

Model 3473

24-bit Change-of-state Input Register

INSTRUCTION MANUAL

February, 1987

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Model 3473-A1A
24-bit Change-of-state Input Register
INSTRUCTION MANUAL

February, 1987

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Model 3473-S018

*** Special Option ***

August 1985

Model 3473-S018

Special Option

Model 3473-S018

The 3473-S018 is a 3473-A1A with an input filter time constant of 10 milliseconds.

August 1985

*****Special Option*****

Model 3473-S021

24-bit Change-of-state Input Register

September, 1995

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Model 3473-S021

*****Special Option*****

The Model 3473-S021 is the same as the Model 3473-A1A except it has been modified to 22 millisecond time constant.

September, 1995

Model 3473-A1B
24-bit Change-of-state Input Register
INSTRUCTION MANUAL

February, 1987

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***** SPECIAL OPTION *****

Model 3473-S006

November 1981

Model 3473-S006

**** SPECIAL OPTION ****

Model 3473-S006

The 3473-S006 is a 3473-A1B with one-millisecond input filter time constraints.

**** SPECIAL OPTION ****

MODEL 3473-S015

FEBRUARY 1984

Model 3473-S015

****** SPECIAL OPTION ******

The Model 3473-S015 is the same as a 3473-A1B, except the input filter time constant has been changed to 10 milliseconds. The 8837 line receivers have been changed to Signetics 8T37 line receivers.

Model 3473-A1C
24-bit Change-of-state Input Register
INSTRUCTION MANUAL

February, 1987

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**** SPECIAL OPTION ****

Model 3473-S007

August 1982

Model 3473-S007

**** SPECIAL OPTION ****

(AIC)
Model 3473-S007

The 3473-S007 CAMAC module is a 24-bit change-of-state input register which sets a LAM only when a positive edge transition occurs on the input.

***** SPECIAL OPTION *****

Model #3473-S008

October 1982

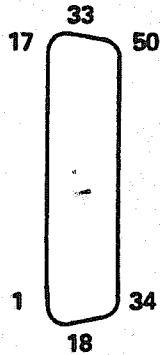
Model 3473-S008

**** SPECIAL OPTION ****

Model 3473-S008

The 3473-S008 is a 3473-A1C with a 50-position "D" type connector mounted on the front panel. Connector wiring is as shown on Page 4 of this manual.

MODEL 3473-S008



FACE VIEW

Pin/Wire List

50 PIN 'D'

PIN NO.

17	Input Signal 9A
16	Input Signal 8B
15	Input Signal 8A
14	Input Signal 7B
13	Input Signal 7A
12	Input Signal 6B
11	Input Signal 6A
10	Input Signal 5B
9	Input Signal 5A
8	Input Signal 4B
7	Input Signal 4A
6	Input Signal 3B
5	Input Signal 3A
4	Input Signal 2B
3	Input Signal 2A
2	Input Signal 1B
1	Input Signal 1A

PIN NO.

33	Input Signal 17A
32	Input Signal 16B
31	Input Signal 16A
30	Input Signal 15B
29	Input Signal 15A
28	Input Signal 14B
27	Input Signal 14A
26	Input Signal 13B
25	Input Signal 13A
24	Input Signal 12B
23	Input Signal 12A
22	Input Signal 11B
21	Input Signal 11A
20	Input Signal 10B
19	Input Signal 10A
18	Input Signal 9B

PIN NO.

50	Unused
49	Unused
48	Input Signal 24B
47	Input Signal 24A
46	Input Signal 23B
45	Input Signal 23A
44	Input Signal 22B
43	Input Signal 22A
42	Input Signal 21B
41	Input Signal 21A
40	Input Signal 20B
39	Input Signal 20A
38	Input Signal 19B
37	Input Signal 19A
36	Input Signal 18B
35	Input Signal 18A
34	Input Signal 17B

SPECIAL OPTION

Model 3473-S010

November 1982

Model 3473-S010

Special Option

Model 3473-S010

The 3473-S010 is a 3473-ALC with an input filter time constant of one millisecond.

11 November 1982

SPECIAL OPTION

Model 3473-S013

November 1983

Model 3473-S013

*****SPECIAL OPTION*****

The Model 3473-S013 is the same as the Model 3473-A1C, except the input filter has been removed to allow input signals up to 8000 Hertz to be received.

The minimum input pulse width must be greater than 10 microseconds.

SPECIAL OPTION

MODEL 3473 - S016

24-BIT CHANGE-OF-STATE INPUT REGISTER

OCTOBER 1984

Model 3473-S016

SPECIAL OPTION

Model 3473-S016

The 3473-S016 is a 3473-A1C with an input filter time constant of 10 milliseconds.

The information in the following manual remains the same except Schematic Drawing No. 022104-D-4212 applies to Model 3473-S016.

Model 3473-A1D
24-bit Change-of-state Input Register
INSTRUCTION MANUAL

February, 1987

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*****Special Option*****

Model 3473-S012

24-bit Change-of-state Input Register

May, 1993

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Model 3473-S012

*****Special Option*****

The Model 3473-S012 is the same as the Model 3473-A1D except it has been modified so that the input filter is 10 milliseconds.

JRH:rem
May 26, 1993

*****SPECIAL OPTION*****

Model 3473-S020

24-bit Change-of-state Input Register

January, 1991

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Model 3473-S020

*****SPECIAL OPTION*****

The Model 3473-S020 is the same as the Model 3473-A1D except with TTL input range and a 10 millisecond time constant.

JRH:rem(WP)
January 22, 1991

Model 3473-A1E

24-bit Change-of-state Input Register

INSTRUCTION MANUAL

February, 1987

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*****SPECIAL OPTION*****

Model 3473-S002

24-bit Change-of-State Input Register

August, 1980

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Model 3473-S002

*****SPECIAL OPTION*****

Model 3473-S002

This module operates as described in this manual with the following exception:

All features are the same as the model 3473-A1E, except inputs are modified for TTL inputs with optical isolation.

SPECIAL OPTION

Model 3473-S004

July 1981

Model 3473-S004

Special Option

Model 3473-S004

The 3473-S004 is a 3473-A1E with a input filter time constant of 10 milliseconds.

2 July 1981

*** SPECIAL OPTION ***

Model 3473-S009

November 1982

Model 3473-S009

**** SPECIAL OPTION ****

Model 3473-S009

The 3473-S009 is a 3473-A1E with an input filter time constant of 30 milliseconds, +0%, -10%.

SPECIAL OPTION

Model 3473-S011

June 1983

Model 3473-S011

******SPECIAL OPTION******

The 3473-S011 is a 3473-A1E with positive-edge detection. A LAM will only be set on the leading edge of the input signal. The input that caused a LAM to be set must be removed and the LAM set signal cleared before another input changes. If this is not performed it will be possible to miss that last change-of-state.

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Schematic Drawing 022104-D-1273.	Insert

24-bit Change-of-state Input Register

Includes optical isolation with change-of-state monitoring

3473

Features

- 24-bit voltage sense
- Change-of-state indication
- Optical isolation
- 12, 24, and 48 VDC or 120 VAC
- 100 millisecond input filter

Typical Applications

- Contact sense
- Event monitoring
- Level detectors
- Alarms
- Manual switch entry
- Pressure switches

General Description *(Product specifications and descriptions subject to change without notice.)*

The 3473 is a single-width CAMAC module providing 24 individually isolated contact-sense circuits and change-of-state indication. The sense circuit detects the presence or absence of voltage at its terminals and is suitable for sensing such remote process contact closures as limit switches, machine-tool relay contacts, pressure switches, manual switches, and mercury-wetted contacts. Four voltage options are available: 12 VDC, 24 VDC, 48 VDC, and 120 VAC.

Input isolation is achieved via the use of LED/phototransistor optical isolators. Each circuit is a floating two-wire circuit with common-mode voltage isolation greater than 500 volts. Each option has 24 circuits with identical input voltage ratings, and the switching threshold is approximately one half the rated input voltage. Each input circuit draws between five and ten milliamperes. The logic convention is such that a contact closure (input voltage present) is interpreted as a logical "1." Each input is conditioned by filtering after the optical isolator. The filter time constant is 100 milliseconds. Other time constant options are available by special order.

The 3473 contains a 24-bit memory register and a 24-bit comparator. If one or more of the inputs has changed state (1-to-0 or 0-to-1) since the last time the memory register was updated, a common LAM status is set. This can produce a LAM request directing the computer program to read the current state of the inputs.

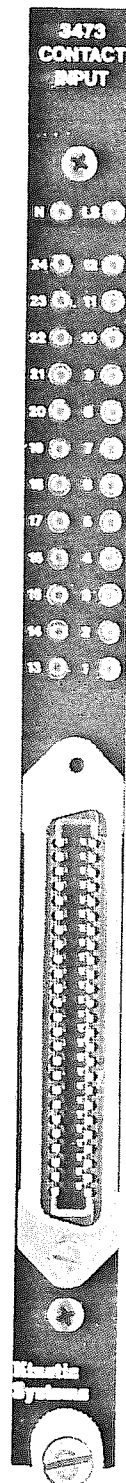
Operation

The 3473 can be used interchangeably with the 3471 24-bit Isolated Input Gate if only the F(0)·A(0) Read is used and the LAM request is maintained in a disabled state.

In the initialized state, the input register and the memory register contain the same data pattern. If any input changes state, a not-compare exits and the LAM status is set. This produces a LAM request (if enabled). In response to the LAM request, an F(2)·A(0) command reads the new states of the inputs, updates the memory register to equal the input states, and clears the LAM status.

To determine input states before the recent changes, an F(0)·A(1) command can be performed to read the state of the memory register. This must be done before the F(2)·A(0) Read.

Note that the first change-of-state sets the LAM status, and no further indication is given as other inputs change state until an F(2)·A(0) read-and-clear command is performed. The data staticize latch is disabled during the F(0)·A(0) and F(2)·A(0) commands to prevent ambiguous results if inputs are changing at that time.



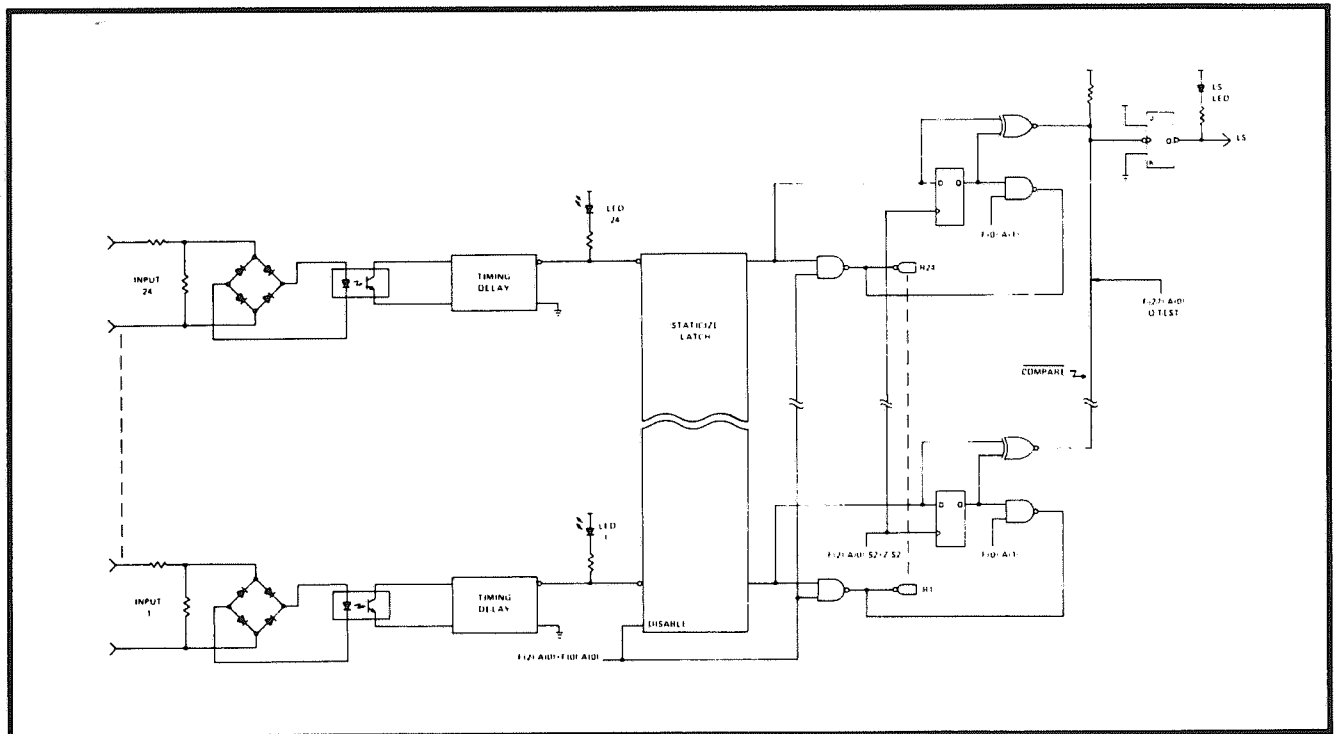
3473 (continued)

Function Codes

Command		Q	Action
F(0)·A(0)	RD1	1	Reads the Input register.
F(0)·A(1)	RD1	1	Reads the Memory register.
F(2)·A(0)	RC1	1	Reads the Input register, then updates the Memory register and clears the LAM status.
F(8)·A(15)	TLM	LR	Tests whether a LAM request is present.
F(10)·A(0)	CLM	1	Clears the LAM status.
F(24)·A(0)	DIS	1	Disables the LAM request.
F(26)·A(0)	ENB	1	Enables the LAM request.
F(27)·A(0)	TST	1 ≠ M	Tests whether the Input register is not equal to the Memory register.
Z	CZ	0	Updates the Memory register and the LAM status, disables the LAM request.

Note: X = 1 for all valid addressed commands.

Simplified Block Diagram



Power Requirements

+6 volts: 450 mA

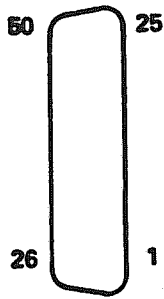
Ordering Information

- Model 3473-A1A** Change-of-State Input Register, 120 Vac, 24 bits, 50S Amphenol Ribbon connector
- Model 3473-A1B** Change-of-State Input Register, 48 Vdc, 24 bits, 50S Amphenol Ribbon connector
- Model 3473-A1C** Change-of-State Input Register, 24 Vdc, 24 bits, 50S Amphenol Ribbon connector
- Model 3473-A1D** Change-of-State Input Register, 12 Vdc, 24 bits, 50S Amphenol Ribbon connector
- Model 3473-A1E** Change-of-State Input Register, contact input, 24 bits, 50S Amphenol Ribbon connector

Related Products

- Model 5950-Z1A Mating Connector
- Model 1850-A1D Rack Termination Panel

Model
3473



FACE VIEW

Socket/Wire List

50 SOCKET RIBBON CONN.

SOCKET NO.

50	_____
49	Input Signal 24B
48	23B
47	22B
46	21B
45	20B
44	19B
43	18B
42	17B
41	16B
40	15B
39	14B
38	13B
37	12B
36	11B
35	10B
34	9B
33	8B
32	7B
31	6B
30	5B
29	4B
28	3B
27	2B
26	1B

SOCKET NO.

25	_____
24	Input Signal 24A
23	23A
22	22A
21	21A
20	20A
19	19A
18	18A
17	17A
16	16A
15	15A
14	14A
13	13A
12	12A
11	11A
10	10A
9	9A
8	8A
7	7A
6	6A
5	5A
4	4A
3	3A
2	2A
1	1A

Model 3473

DISABLE CHANGE-OF-STATE INDICATION

As indicated earlier, the 3473, is software-compatible with (and can replace) the 3471 Input Gate if the F(0)A(0) read is only used and the LAM request is maintained in the disabled state.

It is also possible to disable the setting of the LAM status by change-of-state inputs in groups of six bits. This is done by strap option on the 3473. This feature allows a portion of the module to perform as an input gate while the remaining inputs provide a change-of-state indication.

Cutting the following straps will disable setting the LAM for the associated bits:

Strap Location	Bits Affected
Below IC "M"	1 - 6
Below IC "K"	7 - 12
Below IC "J"	13 - 18
Below IC "G"	19 - 24

Note that the F(0)A(1) and the F(2)A(0) readings are unaffected by these straps.

UNBALANCED CONTACT MONITOR

The 3473-A1A through -A1D modules provide isolated input (as shown on the block diagram on page 2). This requires an external voltage source (generally in series with an external contact) for the input circuits. This has the advantage of providing ground isolation between the external inputs and the module.

The 3473-A1E is arranged for monitoring of unbalanced contacts (one side of each contact connected to ground at the module). One side of each contact input is connected to +24 volts within the module. This has the advantage of not requiring an external voltage source for the inputs. The "common" side of the contacts are connected to contacts 26-49. The input circuit is as indicated on the following page. Connections are shown on the connector chart on page 5, except that all "B" inputs are connected to ground within the module.

This version of the module introduces a current drain of 190 milliamperes from +24 volts when all inputs are ON.

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2. Obtain a Return Authorization (RA) Number.
3. Initiate a purchase order for the estimated repair charge if the product is out of warranty.
4. Include a description of the problem and your technical contact person with the product.
5. Ship the product prepaid with the RA Number marked on the outside of the package to:

KineticSystems Company, LLC
Repair Service Center
900 North State Street
Lockport, IL 60441

Telephone: (815) 838-0005
Facsimile: (815) 838-4424
Email: tech-serv@kscorp.com