T D Collaborative LLC

TN10354: VTX423 Data and Setup Communication

Overview

The serial port on the VTX423 viscometer can be used to access data as well as to configure the sensor, enter calibration coefficients, calibrate the 4-20ma current outputs, set or negate data averaging, etc. Restricted commands are enabled when the Restricted Commands state is set. Unrestricted Commands are always accessible. Serial port data can be viewed with a computer using a communications utility such as Hyperterminal configured for 2400 baud, 8bit, no parity, one stop bit, no handshake.

Note: Commands are case sensitive.

Unrestricted Commands

M	Lists the Menu Options shown below.
A	[Default.] Maximizes Accuracy..
F	Faster response [response time reduced].
Rnnn	Sets the Report Interval in seconds. 1<= nnn <=255. [Default = 5 seconds.]
NR	Sets the No Report State. To receive data in this state type the D command.
D	When in NR State, each "D" [Data] transmission results in a Data Report echo.
degC	Sets RS232 output to degrees Celsius. [Default.] See Note 1.
degF	Sets RS232 output to degrees Fahrenheit. See Note 3.

Restricted Commands

To enable Restricted Commands type "SetRC". Recommended ONLY under factory direction, since this enables changes to calibration coefficients and other critical settings. RC state is negated on restart.

cn	Selects 4-20 Ma current calibration mode. c0/1/2/3/4 = TempOffset/TempSpan/ViscoOffset/ViscoSpan/none
+ n n	Increases current calibration setting by nn decimal units
- n n	Decreases current calibration settings by nn decimal units.
TnHHLLNNNN	Sets Tn calibration Coefficient to HHLLNNNN whole and fractional signed hex units
VnHHLLNNNN	Sets Vn calibration Coefficient to HHLLNNNN whole and fractional signed hex units
Tn	Reports Tn coefficient value, 0<=n<=3 in whole and fractional signed hex units
Vn	Reports Vn coefficient value, 0<=n<=3 in whole and fractional signed hex units
WP	Write current DoublePeriodAvg and ViscoDataReject in EEPROM
P	List but do not write Frequency, VDR, Ampl1, Ampl2, and Ampl4
snxxxxxxxx	Store 4 byte hex Serial Number in EEPROM 0x0C:0F, e.g. sn11060005 or 00120FA7
rxLLNNNN	Store Rmax in EEPROM. Hex LLNNNN ratio. NB: lower case letters "rx".
pnHHLL	Store Pk to Pk Amplitude minimum. e.g. pn0020 is a minimum count of d32.
C	List all calibration coefficients, period, and data reject settings saved in EEPROM
TC	Sets the Temperature Calibrate State. Outputs averaged raw temperature counts.
VC	Sets the Viscosity Calibrate State. Outputs temperature and viscosity ratio data.
m	Sets the Measurement State. Also set during power up reboot, i.e. default.
TRx	TR1 sets 0-100degC, TR2 sets 0-200degC measurement range for 4-20ma mapping.
VRx	VR4 sets 0-40cp, VR3 sets 0-300cp for 4-20ma mapping.

Note 1: 4-20ma current output is mapped based on degrees Celsius, i.e. 4-20ma is 0-100C or 0-200degC
Note 2: Any display exceeding Full Scale is an over range condition.
Note 3: The D422 displays both Celsius and Fahrenheit. The front label should be selected accordingly.