Table 1. Writable Keywords for Controlling Rotation

Select kind of motion or restrict motion:	
ROTATALG	How to combine the values of two Renishaw readheads, e.g. averaging.
ROTATDCS	Boolean flag: shall commands from DCS be followed?
ROTATMOD	Rotation mode: follow DCS demands; JOG mode; POSition mode; etc.
ROTATLCK	Software lockout (ignore commands unless set to `unlocked`.
Calibrate (home) rotator:	
ROTATCAL	Write: force state=uncalibrated or force home sequence. Read: tell current calibration state.
POS mode: motion to a fixed position:	
ROTATNAM	Go to a named position.
ROTATORD	Go to an ordinal position corresponding to a named position.
ROTATVAL	Write: go to a position; read: tell current. Degrees.
ROTATRAW	Like `ROTATVAL`, but units are Renishaw encoder counts.
ROTATREL	Make a relative motion; units are Renishaw encoder counts
ROTATMSP	Motor speed when in POS mode; units are motor encoder cts/sec.
JOG mode: move at given speed:	
ROTATVEL	Write: request jog in deg/sec. Read: curr speed.
ROTATSPD	Like `ROTATVEL`, but units are Renishaw encoder cts/sec.
Debugging and logging control:	
DISP6BCI	Change broadcast interval of certain keywords.
DISP6DWIM	Magic “Do What I Mean”; requires signal to enable.
ROTATCAP	Trigger high-speed capture of encoder data.
ROTATTST	Unused.
DISP6DMP	Request a dump of internal state into the logfile.
DISP6DBG	Set debug level.
DISP6LVL	Set logging level.
DISP6SUF	Set suffix of high-bandwidth logfiles.
DISP6LTO	Set duration of high-bandwidth logging.
Select kind of motion or restrict motion:	
ROTATCMT	For user’s convenience; not used by rotator.
ROTATTAG	For user’s convenience; not used by rotator.
Select kind of motion or restrict motion:	
SOUNDVOL	Volume at which sounds should be played.
SOUNDNAM	Play the sound file named here.
DISP6BUZ	Bool: Turn on or off buzzer 1.
DISP6BAZ	Bool: Turn on or off buzzer 2.
Miscellaneous:	
ROTATNRS	Seconds over which RMS data are measured.
ROTATFIM	Bool: fiducial-light control (deprecated).
ROTATFOP	Bool: state of fiducial light detector (deprecated).

Table 2. Readonly Keywords for Monitoring Rotation. (Not all keywords are shown.)

Hardware Status Keywords	
ROTATBYP	Bool: If true, power to motor has been switched to bypass the motor controller.
ROTATHLK	Bool: If true, power to motor has been locked out by panic button.
ROTATEMS	Bool: If true, the dome's emergency-stop button has cut power to rotator motor.
ROTATDIS	Bool: If true, power to motor been disabled due to an open hatch.
ROTATBRK	Bool: If true, band brake is on.
ROTATLIM	Enum: Limit status; indicates which limit is active, if any.
ROTATSEC	Bool: If true, the rotator passed the primary limit and tripped the secondary limit.
ROTATEST	Enum: Indicates if Renishaw and motor encoders are in reasonably good agreement.
ROTATPOW	Bool: Combines above indicators to indicate if there is motor power.
Moving and Tracking Errors:	
ROTAMMAX	Max. error in Galil's internal control loop over last `ROTATNRS` sec; motor enc counts.
ROTAMMIN	As above, but minimum error.
ROTAMRMS	As above, but RMS error.
ROTATMAX	Maximum tracking error over last `ROTATNRS` seconds; arcsec.
ROTATMIN	Minimum tracking error over last `ROTATNRS` seconds; arcsec.
ROTATRMS	RMS tracking error over last `ROTATNRS` seconds; arcsec.
Encoder offsets:	
ROTA1GOF	Renishaw 1's adjustment for crossing tape butting. Usually disabled.
ROTA1IOF	Renishaw 1's adjustment for variation in index pulse location. Usually disabled.
ROTA1LTA	Renishaw 1's last latched value for its index pulse.
ROTA1LTM	Same as `ROTA1LTA`, but modulo one circle.
ROTA1QBT	Number of samples in last second that Renishaw 1's signal level was log.
ROTA1QOF	Renishaw 1's adjustment for low signal level. Usually disabled.
ROTA1RAW	Renishaw 1's encoder value.
ROTA1REN	Renishaw 1's current signal level.
ROTA1TOF	Renishaw 1's total adjustment (sum of other *OF keywords).
There is also a set of similar keywords for Renishaw 2.	
Other Position and Status Keywords:	
ROTATERR	Last error code used in a KTL reply.
ROTATMSG	String message describing the `ROTATERR`.
ROTATCON	`AUTO` (keyword and DCS control) or `MANUAL` (paddle) control.
ROTATSTA	Overall rotation status, e.g. Tracking, Slewing, Halted.
ROTATTRK	True if tracking.
ROTATTSL	Time spent slewing to next target.
ROTATTAQ	Time acquiring (transitioning from slewing to treacking).
ROTATTTK	Time spent continuously tracking.
ROTATTSE	Time settling (transitioning from slewing to holding position after a move).
ROTATTSH	How long it's been since the instrument was homed.
ROTATTVE	Target velocity, deg/sec.
ROTATTVA	Target position, deg.
ROTATTOR	Current torque.
ROTATATL	Number of measurements in last second during which torque was at the limit; if > 0, may indicate rotator is out of balance or there are objects in path.

Table 3. Supplementary Environmental Keywords. (Not all keywords are shown.)

AIRPRESS	Bool: true if air pressure is ok; false if the pressure is too low.
BAYBFAN	Bool: true if the fan between electronics bays A and B is on.
BAYCFAN	Bool: true if the fan between electronics bays C and D is on.
COOLFLOW	Bool: true if the coolant flow rate is ok; false if it's too low.
POW05V	Value of the rotation electronics 5V power supply
POW12R	Value derived from the $+-12$V power supply.
POW48V	Value of the rotation electronics 48V power supply
TMPBAYBC	Temperature of electronics bay B's in celsius.
TMPBAYCC	Temperature of electronics bay C's in celsius.
TMPCINC	Temperature of the coolant at the entrance to the electronics bays, celsius.
TMPCOUTC	Temperature of the coolant at the exit from the electronics bays, celsius.
TMPELECC	Rotation controller electronics' temperature, celsius.