



## Application Bulletin: #165

Date: October 2009

### I-24 DOWNLOADED REPORTS

The following reports may be downloaded from the Sentinel I24 instrument to a USB flash storage or to a PLC or computer using the RS-232 or TCP/IP communications ports.

The Instrument Configuration report displays the setup parameters from the INSTR CONFIG setup screens: This includes the current settings for the communication options (RS232, TCP/IP, USB), firmware versions, and other miscellaneous instrument settings.

#### RS232 1

```
=====
RS232 Port 1 Interface      Terminal
RS232 Port 1 Config        115200\8N1\none
RS232 Port 1 Function      Autosetup info
RS232 Port 1 Output        Test only
```

#### RS232 2

```
=====
RS232 Port 2 Interface      Fixed width out
RS232 Port 2 Config        115200\8N1\none
RS232 Port 2 Function      Station Cntrs
Fixed width out             Custom
  Result Field 1           Station
  Result Field 2           Part
  Result Field 3           Link Info
  Result Field 4           Time
  Result Field 5           Date
  Result Field 6           Unique id
  Result Field 7           Part evaluation
  Result Field 8           SPC flag
  Result Field 9           Barcode
  Test field               All result information
```

#### TCP/IP

```
=====
Instrument IP address       172.16.5.2
Mail Server IP address     172.16.0.4
Gateway IP address         172.16.0.1
Subnet Mask                 255.255.0.0
MAC address                 0807AA030Cd2
```

#### TCP/IP 1

```
=====
TCP/IP 1 Interface         Fixed width out
TCP/IP 1 Function          Instr Config
Fixed width out            All result information
```



TCP/IP 2		
=====		
TCP/IP 2 Interface	Terminal	
TCP/IP 2 Function	Station Cntrs	
TCP/IP 2 Output	Test only	
TCP/IP 3		
=====		
TCP/IP 3 Interface	Terminal	
TCP/IP 3 Function	Part Config	
TCP/IP 3 Output	No output	
TCP/IP 4		
=====		
TCP/IP 4 Interface	Terminal	
TCP/IP 4 Function	Sta Last 100	
TCP/IP 4 Output	No output	
USB		
=====		
Update firmware	No	
Generate report	All results	
Result sync	Yes	
Backup\Restore	Restore flow cal	
Drive control	Unmount	
EMAIL		
=====		
User id	I24	
Email password	clt2s3	
From Addr:	Conf_2.I24@cincinnati-test.com	
Email Alert 1	OFF	
A1 Addr:	john.doe@gmail.com	
Email Alert 2	OFF	
A2 Addr:	george.doe@gmail.com	
Email Function	Station Cntrs	
Fnc Addr:	robert.doe@gmail.com	
MISC		
=====		
Instrument name	Head block 2	
Serial Number	2236067972	
Edit\View Security	OFF	
Time	17:20:25	
Date	07/09/08	
Screen Saver	10 min key idle	
VERSION		
=====		
System Version	178.136	
Controller	(11534336)	1.78
Module	(10485760)	1.36
Sram	(11534336)	0.39
CAN	(11534336)	0.01
USB	(11534336)	0.01



## STATION CONFIGURATION

This report indicates the setup of the instrument hardware for the test station. Parameters include the manifold type that will define the type of tests available for selection within the part configuration section. The remaining parameters define the established pressure transducer, regulator type and range (for electronic regulator), and other transducers (flow, absolute pressure, or differential pressure). Also displayed is the number of part programs that are accessible.

Station Configuration	
HARDWARE	
=====	
Manifold Type	AF - Diff Flow
Number of Parts	99
Transducer Type 1	Druck 115PSIA
Transducer Type 2	Honeywell 1k
Regulator Type 1	Mechanical

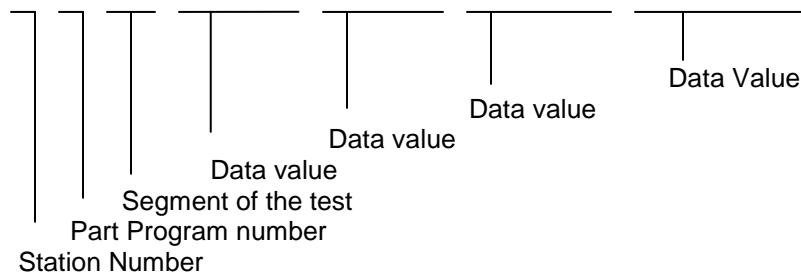
*Station configuration report*

## PRESSURE STREAMING

The pressure streaming output is a string of information identifying the significant information about a test every 0.01 seconds. This data output is only available via the RS232 port when the RS232 Interface is set for Terminal. The RS232 Output must be set for Streaming or Streaming and Test. To make the information output as short and concise as possible for each data point, the data identifiers are output in hex code. The data provided changes depending on the test type and phase or segment of the test. The data string consists of a station number, part number, segment or phase of the test process, elapsed time, time within each segment, pressure measurement, pressure loss or flow measurement, and potentially EDC correction. Each set of variable data consists of a variable identifier, variable unit of measurement, and the measured variable.

Stream of typical test data associated with a reading every 0.01 seconds

**S01P01G42,015D 5.13,025D 3.00,120C 60.196,1C29 0.01356**



Station no., part no., and test segment identification

<b>S01</b>	Station No	Typically 01 for station 1
<b>P01</b>	Part No	1 to 99
<b>G42</b>	segment no.	testing cycle (See segment table, Figure 195)



S01P01G42,**015D 5.13**,025D 3.00,120C 60.196,1C29 0.01356

*Data Value*

- 01** Variable code - Elapsed Time (See Variable table, Figure 196)
- 5D** Unit code - Seconds (See Unit table, Figure 197)
- 5.13** Variable – 5.13 seconds of elapsed time into the overall test cycle

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*Data Value*

- 02** Variable code – Segment timer (See Variable table, Figure 196)
- 5D** Unit code – Seconds (See Unit table, Figure 197)
- 3.00** Variable – 3.00 seconds of time remaining in segment

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*Data Value*

- 12** Variable code – Measured Pressure (See Variable table, Figure 196)
- 0C** Unit code – psig (see Unit table, Figure 197)
- 60.196** Variable – 60.196 psig pressure

S01P01G42,015D 5.13,025D 3.00,120C 60.196,**1C29 0.01356**

*Data Value*

- 1C** Variable code – Pressure loss (See Variable table, Figure 196)
- 29** Unit code - psig (see Unit table, Figure 197)
- 0.1356** Variable - .01356 Δpsig pressure change

Sample of Hex code numbering (0,1,2,3,4,5,6,7,8,9,A,B,C,D,E,F,10,11,...19,1A,...,1F,20,...)

Hexcode for seGment No.	seGment Function
01 – 19	Internal and setup functions
1A - 21	Pre-fill cycle functions
22 - 30	Fill cycle functions
31 - 40	Stabilization cycle functions
41 – 5D	Test cycle functions
5E - 68	Exhaust cycle functions
69 – 75	Verification functions
76 - 80	Action functions
8B – 91	Time functions (like Relax)
92 – 98	Transducer functions
99 – 9E	Pressure functions
9F – A9	Tooling motions

*Segment Table to identify phase of test sequence*



Hex code	
Variable	Measurement Type
01	Elapsed time with Segment (incrementing time in test)
02	Segment timer (decrementing time remaining in segment)
03	Isolation decay timer
07	Total test time
0D	Test Pressure
12	Measured Pressure
1C	Pressure loss (Corrected)
44	Measured flow
4B	EDC offset

*Variable table for Measurement Type*

Hex code Units	Units Pressure	Hex code Units	Units Delta Pressure	Hex code Units	Units Flow	Hex code Units	Units Time
02	Atm	1F	$\Delta$ Atm	3C	sccm	5B	Hour
03	bar	20	$\Delta$ bar	3D	sccs	5C	Minutes
04	cmHg	21	$\Delta$ cmHg	3E	scch	5D	Second
05	inHg	22	$\Delta$ inHg	3F	scfm	5E	millisecond
06	kPa	23	$\Delta$ kPa	40	slpm		
07	Mpa	24	$\Delta$ MPa	41	slps		
08	mbar	25	$\Delta$ mbar	42	scfh		
09	mmHg	26	$\Delta$ mmHg	43	scfs		
0A	Pa	27	$\Delta$ Pa				
0B	Torr	28	$\Delta$ Torr				
0C	psig	29	$\Delta$ psig				
0D	psiv	2A	$\Delta$ psiv				
0E	inWC	2B	$\Delta$ inWC				
0F	cmWC	2C	$\Delta$ cmWC				
02	mmWC	2D	$\Delta$ mmWC				

*Unit of measurement code table*



## Terminal Test Output after each test

This “Test” output is a result of setting the “Interface” to “Terminal” and “Output” to include “Test”. The result information has more complete descriptions of each test result parameter.

Test result	Station No.	Part No.	Date	Time	Unique ID	Part Result
Test type	S01	P02	07/11/08	09:04:45.06	0000005319	PART ACCEPT
PLRq	P	Leak Rate	0.080466	sccm	Pressure Loss	0.008801 dpsig
Test Pressure	30.551664	psig	EDC Offset	0.000000	sccm	Predict
ed Leak	0.080466	sccm	Quik Loss	0.008801	dpsig	Quik Test Press
ure	30.556084	psig				

### “Test” output report for RS232 Port: Terminal (Pressure Decay Test)

## Fixed Width Output test results

With “Interface” set to “Fixed Width Out”, the Sentinel I24 can output the results in one of three ways at the completion of each test via RS232 or TCP/IP.

- Part result only
- First 2 test results
- All result information

## PART RESULTS ONLY AFTER EACH TEST

With the “Output” set to “Part results only” the following test result data appears. Test results are in order of most recent data at bottom.

Part no.	Link info	Date	Time	Unique ID.	Part result
S01	P01 R--	04/11/07	15:17:11.570	0000022408	R
S01	P01 R--	04/11/07	15:17:19.590	0000022409	A

### Part results only report

#### First 2 test results

First 2 test results are for each part for Station 01. The results are in order of most recent data at the bottom. The “First 2 test results” output is established by setting the “Interface” to “Fixed Width Out” and “Output” to “First 2 test results”.

Part No.	Link Info	Date	Time	Unique ID.	Part Result	Test Type	Leak Rate
S01	P01 R--	04/11/07	16:17:44.720	0000022861	R - PLRq	F	LR 5.278410 sccm
PL	0.024620	dpsig					

Part pressure loss

### First 2 test results output (for single pressure decay test)



## All result information

The “All result information” output is established by setting the “Interface” to “Fixed Width Out” and “Output” to “All Result Information”. All result information is for each part for Station 01. The results are in order of most recent data at the bottom.

Part No.	Link Info	Date	Time	Unique ID	SPC Flag	Part Result	Test Type	Test Result	Leak Rate
S01	P01 R--	04/07/07	00:08:04.860	0000050193	R	- PLRq	F	LR 0.036461	sccm
	PL 0.015409	dpsig	Pt 49.998657	psig	EDC 0.000000	sccm	PQ -0.0378	sccm	
	QL 0.04889	dpsig	QP 49.89456	[psig					

Quik Test Pressure loss      Quik Test Pressure      Environmental Drift Correction  
 Part pressure loss      Test Pressure      Quik Test Leak Rate

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*Each Test All result information output (for pressure decay test)*

## STATION COUNTERS

The “Counters” report provides the counter data for the current active part number. To obtain reports for the other part numbers, Change Part to the desired part number and request the Counter report again.

I24 Part 01 counters	07\12\08 13:52:42
=====	
Cycles Since New	63262
Accept Cycles	6263
Reject Cycles	6545
Malfunction Cycles	5
Cycles Since Cal	5986
Clear Part Counters	No
Clear Stn Counters	No
Clear Stn Results	No

Counters report