

# *T D Collaborative LLC*

## D422: Viscosity and Temperature Display

### Highlights

- Desk top or panel mount
- Din/4 format
- Bright 7-segment displays
  - Viscosity in cp
  - Temperature in degF or degC
- Water and dustproof front face
- Outputs for monitoring and control
  - 4-20ma, Viscosity and Temperature
  - Serial port monitoring and set up



### Overview

The D422 offers continuous high-visibility display of the viscosity and temperature data generated by the VTX423 viscometer. It powers the sensor, replicates the sensor's 4-20ma current output, and it is a convenient interface to a computer serial port. The serial port can be used to acquire data, as well as adjust various settings such as the data Report Interval, and to retrieve data such as sensor serial number and calibration settings. The face of the device is completely sealed. When mounted in a panel side rails secure the gasketed face against the panel for a tight seal isolating the rear face where all the data I/O is located.

### Operation

Power for both the VTX423 sensor and the D422 display is provided on the rear panel 24Vdc jack. When power is first applied, the two 7-segment, 4 digit displays auto test then as soon as the sensor has booted up and

has begun its measurement cycle, the data is automatically displayed.

The VTX423 sensor outputs data periodically. The data refresh time has a default value of ten seconds, but can be set to as little as one second or as much as 255 seconds [see serial port communication]. During the time between successive updates the most recent data set is displayed.

The back panel replicates the 4-20ma current output of the sensor. This data is refreshed every 200ms.

Data can be set through the serial port to be Averaged [16 or 64 fold measurement averages depending on Report Interval], or Not Averaged. Averaged data has less measurement-to-measurement scatter, but has a slower response time. Since viscosity is typically a very slowly varying parameter, it is usually best to select the Averaged data condition [default].

## Specifications

Mounting	¼ Din, cutout 92mm x 92mm [3.622" x 3.622"]
Required Power	24Vdc, 300ma into 2.5mm panel jack
Adaptor [provided]	Input 90-240Vac, 50-60Hz, output 24Vdc, 300ma
Output to sensor	24Vdc plus RS232 3-wire serial port communication
Output from sensor	4-20ma viscosity and temperature, 3-wire serial port data
Compatible Sensors	VTX423

## Installation

To panel mount, first form a Din/4 panel cutout [92mm x 92mm]. Using the 1/16 hex wrench provided, remove the set screws which retain the side rails. Slide the display into the cutout from the front, restore the side rails, then restore and tighten the set screws to firmly attach the display to the panel.

## Interconnect

On the back of the display there is a 1 x 10 terminal strip, as shown. The first six connections are to the VTX423 sensor. We recommend use of an 18-26 awg multistrand shielded cable. The interconnect wiring is the same as the sensor, so pin one labeled "Gnd" goes to pin 1 of the sensor terminal strip, also labeled "Gnd", pin2 to pin2, etc. If desired, there is a ground terminal lug for connection to a reliable system ground. Power for both the display and sensor is provided by the 2.5mm jack. 4-20ma current outputs are continuously available on pins 7 – 10. The current is sourced and can drive up to 300 ohm loop resistance. It is refreshed every 200ms.



## Serial Port Communication

The D-Sub 9 connector is used for serial port computer interconnect. Data is packaged in a 2400 baud, 8-bit, no parity, one stop bit format. It can be accessed using HyperTerminal or similar terminal utilities. If you have no serial port the display can be accessed through the USB port using an adaptor. For additional details on serial communication see Technical Note TN10354 "VTX423 Data and Setup Serial Communication". Data from the sensor is

periodically pushed to the display and computer at a "Report Interval". The default Report Interval is 10 seconds. It can be set through the serial port to as little as 1 second and as long as 255 seconds. Alternatively, data can be updated upon demand. To do this connect to the serial port, power the sensor, and when the data stream begins, type "NR" for No Reporting. After that, to refresh data send a "D" command for Data.

Consult the factory or your sales rep for additional details and options or for a quote.



**TD Collaborative LLC**

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3R Green Street, Woburn, MA 01801  
Tel: 781.933.6116 Fax: 781.218.2682