KineticSystems

Model 3291-Z1A

System Monitor and Dataway Display

Model 3291

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GENERAL DESCRIPTION

The Model 3291 is a single-width module that indicates the state of all Dataway signal lines during a Dataway cycle. It contains two 24-bit registers, designated as Data and Command registers, the outputs of which are continuously displayed by front-panel LED's.

The Data register is loaded from the Dataway Write lines for a Write operation and from the Dataway Read lines for a Read operation. The Data register can be read by $N \cdot F(0) \cdot A(0)$. The Command register is loaded during Dataway operations and contains five F bits, four A bits, bits representing N, X, Q, C, Z, I, L, P2, and P1. The bit position in the Command register is as indicated by the associated LED's on the front-panel. The Command register can be read by $N \cdot F(0) \cdot A(1)$.

Several modes of operation are provided which determine the manner in which the registers are loaded. The modes are S1, N·S1, Q·S1, DC WRITE and DC READ. Hold mode (H) inhibits register loading for all but the DC modes. The modes are selectable by a front-panel toggle switch or by a five-bit Control register. The module will automatically advance through its five modes by holding the MODE/HOLD switch in the MODE position. This combination of mode selection and the ability to read the Command and Data registers makes the Model 3291 a valuable tool in checking the integrity of a CAMAC system.

The Data, Command, and Control registers of the Model 3291 can be cleared by Dataway command, the Clear signal from the Model 3295 or by the front-panel push-button. The front-panel LED's are tested whenever the front-panel Clear push-button is held depressed.

MODES OF OPERATION

MODE	Display Operation			
	R/W,N,A,F,X,Q,B	C,Z	I,L,P1,P2	S1,S2
S1	Clocked by S1	Clocked by S2	Follows	Note 1
N·S1	Clocked by N·S1	Clocked by S2	Follows	Note 1
Q·S1	Clocked by Q·S1	Clocked by S2	Follows	Note 1
DC Write	Follows	Follows	Follows	Follows
DC Read	Follows	Follows	Follows	Follows
Hold (H)	Held	Clocked by S2	Follows	Note 1

Notes:
1. S1 and S2 latches are cleared by the leading edge of Busy and are set by S1 and S2 respectively.
2. The "D" LED flashes for any activity on the Dataway. A one-shot extends this signal.

3291 DATAWAY DISPLAY

	N
D	24
S1	23
S2	22
B	21
P1	20
P2	19
L	18
I	17
Z	16
C	15
Q	14
X	13
N	12
A	11
8	10
4	9
2	8
1	7
F	6
16	5
8	4
4	3
2	2
1	1

DCR
DCW
Q·S1
N·S1
S1
HOLD
MODE
CLR

Kinetic Systems

FUNCTION CODES

Command		Q	Action
N·F(0)·A(0)	RD1	1	Reads the Data register.
N·F(0)·A(1)	RD1	1	Reads the Command register.
N·F(1)·A(0)	RD2	1	Reads the Control register.
N·F(1)·A(15)	RD2	1	Reads the module identifying number (3291 = 6333_8).
N·F(8)·A(15)	TLM	LR	Tests if the LAM request is present.
N·F(10)·A(0)	CLM	1	Clears the LAM status.
N·F(14)·A(0)	F14	1	Sets the LAM status.
N·F(17)·A(0)	WT2	1	Writes the Control register.
F(0) to F(7)			Loads the Data register from the Read lines.
F(16) to F(23)			Loads the Data register from the Write lines.

Notes: The Model 3291 returns X = 1 for all commands directed to it and Q = 1 for all such commands except N·F(8)·A(15). The commands that include N are operable when the 3291 is addressed and actions are independent of the strobe mode selected. The register load commands that do not include N operate on any Dataway cycle regardless of the station address. The register loading is as indicated under MODES OF OPERATION.

REGISTERS

Note: C = CLEAR, H = HOLD
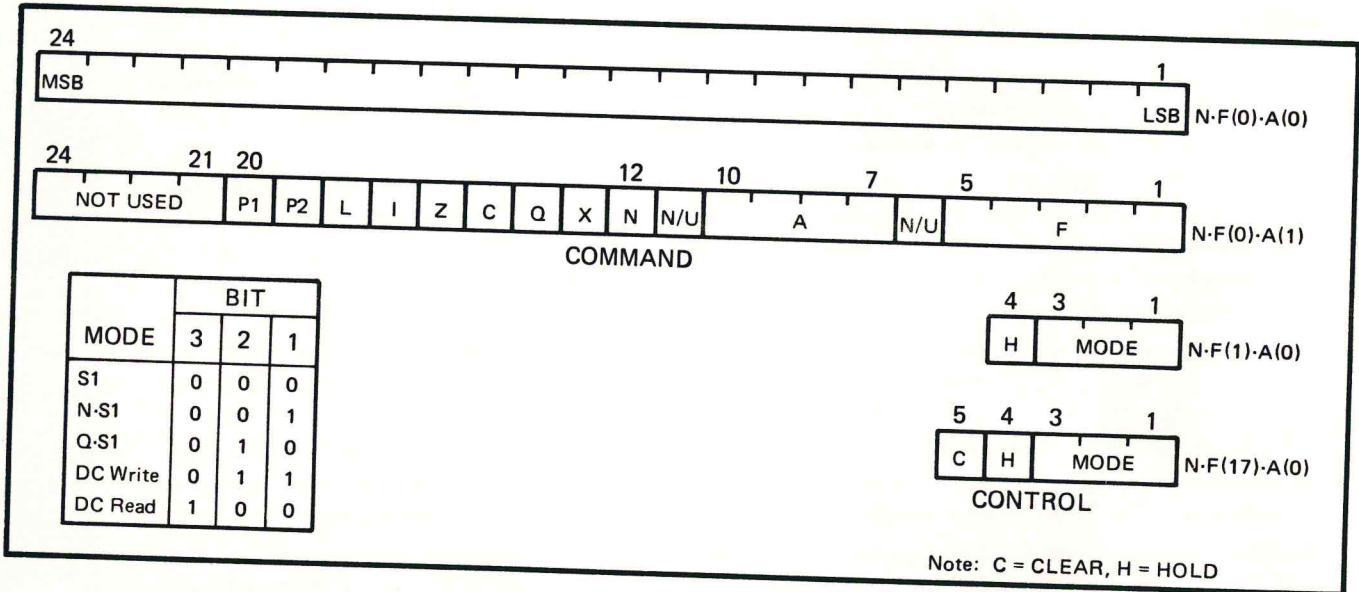
POWER REQUIREMENTS

+6 volts — 900 mA

ORDERING INFORMATION

Model 3291-Z1A — System Monitor and Dataway Display

Accessories — Model 3295 Dataway Display Control Module

Weight: .70 kg. (1 lb. 8 oz.)

CONTROL REGISTER BIT ASSIGNMENT

The five-bit Control register contains three bits for mode selection, a bit for holding data and a Clear bit. The register is loaded by $N \cdot F(17) \cdot A(0) \cdot S1$. The load command does not update the Command or Data registers.

Mode Selection

MODE	BIT		
	3	2	1
S1	0	0	0
N·S1	0	0	1
Q·S1	0	1	0
DC Write	0	1	1
DC Read	1	0	0

Hold (Bit 4)

Writing the Control register with a one at Bit 4 inhibits further loading of the Command and Data registers. The data previously loaded in these registers remains there and continues to be displayed on the front panel. Either DC mode of operation will override the holding of data.

Clear (Bit 5)

Writing the Control register with a one at Bit 5 clears the LAM and the Command, Data and Control registers. The Control register is returned to the S1 mode of operation.

REGISTER LOADING INHIBITED

The Command and Data registers of the 3291 are inhibited from being updated during any of the following: $N.F(0).A(1)$, $N.F(1).A(0)$, $N.F(17).A(0)$ or the assertion of the external Hold signal. The display registers are not updated for these three commands when they are directed to the 3291 N-slot since they are used to read or write internal registers in the 3291. (For example, the 3291 command register should be read without destroying the previously stored command data by updating it with the $F(1).A(0)$ command information.) To assure that these commands occur, direct them to any other slot in the crate and then read the 3291 via the $N.F(0).A(1)$ command.

Model 3291

FRONT PANEL

LED INDICATORS

N   Flashes when the module is addressed.

DATA   24 LED's which show the current contents of the
                    Data register. The LED's are arranged vertically
                    and are marked to show octal and hexadecimal
                    groupings.

COMMAND   21 LED's which show the current contents of the
                    Command register.

CONTROL   A group of six LED's which show the current mode
                    of operation and the state of the Hold latch (H).

SWITCHES

MODE/HOLD   A 3-position, center-off toggle switch. When
                    pushed down, it steps the module through its five
                    operating modes. When pushed down, it places the
                    module into the Hold mode.

CLEAR   A normally closed pushbutton. When pushed, it
                    performs a lamp test, lighting the 53 front panel
                    LED indicators. Upon release, it clears the LAM
                    and the Command, Data and Control registers,
                    putting the module in the S1 mode of operation.
                    It also "clears" hold.

REAR PANEL

CONNECTORS

BLACK JACK   This pin jack (for 0.080" pin) provides for
                    connection to the Clear signal of the Model 3295.
                    This signal clears the LAM and the Command, Data
                    and Control registers, returning the Model 3291
                    to the S1 mode of operation. It also "clears"
                    Hold.

RED JACK   This pin jack provides for "HOLDING" the data in
                    the Model 3291 and updating only on a compare
                    from the Model 3295.

WARRANTY

All KineticSystems Corporation equipment is warranted against defects in workmanship and material under normal use and service for a period of two years from the date of shipment. KSC will repair or replace, at KSC's option, any equipment found to be defective in workmanship or material within two years of shipment. Repair charges will be applicable from two years after delivery with repair charges varying, depending on the complexity of the equipment. This warranty covers all such items delivered after March 1, 1978.

Equipment purchased by KineticSystems Corporation for resale will carry the original equipment manufacturers' warranty.

The equipment warranty outside the continental U.S.A. or Switzerland is limited to repair of the equipment and excludes shipping, custom's clearance, or any other charges.

Equipment for repair must be returned prepaid to KSC. Transportation charges for shipping the equipment to KSC shall be paid by the customer, while transportation charges for the return of the repaired equipment shall be paid by KSC except as indicated in the previous paragraph and will be made on a UPS basis, where available, or parcel post insured. Premium methods of shipment are available at customer's expense and will be used only when requested. If KSC selects the carrier, KSC will not thereby assume any liability in connection with the shipment nor shall the carrier be in any way construed to be the agent of KSC.

No equipment will be accepted for credit or exchange without the prior approval of KSC. Contact the Repair Service Center in your area for a return authorization number.

All customers (except European) please ship units to:

> KineticSystems Corporation
> Repair Service
> 11 Maryknoll Drive
> Lockport, Illinois 60441
>
> Telephone (815) 838-0005
> TWX 910 638-2831

In Europe ship all units to:

> Kinetic Systems International S.A.
> Repair Service
> 6 Chemin de Tavernay
> 1218 Geneva, Switzerland
>
> Telephone (022) 98 44 45
> Telex 289 622 KSI CH

The following steps should be taken when returning a unit:

1. Contact KineticSystems and discuss the problem with an engineer.
2. Obtain a return authorization (RA) number.
3. Initiate a purchase order for the estimated repair charge if the equipment is out of warranty.
4. Ship the equipment to KineticSystems with the RA number, a description of the problem, and the name of the technical contact person.

BILL OF MATERIALS FOR W03291Z1A
3291-Z1A   ASSEMBLY   PARTS LIST REV #   8

ITEM NO	QUANTITY	DESCRIPTION	PART NO
1	1	1000PF RD CW15C102K/CN15C102K	CA 150102
2	13	.1UF REDCAP CR20D104ZC	CA 150104
3	1	330PF REDCAP CW15C331K	CA 150331
4	3	22UF/15V PT KMT#T310B226K015A	CA 215226
5	1	4.7UF35V PT KMT#T310B475K035A	CA 235475
6	1	TEST PT *JHNSN 105-1043-001BL	CO 919005
7	2	LG TST PT RED EFJ#105-1042-00	CO 919025
8	5	B-SOCKETS AMP 2-331272-7	CO 921006
9	4	1N914A/1N4446	DI 100914
10	1	1N4005 (1 AMP)	DI 104005
11	1	1N5401 (3 AMP)	DI 105401
12	43	SMALL RED LED MONSANTO #MV507	DI 901003
13	10	SM YELLOW LED XCITON #XC209Y	DI 901007
14	1	FP 3291-Z1A B-1004	FP 403291
15	1	3 AMP LITFU 275.003/276.003	FU 911003
16	2	REAR MOUNTING RAIL(SEC) B-122	HD 231229
17	1	SEC SHIELD B-1057	HD 241057
18	1	.4JMPR*SQUR J0.400X0.125PVC22	HD 901006
19	1	GND SHIELD LABEL #77-631979-2	HD 901046
20	1	GRD SHIELD INSULATION LE BLK	HD 901065
21	1	DATA FINGER GRDS BORER#151-97	HD 901113
22	6	4-40 X 1/4 FLT HD	HD 911002
23	7	4-40 X 3/16 BND HD	HD 911005
24	2	4-40 X 1/4 BND HD	HD 911006
25	2	4-40X1/4 PHIL PAN HDMS BLK OX	HD 911035
26	3	#4 NYL SHLDR WASHR B51547F01	HD 913011
27	1	DEUTSCH FASTNR FJBA-7500-4MMB	HD 914000
28	2	555/1455PI	IC 100555
29	1	7402	IC 107402
30	1	7403	IC 107403
31	1	7404	IC 107404
32	1	7405	IC 107405
33	2	7408	IC 107408
34	7	8234 SIGNETICS	IC 108234
35	1	9309	IC 109309
36	3	9602/DM8602 NO NATIONAL	IC 109602
37	1	74279	IC 174279
38	2	74LS00	IC 407400
39	2	74LS02	IC 407402
40	4	74LS04	IC 407404

ITEM NO	QUANTITY	DESCRIPTION	PART NO
41	2	74LS08	IC 407408
42	3	74LS27	IC 407427
43	4	74LS32	IC 407432
44	3	74LS42	IC 407442
45	2	74LS74	IC 407474
46	1	74LS107	IC 474107
47	6	74LS157	IC 474157
48	10	74LS175	IC 474175
49	1	74LS197	IC 474197
50	1	PCB 3291	PC 103291
51	1	PCB B425 3291 Z1A &Z1B	PC 302425
52	1	1/8W 5% 150 OHM	RE 121500
53	3	1/8W 5% 220 OHM	RE 122200
54	41	1/8W 5% 470 OHM	RE 124700
55	7	1/4W 5% 1000 OHM	RE 221001
56	2	1/4W 5% 10K	RE 221002
57	1	1/4W 5% 180K	RE 221803
58	7	1/4W 5% 220 OHM	RE 222200
59	3	1/4W 5% 22K	RE 222202
60	3	1/4W 5% 33K	RE 223302
61	2	1/4W 5% 470 OHM	RE 224700
62	8	1/4W 5% 4700 OHM	RE 224701
63	1	1/4W 10% 4.7M	RE 234704
64	1	3291 B-1106	RP 221106
65	1	SPDT PUSHBUTTON C&K #8121Z	SW 911005
66	1	DPDT MOM TOGGLE C&K 721593YZQ	SW 911009
67	1	PUSH BUTTON CAP C&K A7089-1	SW 991006
68	1	2N3643/PN3643-5 NPN NATIONAL	XS 103643