

INSTRUCTIONS FOR ENCODER RESOLUTION CALIBRATION

Newport™ guarantees specification values which are measured and recorded following ASME B5.57 and ISO 230-2 standards. The typical performance values exceed the guaranteed specifications.

The following stages series are supplied with a **Control report** indicating the measured value for the index increment which must be updated in the stage default configuration file to ensure optimum performance.

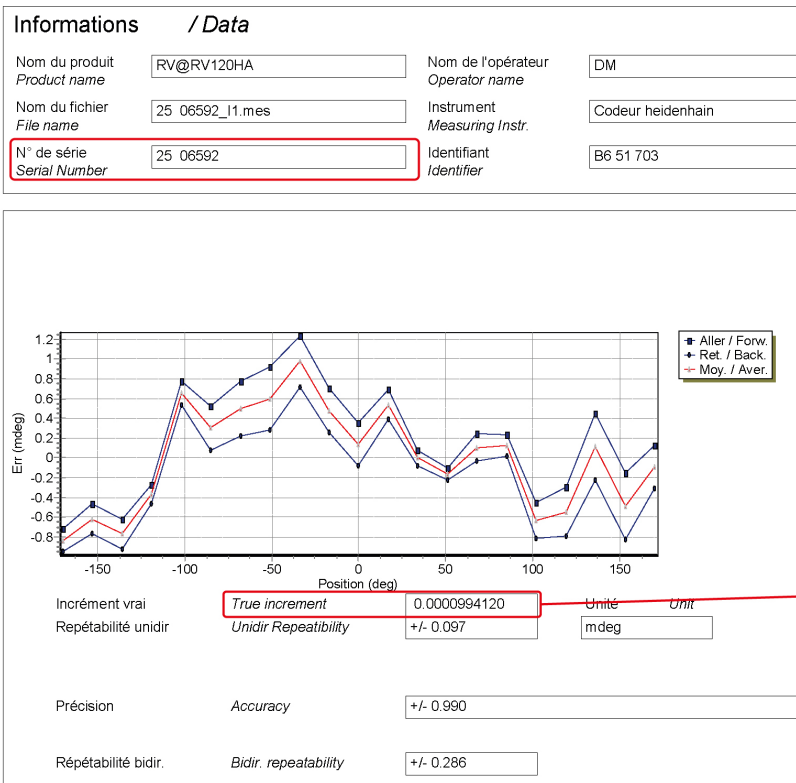
1. STAGES SERIES CONCERNED

- ILSxxHA
- IMSxxHA
- RVxxHAxx
- TRA
- TRB
- LTA HL / HS

2. HOW TO RETRIEVE THE ENCODER RESOLUTION TRUE VALUE

The true value of the Encoder increment is indicated:

- in the Control report delivered with the stage
- on a label affixed to the stage



RV120HAT
Rés codeur: 0.0000994120

3. HOW TO CONFIGURE THE ENCODER RESOLUTION TRUE VALUE IN XPS-D / RLD CONTROLLERS

Once the stage has been added to the stages.ini file, modify the EncoderResolution parameter:

- Click on the stage from the list under “**Stages already in stages.ini**”. A window is displayed which allows the user to modify the stage in the stages.ini file.
- Scroll down to the section “**Position encoder interface parameters**” that contains the **EncoderResolution** parameter that will be modified.
- Modify the **EncoderResolution** parameter according to the Control report of the stage. In the example described the value of the EncoderResolution parameter must be changed from the default value (0.0001) to the control report **True increment** value (0.0000994120)
- When done, click “**Save**” to apply the new value, or click “**Cancel**” if a mistake was made.
- To take the new value into account, reboot the controller by clicking the “**REBOOT**” button.

Newport®

System Stages Controller Files Front panel Terminal Data acquisition Documentation

Add, remove or edit stages Create custom stages Tuning Fine tuning Lissajous

Add, remove or edit stages

In this page, the administrators can configure the stage configurations that will be selected in the control.

Stages already in stages.ini (14)

Click on a stage to duplicate, rename, modify or delete it.

DUMMY_ENCODER DUMMY_ENCODER_TSPeMUL DUMMY_STAGE NO_DRIVER

RV120HAT XPS-DRV03

XM XML350 XPS-DRV11

Y Y.Option1_2 Y.Option1_3

Modify a stage configuration

Review or edit the name and parameters for this stage.

Configuration name: RV120HAT@XPS-DRV03

```
DriverStageInertia = 0.000078 ; Kg.m²
DriverGearRatio = 0.5 ; Revolution/Unit

; --- Driver command interface parameters
; --- <MotorDriverInterface.AnalogVelocity>
MotorDriverInterface = AnalogVelocity
DelayAfterMotorOnToSetClosedLoop = 0.05 ; sec # Not
ScalingVelocity = 120 ; Unit/Sec
VelocityLimit = 120 ; Unit/Sec
CurrentLimit = 5 ; Amp
CurrentLimit = 4 ; Amp

; --- Position encoder interface parameters
; --- <Encoder.AquadB>
EncoderType = AquadB
EncoderResolution = 0.0001 ; Unit
LinearEncoderCorrection = 0 ; Ppm
PositionerMappingFileName =
PositionerMappingLineNumber = 0
PositionerMappingMaxPositionError = 0 ; Unit
EncoderIndexOffset = 0 ; Unit


; --- Travels and servitudes type parameters
; --- <Servitudes.StandardDriverPlug>
ServitudesType = StandardDriverPlug
MinimumTactPosition = -170 ; Unit
```

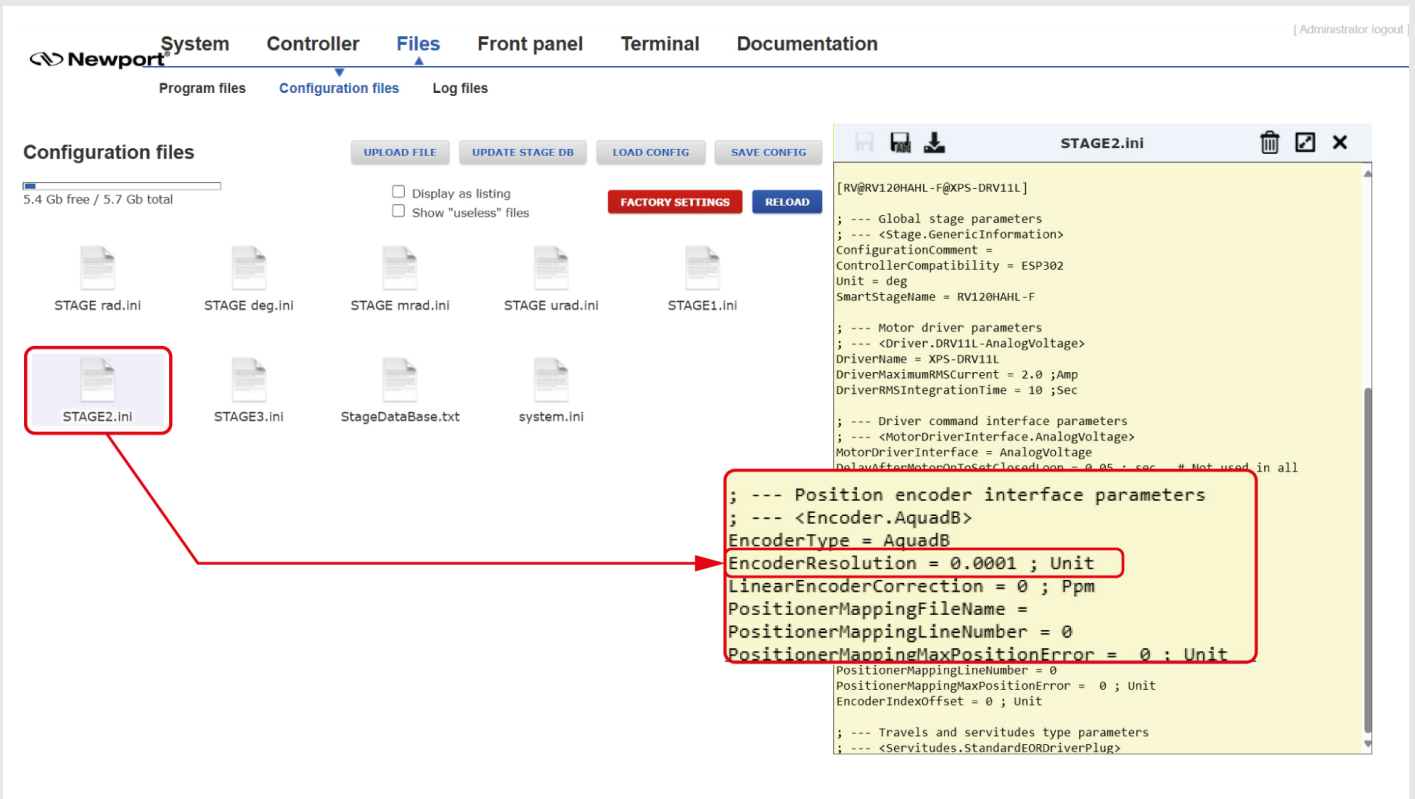
RESTART APPLICATION REBOOT

DELETE DUPLICATE SAVE CANCEL

4. HOW TO CONFIGURE THE ENCODER RESOLUTION TRUE VALUE IN ESP302 CONTROLLER

Once the stage has been added to the configuration files, modify the EncoderResolution parameter:

- Click on the stage.ini file from the **File / Configuration files** window. The edit window displays the stage.ini file and allows the user to modify the stage parameters.
- Scroll down to the section “**Position encoder interface parameters**” that contains the **EncoderResolution** parameter of the stage that will be modified.
- Modify the **EncoderResolution** parameter according to the Control report of the stage. In the example described the value of the EncoderResolution parameter must be changed from the default value (0.0001) to the control report **True increment** value (0.0000994120).
- When done, click Save icon  to apply the new value.
- To take the new value into account, reboot the controller by clicking the “**RELOAD**” button and then select “**REBOOT**”.



The screenshot shows the Newport configuration interface. The 'Files' tab is active, displaying a list of configuration files. The file 'STAGE2.ini' is selected and highlighted with a red box. A red arrow points from this box to the 'STAGE2.ini' file in the editor window on the right. In the editor, the 'Position encoder interface parameters' section is highlighted with a red box, and the 'EncoderResolution' parameter is specifically highlighted with a red box. The value of 'EncoderResolution' is currently '0.0001 ; Unit'.

```
[RV@RV120HAHL-F@XPS-DRV11L]
; --- Global stage parameters
; --- <Stage.GenericInformation>
ConfigurationComment =
ControllerCompatibility = ESP302
Unit = deg
SmartStageName = RV120HAHL-F

; --- Motor driver parameters
; --- <Driver.DRV11L-AnalogVoltage>
DriverName = XPS-DRV11L
DriverMaximumRMSCurrent = 2.0 ;Amp
DriverRMSIntegrationTime = 10 ;Sec

; --- Driver command interface parameters
; --- <MotorDriverInterface.AnalogVoltage>
MotorDriverInterface = AnalogVoltage
DelayAfterMotorPhotoSetClosedLoop = 0.05 ; sec # Not used in all

; --- Position encoder interface parameters
; --- <Encoder.AquadB>
EncoderType = AquadB
EncoderResolution = 0.0001 ; Unit
LinearEncoderCorrection = 0 ; Ppm
PositionerMappingFileName =
PositionerMappingLineNumber = 0
PositionerMappingMaxPositionError = 0 ; Unit
PositionerMappingLineNumber = 0
PositionerMappingMaxPositionError = 0 ; Unit
EncoderIndexOffset = 0 ; Unit

; --- Travels and servitudes type parameters
; --- <Servitudes.StandardEORDriverPlug>
```

5. ENCODER RESOLUTION CALIBRATION FOR NON NEWPORT CONTROLLER

Refer to controller’s Manual for stage configuration procedure to modify the equivalent EncoderResolution parameter.

