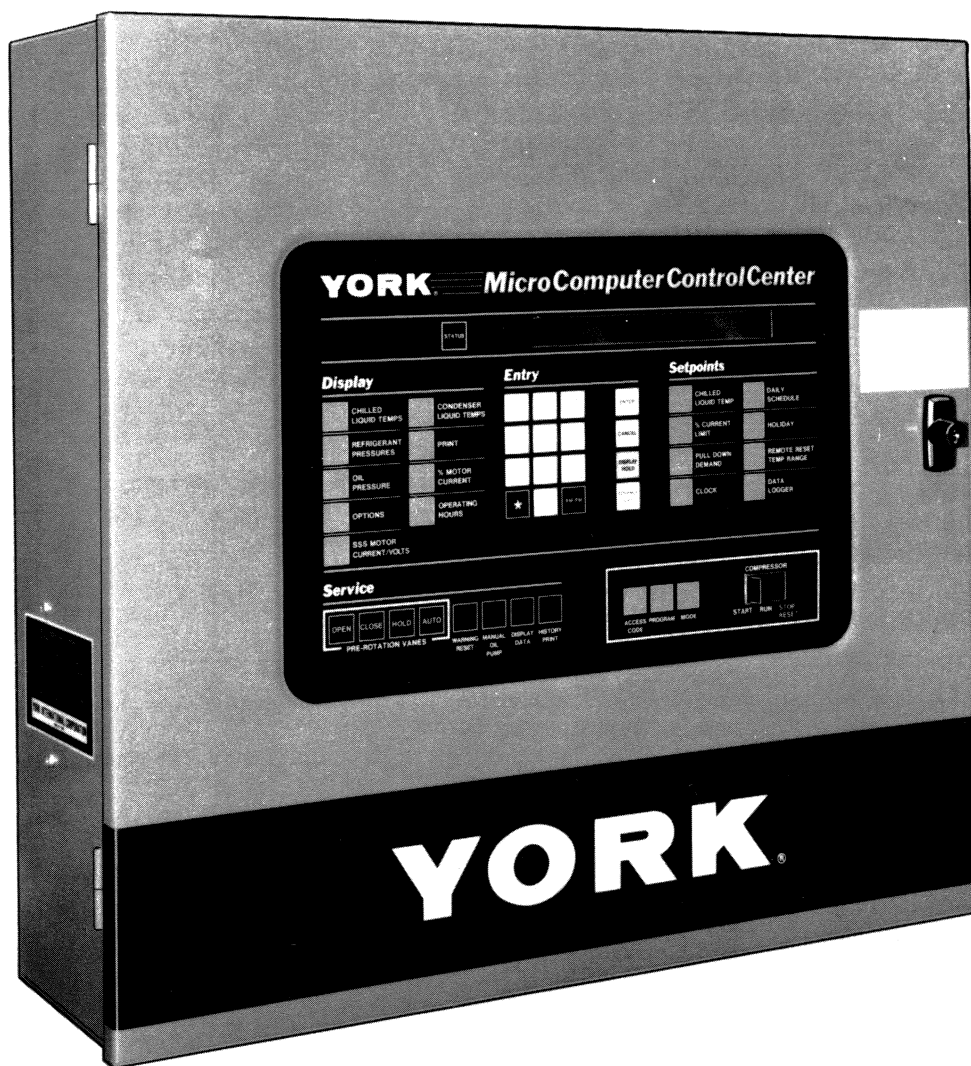


MICROCOMPUTER CONTROL CENTER PART NO. 031-00954

ELECTROMECHANICAL STARTER,
SOLID STATE STARTER AND TURBO-MODULATOR
APPLICATIONS



ITEM	DESCRIPTION	FIG. NO.	QTY.	PART NUMBER
1	RELAY	1	1	024-23962-000
2	TRANSFORMER	1	1	025-27311-000
3	FUSE, 5 AMP	1	1	025-14019-000
4	FUSE, 15 AMP	1	1	025-14384-000
5	FUSE HOLDER	1	2	025-13991-000
6	CONTROL, MICRO BOARD	1	1	TABLE 1
7	CONTROL, POWER SUPPLY – UNTIL 12/92 – SUPERSEDED BY	1 1	1 1	031-00938-000 031-01080-000
8	CONTROL, DIGITAL INPUT	1	1	031-00935-000
9	CONTROL, RELAY BOARD – UNTIL 9/93 – SUPERSEDED BY	1 1	1 1	031-00932-001 031-00932-002
10	FASTENER, PAWL ADJ.	2	1	021-17252-000
11	KEYPAD	2	1	024-24606-000
12	DISPLAY (Babcock VF-140-04) – UNTIL 12/91 – SUPERSEDED BY	3, 4, 5 3, 4, 5	1 1	031-00775-000 331-00775-600 ⁽²⁾
13	SWITCH, ROCKER	2	1	024-23143-000
14	SUPPRESSOR	1	1	031-00808-000
15	CONTROL, TM II INTERFACE (Turbo-Modulator Application Only)	3	1	031-00957-000
16	CABLE, FIBER-OPTIC – CURRENT SETPOINT (TM Application Only)	3	1	031-00894-000
17	CABLE, FIBER-OPTIC – TEMPERATURE SETPOINT (TM Application Only)	3	1	031-00893-000
18	CONTROL, CURRENT MODULE CM-2 (Electro-Mechanical Starter Appl. Only)	4	1	031-00947-000
19	DIODE BRIDGE (Electro-Mechanical Starter Application Only)	4	1	031-00210-000
20	RESISTOR, VARIABLE (Electro-Mechanical Starter Application Only)	4	2	025-20789-000
21	CONTROL, LOGIC – 7L (Solid State Starter Application Only)	5	1	031-00936-002
22	CONTROL, LOGIC – 14L (Solid State Starter Application Only)	5	1	031-00936-003
23	CONTROL, LOGIC – 26L (Solid State Starter Application Only)	5	1	031-00936-004
24	CONTROL, LOGIC – 33L (Solid State Starter Application Only)	5	1	031-00936-005
25	CONTROL, REMOTE RESET (Customer Option)	1	–	031-00814-000 ⁽¹⁾
26	CARD FILE (Customer Option)	1	1	031-00827-000
27	IC, REAL TIME CLOCK – U16	1	1	031-00955-000
28	EPROM – U17	1	1	TABLE 2
29	TRANSDUCERS	–	–	TABLE 3
30	THERMISTORS	–	–	TABLE 4
31	CABLE, RIBBON – MICRO BOARD J4	1	1	031-00950-000
32	CABLE, RIBBON – RELAY BOARD J1	1	1	031-00951-000
33	CABLE, RIBBON – DISPLAY	3, 4, 5	1	031-00952-000
34	CABLE, RIBBON – DIGITAL INPUT BOARD J1	1	1	031-00953-000
35	CABLE, RIBBON – MICRO BOARD J2	1	1	031-00985-000

NOTE: (1) If it is desired to remotely reset both chilled water setpoint and current limit setpoint, 2 ea. are required. If it is desired to remotely reset only one of these setpoints, 1 ea. is required.

(2) 331-00775-600 is a Kit consisting of Display 031-00775-001 (Babcock VF-140-02 or IEE 33383-01) and Display Reset Board 031-01305-000.

Due to the varied applications of the Micro Board, replacement Micro Boards are provided without EPROMS. In some circumstances it will be necessary to remove the EPROM from the defective board and use it in the replacement board. In other circumstances, the available replacement board will not be compatible with the existing EPROM and both board and EPROM would have to be ordered.

Therefore, to select a replacement Micro Board that will provide proper operation, it is essential the part number of the defective board and the part number of the EPROM installed in that board are known prior to placing an order. The board part number is printed on the front surface of the board. The EPROM is component U17 on the Micro Board. Its part number is printed on a label attached to the top surface of the EPROM.

TABLE 1 –

IF EQUIPPED WITH: MICRO BOARD / EPROM	SELECTION	REPLACE WITH: MICRO BOARD / EPROM
031-00940-000 OR 031-00940-001 / 031-00956-001	(1) (2)	031-01065-000 / 031-01097-009 031-01065-001 / 031-01097-009
031-00940-000 OR 031-00940-001 / 031-01027-001	(1)	031-00940-001 / NOTE 1
031-00940-000 OR 031-00940-001 / 031-01027-002	(1) (2)	031-01065-000 / 031-01097-008 031-01065-001 / 031-01097-008
031-00940-000 OR 031-00940-001 / 031-01027-008	(1)	031-00940-001 / NOTE 1
031-00940-000 OR 031-00940-001 / 031-01027-003	(1) (2)	031-01065-000 / 031-01097-008 031-01065-001 / 031-01097-008
031-00940-000 OR 031-00940-001 / 031-01027-004	(1)	031-00940-001 / NOTE 1
031-00940-000 OR 031-00940-001 / 031-01027-005	(1) (2)	031-01065-000 / 031-01097-004 031-01065-001 / 031-01097-004
031-00940-000 OR 031-00940-001 / 031-01027-006	(1) (2)	031-01065-000 / 031-01097-002 031-01065-001 / 031-01097-002
031-00940-000 OR 031-00940-001 / 031-01027-007	(1) (2)	031-01065-000 / 031-01097-002 031-01065-001 / 031-01097-002
031-00940-000 OR 031-00940-001 / 031-01027-009	(1) (2)	031-01065-000 / 031-01097-010 031-01065-001 / 031-01097-010
031-00940-000 OR 031-00940-001 / 031-01027-010	(1) (2)	031-01065-000 / 031-01097-011 031-01065-001 / 031-01097-011
031-00940-000 OR 031-00940-001 / 031-01027-011	(1) (2)	031-01065-000 / 031-01097-012 031-01065-001 / 031-01097-012
031-01065-000 / NOTE 1	(1) (2)	031-01065-000 / NOTE 1 031-01065-001 / NOTE 1
031-01065-001 / NOTE 1	(1)	031-01065-001 / NOTE 1

NOTE: 1. Servicemen, in the field, must remove the EPROM from the defective Micro Board and re-use in the replacement board.

Refer to Table 1 and order a replacement Micro Board as follows:

1. In the left hand column of Table 1, locate the part number of the defective Micro Board and the part number of the EPROM installed in that board. In some cases, no EPROM part number is listed because the EPROM will be removed from the defective board and used in the replacement board.

2. Several order selections could be offered in the right hand column. Not all orders will offer more than one selection. Place an order for selection (1). If not available, order selection (2), etc. If an EPROM part number is listed in the right hand column, both the Micro Board part number and the EPROM part number must be ordered. In other cases it is necessary to order only the Micro Board.

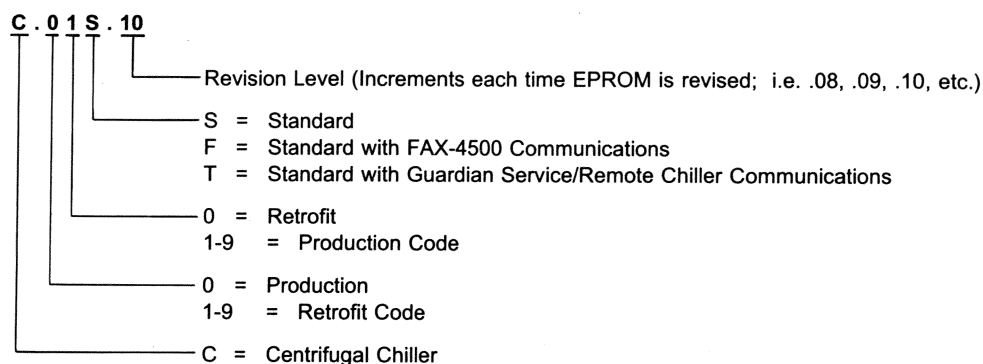
TABLE 2 – EPROMS

EPROM VERSION	EPROM PART NUMBER	APPLICATION	APPLICABLE TRANSDUCERS (See Pg. 5 for Notes)	APPLICABLE MICRO BOARD
3.B, 3.BS or 3.BSP	031-00956-001	R11	NOTE 1	031-00940-000; 001
3.CFB	031-01027-001	R11 With YORK FAX-4500 Energy Management System	NOTE 1	031-00940-000; 001
3.E	031-01027-002	R11	NOTE 2	031-00940-000; 001
3.EF	031-01027-008	R11 With YORK FAX-4500 Energy Management System	NOTE 2	031-00940-000; 001
3.ER	031-01027-003	R123	NOTE 3	031-00940-000; 001
3.ERF	031-01027-004	R123 With YORK FAX-4500 Energy Management System	NOTE 3	031-00940-000; 001
3.CT	031-01027-005	R11 With GUARDIAN Service / Remote Chiller Communications	NOTE 1	031-00940-000; 001
3.ET	031-01027-006	R11 With GUARDIAN Service / Remote Chiller Communications	NOTE 2	031-00940-000; 001
3.ERT	031-01027-007	R123 With GUARDIAN Service / Remote Chiller Communications	NOTE 3	031-00940-000; 001
3.XC	031-01027-009	R11 Series 67-70 "E" Compr. Monoshell Retrofit	NOTE 5	031-00940-000; 001
3.YC	031-01027-010	R11 Series 67-70 "B" & "C" Compr. Monoshell Retrofit	NOTE 5	031-00940-000; 001
3.ZB	031-01027-011	R11 Series 64 Compr. Monoshell Retrofit	NOTE 5	031-00940-000; 001
C.01S.10	031-01097-008 Supersedes: 031-01074-001	R11 / R123	NOTE 4	031-01065-000; 001
C.01F.10	031-01097-001	R11 / R123 With YORK FAX-4500 Communications	NOTE 4	031-01065-000; 001
C.01T.10	031-01097-002	R11 / R123 With GUARDIAN Service / Remote Chiller Communications	NOTE 4	031-01065-000; 001
C.00S.10	031-01097-009 Supersedes: 031-01074-002	R11	NOTE 6	031-01065-000; 001
C.00F.10	031-01097-003	R11 With YORK FAX-4500 Communications	NOTE 6	031-01065-000; 001
C.00T.10	031-01097-004	R11 With GUARDIAN Service / Remote Chiller Communications	NOTE 6	031-01065-000; 001
C.10S.10	031-01097-010 Supersedes: 031-01074-003	R11 / R123 Series 67-70 "E" Compr. Monoshell Retrofit	NOTE 7	031-01065-000; 001
C.20S.10	031-01097-011 Supersedes: 031-01074-004	R11 / R123 Series 67-70 "B" & "C" Compr. Monoshell Retrofit	NOTE 7	031-01065-000; 001
C.30S.10	031-01097-012 Supersedes: 031-01074-005	R11 / R123 Series 64 Compr. Monoshell Retrofit	NOTE 7	031-01065-000; 001
C.10F.10	031-01097-005	R11 / R123 Series 67-70 "E" Compr. Monoshell Retrofit With FAX-4500 Communications	NOTE 7	031-01065-000; 001
C.20F.10	031-01097-006	R11 / R123 Series 67-70 "B" & "C" Compr. Monoshell Retrofit With FAX-4500 Communications	NOTE 7	031-01065-000; 001
C.30F.10	031-01097-007	R11 / R123 Series 64 Compr. Monoshell Retrofit With FAX-4500 Communications	NOTE 7	031-01065-000; 001

NOTES for TABLE 2		OLD PART NUMBER				NEW PART NUMBER	
1	COND EVAP OIL (LO) OIL (HI) PURGE	R11	025-27517-001 025-27517-002 025-27517-003 025-27517-004 025-27517-004			R11	025-29148-006 025-29148-007 025-29148-003 025-29148-004 025-29148-004
2	COND EVAP OIL (LO) OIL (HI) PURGE	R11	025-28930-001 025-28930-002 025-28930-003 025-28930-004 025-28930-004			R11/R123	025-29148-001 025-29148-002 025-29148-003 025-29148-004 025-29148-004
3	COND EVAP OIL (LO) OIL (HI) PURGE	R123	025-28930-101 025-28930-102 025-28930-103 025-28930-104 025-28930-104			R11/R123	025-29148-001 025-29148-002 025-29148-003 025-29148-004 025-29148-004
4	COND EVAP OIL (LO) OIL (HI) PURGE (A) PURGE (B)	R11	025-28930-001 025-28930-002 025-28930-003 025-28930-004 025-28930-004 -	R123	025-28930-101 025-28930-102 025-28930-103 025-28930-104 025-28930-104 -	R11/R123	025-29148-001 025-29148-002 025-29148-003 025-29148-004 025-29148-004 025-29148-008
5	COND EVAP OIL (LO) OIL (HI) PURGE	R11	025-28930-001 025-28930-002 025-28930-003 025-28930-005 025-28930-004			R11/R123	025-29148-001 025-29148-002 025-29148-003 025-29148-005 025-29148-004
6	COND EVAP OIL (LO) OIL (HI) PURGE (A) PURGE (B)	R11	025-27517-001 025-27517-002 025-27517-003 025-27517-004 025-27517-004 -			R11	025-29148-006 025-29148-007 025-29148-003 025-29148-004 025-29148-004 025-29148-008
7	COND EVAP OIL (LO) OIL (HI) PURGE (A) PURGE (B)	R11	025-28930-001 025-28930-002 025-28930-003 025-28930-005 025-28930-004 -			R11/R123	025-29148-001 025-29148-002 025-29148-003 025-29148-005 025-29148-004 025-29148-008

NOTE: (A) = Low Pressure Purge Unit (B) = High Pressure Pump Assisted Purge Unit

Order EPROMS by Part Number. In later EPROMs, the "VERSION" is an Alphanumeric Code that identifies the Application and Revision Level of the EPROM as follows:



The chiller could be equipped with one of several different classes of transducers. The actual transducer used is a function of the chiller vintage and refrigerant employed. Not all transducers are compatible with all refrigerants. Also, not all transducers are compatible with all EPROMS (the EPROM is IC U17 on the Micro Board). EPROM compatibility can be verified by referring to Table 2. The EPROM version listed is the latest revision level.

Early vintage transducers (025-27517-XXX) were not equipped with waterproof connectors. Late vintage transducers (025-28930-XXX or 025-29148-XXX) are equipped with waterproof connectors. Replacement transducers for early vintage transducers will be supplied as a kit containing waterproof connector adapters.

Therefore, when choosing a replacement transducer, order the same part number as the defective transducer. The correct replacement will be automatically supplied.

TABLE 3 – TRANSDUCERS

		CONDENSER	EVAPORATOR	OIL (LOW SIDE)	OIL (HIGH SIDE)	PURGE	REFRIGERANT APPLICATION
OLD P/N NEW P/N (KIT) Consists of: Transducer Instructions Waterproof Adapter		025-27517-001 325-27517-001 025-29148-006 035-08972-000 025-29150-001	025-27517-002 325-27517-002 025-29148-007 035-08972-000 025-29150-001	025-27517-003 325-27517-003 025-29148-003 035-08972-000 025-29150-001	025-27517-004 325-27517-004 025-29148-004 035-08972-000 025-29150-001	025-27517-004 325-27517-004 025-29148-004 035-08972-000 025-29150-001	R11 R11 / R123
OLD P/N NEW P/N		025-28930-101 025-29148-001	025-28930-102 025-29148-002	025-28930-103 025-29148-003	025-28930-104 025-29148-004	025-28930-104 025-29148-004	R123 R11 / R123
	CONDENSER	EVAPORATOR	OIL (LOW SIDE)	DUAL SHELL CHILLERS OIL (HIGH SIDE)	MONOSHELL RETROFIT CHILLERS OIL (HIGH SIDE)	PURGE (LOW PRESSURE UNIT)	REFRIGERANT APPLICATION
OLD P/N NEW P/N	025-28930-001 025-29148-001	025-28930-002 025-29148-002	025-28930-003 025-29148-003	025-28930-004 025-29148-004	025-28930-005 025-29148-005	025-28930-004 025-29148-004	R11 R11/R123
						PURGE (HIGH PRESSURE PUMP-ASSISTED UNIT)	REFRIGERANT APPLICATION
						025-29148-008	R11/R123

The chiller could be equipped with one of two classes of thermistors. The difference between the classes is the type of electrical connector used. Early vintage thermistors (025-25163-000 and 025-29195-000) were equipped with non-waterproof connectors. Later vintage thermistors (025-28935-000 and 025-28936-000) are equipped with waterproof connectors. Replacement thermistors for early vintage thermistors will be equipped with waterproof connectors and supplied as a kit containing adapters that allow connection to non-waterproof mating connectors.

Therefore, when choosing a replacement thermistor, first identify if the defective thermistor is equipped with a non-waterproof connector. If it is, order the appropriate kit. Otherwise, order the appropriate waterproof connector-equipped thermistor only.

The waterproof connector is black in color and contains flat pins. The non-waterproof connector is white/opaque plastic with cylindrical pins.

TABLE 4 – THERMISTORS

	OIL TEMP	DISCHARGE TEMP	LEAVING CHILLED WATER TEMP	ENTERING CHILLED WATER TEMP	LEAVING CONDENSER WATER TEMP	ENTERING CONDENSER WATER TEMP	CONNECTOR TYPE
OLD P/N	025-25163-000	025-25163-000	025-25195-000	025-25195-000	025-25195-000	025-25195-000	Non-Waterproof
NEW P/N (KIT)	325-25163-000	325-25163-000	325-25195-000	325-25195-000	325-25195-000	325-25195-000	
Consists of:							
Thermistor	025-28936-000	025-28936-000	025-28935-000	025-28935-000	025-28935-000	025-28935-000	Waterproof
Instructions	035-08972-000	035-08972-000	035-08972-000	035-08972-000	035-08972-000	035-08972-000	
Waterproof Adapter	025-29150-002	025-29150-002	025-29150-002	025-29150-002	025-29150-002	025-29150-002	
PART NUMBER	025-28936-000	025-28936-000	025-28935-000	025-28935-000	025-28935-000	025-28935-000	Waterproof

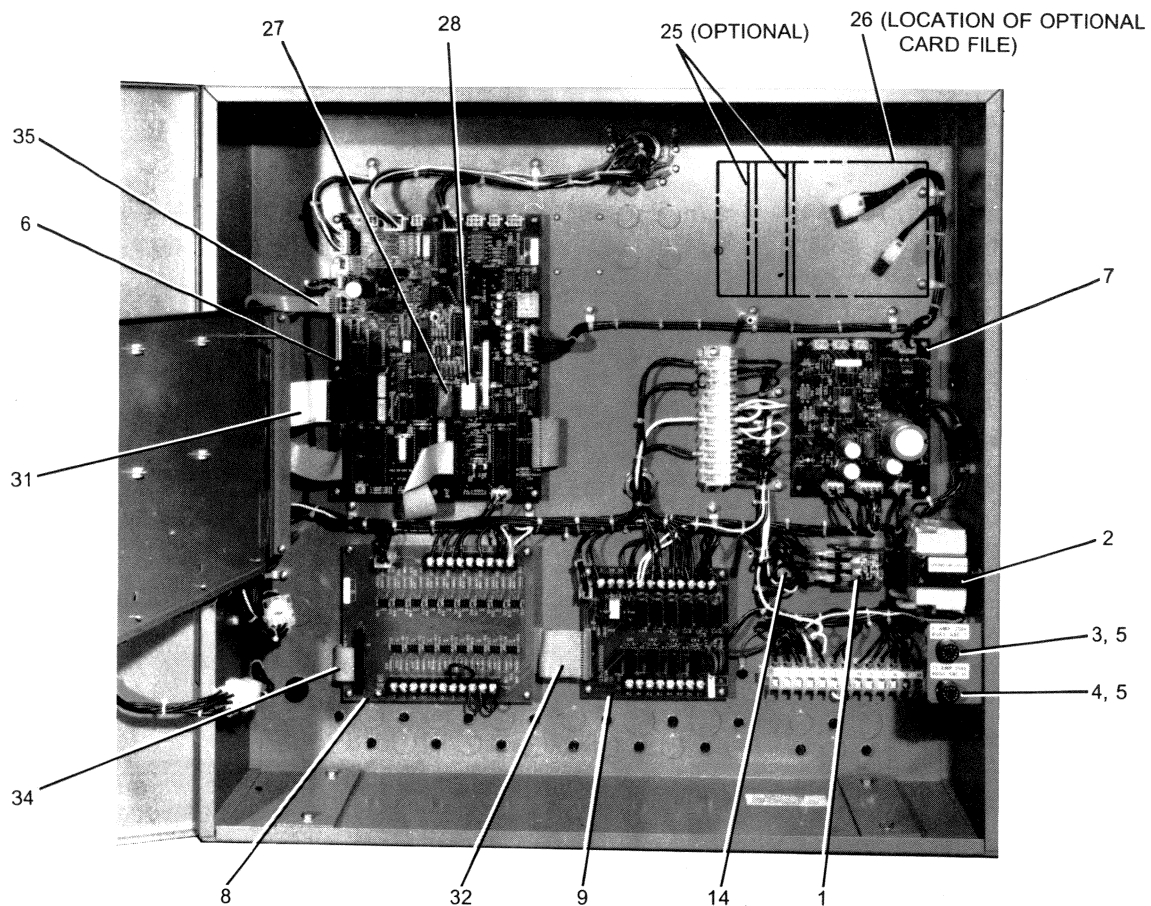


FIG. 1 — MICROCOMPUTER CONTROL CENTER — DOOR AND HINGED PANEL OPEN

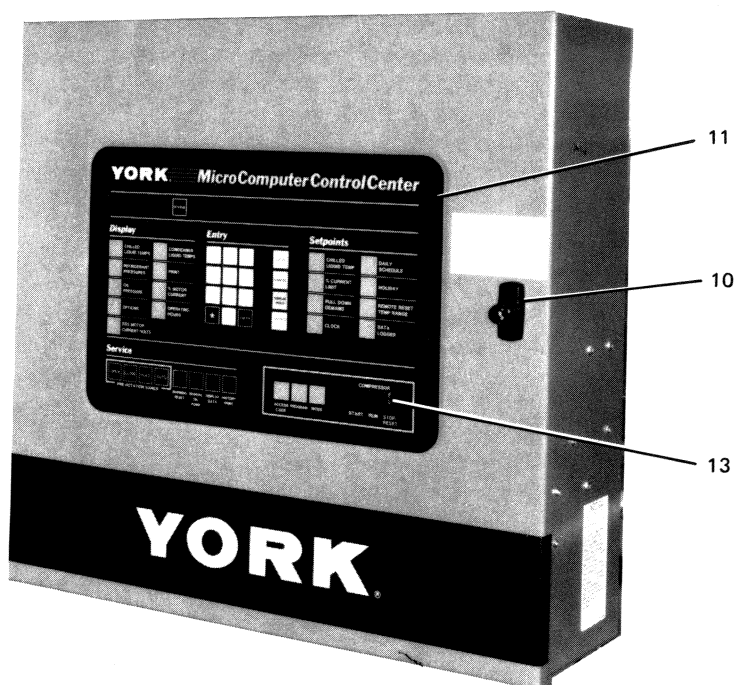


FIG. 2 — MICROCOMPUTER CONTROL CENTER EXTERIOR

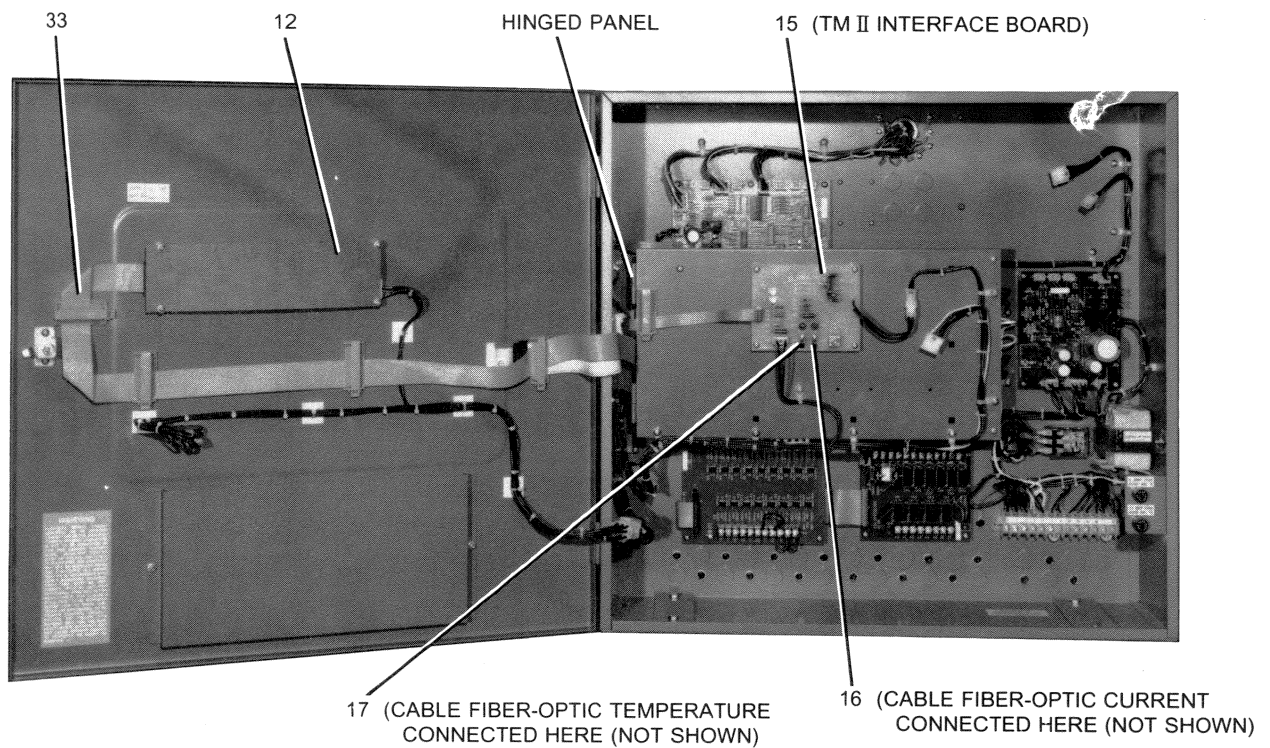
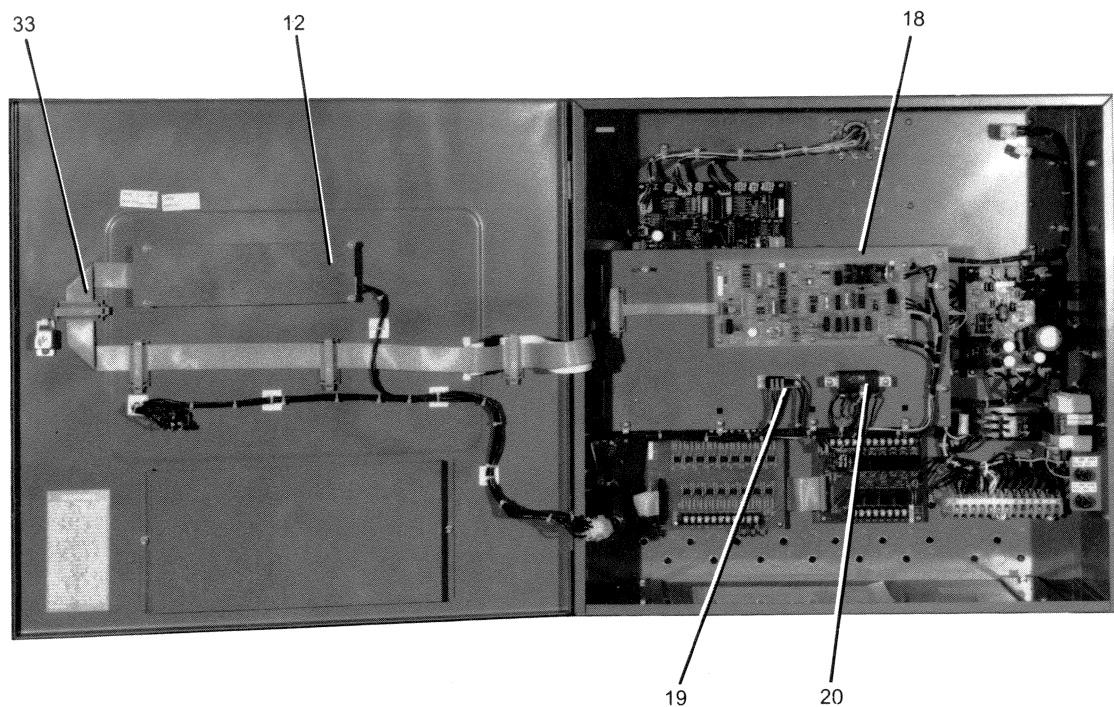
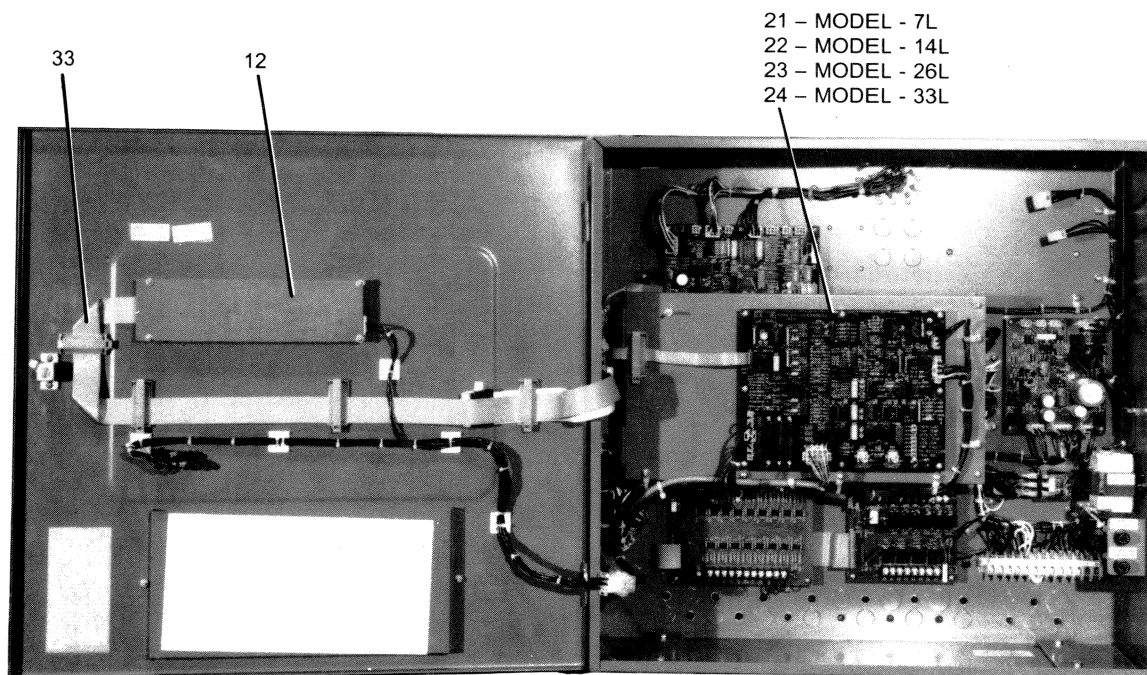


FIG. 3 — MICROCOMPUTER CONTROL CENTER — DOOR OPEN — TURBO-MODULATOR II APPLICATIONS



**FIG. 4 — MICROCOMPUTER CONTROL CENTER
DOOR OPEN - ELECTRO-MECHANICAL STARTER APPLICATIONS**



**FIG. 5 — MICROCOMPUTER CONTROL CENTER
DOOR OPEN - SOLID STATE STARTER APPLICATIONS**



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