

LIST OF SCPI COMMANDS

This document contains a list of SCPI commands currently implemented in Mercury Systems.

Command						Options	R/W	Description
SYS	CAT						R	Returns a list of existing hardware devices
SYS	DISP	DIMA				OFF:ON	R/W	Set automatic display brightness
SYS	DISP	DIMT				0 - 10	R/W	Sets the time for the automatic dimming
SYS	DISP	BRIG				0 - 100	R/W	Sets the brightness
SYS	MAN	HVER					R	Reads Hardware version of the Box
SYS	MAN	FVER					R	Cryosys version
SYS	MAN	SERL					R	Serial number of the box
SYS	TIME					hh:mm:ss	R/W	Sets the time of the box
SYS	DATE					yyyy:MM:dd	R/W	Sets the date of the box
SYS	USER					NONE:GUEST:NORM:ENG	R/W	Sets the remote user level (a password may be required after the level)
SYS	PASS						W	Sets a new password for the present user level
SYS	FLSH						R	Reads the available memory in the box
SYS	CUTOFF					OFF:ON	R/W	Sets the shutdown mode of a Cryojet
DEV	UID	TEMP	MAN	HVER			R	Reads the hardware version of the daughter card
DEV	UID	TEMP	MAN	FVER			R	Reads the firmware version of the daughter card
DEV	UID	TEMP	MAN	SERL			R	Reads the serial number of the daughter card
DEV	UID	TEMP	NICK				R/W	Sets the name of the device
DEV	UID	TEMP	TYPE			DUM:PTC:NTC:TCE:DDE	R/W	Sets the sensor type
DEV	UID	TEMP	EXCT	TYPE		UNIP:BIP:SOFT	R/W	Sets the excitation type
DEV	UID	TEMP	EXCT	MAG		0 - 1000	R/W	Sets the excitation magnitude
DEV	UID	TEMP	CAL	OFFS		0 - 1000	R/W	Sets the offset of the calibration curve
DEV	UID	TEMP	CAL	SCAL		0 - 1000	R/W	Sets the scale of the calibration curve
DEV	UID	TEMP	CAL	FILE			R/W	Sets the calibration file to use to calculate the temperature
DEV	UID	TEMP	CAL	INT		NONE:LIN	R/W	Sets the interpolation method for the calibration file
DEV	UID	TEMP	CAL	HOTL		0 - 2000	R/W	Set the maximum value for temperature setpoint (hot limit)
DEV	UID	TEMP	CAL	COLDL		0 - 1000	R/W	Set the minimum value for temperature setpoint (cold limit)
DEV	UID	TEMP	CAL	CAL			W	Calibrates the hardware
DEV	UID	TEMP	LOOP	HTR		UID	R/W	Assign Heater device to Temperature
DEV	UID	TEMP	LOOP	AUX		UID	R/W	Assign Auxiliary device to Temperature
DEV	UID	TEMP	LOOP	P			R/W	Set the P Value
DEV	UID	TEMP	LOOP	I			R/W	Set the I Value
DEV	UID	TEMP	LOOP	D			R/W	Set the D Value

Command					Options	R/W	Description	
DEV	UID	TEMP	LOOP	PIDT		OFF:ON	R/W	Sets automatic PID values (from table)
DEV	UID	TEMP	LOOP	PIDF			R/W	Sets the file to read from for the automatic PID Table
DEV	UID	TEMP	LOOP	THTF			R/W	Sets the file to read from for the Target Heater Table
DEV	UID	TEMP	LOOP	SWFL			R/W	Sets the file to read from for the Sweep Table
DEV	UID	TEMP	LOOP	SWMD		OFF:ON	R/W	Sets the sweep mode
DEV	UID	TEMP	LOOP	ENAB		OFF:ON	R/W	Enables(Auto)/disables(Manual) the PID control
DEV	UID	TEMP	LOOP	TSET		0 - 2000	R/W	Sets the temperature set point
DEV	UID	TEMP	LOOP	HSET		0 - 100	R/W	Sets the Heater percentage (in Manual)
DEV	UID	TEMP	LOOP	FSET		0 - 100	R/W	Sets the flow percentage (Manual flow)
DEV	UID	TEMP	LOOP	FAUT		OFF:ON	R/W	Enables/Disables flow control
DEV	UID	TEMP	SIG	VOLT			R	Sensor voltage
DEV	UID	TEMP	SIG	CURR			R	Sensor current
DEV	UID	TEMP	SIG	TEMP			R	Measured temperature
DEV	UID	TEMP	SIG	POWR			R	Sensor power dissipation
DEV	UID	TEMP	SIG	RES			R	Measured resistance (PTC/NTC)
DEV	UID	TEMP	SIG	SLOP			R	Temperature to resistance ratio (PTC/NTC)
DEV	UID	TEMP	SIG	REF			R	Thermocouple reference temperature
DEV	UID	HTR	MAN	HVER			R	Reads the hardware version of the daughter card
DEV	UID	HTR	MAN	FVER			R	Reads the firmware version of the daughter card
DEV	UID	HTR	MAN	SERL			R	Reads the serial number of the daughter card
DEV	UID	HTR	NICK				R/W	Sets the name of the device
DEV	UID	HTR	VLIM			0 - 40	R/W	Sets the Maximum voltage limit for the heater
DEV	UID	HTR	RES			10 - 2000	R/W	Sets the heater resistance
DEV	UID	HTR	PMAX			0 - 80	R	Indicates the maximum power of the heater
DEV	UID	HTR	CAL				W	Calibrates the hardware
DEV	UID	HTR	SIG	VOLT			R	Heater voltage
DEV	UID	HTR	MAN	CURR			R	Heater current
DEV	UID	HTR	MAN	POWR			R	Heater power dissipation
DEV	UID	FLW	MAN	HVER			R	Reads the hardware version of the daughter card
DEV	UID	FLW	MAN	FVER			R	Reads the firmware version of the daughter card
DEV	UID	FLW	MAN	SERL			R	Reads the serial number of the daughter card
DEV	UID	FLW	NICK				R/W	Sets the name of the device
DEV	UID	FLW	VLIM			0 - 40	R/W	Sets the Maximum voltage limit for the heater
DEV	UID	FLW	RES			10 - 2000	R/W	Sets the heater resistance
DEV	UID	FLW	PMAX			0 - 80	R	Indicates the maximum power of the heater
DEV	UID	FLW	CAL				W	Calibrates the hardware
DEV	UID	FLW	FAST			OFF:ON	R/W	Sets the fastcool mode
DEV	UID	FLW	SIG	VOLT			R	Heater voltage
DEV	UID	FLW	SIG	CURR			R	Heater current
DEV	UID	FLW	SIG	POWR			R	Heater power dissipation
DEV	UID	FLW	SIG	FLOW			R	Flow rate

Technical Note

Command						Options	R/W	Description
DEV	UID	AUX	MAN	HVER			R	Reads the hardware version of the daughter card
DEV	UID	AUX	MAN	FVER			R	Reads the firmware version of the daughter card
DEV	UID	AUX	MAN	SERL			R	Reads the serial number of the daughter card
DEV	UID	AUX	NICK				R/W	Sets the name of the device
DEV	UID	AUX	GFSF				R/W	Sets the THT scaling factor
DEV	UID	AUX	GMIN			0 - 20	R/W	Sets the minimum flow
DEV	UID	AUX	SPD			0 - 1	R/W	Sets the speed of the valve (Slow, Fast)
DEV	UID	AUX	TES			0 - 20	R/W	Sets the Temperature error sensitivity
DEV	UID	AUX	TVES			0 - 20	R/W	Sets the Voltage error sensitivity
DEV	UID	AUX	GEAR			0 - 7	R/W	Sets the gearing factor for the valve
DEV	UID	AUX	SIG	PERC			R	Valve open percentage
DEV	UID	AUX	SIG	STEP			R	Valve position
DEV	UID	AUX	SIG	In		OFF:ON	R	Input state
DEV	UID	AUX	SIG	On		OFF:ON	R/W	Output state
DEV	UID	LVL	MAN	HVER			R	Reads the hardware version of the daughter card
DEV	UID	LVL	MAN	FVER			R	Reads the firmware version of the daughter card
DEV	UID	LVL	MAN	SERL			R	Reads the serial number of the daughter card
DEV	UID	LVL	NICK				R/W	Sets the name of the device
DEV	UID	LVL	NIT	FREQ	ZERO		R/W	Sets the frequency value equivalent to 0% Nitrogen level
DEV	UID	LVL	NIT	FREQ	FULL		R/W	Sets the frequency value equivalent to 100% Nitrogen level
DEV	UID	LVL	NIT	PPS			R/W	Sets the read interval for the nitrogen level
DEV	UID	LVL	HEL	RES	ZERO		R/W	Sets the resistance value equivalent to 0% Helium level
DEV	UID	LVL	HEL	RES	FULL		R/W	Sets the resistance value equivalent to 100% Helium level
DEV	UID	LVL	HEL	PULS	TIM	.3 - 60	R/W	Sets the measurement time for the helium level
DEV	UID	LVL	HEL	PULS	DEL	0 - 60	R/W	Sets the measurement delay for the helium level
DEV	UID	LVL	HEL	PULS	MAG	0 - 280	R/W	Sets the excitation magnitude for the helium measurement
DEV	UID	LVL	HEL	PREP	TIM	0 - 1000000	R/W	Sets the preparation time for the helium measurement
DEV	UID	LVL	HEL	PREP	MAG	0 - 280	R/W	Sets the excitation magnitude for the preparation of helium measurement
DEV	UID	LVL	SIG	HEL	LEV		R	Helium level
DEV	UID	LVL	SIG	HEL	RES		R	Helium sensor resistance
DEV	UID	LVL	SIG	NIT	COUN		R	Nitrogen sensor pulse count
DEV	UID	LVL	SIG	NIT	FREQ		R	Nitrogen sensor measured frequency
DEV	UID	LVL	SIG	NIT	LEV		R	Nitrogen sensor level
DEV	UID	PRES	MAN	HVER			R	Reads the hardware version of the daughter card
DEV	UID	PRES	MAN	FVER			R	Reads the firmware version of the daughter card
DEV	UID	PRES	MAN	SERL			R	Reads the serial number of the daughter card
DEV	UID	PRES	NICK				R/W	Sets the name of the device
DEV	UID	PRES	TYPE				R/W	Pressure sensor type (currently not implemented)
DEV	UID	PRES	CAL	OFFS		0 - 1000	R/W	Sets the offset of the calibration curve

Command					Options	R/W	Description
DEV	UID	PRES	CAL	SCAL	0 - 1000	R/W	Sets the scale of the calibration curve
DEV	UID	PRES	CAL	FILE		R/W	Sets the calibration file to use to calculate the temperature
DEV	UID	PRES	CAL	INT	NONE:LIN	R/W	Sets the interpolation method for the calibration file
DEV	UID	PRES	CAL	HIGHL	0 - 1000	R/W	Set the maximum value for temperature setpoint (hot limit)
DEV	UID	PRES	CAL	LOWL	0 - 1000	R/W	Set the minimum value for temperature setpoint (cold limit)
DEV	UID	PRES	CAL	CAL		W	Calibrates the hardware
DEV	UID	PRES	LOOP	HTR	UID	R/W	Assign Heater device to Temperature
DEV	UID	PRES	LOOP	AUX	UID	R/W	Assign Auxiliary device to Temperature
DEV	UID	PRES	LOOP	P		R/W	Set the P Value
DEV	UID	PRES	LOOP	I		R/W	Set the I Value
DEV	UID	PRES	LOOP	D		R/W	Set the D Value
DEV	UID	PRES	LOOP	PIDT	OFF:ON	R/W	Sets automatic PID values (from table)
DEV	UID	PRES	LOOP	PIDF		R/W	Sets the file to read from for the automatic PID Table
DEV	UID	PRES	LOOP	THTF		R/W	Sets the file to read from for the Target Heater Table
DEV	UID	PRES	LOOP	SWFL		R/W	Sets the file to read from for the Sweep Table
DEV	UID	PRES	LOOP	SWMD	OFF:ON	R/W	Sets the sweep mode
DEV	UID	PRES	LOOP	ENAB	OFF:ON	R/W	Enables(Auto)/disables(Manual) the PID control
DEV	UID	PRES	LOOP	TSET	0 - 2000	R/W	Sets the pressure set point
DEV	UID	PRES	LOOP	HSET	0 - 100	R/W	Sets the Heater percentage (in Manual)
DEV	UID	PRES	LOOP	FSET	0 - 100	R/W	Sets the flow percentage (Manual flow)
DEV	UID	PRES	LOOP	FAUT	OFF:ON	R/W	Enables/Disables flow control
DEV	UID	PRES	SIG	VOLT		R	Sensor voltage
DEV	UID	PRES	SIG	CURR		R	Sensor current
DEV	UID	PRES	SIG	PRES		R	Measured pressure
DEV	UID	PRES	SIG	POWR		R	Sensor power dissipation
DEV	UID	PSU	MAN	HVER		R	Reads the hardware version of the daughter card
DEV	UID	PSU	MAN	FVER		R	Reads the firmware version of the daughter card
DEV	UID	PSU	MAN	SERL		R	Reads the serial number of the daughter card
DEV	UID	PSU	NICK			R/W	Sets the name of the device
DEV	UID	PSU	VTRT		0 - 60000	R/W	Sets the transient time for ignoring overvoltage in the magnet
DEV	UID	PSU	BIPL		OFF:ON	R/W	Indicates if the magnet is unipolar or bipolar
DEV	UID	PSU	ATOB		0 - 1000	R/W	Sets the current to field ratio
DEV	UID	PSU	SWPR		UID	R/W	Indicates which PSU handles the magnet switch heater
DEV	UID	PSU	SHTC		0 - 125	R/W	Sets the switch heater current
DEV	UID	PSU	VLIM		0 - 100	R/W	Set the magnet's maximum voltage when not quenched
DEV	UID	PSU	IND		0 - 1000	R/W	Sets the magnet's inductance
DEV	UID	PSU	CLIM		0 - 630	R/W	Sets the magnet's maximum current
DEV	UID	PSU	OCNF		PARA:SERS:MAT	R/W	Sets the PSU arrangement for this magnet
DEV	UID	PSU	ACTN		HOLD:RTOZ:RTOS:CLMP	R/W	Sets the magnet mode (hold, ramp to zero, ramp to field, clamp)

Technical Note

Command					Options	R/W	Description
DEV	UID	PSU	SIG	CURR		R	Magnet PSU current
DEV	UID	PSU	SIG	PCURR		R	Persistent current of the magnet
DEV	UID	PSU	SIG	VOLT		R	Magnet voltage
DEV	UID	PSU	SIG	RCST		R	Sets the current rate for ramping
DEV	UID	PSU	SIG	RFST		R	Sets the field rate for ramping
DEV	UID	PSU	SIG	SWHN	OFF:ON	R	Turns the switch heater on/off without checking for current matching
DEV	UID	PSU	SIG	SWHT	OFF:ON	R	Turns the switch heater on/off checking for current match
DEV	UID	PSU	SIG	FSET		R	Sets the field set point
DEV	UID	PSU	SIG	CSET		R	Sets the current set point
DEV	UID	PSU	SIG	FLD		R	Magnet PSU Field
DEV	UID	PSU	SIG	RFLD		R	Magnet PSU Field rate
DEV	UID	PSU	SIG	PFLD		R	Persistent field of the magnet
DEV	UID	PSU	SIG	RCUR		R	Magnet PSU current rate
DEV	UID	HEL	LOWT		1 - 10	R/W	sets the low temperature sensor threshold
DEV	UID	HEL	MAXS		0 - 200	R/W	Sets the maximum sorb temperature
DEV	UID	HEL	MAXP		0 - 200	R/W	Sets the maximum pot temperature
DEV	UID	HEL	LMT		0 - 10	R/W	sets the low temperature mode threshold
DEV	UID	HEL	HYST		.01 - 1	R/W	sets the low temperature mode threshold hysteresis
DEV	UID	HEL	STAB		0 - 1	R/w	Stability margin
DEV	UID	HEL	COND	TPOT	0 - 20	R/W	Sets the maximum pot temperature for stability measurements
DEV	UID	HEL	COND	ERR	0 - 10	R/W	Sets the pot temperature measurement error for recondensing
DEV	UID	HEL	COND	RATE	0 - 1	R/W	Minimum condense temperature rate
DEV	UID	HEL	COND	MODE	OFF:ON	R/W	Sets recondense on/off
DEV	UID	HEL	COND	POTH	0 - 60	R/W	Sets the pot temperature threshold for recondensing
DEV	UID	HEL	COND	DEAD	0 - 9999	R/W	Recondense dead time
DEV	UID	HEL	COND	SORBL	0 - 60	R/W	Sets the sorb temperature threshold for recondensing
DEV	UID	HEL	COND	TOUT	0 - 9999	R/W	Recondense stability timeout
DEV	UID	HEL	COND	RET	0 - 10	R/W	Recondense number of retries
DEV	UID	HEL	COND	TSORB	0 - 100	R/W	Sorb target setpoint
DEV	UID	HEL	TSORB		0 - 100	R/W	Sorb final setpoint
DEV	UID	HEL	SP		10 - 9999	R/W	Sets the stability measurement range
DEV	UID	HEL	GASL		0 - 100	R/W	Sets the flow set point for low temperature mode
DEV	UID	HEL	GASH		0 - 100	R/W	Sets the flow set point for high temperature mode
DEV	UID	HEL	SGI		1 - 10	R/W	Sets the gas increment rate for optimization
DEV	UID	HEL	GSET		0 - 100	R/W	Sets the flow set point for condense mode (currently not implemented)

Technical Note

Command						Options	R/W	Description
DEV	UID	HEL	SIG	STAT		Shutdown: Low Temp: High Temp: Optimise: Condensing: Con_Error: Stopping	R	Monitors the state of the Heliox
FILE	UID	DATA					R/W	Reads/Writes a file onto the system (file contents must be checksummed and in Hex format)

Legend:

R – Read Only Command

R/W – Read and Write Command

IPS specific commands

Cryojet specific commands

Heliox specific commands

Examples:

Read only command

READ:SYS:CAT

R/W – Read and Write Command

READ:DEV:MB1.T1:TEMP:NICK – Reads the nickname of MB1.T1 temperature sensor

SET:DEV:MB1.T1:TEMP:NICK:TEMP_1 – Sets the nickname of MB1.T1 temperature sensor to TEMP_1