

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>.

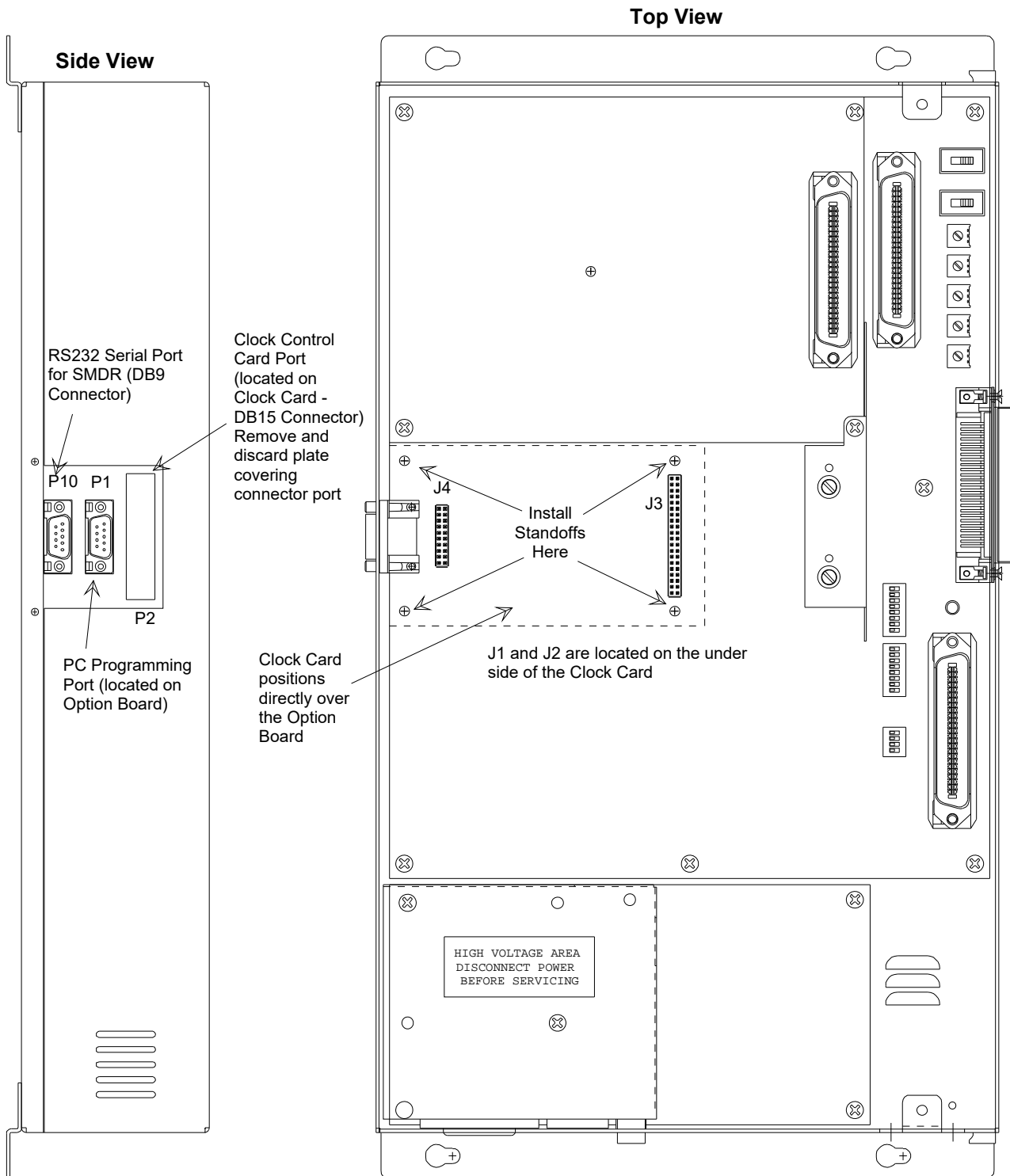
Valcom equipment is not field repairable. Valcom, Inc. maintains service facilities in Roanoke, VA. Should repairs be necessary, attach a tag to the unit clearly stating company name, address, phone number, contact person and the nature of the problem. Send the unit to:

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

WARRANTY

Warranty information may be found on our website at www.valcom.com/warranty.

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.

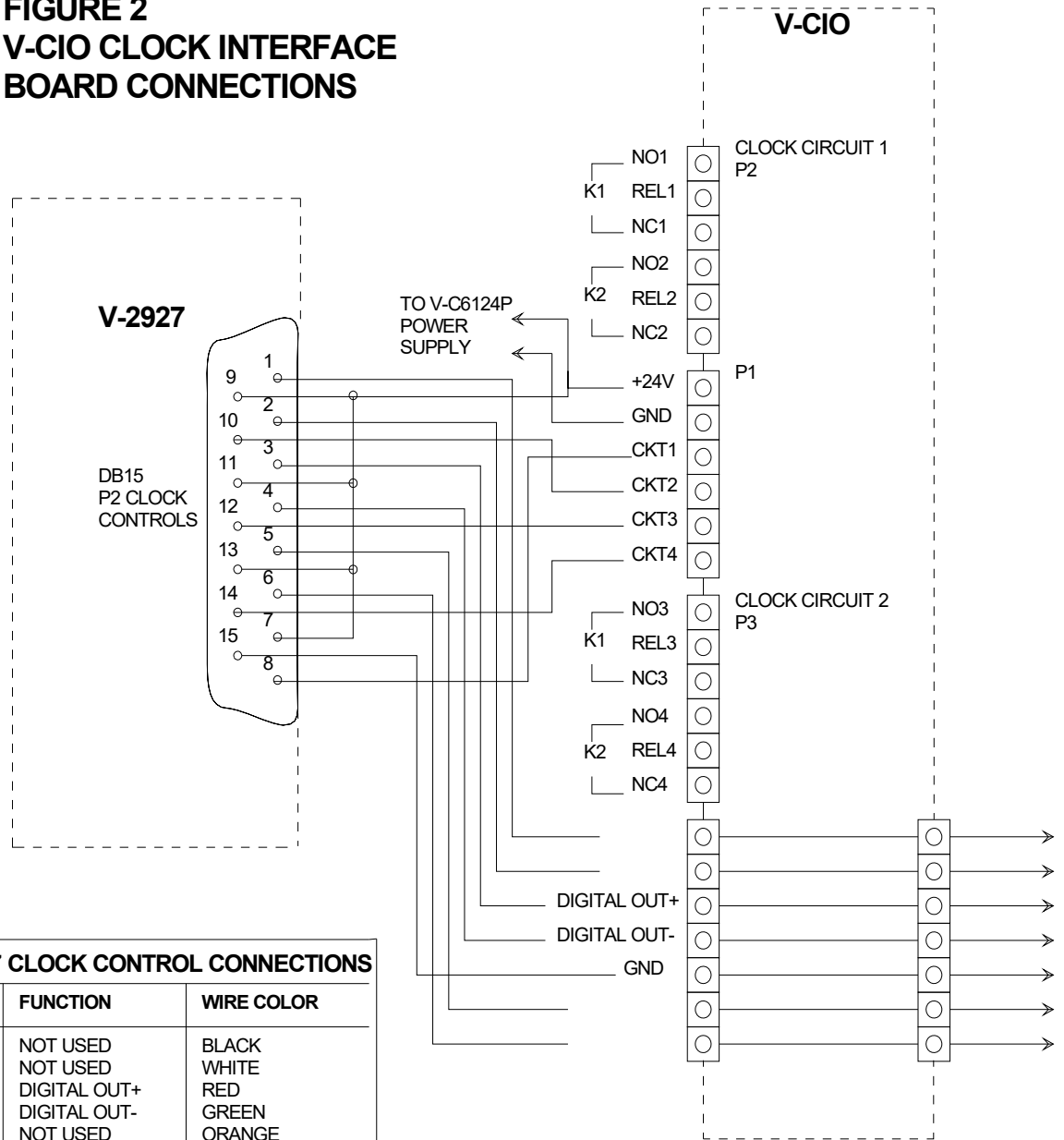
CLOCK TYPE CODES

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.**

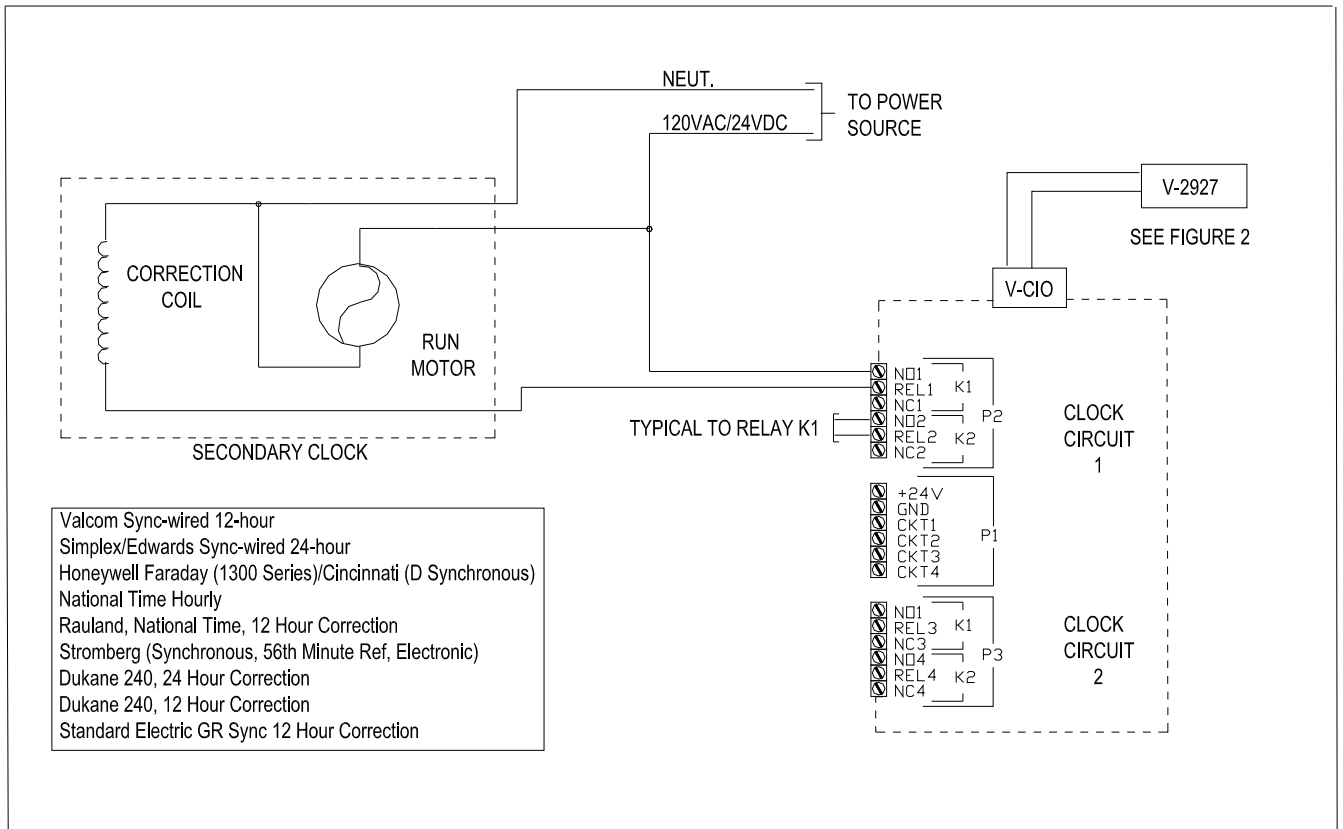


FIGURE 3 - Types 1, 2, 7, 8, 9, 10, 20, 21 and 22

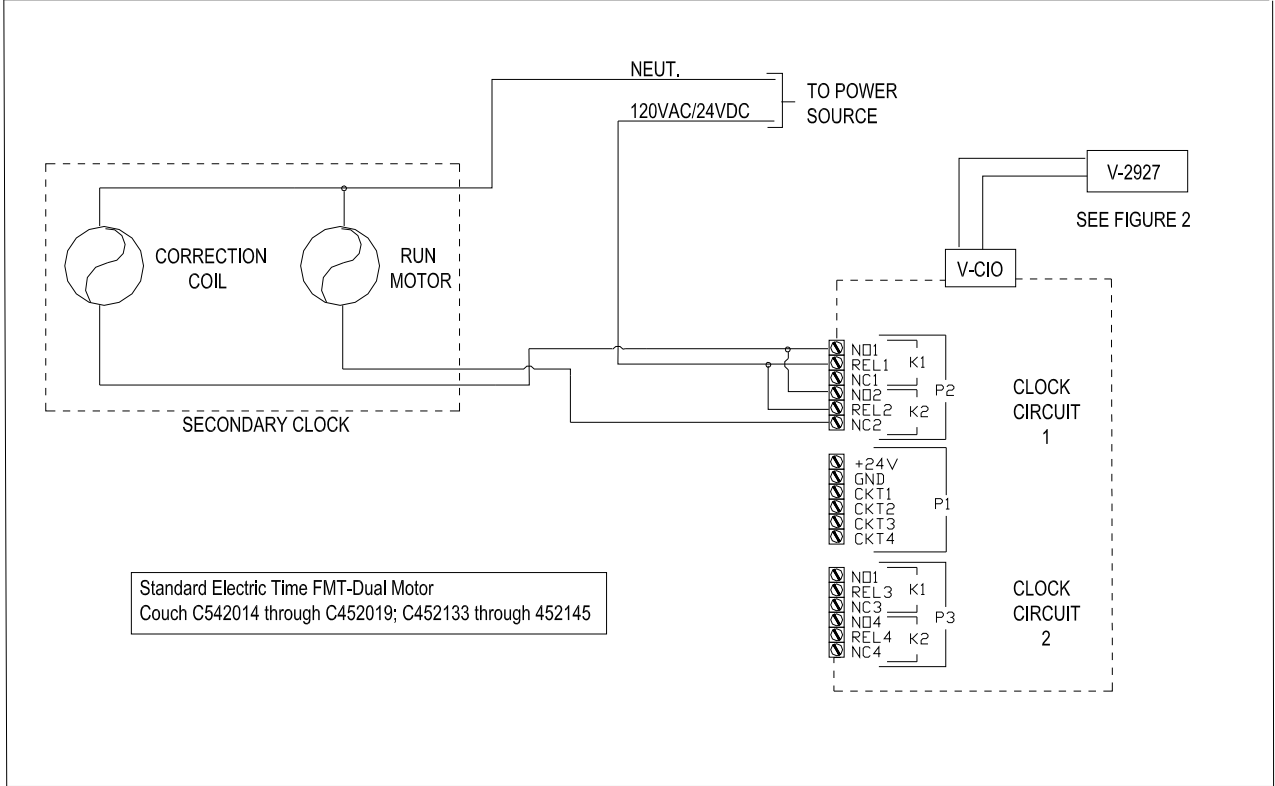


FIGURE 4 - Type 16

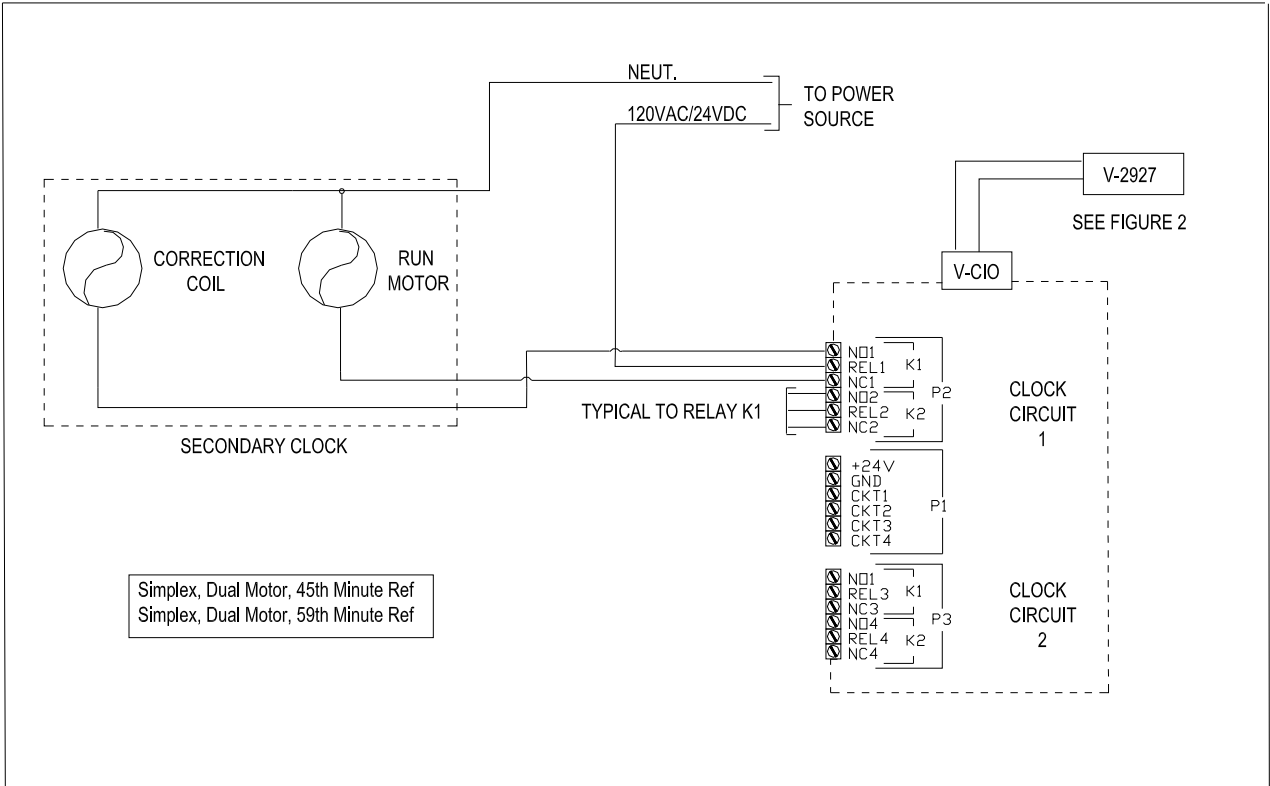


FIGURE 5 - Type 11 and 12

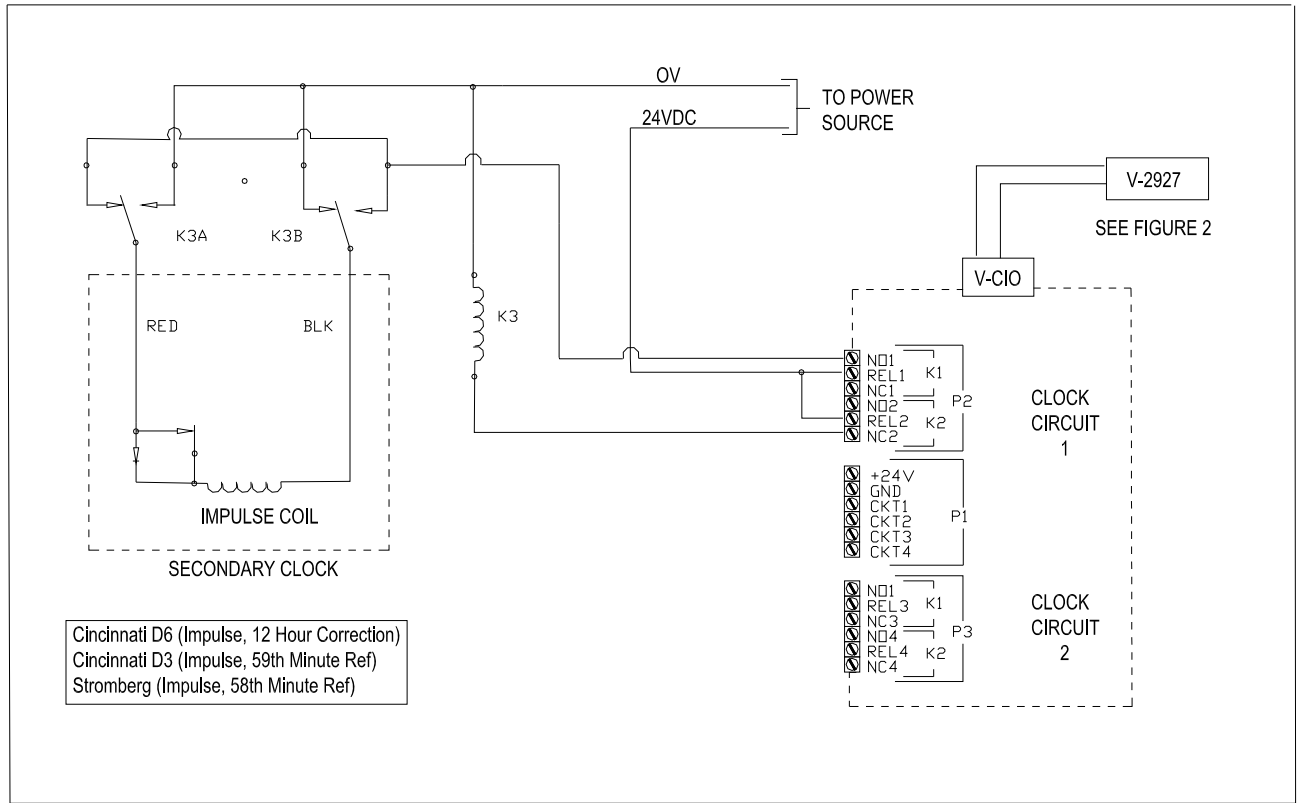


FIGURE 6 - Types 13, 14 and 15

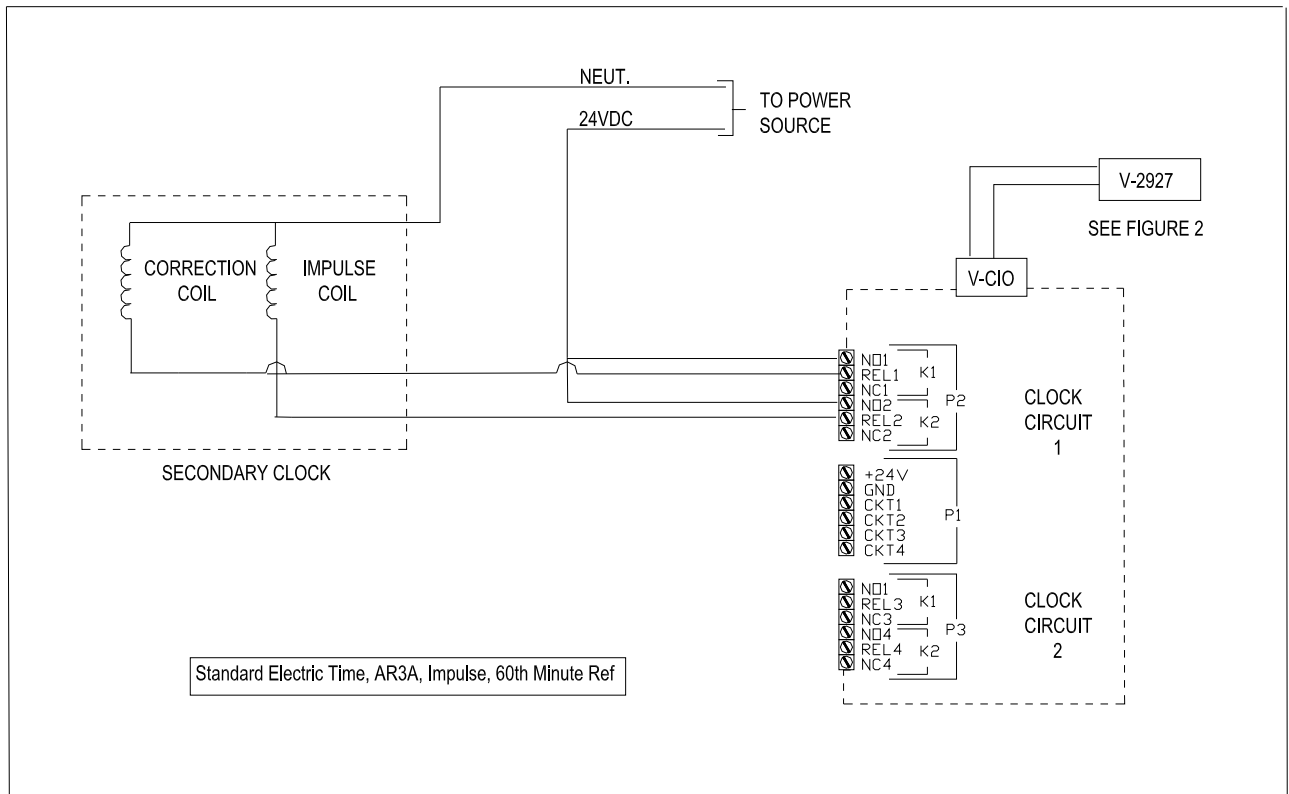


FIGURE 7 - Type 18

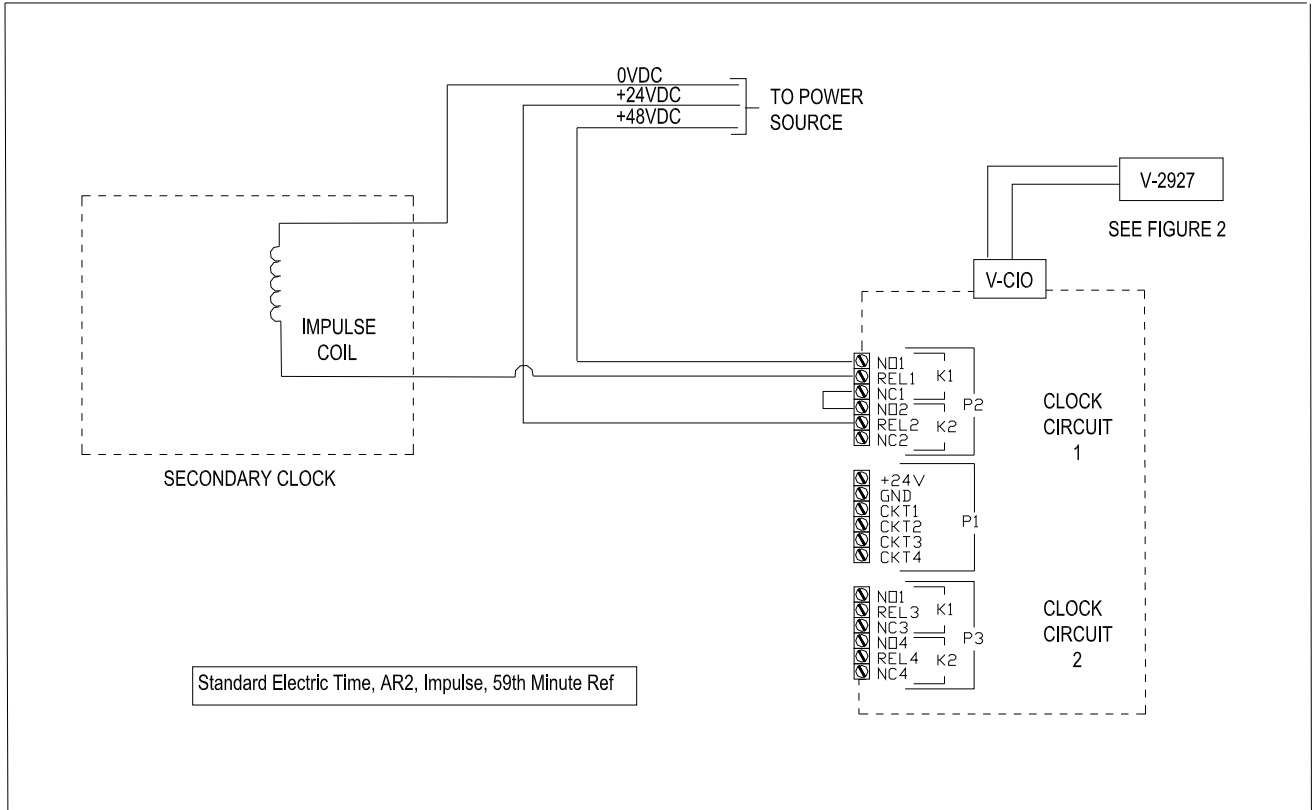


FIGURE 8 - Type 17

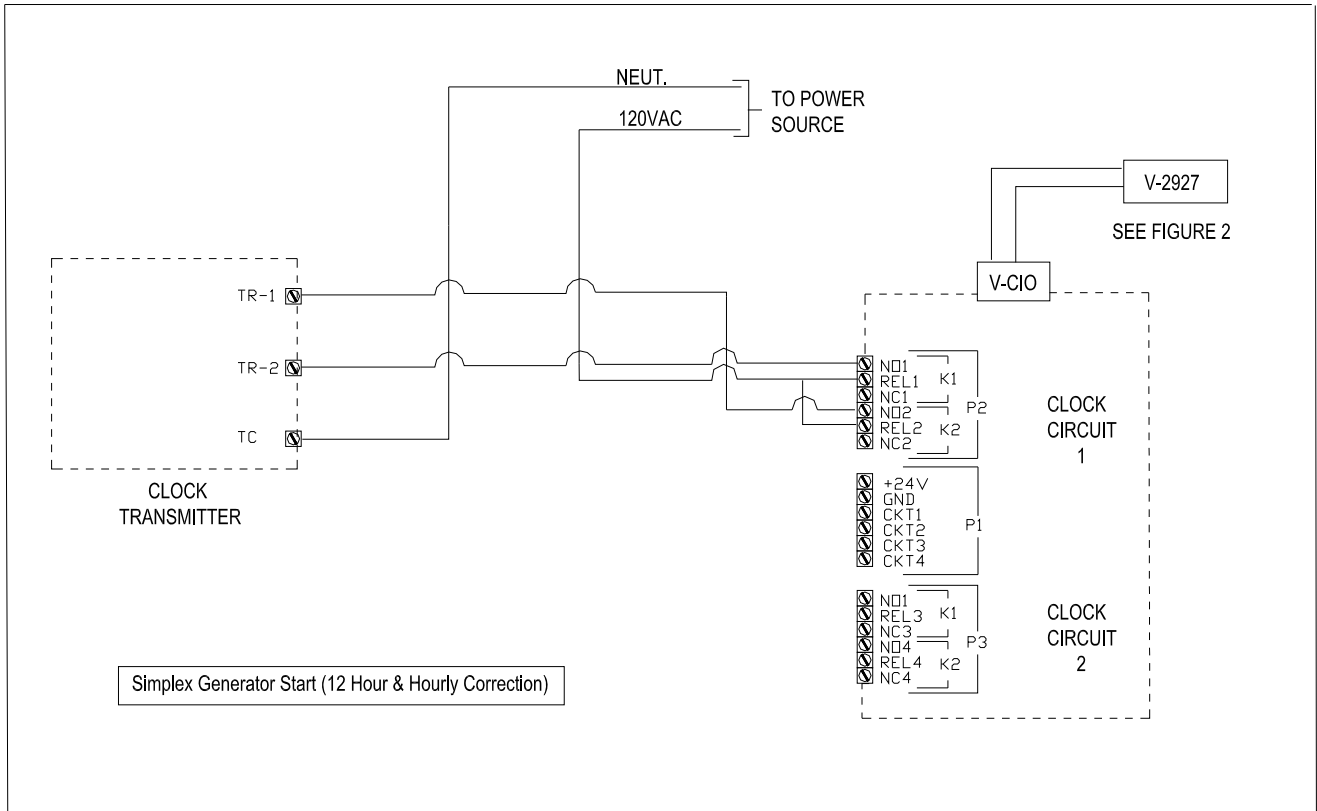


FIGURE 9 - Type 3

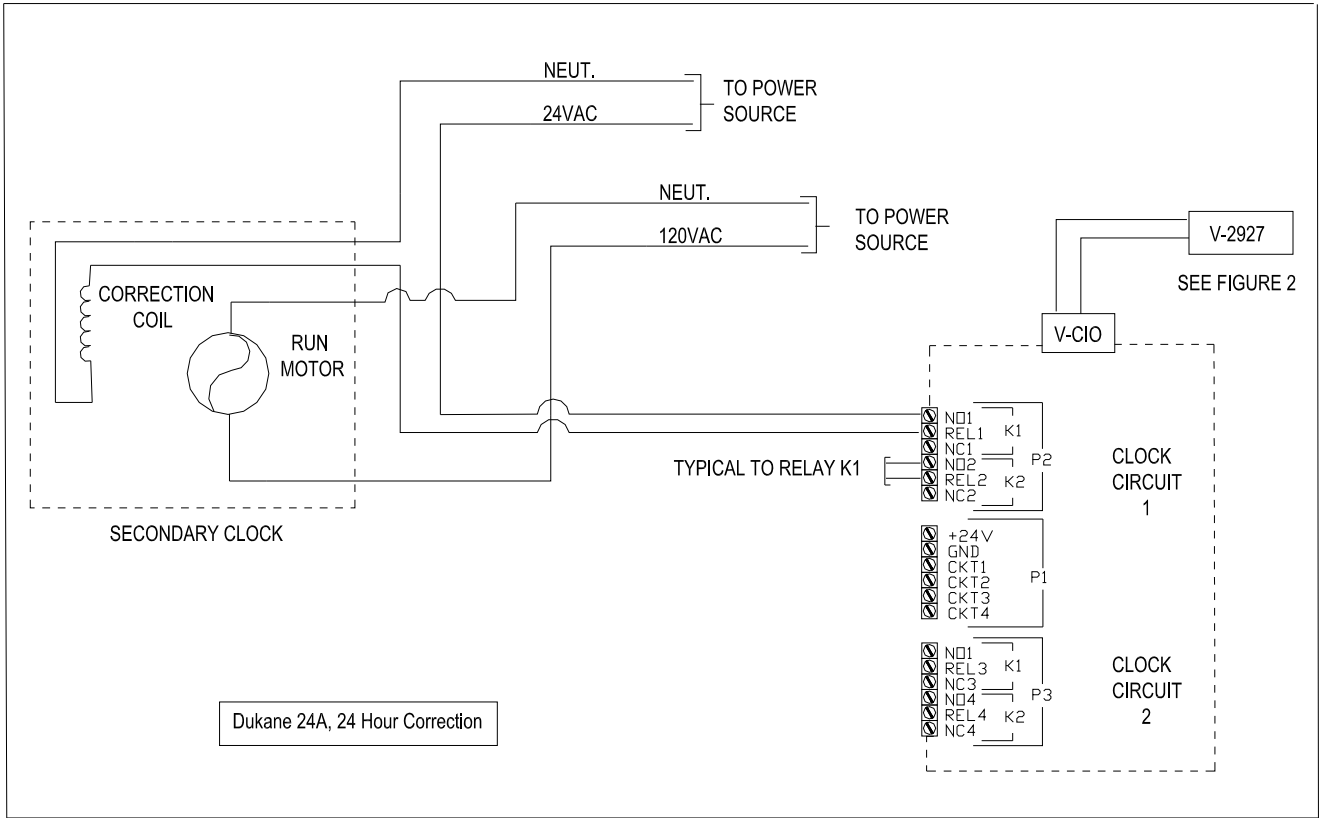


FIGURE 10 - Type 19

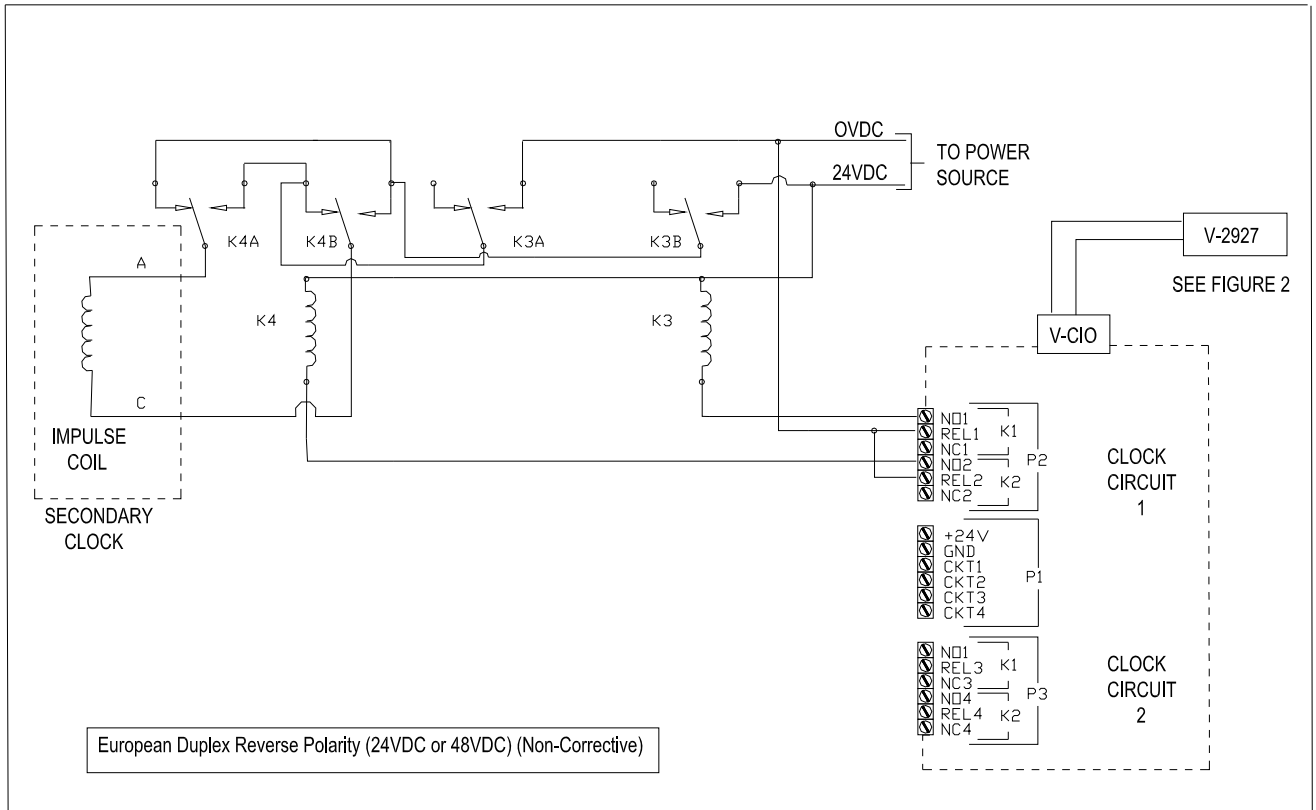


FIGURE 11 - Type 6 (K3 & K4 are 24VDC DPDT Relays)

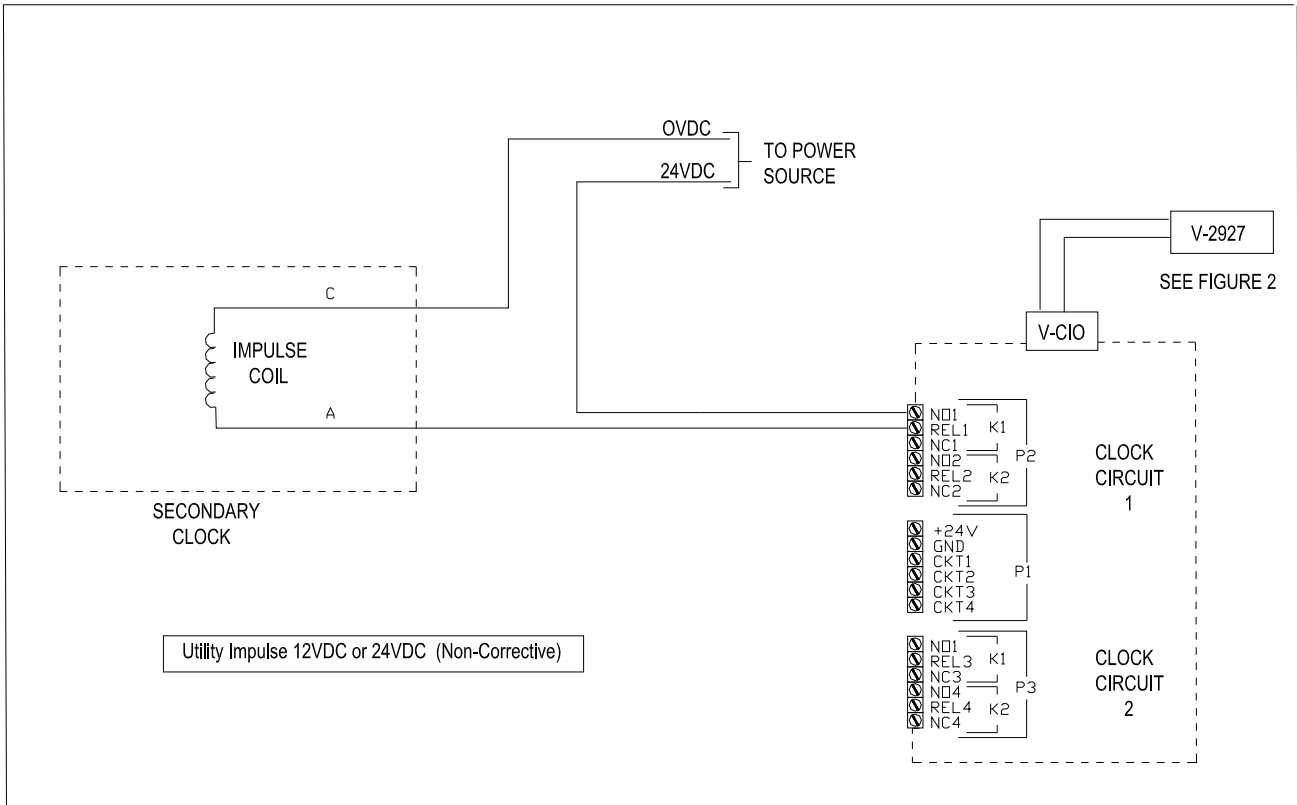


FIGURE 12 - Type 5

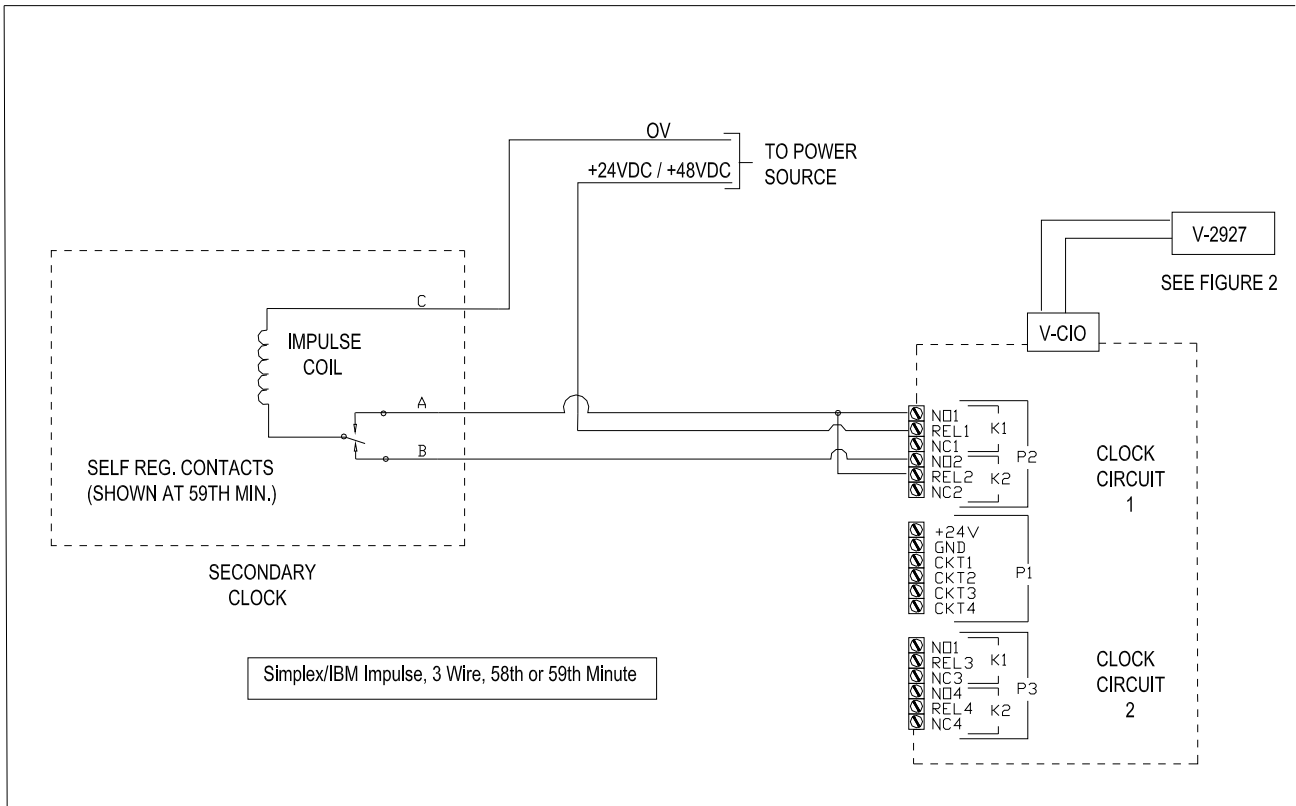


FIGURE 13 - Type 4 (3 Wire)

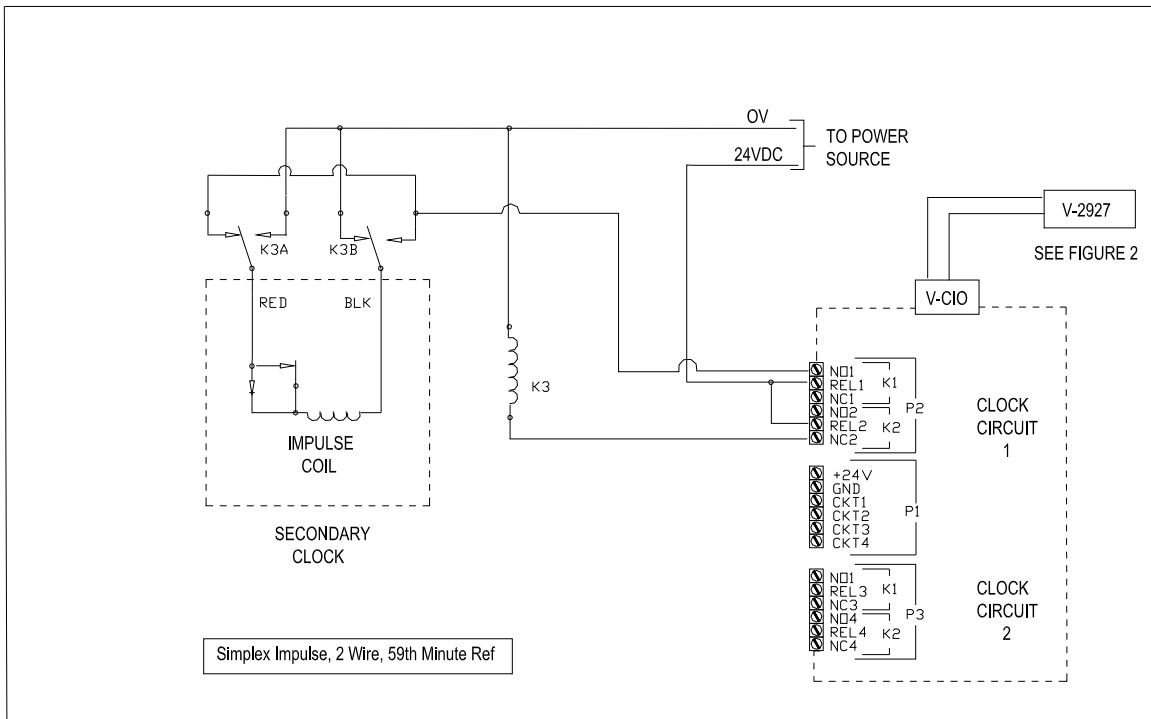


FIGURE 14 - Type 4 (2 Wire)

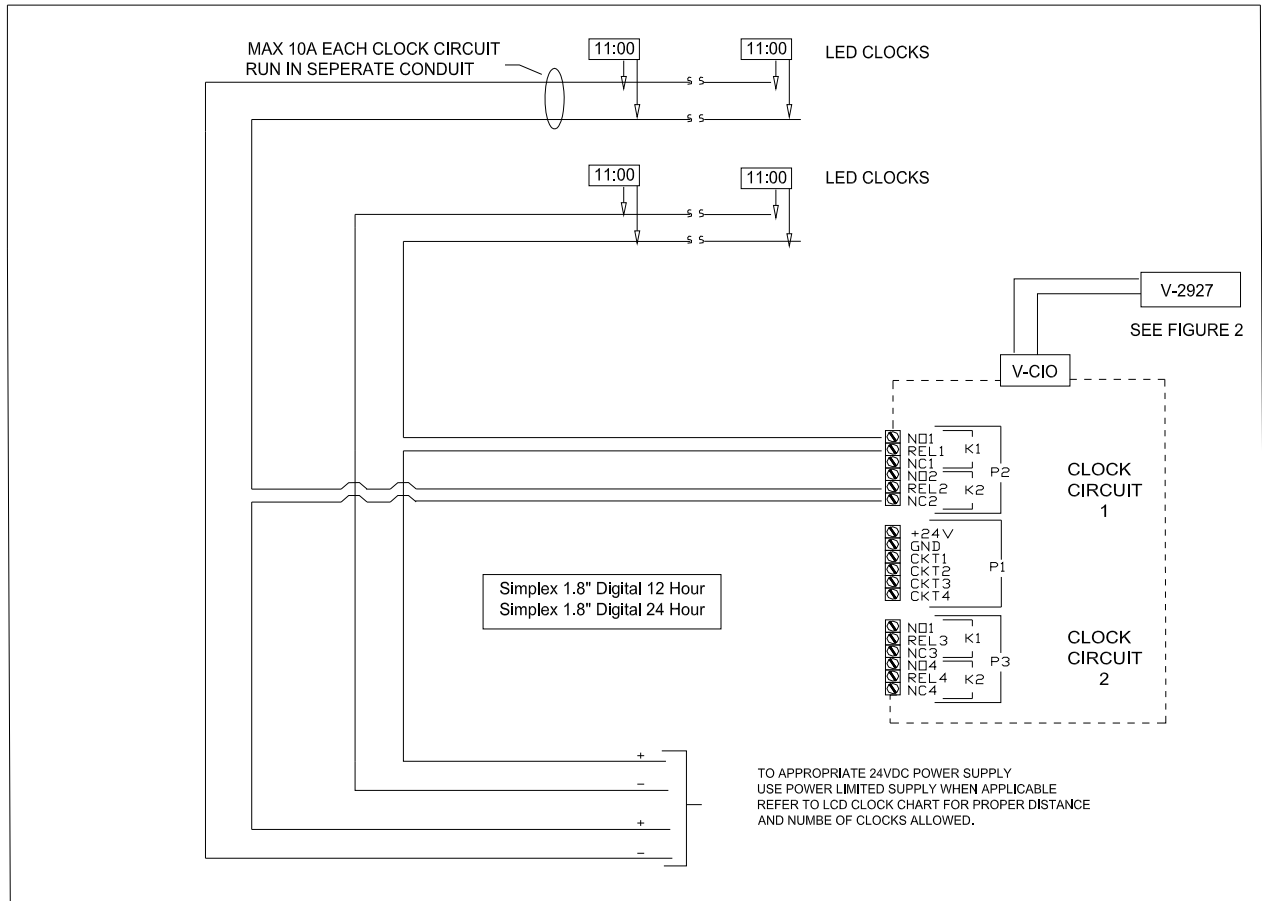


FIGURE 15 - Types 23 and 24 (Simplex 6333 1.8" Digital)

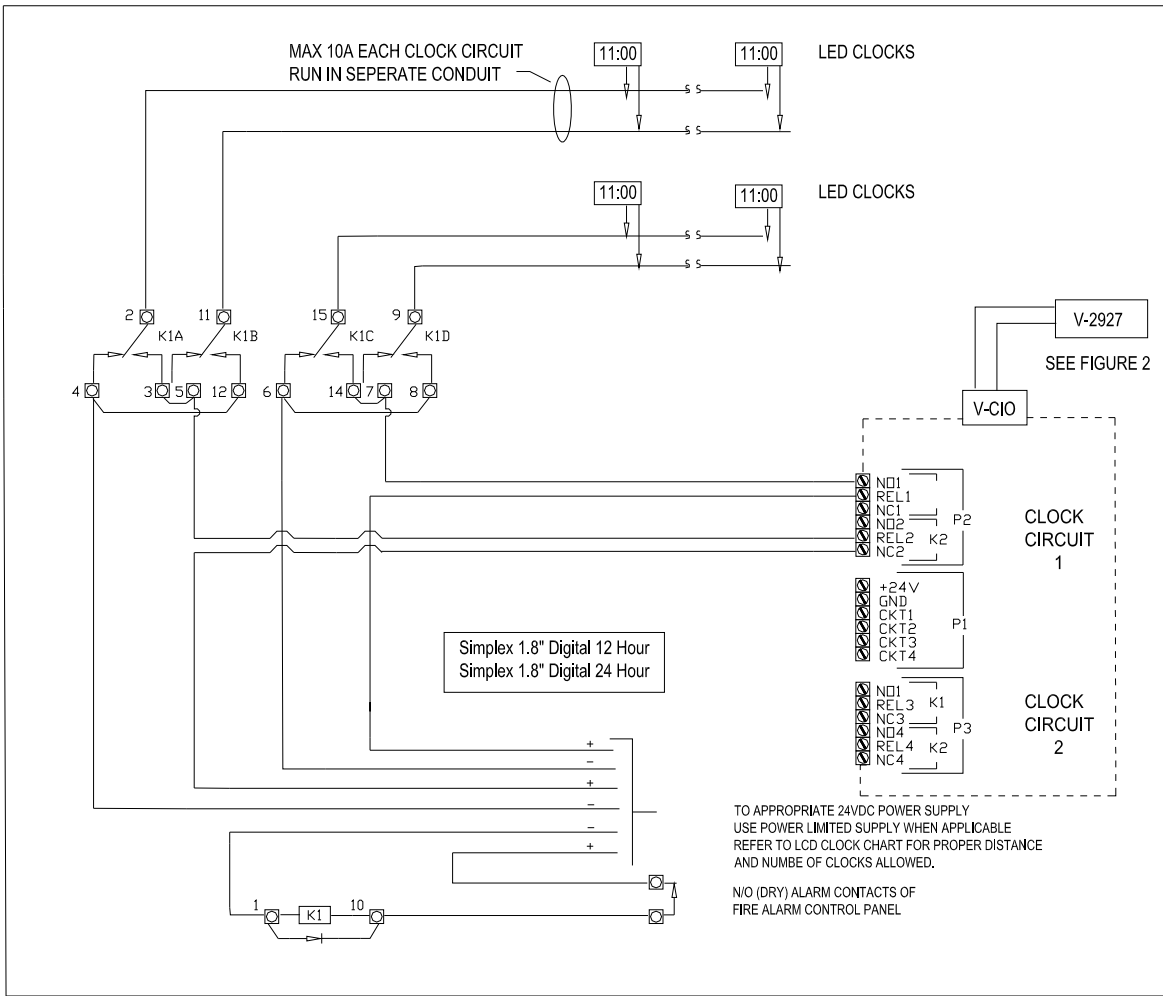


FIGURE 16- Types 23 and 24 (Simplex 6333 1.8" Digital To Flash "Fire")

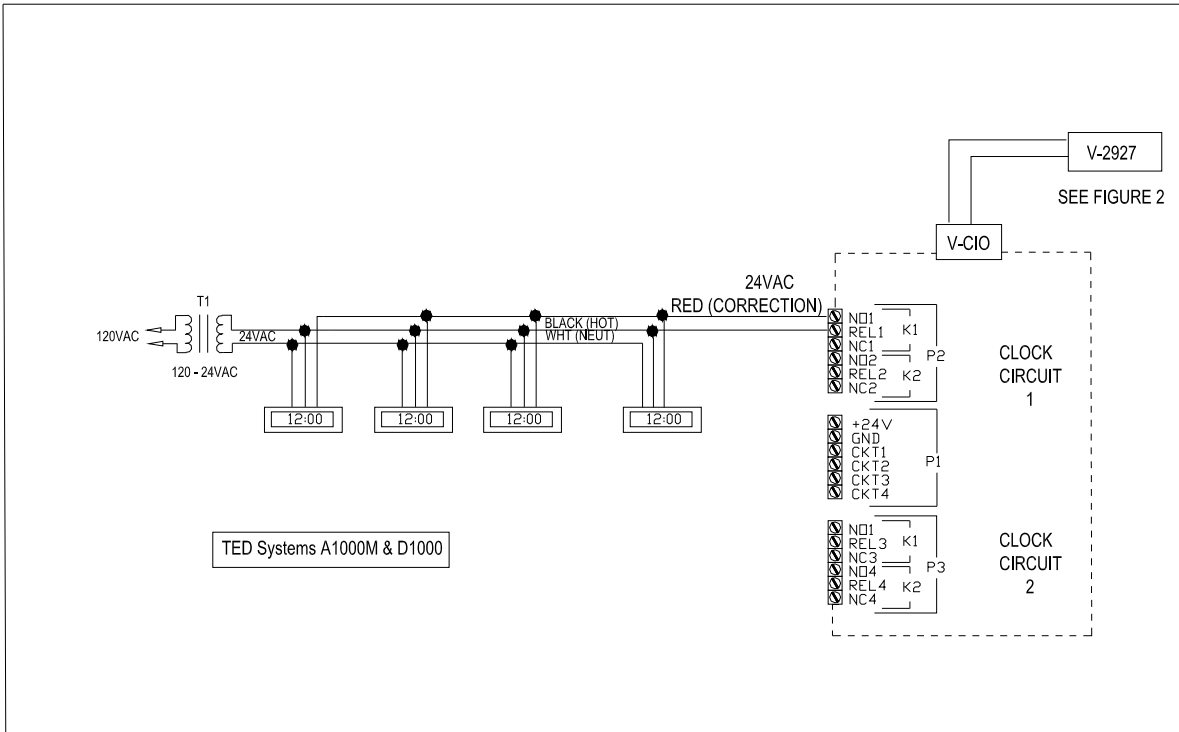


FIGURE 17 - Type 1