



FIELD DATA COLLECTION UNIT

S1392-x

- **Completely Sealed to the Environment**
- **Equipped with a Universal Serial Interface**
- **Dual Processors for easy data collection from ANY sensor and rapid processing**
 - **-40 C to + 70 C operating temperature**

The FDCU will collect and process all the signals from the sensor suites. It reads sensors, processes data, checks alarms and control functions and telemeters (as well as storing) the remotely collected data. Most importantly the FDCU electronics have the flexibility and capacity to add new sensors or sensors from other manufacturers over the period of at least 10 years without making firmware changes. This FDCU is also equipped with a Universal Serial Interface, which allows the FDCU to connect to any serial sensor.

FDCU CONTINUOUS SELF-TEST CHECKING AND DATA QUALITY CHECKS

The results FDCU Continuous Self-Test checking and Data Quality Checks are presented in the BIT (built in test) output field. There are 8 different self-test (listed below) which the FDCU electronics continuously performs on itself. A BIT flag is set for each of these tests that fail.

The following tests, encoded in the BIT field as bits 1 through 8, monitor the operation of the System:

- System reset
- Real-time clock suspect
- Data logging memory initialized
- Serial device communication failure
- EEPROM suspect
- 18-bit ADC suspect
- 12-bit ADC suspect.
- Serial port communication failure

There are 24 more BIT tests available for data quality testing. These are configurable. An example of some of the data

- quality checks are listed below.
- Air temperature out of range
- Air temperature static
- Dewpoint out of range
- Air flow aspirator blocked
- Pressure sensor out of range
- Pressure sensor static
- No AC power – on backup power



Technical Specifications

S1392-x

Processor 1	Motorola 68332
OPERATING LIMITS	
High Temperature	+65°C
Low Temperature with heater option	-70°C
Low Temperature without heater option	-50°C
Relative Humidity	5% to 100% RH
Electromagnetic interference	Exposure to airport environment
PERFORMANCE SPECIFICATION	
Serial Ports	3 serial ports RS 232, RS 422, RS 485, TTL standard Telephone modem and RF modem optional 300 to 19,200 baud
Analog inputs	16 inputs standard EXPANDABLE to 75 analog inputs Resolution 18 bits Linearity 0.001% Absolute accuracy 0.05%
Frequency inputs	14 inputs (including 2 comparator inputs) 7 ports can be use for outputs Up to 100 kHz at 0.05% accuracy
Hardware watchdog timer	Yes

Processor 2	ARM9 180Mhz processor
OPERATING LIMITS	
High Temperature	+65°C
Low Temperature with heater option	-70°C
Low Temperature without heater option	-30°C with radio link
Relative Humidity	5% to 100% RH
Electromagnetic interference	Exposure to airport environment
PERFORMANCE SPECIFICATION	
Serial Ports	6 ports standard EXPANDABLE TO 12 serial ports RS 232, RS 422, RS 485, TTL standard Up to 115,200 bits/second baud
Memory	<ul style="list-style-type: none"> • 16Mb SDRAM • 16Mb Flash • 16Kb EEPROM for Boot loader
Interfaces	10/10 base TX Ethernet, I ² C
Troubleshooting	2 indicator LED's
Hardware watchdog timer	Yes