Subject: Fwd: Filter Wheel
Date: Tuesday, December 21, 2021 at 11:44:57 AM Eastern Standard Time
From: Stephen Hope
To: Massimo Robberto
Attachments: 12162_5.png, PastedGraphic-5.tiff

External Email - Use Caution

Regards,

PastedGraphic-5.tiff

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Begin forwarded message:

From: stephen.hope@idg.jhu.edu
Subject: Fwd: Filter Wheel
Date: October 14, 2021 at 11:40:47 AM EDT
To: Jonathan Hoover <12jonboy12@gmail.com>

Regards,

PastedGraphic-5.tiff

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Begin forwarded message:

From: stephen.hope@idg.jhu.edu
Subject: Filter Wheel

Date: May 21, 2021 at 12:03:14 PM EDT
To: Jonathan Hoover <12jonboy12@gmail.com>

Here are filter wheel commands to send to the PCM…. The **stored procedures** only need to be sent once in the lifetime of the drive… You should have the ability to send these, but will not have to unless we replaced a drive.

The **operating commands** allow you to choose a particular filter by asking the drive to execute a stored procedure. This should be integrated into your code. You also ought to query the wheels to make sure they are where you think they are….

Note: all procedures include the command to route the drive packet via the PCM so it should be really simple to integrate.

BTW the camera is no facing the filter wheel.

FILTER WHEEL STORED PROCEDURES - These need to be sent to the motor controllers the first time they are used… i.e if you replace a motor controller you should reinitialize with these commands…
WHEEL 1

Initial drive settings (velocity, steps ratio, current), plus homing routine — this runs automatically on power up.
~@,9600_8N1T2000,/1s0m23l23h0j32V4000v2500n0P0P100z0M500e1R

Position A1
~@,9600_8N1T2000,/1s1A46667R

Position A2
~@,9600_8N1T2000,/1s2A62222R

Position A3
~@,9600_8N1T2000,/1s3A77778R

Position A4
~@,9600_8N1T2000,/1s4A0R

Position A5
~@,9600_8N1T2000,/1s5A15555R

Position A6
~@,9600_8N1T2000,/1s6A31111R

WHEEL 2

Initial drive settings (velocity, steps ratio, current), plus homing routine — this runs automatically on power up.
~@,9600_8N1T2000,/2s0m23l23h0j32V4000v2500n0P0P100z0M500e1R

Position B1
~@,9600_8N1T2000,/2s1A46667R

Position B2
~@,9600_8N1T2000,/2s2A62222R

Position B3
~@,9600_8N1T2000,/2s3A77778R

Position B4
~@,9600_8N1T2000,/2s4A0R

Position B5
~@,9600_8N1T2000,/2s5A15555R

Position B6
~@,9600_8N1T2000,/2s6A31111R

OPERATING COMMANDS:

Homing occurs automatically on power up…. Or it can be forced using:

~@,9600_8N1T2000,/1e0R (wheel 1)
~@,9600_8N1T2000,/2e0R (wheel 2)

Positions 1 through six are commanded as follows:

~@,9600_8N1T2000,/1e1R (Position A1)
~@,9600_8N1T2000,/2e1R (Position B1)

~@,9600_8N1T2000,/1e2R (Position A2)
~@,9600_8N1T2000,/2e2R (Position B2)

~@,9600_8N1T2000,/1e3R (Position A3)
~@,9600_8N1T2000,/2e3R (Position B3)

~@,9600_8N1T2000,/1e4R (Position A4)
~@,9600_8N1T2000,/2e4R (Position B4)

~@,9600_8N1T2000,/1e5R (Position A5)
~@,9600_8N1T2000,/2e5R (Position B5)

~@,9600_8N1T2000,/1e6R (Position A6)
~@,9600_8N1T2000,/2e6R (Position B6)

QUERY COMMANDS:

~@,9600_8N1T2000,1/?0 (returns wheel 1, current step count)
~@,9600_8N1T2000,/2?0 (returns wheel 2, current step count)

Example response: /0`15555

When the wheel is in position (i.e. not moving) the step count should be:

- Position 1: 46667
- Position 2: 62222
- Position 3: 77778
- Position 4: 0
- Position 5: 15555
- Position 6: 31111

~@,9600_8N1T2000,1/?0 (returns wheel 1, sensor status)
~@,9600_8N1T2000,/2?0 (returns wheel 2, sensor status)

Example Response: /0'14

When the wheel is in position (i.e. not moving) the sensor status should be:

- Position 1: 14
- Position 2: 14
- Position 3: 14
- Position 4: 13
- Position 5: 14
- Position 6: 14

Regards,

PastedGraphic-5.tiff

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