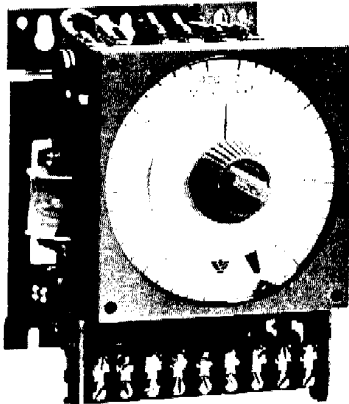




HZ MICROFLEX® SERIES RESET COUNTER

HZ4



OPERATION

The MICROFLEX® is a solenoid operated pawl and ratchet assembly counter available in three ranges. A solenoid operated clutch engages gear assemblies and closes or opens 3 sets of 15 ampere silver contacts in any of six separate sequences. Sequence changes are made by orientation and location of 3 different trip bar lugs. The counter has 5 field selectable methods of starting and resetting including reverse action clutch. The reverse action clutch will not reset on power failure. Changing from standard action to reverse action clutch will not alter switch operating sequence.

The 1000 and 400 count units have a fixed outer dial and a micrometer adjustable inner dial and pointer with a 20 to 1 and 50 to 1 ratio for accurate setting. The 19 count setting knob drives the setting pointer directly.

Set point knob can be locked into position to prevent set point error due to vibration. Progress indication is on all units. Registration of counts is on the trailing edge of the input pulse.

Options Include:

- Key lock on setting knob to prevent tampering (HA10-361).
- Back of panel mounting with front of panel adjustability.
- Flush panel mounting.

OPERATION

Application of line voltage to power input terminals closes the solenoid operated clutch. As the clutch closes, a contact lift bar raises, closing or opening three sets of contacts. The contacts are supported by fingers which ride on trip bar lugs, positioned on a trip bar. When power is applied and released from the count solenoid, counts are registered. At count out, the trip bar shifts, dropping the contact fingers, changing the contacts position. The counter will remain in the counted out position until reset.

Operating modes, terminal identification and jumper placement points are defined at length elsewhere in this bulletin.

SPECIFICATIONS

Count Ranges

SYM.	RANGE	ACCURACY	MINIMUM SETTING
2	19	100%	1 Count
0	400	100%	2 Counts
1	1000	± 1 Count	3 Counts

50 ms minimum "ON-OFF" time of count pulse.

Count Speed

500 per minute

50 ms clutch pull-in time.

Reset Time

3/4 second on full scale setting.

Accuracy

100% on 19 and 400 count ranges.

± 1 count of dial setting on 1000 count range.

Voltage/Frequency

120 VAC (+10 -15%) 50/60 Hz

240 VAC (+10 -15%) 50/60 Hz

Operating Voltage

+10% to -15% of rated voltage

Contact Rating

15 Amps, Resistive, 120 VAC, 50/60 Hz

10 Amps, Resistive, 240 VAC, 50/60 Hz

Burden

Clutch Coil

120 VAC 50/60Hz

240 VAC 50/60Hz

Inrush

93 V.A.

93 V.A.

Maintained

34 V.A.

35 V.A.

Count Coil

120 VAC 50/60Hz

240 VAC 50/60Hz

Inrush

51 V.A.

61 V.A.

Maintained

14 V.A.

20 V.A.

Operating Temperature

0° to +140°F (-18° to 60°C)

Contact Life

2,000,000 at Contact Rating

Vibration

Unaffected by 2.5G sinusoidal vibration magnitudes in both directions of three perpendicular mounting axes imposed from 10 to 1000 Hz.

Laboratory Testing

U.L. Recognition E-96337



Eagle Signal Controls

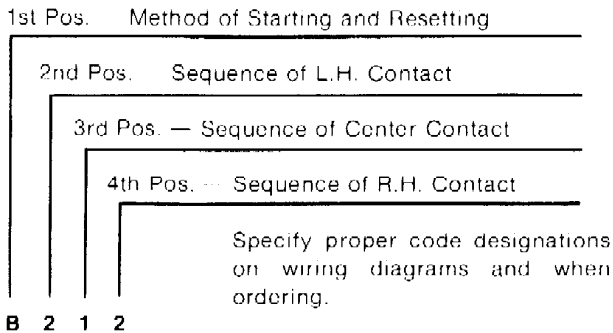
A Division of Mark IV Industries, Inc.
8004 Cameron Road, Austin, Texas 78753 U.S.A.

COUNT CONTROL



CONTACT OPERATION

Each contact is designated by a sequence number.



The letter symbol designation representing the method of starting and resetting, together with three numerical symbols, designating each of three contact actions, condenses the information into an OPERATING ARRANGEMENT symbol, i.e., A242, B242, R242, etc.

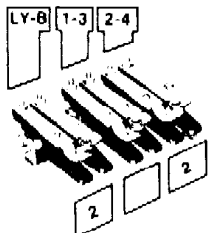
METHODS OF STARTING AND RESETTING

A	For use with momentary contact start switch. Energize to start. Automatically resets at zero. Resets on power interruption.
B	For use with maintained contact control switch. Energize to start. Deenergize to reset. Resets on power interruption.
R	For use when opening control switch starts counting; close control switch to reset. A power interruption stops counter without resetting to "0"

CLUTCH COIL OPERATION

Symbol "A&B" indicates clutch coil is energized to start and deenergized to reset.

Symbol "R" indicates clutch coil is energized to reset and deenergized to start.



Counter will be shipped set for arrangement A242 unless otherwise specified.

CONTACT SEQUENCE

The numerical symbols designate action of the switches. The MICROFLEX* has 3 positions during its operating cycle. Each switch can be OPEN or CLOSED in each position.

Left contact (LY-B) or left contact and center contact (1-3) are normally used as internal control circuits.

Contact LY-B must always be sequence "2" when used with a momentary start impulse.

LOAD CONTACT CHART

O = CONTACTS OPEN
X = CONTACTS CLOSED

Sequence Number	SWITCH POSITIONS		
	Reset	Counting	Counted-Out
1*	O	O	X
2	O	X	O
3* †	X	X	O
4†	X	O	X
5	O	X	X
6	X	O	O

* Sequence 1 and 3 should not be used with starting method "A" or "C" where unit automatically resets. Contact closure time is short and not useable.

† Contact bounce may be a problem when sequence 3 or 4 is used for holding circuit for motor starter or relay.

For a complete explanation of operating arrangements and adjustments, request Bulletin 110-C, Bulletin 720E, counter parts list, is also available.

COUNT CONTROL



HZ4

WIRING DIAGRAMS

Bold Lines are Internal Wiring

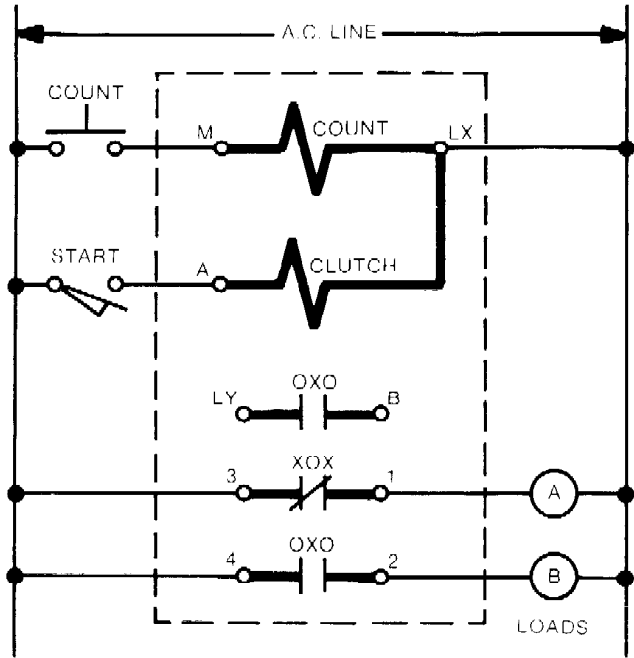


Figure 1

OPERATING ARRANGEMENT B242

Sustained Start — Close to Start, Open to Reset. Resets on power failure.

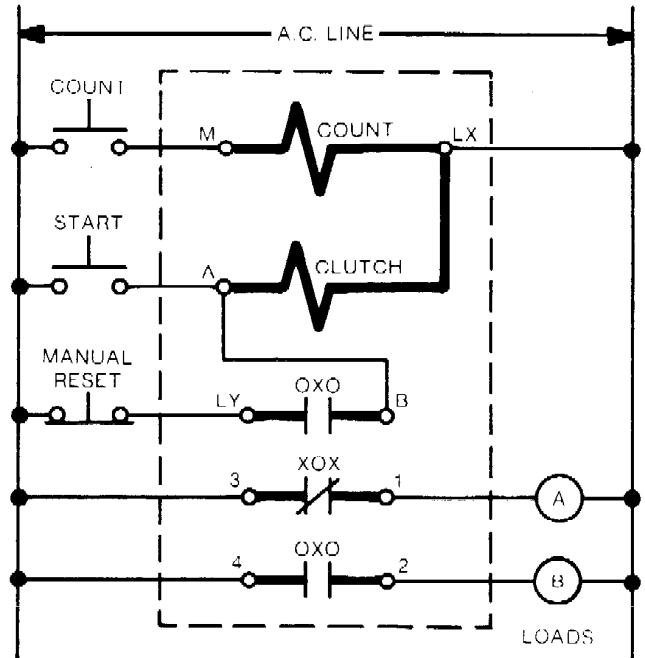


Figure 2

OPERATING ARRANGEMENT A242

Momentary Start — Close to Start, Automatic Reset. Manual reset switch is optional.

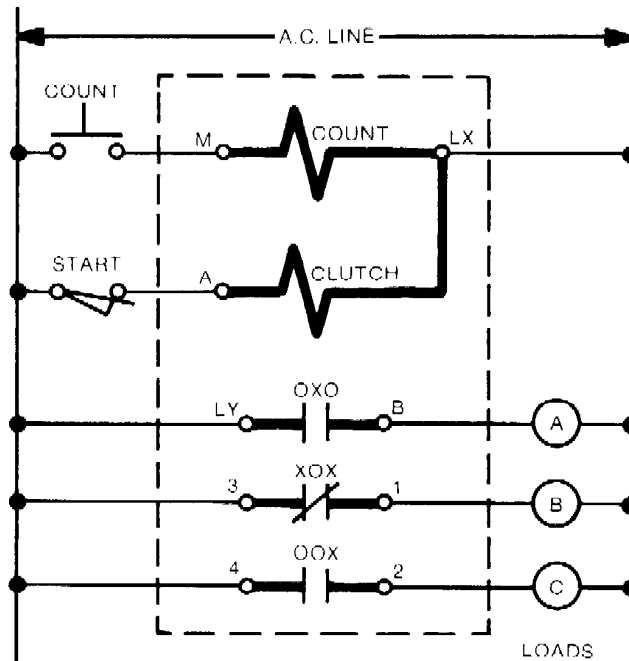


Figure 3

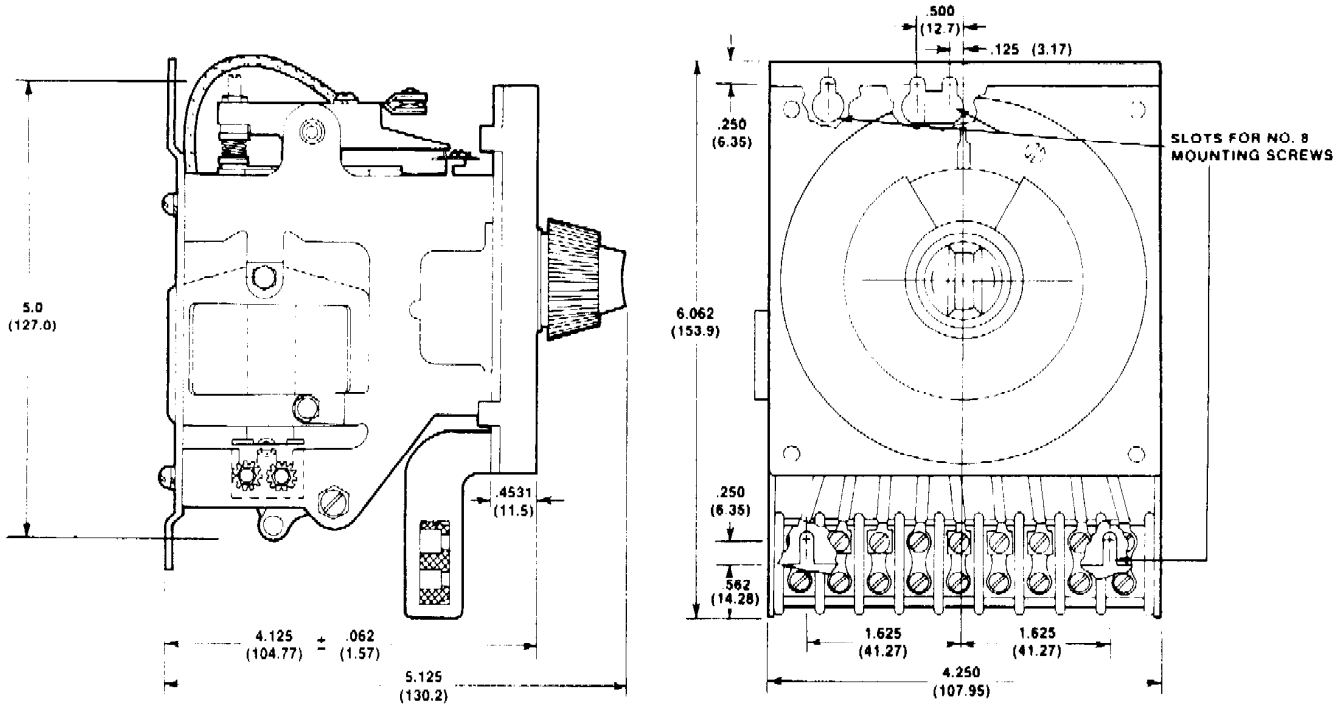
OPERATING ARRANGEMENT R241

Sustained Start — Close to Reset, Open to Start. Does not reset on power failure

COUNT CONTROL



MOUNTING DIMENSIONS



NOTE: Lubrication and cleaning is important on this instrument. See Bulletin 720-C.

ORDERING INFORMATION

