

TDC Collaborative LLC

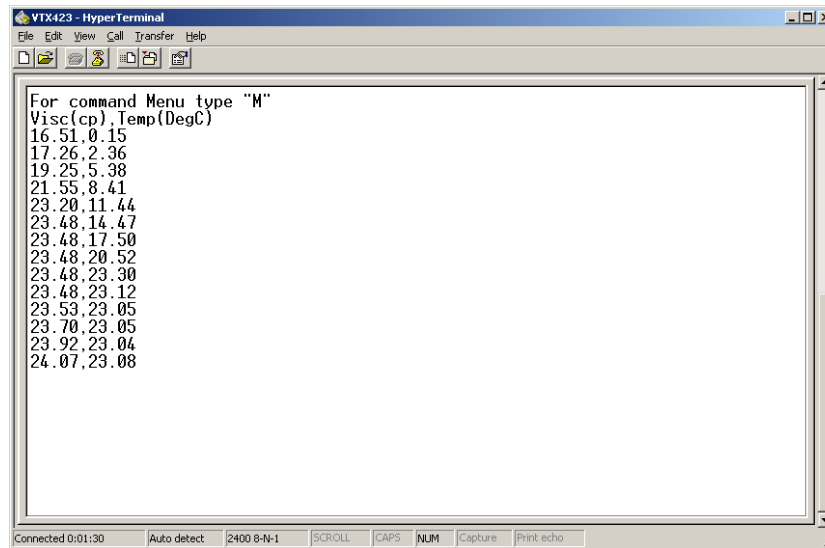
TN11169: Serial Port Options for Data Acquisition and Sensor Configuration

Overview

The output of 4-series TDC viscometers can be accessed by a computer through the serial port [or USB using a USB to Serial converter]. The following describes options for data acquisition and sensor configuration available through the serial port.

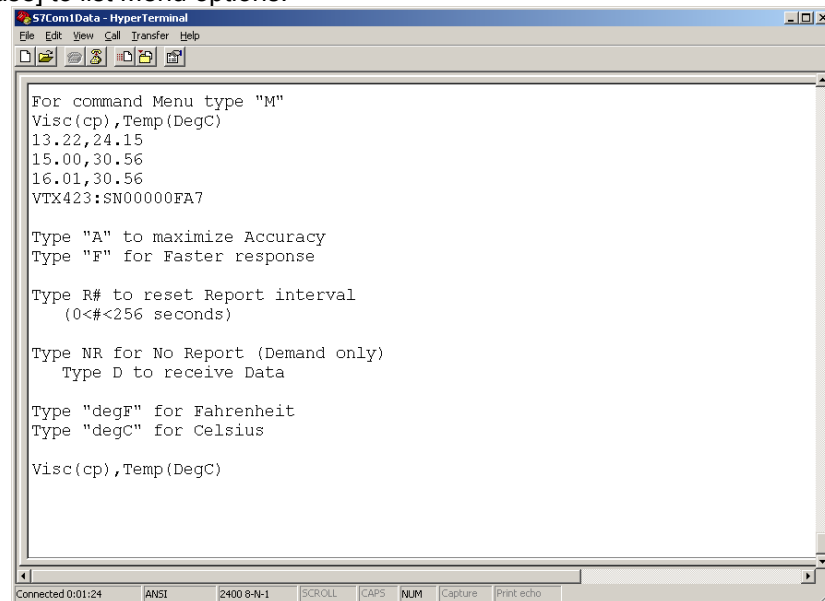
Serial Port Communication

Activate your hyperterminal program configured for TDC sensor interface [see TN11168 for details], then apply power to the display. After a few seconds a stream of comma separated viscosity and temperature data will appear. The data can be ported to a logging program for analysis.



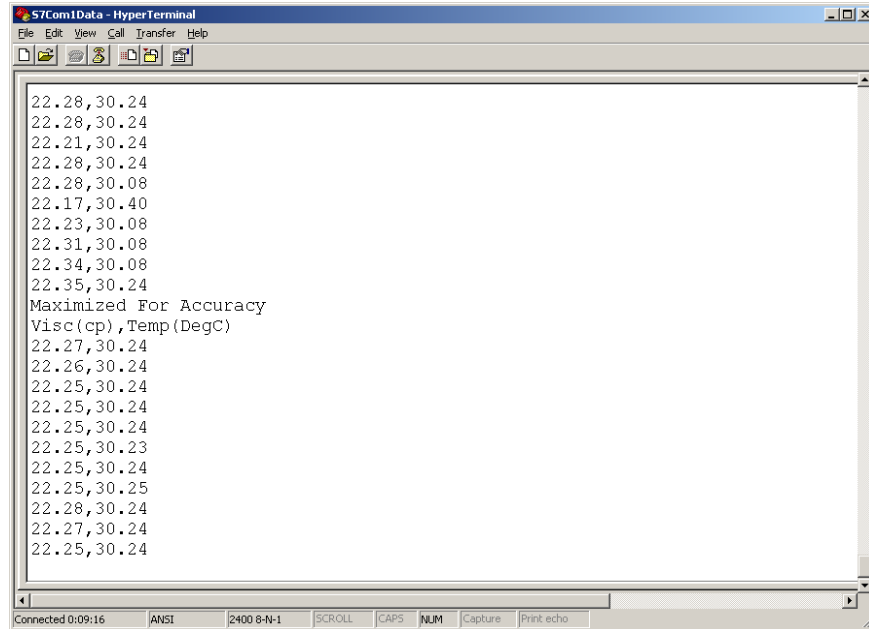
```
VTX423 - HyperTerminal
File Edit View Call Transfer Help
[Icons]
For command Menu type "M"
Visc(cp),Temp(DegC)
16.51,0.15
17.26,2.36
19.25,5.38
21.55,8.41
23.20,11.44
23.48,14.47
23.48,17.50
23.48,20.52
23.48,23.30
23.48,23.12
23.53,23.05
23.70,23.05
23.92,23.04
24.07,23.08
Connected 0:01:30 Auto detect 2400 8-N-1 SCROLL CAPS NUM Capture Print echo
```

Type M [upper case] to list Menu options.



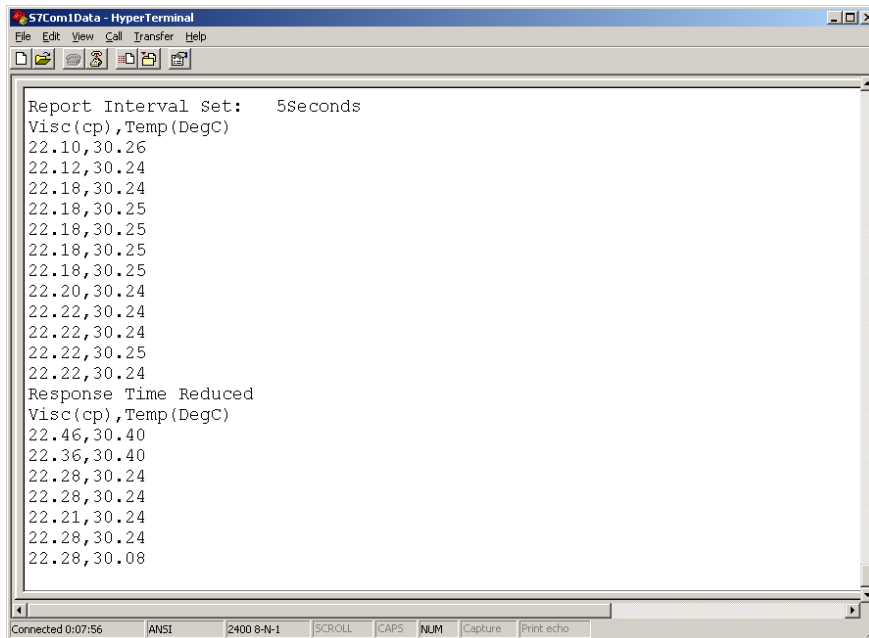
```
S7Com1Data - HyperTerminal
File Edit View Call Transfer Help
[Icons]
For command Menu type "M"
Visc(cp),Temp(DegC)
13.22,24.15
15.00,30.56
16.01,30.56
VTX423:SN00000FA7
Type "A" to maximize Accuracy
Type "F" for Faster response
Type R# to reset Report interval
(0<#<256 seconds)
Type NR for No Report (Demand only)
Type D to receive Data
Type "degF" for Fahrenheit
Type "degC" for Celsius
Visc(cp),Temp(DegC)
Connected 0:01:24 ANSI 2400 8-N-1 SCROLL CAPS NUM Capture Print echo
```

Since viscosity and temperature typically change very slowly, the default setting is data Averaging for the most accuracy. When the "A" command is typed the system responds with an acknowledgement "maximized for Accuracy"



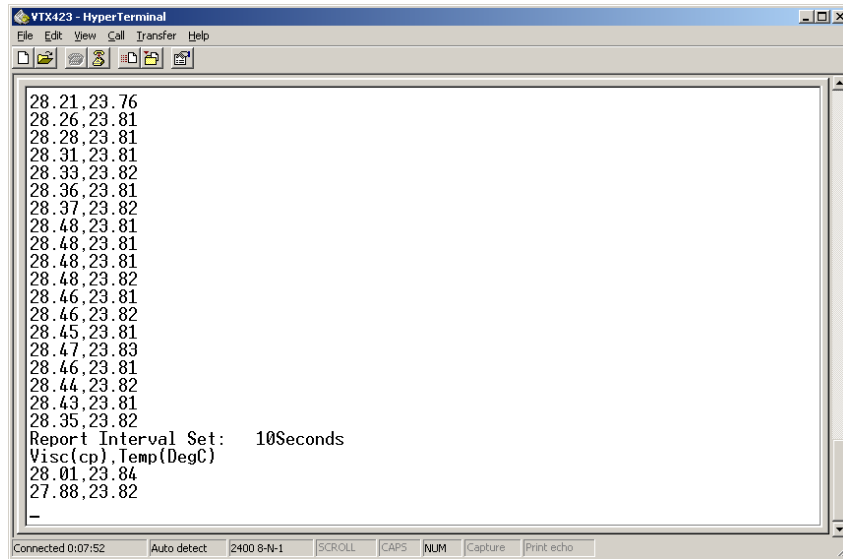
```
STCom1Data - HyperTerminal
File Edit View Call Transfer Help
22.28,30.24
22.28,30.24
22.21,30.24
22.28,30.24
22.28,30.08
22.17,30.40
22.23,30.08
22.31,30.08
22.34,30.08
22.35,30.24
Maximized For Accuracy
Visc(cp),Temp(DegC)
22.27,30.24
22.26,30.24
22.25,30.24
22.25,30.24
22.25,30.24
22.25,30.23
22.25,30.24
22.25,30.25
22.28,30.24
22.27,30.24
22.25,30.24
Connected 0:09:16 ANSI 2400 8-N-1 SCROLL CAPS NUM Capture Print echo
```

To select a faster response time, type "F" for Faster. The system acknowledges the faster response time setting [about 6 fold faster] with a "Response Time Reduced" message.

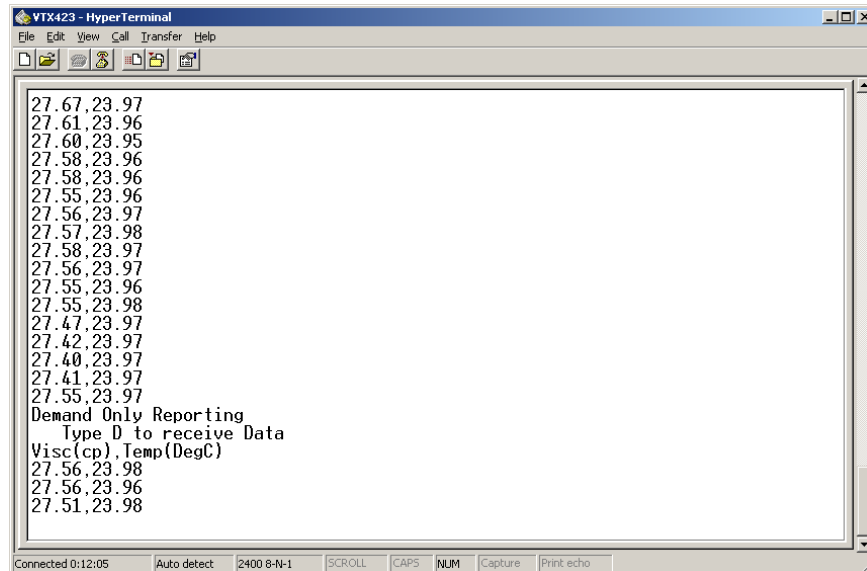


```
STCom1Data - HyperTerminal
File Edit View Call Transfer Help
Report Interval Set: 5Seconds
Visc(cp),Temp(DegC)
22.10,30.26
22.12,30.24
22.18,30.24
22.18,30.25
22.18,30.25
22.18,30.25
22.18,30.25
22.20,30.24
22.22,30.24
22.22,30.24
22.22,30.25
22.22,30.24
Response Time Reduced
Visc(cp),Temp(DegC)
22.46,30.40
22.36,30.40
22.28,30.24
22.28,30.24
22.21,30.24
22.28,30.24
22.28,30.08
Connected 0:07:56 ANSI 2400 8-N-1 SCROLL CAPS NUM Capture Print echo
```

The frequency with which data is reported is called the Report Interval. It can be anything from 1 to 255 seconds. The default interval is five seconds. To select a different report interval, type "R" followed by a number from 1 to 255. For example to set ten seconds, type "R10". The screen will acknowledge the new setting with a message, then data will begin appearing at the new ten second interval.

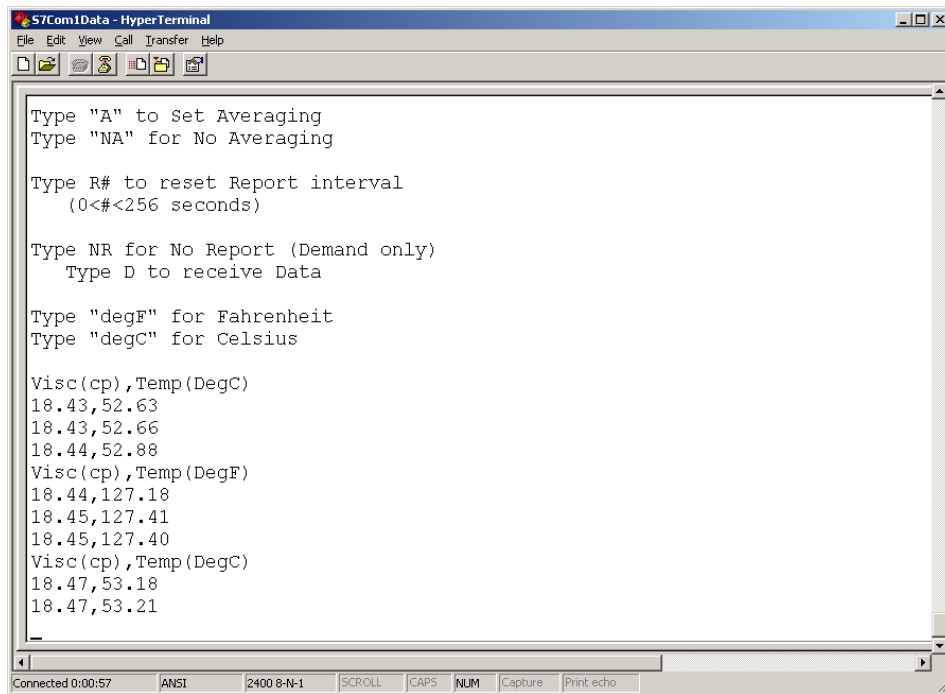


There will be situations in which the user wants to control the data report timing. This is the No Report state. To set it, type "NR". To then receive data type "D". The system will respond to each "D" data request with the current measurements.



To return to periodic, pushed data, type the desired report interval, e.g. "R5"

The last two items in the setup menu are degF and degC. The default is degC, as indicated in the data header. To select degF simply type "degF". The system will acknowledge the new temperature settings with a new data header. To return to degC, type "degC". **Note: all communications are case sensitive.**



```
57Com1Data - HyperTerminal
File Edit View Call Transfer Help
Type "A" to Set Averaging
Type "NA" for No Averaging
Type R# to reset Report interval
(0<#<256 seconds)
Type NR for No Report (Demand only)
Type D to receive Data
Type "degF" for Fahrenheit
Type "degC" for Celsius
Visc(cp),Temp(DegC)
18.43,52.63
18.43,52.66
18.44,52.88
Visc(cp),Temp(DegF)
18.44,127.18
18.45,127.41
18.45,127.40
Visc(cp),Temp(DegC)
18.47,53.18
18.47,53.21
Connected 0:00:57 ANSI 2400 8-N-1 SCROLL CAPS NUM Capture Print echo
```