HUGS Protocol definition

Revision 1.0 4/13/2020

Note: HUGS uses a binary format, rather than an ASCII character format, so it is not directly printable.

	0	1	2	3	4	5		L+4	L+5	L+6	L+7
Send/Rec	вом	LEN	DEST/SEQ	CMD_ID	RSP_ID		DATA: LEN Bytes		CRC		EOM
		-			-	-					
BOM	Beginning Of Message Character:			Slash	"/"						

LEN Length of variable Data. 0 - 0xF7

DEST/SEQ LSN (Lower 4 bits) TARGET Identifier. 0-15 0x0 = HOST, 0xF = ALL

MSN (Upper 4 bits) Message Sequence. Cycles through 0-15

CMD_ID On a command, this will be the required action. Indicates how to interpret variable data section

On a response, the CMD_ID will be RSP

RSP_ID On a command, this is the required Response: Indicates what data should be returned.

On a response, the RSP_ID will be the type of data bing returned in the response.

DATA Variable number of data bytes . Length defined by LEN parameter

CRC 16-bit Cyclic Redundancey Check of Bytes 0 to L+4

EOM End Of Message character: Newline \n 0x0A

Command IDs	Name	Value	LEN							
No Operation	NOP	0x00	0							
Response	RSP	0x01	0							
Enable	ENA	0x02	0							
Disable	DIS	0x03	0							
Set Power	POW	0x04	1	+/-100%		Def 0				
Set ABS Pos	ABS	0x05	2	mm (+/- 32	2767)	Def 0				
Set Rel Pos	REL	0x06	2	mm (+/- 32	2767)	Def 0				
Set Watchdog	DOG	0x07	2	mS (0-6553	35)	Def 1000				
Reset Pos	RES	0x08	0			•				
Set Speed	SPE	0x09	1	+/-100%		Def 0				
Power Down	XXX	0xFF	0		_					
Response ID	Name	Value	LEN	Data						
No Response	NOR	0x00	1	STATUS			_			
Velocity	SSPE	0x01	3	STATUS	RPS * 100 (+	·/- 1000)			_	
Position	SPOS	0x02	5	STATUS	mm (+/- 2,1	47,483,648)				
Voltage	SVOL	0x03	3	STATUS	mV (0-6553	5)			-	
Current	SAMP	0x04	3	STATUS	mA (0 6553	5)				
Power	SPOW	0x05	2	STATUS	+/-100%		-			
Watchdog	SDOG	0x06	3	STATUS	mS (0 65535	5)				
Stopped	STOP	0x06	1	STATUS			-			
					_					
STATUS		Bit	7	6	5	4	3	2	1	0
									Enabled	ESTOP