

Model 3640-L1A
4-channel, Up-Down Presettable Counter

INSTRUCTION MANUAL

April, 1990

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

Model 3640-S003

October 1985

Model 3640-S003

****Special Option****

Model 3640-S003

The 3640-S003 is a standard 3640 which has been modified to assert the Dataway Inhibit line (I) any time that a LAM status bit is set (i.e., on the underflow or overflow of any counter). The Inhibit line will be negated by the execution of either a "Clear Counter" (F(9)·A(i)) or a "Write Counter" (F(16)·A(i)) command.

In this Special 3640-S003, drawing #02245-D-4611 replaces #02245-D-284

October 1985

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

Model 3640-S004

4-channel, Up-Down Presettable Counter

March, 1988

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Model 3640

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

The module 3640-S004 is the same as the module 3640-L1A except that the "down count" input for channel 1 has been changed to act as a clear input for channel 1. All other channels perform as described.

MLH:rem(3000 Ser. 13)
March 25, 1988

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

Model 3640-S005

4-channel, Up-Down Presettable Counter

March, 1991

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Model 3640-S005

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

3640-S005

The Model 3640-S005 is the same as the Model 3640-L1A except it has been modified to bring the latched borrow signal from counter 4 out of the lower INHIBIT front panel LEMO.

This high true signal can be used to inhibit the internal clock of the Model 3655-S009.

JRH:rem

March 15, 1991

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

Model 3640-S007

4-channel, Up-Down Presettable Counter

November, 1994

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Model 3640-S007

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

Model 3640-S007

The Model 3640-S007 is the same as the Model 3640-L1A except the TTL LAM signal has been brought out to FP inhibit LEMO. High True signal present at FP if any channel has underflowed or overflowed.

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4-channel Up-down Presettable Counter

Counts up or down from dc to 20 MHz with TTL-level signals

3640

Features

- TTL-level inputs
- Counting rates from dc to 20 megahertz
- Separate inputs for counting up and down
- Capacity of 65,535 counts per channel
- Ability to connect channels in series to extend capacity to 32 bits
- Overflow and underflow LAM status bits for each channel
- Separate clear command for each channel

Typical Applications

- Stepping motor position monitoring (use with the 3362)
- General-purpose counting
- Limit alarming
- Interfacing for incremental shaft encoder
- Interfacing for joystick

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

The 3640 is a single-width CAMAC module that contains four presettable, 16-bit up-down counters. These counters accept TTL signals at rates from dc to 20 megahertz from either the front-panel LEMO connectors or the printed circuit edge connector.

Each counter can be read as well as written. Counting can be inhibited by Dataway Inhibit or from an external inhibit signal. A front-panel switch enables the Dataway Inhibit. Counters can be individually cleared by Dataway command, and they can be connected in series for increased count capacity.

Each counter has both an overflow and an underflow LAM status bit. The resulting eight LAM status bits can be read and cleared individually or in pairs as the associated counter is cleared. The pattern of LAM status bits is shown below:

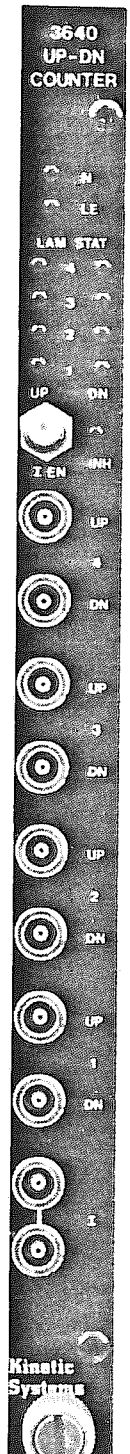
8				1			
Over-flow	Under-flow	Over-flow	Under-flow	Over-flow	Under-flow	Over-flow	Under-flow
4	4	3	3	2	2	1	1

LAM Status Bits

The LAM status bits are ORed, and a single enable provides for LAM requests to be asserted.

In addition to the eight input LEMO connectors and the two bridged LEMO connectors for external inhibit, the front panel contains a LED that indicates when LAM requests are enabled and a separate LED indicator for each of the eight LAM status bits.

Inputs are protected for transient up to ± 50 volts.

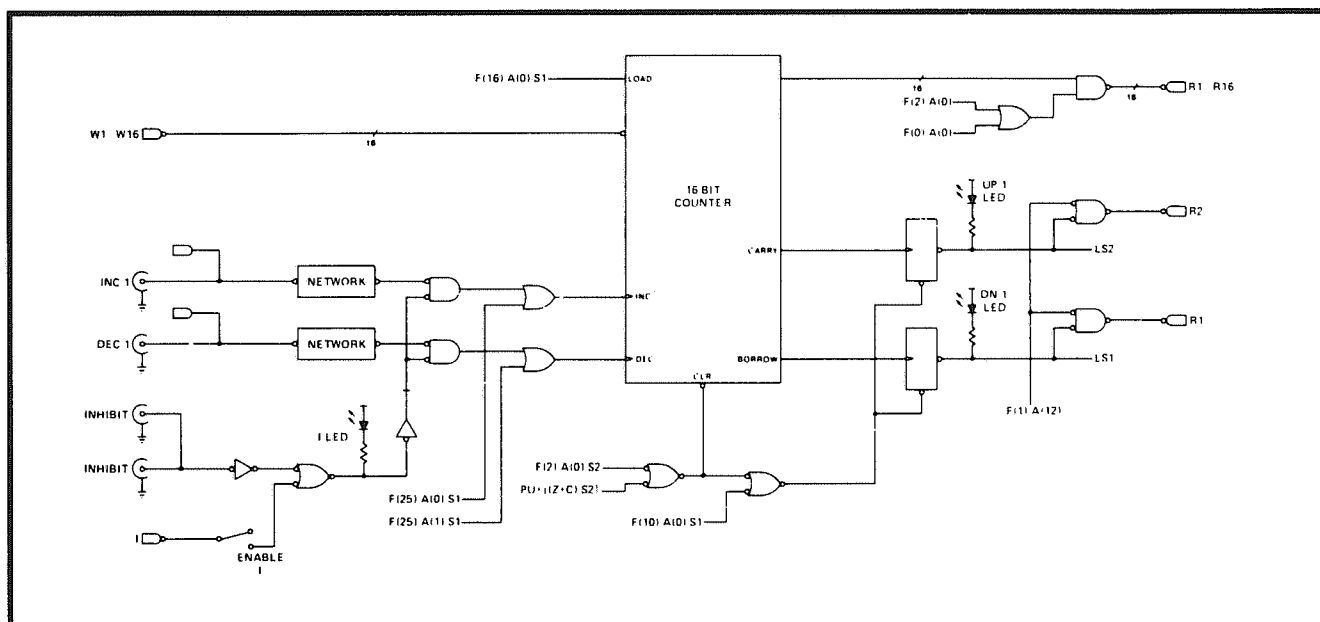


Function Codes

Command		Q	Action
F(0)·A(i)	RD1	1	Reads Counter i.
F(1)·A(12)	RD2	1	Reads the LAM status bits.
F(1)·A(15)	RD2	1	Reads the module identifying number (3640 = 7070 ₈).
F(2)·A(i)	RC1	1	Reads Counter i, then clears Counter i and associated overflow and underflow LAM status bits.
F(8)·A(15)	TLM	LR	Tests whether a LAM request is present.
F(9)·A(i)	CL1	1	Clears Counter i and associated overflow and underflow LAM status bits.
F(10)·A(j)	CLM	1	Clears LAM Status Bit j.
F(16)·A(i)	WT1	1	Writes Counter i.
F(24)·A(0)	DIS	1	Disables LAM requests.
F(25)·A(0)	XEQ	1	Executes an increment of all counters.
F(25)·A(1)	XEQ	1	Executes a decrement of all counters.
F(26)·A(0)	ENB	1	Enables LAM request.
C	CZ	0	Clears the counters and LAM status bits.
Z	CZ	0	Clears the counters and LAM status bits, disables LAM requests.

Notes: i can range from 0 to 3.
j can range from 0 to 7.
X = 1 for all valid addressed commands.

Simplified Block Diagram (Channel 1 shown)



Power Requirements

+6 volts: 1000 mA

Ordering Information

Model 3640-L1A Up-Down Presettable Counter, 4 channels, with LEMO connectors

Related Products

Models 5910-Z1A, 5960-Z1A, or 5960-Z1B

Mating Connectors

INTERRUPT CAPABILITY

When counting up and the counter contains $2^{16} - 1$ (or $2^{32} - 1$ selected by jumpers), the next up-pulse causes the counter to roll over and the associated overflow LAM source bit is set. When counting down and the counter contains zero, the next down-pulse sets the corresponding underflow bit and goes to a count of $2^{16} - 1$ (or $2^{32} - 1$). The LAM source bits are ORed to produce one LAM source. The source can be enabled to produce a Dataway L signal.

FRONT PANEL

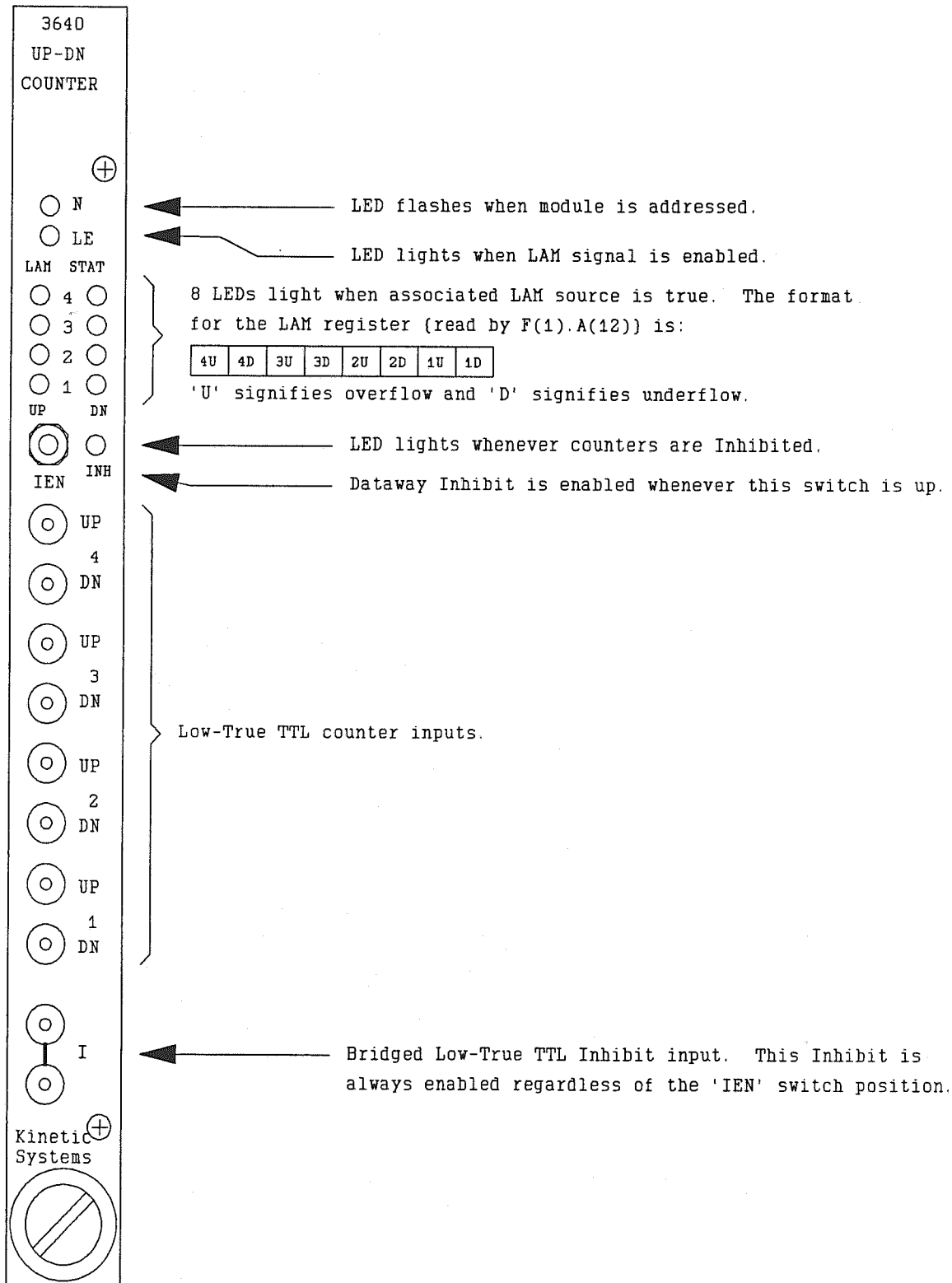
A jackscrew is provided which functions both in insertion and in extraction of the module. The status indications are:

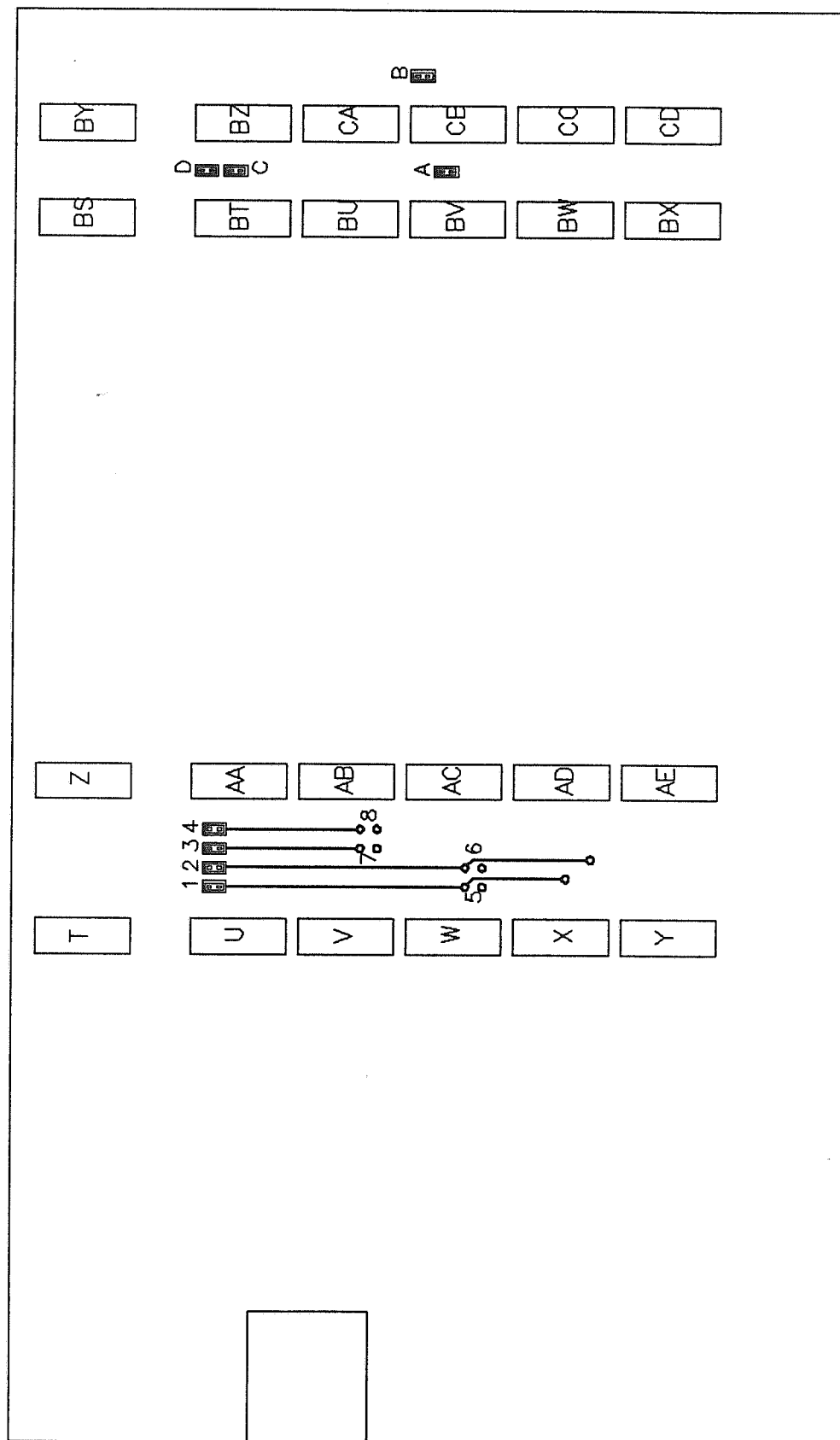
- N light - Flashes whenever this module is addressed.
- LE light - ON whenever LAM requests are enabled.
- LS light - Eight indicators ON whenever the associated LAM source is set.

There are eight LEMO connectors for the inputs and two bridged LEMO connectors for the inhibit. There is a switch to enable the Dataway inhibit.

NOTE: Counter inputs are Low-True and should remain High until activated to increment/decrement channel.

Model 3640

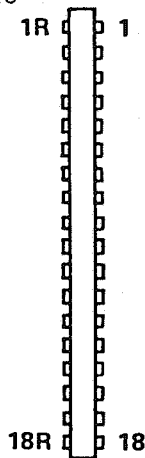




Strapping Options:

- 1.) To connect channels 1 and 2 in series, remove jumpers labeled 1, 2, A, and B (a total of 4); add a wire between the solder pads labeled 5 and 6. The two new straps should have a vertical orientation.
- 2.) To connect channels 3 and 4 in series, remove jumpers labeled 3, 4, C, and D (a total of 4); add a wire between the solder pads labeled 7 and 8. The two new straps should have a vertical orientation.

Model 3640



Pin/Wire List

18/36 POSTION P.C. EDGE

FACE VIEW

PIN NO.

1R	Module Common
2R	
3R	
4R	
5R	
6R	
7R	
8R	
9R	
10R	
11R	
12R	
13R	
14R	
15R	↓
16R	
17R	
18R	

PIN NO.

1	Module Common
2	Channel 4 Up Input
3	Channel 4 Down Input
4	Channel 3 Up Input
5	Channel 3 Down Input
6	Channel 2 Up Input
7	Channel 2 Down Input
8	Channel 1 Up Input
9	Channel 1 Down Input
10	
11	
12	Channel 1 Ext. Clear
13	Channel 2 Ext. Clear
14	Channel 3 Ext. Clear
15	Channel 4 Ext. Clear
16	
17	
18	

Mating Connectors: Model 5960, 5961

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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