default(Reset):

This function will clear all data in the Positioner, includes High/Low Limits,Satellite Positions,…,etc.

Unplug from the AC outle.Press the Power button on the top of the positioner and re-plug to the AC outlet. Keep pressing the Power button for 3 seconds. The Display will show 10,9…1,then reset the system. To stop the Reset process, **Unplug** from the AC outlet before counting to 1.

❖ For DiSEqC 1.0 Receiver

1. For DiSEqC 1.0 Receivers,they can control up to 4 positions.

Position	1	2	3	4
LNB	1	2	3	4
LNB	A	B	C	D

The table is for your reference only. The operation might be different for different receivers
For example,some receivers call position 1~4 as **LNB1,2,3,4 or DiSEqC A,B,C,D.** Please refer to the manual of your receivers

2. In order to avoid confusion.the positioner will ignore the DiSEqC 1.0 commands after receive the DiSEqC 1.2 commands. It can recognize the DiSEqC 1.0 commands again after unplug from AC for more than 5 seconds.
3. The optional Remote Control is not necessary for DiSEqC 1.0 receivers.However,the optional Remote Control is strongly recommended for the following reasons:1)Easier Operation. 2) More positons(from 4 to 99).

The following is the operation without remote control. If you have the optional remote

Control, please refer to chapter. **For any Receiver**

*Store the Satellite Positions: Operate via the 3 Manual buttons

1. Drive the Actuator East/West via the manual East/West until the picture on the TV screen Is clear.
2. Press the Power/Store button for 5 seconds, The LED will show "C01".
3. Press Up/Down buttons to choose the sat. No. you want to store: C01~C99
4. Press Store button for confirmation within 3 seconds,the LED will show P01~P99.

Manual Buttons

DiSEqC 1.2

◄ ► ⏻

East(West) West(East) Power/
/Down /UP Store

Repeat Step 1 to 3 to set up all the satellites you prefer. However,for DiSEqC 1.0
Receivers,only P01~P04 can be used. C
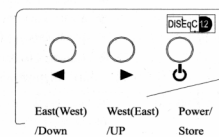
*Recall a Satellite Position:

Change the DiSEqC 1.0 setting of the channels.The positioner will drive the dish to the right Satellites while you change the channel. The Display will show **"P01"~"P04"**

*Restore Factory Default(Reset):

This function will clear all date in the Positioner, includes High/Low Limits,Satellite Positions,…,etc.
Unplug from the AC outlet.Press the Power button on the top of the positioner and re-plug to the AC outlet.Keep pressing the power button for 3 seconds. The Display will show 10, 9 …1 then reset the system. To stop the Reset process,unplug from the AC outlet before counting to 1.

❖ Troubleshooting

Symptoms	Check points
Can't work with DiSEqC 1.0 Receiver	1. Make sure positon no.1 to 4 are stored. 2. After receive DiSEqC 1.2 commands,the DiSEqC 1.0 Commands will be ignored. Please operate the Positioner by DiSEqC 1.2 receiver,which is much better for motorization system.
Can't move to count less Than 0 or more than 999	The total position index of this Positioner is 2000 (0~1999),which is enough for most of the application. Use""**Goto Position 0**" Function to solve.
The Stored Positions are not Correct.	1. Try to use the "**Re-calculate(Adjust Shift) function**" To correct the position first. 2. If it happens again and again, please replace the Reed Sensor to check if the Sensor is stable. 3. Restore Factory Default(Reset).
The LED shows I--- or ---I, and can't move more.	The symbols mean Electrical Limits,which have been Set.If you want to cancel this setting,use the "Limit Off Function"from the receiver. And set the software limit again.
Er1 Message Over Current Or System shut-dow	● Make sure there is no short-circuit of the wire connection. ● Check if the Antenna is blocked by anything. ● Make sure the Motor works well.Some times a Malfunction Motor can cause higher current. ● Maybe the Antenna is too heavy.Please try to use our **high-power** version.
Er2 Message(No Pulses)	● Re-check the wire connection. ● Make sure the actuator is not stopped by Mechanical Limit. ● Check if the Reed Switch Sensor is broken. ● Check if the Motor is broken.
Er3 / Er4 Message (Internal Error)	● Reset the positioner
Only the LED lights on and the Positioner doesn't work. (No response)	● Unplug the AC Power Cord from the AC outlet.Wait for more than 10 seconds then re-plug. This problem might be caused by the unstable AC power. In order to protect the stored data,the Positioner will lock itself under this situation.A voltage regulator might help.
Turn-Off Automatically	The Display will be turned-off while LNB power is off.
Cant't be Turned-off by Optional Remote Control or Manual Power button	If the LNB power of receiver is switched-on.the positioner Can't be turned-off

❖ Quick Table for Optional Remote Control

⬭ Key on Remote Control   ⬭ Button on Positioner

Power ON/OFF: [Power] or [⏻]

Manual East/West: [◁E] or [W▷] or [◁] or [▷]

Set Software Limit: [◁E] or [W▷] to intended Lo/Hi position+ [Limit] + [◁E / W▷] + (Enter)

Cancel Software Limit: [Limit] + [Limit] + (Enter)

Store Satellite Positions: [◁E] or [W▷] to the Position you want.press [Store] then Input Sat No. ①~㊾+ (Enter)

Recall a stored position (1)SAT [△] or SAT [▽] to better position
(2) Press Sat No. key ①~㊾+ (Enter)

Shift Function :Recall a stored position 1~99+ [Shift] for 3 seconds ,then LED shows"sh.F." + [◁E] or [W▷] to better position+ (Enter)then LED shows P01~P99.

Reset: keep pressing [Reset] for 10 seconds .The actuator will retract fully and the software limits will be canceled.

Interruption: Press [Cancel] to STOP the Motor.

Lock key protection :press [LOCK] + (Enter)to lock the positioner and again to unlock it.

◆ Display Description

Display	Description
(blank)	Standby mode
`000`	Pulse 000.
`000`	Pulse "1000"(dot means 1K).
`C01` `C99`	Satellite position in storing process.
`P01` `P99`	Satellite position 01~99
`Er2`	Error message:no feedback from sensor or reach to hardware limits.
`HL`	Setting software high limit
`LL`	Setting software low limit

Display	Description
`L__`	Enter Limit Setting mode.
`LoF`	Cancel software limits.
`├`	Reach to software low limit.
`┤`	Reach to software high limit.
`ShF`	Re-Calculation(adjust shift) function.
`Loc`	Lock key protection.
`_ _ _`	Flashy display after successful resetting the positioner.

◆ Specificatio

Input Voltage	:	220-240VAC 50Hz (110VAC 60Hz Available)
		13/18 VDC (F Type via Coaxial Cable)
Output Voltage	:	13/18 VDC (F Type/According to the Input)
		36VDC (via Motor Cable)
		5VDC (Optional for Optical Sensor)
Maximum Current	:	2.2A/3.5A (High Power Version)
Power Consumption	:	Standby:5W
		Max.: 70W/100W (High Power Version)
Position Memories	:	99/4
Protocol	:	**DiSEqC 1.2**/1.0
Remote Control	:	IR(Optional)
Operating Temperature	:	5℃ to 40℃ (41° F to 104° F)
Storage Temperature	:	-20℃ to 60℃ (-4° F to 140° F)
Dimensions(WxHxD)	:	230x70x158 mm3(Net)/270x76x190 mm3(Gross)
Weight	:	1.2Kg(Net)/1.3Kg(Gross) (+0.3Kg for High Power version)

All Specification might be changed without prior notice.　　　　　PN9211-1