

TALKBACK INTERCOM SYSTEM

V-2927 CLOCK CONTROL CARD FOR THE V-2924A

INTRODUCTION

The V-2927 Clock Control Card is an optional plug-in card designed for use with the V-2924A Talkback Intercom System with a V-2928 Option Card. It provides correction and control functions for various impulse and synchronous clocks. The V-2927 also provides a digital output used with the V-DCPI, Digital Clock Protocol Interface, to provide time correction data to Valcom wired and wireless clocks. Programming of various clock types is performed via Windows compatible Programming Tool. The V-2927 requires the use of the V-CIO Clock Interface Board when used with mechanical time clocks.

DIMENSIONS/WEIGHT

- 5.30"L x 3.00"W x 1.10"D
(13.46cm x 7.62cm x 2.79cm)
- 0.9 lbs. (0.41 kg)



FEATURES

- Valcom Digital Output
- Two clock ports, independently programmable
- 24 mechanical clock types supported (see code list on next page for types)
- Manual clock advance (operation dependent on clock types), dial code accessible
- Programmable adjustment for daylight savings time (DST) (operation dependent on clock types)
- Automatic clock correction after time update
- Automatic clock correction after power disruption
- Windows Programming Tool

MINIMAL SYSTEM REQUIREMENT

- V-2924A Control Unit with V-2928 Option Card
- V-2927 Clock Control Card
- Rev 2.00 Programming Tool
- Rev 2.02 Control Unit Software
- 486 or higher personal computer with Windows 95, Windows 98 or Windows NT 4.0 operating system, 8 MB RAM, 30 meg free system disk space
- V-CIO Interface Board (for impulse clocks)
- 1 available DB9 serial communications port

OPERATION

The V-2927 Clock Control Card installs into connectors J3 and J4 shown in Figure 1. The output connections are presented to the V-CIO Clock Interface Board via P2, DB15 male of the V-2927 Clock Control Card. Two independent clock ports, consisting of two normally open contacts each, are provided. These ports work independently of each other and allow the system to control two clock types simultaneously. A status LED is provided for each relay to indicate activity. An administrative code, (#97XX, with XX being number of minutes to advance), is provided to manually correct or advance various impulse clocks.

(Default code is 01).

INSTALLATION

The V-2927 must be installed prior to programming its available options.

WARNING: Disconnect main power before servicing!

- Remove the side plate and top cover of the Control Unit and set aside
- Remove and discard plate covering connector port opening for Clock Card DB15
- Remove four standoff nuts from Option Card
- Install 4 standoffs (shown in Figure 1)
- Connect J1 of Clock Card to J3 (shown in Figure 1)
- Connect J2 of Clock Card to J4 (shown in Figure 1)
- Press Clock Card firmly in place to make sure connectors are seated properly
- Install and tighten 4 standoff nuts on V-2927 board
- Replace top cover and side plate of the Control Unit and plug in the power supply
- Plug Clock Card connector into P2 (Clock Card Connector Port - See Figure 1 for location)
- Make connections to V-CIO board if mechanical clocks are being used (See Figure 2 for location)

CLOCK TYPE CODES

| Code | Description | Code | Description |
|------|--|------|------------------------------|
| 01 | Valcom Sync-wired 12-hour | 13 | Cincinnati D6 |
| 02 | Simplex sync-wired 24-hour | 14 | Cincinnati D3 |
| 03 | Generator start | 15 | Stromberg, 58 th |
| 04 | Simplex 59 th minute | 16 | Standard electric time, FMT |
| 05 | Utility impulse | 17 | Standard electric time, AR2 |
| 06 | European reverse | 18 | Standard electric time, AR3A |
| 07 | Honeywell Faraday | 19 | Dukane 24A |
| 08 | National time, hourly | 20 | Dukane 240. 24 hour |
| 09 | Rauland, national time, 12-corr | 21 | Dukane 240. 12 hour |
| 10 | Stromberg | 22 | Standard electric GR |
| 11 | Simplex, dual motor, 45 th minute | 23 | Simplex 1.8" digital 12-hour |
| 12 | Simplex, dual motor, 59 th minute | 24 | Simplex 1.8" digital 24-hour |

TECHNICAL ASSISTANCE

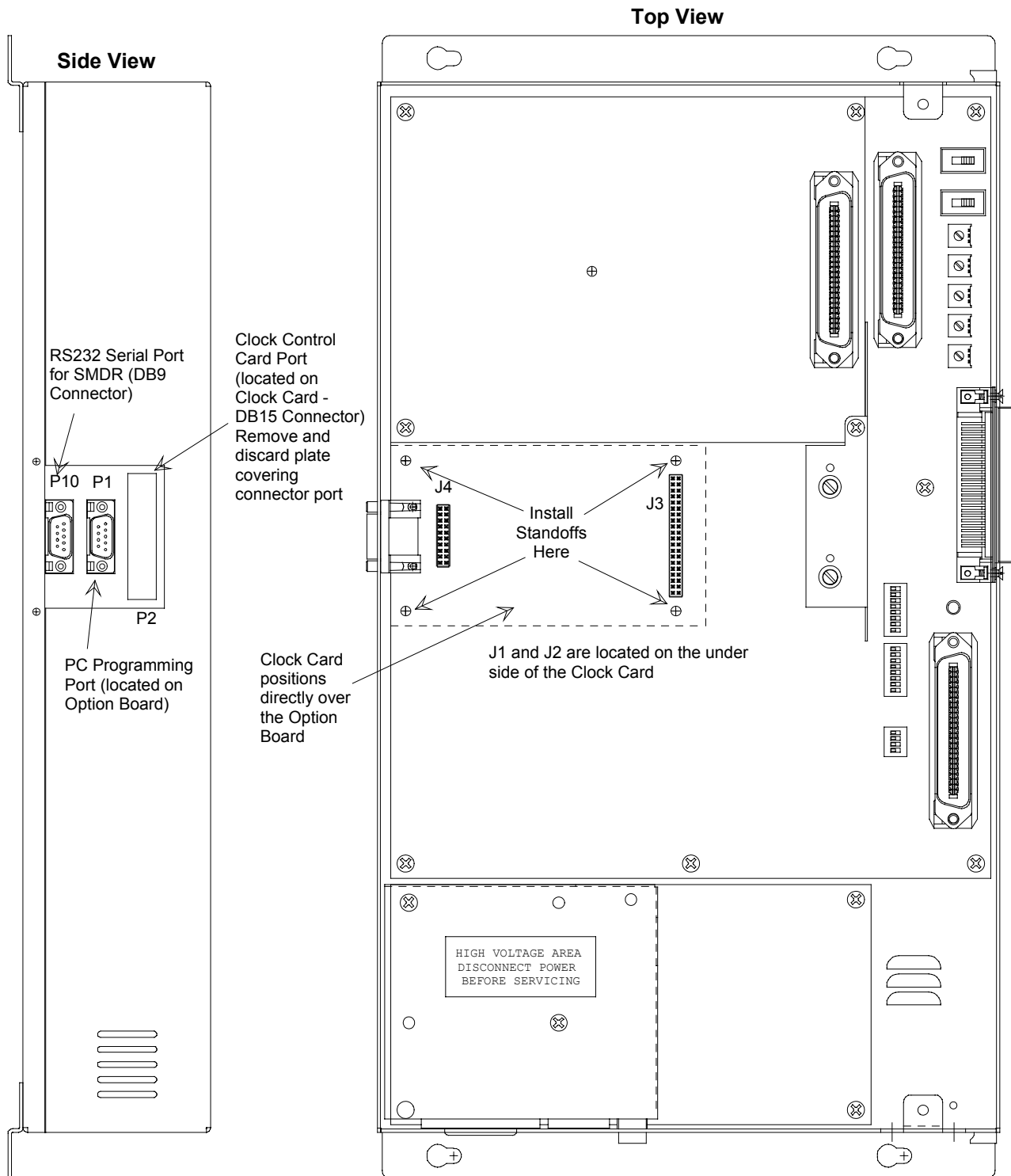
When trouble is reported, verify that power is being supplied to the unit and there are no broken connections. Check voltages for proper polarity on the cross connect block.

Assistance in troubleshooting is available from the factory. When calling you should have a VOM and a test set and be calling from the job site. Call (540) 563-2000 and press 1 for Technical Support or visit our website at <http://www.valcom.com>.

Valcom equipment is not field repairable. Valcom, Inc. maintains service facilities in Roanoke, VA. Should repairs be necessary, attach a tag to the unit clearly stating company name, address, phone number, contact person and the nature of the problem. Send the unit to:

Valcom, Inc.
Repair and Return Dept.
5614 Hollins Road
Roanoke, VA 24019-5056

FIGURE 1 - CLOCK CARD PLACEMENT ON THE CONTROL BOARD



Align J1 on the Clock Card directly over J3.
Align J2 on the Clock Card directly over J4.
Press V-2927 firmly in place.

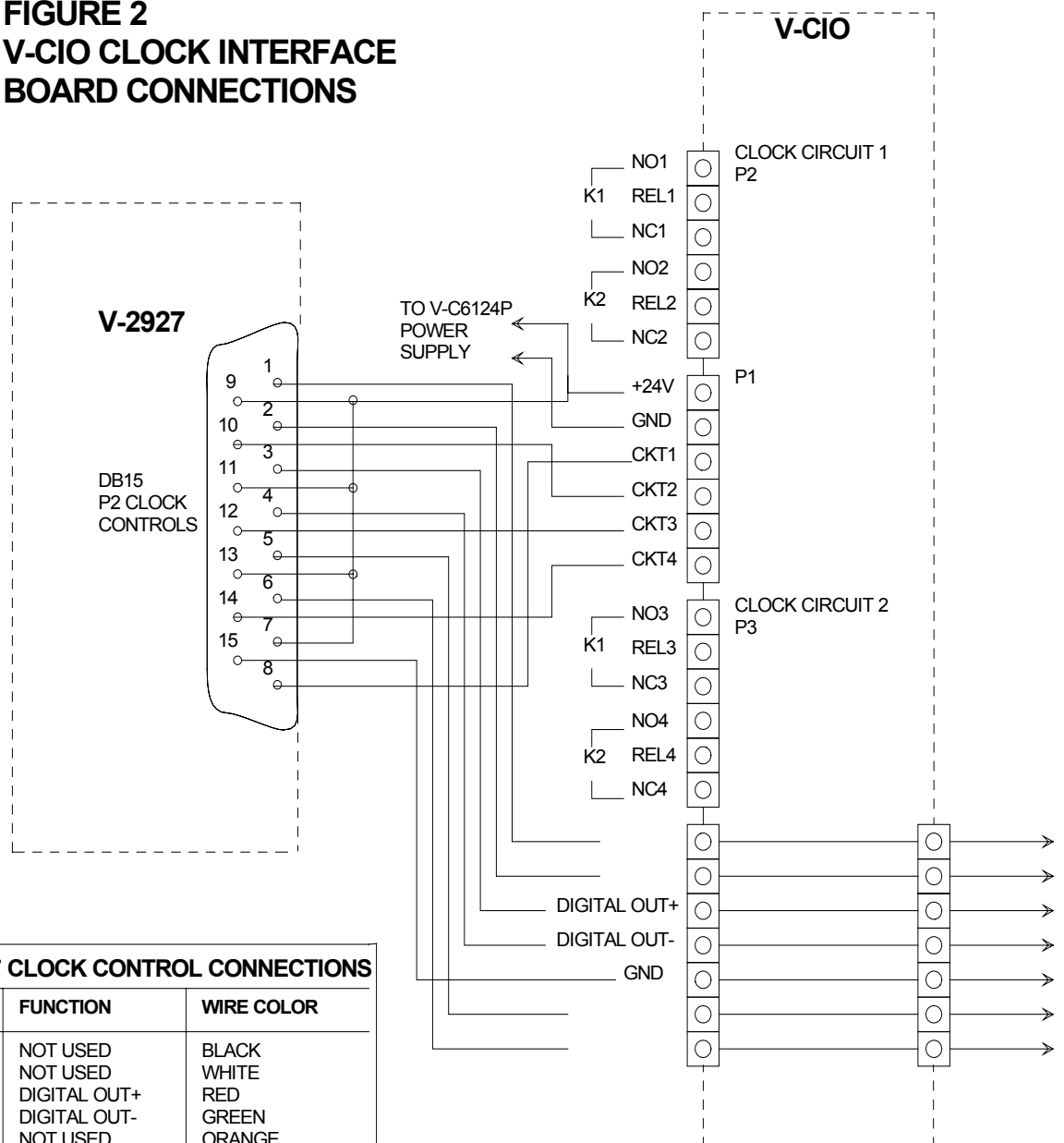
CLOCK TYPE CODES

| Type # | Description | Figure # |
|--------|---|----------|
| 1 | Valcom Sync-wired 12-hour | 3 |
| 1 | TED Systems A1000M & D1000 | 17 |
| 2 | Simplex/Edwards Sync-wired 24-hour | 3 |
| 3 | Simplex Generator Start (12 hour & Hourly Correction) | 9 |
| 4 | Simplex/IBM Impulse, 3 Wire, 58th or 59th Minute | 13 |
| 4 | Simplex Impulse, 2 Wire, 59th Minute Ref | 14 |
| 5 | Utility Impulse 12VDC or 24VDC (Non-Corrective) | 12 |
| 6 | European Duplex Reverse Polarity (24VDC or 48VDC) | 11 |
| 7 | Honeywell Faraday (1300 Series) / Cincinnati (D Synchronous) | 3 |
| 8 | National Time Hourly | 3 |
| 9 | Rauland, National Time, 12 Hour Correction | 3 |
| 10 | Stromberg (Synchronous, 56th Minute Ref, Electronic) | 3 |
| 11 | Simplex, dual Motor, 45th Minute Ref | 5 |
| 12 | Simplex, dual Motor, 59th Minute Ref | 5 |
| 13 | Cincinnati D6 (Impulse, 12 Hour Correction) | 6 |
| 14 | Cincinnati D3 (Impulse, 59th Minute Ref) | 6 |
| 15 | Stromberg (Impulse, 58th Minute Ref) | 6 |
| 16 | Standard Electric Time FMT-Dual Motor Couch C542014 through C452019; C452133 through 452145 | 4 |
| 17 | Standard Electric Time, AR2, Impulse, 59th Minute ref | 8 |
| 18 | Standard electric Time, AR3A, Impulse, 60th Minute Ref | 7 |
| 19 | Dukane 24A, 24 Hour Correction | 10 |
| 20 | Dukane 240, 24 Hour Correction | 3 |
| 21 | Dukane 240, 12 Hour Correction | 3 |
| 22 | Standard Electric GR Sync 12 Hour Correction | 3 |
| 23 | Simplex 1.8" digital 12 Hour | 15/16 |
| 24 | Simplex 1.8" digital 24 Hour | 15/16 |

Simplex 6333 Series LED Load Chart

| | | 14 AWG | 16 AWG | 18 AWG | 20 AWG | 22 AWG | 24 AWG |
|------------------|------|--------|--------|--------|--------|--------|--------|
| Number Of Clocks | 2 | 4960' | 3109' | 1956' | 1250' | 781' | 481' |
| | 4 | 2480' | 1555' | 978' | 625' | 391' | 240' |
| | 6 | 1653' | 1036' | 625' | 417' | 260' | 160' |
| | 8 | 1240' | 777' | 489' | 313' | 195' | 120' |
| | 10 | 992' | 622' | 391' | 250' | 156' | 96' |
| | 12 | 827' | 518' | 326' | 208' | 130' | 80' |
| | 14 | 709' | 444' | 279' | 179' | 112' | 69' |
| | 16 | 620' | 389' | 245' | 156' | 98' | 60' |
| | 18 | 551' | 345' | 217' | 139' | 87' | 53' |
| | 20 | 496' | 311' | 196' | 125' | 78' | 48' |
| | 22 | 451' | 283' | 178' | 114' | 71' | 44' |
| | 24 | 413' | 259' | 163' | 104' | 65' | 40' |
| | 26 | 382' | 239' | 150' | 96' | 60' | 37' |
| | 28 | 354' | 222' | 140' | 89' | 56' | 34' |
| | 30 | 331' | 207' | 130' | 83' | 52' | 32' |
| | 32 | 310' | 194' | 122' | 78' | 49' | 30' |
| | 34 | 292' | 183' | 115' | 74' | 46' | 28' |
| | 36 | 276' | 173' | 109' | 69' | 43' | 27' |
| 38 | 261' | 164' | 103' | 66' | 41' | 25' | |
| 40 | 248' | 155' | 98' | 63' | 39' | 24' | |

**FIGURE 2
V-CIO CLOCK INTERFACE
BOARD CONNECTIONS**



| V-2927 CLOCK CONTROL CONNECTIONS | | |
|----------------------------------|--------------|--------------|
| PIN # | FUNCTION | WIRE COLOR |
| 1 | NOT USED | BLACK |
| 2 | NOT USED | WHITE |
| 3 | DIGITAL OUT+ | RED |
| 4 | DIGITAL OUT- | GREEN |
| 5 | NOT USED | ORANGE |
| 6 | NOT USED | BLUE |
| 7 | CLK 1 K1 C | WHITE/BLACK |
| 8 | CLK 1 K1 N/O | RED/BLACK |
| 9 | CLK 1 K4 C | GREEN/BLACK |
| 10 | CLK 1 K4 N/O | ORANGE/BLACK |
| 11 | CLK 2 K3 C | BLUE/BLACK |
| 12 | CLK 2 K3 N/O | BLACK/WHITE |
| 13 | CLK 1 K2 C | RED/WHITE |
| 14 | CLK 2 K2 N/O | GREEN/WHITE |
| 15 | GND | BLUE/WHITE |

EACH CLOCK I/O P.C. BOARD CAN SUPPORT 2 CLOCK CIRCUITS: CLK 1 AND CLK 2.
EACH CIRCUIT CONSISTS OF TWO RELAYS K1 AND K2: FORM C CONTACTS RATED 10A @ 30VDC/10A @ 125VAC

**WARNING: DO NOT ATTEMPT TO OPERATE CLOCKS DIRECTLY FROM MASTER CLOCK BOARD!
CONTACTS OF RELAYS ON MASTER CLOCK BOARD ARE NOT PROTECTED.**

VALCOM LIMITED WARRANTY

Valcom, Inc. warrants its products to be free from defects in materials and workmanship under conditions of normal use and service for a period of one year from the date of shipment. The obligation under this warranty shall be limited to the replacement, repair or refund of any such defective device within the warranty period, provided that:

1. inspection by Valcom, Inc. indicates the validity of the claim;
2. the defect is not the result of damage, misuse, or negligence after the original shipment;
3. the product has not been altered in any way or repaired by others and that factory sealed units are unopened (a service charge plus parts and labor will be applied to units defaced or physically damaged);
4. freight charges for the return of products to Valcom are prepaid;
5. all units 'out of warranty' are subject to a service charge. The service charge will cover minor repairs (major repairs will be subject to additional charges for parts and labor).

This warranty is in lieu of and excludes all other warranties, expressed or implied and in no event shall Valcom, Inc. be liable for any anticipated profits, consequential damage, loss of time or other losses incurred by the buyer in connection with the purchase, operation or use of the product.

This warranty specifically excludes damage incurred in shipment. In the event a product is received in damaged condition, the carrier should be notified immediately. Claims for such damage should be filed with the carrier involved in accordance with the F.O.B. point.

Headquarters:
Valcom, Inc.
5614 Hollins Rd
Roanoke, VA 24019
Phone: (540) 563-2000
FAX: (540) 362-9800

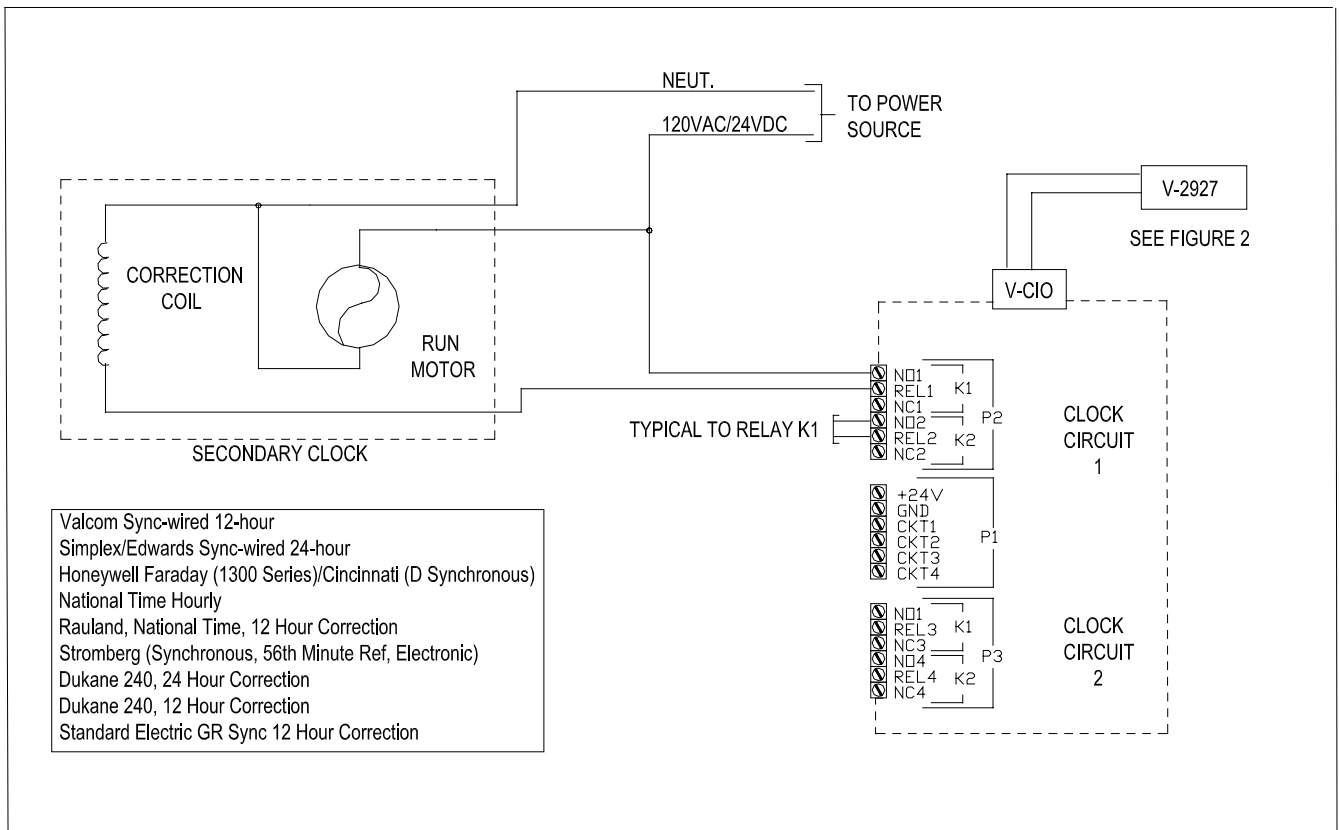


FIGURE 3 - Types 1, 2, 7, 8, 9, 10, 20, 21 and 22

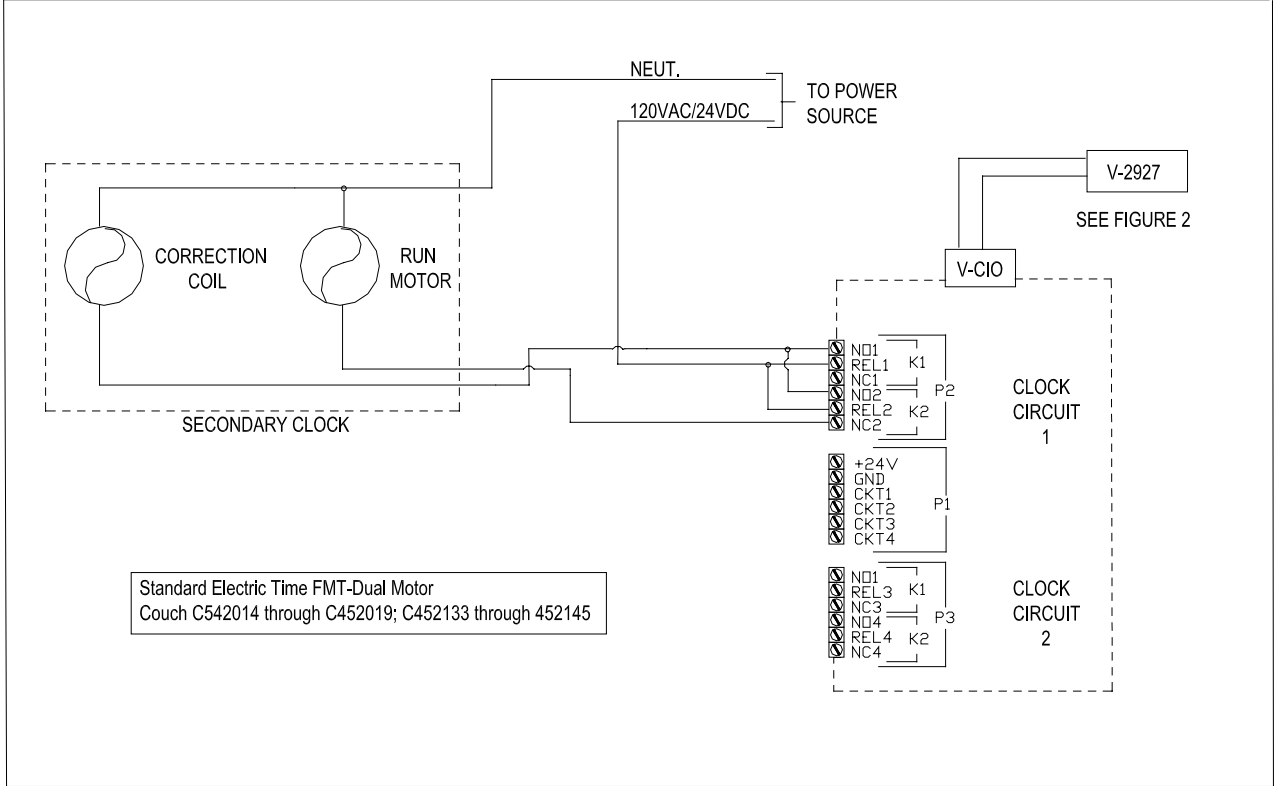


FIGURE 4 - Type 16

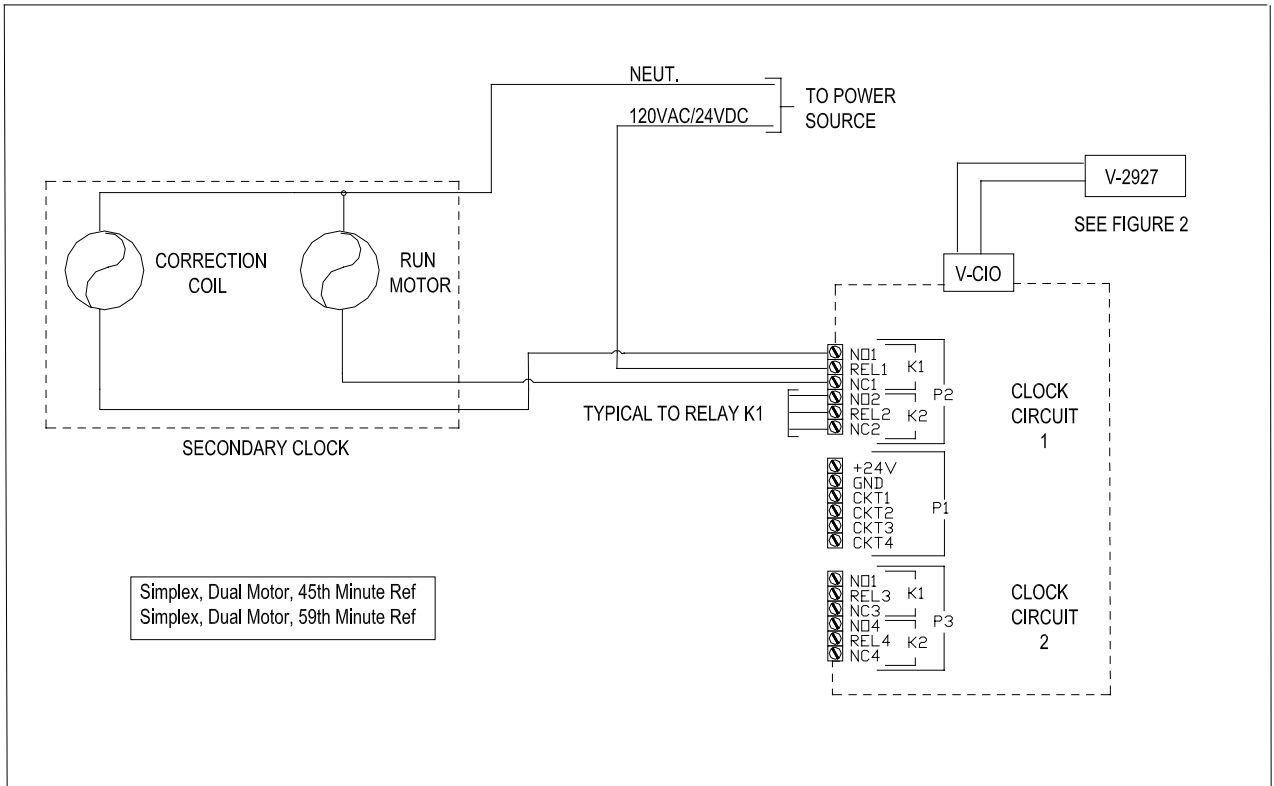


FIGURE 5 - Type 11 and 12

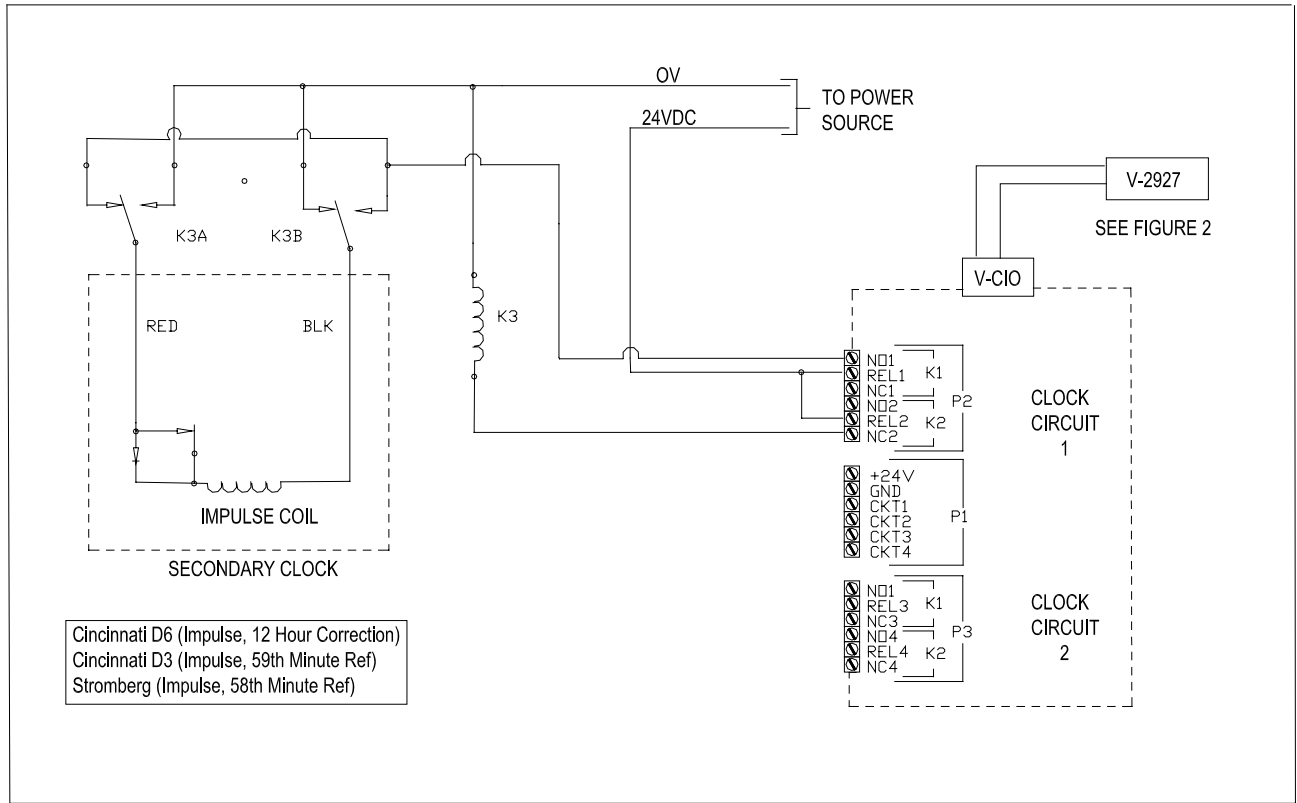


FIGURE 6 - Types 13, 14 and 15

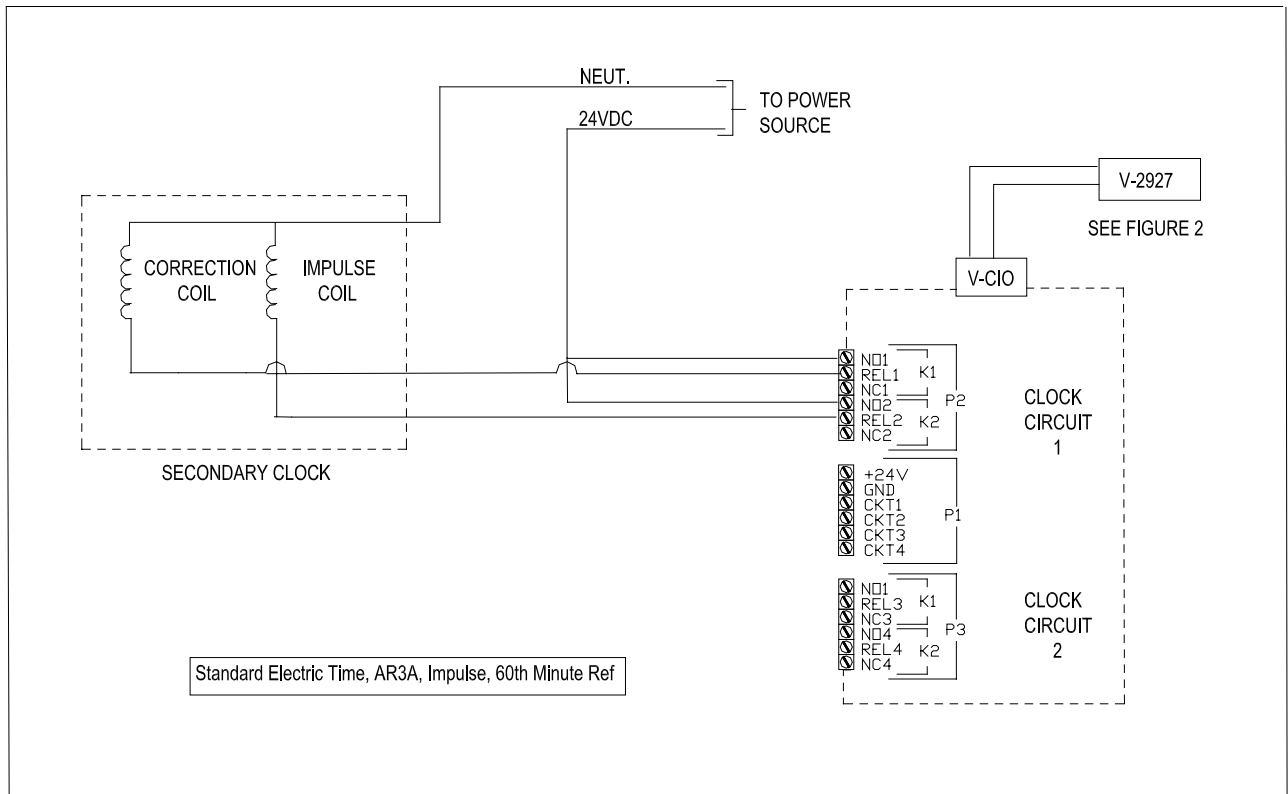


FIGURE 7 - Type 18

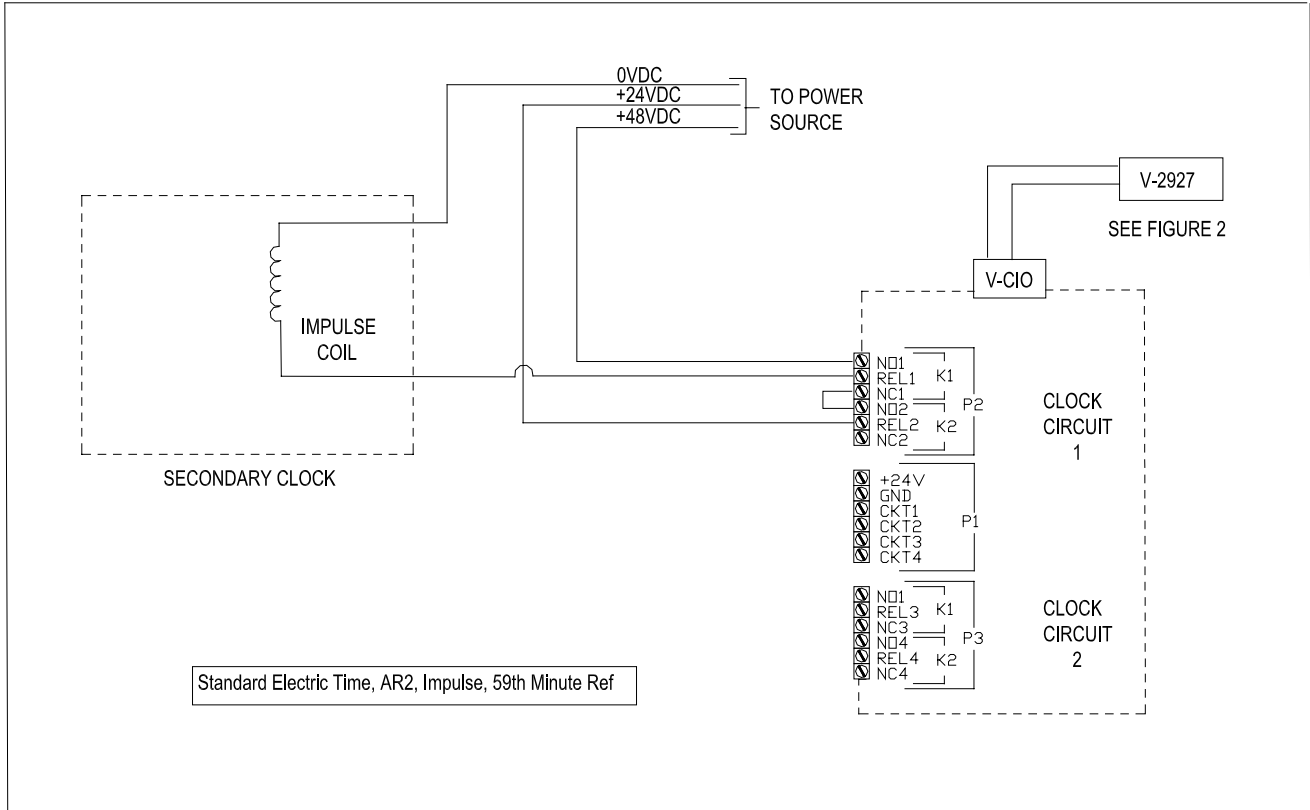


FIGURE 8 - Type 17

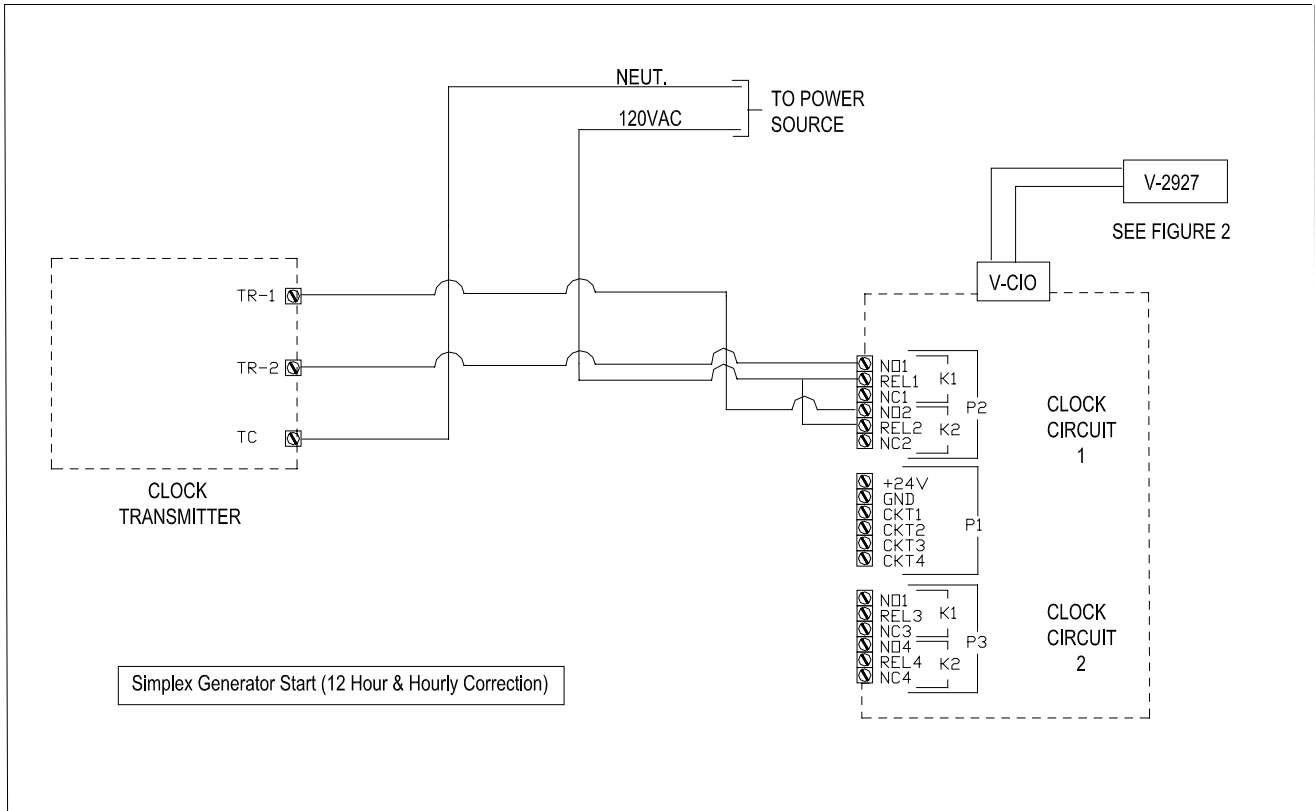


FIGURE 9 - Type 3

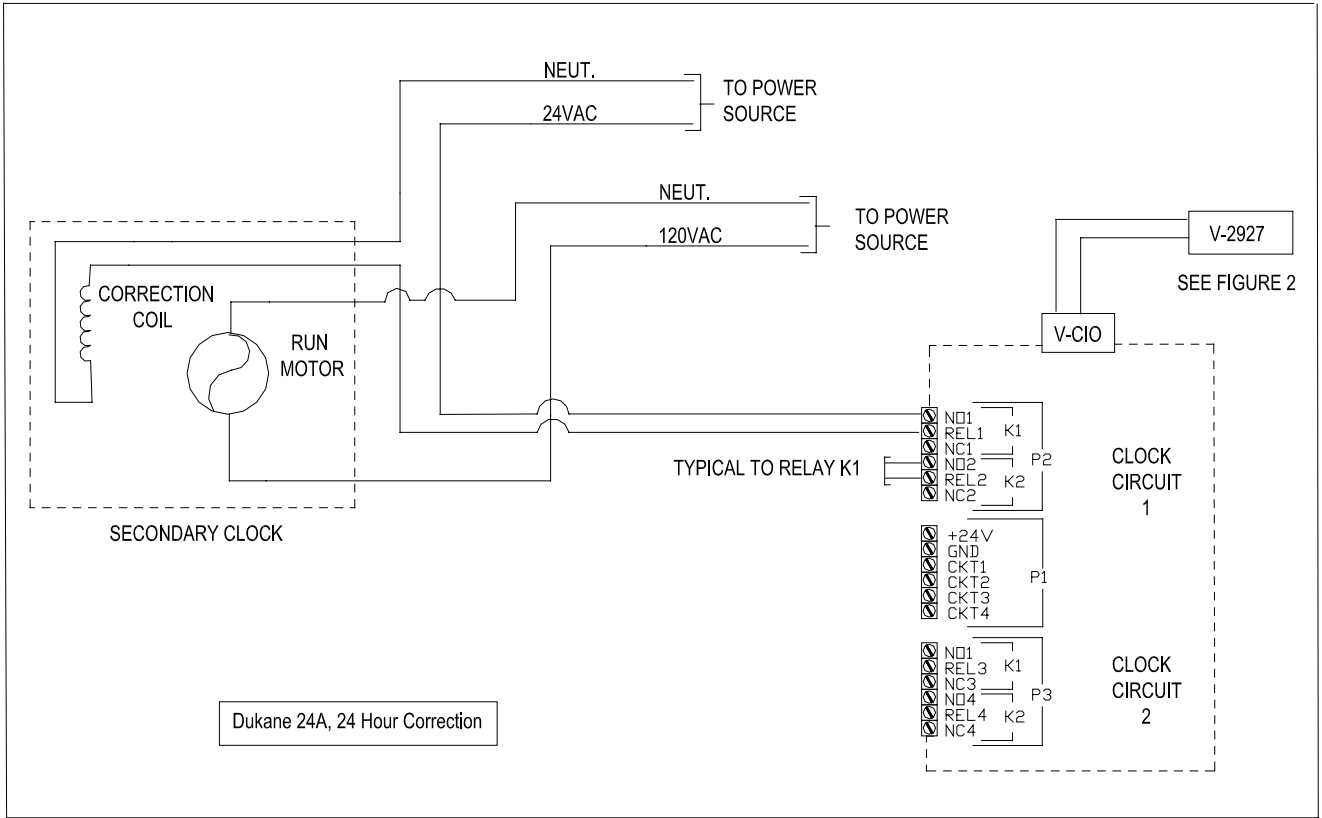


FIGURE 10 - Type 19

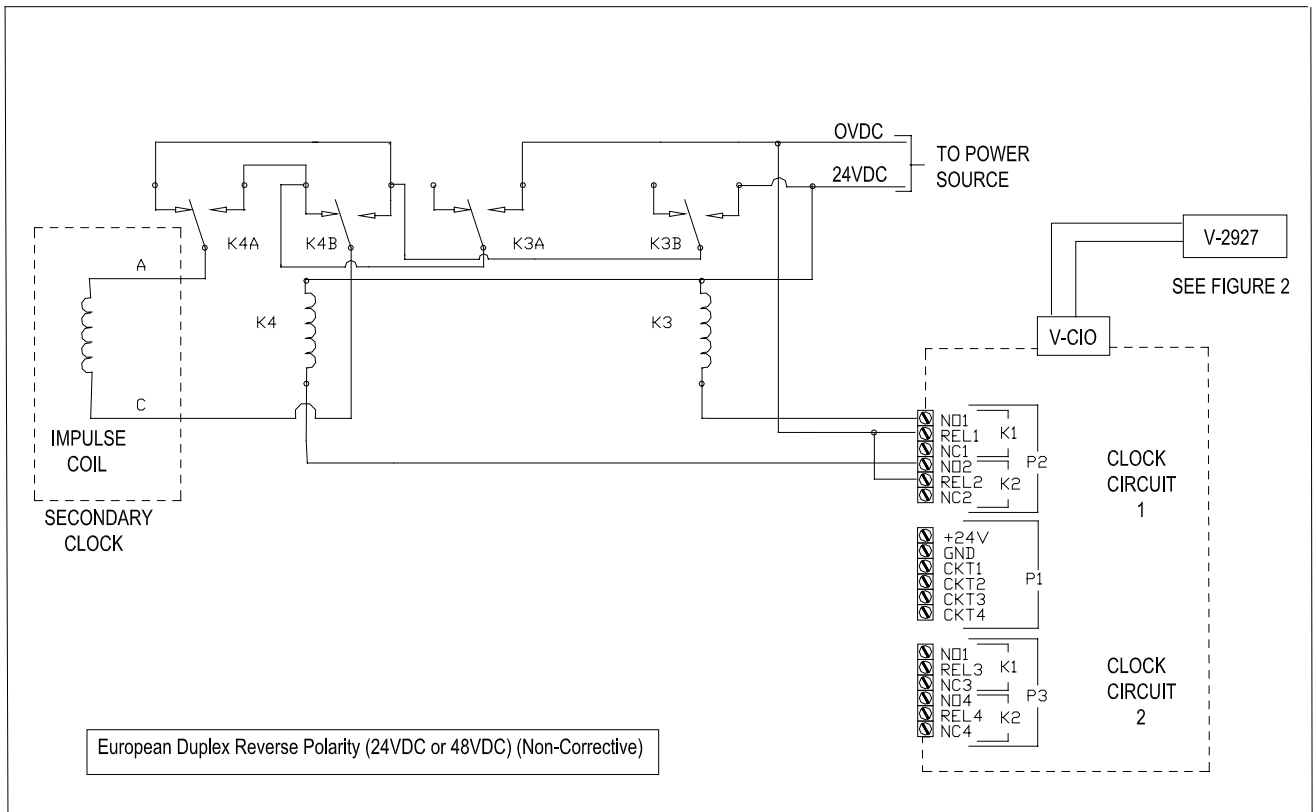


FIGURE 11 - Type 6 (K3 & K4 are 24VDC DPDT Relays)

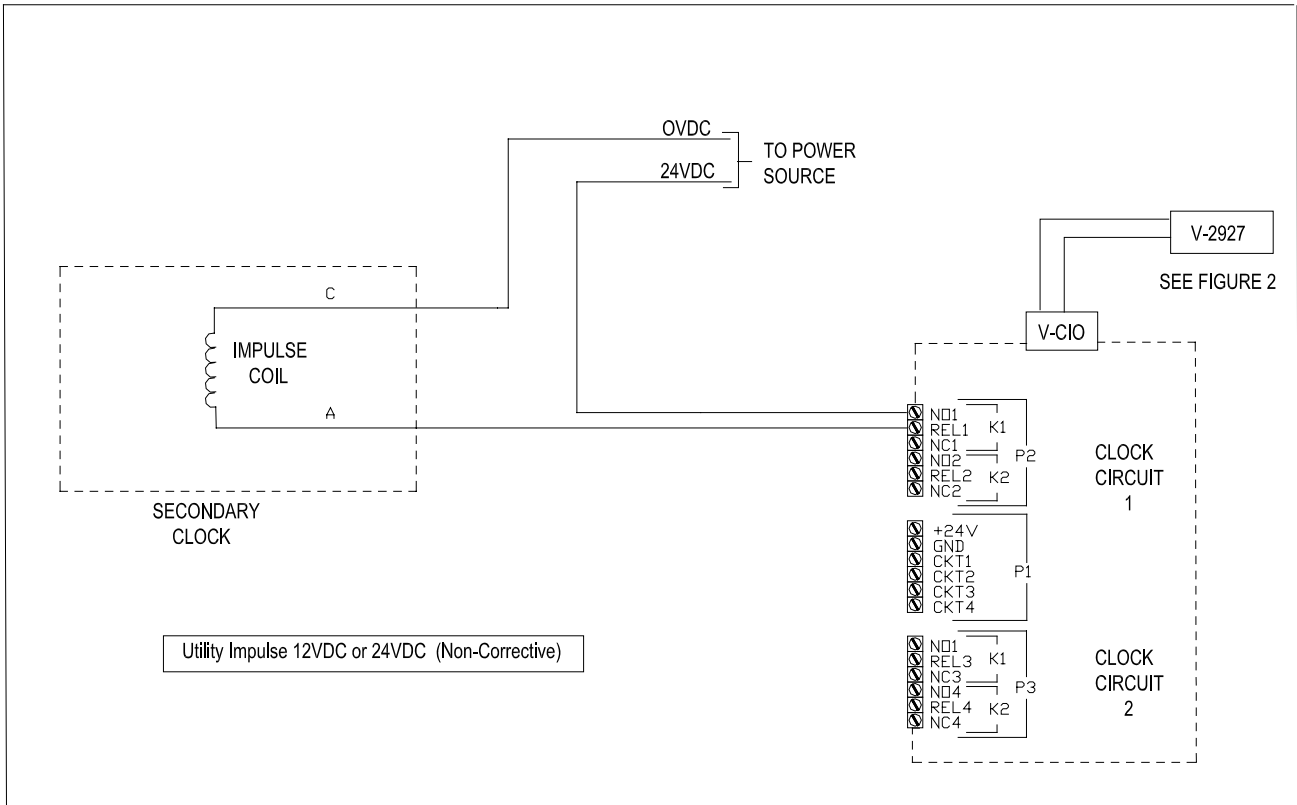


FIGURE 12 - Type 5

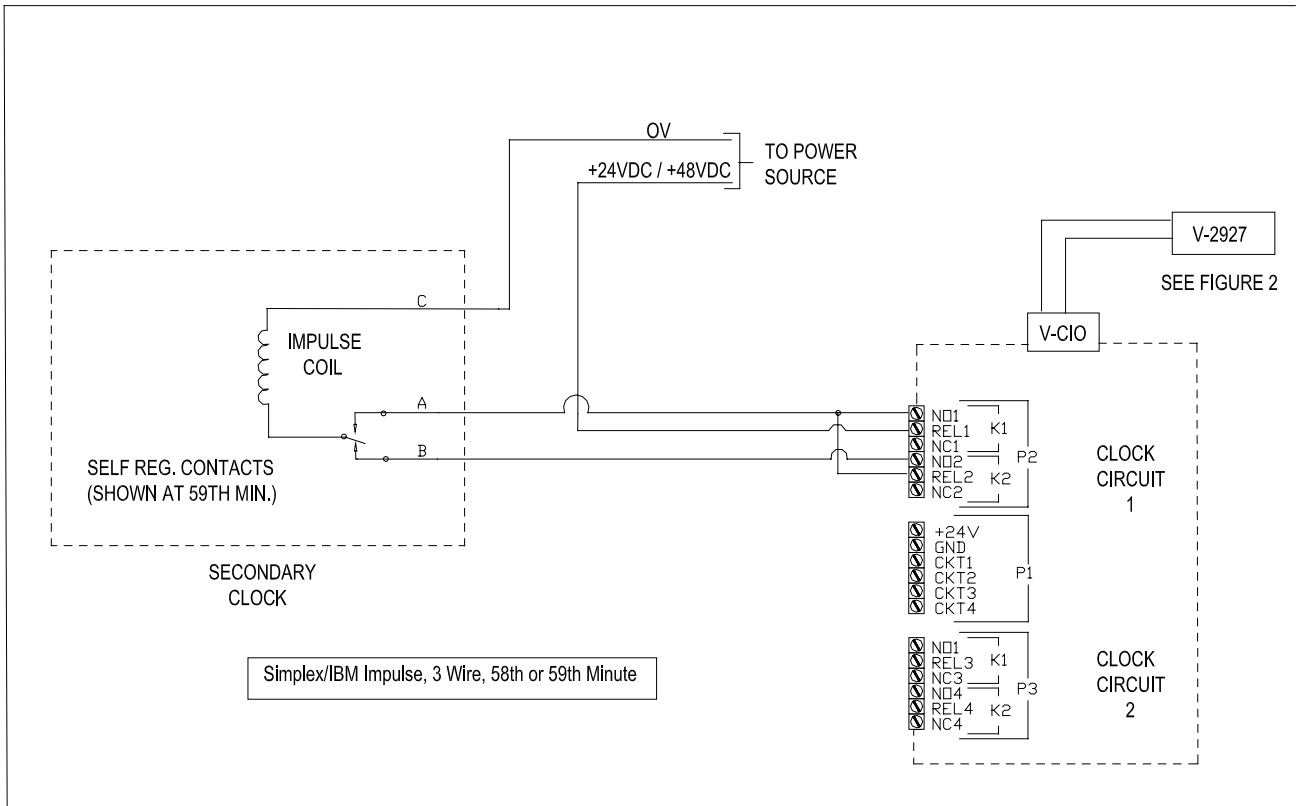


FIGURE 13 - Type 4 (3 Wire)

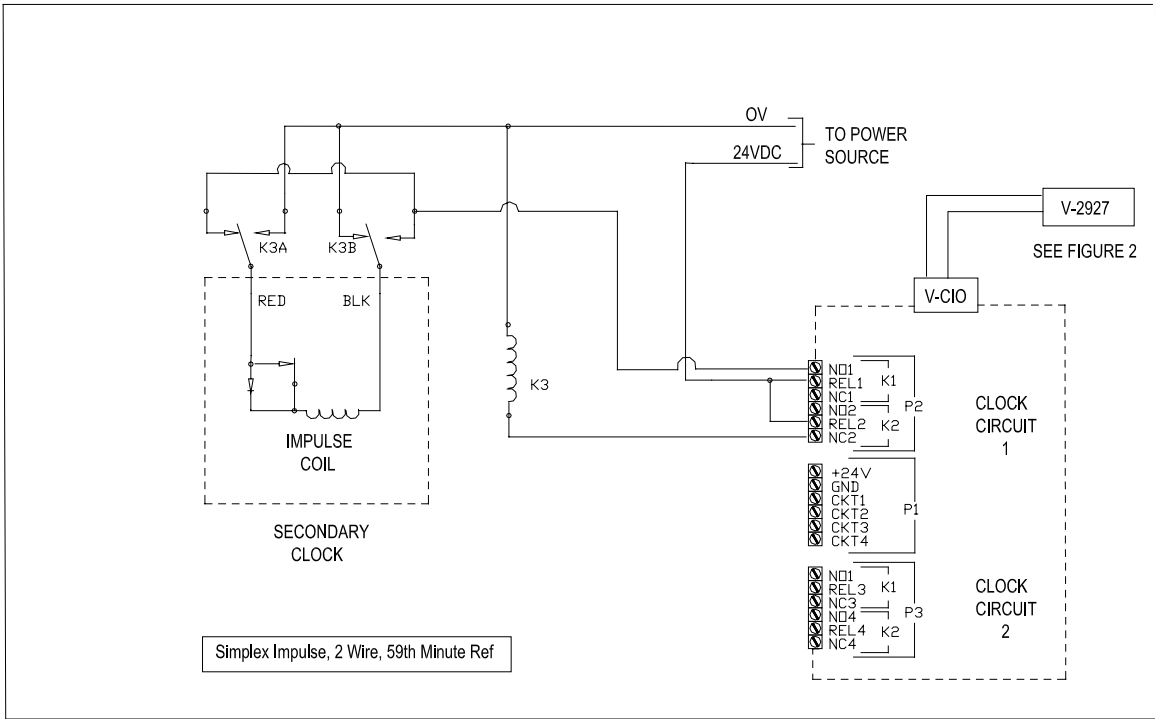


FIGURE 14 - Type 4 (2 Wire)

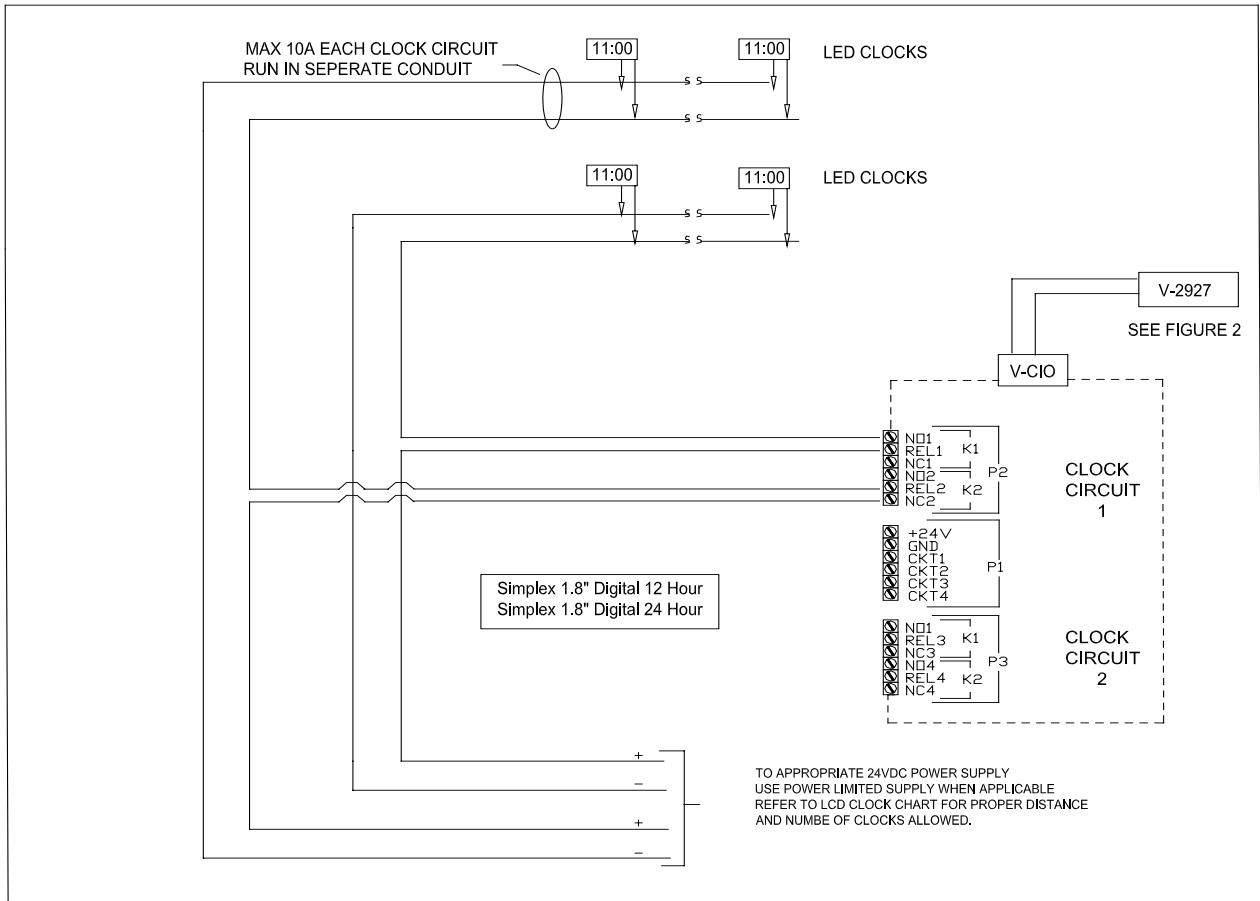


FIGURE 15 - Types 23 and 24 (Simplex 6333 1.8" Digital)

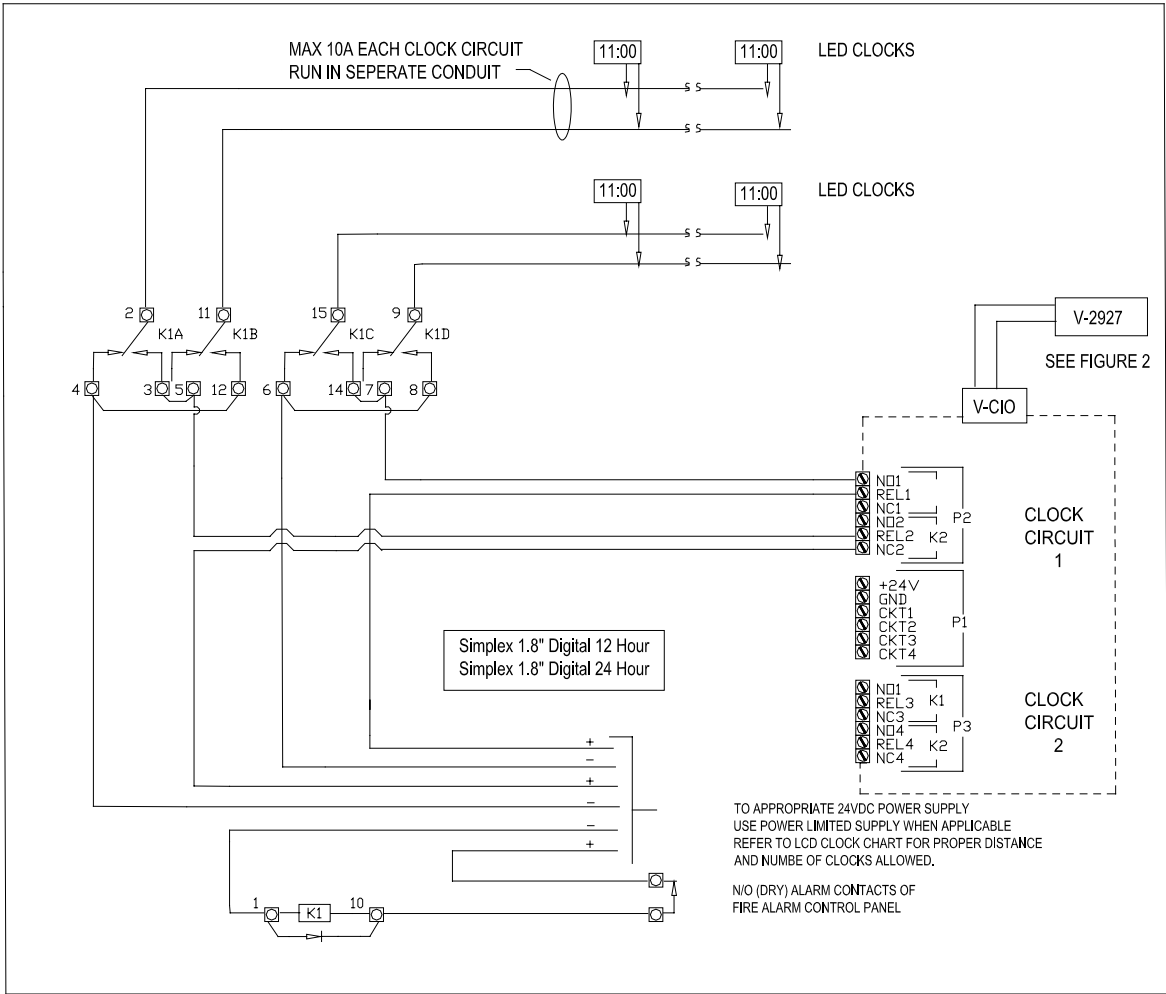


FIGURE 16- Types 23 and 24 (Simplex 6333 1.8" Digital To Flash "Fire")

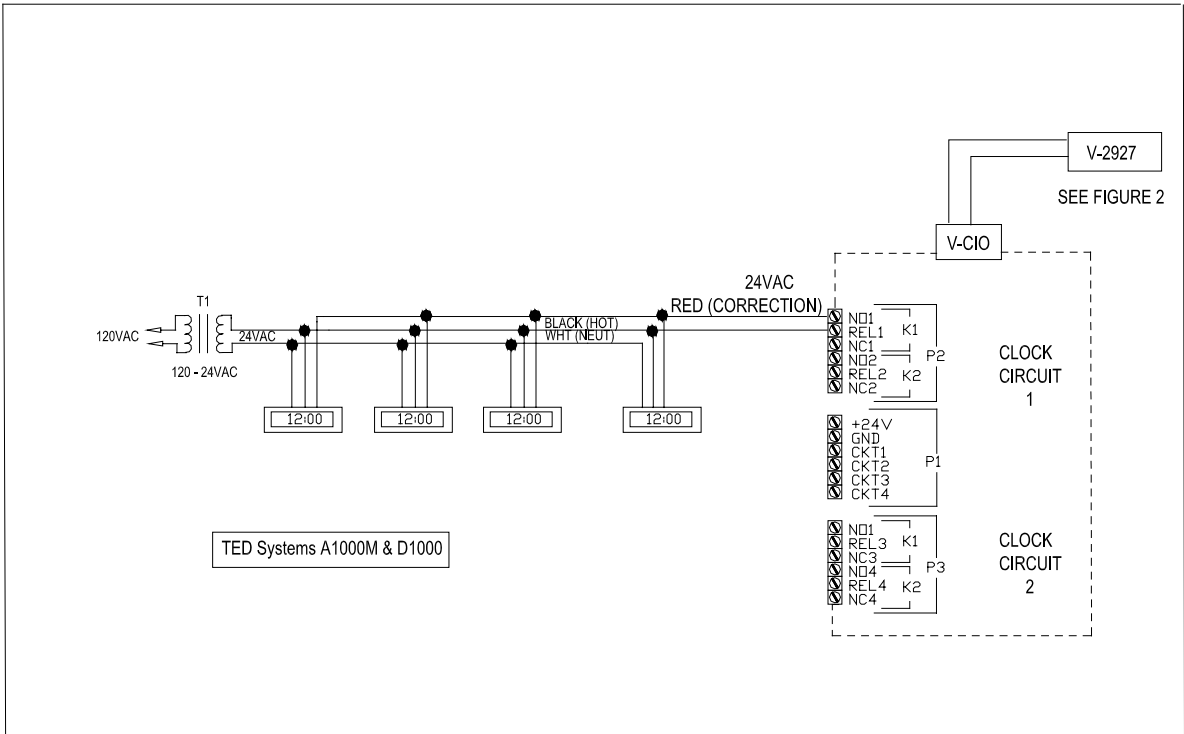


FIGURE 17 - Type 1