

**888P+**  
**TEST SCORING MACHINE**  
**USER'S GUIDE**

U/M 888p+

December 1998

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## **WARNING**

The SCANTRON 888P+ Test Scoring Machine is a precision electronic device that uses 110 volt, 60 hertz electrical power. Do not open the case or make any adjustments to the unit while it is plugged into an electrical wall socket or other power source.

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## **INTRODUCTION**

The SCANTRON 888P+ is a multifunction test scoring machine that will score up to fifty questions by five choices on each side of a form at rates of up to 2000 forms per hour. Incorrect answers are identified by a red bar error mark to the left of the row of choices, and the total number correct is printed at the bottom of the form. The 888P+ also has a "verification of key" feature that prints the correct answers (alphabetic or numeric) on the right side of each line of the test's multiple choice questions of the incorrectly answered questions.

The 888P+ can sequentially serialize each document as it is fed through the test scoring machine.

Using special SCANTRON forms, the 888P+ can print an item analysis and/or a student roster of all scores. In addition to test scoring, the 888P+ can be used to tabulate surveys, count ballots, tally class requests, and score essays.

With forms containing the subjective scoring area, the 888P+ can combine an objective score with the results from performance based tests (essays, special projects, homework, and oral reports) to create a single score. Consolidated test results are printed as raw scores, or percentage and raw scores.

## **UNPACKING**

The SCANTRON Model 888P+ has been shipped ready for installation and use. Before unpacking, inspect the outer container for possible damage. Should severe damage be evident, contact a SCANTRON sales representative before disassembly.

Carefully remove the forms tray insert. Then remove the machine using the special finger grip slots provided on the outside edge at the top center of each white styrofoam end cap or by placing the box face down on its open lid and then carefully removing the box from the machine/styrofoam end cap assembly.

This product comes complete with the following items:

1. Model 888P+ Test Scoring Machine
2. Forms Tray
3. Plastic Dust Cover
4. Model 888P+ User Manual

Inspect contents for order completion and for possible damage.

Should an item be missing or damaged, please retain all packing materials and contact a SCANTRON sales representative for correction.

## PANEL SWITCHES AND LAMPS

### CONTROL PANEL

<u>SWITCH</u>	<u>FUNCTION</u>
Power On	Allows the 888P+ to program a key and score forms.
Program Erase	Erases existing key and turns power off.
Print Left / Right	This switch causes the score printed at the bottom to be shifted. This feature allows rescoring without printing the new score over the previously printed score. (During verification this switch is disabled).

<u>LAMP</u>	<u>FUNCTION</u>
Score Mode	This lamp indicates that the 888P+ is ready to feed a form.
Document Alarm	This lamp will illuminate when there is a mismatch in the number of timing marks between the key and the test forms, or when a form is mistakenly fed through the machine upside down.

### DIAGNOSTIC

If the 888P+ passes the power on tests, there will be two short beeps. Errors in the power on sequences will emit a continuous beep.

When errors are encountered while reading a form, the buzzer will emit a short beep instead of a continuous beep. The length of the beep is determined by the type of error. See the section labeled "Errors."

## KEY MARKING INSTRUCTIONS

The KEY of the form is the top marking line where it is possible to program the 888P+ to perform various functions when scoring forms or tallying ballots and surveys. The KEY may also be referred to as a key line. A typical key line follows:

■            (T)    (F)                    KEY  
              [ 1 ] [ 2 ] [ 3 ]                [ 5 ]

**To print score only** - mark the fifth position on the key line of the form. The 888P+ will only print the scores on the lower end of the student response forms.

**To print a score and verify answers (alphabetic)** - mark the second and fifth positions on the key line of the form. This verification will print the correct alphabetic answer to the right of any incorrect answer on a form as it is scanned. The score is printed on the lower portion of the student form. The PRINT LEFT/RIGHT option is disabled and no error marks are printed.

**To print a score and verify answers (numeric)** - mark the second, third, and fifth positions on the key line of the form. This verification will print the correct numeric answer to the right of any incorrect answer on a form as it is scanned. The score is printed on the lower portion of the student form. The PRINT LEFT/RIGHT option is disabled and no error marks are printed.

**To print a score and serial number** - mark the third and fifth positions on the key line of the form. The forms will be error marked and the score will be printed on the lower end of the student response forms.

**To create a percentage score** - mark the first position on the key line in combination with any of the types of marks above. On forms with the subjective scoring area, the forms already have a percentage symbol instead of a 1.

**For subjective scoring** - mark the total possible subjective points (maximum of 150 points). Only one number may be chosen per line in the subjective scoring area. Now mark the key and the correct answers.

**To combine side 1 and side 2** - mark the key (both sides), score the key (both sides), and then score the student forms (both sides).

*Each side of the form cannot exceed fifty questions.*

# STUDENT MARKING INSTRUCTIONS

Accurate scoring is determined by the marking instrument and quality of the mark.

Results can be less than satisfactory if the wrong marking instrument is used. A #2 pencil will give the best results. The results may be inaccurate if the mark is not dark and does not fill the entire mark position. Problems may also arise if erasures are not clean. Incomplete erasures may be read as a mark.

	(T)	(F)	KEY
<b>O's</b>		<input type="checkbox"/>	<input type="checkbox"/>
<b>Squares</b>		<input type="checkbox"/>	<input type="checkbox"/>
<b>X's</b>		<input type="checkbox"/>	<input type="checkbox"/>
<b>Marks too high</b>		<input type="checkbox"/>	<input type="checkbox"/>
<b>Marks too low</b>		<input type="checkbox"/>	<input type="checkbox"/>
<b>Dots</b>		<input type="checkbox"/>	<input type="checkbox"/>
<b>Marks too far left</b>		<input type="checkbox"/>	<input type="checkbox"/>
<b>Marks too far right</b>		<input type="checkbox"/>	<input type="checkbox"/>
<b>Checks</b>		<input type="checkbox"/>	<input type="checkbox"/>
<b>Slashes</b>		<input type="checkbox"/>	<input type="checkbox"/>
	1		
	2		
	3		
	4		
	5		
	6		
	7		
	8		
	9		
	10		
	11		
	12		
	13		
	14		
	15		
	16		
	17		
	18		
	19		
	20		
	21		
	22		
	23		
	24		
	25		

Marks too light

**MARKS SHOULD LOOK LIKE THIS**

Dark mark  
Fills the box  
Mark with #2 pencil

**IMPORTANT**

USE NO. 2 PENCIL ONLY

- MAKE DARK MARKS
- ERASE COMPLETELY
- TO CHANGE
- EXAMPLE: A B C D E

---

**TO USE SUBJECTIVE SCORE FEATURE:**

- Mark total possible subjective points
- Only one mark per line on key
- 150 points maximum

EXAMPLE OF STUDENT SCORE:

400	300	200	100	0
4	3	2	1	0

NAME	SUBJ	DATE
------	------	------

## **TEACHER INFORMATION**

In order to obtain correct results, be sure that mark positions on the key line are filled in correctly (refer to "Key Marking Instructions"). For further verification, compare the number of questions on the key to the number of items on the test.

## **DOUBLE SIDED SCANNING**

### **THE KEY**

When a scoring option has been selected from the key line on both the front and back sides of the form, the form is considered to be a two pass form. The first pass should be the front side of the key and the second pass should be the back side of the key. The ordering of the passes should be consistent for both the key and the student response form.

If a scoring option has only been selected from the key line on one side of the form, the form is considered to be a "single pass" form. The key can either be on SIDE 1 or SIDE 2. The same is true of the student response forms. However, both the side of the key and student response form should be the same.

When no scoring option has been selected from the key line and the key is scanned on the first pass, the document alarm lights up informing the user of the error.

When the scoring option has been selected from the key line on both the front and back sides of the key and the key is scanned on the same side twice, the document alarm will inform the user of an error.

*Note:* Anytime an error occurs with the key, the 888P+ must be re-keyed and the process started over.

### **TEACHER SCORE**

Because it is not possible to determine ahead of time if a second key side will be processed, all of the information will be printed on the teachers key during the first pass.

After each pass, the multiple choice score will be printed.

### **STUDENT SCORE**

When using single pass forms, the sum of the scores from the essay and multiple choice questions will be printed on the front side of the student response form.

When using two pass forms, the first pass will have no score printed, and the second pass will print the sum of the scores from the essay and the multiple choice questions from both sides.



## **TEST SCORING INSTRUCTIONS**

Feed a key through the OMR. The key should have the proper options selected on the key line and the correct answers filled in. The total number of answers will be tallied and printed at the bottom of the key form. The 888P+ will "beep" indicating an error if a non-key form is fed, or if the key is not marked correctly.

Feed the student response forms through the OMR. If there is a mismatch in the number of timing marks on the key form and a student response form, the document alarm will sound and the document alarm light will illuminate. **DO NOT TURN OFF THE MACHINE.** To eliminate the alarm and light, feed the next form. Examine the unscored form for any extraneous marks in the timing track area to the left of the numbered column. Erase any extra marks and feed the form again. The alarm will also sound if a form is fed upside down.

The total number of correct answers is printed on each student response form. Incorrect answers are indicated by a red mark unless alphabetic or numeric verification is used. With verification the correct answer is printed next to the incorrect one. After feeding all of the student response forms, **DO NOT** turn off the machine if an item analysis or a class roster is to be printed. This information will remain in memory until the machine is powered "off."

If the re-scoring of any tests is necessary, press the PRINT LEFT/RIGHT switch to the opposite of the position it was set at when the original scoring was done. Follow normal scoring procedures. This option is disabled if either the alphabetic or numeric verification has been selected.

If another test has to be scored with a different key, turn the power off and repeat the entire process from the beginning as explained above.

## **SUBTEST INSTRUCTIONS**

The subtest features allow the user to obtain results from a portion of the total exam.

An example is a fifty question exam in which the user has ten questions dealing with "fractions" and desires to know how the class or a specific student performed on just that portion of the test.

To score subtests, create a special key by obtaining a new blank form, filling in the fifth mark position of the key line, and filling in the correct answer for each question that will be part of the subtest results.

On the control panel of the 888P+, press the PRINT LEFT/RIGHT switch to the opposite position from where it was set during the original scoring. Turn the power switch on. Feed the newly generated key form through the OMR. Feed all of the student response forms through the OMR. Feed the Item Analysis and Student Roster forms. The numbers printed on these forms will represent the subtest results. Repeat the entire process for other subtests. Warning: If more than one subtest is processed, the score may not be legible due to over printing of scores on the form.

## ITEM ANALYSIS AND STUDENT ROSTER

SCANTRON prints stock forms that may be used by the 888P+ for Item Analysis and Student Roster. There are several types of Item Analysis print-out forms available (Form numbers 9700, 9701 and 9702). The Item Analysis forms contain sections for the number of tests scored, the average score, and the number of wrong answers for each question given. If there are more than fifty questions, item analysis output can be continued with either the pass 3 or pass 4 side to the form. To start, score forms as directed in "Test Scoring Instructions." Then, select the item analysis print-out form that best handles the number of questions on the test. Feed the item analysis print-out form into the test scoring machine. The total number of forms scored, the class average, and the total number of incorrect responses for each test item will be printed on the form. Below is a typical example of an Item Analysis form:


	FORMS SCORED	
	CLASS AVERAGE	
	ITEM	
	1	
	2	
	3	
	4	
	5	
	6	
	7	
	8	
	9	

**ITEM ANALYSIS**

CLASS \_\_\_\_\_ TEST \_\_\_\_\_

The Student Roster form has space for a maximum of 50 students. If more than fifty students have been scored, the 888P+ can continue printing roster scores with either a pass 1 or pass 2 of the student roster form, up to a 100 student maximum. A score for each student test will be printed in the order the test was fed into the 888P+. To use the roster feature simply put the student tests in the order desired, score them according to the test scoring instructions, and then feed the Student Roster form.

The scores will print opposite the area used for putting in the student name. Below is an example of the Student Roster form:

		STUDENT NAME		
	1			
	2			
	3			
	4			
	5			
	6			
	7			
	8			
				<b>SCORES BY</b> <b>CLASS ROSTER</b>
				CLASS _____
				TEST _____
				DATE _____

All the student information remains in the 888P+ memory as long as the OMR is not powered off. Therefore it is possible to feed the Item Analysis form and the Student Roster form without rescoring the documents.

## PERCENTILE SCORE RESPONSE

### OUTPUT FORMAT

Both raw score and percentile score will be printed on the teachers key and the student response form. Percentile scores on the teachers key are always 100% and serve no purpose except to indicate percentile mode was accepted by the 888P+.

This format does not fit on existing 882 forms when in verification modes. A minimum of 1 inch is required after the trailing edge of the print mark to guarantee accurate and legible printing.

### EXTENDING PERCENTILE RESPONSE

When the percentile selection is made on the teachers key, the 888P+ will automatically output the two special forms, roster, and item analysis in a percentile format.

There is not enough room to print the "%" character after each data position on the forms. This may create confusion at a later date as to whether the answers printed were raw scores or percentile. For this reason, a double "%" character is printed at the beginning of the data during the first and third passes to indicate the use of percentage scoring on the form.

### TABULATING SURVEY RESULTS

The 888P+ tallies survey results using a method similar to scoring tests. A key still needs to be created, but this key only has the one position marked in the function line section as shown below:

There are two techniques for tabulating surveys depending on the type of form being used to take the survey. The first type has the selections listed vertically as in the example below:

The diagram illustrates the layout of a Scantron Form 20-S. On the left is a key for three questions. Question 1 has five options: a, b, c, d, e. Question 2 has five options: a, b, c, d, e. Question 3 has two options: a, b. In the center is a student response form with three columns of bubbles. The first column is for question 1, the second for question 2, and the third for question 3. An arrow points to the top of the third column, and a box labeled '3' is above it. On the right side of the form, the text 'SCANTRON FORM 20-S' is printed vertically, followed by 'SURVEY ANSWER FORM' and '20 QUESTION'.

To tally responses using this form:

1. Turn power on and feed through a blank form with only the fifth key position marked.
2. Feed the survey forms ignoring any red marks or numbers printed.
3. When finished, feed the Item Analysis form. The 888P+ will print the items numerically. Item 1 will represent the number of people who responded to item 1(a), item 2 will represent item 1(b), and so on until the last response.
4. Remember that a separate tally and key is required after every two passes of the tally form (1-50 and 51-100 for maximum of 100 questions). So after two passes are done, turn the power off and then on again and re-program the 888P+ with a new key and pass 101-150 and 151-200.

The second style of survey form has the choices printed horizontally from left to right similar to the sample below.

	(T)	(F)		KEY		
■	□ % □	□ 2 □	□ 3 □	■		
■	1	□ A □	□ B □	□ C □	□ D □	□ E □
■	2	□ A □	□ B □	□ C □	□ D □	□ E □
■	3	□ A □	□ B □	□ C □	□ D □	□ E □
■	4	□ A □	□ B □	□ C □	□ D □	□ E □
■	5	□ A □	□ B □	□ C □	□ D □	□ E □
■	6	□ A □	□ B □	□ C □	□ D □	□ E □
■	7	□ A □	□ B □	□ C □	□ D □	□ E □
■	8	□ A □	□ B □	□ C □	□ D □	□ E □
■	9	□ A □	□ B □	□ C □	□ D □	□ E □
■	10	□ A □	□ B □	□ C □	□ D □	□ E □

PART 1

• MAKE DARK MARKS

• ERASE COMPLETELY TO CHANGE

• EXAMPLE: □ A □ □ B □ □ C □ □ D □ □ E □

USE NO. 2 PENCIL ONLY

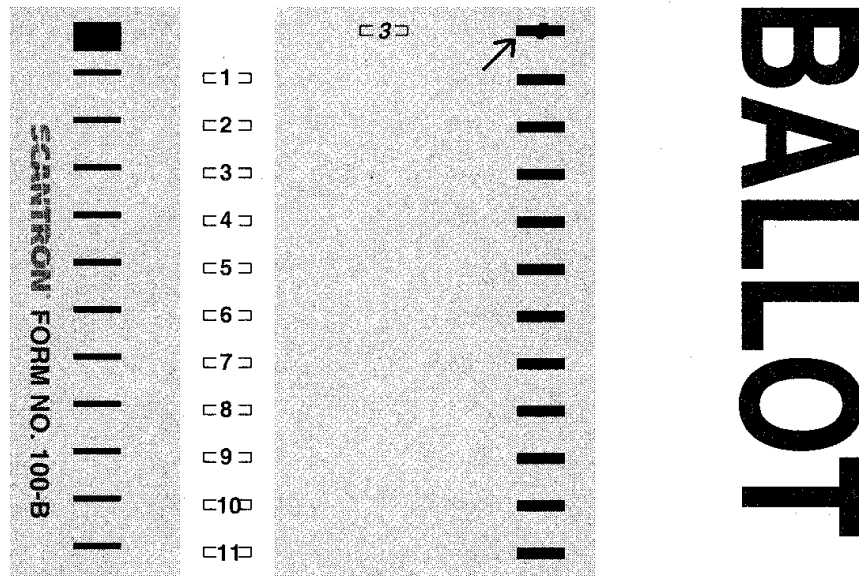
**IMPOR**

To tally this type of form:

1. Prepare a new key for column "A" by filling in each mark position in the "A" column. Also fill in the one key mark position on the function line of the form.
2. Turn the power on and feed the key.
3. Feed survey forms ignoring any red marks or numbers printed.
4. When finished, scan the Item Analysis form. The numbers that print on the sheet are NOT the final count. Each tally number must be subtracted from the total number of documents scanned to arrive at the correct tally.
5. The above procedure must be repeated for each of the remaining columns using a separate key for each different column.

## BALLOTING INSTRUCTIONS

1. Select a ballot form that closely matches the number of possible candidates.
2. Assign a different number to each candidate. Maximum 100 per ballot.
3. Be sure to include ballot marking instructions on the slate of candidates to reduce mistakes due to unreliable marking of ballot forms.
4. To tally ballots, turn the power on and feed a blank ballot form with only the one key position marked on the function line as shown below:



Feed the ballot forms ignoring any red marks or numbers printed on the form. The maximum number of ballots that can be scanned is 999.

When finished, feed the Item Analysis form. The total number of votes cast for each candidate will be printed next to the corresponding number.

## CLASS REQUEST TALLY INSTRUCTIONS

1. Using a blank Class Request form, mark only the key position shown below:

The diagram shows the front of a Class Request form. On the left, there are two vertical columns of checkboxes, numbered 1 through 24. The right column has checkboxes 3 and 5 marked with a solid black bar. In the center, the word "FRONT" is printed in large, bold letters. Below it, there are three bullet points: "Mark your choice with a No. 2 lead pencil.", "Do not fold or bend this paper.", and "EXAMPLE: [checkbox 1] [checkbox 3]". The example shows checkbox 1 with a solid bar and checkbox 3 with an empty box. On the right side of the form, there is a vertical column of checkboxes numbered 6 through 12, with checkbox 10 marked with a solid bar. Below this column, the text "GRADE: 9 10 11 12" is printed, with "circle only one" written vertically to the left. At the bottom of the form, the text "DO NOT MARK IN SHA" is printed vertically. The form is labeled "SCANTRON FORM NO. 200-S" on the right side.

2. Turn the power on and feed the key form.
3. Feed the student Class Request forms.
4. When finished, feed the Item Analysis form. The total number of requests for the classes will appear next to the corresponding number.
5. Remember that a separate key and tally is required for every two passes of the Item Analysis (1-50 and 51-100). After tallying the first page, simply turn the power off, then on, and repeat the above procedure for passes 3 and 4 (101-150 and 151-200).

## **ESSAY SCORING OPTION**

### **PLACEMENT**

Essay marks may only be placed on SIDE 1. If there are four and only four leading timing marks before the reset mark, then the data on those four marks will be considered the essay score.

### **TEACHER MARKING**

If the teachers essay score is completely blank, the form will be considered a non-essay form and all student essay marks and leading timing lines will be ignored. The 888P+ will sum one mark value per timing line. If a multiple mark is made on one of the timing lines, then the form will be rejected. When a teacher essay is without error, the 888P+ will print the essay score along with the multiple choice score

### **STUDENT MARKING**

The following checks are made only if the teachers key indicated that an essay score was to be used.

If a zero essay grade is required, then the number zero must be filled out on the students essay form. Blank entries will be considered an error.

The 888P+ will sum mark values per timing line. If a multiple mark is made on one of the timing lines, then the form will be rejected.

If the student essay score exceeds the teachers essay score, the form will be rejected.

The final student grade will be the sum of the essay and multiple choice questions.



## **ERRORS**

The following are possible errors that can occur while operating the 888P+. First the problem is listed and then below each problem are the possible solutions in order from most likely to least likely.

### **Will not Program**

1. Mark position on key line not marked.
2. Forms are feeding crookedly.
3. Marks are too light.
4. One or more mark position left blank on answer key.

### **Will not program all responses**

1. Marks are too light.
2. One or more mark position left blank on answer key.
3. Form is three hole punched.

### **Key is rejected**

1. Marks are in the timing track.
2. One or more mark position left blank on answer key.

### **Programs incorrect information**

1. Marks are not centered in the mark positions.
2. Form is three hole punched.
3. Marks are too light.

### **Marking Correct answers wrong**

1. Wrong key has been programmed.
2. Marks are too light.
3. Extra marks have been made.
4. Poor erasures.
5. Forms are feeding crookedly.
6. Marks are not centered in the mark positions.

### **Score not printing**

1. Overfeeding.
2. Forms are feeding crookedly.
3. Print command in timing track is missing.

### **Rejects student's form**

1. Marks are in the timing track.
2. Form is three hole punched.
3. Forms are feeding crookedly.

### **Not scoring certain questions**

1. One or more mark position left blank on answer key.
2. Marks are too light.
3. Marks are not centered in the mark positions.

### **Continuous beep when first turned on**

Internal diagnostic failure. Call your local SCANTRON Sales office.

### **Machine failures (continuous beep)**

Call your local SCANTRON Sales office.

### **Form errors (short beep)**

1. Multiple reset marks.
2. No reset mark or print mark before reset mark on form.
3. No print mark.
4. Wrong number of timing marks on student form (different # than on key).

### **Operational errors (short beep)**

1. Key mark position not marked.
2. Side 1 / Side 2 sequence error.

### **Essay errors (long beep)**

1. Multiple mark in essay score.
2. No student essay score marked.
3. Wrong number of timing marks on student's essay form.
4. Student essay score is greater than that of teacher.