FMC Technologies

Universal Performance Curve Compensator

UPCC

Communications

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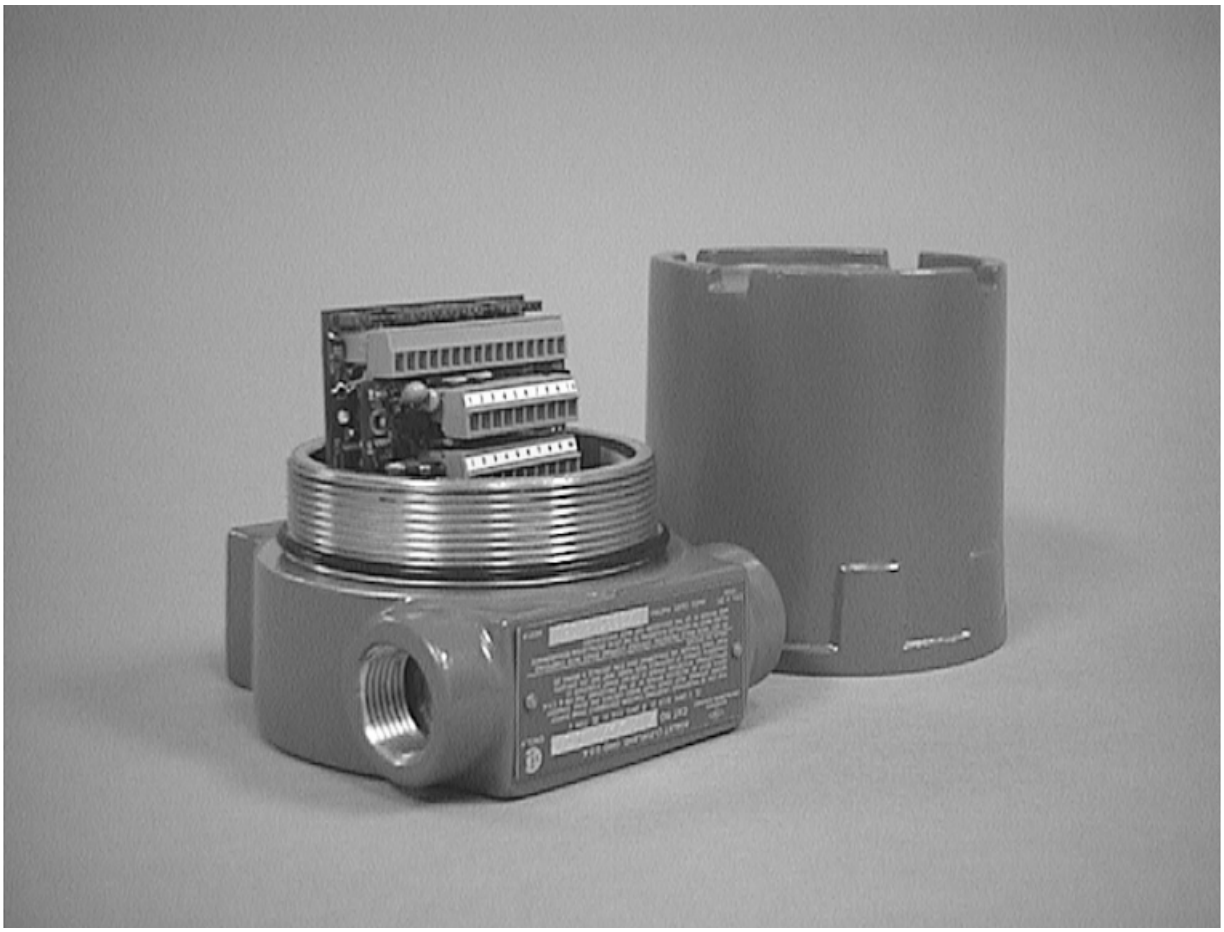

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Receipt of Equipment

When the equipment is received, the outside packing case should be checked immediately for any shipping damage. If the packing case has been damaged, the local carrier should be notified at once regarding his liability. Carefully remove the unit from its packing case and inspect for damaged or missing parts.

If damage has occurred during shipment or parts are missing, a written report should be submitted to the Customer Service Department, FMC Technologies Measurement Solutions, Inc., Erie, Pennsylvania 16514.

Prior to installation, the unit should be stored in its original packing case and protected from adverse weather conditions and abuse.

Caution:

This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with this Instruction Manual, may cause interference to radio communications. It has not been tested to comply with the limits for a Class A computing device pursuant to Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference when operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference, in which case the user, at his own expense, will be required to take whatever measures may be required to correct the interference.

Proprietary Notice

Introduction

The Smith Meter™ UPCC Universal Performance Curve Compensator is a microprocessor-based turbine meter preamplifier that has been designed to operate with the Smith line of multi-viscosity turbine meters. It is used to compensate for the viscosity of the product by either directly interfacing to a SolarTron Viscometer Head, by temperature inferred viscosity correction or current proportional to viscosity. It can also be used to convert the low voltage sinusoidal signal into a square wave pulse form that can be used to increase the transmission distance of the output.

The UPCC also functions as a flow computer that provides spontaneous and average flow rates, batch and cumulative totalization, turbine meter frequency measurement, and flow direction detection. The pulse output can be raw uncompensated or a high resolution output and quadrature.

Operating Principle

Viscosity and flow rate are key features in determining the performance of an MV Series Turbine Meter. By testing a meter over a range of viscosity's and flow rates, the meter factor is determined and plotted relative to the log of velocity (flow rate)/viscosity. This data is also programmed in the UPC Compensator at the factory. Each meter has a unique meter factor vs. velocity/viscosity characteristic curve plotted over a specific flow and viscosity range. In actual operation, the product viscosity must be input for each product metered. The viscosity input can be

A Constant - Manually input a known viscosity value. This is sufficient when the product viscosity varies little over the metered volume.

Temperature/Viscosity Input - The temperature/viscosity input is provided at minimum and maximum operating temperatures. The UPC constantly reads the temperature and corrects for variations in viscosity. This increases the measurement accuracy when wide temperature variations are experienced when a product is flowing. Up to three meter profile selections can be set up, which allows the operator to set up three separate temperature/viscosity profiles.

Viscometer Input - An analog or digital input from an on-line viscometer. This may be necessary where a wide range of products are handled and programming product viscosity is not practical.

Hardware

The CPU is a Motorola 68332 processor operating at 16 mHz. The 68332 is a 32-bit processor internally reducing to 16 bits for external connections. The Motorola 68332 is divided into four sections: a 68020 processor, a Time Processor Unit (TPU), internal high-speed 2K RAM, and a built-in UART. A built-in interrupt controller and watchdog timer allows the CPU to function efficiently with a minimum of additional hardware. The real-time clock provides power-up reset and low power-down control.

The turbine preamplifier amplifies the two channels of the turbine sine wave signals to square wave output driver circuit that is capable of operating as a current sink or a current source. In addition, these square waves are passed to the CPU for the viscosity-compensated output. If the CPU would fail, then the compensated output would also fail. However, the preamplifier outputs are not dependent on the CPU and can be wired to external counters for backup.

Note: *The pulse amplification circuitry is not dependent on the CPU operation in any way.*

The UPCC implements the Modicon Modbus protocol. Maximum baud rate is 19,200. The Modbus protocol specifies one master and up to 247 slaves on a common communication line. Each slave is assigned a unique address from 1 to 255.

Transmission Mode

Two modes of transmission, ASCII and RTU, are available.

	ASCII	RTU
Data Bits	7	8
Start Bits	1	1
Parity	Even, Odd	None
Stop Bits	1	1
Error Checking	Checksum	CRC
Baud Rate	1200 - 19,200	1200 - 19,200

ASCII Framing

Framing is accomplished by using a colon character (:) indicating the beginning of a frame and carriage return (CR), and line feed (LF) for the end of a frame.

ASCII Message Format

	ADDR	FUNC	DATA	ERR/CHECK		
":"	2 CHAR	2 CHAR	N*2 CHAR	2 CHAR	CR	LF
8 BITS	16 BITS	16 BITS	N*16 BIT	16 BITS	8 BITS	8 BITS

RTU Framing

Frame synchronization is done by time basis only. The UPCC allows 3.5 characters time without new characters coming in before proceeding to process the message and resetting the buffer.

ADDRESS	FUNCTION	DATA	CRC
8 BITS	8 BITS	N*8 BITS	16 BITS

Function Code

These functions are to inform the slave device of what function to perform.

FUNCTION CODE (Hex)	ACTION
0X03	READ REGISTERS(S)
0X08	WRITE REGISTER(S)
0X10	ECHO COMMAND

Data

The data field is a variable length field that contains the Modbus register address starting location and the number of locations to be accessed. The field will also contain data if the command is a write operation. The following tables illustrate the structure of the data portion of the Modbus command.

	Starting Location:		Number of Locations to Read:	
Length	1 Byte	1 Byte	1 Byte	1 Byte
Hi/Lo Byte:	Hi	Lo	Hi	Lo
Data Format:	Binary	Binary	Binary	Binary

Table 1. RTU Read Data Structure

	Starting Location:	Number of Locations to Write:	Byte Count N:	Data (Hi/Lo):
Length:	2 Bytes	2 Bytes	1 Byte	N Bytes
Hi/Lo Order:	Hi/Lo	Hi/Lo	Lo	Hi/Lo
Data Format:	Binary	Binary	Binary	Binary

Table 2. RTU Write Data Structure

	Starting Location:		Number of Locations to Read:	
Length	2 Bytes	2 Bytes	2 Bytes	2 Bytes
Hi/Lo Byte:	Hi	Lo	Hi	Lo
Data Format:	ASCII/Hex encoded	ASCII/Hex encoded	ASCII/Hex encoded	ASCII/Hex encoded

Table 3. ASCII Read Data Structure

	Starting Location:	Number of Locations to Write:	Byte Count N:	Data (Hi/Lo):
Length:	4 Bytes	4 Bytes	2 Byte	2*N Bytes
Hi/Lo Order:	Hi/Lo	Hi/Lo	Lo	Hi/Lo
Data Format:	ASCII/Hex encoded	ASCII/Hex encoded	ASCII/Hex encoded	ASCII/Hex encoded

Table 4. ASCII Write Data Structure

EXCEPTION CODE	DESCRIPTION
01	ILLEGAL FUNCTION
02	ILLEGAL DATA ADDRESS
03	ILLEGAL DATA VALUE
04	DATA CANNOT BE WRITTEN

Error Check

LRC Mode

The LRC check is transmitted as two ASCII hexadecimal characters. First, the message has to be stripped of the colon, LF, and CR, and then converted (the Hex ASCII to Binary). Add the binary bits and then twos complement the result.

CRC Mode

The entire message is considered in the CRC mode. The most significant bit is transmitted first. The message is premultiplied by 16. The integer quotient digits are ignored and the 16-bit remainder is appended to the message as the two CRC check bytes. The resulting message including the CRC, when divided by the same polynomial (X16 + X15 + X3 + 1) as the receiver will give a zero remainder if no error has occurred.

Exception Response

Exception response comes from the slave if it finds errors in communication. The slave responds to the master echoing the slave address, function code (with high bit set), exception code, and error check. To indicate that the response is notification of an error, the high order bit of the function code is set to 1.

Modbus Command Processing

The Modbus communications scheme will allow both direct read/write and read-only access to all of the UPCC Modbus registers. These registers will provide total access to all user accessible control functions, calibration factors, real-time operational data, turbine diagnostics data, and historical data. The protocol supports a variety of text and numeric data formats.

The Modbus routine will process commands by first parsing and interpreting the ASCII or RTU command string. If the command is a read-register operation, the data is transmitted back to the master unit. If the command is a write operation, the data is range-checked before the register is written. Registers that are defined as read-only are protected from any Modbus write operation. Other registers may be protected depending upon the use of the Weights and Measures mode. In addition to these data protection functions, the UPCC Windows-based interface will utilize a set of security codes to further prevent unauthorized access to certain data, configuration parameters, and control functions.

Large blocks of historical data may also be retrieved through the Modbus registers. Historical data retrieval will be a multi-step process that requires the user to supply a retrieval request code, a starting time or date, and the number of records that are desired. Historical data will then be read from a contiguous block of Modbus registers. The exact procedures will vary depending upon the type of report that is requested.

Weights and Measures Mode

The UPCC supports a Weights and Measures mode of operation. This mode will provide additional protection for certain critical UPCC data and control register locations. Use of this mode will require selection of the Weights and Measures mode flag and the configuration of the first status input as a Weights and Measures switch input. Contact closure must be made on the UPCC status input in order to allow these registers to be written.

Weights and Measures mode will provide protection for the following Modbus registers:

- K-Factor
- Units of measure
- Time units
- Pulse output volume factor
- Reset “non-resettable” totalizer command

Modbus Address Table

All user access to the UPCC will be performed through the use of Modbus registers. The Modbus address table will contain a listing of those registers that can be accessed through the Modbus communication link. Appendix B contains a complete listing of all the assigned Modbus addresses.

System Configuration Registers

The system configuration registers will contain access to the following items:

- General information and configuration
- Flow parameters entry
- Serial communications configuration
- Status input and output configuration
- Pulse output configuration
- Analog 4-20 mA input and output configuration and calibration
- Temperature sensor configuration and calibration
- Viscometer configuration and calibration

Product Recipe Registers

The product recipe registers will consist of ten identical blocks of registers used to hold viscosity compensation coefficients and product-specific calibration data, as follows:

- Product labels
- Temperature inferred viscosity calibration data
- Direct viscosity measurement compensation equation coefficients

Alarm Limits

A block of registers will be used to hold low and high alarm limits for critical parameters.

System Control Registers

Certain other registers will be used to control various operational and data retrieval functions. This group will include:

System control
Status input and output control

Present Values Data Registers

The Present Values data registers will be blocks of registers that will contain all user-accessible and diagnostic present value data, as follows:

Present and batch timed data
All pulse count totals
Flowrates and other flow information
Temperature and viscosity values
Diagnostic data and intermediate calculations

Modbus Examples

Example 1

Function Code 3

ASCII Read Register 1002 ⟶ 1121 (Company Name)

Transmit

	Start Char:	**Unit ID**		**Function Code**		**Starting Register**				**Number of Registers**			
						HI		LO		HI		LO	
Hex	3A	46	46	30	33	30	34	34	45	30	30	31	34
ASCII	:	F	F	0	3	0	4	4	E	0	0	1	4
Value		255		03		1102				20			

	Error Check		**End Char**	
Hex	39	38	OD	OA
ASCII	9	8	^M	^J
Value			CR	LF

Response - Company Name = Smith Meter

	Start Char:	Unit ID		Function Code		Byte Count		Data					
Hex	3A	46	46	30	33	32	38	35	33	36	44	36	39
ASCII	:	F	F	0	3	2	8	5	3	6	D	6	9
Value		255		03		40		S		M		i	

	Data (Continued)													
Hex	37	34	36	38	32	30	34	44	36	35	37	34	36	35
ASCII	7	4	6	8	2	0	4	D	6	5	7	4	6	5
Value	t		h		space		M		e		t		e	

	Data (Continued)													
Hex	37	32	32	30	34	39	36	45	36	33	32	45	30	30
ASCII	7	2	2	0	4	9	6	E	6	3	2	E	0	0
Value	r		space		I		n		c		.		Null	

	Data (Continued)													
Hex	46	31	36	41	30	30	43	30	30	31	35	38	30	30
ASCII	F	1	6	A	0	0	C	0	0	1	5	8	0	0
Value					Null								Null	

	Data (Continued)													
Hex	41	34	46	32	36	41	30	30	45	30	46	35	36	41
ASCII	A	4	F	2	6	A	0	0	E	0	F	5	6	A
Value							Null							

	Data (Continued)													
Hex	30	30	32	30	31	41	37	44	30	30	45	30	46	35
ASCII	0	0	2	0	1	A	7	D	0	0	E	0	F	5
Value									Null					

	Data (Continued)							
					Error Check		End Char	
Hex	36	41	30	30	41	33	OD	OA
ASCII	6	A	0	0	A	3	^M	^J
Value			Null				CR	LF

Example 2

Function Code 03

ASCII Read Registers 3202 and 3203 (Alarm Status Information)

Transmit

	Start Char	Unit ID		Function Code		Starting Register				Number of Registers				Error Check		End Char	
Hex	3A	46	46	30	33	30	43	38	32	30	30	30	32	36	45	OD	OA
ASCII	:	F	F	0	3	0	C	8	2	0	0	0	2	6	E	^M	^J
Value		255		03		3202				2						CR	LF

Response - Alarm Status 147456

	Start Char	Unit ID		Function Code		Byte Count		Data							
Hex	3A	46	46	30	33	30	34	30	30	30	32	34	30	30	30
ASCII	:	F	F	0	3	0	4	0	0	0	2	4	0	0	0
Value		255		03		04		147,456							

	Error Check		End Char	
Hex	42	38	OD	OA
ASCII	B	8	^M	^J
Value			CR	LF

Example 3

Function Code 03

RTU Protocol Read Register 1102 to 1121 (Company Name)

Transmit

	Unit ID	Function Code	Starting Register		Number of Registers		CRC	
ASCII	FF	03	04	4E	00	14	31	3C
Value	255	3	1102		20			

Response - Company Name = Smith Meter Inc.

	Unit ID	Function Code	Byte Count	Data							
ASCII	FF	03	28	53	6D	69	74	68	20	4D	65
Value	255	03	40	S	m	i	t	h	Space	M	e

	Data											
ASCII	74	65	72	20	49	6E	63	2E	00	F1	6A	00
Value	t	e	r	Space	I	n	c	.	Null			Null

	Data														
ASCII	C0	01	58	00	A4	F2	6A	00	E0	F5	6A	00	20	1A	7D
Value															

		Data				CRC	
ASCII	00	E0	F5	6A	00	EB	5E
Value							

Example 4

Function Code 03

RTU Protocol Read Register 3202 and 3203 (Alarm Status Information)

Transmit

	Unit ID	Function Code	Starting Register		Number of Registers		CRC	
ASCII	FF	03	0C	82	00	02	72	AD
Value	255	03	3202		2			

Response - Alarm Status 147456

	Unit ID	Function Code	Byte Count	Data				CRC	
ASCII	FF	03	04	00	02	40	00	75	FC
Value	255	03	4	147,456					

ASCII Error Check Example

ASCII Message (Hexadecimal)

Start Char	Unit ID	Function Code	Starting Register		Number of Registers		Error Check	End Char	
:	FF	03	0C	82	00	02	6E	0D	0A

To calculate the Error Check for a message sent using the ASCII protocol, the following steps should be followed:

1. Strip of the message of the Start and End characters.

Unit ID	Function Code	Starting Register		Number of Registers	
FF	03	0C	82	00	02

2. Add the hexadecimal characters together.
   FF + 03 + 0C + 82 + 00 + 02 = 92

3. Negate the answer from Step 2 (92) = 6D.

4. Add 1 to the answer from Step 3 equals the Error Check (6E).

Note: *Steps 3 and 4 are the same as taking the result from Step 2 (92) and taking the 2's complement.*

Security Code Registers				
Register	**Description**	**Format**	**Range**	**Read/Write**
1001-1003	Parameter Entry Password	String	6 Char	WO
1004-1006	Status Input Password	String	6 Char	WO
1007-1009	Switch Output Password	String	6 Char	WO
1010-1012	Security Codes Password	String	6 Char	WO
1013-1015	Date and Time Password	String	6 Char	WO
1016-1018	Not Used			
1019-1021	End Batch Password	String	6 Char	WO
1022-1024	Reset Cumulative Totalizers Password	String	6 Char	WO
1025-1027	Weights and Measures Password	String	6 Char	WO
1028-1036	Not Used			
1037-1039	Supervisor Password	String	6 Char	WO
1040-1042	Requested Code	String	6 Char	WO
1043-1054	Encrypted Version of Security Code	String	24 Char	RO

General System Configuration				
Register	**Description**	**Format**	**Range**	**Read/Write**
1101	Firmware Revision Number	Integer/16		RO
1102-1121	Company Name	String	40 Char	RW
1122-1141	Meter Location	String	40 Char	RW
1142-1145	Meter ID	String	8 Char	RW
1146	Meter Diameter	Integer/16	00.01-99.99	RW
1147	Not Used			
1148	Number of Blades	Integer/16	1-99	RW
1149	Weights and Measures Write Protect 0 = Disabled 1 = Enabled	Integer/16	0, 1	RW
1150	Smith Load Printer Installed 0 = No 1 = Yes	Integer/16	0, 1	RW
1151	High Speed Mode 0 = No (200 Hz or Less) 1 = Yes (201 Hz to 2000 Hz)	Integer/16	0, 1	RW

Flow Parameter Configuration				
Register	**Description**	**Format**	**Range**	**Read/Write**
1201	Bi-directional Mode 0 = No 1 = Quadratic Detection 2 = Input Switch	Integer/16	0-2	RW
1202	Pickup Coil Connections 0 = Single 1 = Dual	Integer/16	0, 1	RW
1203	Allow Switching from Coil A to Coil B 0 = No 1 = Yes	Integer/16	0, 1	RW
1204-1207	Not Used			
1208-1209	Minimum Frequency	Integer/32	0-100	RW
1210-1211	Maximum Delta Frequency	Integer/32	1-10,000	RW
1212-1213	Maximum Frequency Change	Integer/32	1-10,000	RW

Communications Configuration				
Register	**Description**	**Format**	**Range**	**Read/Write**
1225	Unit ID	Integer/16	1-255	RW
1226	Spare			
1227	Packet Type 0 = RTU 1 = ASCII	Integer/16	0,1	RW
1228	Data Transfer Rate 0 = 1200 1 = 2400 2 = 4800 3 = 9600 4 = 19,200	Integer/16	0-4	RW
1229	Parity Mode 0 = None 1 = Odd 2 = Even	Integer/16	0-2	RW
1230	Enable Time (MS)	Integer/16	0-100	RW

Pulse Output and I/O Configuration				
Register	**Description**	**Format**	**Range**	**Read/Write**
1251	Pulse Output #1 Configuration 0 = Disabled 1 = Raw Echo of Pulse Inputs 2 = Raw Pulses Multiplier 3 = Compensated Pulses 4 = Compensated Pulses Multiplier	Integer/16	0-4	RW
1252	Pulse Output #2 Configuration 0 = Disabled 1 = Raw Echo of Pulse Inputs 2 = Raw Pulses Multiplier 3 = Compensated Pulses 4 = Compensated Pulses Multiplier	Integer/16	0-4	RW
1253-1254	Latched Output Map Configuration #1	Integer/32	0-1,069,580,287	RW
1255-1256	Instantaneous Output Map Configuration #1	Integer/32	0-1,069,809,663	RW
1257-1258	Latched Output Map Configuration #2	Integer/32	0-1,069,580,287	RW
1259-1260	Instantaneous Output Map Configuration #2	Integer/32	0-1,069,809,603	RW

Analog Input Configuration				
Register	**Description**	**Format**	**Range**	**Read/Write**
1275	4 to 20 mA input 0 = Disabled 1 = TBD	Integer/16	0-1	RW
1276-1279	Label	String	8 Char	RW
1280-1281	Low Value	Float	N/A	RW
1282-1283	High Value	Float	N/A	RW
1284-1285	Gain	Float	N/A	RW
1286-1287	Offset	Float	N/A	RW
1288	Calibration Mode	Boolean	N/A	RW

Analog Output #1 Configuration				
Register	**Description**	**Format**	**Range**	**Read/Write**
1301	Not Used			
1303-1304	Low Value (4mA)	Float	N/A	RW
1305-1306	High Value (20mA)	Float	N/A	RW
1307-1308	Gain Factor	Float	N/A	RW
1309-1310	Offset Factor	Float	N/A	RW
1311-1312	Calibration Value	Float	N/A	RW

Analog Output #2 Configuration				
Register	**Description**	**Format**	**Range**	**Read/Write**
1321-1322	Not Used			
1323-1324	Low Value (4mA)	Float	N/A	RW
1325-1326	High Value (20mA)	Float	N/A	RW
1327-1328	Gain Factor	Float	N/A	RW
1329-1330	Offset Factor	Float	N/A	RW
1331-1332	Calibration Value	Float	N/A	RW

Temperature Inputs Configuration				
Register	**Description**	**Format**	**Range**	**Read/Write**
1341	Sensor Type 0 = Disabled 1 = PRTD 2 = DS 1820	Integer/16	0-2	RW
1342-1343	Calibration Offset	Float	N/A	RW
1344-1345	Default Temperature	Float	N/A	RW

Viscometer Calibration				
Register	**Description**	**Format**	**Range**	**Read/Write**
1401-1402	Ultra Low Range V_0	Float	N/A	RW
1403-1404	Ultra Low Range V_1	Float	N/A	RW
1405-1406	Ultra Low Range V_2	Float	N/A	RW
1407-1408	Low Range V_0	Float	N/A	RW
1409-1410	Low Range V_1	Float	N/A	RW
1411-1412	Low Range V_2	Float	N/A	RW
1413-1414	Medium Range V_0	Float	N/A	RW
1415-1416	Medium Range V_1	Float	N/A	RW
1417-1418	Medium Range V_2	Float	N/A	RW
1419-1420	High Range V_0	Float	N/A	RW
1421-1422	High Range V_1	Float	N/A	RW
1423-1424	High Range V_2	Float	N/A	RW
1425-1426	Calibration Constant K_0	Float	N/A	RW
1427-1428	Calibration Constant K_1	Float	N/A	RW
1429-1430	Calibration Constant K_2	Float	N/A	RW
1431-1432	Calibration Constant K_{18}	Float	N/A	RW
1433-1434	Calibration Constant K_{19}	Float	N/A	RW
1435-1436	V Scale Factor	Float	N/A	RW
1437-1438	Kd Scale Factor	Float	N/A	RW
1439-1440	U Scale Factor	Float	N/A	RW
1441-1442	Default Viscosity	Float	N/A	RW
1443-1444	Default Density	Float	N/A	RW

Meter Profile #1				
Register	**Description**	**Format**	**Range**	**Read/Write**
2001-2005	Profile Name (1)	String	10 Char	RW
2006-2010	Not Used			
2011-2012	Viscosity of First Calibration Point (V1)	Float	N/A	RW
2013-2014	Temperature of First Calibration Point (T1)	Float	N/A	RW
2015-2016	Viscosity of Second Calibration Point (V2)	Float	N/A	RW
2017-2018	Temperature of Second Calibration Point (T2)	Float	N/A	RW
2019-2022	Constant A	Double	N/A	RW
2023-2026	Constant B	Double	N/A	RW
2027	Select A/B Value 0 = Direct Entry 1 = Calculation	Boolean	0-1	RW
2028-2030	Not Used			
2031-2034	Forward Viscosity Coefficient A	Double	N/A	RW
2035-2038	Forward Viscosity Coefficient B	Double	N/A	RW
2039-2042	Forward Viscosity Coefficient C	Double	N/A	RW
2043-2046	Forward Viscosity Coefficient D	Double	N/A	RW
2047-2050	Forward Viscosity Coefficient E	Double	N/A	RW
2051-2054	Forward Viscosity Coefficient F	Double	N/A	RW
2055-2058	Forward Viscosity Coefficient G	Double	N/A	RW
2059-2062	Forward Viscosity Coefficient H	Double	N/A	RW
2063-2066	Reverse Viscosity Coefficient A	Double	N/A	RW
2067-2070	Reverse Viscosity Coefficient B	Double	N/A	RW
2071-2074	Reverse Viscosity Coefficient C	Double	N/A	RW
2075-2078	Reverse Viscosity Coefficient D	Double	N/A	RW
2079-2082	Reverse Viscosity Coefficient E	Double	N/A	RW
2083-2086	Reverse Viscosity Coefficient F	Double	N/A	RW
2087-2090	Reverse Viscosity Coefficient G	Double	N/A	RW
2091-2094	Reverse Viscosity Coefficient H	Double	N/A	RW

Register	Description	Format	Range	Read/Write
2095-2098	Fault Reynolds Number	Double	N/A	RW
2099-2102	Low Limit Reynolds Number	Double	N/A	RW
2103-2106	High Limit Reynolds Number	Double	N/A	RW
2107-2108	Low Lookup K-Factor Point 1	Float	N/A	RW
2109-2110	Low Lookup K-Factor Point 2	Float	N/A	RW
2111-2112	Low Lookup K-Factor Point 3	Float	N/A	RW
2113-2114	Low Lookup K-Factor Point 4	Float	N/A	RW
2115-2116	Low Lookup K-Factor Point 5	Float	N/A	RW
2117-2118	Low Lookup K-Factor Point 6	Float	N/A	RW
2119-2120	Low Lookup K-Factor Point 7	Float	N/A	RW
2121-2122	Low Lookup K-Factor Point 8	Float	N/A	RW
2123-2124	Low Lookup K-Factor Point 9	Float	N/A	RW
2125-2126	Low Lookup K-Factor Point 10	Float	N/A	RW
2127-2128	Low Lookup Flow Rate Point 1	Float	N/A	RW
2129-2130	Low Lookup Flow Rate Point 2	Float	N/A	RW
2131-2132	Low Lookup Flow Rate Point 3	Float	N/A	RW
2133-2134	Low Lookup Flow Rate Point 4	Float	N/A	RW
2135-2136	Low Lookup Flow Rate Point 5	Float	N/A	RW
2137-2138	Low Lookup Flow Rate Point 6	Float	N/A	RW
2139-2140	Low Lookup Flow Rate Point 7	Float	N/A	RW
2141-2142	Low Lookup Flow Rate Point 8	Float	N/A	RW
2143-2144	Low Lookup Flow Rate Point 9	Float	N/A	RW
2145-2146	Low Lookup Flow Rate Point 10	Float	N/A	RW
2147-2148	Low Lookup Viscosity Point 1	Float	N/A	RW
2148-2150	Low Lookup Viscosity Point 2	Float	N/A	RW
2151-2152	Low Lookup Viscosity Point 3	Float	N/A	RW
2153-2154	Low Lookup Viscosity Point 4	Float	N/A	RW
2155-2156	Low Lookup Viscosity Point 5	Float	N/A	RW
2157-2158	Low Lookup Viscosity Point 6	Float	N/A	RW
2159-2160	Low Lookup Viscosity Point 7	Float	N/A	RW

Register	Description	Format	Range	Read/Write
2161-2162	Low Lookup Viscosity Point 8	Float	N/A	RW
2163-2164	Low Lookup Viscosity Point 9	Float	N/A	RW
2165-2166	Low Lookup Viscosity Point 10	Float	N/A	RW
2167-2168	High Lookup K-Factor Point 1	Float	N/A	RW
2169-2170	High Lookup Flow Rate Point 1	Float	N/A	RW
2171-2172	High Lookup Viscosity Point 1	Float	N/A	RW
2173-2174	Forward Curve Fit K-Factor Point 1	Float	N/A	RW
2175-2176	Forward Curve Fit Viscosity Point 1	Float	N/A	RW
2177-2178	Forward Curve Fit Flow Rate Point 1	Float	N/A	RW
2179-2180	Reverse Curve Fit K-Factor Point 1	Float	N/A	RW
2181-2182	Reverse Curve Fit Viscosity Point 1	Float	N/A	RW
2182-2184	Reverse Curve Fit Flow Rate Point 1	Float	N/A	RW
2185-2186	Forward Curve Fit K-Factor Point 2	Float	N/A	RW
2187-2188	Forward Curve Fit Viscosity Point 2	Float	N/A	RW
2189-2190	Forward Curve Fit Flow Rate Point 2	Float	N/A	RW
2191-2192	Reverse Curve Fit K-Factor Point 2	Float	N/A	RW
2193-2194	Reverse Curve Fit Viscosity Point 2	Float	N/A	RW
2195-2196	Reverse Curve Fit Flow Rate Point 2	Float	N/A	RW
2197-2198	Forward Curve Fit K-Factor Point 3	Float	N/A	RW
2199-2200	Forward Curve Fit Viscosity Point 3	Float	N/A	RW
2201-2202	Forward Curve Fit Flow Rate Point 3	Float	N/A	RW
2203-2204	Reverse Curve Fit K-Factor Point 3	Float	N/A	RW
2205-2206	Reverse Curve Fit Viscosity Point 3	Float	N/A	RW
2207-2208	Reverse Curve Fit Flow Rate Point 3	Float	N/A	RW
2209-2210	Forward Curve Fit K-Factor Point 4	Float	N/A	RW
2211-2212	Forward Curve Fit Viscosity Point 4	Float	N/A	RW
2213-2214	Forward Curve Fit Flow Rate Point 4	Float	N/A	RW
2215-2216	Reverse Curve Fit K-Factor Point 4	Float	N/A	RW
2217-2218	Reverse Curve Fit Viscosity Point 4	Float	N/A	RW
2219-2220	Reverse Curve Fit Flow Rate Point 4	Float	N/A	RW

Register	Description	Format	Range	Read/Write
2221-2222	Forward Curve Fit K-Factor Point 5	Float	N/A	RW
2223-2224	Forward Curve Fit Viscosity Point 5	Float	N/A	RW
2225-2226	Forward Curve Fit Flow Rate Point 5	Float	N/A	RW
2227-2228	Reverse Curve Fit K-Factor Point 5	Float	N/A	RW
2229-2230	Reverse Curve Fit Viscosity Point 5	Float	N/A	RW
2231-2232	Reverse Curve Fit Flow Rate Point 5	Float	N/A	RW
2233-2234	Forward Curve Fit K-Factor Point 6	Float	N/A	RW
2235-2236	Forward Curve Fit Viscosity Point 6	Float	N/A	RW
2237-2238	Forward Curve Fit Flow Rate Point 6	Float	N/A	RW
2239-2240	Reverse Curve Fit K-Factor Point 6	Float	N/A	RW
2241-2242	Reverse Curve Fit Viscosity Point 6	Float	N/A	RW
2243-2244	Reverse Curve Fit Flow Rate Point 6	Float	N/A	RW
2245-2246	Forward Curve Fit K-Factor Point 7	Float	N/A	RW
2247-2248	Forward Curve Fit Viscosity Point 7	Float	N/A	RW
2249-2250	Forward Curve Fit Flow Rate Point 7	Float	N/A	RW
2251-2252	Reverse Curve Fit K-Factor Point 7	Float	N/A	RW
2253-2254	Reverse Curve Fit Viscosity Point 7	Float	N/A	RW
2255-2256	Reverse Curve Fit Flow Rate Point 7	Float	N/A	RW
2257-2258	Forward Curve Fit K-Factor Point 8	Float	N/A	RW
2259-2260	Forward Curve Fit Viscosity Point 8	Float	N/A	RW
2261-2262	Forward Curve Fit Flow Rate Point 8	Float	N/A	RW
2263-2264	Reverse Curve Fit K-Factor Point 8	Float	N/A	RW
2265-2266	Reverse Curve Fit Viscosity Point 8	Float	N/A	RW
2267-2268	Reverse Curve Fit Flow Rate Point 8	Float	N/A	RW
2269-2270	Forward Curve Kit F-Factor Point 9	Float	N/A	RW
2271-2272	Forward Curve Fit Viscosity Point 9	Float	N/A	RW
2273-2274	Forward Curve Fit Flow Rate Point 9	Float	N/A	RW
2275-2276	Reverse Curve Fit K-Factor Point 9	Float	N/A	RW
2277-2278	Reverse Curve Fit Viscosity Point 9	Float	N/A	RW
2279-2280	Reverse Curve Fit Flow Rate Point 9	Float	N/A	RW

Register	Description	Format	Range	Read/Write
2281-2282	Forward Curve Fit K-Factor Point 10	Float	N/A	RW
2283-2284	Forward Curve Fit Viscosity Point 10	Float	N/A	RW
2285-2286	Forward Curve Fit Flow Rate Point 10	Float	N/A	RW
2287-2288	Reverse Curve Fit K-Factor Point 10	Float	N/A	RW
2289-2290	Reverse Curve Fit Viscosity Point 10	Float	N/A	RW
2291-2292	Reverse Curve Fit Flow Rate Point 10	Float	N/A	RW
2293-2294	Forward Curve Fit K-Factor Point 11	Float	N/A	RW
2295-2296	Forward Curve Fit Viscosity Point 11	Float	N/A	RW
2297-2298	Forward Curve Fit Flow Rate Point 11	Float	N/A	RW
2299-2300	Reverse Curve Fit K-Factor Point 11	Float	N/A	RW
2301-2302	Reverse Curve Fit Viscosity Point 11	Float	N/A	RW
2303-2304	Reverse Curve Fit Flow Rate Point 11	Float	N/A	RW
2305-2306	Forward Curve Fit K-Factor Point 12	Float	N/A	RW
2307-2308	Forward Curve Fit Viscosity Point 12	Float	N/A	RW
2309-2310	Forward Curve Fit Flow Rate Point 12	Float	N/A	RW
2311-2312	Reverse Curve Fit K-Factor Point 12	Float	N/A	RW
2313-2314	Reverse Curve Fit Viscosity Point 12	Float	N/A	RW
2315-2316	Reverse Curve Fit Flow Rate Point 12	Float	N/A	RW
2317-2318	Forward Curve Fit K-Factor Point 13	Float	N/A	RW
2319-2320	Forward Curve Fit Viscosity Point 13	Float	N/A	RW
2321-2322	Forward Curve Fit Flow Rate Point 13	Float	N/A	RW
2323-2324	Reverse Curve Fit K-Factor Point 13	Float	N/A	RW
2325-2326	Reverse Curve Fit Viscosity Point 13	Float	N/A	RW
2327-2328	Reverse Curve Fit Flow Rate Point 13	Float	N/A	RW
2329-2330	Forward Curve Fit K-Factor Point 14	Float	N/A	RW
2331-2332	Forward Curve Fit Viscosity Point 14	Float	N/A	RW
2333-2334	Forward Curve Fit Flow Rate Point 14	Float	N/A	RW
2335-2336	Reverse Curve Fit K-Factor Point 14	Float	N/A	RW
2337-2338	Reverse Curve Fit Viscosity Point 14	Float	N/A	RW
2339-2340	Reverse Curve Fit Flow Rate Point 14	Float	N/A	RW

Register	Description	Format	Range	Read/Write
2341-2342	Forward Curve Fit K-Factor Point 15	Float	N/A	RW
2343-2344	Forward Curve Fit Viscosity Point 15	Float	N/A	RW
2345-2346	Forward Curve Fit Flow Rate Point 15	Float	N/A	RW
2347-2348	Reverse Curve Fit K-Factor Point 15	Float	N/A	RW
2349-2350	Reverse Curve Fit Viscosity Point 15	Float	N/A	RW
2351-2352	Reverse Curve Fit Flow Rate Point 15	Float	N/A	RW

Meter Profile #2				
Register	**Description**	**Format**	**Range**	**Read/Write**
3001-3005	Profile Name (1)	String	10 Char	RW
3006-3010	Not Used			
3011-3012	Viscosity of First Calibration Point (V1)	Float	N/A	RW
3013-3014	Temperature of First Calibration Point (T1)	Float	N/A	RW
3015-3016	Viscosity of Second Calibration Point (V2)	Float	N/A	RW
3017-3018	Temperature of Second Calibration Point (T2)	Float	N/A	RW
3019-3022	Constant A	Double	N/A	RW
3023-3026	Constant B	Double	N/A	RW
3027	Select A/B Value 0 = Direct Entry 1 = Calculation	Boolean	0-1	RW
3028-3030	Not Used			
3031-3034	Forward Viscosity Coefficient A	Double	N/A	RW
3035-3038	Forward Viscosity Coefficient B	Double	N/A	RW
3039-3042	Forward Viscosity Coefficient C	Double	N/A	RW
3043-3046	Forward Viscosity Coefficient D	Double	N/A	RW
3047-3050	Forward Viscosity Coefficient E	Double	N/A	RW
3051-3054	Forward Viscosity Coefficient F	Double	N/A	RW
3055-3058	Forward Viscosity Coefficient G	Double	N/A	RW
3059-3062	Forward Viscosity Coefficient H	Double	N/A	RW
3063-3066	Reverse Viscosity Coefficient A	Double	N/A	RW
3067-3070	Reverse Viscosity Coefficient B	Double	N/A	RW
3071-3074	Reverse Viscosity Coefficient C	Double	N/A	RW
3075-3078	Reverse Viscosity Coefficient D	Double	N/A	RW
3079-3082	Reverse Viscosity Coefficient E	Double	N/A	RW
3083-3086	Reverse Viscosity Coefficient F	Double	N/A	RW
3087-3090	Reverse Viscosity Coefficient G	Double	N/A	RW
3091-3094	Reverse Viscosity Coefficient H	Double	N/A	RW

Register	Description	Format	Range	Read/Write
3095-3098	Fault Reynolds Number	Double	N/A	RW
3099-3102	Low Limit Reynolds Number	Double	N/A	RW
3103-3106	High Limit Reynolds Number	Double	N/A	RW
3107-3108	Low Lookup K-Factor Point 1	Float	N/A	RW
3109-3110	Low Lookup K-Factor Point 2	Float	N/A	RW
3111-3112	Low Lookup K-Factor Point 3	Float	N/A	RW
3113-3114	Low Lookup K-Factor Point 4	Float	N/A	RW
3115-3116	Low Lookup K-Factor Point 5	Float	N/A	RW
3117-3118	Low Lookup K-Factor Point 6	Float	N/A	RW
3119-3120	Low Lookup K-Factor Point 7	Float	N/A	RW
3121-3122	Low Lookup K-Factor Point 8	Float	N/A	RW
3123-3124	Low Lookup K-Factor Point 9	Float	N/A	RW
3125-3126	Low Lookup K-Factor Point 10	Float	N/A	RW
3127-3128	Low Lookup Flow Rate Point 1	Float	N/A	RW
3129-3130	Low Lookup Flow Rate Point 2	Float	N/A	RW
3131-3132	Low Lookup Flow Rate Point 3	Float	N/A	RW
3133-3134	Low Lookup Flow Rate Point 4	Float	N/A	RW
3135-3136	Low Lookup Flow Rate Point 5	Float	N/A	RW
3137-3138	Low Lookup Flow Rate Point 6	Float	N/A	RW
3139-3140	Low Lookup Flow Rate Point 7	Float	N/A	RW
3141-3142	Low Lookup Flow Rate Point 8	Float	N/A	RW
3143-3144	Low Lookup Flow Rate Point 9	Float	N/A	RW
3145-3146	Low Lookup Flow Rate Point 10	Float	N/A	RW
3147-3148	Low Lookup Viscosity Point 1	Float	N/A	RW
3148-3150	Low Lookup Viscosity Point 2	Float	N/A	RW
3151-3152	Low Lookup Viscosity Point 3	Float	N/A	RW
3153-3154	Low Lookup Viscosity Point 4	Float	N/A	RW
3155-3156	Low Lookup Viscosity Point 5	Float	N/A	RW
3157-3158	Low Lookup Viscosity Point 6	Float	N/A	RW
3159-3160	Low Lookup Viscosity Point 7	Float	N/A	RW

Register	Description	Format	Range	Read/Write
3161-3162	Low Lookup Viscosity Point 8	Float	N/A	RW
3163-3164	Low Lookup Viscosity Point 9	Float	N/A	RW
3165-3166	Low Lookup Viscosity Point 10	Float	N/A	RW
3167-3168	High Lookup K-Factor Point 1	Float	N/A	RW
3169-3170	High Lookup Flow Rate Point 1	Float	N/A	RW
3171-3172	High Lookup Viscosity Point 1	Float	N/A	RW
3173-3174	Forward Curve Fit K-Factor Point 1	Float	N/A	RW
3175-3176	Forward Curve Fit Viscosity Point 1	Float	N/A	RW
3177-3178	Forward Curve Fit Flow Rate Point 1	Float	N/A	RW
3179-3180	Reverse Curve Fit K-Factor Point 1	Float	N/A	RW
3181-3182	Reverse Curve Fit Viscosity Point 1	Float	N/A	RW
3182-3184	Reverse Curve Fit Flow Rate Point 1	Float	N/A	RW
3185-3186	Forward Curve Fit K-Factor Point 2	Float	N/A	RW
3187-3188	Forward Curve Fit Viscosity Point 2	Float	N/A	RW
3189-3190	Forward Curve Fit Flow Rate Point 2	Float	N/A	RW
3191-3192	Reverse Curve Fit K-Factor Point 2	Float	N/A	RW
3193-3194	Reverse Curve Fit Viscosity Point 2	Float	N/A	RW
3195-3196	Reverse Curve Fit Flow Rate Point 2	Float	N/A	RW
3197-3198	Forward Curve Fit K-Factor Point 3	Float	N/A	RW
3199-3200	Forward Curve Fit Viscosity Point 3	Float	N/A	RW
3201-3202	Forward Curve Fit Flow Rate Point 3	Float	N/A	RW
3203-3204	Reverse Curve Fit K-Factor Point 3	Float	N/A	RW
3205-3206	Reverse Curve Fit Viscosity Point 3	Float	N/A	RW
3207-3208	Reverse Curve Fit Flow Rate Point 3	Float	N/A	RW
3209-3210	Forward Curve Fit K-Factor Point 4	Float	N/A	RW
3211-3212	Forward Curve Fit Viscosity Point 4	Float	N/A	RW
3213-3214	Forward Curve Fit Flow Rate Point 4	Float	N/A	RW
3215-3216	Reverse Curve Fit K-Factor Point 4	Float	N/A	RW
3217-3218	Reverse Curve Fit Viscosity Point 4	Float	N/A	RW
3219-3220	Reverse Curve Fit Flow Rate Point 4	Float	N/A	RW

Register	Description	Format	Range	Read/Write
3221-3222	Forward Curve Fit K-Factor Point 5	Float	N/A	RW
3223-3224	Forward Curve Fit Viscosity Point 5	Float	N/A	RW
3225-3226	Forward Curve Fit Flow Rate Point 5	Float	N/A	RW
3227-3228	Reverse Curve Fit K-Factor Point 5	Float	N/A	RW
3229-3230	Reverse Curve Fit Viscosity Point 5	Float	N/A	RW
3231-3232	Reverse Curve Fit Flow Rate Point 5	Float	N/A	RW
3233-3234	Forward Curve Fit K-Factor Point 6	Float	N/A	RW
3235-3236	Forward Curve Fit Viscosity Point 6	Float	N/A	RW
3237-3238	Forward Curve Fit Flow Rate Point 6	Float	N/A	RW
3239-3240	Reverse Curve Fit K-Factor Point 6	Float	N/A	RW
3241-3242	Reverse Curve Fit Viscosity Point 6	Float	N/A	RW
3243-3244	Reverse Curve Fit Flow Rate Point 6	Float	N/A	RW
3245-3246	Forward Curve Fit K-Factor Point 7	Float	N/A	RW
3247-3248	Forward Curve Fit Viscosity Point 7	Float	N/A	RW
3249-3250	Forward Curve Fit Flow Rate Point 7	Float	N/A	RW
3251-3252	Reverse Curve Fit K-Factor Point 7	Float	N/A	RW
3253-3254	Reverse Curve Fit Viscosity Point 7	Float	N/A	RW
3255-3256	Reverse Curve Fit Flow Rate Point 7	Float	N/A	RW
3257-3258	Forward Curve Fit K-Factor Point 8	Float	N/A	RW
3259-3260	Forward Curve Fit Viscosity Point 8	Float	N/A	RW
3261-3262	Forward Curve Fit Flow Rate Point 8	Float	N/A	RW
3263-3264	Reverse Curve Fit K-Factor Point 8	Float	N/A	RW
3265-3266	Reverse Curve Fit Viscosity Point 8	Float	N/A	RW
3267-3268	Reverse Curve Fit Flow Rate Point 8	Float	N/A	RW
3269-3270	Forward Curve Kit F-Factor Point 9	Float	N/A	RW
3271-3272	Forward Curve Fit Viscosity Point 9	Float	N/A	RW
3273-3274	Forward Curve Fit Flow Rate Point 9	Float	N/A	RW
3275-3276	Reverse Curve Fit K-Factor Point 9	Float	N/A	RW
3277-3278	Reverse Curve Fit Viscosity Point 9	Float	N/A	RW
3279-3280	Reverse Curve Fit Flow Rate Point 9	Float	N/A	RW

Register	Description	Format	Range	Read/Write
3281-3282	Forward Curve Fit K-Factor Point 10	Float	N/A	RW
3283-3284	Forward Curve Fit Viscosity Point 10	Float	N/A	RW
3285-3286	Forward Curve Fit Flow Rate Point 10	Float	N/A	RW
3287-3288	Reverse Curve Fit K-Factor Point 10	Float	N/A	RW
3289-3290	Reverse Curve Fit Viscosity Point 10	Float	N/A	RW
3291-3292	Reverse Curve Fit Flow Rate Point 10	Float	N/A	RW
3293-3294	Forward Curve Fit K-Factor Point 11	Float	N/A	RW
3295-3296	Forward Curve Fit Viscosity Point 11	Float	N/A	RW
3297-3298	Forward Curve Fit Flow Rate Point 11	Float	N/A	RW
3299-3300	Reverse Curve Fit K-Factor Point 11	Float	N/A	RW
3301-3302	Reverse Curve Fit Viscosity Point 11	Float	N/A	RW
3303-3304	Reverse Curve Fit Flow Rate Point 11	Float	N/A	RW
3305-3306	Forward Curve Fit K-Factor Point 12	Float	N/A	RW
3307-3308	Forward Curve Fit Viscosity Point 12	Float	N/A	RW
3309-3310	Forward Curve Fit Flow Rate Point 12	Float	N/A	RW
3311-3312	Reverse Curve Fit K-Factor Point 12	Float	N/A	RW
3313-3314	Reverse Curve Fit Viscosity Point 12	Float	N/A	RW
3315-3316	Reverse Curve Fit Flow Rate Point 12	Float	N/A	RW
3317-3318	Forward Curve Fit K-Factor Point 13	Float	N/A	RW
3319-3320	Forward Curve Fit Viscosity Point 13	Float	N/A	RW
3321-3322	Forward Curve Fit Flow Rate Point 13	Float	N/A	RW
3323-3324	Reverse Curve Fit K-Factor Point 13	Float	N/A	RW
3325-3326	Reverse Curve Fit Viscosity Point 13	Float	N/A	RW
3327-3328	Reverse Curve Fit Flow Rate Point 13	Float	N/A	RW
3329-3330	Forward Curve Fit K-Factor Point 14	Float	N/A	RW
3331-3332	Forward Curve Fit Viscosity Point 14	Float	N/A	RW
3333-3334	Forward Curve Fit Flow Rate Point 14	Float	N/A	RW
3335-3336	Reverse Curve Fit K-Factor Point 14	Float	N/A	RW
3337-3338	Reverse Curve Fit Viscosity Point 14	Float	N/A	RW
3339-3340	Reverse Curve Fit Flow Rate Point 14	Float	N/A	RW

Register	Description	Format	Range	Read/Write
3341-3342	Forward Curve Fit K-Factor Point 15	Float	N/A	RW
3343-3344	Forward Curve Fit Viscosity Point 15	Float	N/A	RW
3345-3346	Forward Curve Fit Flow Rate Point 15	Float	N/A	RW
3347-3348	Reverse Curve Fit K-Factor Point 15	Float	N/A	RW
3349-3350	Reverse Curve Fit Viscosity Point 15	Float	N/A	RW
3351-3352	Reverse Curve Fit Flow Rate Point 15	Float	N/A	RW

Meter Profile #3				
Register	**Description**	**Format**	**Range**	**Read/Write**
4001-4005	Profile Name (1)	String	10 Char	RW
4006-4010	Not Used			
4011-4012	Viscosity of First Calibration Point (V1)	Float	N/A	RW
4013-4014	Temperature of First Calibration Point (T1)	Float	N/A	RW
4015-4016	Viscosity of Second Calibration Point (V2)	Float	N/A	RW
4017-4018	Temperature of Second Calibration Point (T2)	Float	N/A	RW
4019-4022	Constant A	Double	N/A	RW
4023-4026	Constant B	Double	N/A	RW
4027	Select A/B Value 0 = Direct Entry 1 = Calculation	Boolean	0-1	RW
4028-4030	Not Used			
4031-4034	Forward Viscosity Coefficient A	Double	N/A	RW
4035-4038	Forward Viscosity Coefficient B	Double	N/A	RW
4039-4042	Forward Viscosity Coefficient C	Double	N/A	RW
4043-4046	Forward Viscosity Coefficient D	Double	N/A	RW
4047-4050	Forward Viscosity Coefficient E	Double	N/A	RW
4051-4054	Forward Viscosity Coefficient F	Double	N/A	RW
4055-4058	Forward Viscosity Coefficient G	Double	N/A	RW
4059-4062	Forward Viscosity Coefficient H	Double	N/A	RW
4063-4066	Reverse Viscosity Coefficient A	Double	N/A	RW
4067-4070	Reverse Viscosity Coefficient B	Double	N/A	RW
4071-4074	Reverse Viscosity Coefficient C	Double	N/A	RW
4075-4078	Reverse Viscosity Coefficient D	Double	N/A	RW
4079-4082	Reverse Viscosity Coefficient E	Double	N/A	RW
4083-4086	Reverse Viscosity Coefficient F	Double	N/A	RW
4087-4090	Reverse Viscosity Coefficient G	Double	N/A	RW
4091-4094	Reverse Viscosity Coefficient H	Double	N/A	RW

Register	Description	Format	Range	Read/Write
4095-4098	Fault Reynolds Number	Double	N/A	RW
4099-4102	Low Limit Reynolds Number	Double	N/A	RW
4103-4106	High Limit Reynolds Number	Double	N/A	RW
4107-4108	Low Lookup K-Factor Point 1	Float	N/A	RW
4109-4110	Low Lookup K-Factor Point 2	Float	N/A	RW
4111-4112	Low Lookup K-Factor Point 3	Float	N/A	RW
4113-4114	Low Lookup K-Factor Point 4	Float	N/A	RW
4115-4116	Low Lookup K-Factor Point 5	Float	N/A	RW
4117-4118	Low Lookup K-Factor Point 6	Float	N/A	RW
4119-4120	Low Lookup K-Factor Point 7	Float	N/A	RW
4121-4122	Low Lookup K-Factor Point 8	Float	N/A	RW
4123-4124	Low Lookup K-Factor Point 9	Float	N/A	RW
4125-4126	Low Lookup K-Factor Point 10	Float	N/A	RW
4127-4128	Low Lookup Flow Rate Point 1	Float	N/A	RW
4129-4130	Low Lookup Flow Rate Point 2	Float	N/A	RW
4131-4132	Low Lookup Flow Rate Point 3	Float	N/A	RW
4133-4134	Low Lookup Flow Rate Point 4	Float	N/A	RW
4135-4136	Low Lookup Flow Rate Point 5	Float	N/A	RW
4137-4138	Low Lookup Flow Rate Point 6	Float	N/A	RW
4139-4140	Low Lookup Flow Rate Point 7	Float	N/A	RW
4141-4142	Low Lookup Flow Rate Point 8	Float	N/A	RW
4143-4144	Low Lookup Flow Rate Point 9	Float	N/A	RW
4145-4146	Low Lookup Flow Rate Point 10	Float	N/A	RW
4147-4148	Low Lookup Viscosity Point 1	Float	N/A	RW
4148-4150	Low Lookup Viscosity Point 2	Float	N/A	RW
4151-4152	Low Lookup Viscosity Point 3	Float	N/A	RW
4153-4154	Low Lookup Viscosity Point 4	Float	N/A	RW
4155-4156	Low Lookup Viscosity Point 5	Float	N/A	RW
4157-4158	Low Lookup Viscosity Point 6	Float	N/A	RW
4159-4160	Low Lookup Viscosity Point 7	Float	N/A	RW

Register	Description	Format	Range	Read/Write
4161-4162	Low Lookup Viscosity Point 8	Float	N/A	RW
4163-4164	Low Lookup Viscosity Point 9	Float	N/A	RW
4165-4166	Low Lookup Viscosity Point 10	Float	N/A	RW
4167-4168	High Lookup K-Factor Point 1	Float	N/A	RW
4169-4170	High Lookup Flow Rate Point 1	Float	N/A	RW
4171-4172	High Lookup Viscosity Point 1	Float	N/A	RW
4173-4174	Forward Curve Fit K-Factor Point 1	Float	N/A	RW
4175-4176	Forward Curve Fit Viscosity Point 1	Float	N/A	RW
4177-4178	Forward Curve Fit Flow Rate Point 1	Float	N/A	RW
4179-4180	Reverse Curve Fit K-Factor Point 1	Float	N/A	RW
4181-4182	Reverse Curve Fit Viscosity Point 1	Float	N/A	RW
4182-4184	Reverse Curve Fit Flow Rate Point 1	Float	N/A	RW
4185-4186	Forward Curve Fit K-Factor Point 2	Float	N/A	RW
4187-4188	Forward Curve Fit Viscosity Point 2	Float	N/A	RW
4189-4190	Forward Curve Fit Flow Rate Point 2	Float	N/A	RW
4191-4192	Reverse Curve Fit K-Factor Point 2	Float	N/A	RW
4193-4194	Reverse Curve Fit Viscosity Point 2	Float	N/A	RW
4195-4196	Reverse Curve Fit Flow Rate Point 2	Float	N/A	RW
4197-4198	Forward Curve Fit K-Factor Point 3	Float	N/A	RW
4199-4200	Forward Curve Fit Viscosity Point 3	Float	N/A	RW
4201-4202	Forward Curve Fit Flow Rate Point 3	Float	N/A	RW
4203-4204	Reverse Curve Fit K-Factor Point 3	Float	N/A	RW
4205-4206	Reverse Curve Fit Viscosity Point 3	Float	N/A	RW
4207-4208	Reverse Curve Fit Flow Rate Point 3	Float	N/A	RW
4209-4210	Forward Curve Fit K-Factor Point 4	Float	N/A	RW
4211-4212	Forward Curve Fit Viscosity Point 4	Float	N/A	RW
4213-4214	Forward Curve Fit Flow Rate Point 4	Float	N/A	RW
4215-4216	Reverse Curve Fit K-Factor Point 4	Float	N/A	RW
4217-4218	Reverse Curve Fit Viscosity Point 4	Float	N/A	RW
4219-4220	Reverse Curve Fit Flow Rate Point 4	Float	N/A	RW

Register	Description	Format	Range	Read/Write
4221-4222	Forward Curve Fit K-Factor Point 5	Float	N/A	RW
4223-4224	Forward Curve Fit Viscosity Point 5	Float	N/A	RW
4225-4226	Forward Curve Fit Flow Rate Point 5	Float	N/A	RW
4227-4228	Reverse Curve Fit K-Factor Point 5	Float	N/A	RW
4229-4230	Reverse Curve Fit Viscosity Point 5	Float	N/A	RW
4231-4232	Reverse Curve Fit Flow Rate Point 5	Float	N/A	RW
4233-4234	Forward Curve Fit K-Factor Point 6	Float	N/A	RW
4235-4236	Forward Curve Fit Viscosity Point 6	Float	N/A	RW
4237-4238	Forward Curve Fit Flow Rate Point 6	Float	N/A	RW
4239-4240	Reverse Curve Fit K-Factor Point 6	Float	N/A	RW
4241-4242	Reverse Curve Fit Viscosity Point 6	Float	N/A	RW
4243-4244	Reverse Curve Fit Flow Rate Point 6	Float	N/A	RW
4245-4246	Forward Curve Fit K-Factor Point 7	Float	N/A	RW
4247-4248	Forward Curve Fit Viscosity Point 7	Float	N/A	RW
4249-4250	Forward Curve Fit Flow Rate Point 7	Float	N/A	RW
4251-4252	Reverse Curve Fit K-Factor Point 7	Float	N/A	RW
4253-4254	Reverse Curve Fit Viscosity Point 7	Float	N/A	RW
4255-4256	Reverse Curve Fit Flow Rate Point 7	Float	N/A	RW
4257-4258	Forward Curve Fit K-Factor Point 8	Float	N/A	RW
4259-4260	Forward Curve Fit Viscosity Point 8	Float	N/A	RW
4261-4262	Forward Curve Fit Flow Rate Point 8	Float	N/A	RW
4263-4264	Reverse Curve Fit K-Factor Point 8	Float	N/A	RW
4265-4266	Reverse Curve Fit Viscosity Point 8	Float	N/A	RW
4267-4268	Reverse Curve Fit Flow Rate Point 8	Float	N/A	RW
4269-4270	Forward Curve Kit F-Factor Point 9	Float	N/A	RW
4271-4272	Forward Curve Fit Viscosity Point 9	Float	N/A	RW
4273-4274	Forward Curve Fit Flow Rate Point 9	Float	N/A	RW
4275-4276	Reverse Curve Fit K-Factor Point 9	Float	N/A	RW
4277-4278	Reverse Curve Fit Viscosity Point 9	Float	N/A	RW
4279-4280	Reverse Curve Fit Flow Rate Point 9	Float	N/A	RW

Register	Description	Format	Range	Read/Write
4281-4282	Forward Curve Fit K-Factor Point 10	Float	N/A	RW
4283-4284	Forward Curve Fit Viscosity Point 10	Float	N/A	RW
4285-4286	Forward Curve Fit Flow Rate Point 10	Float	N/A	RW
4287-4288	Reverse Curve Fit K-Factor Point 10	Float	N/A	RW
4289-4290	Reverse Curve Fit Viscosity Point 10	Float	N/A	RW
4291-4292	Reverse Curve Fit Flow Rate Point 10	Float	N/A	RW
4293-4294	Forward Curve Fit K-Factor Point 11	Float	N/A	RW
4295-4296	Forward Curve Fit Viscosity Point 11	Float	N/A	RW
4297-4298	Forward Curve Fit Flow Rate Point 11	Float	N/A	RW
4299-4300	Reverse Curve Fit K-Factor Point 11	Float	N/A	RW
4301-4302	Reverse Curve Fit Viscosity Point 11	Float	N/A	RW
4303-4304	Reverse Curve Fit Flow Rate Point 11	Float	N/A	RW
4305-4306	Forward Curve Fit K-Factor Point 12	Float	N/A	RW
4307-4308	Forward Curve Fit Viscosity Point 12	Float	N/A	RW
4309-4310	Forward Curve Fit Flow Rate Point 12	Float	N/A	RW
4311-4312	Reverse Curve Fit K-Factor Point 12	Float	N/A	RW
4313-4314	Reverse Curve Fit Viscosity Point 12	Float	N/A	RW
4315-4316	Reverse Curve Fit Flow Rate Point 12	Float	N/A	RW
4317-4318	Forward Curve Fit K-Factor Point 13	Float	N/A	RW
4319-4320	Forward Curve Fit Viscosity Point 13	Float	N/A	RW
4321-4322	Forward Curve Fit Flow Rate Point 13	Float	N/A	RW
4323-4324	Reverse Curve Fit K-Factor Point 13	Float	N/A	RW
4325-4326	Reverse Curve Fit Viscosity Point 13	Float	N/A	RW
4327-4328	Reverse Curve Fit Flow Rate Point 13	Float	N/A	RW
4329-4330	Forward Curve Fit K-Factor Point 14	Float	N/A	RW
4331-4332	Forward Curve Fit Viscosity Point 14	Float	N/A	RW
4333-4334	Forward Curve Fit Flow Rate Point 14	Float	N/A	RW
4335-4336	Reverse Curve Fit K-Factor Point 14	Float	N/A	RW
4337-4338	Reverse Curve Fit Viscosity Point 14	Float	N/A	RW
4339-4340	Reverse Curve Fit Flow Rate Point 14	Float	N/A	RW

Register	Description	Format	Range	Read/Write
4341-4342	Forward Curve Fit K-Factor Point 15	Float	N/A	RW
4343-4344	Forward Curve Fit Viscosity Point 15	Float	N/A	RW
4345-4346	Forward Curve Fit Flow Rate Point 15	Float	N/A	RW
4347-4348	Reverse Curve Fit K-Factor Point 15	Float	N/A	RW
4349-4350	Reverse Curve Fit Viscosity Point 15	Float	N/A	RW
4351-4352	Reverse Curve Fit Flow Rate Point 15	Float	N/A	RW

Meter Profile #4				
Register	**Description**	**Format**	**Range**	**Read/Write**
5001-5005	Profile Name (1)	String	10 Char	RW
5006-5010	Not Used			
5011-5012	Viscosity of First Calibration Point (V1)	Float	N/A	RW
5013-5014	Temperature of First Calibration Point (T1)	Float	N/A	RW
5015-5016	Viscosity of Second Calibration Point (V2)	Float	N/A	RW
5017-5018	Temperature of Second Calibration Point (T2)	Float	N/A	RW
5019-5022	Constant A	Double	N/A	RW
5023-5026	Constant B	Double	N/A	RW
5027	Select A/B Value 0 = Direct Entry 1 = Calculation	Boolean	0-1	RW
5028-5030	Not Used			
5031-5034	Forward Viscosity Coefficient A	Double	N/A	RW
5035-5038	Forward Viscosity Coefficient B	Double	N/A	RW
5039-5042	Forward Viscosity Coefficient C	Double	N/A	RW
5043-5046	Forward Viscosity Coefficient D	Double	N/A	RW
5047-5050	Forward Viscosity Coefficient E	Double	N/A	RW
5051-5054	Forward Viscosity Coefficient F	Double	N/A	RW
5055-5058	Forward Viscosity Coefficient G	Double	N/A	RW
5059-5062	Forward Viscosity Coefficient H	Double	N/A	RW
5063-5066	Reverse Viscosity Coefficient A	Double	N/A	RW
5067-5070	Reverse Viscosity Coefficient B	Double	N/A	RW
5071-5074	Reverse Viscosity Coefficient C	Double	N/A	RW
5075-5078	Reverse Viscosity Coefficient D	Double	N/A	RW
5079-5082	Reverse Viscosity Coefficient E	Double	N/A	RW
5083-5086	Reverse Viscosity Coefficient F	Double	N/A	RW
5087-5090	Reverse Viscosity Coefficient G	Double	N/A	RW
5091-5094	Reverse Viscosity Coefficient H	Double	N/A	RW

Register	Description	Format	Range	Read/Write
5095-5098	Fault Reynolds Number	Double	N/A	RW
5099-5102	Low Limit Reynolds Number	Double	N/A	RW
5103-5106	High Limit Reynolds Number	Double	N/A	RW
5107-5108	Low Lookup K-Factor Point 1	Float	N/A	RW
5109-5110	Low Lookup K-Factor Point 2	Float	N/A	RW
5111-5112	Low Lookup K-Factor Point 3	Float	N/A	RW
5113-5114	Low Lookup K-Factor Point 4	Float	N/A	RW
5115-5116	Low Lookup K-Factor Point 5	Float	N/A	RW
5117-5118	Low Lookup K-Factor Point 6	Float	N/A	RW
5119-5120	Low Lookup K-Factor Point 7	Float	N/A	RW
5121-5122	Low Lookup K-Factor Point 8	Float	N/A	RW
5123-5124	Low Lookup K-Factor Point 9	Float	N/A	RW
5125-5126	Low Lookup K-Factor Point 10	Float	N/A	RW
5127-5128	Low Lookup Flow Rate Point 1	Float	N/A	RW
5129-5130	Low Lookup Flow Rate Point 2	Float	N/A	RW
5131-5132	Low Lookup Flow Rate Point 3	Float	N/A	RW
5133-5134	Low Lookup Flow Rate Point 4	Float	N/A	RW
5135-5136	Low Lookup Flow Rate Point 5	Float	N/A	RW
5137-5138	Low Lookup Flow Rate Point 6	Float	N/A	RW
5139-5140	Low Lookup Flow Rate Point 7	Float	N/A	RW
5141-5142	Low Lookup Flow Rate Point 8	Float	N/A	RW
5143-5144	Low Lookup Flow Rate Point 9	Float	N/A	RW
5145-5146	Low Lookup Flow Rate Point 10	Float	N/A	RW
5147-5148	Low Lookup Viscosity Point 1	Float	N/A	RW
5148-5150	Low Lookup Viscosity Point 2	Float	N/A	RW
5151-5152	Low Lookup Viscosity Point 3	Float	N/A	RW
5153-5154	Low Lookup Viscosity Point 4	Float	N/A	RW
5155-5156	Low Lookup Viscosity Point 5	Float	N/A	RW
5157-5158	Low Lookup Viscosity Point 6	Float	N/A	RW
5159-5160	Low Lookup Viscosity Point 7	Float	N/A	RW

Register	Description	Format	Range	Read/Write
5161-5162	Low Lookup Viscosity Point 8	Float	N/A	RW
5163-5164	Low Lookup Viscosity Point 9	Float	N/A	RW
5165-5166	Low Lookup Viscosity Point 10	Float	N/A	RW
5167-5168	High Lookup K-Factor Point 1	Float	N/A	RW
5169-5170	High Lookup Flow Rate Point 1	Float	N/A	RW
5171-5172	High Lookup Viscosity Point 1	Float	N/A	RW
5173-5174	Forward Curve Fit K-Factor Point 1	Float	N/A	RW
5175-5176	Forward Curve Fit Viscosity Point 1	Float	N/A	RW
5177-5178	Forward Curve Fit Flow Rate Point 1	Float	N/A	RW
5179-5180	Reverse Curve Fit K-Factor Point 1	Float	N/A	RW
5181-5182	Reverse Curve Fit Viscosity Point 1	Float	N/A	RW
5182-5184	Reverse Curve Fit Flow Rate Point 1	Float	N/A	RW
5185-5186	Forward Curve Fit K-Factor Point 2	Float	N/A	RW
5187-5188	Forward Curve Fit Viscosity Point 2	Float	N/A	RW
5189-5190	Forward Curve Fit Flow Rate Point 2	Float	N/A	RW
5191-5192	Reverse Curve Fit K-Factor Point 2	Float	N/A	RW
5193-5194	Reverse Curve Fit Viscosity Point 2	Float	N/A	RW
5195-5196	Reverse Curve Fit Flow Rate Point 2	Float	N/A	RW
5197-5198	Forward Curve Fit K-Factor Point 3	Float	N/A	RW
5199-5200	Forward Curve Fit Viscosity Point 3	Float	N/A	RW
5201-5202	Forward Curve Fit Flow Rate Point 3	Float	N/A	RW
5203-5204	Reverse Curve Fit K-Factor Point 3	Float	N/A	RW
5205-5206	Reverse Curve Fit Viscosity Point 3	Float	N/A	RW
5207-5208	Reverse Curve Fit Flow Rate Point 3	Float	N/A	RW
5209-5210	Forward Curve Fit K-Factor Point 4	Float	N/A	RW
5211-5212	Forward Curve Fit Viscosity Point 4	Float	N/A	RW
5213-5214	Forward Curve Fit Flow Rate Point 4	Float	N/A	RW
5215-5216	Reverse Curve Fit K-Factor Point 4	Float	N/A	RW
5217-5218	Reverse Curve Fit Viscosity Point 4	Float	N/A	RW
5219-5220	Reverse Curve Fit Flow Rate Point 4	Float	N/A	RW

Register	Description	Format	Range	Read/Write
5221-5222	Forward Curve Fit K-Factor Point 5	Float	N/A	RW
5223-5224	Forward Curve Fit Viscosity Point 5	Float	N/A	RW
5225-5226	Forward Curve Fit Flow Rate Point 5	Float	N/A	RW
5227-5228	Reverse Curve Fit K-Factor Point 5	Float	N/A	RW
5229-5230	Reverse Curve Fit Viscosity Point 5	Float	N/A	RW
5231-5232	Reverse Curve Fit Flow Rate Point 5	Float	N/A	RW
5233-5234	Forward Curve Fit K-Factor Point 6	Float	N/A	RW
5235-5236	Forward Curve Fit Viscosity Point 6	Float	N/A	RW
5237-5238	Forward Curve Fit Flow Rate Point 6	Float	N/A	RW
5239-5240	Reverse Curve Fit K-Factor Point 6	Float	N/A	RW
5241-5242	Reverse Curve Fit Viscosity Point 6	Float	N/A	RW
5243-5244	Reverse Curve Fit Flow Rate Point 6	Float	N/A	RW
5245-5246	Forward Curve Fit K-Factor Point 7	Float	N/A	RW
5247-5248	Forward Curve Fit Viscosity Point 7	Float	N/A	RW
5249-5250	Forward Curve Fit Flow Rate Point 7	Float	N/A	RW
5251-5252	Reverse Curve Fit K-Factor Point 7	Float	N/A	RW
5253-5254	Reverse Curve Fit Viscosity Point 7	Float	N/A	RW
5255-5256	Reverse Curve Fit Flow Rate Point 7	Float	N/A	RW
5257-5258	Forward Curve Fit K-Factor Point 8	Float	N/A	RW
5259-5260	Forward Curve Fit Viscosity Point 8	Float	N/A	RW
5261-5262	Forward Curve Fit Flow Rate Point 8	Float	N/A	RW
5263-5264	Reverse Curve Fit K-Factor Point 8	Float	N/A	RW
5265-5266	Reverse Curve Fit Viscosity Point 8	Float	N/A	RW
5267-5268	Reverse Curve Fit Flow Rate Point 8	Float	N/A	RW
5269-5270	Forward Curve Kit F-Factor Point 9	Float	N/A	RW
5271-5272	Forward Curve Fit Viscosity Point 9	Float	N/A	RW
5273-5274	Forward Curve Fit Flow Rate Point 9	Float	N/A	RW
5275-5276	Reverse Curve Fit K-Factor Point 9	Float	N/A	RW
5277-5278	Reverse Curve Fit Viscosity Point 9	Float	N/A	RW
5279-5280	Reverse Curve Fit Flow Rate Point 9	Float	N/A	RW

Register	Description	Format	Range	Read/Write
5281-5282	Forward Curve Fit K-Factor Point 10	Float	N/A	RW
5283-5284	Forward Curve Fit Viscosity Point 10	Float	N/A	RW
5285-5286	Forward Curve Fit Flow Rate Point 10	Float	N/A	RW
5287-5288	Reverse Curve Fit K-Factor Point 10	Float	N/A	RW
5289-5290	Reverse Curve Fit Viscosity Point 10	Float	N/A	RW
5291-5292	Reverse Curve Fit Flow Rate Point 10	Float	N/A	RW
5293-5294	Forward Curve Fit K-Factor Point 11	Float	N/A	RW
5295-5296	Forward Curve Fit Viscosity Point 11	Float	N/A	RW
5297-5298	Forward Curve Fit Flow Rate Point 11	Float	N/A	RW
5299-5300	Reverse Curve Fit K-Factor Point 11	Float	N/A	RW
5301-5302	Reverse Curve Fit Viscosity Point 11	Float	N/A	RW
5303-5304	Reverse Curve Fit Flow Rate Point 11	Float	N/A	RW
5305-5306	Forward Curve Fit K-Factor Point 12	Float	N/A	RW
5307-5308	Forward Curve Fit Viscosity Point 12	Float	N/A	RW
5309-5310	Forward Curve Fit Flow Rate Point 12	Float	N/A	RW
5311-5312	Reverse Curve Fit K-Factor Point 12	Float	N/A	RW
5313-5314	Reverse Curve Fit Viscosity Point 12	Float	N/A	RW
5315-5316	Reverse Curve Fit Flow Rate Point 12	Float	N/A	RW
5317-5318	Forward Curve Fit K-Factor Point 13	Float	N/A	RW
5319-5320	Forward Curve Fit Viscosity Point 13	Float	N/A	RW
5321-5322	Forward Curve Fit Flow Rate Point 13	Float	N/A	RW
5323-5324	Reverse Curve Fit K-Factor Point 13	Float	N/A	RW
5325-5326	Reverse Curve Fit Viscosity Point 13	Float	N/A	RW
5327-5328	Reverse Curve Fit Flow Rate Point 13	Float	N/A	RW
5329-5330	Forward Curve Fit K-Factor Point 14	Float	N/A	RW
5331-5332	Forward Curve Fit Viscosity Point 14	Float	N/A	RW
5333-5334	Forward Curve Fit Flow Rate Point 14	Float	N/A	RW
5335-5336	Reverse Curve Fit K-Factor Point 14	Float	N/A	RW
5337-5338	Reverse Curve Fit Viscosity Point 14	Float	N/A	RW
5339-5340	Reverse Curve Fit Flow Rate Point 14	Float	N/A	RW

Register	Description	Format	Range	Read/Write
5341-5342	Forward Curve Fit K-Factor Point 15	Float	N/A	RW
5343-5344	Forward Curve Fit Viscosity Point 15	Float	N/A	RW
5345-5346	Forward Curve Fit Flow Rate Point 15	Float	N/A	RW
5347-5348	Reverse Curve Fit K-Factor Point 15	Float	N/A	RW
5349-5350	Reverse Curve Fit Viscosity Point 15	Float	N/A	RW
5351-5352	Reverse Curve Fit Flow Rate Point 15	Float	N/A	RW

Meter Profile #5				
Register	**Description**	**Format**	**Range**	**Read/Write**
6001-6005	Profile Name (1)	String	10 Char	RW
6006-6010	Not Used			
6011-6012	Viscosity of First Calibration Point (V1)	Float	N/A	RW
6013-6014	Temperature of First Calibration Point (T1)	Float	N/A	RW
6015-6016	Viscosity of Second Calibration Point (V2)	Float	N/A	RW
6017-6018	Temperature of Second Calibration Point (T2)	Float	N/A	RW
6019-6022	Constant A	Double	N/A	RW
6023-6026	Constant B	Double	N/A	RW
6027	Select A/B Value 0 = Direct Entry 1 = Calculation	Boolean	0-1	RW
6028-6030	Not Used			
6031-6034	Forward Viscosity Coefficient A	Double	N/A	RW
6035-6038	Forward Viscosity Coefficient B	Double	N/A	RW
6039-6042	Forward Viscosity Coefficient C	Double	N/A	RW
6043-6046	Forward Viscosity Coefficient D	Double	N/A	RW
6047-6050	Forward Viscosity Coefficient E	Double	N/A	RW
6051-6054	Forward Viscosity Coefficient F	Double	N/A	RW
6055-6058	Forward Viscosity Coefficient G	Double	N/A	RW
6059-6062	Forward Viscosity Coefficient H	Double	N/A	RW
6063-6066	Reverse Viscosity Coefficient A	Double	N/A	RW
6067-6070	Reverse Viscosity Coefficient B	Double	N/A	RW
6071-6074	Reverse Viscosity Coefficient C	Double	N/A	RW
6075-6078	Reverse Viscosity Coefficient D	Double	N/A	RW
6079-6082	Reverse Viscosity Coefficient E	Double	N/A	RW
6083-6086	Reverse Viscosity Coefficient F	Double	N/A	RW
6087-6090	Reverse Viscosity Coefficient G	Double	N/A	RW
6091-6094	Reverse Viscosity Coefficient H	Double	N/A	RW

Register	Description	Format	Range	Read/Write
6095-6098	Fault Reynolds Number	Double	N/A	RW
6099-6102	Low Limit Reynolds Number	Double	N/A	RW
6103-6106	High Limit Reynolds Number	Double	N/A	RW
6107-6108	Low Lookup K-Factor Point 1	Float	N/A	RW
6109-6110	Low Lookup K-Factor Point 2	Float	N/A	RW
6111-6112	Low Lookup K-Factor Point 3	Float	N/A	RW
6113-6114	Low Lookup K-Factor Point 4	Float	N/A	RW
6115-6116	Low Lookup K-Factor Point 5	Float	N/A	RW
6117-6118	Low Lookup K-Factor Point 6	Float	N/A	RW
6119-6120	Low Lookup K-Factor Point 7	Float	N/A	RW
6121-6122	Low Lookup K-Factor Point 8	Float	N/A	RW
6123-6124	Low Lookup K-Factor Point 9	Float	N/A	RW
6125-6126	Low Lookup K-Factor Point 10	Float	N/A	RW
6127-6128	Low Lookup Flow Rate Point 1	Float	N/A	RW
6129-6130	Low Lookup Flow Rate Point 2	Float	N/A	RW
6131-6132	Low Lookup Flow Rate Point 3	Float	N/A	RW
6133-6134	Low Lookup Flow Rate Point 4	Float	N/A	RW
6135-6136	Low Lookup Flow Rate Point 5	Float	N/A	RW
6137-6138	Low Lookup Flow Rate Point 6	Float	N/A	RW
6139-6140	Low Lookup Flow Rate Point 7	Float	N/A	RW
6141-6142	Low Lookup Flow Rate Point 8	Float	N/A	RW
6143-6144	Low Lookup Flow Rate Point 9	Float	N/A	RW
6145-6146	Low Lookup Flow Rate Point 10	Float	N/A	RW
6147-6148	Low Lookup Viscosity Point 1	Float	N/A	RW
6148-6150	Low Lookup Viscosity Point 2	Float	N/A	RW
6151-6152	Low Lookup Viscosity Point 3	Float	N/A	RW
6153-6154	Low Lookup Viscosity Point 4	Float	N/A	RW
6155-6156	Low Lookup Viscosity Point 5	Float	N/A	RW
6157-6158	Low Lookup Viscosity Point 6	Float	N/A	RW
6159-6160	Low Lookup Viscosity Point 7	Float	N/A	RW

Register	Description	Format	Range	Read/Write
6161-6162	Low Lookup Viscosity Point 8	Float	N/A	RW
6163-6164	Low Lookup Viscosity Point 9	Float	N/A	RW
6165-6166	Low Lookup Viscosity Point 10	Float	N/A	RW
6167-6168	High Lookup K-Factor Point 1	Float	N/A	RW
6169-6170	High Lookup Flow Rate Point 1	Float	N/A	RW
6171-6172	High Lookup Viscosity Point 1	Float	N/A	RW
6173-6174	Forward Curve Fit K-Factor Point 1	Float	N/A	RW
6175-6176	Forward Curve Fit Viscosity Point 1	Float	N/A	RW
6177-6178	Forward Curve Fit Flow Rate Point 1	Float	N/A	RW
6179-6180	Reverse Curve Fit K-Factor Point 1	Float	N/A	RW
6181-6182	Reverse Curve Fit Viscosity Point 1	Float	N/A	RW
6182-6184	Reverse Curve Fit Flow Rate Point 1	Float	N/A	RW
6185-6186	Forward Curve Fit K-Factor Point 2	Float	N/A	RW
6187-6188	Forward Curve Fit Viscosity Point 2	Float	N/A	RW
6189-6190	Forward Curve Fit Flow Rate Point 2	Float	N/A	RW
6191-6192	Reverse Curve Fit K-Factor Point 2	Float	N/A	RW
6193-6194	Reverse Curve Fit Viscosity Point 2	Float	N/A	RW
6195-6196	Reverse Curve Fit Flow Rate Point 2	Float	N/A	RW
6197-6198	Forward Curve Fit K-Factor Point 3	Float	N/A	RW
6199-6200	Forward Curve Fit Viscosity Point 3	Float	N/A	RW
6201-6202	Forward Curve Fit Flow Rate Point 3	Float	N/A	RW
6203-6204	Reverse Curve Fit K-Factor Point 3	Float	N/A	RW
6205-6206	Reverse Curve Fit Viscosity Point 3	Float	N/A	RW
6207-6208	Reverse Curve Fit Flow Rate Point 3	Float	N/A	RW
6209-6210	Forward Curve Fit K-Factor Point 4	Float	N/A	RW
6211-6212	Forward Curve Fit Viscosity Point 4	Float	N/A	RW
6213-6214	Forward Curve Fit Flow Rate Point 4	Float	N/A	RW
6215-6216	Reverse Curve Fit K-Factor Point 4	Float	N/A	RW
6217-6218	Reverse Curve Fit Viscosity Point 4	Float	N/A	RW
6219-6220	Reverse Curve Fit Flow Rate Point 4	Float	N/A	RW

Register	Description	Format	Range	Read/Write
6221-6222	Forward Curve Fit K-Factor Point 5	Float	N/A	RW
6223-6224	Forward Curve Fit Viscosity Point 5	Float	N/A	RW
6225-6226	Forward Curve Fit Flow Rate Point 5	Float	N/A	RW
6227-6228	Reverse Curve Fit K-Factor Point 5	Float	N/A	RW
6229-6230	Reverse Curve Fit Viscosity Point 5	Float	N/A	RW
6231-6232	Reverse Curve Fit Flow Rate Point 5	Float	N/A	RW
6233-6234	Forward Curve Fit K-Factor Point 6	Float	N/A	RW
6235-6236	Forward Curve Fit Viscosity Point 6	Float	N/A	RW
6237-6238	Forward Curve Fit Flow Rate Point 6	Float	N/A	RW
6239-6240	Reverse Curve Fit K-Factor Point 6	Float	N/A	RW
6241-6242	Reverse Curve Fit Viscosity Point 6	Float	N/A	RW
6243-6244	Reverse Curve Fit Flow Rate Point 6	Float	N/A	RW
6245-6246	Forward Curve Fit K-Factor Point 7	Float	N/A	RW
6247-6248	Forward Curve Fit Viscosity Point 7	Float	N/A	RW
6249-6250	Forward Curve Fit Flow Rate Point 7	Float	N/A	RW
6251-6252	Reverse Curve Fit K-Factor Point 7	Float	N/A	RW
6253-6254	Reverse Curve Fit Viscosity Point 7	Float	N/A	RW
6255-6256	Reverse Curve Fit Flow Rate Point 7	Float	N/A	RW
6257-6258	Forward Curve Fit K-Factor Point 8	Float	N/A	RW
6259-6260	Forward Curve Fit Viscosity Point 8	Float	N/A	RW
6261-6262	Forward Curve Fit Flow Rate Point 8	Float	N/A	RW
6263-6264	Reverse Curve Fit K-Factor Point 8	Float	N/A	RW
6265-6266	Reverse Curve Fit Viscosity Point 8	Float	N/A	RW
6267-6268	Reverse Curve Fit Flow Rate Point 8	Float	N/A	RW
6269-6270	Forward Curve Kit F-Factor Point 9	Float	N/A	RW
6271-6272	Forward Curve Fit Viscosity Point 9	Float	N/A	RW
6273-6274	Forward Curve Fit Flow Rate Point 9	Float	N/A	RW
6275-6276	Reverse Curve Fit K-Factor Point 9	Float	N/A	RW
6277-6278	Reverse Curve Fit Viscosity Point 9	Float	N/A	RW
6279-6280	Reverse Curve Fit Flow Rate Point 9	Float	N/A	RW

Register	Description	Format	Range	Read/Write
6281-6282	Forward Curve Fit K-Factor Point 10	Float	N/A	RW
6283-6284	Forward Curve Fit Viscosity Point 10	Float	N/A	RW
6285-6286	Forward Curve Fit Flow Rate Point 10	Float	N/A	RW
6287-6288	Reverse Curve Fit K-Factor Point 10	Float	N/A	RW
6289-6290	Reverse Curve Fit Viscosity Point 10	Float	N/A	RW
6291-6292	Reverse Curve Fit Flow Rate Point 10	Float	N/A	RW
6293-6294	Forward Curve Fit K-Factor Point 11	Float	N/A	RW
6295-6296	Forward Curve Fit Viscosity Point 11	Float	N/A	RW
6297-6298	Forward Curve Fit Flow Rate Point 11	Float	N/A	RW
6299-6300	Reverse Curve Fit K-Factor Point 11	Float	N/A	RW
6301-6302	Reverse Curve Fit Viscosity Point 11	Float	N/A	RW
6303-6304	Reverse Curve Fit Flow Rate Point 11	Float	N/A	RW
6305-6306	Forward Curve Fit K-Factor Point 12	Float	N/A	RW
6307-6308	Forward Curve Fit Viscosity Point 12	Float	N/A	RW
6309-6310	Forward Curve Fit Flow Rate Point 12	Float	N/A	RW
6311-6312	Reverse Curve Fit K-Factor Point 12	Float	N/A	RW
6313-6314	Reverse Curve Fit Viscosity Point 12	Float	N/A	RW
6315-6316	Reverse Curve Fit Flow Rate Point 12	Float	N/A	RW
6317-6318	Forward Curve Fit K-Factor Point 13	Float	N/A	RW
6319-6320	Forward Curve Fit Viscosity Point 13	Float	N/A	RW
6321-6322	Forward Curve Fit Flow Rate Point 13	Float	N/A	RW
6323-6324	Reverse Curve Fit K-Factor Point 13	Float	N/A	RW
6325-6326	Reverse Curve Fit Viscosity Point 13	Float	N/A	RW
6327-6328	Reverse Curve Fit Flow Rate Point 13	Float	N/A	RW
6329-6330	Forward Curve Fit K-Factor Point 14	Float	N/A	RW
6331-6332	Forward Curve Fit Viscosity Point 14	Float	N/A	RW
6333-6334	Forward Curve Fit Flow Rate Point 14	Float	N/A	RW
6335-6336	Reverse Curve Fit K-Factor Point 14	Float	N/A	RW
6337-6338	Reverse Curve Fit Viscosity Point 14	Float	N/A	RW
6339-6340	Reverse Curve Fit Flow Rate Point 14	Float	N/A	RW

Register	Description	Format	Range	Read/Write
6341-6342	Forward Curve Fit K-Factor Point 15	Float	N/A	RW
6343-6344	Forward Curve Fit Viscosity Point 15	Float	N/A	RW
6345-6346	Forward Curve Fit Flow Rate Point 15	Float	N/A	RW
6347-6348	Reverse Curve Fit K-Factor Point 15	Float	N/A	RW
6349-6350	Reverse Curve Fit Viscosity Point 15	Float	N/A	RW
6351-6352	Reverse Curve Fit Flow Rate Point 15	Float	N/A	RW

Meter Profile #6				
Register	**Description**	**Format**	**Range**	**Read/Write**
7001-7005	Profile Name (1)	String	10 Char	RW
7006-7010	Not Used			
7011-7012	Viscosity of First Calibration Point (V1)	Float	N/A	RW
7013-7014	Temperature of First Calibration Point (T1)	Float	N/A	RW
7015-7016	Viscosity of Second Calibration Point (V2)	Float	N/A	RW
7017-7018	Temperature of Second Calibration Point (T2)	Float	N/A	RW
7019-7022	Constant A	Double	N/A	RW
7023-7026	Constant B	Double	N/A	RW
7027	Select A/B Value 0 = Direct Entry 1 = Calculation	Boolean	0-1	RW
7028-7030	Not Used			
7031-7034	Forward Viscosity Coefficient A	Double	N/A	RW
7035-7038	Forward Viscosity Coefficient B	Double	N/A	RW
7039-7042	Forward Viscosity Coefficient C	Double	N/A	RW
7043-7046	Forward Viscosity Coefficient D	Double	N/A	RW
7047-7050	Forward Viscosity Coefficient E	Double	N/A	RW
7051-7054	Forward Viscosity Coefficient F	Double	N/A	RW
7055-7058	Forward Viscosity Coefficient G	Double	N/A	RW
7059-7062	Forward Viscosity Coefficient H	Double	N/A	RW
7063-7066	Reverse Viscosity Coefficient A	Double	N/A	RW
7067-7070	Reverse Viscosity Coefficient B	Double	N/A	RW
7071-7074	Reverse Viscosity Coefficient C	Double	N/A	RW
7075-7078	Reverse Viscosity Coefficient D	Double	N/A	RW
7079-7082	Reverse Viscosity Coefficient E	Double	N/A	RW
7083-7086	Reverse Viscosity Coefficient F	Double	N/A	RW
7087-7090	Reverse Viscosity Coefficient G	Double	N/A	RW
7091-7094	Reverse Viscosity Coefficient H	Double	N/A	RW

Register	Description	Format	Range	Read/Write
7095-7098	Fault Reynolds Number	Double	N/A	RW
7099-7102	Low Limit Reynolds Number	Double	N/A	RW
7103-7106	High Limit Reynolds Number	Double	N/A	RW
7107-7108	Low Lookup K-Factor Point 1	Float	N/A	RW
7109-7110	Low Lookup K-Factor Point 2	Float	N/A	RW
7111-7112	Low Lookup K-Factor Point 3	Float	N/A	RW
7113-7114	Low Lookup K-Factor Point 4	Float	N/A	RW
7115-7116	Low Lookup K-Factor Point 5	Float	N/A	RW
7117-7118	Low Lookup K-Factor Point 6	Float	N/A	RW
7119-7120	Low Lookup K-Factor Point 7	Float	N/A	RW
7121-7122	Low Lookup K-Factor Point 8	Float	N/A	RW
7123-7124	Low Lookup K-Factor Point 9	Float	N/A	RW
7125-7126	Low Lookup K-Factor Point 10	Float	N/A	RW
7127-7128	Low Lookup Flow Rate Point 1	Float	N/A	RW
7129-7130	Low Lookup Flow Rate Point 2	Float	N/A	RW
7131-7132	Low Lookup Flow Rate Point 3	Float	N/A	RW
7133-7134	Low Lookup Flow Rate Point 4	Float	N/A	RW
7135-7136	Low Lookup Flow Rate Point 5	Float	N/A	RW
7137-7138	Low Lookup Flow Rate Point 6	Float	N/A	RW
7139-7140	Low Lookup Flow Rate Point 7	Float	N/A	RW
7141-7142	Low Lookup Flow Rate Point 8	Float	N/A	RW
7143-7144	Low Lookup Flow Rate Point 9	Float	N/A	RW
7145-7146	Low Lookup Flow Rate Point 10	Float	N/A	RW
7147-7148	Low Lookup Viscosity Point 1	Float	N/A	RW
7148-7150	Low Lookup Viscosity Point 2	Float	N/A	RW
7151-7152	Low Lookup Viscosity Point 3	Float	N/A	RW
7153-7154	Low Lookup Viscosity Point 4	Float	N/A	RW
7155-7156	Low Lookup Viscosity Point 5	Float	N/A	RW
7157-7158	Low Lookup Viscosity Point 6	Float	N/A	RW
7159-7160	Low Lookup Viscosity Point 7	Float	N/A	RW

Register	Description	Format	Range	Read/Write
7161-7162	Low Lookup Viscosity Point 8	Float	N/A	RW
7163-7164	Low Lookup Viscosity Point 9	Float	N/A	RW
7165-7166	Low Lookup Viscosity Point 10	Float	N/A	RW
7167-7168	High Lookup K-Factor Point 1	Float	N/A	RW
7169-7170	High Lookup Flow Rate Point 1	Float	N/A	RW
7171-7172	High Lookup Viscosity Point 1	Float	N/A	RW
7173-7174	Forward Curve Fit K-Factor Point 1	Float	N/A	RW
7175-7176	Forward Curve Fit Viscosity Point 1	Float	N/A	RW
7177-7178	Forward Curve Fit Flow Rate Point 1	Float	N/A	RW
7179-7180	Reverse Curve Fit K-Factor Point 1	Float	N/A	RW
7181-7182	Reverse Curve Fit Viscosity Point 1	Float	N/A	RW
7182-7184	Reverse Curve Fit Flow Rate Point 1	Float	N/A	RW
7185-7186	Forward Curve Fit K-Factor Point 2	Float	N/A	RW
7187-7188	Forward Curve Fit Viscosity Point 2	Float	N/A	RW
7189-7190	Forward Curve Fit Flow Rate Point 2	Float	N/A	RW
7191-7192	Reverse Curve Fit K-Factor Point 2	Float	N/A	RW
7193-7194	Reverse Curve Fit Viscosity Point 2	Float	N/A	RW
7195-7196	Reverse Curve Fit Flow Rate Point 2	Float	N/A	RW
7197-7198	Forward Curve Fit K-Factor Point 3	Float	N/A	RW
7199-7200	Forward Curve Fit Viscosity Point 3	Float	N/A	RW
7201-7202	Forward Curve Fit Flow Rate Point 3	Float	N/A	RW
7203-7204	Reverse Curve Fit K-Factor Point 3	Float	N/A	RW
7205-7206	Reverse Curve Fit Viscosity Point 3	Float	N/A	RW
7207-7208	Reverse Curve Fit Flow Rate Point 3	Float	N/A	RW
7209-7210	Forward Curve Fit K-Factor Point 4	Float	N/A	RW
7211-7212	Forward Curve Fit Viscosity Point 4	Float	N/A	RW
7213-7214	Forward Curve Fit Flow Rate Point 4	Float	N/A	RW
7215-7216	Reverse Curve Fit K-Factor Point 4	Float	N/A	RW
7217-7218	Reverse Curve Fit Viscosity Point 4	Float	N/A	RW
7219-7220	Reverse Curve Fit Flow Rate Point 4	Float	N/A	RW

Register	Description	Format	Range	Read/Write
7221-7222	Forward Curve Fit K-Factor Point 5	Float	N/A	RW
7223-7224	Forward Curve Fit Viscosity Point 5	Float	N/A	RW
7225-7226	Forward Curve Fit Flow Rate Point 5	Float	N/A	RW
7227-7228	Reverse Curve Fit K-Factor Point 5	Float	N/A	RW
7229-7230	Reverse Curve Fit Viscosity Point 5	Float	N/A	RW
7231-7232	Reverse Curve Fit Flow Rate Point 5	Float	N/A	RW
7233-7234	Forward Curve Fit K-Factor Point 6	Float	N/A	RW
7235-7236	Forward Curve Fit Viscosity Point 6	Float	N/A	RW
7237-7238	Forward Curve Fit Flow Rate Point 6	Float	N/A	RW
7239-7240	Reverse Curve Fit K-Factor Point 6	Float	N/A	RW
7241-7242	Reverse Curve Fit Viscosity Point 6	Float	N/A	RW
7243-7244	Reverse Curve Fit Flow Rate Point 6	Float	N/A	RW
7245-7246	Forward Curve Fit K-Factor Point 7	Float	N/A	RW
7247-7248	Forward Curve Fit Viscosity Point 7	Float	N/A	RW
7249-7250	Forward Curve Fit Flow Rate Point 7	Float	N/A	RW
7251-7252	Reverse Curve Fit K-Factor Point 7	Float	N/A	RW
7253-7254	Reverse Curve Fit Viscosity Point 7	Float	N/A	RW
7255-7256	Reverse Curve Fit Flow Rate Point 7	Float	N/A	RW
7257-7258	Forward Curve Fit K-Factor Point 8	Float	N/A	RW
7259-7260	Forward Curve Fit Viscosity Point 8	Float	N/A	RW
7261-7262	Forward Curve Fit Flow Rate Point 8	Float	N/A	RW
7263-7264	Reverse Curve Fit K-Factor Point 8	Float	N/A	RW
7265-7266	Reverse Curve Fit Viscosity Point 8	Float	N/A	RW
7267-7268	Reverse Curve Fit Flow Rate Point 8	Float	N/A	RW
7269-7270	Forward Curve Kit F-Factor Point 9	Float	N/A	RW
7271-7272	Forward Curve Fit Viscosity Point 9	Float	N/A	RW
7273-7274	Forward Curve Fit Flow Rate Point 9	Float	N/A	RW
7275-7276	Reverse Curve Fit K-Factor Point 9	Float	N/A	RW
7277-7278	Reverse Curve Fit Viscosity Point 9	Float	N/A	RW
7279-7280	Reverse Curve Fit Flow Rate Point 9	Float	N/A	RW

Register	Description	Format	Range	Read/Write
7281-7282	Forward Curve Fit K-Factor Point 10	Float	N/A	RW
7283-7284	Forward Curve Fit Viscosity Point 10	Float	N/A	RW
7285-7286	Forward Curve Fit Flow Rate Point 10	Float	N/A	RW
7287-7288	Reverse Curve Fit K-Factor Point 10	Float	N/A	RW
7289-7290	Reverse Curve Fit Viscosity Point 10	Float	N/A	RW
7291-7292	Reverse Curve Fit Flow Rate Point 10	Float	N/A	RW
7293-7294	Forward Curve Fit K-Factor Point 11	Float	N/A	RW
7295-7296	Forward Curve Fit Viscosity Point 11	Float	N/A	RW
7297-7298	Forward Curve Fit Flow Rate Point 11	Float	N/A	RW
7299-7300	Reverse Curve Fit K-Factor Point 11	Float	N/A	RW
7301-7302	Reverse Curve Fit Viscosity Point 11	Float	N/A	RW
7303-7304	Reverse Curve Fit Flow Rate Point 11	Float	N/A	RW
7305-7306	Forward Curve Fit K-Factor Point 12	Float	N/A	RW
7307-7308	Forward Curve Fit Viscosity Point 12	Float	N/A	RW
7309-7310	Forward Curve Fit Flow Rate Point 12	Float	N/A	RW
7311-7312	Reverse Curve Fit K-Factor Point 12	Float	N/A	RW
7313-7314	Reverse Curve Fit Viscosity Point 12	Float	N/A	RW
7315-7316	Reverse Curve Fit Flow Rate Point 12	Float	N/A	RW
7317-7318	Forward Curve Fit K-Factor Point 13	Float	N/A	RW
7319-7320	Forward Curve Fit Viscosity Point 13	Float	N/A	RW
7321-7322	Forward Curve Fit Flow Rate Point 13	Float	N/A	RW
7323-7324	Reverse Curve Fit K-Factor Point 13	Float	N/A	RW
7325-7326	Reverse Curve Fit Viscosity Point 13	Float	N/A	RW
7327-7328	Reverse Curve Fit Flow Rate Point 13	Float	N/A	RW
7329-7330	Forward Curve Fit K-Factor Point 14	Float	N/A	RW
7331-7332	Forward Curve Fit Viscosity Point 14	Float	N/A	RW
7333-7334	Forward Curve Fit Flow Rate Point 14	Float	N/A	RW
7335-7336	Reverse Curve Fit K-Factor Point 14	Float	N/A	RW
7337-7338	Reverse Curve Fit Viscosity Point 14	Float	N/A	RW
7339-7340	Reverse Curve Fit Flow Rate Point 14	Float	N/A	RW

Register	Description	Format	Range	Read/Write
7341-7342	Forward Curve Fit K-Factor Point 15	Float	N/A	RW
7343-7344	Forward Curve Fit Viscosity Point 15	Float	N/A	RW
7345-7346	Forward Curve Fit Flow Rate Point 15	Float	N/A	RW
7347-7348	Reverse Curve Fit K-Factor Point 15	Float	N/A	RW
7349-7350	Reverse Curve Fit Viscosity Point 15	Float	N/A	RW
7351-7352	Reverse Curve Fit Flow Rate Point 15	Float	N/A	RW

Meter Profile #7				
Register	**Description**	**Format**	**Range**	**Read/Write**
8001-8005	Profile Name (1)	String	10 Char	RW
8006-8010	Not Used			
8011-8012	Viscosity of First Calibration Point (V1)	Float	N/A	RW
8013-8014	Temperature of First Calibration Point (T1)	Float	N/A	RW
8015-8016	Viscosity of Second Calibration Point (V2)	Float	N/A	RW
8017-8018	Temperature of Second Calibration Point (T2)	Float	N/A	RW
8019-8022	Constant A	Double	N/A	RW
8023-8026	Constant B	Double	N/A	RW
8027	Select A/B Value 0 = Direct Entry 1 = Calculation	Boolean	0-1	RW
8028-8030	Not Used			
8031-8034	Forward Viscosity Coefficient A	Double	N/A	RW
8035-8038	Forward Viscosity Coefficient B	Double	N/A	RW
8039-8042	Forward Viscosity Coefficient C	Double	N/A	RW
8043-8046	Forward Viscosity Coefficient D	Double	N/A	RW
8047-8050	Forward Viscosity Coefficient E	Double	N/A	RW
8051-8054	Forward Viscosity Coefficient F	Double	N/A	RW
8055-8058	Forward Viscosity Coefficient G	Double	N/A	RW
8059-8062	Forward Viscosity Coefficient H	Double	N/A	RW
8063-8066	Reverse Viscosity Coefficient A	Double	N/A	RW
8067-8070	Reverse Viscosity Coefficient B	Double	N/A	RW
8071-8074	Reverse Viscosity Coefficient C	Double	N/A	RW
8075-8078	Reverse Viscosity Coefficient D	Double	N/A	RW
8079-8082	Reverse Viscosity Coefficient E	Double	N/A	RW
8083-8086	Reverse Viscosity Coefficient F	Double	N/A	RW
8087-8090	Reverse Viscosity Coefficient G	Double	N/A	RW
8091-8094	Reverse Viscosity Coefficient H	Double	N/A	RW

Register	Description	Format	Range	Read/Write
8095-8098	Fault Reynolds Number	Double	N/A	RW
8099-8102	Low Limit Reynolds Number	Double	N/A	RW
8103-8106	High Limit Reynolds Number	Double	N/A	RW
8107-8108	Low Lookup K-Factor Point 1	Float	N/A	RW
8109-8110	Low Lookup K-Factor Point 2	Float	N/A	RW
8111-8112	Low Lookup K-Factor Point 3	Float	N/A	RW
8113-8114	Low Lookup K-Factor Point 4	Float	N/A	RW
8115-8116	Low Lookup K-Factor Point 5	Float	N/A	RW
8117-8118	Low Lookup K-Factor Point 6	Float	N/A	RW
8119-8120	Low Lookup K-Factor Point 7	Float	N/A	RW
8121-8122	Low Lookup K-Factor Point 8	Float	N/A	RW
8123-8124	Low Lookup K-Factor Point 9	Float	N/A	RW
8125-8126	Low Lookup K-Factor Point 10	Float	N/A	RW
8127-8128	Low Lookup Flow Rate Point 1	Float	N/A	RW
8129-8130	Low Lookup Flow Rate Point 2	Float	N/A	RW
8131-8132	Low Lookup Flow Rate Point 3	Float	N/A	RW
8133-8134	Low Lookup Flow Rate Point 4	Float	N/A	RW
8135-8136	Low Lookup Flow Rate Point 5	Float	N/A	RW
8137-8138	Low Lookup Flow Rate Point 6	Float	N/A	RW
8139-8140	Low Lookup Flow Rate Point 7	Float	N/A	RW
8141-8142	Low Lookup Flow Rate Point 8	Float	N/A	RW
8143-8144	Low Lookup Flow Rate Point 9	Float	N/A	RW
8145-8146	Low Lookup Flow Rate Point 10	Float	N/A	RW
8147-8148	Low Lookup Viscosity Point 1	Float	N/A	RW
8148-8150	Low Lookup Viscosity Point 2	Float	N/A	RW
8151-8152	Low Lookup Viscosity Point 3	Float	N/A	RW
8153-8154	Low Lookup Viscosity Point 4	Float	N/A	RW
8155-8156	Low Lookup Viscosity Point 5	Float	N/A	RW
8157-8158	Low Lookup Viscosity Point 6	Float	N/A	RW
8159-8160	Low Lookup Viscosity Point 7	Float	N/A	RW

Register	Description	Format	Range	Read/Write
8161-8162	Low Lookup Viscosity Point 8	Float	N/A	RW
8163-8164	Low Lookup Viscosity Point 9	Float	N/A	RW
8165-8166	Low Lookup Viscosity Point 10	Float	N/A	RW
8167-8168	High Lookup K-Factor Point 1	Float	N/A	RW
8169-8170	High Lookup Flow Rate Point 1	Float	N/A	RW
8171-8172	High Lookup Viscosity Point 1	Float	N/A	RW
8173-8174	Forward Curve Fit K-Factor Point 1	Float	N/A	RW
8175-8176	Forward Curve Fit Viscosity Point 1	Float	N/A	RW
8177-8178	Forward Curve Fit Flow Rate Point 1	Float	N/A	RW
8179-8180	Reverse Curve Fit K-Factor Point 1	Float	N/A	RW
8181-8182	Reverse Curve Fit Viscosity Point 1	Float	N/A	RW
8182-8184	Reverse Curve Fit Flow Rate Point 1	Float	N/A	RW
8185-8186	Forward Curve Fit K-Factor Point 2	Float	N/A	RW
8187-8188	Forward Curve Fit Viscosity Point 2	Float	N/A	RW
8189-8190	Forward Curve Fit Flow Rate Point 2	Float	N/A	RW
8191-8192	Reverse Curve Fit K-Factor Point 2	Float	N/A	RW
8193-8194	Reverse Curve Fit Viscosity Point 2	Float	N/A	RW
8195-8196	Reverse Curve Fit Flow Rate Point 2	Float	N/A	RW
8197-8198	Forward Curve Fit K-Factor Point 3	Float	N/A	RW
8199-8200	Forward Curve Fit Viscosity Point 3	Float	N/A	RW
8201-8202	Forward Curve Fit Flow Rate Point 3	Float	N/A	RW
8203-8204	Reverse Curve Fit K-Factor Point 3	Float	N/A	RW
8205-8206	Reverse Curve Fit Viscosity Point 3	Float	N/A	RW
8207-8208	Reverse Curve Fit Flow Rate Point 3	Float	N/A	RW
8209-8210	Forward Curve Fit K-Factor Point 4	Float	N/A	RW
8211-8212	Forward Curve Fit Viscosity Point 4	Float	N/A	RW
8213-8214	Forward Curve Fit Flow Rate Point 4	Float	N/A	RW
8215-8216	Reverse Curve Fit K-Factor Point 4	Float	N/A	RW
8217-8218	Reverse Curve Fit Viscosity Point 4	Float	N/A	RW
8219-8220	Reverse Curve Fit Flow Rate Point 4	Float	N/A	RW

Register	Description	Format	Range	Read/Write
8221-8222	Forward Curve Fit K-Factor Point 5	Float	N/A	RW
8223-8224	Forward Curve Fit Viscosity Point 5	Float	N/A	RW
8225-8226	Forward Curve Fit Flow Rate Point 5	Float	N/A	RW
8227-8228	Reverse Curve Fit K-Factor Point 5	Float	N/A	RW
8229-8230	Reverse Curve Fit Viscosity Point 5	Float	N/A	RW
8231-8232	Reverse Curve Fit Flow Rate Point 5	Float	N/A	RW
8233-8234	Forward Curve Fit K-Factor Point 6	Float	N/A	RW
8235-8236	Forward Curve Fit Viscosity Point 6	Float	N/A	RW
8237-8238	Forward Curve Fit Flow Rate Point 6	Float	N/A	RW
8239-8240	Reverse Curve Fit K-Factor Point 6	Float	N/A	RW
8241-8242	Reverse Curve Fit Viscosity Point 6	Float	N/A	RW
8243-8244	Reverse Curve Fit Flow Rate Point 6	Float	N/A	RW
8245-8246	Forward Curve Fit K-Factor Point 7	Float	N/A	RW
8247-8248	Forward Curve Fit Viscosity Point 7	Float	N/A	RW
8249-8250	Forward Curve Fit Flow Rate Point 7	Float	N/A	RW
8251-8252	Reverse Curve Fit K-Factor Point 7	Float	N/A	RW
8253-8254	Reverse Curve Fit Viscosity Point 7	Float	N/A	RW
8255-8256	Reverse Curve Fit Flow Rate Point 7	Float	N/A	RW
8257-8258	Forward Curve Fit K-Factor Point 8	Float	N/A	RW
8259-8260	Forward Curve Fit Viscosity Point 8	Float	N/A	RW
8261-8262	Forward Curve Fit Flow Rate Point 8	Float	N/A	RW
8263-8264	Reverse Curve Fit K-Factor Point 8	Float	N/A	RW
8265-8266	Reverse Curve Fit Viscosity Point 8	Float	N/A	RW
8267-8268	Reverse Curve Fit Flow Rate Point 8	Float	N/A	RW
8269-8270	Forward Curve Kit F-Factor Point 9	Float	N/A	RW
8271-8272	Forward Curve Fit Viscosity Point 9	Float	N/A	RW
8273-8274	Forward Curve Fit Flow Rate Point 9	Float	N/A	RW
8275-8276	Reverse Curve Fit K-Factor Point 9	Float	N/A	RW
8277-8278	Reverse Curve Fit Viscosity Point 9	Float	N/A	RW
8279-8280	Reverse Curve Fit Flow Rate Point 9	Float	N/A	RW

Register	Description	Format	Range	Read/Write
8281-8282	Forward Curve Fit K-Factor Point 10	Float	N/A	RW
8283-8284	Forward Curve Fit Viscosity Point 10	Float	N/A	RW
8285-8286	Forward Curve Fit Flow Rate Point 10	Float	N/A	RW
8287-8288	Reverse Curve Fit K-Factor Point 10	Float	N/A	RW
8289-8290	Reverse Curve Fit Viscosity Point 10	Float	N/A	RW
8291-8292	Reverse Curve Fit Flow Rate Point 10	Float	N/A	RW
8293-8294	Forward Curve Fit K-Factor Point 11	Float	N/A	RW
8295-8296	Forward Curve Fit Viscosity Point 11	Float	N/A	RW
8297-8298	Forward Curve Fit Flow Rate Point 11	Float	N/A	RW
8299-8300	Reverse Curve Fit K-Factor Point 11	Float	N/A	RW
8301-8302	Reverse Curve Fit Viscosity Point 11	Float	N/A	RW
8303-8304	Reverse Curve Fit Flow Rate Point 11	Float	N/A	RW
8305-8306	Forward Curve Fit K-Factor Point 12	Float	N/A	RW
8307-8308	Forward Curve Fit Viscosity Point 12	Float	N/A	RW
8309-8310	Forward Curve Fit Flow Rate Point 12	Float	N/A	RW
8311-8312	Reverse Curve Fit K-Factor Point 12	Float	N/A	RW
8313-8314	Reverse Curve Fit Viscosity Point 12	Float	N/A	RW
8315-8316	Reverse Curve Fit Flow Rate Point 12	Float	N/A	RW
8317-8318	Forward Curve Fit K-Factor Point 13	Float	N/A	RW
8319-8320	Forward Curve Fit Viscosity Point 13	Float	N/A	RW
8321-8322	Forward Curve Fit Flow Rate Point 13	Float	N/A	RW
8323-8324	Reverse Curve Fit K-Factor Point 13	Float	N/A	RW
8325-8326	Reverse Curve Fit Viscosity Point 13	Float	N/A	RW
8327-8328	Reverse Curve Fit Flow Rate Point 13	Float	N/A	RW
8329-8330	Forward Curve Fit K-Factor Point 14	Float	N/A	RW
8331-8332	Forward Curve Fit Viscosity Point 14	Float	N/A	RW
8333-8334	Forward Curve Fit Flow Rate Point 14	Float	N/A	RW
8335-8336	Reverse Curve Fit K-Factor Point 14	Float	N/A	RW
8337-8338	Reverse Curve Fit Viscosity Point 14	Float	N/A	RW
8339-8340	Reverse Curve Fit Flow Rate Point 14	Float	N/A	RW

Register	Description	Format	Range	Read/Write
8341-8342	Forward Curve Fit K-Factor Point 15	Float	N/A	RW
8343-8344	Forward Curve Fit Viscosity Point 15	Float	N/A	RW
8345-8346	Forward Curve Fit Flow Rate Point 15	Float	N/A	RW
8347-8348	Reverse Curve Fit K-Factor Point 15	Float	N/A	RW
8349-8350	Reverse Curve Fit Viscosity Point 15	Float	N/A	RW
8351-8352	Reverse Curve Fit Flow Rate Point 15	Float	N/A	RW

Meter Profile #8				
Register	**Description**	**Format**	**Range**	**Read/Write**
9001-9005	Profile Name (1)	String	10 Char	RW
9006-9010	Not Used			
9011-9012	Viscosity of First Calibration Point (V1)	Float	N/A	RW
9013-9014	Temperature of First Calibration Point (T1)	Float	N/A	RW
9015-9016	Viscosity of Second Calibration Point (V2)	Float	N/A	RW
9017-9018	Temperature of Second Calibration Point (T2)	Float	N/A	RW
9019-9022	Constant A	Double	N/A	RW
9023-9026	Constant B	Double	N/A	RW
9027	Select A/B Value 0 = Direct Entry 1 = Calculation	Boolean	0-1	RW
9028-9030	Not Used			
9031-9034	Forward Viscosity Coefficient A	Double	N/A	RW
9035-9038	Forward Viscosity Coefficient B	Double	N/A	RW
9039-9042	Forward Viscosity Coefficient C	Double	N/A	RW
9043-9046	Forward Viscosity Coefficient D	Double	N/A	RW
9047-9050	Forward Viscosity Coefficient E	Double	N/A	RW
9051-9054	Forward Viscosity Coefficient F	Double	N/A	RW
9055-9058	Forward Viscosity Coefficient G	Double	N/A	RW
9059-9062	Forward Viscosity Coefficient H	Double	N/A	RW
9063-9066	Reverse Viscosity Coefficient A	Double	N/A	RW
9067-9070	Reverse Viscosity Coefficient B	Double	N/A	RW
9071-9074	Reverse Viscosity Coefficient C	Double	N/A	RW
9075-9078	Reverse Viscosity Coefficient D	Double	N/A	RW
9079-9082	Reverse Viscosity Coefficient E	Double	N/A	RW
9083-9086	Reverse Viscosity Coefficient F	Double	N/A	RW
9087-9090	Reverse Viscosity Coefficient G	Double	N/A	RW
9091-9094	Reverse Viscosity Coefficient H	Double	N/A	RW

Register	Description	Format	Range	Read/Write
9095-9098	Fault Reynolds Number	Double	N/A	RW
9099-9102	Low Limit Reynolds Number	Double	N/A	RW
9103-9106	High Limit Reynolds Number	Double	N/A	RW
9107-9108	Low Lookup K-Factor Point 1	Float	N/A	RW
9109-9110	Low Lookup K-Factor Point 2	Float	N/A	RW
9111-9112	Low Lookup K-Factor Point 3	Float	N/A	RW
9113-9114	Low Lookup K-Factor Point 4	Float	N/A	RW
9115-9116	Low Lookup K-Factor Point 5	Float	N/A	RW
9117-9118	Low Lookup K-Factor Point 6	Float	N/A	RW
9119-9120	Low Lookup K-Factor Point 7	Float	N/A	RW
9121-9122	Low Lookup K-Factor Point 8	Float	N/A	RW
9123-9124	Low Lookup K-Factor Point 9	Float	N/A	RW
9125-9126	Low Lookup K-Factor Point 10	Float	N/A	RW
9127-9128	Low Lookup Flow Rate Point 1	Float	N/A	RW
9129-9130	Low Lookup Flow Rate Point 2	Float	N/A	RW
9131-9132	Low Lookup Flow Rate Point 3	Float	N/A	RW
9133-9134	Low Lookup Flow Rate Point 4	Float	N/A	RW
9135-9136	Low Lookup Flow Rate Point 5	Float	N/A	RW
9137-9138	Low Lookup Flow Rate Point 6	Float	N/A	RW
9139-9140	Low Lookup Flow Rate Point 7	Float	N/A	RW
9141-9142	Low Lookup Flow Rate Point 8	Float	N/A	RW
9143-9144	Low Lookup Flow Rate Point 9	Float	N/A	RW
9145-9146	Low Lookup Flow Rate Point 10	Float	N/A	RW
9147-9148	Low Lookup Viscosity Point 1	Float	N/A	RW
9148-9150	Low Lookup Viscosity Point 2	Float	N/A	RW
9151-9152	Low Lookup Viscosity Point 3	Float	N/A	RW
9153-9154	Low Lookup Viscosity Point 4	Float	N/A	RW
9155-9156	Low Lookup Viscosity Point 5	Float	N/A	RW
9157-9158	Low Lookup Viscosity Point 6	Float	N/A	RW
9159-9160	Low Lookup Viscosity Point 7	Float	N/A	RW

Register	Description	Format	Range	Read/Write
9161-9162	Low Lookup Viscosity Point 8	Float	N/A	RW
9163-9164	Low Lookup Viscosity Point 9	Float	N/A	RW
9165-9166	Low Lookup Viscosity Point 10	Float	N/A	RW
9167-9168	High Lookup K-Factor Point 1	Float	N/A	RW
9169-9170	High Lookup Flow Rate Point 1	Float	N/A	RW
9171-9172	High Lookup Viscosity Point 1	Float	N/A	RW
9173-9174	Forward Curve Fit K-Factor Point 1	Float	N/A	RW
9175-9176	Forward Curve Fit Viscosity Point 1	Float	N/A	RW
9177-9178	Forward Curve Fit Flow Rate Point 1	Float	N/A	RW
9179-9180	Reverse Curve Fit K-Factor Point 1	Float	N/A	RW
9181-9182	Reverse Curve Fit Viscosity Point 1	Float	N/A	RW
9182-9184	Reverse Curve Fit Flow Rate Point 1	Float	N/A	RW
9185-9186	Forward Curve Fit K-Factor Point 2	Float	N/A	RW
9187-9188	Forward Curve Fit Viscosity Point 2	Float	N/A	RW
9189-9190	Forward Curve Fit Flow Rate Point 2	Float	N/A	RW
9191-9192	Reverse Curve Fit K-Factor Point 2	Float	N/A	RW
9193-9194	Reverse Curve Fit Viscosity Point 2	Float	N/A	RW
9195-9196	Reverse Curve Fit Flow Rate Point 2	Float	N/A	RW
9197-9198	Forward Curve Fit K-Factor Point 3	Float	N/A	RW
9199-9200	Forward Curve Fit Viscosity Point 3	Float	N/A	RW
9201-9202	Forward Curve Fit Flow Rate Point 3	Float	N/A	RW
9203-9204	Reverse Curve Fit K-Factor Point 3	Float	N/A	RW
9205-9206	Reverse Curve Fit Viscosity Point 3	Float	N/A	RW
9207-9208	Reverse Curve Fit Flow Rate Point 3	Float	N/A	RW
9209-9210	Forward Curve Fit K-Factor Point 4	Float	N/A	RW
9211-9212	Forward Curve Fit Viscosity Point 4	Float	N/A	RW
9213-9214	Forward Curve Fit Flow Rate Point 4	Float	N/A	RW
9215-9216	Reverse Curve Fit K-Factor Point 4	Float	N/A	RW
9217-9218	Reverse Curve Fit Viscosity Point 4	Float	N/A	RW
9219-9220	Reverse Curve Fit Flow Rate Point 4	Float	N/A	RW

Register	Description	Format	Range	Read/Write
9221-9222	Forward Curve Fit K-Factor Point 5	Float	N/A	RW
9223-9224	Forward Curve Fit Viscosity Point 5	Float	N/A	RW
9225-9226	Forward Curve Fit Flow Rate Point 5	Float	N/A	RW
9227-9228	Reverse Curve Fit K-Factor Point 5	Float	N/A	RW
9229-9230	Reverse Curve Fit Viscosity Point 5	Float	N/A	RW
9231-9232	Reverse Curve Fit Flow Rate Point 5	Float	N/A	RW
9233-9234	Forward Curve Fit K-Factor Point 6	Float	N/A	RW
9235-9236	Forward Curve Fit Viscosity Point 6	Float	N/A	RW
9237-9238	Forward Curve Fit Flow Rate Point 6	Float	N/A	RW
9239-9240	Reverse Curve Fit K-Factor Point 6	Float	N/A	RW
9241-9242	Reverse Curve Fit Viscosity Point 6	Float	N/A	RW
9243-9244	Reverse Curve Fit Flow Rate Point 6	Float	N/A	RW
9245-9246	Forward Curve Fit K-Factor Point 7	Float	N/A	RW
9247-9248	Forward Curve Fit Viscosity Point 7	Float	N/A	RW
9249-9250	Forward Curve Fit Flow Rate Point 7	Float	N/A	RW
9251-9252	Reverse Curve Fit K-Factor Point 7	Float	N/A	RW
9253-9254	Reverse Curve Fit Viscosity Point 7	Float	N/A	RW
9255-9256	Reverse Curve Fit Flow Rate Point 7	Float	N/A	RW
9257-9258	Forward Curve Fit K-Factor Point 8	Float	N/A	RW
9259-9260	Forward Curve Fit Viscosity Point 8	Float	N/A	RW
9261-9262	Forward Curve Fit Flow Rate Point 8	Float	N/A	RW
9263-9264	Reverse Curve Fit K-Factor Point 8	Float	N/A	RW
9265-9266	Reverse Curve Fit Viscosity Point 8	Float	N/A	RW
9267-9268	Reverse Curve Fit Flow Rate Point 8	Float	N/A	RW
9269-9270	Forward Curve Kit F-Factor Point 9	Float	N/A	RW
9271-9272	Forward Curve Fit Viscosity Point 9	Float	N/A	RW
9273-9274	Forward Curve Fit Flow Rate Point 9	Float	N/A	RW
9275-9276	Reverse Curve Fit K-Factor Point 9	Float	N/A	RW
9277-9278	Reverse Curve Fit Viscosity Point 9	Float	N/A	RW
9279-9280	Reverse Curve Fit Flow Rate Point 9	Float	N/A	RW

Register	Description	Format	Range	Read/Write
9281-9282	Forward Curve Fit K-Factor Point 10	Float	N/A	RW
9283-9284	Forward Curve Fit Viscosity Point 10	Float	N/A	RW
9285-9286	Forward Curve Fit Flow Rate Point 10	Float	N/A	RW
9287-9288	Reverse Curve Fit K-Factor Point 10	Float	N/A	RW
9289-9290	Reverse Curve Fit Viscosity Point 10	Float	N/A	RW
9291-9292	Reverse Curve Fit Flow Rate Point 10	Float	N/A	RW
9293-9294	Forward Curve Fit K-Factor Point 11	Float	N/A	RW
9295-9296	Forward Curve Fit Viscosity Point 11	Float	N/A	RW
9297-9298	Forward Curve Fit Flow Rate Point 11	Float	N/A	RW
9299-9300	Reverse Curve Fit K-Factor Point 11	Float	N/A	RW
9301-9302	Reverse Curve Fit Viscosity Point 11	Float	N/A	RW
9303-9304	Reverse Curve Fit Flow Rate Point 11	Float	N/A	RW
9305-9306	Forward Curve Fit K-Factor Point 12	Float	N/A	RW
9307-9308	Forward Curve Fit Viscosity Point 12	Float	N/A	RW
9309-9310	Forward Curve Fit Flow Rate Point 12	Float	N/A	RW
9311-9312	Reverse Curve Fit K-Factor Point 12	Float	N/A	RW
9313-9314	Reverse Curve Fit Viscosity Point 12	Float	N/A	RW
9315-9316	Reverse Curve Fit Flow Rate Point 12	Float	N/A	RW
9317-9318	Forward Curve Fit K-Factor Point 13	Float	N/A	RW
9319-9320	Forward Curve Fit Viscosity Point 13	Float	N/A	RW
9321-9322	Forward Curve Fit Flow Rate Point 13	Float	N/A	RW
9323-9324	Reverse Curve Fit K-Factor Point 13	Float	N/A	RW
9325-9326	Reverse Curve Fit Viscosity Point 13	Float	N/A	RW
9327-9328	Reverse Curve Fit Flow Rate Point 13	Float	N/A	RW
9329-9330	Forward Curve Fit K-Factor Point 14	Float	N/A	RW
9331-9332	Forward Curve Fit Viscosity Point 14	Float	N/A	RW
9333-9334	Forward Curve Fit Flow Rate Point 14	Float	N/A	RW
9335-9336	Reverse Curve Fit K-Factor Point 14	Float	N/A	RW
9337-9338	Reverse Curve Fit Viscosity Point 14	Float	N/A	RW
9339-9340	Reverse Curve Fit Flow Rate Point 14	Float	N/A	RW

Register	Description	Format	Range	Read/Write
9341-9342	Forward Curve Fit K-Factor Point 15	Float	N/A	RW
9343-9344	Forward Curve Fit Viscosity Point 15	Float	N/A	RW
9345-9346	Forward Curve Fit Flow Rate Point 15	Float	N/A	RW
9347-9348	Reverse Curve Fit K-Factor Point 15	Float	N/A	RW
9349-9350	Reverse Curve Fit Viscosity Point 15	Float	N/A	RW
9351-9352	Reverse Curve Fit Flow Rate Point 15	Float	N/A	RW

Alarm Limits				
Register	**Description**	**Format**	**Range**	**Read/Write**
5001-5002	Minimum Input Frequency	Float	N/A	RW
5003-5004	Maximum Input Frequency	Float	N/A	RW
5005-5006	Minimum Temperature	Float	N/A	RW
5007-5008	Maximum Temperature	Float	N/A	RW
5009-5010	Minimum Viscosity	Float	N/A	RW
5011-5012	Maximum Viscosity	Float	N/A	RW
5013-5014	Minimum Flow	Float	N/A	RW
5015-5016	Maximum Flow	Float	N/A	RW
5017-5018	Minimum Compensated Flow	Float	N/A	RW
5019-5020	Maximum Compensated Flow	Float	N/A	RW
5021-5022	Minimum 4 to 20 mA Input	Float	N/A	RW
5023-5024	Maximum 4 to 20 mA Input	Float	N/A	RW

General Configuration				
Register	**Description**	**Format**	**Range**	**Read/Write**
5050-5051	Forward and Reverse Volume K-Factor	Float		RW
5052-5053	Max K-Factor % Change	Float	0-4	RW
5054	Unit Volume 0 = Gal 1 = Bbl 2 = Ft^3 3 = M^3 4 = Lit	Integer/16	0-4	RW
5055	Unit Time 0 = Per hour 1 = Per minute	Integer/16	0-1	RW
5056	Temperature Units 0 = Celsius 1 = Kelvin 2 = Fahrenheit	Integer/16	0-2	RW
5057	Density Units 0 = kg/M^3 1 = Sq 2 = API 3 = lbs/gal 4 = lbs/ft 5 = q/cc 6 = kg/L	Integer/16	0-2	RW
5058	Length Units 0 = inches 1 = millimeters	Integer/16	0-1	RW
5059	Compensation Mode 0 = Not used 1 = Viscometer 2 = Temperature	Integer/16	0-2	RW
5060	Input Pulse Factor for Output Pulse	Integer/16		RW
5061	Active Recipe 0 = Profile #1 1 = Profile #2 2 = Profile #3 3 = Profile #4 4 = Profile #5 5 = Profile #6 6 = Profile #7 7 = Profile #8	Integer/16	0-7	RW

Register	Description	Format	Range	Read/Write
5062	4 to 20 mA Output #1 0 = Disabled 1 = Raw Flow Rate 2 = Compensated Multiplied Flow Rate 3 = Temperature 4 = Kinematic Viscosity	Integer/16	0-4	RW
5063	4 to 20 Output #2 0 = Disabled 1 = Raw Flow Rate 2 = Compensated Multiplied Flow Rate 3 = Temperature 4 = Kinematic Viscosity	Integer/16	0-4	RW
5064	Input #1 Configuration 0 = Not Used 1 = Batch End 2 = Flow Direction 3 = Alarm Acknowledgment/Reset 4 = Weights and Measures	Integer/16	0-4	RW
5065	Input #2 Configuration 0 = Not Used 1 = Batch End 2 = Flow Direction 3 = Alarm Acknowledgment/Reset 4 = Weights and Measures	Integer/16	0-4	RW
5066	Input #3 Configuration 0 = Not Used 1 = Batch End 2 = Flow Direction 3 = Alarm Acknowledgment/Reset 4 = Weights and Measures	Integer/16	0-4	RW
5067	Temperature Corrected Density 0 = No 1 = Yes	Integer/16	0-1	RW

Password/Status of Inputs and Outputs				
Register	**Description**	**Format**	**Range**	**Read/Write**
5111	Password Mask Bit 0 = Parameter Entry Bit 1 = Switched Output Bit 2 = Status Input Bit 3 = Security Code Bit 4 = Date and Time Bit 5 = End Batch Bit 6 = Reset Totals Bit 7 = Weights and Measures Changes are allowed Bit 8 = Weights and Measures Password is corrected Bit 9 = Weights and Measures Key is Unprotected	Integer/16	0-9	RO
5121	Status Input #1 0 = De-energized 1 = Energized	Boolean	0-1	RO
5122	Status Input #2 0 = De-energized 1 = Energized	Boolean	0-1	RO
5123	Status Input #3 0 = De-energized 1 = Energized	Boolean	0-1	RO
5124	Status Output #1 0 = Open 1 = Closed	Boolean	0-1	RW
5125	Status Output #2 0 = Open 1 = Closed	Boolean	0-1	RW

Real Time Data Retrieval				
Register	**Description**	**Format**	**Range**	**Read/Write**
5151	Ticket Number	Integer/16		RW
5152-5153	Current Batch Start Time (Seconds since 1/1/80)	UINT-32		RO
5154	Current Batch Start Time (Milliseconds)	Integer/16		RO
5155-5156	Current Batch End Time (Seconds since 1/1/80)	UINT-32		RO
5157	Current Batch End Time (Milliseconds)	Integer/16		RO
5158-5159	Current Time (Seconds since 1/1/80)	UINT-32		RO
5160	Current Time (Milliseconds)	Integer/16		RO
5161-5162	Forward Raw Non-resettable Pulse Total	UINT-32		RO
5163-5164	Reverse Raw Non-resettable Pulse Total	UINT-32		RO
5165-5166	Forward Raw Batch Pulse Total	UINT-32		RO
5167-5168	Reverse Raw Batch Pulse Total	UINT-32		RO
5169-5170	Forward Compensated Raw Non-resettable Pulse Total	UINT-32		RO
5171-5172	Reverse Compensated Raw Non-resettable Pulse Total	UINT-32		RO
5173-5174	Forward Compensated Batch Pulse Total	UINT-32		RO
5175-5176	Reverse Compensated Batch Pulse Total	UINT-32		RO
5177-5180	Not Used			
5181-5182	Instantaneous Raw Flow Rate	UINT-32		RO
5183-5184	Instantaneous Compensated Flow Rate	UINT-32		RO
5185-5186	Batch Average Raw Flow Rate	UINT-32		RO
5187-5188	Batch Average Compensated Flow Rate	UINT-32		RO
5189-5190	Not Used			
5191	Flow Direction 0 = Forward 1 = Reverse	Boolean	0-1	RO
5192	Quadrature Flow Direction 0 = Forward 1 = Reverse	Boolean	0-1	RO

Register	Description	Format	Range	Read/Write
5193-5194	Raw Meter Frequency	INT-16		RO
5195	No Flow Condition 0 = No Flow 1 = Flow	Boolean	0-1	RO
5196	Serial Communications Only	Boolean		RO
5197	Weights and Measures Key Input 0 = De-energized 1 = Energized	Boolean	0-1	RO
5198	Weights and Measures Write Protection	Boolean		RO
5199-5200	Floating Point Meter Frequency	Float		RO
5202-5203	Active Alarm Status	Binary 32		RO
5204-5205	Latched Alarm Status	Binary 32		RO
5206-5210	Spare			
5211-5212	Kinematic Viscosity (2DP)	UINT-32		RO
5213-5214	Temperature in Degrees C (2DP)	UINT-32		RO

Diagnostic Data				
Register	**Description**	**Format**	**Range**	**Read/Write**
5309-5310	T_a Count from Viscometer (US)	UINT-32		RO
5311-5312	T_b Time Constant Read from Viscometer (US)	UINT-32		RO
5313-5314	Quality Factor	Float		RO
5315-5316	Dynamic Viscosity	Float		RO
5317-5318	Density	Float		RO
5319-5320	Kinematic Viscosity	Float		RO
5321-5322	Temperature in Degrees C	Float		RO
5323-5324	Active Viscosity Correction Factor	Float		RO
5325-5326	4-to-20 mA Input	Float		RO
5327-5328	4-to-20 mA Output 1	Float		RO
5329-5330	4-to-20 mA Output 2	Float		RO
5331-5334	Reynolds Number	Float		RO
5335-5336	Raw Flow Rate	Float		RO
5337-5338	Compensated Flow Rate	Float		RO
5339-5340	Average Temperature	Float		RO
5341-5342	Average Viscosity	Float		RO
5343-5344	Average Density	Float		RO
5345-5433	Not Used			
5432-5435	Active Temperature Constant A	Float		RO
5436-5439	Active Temperature Constant B	Float		RO
5440-5441	Pulse A Interrupt Count	UINT-32		RO
5442-5443	Pulse B Interrupt Count	UINT-32		RO
5444-5445	Output One Count	UINT-32		RO
5446-5447	Output Two Count	UINT-32		RO
5448-5451	Active Fault Reynolds Number	Double		RO
5252-5455	Active Low Limit Reynolds Number	Double		RO
5456-5459	Active High Low Reynolds Number	Double		RO
5460-5461	Correction K-Factor	Float		RO

Batch History				
Register	**Description**	**Format**	**Range**	**Read/Write**
5601	Batch History Report 1 = Newest ↓ ↓ 50 = Oldest	INT-16	1-50	RW
5602-5610	Not Used			
5611	Ticket Number	INT-16		RO
5612-5613	Start Time (Seconds Since 1/1/80)	UINT-32		RO
5614	Start Time (Milliseconds)	INT-16		RO
5615-5616	End Time (Seconds Since 1/1/80)	UINT-32		RO
5617	End Time (Milliseconds)	INT-16		RO
5618-5620	Not Used			
5621-5622	Forward Raw Batch Pulses	UINT-32		RO
5623-5624	Reverse Raw Batch Pulses	UINT-32		RO
5625-5626	Forward Compensated Batch Pulses	UINT-32		RO
5627-5628	Reverse Compensated Batch Pulses	UINT-32		RO
5629-5630	Not Used			
5631-5632	Alarm Status Information	Binary 32		RO
5633-5634	Latched Alarm Status Information	Binary 32		RO
5635	Flow Direction 1 = Forward 2 = Reverse	Boolean	0-1	RO
5636-5637	Average Raw Flow Rate	Float		RO
5638-5639	Average Compensated Flow Rate	Float		RO
5640-5641	Average Temperature	Float		RO
5642-5643	Average Kinematic Viscosity	Float		RO
5644-5645	Average Density	Float		RO
5646-5649	Not Used			
5650	Request Code	INT-16	1-50	RW
5651	Ticket Number	UINT-16		RO
5652-5653	Time (Seconds Since 1/1/80)	UINT-32		RO
5654	Time (Milliseconds)	INT-16		RO
5655-5660	Not Used			
5661-5662	Forward Row Batch Pulse Total	UINT-32		RO
5663-5664	Reverse Row Batch Pulse Total	UINT-32		RO

Register	Description	Format	Range	Read/Write
5665-5666	Forward Compensated Batch Pulses	UINT-32		RO
5667-5668	Reverse Compensated Batch Pulses	UINT-32		RO
5669-5670	Not Used			
5671-5672	Alarm Status Information	Binary 32		RO
5673-5674	Latched Alarm Status Information	Binary 32		RO
5675	Flow Direction 0 = Forward 1 = Reverse	Boolean	0-1	RO
5676	Not Used			
5677-5678	Raw Instantaneous Flow Rate	UINT-32		RO
5679-5680	Compensated Instantaneous Flow Rate	UINT-32		RO
5681-5682	Frequency	INT-32		RO
5683	Communication Interface 0 = ASCII 1 = RTU	INT-16	0-1	RW
5684-5699	Not Used			

Present Value Flags				
Register	**Description**	**Format**	**Range**	**Read/Write**
5700	State of the Non-resettable Totalizer Restart Flag	Boolean		RW
5701	Resets all latched alarms	Boolean		RW
5702	State of the End Batch Request Flag	Boolean		RW
5703	Read RTC	Boolean		RW
5704	Set RTC	Boolean		RW
5705-5706	Set Time (Seconds Since 1/1/800	UINT-32		RW
5707	Set Time (Milliseconds)	INT-32		RW
5708	Viscometer Range	INT-16		RO
5709-5799	Not Used			
5800-5814	Factory Use Only			

Description	Value	Description	Value
Missing Pulse A Alarm	1	Missing Pulse B Alarm	2
Minimum Input Frequency Alarm Limit	4	Maximum Input Frequency Alarm Limit	8
Minimum Temperature Alarm Limit	16	Maximum Temperature Alarm Limit	32
Minimum Viscosity Alarm Limit	64	Maximum Viscosity Alarm Limit	128
Minimum Flow Alarm Limit	256	Maximum Flow Alarm Limit	512
Minimum Compensated Flow Alarm Limit	1024	Maximum Compensated Flow Alarm Limit	2048
Minimum 4-20 mA Input Alarm Limit	4096	Maximum 4-20 mA Input Alarm Limit	8192
No-Flow Condition	16,384	Meter Direction	32, 768
Weights and Measures Mode	65, 536	Weights and Measures Program Mode	131,072
??????????????????????	262,144	????????????????????????????????	524,288
??????????????????????	1,048,576	????????????????????????????????	2,097,152
RAM Failed Self-Test	4,194,304	Maximum Input Frequency Exceeded	8,388,608
EPROM CRC Failure	16,777,216	Invalid Power Fail CRC	33,554,432
Invalid Configuration CRC	67,108,864	Failed Temperature Input	134,217,728
Failed Viscometer Input	268,435,456	NC RAM CRC Failure	536,870,912

This table is used to decode the values that are stored in the Modbus registers 3202 (Current Batch: Alarm Status Information) and 3204 (Current Batch: Latched Alarm Status Information). Each number stored in these locations will be unique based on the status of the UPCC.

For example: The numerical value 81,920 is stored in register 3202. To determine the meaning of the number it must be determined which of the above status' show up in the number. To decode this number:

1. Look at the table above and determine the number that is closest to 81,920 but does not exceed it. That number is 65,536 (Weights and Measures Mode).

2. Subtract 65,536 from 81,920, the result is 16,384.

3. Look at the table above and determine the number that is closest to 16,384 but does not exceed it. That number is 16,384 (No-flow condition).

4. Subtract 16, 384 from 16,384, the result is 0 indicating that there are no other alarms or status.

From this information it has been determined that the UPCC is in Weights and Measures Mode and also that there is currently no flow through the meter. Each set of numbers are unique and are made of up of a unique set of Alarms/Status.

S

T

U

V

W

Section V - Related Publications

The following literature can be obtained from FMC Technologies Measurement Solutions, Inc. Literature Fulfillment at johno@gohrs.com or online at *www.fmctechnologies.com/measurementsolutions*. When requesting literature from Literature Fulfillment, please reference the appropriate bulletin number and title.

UPCC

Specification .....Bulletin SS02017
Installation/Operation.....Bulletin MN02011
Communications .....Bulletin MN02012L

Headquarters:
1803 Gears Road, Houston, TX 77067 USA, Phone: 281/260-2190, Fax: 281/260-2191

Gas Measurement Products:
Erie, PA USA Phone 814/898-5000
Thetford, England Phone (44) 1842-82-2900
Kongsberg, Norway Phone (47) 32/286-700
Buenos Aires, Argentina Phone 54 (11) 4312-4736

Integrated Measurement Systems:
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Kongsberg, Norway Phone (47) 32/286-700
San Juan, Puerto Rico Phone 787/274-3760
United Arab Emirates, Dubai Phone 971 +4/331-3646

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Ellerbek, Germany Phone (49) 4101-3040
Barcelona, Spain Phone (34) 93/201-0989

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