

Additions to existing Communications Protocol:

New command from Master consists of three bytes with the form: # slave_address<LF>

The slave responds with: #0 slave_addressC₁C₂C₃C₄,V₁V₂V₃V₄ * P₁P₂P₃P₄<LF>

where * P₁P₂P₃P₄ is one of the following:

- | | | |
|------|--------------------|---------------------------------|
| 1) T | temperature | 4 byte float |
| 2) C | converter voltage | 4 byte float |
| 3) E | error | 4 byte float |
| 4) O | converter overhead | 4 byte float |
| 5) S | system info | 4 bytes – bit pattern see below |

System info:

uint8_t sys_fault_flag1:

sysTempWarn_bm	0x01	// Temperature Warn
sysTempShut_bm	0x02	// Temperature Shutdown
sysCommFail_bm	0x04	// Communications Failure
sysTempKlst_bm	0x08	// Temperature Klystron
sysFanShort_bm	0x10	// Fan Shorted
sysFanOpen_bm	0x20	// Fan Open
sysRegFail_bm	0x40	// Converter Failure
sysLEMCurr_bm	0x80	// LEM current vs. Setpoint

uint8_t sys_fault_flag2;

sysACflt_bm	0x01	// AC fault
sysHKflt_bm	0x02	// HK fault
sysACPhase_bm	0x04	// AC Missing Phase
sysGndFlt_bm	0x08	// Ground Fault
sysOvrCurr_bm	0x10	// Digital I/O
sysDCCTfail_bm	0x20	// Digital I/O
sysOvrVolt_bm	0x40	// Analog Over Voltage

uint8_t sys_fault_flag3;

sysIntlck1_bm	0x01	//interlock1 fault
sysIntlck2_bm	0x02	//interlock2 fault
sysIntlck3_bm	0x04	//interlock3 fault

sysIntlck4_bm	0x08	//interlock4 fault
sysPhaseA_bm	0x10	//phase A fault
sysPhaseB_bm	0x20	//phase B fault
sysPhaseC_bm	0x40	//phase C fault
sysContact_bm	0x80	//contactor

Housekeeping voltage Info:

Bit maps for hk voltages. 1 indicates fault.

e8viso_bm	0x01	// +8V ISO
p15viso_bm	0x02	// +15V ISO
n15viso_bm	0x04	// -15V ISO
e85viso_bm	0x08	// +80V ISO
p15vnoniso_bm	0x10	// +15V NON-ISO
n15vnoniso_bm	0x20	// -15V NON-ISO