

Transformer Selection Problem

Look at the transformer selection chart on the opposite page. 

Toroidal (doughnut shaped) transformers are custom-built as they are ordered. Production clerks in electronic assembly plants order transformers by part number according to the specifications they are given.

Question

1

What feature of the transformer is indicated by an 'A' as the third element in the part number?

		A					
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Question

2

What are the first two numbers in the part number of a transformer with a power rating of 300 VA (volt-amp)?

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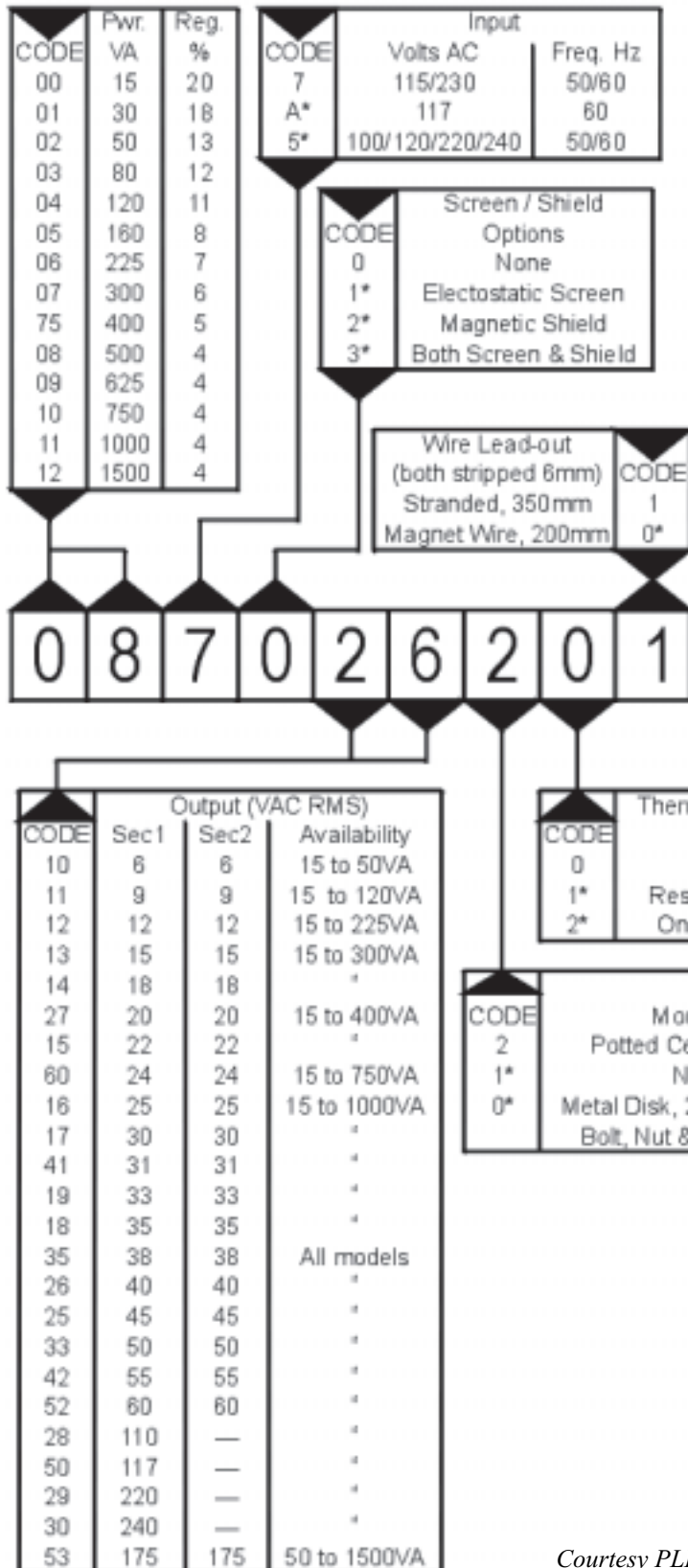
Question

3

Build the part number for a PLITRON toroidal transformer with the following specifications: 1000 VA; 115/230 Volts AC input; 50/50 Volt output; centre potted and drilled; thermal protection by resetting switch; 350 mm stranded wire lead outs.

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Building a PLITRON order number



The selection chart is an aid to building a PLITRON part number. In this example, part number 087026201, describes a 500VA toroidal transformer with a dual input (115/230 VAC), 2 x 40 VAC outputs (at 6.25 A each), a potted and drilled center, and stranded leads. (* Indicates an option which is subject to minimum order.)



Courtesy PLITRON Manufacturing Inc., Toronto, Ontario.

Answers - Transformer Problem

1. *What feature of the transformer is indicated by an 'A' as the third element in the part number?*

The A indicates a **117 VAC, 60 Hz input**

2. *What are the first two numbers in the part number of a transformer with a power rating of 300 VA (volt-amp)?*

07 indicates a 300 VA rating

3. *Build the part number for a PLITRON toroidal transformer with the following specifications: 1000 VA; 115/230 Volts AC input; 50/50 Volt output; centre potted and drilled; thermal protection by resetting switch; 350 mm stranded wire lead outs.*

1 1 7 _ 3 3 2 1 1 (The fourth element was not specified and is not marked.
The 'default' selection would be '0' - no screen or shield)

Why does TOWES use 'constructed response' type questions?

Constructed response items, such as the creation of this Plitron part number, are more difficult to mark than other types of exam questions, but yield far more psychometric information (which is the reason for testing).

For many years the 'gold standard' for test items has been the multiple choice format. Proponents of multiple choice items correctly point out that this type of question discriminates well and is easy to mark. On the other hand, the emphasis on the actual question in a multiple choice item means that these items are fundamentally tests of reading and test-taking skills.

Constructed response items yield more information from incorrect responses and allow a wider range of possible answers. For example, during trials, we may find that less-skilled individuals do not fill in the fourth item in question 3, while better skilled individuals insert a '0' as the default value. In this case, we could modify how this item was marked to make use of this added 'information' about the skill of test-takers.

We use constructed response items because we respect the test-taker and value the time he or she has taken to write the test. The time we take to mark the test is well-spent if we can get comprehensive and accurate information about literacy and numeracy skills from the test results.

Building a PLITRON order number

CODE	Pwr. VA	Reg. %	CODE	Input	
				Volts AC	Freq. Hz
00	15	20	7	115/230	50/60
01	30	18	A*	117	60
02	50	13	5*	100/120/220/240	50/60
03	80	12			
04	120	11			
05	160	8			
06	225	7			
07	300	6			
75	400	5			
08	500	4			
09	625	4			
10	750	4			
11	1000	4			
12	1500	4			

The selection chart is an aid to building a PLITRON part number. In this example, part number 087026201, describes a

Q1

Use the search term 'third position' and trace the line to **locate** the small chart for the third position

Cycle to find the 'A' in the first column of the chart; find its meaning in the second column of the same row.

0 8 7 0 2 6 2 0 1

CODE	Output (VAC RMS)		
	Sec1	Sec2	Availability
10	6	6	15 to 50VA
11	9	9	15 to 120VA
12	12	12	15 to 225VA
13	15	15	15 to 300VA
14	18	18	"
27	20	20	15 to 400VA
15	22	22	"
60	24	24	15 to 750VA
16	25	25	15 to 1000VA
17	30	30	"
41	31	31	"
19	33	33	"
18	35	35	"
35	38	38	All models
26	40	40	"
25	45	45	"
33	50	50	"
42	55	55	"
52	60	60	"
28	110	—	"
50	117	—	"
29	220	—	"
30	240	—	"
53	175	175	50 to 1500VA

CODE	Thermal Protection Options
0	None
1*	Resetting Switch
2*	One Shot Fuse

CODE	Mounting
2	Potted Center, drilled
1*	None
0*	Metal Disk, 2 Neo washers Bolt, Nut & Flat washer



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1. *What feature of the transformer is indicated by an 'A' as the third element in the part number?*

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75	400	5			
08	500	4			
09	625	4			
10	750	4			
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12	1500	4			

CODE	Options
0	None
1*	Electrostatic S
2*	Magnetic Sh
3*	Both Screen &

CODE	Options
0	None
1*	Resetting Switch
2*	One Shot Fuse

CODE	Options
2	Potted Center, drilled
1*	None
0*	Metal Disk, 2 Neo washers Bolt, Nut & Flat washer

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