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Schematic/Electrical Parts

Milnor® Coin-operated Washer-extractor MCR09E5, MCR18E4

Read the separate safety manual before installing, operating, or servicing

PELLERIN MILNOR CORPORATION POST OFFICE BOX 400, KENNER, LOUISIANA 70063-0400, U.S.A.

Table of Contents
MECMCR11AE/16076A

COMPONENT PARTS LIST

WCMW1PL/2014264N

COMPONENT NUMBER	FUNCTION OF THIS COMPONENT NUMBER	WHERE TO FIND THIS COMPONENT	MILNOR P/N	DESCRIPTION	LOCATION
BA	**>>PRINTED CIRCUIT BOARDS**				
BASP	BOARD-SWITCH PANEL	WCMW1BW	98CMCR0903	BD:MCR COIN STATUS->TEST	SWITCH PANEL
BAUP	BOARD-PROCESSOR	WCMW1BW	98CMCR0904	BD:12OUTPUT-8INPUT COIN->TEST	CONTROL PANEL
CR	**>>RELAY-PILOT OR CONTROL**				
CRDC	RELAY-DOOR CLOSED	WCMW1S+	09C024D71	RELAY 4PDT DIFGLD 14PN 240V	CONTROL PANEL
CRDL	RELAY-DOOR LOCKED	WCMW1S+	09C024D71	RELAY 4PDT DIFGLD 14PN 240V	CONTROL PANEL
CS	**>>CONTACTOR-MOTOR STARTER**				
CSVP	CONTACTOR-ENABLE INVERTER	WCMW1S+	98CMCR1801	12A 3P CONTACTOR NR 240V5/6	CONTROL PANEL
EF	**>>FUSE OR FUSE HOLDER**				
EF71A	FUSE-240V INCOMING POWER X-BUSS	WCMW1S+	09FF002F2H	2A 250V F2H CONTROL FUSE	CONTROL PANEL
EF71B	FUSE-240V INCOMING POWER Y-BUSS	WCMW1S+	09FF002F2H	2A 250V F2H CONTROL FUSE	CONTROL PANEL
EFP1	FUSE-120V FEED TRANSFORMER PRIMARY	WCMW1LV	09FF006AWV	FUSE BUSS STYLE CC TYPE FNQ-R 6 AMP 60	CONTROL PANEL
EFP2	FUSE-120V FEED TRANSFORMER PRIMARY	WCMW1LV	09FF006AWV	FUSE BUSS STYLE CC TYPE FNQ-R 6 AMP 60	CONTROL PANEL
EM	**>>ELECTROMAGNET AND SOLENOID**				
EMBS	SOLENOID-COIN BLOCKING	WCMW1S+	38C085	REJ.W/LOCK-MECH 230V CASTIC	COIN ACCEPTOR
EMDL	SOLENOID-DOOR LOCK	WCMW1S+	09K063D12	DOOR LOCK SOLENOID 12V	DOOR LOCK
ES	**>>POWER SUPPLY-ELECTRONIC**				
ESPS	POWER SUPPLY-MICROPROCESSOR	WCMW1BW	98CMCR0905	PWRSUP 13V/OUT 85-264VAC/IN	CONTROL PANEL
EX	**>>TRANSFORMERS**				
EXHV (208/240V)	TRANSFORMER-208/240V	WCMW1LV	98CMCR0902	AUTOXFMR 208V/230V 250VA	CONTROL PANEL
EXHV (120VAC)	TRANSFORMER-120/240V	WCMW1LV	09UB20AA71	XFMR 120V PRI/240V SEC 200VA	CONTROL PANEL
MR	**>>>MOTORS**				
MTWE	MOTOR-BASKET	WCMW1VP	MESSAGE SO	SEE SPECIFIC COMPONENT+NAMEPLATE	MACHINE BASE
MV	**>>>MOTOR POWER INVERTERS**				
MVINV (MCR12)	INVERTER-BASKET MOTOR	WCMW1VP	09MV020F74	INVERTER 2HP 230V (GPD315)	CONTROL PANEL
MVINV (MCR18)	INVERTER-BASKET MOTOR	WCMW1VP	09MV030F74	VARSPEED 3HP 11A 230V GPD315	CONTROL PANEL
MVINV (MCR18)	INVERTER-BASKET MOTOR	WCMW1VPA	09MWB01174	V1000 INVERTER 11AMP 230V	CONTROL PANEL
MVINV (MCR12)	INVERTER-BASKET MOTOR (120V/1P)	WCMW1VPS	09MV005C37	INVERTER GPD205 5 AMPS 120V	CONTROL PANEL
PX	**>>>PROXIMITY SWITCH**				
PXCC	PROX SWITCH-COIN SLOT QUARTER	WCMW1IA	38C085	REJ.W/LOCK-MECH 230V CASTIC	COIN ACCEPTOR
SH	**>>SWITCH-HAND OPERATED**				
SH01	SWITCH-208/240V	WCMW1LV	09N050	TOGSW SPDT NO OFF 10A250V	CONTROL PANEL

1

COMPONENT PARTS LIST

WCMW1PL/2014264N

COMPONENT NUMBER	FUNCTION OF THIS COMPONENT NUMBER	WHERE TO FIND THIS COMPONENT	MILNOR P/N	DESCRIPTION	LOCATION
SK	**>>SWITCH-KEYLOCK**				
SKAT	KEY SWITCH-ATTENDANT	WCMW1IA	09N127C	KEYSW SPST 7A120VAC SCREW TERM	SWITCH PANEL
SM	**>>SWITCH-MECHANICAL OPERATED**				
SMD	SWITCH-DOOR CLOSED	WCMW1S+	02-04177	MICROSWITCH=W/MAN CUT LEVER	DOOR LOCK
SMDL	MECHANICAL SW-DOOR LOCKED	WCMW1S+	09R010D	DOOR LOCK SWITCH	DOOR LOCK
SMVB	MECHANICAL SWITCH-VIBRATION	WCMW1IA	98CMCR0910	VIBRATION SWITCH	CONTROL PANEL
SN	**>>SNUBBER**				
SNBS	SNUBBER-COIN BLOCKING SOLENOID	WCMW1S+	09ARC2047J	SNUB .2MFD 470 OHM 600VDC	CONTROL PANEL
SNVP	SNUBBER-INVERTER ENABLE CONTACTOR	WCMW1S+	09ARC2047J	SNUB .2MFD 470 OHM 600VDC	CONTROL PANEL
SP	**>>SWITCH-PRESSURE OPERATED**				
SPLL	PRESSURE SWITCH-LEVEL	WCMW1IA	09N086A	PRESS SW INVENSYS #738-761	CONTROL PANEL
VE	**>>VALVE-ELECTRIC OPERATED**				
VEC1	VALVE-FLUSH CHEM. POCKET 1	WCMW1CV	96P061A71	3/4"INLET 10M HOSEOUT 220/240V	REAR OF MACH.
VEC2	VALVE-FLUSH CHEM. POCKET 2	WCMW1CV	96P061A71	3/4"INLET 10M HOSEOUT 220/240V	REAR OF MACH.
VEC3	VALVE-FLUSH CHEM. POCKET 3	WCMW1CV	96P061A71	3/4"INLET 10M HOSEOUT 220/240V	REAR OF MACH.
VEDR (MCR12)	VALVE-DRAIN	WCMW1CV	96D25RAA71	DRAINVALRTANG 2"N/O 240V 50/60	REAR OF MACH.
VEDR (MCR18)	VALVE-DRAIN	WCMW1CV	96D35RAA71	DRAINVAL RT-ANG 3" 240V 50/60C	REAR OF MACH.
VEWC	VALVE-COLD WATER	WCMW1CV	96P060A71	3/4"DUOINLET 1/2"HOSEOUT 240V	REAR OF MACH.
VEWH	VALVE-HOT WATER	WCMW1CV	96P060A71	3/4"DUOINLET 1/2"HOSEOUT 240V	REAR OF MACH.

2

PELLERIN MILNOR CORPORATION
LIMITED STANDARD WARRANTY

We warrant to the original purchaser that MILNOR machines including electronic hardware/software (hereafter referred to as "equipment"), will be free from defects in material and workmanship for a period of one year from the date of shipment (unless the time period is specifically extended for certain parts pursuant to a specific MILNOR published extended warranty) from our factory with no operating hour limitation. This warranty is contingent upon the equipment being installed, operated and serviced as specified in the operating manual supplied with the equipment, and operated under normal conditions by competent operators.

Providing we receive written notification of a warranted defect within 30 days of its discovery, we will at our option repair or replace the defective part or parts, FOB our factory. We retain the right to require inspection of the parts claimed defective in our factory prior to repairing or replacing same. We will not be responsible, or in any way liable, for unauthorized repairs or service to our equipment, and this warranty shall be void if the equipment is tampered with, modified, or abused, used for purposes not intended in the design and construction of the machine, or is repaired or altered in any way without MILNOR's written consent.

Parts damaged by exposure to weather, to aggressive water, or to chemical attack are not covered by this warranty. For parts which require routine replacement due to normal wear such as gaskets, contact points, brake and clutch linings, belts, hoses, and similar parts the warranty time period is 90 days.

We reserve the right to make changes in the design and/or construction of our equipment (including purchased components) without obligation to change any equipment previously supplied.

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WE NEITHER ASSUME, NOR AUTHORIZE ANY EMPLOYEE OR OTHER PERSON TO ASSUME FOR US, ANY OTHER RESPONSIBILITY AND/OR LIABILITY IN CONNECTION WITH THE SALE OR FURNISHING OF OUR EQUIPMENT TO ANY BUYER.

How to order repair parts

Repair parts may be ordered either from the authorized dealer who sold you this machine, or directly from the MILNOR factory. In most cases, your dealer will have these parts in stock.

When ordering parts, please be sure to give us the following information:

1. Model and serial number of the machine for which the parts are required
2. Part number
3. Name of the part
4. Quantity needed
5. Method of shipment desired
6. In correspondence regarding motors or electrical controls, please include all nameplate data, including wiring diagram number and the make or manufacturer of the motor or controls.

All parts will be shipped C.O.D. transportation charges collect only.

Please read this manual

It is strongly recommended that you read the installation and operating manual before attempting to install or operate your machine. We suggest that this manual be kept in your business office so that it will not become lost.

PELLERIN MILNOR CORPORATION
P.O. BOX 400, KENNER, LA., 70063-0400, U.S.A.
FAX: Administration 504/468-9307, Engineering 504/469-1849, Service 504/469-9777

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HOW TO USE MILNOR® ELECTRICAL SCHEMATICS

Milnor® electrical schematic manuals contain a ***table of contents/component list*, a set of s*chematic drawings, and a signal routing table.*** These documents are cross referenced and must be used together.

The ***table of contents/components list shows,*** for every component on every schematic in the manual, the *component item number*(explained in detail below), statement of function, parent schematic number, part number, description and electric box location.

The ***schematic drawings*** use symbols for each electro-mechanical component, and indicate the function of each. Integrated circuits are not shown, but the function of each microprocessor input and output is stated. Certain electrical components not pertinent to circuit logic, such as wire connectors, are not represented on the schematic but are shown in the signal routing table. **Most machines (manuals) require several schematics to describe the complete control system *including all available options.* However, this means that there are usually some schematics that do not apply to a specific machine.** Each schematic is devoted to circuits with common functions (e.g., microprocessor inputs, motor contactors). Schematics appear in the manual in alphanumeric order.

The ***signal routing table*** assists in determining wire routing. It identifies each group of conductors in a control system connected with zero resistance. Groups are identified by a two or three character wire number. Each wire belonging to such a group of conductors has that group's wire number printed along the wire insulation. Although there are some exceptions, generally each group of conductors within the entire electrical system for a machine family has its own unique wire number. The signal routing table for the manual lists each wire alphanumerically by wire number and each component/pin number to which *the wire is attached*, including those not shown on the schematics (e.g., wire connectors). Milnor® document MSTS0202BE "HOW TO USE THE SIGNAL ROUTING TABLE" provides more information.

Component Prefix Classifications and Descriptions

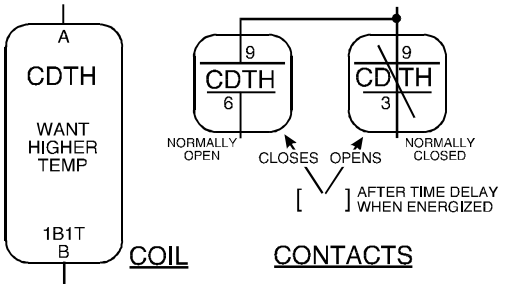
The ***component item numbers*** consist of up to six characters and appear as part of a component's symbol on the schematic. The first two characters indicate the general class of component and the remaining characters are a mnemonic for the function. For example, "CD" is the code for all time delay relays and "SR" stands for safety reset. Thus, CDSR is a time delay relay that serves as a safety reset.

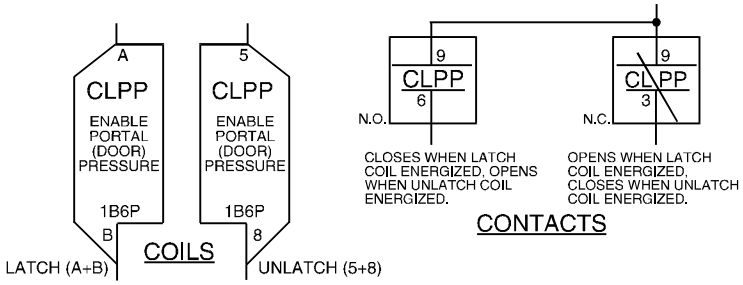
The following are descriptions of the electrical components used in Milnor® machines. Descriptions are in alphabetical order of the component class code (two character prefix).

BA=Printed Circuit Board Insulating substrate on which a thin pattern of copper conductors has been formed to connect discrete electronic components also mounted on the board.

CB=Circuit Breaker Automatic switch that opens an electric circuit in abnormal current conditions (e.g., an overload).

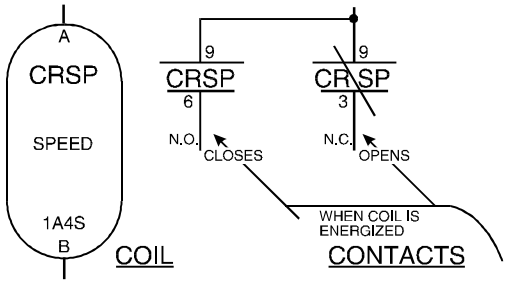
CD=Control, Time Delay Relay A relay whose contacts switch only after a fixed or adjustable delay, once voltage has been applied to its coil. The contacts switch back to normal (de-energized state) immediately when the voltage is removed.

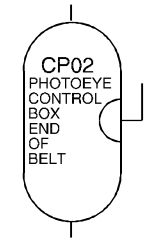




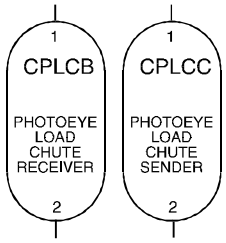
CL=Control, Latch Relay A relay which latches in an energized or set position when operated by one coil (the *latch/set coil*). The relay stays latched, even though coil voltage is removed. The relay releases or unlatches when voltage is applied to a second coil, (the *unlatch/reset coil*).

CR=Control, Relay A relay whose contacts switch immediately when voltage is applied to its coil and revert to normal when the voltage is removed.





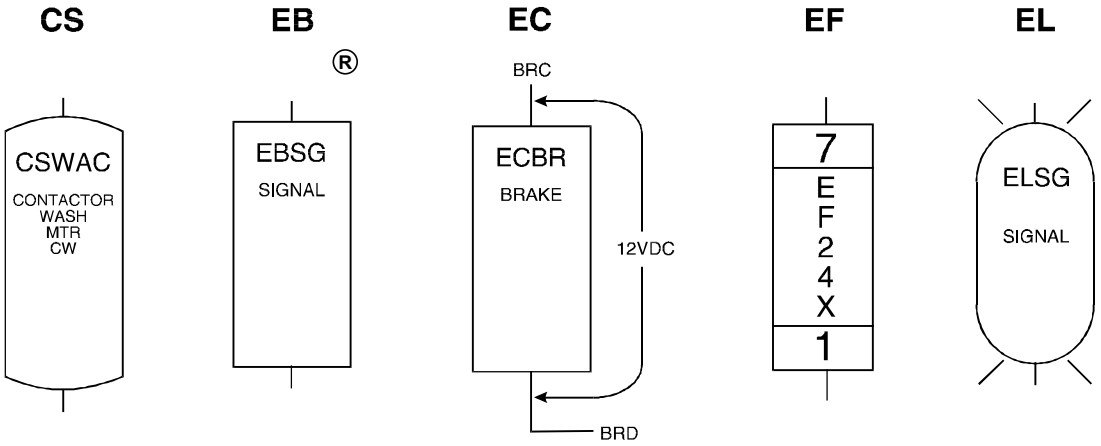
Example of One Assembly



Example of Two Separate Assemblies

CP=Control, Photo-Eyes Photo-eyes sense the presence of an object without direct physical contact. Photo-eyes consist of a *transmitter, receiver, and output module.* These components may be housed in one assembly with the transmitter bouncing light off of a reflector to the receiver, or these components can be housed in *two separate assemblies* with the transmitter pointed directly at the receiver.

The photo-eye can be set to turn on its output either when the light beam becomes blocked (dark operate) or when it becomes unblocked (light operate).



CS=Control, Contactor/Motor Starter A relay capable of handling heavier electrical loads, usually a motor.

EB=Electric Buzzer An audible signaling device.

EC=Electric Clutch A clutch consists of a coil and a rotor. The rotor has two separate rotating plates. These plates are free to rotate independent of each other until the coil is energized. Once energized the two plates turn as one.

ED=Electronic Display A visual presentation of data, such as an LCD (liquid crystal display), LED (light emitting diode) display, or VFD (vacuum florescent display).

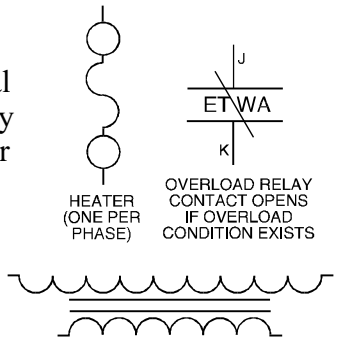
EF=Electric Fuse A fuse is an over-current safety device with a circuit opening fusible member which is heated and severed by the passage of over-current through it.

EL=Electric Light Indicator lights may be either incandescent or fluorescent.

EM=Electro Magnet Solenoid A device consisting of a core surrounded by a wire coil through which an electric current is passed. While current is flowing, iron is attracted to the core (e.g., a pinch tube drain valve solenoid).

ES=Electronic Power Supply A device that converts AC (altemating current) to filtered and regulated DC (direct current). The input voltage to the power supply is usually 120 or 240 VAC . The output is +5, +12, and -12 VDC.

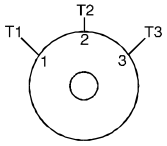
ET=Thermal Overload A safety device designed to protect a motor. A thermal overload consists of an overload block, heaters, and an auxiliary contact. The auxiliary contact is normally installed in a safety (three-wire) circuit that stops power to the motor contactor coil when a motor overload occurs.



EX=Electrical Transformer A device that transfers electrical energy from one isolated circuit to another, often raising or lowering the voltage in the process.

KB=Keyboard Device similar to a typewriter for making entries to a computer.

MN=Electronic Monitor (CRT) A cathode ray tube used for visual presentation of data.



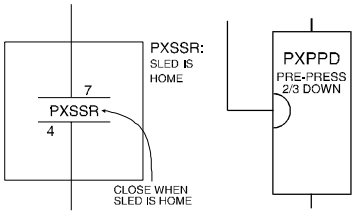
MR=Motors Electro-mechanical device that converts electrical energy into mechanical energy.

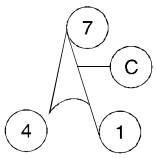
MV=Motor (Variable Speed) Inverter To vary the speed of an AC motor, the volts to frequency ratio must be kept constant. The motor will overheat if this ratio is not maintained.

The motor variable speed inverter converts three phase AC to DC. The inverter then uses this DC voltage to generate AC at the proper voltage and frequency for the commanded speed.

NOTE: Switch symbols used in the schematics and described below always depict the switch in its unactuated state.

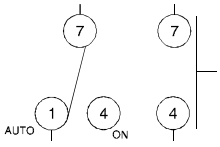
PX=Proximity Switch A device which reacts to the proximity of an target without physical contact or connection. The actuator or target causes a change in the inductance of the proximity switch which causes the switch to operate. Proximity switches can be two-wire (AC) or three-wire (DC) devices.

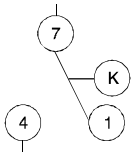




SC=Switch, Cam Operated A switch in which the electrical contacts are opened and/or closed by the mechanical action of a cam(s). Applications include 35-50 pound timer operated machines, autospot, timer reversing motor assembly, and some balancing systems.

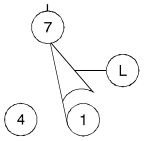
SH=Switch, Hand Operated A switch that is manually operated (e.g., *Start button*, *Master switch*, etc.).



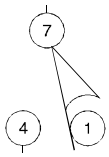


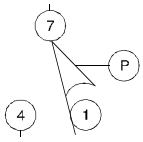
SK=Switch, Key Lock A switch that requires a key to operate . This prevents unauthorized personnel from gaining access to certain functions (e.g., the *Program Menu*).

SL=Switch, Level Operated A switch connected to a float that causes the switch to open and close as the level changes.



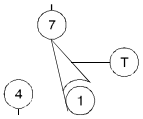
SM=Switch, Mechanically Operated A switch that is mechanically operated by a part of or the motion of the machine (e.g., door closed switch, tilt limit switches, etc.)





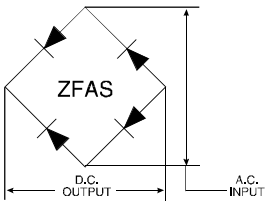
SP=Switch, Pressure Operated A switch consisting of a diaphragm that pushes against a switch actuator.

ST=Switch, Temperature Operated A switch that is actuated at a preset temperature (e.g., dryer safety probes) or has adjustable set points (e.g., Motometers or Combistats).



TB=Terminal Board A strip or block for attaching or terminating wires.

VE=Valve, Electric Operated A valve operated by an electric coil to control the flow of fluid. The fluid can be air, water or hydraulics.

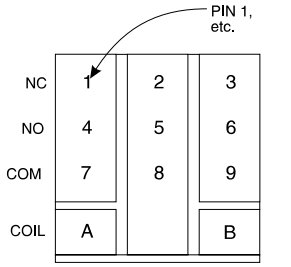


ZF=Rectifier A solid state device that converts alternating current to direct current.

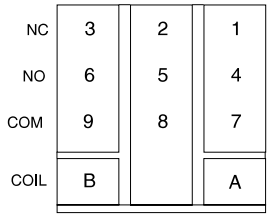
WC=Wiring Connector A coupling device for joining two cables or connecting a cable to an electronic circuit or piece of equipment. Connectors are male or female, according to whether they plug into or receive the mating connector.

Component Terminal Numbering

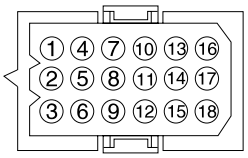
NOTE: Numbers shown usually appear on the component.



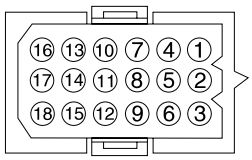
11 PIN PLUG IN RELAY
(PIN END VIEW)



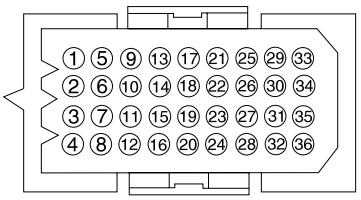
11 PIN RELAY BASE
("PLUG- IN" SIDE)



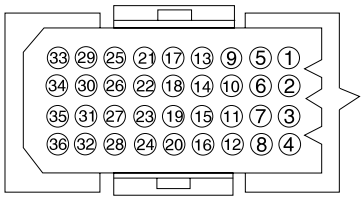
18 PIN (R)



18 PIN (P)

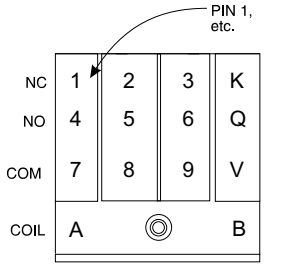


36 PIN (R)

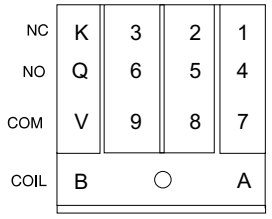


36 PIN (P)

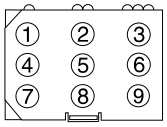
AMP CONNECTOR PIN LOCATIONS
(Viewed from mating side of connector)



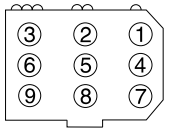
14 PIN PLUG IN RELAY
(PIN END VIEW)



14 PIN RELAY BASE
("PLUG- IN" SIDE)



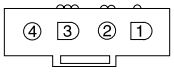
9 PIN (R)



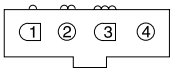
9 PIN (P)

2 PIN (R)

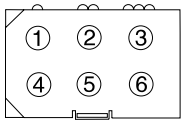
2 PIN (P)



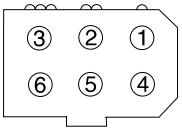
4 PIN (P)



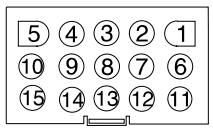
4 PIN (R)



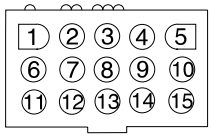
6 PIN (R)



6 PIN (P)

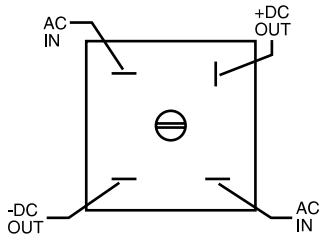


15 PIN (P)

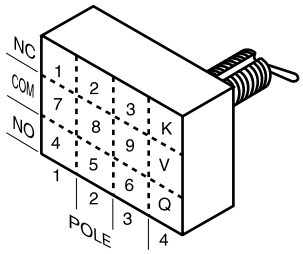


15 PIN (R)

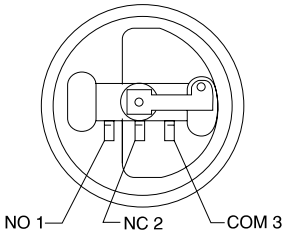
MOLEX CONNECTOR PIN LOCATIONS
(Viewed from mating side of connector)



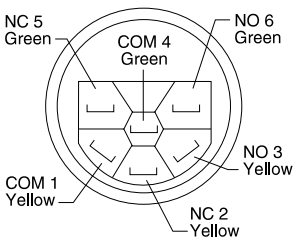
BRIDGE RECTIFIER



TOGGLE SWITCH

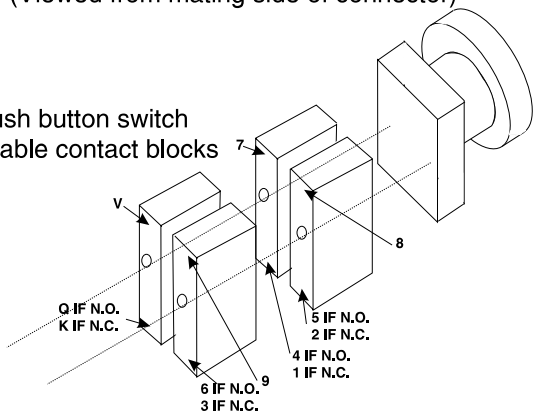


PRESSURE SWITCH



TEMPERATURE CONTROLLER
(Stork Combistat)

Rotary or push button switch
with replaceable contact blocks



Features of Milnor® Electrical Schematics

Document W6DRYGS+A shown on the next page, is part of an actual schematic for the Milnor® Gas Dryer. For the purposes of this instruction, the schematic is shown gray and explanations of the items on the schematic are shown black.

The item numbers below correspond to the circled item numbers shown on the drawing.

① The first six characters of the *drawing number (W6DRYG)* indicate that this is a *wiring diagram (W)*, identify the *generation of controls (6)*, and identify the *type of machine (DRYG*=Gas Dryer). These characters appear in the drawing number of every schematic in the set.

The characters following the first six are unique to each drawing. The two characters identified as the *page number* are an abbreviation for the function performed by the depicted circuitry (S+=three-wire circuit) and establish the order in which the schematic occurs in the manual (schematics are arranged in alpha-numeric order in the manual).

Whenever circuitry changes are significant enough to warrant publishing a new schematic drawing, the new drawing number will be the same as the old except for the major revision letter (*A* in the example).

② Included in the drawing title are the class of control system, the title of this circuit, and the circuit voltage.

③ Line numbers are provided along the bottom edge of the drawing. These permit service personnel in the field and at the Milnor® factory to quickly relate circuit locations when discussing troubleshooting over the phone. Page and line numbers are referenced on the drawing as explained in items five and six below.

④ General functions of the circuit or portions thereof are stated across the top edge of the drawing.

⑤ Relay contacts show the page and line number on which the relay coil may be found. This is the type of cross referencing most frequently used in troubleshooting.

⑥ Relay coils show the page and line number on which its associated contacts are located.

⑦ Relay contacts and relay coils show the physical location of the relay if mounted on a tray..

⑧ The designation *MTA* applies to electronic circuit board connections. Typically, a control system will contain several different types of circuit boards and one or more boards of each type. A numerical suffix identifies the board type and a numerical prefix identifies which one of several boards of a given type is being depicted. For example, the designation *1MTA5* identifies this as the first I/O board (8 output, 16 input board) in the control system. As shown on the drawing, a pin number follows the board number, separated by a dash. Thus, *1MTA5-9* is pin 9 on this board. The numerical designations for board types vary from one control system to another. Some of the board types commonly encountered on the Mark II washer-extractor control and their designations are as follows:

MTA1-MTA6 = 8 output, 16 input (8/16) boards.

MTA11-MTA16 = 16 output boards

MTA30-MTA40 = processor boards

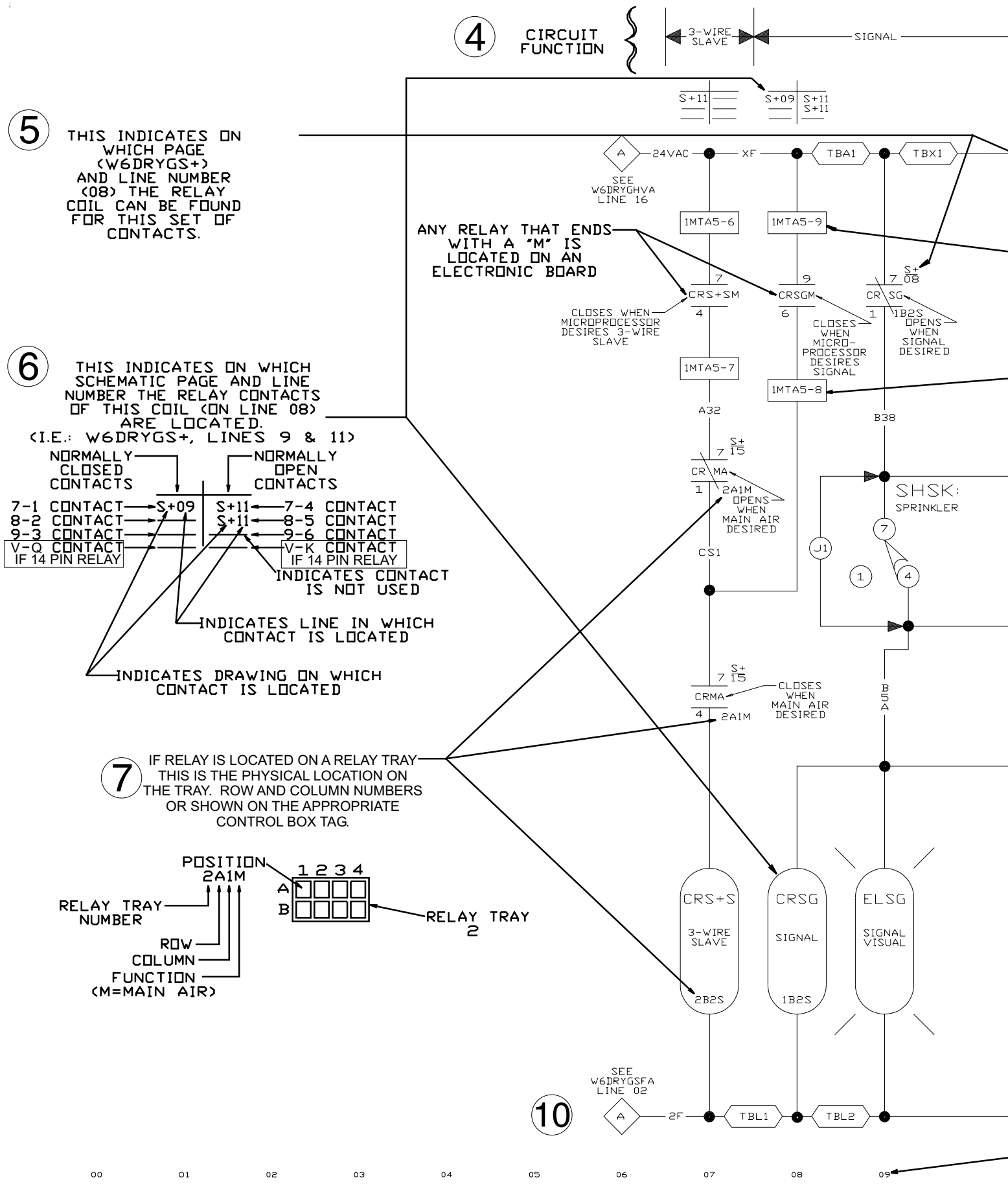
MTA41-MTA43 = digital to analog (D/A) boards

MTA51-MTA56 = analog to digital (A/D) boards

The complete listing of the boards utilized in a given control system can be found in the component list for that system.

⑨ The wire numbers, as described in the explanation of the signal routing table at the beginning of this section, are shown at appropriate locations on the schematic drawing.

⑩ Where diamond symbols appear at the end of a conductor, these are match points for continuing the schematic on another drawing. The page and line number that continues the circuit is printed adjacent to the diamond symbol. Where more than one match point appears on the referenced page, match diamonds containing corresponding letters.


4
CIRCUIT FUNCTION
3-WIRE SLAVE
SIGNAL
5
THIS INDICATES ON WHICH PAGE (W6DRYGS+) AND LINE NUMBER (08) THE RELAY COIL CAN BE FOUND FOR THIS SET OF CONTACTS.
S+11
S+09
S+11
S+11
A
24VAC
XF
TBA1
TBX1
SEE W6DRYGHVA LINE 16
1MTA5-6
1MTA5-9
ANY RELAY THAT ENDS WITH A "M" IS LOCATED ON AN ELECTRONIC BOARD
7
CRS+SM
4
9
CRSGM
6
7
S+08
CR SG
1
1B2S
CLOSES WHEN MICROPROCESSOR DESIRES 3-WIRE SLAVE
CLOSES WHEN MICRO-PROCESSOR DESIRES SIGNAL
OPENS WHEN SIGNAL DESIRED
1MTA5-7
1MTA5-8
6
THIS INDICATES ON WHICH SCHEMATIC PAGE AND LINE NUMBER THE RELAY CONTACTS OF THIS COIL (ON LINE 08) ARE LOCATED.
(I.E.: W6DRYGS+, LINES 9 & 11)
NORMALLY CLOSED CONTACTS
NORMALLY OPEN CONTACTS
7-1 CONTACT
8-2 CONTACT
9-3 CONTACT
V-Q CONTACT
IF 14 PIN RELAY
S+09
S+11
S+11
7-4 CONTACT
8-5 CONTACT
9-6 CONTACT
V-K CONTACT
IF 14 PIN RELAY
INDICATES CONTACT IS NOT USED
INDICATES LINE IN WHICH CONTACT IS LOCATED
INDICATES DRAWING ON WHICH CONTACT IS LOCATED
A32
B38
7
S+15
CR MA
1
2A1M
OPENS WHEN MAIN AIR DESIRED
CS1
SHSK
SPRINKLER
J1
7
1
4
7
S+15
CRMA
4
2A1M
CLOSES WHEN MAIN AIR DESIRED
B5A
7
IF RELAY IS LOCATED ON A RELAY TRAY THIS IS THE PHYSICAL LOCATION ON THE TRAY. ROW AND COLUMN NUMBERS OR SHOWN ON THE APPROPRIATE CONTROL BOX TAG.
POSITION
2A1M
1 2 3 4
A
B
RELAY TRAY NUMBER
RELAY TRAY 2
ROW
COLUMN
FUNCTION (M=MAIN AIR)
CRS+S
3-WIRE SLAVE
2B2S
CRSG
SIGNAL
1B2S
ELSG
SIGNAL VISUAL
SEE W6DRYGSFA LINE 02
10
A
2F
TBL1
TBL2
00
01
02
03
04
05
06
07
08
09

HOW TO READ MILNOR ELECTRICAL SCHEMATICS

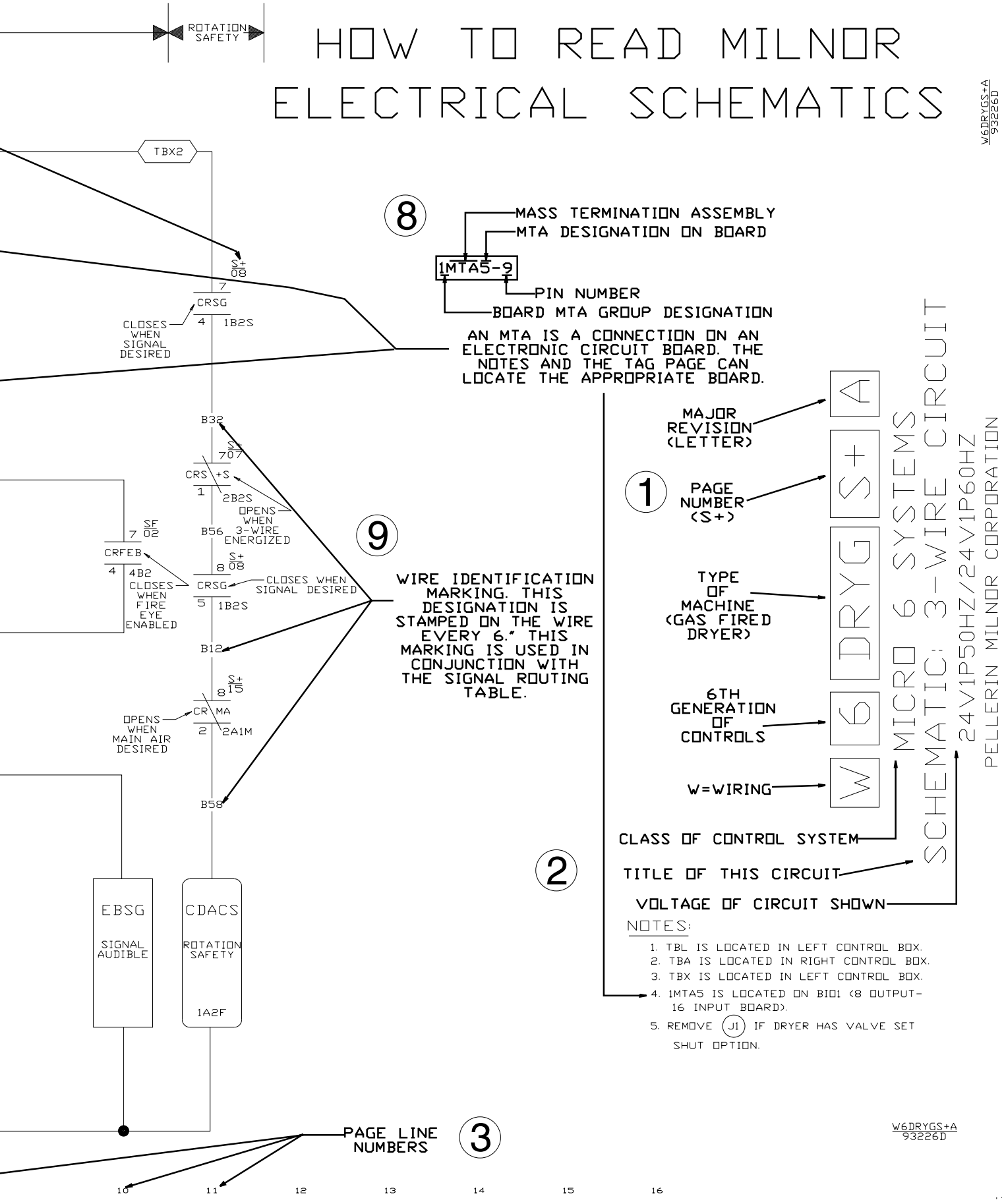
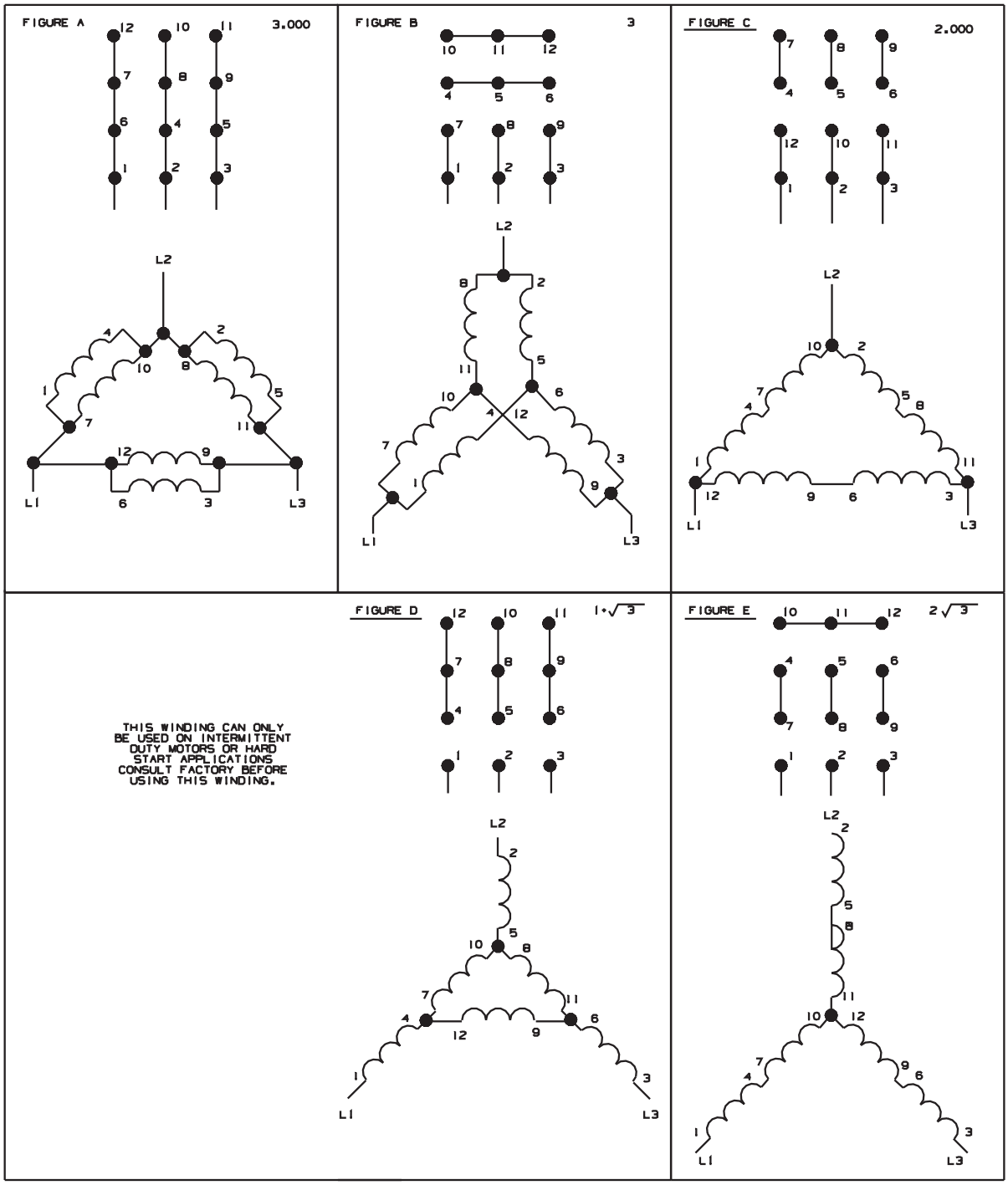


FIGURE	ELECTRICAL VALUES	SUFFIXES									
		B		H		M		T		U	
		50HZ	60HZ	50HZ	60HZ	50HZ	60HZ	50HZ	60HZ	50HZ	60HZ
A	1.000	208	230			200	220	220	240	200-220	208-240
B	$\sqrt{3}$				208	346	380	380		346-380	380
C	2.000	416	460	220	240	400	440	440	480	400-440	440-480
D	$1+\sqrt{3}$						600				600
E	$2\sqrt{3}$			380							



06 07 08 09 10 11 12 13 14 15 16 17

BMP850029

MOTOR CONNECTION DIAGRAMS

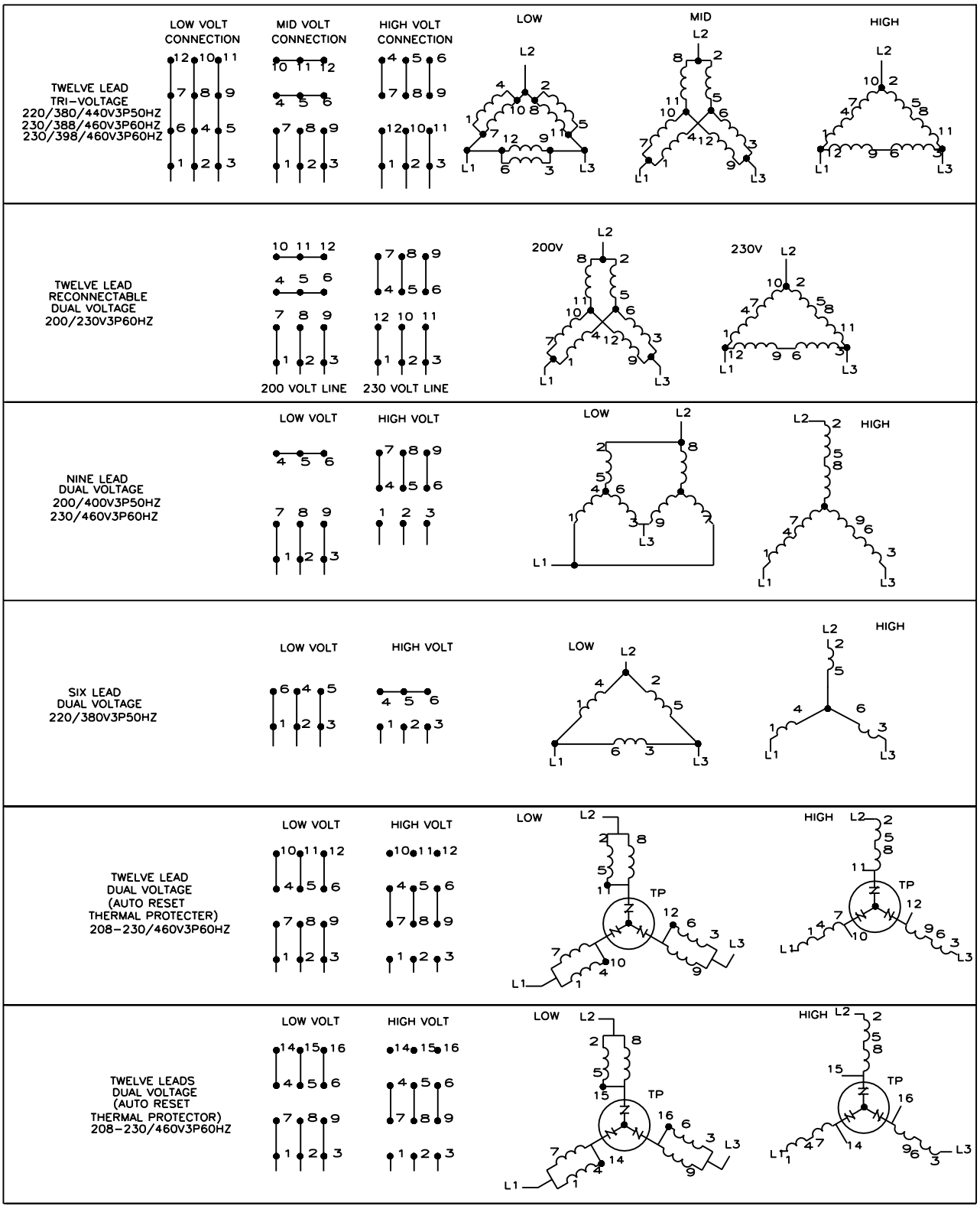
THREE PHASE SINGLE SPEED MOTORS WITH MULTIPLE VOLTAGE RATINGS

(ONLY FOR MOTOR SUFFIXES LISTED)

PELLERIN MILNOR CORPORATION

BMP850029
993628

BMP850029
993628

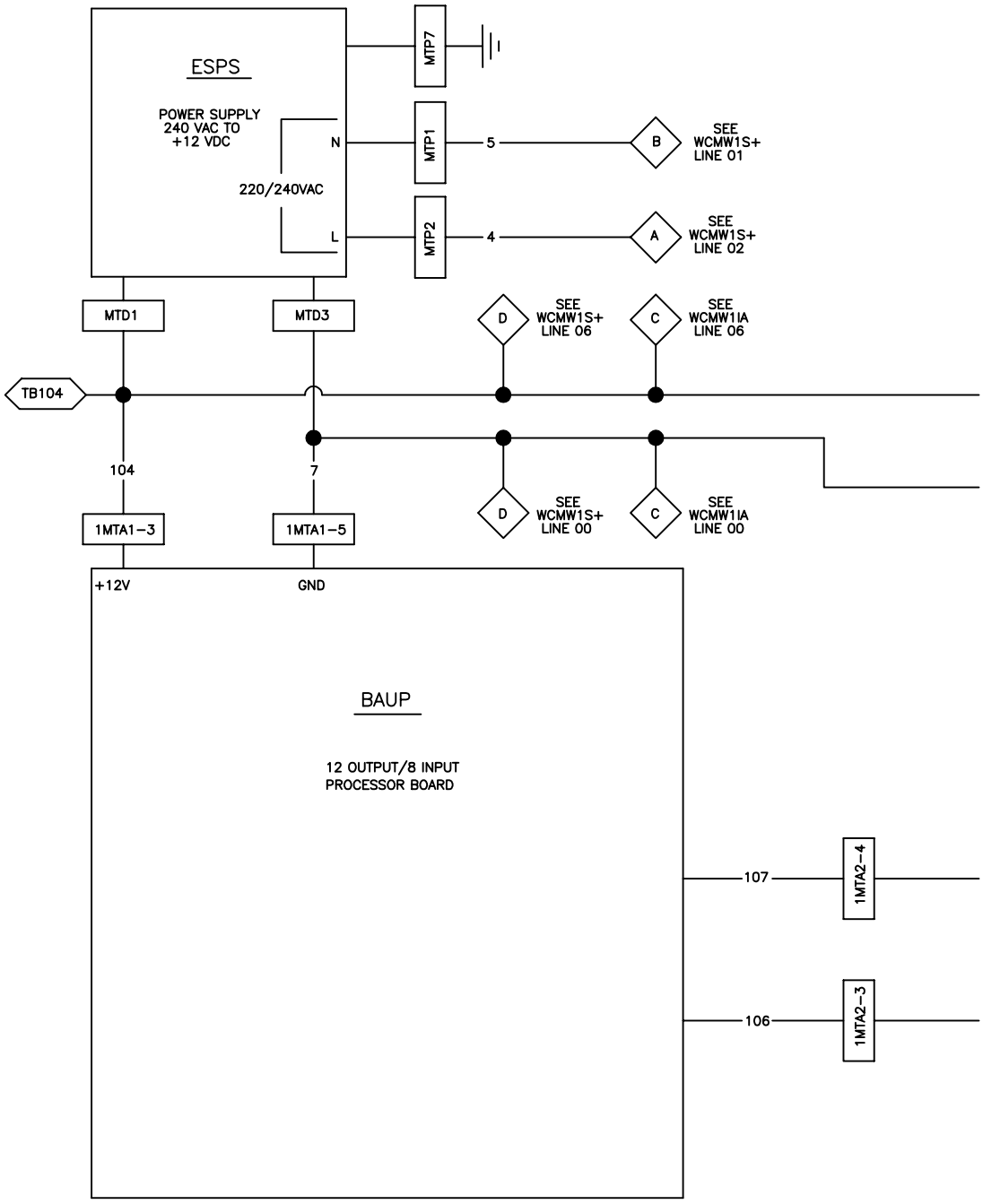


W80008

THREE PHASE
MOTOR CONNECTION DIAGRAMS
SINGLE SPEED MOTORS WITH MULTIPLE VOLTAGE RATINGS

PELLERIN MILNOR CORPORATION

W80008
2001253A



00 01 02 03 04 05 06 07 08 09 10

WCMW1BW
2006464B

WCMW1BW

MCR SERIES, COIN OPERATED
SCHEMATIC: BOARD TO BOARD WIRING

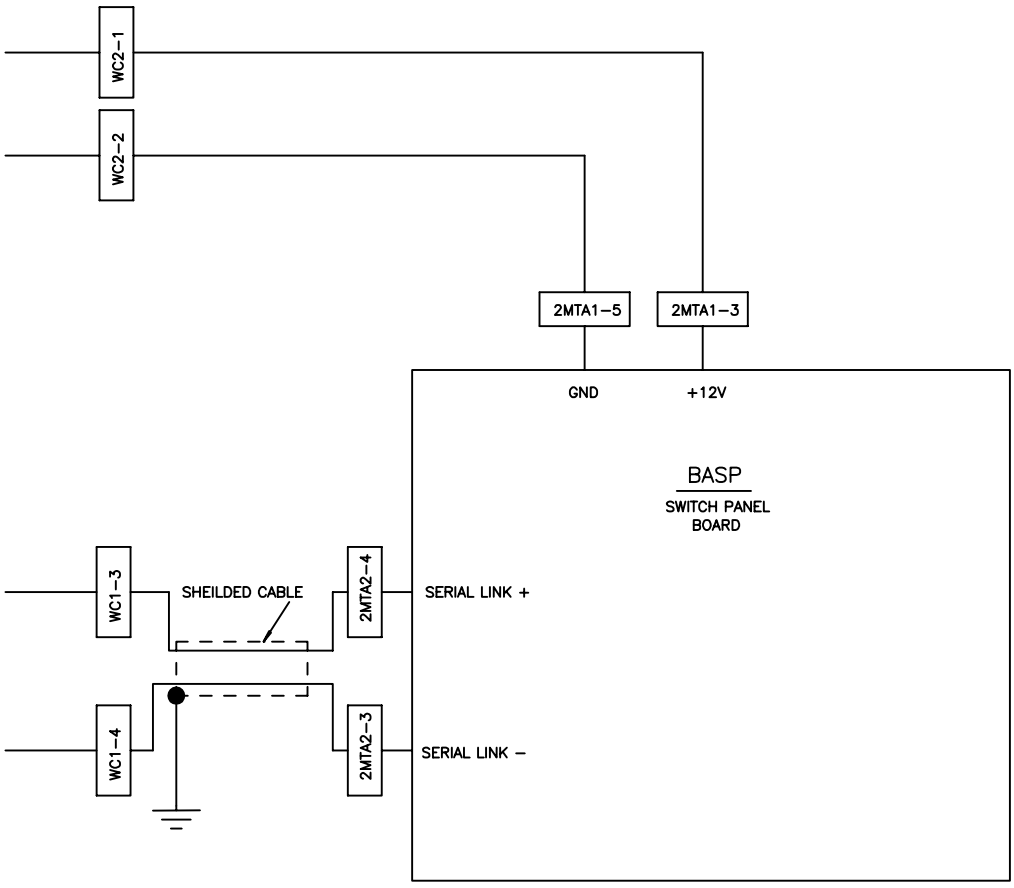
PELLERIN MILNOR CORPORATION

WIRE COLOR CODE

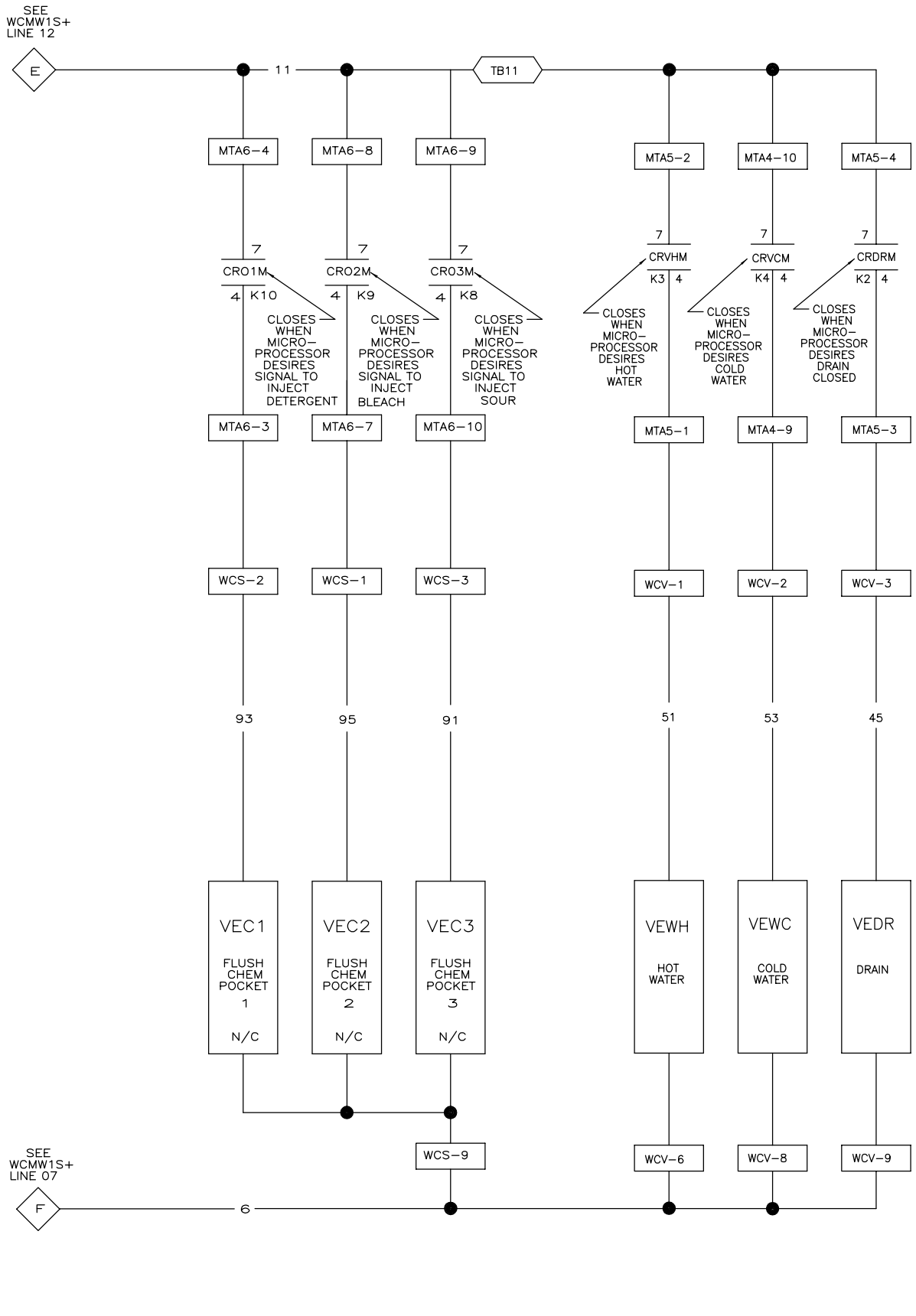
WIRE COLOR	APPLICATION	MILNOR P/N
ORANGE	A.C. SOURCE	09V165A 14AWM ORANGWIR UL600V105 5000'
RED	A.C. CONTROL / A.C. COMMON	09VS3C18RD 18AWG CSA EQUIP 300V RED
BLUE –104	VDC / D.C. GROUNDS / D.C. SIGNALS	09VS3C18B 18AWG CSA EQUIP 300V BLUE
YELLOW/GREEN	GROUND	09VS3C18YG 18AWG YEL/GRN 300V105C 1430
GREY	SHEILDED CABLE	09V300A02 CABLE 2–COND 18GA SHLD W/GRND ALPHA #2421 OR BELDEN #8760

NOTES

1. 1MTA1, 1MTA2, 1MTA3 AND 1MTA5 LOCATED ON BAUP PROCESSOR BOARD.
2. 2MTA1 AND 2MTA2 ARE LOCATED ON BASP SWITCHPANEL BOARD.



11 12 13 14 15 16 17 18 19



WCMW1CV
2006493B

LITHO IN U.S.A.

WCMW1CV
MCR SERIES, COIN OPERATED
SCHEMATIC: FLUSHING SUPPLIES AND VALVES
220V1P50HZ/240V1P60HZ

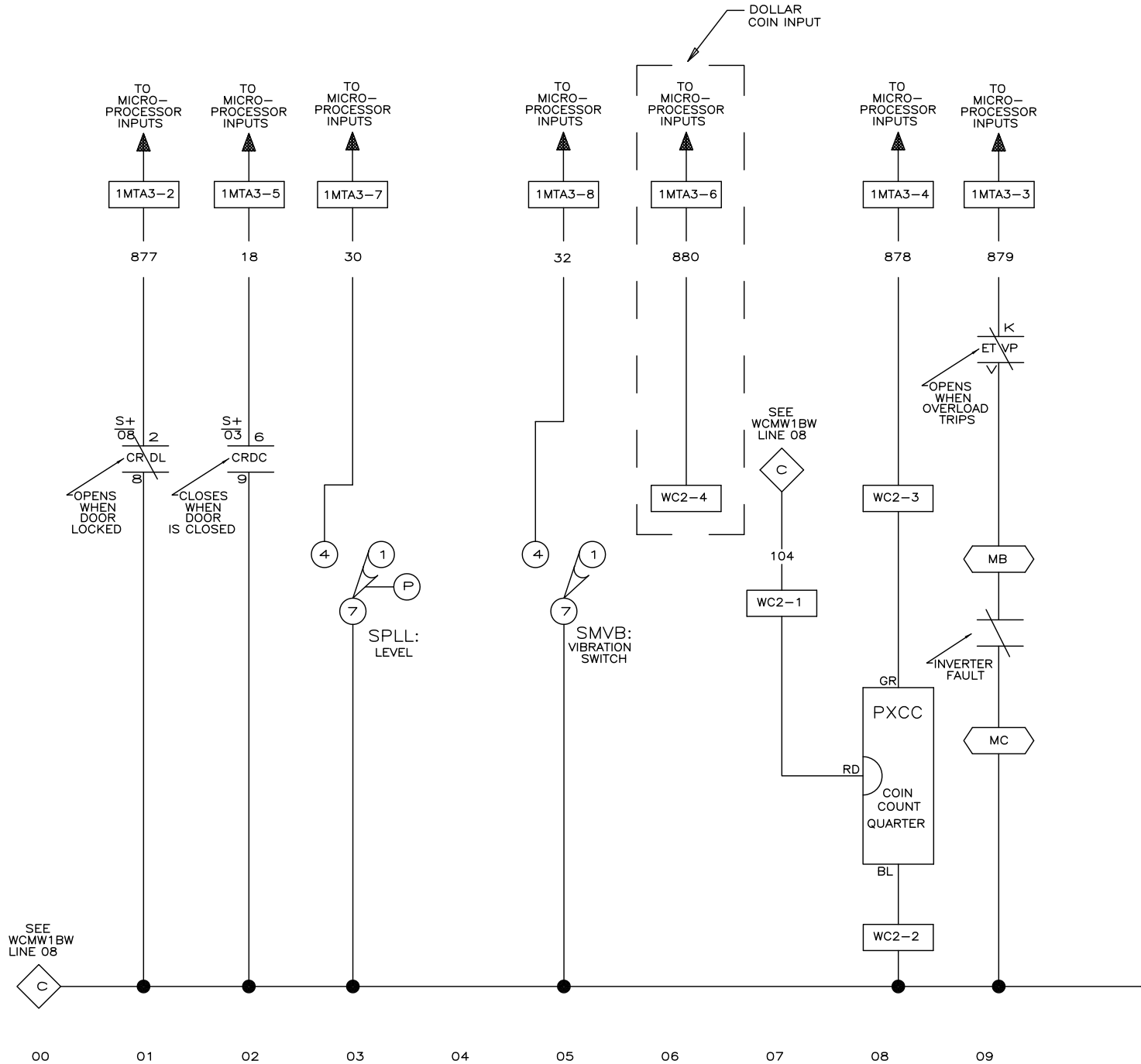
PELLERIN MILNOR CORPORATION

WCMW1CV
2006493B

NOTES:

1. MTA-4,5,AND 6 ARE LOCATED ON THE PROCESSOR BOARD.
2. TBS IS LOCATED NEAR THE REAR ACCESS PANEL NEXT TO THE INCOMING POWER CONNECTIONS.

WCMW1CV
2006493B



WCMW1IA
2016076B

WCMW1IA

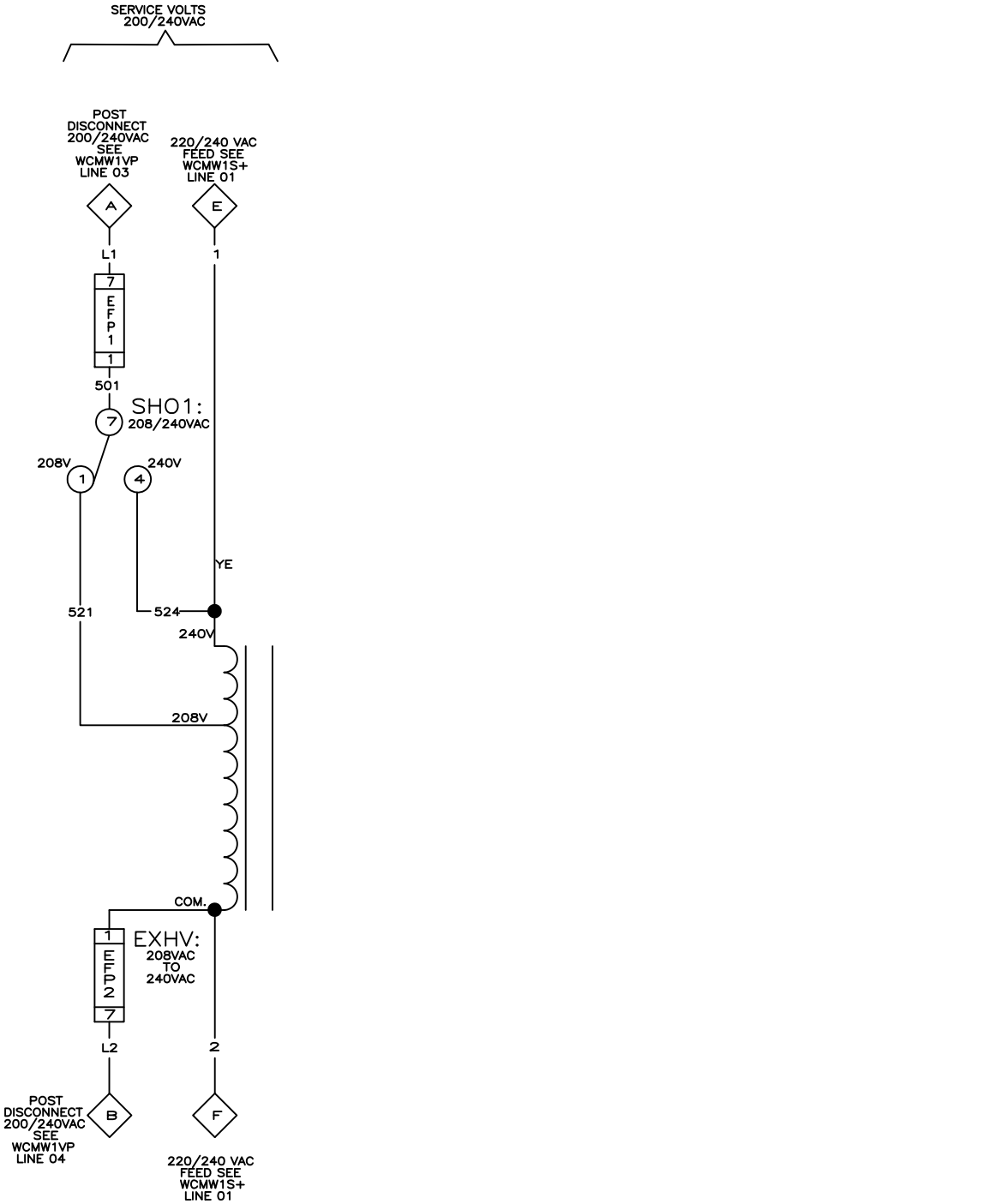
MCR SERIES, COIN OPERATED

SCHEMATIC: MICROPROCESSOR INPUTS

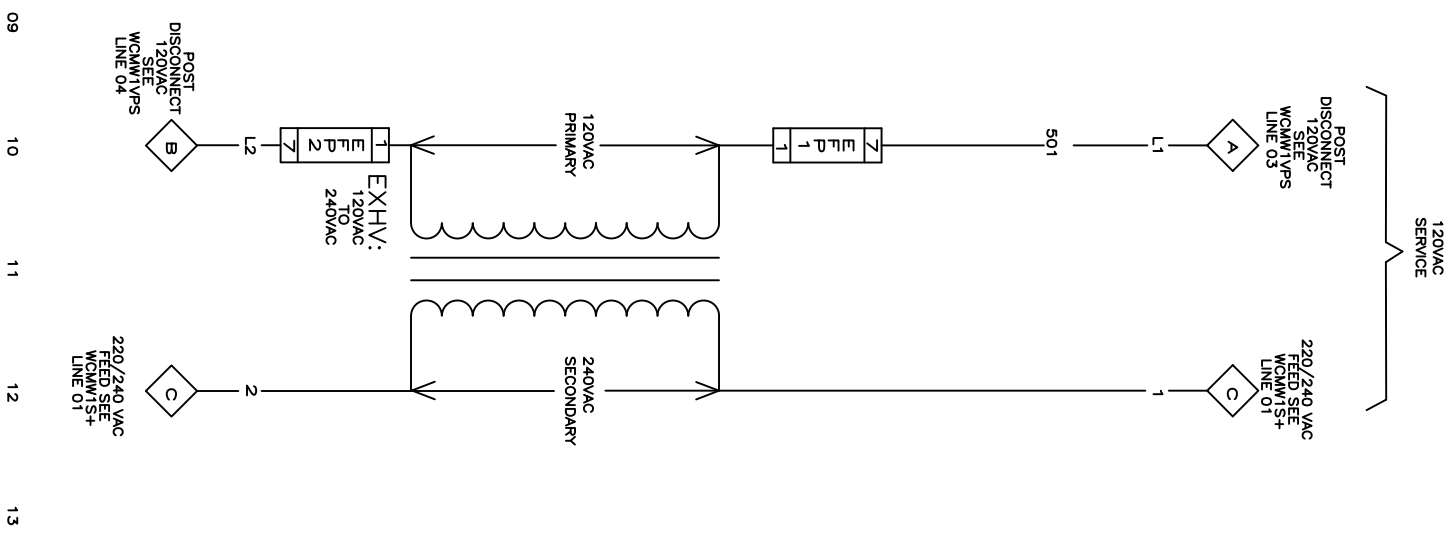
PELLERIN MILNOR CORPORATION

NOTES

1. MTA–3 AND 7 ARE LOCATED ON THE PROCESSOR BOARD.
2. MB AND MC ARE LOCATED ON INVERTER.
3. TBC ONLY SUPPLIED WHEN CARD READER INTERFACE ORDERD.



WCMW1LV
2014264B

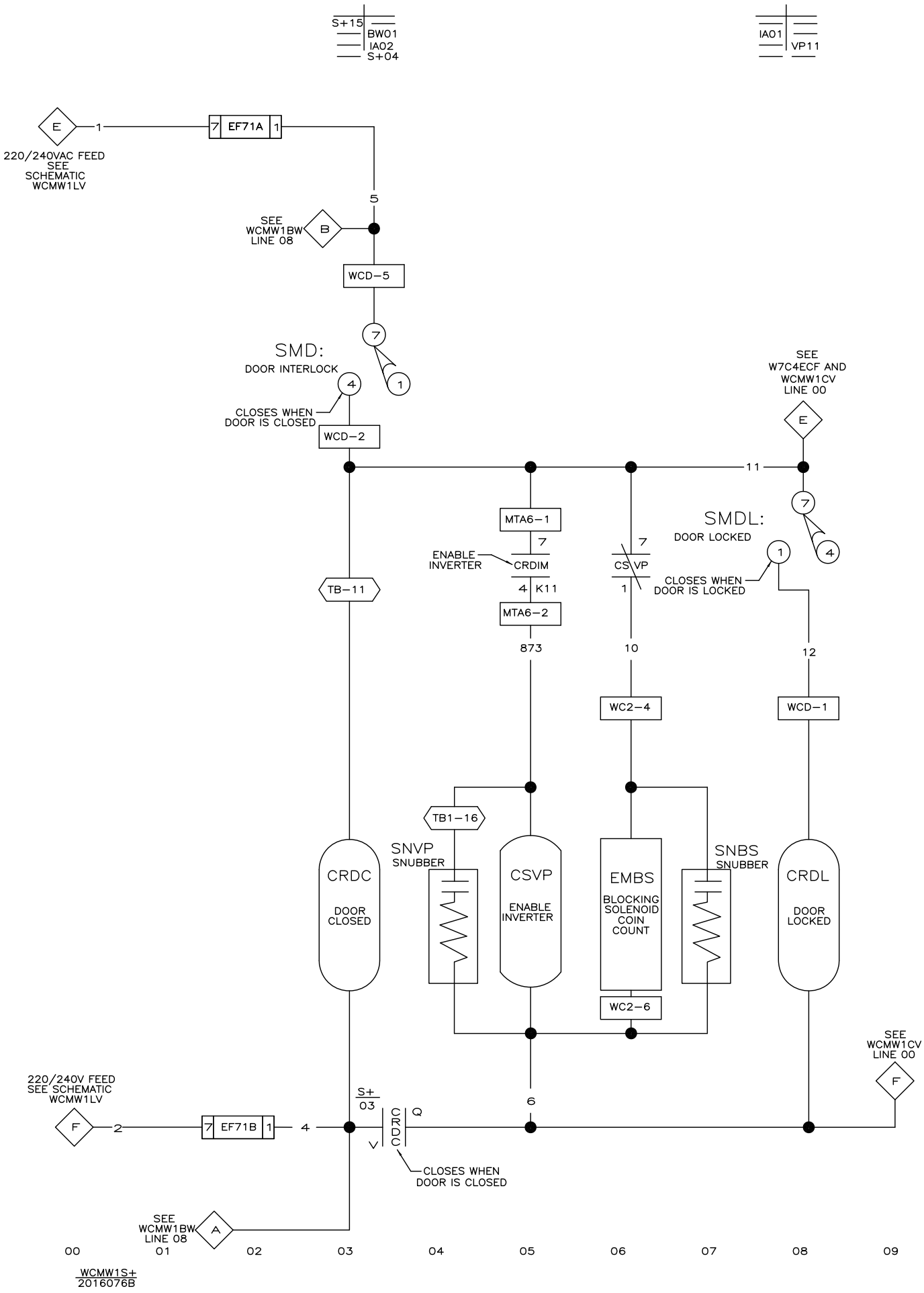


WCMW1LV

MCR SERIES, COIN OPERATED
SCHEMATIC: CONTROL CIRCUIT TRANSFORMER
220V1P50HZ/240V1P60HZ

PELLERIN MILNOR CORPORATION

WCMW1LV
2014264B


S+15
BW01
IA02
S+04
IA01
VP11
E
1
7 EF71A 1
220/240VAC FEED
SEE
SCHEMATIC
WCMW1LV
5
SEE
WCMW1BW
LINE 08
B
WCD–5
7
1
SMD:
DOOR INTERLOCK
4
CLOSES WHEN
DOOR IS CLOSED
WCD–2
SEE
W7C4ECF AND
WCMW1CV
LINE 00
E
11
7
4
SMDL:
DOOR LOCKED
1
CLOSES WHEN
DOOR IS LOCKED
MTA6–1
7
ENABLE
INVERTER
CRDIM
4 K11
MTA6–2
873
7
CS VP
1
10
12
TB–11
WC2–4
WCD–1
TB1–16
SNVP
SNUBBER
CRDC
DOOR
CLOSED
CSVP
ENABLE
INVERTER
EMBS
BLOCKING
SOLENOID
COIN
COUNT
SNBS
SNUBBER
CRDL
DOOR
LOCKED
WC2–6
SEE
WCMW1CV
LINE 00
F
220/240V FEED
SEE SCHEMATIC
WCMW1LV
F
2
7 EF71B 1
4
S+
03
V
CRDC
Q
6
CLOSES WHEN
DOOR IS CLOSED
SEE
WCMW1BW
LINE 08
A
00
01
02
03
04
05
06
07
08
09
WCMW1S+
2016076B

WCMW1S+

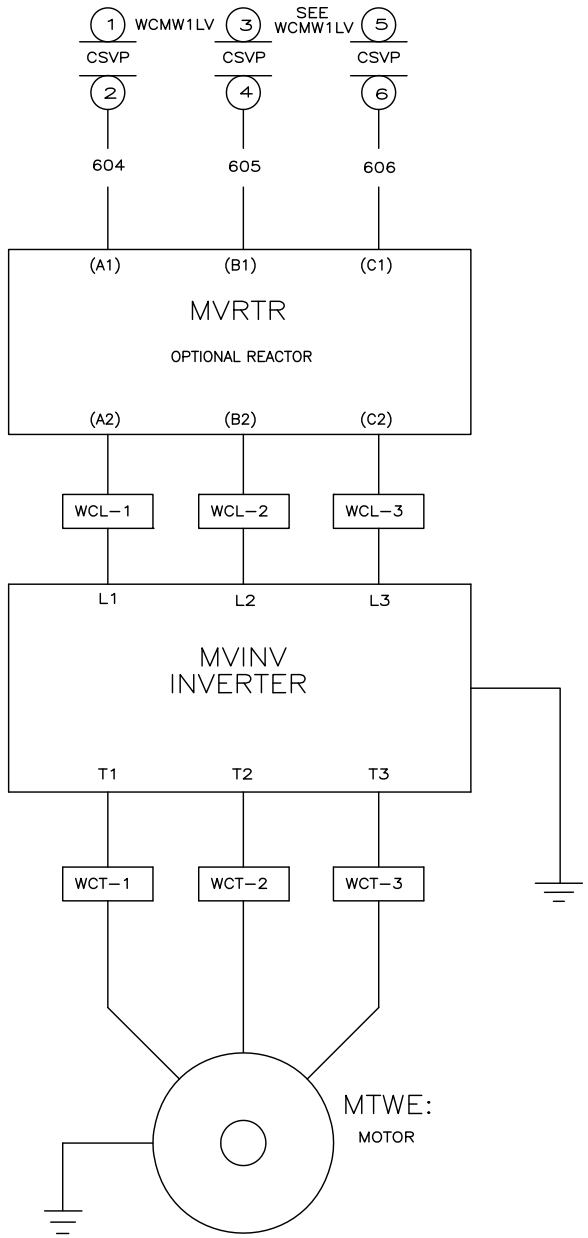
MCR SERIES, COIN OPERATED

SCHEMATIC: START CIRCUIT & DOOR INTERLOCK

220V,1P,50HZ/240V,1P,60HZ

PELLERIN MILNOR CORPORATION

10 11 12 13 14 15 16



LITHO IN U.S.A.

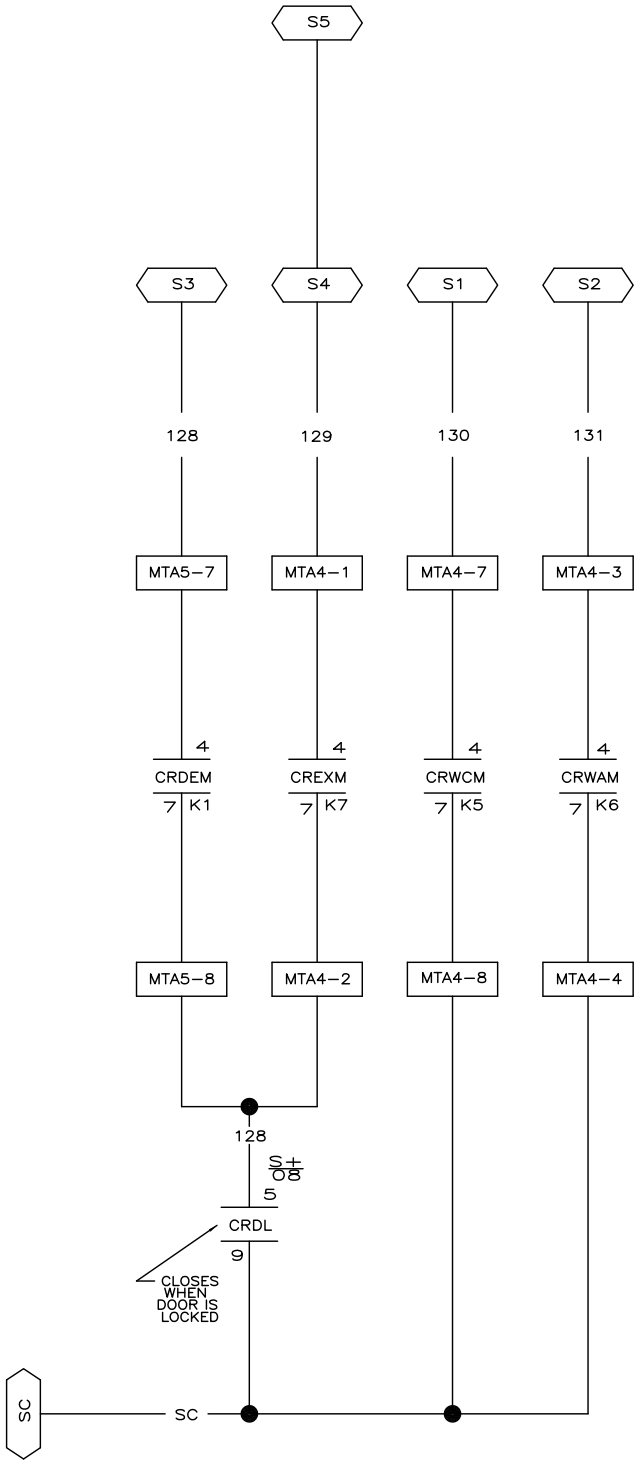
00 01 02 03 04 05 06 07 08 09

WCMW1VP
2015163B

WCMW1VP
MCR SERIES, COIN OPERATED
SCHEMATIC: MOTOR INVERTER
(GPD315)

PELLERIN MILNOR CORPORATION

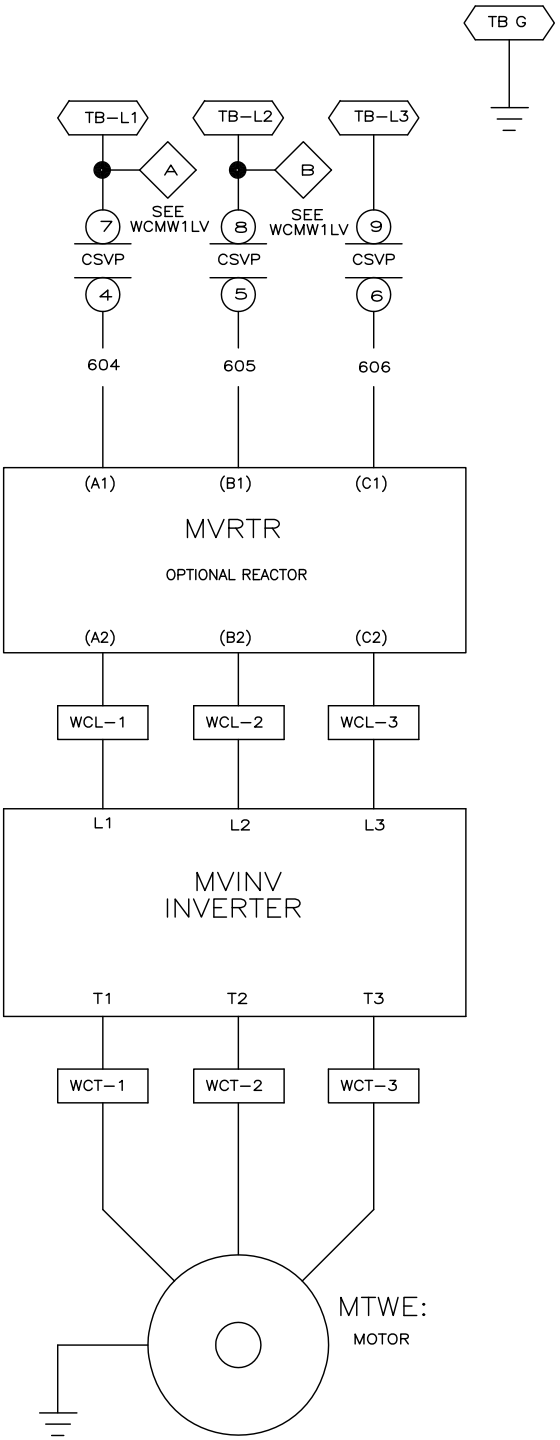
STATUS	CW K5	CCW K6	K1	K7
WASH	X			
DRAIN	X		X	
EXTRACT	X			X



NOTES
MTA4 & MTA5 ARE LOCATED ON THE PROCESSOR BOARD.

10 11 12 13 14 15 16 17 18 19

WCMW1VP
2015163B



LITHO IN U.S.A.

00 01 02 03 04 05 06 07 08 09

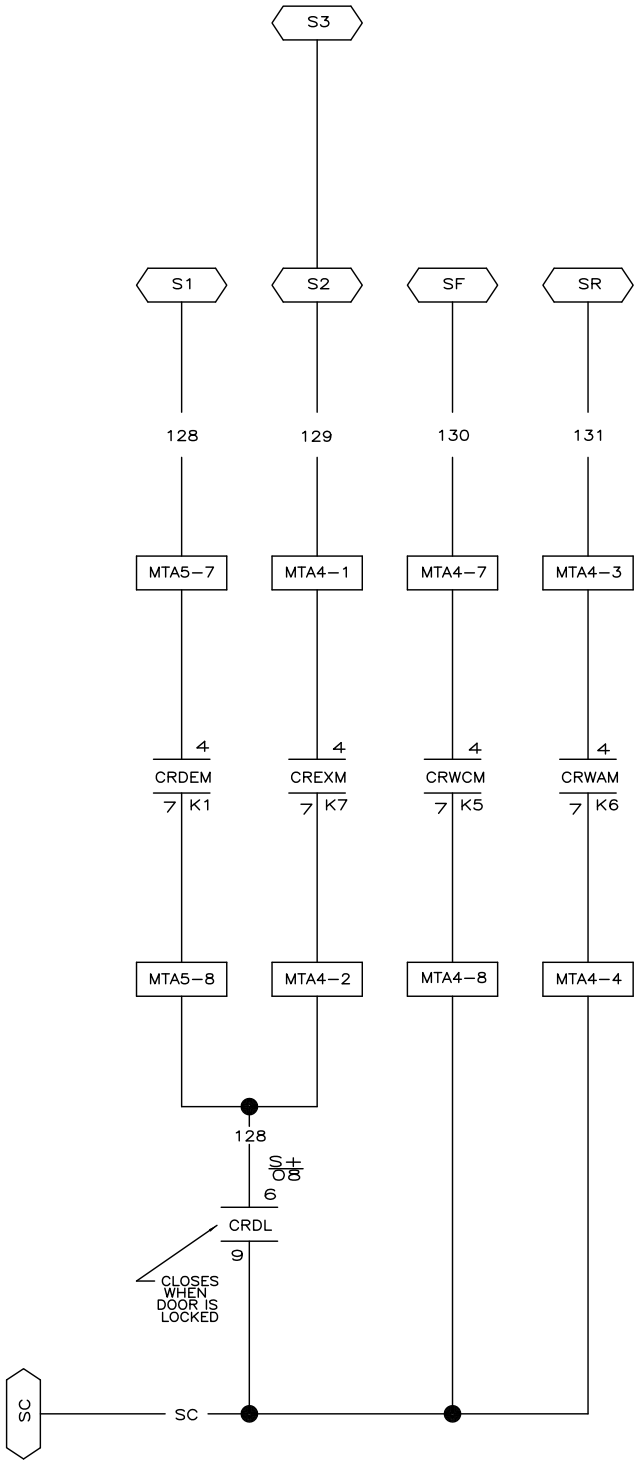
WCMW1VPS
2015163B

WCMW1VPS

MCR SERIES, COIN OPERATED
SCHEMATIC: MOTOR INVERTER
FOR MODEL MCR09 120V, 1 PHASE
(GPD205)

PELLERIN MILNOR CORPORATION

SOLENOIDS	CW K5	CCW K6	K1	K7
WASH	X			
DRAIN	X		X	
EXTRACT	X			X



NOTES
MTA4 & MTA5 ARE LOCATED ON THE PROCESSOR BOARD.

10 11 12 13 14 15 16 17 18 19