

[redacted] STAT

December 7, 1964

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STATDIGITAL READOUT COUNTERS

The Digital Readout Counters contracted and delivered so far have been for real time on line computer use. In addition there will be some counters required for punch card use and the configuration will be somewhat different. In order to make the control panel, x- and y-axis counter and synchronizer of future units identical to and interchangeable with previous units, [redacted] recommends a separate punch coupler unit be used. Thus any digital counter of this series can be converted to IBM punch card output by adding a punch coupler which would couple in an IBM punch and typewriter. An alternate mode of the coupler will switch the digital readout counter to real time on line computer use as before. A punch card format for the 80 character IBM punch card was worked out by John R. [redacted]. The first 20 columns are reserved for operator use. A space and one column will be used for recording the readout command and a space and 4 columns for the instruction character. Each coordinate axis will require a space, an algebraic sign and six columns for the coordinate reading. A space and 3 columns will be used for machine identification and a space and 10 columns for recording the special character reading. The remaining six of the 80 columns on the IBM card will be spares. A schematic illustration of the format is attached. Header cards can be used to print out column headings and other fixed data.

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The first application of the on-line/punch card dual capability will be for conversion of the [redacted] 880 Comparator to include real time on-line access to the computer. The [redacted] 880 uses the telecomputing reading head and I sent [redacted] the maintenance manual on the Telecomputing Head. [redacted] is presently determining whether the output of the telecomputing demodulator is suitable for direct input to his x- and y-axis counters. He thinks it probably is but if not he would have to add a pulse shaping network between the telecomputing demodulator and his counter. [redacted] expects to have complete information and his proposal ready for submittal by Friday, Dec. 11, 1964.

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The delivery schedule of the [redacted] Digital Readout Counters presently on order is:

- a) One 2-axis counter delivered 30, Sept. 64.
- b) One 2-axis counter delivered 30, Oct. 64.
- c) Spare Circuit Boards delivered 30, Oct. 64.
- d) One 2-axis counter delivered 30, Nov. 64.
- e) One 4-axis counter scheduled for delivery 11, Dec. 64.

Digital Readout Counters

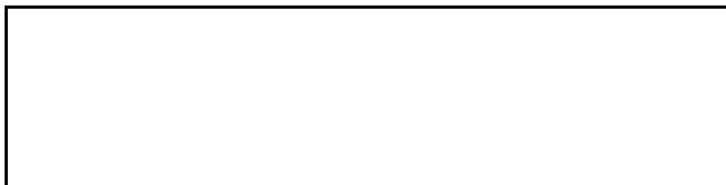
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All above counters, except the first one delivered on 30 Sept., include the circuit changes required for a compatible interface with the computer and the solenoid holding switches for the Readout Character Command. The first unit is to be returned to [redacted] for retrofit of the changes. [redacted] talked to [redacted] last week to schedule shipment to [redacted] of the [redacted] counter used on the [redacted] multiformat projector. The counter is to go back to [redacted] for the same retrofit changes. [redacted] expects to receive the counter from [redacted] early this month. The control panel of the [redacted] counter used on the [redacted] stereo comparator presently in-house must be returned to [redacted] for addition of the solenoid holding switches. The computer interface changes were accomplished by [redacted] at your plant in Oct. 1964.

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IBM Punch Card Format

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	26	27
Columns 1 thru 20 reserved for operation identification.																				Readout Command		Instruction Character				
																				R	C	I	N	S	T	
																				1		A	A	A	A	
																				2		↓	↓	↓	↓	
																				4						
																				8		↓	↓	↓	↓	
																						P	P	P	P	

28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54
X1 Coordinate							Y1 Coordinate							X2 Coordinate							Y2					
X	I	C	O	O	R	D	Y	I	C	O	O	R	D	X	2	C	O	O	R	D	Y	2				
±	0	0	0	0	0	1	±	0	0	0	0	0	0	±	0	0	0	0	0	0	±	0				
	↓							↓							↓							↓				
	9	9	9	9	9	9		9	9	9	9	9	9		9	9	9	9	9	9		9				

55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
Coordinate					I.D.			Special Character										Spares							
C	O	O	R	D	I	.	D	S	P	C	L	C	H	R	A	T	R								
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓					
9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9					