

IDC TM90 Remote I/O adapter board with A-B NAChip: Discrete I/O and Block Transfer definitions

file BTRNA Rev 04-08-2002.DOC

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Revisions:

02/08/2000	Add AutoTrak Begin & End margins (Function 6) Change Font to highlight parameters to be employed with Transfer/Progressive die recipes
02/23/2000	Corrected Function 2 list & Scaling note
03/01/2000	Corresponds to IDC RIO Version 0008, TM90 Version E019 Define ¼ Rack operation (see also Setup & DipSwitch description at end of this document) Add copy of discrete I/O bits to Read Function 1 (changes Length to 14) Require BTW Header to change in order for BTW operation to take place (1-shot at TM90) Change Example addresses to Rack 2 to coincide with example ladder logic. Define BTW Error code feedback in 4 th word of BTR operations Define BTW Write mode 2 to write and set BTR pointer
03/15/2000	Correct ordering of Tonnage & Motion tables
07/10/2000	RIO Version 10 adds the following two features: Add Linear Stroke definition (Function 9) for TM90Lxxx (009 & later) Add Shared RAM memory definition (Function 50) (RIO Version 10 +) (see note 14, page 8)
08/15/2000	Define double-word shutheight lengths, redefine shutheight word order (See note 15)
01/12/2001	Remote I/O version 0014, corresponds with TM90L014 Redefine Function 9 to describe stroke in mm, add OuterDwell to stroke: see note 16
03/07/2001	Fix Rack 5 & 6 Dipswitch settings, add Decimal rack address to Dipswitch table
04/04/2001	Add word 17 (TrakMode) to Function 6 for RIO16+ with TM90E-26+ Note TM90E026 & up now define TrakBeg & TrakEnd values in DEGREES
04/08/2001	Documented V1.01 with flash-disk storage of die recipes (Discrete and/or BTW function 10) See Note 1.01 following discrete I/O bits, BT Note 18 & BT Function 10

Definitions and Terminology:

BTR = a block transfer read that is initiated by the PLC, and reads data from IDC remote I/O board.

BTW = a block transfer write that is initiated by the PLC, and writes data to IDC remote I/O board.

Adapter = IDC remote I/O board.

Input = discrete input to PLC from adapter

Output = discrete output to adapter from PLC

All block transfer data words are 16 bits binary.

All discrete bits are addressed in octal (in PLC ladder logic).

Starting with Version 0008, the Adapter may be addressed as a ¼ rack consisting of 4 logical slots, or a ½ rack consisting of eight logical slots – see DipSwitch chart. Each logical slot consists of eight input bits and eight output bits.

All block transfers are addressed to the first logical slot in IDC's remote I/O board. This uses the first 8 input bits and the first 8 output bits of the rack address.

EXAMPLE ADDRESSING WITH ADAPTER AS THE FIRST HALF OF RACK TWO: (*Italicized groups unavailable in ¼ rack mode*)

GROUP 0 SLOT 0, I:20/00-I:20/07 AND O:20/00-O:20/07 (BLOCK TRANSFERS ONLY)

GROUP 0 SLOT 1, I:20/10-I:20/17 AND O:20/10-O:20/17 (DISCRETE I/O)

GROUP 1 SLOT 0, I:21/00-I:21/07 AND O:21/00-O:21/07 (DISCRETE I/O)

GROUP 1 SLOT 1, I:21/10-I:21/17 AND O:21/10-O:21/17 (DISCRETE I/O)

GROUP 2 SLOT 0, I:22/00-I:22/07 AND O:22/00-O:22/07 (DISCRETE I/O)

GROUP 2 SLOT 1, I:22/10-I:22/17 AND O:22/10-O:22/17 (DISCRETE I/O)

GROUP 3 SLOT 0, I:23/00-I:23/07 AND O:233/00-O:23/07 (DISCRETE I/O)

GROUP 3 SLOT 1, I:23/10-I:23/17 AND O:22/10-O:23/17 (DISCRETE I/O)

DISCRETE I/O USAGE (example with Rack 2):

GROUP 0 SLOT 1 (I:20/10-I:20/17 AND O:20/10-O:20/17)

Inputs:

0 (I:20/10)	Press Limit OK (Normally Open, HELD CLOSED when OK)
1 (I:20/11)	Die Limit OK (Normally Open, HELD CLOSED when OK)
2 (I:20/12)	Slide Interference OK (Normally Open, HELD CLOSED when OK)
3 (I:20/13)	AutoTrak™ Limits Active
4 (I:20/14)	New Data Available (i.e., press cycled, new AutoTrak, etc.)
5 (I:20/15)	Die Recipe & AutoTrak Saved (see Note 1.01, below)
6 (I:20/16)	Die Recipe & AutoTrak Recalled (see Note 1.01, below)
7 (I:20/17)	Die Recipe Save/Recall ERROR (see Note 1.01, below)

Outputs:

0 (O:20/10)	Reset Faults
1 (O:20/11)	Cycle Camswitch (Peak-reading Monitors only)
2 (O:20/12)	Calculate AutoTrak™ Limits
3 (O:20/13)	Enable AutoTrak Monitoring
4 (O:20/14)	
5 (O:20/15)	Save Die Recipe & AutoTrak (see Note 1.01, below)
6 (O:20/16)	Recall Die Recipe & AutoTrak (see Note 1.01, below)
7 (O:20/17)	

GROUP 1 SLOT 0 (I:21/00-I:21/07 AND O:21/00-O:21/07)

Inputs:

0 (I:21/00)	Press OVERLOAD Flag, Channel 1
1 (I:21/01)	Press OVERLOAD Flag, Channel 2
2 (I:21/02)	Press OVERLOAD Flag, Channel 3
3 (I:21/03)	Press OVERLOAD Flag, Channel 4
4 (I:21/04)	Press OVERLOAD Flag, Channel 5
5 (I:21/05)	Press OVERLOAD Flag, Channel 6
6 (I:21/06)	Press OVERLOAD Flag, Channel 7
7 (I:21/07)	Press OVERLOAD Flag, Channel 8

Outputs:

0 (O:21/00)	
1 (O:21/01)	
2 (O:21/02)	
3 (O:21/03)	
4 (O:21/04)	
5 (O:21/05)	
6 (O:21/06)	
7 (O:21/07)	

GROUP 1 SLOT 1 (I:21/10-I:21/17 AND O:21/10-O:21/17)

Inputs:

0 (I:21/10)	Die HIGH Limit Fault Flag, Channel 1
1 (I:21/11)	Die HIGH Limit Fault Flag, Channel 2
2 (I:21/12)	Die HIGH Limit Fault Flag, Channel 3
3 (I:21/13)	Die HIGH Limit Fault Flag, Channel 4
4 (I:21/14)	Die HIGH Limit Fault Flag, Channel 5
5 (I:21/15)	Die HIGH Limit Fault Flag, Channel 6
6 (I:21/16)	Die HIGH Limit Fault Flag, Channel 7
7 (I:21/17)	Die HIGH Limit Fault Flag, Channel 8

Outputs:

0 (O:21/10)	
1 (O:21/11)	
2 (O:21/12)	
3 (O:21/13)	
4 (O:21/14)	
5 (O:21/15)	
6 (O:21/16)	
7 (O:21/17)	

GROUP 2 SLOT 0 (I:22/00-I:22/07 AND O:22/00-O:22/07) (1/2 Rack mode only!)

Inputs:

0 (I:22/00)	Die LOW Limit Fault Flag, Channel 1
1 (I:22/01)	Die LOW Limit Fault Flag, Channel 2
2 (I:22/02)	Die LOW Limit Fault Flag, Channel 3
3 (I:22/03)	Die LOW Limit Fault Flag, Channel 4
4 (I:22/04)	Die LOW Limit Fault Flag, Channel 5
5 (I:22/05)	Die LOW Limit Fault Flag, Channel 6
6 (I:22/06)	Die LOW Limit Fault Flag, Channel 7
7 (I:22/07)	Die LOW Limit Fault Flag, Channel 8

Outputs:

0 (O:22/00)	
1 (O:22/01)	

2 (O:22/02)	
3 (O:22/03)	
4 (O:22/04)	
5 (O:22/05)	
6 (O:22/06)	
7 (O:22/07)	

GROUP 2 SLOT 1 (I:22/10-I:22/17 AND O:22/10-O:22/17) (1/2 Rack mode only!)

SPARE

GROUP 3 SLOT 0 (I:23/00-I:23/07 AND O:23/00-O:23/07) (1/2 Rack mode only!)

Inputs:

0 (I:23/00)	Operating Die ID from Load Monitor, Binary code, LSB (1)
1 (I:23/01)	Operating Die ID from Load Monitor, Binary code, (2)
2 (I:23/02)	Operating Die ID from Load Monitor, Binary code, (4)
3 (I:23/03)	Operating Die ID from Load Monitor, Binary code, (8)
4 (I:23/04)	Operating Die ID from Load Monitor, Binary code, (16)
5 (I:23/05)	Operating Die ID from Load Monitor, Binary code, (32)
6 (I:23/06)	Operating Die ID from Load Monitor, Binary code, (64)
7 (I:23/07)	Operating Die ID from Load Monitor, Binary code, MSB (128)

Outputs:

0 (O:23/00)	Requested Die ID to Load Monitor from PLC, Binary code, LSB (1)
1 (O:23/01)	Requested Die ID to Load Monitor from PLC, Binary code, (2)
2 (O:23/02)	Requested Die ID to Load Monitor from PLC, Binary code, (4)
3 (O:23/03)	Requested Die ID to Load Monitor from PLC, Binary code, (8)
4 (O:23/04)	Requested Die ID to Load Monitor from PLC, Binary code, (16)
5 (O:23/05)	Requested Die ID to Load Monitor from PLC, Binary code, (32)
6 (O:23/06)	Requested Die ID to Load Monitor from PLC, Binary code, (65)
7 (O:23/07)	Requested Die ID to Load Monitor from PLC, Binary code, MSB(128)

GROUP 3 SLOT 1 (I:23/10-I:23/17 AND O:23/10-O:23/17) (1/2 Rack mode only!)

SPARE

NOTE 1.01

Beginning with Remote I/O version 1.01, the Die Recipe storage is transferred from the TM90 EEPROM to the Remote I/O FLASH DISK. To implement this, the aforementioned discrete I/O bits have been implemented in the ½ rack mode (see bits I:x0/15,16,17 and O:x0/15,16 above), or Block Transfer programming may be used to control this operation (see Function 10) in either ¼ or ½ rack mode.

Die Recipe Save:

To trigger a Save/Recall operation with discrete I/O, you must be using the ½ rack configuration because the Die ID bits are in the 4th “slot” (Ox3/00 to 0:x3/07). When a binary code is set for the Die ID, the change triggers the TM90’s die recipe recall operation. After establishing a successful AutoTrak setup, you can turn on bit 15 (octal) of the 1st OUTPUT word (O:x0/15) to trigger an AutoTrak SAVE using the current Die ID (from the 4th I/O word). When the rising edge of this bit is received, the unit will save the AutoTrak data according to the active Die ID number, then set bit 15 (octal) of the 1st INPUT word (I:x0/15) to inform the PLC that the Save operation is complete. In the event of an error, bit 17 (octal) will be turned on instead of bit 15. The input acknowledge (or error) bit will stay on until the trigger bit goes away, so it may be used to “unlatch” the trigger bit. When the trigger bit goes off, the acknowledge (or error) bit will also turn off.

Die Recipe Recall:

To RECALL a previous AutoTrak curve, first set the Die ID (in the 4th OUTPUT word, O:x3/00-07), then turn on bit O:x0/16 (octal) to trigger the RECALL operation for that Die ID. When the rising edge of this bit is received, the unit will RECALL the AutoTrak data according to the active Die ID number, then set bit I:0x/16 (octal) to inform the PLC that the Recall operation is complete. In the event of an error (such as requesting a ID that’s never been saved), bit I:0x/17 (octal) will be turned on instead of bit 16. The input bit (I:x0/16 or 17) will stay on until the trigger bit goes away, so it may be used to “unlatch” the trigger bit. When the trigger bit goes off, the acknowledge (or error) bit will also turn off.

BLOCK TRANSFER WRITE (General Definition):

1st WORD	Function Code specifying data to be written, or read in next BTR (according to Word 4)
2nd Word	Pointer within Code data
3rd WORD	Length (1-60 words) of data to be transferred (0 defaults to full block for the above function)
4th WORD	Write Mode flag: 0=Set up read Code and Pointer for subsequent READS 1=Write data specified by Code and Pointer above 2=Write data specified by Code and Pointer, and set up for subsequent READS
5th WORD through 64th WORD	UP TO 60 WORDS OF DATA SENT BY PLC

Note: Block Transfer Write instructions in the PLC should have set, pre-programmed lengths

BLOCK TRANSFER READ (General Definition):

1st WORD	Function Code defining data to follow (should be same as 1st Word of last BTW executed with Word 4 =0).
2nd Word	Pointer within Code data
3rd WORD	Length of data transferred
4th WORD	0 or BTW Error code (see notes 4 & 5 below)
5th WORD through 64th WORD	UP TO 60 WORDS OF DATA READ BY PLC

Block Transfer Sequence of operations

Because the TM90 contains more data than can be fit into a Block Transfer operation, it is necessary to use data pointers to tell the TM90 which data to work with in Block Transfer operations. To accomplish this, various Function Codes have been defined as detailed below. Also, because there is only one Block Transfer Write buffer and one Block Transfer Read buffer, the Block Transfer Write operations have been defined for three distinct modes for all functions depending on the value of the Write flag word:

- when the Write flag word is 0, a BTW operation sets up pointers for subsequent BTR operations
- when the Write flag word is 1, a BTW operation actually performs the indicated data transfer
- when the Write flag word is 2, a BTW operation performs the data transfer **and** sets up the read pointers

Upon startup, before BTR operations can be performed a BTW operation must be executed to tell the TM90 which data to send for BTRs.

This is accomplished by doing a BTW of the HEADER data (see below) for the desired function, with word 4 set to 0. Subsequent BTR operations will then provide data for that function. In this mode, the BTW length need only be 4 words (and, in fact, extra words will be ignored by the monitor).

To write function DATA to the monitor **without affecting** an existing BTR setup, a HEADER can be set up in the PLC data table for the particular function with the 4th word set to 1, and the data loaded into words 5-64 as needed. A BTW operation with that data will then perform the indicated function, without changing the previously defined BTR header. To read back the function data (optional), a BTW of the function's HEADER with the 4th word set to 0 can be executed, then perform the BTR. The BTR will remain "aimed at" that function until it is redirected by writing a different header block with the 4th word set to 0 or 2.

Alternatively, to simultaneously write function Data to the monitor **and** set up the BTR pointer to allow reading back the same data, a HEADER can be set up in the PLC data table for the particular function with the 4th word set to 2, and the data loaded into words 5-64 as needed. A BTW operation with that data will then perform the indicated function, **and** change the previously defined BTR header. Subsequent BTRs will then return that data.

When programming Block Transfer operations, the Length of the Block Transfer instruction is always 4 more than the number of data words transferred for the function because the Header data is included in the Block Transfer.

Note that when writing just the BTR pointer data (the Write flag set to 0) the Block Transfer instruction Length can be only 4, because the rest of the block will be ignored anyway.

To accommodate repetitive BTWs without creating an unwholesome burden on the TM90, the TM90 RIO adapter will watch incoming BTW HEADER blocks, and only act on the requested operation when NEW data arrives. Repeated block transfers with identical data will be acknowledged to satisfy the RIO scanner, but will not perform any operations on the TM90 itself.

DATA REQUEST/DEFINITION CODES for Header Words in Block Transfer:

General Definitions:

The **first word** of the header contains a Function number identifying the basic logical data block (see below) to be read/written.

The **second word** is a pointer within the logical data block. It may contain 00 to read/write starting at the beginning of the logical data block. To read/write data starting within this block, place the desired Function number in the first word and the desired starting Pointer value in the 2nd word, and optionally specify the length to be written/read in the 3rd word of the block transfer write.

The **third word** optionally specifies a LENGTH (number of registers) to be transferred. If 0 is supplied, the Adaptor will use the full length of the logical data block (if the Pointer is 0) or the remaining words in the functional block starting at the Pointer location.

The **fourth word** of a BTW informs the adaptor whether data is being written directly to the Tonnage Monitor's memory (when 1 or 2) or whether the write operation is being used to set up the pointers for subsequent BTR operations (when 0 or 2). When a BTW is performed with Word 4 =0, subsequent BTR operations will report the specified data until the function and pointer are changed by another BTW with word 4 =0. In other words, BTW's with Word 4 =1 will not change the BTR pointer. With version RIO0008 or later, BTW's with Word4 = 2 will both perform the write operation **and** set the BTR pointer.

Notes:

1. Code and Function numbers in the table below are DECIMAL values for the convenience of ladder logic programming. All data transferred will be binary.
2. Some items are read-only: this means writes will be ignored
3. The Write checkmark below indicates that the protocol will support reading or writing to the register.
4. The Write Protect checkmark means that the protocol will support writing to the register, but it may be ineffective if the hardware write protect is enabled in the monitor. In this case, writes will seem to be ignored (the data will not change). As of Version RIO0008, an error code will be returned – see below.
5. As of version RIO0008, the 4th word of BTRs will normally be 0, unless an error occurred on a BTW operation. In that event, the high byte of the 4th word of the BTR will contain the Function number that caused the error, while the low byte will contain the error code. At this moment, the only error code defined is #1, failure writing to EEPROM (probably due to Write Protect being ON). The error code will persist until the next BTW operation. Any successful BTW will clear the error code.
6. For those Functions that have some read-only items amongst read/write items, writing to the entire block is OK; it just won't change the read-only items.
7. On Reset or Power-up, the user should do a BTW operation to set up for Function 1. Subsequent BTR operations will then report the 10 Peak Reading registers and 4 words of Discrete Status bits, until some other BTW operation with Word 4 =0 or 2 changes the Function Code and/or Pointer.

8. All functions are optional: if a function is not implemented in ladder logic in the host PLC, the function will be dormant and will not affect PLC memory requirements. In other words, PLC memory only needs to be allocated for those functions that are used in a particular application.
9. It is not the intent of this document to fully describe the various features of IDC's Tonnage Monitor. If further clarification is needed, users should consult IDC's Tonnage Monitor User's Manual.
10. SCALING: the Peak Readings and the various forms of Signature data are scaled to the units specified in the Channel Rating parameters (usu. Tons).
11. Unrecognized Code, Pointer or Length parameters will cause Block Transfer Write operations to be ignored within the Tonnage Monitor. Subsequent Block Transfer Read operations will continue using the last valid setup.
12. When reading or writing a subset of a Code group (i.e., by specifying a starting Pointer) the first DATA word (word 5 in the block transfer buffer) will be the beginning of the requested data. Data in the BTR buffer (in the PLC) beyond the specified Length will be indeterminate: the adapter will only transmit the requested number of words.
13. As of RIO Version 8 & 9 (TM90E019), after data is written to Functions 5 or 6, a keypad user should use the Home or End key once before using the Next or Prev keys, to ensure that the prompt data is aligned with the keypad pointers.
14. Starting with Version 10, 60 words of general-purpose RAM memory are made available for general exchange of data between the TM90 itself, the Remote I/O host, and the TM90's Modbus master (the standard communication port of the TM90). This memory provides read/write access from any of these ports. The format is 16-bit unsigned, stored in the TM90 in Lo/Hi format. The data is saved in battery-backed RAM, so it may or may not survive power-down of the TM90, depending on the state of the battery.

The functional allocation of this memory is application dependent, and must be coordinated between the ports on a case-by-case basis. The programmer of each port should be careful to write only to the registers allocated for writing by that port to avoid over-writing another user's data.
15. As of version 10, the Shutheight Length parameters in Function 7 and the actual Shutheight feedback in Function 8 occupy 2 integer words each, in Low/High order. The resulting 32-bit number represents 1/10's of a mm. In any PLC calculations performed on this data (or Data Table Edits) the user must take into account the fact that the TM90 treats each of these as UNSIGNED INTEGERS. This is particularly true for the Low words, which will be displayed as signed integer values in the default Data Table display, and may be displayed as negative numbers when the value is between 32768 & 65535
16. Starting with TM90L014 with RIO0014, the Remote I/O adapter will calculate the required EncBits, EncOffset and ODeg@x.x" prompts and download them to the TM90 when Function 9 is written by the PLC. In so doing, the peak-detecting window will be set to the required stroke **plus** the number of ticks programmed in the OuterDwell prompt. This allows some users to fine-tune the cycle window to

allow for machine stretch at dead bottom while working with the control system’s established motion parameters. In practice this means that if the peak reading at the end of cycle doesn’t include the full dead-bottom tonnage a small number must be entered in the OuterDwell prompt to allow for stretching of the machine. This will allow the monitor to continue logging so many “tics” beyond the calculated window. The size of a “tic” is dependent on the encoder resolution, which is in turn a function of total working stroke. For more details, see the TM90 User’s Manual.

17. Function 6 extended to 17 words with version RIO0016 in conjunction with TM90E026. This defines a TrakMode prompt replacing the former OuterType prompt. This is defined in the TM90 User Manual. This actually duplicates Function 3, word 11, in order to facilitate die recipe management without entailing extra block transfer messages. If a PLC user is programming block transfers using default lengths, this extra word must be anticipated.

18. Function 10: Die Recipe Save/Recall, including AutoTrak

Block Transfer triggering may be used in either ½ or ¼ rack mode, but if you’re using a ¼ rack configuration you must use the Block Transfer method. To manage the AutoTrak save/recall a new Function 10 has been defined, consisting of the standard 4-word header and 2 words of control data. The first word of these control words is the numerical Die ID, while the second contains control bits that emulate the discrete I/O operation described above: a rising edge on bit 00 of the second word triggers a Save operation (using the Die ID from the 1st word), while a rising edge of bit 01 (of the 2nd word) triggers a Recall operation. The acknowledgement and error bits are provided in the 1st word of discrete I/O as described above.

As an example, to Save AutoTrak for Die ID “n”, you would perform the following block transfer WRITES:
Step 1:

Data Word number	Description	Value
0	Function Code	10
1	Pointer	0
2	Length	2
3	Write Flag	1
4	Die ID	N
5	Command Bits	1

This would cause the unit to SAVE the current AutoTrak data under Die ID #n. Upon success, input bit 15 (octal) of the 1st discrete I/O word would be set to acknowledge the operation, or bit 17 would be set in case of an error. After receiving this acknowledgement, you would next block transfer the following sequence of data to clear the command bit so that it will see a “rising edge” on the next occasion:

Step 2:

Data Word number	Description	Value
0	Function Code	10
1	Pointer	0
2	Length	2
3	Write Flag	0 (Note change from previous)
4	Die ID	N
5	Command Bits	0 (Note change from previous)

Step 3:

Data Word number	Description	Value
0	Function Code	10
1	Pointer	0
2	Length	2
3	Write Flag	1 (Note change from previous)
4	Die ID	N

5	Command Bits	0
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Step 4:

Data Word number	Description	Value
0	Function Code	10
1	Pointer	0
2	Length	2
3	Write Flag	0 (Note change from previous)
4	Die ID	N
5	Command Bits	0

Although at first glance this looks like it involves 4 separate block transfer instructions, it can be implemented with a single instruction executed 4 times with the proper sequence of data, and only 2 words of data actually change during the sequence, so the instruction overhead is not as great as it first appears.

The “extra” steps are needed because the system is filtering out repetitive block transfers by only acting on changes in the header data and also acting on the rising edge of the command bit together with the Write Flag set to 1. The final step just sets the header data back to a non-write configuration so that a rising edge will be seen at the start of the next sequence.

RECALL operation is identical, except that the Command Bits word gets set to 2 in the first step, and the acknowledgement occurs in bit 16 (octal) of the first word of inputs to the PLC.

Note that Function 10 is a WRITE-ONLY operation. Attempts to read data back from this data block will be ignored by the Remote I/O interface.

Code and Pointer definitions (Code & Pointer definitions are DECIMAL):

NOTE: Items in **Arial Bold** font should be considered for inclusion in Die Recipes. Items in *Arial Italic* font should be considered for inclusion in a single-copy backup storage for the purpose of backing up the monitor's setup. These indications are indicated for 4-channel units as used with typical Transfer or Progressive presses.

Code	Pointer	Read	Write	Write Protect	DEFINITION
0000	xxxx				INVALID (No Operation, i.e., ignored)
1	0	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Peak Tonnage Values & Status Bits: 14 Registers
	1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Channel 1
	2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Channel 2
	3	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Channel 3
	4	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Channel 4
	5	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Channel 5
	6	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Channel 6
	7	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Channel 7
	8	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Channel 8
	9	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Outer (Slide 1) Total
	10	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Inner (Slide 2) Total
	11	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Copy of Input Bits x0/00-x0/17 (octal)
	12	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Copy of Input Bits x1/00-x1/17 (octal)
	13	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Copy of Input Bits x2/00-x2/17 (octal)
	14	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Copy of Input Bits x3/00-x3/17 (octal)
Code	Pointer	Read	Write	Write Protect	DEFINITION
2	0				Counter/Status Registers
	1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Good Parts Counter
	2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Total Parts Counter
	3	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	High Hits Counter
	4	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Low Hits Counter
	5	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Worst Hit Register
	6	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Batch Preset Register
	7	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Encoder/Resolver Position (binary)
	8	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Fault Position (resolver angle, binary)
	9	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Log Begin (angle where first signature logged)
	10	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Cycle Length (Size of signature, each channel)
	11	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	FIFO Length (# Signatures in storage)
	12	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	TM90 ROM Version
	13	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Remote I/O Adapter ROM Version

Code	Pointer	Read	Write	Write Protect	DEFINITION
3	0				Press-related Configuration (Consult TM80 manual)
	1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<i>Channel 1 Rated (Scale Factor)</i>
	2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<i>Channel 2 Rated</i>
	3	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<i>Channel 3 Rated</i>
	4	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<i>Channel 4 Rated</i>
	5	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<i>Channel 5 Rated</i>
	6	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<i>Channel 6 Rated</i>
	7	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<i>Channel 7 Rated</i>
	8	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<i>Channel 8 Rated</i>
	9	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<i>No. Outer Channels (or Slide 1)</i>
	10	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<i>No. Inner Channels (or Slide 2)</i>
	11	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<i>Outer Type</i>
	12	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<i>Encoder Type</i>
	13	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<i>Encoder Offset</i>
	14	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<i>Encoder Bits</i>
	15	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<i>Outer Dwell Position</i>
Code	Pointer	Read	Write	Write Protect	DEFINITION
4	0				Press Motion Curves
	1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<i>Inner (Slide 2)Outer (Slide 1) Deg. at 0.0"</i>
	2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<i>Inner (Slide 2)Deg. at 0.5"</i>
	3	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<i>Inner (Slide 2)Deg. at 1.0"</i>
	4	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<i>Inner (Slide 2)Deg. at 1.5"</i>
	5	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<i>Inner (Slide 2)Deg. at 2.0"</i>
	6	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<i>Inner (Slide 2)Deg. at 2.5"</i>
	7	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<i>Inner (Slide 2)Deg. at 3.0"</i>
	8	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<i>Inner (Slide 2)Deg. at 3.5"</i>
	9	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<i>Inner (Slide 2)Deg. at 4.0"</i>
	10	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<i>Inner (Slide 2)Deg. at 4.5"</i>
	11	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<i>Inner (Slide 2)Deg. at 5.0"</i>
	12	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<i>Inner (Slide 2)Deg. at 5.5"</i>
	13	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<i>Inner (Slide 2)Deg. at 6.0"</i>
	14	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<i>Outer (Slide 1) Deg. at 0.0"</i>
	15	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<i>Outer (Slide 1) Deg. at 0.5"</i>
	16	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<i>Outer (Slide 1) Deg. at 1.0"</i>
	17	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<i>Outer (Slide 1) Deg. at 1.5"</i>
	18	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<i>Outer (Slide 1) Deg. at 2.0"</i>
	19	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<i>Outer (Slide 1) Deg. at 2.5"</i>
	20	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<i>Outer (Slide 1) Deg. at 3.0"</i>
	21	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<i>Outer (Slide 1) Deg. at 3.5"</i>
	22	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<i>Outer (Slide 1) Deg. at 4.0"</i>
	23	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<i>Outer (Slide 1) Deg. at 4.5"</i>
	24	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<i>Outer (Slide 1) Deg. at 5.0"</i>
	25	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<i>Outer (Slide 1) Deg. at 5.5"</i>
	26	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<i>Outer (Slide 1) Deg. at 6.0"</i>

Code	Pointer	Read	Write	Write Protect	DEFINITION
5	0				Press Rating Curves
	1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<i>Inner (Slide 2) Rating at 0.0"</i>
	2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<i>Inner (Slide 2) Rating at 0.5"</i>
	3	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<i>Inner (Slide 2) Rating at 1.0"</i>
	4	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<i>Inner (Slide 2) Rating at 1.5"</i>
	5	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<i>Inner (Slide 2) Rating at 2.0"</i>
	6	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<i>Inner (Slide 2) Rating at 2.5"</i>
	7	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<i>Inner (Slide 2) Rating at 3.0"</i>
	8	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<i>Inner (Slide 2) Rating at 3.5"</i>
	9	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<i>Inner (Slide 2) Rating at 4.0"</i>
	10	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<i>Inner (Slide 2) Rating at 4.5"</i>
	11	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<i>Inner (Slide 2) Rating at 5.0"</i>
	12	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<i>Inner (Slide 2) Rating at 5.5"</i>
	13	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<i>Inner (Slide 2) Rating at 6.0"</i>
	14	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Outer (Slide 1) Rating at 0.0"
	15	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Outer (Slide 1) Rating at 0.5"
	16	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Outer (Slide 1) Rating at 1.0"
	17	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Outer (Slide 1) Rating at 1.5"
	18	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Outer (Slide 1) Rating at 2.0"
	19	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Outer (Slide 1) Rating at 2.5"
	20	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Outer (Slide 1) Rating at 3.0"
	21	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Outer (Slide 1) Rating at 3.5"
	22	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Outer (Slide 1) Rating at 4.0"
	23	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Outer (Slide 1) Rating at 4.5"
	24	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Outer (Slide 1) Rating at 5.0"
	25	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Outer (Slide 1) Rating at 5.5"
	26	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Outer (Slide 1) Rating at 6.0"
Code	Pointer	Read	Write	Write Protect	DEFINITION
6	0				Die-related Setup Parameters
	1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Outer Die (Slide 1) Maximum Limit
	2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Outer Die (Slide 1) Minimum Limit
	3	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Outer Die (Slide 1) Plus Autotrak Margin
	4	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Outer Die (Slide 1) Minus Autotrak Margin
	5	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<i>Inner Die (Slide 2) Maximum Limit</i>
	6	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<i>Inner Die (Slide 2) Minimum Limit</i>
	7	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<i>Inner Die (Slide 2) Plus Autotrak Margin</i>
	8	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<i>Inner Die (Slide 2) Minus Autotrak Margin</i>
	9	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<i>Fill Cycles</i>
	10	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<i>Auto Cycle Time (for Automatic AutoTrak)</i>
	11	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<i>Auto Trak Cycle Count Preset</i>
	12	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<i>AutoTrak Off Delay</i>
	13	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Slide 1 AutoTrak Window Begin Angle (0-359)
	14	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Slide 1 AutoTrak Window End Angle (0-359)
	15	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<i>Slide 2 AutoTrak Window Begin Angle (0-359)</i>
	16	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<i>Slide 2 AutoTrak Window End Angle (0-359)</i>
	17	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	TrakMode for both Slides –see TM90 Manual

Code	Pointer	Read	Write	Write Protect	DEFINITION
7	0				Shutheight setup data
	1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Outer/Slide 1 Shutheight # Bits
	2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Outer/Slide 1 Shutheight Transducer Type
	3	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Outer/Slide 1 Shutheight Transducer Length (Low word, see Note 15)
	4	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Outer/Slide 1 Shutheight Transducer Length (High word, see Note 15)
	5	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Outer/Slide 1 Shutheight Transducer Bias
	6	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Inner/Slide 2 Shutheight # Bits
	7	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Inner/Slide 2 Shutheight Transducer Type
	8	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Outer/Slide 2 Shutheight Transducer Length (Low word, see Note 15)
	9	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Outer/Slide 2 Shutheight Transducer Length (High word, see Note 15)
	10	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Inner/Slide 2 Shutheight Transducer Bias
	11	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Minimum Slide Separation
Code	Pointer	Read	Write	Write Protect	DEFINITION
8	0				Shutheight Readout data
	1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Outer (Slide 1) Shutheight (Low word) See Note 15
	2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Outer (Slide 1) Shutheight (High Word) See Note 15
	3	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Inner(Slide 2) Shutheight (Low word) See Note 15
	4	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Inner (Slide 2) Shutheight (High Word) See Note 15
Code	Pointer	Read	Write	Write Protect	DEFINITION See Note 16 above
9	0				Linear Stroke Programming Data (Applicable <u>only</u> to TM90Lxxx versions)
	1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Die Closed Height, 1/10's mm (Low word)
	2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Die Closed Height, 1/10's mm (High Word)
	3	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Die Contact Height, 1/10's mm (Low word)
	4	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Die Contact Height, 1/10's mm (High Word)
Code	Pointer	Read	Write	Write Protect	DEFINITION
10	0				Die Recipe Program Operations Version 1.01 & later (See Note 18 above)
	1	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Die Recipe Number
	2	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Die Recipe Command Bits (See Note 18)

Code	Pointer	Read	Write	Write Protect	DEFINITION
					CURRENT SIGNATURE DATA
11	0	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Current Signature Data, Channel 1 , Words 1-60
	1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Current Signature Data, Channel 1 , Words 61-120
	2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Current Signature Data, Channel 1 , Words 121-128
	3	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Reserved
	4	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Reserved
12	0	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Current Signature Data, Channel 2 , Words 1-60
	1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Current Signature Data, Channel 2 , Words 61-120
	2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Current Signature Data, Channel 2 , Words 121-128
	3	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Reserved
	4	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Reserved
13	0	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Current Signature Data, Channel 3 , Words 1-60
	1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Current Signature Data, Channel 3 , Words 61-120
	2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Current Signature Data, Channel 3 , Words 121-128
	3	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Reserved
	4	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Reserved
14	0	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Current Signature Data, Channel 4 , Words 1-60
	1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Current Signature Data, Channel 4 , Words 61-120
	2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Current Signature Data, Channel 4 , Words 121-128
	3	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Reserved
	4	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Reserved
15	0	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Current Signature Data, Channel 5 , Words 1-60
	1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Current Signature Data, Channel 5 , Words 61-120
	2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Current Signature Data, Channel 5 , Words 121-128
	3	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Reserved
	4	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Reserved
16	0	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Current Signature Data, Channel 6 , Words 1-60
	1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Current Signature Data, Channel 6 , Words 61-120
	2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Current Signature Data, Channel 6 , Words 121-128
	3	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Reserved
	4	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Reserved
17	0	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Current Signature Data, Channel 7 , Words 1-60
	1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Current Signature Data, Channel 7 , Words 61-120
	2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Current Signature Data, Channel 7 , Words 121-128
	3	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Reserved
	4	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Reserved
18	0	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Current Signature Data, Channel 8 , Words 1-60
	1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Current Signature Data, Channel 8 , Words 61-120
	2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Current Signature Data, Channel 8 , Words 121-128
	3	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Reserved
	4	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Reserved
19	0	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Current Signature Data, Outer Total , Words 1-60
	1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Current Signature Data, Outer Total , Words 61-120
	2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Current Signature Data, Outer Total , Words 121-128
	3	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Reserved
	4	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Reserved
20	0	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Current Signature Data, Inner Total , Words 1-60
	1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Current Signature Data, Inner Total , Words 61-120

	2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Current Signature Data, Inner Total , Words 121-128
	3	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Reserved
	4	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Reserved

Code	Pointer	Read	Write	Write Protect	DEFINITION
					AutoTrak Average SIGNATURE DATA
21	0	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	AutoTrak Average Data, Channel 1 , Words 1-60
	1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	AutoTrak Average Data, Channel 1 , Words 61-120
	2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	AutoTrak Average Data, Channel 1 , Words 121-128
	3	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	AutoTrak Reserved
	4	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	AutoTrak Reserved
22	0	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	AutoTrak Average Data, Channel 2 , Words 1-60
	1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	AutoTrak Average Data, Channel 2 , Words 61-120
	2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	AutoTrak Average Data, Channel 2 , Words 121-128
	3	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	AutoTrak Reserved
	4	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	AutoTrak Reserved
23	0	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	AutoTrak Average Data, Channel 3 , Words 1-60
	1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	AutoTrak Average Data, Channel 3 , Words 61-120
	2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	AutoTrak Average Data, Channel 3 , Words 121-128
	3	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	AutoTrak Reserved
	4	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	AutoTrak Reserved
24	0	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	AutoTrak Average Data, Channel 4 , Words 1-60
	1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	AutoTrak Average Data, Channel 4 , Words 61-120
	2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	AutoTrak Average Data, Channel 4 , Words 121-128
	3	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	AutoTrak Reserved
	4	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	AutoTrak Reserved
25	0	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	AutoTrak Average Data, Channel 5 , Words 1-60
	1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	AutoTrak Average Data, Channel 5 , Words 61-120
	2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	AutoTrak Average Data, Channel 5 , Words 121-128
	3	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	AutoTrak Reserved
	4	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	AutoTrak Reserved
26	0	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	AutoTrak Average Data, Channel 6 , Words 1-60
	1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	AutoTrak Average Data, Channel 6 , Words 61-120
	2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	AutoTrak Average Data, Channel 6 , Words 121-128
	3	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	AutoTrak Reserved
	4	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	AutoTrak Reserved
27	0	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	AutoTrak Average Data, Channel 7 , Words 1-60
	1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	AutoTrak Average Data, Channel 7 , Words 61-120
	2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	AutoTrak Average Data, Channel 7 , Words 121-128
	3	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	AutoTrak Reserved
	4	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	AutoTrak Reserved
28	0	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	AutoTrak Average Data, Channel 8 , Words 1-60
	1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	AutoTrak Average Data, Channel 8 , Words 61-120
	2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	AutoTrak Average Data, Channel 8 , Words 121-128
	3	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	AutoTrak Reserved
	4	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	AutoTrak Reserved

Code	Pointer	Read	Write	Write Protect	DEFINITION
					AutoTrak 3-Sigma DATA
31	0	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	AutoTrak 3-Sigma Data, Channel 1 , Words 1-60
	1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	AutoTrak 3-Sigma Data, Channel 1 , Words 61-120
	2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	AutoTrak 3-Sigma Data, Channel 1 , Words 121-128
	3	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	AutoTrak Reserved
	4	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	AutoTrak Reserved
32	0	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	AutoTrak 3-Sigma Data, Channel 2 , Words 1-60
	1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	AutoTrak 3-Sigma Data, Channel 2 , Words 61-120
	2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	AutoTrak 3-Sigma Data, Channel 2 , Words 121-128
	3	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	AutoTrak Reserved
	4	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	AutoTrak Reserved
33	0	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	AutoTrak 3-Sigma Data, Channel 3 , Words 1-60
	1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	AutoTrak 3-Sigma Data, Channel 3 , Words 61-120
	2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	AutoTrak 3-Sigma Data, Channel 3 , Words 121-128
	3	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	AutoTrak Reserved
	4	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	AutoTrak Reserved
34	0	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	AutoTrak 3-Sigma Data, Channel 4 , Words 1-60
	1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	AutoTrak 3-Sigma Data, Channel 4 , Words 61-120
	2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	AutoTrak 3-Sigma Data, Channel 4 , Words 121-128
	3	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	AutoTrak Reserved
	4	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	AutoTrak Reserved
35	0	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	AutoTrak 3-Sigma Data, Channel 5 , Words 1-60
	1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	AutoTrak 3-Sigma Data, Channel 5 , Words 61-120
	2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	AutoTrak 3-Sigma Data, Channel 5 , Words 121-128
	3	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	AutoTrak Reserved
	4	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	AutoTrak Reserved
36	0	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	AutoTrak 3-Sigma Data, Channel 6 , Words 1-60
	1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	AutoTrak 3-Sigma Data, Channel 6 , Words 61-120
	2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	AutoTrak 3-Sigma Data, Channel 6 , Words 121-128
	3	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	AutoTrak Reserved
	4	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	AutoTrak Reserved
37	0	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	AutoTrak 3-Sigma Data, Channel 7 , Words 1-60
	1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	AutoTrak 3-Sigma Data, Channel 7 , Words 61-120
	2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	AutoTrak 3-Sigma Data, Channel 7 , Words 121-128
	3	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	AutoTrak Reserved
	4	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	AutoTrak Reserved
38	0	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	AutoTrak 3-Sigma Data, Channel 8 , Words 1-60
	1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	AutoTrak 3-Sigma Data, Channel 8 , Words 61-120
	2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	AutoTrak 3-Sigma Data, Channel 8 , Words 121-128
	3	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	AutoTrak Reserved
	4	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	AutoTrak Reserved

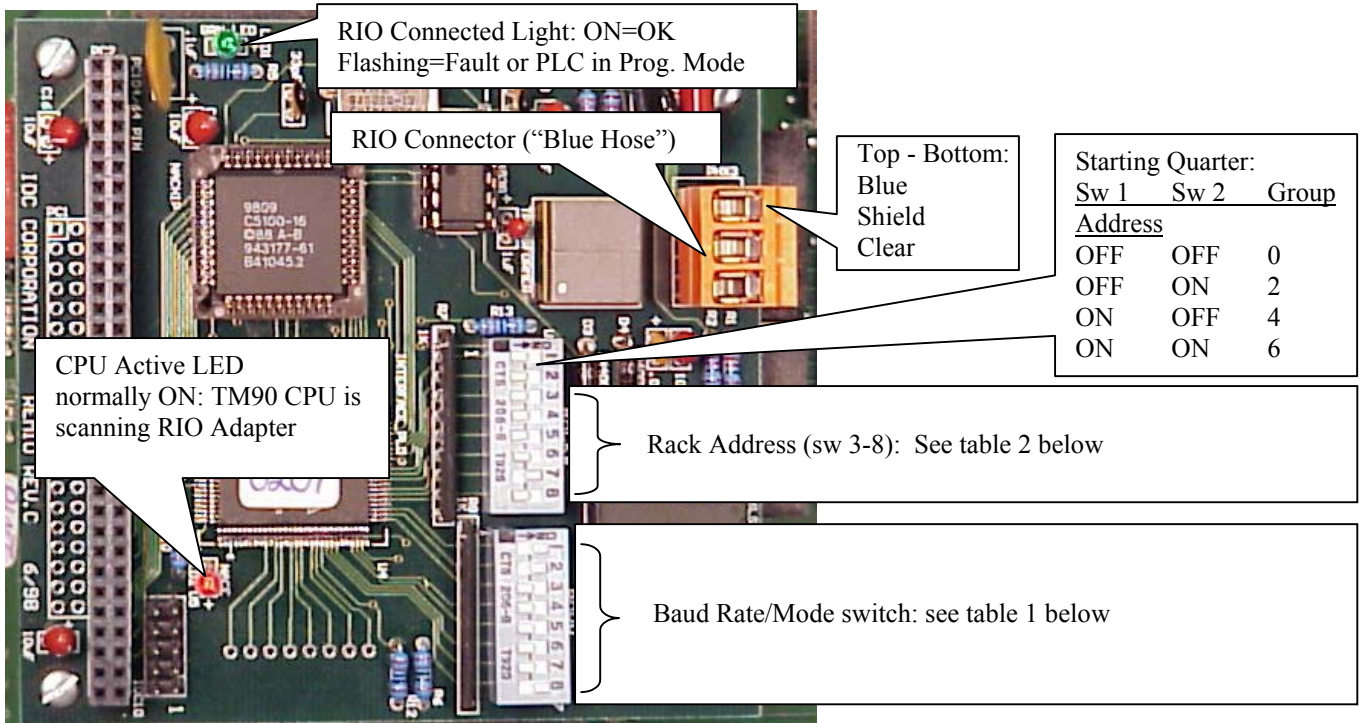
Code	Pointer	Read	Write	Write Protect	DEFINITION
					Historical DATA
40	0	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Prior Cycle Pointer: points to data for cycle of specified age
41	0	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Historical Data, Channel 1 , Words 1-60
	1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Historical Data, Channel 1 , Words 61-120
	2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Historical Data, Channel 1 , Words 121-128
	3	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Reserved
	4	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Reserved
42	0	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Historical Data, Channel 2 , Words 1-60
	1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Historical Data, Channel 2 , Words 61-120
	2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Historical Data, Channel 2 , Words 121-128
	3	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Reserved
	4	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Reserved
43	0	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Historical Data, Channel 3 , Words 1-60
	1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Historical Data, Channel 3 , Words 61-120
	2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Historical Data, Channel 3 , Words 121-128
	3	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Reserved
	4	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Reserved
44	0	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Historical Data, Channel 4 , Words 1-60
	1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Historical Data, Channel 4 , Words 61-120
	2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Historical Data, Channel 4 , Words 121-128
	3	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Reserved
	4	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Reserved
45	0	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Historical Data, Channel 5 , Words 1-60
	1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Historical Data, Channel 5 , Words 61-120
	2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Historical Data, Channel 5 , Words 121-128
	3	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Reserved
	4	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Reserved
46	0	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Historical Data, Channel 6 , Words 1-60
	1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Historical Data, Channel 6 , Words 61-120
	2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Historical Data, Channel 6 , Words 121-128
	3	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Reserved
	4	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Reserved
47	0	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Historical Data, Channel 7 , Words 1-60
	1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Historical Data, Channel 7 , Words 61-120
	2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Historical Data, Channel 7 , Words 121-128
	3	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Reserved
	4	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Reserved
48	0	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Historical Data, Channel 8 , Words 1-60
	1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Historical Data, Channel 8 , Words 61-120
	2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Historical Data, Channel 8 , Words 121-128
	3	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Reserved
	4	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Reserved

Code	Pointer	Read	Write	Write Protect	DEFINITION
50	0				General Purpose Shared Memory (60 words max) TM90 RAM, accessible from Remote I/O & Modbus ports
	1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Shared Memory, Word 01: Modbus Register 40501
	2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Shared Memory, Word 02: Modbus Register 40502
	3	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Shared Memory, Word 03: Modbus Register 40503
	4	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Shared Memory, Word 04: Modbus Register 40504
	5	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Shared Memory, Word 05: Modbus Register 40505
	6	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Shared Memory, Word 06: Modbus Register 40506
	7	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Shared Memory, Word 07: Modbus Register 40507
	8	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Shared Memory, Word 08: Modbus Register 40508
	9	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Shared Memory, Word 09: Modbus Register 40509
	10	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Shared Memory, Word 10: Modbus Register 40510
	11	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Shared Memory, Word 11: Modbus Register 40511
	12	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Shared Memory, Word 12: Modbus Register 40512
	13	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Shared Memory, Word 13: Modbus Register 40513
	14	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Shared Memory, Word 14: Modbus Register 40514
	15	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Shared Memory, Word 15: Modbus Register 40515
	16	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Shared Memory, Word 16: Modbus Register 40516
	17	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Shared Memory, Word 17: Modbus Register 40517
	18	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Shared Memory, Word 18: Modbus Register 40518
	19	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Shared Memory, Word 19: Modbus Register 40519
	20	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Shared Memory, Word 20: Modbus Register 40520
	21	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Shared Memory, Word 21: Modbus Register 40521
	22	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Shared Memory, Word 22: Modbus Register 40522
	23	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Shared Memory, Word 23: Modbus Register 40523
	24	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Shared Memory, Word 24: Modbus Register 40524
	25	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Shared Memory, Word 25: Modbus Register 40525
	26	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Shared Memory, Word 26: Modbus Register 40526
	27	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Shared Memory, Word 27: Modbus Register 40527
	28	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Shared Memory, Word 28: Modbus Register 40528
	29	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Shared Memory, Word 29: Modbus Register 40529
	30	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Shared Memory, Word 30: Modbus Register 40530
	31	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Shared Memory, Word 31: Modbus Register 40531
	32	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Shared Memory, Word 32: Modbus Register 40532
	33	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Shared Memory, Word 33: Modbus Register 40533
	34	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Shared Memory, Word 34: Modbus Register 40534
	35	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Shared Memory, Word 35: Modbus Register 40535
	36	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Shared Memory, Word 36: Modbus Register 40536
	37	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Shared Memory, Word 37: Modbus Register 40537
	38	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Shared Memory, Word 38: Modbus Register 40538
	39	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Shared Memory, Word 39: Modbus Register 40539
	40	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Shared Memory, Word 40: Modbus Register 40540
	41	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Shared Memory, Word 41: Modbus Register 40541
	42	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Shared Memory, Word 42: Modbus Register 40542
	43	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Shared Memory, Word 43: Modbus Register 40543
	44	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Shared Memory, Word 44: Modbus Register 40544
	45	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Shared Memory, Word 45: Modbus Register 40545
	46	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Shared Memory, Word 46: Modbus Register 40546
	47	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Shared Memory, Word 47: Modbus Register 40547

48	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Shared Memory, Word 48: Modbus Register 40548
49	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Shared Memory, Word 49: Modbus Register 40549
50	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Shared Memory, Word 50: Modbus Register 40550
51	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Shared Memory, Word 51: Modbus Register 40551
52	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Shared Memory, Word 52: Modbus Register 40552
53	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Shared Memory, Word 53: Modbus Register 40553
54	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Shared Memory, Word 54: Modbus Register 40554
55	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Shared Memory, Word 55: Modbus Register 40555
56	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Shared Memory, Word 56: Modbus Register 40556
57	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Shared Memory, Word 57: Modbus Register 40557
58	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Shared Memory, Word 58: Modbus Register 40558
59	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Shared Memory, Word 59: Modbus Register 40559
60	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Shared Memory, Word 60: Modbus Register 40560

REMIO Board Setup

Rev. C



The Baud/Mode switch should be set according to the following table (SW1 is at the TOP as viewed above):

RIO BAUD RATE: (<input checked="" type="checkbox"/> =ON)	Sw 1	Sw 2
57.6K	<input type="checkbox"/>	<input type="checkbox"/>
115K	<input type="checkbox"/>	<input checked="" type="checkbox"/>
230K	<input checked="" type="checkbox"/>	(don't care)

- SW3=Last Rack
(with older PLC-2 scanners **ONLY**,
on if last rack in RIO scanner)
- SW4=spare
- SW5=spare
- SW6=spare
- SW7=OFF for 1/2 Rack size,
ON for 1/4 Rack size
(RIO0008 & Later EPROMS)
- SW8=ON for Encoder Version , OFF
for Camswitch version

Set Rack/Group switches according to the following table: (SW1 is at the TOP as drawn above)

Octal Rack Address	Decimal Rack Address	3 4 5 6 7 8 (X=ON)	Octal Rack Address	Decimal Rack Address	3 4 5 6 7 8 (X=ON)
00	00	NOT Available	40	32	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
01	01	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>	41	33	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>
02	02	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>	42	34	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>
03	03	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	43	35	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
04	04	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	44	36	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
05	05	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>	45	37	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>
06	06	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>	46	38	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>
07	07	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	47	39	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
10	08	<input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	50	40	<input checked="" type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
11	09	<input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>	51	41	<input checked="" type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>
12	10	<input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>	52	42	<input checked="" type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>
13	11	<input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	53	43	<input checked="" type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
14	12	<input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	54	44	<input checked="" type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
15	13	<input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	55	45	<input checked="" type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
16	14	<input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>	56	46	<input checked="" type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>
17	15	<input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	57	47	<input checked="" type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
20	16	<input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	60	48	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
21	17	<input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>	61	49	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>
22	18	<input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>	62	50	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>
23	19	<input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	63	51	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
24	20	<input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>	64	52	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>
25	21	<input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	65	53	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
26	22	<input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>	66	54	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>
27	23	<input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	67	55	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
30	24	<input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	70	56	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
31	25	<input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>	71	57	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>
32	26	<input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>	72	58	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>
33	27	<input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	73	59	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
34	28	<input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	74	60	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
35	29	<input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	75	61	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>
36	30	<input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>	76	62	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>
37	31	<input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	77	63	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>

Set Rack/Group switches 1 & 2 according to the following table:

Starting Group	SW 1	SW 2
0	<input type="checkbox"/>	<input type="checkbox"/>
2	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4	<input checked="" type="checkbox"/>	<input type="checkbox"/>
6 (NOT APPLICABLE in 1/2 rack mode)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

NOTE: after changing DIP Switch settings, the monitor must undergo a power-up reset to ensure that all changes are properly implemented.

Note also that a power-up reset may be required with certain PLCs when the I/O Scanner configuration is edited in the PLC.