Introduction

This supplement provides a listing of all registers used for storing and controlling data in the meter. Some of these registers can be accessed during meter configuration. Configuration can be done either through the front panel buttons or via a PC using the manufacturer's Meter Configuration Utiltiy program.

The registers are also available for use with a macro. Macros can be pre-configured into the meter by the manufacturer, or written and uploaded to the meter by the user via the manufacturer's Macro Compiler program.
See TDS Compiler Tutorial (NZ212) for more details

Chapters

1 Numerical Listing lists registers and descriptions numerically. This listing contains a full description for each register.

2 Functional Grouping groups register names and numbers by functional groups and acts as the index for this supplement.

Register Overview

The register map for the Tiger 380 meter is different to that of the standard Tiger 320 range. The following overview shows how register types are arranged over the entire register map.

32 bit Fixed Point (1 – 1023)
Register addresses 1 to 1023 are used for 32 bit fixed point addresses. To accommodate for Modbus usage of 32 point registers, only odd register addresses are used, giving a maximum of 511 registers.

32 bit Floating Point Registers (1025 – 2047)
Register addresses 1025 to 2047 are used for 32 bit floating point addresses. To accommodate for Modbus usage of 32 point registers, only odd register addresses are used, giving a maximum of 511 registers.

24 bit Fixed Point (2049 – 4095)
Register addresses 2049 to 4095 are used for 24 bit fixed point addresses. To accommodate for Modbus usage of 24 point registers, only odd register addresses are used, giving a maximum of 1023 registers.

16 bit Fixed Point (4097 – 8192)
Register addresses 4097 to 8192 are used for 16 bit fixed point addresses. Both odd and even addresses in this range are used, giving a maximum of 4096 registers.

8 bit Fixed Point (8193 – 16384)
Register addresses 8193 to 16384 are used for 8 bit fixed point addresses. Both odd and even addresses in this range are used, giving a maximum of 8192 registers.

Text Registers (16385 – 20479)
Register addresses 16385 to 20479 are used for accessing text strings. Only odd addresses in this range are used, giving a maximum of 2047 text strings. These registers 16385 to 16525 are arranged so that they relate to registers numbers 1 to 141 with an offset of 16384 added to them.

Macro Code Registers (32769 – 65536)
Register addresses 32769 to 65536 are 16 bit unsigned registers used for macro code storage. Both odd and even addresses in this range are used, giving a maximum of 32767 registers.

Symbol Types

The Type column uses the following abbreviations to identify the register type:

- B_ The symbol B_ is followed by a number from 0 to 31 and describes the register bit number.
- F_32 The symbol F_32 identifies the register as a floating point 32-bit register.
- _R The symbol _R identifies the register as a read only register.
- S_ The symbol S_ is followed by either 16, 24, or 32, identifying the register as a 16, 24, or 32-bit signed integer.
- _T The symbol _T indicates that the register is reserved for testing purposes by Texmate.
- U_ The symbol U_ is followed by either 8 or 16, identifying the register as an 8 or 16-bit unsigned integer.

Reg.	Type	Register Name	Register Description
1	S_32	**DISPLAY**	32 bit register for primary display data
7	S_32	**RESULT**	Non volatile 32 bit register for result data
9	S_32	**CH1**	Non volatile 32 bit register for channel 1 data
11	S_32	**CH2**	Non volatile 32 bit register for channel 2 data
13	S_32	**CH3**	Non volatile 32 bit register for channel 3 data
15	S_32	**CH4**	Non volatile 32 bit register for channel 4 data
17	S_32	**CH5**	Non volatile 32 bit register for channel 5 data
19	S_32	**CH6**	Non volatile 32 bit register for channel 6 data
21	S_32	**CH7**	Non volatile 32 bit register for channel 7 data The above registers are normally updated by the operating system of the controller after a new input sample is processed. If the channel is disabled or in a counter mode, it is also possible to modify the contents of the register by writing to it from the setpoint reset logic, the Macro or via the serial port. A write to these registers in any other operational mode may result in the newly written value being over written by the operating system in the controller. A write to the CHx_PROCESSED, CHx_RAW, or CHx_SCALED registers will modify only that register. A write to the CHx register will automatically update CHx_PROCESSED, CHx_RAW, and CHx_SCALED. The controller will take into account scale and offset and post processing and calulate the CHx_RAW value. (This is useful to reset the count in counter applications which use a scale and offset value other than 1 and 0). Note: 32 point linearization is not supported by the above feature. A read of CHx register is identical to a read of CHx_PROCESSED register.
37	S_32	**TOTAL1**	Non volatile 32 bit register for Totalisator 1 value
39	S_32	**TOTAL2**	Non volatile 32 bit register for Totalisator 2 value
41	S_32	**TOTAL3**	Non volatile 32 bit register for Totalisator 3 value
43	S_32	**TOTAL4**	Non volatile 32 bit register for Totalisator 4 value
45	S_32	**TOTAL5**	Non volatile 32 bit register for Totalisator 5 value
47	S_32	**TOTAL6**	Non volatile 32 bit register for Totalisator 6 value
57	S_32	**PEAK1**	32 bit register for Peak 1 value
59	S_32	**VALLEY1**	32 bit register for Valley 1 value
61	S_32	**PEAK2**	32 bit register for Peak 2 value
63	S_32	**VALLEY2**	32 bit register for Valley 2 value
65	S_32	**PEAK3**	32 bit register for Peak 3 value
67	S_32	**VALLEY3**	32 bit register for Valley 3 value
77	S_32	**TARE**	32 bit register for Tare value
79 to 109	S_32	**AUX1** **to** **AUX16**	Registers 79 - 109 are 16 non volatile 32 bit auxiliary registers in odd numbers.
111	S_32	**SETPOINT1**	32 bit register for Setpoint 1 value
113	S_32	**SETPOINT2**	32 bit register for Setpoint 2 value
115	S_32	**SETPOINT3**	32 bit register for Setpoint 3 value
117	S_32	**SETPOINT4**	32 bit register for Setpoint 4 value
119	S_32	**SETPOINT5**	32 bit register for Setpoint 5 value
121	S_32	**SETPOINT6**	32 bit register for Setpoint 6 value
143	U_32	**TIMER1**	32 bit timer counts up every 0.1 seconds (13.6 years) can be set/reset by macro
145	U_32	**TIMER2**	32 bit timer counts up every 0.1 seconds (13.6 years) can be set/reset by macro
147	U_32	**TIMER3**	32 bit timer counts up every 0.1 seconds (13.6 years) can be set/reset by macro
149	U_32	**TIMER4**	32 bit timer counts up every 0.1 seconds (13.6 years) can be set/reset by macro
151	U_32_R	**HRS_MIN_SEC**	32 bit time stamp from real time clock in Hrs:Min:Sec format.
155 to 193	S_32	**INTEGER_VARIABLE1** **to** **INTEGER_VARIABLE20**	Registers 155 to 193 are 32 bit integer registers used for macro variable space. Odd numbers.
231	S_32	**EDIT_VALUE**	32 bit register holds the currently displayed value when in any edit mode

Reg.	Type	Register Name	Register Description
233	S_32	**EDIT_MAX**	32 bit register. Sets the maximum allowable range in edit mode
235	S_32	**EDIT_MIN**	32 bit register. Sets the minimum allowable range in edit mode
237	S_32	**EDIT_DEF**	32 bit register. Sets the default value when Up&Down buttons are pressed in edit mode
239	U_32	**ALARM_STATUS**	32 bit value showing status of Setpoints.
239	B_0	**SP1**	Register 1 is a 32 bit register which contains flags to indicate the status of the 6 set-points and rising or falling tendency. In the normal mode of operation, the status of each setpoint is controlled by the meter, based on a comparison between the input value and the setpoint value. Each setpoint can individually be placed into remote mode by setting the appropriate mode control bit (bits 8 – 13). In remote mode, the input value and setpoint values have no effect on the setpoint status. Instead, the status of the setpoint is controlled directly by setting or clearing the appropriate status bit. This can be done from the serial port or from a Macro. The following description shows the function of each bit when reading the alarm status. Alarm Status Read Bit 0 = Set-point 1 (0 = off, 1 = on) Bit 1 = Set-point 2 (0 = off, 1 = on) Bit 2 = Set-point 3 (0 = off, 1 = on) Bit 3 = Set-point 4 (0 = off, 1 = on) Bit 4 = Set-point 5 (0 = off, 1 = on) Bit 5 = Set-point 6 (0 = off, 1 = on) Bit 6 = Rising tendency (1 = rising) Bit 7 = Falling tendency (1 = falling) Bit 8 = Remote setpoint mode for set-point 1 (0 = normal mode, 1 = remote mode) Bit 9 = Remote setpoint mode for set-point 2 Bit 10 = Remote setpoint mode for set-point 3 Bit 11 = Remote setpoint mode for set-point 4 Bit 12 = Remote setpoint mode for set-point 5 Bit 13 = Remote setpoint mode for set-point 6 Bit 14-31 = Reserved for future use (these bits will always be read as 0) Note: Bits 0 – 5 indicate the setpoint status only, not the relay status. Setpoint timer and manual reset settings could cause the relay status to be different from the setpoint status. For relay status, see register #4099. The following description shows the function of each bit when writing to the alarm status. Alarm Status Write Bit 0 = Setpoint 1 (0 = off, 1 = on) Bit 1 = Setpoint 2 (0 = off, 1 = on) Bit 2 = Setpoint 3 (0 = off, 1 = on) Bit 3 = Setpoint 4 (0 = off, 1 = on) Bit 4 = Setpoint 5 (0 = off, 1 = on) Bit 5 = Setpoint 6 (0 = off, 1 = on) Bit 6 = Don't care (read only bits - see alarm status read above) Bit 7 = Don't care (read only bits - see alarm status read above) Bit 8 = Remote setpoint mode for set-point 1 (0 = normal mode, 1 = remote mode) Bit 9 = Remote setpoint mode for set-point 2 Bit 10 = Remote setpoint mode for set-point 3 Bit 11 = Remote setpoint mode for set-point 4 Bit 12 = Remote setpoint mode for set-point 5 Bit 13 = Remote setpoint mode for set-point 6 Bit 9 - 31 = Reserved for future use (these bits should be written as 0) Note: Bits 0 – 5 indicate the setpoint status only, not the relay status. Setpoint timer and manual reset settings could cause the relay status to be different from the setpoint status. For relay status, see register #4099. Pulse Width Modulation (PWM) Mode If SP1 is set to remote while operating in PID mode, then relay1 functions as a manual pulse width modulation (PWM) output. In this mode, the PWM duty cycle can be set from 0% to 100.0% directly by writing to the PID output register #4125. The PWM cycle time can be set from 0.1 to 1000.0 seconds by writing to register #426. In this mode, the PID algorithm is not functional and all other PID settings have no effect on the PID output register or relay status. The above example is given for SP1 only but the same applies SP1 – SP6
239	B_1	**SP2**	
239	B_2	**SP3**	
239	B_3	**SP4**	
239	B_4	**SP5**	
239	B_5	**SP6**	
239	B_6	**TREND_UP**	
239	B_7	**TREND_DOWN**	
239	B_8	**SP1_REMOTE**	
239	B_9	**SP2_REMOTE**	
239	B_10	**SP3_REMOTE**	
239	B_11	**SP4_REMOTE**	
239	B_12	**SP5_REMOTE**	
239	B_13	**SP6_REMOTE**	
241	U_32	**GENERAL_PURPOSE_FLAGS**	32 bit register which contains general purpose bit flags for macro use.

Reg.	Type	Register Name	Register Description
241	B_0 to B_31	**GPF1** **to** **GPF32**	General purpose bit flags for macro use. Also settable via LCD panel using RPC(101) command.
247	U_32	**SWITCHES**	32 bit register contains flags for front panel switches.
247	B_0	**PROG_BUTTON**	flag shows the current status of the program button (On=button pressed).
247	B_1	**DOWN_BUTTON**	flag shows the current status of the down button (On=button pressed).
247	B_2	**UP_BUTTON**	flag shows the current status of the up button (On=button pressed).
247	B_3	**LOCK_UP_SWITCH**	flag shows the current status of lock switch 2 (On= main program locked).
247	B_4	**LOCK_DOWN_SWITCH**	flag shows the current status of lock switch 1 (On= setpoint programming mode locked).
247	B_5	**F1_BUTTON**	flag shows the current status of the function 1 button (On=button pressed).
247	B_6	**F2_BUTTON**	flag shows the current status of the function 2 button (On=button pressed).
247	B_7	**F3_BUTTON**	flag shows the current status of the function 3 button (On=button pressed).
247	B_15	**REMOTE_SWITCH**	When set, this bit disables operation of all front panel switches. Register 247 is a 32 bit register used to read the status of the switches or to disable the front panel switches and manually control switch depressions from the serial port. An explanation of the function of each bit is given below: Bit 0 = Program Button (0 = off (open), 1 = on (closed)) Bit 1 = Down Button (0 = off (open), 1 = on (closed)) Bit 2 = Up Button (0 = off (open), 1 = on (closed)) Bit 3 = Lock up switch (0 = off (open), 1 = on (closed)) Bit 4 = Lock down switch (0 = off (open), 1 = on (closed)) Bit 5 = Func1 button (0 = off (open), 1 = on (closed)) Bit 6 = Func2 button (0 = off (open), 1 = on (closed)) Bit 7 = Func3 button (0 = off (open), 1 = on (closed)) Bit 8 = Reserved for future use Bit 9 = Reserved for future use Bit 10 = Reserved for future use Bit 11 = Reserved for future use Bit 12 = Reserved for future use Bit 13 = Reserved for future use Bit 14 = Reserved for future use Bit 15 = Switch disable (0 = normal mode, 1 = remote switch mode) Bit 16 = Reserved for future use Bit 17 = Reserved for future use Bit 18 = Reserved for future use Bit 19 = Reserved for future use Bit 20 = Reserved for future use Bit 21 = Reserved for future use Bit 22 = Reserved for future use Bit 23 = Reserved for future use Bit 24 = Reserved for future use Bit 25 = Reserved for future use Bit 26 = Reserved for future use Bit 27 = Reserved for future use Bit 28 = Reserved for future use Bit 29 = Reserved for future use Bit 30 = Reserved for future use Bit 31 = Reserved for future use If bit 15 of register 247 is 0 (normal mode of operation), a read of the register will show the current status of the above switches and input pins. A write to bits 0 – 6 while in the normal mode is not recommended and will produce an unreliable result.
249	U_32	**DIGITAL_OUT**	32 bit register with output bit flags for multi I/O modules.
249	B_0 to B_31	**DO_1** **to** **DO_32**	Register 249 is a 32 bit register which contains bit flags to control up to 32 digital outputs. It is designed to be used with a macro and requires one or more IO expansion modules to be fitted to the meter. The bit functions are as follows; Bit 0 = Output DO_1 (1 = active state), 0 = inactive state) Bit 1 = Output DO_2 (1 = active state), 0 = inactive state) Bit 2 = Output DO_3 (1 = active state), 0 = inactive state) | | | Bit 31 = Output DO_32 (1 = active state), 0 = inactive state)

Reg.	Type	Register Name	Register Description
251	U_32_R	**DIGITAL_IN**	32 bit read only register with bit flags for multi I/O modules.
251 to 253	B_0_R to B_31_R	**DI_1 to DI_32**	Register 251 is a 32 bit register which contains bit flags to read up to 32 digital inputs. It is designed to be used with a macro and requires one or more IO expansion modules to be fitted to the meter. The bit functions are as follows; Bit 0 = Input DI_1 (1 = active state, 0 = inactive state) Bit 1 = Input DI_2 (1 = active state, 0 = inactive state) Bit 2 = Input DI_3 (1 = active state, 0 = inactive state) | | | Bit 31 = Input DI_32 (1 = active state, 0 = inactive state)
257	S_32	**RESULT_PROCESSED**	32 bit register holds the processed data for the result channel.
259	S_32	**CH1_PROCESSED**	32 bit register holds the processed data for channel 1.
261	S_32	**CH2_PROCESSED**	32 bit register holds the processed data for channel 2.
263	S_32	**CH3_PROCESSED**	32 bit register holds the processed data for channel 3.
265	S_32	**CH4_PROCESSED**	32 bit register holds the processed data for channel 4.
267	S_32	**CH5_PROCESSED**	32 bit register holds the processed data for channel 5.
269	S_32	**CH6_PROCESSED**	32 bit register holds the processed data for channel 6.
271	S_32	**CH7_PROCESSED**	32 bit register holds the processed data for channel 7.
281	S_32	**RESULT_RAW**	32 bit register holds the raw result data, prior to scaling and post processing.
283	S_32	**CH1_RAW**	32 bit register holds the raw data for channel 1, prior to scaling and post processing.
285	S_32	**CH2_RAW**	32 bit register holds the raw data for channel 2, prior to scaling and post processing.
287	S_32	**CH3_RAW**	32 bit register holds the raw data for channel 3, prior to scaling and post processing.
289	S_32	**CH4_RAW**	32 bit register holds the raw data for channel 4, prior to scaling and post processing.
291	S_32	**CH5_RAW**	32 bit register holds the raw data for channel 5, prior to scaling and post processing.
293	S_32	**CH6_RAW**	32 bit register holds the raw data for channel 6, prior to scaling and post processing.
295	S_32	**CH7_RAW**	32 bit register holds the raw data for channel 7, prior to scaling and post processing.
305	S_32	**RESULT_SCALED**	32 bit register holds the scaled result data, before any post processing.
307	S_32	**CH1_SCALED**	32 bit register holds the scaled data for channel 1, before any post processing.
309	S_32	**CH2_SCALED**	32 bit register holds the scaled data for channel 2, before any post processing.
311	S_32	**CH3_SCALED**	32 bit register holds the scaled data for channel 3, before any post processing.
313	S_32	**CH4_SCALED**	32 bit register holds the scaled data for channel 4, before any post processing.
315	S_32	**CH5_SCALED**	32 bit register holds the scaled data for channel 5, before any post processing.
317	S_32	**CH6_SCALED**	32 bit register holds the scaled data for channel 6, before any post processing.
319	S_32	**CH7_SCALED**	32 bit register holds the scaled data for channel 7, before any post processing.
329	S_32	**SMART_RESULT1**	32 bit register holds result 1 when a smart input module is used.
331	S_32	**SMART_RESULT2**	32 bit register holds result 2 when a smart input module is used.
333	S_32	**SMART_RESULT3**	32 bit register holds result 3 when a smart input module is used.
335	S_32	**SMART_RESULT4**	32 bit register holds result 4 when a smart input module is used.
337	S_32	**SMART_RESULT5**	32 bit register holds result 5 when a smart input module is used.
339	S_32	**SMART_RESULT6**	32 bit register holds result 6 when a smart input module is used.
341	S_32	**SMART_RESULT7**	32 bit register holds result 7 when a smart input module is used.
349	S_32	**RECEIVE_RESULT1**	32 bit register holds the 1st numeric value received in a string via serial port 1.
351	S_32	**RECEIVE_RESULT2**	32 bit register holds the 1st numeric value received in a string via serial port 2.
353	S_32	**RECEIVE_RESULT3**	32 bit register holds the 1st numeric value received in a string via serial port 3.
357	S_32	**OFFSET_RESULT**	32 bit register holds the calibration offset for the result channel.
359	S_32	**OFFSET_CH1**	32 bit register holds the calibration offset for channel 1.
361	S_32	**OFFSET_CH2**	32 bit register holds the calibration offset for channel 2.
363	S_32	**OFFSET_CH3**	32 bit register holds the calibration offset for channel 3.
365	S_32	**OFFSET_CH4**	32 bit register holds the calibration offset for channel 4.
367	S_32	**OFFSET_CH5**	32 bit register holds the calibration offset for channel 5.
369	S_32	**OFFSET_CH6**	32 bit register holds the calibration offset for channel 6.
371	S_32	**OFFSET_CH7**	32 bit register holds the calibration offset for channel 7.
381	S_32	**D2A_AOP1_ZERO**	32 bit register holds the zero scale value for analogue O/P 1.
383	S_32	**D2A_AOP2_ZERO**	32 bit register holds the zero scale value for analogue O/P 2.
385	S_32	**D2A_AOP3_ZERO**	32 bit register holds the zero scale value for analogue O/P 3.
387	S_32	**D2A_AOP4_ZERO**	32 bit register holds the zero scale value for analogue O/P 4.
389	S_32	**D2A_AOP5_ZERO**	32 bit register holds the zero scale value for analogue O/P 5.

Reg.	Type	Register Name	Register Description
391	S_32	**D2A_AOP6_ZERO**	32 bit register holds the zero scale value for analogue O/P 6.
393	S_32	**D2A_AOP7_ZERO**	32 bit register holds the zero scale value for analogue O/P 7.
395	S_32	**D2A_AOP8_ZERO**	32 bit register holds the zero scale value for analogue O/P 8.
405	S_32	**D2A_AOP1_FULL_SCALE**	32 bit register holds the full scale value for analogue O/P 1.
407	S_32	**D2A_AOP2_FULL_SCALE**	32 bit register holds the full scale value for analogue O/P 2.
409	S_32	**D2A_AOP3_FULL_SCALE**	32 bit register holds the full scale value for analogue O/P 3.
411	S_32	**D2A_AOP4_FULL_SCALE**	32 bit register holds the full scale value for analogue O/P 4.
413	S_32	**D2A_AOP5_FULL_SCALE**	32 bit register holds the full scale value for analogue O/P 5.
415	S_32	**D2A_AOP6_FULL_SCALE**	32 bit register holds the full scale value for analogue O/P 6.
417	S_32	**D2A_AOP7_FULL_SCALE**	32 bit register holds the full scale value for analogue O/P 7.
419	S_32	**D2A_AOP8_FULL_SCALE**	32 bit register holds the full scale value for analogue O/P 8.
429	S_32	**SP1_RESET_VALUE**	32 bit register holds the reset value used with setpoint 1 trigger functions.
429	S_32	**PID1_SPAN**	32 bit register sets the span value for PID1 from 0 to 99999.
431	S_32	**SP2_RESET_VALUE**	32 bit register holds the reset value used with setpoint 2 trigger functions.
431	S_32	**PID2_SPAN**	32 bit register sets the span value for PID2 from 0 to 99999.
433	S_32	**SP3_RESET_VALUE**	32 bit register holds the reset value used with setpoint 3 trigger functions.
433	S_32	**PID3_SPAN**	32 bit register sets the span value for PID3 from 0 to 99999.
435	S_32	**SP4_RESET_VALUE**	32 bit register holds the reset value used with setpoint 4 trigger functions.
435	S_32	**PID4_SPAN**	32 bit register sets the span value for PID4 from 0 to 99999.
437	S_32	**SP5_RESET_VALUE**	32 bit register holds the reset value used with setpoint 5 trigger functions.
437	S_32	**PID5_SPAN**	32 bit register sets the span value for PID5 from 0 to 99999.
439	S_32	**SP6_RESET_VALUE**	32 bit register holds the reset value used with setpoint 6 trigger functions.
439	S_32	**PID6_SPAN**	32 bit register sets the span value for PID6 from 0 to 99999.
461	S_32	**SPAN**	32 bit register. Span value for single/dual point calibration mode.
463	S_32	**ZERO**	32 bit register. Zero value for single/dual point calibration mode.
465 467	S_32 S_32	**SMART_RESET_OFFSET1** **SMART_RESET_OFFSET2**	Registers 465 & 467 are reset offset registers which are used with certain types of smart input modules. A write to register 465 or 467 will cause the smart input module to reset it's result register 1 or result register 2 respectively. If the data value written to these registers is zero, then the smart input module will write a zero into the appropriate result register. If the data value written to these registers is other than zero, then the smart input module will treat this as an offset and subtract the data value from the appropriate result register. A read of these registers will read the last offset value which was written to input module. NOTE: These registers are only for use with a smart input module connected to the meter and then only with selected types of smart input module.
469	S_32	**INC_DEC_DISPLAY**	32 bit register. Permanent memory storage for display value in on demand manual loader mode.
471	S_32	**MANUAL_LOADER_DISPLAY**	32 bit register. Permanent memory storage for display value in direct display manual loader mode.
473	S_32	**BAR_LOW**	32 bit register holds the bar graph low end value (for bar graph meters only).
475	S_32	**BAR_HIGH**	32 bit register holds the bar graph high end value (for bar graph meters only).
479	S_32	**VARIABLE_A_INT**	32 register for variable A, accessed in fixed point format. Registers 479 & 1121 both address the same physical 32 bit register in memory (Variable A), but differ in the way the register is interpreted. Accessing Variable A through register 1121 will assume the contents have been stored in a 32 bit single precision floating point format. Accessing variable A through register 479 will assume the contents have been stored in a 32 bit fixed point long format. This pair of registers is only intended for use with the macro.

Reg.	Type	Register Name	Register Description
487	U_32_R	**MAX_LOG_SAMPLES**	32 bit register. Indicates the maximum number data logging samples available. Register 487 is a 32 bit read only register, which reports the maximum number of log samples available. The maximum number of log samples is defined by the amount of memory fitted, how many registers are being logged and the size of each register to be logged.
489	U_32	**LOG_WRITE_POINTER**	Register 489 is a 32-bit register that points to the most recent log sample written by the meter. It counts up from 0 each time a new sample is logged, with the maximum number of samples being limited by the size of non-volatile memory installed in the controller and also the number/size of registers to be logged. Before a new sample is written, the controller first checks to make sure that it is not overwriting a sample that has not been read. It does this by comparing the write pointer with the read pointer. If they are the same and the Linear logging mode has been selected, data logging is halted until a read is actioned. If this occurs, any new samples will be lost. If the Cyclic mode has been selected, the oldest sample will be overwritten with new data and the old sample will be lost. When the sample number reaches the maximum count it wraps around to zero. Register 489 can read or written to. Make sure that any values written to this pointer are within the allowable range for the size of the installed memory.
491	U_32	**LOG_READ_POINTER**	Register 491 is a 32-bit register that points to the most recent log sample read from the controller. It counts up from 0 each time log data is read from the controller, with the maximum number of samples being limited by the size of non-volatile memory installed in the controller and also the number/size of registers to be logged. When it reaches the maximum count it wraps around to zero. When it reaches the write pointer the log buffer is empty and no more data can be read out of the log. Register 491 can read or written to. Make sure that any values written to this pointer are within the allowable range for the size of the installed memory.
493 to 523	S_32_R	**LOG_SAMPLE_REG1** **to** **LOG_SAMPLE_REG16**	Read only registers. Registers 493 to 523 give numeric values for the 1st through to the 16th register logged in accordance with registers 4417 to 4432. The size and type will vary depending on the size and data type of the registers addressed by registers 4417 to 4432. These registers give an unformatted numeric value which can be read in ASCII or any other serial mode. If sample does not contain the data that is requested, the meter will respond by sending a null character in ASCII mode or a data error in Modbus mode.
1025 to 1055	F_32	**FLOAT_VARIABLE1** **to** **FLOAT_VARIABLE16**	Non volatile 32 bit floating point registers for macro for variable space.
1057	F_32	**PID1_ERROR_SUM**	32 bit floating point registers for PID. Registers 1057 – 1079 are 32 bit floating point registers used by the PID control algorithms. Registers 1057 – 1067 show the Error Sum term for PID outputs 1 – 6. Registers 1069 – 1079 show the Integral term for PID outputs 1 – 6.
1059	F_32	**PID2_ERROR_SUM**	
1061	F_32	**PID3_ERROR_SUM**	
1063	F_32	**PID4_ERROR_SUM**	
1065	F_32	**PID5_ERROR_SUM**	
1067	F_32	**PID6_ERROR_SUM**	
1069	F_32	**PID1_INTEGRAL_TERM**	
1071	F_32	**PID2_INTEGRAL_TERM**	
1073	F_32	**PID3_INTEGRAL_TERM**	
1075	F_32	**PID4_INTEGRAL_TERM**	
1077	F_32	**PID5_INTEGRAL_TERM**	
1079	F_32	**PID6_INTEGRAL_TERM**	
1097	F_32	**SCALE_FACTOR_RESULT**	32 bit floating point register holds the calibration scale factor for the result channel.
1099	F_32	**SCALE_FACTOR_CH1**	32 bit floating point register holds the calibration scale factor for channel 1.
1101	F_32	**SCALE_FACTOR_CH2**	32 bit floating point register holds the calibration scale factor for channel 2.
1103	F_32	**SCALE_FACTOR_CH3**	32 bit floating point register holds the calibration scale factor for channel 3.
1105	F_32	**SCALE_FACTOR_CH4**	32 bit floating point register holds the calibration scale factor for channel 4.
1107	F_32	**SCALE_FACTOR_CH5**	32 bit floating point register holds the calibration scale factor for channel 5.
1109	F_32	**SCALE_FACTOR_CH6**	32 bit floating point register holds the calibration scale factor for channel 6.
1111	F_32	**SCALE_FACTOR_CH7**	32 bit floating point register holds the calibration scale factor for channel 7.

Reg.	Type	Register Name	Register Description
1121	F_32	**VARIABLE_A_FP**	32 register for variable A, accessed in floating point format. Registers 479 & 1121 both address the same physical 32 bit register in memory (Variable A), but differ in the way the register is interpreted. Accessing Variable A through register 1121 will assume the contents have been stored in a 32 bit single precision floating point format. Accessing variable A through register 479 will assume the contents have been stored in a 32 bit fixed point long format. This pair of registers is only intended for use with the macro.
1123	F_32	**SMART_CAL1**	Registers 1123 to 1129 are 32 bit floating point registers, used to store calibration values for smart input modules. Reading or writing these registers will directly access the data in the smart input module itself. A write will write to the smart input module and then backup the data in EEPROM so that it can be sent to the smart input module at power up. The actual function of each register will vary depending on which smart input module is being used. Some smart input modules do not use these registers and any attempt to access them will produce a null response. If there are no smart input modules operating, these registers cannot be read. A write to these registers will always update the EEPROM, regardless of whether an appropriate smart input module is operational at the time.
1125	F_32	**SMART_CAL2**	
1127	F_32	**SMART_CAL3**	
1129	F_32	**SMART_CAL4**	
2049	S_24	**TABLE1_INPUT1**	24 bit register. Input points 1 to 32, 32 point linearisation table 1 range -8388607 - +8388607.
to		**to**	
2111	S_24	**TABLE1_INPUT32**	
2113	S_24	**TABLE1_OUTPUT1**	24 bit registers. Output points 1 to 32, 32 point linearisation table 1 range -8388607 - +8388607.
to		**to**	
2175	S_24	**TABLE1_OUTPUT32**	
2177	S_24	**TABLE2_INPUT1**	24 bit registers. Input points 1 to 32, 32 point linearisation table 2 range -8388607 - +8388607.
to		**to**	
2239	S_24	**TABLE2_INPUT32**	
2241	S_24	**TABLE2_OUTPUT1**	24 bit registers. Output points 1 to 32, 32 point linearisation table 2 range -8388607 - +8388607.
to		**to**	
2303	S_24	**TABLE2_OUPTPUT32**	
2305	S_24	**TABLE3_INPUT1**	24 bit registers. Input points 1 to 32, 32 point linearisation table 3 range -8388607 - +8388607.
to		**to**	
2367	S_24	**TABLE3_INPUT32**	
2369	S_24	**TABLE3_OUTPUT1**	24 bit registers. Output points 1 to 32, 32 point linearisation table 3 range -8388607 - +8388607.
to		**to**	
2431	S_24	**TABLE3_OUTPUT32**	
2433	S_24	**TABLE4_INPUT1**	24 bit registers. Input points 1 to 32, 32 point linearisation table 4 range -8388607 - +8388607.
to		**to**	
2495	S_24	**TABLE4_INPUT32**	
2497	S_24	**TABLE4_OUTPUT1**	24 bit registers. Output points 1 to 32, 32 point linearisation table 4 range -8388607 - +8388607.
to		**to**	
2559	S_24	**TABLE4_OUTPUT32**	
4097	U_16_R	**SETPOINT_STATUS_FLAGS**	8 bit read only register shows the status of the setpoints.
4097	B_0_R	**SP1_STATUS**	read only flag shows the status of setpoint 1 in normal & remote mode.
4097	B_1_R	**SP2_STATUS**	read only flag shows the status of setpoint 2 in normal & remote mode.
4097	B_2_R	**SP3_STATUS**	read only flag shows the status of setpoint 3 in normal & remote mode.
4097	B_3_R	**SP4_STATUS**	read only flag shows the status of setpoint 4 in normal & remote mode.
4097	B_4_R	**SP5_STATUS**	read only flag shows the status of setpoint 5 in normal & remote mode.
4097	B_5_R	**SP6_STATUS**	read only flag shows the status of setpoint 1 in normal & remote mode.

Reg.	Type	Register Name	Register Description
4098	U_16_R	**TRIGGER_STATUS**	8 bit read only register contains setpoint trigger status flags. Register 4098 is a single 16 bit read only register which contains 6 flags showing the trigger status for each of the 6 setpoint trigger functions. Each flag is set if the trigger condition selected for that setpoint (i.e. make, break, both, level) is satisfied, and cleared if the trigger condition is false. The function of each bit is shown below. Setpoint Trigger Flags: Bit 0 = Set-point 1 trigger flag (0 = trigger in-active, 1 = trigger activated) Bit 1 = Set-point 2 trigger flag (0 = trigger in-active, 1 = trigger activated) Bit 2 = Set-point 3 trigger flag (0 = trigger in-active, 1 = trigger activated) Bit 3 = Set-point 4 trigger flag (0 = trigger in-active, 1 = trigger activated) Bit 4 = Set-point 5 trigger flag (0 = trigger in-active, 1 = trigger activated) Bit 5 = Set-point 6 trigger flag (0 = trigger in-active, 1 = trigger activated) Bit 6 –15 = Reserved for future development.
4098	B_0_R	**TRIGGER1**	
4098	B_1_R	**TRIGGER2**	
4098	B_2_R	**TRIGGER3**	
4098	B_3_R	**TRIGGER4**	
4098	B_4_R	**TRIGGER5**	
4098	B_5_R	**TRIGGER6**	
4099	U_16	**RELAY_STATUS**	8 bit register contains flags showing the instantaneous status of each relay (this may be different to the setpoint status). This 16 bit register is a read only register which shows the current status of the relays after the set-point processing has been done. The difference between this register and register 249 (alarm status) is that the alarm status register shows the current status of the set-points as opposed to the relays. For example a set-point may have been activated but the relay may not yet be turned on because of a 10 second delay on make. In this case, reading the alarm status register (#249) would show the set-point as active, but reading 4099 would show that the relay had not yet turned on. An explanation of the bit functions for these registers is shown below: Relay Output Flags: Bit 0 = Relay 1 (0 = off, 1 = on) Bit 1 = Relay 2 (0 = off, 1 = on) Bit 2 = Relay 3 (0 = off, 1 = on) Bit 3 = Relay 4 (0 = off, 1 = on) Bit 4 = Relay 5 (0 = off, 1 = on) Bit 5 = Relay 6 (0 = off, 1 = on) Bit 6 – 15 = Don't care
4099	B_0	**RELAY1**	
4099	B_1	**RELAY2**	
4099	B_2	**RELAY3**	
4099	B_3	**RELAY4**	
4099	B_4	**RELAY5**	
4099	B_5	**RELAY6**	
4100	U_16	**SETPOINT_LATCH_FLAGS**	8 bit register holds the latching status for setpoints. This is a 16 bit register which controls the latching feature for the set-points. If latching is selected for a set-point and the appropriate bit of register 4100 is set, then the set-point will be latched (either above or below the setpoint value as selected). The set-point can be unlatched by clearing the appropriate bit to zero. This holds true regardless of whether the latching is in the on state or the off state. Unlatching the meter from the front panel buttons or from the lock or hold pin does exactly the same thing. Set-point Latch Mask: Bit 0 = Set-point 1 (0 = set-point unlatched, 1 = set-point latched) Bit 1 = Set-point 2 (0 = set-point unlatched, 1 = set-point latched) Bit 2 = Set-point 3 (0 = set-point unlatched, 1 = set-point latched) Bit 3 = Set-point 4 (0 = set-point unlatched, 1 = set-point latched) Bit 4 = Set-point 5 (0 = set-point unlatched, 1 = set-point latched) Bit 5 = Set-point 6 (0 = set-point unlatched, 1 = set-point latched) Bit 6 – 15 = Don't care
4100	B_0	**SP1_LATCH**	
4100	B_1	**SP2_LATCH**	
4100	B_2	**SP3_LATCH**	
4100	B_3	**SP4_LATCH**	
4100	B_4	**SP5_LATCH**	
4100	B_5	**SP6_LATCH**	

Reg.	Type	Register Name	Register Description
4101	U_16	**RELAY_DE_ENERGISE_FLAGS**	8 bit register holds the de-energised status for relays.
4101	B_0	**RLY1_DE_ENERGISE**	This is a 16 bit register which controls the de-energising feature for the relays. Register 4101 functions as follows. If the de-energise feature is selected for a set-point, then whenever that set-point is in it's in-active state, the appropriate bit of register 4101 will be set by the software. When the set-point becomes active, register 4101 is used as a mask and the appropriate bit is ANDed with the relay output state. If the result is a "1", then the relay is energised. If the appropriate bit of register 4101 is cleared to a "0" (while the set-point is active), the relay will be de-energised. As soon as the set-point returns to it's in-active state the appropriate bit of register 4101 will be set to a "1" again. If a relay is de-energised via the front panel buttons, register 4101 is modified in the same way. The function of each bit is shown below Relay De-energise Mask: Bit 0 = Relay 1 (0 = relay de-energise activated, 1 = relay de-energise in-active) Bit 1 = Relay 2 (0 = relay de-energise activated, 1 = relay de-energise in-active) Bit 2 = Relay 3 (0 = relay de-energise activated, 1 = relay de-energise in-active) Bit 3 = Relay 4 (0 = relay de-energise activated, 1 = relay de-energise in-active) Bit 4 = Relay 5 (0 = relay de-energise activated, 1 = relay de-energise in-active) Bit 5 = Relay 6 (0 = relay de-energise activated, 1 = relay de-energise in-active) Bit 6 – 15 = Don't care
4101	B_1	**RLY2_DE_ENERGISE**	
4101	B_2	**RLY3_DE_ENERGISE**	
4101	B_3	**RLY4_DE_ENERGISE**	
4101	B_4	**RLY5_DE_ENERGISE**	
4101	B_5	**RLY6_DE_ENERGISE**	
4102	U_16	**SP_POWERON_INHIBIT_FLAGS**	8 bit register contains flags to show which setpoints have been in-active since power-on. Register 4102 is an 16 bit register which contains flags for the reset delay function of the set-points. The function of each bit is shown below; Set-point Power-on Inhibit Bit 0 = Power-on Inhibit SP1 (0=power-on inhibit active, 1=power-on inhibit in-active) Bit 1 = Power-on Inhibit SP2 Bit 2 = Power-on Inhibit SP3 Bit 3 = Power-on Inhibit SP4 Bit 4 = Power-on Inhibit SP5 Bit 5 = Power-on Inhibit SP6 Bit 6 – 15 = Don't care The reset delay feature functions as follows. After power on, the register 4102 is initially cleared to zero. As each set-point is examined, the appropriate bit of register 4102 is set only if the set-point is in-active. A set-point which has the reset delay feature selected, can only activate the relay if the appropriate power-on inhibit bit is set. This means that the after reset, the setpoint must first enter the in-active state before it can be activated. This register can be read or written to.
4102	B_0	**POWERON_INHIBIT_SP1**	
4102	B_1	**POWERON_INHIBIT_SP2**	
4102	B_2	**POWERON_INHIBIT_SP3**	
4102	B_3	**POWERON_INHIBIT_SP4**	
4102	B_4	**POWERON_INHIBIT_SP5**	
4102	B_5	**POWERON_INHIBIT_SP6**	
4108	U_16	**DIGITAL_IO**	16 bit register contains flags for the digital inputs at the rear of the meter. Register 4108 is a 16 bit register which shows the current status of the I/O pins on the back panel of the meter. The bit function for each bit is shown below. Bit 0 = Hold pin (1 = active state), 0 = inactive state) Bit 1 = Lock pin Bit 2 = Capture pin Bit 3 = D1 read only pin Bit 4 = D2 read only pin Bit 5 = D3 read only pin Bit 6 = COUNT2_INPUT read only pin Bit 7 = COUNT2_DIRECTION read only pin Bit 8-15 = Reserved for future expansion When register 4108 is read, the status of all of the pins is sampled directly from the input pin. If register 4108 is written to, the values specified are also written directly to the corresponding pins. NOTE: Because of the port structure of the 8051, a 0 written to a digital pin will configure it as an input with a weak pull-up. A 1 written to a pin will configure the pin as an output only, which is driven low. Care must be taken when writing to register 4108 to ensure that a "0" is written to each bit that is required to be an input. Only Bits 0 – 2 are read/write registers. All other bits are read only pins. Also note that state of each bit in reg #4108 is not the same as the actual voltage on the pin at the rear of the meter. This is because the inputs are high in their inactive state and are pulled low when active.

Reg.	Type	Register Name	Register Description
4108	B_0_R	**HOLD_PIN**	flag shows the current status of the hold pin at the rear of the meter (On=hold pin connected to common).
4108	B_1_R	**LOCK_PIN**	flag shows the current status of the lock pin at the rear of the meter (On=lock pin connected to common).
4108	B_2_R	**CAPTURE_PIN**	flag shows the current status of the capture pin at the rear of the meter (On=capture pin connected to common).
4108	B_3_R	**D1**	read only flag shows the current status of the D1 pin at the rear of the meter (On=D1 pin connected to common).
4108	B_4_R	**D2**	read only flag shows the current status of the D2 pin at the rear of the meter (On=D2 pin connected to common).
4108	B_5_R	**D3**	read only flag shows the current status of the D3 pin at the rear of the meter (On=D3 pin connected to common).
4108	B_6_R	**COUNT2_INPUT**	read only flag shows the current status of the Ch2 count input pin on selected input modules.
4108	B_7_R	**COUNT2_DIRECTION**	read only flag shows the current status of the Ch2 count direction pin on selected input modules.
4108	B_8_R	**MUX0**	read only flag shows status of MUX0 input pin on selected input modules (single Ch mode only).
4108	B_9_R	**MUX1**	read only flag shows status of MUX1 input pin on selected input modules (single Ch mode only).
4109	U_16	**STATE**	16 bit register. Used to control the state number of the macro (cleared to 0 when returning to operational display).
4110	U_16	**ANNUNCIATORS**	16 bit register contains status & control flags for the annunciator LED's.
4110	B_0	**LED6**	Register 4110 is a 16 bit register which allows the user to take remote control of the LED annunciators on the front panel. The bit functions are shown below.
4110	B_1	**LED5**	
4110	B_2	**LED4**	
4110	B_3	**LED3**	Remote LED
4110	B_4	**LED2**	Bit 0 = SP LED 6 (0 = off, 1 = on)
4110	B_5	**LED1**	Bit 1 = SP LED 5 (0 = off, 1 = on)
			Bit 2 = SP LED 4 (0 = off, 1 = on)
4110	B_8	**REMOTE_LED6**	Bit 3 = SP LED 3 (0 = off, 1 = on)
4110	B_9	**REMOTE_LED5**	Bit 4 = SP LED 2 (0 = off, 1 = on)
4110	B_10	**REMOTE_LED4**	Bit 5 = SP LED 1 (0 = off, 1 = on)
4110	B_11	**REMOTE_LED3**	Bit 6 = Don't care
4110	B_12	**REMOTE_LED2**	Bit 7 = Don't care
4110	B_13	**REMOTE_LED1**	Bit 8 = Remote LED mode for SP LED 6 (0 = normal mode, 1 = remote mode)
			Bit 9 = Remote LED mode for SP LED 5 (0 = normal mode, 1 = remote mode)
			Bit 10 = Remote LED mode for SP LED 4 (0 = normal mode, 1 = remote mode)
			Bit 11 = Remote LED mode for SP LED 3 (0 = normal mode, 1 = remote mode)
			Bit 12 = Remote LED mode for SP LED 2 (0 = normal mode, 1 = remote mode)
			Bit 13 = Remote LED mode for SP LED 1 (0 = normal mode, 1 = remote mode)
			Bit 14 - 15 = Reserved for future use (these bits should be written as 0)
			A read of this register will always show the current LED status of all LED's whether in normal or remote mode.
4111	U_16	**SHORT_TIMER1**	16 bit timer counts up every 0.1 seconds (109 minutes). It can be set/reset by macro.
4112	U_16	**SHORT_TIMER2**	16 bit timer counts up every 0.1 seconds (109 minutes). It can be set/reset by macro.
4113	U_16	**SHORT_TIMER3**	16 bit timer counts up every 0.1 seconds (109 minutes). It can be set/reset by macro.
4114	U_16	**SHORT_TIMER4**	16 bit timer counts up every 0.1 seconds (109 minutes). It can be set/reset by macro.
4117	U_16	**CH1_PRESCALER**	16 register sets the prescale value in channel 1 counter mode.
4118	U_16	**CH2_PRESCALER**	16 register sets the prescale value in channel 2 counter mode.
4121	S_16	**CH1_PRESCALER_COUNT**	16 bit register give the current prescaler count value for channel 1 in counter mode.
4122	S_16	**CH2_PRESCALER_COUNT**	16 bit register give the current prescaler count value for channel 2 in counter mode.
4125	U_16	**PID1_OUTPUT**	16 bit register holds a PID output value from 0-1000 when SP1 is set to PID mode.
4126	U_16	**PID2_OUTPUT**	16 bit register holds a PID output value from 0-1000 when SP2 is set to PID mode.
4127	U_16	**PID3_OUTPUT**	16 bit register holds a PID output value from 0-1000 when SP3 is set to PID mode.
4128	U_16	**PID4_OUTPUT**	16 bit register holds a PID output value from 0-1000 when SP4 is set to PID mode.
4129	U_16	**PID5_OUTPUT**	16 bit register holds a PID output value from 0-1000 when SP5 is set to PID mode.
4130	U_16	**PID6_OUTPUT**	16 bit register holds a PID output value from 0-1000 when SP6 is set to PID mode.
4133	S_16	**AUTO_ZERO_RESULT**	16 bit register contains the auto zero correction offset for the result.

Reg.	Type	Register Name	Register Description
4134	S_16	**AUTO_ZERO_CH1**	16 bit register. auto zero correction offset for channel 1.
4135	S_16	**AUTO_ZERO_CH2**	16 bit register. auto zero correction offset for channel 2.
4136	S_16	**AUTO_ZERO_CH3**	16 bit register. auto zero correction offset for channel 3.
4137	S_16	**AUTO_ZERO_CH4**	16 bit register. auto zero correction offset for channel 4.
4138	S_16	**AUTO_ZERO_CH5**	16 bit register. auto zero correction offset for channel 5.
4139	S_16	**AUTO_ZERO_CH6**	16 bit register. auto zero correction offset for channel 6.
4140	S_16	**AUTO_ZERO_CH7**	16 bit register. auto zero correction offset for channel 7.
4145	S_16	**ANALOG_OUTPUT1**	16 bit register holds the scaled output data for analogue O/P 1.
4146	S_16	**ANALOG_OUTPUT2**	16 bit register holds the scaled output data for analogue O/P 2.
4147	S_16	**ANALOG_OUTPUT3**	16 bit register holds the scaled output data for analogue O/P 3.
4148	S_16	**ANALOG_OUTPUT4**	16 bit register holds the scaled output data for analogue O/P 4.
4149	S_16	**ANALOG_OUTPUT5**	16 bit register holds the scaled output data for analogue O/P 5.
4150	S_16	**ANALOG_OUTPUT6**	16 bit register holds the scaled output data for analogue O/P 6.
4151	S_16	**ANALOG_OUTPUT7**	16 bit register holds the scaled output data for analogue O/P 7.
4152	S_16	**ANALOG_OUTPUT8**	16 bit register holds the scaled output data for analogue O/P 8.
4157 to 4164	S_16	**D2A_AOP1_CAL_LOW to D2A_AOP8_CAL_LOW**	Registers 4157 to 4164 are 16 bit registers holding the low end calibration values for analog outputs 1 to 8.
4169 to 4176	S_16	**D2A_AOP1_CAL_HIGH to D2A_AOP8_CAL_HIGH**	Registers 4169 to 4176 are 16 bit register holding the high end calibration values for analog outputs 1 to 8.
4181	U_16	**SP1_HYST**	16 bit register holds the hysteresis/passband value for setpoint 1.
4181	U_16	**PID1_PROPORTIONAL_BAND**	16 bit register sets the proportional band for PID1 from 0% to 999.9%(9999).
4182	U_16	**SP2_HYST**	16 bit register holds the hysteresis/passband value for setpoint 2.
4182	U_16	**PID2_PROPORTIONAL_BAND**	16 bit register sets the proportional band for PID2 from 0% to 999.9%(9999).
4183	U_16	**SP3_HYST**	16 bit register holds the hysteresis/passband value for setpoint 3.
4183	U_16	**PID3_PROPORTIONAL_BAND**	16 bit register sets the proportional band for PID3 from 0% to 999.9%(9999).
4184	U_16	**SP4_HYST**	16 bit register holds the hysteresis/passband value for setpoint 4.
4184	U_16	**PID4_PROPORTIONAL_BAND**	16 bit register sets the proportional band for PID4 from 0% to 999.9%(9999).
4185	U_16	**SP5_HYST**	16 bit register holds the hysteresis/passband value for setpoint 5.
4185	U_16	**PID5_PROPORTIONAL_BAND**	16 bit register sets the proportional band for PID5 from 0% to 999.9%(9999).
4186	U_16	**SP6_HYST**	16 bit register holds the hysteresis/passband value for setpoint 6.
4186	U_16	**PID6_PROPORTIONAL_BAND**	16 bit register sets the proportional band for PID6 from 0% to 999.9%(9999).
4197	U_16	**SP1_MAKE_DELAY**	16 bit register holds the make delay time for setpoint 1(0.1s or 0.001s resolution).
4197	U_16	**PID1_INTEGRAL_VALUE**	16 bit register sets the integral value for PID1 from 0 to 6553.5(65535).
4198	U_16	**SP2_MAKE_DELAY**	16 bit register holds the make delay time for setpoint 2(0.1s or 0.001s resolution).
4198	U_16	**PID2_INTEGRAL_VALUE**	16 bit register sets the integral value for PID2 from 0 to 6553.5(65535).
4199	U_16	**SP3_MAKE_DELAY**	16 bit register holds the make delay time for setpoint 3(0.1s resolution).
4199	U_16	**PID3_INTEGRAL_VALUE**	16 bit register sets the integral value for PID3 from 0 to 6553.5(65535).
4200	U_16	**SP4_MAKE_DELAY**	16 bit register holds the make delay time for setpoint 4(0.1s resolution).
4200	U_16	**PID4_INTEGRAL_VALUE**	16 bit register sets the integral value for PID4 from 0 to 6553.5(65535).
4201	U_16	**SP5_MAKE_DELAY**	16 bit register holds the make delay time for setpoint 5(0.1s resolution).
4201	U_16	**PID5_INTEGRAL_VALUE**	16 bit register sets the integral value for PID5 from 0 to 6553.5(65535).
4202	U_16	**SP6_MAKE_DELAY**	16 bit register holds the make delay time for setpoint 6(0.1s resolution).
4202	U_16	**PID6_INTEGRAL_VALUE**	16 bit register sets the integral value for PID6 from 0 to 6553.5(65535).
4213	U_16	**SP1_BREAK_DELAY**	16 bit register holds the break delay time for setpoint 1(0.1s or 0.001s resolution).
4213	U_16	**PID1_DERIVATIVE_VALUE**	16 bit register sets the derivative value for PID1 from 0 to 999.9(9999).
4214	U_16	**SP2_BREAK_DELAY**	16 bit register holds the break delay time for setpoint 2(0.1s or 0.001s resolution).
4214	U_16	**PID2_DERIVATIVE_VALUE**	16 bit register sets the derivative value for PID2 from 0 to 999.9(9999).
4215	U_16	**SP3_BREAK_DELAY**	16 bit register holds the break delay time for setpoint 3(0.1s resolution).

Reg.	Type	Register Name	Register Description
4215	U_16	**PID3_DERIVATIVE_VALUE**	16 bit register sets the derivative value for PID3 from 0 to 999.9(9999).
4216	U_16	**SP4_BREAK_DELAY**	16 bit register holds the break delay time for setpoint 4(0.1s resolution).
4216	U_16	**PID4_DERIVATIVE_VALUE**	16 bit register sets the derivative value for PID4 from 0 to 999.9(9999).
4217	U_16	**SP5_BREAK_DELAY**	16 bit register holds the break delay time for setpoint 5(0.1s resolution).
4217	U_16	**PID5_DERIVATIVE_VALUE**	16 bit register sets the derivative value for PID5 from 0 to 999.9(9999).
4218	U_16	**SP6_BREAK_DELAY**	16 bit register holds the break delay time for setpoint 6(0.1s resolution).
4218	U_16	**PID6_DERIVATIVE_VALUE**	16 bit register sets the derivative value for PID6 from 0 to 999.9(9999).
4229 to 4234	U_16	**SP1_RESET_DESTINATION to SP6_RESET_DESTINATION**	Registers 4229 – 4234 are 16 bit registers which specify the destination register that will be modified by each set-point reset function.
4245	U_16	**PID1_ANTI_RESET_WINDUP**	16 bit register. PID anti reset windup for setpoint 1. % of PB (range 0.1% - 100.0%).
4246	U_16	**PID2_ANTI_RESET_WINDUP**	16 bit register. PID anti reset windup for setpoint 2. % of PB (range 0.1% - 100.0%).
4247	U_16	**PID3_ANTI_RESET_WINDUP**	16 bit register. PID anti reset windup for setpoint 3. % of PB (range 0.1% - 100.0%).
4248	U_16	**PID4_ANTI_RESET_WINDUP**	16 bit register. PID anti reset windup for setpoint 4. % of PB (range 0.1% - 100.0%).
4249	U_16	**PID5_ANTI_RESET_WINDUP**	16 bit register. PID anti reset windup for setpoint 5. % of PB (range 0.1% - 100.0%).
4250	U_16	**PID6_ANTI_RESET_WINDUP**	16 bit register. PID anti reset windup for setpoint 6. % of PB (range 0.1% - 100.0%).
4261	U_16	**PID1_CYCLE_TIME**	16 bit register. PID cycle time for setpoint 1 (range 0-1000.0 seconds).
4262	U_16	**PID2_CYCLE_TIME**	16 bit register. PID cycle time for setpoint 2 (range 0-1000.0 seconds).
4263	U_16	**PID3_CYCLE_TIME**	16 bit register. PID cycle time for setpoint 3 (range 0-1000.0 seconds).
4264	U_16	**PID4_CYCLE_TIME**	16 bit register. PID cycle time for setpoint 4 (range 0-1000.0 seconds).
4265	U_16	**PID5_CYCLE_TIME**	16 bit register. PID cycle time for setpoint 5 (range 0-1000.0 seconds).
4266	U_16	**PID6_CYCLE_TIME**	16 bit register. PID cycle time for setpoint 6 (range 0-1000.0 seconds).
4277	U_16	**TABLE1_DATE**	16 bit register. Date (Year/Week) when linearisation table 1 was last modified(range 0000 - 9952).
4278	U_16	**TABLE2_DATE**	16 bit register. Date (Year/Week) when linearisation table 2 was last modified(range 0000 - 9952).
4279	U_16	**TABLE3_DATE**	16 bit register. Date (Year/Week) when linearisation table 3 was last modified(range 0000 - 9952).
4280	U_16	**TABLE4_DATE**	16 bit register. Date (Year/Week) when linearisation table 4 was last modified(range 0000 - 9952).
4285	U_16	**TABLE1_SERIAL_NO**	16 bit register. Serial number of linearisation table 1 (range 0-65535).
4286	U_16	**TABLE2_SERIAL_NO**	16 bit register. Serial number of linearisation table 2 (range 0-65535).
4287	U_16	**TABLE3_SERIAL_NO**	16 bit register. Serial number of linearisation table 3 (range 0-65535).
4288	U_16	**TABLE4_SERIAL_NO**	16 bit register. Serial number of linearisation table 4 (range 0-65535).
4293	U_16	**AVERAGING_WINDOW_RESULT**	16 bit register. Averaging window for result (range 0-65535 counts).
4294	U_16	**AVERAGING_WINDOW_CH1**	16 bit register. Averaging window for channel 1 (range 0-65535 counts).
4295	U_16	**AVERAGING_WINDOW_CH2**	16 bit register. Averaging window for channel 2 (range 0-65535 counts).
4296	U_16	**AVERAGING_WINDOW_CH3**	16 bit register. Averaging window for channel 3 (range 0-65535 counts).
4297	U_16	**AVERAGING_WINDOW_CH4**	16 bit register. Averaging window for channel 4 (range 0-65535 counts).
4298	U_16	**AVERAGING_WINDOW_CH5**	16 bit register. Averaging window for channel 5 (range 0-65535 counts).
4299	U_16	**AVERAGING_WINDOW_CH6**	16 bit register. Averaging window for channel 6 (range 0-65535 counts).
4300	U_16	**AVERAGING_WINDOW_CH7**	16 bit register. Averaging window for channel 7 (range 0-65535 counts).
4305	U_16	**INPUT_RATE1**	Registers 4305 to 4310 are 16 bit unsigned registers which hold the numeric value for the input rate used during the totalisator calibration procedure.
4306	U_16	**INPUT_RATE2**	
4307	U_16	**INPUT_RATE3**	
4308	U_16	**INPUT_RATE4**	
4309	U_16	**INPUT_RATE5**	
4310	U_16	**INPUT_RATE6**	
4315	S_16	**K_FACTOR1**	32 bit register. K factor for totalisator 1.
4316	S_16	**K_FACTOR2**	32 bit register. K factor for totalisator 2.
4317	S_16	**K_FACTOR3**	32 bit register. K factor for totalisator 3.
4318	S_16	**K_FACTOR4**	32 bit register. K factor for totalisator 4.

Reg.	Type	Register Name	Register Description
4319	S_16	**K_FACTOR5**	32 bit register. K factor for totalisator 5.
4320	S_16	**K_FACTOR6**	32 bit register. K factor for totalisator 6.
4325	S_16	**CUTOFF1**	16 bit register. Cutoff value for totalisator 1 (range -32768 to 32767).
4326	S_16	**CUTOFF2**	16 bit register. Cutoff value for totalisator 2 (range -32768 to 32767).
4327	S_16	**CUTOFF3**	16 bit register. Cutoff value for totalisator 3 (range -32768 to 32767).
4328	S_16	**CUTOFF4**	16 bit register. Cutoff value for totalisator 4 (range -32768 to 32767).
4329	S_16	**CUTOFF5**	16 bit register. Cutoff value for totalisator 5 (range -32768 to 32767).
4330	S_16	**CUTOFF6**	16 bit register. Cutoff value for totalisator 6 (range -32768 to 32767).
4335	U_16	**AZ_APERTURE_BAND_RESULT**	16 bit register. Auto zero aperture band for result (range 0-65535 counts).
4336	U_16	**AZ_APERTURE_BAND_CH1**	16 bit register. Auto zero aperture band for channel 1 (range 0-65535 counts).
4337	U_16	**AZ_APERTURE_BAND_CH2**	16 bit register. Auto zero aperture band for channel 2 (range 0-65535 counts).
4338	U_16	**AZ_APERTURE_BAND_CH3**	16 bit register. Auto zero aperture band for channel 3 (range 0-65535 counts).
4339	U_16	**AZ_APERTURE_BAND_CH4**	16 bit register. Auto zero aperture band for channel 4 (range 0-65535 counts).
4340	U_16	**AZ_APERTURE_BAND_CH5**	16 bit register. Auto zero aperture band for channel 5 (range 0-65535 counts).
4341	U_16	**AZ_APERTURE_BAND_CH6**	16 bit register. Auto zero aperture band for channel 6 (range 0-65535 counts).
4342	U_16	**AZ_APERTURE_BAND_CH7**	16 bit register. Auto zero aperture band for channel 7 (range 0-65535 counts).
4347	U_16	**BAR_COLOUR**	16 bit register sets the bar graph colour bands between setpoints (for bar graph meters only).
4371 4372 4373	U_16 U_16 U_16	**DATA_SOURCE_DISPLAY1** **DATA_SOURCE_DISPLAY2** **DATA_SOURCE_DISPLAY3**	Registers 4371 – 4373 are 16 bit registers which specify the data source for various displays. The number they contain is the ASCII/Modbus register number for the required data source. (Note: Only registers that hold integer values can be used as a data source for the display. Floating point and text registers can not be used.) Register 4372 & 4373 are reserved for with different models of meter were there are more than one display output. The function of registers 4372 & 4373 with different meter types is shown below; 6 x 2 Line LED Display Meter 4371 = Data source for 1st line of display 4372 = Data source for 2nd line of display 8 x 2 Line LCD Display Meter 4371 = Data source for 1st line of display 4372 = Data source for 2nd line of display Bar Graph Meter 4371 = Data source for 1st line of display 4372 = Data source for bar graph. 3 Display Meter 4371 = Data source for display 1. 4372 = Data source for display 2. 4373 = Data source for display 3.
4374 4375 4376	U_16 U_16 U_16	**DATA_SOURCE_PEAK_VALLEY1** **DATA_SOURCE_PEAK_VALLEY2** **DATA_SOURCE_PEAK_VALLEY3**	Registers 4374 – 4376 are 16 bit registers which specify the data source for the peak and valley displays. The number they contain is the ASCII/Modbus register number for the required data source. Note: Only registers that hold integer values can be used as a data source for the display. Floating point and text registers can not be used.
4379 4380 4381 4382 4383 4384 4385 4386	U_16 U_16 U_16 U_16 U_16 U_16 U_16 U_16	**DATA_SOURCE_ANALOG1** **DATA_SOURCE_ANALOG2** **DATA_SOURCE_ANALOG3** **DATA_SOURCE_ANALOG4** **DATA_SOURCE_ANALOG5** **DATA_SOURCE_ANALOG6** **DATA_SOURCE_ANALOG7** **DATA_SOURCE_ANALOG8**	Registers 4379 – 4386 are 16 bit registers which specify the data source for the analog output channels. The number they contain is the ASCII/Modbus register number for the required data source. Note: Only registers that hold integer values can be used as a data source for the display. Floating point and text registers can not be used.

Reg.	Type	Register Name	Register Description
4391 4392 4393 4394 4395 4396	U_16 U_16 U_16 U_16 U_16 U_16	**DATA_SOURCE_TOTAL1** **DATA_SOURCE_TOTAL2** **DATA_SOURCE_TOTAL3** **DATA_SOURCE_TOTAL4** **DATA_SOURCE_TOTAL5** **DATA_SOURCE_TOTAL6**	Registers 4391 – 4396 are 16 bit registers which specify the data source for the totalizer channels. The number they contain is the ASCII/Modbus register number for the required data source. Note: Only registers that hold integer values can be used as a data source for the display. Floating point and text registers can not be used.
4401 4402 4403 4404 4405 4406	U_16 U_16 U_16 U_16 U_16 U_16	**SP1_DATA_SOURCE** **SP2_DATA_SOURCE** **SP3_DATA_SOURCE** **SP4_DATA_SOURCE** **SP5_DATA_SOURCE** **SP6_DATA_SOURCE**	16 bit register holds the register number of the data source for setpoint 1. Registers 4401 – 4406 are 16 bit registers which specify the data source for the setpoints. The number they contain is the ASCII/Modbus register number for the required data source. Note: Only registers that hold integer values can be used as a data source for the display. Floating point and text registers can not be used.
4417 4418 4419 4420 4421 4422 4423 4424 4425 4426 4427 4428 4429 4430 4431 4432	U_16 U_16 U_16 U_16 U_16 U_16 U_16 U_16 U_16 U_16 U_16 U_16 U_16 U_16 U_16 U_16	**LOG_REG1** **LOG_REG2** **LOG_REG3** **LOG_REG4** **LOG_REG5** **LOG_REG6** **LOG_REG7** **LOG_REG8** **LOG_REG9** **LOG_REG10** **LOG_REG11** **LOG_REG12** **LOG_REG13** **LOG_REG14** **LOG_REG15** **LOG_REG16**	Registers 4417 - 4432 are used to specify which registers the data logger logs. Although registers 4417 and 4418 are 16 bit unsigned registers, their allowable range is only from 1 to 32767. Register 4417 specifies the first register to be logged, 4418 the second, 4419 the third and so on. Setting one of these registers to zero will disable that register from logging any data. Changing registers 4417 – 4432 will potentially change the maximum number of log samples available for the currently installed memory. The maximum number of log samples available will depend on how many registers are logged, the size of each register, and the memory size. Registers 4417 - 4432 can be read and written as normal registers. Most of the registers in the meter can be logged. This includes floating point and text registers. Text registers 16553, 16555 and 16543 should not be logged.
4433	U_16_R	**MACRO_SIZE**	This register is a 16 bit read only register which defines the amount of macro code space available in the meter. Reading this register will produce a number from 1 – 65535 which relates to the number of ASCII/Modbus registers allocated for macro code storage. This may change with model or version number.
4434	U_16	**CODE_BLANKING**	Register 4434 is a 16 bit register in EEPROM which controls the sequence of code setups that are displayed when the “Prog” and “Up” button are pressed. Each bit in the register controls a specific code display as shown below. If a specific bit is a “0” then the display of the associated function is disabled and that function will be skipped over. If a bit is a “1” the function will be displayed. Bit 0 = not used Bit 1 = Brightness Bit 2 = “Lock” display Bit 3 = Cal Bit 4 = Code 1 Bit 5 = Code 2 Bit 6 = Code 3 Bit 7 = Code 4 Bit 8 = Code 5 Bit 9 = Code 6 Bit 10 = Code 7 Bit 11 = Code 8 Bit 12 = Code 9 Bit 13 = Code 10 Bit 14 = not used Bit 15 = not used The default value will be 65535 (0xFFFF hex) which is all codes enabled.

Reg.	Type	Register Name	Register Description
4435	U_16	**SETPOINT_BLANKING**	Register 4435 is a 16 bit register in EEPROM which controls the sequence of code setups that are displayed when the “Prog” and “Down” button are pressed. Each bit in the register functions in the same manner as above for register 4434 but with the different control functions as shown below. Bit 0 = “Lock” display Bit 1 = Setpoint 1 Bit 2 = Setpoint 2 Bit 3 = Setpoint 3 Bit 4 = Setpoint 4 Bit 5 = Setpoint 5 Bit 6 = Setpoint 6 Bit 7 = Setpoint control 1 Bit 8 = Setpoint control 2 Bit 9 = Setpoint control 3 Bit 10 = Setpoint control 4 Bit 11 = Setpoint control 5 Bit 12 = Setpoint control 6 Bit 13 = not used Bit 14 = not used Bit 15 = not used The default value will be 8191 (0x1FFF hex) which is all codes enabled.
4436	U_16	**VIEW_MODE_BLANKING**	Register 4436 is a 16 bit register in EEPROM which controls the sequence of displays which can be viewed when the “Up” or “Down” buttons are pressed. Each bit in the register functions in the same manner as for register 4434 above but with the different control functions as shown below. Down Button: Bit 0 = Setpoint 2 Bit 1 = Setpoint 4 Bit 2 = Setpoint 6 Bit 3 = Valley Bit 4 = Total 2 Bit 5 = Channel 2 Bit 6 = Channel 4 Bit 7 = Enable view mode macro on Down button Up Button: Bit 8 = Setpoint 1 Bit 9 = Setpoint 3 Bit 10 = Setpoint 5 Bit 11 = Peak Bit 12 = Total 1 Bit 13 = Channel 1 Bit 14 = Channel 3 Bit 15 = Enable view mode macro on Up button The default value will be 32639 (0x7F7F hex) which is all codes enabled except the view macro.
4437	U_16_R	**EEPROM_MEMORY_SIZE**	8 bit register shows how much EEPROM memory is fitted to the meter (value in Kbytes). This is a 16 bit read only register which shows how much EEPROM memory is installed in the meter. The size of the EEPROM memory installed in the meter is tested by the meter when the memory is re-initialised and the result is stored in register 4437. The results can be interpreted as follows: Value — EEPROM Memory Size 0 — Error – the meter does not recognise a correct EEPROM memory device 128 — 1 x 24C128 EEPROM installed 256 — 1 x 24C256 EEPROM installed 512 — 1 x 24C512 EEPROM installed 1024 — 2 x 24C512 EEPROM installed 1536 — 3 x 24C512 EEPROM installed 2048 — 4 x 24C512 EEPROM installed Any value other than those shown above is not a valid EEPROM size and is an error.
4438	U_16_R	**HOURS_MINUTES**	16 bit time stamp from real time clock in Hrs:Min format.

Reg.	Type	Register Name	Register Description
4450	U_16	**DATA_SOURCE_RESULT**	16 bit register selecting the source register for the result channel (range 0-65535).
4455	U_16	**DATA_SOURCE_CH5**	16 bit register selecting the source register for the result channel (range 0-65535).
4456	U_16	**DATA_SOURCE_CH6**	16 bit register selecting the source register for the result channel (range 0-65535).
4457	U_16	**DATA_SOURCE_CH7**	16 bit register selecting the source register for the result channel (range 0-65535).
4462	U_16	**LOG_READ_COUNT**	16 bit register which sets the number of log samples to read using register 16555 (range 0-65535 counts). Register 4462 defines the maximum number of log samples that will be output when register 16555 is read. The factory default value for 4462 is 100 samples.
5121 to 6144	S_16 S_16	**USER_MEMORY_1** **to** **USER_MEMORY_1024**	16 bit non volatile memory for user defined data/tables (range -32768 to 32767) warning - overlaps 8bit user memory. Registers 5121 – 6144 are 16 bit signed registers that can be used for non volatile storage of user data or look up tables etc. The data is stored in an EEPROM chip so that data will be retained even after the power to the meter has been disconnected. These registers can be accessed either by the macro or via the serial port.
8193 8194 8195 8196 8197 8198 8199 8200 8201 8202 8203	O_8 O_8 O_8 O_8 O_8 O_8 O_8 O_8 O_8 O_8 O_8	**CAL** **CODE1** **CODE2** **CODE3** **CODE4** **CODE5** **CODE6** **CODE7** **CODE8** **CODE9** **CODE10**	Registers 8193 – 8203 are 8 bit registers used to control the functionality of the meter. The function of each register is described in the DI50T+ Codes document. When reading or writing to these registers via the serial port, the data is treated in octal format so that it is identical to the value shown on the display of the meter when setting the codes up manually. The function selected in the first digit of each Code register is stored in bits 6&7. The function selected in the second digit of each Code register is stored in bits 3,4, &5. The function selected in the third digit of each Code register is stored in bits 0,1, &2. For example: If the manual setup for Code4 shows 241, then reading register 8197 in ASCII mode will result in a value of 241. Converting this octal value to a binary or hex equivalent gives 0A1 hex or 10100001 binary. Octal 2 4 1 Binary 10 100 001 1st digit 2nd digit 3rd digit
8206	U_8	**BRIGHTNESS**	8 bit register holds the display brightness/contrast setting (range 0-7). This is an 8 bit register used to control the brightness of an LED display meter or the contrast of some LCD display meters. A number between 0 and 7 can be written to register 8206 to control the brightness.

Reg.	Type	Register Name	Register Description
8207 8208 8209	U_8 U_8 U_8	**BAUDRATE1** **BAUDRATE2** **BAUDRATE3**	Registers 8207 - 8209 are 8 bit registers used to store the serial port settings for port 1, 2, and 3 respectively. Bits 0 – 2 are used to hold the baud rate information. Bit 3 is used to select between 7 or 8 data bits and bits 4 & 5 are used to select the parity type. Bits 6 and 7 allow different transmit delay times to be selected. The various options available are shown below: Bits 7,6 = transmit delay (00 = 2mS, 01 = 20mS, 10 = 50mS, 11 = 100mS) Bits 5,4 = parity (00 = no parity, 01 = odd parity, 10 = even parity) Bit 3 = data bits (0 = 8 data bits, 1 = 7 data bits) Bits 2,1,0 = baud rate Port 1: (000 = 1200 baud, 001 = 2400 baud, 010 = 4800 baud, 011 = 9600 baud, 100 = 19200 baud, 101 = 38400 baud, 110 = 57600 baud, 111 = 115200 baud) Port 2: (000 = not available, 001 = not available, 010 = not available, 011 = 9600 baud, 100 = 19200 baud, 101 = 38400 baud, 110 = 57600 baud, 111 = 115200 baud) (if 000 - 010 are selected baud rate of 9600 is used) Port 3: (000 = 1200 baud, 001 = 2400 baud, 010 = 4800 baud, 011 = 9600 baud, 100 = 19200 baud, 101 = not available, 110 = not available, 111 = not available) (if 101 - 111 are selected baud rate of 19200 is used) Note: If these registers are modified via the serial port, the meter response (and any subsequent communications) will be issued at the new modified baud rate/parity settings which may result in a communications error at the master device. Not all baudrates are available on all serial ports.
8211 8212 8213	U_8 U_8 U_8	**SERIAL_ADDRESS1** **SERIAL_ADDRESS2** **SERIAL_ADDRESS3**	These are 8 bit registers which set the serial address for ports 1 - 3. The meter address can be set from 1 to 255. The meter address should not be set to 0 as this address is reserved (all meters respond to a request at address zero).
8215 8216 8217	U_8 U_8 U_8	**SERIAL_MODE1** **SERIAL_MODE2** **SERIAL_MODE3**	Registers 8215 - 8217 set up the serial mode of operation for the respective serial ports. The available modes are as follows; 0 = ASCII mode 1 = Modbus RTU slave mode 2 = Macro master mode 3 = Printer mode 4 = Ethernet mode 5 = Devicenet mode 6 = LCD touch panel display mode 7 = Modbus master mode Note: Some of the above modes require special hardware to function and may not be available on all models.
8219	U_8_R	**SERIAL_PORT_NO**	8 bit read only register shows which serial port is being accessed. Register 8219 is an 8 bit register which reports which serial port is currently in use. Because the 380 series meters have multiple serial ports it may be necessary for an external device to know which one it is currently using. For example, a read of 8219 via serial port 1 will result in a number 1 being returned.
8220	U_8	**VIEW_POINTER**	8 bit registers indicates which value is currently being displayed in view mode (i.e. pressing up/down).

Reg.	Type	Register Name	Register Description
8222	B_5	**NON_VOLATILE_WRITE**	When this flag is On, the next register written will be saved in permanent memory (flag reset after each write). Bit 5 of Register 8222 is used by the macro only to enable a write to non volatile memory. Nearly all of the registers in the meter are situated in RAM (Random Access Memory) which looses it data when the meter is turned off. In some cases this is undesirable, so a second copy of the data is stored in non volatile memory, which retains it's data even when the meter is turned off. However, a physical limitation of this sort of memory is that each memory location can only be written 100,000 times in total. The non volatile write flag is provided so that those registers which have a copy in non volatile memory are can still be written to by the macro each cycle, without exceeding the maximum write limit. If bit 5 is set to a '1' then the next time the macro stores a value into a register it will write to RAM and update any associated non volatile memory locations as well. If bit 5 is set to a '0' then the time the macro stores a value into a register, it will only write to RAM. After each store instruction, the macro engine will automatically clear this flag to '0'. Note: The non volatile write flag only functions for macro commands. Any write to a register via the serial port will ALWAYS update the non volatile memory

Reg.	Type	Register Name	Register Description
8223	U_8	**EDIT_STATE**	8 bit register. Defines which parameter type is currently being edited. Register 8223 is an 8 bit register which gives the current operational state of meter when it is in any edit mode. The following table shows the different parameters that are being edited in each state.

Edit State	Operation	Edit State	Operation
0	Not in edit mode	45	Analog o/p - full scale
1	Brightness	46	K factor for totalisator Edit State Operation
2	Lock display (up)	47	Cut off for totalisator
3	Cal	48	Prescaler for counter 1
4	Code 1	49	Display format
5	Code 2	50	Display Text character
6	Code 3	51	Inc/dec, Manual loader mode from Prog button
7	Code 4	52	Bar low
8	Code 5	53	Bar high
9	Code 6	54	Bar nominal
10	Code 7	55	Colour band 1
11	Code 8	56	Colour band 2
12	Code 9	57	Colour band 3
13	Code 10	58	Colour band 4
14	Not used	59	Colour band 5
15	Edit mode - Macro	60	Colour band 6
16	Lock display (down)	61	Colour band 7
17	Set-point 1	62	Prescaler for counter 2
18	Set-point 2	63	Calibrate zero in Ph mode
19	Set-point 3	64	Calibrate span in Ph mode
20	Set-point 4	65	Display source
21	Set-point 5	66 - 68	Not used
22	Set-point 6	69	Auto zero capture band
23	Set-point 1 control	70	Auto zero motion band
24	Set-point 2 control	71	Averaging samples
25	Set-point 3 control	72	Averaging window
26	Set-point 4 control	73	Smart input module Setup 1
27	Set-point 5 control	74	Smart input module Setup 2
28	Set-point 6 control	75	Smart input module Setup 3
29-31	Not used	76	Auto zero aperture band
32	Manual cal - offset	77	Display input value for totalisator setup
33	Manual cal - scale	78	Totalisator rate time selection
34	Tbuff in PH mode or Cal TC, RTD	79	Totalisator roll over select
35	Auto cal - Zero	80	Select 7 or 8 data bits for serial port
36	Auto cal - Span	81	Disable code blanking
37	Auto cal - 4 sec delay and calculate scale & offset values	82	Diable macro
38	Baud rate	83	Serial mode selection
39	Parity	96	Select mode for 32 point lin
40	Transmit delay	97	Select table for 32 point lin
41	Serial address	98	Enter date for 32 point lin
42	Analog o/p - cal low end	99	Enter serial no. for 32 point lin
43	Analog o/p - cal high end	100-163	Edit 32 point input and output values. Even numbers = input values, odd numbers = output values.
44	Analog o/p - zero		

Reg.	Type	Register Name	Register Description
8226 8227 8228	U_8 U_8 U_8	**STRING_CHARACTER1** **STRING_CHARACTER2** **STRING_CHARACTER3**	The protocol for macro master mode is not set in software. Instead it can be user defined in the macro. Registers 8226 – 8229 in conjunction with registers 8230 - 8233 are used for this purpose. The following table shows which register pairs are used together. Register Pair — Serial Port 8226/8230 — Port 1 8227/8231 — Port 2 8228/8232 — Port 3 8229/8233 — Reserved for future development of Port 4 The following explanation uses the registers for port 1 but the same logic applies for all ports. Register 8226 is an 8 bit register which has 2 functions, depending on the value of register 8230. If register 8230 is zero, (i.e. string length = zero), then register 8226 functions as an end of string character (EOS) for macro master mode serial comms, allowing the user to define their own terminating character for the received string. If register 8230 has some value other than zero, then register 8226 functions as a start of string character. In this mode the serial port will look for the start character and then input the number of bytes defined in register 8230
8230 8231 8232	U_8 U_8 U_8	**STRING_LENGTH1** **STRING_LENGTH2** **STRING_LENGTH3**	Registers 8230 to 8233 are 8 bit registers which set the string length for the receive respective serial port in macro master mode. If these registers are greater than zero, the respective serial port will search for the start character defined in the appropriate start of string register (see 8226 – 8229 above), and then it will input the specified number of bytes.
8234	U_8	**RECEIVE_FLAGS1**	8 bit register. Serial receive flags. Used in macro master mode.
8234	B_0	**RECEIVE_READY1**	This flag shows that a new message string has been received on port 1 in macro master mode.
8235	U_8	**RECEIVE_FLAGS2**	8 bit register. Serial receive flags. Used in macro master mode.
8235	B_0	**RECEIVE_READY2**	This flag shows that a new message string has been received on port 2 in macro master mode.
8236	U_8	**RECEIVE_FLAGS3**	8 bit register. Serial receive flags. Used in macro master mode.
8236	B_0	**RECEIVE_READY3**	This flag shows that a new message string has been received on port 3 in macro master mode.
8238	U_8	**SECONDS**	8 bit register holds the real time clock seconds count (range 0-59).
8239	U_8	**MINUTES**	8 bit register holds the real time clock minutes count (range 0-59).
8240	U_8	**HOURS**	8 bit register holds the real time clock hours count (range 0-23).
8241	U_8	**DAYS**	8 bit register holds the real time clock days of the week (range 1-7).
8242	U_8	**DATE**	8 bit register holds the real time clock date (range 1-31).
8243	U_8	**MONTH**	8 bit register holds the real time clock month (range 1-12).
8244	U_8	**YEAR**	8 bit registers holds the real time clock year (range 0-99)
8245 8246 8247 8248 8249 8250	O_8 O_8 O_8 O_8 O_8 O_8	**SP1_CONTROL** **SP2_CONTROL** **SP3_CONTROL** **SP4_CONTROL** **SP5_CONTROL** **SP6_CONTROL**	These registers are 8 bit registers used to control the set-point functionality. The function of each register is described in the DI50T+ Codes document. When reading or writing to these registers via the serial port, the data is treated in octal format so that it is identical to the value shown on the display of the meter when setting these codes up manually. The format of these registers is the same as registers 8193 – 8203 described above.
8261 8262 8263 8264 8265 8266	U_8 U_8 U_8 U_8 U_8 U_8	**SP1_TRACKING** **SP2_TRACKING** **SP3_TRACKING** **SP4_TRACKING** **SP5_TRACKING** **SP6_TRACKING**	Registers 8261 – 8266 are 8 bit registers used for selecting the set-point tracking. The function of each bit is shown below; Set-point tracking Bits 0 – 2 = Tracking mode. (xxxxx000b = tracking disabled) (xxxxx001b = Set-point tracks SP1) (xxxxx010b = Set-point tracks SP2) (xxxxx011b = Set-point tracks SP3) (xxxxx100b = Set-point tracks SP4) (xxxxx101b = Set-point tracks SP5) (xxxxx110b = Set-point tracks SP6) Bits 3 – 7 = Reserved for future development

Reg.	Type	Register Name	Register Description
8277 8278 8279 8280 8281 8282	U_8 U_8 U_8 U_8 U_8 U_8	**SP1_DELAY_TYPE** **SP2_DELAY_TYPE** **SP3_DELAY_TYPE** **SP4_DELAY_TYPE** **SP5_DELAY_TYPE** **SP6_DELAY_TYPE**	8 bit register controls the delay type settings for setpoint 1. Registers 8277 to 8282 are 8 bit registers used to control the delay type, display flashing and mode of each of the 6 set-points. An explanation of the function of each bit is given below: Bits 0 – 2 = Delay type (xxxxx000b = Off) (xxxxx001b = normal) (xxxxx010b = one shot) (xxxxx011b = pulse) (xxxxx100b = repeat) (xxxxx101b = -ve one shot) (xxxxx110b = -ve pulse) (xxxxx111b = -ve repeat) Bit 3 = Display flash on set-point (0 = no flash, 1 = flash on set-point active). Bit 4,5 = Hysteresis/Deviation/PID mode (xx00xxxb = Off) (xx01xxxxb = Hyst) (xx10xxxxb = Dev) (xx11xxxxb = PID) Bit 6 = Delay resolution (0 = 0.1Sec resolution, 1 = 1mSec resolution) Bit 7 = Reserved for future development.
8293 8294 8295 8296 8297 8298	U_8 U_8 U_8 U_8 U_8 U_8	**SP1_TRIGGER** **SP2_TRIGGER** **SP3_TRIGGER** **SP4_TRIGGER** **SP5_TRIGGER** **SP6_TRIGGER**	8 bit register. Controls trigger functions of setpoint 1. Registers 8293 – 8298 are 8 bit registers used for selecting the set-point trigger functions. The function of each bit is shown below; Bits 0 – 2 = Trigger Functions (xxxxx000b = All trigger functions disabled) (xxxxx001b = Trigger on make edge) (xxxxx010b = Trigger on break edge) (xxxxx011b = Trigger on both make & break edge) (xxxxx100b = Trigger when energised) Bits 3 & 4 = Reset Mode (xxx00xxxb = Destination register = user defined constant) (xxx01xxxb = Destination register = Input_data - Setpoint_value + Constant) (xxx10xxxb = Destination register = Destination + Constant) (xxx11xxxb = Destination register = Source register) Bit 5 = Reserved for future development Bit 6 = Log on selected edge (0 = no log, 1 = log). Bit 7 = Print on selected edge (0 = no print, 1 = print).
8309	U_8	**AVERAGING_SAMPLES_RESULT**	8 bit register. Averaging samples for result (range 0-255 samples).
8310	U_8	**AVERAGING_SAMPLES_CH1**	8 bit register. Averaging samples for channel 1 (range 0-255 samples).
8311	U_8	**AVERAGING_SAMPLES_CH2**	8 bit register. Averaging samples for channel 2 (range 0-255 samples).
8312	U_8	**AVERAGING_SAMPLES_CH3**	8 bit register. Averaging samples for channel 3 (range 0-255 samples).
8313	U_8	**AVERAGING_SAMPLES_CH4**	8 bit register. Averaging samples for channel 4 (range 0-255 samples).
8314	U_8	**AVERAGING_SAMPLES_CH5**	8 bit register. Averaging samples for channel 5 (range 0-255 samples).
8315	U_8	**AVERAGING_SAMPLES_CH6**	8 bit register. Averaging samples for channel 6 (range 0-255 samples).
8316	U_8	**AVERAGING_SAMPLES_CH7**	8 bit register. Averaging samples for channel 7 (range 0-255 samples).
8321	U_8	**AZ_CAPTURE_BAND_RESULT**	8 bit register. Auto zero capture band for result range 0-254 counts, 255=manual zero.
8322	U_8	**AZ_CAPTURE_BAND_CH1**	8 bit register. Auto zero capture band for channel 1 range 0-254 counts, 255=manual zero.
8323	U_8	**AZ_CAPTURE_BAND_CH2**	8 bit register. Auto zero capture band for channel 2 range 0-254 counts, 255=manual zero.
8324	U_8	**AZ_CAPTURE_BAND_CH3**	8 bit register. Auto zero capture band for channel 3 range 0-254 counts, 255=manual zero.
8325	U_8	**AZ_CAPTURE_BAND_CH4**	8 bit register. Auto zero capture band for channel 4 range 0-254 counts, 255=manual zero.
8326	U_8	**AZ_CAPTURE_BAND_CH5**	8 bit register. Auto zero capture band for channel 5 range 0-254 counts, 255=manual zero.

Reg.	Type	Register Name	Register Description
8327	U_8	**AZ_CAPTURE_BAND_CH6**	8 bit register. Auto zero capture band for channel 6 range 0-254 counts, 255=manual zero.
8328	U_8	**AZ_CAPTURE_BAND_CH7**	8 bit register. Auto zero capture band for channel 7 range 0-254 counts, 255=manual zero.
8333	U_8	**AZ_MOTION_BAND_RESULT**	8 bit register. Auto zero motion band for result (range 0-255 counts/second).
8334	U_8	**AZ_MOTION_BAND_CH1**	8 bit register. Auto zero motion band for channel 1 (range 0-255 counts/second).
8335	U_8	**AZ_MOTION_BAND_CH2**	8 bit register. Auto zero motion band for channel 2 (range 0-255 counts/second).
8336	U_8	**AZ_MOTION_BAND_CH3**	8 bit register. Auto zero motion band for channel 3 (range 0-255 counts/second).
8337	U_8	**AZ_MOTION_BAND_CH4**	8 bit register. Auto zero motion band for channel 4 (range 0-255 counts/second).
8338	U_8	**AZ_MOTION_BAND_CH5**	8 bit register. Auto zero motion band for channel 5 (range 0-255 counts/second).
8339	U_8	**AZ_MOTION_BAND_CH6**	8 bit register. Auto zero motion band for channel 6 (range 0-255 counts/second).
8340	U_8	**AZ_MOTION_BAND_CH7**	8 bit register. Auto zero motion band for channel 7 (range 0-255 counts/second).
8345	U_8	**RATE_TOTALIZER1**	Registers 8345 - 8350 are 8 bit registers which control the time period for K factor calculation and roll over features for Totalisators 1 - 6 respectively. The format of these registers is shown below. Bits 0 - 3 xxxx0000 = 1 second period for K factor calculations xxxx0001 = 10 seconds period for K factor calculations xxxx0010 = 1 minute period for K factor calculations xxxx0011 = 10 minute period for K factor calculations xxxx0100 = 1 hour period for K factor calculations xxxx0101 = 10 hours period for K factor calculations xxxx0110 = 1 day period for K factor calculations xxxx0111 = 1 week period for K factor calculations Bit 4 = Totalisator Roll over (0 = inactive, 1 = roll over active) Bit 5-7 = unused at present.
8346	U_8	**RATE_TOTALIZER2**	
8347	U_8	**RATE_TOTALIZER3**	
8348	U_8	**RATE_TOTALIZER4**	
8349	U_8	**RATE_TOTALIZER5**	
8350	U_8	**RATE_TOTALIZER6**	
8366	U_8	**CURRENT_DISPLAY_FORMAT**	8 bit register holds the display format settings of the current display (see display format mode in octal). Register 8366 is an 8 bit register which shows the display options (rounding, display mode, decimal point selection) that are currently active on the display. The function of each bit is exactly the same as that for registers 8367 – 8391.
8367	O_8	**DISPLAY_FORMAT_RESULT**	8 bit register controls the display format settings for the result (see display format mode in data sheet).
8368	O_8	**DISPLAY_FORMAT_CH1**	8 bit register controls the display format settings for channel 1.
8369	O_8	**DISPLAY_FORMAT_CH2**	8 bit register controls the display format settings for channel 2.
8370	O_8	**DISPLAY_FORMAT_CH3**	8 bit register controls the display format settings for channel 3.
8371	O_8	**DISPLAY_FORMAT_CH4**	8 bit register controls the display format settings for channel 4.
8372	O_8	**DISPLAY_FORMAT_CH5**	8 bit register controls the display format settings for channel 5.
8373	O_8	**DISPLAY_FORMAT_CH6**	8 bit register controls the display format settings for channel 6.
8374	O_8	**DISPLAY_FORMAT_CH7**	8 bit register controls the display format settings for channel 7.
8375	O_8	**DISPLAY_FORMAT_DEFAULT**	8 bit register holds the default display format settings (see display format mode in data sheet).
8376	O_8	**DISPLAY_FORMAT_TOTAL1**	8 bit register controls the display format settings for totalisator 1 (see display format mode in data sheet).
8377	O_8	**DISPLAY_FORMAT_TOTAL2**	8 bit register controls the display format settings for totalisator 2.
8378	O_8	**DISPLAY_FORMAT_TOTAL3**	8 bit register controls the display format settings for totalisator 3.
8379	O_8	**DISPLAY_FORMAT_TOTAL4**	8 bit register controls the display format settings for totalisator 4.
8380	O_8	**DISPLAY_FORMAT_TOTAL5**	8 bit register controls the display format settings for totalisator 5.
8381	O_8	**DISPLAY_FORMAT_TOTAL6**	8 bit register controls the display format settings for totalisator 6.
8382	O_8	**DISPLAY_FORMAT_AUX1**	8 bit register controls the display format settings for auxiliary 1.
8383	O_8	**DISPLAY_FORMAT_AUX2**	8 bit register controls the display format settings for auxiliary 2.
8384	O_8	**DISPLAY_FORMAT_AUX3**	8 bit register controls the display format settings for auxiliary 3.
8385	O_8	**DISPLAY_FORMAT_AUX4**	8 bit register controls the display format settings for auxiliary 4.
8386	O_8	**DISPLAY_FORMAT_AUX5**	8 bit register controls the display format settings for auxiliary 5.
8387	O_8	**DISPLAY_FORMAT_AUX6**	8 bit register controls the display format settings for auxiliary 6.
8388	O_8	**DISPLAY_FORMAT_AUX7**	8 bit register controls the display format settings for auxiliary 7.
8389	O_8	**DISPLAY_FORMAT_AUX8**	8 bit register controls the display format settings for auxiliary 8.
8390	O_8	**DISPLAY_FORMAT_AUX9**	8 bit register controls the display format settings for auxiliary 9.
8391	O_8	**DISPLAY_FORMAT_AUX10**	8 bit register controls the display format settings for auxiliary 10.

Reg.	Type	Register Name	Register Description
8392	U_8	**CURRENT_ALPHA_CHARACTER**	8 bit register holds the ASCII value for the last digit text character (0= no character). Register 8392 is an 8 bit register, which shows the Alpha-numeric character that is currently active on the display. The value read from 8392 is the ASCII code for the character. An ASCII null (0) indicates that no Alpha-numeric character is displayed.
8393	U_8	**TEXT_CHARACTER_RESULT**	8 bit register holds the ASCII value for the last digit text character for the result (0= no character). Registers 8392 - 8417 hold an ASCII charcter that determines which alpha-numeric character is inserted in the Least Significant Digit (LSD) for each of the different data displays. To enable the display of an ASCII character in the LSD, just write the appropriate ASCII code (shown in the tables above) to one of these registers. To return to a normal display (with no ASCII character), write an ASCII null (0) to the register.
8394	U_8	**TEXT_CHARACTER_CH1**	Registers 8394 to 8400 are 8 bit register holding the ASCII values for the last digit text character for channels 1 to 7 (0= no character).
8395	U_8	**TEXT_CHARACTER_CH2**	
8396	U_8	**TEXT_CHARACTER_CH3**	
8397	U_8	**TEXT_CHARACTER_CH4**	
8398	U_8	**TEXT_CHARACTER_CH5**	
8399	U_8	**TEXT_CHARACTER_CH6**	
8400	U_8	**TEXT_CHARACTER_CH7**	
8401	U_8	**TEXT_CHARACTER_DEFAULT**	8 bit register holds the ASCII value for the default last digit text character (0= no character).
8402	U_8	**TEXT_CHARACTER_TOTAL1**	Registers 8401 to 8407 are 8 bit registers holding the ASCII values for the last digit text character for totalisators 1 to 6 (0= no character).
8403	U_8	**TEXT_CHARACTER_TOTAL2**	
8404	U_8	**TEXT_CHARACTER_TOTAL3**	
8405	U_8	**TEXT_CHARACTER_TOTAL4**	
8406	U_8	**TEXT_CHARACTER_TOTAL5**	
8407	U_8	**TEXT_CHARACTER_TOTAL6**	
8408	U_8	**TEXT_CHARACTER_AUX1**	Registers 8408 to 8417 are 8 bit registers holding the ASCII valuea for the last digit text character for auxiliaris 1 to 10 (0= no character).
8409	U_8	**TEXT_CHARACTER_AUX2**	
8410	U_8	**TEXT_CHARACTER_AUX3**	
8411	U_8	**TEXT_CHARACTER_AUX4**	
8412	U_8	**TEXT_CHARACTER_AUX5**	
8413	U_8	**TEXT_CHARACTER_AUX6**	
8414	U_8	**TEXT_CHARACTER_AUX7**	
8415	U_8	**TEXT_CHARACTER_AUX8**	
8416	U_8	**TEXT_CHARACTER_AUX9**	
8417	U_8	**TEXT_CHARACTER_AUX10**	
8422	U_8_R	**SMART_ID**	8 bit read only register. Defines the type of smart input module currently in use.
8423	O_8	**SMART_SETUP1**	8 bit register. Setup 1 data for smart input module.
8424	O_8	**SMART_SETUP2**	8 bit register. Setup 2 data for smart input module.
8425	O_8	**SMART_SETUP3**	8 bit register. Setup 3 data for smart input module.

Reg.	Type	Register Name	Register Description
8430	U_8_R	**IO_TYPE**	8 bit read only register shows type of I/O expansion module currently fitted in meter. Register 8430 is an 8 bit unsigned register that shows which I/O expansion module is connected to the meter at switch on. This will contain one of the following values; Value — Function 0 — No I/O expansion module fitted 1 — 4 set-points for bar graph output 2 — 6 set-points, 10 digital outputs (DO_1 - DO_10), 6 digital inputs (DI_1 - DI_6) 4 — 16 digital outputs (DO_1 - DO_16) 8 — 16 digital inputs (DI_1 - DI_16) 16 — 6 set-points, 6 digital outputs (DO_1 - DO_6), 10 digital inputs (DI_1 - DI_10) 32 — Not used 64 — 16 digital outputs (DO_17 - DO_32) 128 — Multi I/O module Note: This register is updated by the meter at power up, or if a different module type is detected. If the I/O expansion module is removed after power up, this register will retain it's original value and keep trying to locate the I/O module on the expansion bus. It will only change to a new value if another I/O module type is located on the bus. Although this is intended as a read only register, it can be written to. Writing a value of zero to this register will disable the I/O expansion module. Writing any value other than zero will force the meter to search the bus for a connected I/O module.
8432	U_8	**DATALOG_MEM_SIZE**	Register 8432 is an 8 bit unsigned register which shows if the extended data logger module is fitted to the meter and how much memory is installed in Mbytes (0=no data logger).
8433	U_8_R	**SMART_VERSION**	8 bit unsigned read only reg shows version number of smart input module. Register 8433 is an 8 bit read only unsigned register which shows the software version number of a smart input module connected to the meter. The meter must have at least one input channel set to smart input mode before this register will be updated.
8434	U_8_R	**CPU_LOADING**	8 bit unsigned read only reg shows percentage CPU loading. This register is an 8 bit read only unsigned register which shows the current processing load on the CPU in the meter from 1 – 100%. A value over 90% indicates that the meter is running out of processing time to complete all of the required functions within the selected update time. As a result input samples or output functions may be skipped and software timers or totalisators may become inaccurate. The solution is to set to 'Off' all unused functions and setpoints, reduce the size of any macros which are currently running and lastly to select an update rate of 0.1 seconds.
8436	U_8	**BAR_ZERO**	8 bit register controls the bar zero position on the bar (range 0-100).
8436	U_8	**LIGHT_BAR**	8 bit register shows/controls the status of the light bars (light bar meters only).
8436	B_0	**LIGHT_BAR1**	flag shows/controls the status of light bar 1 (light bar meters only).
8436	B_1	**LIGHT_BAR2**	flag shows/controls the status of light bar 2 (light bar meters only).
8436	B_2	**LIGHT_BAR3**	flag shows/controls the status of light bar 3 (light bar meters only).
8436	B_3	**LIGHT_BAR4**	flag shows/controls the status of light bar 4 (light bar meters only).
8436	B_4	**LIGHT_BAR5**	flag shows/controls the status of light bar 5 (light bar meters only).
8436	B_5	**LIGHT_BAR6**	flag shows/controls the status of light bar 6 (light bar meters only).
8436	B_7	**LIGHT_REMOTE**	bit sets remote or meter control of the light bars (On=remote, light bar meters only).

Reg.	Type	Register Name	Register Description
8443	U_8_R	**LOG_SAMPLE_TRIGGER**	Read only register. Trigger source of current log sample. Registers 8443 – 8449 are read only registers used to access data from a log sample. A read of one of these registers, will read the appropriate data from the log sample which is addressed by the current value of the log read pointer (reg #491). . A read of one of these registers will not modify the log read or the log write pointer. The user must setup up the log read pointer to the required sample number before accessing registers 8443 – 8449. In each case, the output will be a numeric value only. These registers can be read in ASCII or Modbus modes, and can also be read from the macro. (For a text output, the registers 16553 & 16555 should be used in ASCII or print mode). The information in registers 8443 – 8449 are logged in every sample, regardless of the settings in Code 8. An explanation of each registers function is shown below. Register 8443 – Trigger Type for sample This register gives an 8 bit numeric value which defines the trigger point for the sample. 0 = Triggered by reset 1 = Triggered by set-point 1 2 = Triggered by set-point 2 3 = Triggered by set-point 3 4 = Triggered by set-point 4 5 = Triggered by set-point 5 6 = Triggered by set-point 6 7 - 16 = Reserved for future development. 17 = Triggered by Program button. 18 = Triggered by F1 button. 19 = Triggered by F2 button. 20 = Triggered by Hold pin. 21 = Triggered by Lock pin. 22 - 23 = Reserved for future development. 24 = Triggered by a write to register 16553 (either via the serial port or macro). 25 = Trigger by a text string write to 16553 from the macro.
8444	U_8_R	**LOG_SAMPLE_DATE**	Read only register. Returns 8 bit value for date of current log sample (range 1-31 days).
8445	U_8_R	**LOG_SAMPLE_MONTH**	Read only register. Returns 8 bit value for month of current log sample (range 1-12 months).
8446	U_8_R	**LOG_SAMPLE_YEAR**	Read only register. Returns 8 bit value for year of current log sample (range 00-99 years).
8447	U_8_R	**LOG_SAMPLE_HOUR**	Read only register. Returns 8 bit value for hours in current log sample (range 0-23 hours).
8448	U_8_R	**LOG_SAMPLE_MINUTE**	Read only register. Returns 8 bit value for minutes in current log sample (range 0-59 minutes).
8449	U_8_R	**LOG_SAMPLE_SECOND**	Read only register. Returns 8 bit value for seconds in current log sample (range 0-59 seconds).
8454	U_8	**RECEIVE_COUNT1**	Registers 8454-8456 are 8 bit registers which show the received message length (i.e. how many bytes have been received by the serial port in a message) for ports 1 - 3 respectively. Although these registers can be read in all serial modes, their main purpose is for use in macro master mode under macro control of the serial ports.
8455	U_8	**RECEIVE_COUNT2**	
8456	U_8	**RECEIVE_COUNT3**	
8458	U_8	**SERIAL_POINTER1**	8 bit pointer used for string compare commands with serial port 1.
8459	U_8	**SERIAL_POINTER2**	8 bit pointer used for string compare commands with serial port 2.
8460	U_8	**SERIAL_POINTER3**	8 bit pointer used for string compare commands with serial port 3.
8462	U_8	**POLL_TIME**	8 bit register which sets the polling time for the Modbus master macro (1 count = 0.01 seconds).
8463	U_8	**RESPONSE_TIME**	8 bit register which sets the response timeout for the Modbus master macro (1count=0.1S).

Reg.	Type	Register Name	Register Description
8464	U_8_R	**MODBUS_MASTER_FLAGS**	8 bit read only register which contains status flags for the Modbus master macro. Bits 0 - 3 (Standard Modbus Exception Error Codes) 1 = Illegal function call (function call not supported by slave) 2 = Illegal data address (the data address specified in the command is not available in the slave) 3 = Illegal data value (a data value specified in the command is not in the acceptable range) 4 = Slave device failure 5 = Acknowledge 6 = Slave device busy 7 = Negative acknowledge 8 = Memory parity errors
8464	B_4	**MESSAGE_TIMEOUT**	Read only flag - no response received from slave.
8464	B_5	**CRC_ERROR**	Read only flag - response from slave received with CRC checksum error.
8464	B_6	**DATA_ERROR**	Read only flag - Modbus attempted to read/write incorrect data type to slave.
8464	B_7	**MESSAGE_COMPLETE**	Read only flag - previous message transaction is completed ok.
8469	O_8	**DISPLAY_FORMAT_AUX11**	8 bit register controls the display format settings for auxiliary 11 (see display format mode in data sheet).
8470	O_8	**DISPLAY_FORMAT_AUX12**	8 bit register controls the display format settings for auxiliary 12.
8471	O_8	**DISPLAY_FORMAT_AUX13**	8 bit register controls the display format settings for auxiliary 13.
8472	O_8	**DISPLAY_FORMAT_AUX14**	8 bit register controls the display format settings for auxiliary 14.
8473	O_8	**DISPLAY_FORMAT_AUX15**	8 bit register controls the display format settings for auxiliary 15.
8474	O_8	**DISPLAY_FORMAT_AUX16**	8 bit register controls the display format settings for auxiliary 16.
8475	U_8	**TEXT_CHARACTER_AUX11**	8 bit register holds the ASCII value for the last digit text character for auxiliary 11 (0= no character).
8476	U_8	**TEXT_CHARACTER_AUX12**	8 bit register holds the ASCII value for the last digit text character for auxiliary 12.
8477	U_8	**TEXT_CHARACTER_AUX13**	8 bit register holds the ASCII value for the last digit text character for auxiliary 13.
8478	U_8	**TEXT_CHARACTER_AUX14**	8 bit register holds the ASCII value for the last digit text character for auxiliary 14.
8479	U_8	**TEXT_CHARACTER_AUX15**	8 bit register holds the ASCII value for the last digit text character for auxiliary 15.
8480	U_8	**TEXT_CHARACTER_AUX16**	8 bit register holds the ASCII value for the last digit text character for auxiliary 16.
10241 to 12288	U_8	**USER_MEMORY_BYTE_1 to USER_MEMORY_BYTE_2048**	Registers 10241 to 12288 overlap the same memory area used by registers 5121 – 6144. The only difference is that registers 10241 to 12288 address 2048 user memories, each 8 bits wide. Registers 5121 – 6144 access the same physical memory area but as 1024 user memories, each 16 bits wide. This must be taken into consideration when using these registers in a macro.
12289 12545 12801	U_8 U_8 U_8	**RECEIVE_BUFFER1** **RECEIVE_BUFFER2** **RECEIVE_BUFFER3**	Registers 12289 to 13056 are all 8 bit unsigned registers which are used as a buffer for serial port received and transmitted data. They are used in all serial port modes but their intended use is in macro master mode under macro control. By accessing these registers individually, a message string can be built up or interrogated, byte by byte. Note: Although these registers can be written to, it is not recommended unless the user has a thorough knowledge of how the serial port operates. Writing the wrong value to these registers could cause the serial port to lock up.
16385 16387 16389	L_100_T L_100_T L_100_T	**DISPLAY_STRING** **DISPLAY2_STRING** **DISPLAY3_STRING**	Registers 16385 - 16389 are used to write a text string directly to the meter display via the serial port in ASCII mode. Text strings will only be displayed while the meter is in it's normal operational display mode. Text strings will be ignored when the meter is in any edit mode or view mode. A scrolling text string of up to 100 characters long can be sent to the display. The string will be scrolled once through and then the display will return to the operational display mode. The special '~' (tilde) character is used to insert an instantaneous register value into the text string. See note on register 16543 (print string) for more information on this feature. To send text to the display, the following commands can be used. SW16385 _____This text string will scroll across the display_____ * SW16385 _____Setpoint 1 = ~6 Volts $ A read of register 16385 will result in the text "Disp".
16391	L_8_T	**RESULT_TEXT**	Text display for Result
16393	L_8_T	**CHANNEL1_TEXT**	Text display for Channel 1
16395	L_8_T	**CHANNEL2_TEXT**	Text display for Channel 2
16397	L_8_T	**CHANNEL3_TEXT**	Text display for Channel 3
16399	L_8_T	**CHANNEL4_TEXT**	Text display for Channel 4
16401	L_8_T	**CHANNEL5_TEXT**	Text display for Channel 5

Reg.	Type	Register Name	Register Description
16403	L_8_T	**CHANNEL6_TEXT**	Text display for Channel 6
16405	L_8_T	**CHANNEL7_TEXT**	Text display for Channel 7
16421	L_8_T	**TOTAL1_TEXT**	Text display for Total 1
16423	L_8_T	**TOTAL2_TEXT**	Text display for Total 2
16425	L_8_T	**TOTAL3_TEXT**	Text display for Total 3
16427	L_8_T	**TOTAL4_TEXT**	Text display for Total 4
16429	L_8_T	**TOTAL5_TEXT**	Text display for Total 5
16431	L_8_T	**TOTAL6_TEXT**	Text display for Total 6
16441	L_8_T	**PEAK1_TEXT**	Text display for Peak 1
16443	L_8_T	**VALLEY1_TEXT**	Text display for Valley 1
16445	L_8_T	**PEAK2_TEXT**	Text display for Peak 2
16447	L_8_T	**VALLEY2_TEXT**	Text display for Valley 2
16449	L_8_T	**PEAK3_TEXT**	Text display for Peak 3
16451	L_8_T	**VALLEY3_TEXT**	Text display for Valley 3
16463	L_8_T	**AUX1_TEXT**	Text display for Auxiliary 1
16465	L_8_T	**AUX2_TEXT**	Text display for Auxiliary 2
16467	L_8_T	**AUX3_TEXT**	Text display for Auxiliary 3
16469	L_8_T	**AUX4_TEXT**	Text display for Auxiliary 4
16471	L_8_T	**AUX5_TEXT**	Text display for Auxiliary 5
16473	L_8_T	**AUX6_TEXT**	Text display for Auxiliary 6
16475	L_8_T	**AUX7_TEXT**	Text display for Auxiliary 7
16477	L_8_T	**AUX8_TEXT**	Text display for Auxiliary 8
16479	L_8_T	**AUX9_TEXT**	Text display for Auxiliary 9
16481	L_8_T	**AUX10_TEXT**	Text display for Auxiliary 10
16483	L_8_T	**AUX11_TEXT**	Text display for Auxiliary 11
16485	L_8_T	**AUX12_TEXT**	Text display for Auxiliary 12
16487	L_8_T	**AUX13_TEXT**	Text display for Auxiliary 13
16489	L_8_T	**AUX14_TEXT**	Text display for Auxiliary 14
16491	L_8_T	**AUX15_TEXT**	Text display for Auxiliary 15
16493	L_8_T	**AUX16_TEXT**	Text display for Auxiliary 16
16495	L_8_T	**SETPOINT1_TEXT**	Text display for Setpoint 1
16497	L_8_T	**SETPOINT2_TEXT**	Text display for Setpoint 2
16499	L_8_T	**SETPOINT3_TEXT**	Text display for Setpoint 3
16501	L_8_T	**SETPOINT4_TEXT**	Text display for Setpoint 4
16503	L_8_T	**SETPOINT5_TEXT**	Text display for Setpoint 5
16505	L_8_T	**SETPOINT6_TEXT**	Text display for Setpoint 6
16539	L_8_T	**OVER_TEXT**	Text display for over-range
16541	L_8_T	**UNDER_TEXT**	Text display for under-range

Reg.	Type	Register Name	Register Description
16543	L_62_T	**PRINT_STRING**	Print String The register 16543 allows the user to specify the text and registers that will be printed out when a print command is issued in the print mode (i.e. Serial mode = 3). 16543 = Text display and data selection for print out (63 ascii characters long) Register 16543 can be read in the normal manner (i.e. SR16543$). The meter will respond by printing the complete 63 bytes of the stored string. The following example shows a typical read of register 16543; SR16543$Channel 1 =~9 Channel 2 =~11 Channel 3 =~13 Channel 4 =~15 $ Register 16543 can be written as follows: SW16543 Rate = ~9(carriage return & line feed) Total = ~37$ Any alpha numeric ASCII character can be used within the following restrictions: 1) $ and * are reserved for the terminating character at the end of the string and can not be used as part of the text string. 2) The total string length must be <= 63 bytes long. This includes spaces, tabs, carriage returns, line feeds and terminating character. (This does not include the separator space between the register address (16543) and the start of the string). 3) Any number following a ~ will be interpreted as a register address. During the printout, the registers current value will be printed out in this position. 4) The ASCII character \ is treated as a special character in the print string. When a \ is encountered, a * is printed in it's place. (* is reserved as a terminating character and normally cannot appear anywhere in the string). This allows the print output of one meter to be connected to another meter which is operating in ASCII mode. Note: A new line is usually represented by a carriage return and a line feed, so 2 bytes should be added for each new line in length calculations.
16553	C_124_T	**SINGLE_LOG**	This register reads or write a single data log sample if data logging is enabled. Register 16553 is used to read the next sample of log data. It does this by comparing the log read pointer (reg 491) with the log write pointer (reg 489). If they are equal then there has been no new samples logged since the last read and the message "No New Log Data" is sent as a response. If they are not equal, the log read pointer (reg 491) is incremented to point to the new sample, and the new log data is transmitted. Registers 489 & 491 can be used to control the data logger. To reset the data logger, both 489 & 491 should be set to 0 (or any other value in the allowable range of memory). A write to register 16553 will cause a new log sample to be taken. The value written to the register will be ignored and registers 4417 to 4432 will be logged as normal. This allows a log sample to be taken on demand via the serial port or from the control of the macro. Data logging must be enabled in Code 8 for this feature to function. Note: Register 16553 can only be read via the serial port in ASCII mode. To read log data in other serial modes or from the macro, see registers 493 – 523 and registers 8443 – 8449.
16565	L_8_T	**METER_TYPE**	Meter Type String.
16567 to 16693	L_30_T	**USER_TEXT1** **to** **USER_TEXT64**	Non volatile 30 character text string registers for user defined text storage.
16897	L_30_T	**TEXT_VARIABLE1**	30 character text string variable in RAM.
16899	L_30_T	**TEXT_VARIABLE2**	30 character text string variable in RAM.
16901	L_30_T	**TEXT_VARIABLE3**	30 character text string variable in RAM.
16903	L_30_T	**TEXT_VARIABLE4**	30 character text string variable in RAM.

Reg.	Type	Register Name	Register Description
16905	L_30_T	**TEXT_VARIABLE5**	30 character text string variable in RAM.
16907	L_30_T	**TEXT_VARIABLE6**	30 character text string variable in RAM.
16909	L_30_T	**TEXT_VARIABLE7**	30 character text string variable in RAM.
16911	L_30_T	**TEXT_VARIABLE8**	30 character text string variable in RAM.

Notes:

Function	Register Name	Type	Reg.
Analog Output 1	ANALOG_OUTPUT1	S_16	4145
	D2A_AOP1_CAL_HIGH	S_16	4169
	D2A_AOP1_CAL_LOW	S_16	4157
	D2A_AOP1_FULL_SCALE	S_32	405
	D2A_AOP1_ZERO	S_32	381
	DATA_SOURCE_ANALOG1	U_16	4379
Analog Output 2	ANALOG_OUTPUT2	S_16	4146
	D2A_AOP2_CAL_HIGH	S_16	4170
	D2A_AOP2_CAL_LOW	S_16	4158
	D2A_AOP2_FULL_SCALE	S_32	407
	D2A_AOP2_ZERO	S_32	383
	DATA_SOURCE_ANALOG2	U_16	4380
Analog Output 3	ANALOG_OUTPUT3	S_16	4147
	D2A_AOP3_CAL_HIGH	S_16	4171
	D2A_AOP3_CAL_LOW	S_16	4159
	D2A_AOP3_FULL_SCALE	S_32	409
	D2A_AOP3_ZERO	S_32	385
	DATA_SOURCE_ANALOG3	U_16	4381
Analog Output 4	ANALOG_OUTPUT4	S_16	4148
	D2A_AOP4_CAL_HIGH	S_16	4172
	D2A_AOP4_CAL_LOW	S_16	4160
	D2A_AOP4_FULL_SCALE	S_32	411
	D2A_AOP4_ZERO	S_32	387
	DATA_SOURCE_ANALOG4	U_16	4382
Analog Output 5	ANALOG_OUTPUT5	S_16	4149
	D2A_AOP5_CAL_HIGH	S_16	4173
	D2A_AOP5_CAL_LOW	S_16	4161
	D2A_AOP5_FULL_SCALE	S_32	413
	D2A_AOP5_ZERO	S_32	389
	DATA_SOURCE_ANALOG5	U_16	4383
Analog Output 6	ANALOG_OUTPUT6	S_16	4150
	D2A_AOP6_CAL_HIGH	S_16	4174
	D2A_AOP6_CAL_LOW	S_16	4162
	D2A_AOP6_FULL_SCALE	S_32	415
	D2A_AOP6_ZERO	S_32	391
	DATA_SOURCE_ANALOG6	U_16	4384
Analog Output 7	ANALOG_OUTPUT7	S_16	4151
	D2A_AOP7_CAL_HIGH	S_16	4175
	D2A_AOP7_CAL_LOW	S_16	4163
	D2A_AOP7_FULL_SCALE	S_32	417
	D2A_AOP7_ZERO	S_32	393
	DATA_SOURCE_ANALOG7	U_16	4385
Analog Output 8	ANALOG_OUTPUT8	S_16	4152
	D2A_AOP8_CAL_HIGH	S_16	4176
	D2A_AOP8_CAL_LOW	S_16	4164

Function	Register Name	Type	Reg.
	D2A_AOP8_FULL_SCALE	S_32	419
	D2A_AOP8_ZERO	S_32	395
	DATA_SOURCE_ANALOG8	U_16	4386
Channel 1	CH1	S_32	9
	CH1_PROCESSED	S_32	259
	CH1_RAW	S_32	283
	CH1_SCALED	S_32	307
Channel 1 Setup	AUTO_ZERO_CH1	S_16	4134
	AVERAGING_SAMPLES_CH1	U_8	8310
	AVERAGING_WINDOW_CH1	U_16	4294
	AZ_APERTURE_BAND_CH1	U_16	4336
	AZ_CAPTURE_BAND_CH1	U_8	8322
	AZ_MOTION_BAND_CH1	U_8	8334
	CH1_PRESCALER	U_16	4117
	CH1_PRESCALER_COUNT	S_16	4121
	CHANNEL1_TEXT	L_8_T	16393
	DISPLAY_FORMAT_CH1	O_8	8368
	OFFSET_CH1	S_32	359
	SCALE_FACTOR_CH1	F_32	1099
	TEXT_CHARACTER_CH1	U_8	8394
Channel 2	CH2	S_32	11
	CH2_PROCESSED	S_32	261
	CH2_RAW	S_32	285
	CH2_SCALED	S_32	309
Channel 2 Setup	AUTO_ZERO_CH2	S_16	4135
	AVERAGING_SAMPLES_CH2	U_8	8311
	AVERAGING_WINDOW_CH2	U_16	4295
	AZ_APERTURE_BAND_CH2	U_16	4337
	AZ_CAPTURE_BAND_CH2	U_8	8323
	AZ_MOTION_BAND_CH2	U_8	8335
	CH2_PRESCALER	U_16	4118
	CH2_PRESCALER_COUNT	S_16	4122
	CHANNEL2_TEXT	L_8_T	16395
	DISPLAY_FORMAT_CH2	O_8	8369
	OFFSET_CH2	S_32	361
	SCALE_FACTOR_CH2	F_32	1101
	TEXT_CHARACTER_CH2	U_8	8395
Channel 3	CH3	S_32	13
	CH3_PROCESSED	S_32	263
	CH3_RAW	S_32	287
	CH3_SCALED	S_32	311
Channel 3 Setup	AUTO_ZERO_CH3	S_16	4136
	AVERAGING_SAMPLES_CH3	U_8	8312
	AVERAGING_WINDOW_CH3	U_16	4296
	AZ_APERTURE_BAND_CH3	U_16	4338

Function	Register Name	Type	Reg.
	AZ_CAPTURE_BAND_CH3	U_8	8324
	AZ_MOTION_BAND_CH3	U_8	8336
	CHANNEL3_TEXT	L_8_T	16397
	DISPLAY_FORMAT_CH3	O_8	8370
	OFFSET_CH3	S_32	363
	SCALE_FACTOR_CH3	F_32	1103
	TEXT_CHARACTER_CH3	U_8	8396
Channel 4	CH4	S_32	15
	CH4_PROCESSED	S_32	265
	CH4_RAW	S_32	289
	CH4_SCALED	S_32	313
Channel 4 Setup	AUTO_ZERO_CH4	S_16	4137
	AVERAGING_SAMPLES_CH4	U_8	8313
	AVERAGING_WINDOW_CH4	U_16	4297
	AZ_APERTURE_BAND_CH4	U_16	4339
	AZ_CAPTURE_BAND_CH4	U_8	8325
	AZ_MOTION_BAND_CH4	U_8	8337
	CHANNEL4_TEXT	L_8_T	16399
	DISPLAY_FORMAT_CH4	O_8	8371
	OFFSET_CH4	S_32	365
	SCALE_FACTOR_CH4	F_32	1105
	TEXT_CHARACTER_CH4	U_8	8397
Channel 5	CH5	S_32	17
	CH5_PROCESSED	S_32	267
	CH5_RAW	S_32	291
	CH5_SCALED	S_32	315
Channel 5 Setup	AUTO_ZERO_CH5	S_16	4138
	AVERAGING_SAMPLES_CH5	U_8	8314
	AVERAGING_WINDOW_CH5	U_16	4298
	AZ_APERTURE_BAND_CH5	U_16	4340
	AZ_CAPTURE_BAND_CH5	U_8	8326
	AZ_MOTION_BAND_CH5	U_8	8338
	CHANNEL5_TEXT	L_8_T	16401
	DATA_SOURCE_CH5	U_16	4455
	DISPLAY_FORMAT_CH5	O_8	8372
	OFFSET_CH5	S_32	367
	SCALE_FACTOR_CH5	F_32	1107
	TEXT_CHARACTER_CH5	U_8	8398
Channel 6	CH6	S_32	19
	CH6_PROCESSED	S_32	269
	CH6_RAW	S_32	293
	CH6_SCALED	S_32	317
Channel 6 Setup	AUTO_ZERO_CH6	S_16	4139
	AVERAGING_SAMPLES_CH6	U_8	8315
	AVERAGING_WINDOW_CH6	U_16	4299

Function	Register Name	Type	Reg.
	AZ_APERTURE_BAND_CH6	U_16	4341
	AZ_CAPTURE_BAND_CH6	U_8	8327
	AZ_MOTION_BAND_CH6	U_8	8339
	CHANNEL6_TEXT	L_8_T	16403
	DATA_SOURCE_CH6	U_16	4456
	DISPLAY_FORMAT_CH6	O_8	8373
	OFFSET_CH6	S_32	369
	SCALE_FACTOR_CH6	F_32	1109
	TEXT_CHARACTER_CH6	U_8	8399
Channel 7	CH7	S_32	21
	CH7_PROCESSED	S_32	271
	CH7_RAW	S_32	295
	CH7_SCALED	S_32	319
Channel 7 Setup	AUTO_ZERO_CH7	S_16	4140
	AVERAGING_SAMPLES_CH7	U_8	8316
	AVERAGING_WINDOW_CH7	U_16	4300
	AZ_APERTURE_BAND_CH7	U_16	4342
	AZ_CAPTURE_BAND_CH7	U_8	8328
	AZ_MOTION_BAND_CH7	U_8	8340
	CHANNEL7_TEXT	L_8_T	16405
	DATA_SOURCE_CH7	U_16	4457
	DISPLAY_FORMAT_CH7	O_8	8374
	OFFSET_CH7	S_32	371
	SCALE_FACTOR_CH7	F_32	1111
	TEXT_CHARACTER_CH7	U_8	8400
Clock	DATE	U_8	8242
	DAYS	U_8	8241
	HOURS	U_8	8240
	HOURS_MINUTES	U_16_R	4438
	HRS_MIN_SEC	U_32_R	151
	MINUTES	U_8	8239
	MONTH	U_8	8243
	SECONDS	U_8	8238
	YEAR	U_8	8244
Codes	CAL	O_8	8193
	CODE1	O_8	8194
	CODE2	O_8	8195
	CODE3	O_8	8196
	CODE4	O_8	8197
	CODE5	O_8	8198
	CODE6	O_8	8199
	CODE7	O_8	8200
	CODE8	O_8	8201
	CODE9	O_8	8202
	CODE10	O_8	8203
Data Logging	DATALOG_MEM_SIZE	U_8	8432

Function	Register Name	Type	Reg.
	LOG_READ_COUNT	U_16	4462
	LOG_READ_POINTER	U_32	491
	LOG_REG1	U_16	4417
	LOG_REG2	U_16	4418
	LOG_REG3	U_16	4419
	LOG_REG4	U_16	4420
	LOG_REG5	U_16	4421
	LOG_REG6	U_16	4422
	LOG_REG7	U_16	4423
	LOG_REG8	U_16	4424
	LOG_REG9	U_16	4425
	LOG_REG10	U_16	4426
	LOG_REG11	U_16	4427
	LOG_REG12	U_16	4428
	LOG_REG13	U_16	4429
	LOG_REG14	U_16	4430
	LOG_REG15	U_16	4431
	LOG_REG16	U_16	4432
	LOG_WRITE_POINTER	U_32	489
	SINGLE_LOG	C_124_T	16553
Data Logging Read Only	LOG_SAMPLE_DATE	U_8_R	8444
	LOG_SAMPLE_HOUR	U_8_R	8447
	LOG_SAMPLE_MINUTE	U_8_R	8448
	LOG_SAMPLE_MONTH	U_8_R	8445
	LOG_SAMPLE_REG1	S_32_R	493
	LOG_SAMPLE_REG2	S_32_R	495
	LOG_SAMPLE_REG3	S_32_R	497
	LOG_SAMPLE_REG4	S_32_R	499
	LOG_SAMPLE_REG5	S_32_R	501
	LOG_SAMPLE_REG6	S_32_R	503
	LOG_SAMPLE_REG7	S_32_R	505
	LOG_SAMPLE_REG8	S_32_R	507
	LOG_SAMPLE_REG9	S_32_R	509
	LOG_SAMPLE_REG10	S_32_R	511
	LOG_SAMPLE_REG11	S_32_R	513
	LOG_SAMPLE_REG12	S_32_R	515
	LOG_SAMPLE_REG13	S_32_R	517
	LOG_SAMPLE_REG14	S_32_R	519
	LOG_SAMPLE_REG15	S_32_R	521
	LOG_SAMPLE_REG16	S_32_R	523
	LOG_SAMPLE_SECOND	U_8_R	8449
	LOG_SAMPLE_TRIGGER	U_8_R	8443
	LOG_SAMPLE_YEAR	U_8_R	8446
	MAX_LOG_SAMPLES	U_32_R	487
Digital	DIGITAL_OUT	U_32	249
	DO_1	B_0	249
	to	to	
	DO_32	B_31	249

Function	Register Name	Type	Reg.
Digital Read Only	DIGITAL_IN	U_32_R	251
	DI_1	B_0_R	251
	DI_32	B_31_R	251
	IO_TYPE	U_8_R	8430
Display	BRIGHTNESS	U_8	8206
	CODE_BLANKING	U_16	4434
	CURRENT_ALPHA_CHARACTER	U_8	8392
	CURRENT_DISPLAY_FORMAT	U_8	8366
	DATA_SOURCE_DISPLAY1	U_16	4371
	DATA_SOURCE_DISPLAY2	U_16	4372
	DATA_SOURCE_DISPLAY3	U_16	4373
	DATA_SOURCE_PEAK_VALLEY1	U_16	4374
	DATA_SOURCE_PEAK_VALLEY2	U_16	4375
	DATA_SOURCE_PEAK_VALLEY3	U_16	4376
	DISPLAY	S_32	1
	DISPLAY_FORMAT_DEFAULT	O_8	8375
	PEAK1	S_32	57
	PEAK2	S_32	61
	PEAK3	S_32	65
	SETPOINT_BLANKING	U_16	4435
	TARE	S_32	77
	TEXT_CHARACTER_DEFAULT	U_8	8401
	VALLEY1	S_32	59
	VALLEY2	S_32	63
	VALLEY3	S_32	67
	VIEW_MODE_BLANKING	U_16	4436
Display Bargraph	BAR_COLOUR	U_16	4347
	BAR_HIGH	S_32	475
	BAR_LOW	S_32	473
	BAR_ZERO	U_8	8436
Display Format	DISPLAY_FORMAT_CH1	O_8	8368
	DISPLAY_FORMAT_CH2	O_8	8369
	DISPLAY_FORMAT_CH3	O_8	8370
	DISPLAY_FORMAT_CH4	O_8	8371
	DISPLAY_FORMAT_CH5	O_8	8372
	DISPLAY_FORMAT_CH6	O_8	8373
	DISPLAY_FORMAT_CH7	O_8	8374
	DISPLAY_FORMAT_RESULT	O_8	8367
	DISPLAY_FORMAT_TOTAL1	O_8	8376
	DISPLAY_FORMAT_TOTAL2	O_8	8377
	DISPLAY_FORMAT_TOTAL3	O_8	8378
	DISPLAY_FORMAT_TOTAL4	O_8	8379
	DISPLAY_FORMAT_TOTAL5	O_8	8380
	DISPLAY_FORMAT_TOTAL6	O_8	8381
	TEXT_CHARACTER_CH1	U_8	8394
	TEXT_CHARACTER_CH2	U_8	8395
	TEXT_CHARACTER_CH3	U_8	8396

Function	Register Name	Type	Reg.
	TEXT_CHARACTER_CH4	U_8	8397
	TEXT_CHARACTER_CH5	U_8	8398
	TEXT_CHARACTER_CH6	U_8	8399
	TEXT_CHARACTER_CH7	U_8	8400
	TEXT_CHARACTER_RESULT	U_8	8393
	TEXT_CHARACTER_TOTAL1	U_8	8402
	TEXT_CHARACTER_TOTAL2	U_8	8403
	TEXT_CHARACTER_TOTAL3	U_8	8404
	TEXT_CHARACTER_TOTAL4	U_8	8405
	TEXT_CHARACTER_TOTAL5	U_8	8406
	TEXT_CHARACTER_TOTAL6	U_8	8407
Display Text	DISPLAY_STRING	L_100_T	16385
	DISPLAY2_STRING	L_100_T	16387
	DISPLAY3_STRING	L_100_T	16389
	OVER_TEXT	L_8_T	16539
	PEAK1_TEXT	L_8_T	16441
	PEAK2_TEXT	L_8_T	16445
	PEAK3_TEXT	L_8_T	16449
	PRINT_STRING	L_62_T	16543
	UNDER_TEXT	L_8_T	16541
	VALLEY1_TEXT	L_8_T	16443
	VALLEY2_TEXT	L_8_T	16447
	VALLEY3_TEXT	L_8_T	16451
	CHANNEL1_TEXT	L_8_T	16393
	CHANNEL2_TEXT	L_8_T	16395
	CHANNEL3_TEXT	L_8_T	16397
	CHANNEL4_TEXT	L_8_T	16399
	CHANNEL5_TEXT	L_8_T	16401
	CHANNEL6_TEXT	L_8_T	16403
	CHANNEL7_TEXT	L_8_T	16405
	RESULT_TEXT	L_8_T	16391
	SETPOINT1_TEXT	L_8_T	16495
	SETPOINT2_TEXT	L_8_T	16497
	SETPOINT3_TEXT	L_8_T	16499
	SETPOINT4_TEXT	L_8_T	16501
	SETPOINT5_TEXT	L_8_T	16503
	SETPOINT6_TEXT	L_8_T	16505
	TOTAL1_TEXT	L_8_T	16421
	TOTAL2_TEXT	L_8_T	16423
	TOTAL3_TEXT	L_8_T	16425
	TOTAL4_TEXT	L_8_T	16427
	TOTAL5_TEXT	L_8_T	16429
	TOTAL6_TEXT	L_8_T	16431
	AUX1_TEXT	L_8_T	16463
	to		to
	AUX16_TEXT	L_8_T	16493
Display User Auxiliary	AUX1	S_32	79
	AUX2	S_32	81

Function	Register Name	Type	Reg.
	AUX3	S_32	83
	AUX4	S_32	85
	AUX5	S_32	87
	AUX6	S_32	89
	AUX7	S_32	91
	AUX8	S_32	93
	AUX9	S_32	95
	AUX10	S_32	97
	AUX11	S_32	99
	AUX12	S_32	101
	AUX13	S_32	103
	AUX14	S_32	105
	AUX15	S_32	107
	AUX16	S_32	109
Display User Auxiliary Setup	AUX1_TEXT	L_8_T	16463
	to		to
	AUX16_TEXT	L_8_T	16493
	DISPLAY_FORMAT_AUX1	O_8	8382
	DISPLAY_FORMAT_AUX2	O_8	8383
	DISPLAY_FORMAT_AUX3	O_8	8384
	DISPLAY_FORMAT_AUX4	O_8	8385
	DISPLAY_FORMAT_AUX5	O_8	8386
	DISPLAY_FORMAT_AUX6	O_8	8387
	DISPLAY_FORMAT_AUX7	O_8	8388
	DISPLAY_FORMAT_AUX8	O_8	8389
	DISPLAY_FORMAT_AUX9	O_8	8390
	DISPLAY_FORMAT_AUX10	O_8	8391
	DISPLAY_FORMAT_AUX11	O_8	8469
	DISPLAY_FORMAT_AUX12	O_8	8470
	DISPLAY_FORMAT_AUX13	O_8	8471
	DISPLAY_FORMAT_AUX14	O_8	8472
	DISPLAY_FORMAT_AUX15	O_8	8473
	DISPLAY_FORMAT_AUX16	O_8	8474
	TEXT_CHARACTER_AUX1	U_8	8408
	TEXT_CHARACTER_AUX2	U_8	8409
	TEXT_CHARACTER_AUX3	U_8	8410
	TEXT_CHARACTER_AUX4	U_8	8411
	TEXT_CHARACTER_AUX5	U_8	8412
	TEXT_CHARACTER_AUX6	U_8	8413
	TEXT_CHARACTER_AUX7	U_8	8414
	TEXT_CHARACTER_AUX8	U_8	8415
	TEXT_CHARACTER_AUX9	U_8	8416
	TEXT_CHARACTER_AUX10	U_8	8417
	TEXT_CHARACTER_AUX11	U_8	8475
	TEXT_CHARACTER_AUX12	U_8	8476
	TEXT_CHARACTER_AUX13	U_8	8477
	TEXT_CHARACTER_AUX14	U_8	8478
	TEXT_CHARACTER_AUX15	U_8	8479

Function	Register Name	Type	Reg.
	TEXT_CHARACTER_AUX16	U_8	8480
Edit Mode	EDIT_DEF	S_32	237
	EDIT_MAX	S_32	233
	EDIT_MIN	S_32	235
	EDIT_STATE	U_8	8223
	EDIT_VALUE	S_32	231
	NON_VOLATILE_WRITE	B_5	8222
Linearization 1	TABLE1_DATE	U_16	4277
	TABLE1_INPUT1	S_24	2049
	to		to
	TABLE1_INPUT32	S_24	2111
	TABLE1_OUTPUT1	S_24	2113
	to		to
	TABLE1_OUTPUT32	S_24	2175
	TABLE1_SERIAL_NO	U_16	4285
Linearization 2	TABLE2_DATE	U_16	4278
	TABLE2_INPUT1	S_24	2177
	to		to
	TABLE2_INPUT32	S_24	2239
	TABLE2_OUTPUT1	S_24	2241
	to		to
	TABLE2_OUTPUT32	S_24	2303
	TABLE2_SERIAL_NO	U_16	4286
Linearization 3	TABLE3_DATE	U_16	4279
	TABLE3_INPUT1	S_24	2305
	to		to
	TABLE3_INPUT32	S_24	2367
	TABLE3_OUTPUT1	S_24	2369
	to		to
	TABLE3_OUTPUT32	S_24	2431
	TABLE3_SERIAL_NO	U_16	4287
Linearization 4	TABLE4_DATE	U_16	4280
	TABLE4_INPUT1	S_24	2433
	to		to
	TABLE4_INPUT32	S_24	2495
	TABLE4_OUTPUT1	S_24	2497
	to		to
	TABLE4_OUTPUT32	S_24	2559
	TABLE4_SERIAL_NO	U_16	4288
PID 1	PID1_OUTPUT	U_16	4125
	PID1_DERIVATIVE_VALUE	U_16	4213
	PID1_INTEGRAL_VALUE	U_16	4197
	PID1_PROPORTIONAL_BAND	U_16	4181
	PID1_ANTI_RESET_WINDUP	U_16	4245
	PID1_CYCLE_TIME	U_16	4261

Function	Register Name	Type	Reg.
	PID1_ERROR_SUM	F_32	1057
	PID1_INTEGRAL_TERM	F_32	1069
	PID1_SPAN	S_32	429
PID 2	PID2_ANTI_RESET_WINDUP	U_16	4246
	PID2_CYCLE_TIME	U_16	4262
	PID2_DERIVATIVE_VALUE	U_16	4214
	PID2_ERROR_SUM	F_32	1059
	PID2_INTEGRAL_TERM	F_32	1071
	PID2_INTEGRAL_VALUE	U_16	4198
	PID2_OUTPUT	U_16	4126
	PID2_PROPORTIONAL_BAND	U_16	4182
	PID2_SPAN	S_32	431
PID 3	PID3_ANTI_RESET_WINDUP	U_16	4247
	PID3_CYCLE_TIME	U_16	4263
	PID3_DERIVATIVE_VALUE	U_16	4215
	PID3_ERROR_SUM	F_32	1061
	PID3_INTEGRAL_TERM	F_32	1073
	PID3_INTEGRAL_VALUE	U_16	4199
	PID3_OUTPUT	U_16	4127
	PID3_PROPORTIONAL_BAND	U_16	4183
	PID3_SPAN	S_32	433
PID 4	PID4_ANTI_RESET_WINDUP	U_16	4248
	PID4_CYCLE_TIME	U_16	4264
	PID4_DERIVATIVE_VALUE	U_16	4216
	PID4_ERROR_SUM	F_32	1063
	PID4_INTEGRAL_TERM	F_32	1075
	PID4_INTEGRAL_VALUE	U_16	4200
	PID4_OUTPUT	U_16	4128
	PID4_PROPORTIONAL_BAND	U_16	4184
	PID4_SPAN	S_32	435
PID 5	PID5_ANTI_RESET_WINDUP	U_16	4249
	PID5_CYCLE_TIME	U_16	4265
	PID5_DERIVATIVE_VALUE	U_16	4217
	PID5_ERROR_SUM	F_32	1065
	PID5_INTEGRAL_TERM	F_32	1077
	PID5_INTEGRAL_VALUE	U_16	4201
	PID5_OUTPUT	U_16	4129
	PID5_PROPORTIONAL_BAND	U_16	4185
	PID5_SPAN	S_32	437
PID 6	PID6_ANTI_RESET_WINDUP	U_16	4250
	PID6_CYCLE_TIME	U_16	4266
	PID6_DERIVATIVE_VALUE	U_16	4218
	PID6_ERROR_SUM	F_32	1067
	PID6_INTEGRAL_TERM	F_32	1079
	PID6_INTEGRAL_VALUE	U_16	4202
	PID6_OUTPUT	U_16	4130

Function	Register Name	Type	Reg.
	PID6_PROPORTIONAL_BAND	U_16	4186
	PID6_SPAN	S_32	439
Result	RESULT	S_32	7
	RESULT_PROCESSED	S_32	257
	RESULT_RAW	S_32	281
	RESULT_SCALED	S_32	305
Result Setup	AUTO_ZERO_RESULT	S_16	4133
	AVERAGING_SAMPLES_RESULT	U_8	8309
	AVERAGING_WINDOW_RESULT	U_16	4293
	AZ_APERTURE_BAND_RESULT	U_16	4335
	AZ_CAPTURE_BAND_RESULT	U_8	8321
	AZ_MOTION_BAND_RESULT	U_8	8333
	DATA_SOURCE_RESULT	U_16	4450
	DISPLAY_FORMAT_RESULT	O_8	8367
	OFFSET_RESULT	S_32	357
	RESULT_TEXT	L_8_T	16391
	SCALE_FACTOR_RESULT	F_32	1097
	TEXT_CHARACTER_RESULT	U_8	8393
Serial	SERIAL_PORT_NO	U_8_R	8219
Serial Modbus Master	CRC_ERROR	B_5	8464
	DATA_ERROR	B_6	8464
	MESSAGE_COMPLETE	B_7	8464
	MESSAGE_TIMEOUT	B_4	8464
	MODBUS_MASTER_FLAGS	U_8_R	8464
	POLL_TIME	U_8	8462
	RESPONSE_TIME	U_8	8463
Serial Port 1	BAUDRATE1	U_8	8207
	RECEIVE_BUFFER1	U_8	12289
	RECEIVE_COUNT1	U_8	8454
	RECEIVE_FLAGS1	U_8	8234
	RECEIVE_READY1	B_0	8234
	RECEIVE_RESULT1	S_32	349
	SERIAL_ADDRESS1	U_8	8211
	SERIAL_MODE1	U_8	8215
	SERIAL_POINTER1	U_8	8458
	STRING_CHARACTER1	U_8	8226
	STRING_LENGTH1	U_8	8230
Serial Port 2	BAUDRATE2	U_8	8208
	RECEIVE_BUFFER2	U_8	12545
	RECEIVE_COUNT2	U_8	8455
	RECEIVE_FLAGS2	U_8	8235
	RECEIVE_READY2	B_0	8235
	RECEIVE_RESULT2	S_32	351
	SERIAL_ADDRESS2	U_8	8212
	SERIAL_MODE2	U_8	8216

Function	Register Name	Type	Reg.
	SERIAL_POINTER2	U_8	8459
	STRING_CHARACTER2	U_8	8227
	STRING_LENGTH2	U_8	8231
Serial Port 3	BAUDRATE3	U_8	8209
	RECEIVE_BUFFER3	U_8	12801
	RECEIVE_COUNT3	U_8	8456
	RECEIVE_FLAGS3	U_8	8236
	RECEIVE_READY3	B_0	8236
	RECEIVE_RESULT3	S_32	353
	SERIAL_ADDRESS3	U_8	8213
	SERIAL_MODE3	U_8	8217
	SERIAL_POINTER3	U_8	8460
	STRING_CHARACTER3	U_8	8228
	STRING_LENGTH3	U_8	8232
Setpoints	SETPOINT_LATCH_FLAGS	U_16	4100
	SETPOINT_STATUS_FLAGS	U_16_R	4097
	SP_POWERON_INHIBIT_FLAGS	U_16	4102
	TRIGGER_STATUS	U_16_R	4098
Setpoint 1	SETPOINT1	S_32	111
	SP1	B_0	239
	SP1_REMOTE	B_8	239
	SP1_STATUS	B_0_R	4097
	SP1_TRIGGER	U_8	8293
	TRIGGER1	B_0_R	4098
Setpoint 1 Setup	SP1_BREAK_DELAY	U_16	4213
	SP1_HYST	U_16	4181
	SP1_MAKE_DELAY	U_16	4197
	SP1_DATA_SOURCE	U_16	4401
	PID1_ANTI_RESET_WINDUP	U_16	4245
	PID1_CYCLE_TIME	U_16	4261
	PID1_ERROR_SUM	F_32	1057
	PID1_INTEGRAL_TERM	F_32	1069
	SP1_RESET_VALUE	S_32	429
	SP1_DELAY_TYPE	U_8	8277
	SP1_TRACKING	U_8	8261
	SP1_RESET_DESTINATION	U_16	4229
	SP1_CONTROL	O_8	8245
	POWERON_INHIBIT_SP1	B_0	4102
	RLY1_DE_ENERGISE	B_0	4101
	SP1_LATCH	B_0	4100
	SETPOINT1_TEXT	L_8_T	16495
Setpoint 2	SETPOINT2	S_32	113
	SP2	B_1	239
	SP2_REMOTE	B_9	239
	SP2_STATUS	B_1_R	4097
	SP2_TRIGGER	U_8	8294

Function	Register Name	Type	Reg.
	TRIGGER2	B_1_R	4098
Setpoint 2 Setup	PID2_ANTI_RESET_WINDUP	U_16	4246
	PID2_CYCLE_TIME	U_16	4262
	PID2_ERROR_SUM	F_32	1059
	PID2_INTEGRAL_TERM	F_32	1071
	POWERON_INHIBIT_SP2	B_1	4102
	RLY2_DE_ENERGISE	B_1	4101
	SETPOINT2_TEXT	L_8_T	16497
	SP2_BREAK_DELAY	U_16	4214
	SP2_CONTROL	O_8	8246
	SP2_DATA_SOURCE	U_16	4402
	SP2_DELAY_TYPE	U_8	8278
	SP2_HYST	U_16	4182
	SP2_LATCH	B_1	4100
	SP2_MAKE_DELAY	U_16	4198
	SP2_RESET_DESTINATION	U_16	4230
	SP2_RESET_VALUE	S_32	431
	SP2_TRACKING	U_8	8262
Setpoint 3	SETPOINT3	S_32	115
	SP3	B_2	239
	SP3_REMOTE	B_10	239
	SP3_STATUS	B_2_R	4097
	SP3_TRIGGER	U_8	8295
	TRIGGER3	B_2_R	4098
Setpoint 3	PID3_ANTI_RESET_WINDUP	U_16	4247
	PID3_CYCLE_TIME	U_16	4263
	PID3_ERROR_SUM	F_32	1061
	PID3_INTEGRAL_TERM	F_32	1073
	POWERON_INHIBIT_SP3	B_2	4102
	RLY3_DE_ENERGISE	B_2	4101
	SETPOINT3_TEXT	L_8_T	16499
	SP3_BREAK_DELAY	U_16	4215
	SP3_CONTROL	O_8	8247
	SP3_DATA_SOURCE	U_16	4403
	SP3_DELAY_TYPE	U_8	8279
	SP3_HYST	U_16	4183
	SP3_LATCH	B_2	4100
	SP3_MAKE_DELAY	U_16	4199
	SP3_RESET_DESTINATION	U_16	4231
	SP3_RESET_VALUE	S_32	433
	SP3_TRACKING	U_8	8263
Setpoint 4	SETPOINT4	S_32	117
	SP4	B_3	239
	SP4_REMOTE	B_11	239
	SP4_STATUS	B_3_R	4097
	SP4_TRIGGER	U_8	8296

Function	Register Name	Type	Reg.
	TRIGGER4	B_3_R	4098
Setpoint 4 Setup	PID4_ANTI_RESET_WINDUP	U_16	4248
	PID4_CYCLE_TIME	U_16	4264
	PID4_ERROR_SUM	F_32	1063
	PID4_INTEGRAL_TERM	F_32	1075
	POWERON_INHIBIT_SP4	B_3	4102
	RLY4_DE_ENERGISE	B_3	4101
	SETPOINT4_TEXT	L_8_T	16501
	SP4_BREAK_DELAY	U_16	4216
	SP4_CONTROL	O_8	8248
	SP4_DATA_SOURCE	U_16	4404
	SP4_DELAY_TYPE	U_8	8280
	SP4_HYST	U_16	4184
	SP4_LATCH	B_3	4100
	SP4_MAKE_DELAY	U_16	4200
	SP4_RESET_DESTINATION	U_16	4232
	SP4_RESET_VALUE	S_32	435
	SP4_TRACKING	U_8	8264
Setpoint 5	SETPOINT5	S_32	119
	SP5	B_4	239
	SP5_REMOTE	B_12	239
	SP5_STATUS	B_4_R	4097
	SP5_TRIGGER	U_8	8297
	TRIGGER5	B_4_R	4098
Setpoint 5 Setup	PID5_ANTI_RESET_WINDUP	U_16	4249
	PID5_CYCLE_TIME	U_16	4265
	PID5_ERROR_SUM	F_32	1065
	PID5_INTEGRAL_TERM	F_32	1077
	POWERON_INHIBIT_SP5	B_4	4102
	RLY5_DE_ENERGISE	B_4	4101
	SETPOINT5_TEXT	L_8_T	16503
	SP5_BREAK_DELAY	U_16	4217
	SP5_CONTROL	O_8	8249
	SP5_DATA_SOURCE	U_16	4405
	SP5_DELAY_TYPE	U_8	8281
	SP5_HYST	U_16	4185
	SP5_LATCH	B_4	4100
	SP5_MAKE_DELAY	U_16	4201
	SP5_RESET_DESTINATION	U_16	4233
	SP5_RESET_VALUE	S_32	437
	SP5_TRACKING	U_8	8265
Setpoint 6	SETPOINT6	S_32	121
	SP6	B_5	239
	SP6_REMOTE	B_13	239
	SP6_STATUS	B_5_R	4097
	SP6_TRIGGER	U_8	8298

Function	Register Name	Type	Reg.
	TRIGGER6	B_5_R	4098
Setpoint 6 Setup	PID6_ANTI_RESET_WINDUP	U_16	4250
	PID6_CYCLE_TIME	U_16	4266
	PID6_ERROR_SUM	F_32	1067
	PID6_INTEGRAL_TERM	F_32	1079
	POWERON_INHIBIT_SP6	B_5	4102
	RLY6_DE_ENERGISE	B_5	4101
	SETPOINT6_TEXT	L_8_T	16505
	SP6_BREAK_DELAY	U_16	4218
	SP6_CONTROL	O_8	8250
	SP6_DATA_SOURCE	U_16	4406
	SP6_DELAY_TYPE	U_8	8282
	SP6_HYST	U_16	4186
	SP6_LATCH	B_5	4100
	SP6_MAKE_DELAY	U_16	4202
	SP6_RESET_DESTINATION	U_16	4234
	SP6_RESET_VALUE	S_32	439
	SP6_TRACKING	U_8	8266
Smart Module Setup Read Only	SMART_ID	U_8_R	8422
	SMART_VERSION	U_8_R	8433
Smart Module Setup	SMART_CAL1	F_32	1123
	SMART_CAL2	F_32	1125
	SMART_CAL3	F_32	1127
	SMART_CAL4	F_32	1129
	SMART_RESET_OFFSET1	S_32	465
	SMART_RESET_OFFSET2	S_32	467
	SMART_SETUP1	O_8	8423
	SMART_SETUP2	O_8	8424
	SMART_SETUP3	O_8	8425
Smart Module	SMART_RESULT1	S_32	329
	SMART_RESULT2	S_32	331
	SMART_RESULT3	S_32	333
	SMART_RESULT4	S_32	335
	SMART_RESULT5	S_32	337
	SMART_RESULT6	S_32	339
	SMART_RESULT7	S_32	341
Status	ALARM_STATUS	U_32	239
	ANNUNCIATORS	U_16	4110
	EEPROM_MEMORY_SIZE	U_16_R	4437
	ERROR_STATUS	U_8	8435
	LED1	B_5	4110
	LED2	B_4	4110
	LED3	B_3	4110
	LED4	B_2	4110
	LED5	B_1	4110
	LED6	B_0	4110

Function	Register Name	Type	Reg.
	LIGHT_BAR	U_8	8436
	LIGHT_BAR1	B_0	8436
	LIGHT_BAR2	B_1	8436
	LIGHT_BAR3	B_2	8436
	LIGHT_BAR4	B_3	8436
	LIGHT_BAR5	B_4	8436
	LIGHT_BAR6	B_5	8436
	LIGHT_REMOTE	B_7	8436
	RELAY_DE_ENERGISE_FLAGS	U_16	4101
	RELAY_STATUS	U_16	4099
	RELAY1	B_0	4099
	RELAY2	B_1	4099
	RELAY3	B_2	4099
	RELAY4	B_3	4099
	RELAY5	B_4	4099
	RELAY6	B_5	4099
	REMOTE_LED1	B_13	4110
	REMOTE_LED2	B_12	4110
	REMOTE_LED3	B_11	4110
	REMOTE_LED4	B_10	4110
	REMOTE_LED5	B_9	4110
	REMOTE_LED6	B_8	4110
	SETPOINT_STATUS_FLAGS	U_16_R	4097
	SP1_STATUS	B_0_R	4097
	SP2_STATUS	B_1_R	4097
	SP3_STATUS	B_2_R	4097
	SP4_STATUS	B_3_R	4097
	SP5_STATUS	B_4_R	4097
	SP6_STATUS	B_5_R	4097
	STATE	U_16	4109
	TREND_DOWN	B_7	239
	TREND_UP	B_6	239
	VIEW_POINTER	U_8	8220
Status Rear Pins	CAPTURE_PIN	B_2_R	4108
	COUNT2_DIRECTION	B_7_R	4108
	COUNT2_INPUT	B_6_R	4108
	D1	B_3_R	4108
	D2	B_4_R	4108
	D3	B_5_R	4108
	DIGITAL_IO	U_16	4108
	HOLD_PIN	B_0_R	4108
	LOCK_PIN	B_1_R	4108
	MUX0	B_8_R	4108
	MUX1	B_9_R	4108
Status Switches	DOWN_BUTTON	B_1	247
	F1_BUTTON	B_5	247
	F2_BUTTON	B_6	247
	F3_BUTTON	B_7	247

Function	Register Name	Type	Reg.
	LOCK_DOWN_SWITCH	B_4	247
	LOCK_UP_SWITCH	B_3	247
	PROG_BUTTON	B_0	247
	REMOTE_SWITCH	B_15	247
	SWITCHES	U_32	247
	UP_BUTTON	B_2	247
Timers	SHORT_TIMER1	U_16	4111
	SHORT_TIMER2	U_16	4112
	SHORT_TIMER3	U_16	4113
	SHORT_TIMER4	U_16	4114
	TIMER1	U_32	143
	TIMER2	U_32	145
	TIMER3	U_32	147
	TIMER4	U_32	149
Total 1	CUTOFF1	S_16	4325
	DATA_SOURCE_TOTAL1	U_16	4391
	DISPLAY_FORMAT_TOTAL1	O_8	8376
	INPUT_RATE1	U_16	4305
	K_FACTOR1	S_16	4315
	RATE_TOTALIZER1	U_8	8345
	TEXT_CHARACTER_TOTAL1	U_8	8402
	TOTAL1	S_32	37
	TOTAL1_TEXT	L_8_T	16421
Total 2	CUTOFF2	S_16	4326
	DATA_SOURCE_TOTAL2	U_16	4392
	DISPLAY_FORMAT_TOTAL2	O_8	8377
	INPUT_RATE2	U_16	4306
	K_FACTOR2	S_16	4316
	RATE_TOTALIZER2	U_8	8346
	TEXT_CHARACTER_TOTAL2	U_8	8403
	TOTAL2	S_32	39
	TOTAL2_TEXT	L_8_T	16423
Total 3	CUTOFF3	S_16	4327
	DATA_SOURCE_TOTAL3	U_16	4393
	DISPLAY_FORMAT_TOTAL3	O_8	8378
	INPUT_RATE3	U_16	4307
	K_FACTOR3	S_16	4317
	RATE_TOTALIZER3	U_8	8347
	TEXT_CHARACTER_TOTAL3	U_8	8404
	TOTAL3	S_32	41
	TOTAL3_TEXT	L_8_T	16425
Total 4	CUTOFF4	S_16	4328
	DATA_SOURCE_TOTAL4	U_16	4394
	DISPLAY_FORMAT_TOTAL4	O_8	8379
	INPUT_RATE4	U_16	4308
	K_FACTOR4	S_16	4318

Function	Register Name	Type	Reg.
	RATE_TOTALIZER4	U_8	8348
	TEXT_CHARACTER_TOTAL4	U_8	8405
	TOTAL4	S_32	43
	TOTAL4_TEXT	L_8_T	16427
Total 5	CUTOFF5	S_16	4329
	DATA_SOURCE_TOTAL5	U_16	4395
	DISPLAY_FORMAT_TOTAL5	O_8	8380
	INPUT_RATE5	U_16	4309
	K_FACTOR5	S_16	4319
	RATE_TOTALIZER5	U_8	8349
	TEXT_CHARACTER_TOTAL5	U_8	8406
	TOTAL5	S_32	45
	TOTAL5_TEXT	L_8_T	16429
Total 6	CUTOFF6	S_16	4330
	DATA_SOURCE_TOTAL6	U_16	4396
	DISPLAY_FORMAT_TOTAL6	O_8	8381
	INPUT_RATE6	U_16	4310
	K_FACTOR6	S_16	4320
	RATE_TOTALIZER6	U_8	8350
	TEXT_CHARACTER_TOTAL6	U_8	8407
	TOTAL6	S_32	47
	TOTAL6_TEXT	L_8_T	16431
User Memory 16 bit range	USER_MEMORY_1	S_16	5121
	to		to
	USER_MEMORY_1024	S_16	6144
User Memory 8 bit range	USER_MEMORY_BYTE_1	U_8	10241
	to		to
	USER_MEMORY_BYTE_2048	U_8	12288
User Text Memory	USER_TEXT1	L_30_T	16567
	to		to
	USER_TEXT64	L_30_T	16693
User Variables Bit Flags	GENERAL_PURPOSE_FLAGS	U_32	241
	GPF1	B_0	241
	to	to	
	GPF32	B_31	241
User Variables Floating Point	FLOAT_VARIABLE1	F_32	1025
	FLOAT_VARIABLE2	F_32	1027
	FLOAT_VARIABLE3	F_32	1029
	FLOAT_VARIABLE4	F_32	1031
	FLOAT_VARIABLE5	F_32	1033
	FLOAT_VARIABLE6	F_32	1035
	FLOAT_VARIABLE7	F_32	1037
	FLOAT_VARIABLE8	F_32	1039
	FLOAT_VARIABLE9	F_32	1041
	FLOAT_VARIABLE10	F_32	1043

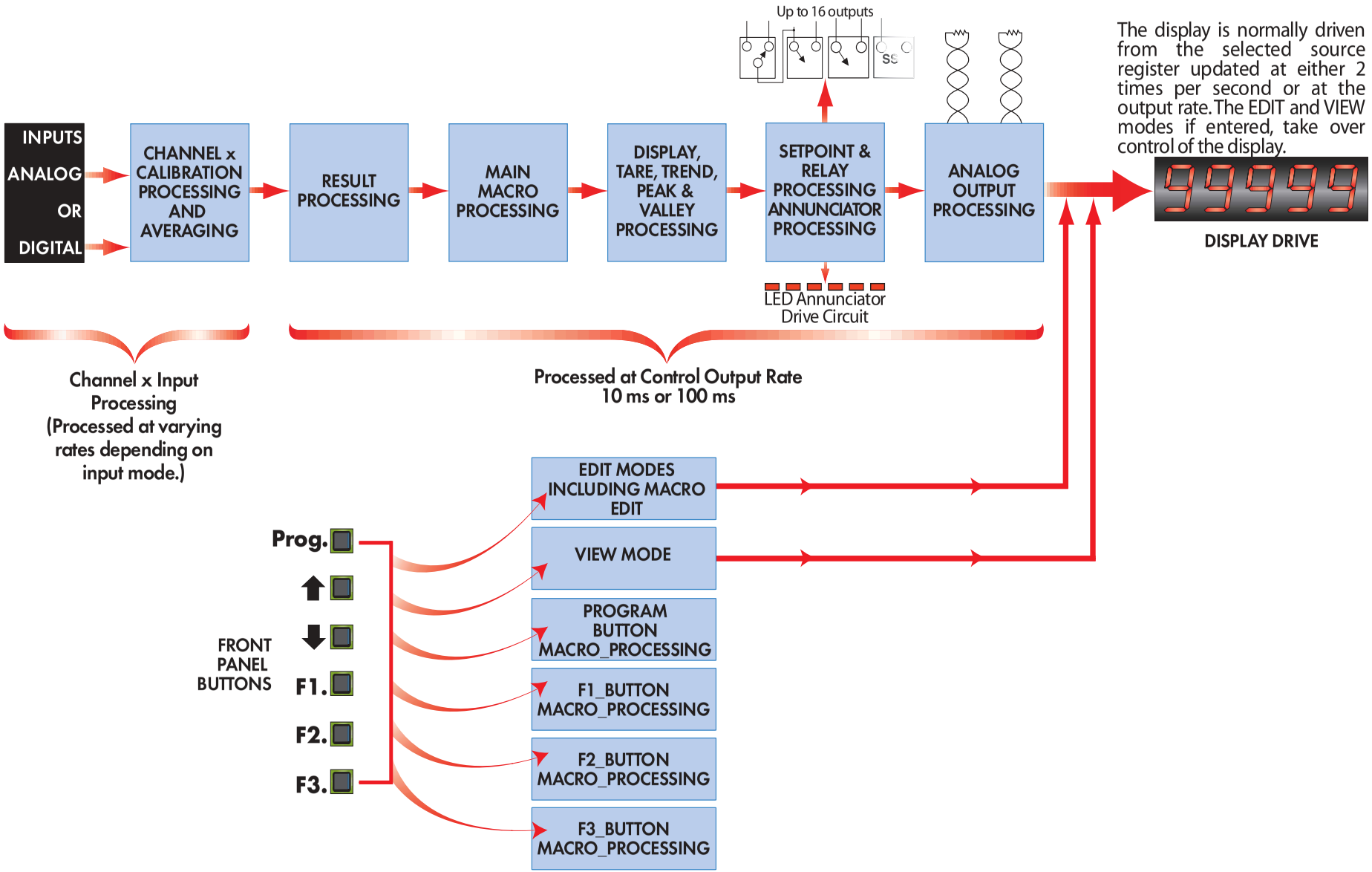
Function	Register Name	Type	Reg.
	FLOAT_VARIABLE11	F_32	1045
	FLOAT_VARIABLE12	F_32	1047
	FLOAT_VARIABLE13	F_32	1049
	FLOAT_VARIABLE14	F_32	1051
	FLOAT_VARIABLE15	F_32	1053
	FLOAT_VARIABLE16	F_32	1055
	VARIABLE_A_FP	F_32	1121
User Variables Integer	INTEGER_VARIABLE1	S_32	155
	INTEGER_VARIABLE2	S_32	157
	INTEGER_VARIABLE3	S_32	159
	INTEGER_VARIABLE4	S_32	161
	INTEGER_VARIABLE5	S_32	163
	INTEGER_VARIABLE6	S_32	165
	INTEGER_VARIABLE7	S_32	167
	INTEGER_VARIABLE8	S_32	169
	INTEGER_VARIABLE9	S_32	171
	INTEGER_VARIABLE10	S_32	173
	INTEGER_VARIABLE11	S_32	175
	INTEGER_VARIABLE12	S_32	177
	INTEGER_VARIABLE13	S_32	179
	INTEGER_VARIABLE14	S_32	181
	INTEGER_VARIABLE15	S_32	183
	INTEGER_VARIABLE16	S_32	185
	INTEGER_VARIABLE17	S_32	187
	INTEGER_VARIABLE18	S_32	189
	INTEGER_VARIABLE19	S_32	191
	INTEGER_VARIABLE20	S_32	193
	VARIABLE_A_INT	S_32	479
User Variables Text	TEXT_VARIABLE1	L_30_T	16897
	TEXT_VARIABLE2	L_30_T	16899
	TEXT_VARIABLE3	L_30_T	16901
	TEXT_VARIABLE4	L_30_T	16903
	TEXT_VARIABLE5	L_30_T	16905
	TEXT_VARIABLE6	L_30_T	16907
	TEXT_VARIABLE7	L_30_T	16909
	TEXT_VARIABLE8	L_30_T	16911
Miscalleneous	CPU_LOADING	U_8_R	8434
	INC_DEC_DISPLAY	S_32	469
	MACRO_SIZE	U_16_R	4433
	MANUAL_LOADER_DISPLAY	S_32	471
	METER_TYPE	L_8_T	16565
	SPAN	S_32	461
	ZERO	S_32	463
Deprecated Names from Tiger 320	B	L_8_T	16385
	BAUDRATE	U_8	8207
	Channel1_Text	L_8_T	16393
	Channel2_Text	L_8_T	16395

Function	Register Name	Type	Reg.
	Channel3_Text	L_8_T	16397
	Channel4_Text	L_8_T	16399
	DATA_SOURCE_PEAK_VALLEY	U_16	4374
	H	L_8_T	16441
	I	L_8_T	16443
	J	L_8_T	16421
	K	L_8_T	16423
	L	L_8_T	16495
	M	L_8_T	16497
	N	L_8_T	16499
	O	L_8_T	16501
	Over_Text	L_8_T	16539
	P	L_8_T	16503
	PEAK	S_32	57
	Peak1_Text	L_8_T	16441
	Print_String	L_62_T	16543
	Q	L_8_T	16505
	R	L_8_T	16539
	RECEIVE_BUFFER	U_8	12289
	RECEIVE_COUNT	U_8	8454
	RECEIVE_FLAGS	U_8	8234
	RECEIVE_READY	B_0	8234
	RECEIVE_RESULT	S_32	349
	S	L_8_T	16541
	SERIAL_ADDRESS	U_8	8211
	SERIAL_POINTER	U_8	8458
	STRING_CHARACTER	U_8	8226
	STRING_CHARACTER1	U_8	8226
	STRING_LENGTH	U_8	8230
	Setpoint1_Text	L_8_T	16495
	Setpoint2_Text	L_8_T	16497
	Setpoint3_Text	L_8_T	16499
	Setpoint4_Text	L_8_T	16501
	Setpoint5_Text	L_8_T	16503
	Setpoint6_Text	L_8_T	16505
	T	L_8_T	16393
	Total1_Text	L_8_T	16421
	Total2_Text	L_8_T	16423
	U	L_8_T	16395
	Under_Text	L_8_T	16541
	V	L_8_T	16397
	VALLEY	S_32	59
	Valley1_Text	L_8_T	16443
	VARIABLE1	S_32	155
	VARIABLE2	S_32	157
	VARIABLE3	S_32	159
	VARIABLE4	S_32	161
	VARIABLE5	S_32	163
	VARIABLE6	S_32	165

Function	Register Name	Type	Reg.
	VARIABLE7	S_32	167
	VARIABLE8	S_32	169
	VARIABLE9	S_32	171
	VARIABLE10	S_32	173
	VARIABLE11	F_32	1025
	VARIABLE12	F_32	1027
	VARIABLE13	F_32	1029
	VARIABLE14	F_32	1031
	VARIABLE15	F_32	1033
	VARIABLE16	F_32	1035
	VARIABLE17	F_32	1037
	VARIABLE18	F_32	1039
	W	L_8_T	16399
	X	L_62_T	16543

BLOCK DIAGRAM

CONTROL AND OUTPUT PROCESSING



Notes:

Notes:

WARRANTY

Texmate warrants that its products are free from defects in material and workmanship under normal use and service for a period of one year from date of shipment. Texmate's obligations under this warranty are limited to replacement or repair, at its option, at its factory, of any of the products which shall, within the applicable period after shipment, be returned to Texmate's facility, transportation charges pre-paid, and which are, after examination, disclosed to the satisfaction of Texmate to be thus defective. The warranty shall not apply to any equipment which shall have been repaired or altered, except by Texmate, or which shall have been subjected to misuse, negligence, or accident. In no case shall Texmate's liability exceed the original purchase price. The aforementioned provisions do not extend the original warranty period of any product which has been either repaired or replaced by Texmate.

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