

## 4 Datastreams

The PDU continually transmits all input and output states and currents on both RS232 serial and CAN. The channel definitions and data byte layouts are the same for both; frames are sent at approximately 100Hz in the sequence 0 1 2 3 4 5 6 7 8 9. Multibyte quantities are sent high byte first.

Channel	Type	Quantity
PRE	U32	Input States Pre Logic (MSB is input 32, LSB is input 1)
POST	U32	Input States Post Logic (MSB is input 32, LSB is input 1)
ST1..32	U8	Output State (0 = ON 1 = OFF 100 = FAULT)
CUR1..32	U8	Output Current (divide by 2 to get amps)
BT	S16	Board Temperature (divide by 10 to get degC)
VBAT	S16	Supply Voltage (in mV)
SP1..4	S8	Spare for future expansion (sent as 0)

Frame	Data bytes							
0	PRE				POST			
1	ST1	ST2	ST3	ST4	ST5	ST6	ST7	ST8
2	ST9	ST10	ST11	ST12	ST13	ST14	ST15	ST16
3	ST17	ST18	ST19	ST20	ST21	ST22	ST23	ST24
4	ST25	ST26	ST27	ST28	ST29	ST30	ST31	ST32
5	CUR1	CUR2	CUR3	CUR4	CUR5	CUR6	CUR7	CUR8
6	CUR9	CUR10	CUR11	CUR12	CUR13	CUR14	CUR15	CUR16
7	CUR17	CUR18	CUR19	CUR20	CUR21	CUR22	CUR23	CUR24
8	CUR25	CUR26	CUR27	CUR28	CUR29	CUR30	CUR31	CUR32
9*	BT		VBAT		SP1	SP2	SP3	SP4

\* frame not sent by pre v1.4.4 software; sensors not present in pre v2.0 hardware

### 4.1 RS232 Serial

Asynchronous serial at 38400/N/8/1

Each frame is

Sync byte (0xFF)

Frame id byte (0..9)

8 Data bytes

Checksum byte (mod 256 sum of sync byte through last data byte)

### 4.2 CAN

CAN2.0B (11 bit identifiers) at 1MHz

Each frame contains 8 Data bytes

Frame Identifiers are 0x700 + frame id byte (0..9)