

TOLEDO INTEGRATED SYSTEMS
TOLEDO TRANSDUCERS INC.



PRESS PILOT 150



MANUAL
AND
INSTALLATION GUIDE

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PP150 FIRMWARE REVISION HISTORY
(CURRENT REV. 3036)

<u>REV.#</u>	<u>MODIFICATION NOTES</u>
2023	INITIAL RELEASE
2024	ADDITION OF ETHERNET
2025	DE-BOUNCE MODE INPUT <ul style="list-style-type: none"> - BYPASS ALL FAULTS DURING WATCHDOG CHECK ON POWERUP - BRAKE MONITOR TEST MODE AND MAIN MOTOR FWD ADDED TO ETHERNET I/O TABLE
2026	ADDED ABILITY TO BYPASS MOTION DETECT IN INCH MODE <ul style="list-style-type: none"> - MODIFIED SAVING/RECALLING PARAMETERS
2027	ETHERNET COMMUNICATIONS SPEED UPGRADE
2028	(NEVER RELEASED)
2029	ADDED CLUTCH ENGAGEMENT FAULT
2030	MODIFIED LOGIC FOR CLUTCH ON NO MOTION FAULT
2031	MODIFIED Z-PULSE (ENCODERS USE ONLY)
2043	SPEED COMP ZONE SETTINGS <ul style="list-style-type: none"> - AUTO SINGLE AND CONT. ON DEMAND - MODIFIED RESOLVER RESOLUTION FOR SPM/TOP STOP CALC.
2044	MODIFIED ENCODER BRAKE MONITOR
2045	ADDED T-CAM OFF TO ETHERNET SETTINGS
2047	CHANGED CLUTCH MOTION TIMER (NEVER RELEASED)
2048	ADDED HYDRAULIC OVERLOAD MONITORING
2051	ADDED "EXCESSIVE STOP TIME" FAULT
2054	ADDED 2 PROGRAMMABLE OUTPUTS <ul style="list-style-type: none"> - ADDED PLS, MOTION DETECT BIT AND SPM TO ETHERNET - MODIFIED HYD. OL TO INCLUDE PUMPING
2056	ADDED FUNCTIONALITY TO COUNTERS
2060	ADDED PROMPT.."MUST INCH 1 ST STROKE".
2061	MODIFIED T-CAM OFF TO BE SPEED COMP DEFAULT STOP.
2062	MODIFIED MULTIPLE RUN BAR CHECK.
2063	MODIFIED AUTO-SINGLE TO UNARM IF T-STOP IS PUSH AND CLUTCH IS STILL ON.
2064	ADDED COUNT TO THE REMOTE DISPLAY.
2065	ALLOW COUNT TO RESET ALWAYS FROM RESET BUTTON, (UNCHECK MUTE & 10MS BM TIME (DEFAULTS)), ADD SCREEN AFTER SAVE CHGS.
2067	MAJOR RELEASE..MODIFIED THE SPEED COMP TOP STOP..ADDED LAST STOP REASON TO ENET (WORD 18 IN PLC).
3000	NEW VERSION (3.00) FOR REMOTE SCREEN IMPLEMENTATION.
3003	MAJOR RELEASE..MODIFIED LAST STOP REASON.
3006	MODIFICATIONS FOR PROFACE SCREEN NOT SAVING DATA
3007	MODIFIED BM TO STORE ACTUAL TEST SPM....CHANGED SO IT SAVES EVERYTIME YOU LEAVE CONFIG SCREEN
3008	ADDED COMPLETE INTERRUPT VECTOR TABLE TO ELIMINATE REBOOTS THAT OCCUR DUE TO SPURIOUS INTERRUPTS
3009	MODIFIED ENCODER SPM CALCULATION
3011	MODIFIED AUTO SINGLE/CONT ON DEMAND ARMED LOGIC
3012	IMPROVED CHECKSUM METHOD FOR THE BATTERY RAM DATA
3014	FIXED CAM SINGLE STROKE NOT STOPPING AT TOP

3016 FIXED WHEN INCH TOP STOP IS USED WITH SPEED COMPENSATION
3017 AUTO SINGLE TIMEOUT MIN TO 1 SEC-FIX PLS FAULTING DATA FLASH
3018 CONT ARM NOT ARMING, CHANGE TO ENET SO IT SAVES TO DATA FLASH
3019 Z-PULSE ONLY IN WINDOW...DELAY SPM ON DISPLAY...ALWAYS
 COMPUTE SPEED COMP OFF
3020 NOT RELEASED
3021 INCH STOP AT TOP FIXED, TCAMOFF ONLY SAVE IF SCREEN OVER ENET,
 COUNTERS ONLY WITH SCREEN, EXTENDED CLUTCH NO MOTION TIMER
3022 MODIFIED PLS SAVE TO SAVE AFTER THEY LEAVE THE PLS SCREEN
3023 MODIFIED THE CLUTCH ON AND NO MOTION FAULT TIMER
3024 MODIFIED THE I/O BOARD REPLACEMENTS PARTS INFO
3027 Z-PULSE MUTE ON UPSTROKE PROGRAMMING
3028 ARM AUTO SINGLE STROKE BUG FIX
3029 DIGITAL FILTER FOR RESOLVER POSITION
3030 CLUTCH ENGAGEMENT FIX FOR SINGLE STROKE MODE W/LIGHT
 CURTAIN MUTE
3031 FIX FOR IRREGULAR STOPPING WHEN SPEED COMP IS USED WITH AN
 EARLY STOP POSITION
3032 DIGITAL FILTER FOR ENCODER Z-PULSE SIGNAL NEAR RESET POSITION
3033 ADDED PROX DEBOUNCE...IMPROVED CLUTCH RELAY B OPENING
 RESPONSE TIME FOR SPEED COMPENSATION...MADE CLUTCH
 VALVE FAULT STATE USER-CONFIGURABLE
3034 IMPROVED RESOLVER FAULT TIMING
3035 FIX FOR ETHERNET COMMUNICATION WHERE AN INVALID
 BRAKE MONITOR LIMIT OF ZERO WOULD PREVENT OTHER
 SETTINGS, SUCH AS PLS WINDOWS, FROM UPDATING
3036 FIXED BUG ISSUE RELATED TO 3035 UPDATE

1 INCOMING POWER CONNECTIONS

L1 AND L2 – INCOMING 120 VAC

THE CUSTOMER SUPPLIED 120VAC POWER MUST BE FROM A CLEAN AND CONTINUOUS SOURCE. THE PP150 HAS ITS OWN INTERNAL +24VDC POWER SUPPLY FOR ALL I/O APPLICATIONS. THIS DC POWER SHOULD ONLY BE USED FOR I/O ON THE PRESS PILOT, AND IS LIMITED TO 1AMP SERVICE.

2 USER INPUTS

I. RUN/INCH BUTTONS

THE SYSTEM REQUIRES ONE SET OF TWO RUN/INCH BUTTONS IN ORDER TO FUNCTION, AND IS EXPANDABLE UP TO FOUR SETS. EACH BUTTON MUST HAVE A SET OF NORMALLY OPEN AND NORMALLY CLOSED CONTACTS. THE INPUTS INTO THE PP150 ARE LABELED “L-RUN(x) NO/NC” AND “R-RUN(x) NC/NO” WHERE ‘X’ IS THE STATION NUMBER OF THE RUN BUTTONS, NC STANDS FOR NORMALLY CLOSED, AND NO STANDS FOR NORMALLY OPEN. ANTI-TIE DOWN HAS BEEN BUILT INTO THE SYSTEM IN ORDER TO INHIBIT THE ABILITY TO “TIE DOWN” ONE OR BOTH OF THE RUN BUTTONS. AN ANTI-TIE DOWN FAULT WILL OCCUR WITHIN 500MS (MILLISECONDS) OF AN INCORRECT CONTACT STATE ON THE RUN BUTTONS. THIS FAULT IS AUTOMATICALLY RESET WHEN AN ANTI-TIE DOWN SITUATION IS CLEARED.

II. PROX CHECK INPUT

THE SYSTEM REQUIRES A PROXIMITY SWITCH TO CHECK POSITION IN A SETTABLE WINDOW THROUGHOUT EACH STROKE. THE PROXIMITY SWITCH MUST BE MOUNTED SEPARATELY FROM THE RESOLVER/ENCODER IN ORDER TO ACCOUNT FOR CHAIN BREAK OR SLIPPAGE ON THE PRESS POSITION DEVICE. A FAULT WILL BE GENERATED IF THE PROX SWITCH CYCLES TWICE WITHOUT SEEING THE BCAM OR TCAM CHANGE STATE. A FAULT WILL ALSO BE GENERATED IF THE PROX SWITCH DOES NOT CYCLE INSIDE THE WINDOW.

III. FAULT RESET BUTTON

THE PP150 RESET BUTTON WILL RESET ANY CURRENT PP150 FAULT WHEN PRESSED. THIS BUTTON NEEDS TO HAVE ONE NORMALLY OPEN CONTACT SENDING A SIGNAL TO THE “FAUL RST” INPUT ON THE PP150.

IV. ARM CONTINUOUS BUTTON

THE SYSTEM REQUIRES THE USE OF A PRIOR ACTION “CONTINUOUS ARM” BUTTON AND SHOULD BE EQUIPPED WITH A NORMALLY OPEN CONTACT SENDING A SIGNAL TO THE “ARM CONT” INPUT ON THE PP150. WHEN THE MODE SELECTOR SWITCH IS IN CONTINUOUS MODE AND THIS BUTTON IS PRESSED, “CONTINUOUS” WILL BE

ARMED AND READY TO RUN. WE SUGGEST AN ILLUMINATED PUSH BUTTON FOR THIS AS THE "CONTINUOUS ARMED" OUTPUT WILL COME ON AS LONG AS CONTINUOUS IS ARMED. SEE CHAPTER 3 SECTION IV FOR THE LIGHT OUTPUT.

V. MODE SELECTOR SWITCH

THE CLUTCH/BRAKE CONTROLLER REQUIRES A KEYED SELECTOR SWITCH FOR FOUR MODES OF OPERATION, (OFF, INCH, SINGLE AND CONTINUOUS). THERE SHOULD BE A NO CONTACT FOR EACH MODE.

OFF WHEN THE KEY IS IN THIS POSITION, THE PRESS WILL NOT RUN. THE KEY SHOULD BE ABLE TO BE REMOVED WHEN IN THIS POSITION.

INCH WHEN THE KEY IS IN THIS POSITION, THE RAM WILL MOVE WHEN THE INCH BUTTONS ARE PRESSED IF NO FAULTS ARE PRESENT

SINGLE WHEN THE KEY IS IN THIS POSITION, THE RAM WILL CYCLE ONE STROKE WHEN THE RUN BUTTONS ARE PRESSED. THE RUN BUTTONS MUST BE HELD PAST BOTTOM DEAD CENTER (BDC) IN ORDER FOR THE RAM TO CARRY UP TO TOP ON ITS OWN. IF THE BUTTONS ARE RELEASED ON THE DOWNSTROKE THE RAM WILL STOP. THE BUTTONS MUST BE RELEASED AND PRESSED AGAIN IN ORDER FOR THE RAM TO MOVE A SECOND STROKE.

CONTINUOUS

WHEN THE KEY IS IN THIS POSITION THE RAM WILL CYCLE CONTINUOUSLY UNTIL STOPPED BY A TOP STOP, E-STOP OR, IMMEDIATE STOP COMMAND OR UNTIL A PP150 FAULT IS DETECTED. THIS MODE REQUIRES A "PRIOR ACTION" BUTTON TO ARM. ONCE ARMED, IF THE RUN BUTTONS ARE NOT PRESSED WITHIN A SETTABLE PERIOD OF TIME (2-10 SECONDS) THE "CONTINUOUS ARMED" CIRCUIT WILL TIME OUT AND HAVE TO BE REARMED. THIS MODE REQUIRES THE RUN BUTTONS TO BE HELD UNTIL PAST BDC. ONCE PAST BDC THE PRESS WILL RUN CONTINUOUSLY. IF THE BUTTONS ARE RELEASED ON THE DOWNSTROKE OF THE FIRST STROKE THE RAM WILL STOP.

VI. TOP STOP INPUT

THE SYSTEM REQUIRES THE USE OF A TOP STOP BUTTON EQUIPPED WITH A SET OF NORMALLY CLOSED CONTACTS. WHEN THE PRESS IS RUNNING IN CONTINUOUS MODE AND THIS BUTTON IS PRESSED THE RAM WILL STOP THE NEXT TIME IT REACHES TOP. WIRE THE TOP STOP BUTTON TO THE TERMINAL BLOCK LABELED "TOP STOP" A TERMINAL BLOCK LABELED "TOP STOPJ" IS AVAILABLE FOR USE IF MORE THAN ONE TOP STOP DEVICE IS NEEDED. "TOP STOPJ" IS NOT A TOP STOP DEVICE INPUT. IF THE AUXILIARY TOP STOP TERMINAL BLOCK "TOP STOPJ" IS USED, IT MUST BE WIRED IN SERIES WITH THE "TOP

STOP” TERMINAL BLOCK IN ORDER FOR THE DEVICE TO PROPERLY TOP STOP THE PRESS.

VII. CLUTCH AIR PRESSURE SWITCH/COUNTER BALANCE PRESSURE SWITCH

THE SYSTEM REQUIRES A SEPARATE N.O. SWITCH ON BOTH THE CLUTCH AIR PRESSURE SUPPLY “CLUT AIR” AND THE COUNTER BALANCE AIR PRESSURE “CBAL AIR” SUPPLY. WITHOUT THESE INPUTS THE SYSTEM WILL STAY FAULTED.

VIII. MAIN MOTOR FORWARD CONTACT

THE SYSTEM REQUIRES A CONTACT FROM THE MAIN MOTOR FORWARD STARTER TO BE WIRED INTO THE “MTR FWD” INPUT. THIS IS NEEDED IN ORDER TO MOVE THE RAM IN SINGLE AND CONTINUOUS MODES. IT IS NOT NEEDED IN INCH MODE, AND ALLOWS THE PRESS TO INCH WITH THE MAIN MOTOR OFF, ALSO KNOWN AS “DEAD MOTOR INCH”.

IX. IMMEDIATE STOP INPUT

THE “IMMED STOP” INPUT MUST REMAIN HIGH FOR SOURCING INPUTS, AND LOW FOR SINKING INPUTS IN ORDER FOR THE PRESS TO RUN IN ANY MODE. LOSING THE “IMMED STOP” INPUT WILL IMMEDIATELY STOP THE PRESS. THIS INPUT CAN BE USED TO STOP THE PRESS FOR AUXILIARY EQUIPMENT SUCH AS DIE PROTECTION. AN AUXILIARY TERMINAL BLOCK LABELED “IMMED STOPJ” IS AVAILABLE FOR USE IF MORE THAN ONE IMMEDIATE STOP DEVICE IS NEEDED. “IMMED STOPJ” IS NOT AN IMMEDIATE STOP DEVICE INPUT. IF THE AUXILIARY IMMEDIATE STOP TERMINAL BLOCK “IMMED STOPJ” IS USED, IT MUST BE WIRED IN SERIES WITH THE “IMMED STOP” TERMINAL BLOCK IN ORDER FOR THE DEVICE TO PROPERLY IMMEDIATELY STOP THE PRESS.

X. ESR-1 AND ESR-2

THESE INPUTS SHOULD BE WIRED SO THAT TWO IDENTICAL (REDUNDANT) CIRCUITS ARE USED TO STOP THE CLUTCH. EACH CONTACT IN THE SERIES SHOULD HAVE TWO SETS OF CONTACTS. THIS IS YOUR EMERGENCY STOP FOR THE PRESS. AUXILIARY EQUIPMENT THAT IS NOT SAFETY RELATED SHOULD BE WIRED TO THE IMMEDIATE STOP INPUT. THESE CIRCUITS ARE WIRED TO DIRECTLY SHUT OFF POWER TO THE CLUTCH VALVES WHEN THE STRING IS BROKEN. IF THE CIRCUITS ARE NOT IDENTICAL, PP150 FAULTS WILL OCCUR BECAUSE OF POWER BEING REMOVED FROM ONE OF THE SOLENOIDS AND NOT THE OTHER. IF THIS DOES OCCUR THE VALVE WILL HAVE TO BE RESET. THESE CIRCUITS ARE ALSO MONITORED BY THE CONTROLLER AND WILL CAUSE A MISMATCH FAULT DURING A MISMATCH CONDITION. IN ORDER TO RESET THE FAULT, BOTH CIRCUITS MUST BE TURNED OFF, THE PP150 RESET BUTTON MUST BE PUSHED, AND THEN BOTH CIRCUITS MUST BE TURNED BACK ON. PRESS THE CLUTCH RESET BUTTON AGAIN TO MAKE SURE NO FAULTS EXIST.

XI. RESOLVER INPUTS

TO INCORPORATE THE DIFFERENT METHODS FOR TRACKING PRESS POSITION, THE PP150 IS EQUIPPED WITH THE ABILITY TO RUN OFF THREE SEPARATE SYSTEMS. RESOLVER BASED SYSTEMS CREATE CAMS DEPENDENT ON AN ABSOLUTE PRESS POSITION. THE PP150 HAS THE ABILITY TO RUN UP TO 1700 STOKES PER MINUTE USING THE RESOLVER FOR PRESS POSITION. CONNECT THE RESOLVER FOR THE SYSTEM USING INPUTS R1, R2, S1, S2, S3, S4, AND SHLD. THESE INPUTS ARE FOUND ON THE LATCH SIDE OF THE PP150. REFER TO THE ELECTRICAL SCHEMATICS FOR WIRING A RESOLVER, AND CHAPTER 5 SECTION II ON HOW TO CALIBRATE THE RESOLVER.

ENCODER INPUTS

AN ENCODER BASED SYSTEM CREATES CAMS DEPENDENT ON AN AUTOMATICALLY CALCULATED OFFSET, AND THE 'Z' PULSE FROM THE ENCODER. THE PP150 HAS THE ABILITY TO RUN UP TO 500 STOKES PER MINUTE USING THE ENCODER FOR PRESS POSITION. CONNECT THE ENCODER TO INPUTS ENC A, ENC B, AND ENC Z. REFER TO THE ELECTRICAL SCHEMATIC FOR WIRING THE ENCODER, AND CHAPTER 5 SECTION II ON HOW TO CHOOSE THE ENCODER AS THE DEFAULT POSITION MONITOR.

XII. CLUTCH VALVE FAULT MONITOR

THE SYSTEM IS EQUIPPED WITH A CLUTCH SOLENOID VALVE FAULT INPUT THAT NEEDS TO BE ON AT ALL TIMES. ANYTIME THIS INPUT IS NOT ON A CLUTCH VALVE MONITOR FAULT WILL OCCUR. THIS FAULT CAN ONLY BE RESET IF THE INPUT IS ON. (WIRE THIS INPUT "ON" IF THE SOLENOID VALVE DOES NOT HAVE A FAULT CONTACT, OR ENABLE THE CLUTCH VALVE FAULT HIGH SETTING ON THE OTHER SETTINGS CONFIGURATION SCREEN AND LEAVE THIS INPUT "OFF")

XIII. BCAM AND TCAM

TYPICAL SETTINGS FOR CAM SWITCHES:

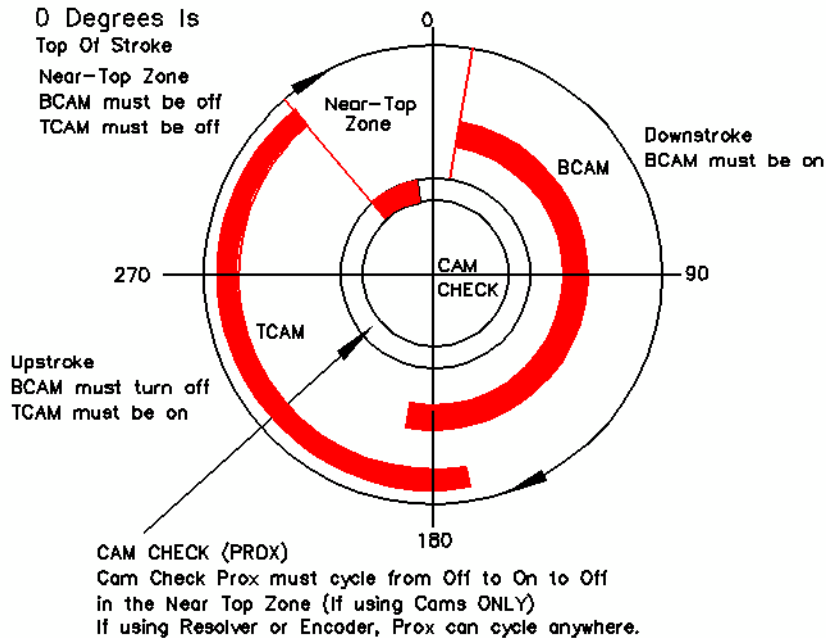
	<input type="checkbox"/> ON	<input type="checkbox"/> OFF	
BCAM	10	190	TURNS ON AT A POSITION TO DETECT A FAULTY BRAKE.
TCAM	170	350	TURNS OFF AT A POSITION TO LET THE PRESS STOP ON TOP.

TCAM AND BCAM MUST OVERLAP SLIGHTLY AT BOTTOM

IMPORTANT: THE ABOVE SETTINGS ARE TYPICAL BUT NOT SPECIFIC TO EVERY APPLICATION. CHANGES MADE SHOULD BE DEPENDANT ON THE FUNCTIONALITY OF THE SYSTEM BEING CONTROLLED.

NOTE: TRANSITION FAULTS WILL OCCUR DURING INITIAL STARTUP UNTIL CAM SWITCHES ARE SET IN THE CORRECT SEQUENCE. THE PP150 CAN RUN UP TO 300 STROKES PER MINUTE USING A CAM BASED SYSTEM.

(If using Resolver or Encoder, Prox can cycle anywhere.)



NOTE: SHADED (RED) AREAS REPRESENT CLOSED CONTACTS

BCAM: THE BCAM (ALSO KNOWN AS BRAKE CAM OR BOTTOM CAM) IS USED TO DETECT A FAULTY FLYWHEEL BRAKE, AND WHERE THE BOTTOM OF THE STROKE OCCURS. SET BCAM TO TURN ON NEAR THE TOP OF THE STROKE AFTER THE PRESS HAS MADE A TOP STOP. THIS SETTING WILL HELP AID IN THE DETECTION OF A BRAKE PROBLEM BY CREATING A FAULT IF BCAM HAS TURNED ON AFTER A TOP STOP HAS BEEN COMMANDED. BCAM SHOULD TURN OFF AT THE BOTTOM OF THE STROKE, BUT AFTER TCAM HAS TURNED ON.

BCAM AND TCAM MUST OVERLAP AT THE BOTTOM OF THE STROKE. IF THIS DOES NOT OCCUR, THE PP150 WILL NOT KNOW WHERE BOTTOM IS, AND A FAULT WILL BE GENERATED.

TCAM: THE TCAM (ALSO KNOWN AS TAKEOVER CAM OR TOP STOP CAM) IS USED TO TAKE OVER THE PRESS RUN FUNCTION AFTER TCAM ON, AND STOP THE PRESS AT TOP AFTER TCAM OFF. SET TCAM ON TO OVERLAP BCAM NEAR THE BOTTOM OF THE STROKE. BCAM AND TCAM MUST OVERLAP AT THE BOTTOM OF THE STROKE. ONCE TCAM COMES ON, THE OPERATOR WILL BE ABLE TO RELEASE THE RUN BUTTONS AND THE PP150 WILL STROKE THE PRESS TO TOP IN SINGLE STROKE MODE, OR CONTINUE TO STROKE IN CONTINUOUS MODE. ADJUST TCAM OFF TO STOP THE PRESS AT TOP DEAD CENTER.

3 USER OUTPUTS

- I. **OUTPUTS C1 & C2 - CLUTCH 1 & 2**
THESE OUTPUTS WILL ENERGIZE THE CLUTCH/BRAKE VALVE. A DUAL SOLENOID VALVE MUST BE USED AND EACH SOLENOID MUST BE WIRED TO THESE SEPARATE OUTPUTS. C1 AND C2 ARE PROTECTED WITH 2A FUSES. IT IS REQUIRED THAT THE SURGE SUPPRESSORS INCLUDED WITH THE PP150 BE USED TO SUPPRESS ANY NOISE THAT MAY BE ASSOCIATED WITH THE FIRING OF THE CLUTCH VALVES. NOTE: SUPPRESSORS ARE RECOMMENDED TO BE PUT ON ANY SOLENOID VALVE CONNECTED TO THE CONTROL.

- II. **CF RELAY - CLUTCH FAULT**
THE PP150 INTERNAL FAULT RELAY WILL ENERGIZE WHEN A PP150 FAULT IS DETECTED IN THE SOFTWARE. SEE CHAPTER 6 ON PP150 FAULT MESSAGES. IT IS SUGGESTED THAT A RED PILOT LIGHT BE USED TO INDICATE THE CLUTCH FAULT. WIRE THIS PILOT LIGHT THROUGH THE RELAY CONTACTS "FAULTF" AND "FAULTS". SEE THE ELECTRICAL SCHEMATICS FOR WIRING A DEVICE TO SHOW A PP150 FAULT.

- III. **CO RELAY - CLUTCH OK**
THIS 'OK' RELAY WILL ENERGIZE WHEN THE PP150 IS READY TO RUN. IT IS SUGGESTED THAT A GREEN ILLUMINATED PUSH BUTTON BE USED TO INDICATE CLUTCH OK. THIS WILL GIVE THE ABILITY TO RESET THE CLUTCH AND VERIFY THE OK CONDITION. WIRE THE LIGHT THROUGH THE RELAY CONTACTS "OKF" AND "OKS". SEE THE ELECTRICAL SCHEMATICS FOR WIRING A DEVICE TO THIS OUTPUT.

- IV. **CA RELAY - CONTINUOUS ARMED**
THIS OUTPUT WILL ENERGIZE WHEN THE CONTINUOUS CYCLE IS ARMED AND READY. WHEN THIS LIGHT IS ON THE SYSTEM IS ARMED IN CONTINUOUS MODE. WHILE LIT, THE RUN BUTTONS MUST BE PUSHED AND HELD PAST BOTTOM ON THE FIRST STROKE. IT IS SUGGESTED THAT A BLUE ILLUMINATED PUSH BUTTON BE USED AS MENTIONED IN CHAPTER 2 SECTION IV "CONTINUOUS ARM BUTTON". WIRE THE N.O. CONTACT OF THE PUSHBUTTON TO THE PP150 TERMINAL BLOCK "ARM CONT". WIRE THE LIGHT THROUGH THE RELAY CONTACTS "C-ARMF" AND "C-ARMS". SEE THE ELECTRICAL SCHEMATICS FOR WIRING A DEVICE TO THE CONTINUOUS ARM OUTPUT.

- V. **CLUTCH ON TO AUXILIARY EQUIPMENT**
THIS OUTPUT IS WIRED IN SERIES THROUGH A NORMALLY OPEN SET OF CONTACTS ON BOTH C1 AND C2'S INTERNAL FORCE GUIDED RELAYS. IT CAN BE USED TO TELL AUXILIARY EQUIPMENT THAT THE CLUTCH IS ENGAGED. THESE ARE DRY CONTACTS SO ANY AC OR DC POWER 250V, 6A RATED OR LESS CAN BE USED.

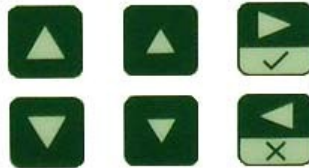
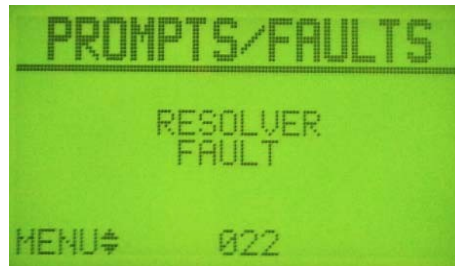
- VI. BINARY MESSAGE OUTPUTS
THERE ARE SIX OUTPUTS THAT ARE 24VDC SINKING OUTPUTS.
THESE OUTPUTS REPRESENT A BINARY VALUE FOR THE PP150
MESSAGING.

M0 MESSAGE BIT 0 = 1
M1 MESSAGE BIT 1 = 2
M2 MESSAGE BIT 2 = 4
M3 MESSAGE BIT 3 = 8
M4 MESSAGE BIT 4 = 16
M5 MESSAGE BIT 5 = 32

4 PRESS PILOT 150 SCREENS

THE PP150 SCREENS HAVE MOVED TO SHEET 100.

I. PROMPTS/FAULTS



THIS SCREEN IS THE MAIN SCREEN THAT LOADS WHEN POWER IS FIRST APPLIED. IT SHOWS ALL THE PP150 PROMPTS AND FAULTS. THE THREE NUMBERS AT THE BOTTOM OF THE SCREEN ARE THE CORRESPONDING VALUES FOR THE PROMPT/FAULT DISPLAYED. THE FIRST NUMBER IS THE PROCESSOR IN WHICH THE FAULT WAS GENERATED FROM. A '0' INDICATES THE 'A' PROCESSOR, AND A '1' INDICATES THE 'B' PROCESSOR. THE SECOND AND THIRD NUMBERS ARE CODES GENERATED TO AID IN THE TROUBLESHOOTING PROCESS. SEE CHAPTER 6 FOR ALL THE FAULT CODES AND THEIR RESPECTIVE CORRECTIVE ACTIONS. THESE NUMBERS ARE ALSO OUTPUT THROUGH THE BINARY MESSAGE BITS 0-5 IN CHAPTER 3 SECTION VI.

THE MENU CAN BE ACCESSED BY PRESSING EITHER THE UP ARROW KEY  OR THE DOWN ARROW KEY 

II. BRAKE MONITOR



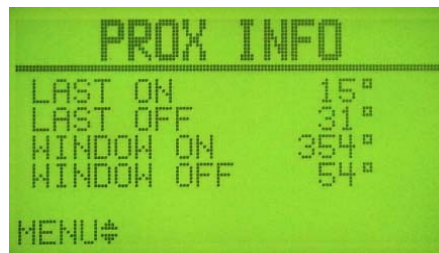
THIS SCREEN SHOWS THE REAL TIME INFORMATION FOR THE BRAKE MONITOR. THE STOP TIME NUMBER INDICATES HOW LONG IN MILLISECONDS IT TOOK FOR THE PRESS TO STOP DURING THE LAST STOP COMMAND. THE STOP DEGREES IS THE NUMBER OF DEGREES IT TOOK TO STOP DURING THAT LAST STOP COMMAND. THE STOP LIMIT IS THE USER SETTABLE TIME AT WHICH THE BRAKE MONITOR WILL FAULT OUT IF THE STOP TIME HAS SURPASSED THE STOP LIMIT. THESE NUMBERS ARE NOT CHANGEABLE ON THIS SCREEN. SEE CHAPTER 5 SECTION XI FOR SETTING THE BRAKE MONITOR.

III. LAST BRAKE TEST



THIS SCREEN SHOWS THE INFORMATION REGARDING THE LAST TIME A BRAKE MONITOR TEST WAS PERFORMED. THE STOP TIME NUMBER INDICATES HOW LONG IN MILLISECONDS IT TOOK FOR THE PRESS TO STOP DURING THE LAST BRAKE TEST. THE STOP DEGREES IS THE NUMBER OF DEGREES IT TOOK TO STOP DURING THE LAST BRAKE TEST. THE TEST SPEED IS THE SPEED OF THE PRESS AT WHICH THE TEST WAS ADMINISTERED. SEE CHAPTER 5 SECTION XII FOR RUNNING A BRAKE MONITOR TEST.

IV. PROX INFO



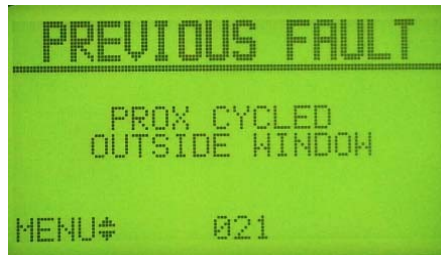
THIS SCREEN SHOWS THE LAST ON AND LAST OFF DEGREES FOR THE PROX CHECK SENSOR. THIS INFORMATION IS HELPFUL IN SETTING THE PROX CHECK WINDOW, AND FOR TROUBLESHOOTING THE PROX CHECK SENSOR. SEE CHAPTER 5 SECTION XVI FOR SETTING THE PROX CHECK WINDOW.

V. MOST RECENT FAULT



THIS SCREEN WILL SHOW THE OPERATOR THE FAULT THAT IS PRESENTLY STOPPING THE PRESS CONTROL. THE CURRENT FAULT LISTED ON THIS SCREEN WILL STAY UNTIL A NEW FAULT HAS OCCURRED. ONCE A NEW FAULT HAS OCCURRED, THE NEW FAULT WILL SHOW ON THIS PAGE, AND THE FAULT THAT WAS ON THIS PAGE WILL MOVE TO THE PREVIOUS FAULT SCREEN. SEE CHAPTER 5 FOR FAULT MESSAGES AND TROUBLESHOOTING.

VI. PREVIOUS FAULT



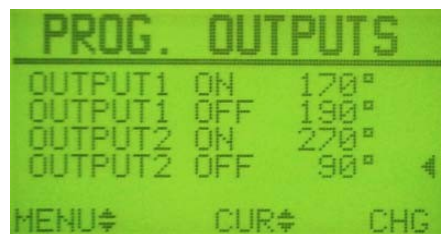
THIS SCREEN WILL SHOW THE OPERATOR THE FAULT THAT HAD OCCURRED LAST BEFORE THE PRESENT FAULT STATE. ONCE A NEW FAULT OCCURS, THIS SCREEN WILL SHOW THE FAULT FROM THE MOST RECENT FLT SCREEN. SEE CHAPTER 5 FOR FAULT MESSAGES AND TROUBLESHOOTING.

VII. TWO FAULTS AGO



THIS SCREEN WILL SHOW THE OPERATOR THE FAULT THAT HAD OCCURRED TWO FAULTS BEFORE THE PRESENT FAULT STATE. ONCE A NEW FAULT OCCURS, THIS SCREEN WILL SHOW THE FAULT FROM THE PREVIOUS FAULT SCREEN. SEE CHAPTER 5 FOR FAULT MESSAGES AND TROUBLESHOOTING.

VIII. PROGRAMMABLE OUTPUTS



THIS SCREEN WILL ALLOW THE OPERATOR TO VIEW AND MODIFY THE OUTPUT WINDOWS FOR BOTH OUTPUTS. THE EXAMPLE SHOWS THE FIRST OUTPUT TURNING ON AT 170° AND OFF AT 190° (TYPICAL PILOT RELEASE EXAMPLE). THE SECOND EXAMPLE SHOWS THE SECOND OUTPUT TURNING ON AT 270° AND TURNING OFF AT 90° (TYPICAL FEED WINDOW).

IX. LAST STOP REASON



THIS SCREEN WILL SHOW THE OPERATOR THE LAST STOP REASON FOR THE CLUTCH TURNING OFF.



LAST STOP REASON CODES:

0. PRESS RUNNING
1. MODE CHANGED
2. IMMEDIATE STOP INPUT OFF
3. TOP STOP INPUT OFF
4. FAULT PRESENT, CHECK HISTORY
5. 90 DEGREE STOP TEST
6. COUNTERS DONE
7. E-STOP OPENED
8. RUN BUTTONS RELEASED
9. MAIN MOTOR FORWARD INPUT OFF
10. AUTO-RUN INPUT OFF
11. AUTO ENABLE INPUT OFF
12. FAULT RESET PB
13. DIAGNOSTIC DIP SWITCH CHANGED


X. COUNTERS



I. BATCH PRESET

THIS PAGE SHOWS THE CURRENT COUNTER INFO FOR THE PRESS AND FOR THE CURRENT BATCH. TO CHANGE THE BATCH COUNTER PRESET, PRESS THE  BUTTON TO MOVE THE CURSOR TO THE BATCH PRE SETTING, AND PRESS THE  BUTTON TO BRING UP A HIGHLIGHTED CURSOR. USE THE LEFT HAND SET OF ARROW KEYS TO CHANGE THE COUNTER BY ONE HUNDRED, AND THE RIGHT HAND ARROW KEYS TO CHANGE THE NUMBER BY SINGLE DIGITS. TO DISABLE THE BATCH COUNTER, SET THE BATCH PRE TO ZERO, OR UNCHECK THE STOP WHEN DONE SETTING.

II. BATCH LEFT

AS THE PRESS RUNS AND THE BATCH COUNTER HAS BEEN SET, THE BATCH LEFT WILL DECREASE. IF THIS COUNTER SHOULD NEED TO BE CLEARED, CURSOR DOWN TO IT AND PRESS THE  BUTTON TO DO SO. THIS WILL CLEAR THE BATCH LEFT AND START THE BATCH COUNT FROM THE PRESET.

III. STOP WHEN DONE

CHECK THIS SETTING WITH THE  BUTTON TO STOP THE PRESS ON TOP WHEN A BATCH COUNT HAS FINISHED.

IV. LIFETIME

THIS COUNTER SHOWS THE AMOUNT OF STROKES SINCE THE PP150 WAS INSTALLED. THIS COUNTER IS ABLE TO BE RESET FROM THE COUNTERS SCREEN VIA THE CALIBRATION M

5 CONFIGURATION SCREENS

THE PP150 IS EQUIPPED WITH CONFIGURATION SCREENS TO ENHANCE CERTAIN FUNCTIONS AND CHANGE SETTINGS ACCORDING TO SYSTEM REQUIREMENTS.

TO PUT IN CONFIGURATION MODE:

- 1) LOCATE SW1 (RED 4-DIP SWITCH) INSIDE EDGE OF THE PP150 ON THE DOOR.
- 2) MOVE DIP #1 TO THE ON POSITION. (SEE FIG. 5-1)



FIG. 5-1



FIG. 5-2

NOTE: FOR [“ADVANCED SETTINGS”](#), MOVE DIP #3 TO THE ON POSITION AS WELL. (SEE FIG. 5-2)

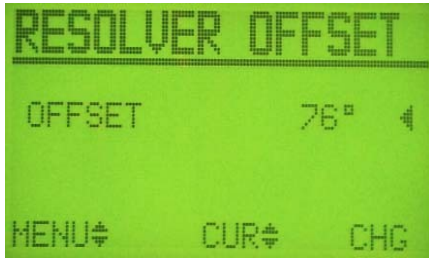
TO CYCLE THROUGH THE SCREENS USE THE  OR  KEYS.

I. POSITION CONTROL

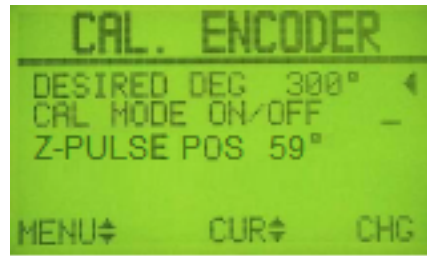


THIS SCREEN GIVES THE CONTROL THREE SEPARATE WAYS TO TRACK POSITION. APPLY RESOLVER TO USE THE RESOLVER BASED CONTROLS, ENCODER FOR THE ENCODER BASED CONTROLS, OR HARD CAMS FOR THE CAM BASED CONTROLS. THE PP150 IS LIMITED IN ITS SPEED DEPENDING ON WHAT SYSTEM IS CHOSEN TO RUN. THE RESOLVER BASED SYSTEM CAN RUN UP TO 1700 STROKES PER MINUTE. THE ENCODER BASED SYSTEM CAN RUN UP TO 500 STROKES PER MINUTE, AND THE CAM BASED SYSTEM CAN RUN UP TO 300 STROKES PER MINUTE.

II. RESOLVER OFFSET/ENCODER CALIBRATION




(ONLY FOR RESOLVER)



(ONLY FOR ENCODER)

THE SELECTION FOR THE POSITION CONTROL WILL DETERMINE WHICH SCREEN ABOVE IS DISPLAYED.

THE LEFT SCREEN IS WHERE THE USER SETS THE OFFSET FOR THE RESOLVER IN ORDER TO PROGRAM THE CORRECT RESOLVER ANGLE. THIS PAGE IS ONLY VISIBLE WHEN RESOLVER HAS BEEN CHOSEN FROM THE POSITION CONTROL PAGE. THE RESOLVER OFFSET IS USED TO ADJUST THE PP150'S POSITION TO THE RESOLVER'S ACTUAL POSITION. TO DETERMINE THE RESOLVER OFFSET NEEDED, STOP THE PRESS AT A KNOWN POSITION, THEN NOTE THE POSITION ON THE PP150. SUBTRACT THIS ANGLE FROM KNOWN POSITION TO GET THE RESOLVER OFFSET. TO CHANGE THE RESOLVER OFFSET, PRESS THE  KEY.


THE RIGHT SCREEN IS WHERE THE USER SETS THE DESIRED ANGLE WHEN USING AN ENCODER FOR POSITION. STOP THE PRESS AT A KNOWN POSITION, ENTER THE DESIRED ANGLE THEN PUT IT IN CAL MODE BY CHECKING CAL MODE ON. IT WILL SAY "IN CAL MODE...INCH PRESS ONCE". INCH THE PRESS ONE TIME. THE PP150 WILL COME OUT OF CAL MODE AUTOMATICALLY ONCE THE ENCODER Z-PULSE HAS TOGGLED ON.

Z-PULSE POSITION: THIS IS THE DEGREE AT WHICH THE Z-PULSE OF THE ENCODER OCCURS.

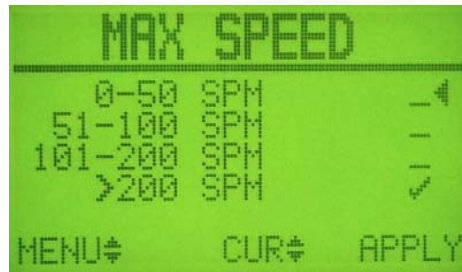
III. CAM SETTINGS



THIS SCREEN IS NOT VISIBLE WHEN HARD CAMS ARE CHOSEN ON THE POSITION CONTROL SCREEN.

THIS PAGE IS ONLY VISIBLE WHEN RESOLVER OR ENCODER IS CHOSEN FROM THE POSITION CONTROL SCREEN, AND IS WHERE CAM SETTINGS CAN BE CHANGED. SEE THE GRAPH IN CHAPTER 2 SECTION XIII FOR TYPICAL CAM SETTINGS. TO CHANGE THE CAM SETTINGS, PRESS THE RIGHT SET OF UP/DOWN KEYS TO SCROLL TO THE CAM SETTINGS TO CHANGE, AND PRESS THE  KEY.

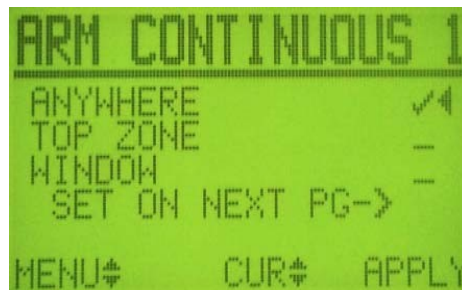
IV. PRESS SPEED



THIS SCREEN IS ONLY VISIBLE WHEN HARD CAMS ARE CHOSEN FROM THE POSITION CONTROL SCREEN.

THIS IS WHERE THE MAX SPEED OF THE PRESS IS CHOSEN. CHOOSE WHICH WINDOW THE PRESS SPEED IS, AND APPLY IT BY PRESSING THE APPLY BUTTON. THE CHECK MARK SHOWS WHICH SPEED IS CHOSEN.

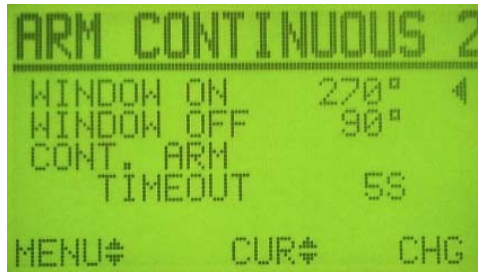
V. ARM CONTINUOUS 1




THIS SCREEN IS NOT VISIBLE WHEN HARD CAMS ARE CHOSEN ON THE POSITION CONTROL SCREEN.

THIS SCREEN IS WHERE THE SETTINGS FOR ARMING THE PRESS IN CONTINUOUS ARE CHANGED. ARMING THE PRESS IN CONTINUOUS CAN BE DONE THREE DIFFERENT WAYS. ANYWHERE MEANS THE PRESS CAN BE ARMED CONTINUOUS REGARDLESS OF POSITION. TOP_ZONE MEANS THE PRESS CAN ONLY BE ARMED IN TOP_ZONE. TOP_ZONE IS DEFINED BY THE WINDOW BETWEEN TCAM OFF AND BCAM ON. WINDOW LETS THE USER DEFINE A WINDOW THAT THE PRESS NEEDS TO BE IN BEFORE IT CAN BE CONTINUOUS ARMED. THIS WINDOW CAN BE SET ON THE ARM CONTINUOUS 2 SCREEN.

VI. ARM CONTINUOUS 2



THIS SCREEN IS NOT VISIBLE WHEN HARD CAMS ARE CHOSEN ON THE POSITION CONTROL SCREEN.

THIS SCREEN IS PART TWO OF THE LAST SCREEN. THIS IS WHERE THE CONTINUOUS ARMING WINDOW IS SET, AND WHERE THE CONTINUOUS ARM TIMEOUT CYCLE IS SET. THIS SCREEN IS NOT VISIBLE IF CAMS ARE CHOSEN ON THE POSITION CONTROLS SCREEN. TO CHANGE THESE SETTINGS, PRESS THE RIGHT SET OF UP/DOWN KEYS TO SCROLL TO THE DESIRED SETTINGS, AND PRESS THE  KEY

- USE THE RIGHT SET OF UP/DOWN ARROW KEYS TO INCREASE OR DECREASE THE DEGREE BY 1°, OR
- USE THE LEFT SET OF UP/DOWN ARROW KEYS TO INCREASE OR DECREASE THE DEGREE BY 10°.

VII. LC MUTE/TOP STOP



THIS SCREEN IS NOT VISIBLE WHEN HARD CAMS ARE CHOSEN ON THE POSITION CONTROL SCREEN.

THIS SCREEN LETS THE USER SELECT LIGHT CURTAIN MUTING AND TOP STOP SETTINGS.

CHECKING THE MUTE CURTAINS SETTING WILL “MUTE” OR IGNORE THE LIGHT CURTAINS ON THE UP STROKE ONLY. GO TO PAGE 83 TO MUTE LIGHT CURTAINS ON UPSTROKE WITH ENCODER SETUP.

CHECKING CONT IMM TOP STOP WILL TOP STOP THE PRESS ANYWHERE IN THE STROKE WHEN A TOP STOP IS COMMANDED. IF A TOP STOP COMMAND IS GIVEN INSIDE THE TOP ZONE, THE PRESS WILL TRY TO STOP EVEN THOUGH IT WILL NOT BE ABLE TO PHYSICALLY STOP IN THE TOP ZONE. THIS SETTING IS IMPORTANT WHEN INTERFACING WITH A SYSTEM THAT CAN GIVE

A TOP STOP SIGNAL TOO LATE, BUT STILL EXPECTS TO SEE THE PRESS STOP ON TOP. (EG. A TRANSFER SYSTEM) IF THIS CONDITION OCCURS, THE PP150 WILL MOST LIKELY GENERATE A TOP STOP OVERRUN FAULT. WITH CONT IMM TOP STOP UNCHECKED, THE PP150 WILL TAKE AN EXTRA STROKE IF THE TOP STOP SIGNAL IS GIVEN INSIDE THE TOP ZONE. THIS WILL ENSURE THE PRESS WILL STOP AT TOP.

CHECKING INCH STOP AT TOP WILL STOP THE PRESS AT TOP IN INCH MODE. THE OPERATOR WILL NEED TO RELEASE THE BUTTONS TO REINITIATE A STROKE. WITH INCH STOP AT TOP UNCHECKED, THE PRESS WILL RUN CONTINUOUSLY WHILE THE RUN BUTTONS ARE PUSHED.

CHECKING 2 STROKE TOP STOP WILL SET THE PRESS TO TOP STOP ON THE SECOND STROKE AROUND. THIS IS ONLY USED IN HIGH SPEED APPLICATIONS WHERE IT WILL TAKE MORE THAN 360 DEGREES TO STOP THE PRESS.

VIII. SPEED COMP TOP 1

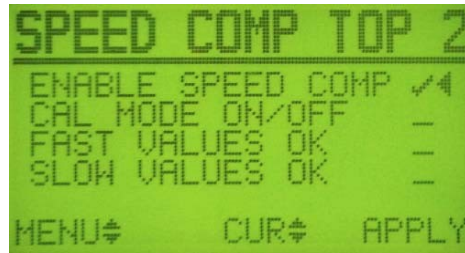


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SPEED COMP TOP 1
-----
FAST SPM      400SPM
FAST STOP     75°
SLOW SPM      100SPM
SLOW STOP     300°
MENU          CUR          CHG
```

THIS SCREEN IS NOT VISIBLE WHEN HARD CAMS ARE CHOSEN ON THE POSITION CONTROL SCREEN.

THIS SCREEN SHOWS THE ANGLE SETUP FOR THE SPEED COMPENSATED TOP STOP. FAST SPM IS THE STROKES PER MINUTE AT WHICH THE PRESS IS AT FULL SPEED. FAST STOP IS THE ANGLE AT WHICH THE PRESS NEEDS A TOP STOP SIGNAL IN ORDER TO STOP AT TOP GOING THE FAST SPM SPEED. SLOW SPM IS THE STROKES PER MINUTE AT WHICH THE PRESS IS AT ITS SLOWEST SPEED. SLOW STOP IS THE ANGLE AT WHICH THE PRESS NEEDS A TOP STOP SIGNAL IN ORDER TO STOP ON TOP GOING THE SLOW SPM SPEED. THESE SETTINGS ARE ACTIVE ONLY WHEN ENABLE SPEED COMP IS CHECKED ON THE SPEED COMP TOP 2 SCREEN.

IX. SPEED COMP TOP 2



THIS SCREEN IS NOT VISIBLE WHEN HARD CAMS ARE CHOSEN ON THE POSITION CONTROL SCREEN.

THIS SCREEN SETS UP THE USE AND CALIBRATION OF THE COMPENSATED TOP STOP FEATURE. TO ENABLE THE SPEED COMP TOP STOP FEATURE, CHECK NEXT TO THE ENABLE SPEED COMP SETTING.

CALIBRATING THE SPEED COMP TOP STOP:

* TO ENSURE THE CORRECT VALUES ARE USED FOR THE SPEED COMPENSATION TOP STOP, DISABLE SPEED COMP WHILE CALIBRATING.

SETTING THE SLOW SPEED SPM AND ANGLE: GO TO THE CAM SETTINGS SCREEN VIA THE CONFIGURATION MENU, AND RUN THE PRESS IN CONTINUOUS MODE AT ITS SLOWEST STROKES PER MINUTE. ONCE RUNNING AT MINIMUM SPEED, PRESS THE TOP STOP BUTTON ON THE DOWN STROKE AND RECORD THE DEGREES AT WHICH THE PRESS STOPS. IF THE PRESS STOPPED BEFORE ZERO, SUBTRACT THE STOPPING ANGLE FROM 360 AND ADD THAT TO THE CURRENT T-CAM OFF PARAMETER. ENTER THE NEW NUMBER INTO THE T-CAM OFF ANGLE. IF THE PRESS STOPPED AFTER ZERO DEGREES SUBTRACT HOWEVER MANY DEGREES PAST ZERO IT STOPPED FROM THE CURRENT T-CAM OFF PARAMETER AND ENTER THE NEW NUMBER INTO THE T-CAM OFF ANGLE. ONCE THE SLOW STOP SPM AND ANGLE HAVE BEEN CALCULATED, GO TO THE SPEED COMP TOP 1 SCREEN AND ENTER THE SLOW STROKES PER MINUTE INTO SLOW SPM AND THE T-CAM OFF ANGLE AT SLOW SPEED INTO THE SLOW STOP PARAMETER.

SETTING THE FAST SPEED SPM AND ANGLE: GO TO THE CAM SETTINGS SCREEN VIA THE CONFIGURATION MENU, AND RUN THE PRESS IN CONTINUOUS MODE AT ITS FASTEST STROKES PER MINUTE. ONCE RUNNING AT MAXIMUM SPEED, PRESS THE TOP STOP BUTTON ON THE DOWN STROKE AND RECORD THE DEGREES AT WHICH THE PRESS STOPS. IF THE PRESS STOPPED BEFORE ZERO, SUBTRACT THE STOPPING ANGLE FROM 360 AND ADD THAT TO THE CURRENT T-CAM OFF PARAMETER. ENTER THE NEW NUMBER INTO THE T-CAM OFF ANGLE. IF THE PRESS STOPPED AFTER ZERO DEGREES SUBTRACT HOWEVER MANY DEGREES PAST ZERO IT STOPPED FROM THE CURRENT T-CAM OFF PARAMETER AND ENTER THE NEW NUMBER INTO THE T-CAM OFF ANGLE. ONCE THE FAST STOP SPM AND ANGLE HAVE BEEN CALCULATED, GO TO THE SPEED COMP TOP 1 SCREEN AND ENTER

THE FAST STROKES PER MINUTE INTO FAST SPM AND THE T-CAM OFF ANGLE AT FAST SPEED INTO THE FAST STOP PARAMETER. ONCE BOTH SLOW AND FAST VALUES HAVE BEEN ENTERED, GO TO THE SPEED COMP TOP 2 SCREEN, AND CHECK CAL MODE ON/OFF. SINCE THE SPEEDS AND ANGLES FOR BOTH THE SLOW AND FAST VALUES HAVE BEEN ENTERED, PUT A CHECK MARK NEXT TO BOTH THE FAST VALUES OK, AND THE SLOW VALUES OK TO ACCEPT THE SETTINGS ON THE SPEED COMP TOP 1 SCREEN. AFTER BOTH ARE CHECKED, THE PP150 WILL COME OUT OF CAL MODE AUTOMATICALLY. TO PUT THESE VALUES INTO EFFECT ENABLE THE SPEED COMPENSATION TOP STOP BY PUTTING A CHECK MARK NEXT TO ENABLE SPEED COMP.



THE NEXT 4 SCREENS (SC OFFSET ZONES 1-4) ARE USED TO ACCOUNT FOR A TOP STOP THAT IS NOT PERFECTLY LINEAR. THESE ZONES ARE USUALLY ONLY NEEDED FOR FASTER PRESSES THAT TAKE MORE THAN ONE STROKE TO STOP. IF YOU DO NOT NEED THIS FUNCTION SIMPLY PUT A ZERO IN THE OFFSET FOR EACH OF THE ZONES 1-4. THE VALUES ON THIS SCREEN ARE USED IN CONJUNCTION WITH THE SPEED COMP TOP STOP CALCULATION. AFTER THE PP150 CALCULATES THE STOP ANGLE FROM THE CURRENT RUNNING SPEED, IT THEN USES THE VALUES ON THESE SCREENS TO DECIDE WHETHER OR NOT TO ADD OR SUBTRACT DEGREES TO THE CALCULATED ANGLE.

SET THESE VALUES STARTING WITH ZONE 1 AS THE SLOWEST SPEED. IN THE EXAMPLE ABOVE, IF THE SPEED OF THE PRESS IS GREATER THAN 500 SPM, AFTER THE CALCULATION FOR THE TOP STOP IS COMPLETE, IT WILL SUBTRACT 11 DEGREES FROM THE CALCULATED STOP ANGLE, IN TURN ATTEMPTING TO STOP THE PRESS EARLIER.

X. OTHER SETTINGS



THIS SCREEN IS NOT VISIBLE WHEN HARD CAMS ARE CHOSEN ON THE POSITION CONTROL SCREEN.

THIS SCREEN ALLOWS THE USER TO SET THE PRESET TIMES OF THREE DIFFERENT TIMERS. THIS SCREEN IS NOT VISIBLE WHEN HARD CAMS ARE CHOSEN ON THE POSITION CONTROL SCREEN.

BYPASS MOTION IN INCH: CHECK THIS SETTING TO BYPASS THE CLUTCH ENGAGEMENT (FLT. 14) AND CLUTCH ON AND NO MOTION (FLT. 19) FAULTS WHILE IN INCH MODE. NOTE: MOTION DETECTION FAULTS ARE ALWAYS ENABLED IN SINGLE AND CONTINUOUS MODES.

CLT ENGAGE: SET THIS TIMER FOR THE NUMBER OF MILLISECONDS THE PP150 SHOULD WAIT UNTIL A FAULT IS GENERATED DUE TO CLUTCH ENGAGED BUT NO MOTION DETECTED. A NO MOTION SITUATION OCCURS WHEN THE CONTROLLER SENDS A SIGNAL TO THE CLUTCH VALVES, BUT HAS NOT SEEN A CHANGE IN PRESS POSITION FOR THE DURATION OF THE CLT ENGAGE TIMER.

MULTI RBAR: THIS IS A TIME IN SECONDS THAT ALL ACTIVE RUN STATIONS MUST BE DEPRESSED AFTER THE FIRST STATION HAS GIVEN A VALID RUN SIGNAL. AFTER THE FIRST RUN STATION IS DEPRESSED, ALL OF THE ACTIVE RUN STATIONS MUST DEPRESS THEIR RUN BUTTONS WITHIN THIS SET TIME, OR A FAULT WILL BE GENERATED.

DRIFT FAULT: THIS IS THE TIMER FOR THE AMOUNT IN MILLISECONDS THE PP150 WILL WAIT TILL A FAULT IS GENERATED DUE TO A MOTION THAT HAS NOT BEEN COMMANDED.

CVALVE FAULT: THIS SETTING ALLOWS THE USER TO SELECT HOW THEY WANT THE CLUTCH VALVE FAULT CIRCUIT TO ACT.

- HIGH (CHECKED) – PRESS WILL STOP IF THIS INPUT TURNS ON AND DECLARE A CLUTCH VALVE FAULT

- LOW (UNCHECKED) – PRESS WILL STOP IF THIS INPUT TURNS OFF AND DECLARE A CLUTCH VALVE FAULT

XI. BRAKE TEST 1



THIS SCREEN IS NOT VISIBLE WHEN HARD CAMS ARE CHOSEN ON THE POSITION CONTROL SCREEN.

THIS SCREEN ALLOWS THE USER TO CHANGE THE THREE BRAKE TEST SETPOINTS.

TEST SPEED: THIS IS THE SPEED AT WHICH THE PRESS WILL PERFORM THE TEST. ONCE THE BRAKE TEST IS INITIALIZED THE PRESS SPEED WILL NEED TO BE ADJUSTED TO THIS PRESET. WHEN THE PRESS REACHES THIS SPEED THE BRAKE TEST WILL START

BT TIMEOUT: THIS IS THE BRAKE TEST TIMEOUT SETPOINT. ONCE THE BRAKE TEST HAS BEEN INITIALIZED THE TEST MUST BE PERFORMED WITHIN THIS TIME WINDOW. IF THE BRAKE TEST IS NOT DONE WITHIN THE ALLOTTED TIME THE TEST WILL BE AUTOMATICALLY CANCELED.


BM FLT LIM: THIS IS THE BRAKE MONITOR FAULT LIMIT. THIS SETS THE LIMIT WHERE A FAULT IS GIVEN IF THE STOP TIME TAKES LONGER THAN THE ALLOTTED TIME.

XII. BRAKE TEST 2



THIS SCREEN IS NOT VISIBLE WHEN HARD CAMS ARE CHOSEN ON THE POSITION CONTROL SCREEN.

THIS SCREEN ALLOWS THE USER TO START THE BRAKE TEST. PRESS THE  KEY TO START THE TEST.

IF THE TEST IS NOT PERFORMED IN THE ALLOTTED TIME THAT WAS SET IN SECTION XI, THE TEST WILL AUTOMATICALLY CANCEL AND "BRAKE TEST IS ON" WILL DISAPPEAR. ONCE THE BRAKE TEST HAS BEEN INITIALIZED, THE  KEY CAN BE PRESSED TO CANCEL THE TEST MANUALLY.

AFTER THE TEST HAS BEEN STARTED AND THE PRESS IS RUNNING AT THE BRAKE TEST SPEED, AN IMMEDIATE STOP SIGNAL WILL BE GENERATED AT 90 DEGREES. ONCE THE PRESS IS STOPPED, THE STOP TIME, STOP DEGS AND TEST SPEED WILL BE SAVED ON THE LAST BRAKE TEST SCREEN VIA THE MAIN MENU.

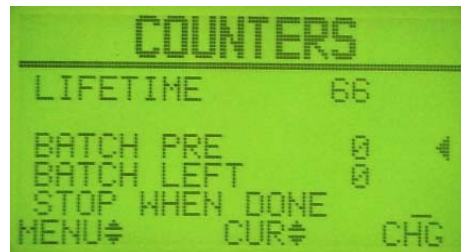
XIII. LED DISPLAY




THIS SCREEN IS VISIBLE WHEN HARD CAMS ARE CHOSEN ON THE POSITION CONTROL SCREEN, BUT NOT ALL SETTINGS ARE AVAILABLE.

THIS SCREEN ALLOWS THE USER TO CHANGE THE INFORMATION DISPLAYED ON THE LED DISPLAY WHEN THE PRESS IS IN MOTION. IF THE USER CHOOSES TO DISPLAY ANGLE THEN SPM, ONCE THE CLUTCH IS ENGAGED THE ANGLE WILL BE DISPLAYED FOR THREE SECONDS BEFORE DISPLAYING THE STROKES PER MINUTE. THE SAME WILL HAPPEN FOR ANGLE THEN BATCH FOR THE BATCH COUNT TO BE DISPLAYED. IF "ANGLE ONLY" OR "BATCH LEFT ONLY" ARE SELECTED THEN THE LED DISPLAY WILL ALWAYS DISPLAY THE SELECTED VALUE.

XIV. COUNTERS



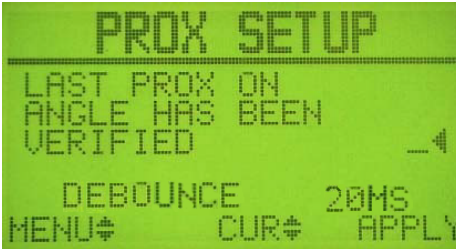
THIS SCREEN SHOWS THE LIFETIME STROKE COUNT SINCE IMPLEMENTATION OF THE PP150. THE COUNTER CAN BE CLEARED BY PRESSING THE  KEY. THIS SCREEN ALSO LETS THE USER CHOOSE WHETHER THEY WANT THEIR TUB COUNTER DISPLAY TO COUNT UP OR TO COUNT DOWN. IT ALSO LETS THE USER ENTER HOW MANY PARTS THE TUB COUNTER SHOULD BE INCREMENTED OR DECREMENTED FOR EACH STROKE. NOTE: THE "PARTS PER STROKE" VALUE DOES NOT CHANGE THE LIFETIME COUNTER INCREMENT VALUE...THAT COUNTER WILL INCREMENT BY ONE FOR EVERY STROKE.

XV. SAVE/RESTORE




FROM THIS SCREEN THE USER IS ABLE TO SAVE THE CURRENT SETUP, RESTORE THE LAST SAVED SETUP, OR RESTORE THE FACTORY DEFAULTS.

XVI. PROX SETUP



THIS SCREEN IS NOT VISIBLE WHEN HARD CAMS ARE CHOSEN ON THE POSITION CONTROL SCREEN.

THIS SCREEN GIVES THE USER THE ABILITY TO TELL THE PP150 WHEN THE PROX CHECK IS IN THE CORRECT POSITION. ONCE THE PROX CHECK SENSOR HAS BEEN MOUNTED, THE ANGLE AT WHICH IT MAKES WILL NEED TO BE VERIFIED AS CORRECT. IF THE ANGLE IS CORRECT, PRESS THE  KEY. ONCE THIS IS DONE, THE PP150 CREATES A WINDOW. THE WINDOW CREATED IS THE WINDOW IN WHICH THE PROX CHECK MUST MAKE EVERY STROKE. THIS WINDOW IS SET 10 DEGREES BEFORE THE ANGLE VERIFIED, AND 30 DEGREES AFTER THE VERIFIED ANGLE TO CREATE A TOTAL OF 40 DEGREES. TO ACCOUNT FOR NUISANCE FAULTS, THE PP150 HAS A BUILT-IN DE-BOUNCE PROGRAM IN WHICH THE PROX CAN COME ON AND OFF SEVERAL TIMES INSIDE THE PROX CHECK WINDOW, BUT MUST BE OFF OUTSIDE THE WINDOW.

DEBOUNCE: – THIS SETTING IS USED TO MITIGATE THE EFFECTS OF ELECTRICAL NOISE ON THE POSITION CHECK PROXIMITY SWITCH. THE SETTING IS HOW LONG THE SWITCH MUST BE IN THE “ON” STATE IN ORDER FOR THE PP150 TO CONSIDER IT A VALID SIGNAL. THIS SETTING IS IN MILLISECONDS.

NOTE: THE FASTER THE PRESS, THE LESS DEBOUNCE CAN BE APPLIED TO PROX SWITCH.

XVII. ETHERNET SETTINGS (REFER TO SECTION 10, PAGE 50)

6 TROUBLESHOOTING

I. FAULT DISPLAYS AND CORRECTIVE ACTION

NOTE: FAULTS 1-99 ARE FAULTS FOR THE A PROCESSOR. FAULTS 101-199 ARE DUPLICATES OF FAULTS 1-99 EXCEPT ONLY FOR THE B PROCESSOR.

MESSAGE BIT OUTPUTS 0-5 REPRESENT A BINARY NUMBER.

MESSAGE BIT 0 = 1

MESSAGE BIT 1 = 2

MESSAGE BIT 2 = 4

MESSAGE BIT 3 = 8

MESSAGE BIT 4 = 16

MESSAGE BIT 5 = 32

THESE OUTPUTS ARE SINKING 24VDC OUTPUTS.

THE WORDING NEXT TO EACH NUMBER IS WHAT IS DISPLAYED ON THE PP150 SCREEN, AND THE OPTIONAL 2X16 LCD DISPLAY.

MESSAGE CODE 1 & 101- E-STOP MISMATCH

ESR1 IS OFF AND ESR2 IS ON, OR VICE VERSA. CHECK THE E-STOP WIRING. BOTH CIRCUITS WILL HAVE TO SHOW THEIR OFF STATE AND THEIR ON STATE IN ORDER TO RESET. PRESS THE PP150 RESET BUTTON IN THE E-STOP OFF STATE, AND THEN AGAIN IN THE ON STATE TO RESET. SEE CHAPTER 3 SECTION IX FOR FURTHER ASSISTANCE.

MESSAGE CODE 2 & 102 - TIE DOWN STN-1 RELEASE BUTTONS

A TIE-DOWN FAULT HAS OCCURRED AT STATION 1. CHECK TO MAKE SURE THE RUN BUTTONS ARE RELEASED. IF THE BUTTONS ARE RELEASED, CHECK TO MAKE SURE THE CORRECT CONTACTS ARE BEING USED ON THE CORRESPONDING INPUTS.

NOTE: THE LEFT AND RIGHT RUN BUTTONS OF ANY STATION BEING USED MUST INCLUDE A NO AND A NC CONTACT. THESE CONTACTS MUST BE WIRED INTO THE PP150 CORRECTLY, AND MUST CHANGE STATE WHEN DEPRESSED.

MESSAGE CODE 3 & 103 - TIE DOWN STN-2 RELEASE BUTTONS

A TIE-DOWN FAULT HAS OCCURRED AT STATION 2. CHECK TO MAKE SURE THE RUN BUTTONS ARE RELEASED. IF THE BUTTONS ARE RELEASED, CHECK TO MAKE SURE THE CORRECT CONTACTS ARE BEING USED ON THE CORRESPONDING INPUTS.

NOTE: THE LEFT AND RIGHT RUN BUTTONS OF ANY STATION BEING USED MUST INCLUDE A NO AND A NC CONTACT. THESE CONTACTS MUST BE WIRED INTO THE PP150 CORRECTLY, AND MUST CHANGE STATE WHEN DEPRESSED.

MESSAGE CODE 4 & 104 – TIE DOWN STN-3 RELEASE BUTTONS

A TIE-DOWN FAULT HAS OCCURRED AT STATION 3. CHECK TO MAKE SURE THE RUN BUTTONS ARE RELEASED. IF THE BUTTONS ARE RELEASED, CHECK TO MAKE SURE THE CORRECT CONTACTS ARE BEING USED ON THE CORRESPONDING INPUTS.

NOTE: THE LEFT AND RIGHT RUN BUTTONS OF ANY STATION BEING USED MUST INCLUDE A NO AND A NC CONTACT. THESE CONTACTS MUST BE WIRED INTO THE PP150 CORRECTLY, AND MUST CHANGE STATE WHEN DEPRESSED.

MESSAGE CODE 5 & 105 – TIE DOWN STN-4 RELEASE BUTTONS

A TIE-DOWN FAULT HAS OCCURRED AT STATION 4. CHECK TO MAKE SURE THE RUN BUTTONS ARE RELEASED. IF THE BUTTONS ARE RELEASED, CHECK TO MAKE SURE THE CORRECT CONTACTS ARE BEING USED ON THE CORRESPONDING INPUTS.

NOTE: THE LEFT AND RIGHT RUN BUTTONS OF ANY STATION BEING USED MUST INCLUDE A NO AND A NC CONTACT. THESE CONTACTS MUST BE WIRED INTO THE PP150 CORRECTLY, AND MUST CHANGE STATE WHEN DEPRESSED.

MESSAGE CODE 6 & 106 – MULTIRUN TIMEOUT RELEASE BUTTONS

THIS MESSAGE OCCURS WHEN MULTIPLE STATIONS ARE ACTIVE AND ALL ACTIVE STATIONS HAVE NOT DEPRESSED THEIR RUN BUTTONS IN TIME DESIGNATED SINCE THE FIRST STATIONS RUN BUTTONS WERE DEPRESSED. ALL ACTIVE STATIONS MUST BE DEPRESSED WITHIN A SET TIME AFTER THE FIRST STATION IS DEPRESSED IN ORDER FOR THE PP150 TO SEE A VALID RUN SIGNAL. WHEN THIS MESSAGE SHOWS, RELEASE THE RUN BUTTONS AND TRY AGAIN MAKING SURE ALL ACTIVE RUN STATIONS ARE USED AT THE SAME TIME. IF A RUN STATION IS NOT BEING USED, IT MUST BE BYPASSED CORRECTLY USING THE CORRESPONDING BYPASS TERMINAL BLOCK ON THE PP150. SEE THE ELECTRICAL PRINTS FOR BYPASSING THE RUN STATIONS.

MESSAGE CODE 7 & 107 – WATCHDOG CHK FLT MUST RESTART THIS ERROR OCCURS WHEN THE PP150 PROGRAM HAS COME ACROSS AN INTERNAL ERROR. IF THIS HAPPENS, THE PP150 MUST BE RESTARTED. IF THE FAULT PERSISTS, CONTACT TOLEDO INTEGRATED SYSTEMS FOR FURTHER ASSISTANCE.

MESSAGE CODE (8&108), (10&110) – WATCHDOG (1&2) MONITOR FAULT THE PP150 HAS DUAL PROCESSORS, EACH HAVING A FORCE GUIDED WATCHDOG RELAY. THE WATCHDOG RELAY IS USED TO REMOVE POWER TO THE CLUTCH VALVES IF A MAJOR FAULT OCCURS. THESE RELAYS ARE CHECKED FOR PROPER OPERATION AT STARTUP AND ARE CONTINUOUSLY MONITORED FOR THE CORRECT STATE. TO RESET THIS FAULT, ATTEMPT TO RESET WITH THE PP150 FLT RESET PB. IF THE PB WILL NOT RESET THE FAULT, CYCLE POWER TO THE PP150.

IF THE ERROR PERSISTS, CONTACT TOLEDO INTEGRATED SYSTEMS FOR FURTHER ASSISTANCE.

MESSAGE CODE 9 & 109 – EXCESSIVE STOP TIME FAULT

THIS FAULT HAPPENS WHEN THE PP150 CLUTCH RELAYS ARE TURNED OFF AND THE RESOLVER/ENCODER SEE MOTION FOR MORE THAN 1.5 TIMES THE ALLOWABLE BRAKE TIME. THIS IS A MAJOR FAULT AND SHOULD NOT BE TAKEN LIGHTLY. ENSURE THAT THE AIR TO THE C/B SOLENOID IS SUFFICIENT AND THAT THE C/B UNIT IS DISENGAGING CORRECTLY.

MESSAGE CODE 11 & 111 – MULTIPLE MODES DETECTED FAULT

THIS SYSTEM CHECKS TO MAKE SURE THAT ONLY ONE MODE IS SELECTED FROM THE SELECTOR SWITCH. IF THIS OCCURS, FIRST CHECK THE WIRING FROM THE MODE SELECTOR SWITCH. ALSO, CHECK FOR BROKEN OR STUCK CONTACTS WITHIN THE MODE SELECTOR SWITCH. PRESS THE PP150 RESET BUTTON TO CLEAR THE FAULT ONCE THE CONDITION IS CORRECTED.

MESSAGE CODE 12 & 112 – NO MODE DETECTED FAULT

THIS OCCURS WHEN THE MODE KEY SWITCH IS TURNED TO THE “OFF” POSITION. TURN THE MODE KEY SWITCH TO A MODE OTHER THAN OFF TO RESET THIS FAULT.

MESSAGE CODE 13 & 113 – HEARTBEAT FAULT

THIS MESSAGE IS THE DETECTION OF A “HEARTBEAT” FROM THE EITHER OF THE PROCESSORS. IF EITHER PROCESSOR DOES NOT SEE THE OTHER PROCESSORS HEARTBEAT, THIS IS THE ERROR THAT OCCURS. PRESS THE PP150 RESET BUTTON TO CLEAR THE FAULT. IF THE FAULT PERSISTS, CONTACT TOLEDO INTEGRATED SYSTEMS FOR FURTHER ASSISTANCE.

MESSAGE CODE 14 & 114 – CLUTCH ENGAGEMENT FAULT

WHEN A CLUTCH “ON” SIGNAL HAS BEEN SENT TO THE CLUTCH VALVES, AND NO MOTION IS SEEN FROM THE RESOLVER/ENCODER, THEN THIS FAULT IS DECLARED. CHECK THE RESOLVER/ENCODER FOR: PROPER WIRING, TO SEE IF THE COUPLING TO THE PRESS IS OK, FOR PROPER DIRECTION, AND CHECK TO MAKE SURE THE CLUTCH VALVE IS NOT FAULTED. PRESS THE PP150 RESET BUTTON TO CLEAR THIS FAULT. (REFER TO CHAPTER 5 SECTION X FOR TIMER SETTINGS, PAGE 27)

MESSAGE CODE 15 & 115 – MUTE RELAY MONITOR FAULT

THIS SYSTEM CHECKS THE POSITION OF EACH OF ITS INTERNAL FORCE GUIDED RELAYS USED FOR MUTING THE LIGHT CURTAINS. IF THE RELAY FAILED TO TURN OFF WHEN IT WAS REQUESTED BY THE PROCESSOR, THIS FAULT WILL OCCUR. PRESS THE PP150 RESET BUTTON TO RESET THE FAULT.

MESSAGE CODE 16 & 116 – CLUTCH RELAY MONITOR FAULT

THIS SYSTEM CHECKS THE POSITION OF EACH OF ITS INTERNAL FORCE GUIDED RELAYS USED TO SEND THE CLUTCH ON SIGNAL TO C1 AND C2. IF THE RELAY FAILED TO TURN ON OR OFF WHEN IT WAS REQUESTED BY THE PROCESSOR, THIS FAULT WILL OCCUR. PRESS THE PP150 RESET BUTTON TO RESET THE FAULT.

NOTE: CLUTCH, WATCHDOG AND MUTE RELAYS MUST BE REPLACED USING ORIGINAL FACTORY SUPPLIED COMPONENTS. IF THE FAULT CANNOT BE RESET, CONTACT TOLEDO INTEGRATED SYSTEMS FOR REPLACEMENT PARTS.

MESSAGE CODE 17 & 117 – CLUTCH VALVE MONITOR FAULT

THE PP150 IS EQUIPPED WITH AN INPUT TO SHOW ON SCREEN IF A CLUTCH SOLENOID VALVE HAS FAULTED. THIS INPUT SHOULD ALWAYS BE ON AND WILL DECLARE A FAULT IF IT IS OFF FOR MORE THAN 1 SECOND. THE INPUT SHOULD COME DIRECTLY FROM THE CLUTCH SOLENOID VALVE FAULT CONTACT. CHECK THE CLUTCH VALVE FOR A FAULT CONDITION. PRESS THE PP150 RESET BUTTON TO RESET THE FAULT ONCE THE VALVE IS NOT FAULTED. (JUMP THIS INPUT “ON” IF THE SOLENOID VALVE DOES NOT HAVE A FAULT CONTACT)

MESSAGE CODE 18 & 118 – UNCOMMANDED MOTION FAULT

THIS SYSTEM CHECKS TO MAKE SURE THE CLUTCH VALVES ARE ENGAGED FIRST AND THEN MOTION IS SEEN. IF MOTION OCCURS BEFORE THE CLUTCH VALVES ARE ENGAGED, THIS FAULT WILL OCCUR. PRESS THE PP150 RESET BUTTON TO RESET THE FAULT. (REFER TO CHAPTER 5, SECTION X DRIFT FLT, PAGE 27)

MESSAGE CODE 19 & 119 – CLUTCH ON BUT NO MOTION FAULT

ONCE THE PP150 HAS SEEN MOTION, THE PRESS MUST CONTINUE WITH MOTION THE ENTIRE TIME THE CLUTCH VALVE IS ON. IF AT ANYTIME THE PRESS STOPS AFTER MOTION HAS BEEN DETECTED AND THE CLUTCH OUTPUTS ARE ON, THIS FAULT WILL OCCUR. PRESS THE PP150 RESET BUTTON TO RESET THE FAULT.

MESSAGE CODE 20 & 120 – HYDRAULIC OL PUMPING PROMPT

AFTER A HYD. OL FAULT HAS BEEN ACKNOWLEDGED AND THE PRESS HAS BEEN INCHED TO THE TOP ZONE, THE PRESS WILL STOP AUTOMATICALLY AND START PUMPING THE HYD. OL SOLENOID. THE OUTPUT WILL STAY ON/PUMPING (DEPENDING ON THE SETTINGS) UNTIL THE HYD. OL INPUT IS “GOOD” FOR 10 CONTINUOUS SECONDS. SEE HYD. OL SECTION (16) FOR COMPLETE PROCESS.

MESSAGE CODE 21 & 121 – PROX CYCLED OUTSIDE WINDOW

THIS FAULT WILL NOT OCCUR IF HARD CAMS ARE CHOSEN ON THE POSITION CONTROL SCREEN.

WHEN A RESOLVER OR AN ENCODER IS THE PRIMARY MEANS OF CHECKING MOTION, THE PP150 HAS THE CAPABILITY OF SETTING ANY WINDOW IN THE STROKE FOR THE PROX CHECK SWITCH TO CYCLE. ONCE THIS WINDOW HAS BEEN SET, THE PROX SHOULD COME ON AND OFF INSIDE THIS WINDOW. IF THE PROX CYCLES OUTSIDE THE WINDOW, THIS FAULT WILL OCCUR. CHECK TO MAKE SURE THE PROX CHECK SENSOR IS COMING ON AT THE CORRECT DEGREE, AND PRESS THE PP150 RESET BUTTON TO RESET THE FAULT.

MESSAGE CODE 22 & 122 – RESOLVER FAULT

IF A RESOLVER IS SELECTED FOR THE MEANS OF MOTION DETECTION AND THERE IS NO RESOLVER CONNECTED TO THE PP150, THIS FAULT WILL OCCUR. THIS FAULT WILL ALSO OCCUR IF THE RESOLVER IS NOT WIRED CORRECTLY. SEE THE ELECTRICAL SCHEMATICS FOR WIRING THE RESOLVER TO THE PP150.

MESSAGE CODE 23 & 123 – PROX CYCLED TWICE FAULT

THIS FAULT WILL NOT OCCUR IF HARD CAMS ARE CHOSEN ON THE POSITION CONTROL SCREEN.

WHEN A RESOLVER OR AN ENCODER IS THE PRIMARY MEANS OF CHECKING MOTION, THE PP150 HAS THE CAPABILITY OF SETTING ANY WINDOW IN THE STROKE FOR THE PROX CHECK SWITCH TO CYCLE. ONCE THIS WINDOW HAS BEEN SET, THE PROX SHOULD COME ON AND OFF INSIDE THIS WINDOW. THERE ALSO IS PROGRAMMING USED TO DEBOUNCE ANY FALSE READINGS THAT MAY OCCUR DURING NORMAL CYCLING OF THE PROX SWITCH. ONCE THE PROX SWITCH ANGLE IS VERIFIED, THE PROX WINDOW IS COMPUTED AND AUTOMATICALLY APPLIED. THIS WINDOW ALLOWS THE PROX SWITCH TO CYCLE AS MANY TIMES AS IT WANTS IN ORDER TO ALLEVIATE NUISANCE FAULTS. IF THE PROX IS STILL CYCLING OUTSIDE OF THIS WINDOW, THIS FAULT WILL OCCUR. PRESS THE PP150 RESET BUTTON TO RESET THIS FAULT.

MESSAGE CODE 24 & 124 – NO PROX IN WINDOW FAULT

THIS FAULT WILL NOT OCCUR IF HARD CAMS ARE CHOSEN ON THE POSITION CONTROL SCREEN.

THIS FAULT WILL OCCUR WHEN THE PROX CHECK HAS FAILED TO CYCLE INSIDE THE USER DEFINED WINDOW. MAKE SURE THAT THE PROX IS MOUNTED CORRECTLY, AND THAT THE WINDOW IS SET TO CAPTURE WHEN THE PROX CYCLES. CHANGE ACCORDINGLY, AND PRESS THE PP150 RESET BUTTON TO RESET THIS FAULT.

MESSAGE CODE 25 & 125 – TOP STOP OVERRUN FAULT

A TOP STOP IS DEFINED AS A STOPPING POINT IN THE TOP ZONE OF THE STROKE. TOP ZONE IS DEFINED AS THE DEGREES BETWEEN TCAM OFF AND BCAM ON. KNOWING THIS INFORMATION, THE PRESS MUST STOP BETWEEN TCAM OFF AND BCAM ON IN ORDER TO TOP STOP. IF THE PRESS STOPS AFTER BCAM HAS TURNED ON, THIS IS CONSIDERED A TOP STOP OVERRUN AND WILL RESULT IN THIS FAULT. THIS FAULT WILL ONLY OCCUR IF A TOP STOP HAS BEEN INITIATED, AND THE PRESS FAILS TO STOP BEFORE BCAM ON. MAKE SURE THE TCAM OFF ANGLE IS CORRECT, THE CONDITION OF THE BRAKE IS IN GOOD CONDITION, COUNTER BALANCE PRESSURE IS CORRECT, AND PRESS THE PP150 RESET BUTTON TO RESET THE FAULT.

MESSAGE CODE 26 & 126 – BRAKE MONITOR FAULT

THIS FAULT WILL OCCUR WHEN THE BRAKE MONITOR STOPPING TIME HAS EXCEEDED THE USER DEFINED SET POINT. BEFORE RESETTING THE FAULT, INVESTIGATE THE CAUSE OF THE EXCESSIVE STOPPING TIME AND TAKE CORRECTIVE ACTION. PRESS THE PP150 RESET BUTTON TO RESET THE FAULT.

MESSAGE CODE 27 & 127 – COUNTER BAL AIR PRESSURE FAULT

THE PP150 IS CONSTANTLY CHECKING TO MAKE SURE THE SYSTEM HAS A GOOD SIGNAL FROM THE COUNTER BALANCE AIR PRESSURE SWITCH. MAKE SURE THE COUNTER BALANCE AIR PRESSURE SWITCH IS SET CORRECTLY IN ORDER FOR THE PP150 TO ACCURATELY ADVISE OF INCORRECT PRESSURE. CHECK THE PRESSURE SWITCH, AND PRESS THE PP150 RESET BUTTON TO RESET THE FAULT.

MESSAGE CODE 28 & 128 – CLUTCH AIR PRESSURE FAULT

THE PP150 IS CONSTANTLY CHECKING TO MAKE SURE THE SYSTEM HAS A GOOD SIGNAL FROM THE CLUTCH AIR PRESSURE SWITCH. MAKE SURE THE CLUTCH AIR PRESSURE SWITCH IS SET CORRECTLY IN ORDER FOR THE PP150 TO ACCURATELY ADVISE OF INCORRECT PRESSURE. CHECK THE PRESSURE SWITCH, AND PRESS THE PP150 RESET BUTTON TO RESET THE FAULT.

FAULTS 31-38 AND 131-138 ARE FAULTS EXCLUSIVE TO THE HARD CAM BASED SYSTEM.

ALL CAM FAULTS CAN BE CAUSED BY FAULTY CONTACTS ON SWITCHES THAT BOUNCE (CODES 31-38 AND 131-138).

MESSAGE CODE 31 & 131 – PROX CYCLED AND A CAM WAS ON

THIS FAULT MEANS THAT THE PROX CHECK CYCLED WHILE EITHER BCAM OR TCAM WAS ON. THE PROX IN A CAM BASED SYSTEM SHOULD ALWAYS COME ON IN THE TOP ZONE. ADJUST THE PROX SO THAT IT DOES NOT CYCLE UNTIL TCAM IS OFF, BUT BEFORE BCAM COMES ON. REFER TO CHAPTER 2 SECTION XIII FOR A GRAPHICAL ILLUSTRATION. PRESS THE PP150 RESET BUTTON TO RESET THE FAULT.

MESSAGE CODE 32 & 132 – BCAM ON AND PROX DIDN'T CYCLE

THE PROX IN A CAM BASED SYSTEM SHOULD ALWAYS COME ON IN THE TOP ZONE. IF THE PROX FAILS TO CYCLE IN THE TOP ZONE AND BCAM COMES ON, THIS FAULT WILL OCCUR. MAKE SURE THE CAMS ARE SET CORRECTLY AND THAT THE PROX CHECK CYCLES IN THE TOP ZONE. REFER TO CHAPTER 2 SECTION XIII FOR A GRAPHICAL ILLUSTRATION. PRESS THE PP150 RESET BUTTON TO RESET THE FAULT.

MESSAGE CODE 33 & 133 – NO CAM OVERLAP AT BOTTOM

BCAM AND TCAM NEED TO BE SET SO THAT THE DEGREE BCAM TURNS OFF, AND THE DEGREE TCAM TURNS ON OVERLAP. IF THIS DOES NOT HAPPEN, THIS FAULT WILL OCCUR. REFER TO CHAPTER 2 SECTION XIII FOR A GRAPHICAL ILLUSTRATION ON DEFAULT SETTINGS FOR CAM SWITCHES. PRESS THE PP150 RESET BUTTON TO RESET THE FAULT.

MESSAGE CODE 34 & 134 – BCAM CYCLED TWICE AT BOTTOM

THIS FAULT OCCURS WHEN BCAM CYCLES NORMALLY, BUT CYCLES AGAIN AFTER TCAM TURNS ON AND BEFORE TCAM TURNS OFF. REFER TO CHAPTER 2 SECTION XIII FOR A GRAPHICAL ILLUSTRATION ON DEFAULT SETTINGS FOR CAM SWITCHES. PRESS THE PP150 RESET BUTTON TO RESET THE FAULT.

MESSAGE CODE 35 & 135 – PROX CYCLED AND NO BOTTOM ZONE

THIS FAULT OCCURS WHEN THE PROX CHECK CYCLES NORMALLY, BUT BCAM AND TCAM DO NOT OVERLAP. IT CAN ALSO BE THE CASE THAT BCAM NEVER CYCLED BEFORE TCAM CAME ON. CHECK TO MAKE SURE THAT THE CAMS ARE WORKING PROPERLY AND THE WINDOWS ARE SET CORRECTLY. PRESS THE PP150 RESET BUTTON TO RESET THE FAULT.

MESSAGE CODE 36 & 136 – PROX CYCLED AND NO UP ZONE

THIS FAULT OCCURS WHEN THE PROX CHECK CYCLES NORMALLY, BUT BCAM AND TCAM DID NOT OVERLAP AT THE BOTTOM OF THE STROKE. IT CAN ALSO BE THE CASE THAT TCAM NEVER CYCLED BEFORE THE PROX CHECK CYCLED. CHECK TO MAKE SURE THAT THE CAMS ARE WORKING PROPERLY AND THE WINDOWS ARE SET CORRECTLY. PRESS THE PP150 RESET BUTTON TO RESET THE FAULT.

MESSAGE CODE 37 & 137 – BCAM OFF BEFORE TCAM CAME ON

BCAM AND TCAM NEED TO BE SET SO THAT THE DEGREE BCAM TURNS OFF, AND THE DEGREE TCAM TURNS ON OVERLAP. IF THIS DOES NOT HAPPEN, THIS FAULT WILL OCCUR. REFER TO CHAPTER 2 SECTION XIII FOR A GRAPHICAL ILLUSTRATION ON DEFAULT SETTINGS FOR CAM SWITCHES. PRESS THE PP150 RESET BUTTON TO RESET THE FAULT.

MESSAGE CODE 38 & 138 – PROX CYCLED TWICE FAULT

IN THE CAM BASED SYSTEM, THE PROX CHECK NEEDS COME ON AND OFF ONCE DURING THE DEGREES THAT TCAM IS OFF, AND BCAM TURNS ON. IF FOR ANY REASON THE PROX CYCLES MORE THAN ONCE IN THAT WINDOW, THIS FAULT WILL OCCUR. CHECK THE COUPLING ON THE CAM BOX, AND MAKE CERTAIN THE PROX SWITCH IS NOT CYCLING TWICE AT THE TOP. ADJUST THE PROX AS NEEDED. PRESS THE PP150 RESET BUTTON TO RESET THE FAULT.

MESSAGE CODE 39 & 139 – ETHERNET HEARTBEAT FAULT

WHEN ETHERNET IS ENABLED, A HEARTBEAT SIGNAL IS CHECKED BETWEEN THE PP150 AND THE PLC. THIS IS CONSIDERED A COMMUNICATIONS ERROR ON THE ETHERNET NETWORK. CHECK ALL ETHERNET CABLES.

MESSAGE CODE 40 & 140 – HYDRAULIC OL FLT...RESET TO ACK

WHEN THE HYD. OL INPUT GOES ON/OFF (DEPENDING ON SETTINGS), THIS FAULT WILL SHOW ON THE SCREEN. PUSH PP150 RESET BUTTON TO ACK. THE FAULT, THEN FOLLOW THE PROMPTS. SEE HYD. OL SECTION (16) FOR COMPLETE PROCESS.

THE FOLLOWING MESSAGES (41-60) ARE CONSIDERED PROMPTS AND NOT FAULT CONDITIONS. AFTER THE CONDITION STATED IS MET, THE PP150 WILL AUTOMATICALLY RESET.

MESSAGE CODE 41 & 141 – SINGLE STROKE READY

THIS IS A PROMPT FROM THE PP150 INDICATING THAT ALL REQUIREMENTS TO BE ABLE TO RUN THE PRESS IN SINGLE STROKE MODE HAVE BEEN VERIFIED.

MESSAGE CODE 42 & 142 – CONTINUOUS NOT ARMED

THIS IS A PROMPT INDICATING THAT ALL REQUIREMENTS TO RUN IN CONTINUOUS MODE ARE MET EXCEPT THE CONTINUOUS ARM (PRIOR ACTION) BUTTON HAS NOT BEEN PUSHED. PUSH THE CONTINUOUS ARM BUTTON TO ARM THE PRESS. ONCE THE BUTTON HAS BEEN PUSHED, THE PRESS WILL STAY ARMED FOR A USER DEFINED TIME LIMIT. ONCE THE TIME IS UP, THE BUTTON WILL NEED TO BE PUSHED AGAIN.

MESSAGE CODE 43 & 143 – CONTINUOUS ARMED

THIS IS A PROMPT FROM THE PP150 INDICATING THAT ALL REQUIREMENTS TO BE ABLE TO RUN THE PRESS IN CONTINUOUS MODE HAVE BEEN VERIFIED.

MESSAGE CODE 44 & 144 – CONTINUOUS AND MOTOR NOT FWD

THIS IS A PROMPT INDICATING THAT ALL REQUIREMENTS TO RUN IN CONTINUOUS MODE ARE MET EXCEPT THE MAIN MOTOR IS NOT RUNNING FORWARD.

MESSAGE CODE 45 & 145 – BRAKE MONITOR TEST MODE ON

THIS IS A PROMPT INDICATING THAT THE PP150 IS IN BRAKE MONITOR TEST MODE. THE PP150 SHOULD ONLY BE RUN IN BRAKE TEST MODE FOR THE PURPOSE OF TESTING THE BRAKE. FAILURE TO DO SO MAY CAUSE DAMAGE TO THE PRESS AND ANY DIE THAT MAY BE IN THE PRESS BED.

MESSAGE CODE 46 & 146 – AUX IMMEDIATE STOP OPEN

THIS PROMPT INDICATES THAT AN IMMEDIATE STOP HAS BEEN DECLARED THROUGH THE IMMEDIATE STOP AUXILIARY INPUT ON THE PP150. CHECK ALL DEVICES THAT ARE CONNECTED TO THE “IMMED STOP” AND “IMMED STOPJ” TERMINAL BLOCKS, AND VERIFY THEY ARE NOT IN A FAULT STATE.

MESSAGE CODE 47 & 147 – AUX TOP STOP OPEN

THIS PROMPT INDICATES THAT A TOP STOP HAS BEEN DECLARED THROUGH THE TOP STOP AUXILIARY INPUT ON THE PP150. CHECK ALL DEVICES THAT ARE CONNECTED TO THE “TOP STOP” AND “TOP STOPJ” TERMINAL BLOCKS, AND VERIFY THEY ARE NOT IN A FAULT STATE.

MESSAGE CODE 48 & 148 – SPEED COMP CAL MODE ON

THIS IS A PROMPT INDICATING THAT THE PP150 IS IN SPEED COMPENSATION CALIBRATION MODE. THE PP150 SHOULD ONLY BE RUN IN SPEED COMP MODE FOR THE PURPOSE OF CALIBRATING THE SPEED COMPENSATION FEATURE. FAILURE TO DO SO MAY CAUSE DAMAGE TO THE PRESS AND ANY DIE THAT MAY BE IN THE PRESS BED.

MESSAGE CODE 49 & 149 – OL BLOWN...INCH PRESS FWD TO TOP

THIS IS A PROMPT INDICATING THAT THE HYD. OL HAS BEEN ACKNOWLEDGED AND THE PRESS NEEDS TO BE INCHED FWD TO THE TOP ZONE TO PUMP THE HYD. OL SOLENOID. SEE HYD. OL SECTION (16) FOR COMPLETE PROCESS.

MESSAGE CODE 50 & 149 – OL BLOWN...INCH PRESS REV TO TOP

THIS IS A PROMPT INDICATING THAT THE HYD. OL HAS BEEN ACKNOWLEDGED AND THE PRESS NEEDS TO BE INCHED REV TO THE TOP ZONE TO PUMP THE HYD. OL SOLENOID. SEE HYD. OL SECTION (16) FOR COMPLETE PROCESS.

MESSAGE CODE 51 & 151 – IN SINGLE BUT MOTOR NOT FWD

THIS IS A PROMPT INDICATING THAT ALL REQUIREMENTS TO RUN IN SINGLE STROKE MODE ARE MET EXCEPT THE MAIN MOTOR IS NOT RUNNING FORWARD.

MESSAGE CODE 52 & 152 – INCH PRESS TO ARM CONTINUOUS

THIS PROMPT INDICATES THAT IN ORDER TO ARM THE PRESS IN CONTINUOUS, THE PRESS MUST BE IN THE USER DEFINED ZONE. ONCE THE PRESS IS IN THIS ZONE, IT CAN BE ARMED FOR CONTINUOUS MODE.

MESSAGE CODE 53 & 153 – INCH MODE READY

THIS IS A PROMPT FROM THE PP150 INDICATING THAT ALL REQUIREMENTS TO BE ABLE TO RUN THE PRESS IN INCH MODE HAVE BEEN VERIFIED.

MESSAGE CODE 54 & 154 – MODE SELECT IN OFF

THIS PROMPT INDICATES THE MODE SELECTOR SWITCH IS IN THE OFF POSITION.

MESSAGE CODE 55 & 155 – EMERGENCY STOP CIRCUIT OPEN

THIS IS A PROMPT INDICATING THE EMERGENCY STOP CIRCUIT IS NOT RESET. CHECK TO MAKE SURE ALL DEVICES IN THE EMERGENCY STOP CIRCUIT ARE MADE. IF ALL THE DEVICES ARE GOOD, THIS PROMPT WILL RESET AUTOMATICALLY.

MESSAGE CODE 56 & 156 – BATCH COUNT DONE

ONCE THE PRESET BATCH COUNT HAS BEEN FINISHED, THIS PROMPT WILL APPEAR ON THE SCREEN. PRESS THE PP150 RESET BUTTON TO RELOAD THE SAME COUNT INTO THE BATCH PRESET.

MESSAGE CODE 57 & 157 – AUTO-SINGLE ENABLED...PUSH TO ARM

THIS PROMPT MEANS THAT THE AUTO-SINGLE ENABLE INPUT IS ON AND THE SYSTEM IS WAITING TO BE ARMED. SEE THE AUTO-SINGLE SECTION (15) FOR A DESCRIPTION OF THE PROCESS.

MESSAGE CODE 58 & 158 – AUTO-SINGLE ARMED

THIS PROMPT MEANS THAT THE AUTO-SINGLE ENABLE INPUT IS ON AND THE SYSTEM IS ARMED AND WAITING FOR THE “ENGAGE” INPUT TO SINGLE STROKE THE PRESS. SEE THE AUTO-SINGLE SECTION (15) FOR A DESCRIPTION OF THE PROCESS.

MESSAGE CODE 59 & 159 – CONT-ON-DEMAND ENABLED...PUSH TO ARM

THIS PROMPT MEANS THAT THE CONT-ON-DEMAND ENABLE INPUT IS ON AND THE SYSTEM IS WAITING TO BE ARMED. SEE THE CONT-ON-DEMAND SECTION (15) FOR A DESCRIPTION OF THE PROCESS.

MESSAGE CODE 60 & 160 – CONT-ON-DEMAND ARMED

THIS PROMPT MEANS THAT THE CONT-ON-DEMAND ENABLE INPUT IS ON AND THE SYSTEM IS ARMED AND WAITING FOR THE “ENGAGE” INPUT TO BEGIN STROKING THE PRESS. SEE THE CONT-ON-DEMAND SECTION (15) FOR A DESCRIPTION OF THE PROCESS.

MESSAGE CODE 61 & 161 – Z-PULSE OUTSIDE OF CHECK WINDOW

THIS FAULT ONLY OCCURS IF THE MUTE CURTAINS IS SELECTED UNDER LC MUTE/TOP STOP AND AN ENCODER IS USED. THE Z-PULSE MUST OCCUR BETWEEN 1-50 DEGREES. SEE THE MUTE LIGHT CURTAINS ON UPSTROKE WITH ENCODER SETUP SECTION (18) FOR A DESCRIPTION OF THE PROCESS.

MESSAGE CODE 62 & 162 – PROX LOCATION INCORRECT

THIS FAULT ONLY OCCURS IF THE MUTE CURTAINS IS SELECTED UNDER LC MUTE/TOP STOP AND AN ENCODER IS USED. THE PROX MUST BE SET TO CYCLE BETWEEN 71-130 DEGREES. SEE THE MUTE LIGHT CURTAINS ON UPSTROKE WITH ENCODER SETUP SECTION (18) FOR A DESCRIPTION OF THE PROCESS.





II. INPUT DIAGNOSTIC SCREENS

THE SYSTEM IS EQUIPPED WITH AN INPUT DIAGNOSTICS TO TEST SYSTEM FUNCTIONS AND THE INPUTS. TO PUT IN DIAGNOSTIC MODE:

- 1) LOCATE SW1 (4 BIT-DIP SWITCH) INSIDE OF THE PP150 ON THE DOOR.



- 2) MOVE DIP SWITCH #2 TO THE ON POSITION.

TO CYCLE THROUGH THE DIAGNOSTIC SCREENS USE THE  KEY TO THE LEFT. TO TEST ANY OF THE SYSTEM FUNCTIONS OR INPUTS, CYCLE THROUGH THE ITEMS BY PRESSING THE  KEY IN THE MIDDLE UNTIL THE ITEM IS DISPLAYED AT THE BOTTOM OF THE SCREEN AND PRESS THE  KEY. TO STOP THE TEST PRESS THE  AGAIN.

THE FIRST TWO SCREENS SHOWN BELOW ARE USED TO TEST THE BUILT IN LED AND LCD SCREENS. IF THE BACKGROUND FOR AN INPUT OR OUTPUT IS DARK, IT SIGNIFIES THAT THE OUTPUT IS GOOD. ALL OF THE DIAGNOSTIC SCREENS FOLLOW THIS FORMAT.



THE NEXT DIAGNOSTIC SCREEN IS THE BINARY OUTPUT MESSAGE SCREEN.



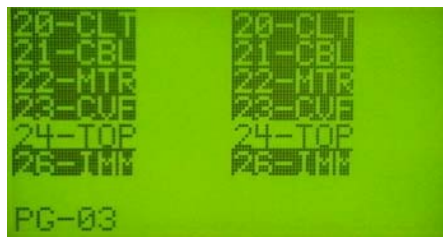
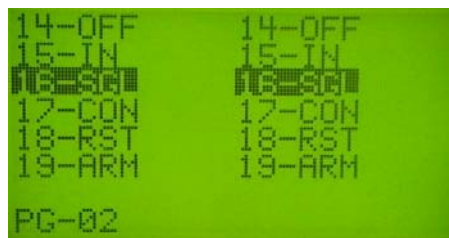
THE NEXT DIAGNOSTIC SCREEN IS THE RELAY SCREEN. THE COLUMN LIST ON THE LEFT REPRESENTS THE RELAYS FOR THE "A" PROCESSOR AND THE COLUMN LIST ON THE RIGHT REPRESENT THE RELAYS FOR THE "B" PROCESSOR. FOUR OTHER OUTPUTS CAN BE TESTED FROM THIS SCREEN INCLUDING PP150 RESET (OK), PP150 FAULT (FAULT), CONTINUOUS ARM (C-ARM) AND OUTPUT 1 (OUT1).



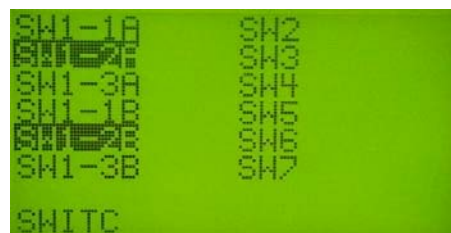
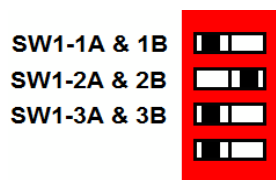
THE NEXT SIX DIAGNOSTIC SCREENS ARE TITLED WITH A PAGE NUMBER IN THE BOTTOM LEFT OF THE DISPLAY. THE NUMBERS TO THE LEFT OF THE DESCRIPTIONS FOR THE “A” AND “B” PROCESSORS REPRESENT THE TERMINAL NUMBER ON THE PP150.

PG-01 & PG-05 ARE SCREENS FOR THE RUN STATIONS. THESE TWO SCREENS AS SHOWN INDICATE THAT THE N.C. CONTACTS FOR RUN STATION #1 ARE ON AND RUN STATIONS #2, #3 & #4 ARE BYPASSED.

PG-02 DISPLAYS THE MODE OF THE PP150. PG-03 DISPLAYS CLUTCH, COUNTERBALANCE, MOTOR, CLUTCH VALVE, TOP STOP AND IMMEDIATE STOP INPUTS. PG-04 DISPLAYS ENCODER, PROX AND CAM INPUTS. PG-06 DISPLAYS INPUTS 1, 2, 3 AND THE E-STOP INPUTS.

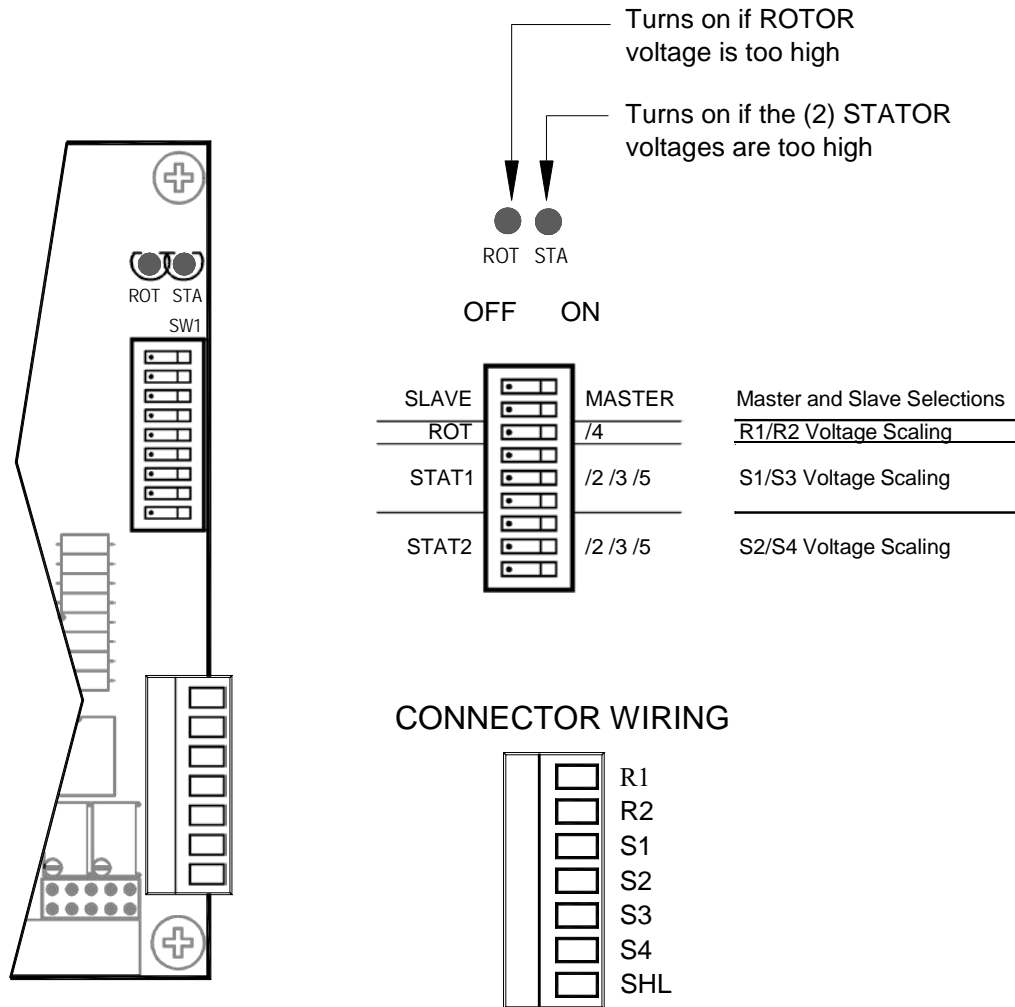


THE LAST SCREEN TESTS THE TOP THREE DIP SWITCH OUTPUTS ON THE DOOR OF THE PP150 AND THE SIX BUTTONS ON THE FRONT OF THE PP150. THE SCREEN BELOW INDICATES THAT SECOND DIP SWITCH IS ON.



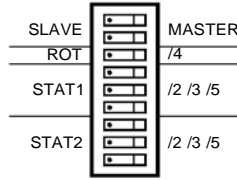
III. RESOLVER WIRING

The PP150 resolver input has a built-in excitation which supports standard 5,000 Hz rotor-excited positional resolvers. The input can be configured in Master Mode or Slave Mode. In Master Mode, the PP150 supplies excitation voltage to the resolver and is wired directly to the resolver. In Slave Mode, the PP150 does not supply excitation voltage to the resolver and is wired to the resolver input terminal of a Master device, where the resolver signal is shared. The resolver input consists of the following components:



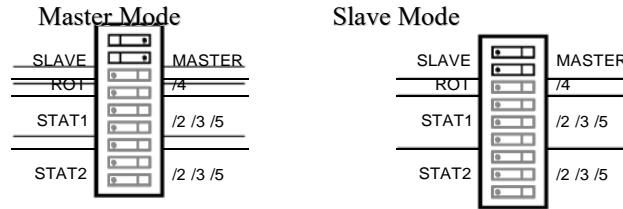
Resolver Interface (detail)

IV. RESOLVER DIP SWITCH SETTINGS

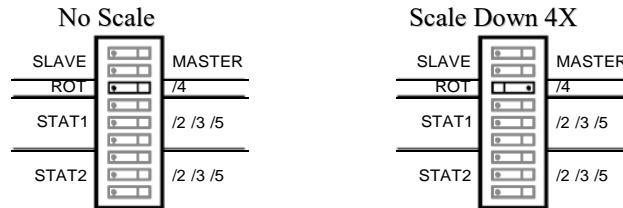


- 1) Set all DIP switches to the OFF (left) position.
(A Dot in these pictures means that side is pushed in.)

- 2) Determine whether the resolver input should be in MASTER mode or SLAVE mode and make the proper setting.

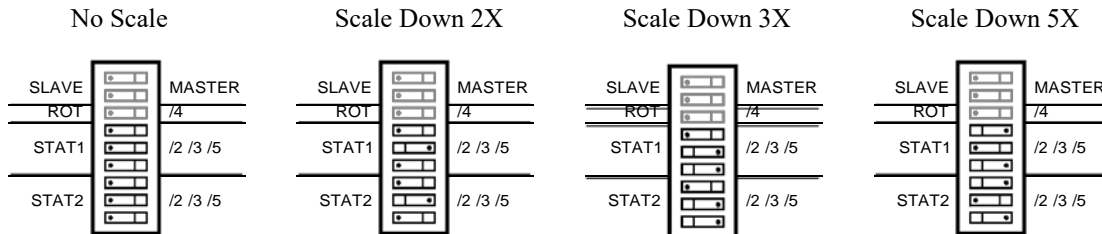


- 3) Make resolver connection.
- 4) With the system on (press can be either running or not running), check to see if the “ROT” LED turns on. Scale down the rotor input voltage by 4X if the “ROT” LED does turn on.



- 5) With the resolver rotating, check to see if the “STAT” LED turns on. If it turns on at any point in a full stroke, scale down both stator input voltages first by 2X. If it still turns on, scale it down further by 3X and then by 5X until the “STAT” LED is not turned on. Perform the test in this order to give our unit the highest workable voltage and therefore more accurate results.

NOTE: Two stator inputs must have the same scale down factor. Therefore, the setting of STAT1 must be the same as STAT2.



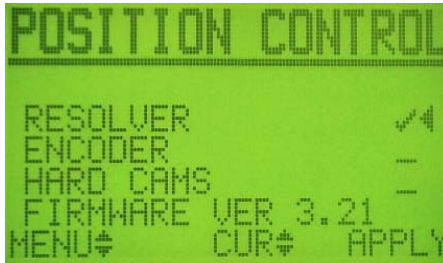
- 6) Record all DIP switch settings.
- 7) Resolver setup is basically completed. Refer to the Operation section of this manual for resolver offset adjustment.
- 8) The picture to the right shows a PP150 resolver set to:
-Master (1&2 Right)
-ROT = No Scale (3 Left)
STAT = Scale Down 2X (4&6,7&9 Left – 5&8 Right)



7 START-UP PROCEDURE

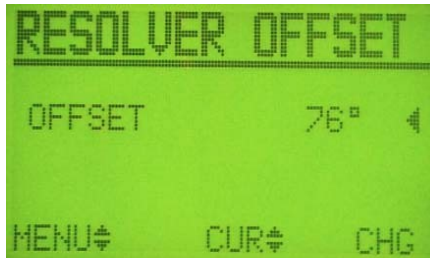
AFTER WIRING THE PRESS CONTROL, FOLLOW THE STEPS BELOW TO ENSURE ALL SETTINGS ARE ADJUSTED CORRECTLY FOR PROPER FUNCTIONALITY AND SAFETY.

1. SET POSITION CONTROL TO CORRECT SETTING (SEE PAGE 21)



A. IF USING RESOLVER:

- I. ADJUST THE OFFSET ANGLE UNTIL THE PRESS POSITION DISPLAYS THE CORRECT ANGLE (SEE PAGE 22).



- II. RECORD OFFSET ON DATA SHEET INSIDE PP150 (SEE PAGE 44).

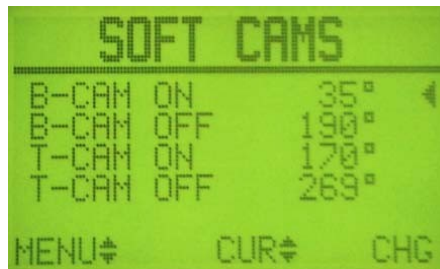
B. IF USING ENCODER:

- I. GO TO ENCODER CAL SCREEN.
- II. ADJUST THE DESIRED ANGLE.
- III. ENTER ENCODER CAL MODE.
- IV. INCH THE PRESS AROUND UNTIL IT COMES OUT OF CAL MODE.

C. IF USING HARD CAMS:

- I. ADJUST HARD CAMS (SEE PAGE 11).
- II. CONTINUE TO STEP 6 OF THE START-UP PROCEDURES.

2. ADJUST SOFT CAM SETTINGS (SEE PAGE 22).



3. DISABLE THE INCH STOP AT TOP SETTING ON THE LC MUTE/TOP STOP SCREEN (SEE PAGE 24).



4. VERIFY PROX:

(AFTER THE PRESS POSITION HAS BEEN ADJUSTED CORRECTLY)

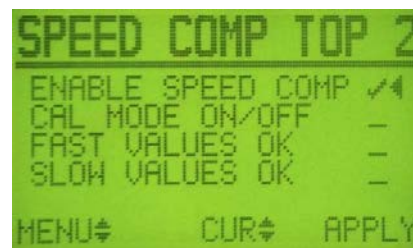
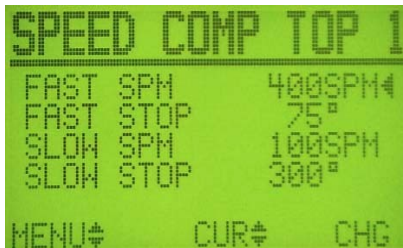
I. CYCLE THE PRESS IN INCH MODE UNTIL THE PROX HAS CYCLED. (YOU WILL MOST LIKELY GET A FAULT DURING THIS PROCEDURE BECAUSE THE WINDOW FOR THE PROX CHECK HAS NOT BEEN VERIFIED YET).

II. ONCE YOU ARE SURE THE POSITION IS CORRECT AND THE PROX HAS CYCLED ONCE, GO TO THE "PROX SETUP" SCREEN AND CHECK VERIFY THE PROX POSITION IN THE PP150 (SEE PAGE 30).

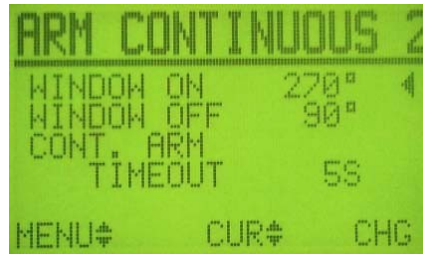
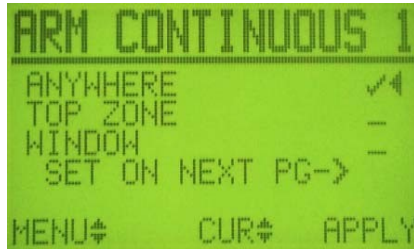


III. ATTEMPT TO INCH THE PRESS A FULL STROKE, IF YOU GET A FAULT, VERIFY THE PROX POSITION AGAIN. FOLLOW THIS PROCEDURE UNTIL YOU CAN CYCLE THE PRESS COMPLETELY WITHOUT GETTING A FAULT. NOTE: YOU CAN VIEW THE CURRENT PROX ANGLES AND WINDOW FROM THE OPERATOR'S PROX INFO SCREEN (SEE PAGE 17).

5. ADJUST THE "SPEED COMPENSATION" SETTINGS (SEE PAGE 25-26).



6. ADJUST WHERE YOU WANT TO BE ABLE TO “ARM CONTINUOUS” (SEE PAGE 23-24).



7. ADJUST THE “MISC. TIMERS” TO THE DESIRED VALUES (SEE PAGE 27).



8. ADJUST THE “LC MUTE/TOP STOP” SETTINGS TO THE DESIRED VALUES (SEE PAGE 24).



9. ADJUST THE BRAKE MONITOR/TEST SETTINGS. (SEE PAGE 28)

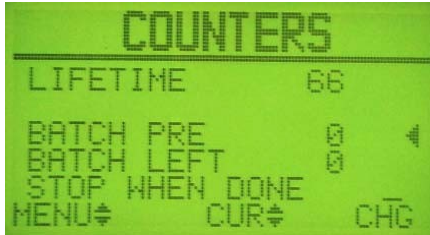


NOTE: IF YOU ARE USING HARD CAMS, SKIP THIS STEP AND PROCEED TO STEP 10.

10. ADJUST LED DISPLAY (SEE PAGE 29).



11. RESET THE LIFETIME COUNTER (SEE PAGE 29).



12. SAVE CURRENT SETTINGS TO MEMORY TO BE BACKED UP. THIS WILL SAVE ALL SETTINGS AT THEIR CURRENT STATE SO IN THE EVENT THAT A SETTING IS MODIFIED, YOU CAN RESTORE TO THE INITIAL START-UP SETTINGS. THIS IS DONE FROM THE "SAVE/RESTORE" SCREEN IN THE CONFIGURATION SCREENS (SEE PAGE 30).




8 PP150 START-UP CHECKLIST

(BE SURE TO UPDATE THE DATASHEET ON THE BACK OF THE PP150 AS WELL AS THE DATASHEET IN SECTION 9)

- ___ 1. SET POSITION CONTROL AND OFFSET/POSITION...PAGES 22-23
- ___ 2. ADJUST SOFT CAMS (RES/ENC ONLY) ...PAGE 23
- ___ 3. TEMPORARILY DISABLE INCH STOP AT TOP (RES/ENC ONLY) PAGES 25-26
- ___ 4. VERIFY PROX (RES/ENC ONLY) ...PAGE 32
- ___ 5. ADJUST SPEED COMP TOP STOP (RES/ENC ONLY) ...PAGES 26-28
- ___ 6. ADJUST ARM CONT SETTINGS...PAGES 24-25
- ___ 7. ADJUST MISC. TIMERS...PAGE 28
- ___ 8. ADJUST LIGHT CURTAIN MUTE AND TOP STOP SETTINGS...PAGES 25-26
- ___ 9. ADJUST BRAKE MONITOR SETTINGS (RUN BRAKE TEST) ...PAGES 29-30
- ___ 10. ADJUST DESIRED LED DISPLAY...PAGE 30
- ___ 11. RESET LIFETIME COUNTER...PAGE 31
- ___ 12. SAVE SETTINGS TO BACKUP...PAGE 31

9 PP150 CONFIGURATION SETTINGS

I. CONFIGURATION DATA SHEET

 PP150 Configuration	
Setup by _____	Date _____
Press # _____	Address _____
Position Selection	<input type="radio"/> CAMS <input type="radio"/> RSVR <input type="radio"/> ENC DEG
Resolver Offset	_____ ° ON _____ ° OFF
Arm Window	_____ ° WIN _____ ° ANY
Arm Selection	<input type="radio"/> TOP SEC
Arm Timeout	_____ ° OFF
B-Soft Cam	_____ ° ON
T-Soft Cam	_____ ° ON
Speed Comp Enable	<input type="radio"/> YES <input type="radio"/> NO
Fast SPM	_____
Fast Angle	_____ DEG
Slow SPM	_____
Slow Angle	_____ DEG
No Motion Limit	_____ mS
Multi Run Bar	_____ SEC
Drift Fault Timer	_____ mS
Mute Light Curtains	<input type="radio"/> YES <input type="radio"/> NO
Cont. Imm. Top Stop	<input type="radio"/> YES <input type="radio"/> NO
Inch Stop at Top	<input type="radio"/> YES <input type="radio"/> NO
Brake Mon. Fault Time	_____ mS

Resolver Configuration

Slave		Master
Rot		±4
Stat1		+ 2,3,5
Stat2		+ 2,3,5

II. SPEED ZONE SETTINGS

RECORD BELOW THE VALUES USED IN THE SPEED COMP TOP STOP ZONES 1-4.

ZONE 1:

IF SPEED > _____ SPM

STOP OFFSET _____ °

STOP EARLY _____

STOP ANGLE _____ °

ZONE 2:

IF SPEED > _____ SPM

STOP OFFSET _____ °

STOP EARLY _____

STOP ANGLE _____ °

ZONE 3:

IF SPEED > _____ SPM

STOP OFFSET _____ °

STOP EARLY _____

STOP ANGLE _____ °

ZONE 4:

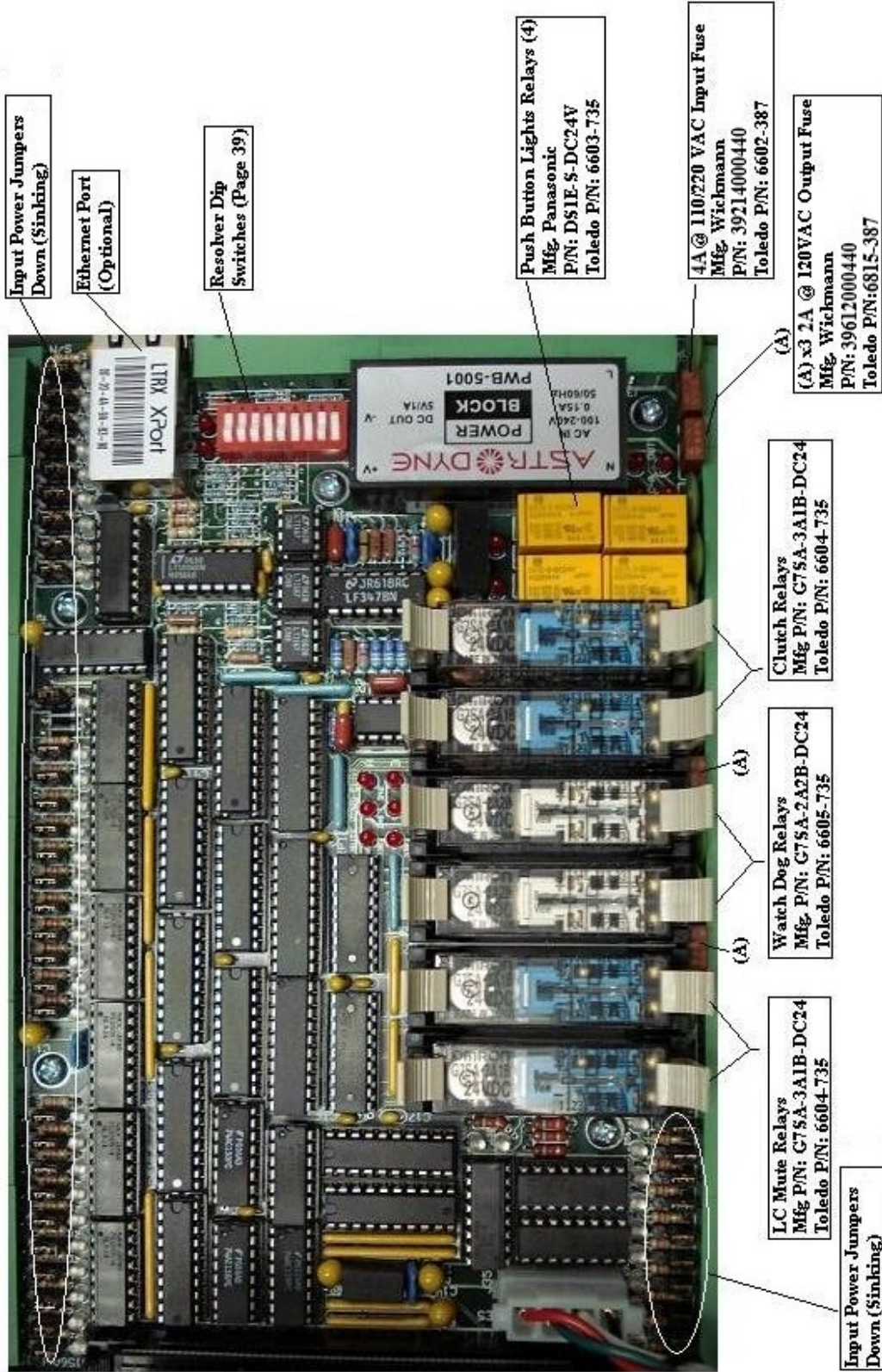
IF SPEED > _____ SPM

STOP OFFSET _____ °

STOP EARLY _____

STOP ANGLE _____ °

III. I/O BOARD REPLACEMENTS PARTS INFO



10 PP150 ETHERNET COMMUNICATION SETUP (OPTIONAL)

THE PP150 IS CAPABLE OF COMMUNICATING TO A PLC ON ETHERNET/IP USING CIP. THIS IS AN OPTIONAL FUNCTION AND MUST BE ORDERED FROM THE FACTORY PRIOR TO SHIPMENT/INSTALLATION. THIS SECTION EXPLAINS HOW TO SET UP THE PP150 AND AN ALLEN BRADLEY PLC USING RSLOGIX 5000.

1. SET THE IP ADDRESS IN THE PP150 TO THE DESIRED, UNUSED ADDRESS. THE PP150 MUST BE RESTARTED BEFORE NEW SETTINGS BECOME ACTIVE. (DEFAULT IS 192.168.0.254)
2. SET THE SUBNET MASK IN THE PP150 TO THE DESIRED VALUE. THE PP150 MUST BE RESTARTED BEFORE NEW SETTINGS BECOME ACTIVE. (DEFAULT IS 255.255.255.0)
3. SETTINGS IN THE PLC ARE EXPLAINED IN THE NEXT 15 PAGES

- A. OPEN YOUR PROJECT IN RSLOGIX 5000
- B. RIGHT CLICK ON YOUR ETHERNET MODULE AND SELECT “NEW MODULE...” (FIGURE 10.1)

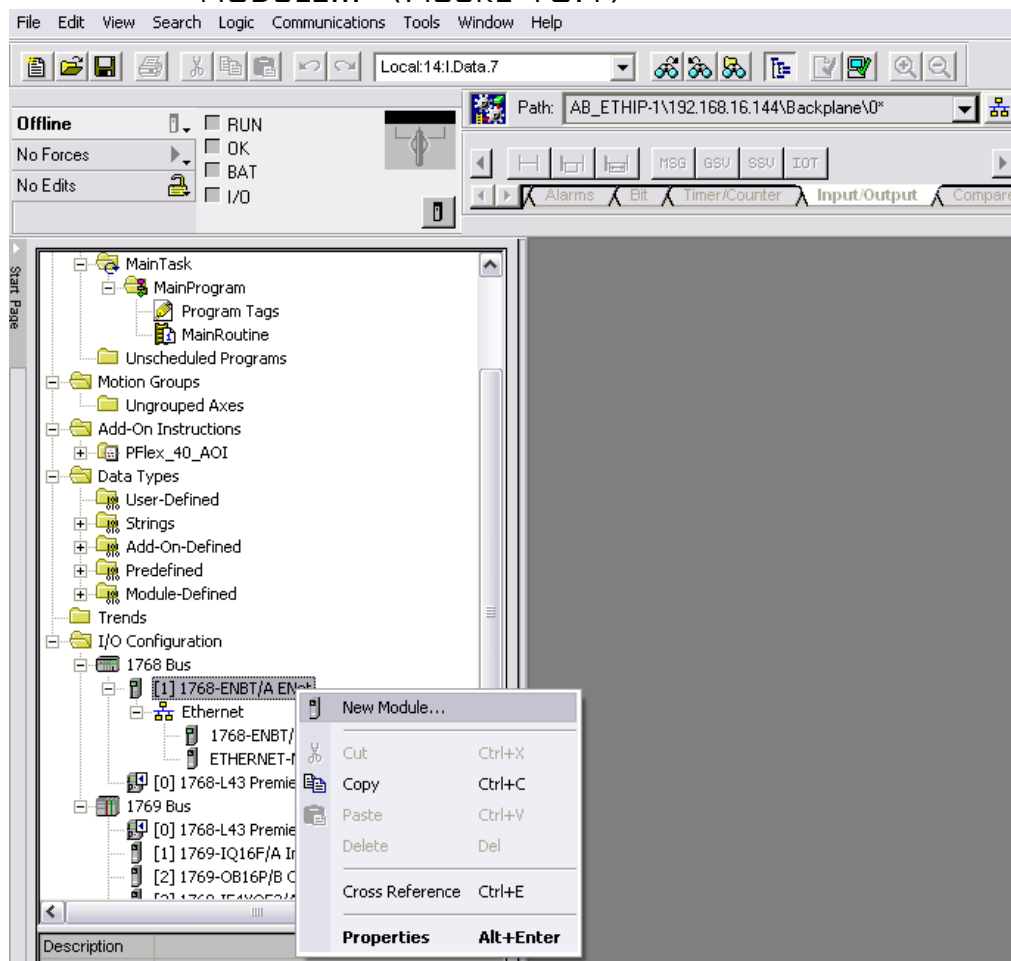


FIGURE 10.1

C. SELECT THE COMMUNICATIONS MODULES AND OPEN THE LIST BY CLICKING ON THE PLUS (+) SYMBOL. (FIGURE 10.2)

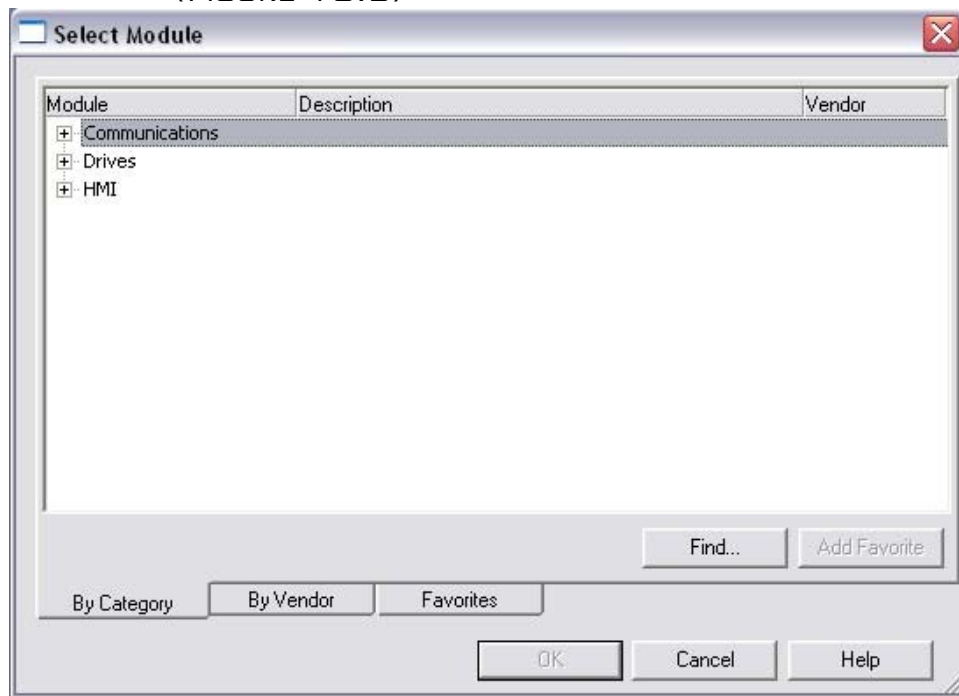


FIGURE 10.2

D. SELECT ETHERNET-MODULE AND THEN CLICK OK (FIGURE 10.3)

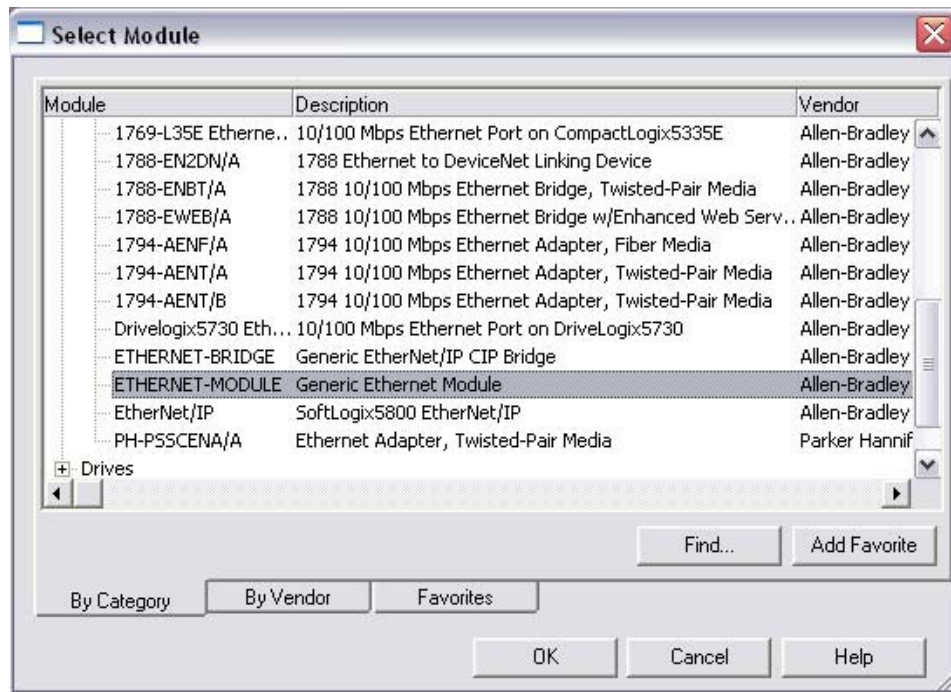
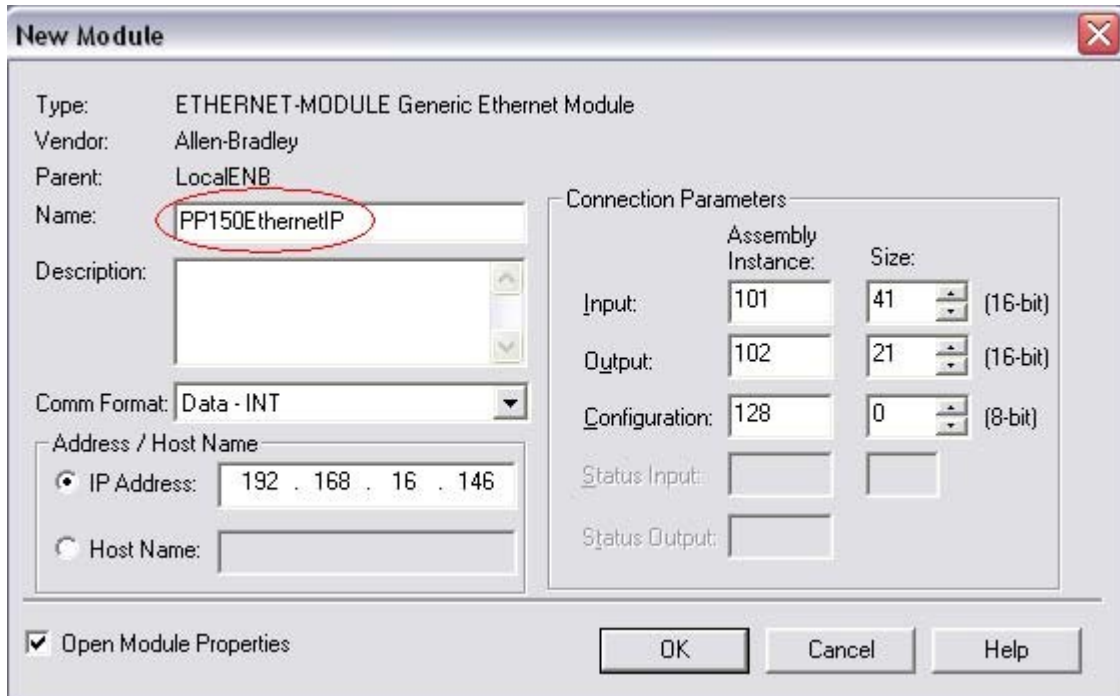


FIGURE 10.3

E. ENTER THE NAME YOU WANT TO REFER TO THE PP150 IN YOUR PROGRAMMING. SAMPLE: PP150ETHERNETIP (FIGURE 10.4)



The 'New Module' dialog box is shown with the following fields and values:

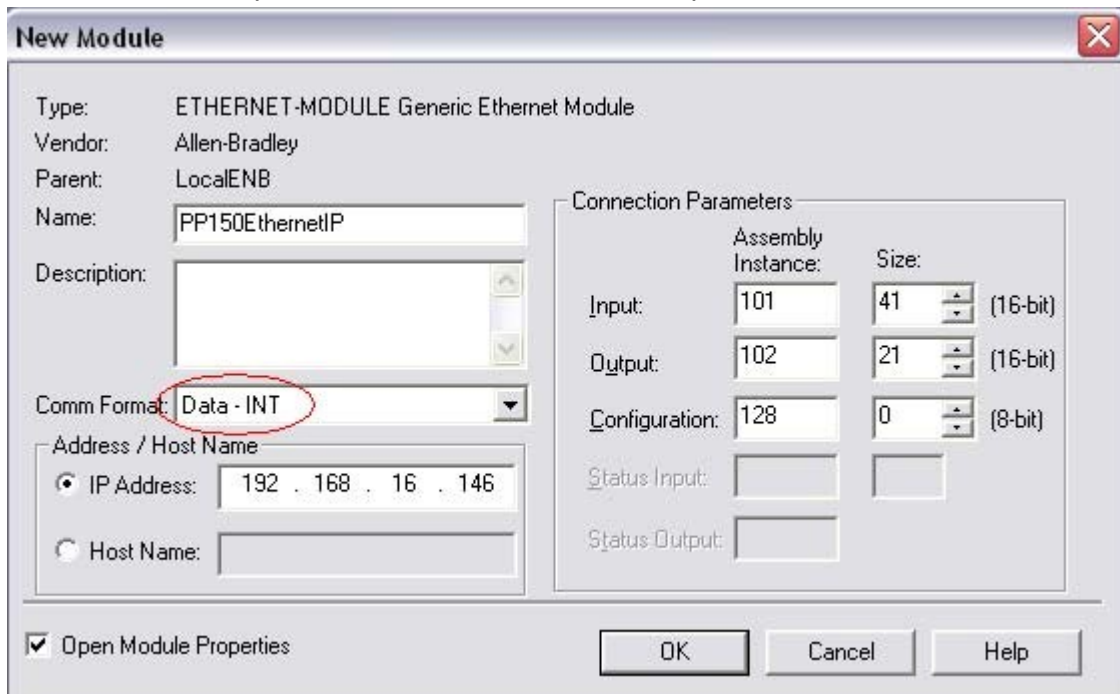
- Type: ETHERNET-MODULE Generic Ethernet Module
- Vendor: Allen-Bradley
- Parent: LocalENB
- Name: PP150EthernetIP (circled in red)
- Description: (empty)
- Comm Format: Data - INT
- Address / Host Name:
 - IP Address: 192 . 168 . 16 . 146
 - Host Name: (empty)
- Connection Parameters:

	Assembly Instance:	Size:	
Input:	101	41	(16-bit)
Output:	102	21	(16-bit)
Configuration:	128	0	(8-bit)
Status Input:			
Status Output:			

At the bottom, there is a checked checkbox for 'Open Module Properties' and buttons for 'OK', 'Cancel', and 'Help'.

FIGURE 10.4

F. SELECT THE COMM FORMAT TO BE DATA - INT. (SEE SAMPLE: FIGURE 10.5)



The 'New Module' dialog box is shown with the following fields and values:

- Type: ETHERNET-MODULE Generic Ethernet Module
- Vendor: Allen-Bradley
- Parent: LocalENB
- Name: PP150EthernetIP
- Description: (empty)
- Comm Format: Data - INT (circled in red)
- Address / Host Name:
 - IP Address: 192 . 168 . 16 . 146
 - Host Name: (empty)
- Connection Parameters:

	Assembly Instance:	Size:	
Input:	101	41	(16-bit)
Output:	102	21	(16-bit)
Configuration:	128	0	(8-bit)
Status Input:			
Status Output:			

At the bottom, there is a checked checkbox for 'Open Module Properties' and buttons for 'OK', 'Cancel', and 'Help'.

FIGURE 10.5

G. ENTER THE CORRECT IP ADDRESS OF THE PP150.
SEE SAMPLE: 192.168.16.146 (FIGURE 10.6)

H. ENTER THE ASSEMBLY INSTANCE AND SIZE EXACTLY
AS IT APPEARS IN FIGURE 10.6. ALL SIX OF THESE
VALUES MUST BE ENTERED CORRECTLY OR
COMMUNICATION WILL FAIL.

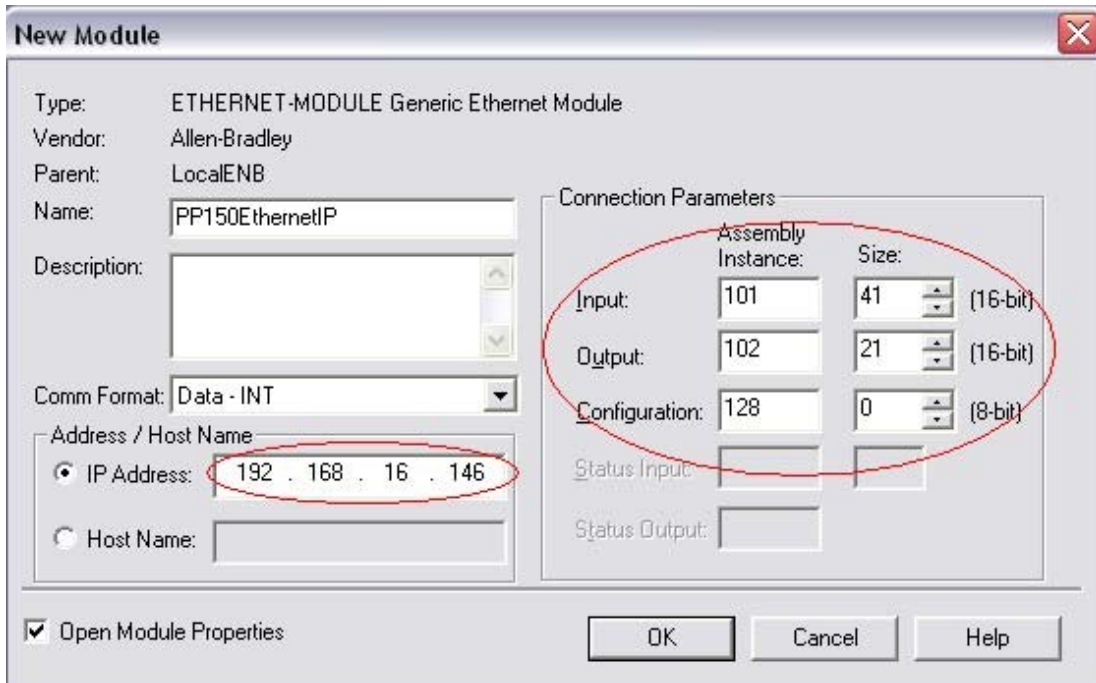


FIGURE 10.6

I. ENTER THE CORRECT VALUE FOR THE REQUESTED
PACKET INTERVAL (FIGURE 10.7)

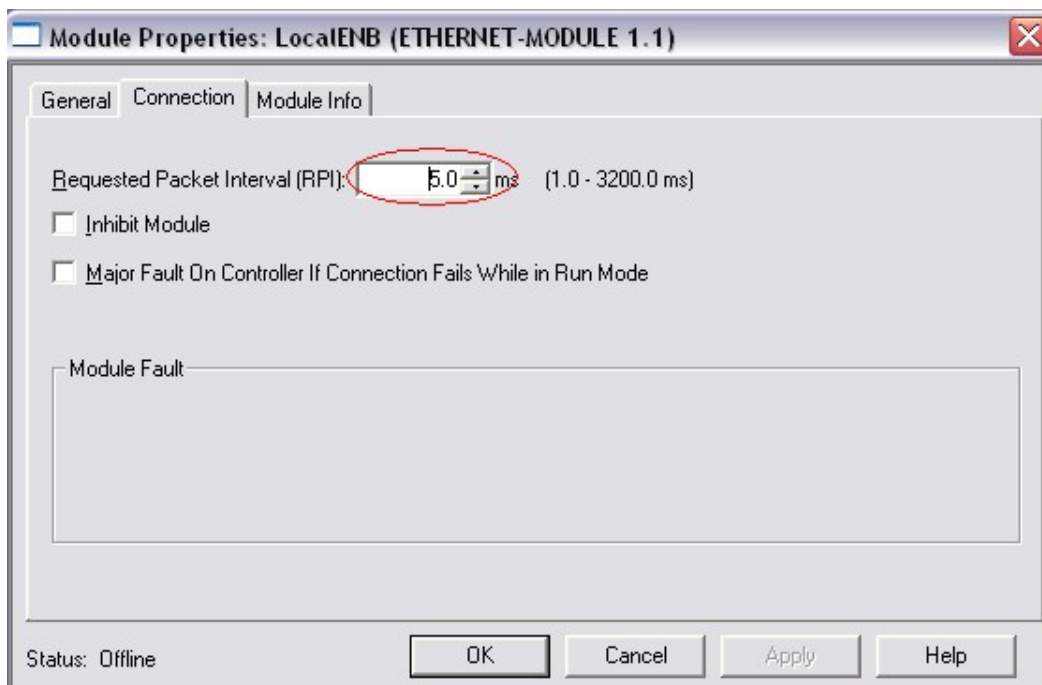


FIGURE 10.7

J. RIGHT CLICK ON YOUR MAINTASK FOLDER AND SELECT “NEW PROGRAM...” (FIGURE 10.8)

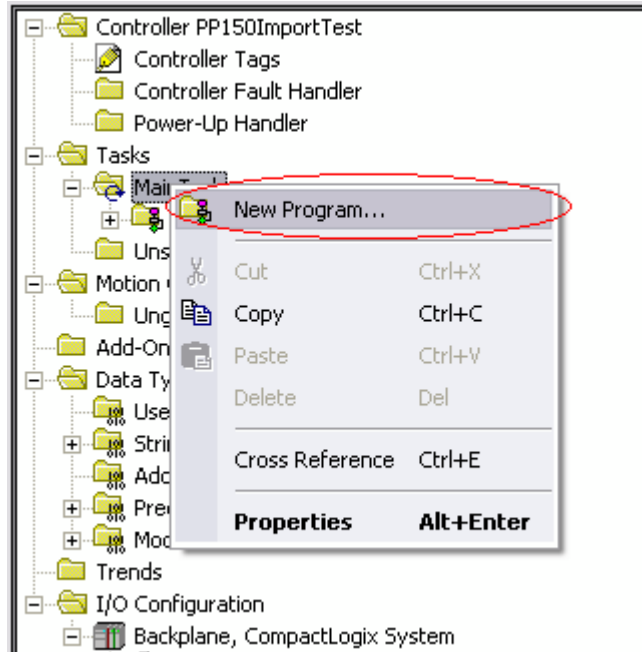


FIGURE 10.8

K. ENTER THE NAME OF THE NEW PROGRAM AS PP150 (SEE EXAMPLE BELOW...FIGURE 10.9)

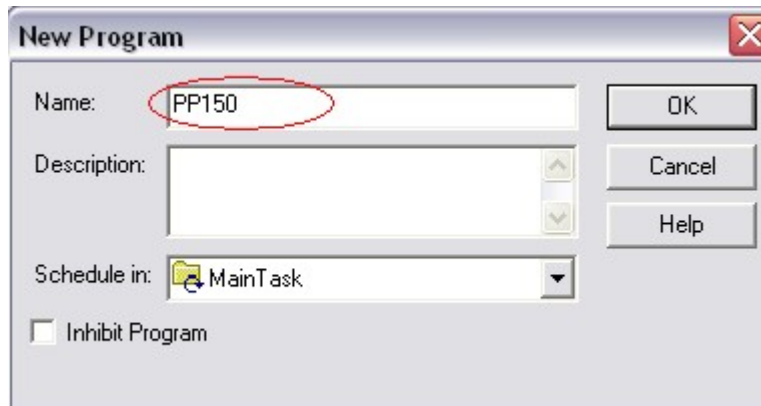


FIGURE 10.9

L. RIGHT CLICK ON THE NEW PROGRAM (PP150) THAT YOU JUST MADE AND SELECT “NEW ROUTINE...” (FIGURE 10.10)

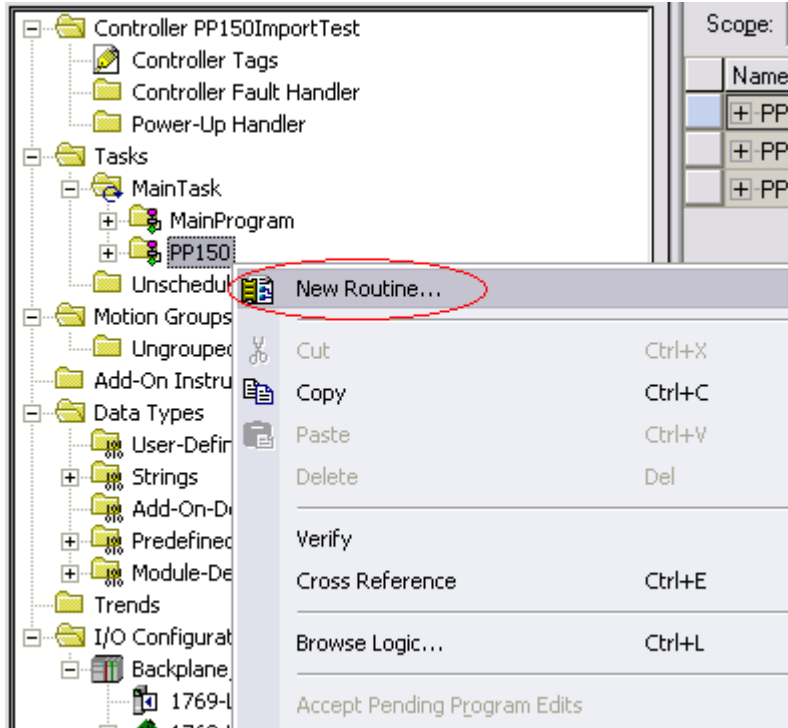


FIGURE 10.10

M. ENTER THE NAME OF THE NEW ROUTINE AS PP150ROUTINE (SEE EXAMPLE BELOW...FIGURE 10.11)

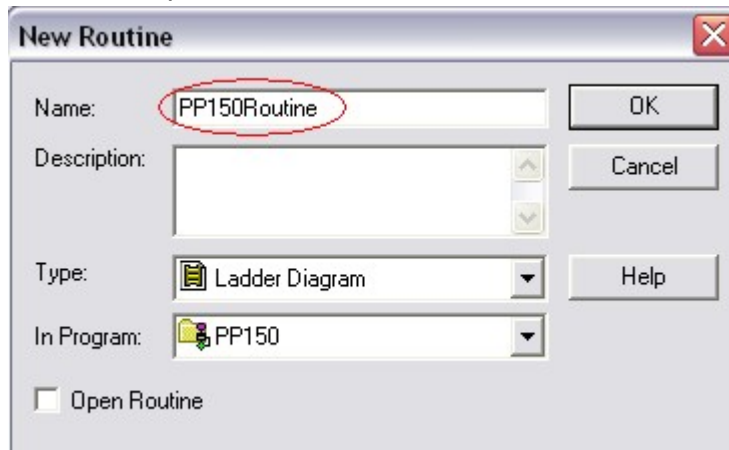


FIGURE 10.11

N. RIGHT CLICK ON THE NEW PROGRAM (PP150) AND SELECT "PROPERTIES" (FIGURE 10.12)

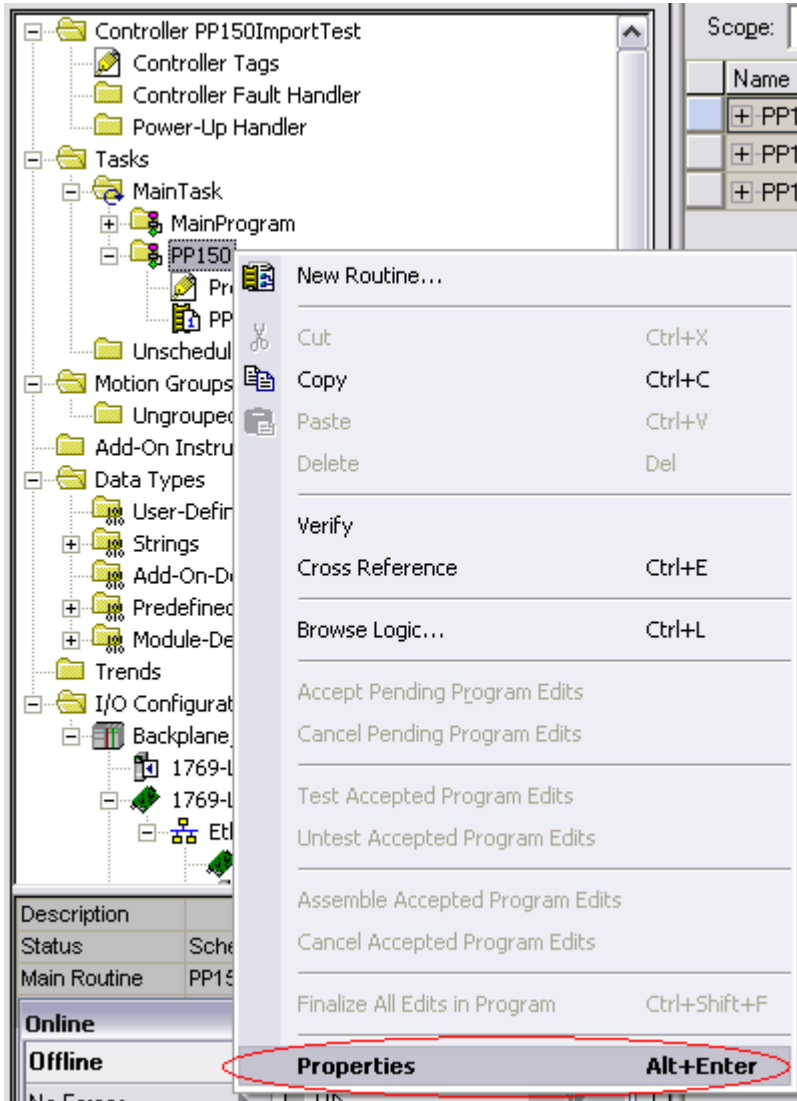


FIGURE 10.12

- O. UNDER THE CONFIGURATION TAB, SELECT PP150 AS THE MAIN ROUTINE (SEE EXAMPLE BELOW...FIGURE 10.13)

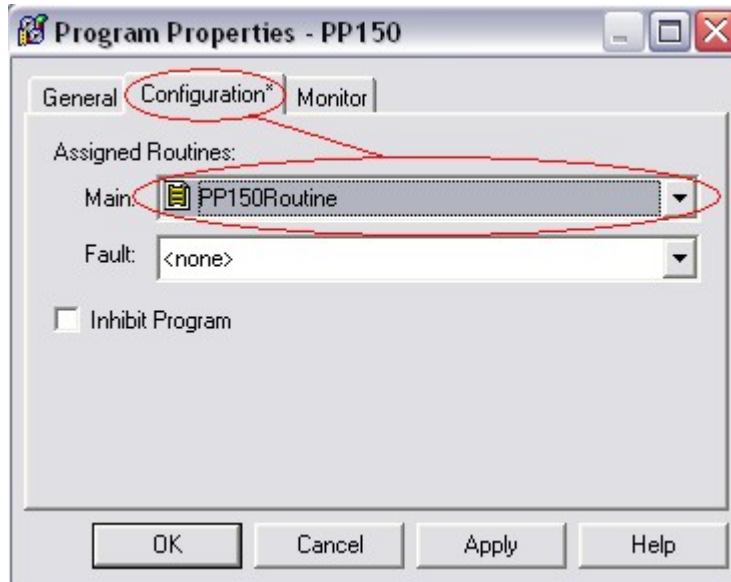


FIGURE 10.13

- P. COPY THE RUNGS 1-9 FROM THE SAMPLE PROGRAM SUPPLIED WITH THE PP150 (SEE EXAMPLE BELOW...FIGURE 10.14)

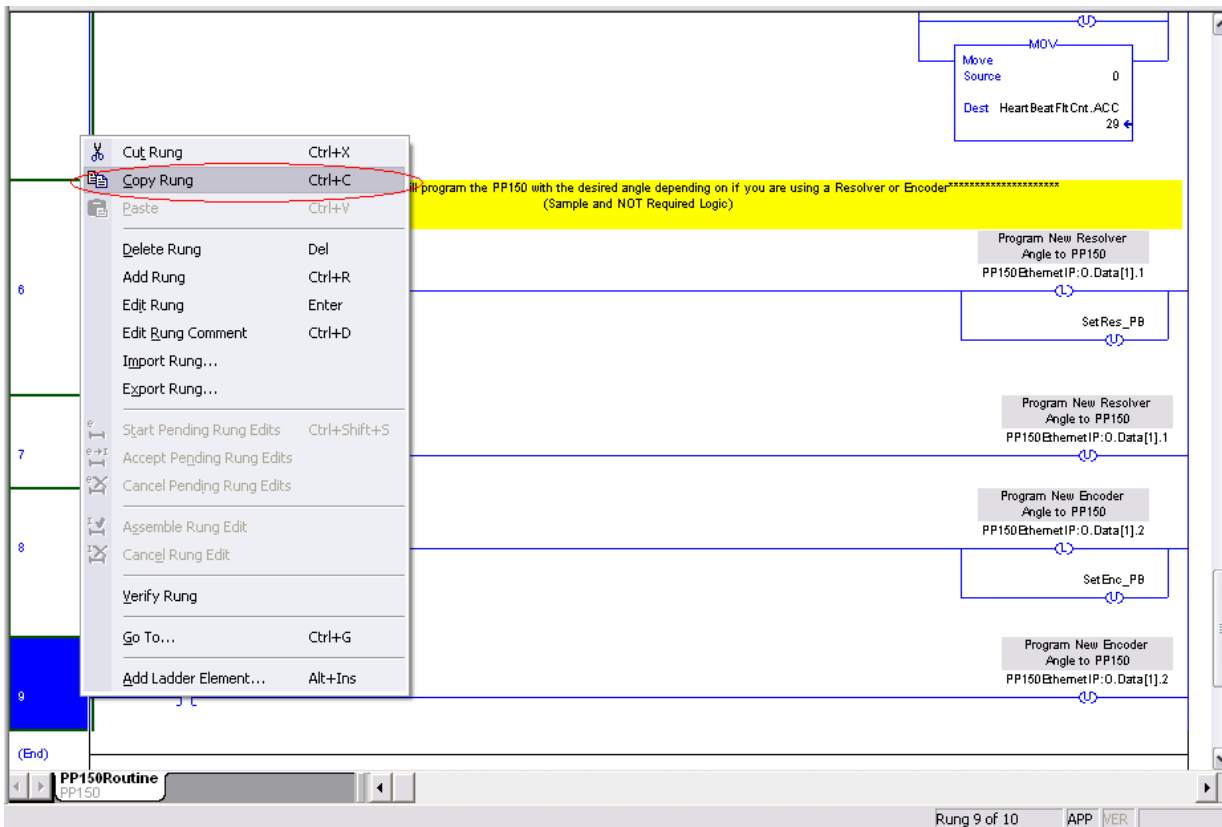


FIGURE 10.14

- Q. PASTE THE COPIED RUNGS FROM THE SAMPLE PROGRAM INTO YOUR NEW PROGRAM LADDER LOGIC. NOTE: THESE RUNGS SHOULD BE COPIED TO THE PP150ROUTINE THAT YOU JUST CREATED. THIS WILL ENSURE THAT THE IMPORTED TAGS (SECTION 10.R) WORKS CORRECTLY (SEE EXAMPLE BELOW...FIGURE 10.15)

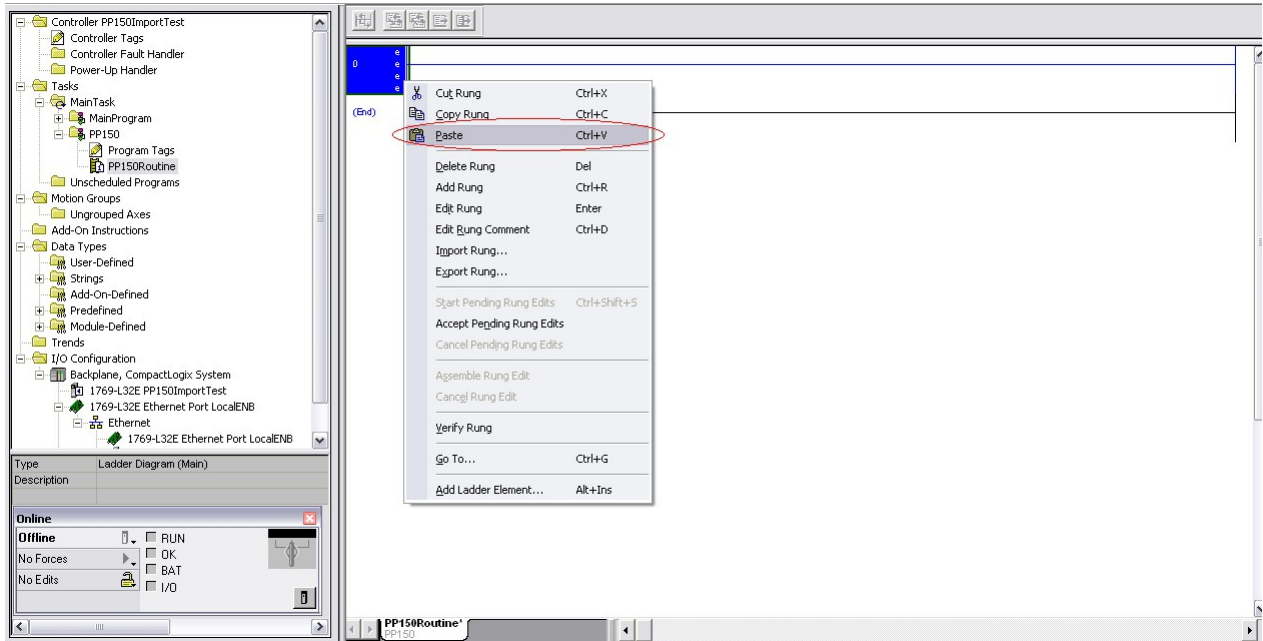


FIGURE 10.15

- R. IMPORT PROGRAM TAGS BY SELECTING TOOLS, THEN "IMPORT..." (SEE EXAMPLE BELOW...FIGURE 10.16)

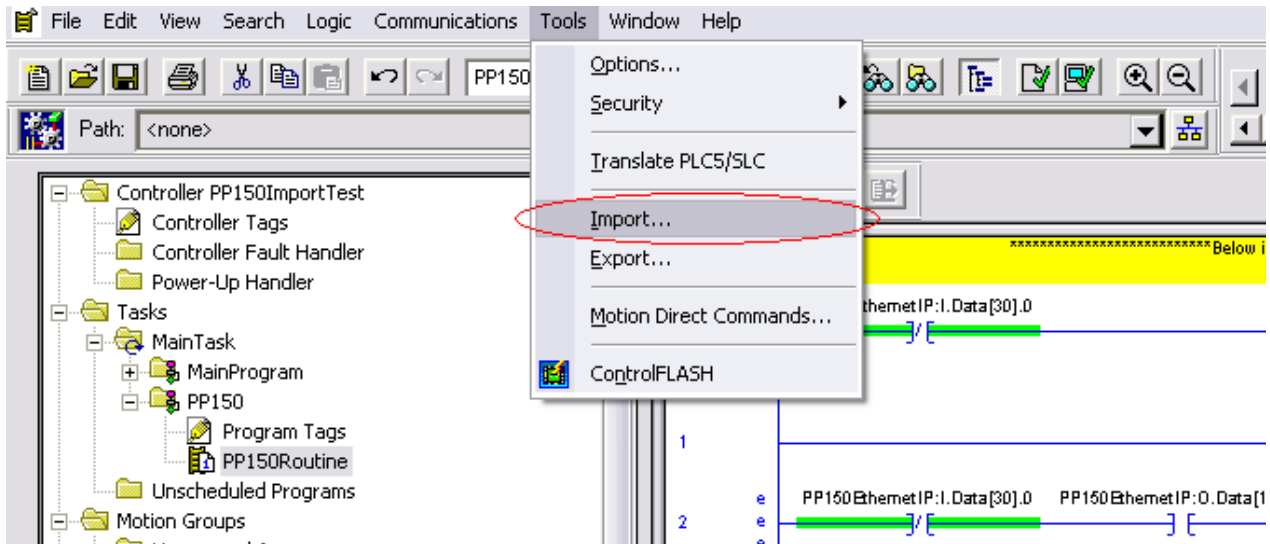


FIGURE 10.16

- S. SELECT THE PP150ETHERNETIP-TAGS.CSV FILE FROM THE CD SUPPLIED WITH THE CONTROLLER. (SEE EXAMPLE BELOW...FIGURE 10.17)

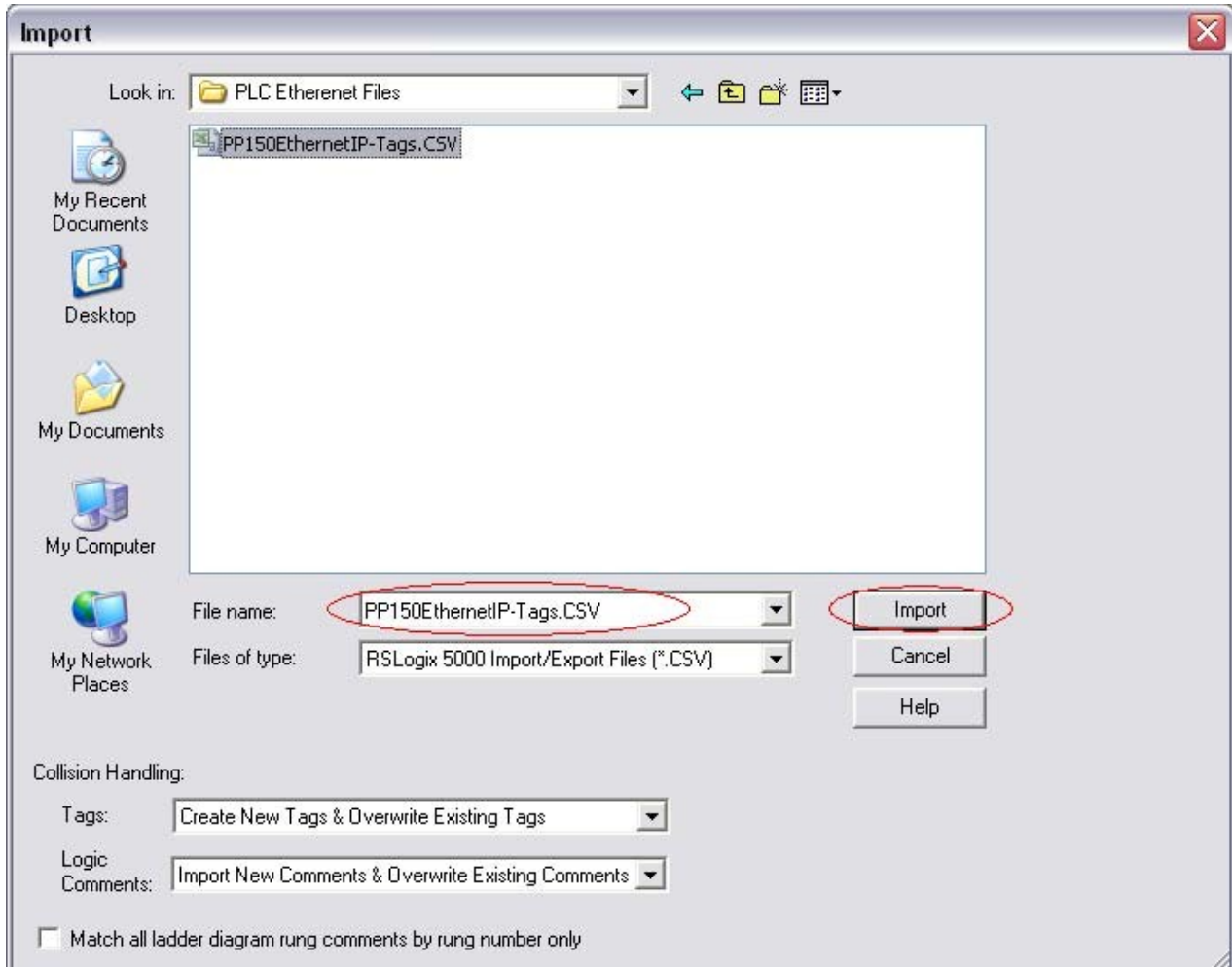


FIGURE 10.17

1 1 P 1 5 0 E T H E R N E T I / O M A P P I N G

FIGURES 1 1 . 1 T H R U 1 1 . 8 S H O W T H E M A P P I N G F O R A L L T H E P P 1 5 0 I / O .

Name	Value	Style	Data Type	Description
PP150EthernetP:I	{...}	{	AB:ETHERNET_...	
PP150EthernetP:I.Data	{...}	{ Decimal	INT[31]	
PP150EthernetP:I.Data[0]	0	Decimal	INT	Communicaiton Status Word
PP150EthernetP:I.Data[0].0	0	Decimal	BOOL	Communicaiton Status Word
PP150EthernetP:I.Data[0].1	0	Decimal	BOOL	PP150 Internal Connection Error
PP150EthernetP:I.Data[0].2	0	Decimal	BOOL	Communicaiton Status Word
PP150EthernetP:I.Data[0].3	0	Decimal	BOOL	Communicaiton Status Word
PP150EthernetP:I.Data[0].4	0	Decimal	BOOL	Communicaiton Status Word
PP150EthernetP:I.Data[0].5	0	Decimal	BOOL	Communicaiton Status Word
PP150EthernetP:I.Data[0].6	0	Decimal	BOOL	Communicaiton Status Word
PP150EthernetP:I.Data[0].7	0	Decimal	BOOL	Communicaiton Status Word
PP150EthernetP:I.Data[0].8	0	Decimal	BOOL	Communicaiton Status Word
PP150EthernetP:I.Data[0].9	0	Decimal	BOOL	Communicaiton Status Word
PP150EthernetP:I.Data[0].10	0	Decimal	BOOL	Communicaiton Status Word
PP150EthernetP:I.Data[0].11	0	Decimal	BOOL	Communicaiton Status Word
PP150EthernetP:I.Data[0].12	0	Decimal	BOOL	Communicaiton Status Word
PP150EthernetP:I.Data[0].13	0	Decimal	BOOL	Communicaiton Status Word
PP150EthernetP:I.Data[0].14	0	Decimal	BOOL	Communicaiton Status Word
PP150EthernetP:I.Data[0].15	0	Decimal	BOOL	Communicaiton Status Word
PP150EthernetP:I.Data[1]	-15127	Decimal	INT	PP150 Input Status Word 1
PP150EthernetP:I.Data[2]	15375	Decimal	INT	PP150 Input Status Word 2

INPUT WORD 0 (FIGURE 1 1 . 1)

Name	Value	Style	Data Type	Description
PP150EthernetP:I	{...}	{	AB:ETHERNET_...	
PP150EthernetP:I.Data	{...}	{ Decimal	INT[31]	
PP150EthernetP:I.Data[0]	0	Decimal	INT	Communicaiton Status Word
PP150EthernetP:I.Data[1]	-15127	Decimal	INT	PP150 Input Status Word 1
PP150EthernetP:I.Data[1].0	1	Decimal	BOOL	Not Used
PP150EthernetP:I.Data[1].1	0	Decimal	BOOL	Not Used
PP150EthernetP:I.Data[1].2	0	Decimal	BOOL	Not Used
PP150EthernetP:I.Data[1].3	1	Decimal	BOOL	Not Used
PP150EthernetP:I.Data[1].4	0	Decimal	BOOL	Not Used
PP150EthernetP:I.Data[1].5	1	Decimal	BOOL	PP150 E-Stop String1 Input
PP150EthernetP:I.Data[1].6	1	Decimal	BOOL	PP150 Clutch 1 Relay Status (NC)
PP150EthernetP:I.Data[1].7	1	Decimal	BOOL	PP150 Clutch 2 Relay Status (NC)
PP150EthernetP:I.Data[1].8	0	Decimal	BOOL	PP150 Mode SS (Off) Input
PP150EthernetP:I.Data[1].9	0	Decimal	BOOL	PP150 Mode SS (Inch) Input
PP150EthernetP:I.Data[1].10	1	Decimal	BOOL	PP150 Mode SS (Single) Input
PP150EthernetP:I.Data[1].11	0	Decimal	BOOL	PP150 Mode SS (Cont) Input
PP150EthernetP:I.Data[1].12	0	Decimal	BOOL	PP150 Fault Reset PB Input
PP150EthernetP:I.Data[1].13	0	Decimal	BOOL	PP150 Arm Cont PB Input
PP150EthernetP:I.Data[1].14	1	Decimal	BOOL	PP150 Clutch Air Input
PP150EthernetP:I.Data[1].15	1	Decimal	BOOL	PP150 Counter Balance Air Input
PP150EthernetP:I.Data[2]	15375	Decimal	INT	PP150 Input Status Word 2

INPUT WORD 1 (FIGURE 1 1 . 2)

Name	Value	Style	Data Type	Description
PP150EthernetP:I	{...}	{	AB:ETHERNET_...	
PP150EthernetP:I.Data	{...}	{ Decimal	INT[31]	
PP150EthernetP:I.Data[0]	0	Decimal	INT	Communication Status Word
PP150EthernetP:I.Data[1]	-15127	Decimal	INT	PP150 Input Status Word 1
PP150EthernetP:I.Data[2]	15375	Decimal	INT	PP150 Input Status Word 2
PP150EthernetP:I.Data[2].0	1	Decimal	BOOL	PP150 Motor FwD Input
PP150EthernetP:I.Data[2].1	1	Decimal	BOOL	PP150 Clutch Valve Monitor Input
PP150EthernetP:I.Data[2].2	1	Decimal	BOOL	PP150 Top Stop Input
PP150EthernetP:I.Data[2].3	1	Decimal	BOOL	PP150 Immediate Stop Input
PP150EthernetP:I.Data[2].4	0	Decimal	BOOL	PP150 Spare In1 Input
PP150EthernetP:I.Data[2].5	0	Decimal	BOOL	PP150 Spare In2 Input
PP150EthernetP:I.Data[2].6	0	Decimal	BOOL	PP150 Watch Dog Relay1 Monitor (NO)
PP150EthernetP:I.Data[2].7	0	Decimal	BOOL	PP150 Watch Dog Relay2 Monitor (NO)
PP150EthernetP:I.Data[2].8	0	Decimal	BOOL	PP150 Spare In3 Input
PP150EthernetP:I.Data[2].9	0	Decimal	BOOL	PP150 Run Station 1 Bypass Input
PP150EthernetP:I.Data[2].10	1	Decimal	BOOL	PP150 Run Station 2 Bypass Input
PP150EthernetP:I.Data[2].11	1	Decimal	BOOL	PP150 Run Station 3 Bypass Input
PP150EthernetP:I.Data[2].12	1	Decimal	BOOL	PP150 Run Station 4 Bypass Input
PP150EthernetP:I.Data[2].13	1	Decimal	BOOL	PP150 E-Stop String2 Input
PP150EthernetP:I.Data[2].14	0	Decimal	BOOL	PP150 Mute Relay1 Input (NO)
PP150EthernetP:I.Data[2].15	0	Decimal	BOOL	PP150 Mute Relay2 Input (NO)
PP150EthernetP:I.Data[3]	258	Decimal	INT	PP150 Input Status Word 3

INPUT WORD 2 (FIGURE 11.3)

Name	Value	Style	Data Type	Description
PP150EthernetP:I	{...}	{	AB:ETHERNET_...	
PP150EthernetP:I.Data	{...}	{ Decimal	INT[31]	
PP150EthernetP:I.Data[0]	0	Decimal	INT	Communication Status Word
PP150EthernetP:I.Data[1]	-15127	Decimal	INT	PP150 Input Status Word 1
PP150EthernetP:I.Data[2]	15375	Decimal	INT	PP150 Input Status Word 2
PP150EthernetP:I.Data[3]	258	Decimal	INT	PP150 Input Status Word 3
PP150EthernetP:I.Data[3].0	0	Decimal	BOOL	PP150 Left Run-1 (NO)
PP150EthernetP:I.Data[3].1	1	Decimal	BOOL	PP150 Right Run-1 (NC)
PP150EthernetP:I.Data[3].2	0	Decimal	BOOL	PP150 Left Run-2 (NO)
PP150EthernetP:I.Data[3].3	0	Decimal	BOOL	PP150 Right Run-2 (NC)
PP150EthernetP:I.Data[3].4	0	Decimal	BOOL	PP150 Left Run-3 (NO)
PP150EthernetP:I.Data[3].5	0	Decimal	BOOL	PP150 Right Run-3 (NC)
PP150EthernetP:I.Data[3].6	0	Decimal	BOOL	PP150 Left Run-4 (NO)
PP150EthernetP:I.Data[3].7	0	Decimal	BOOL	PP150 Right Run-4 (NC)
PP150EthernetP:I.Data[3].8	1	Decimal	BOOL	Not Used
PP150EthernetP:I.Data[3].9	0	Decimal	BOOL	Not Used
PP150EthernetP:I.Data[3].10	0	Decimal	BOOL	Not Used
PP150EthernetP:I.Data[3].11	0	Decimal	BOOL	Not Used
PP150EthernetP:I.Data[3].12	0	Decimal	BOOL	Not Used
PP150EthernetP:I.Data[3].13	0	Decimal	BOOL	Not Used
PP150EthernetP:I.Data[3].14	0	Decimal	BOOL	PP150 T-CAM Input
PP150EthernetP:I.Data[3].15	0	Decimal	BOOL	PP150 B-CAM Input
PP150EthernetP:I.Data[4]	0	Decimal	INT	PP150 Status Word

INPUT WORD 3 (FIGURE 11.4)

Name	Value	Style	Data Type	Description
PP150EthernetIP:I	{...}	{	AB:ETHERN...	
PP150EthernetIP:I.Data	{...}	{	Decimal INT[41]	
PP150EthernetIP:I.Data[0]	0	Decimal	INT	Communicaiton Status Word
PP150EthernetIP:I.Data[1]	-14111	Decimal	INT	PP150 Input Status Word 1
PP150EthernetIP:I.Data[2]	13839	Decimal	INT	PP150 Input Status Word 2
PP150EthernetIP:I.Data[3]	4128	Decimal	INT	PP150 Input Status Word 3
PP150EthernetIP:I.Data[4]	0	Decimal	INT	PP150 Status Word
PP150EthernetIP:I.Data[4].0	0	Decimal	BOOL	PP150 Status Word
PP150EthernetIP:I.Data[4].1	0	Decimal	BOOL	Resolver Program Complete
PP150EthernetIP:I.Data[4].2	0	Decimal	BOOL	Encoder Program Complete
PP150EthernetIP:I.Data[4].3	0	Decimal	BOOL	Brake Monitor in Test Mode
PP150EthernetIP:I.Data[4].4	0	Decimal	BOOL	PP150 Motion Detect Bit
PP150EthernetIP:I.Data[4].5	0	Decimal	BOOL	PP150 Status Word
PP150EthernetIP:I.Data[4].6	0	Decimal	BOOL	PP150 Status Word
PP150EthernetIP:I.Data[4].7	0	Decimal	BOOL	PP150 Status Word
PP150EthernetIP:I.Data[4].8	0	Decimal	BOOL	PP150 Status Word
PP150EthernetIP:I.Data[4].9	0	Decimal	BOOL	PP150 Status Word
PP150EthernetIP:I.Data[4].10	0	Decimal	BOOL	PP150 Status Word
PP150EthernetIP:I.Data[4].11	0	Decimal	BOOL	PP150 Status Word
PP150EthernetIP:I.Data[4].12	0	Decimal	BOOL	PP150 Status Word
PP150EthernetIP:I.Data[4].13	0	Decimal	BOOL	PP150 Status Word
PP150EthernetIP:I.Data[4].14	0	Decimal	BOOL	PP150 Status Word
PP150EthernetIP:I.Data[4].15	0	Decimal	BOOL	PP150 Status Word

INPUT WORD 4 (FIGURE 11.5)

Name	Value	Style	Data Type	Description
PP150EthernetIP:I.Data[15]	2313	Decimal	INT	PP150 Outputs
PP150EthernetIP:I.Data[15].0	1	Decimal	BOOL	Not Used
PP150EthernetIP:I.Data[15].1	0	Decimal	BOOL	Not Used
PP150EthernetIP:I.Data[15].2	0	Decimal	BOOL	Not Used
PP150EthernetIP:I.Data[15].3	1	Decimal	BOOL	Not Used
PP150EthernetIP:I.Data[15].4	0	Decimal	BOOL	Not Used
PP150EthernetIP:I.Data[15].5	0	Decimal	BOOL	PP150 Clutch On
PP150EthernetIP:I.Data[15].6	0	Decimal	BOOL	PP150 Watch Dog On
PP150EthernetIP:I.Data[15].7	0	Decimal	BOOL	PP150 Light Curtain Bypass On
PP150EthernetIP:I.Data[15].8	1	Decimal	BOOL	PP150 Clutch Fault Light On
PP150EthernetIP:I.Data[15].9	0	Decimal	BOOL	PP150 Clutch OK Light On
PP150EthernetIP:I.Data[15].10	0	Decimal	BOOL	PP150 Cont. Arm Light On
PP150EthernetIP:I.Data[15].11	1	Decimal	BOOL	Not Used
PP150EthernetIP:I.Data[15].12	0	Decimal	BOOL	Not Used
PP150EthernetIP:I.Data[15].13	0	Decimal	BOOL	Not Used
PP150EthernetIP:I.Data[15].14	0	Decimal	BOOL	Not Used
PP150EthernetIP:I.Data[15].15	0	Decimal	BOOL	Not Used
PP150EthernetIP:I.Data[16]	21845	Decimal	INT	Not Used

INPUT WORD 15 (FIGURE 11.6)

Name	Value	Style	Data Type	Description
+ PP150EthernetIP:I.Data[4]	0	Decimal	INT	PP150 Status Word
+ PP150EthernetIP:I.Data[5]	69	Decimal	INT	PP150 Press Angle
+ PP150EthernetIP:I.Data[6]	19	Decimal	INT	PP150 Current Prompt/Fault Code
+ PP150EthernetIP:I.Data[7]	19	Decimal	INT	PP150 Most Recent Flt. Code
+ PP150EthernetIP:I.Data[8]	9	Decimal	INT	PP150 Previous Flt. Code
+ PP150EthernetIP:I.Data[9]	19	Decimal	INT	PP150 Two Flts. Ago Code
+ PP150EthernetIP:I.Data[10]	80	Decimal	INT	PP150 Last Stop Time (mS)
+ PP150EthernetIP:I.Data[11]	360	Decimal	INT	PP150 Last Degrees To Stop
+ PP150EthernetIP:I.Data[12]	0	Decimal	INT	PP150 Last Test Stop Time (mS)
+ PP150EthernetIP:I.Data[13]	0	Decimal	INT	PP150 Last Test Degrees To Stop
+ PP150EthernetIP:I.Data[14]	0	Decimal	INT	PP150 Last Test SPM
+ PP150EthernetIP:I.Data[15]	2393	Decimal	INT	PP150 Outputs
+ PP150EthernetIP:I.Data[16]	0	Decimal	INT	PP150 SPM
+ PP150EthernetIP:I.Data[17]	110	Decimal	INT	Heartbeat Counter
+ PP150EthernetIP:I.Data[18]	4	Decimal	INT	Last Stop Reason
+ PP150EthernetIP:I.Data[19]	0	Decimal	INT	Batch Count
+ PP150EthernetIP:I.Data[20]	0	Decimal	INT	Not Used
+ PP150EthernetIP:I.Data[21]	1	Decimal	INT	Actual Control Word 1
+ PP150EthernetIP:I.Data[22]	2	Decimal	INT	Actual Resolver Desired Angle
+ PP150EthernetIP:I.Data[23]	3	Decimal	INT	Actual Encoder Desired Angle
+ PP150EthernetIP:I.Data[24]	4	Decimal	INT	Actual Brake Stop Limit
+ PP150EthernetIP:I.Data[25]	5	Decimal	INT	Actual Brake Test Speed Value
+ PP150EthernetIP:I.Data[26]	6	Decimal	INT	Actual T-Cam Off Value
+ PP150EthernetIP:I.Data[27]	0	Decimal	INT	Not Used
+ PP150EthernetIP:I.Data[28]	0	Decimal	INT	Not Used
+ PP150EthernetIP:I.Data[29]	0	Decimal	INT	Not Used
+ PP150EthernetIP:I.Data[30]	1	Decimal	INT	HeartBeat From PP150
+ PP150EthernetIP:I.Data[31]	-22336	Decimal	INT	Reserved
+ PP150EthernetIP:I.Data[32]	-496	Decimal	INT	Reserved
+ PP150EthernetIP:I.Data[33]	-1	Decimal	INT	Reserved
+ PP150EthernetIP:I.Data[34]	255	Decimal	INT	Reserved
+ PP150EthernetIP:I.Data[35]	10	Decimal	INT	Actual PLS 1 On
+ PP150EthernetIP:I.Data[36]	11	Decimal	INT	Actual PLS 1 Off
+ PP150EthernetIP:I.Data[37]	12	Decimal	INT	Actual PLS2 On
+ PP150EthernetIP:I.Data[38]	13	Decimal	INT	Actual PLS 2 Off
+ PP150EthernetIP:I.Data[39]	0	Decimal	INT	Not Used
+ PP150EthernetIP:I.Data[40]	0	Decimal	INT	Not Used

INPUT WORDS 4-40 (FIGURE 11.7)

Name	Value	F	Style	Data Type	Description
PP150EthernetIP:C	{...}	{.		AB:ETHE...	
PP150EthernetIP:I	{...}	{.		AB:ETHE...	
PP150EthernetIP:O	{...}	{.		AB:ETHE...	
PP150EthernetIP:O.Data	{...}	{.	Decimal	INT[21]	
PP150EthernetIP:O.Data[0]	1		Decimal	INT	Configuration Word
PP150EthernetIP:O.Data[1]	1		Decimal	INT	Control Word 1 to PP150
PP150EthernetIP:O.Data[2]	2		Decimal	INT	Desired Resolver Angle to PP150
PP150EthernetIP:O.Data[3]	3		Decimal	INT	Desired Encoder Angle to PP150
PP150EthernetIP:O.Data[4]	4		Decimal	INT	Desired Brake Stop Limit to PP150
PP150EthernetIP:O.Data[5]	5		Decimal	INT	Desired Brake Test Speed to PP150
PP150EthernetIP:O.Data[6]	6		Decimal	INT	Desired T-Cam Off to PP150
PP150EthernetIP:O.Data[7]	7		Decimal	INT	Not Used
PP150EthernetIP:O.Data[8]	8		Decimal	INT	Not Used
PP150EthernetIP:O.Data[9]	9		Decimal	INT	Not Used
PP150EthernetIP:O.Data[10]	1		Decimal	INT	HeartBeat to PP150 (Bit 0)
PP150EthernetIP:O.Data[11]	-22336		Decimal	INT	RESERVED
PP150EthernetIP:O.Data[12]	-496		Decimal	INT	RESERVED
PP150EthernetIP:O.Data[13]	-1		Decimal	INT	RESERVED
PP150EthernetIP:O.Data[14]	255		Decimal	INT	RESERVED
PP150EthernetIP:O.Data[15]	10		Decimal	INT	PLS 1 WINDOW ON to PP150
PP150EthernetIP:O.Data[16]	11		Decimal	INT	PLS 1 WINDOW OFF to PP150
PP150EthernetIP:O.Data[17]	12		Decimal	INT	PLS 2 WINDOW ON to PP150
PP150EthernetIP:O.Data[18]	13		Decimal	INT	PLS 2 WINDOW OFF to PP150
PP150EthernetIP:O.Data[19]	0		Decimal	INT	Counter Preset
PP150EthernetIP:O.Data[20]	0		Decimal	INT	Not Used

OUTPUT WORDS 0-20 (FIGURE 1 1.8)

Name	Value	F	Style	Data Type	Description
PP150EthernetIP:O	{...}	{		AB:ETHERNET_...	
PP150EthernetIP:O.Data	{...}	{	Decimal	INT[11]	
PP150EthernetIP:O.Data[0]	1		Decimal	INT	Configuration Word
PP150EthernetIP:O.Data[0].0	1		Decimal	BOOL	Enable/Disable PP150 Ethernet Outputs
PP150EthernetIP:O.Data[0].1	0		Decimal	BOOL	Configuration Word
PP150EthernetIP:O.Data[0].2	0		Decimal	BOOL	Configuration Word
PP150EthernetIP:O.Data[0].3	0		Decimal	BOOL	Configuration Word

OUTPUT WORD 0 (FIGURE 1 1.9)

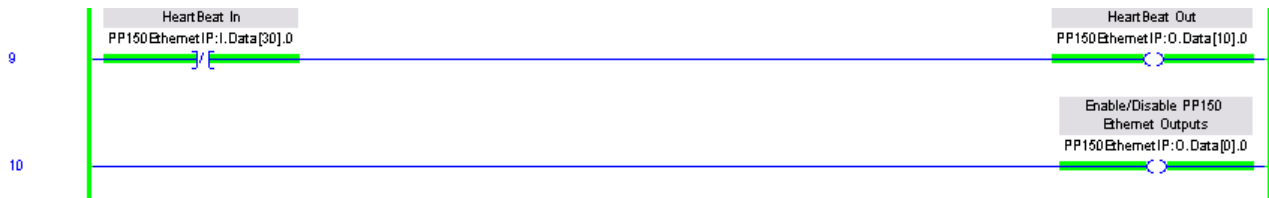
NOTE: FOR COMMUNICATION, OUTPUT WORD0.0 MUST BE 1 (ENABLED)

Name	Value	Status	Data Type	Description
PP150EthernetIP:0	{...}		AB:ET...	
PP150EthernetIP:0.Data	{...}		D.. INT[11]	
PP150EthernetIP:0.Data[0]	0		D.. INT	Configuration Word
PP150EthernetIP:0.Data[1]	0		D.. INT	Control Word 1 to PP150
PP150EthernetIP:0.Data[1].0	0		D.. BOOL	Main Motor FWD to PP150
PP150EthernetIP:0.Data[1].1	0		D.. BOOL	Program New Resolver Angle to PP150
PP150EthernetIP:0.Data[1].2	0		D.. BOOL	Program New Encoder Angle to PP150
PP150EthernetIP:0.Data[1].3	0		D.. BOOL	Start Brake Monitor Test to PP150
PP150EthernetIP:0.Data[1].4	0		D.. BOOL	Not Used
PP150EthernetIP:0.Data[1].5	0		D.. BOOL	Not Used
PP150EthernetIP:0.Data[1].6	0		D.. BOOL	Not Used
PP150EthernetIP:0.Data[1].7	0		D.. BOOL	Not Used
PP150EthernetIP:0.Data[1].8	0		D.. BOOL	Not Used
PP150EthernetIP:0.Data[1].9	0		D.. BOOL	Not Used
PP150EthernetIP:0.Data[1].10	0		D.. BOOL	Not Used
PP150EthernetIP:0.Data[1].11	0		D.. BOOL	Not Used
PP150EthernetIP:0.Data[1].12	0		D.. BOOL	Not Used
PP150EthernetIP:0.Data[1].13	0		D.. BOOL	Not Used
PP150EthernetIP:0.Data[1].14	0		D.. BOOL	Not Used
PP150EthernetIP:0.Data[1].15	0		D.. BOOL	Not Used

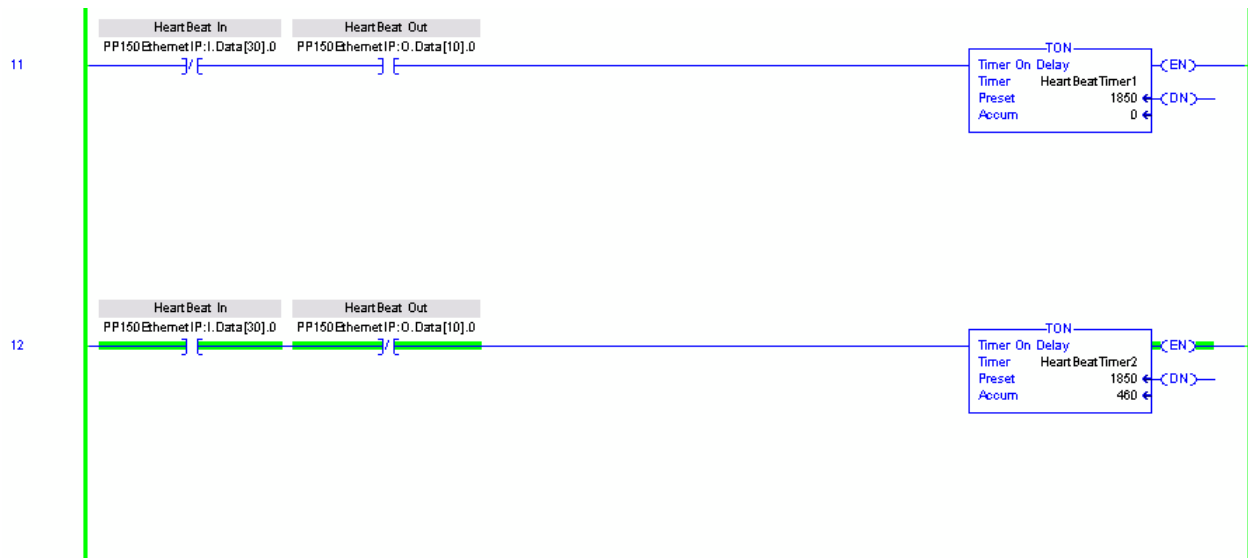
OUTPUT WORD 1 (FIGURE 1 1.10)

1 2 P 1 5 0 LADDER LOGIX EXAMPLES

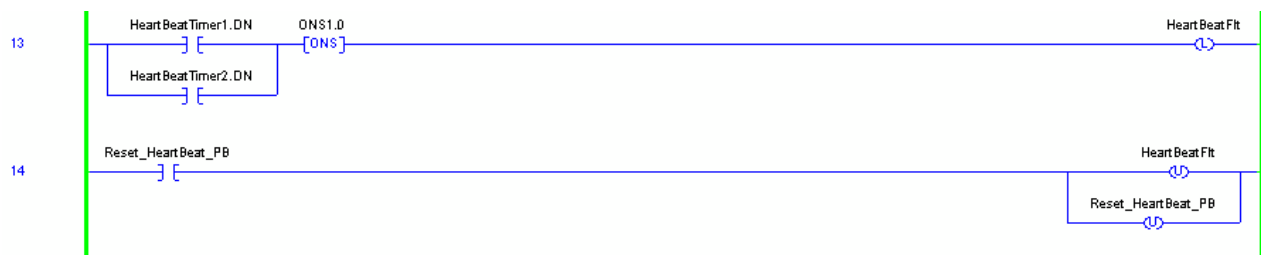
FIGURES 1 2.1 THRU 1 2.3 SHOW EXAMPLE LADDER LOGIC FOR HEARTBEAT, HEARTBEAT MONITORING AND ENABLING PLC OUTPUTS FOR THE PP150. NOTE: IN THE EXAMPLES BELOW, LADDERS 9 AND 1 0 (FIGURE 1 2.1) ARE REQUIRED FOR THE PP150 TO MONITOR A HEARTBEAT WITH THE PLC.



EXAMPLE LADDER LOGIC FOR (REQUIRED) HEARTBEAT AND ENABLE BITS
 (FIGURE 1 2.1)



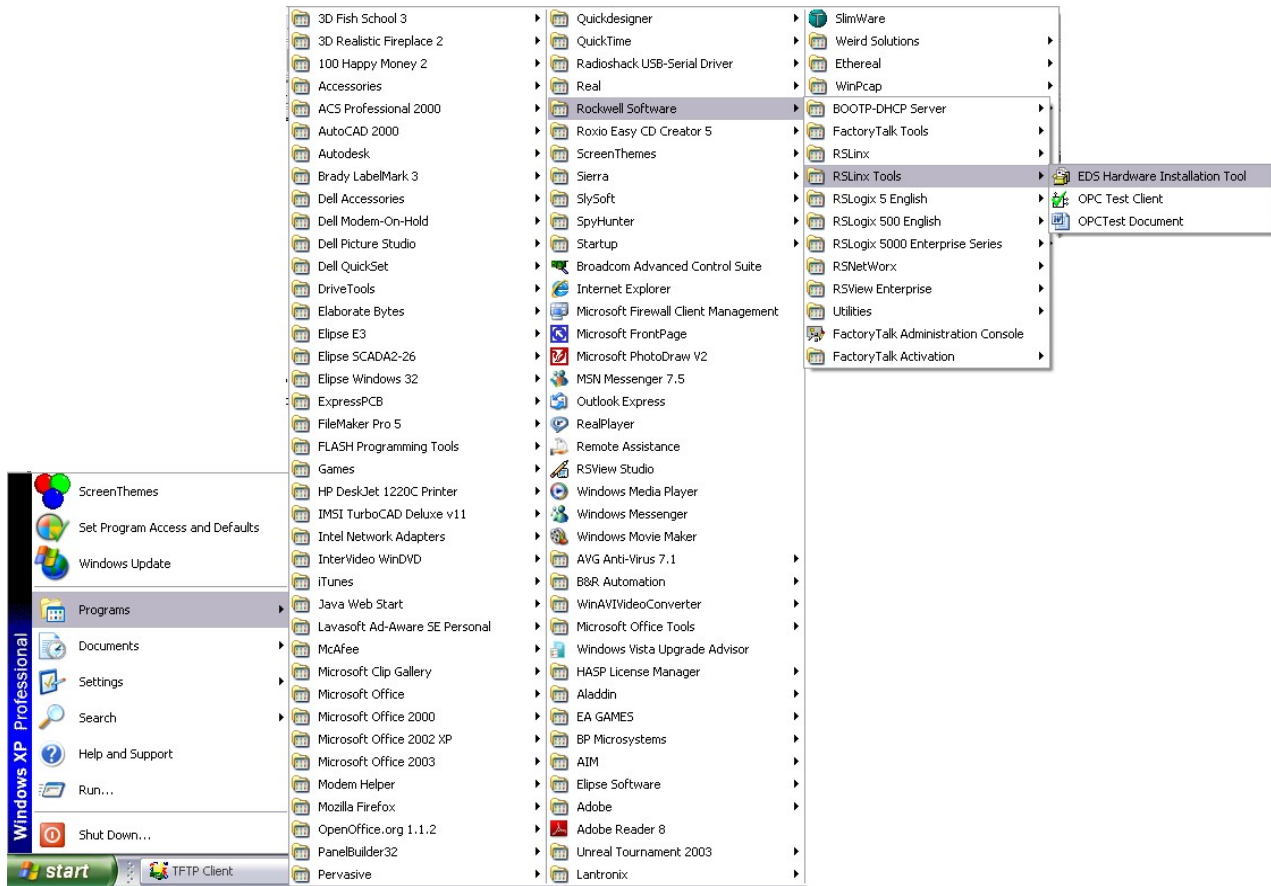
EXAMPLE LADDER LOGIC FOR (OPTIONAL) HEARTBEAT MONITORING
 (FIGURE 1 2.2)



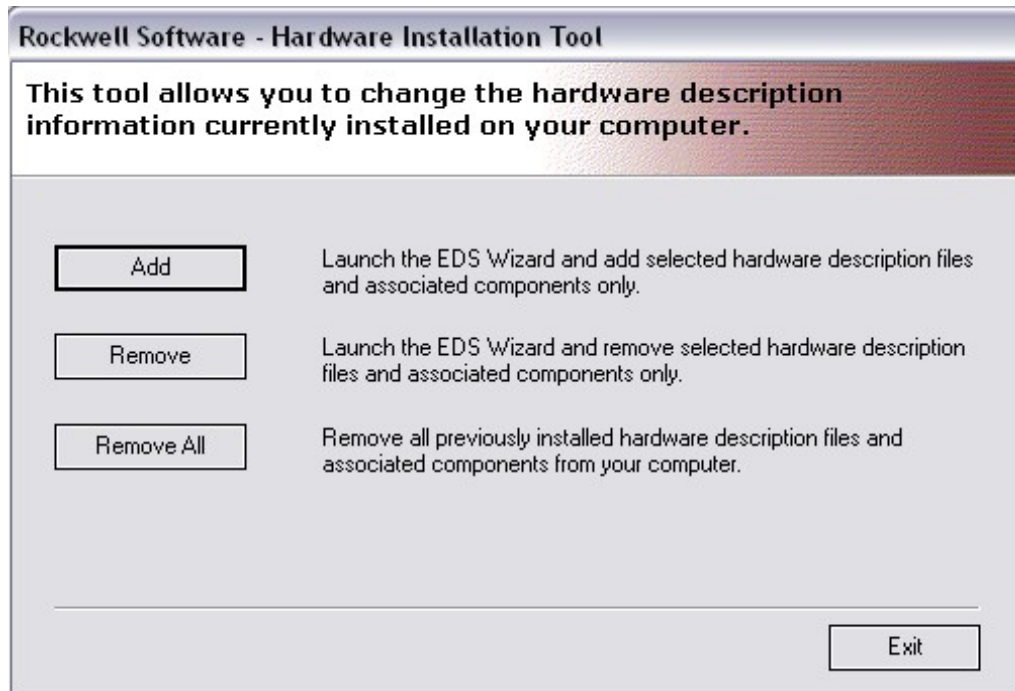
EXAMPLE LADDER LOGIC FOR (OPTIONAL) HEARTBEAT FAULT CAPTURE
 (FIGURE 1 2.3)

13 P150 EDS (ELECTRONIC DATA SHEET) INSTALLATION

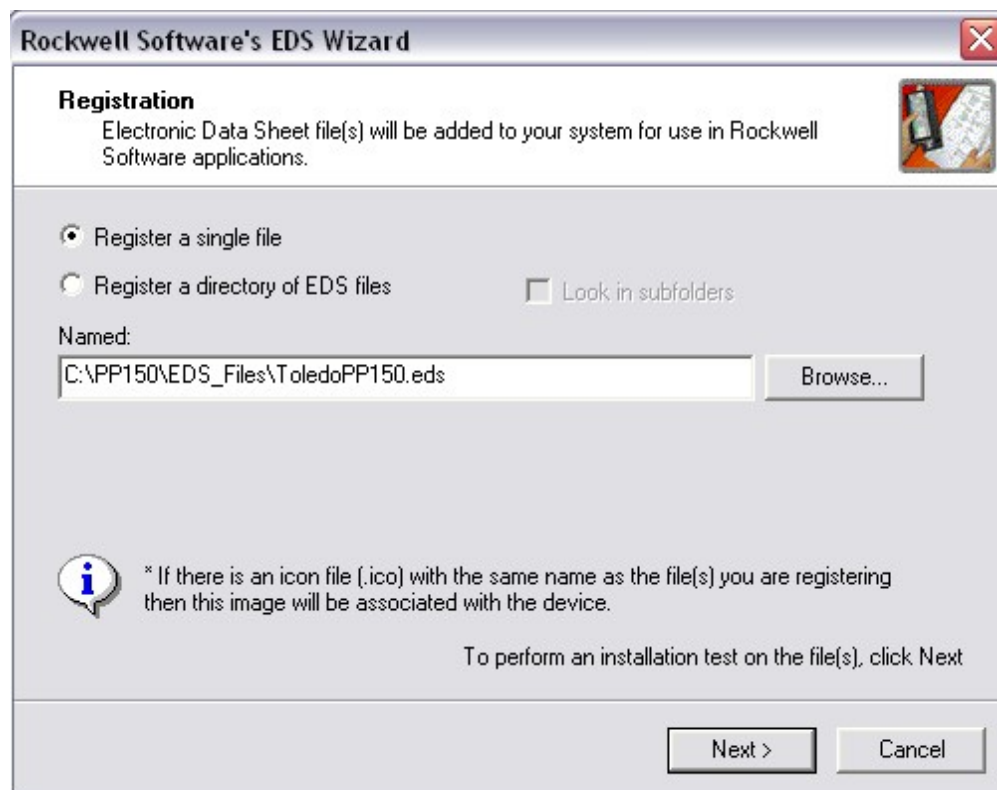
TO VIEW THE PP150 AS KNOWN DEVICE IN YOUR RSLINX YOU MUST INSTALL THE EDS FILE USING THE RSLINX EDS HARDWARE INSTALLATION TOOL. FIGURES 13.1 THRU 13.7 WILL WALK YOU THROUGH THE INSTALLATION PROCESS.



RUN THE EDS HARDWARE INSTALLATION TOOL PROGRAM.
(FIGURE 13.1)



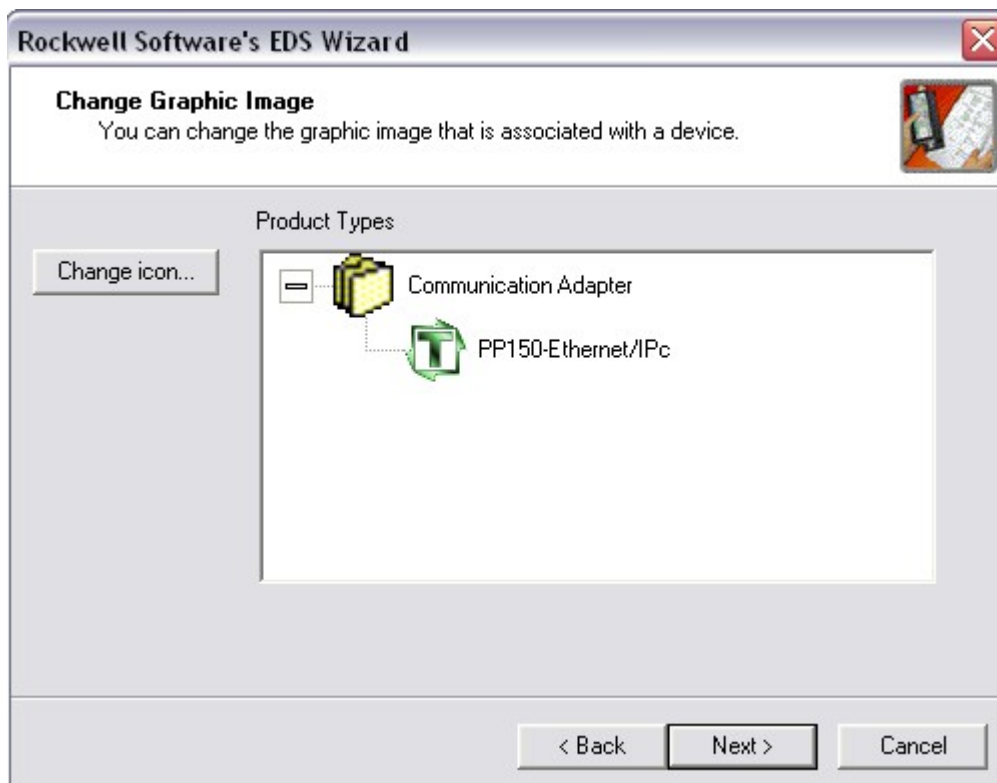
CLICK ON THE “ADD” BUTTON.
(FIGURE 13.2)



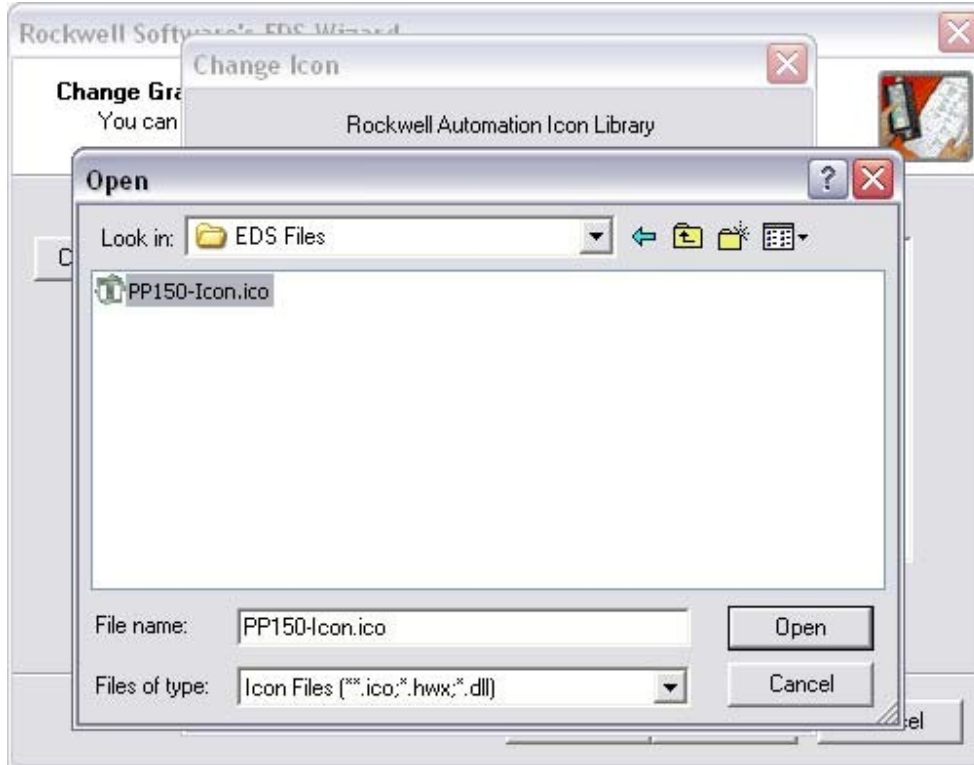
SELECT “REGISTER A SINGLE FILE” AND BROWSE...TO SEARCH FOR THE EDS FILE SUPPLIED BY TOLEDO INTEGRATED SYSTEMS.
(FIGURE 13.3)



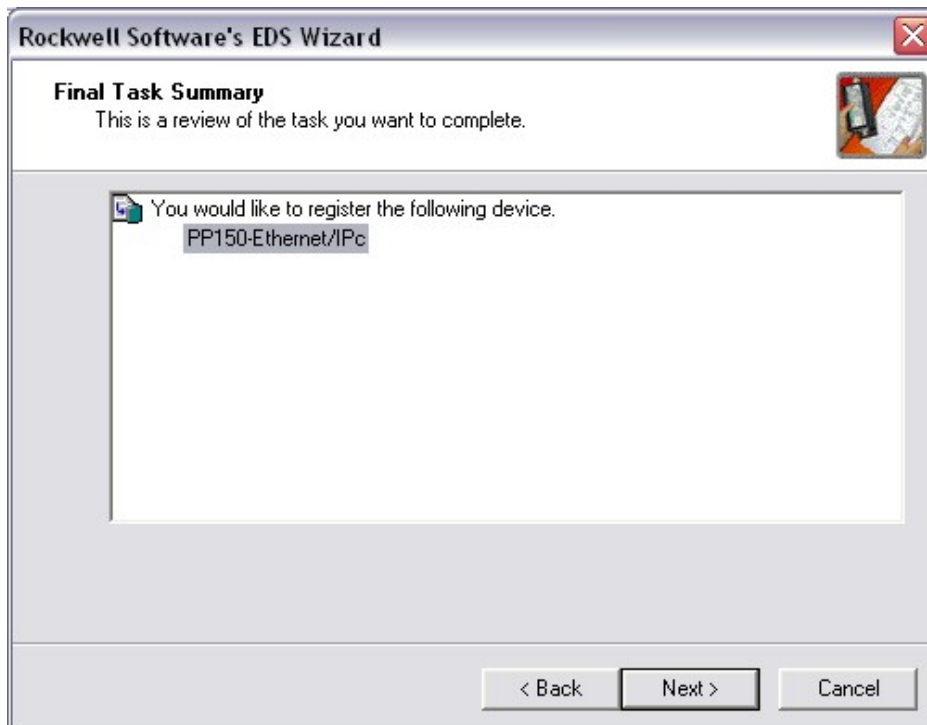
CLICK ON THE “NEXT” BUTTON TO LET ROCKWELL TEST THE FILE.
(FIGURE 13.4)



CLICK ON THE “CHANGE ICON...” BUTTON.
(FIGURE 13.5)



CLICK ON BROWSE...THEN SEARCH FOR THE PP150-ICON.ICO FILE SUPPLIED BY TOLEDO INTEGRATED SYSTEMS.
(FIGURE 13.6)



CLICK ON NEXT AND THE INSTALLATION WILL BE COMPLETE.
(FIGURE 13.7)

14 PP150 ETHERNET/IP SETTINGS

- TO VIEW/MODIFY THE PP150 ETHERNET/IP SETTINGS FLIP THE APPROPRIATE INTERNAL DIP SWITCH TO GET TO THE CONFIGURATION SCREENS. (SEE SECTION 5 PAGE 19 OF THIS MANUAL)

- BE SURE TO ENABLE THE ETHERNET CAPABILITY OF THE PP150 BY CHECKING THE ENABLE LINE ON THE CONFIGURATION SCREEN. THE PP150 MUST BE RESTARTED AFTER ANY MODIFICATIONS TO ETHERNET SETTINGS ARE MADE.

NOTE: ENABLING THE ETHERNET, WILL DISABLE SOME FEATURES FROM THE PP150 SCREEN. THE FOLLOWING FEATURES WILL NOT BE ABLE TO BE MODIFIED DIRECTLY FROM THE PP150, THEY CAN ONLY BE MODIFIED THROUGH THE PLC USING THE I/O MAPPING (SEE SECTION 11 PAGE 54 OF THIS MANUAL).

- FEATURES THAT ARE NOT MODIFIABLE FROM THE PP150 WITH ETHERNET ENABLED:

1. RESOLVER/ENCODER POSITION CALIBRATION
2. BRAKE MONITOR STOP LIMIT
3. 90 ° BRAKE MONITOR TEST
4. T-GAM OFF VALUE
5. PLS OUTPUTS

ETHERNET SCREEN WITH EXAMPLE IP ADDRESS SET TO 192.168.16.146 (DEFAULT)



(FIGURE 14.1)

ETHERNET SCREEN WITH EXAMPLE SUBNET MASK SET TO 255.255.255.0 (DEFAULT)



(FIGURE 14.2)

15 P150 AUTO SINGLE STROKE AND CONT. ON DEMAND

- THE PP150 IS EQUIPPED WITH TWO AUTOMATIC MODES. DEPENDING ON THE MODE INPUT, EITHER AUTO SINGLE OR CONTINUOUS ON DEMAND CAN BE ACCOMPLISHED. THESE AUTO MODES REQUIRE AN ENABLE INPUT (IN2 #38), AN INITIATE AUTO STROKE (IN1 #37) AND AN ARM INPUT (ARM CONT. IS USED #19).

- TO USE THE AUTO MODES, THE ENABLE INPUT MUST BE ON. IF THE ENABLE INPUT IS EVER OFF, THE CONTROL WILL IMMEDIATE STOP THE PRESS AND RETURN TO "NORMAL" OPERATION.
- ONCE THE ENABLE INPUT IS ON, YOU MUST ARM THE UNIT FOR AUTO OPERATION.

THE AUTO MODES SETTINGS CAN BE CONFIGURED IN THE SCREEN USING THE CONFIG/ADVANCED DIP SWITCHES. (SEE FIGURES 15.1 & 15.2)



(FIGURE 15.1)



(FIGURE 15.2)

AUTO SETTINGS:

- 1. 1ST STK REQ. PB: SELECTING THIS OPTION WILL REQUIRE THAT THE OPERATOR USE THE PALM BUTTONS TO INITIATE THE FIRST STROKE IN AUTO MODE. NOTE: THE PALM BUTTONS WILL OPERATE THE SAME AS "NORMAL" MODE UNTIL THE BUTTONS HAVE BEEN HELD THROUGH BOTTOM. ONCE THIS OCCURS, THE UNIT IS NOW ARMED AND REQUIRES ONLY THE "INITIATE AUTO STROKE" INPUT TO ENGAGE THE CLUTCH.
- 2. REQ. OFF TO ARM: SELECTING THIS OPTION WILL REQUIRE THAT THE "INITIATE AUTO STROKE" INPUT IS OFF TO ALLOW THE UNIT TO BE AUTO ARMED. NOTE: IF THIS IS NOT SELECTED AND THE "INITIATE AUTO STROKE" INPUT IS ON WHEN THE ARM BUTTON IS PUSHED, THE PRESS WILL STROKE.
- 3. ENABLE TIMEOUT: SELECTING THIS OPTION WILL DISARM THE UNIT ONCE THE TIMEOUT TIMER HAS FINISHED. EVERY ENGAGEMENT OF THE CLUTCH RESETS THIS TIMER.
- 4. ARM TIMEOUT: THIS IS THE TIME THAT THE UNIT WILL STAY ARMED WITHOUT THE CLUTCH BEING ENGAGED. THIS TIMER IS IN SECONDS AND HAS A MAX OF 1800 SECONDS (30 MINUTES). SETTING THIS TO ZERO WILL BYPASS THE TIMER.

- 5. CONT. DELAY: THIS IS THE TIME THE UNIT WILL DELAY ENGAGING THE CLUTCH (IN CONTINUOUS MODE), ONCE IT HAS RECEIVED THE “INITIATE AUTO STROKE” INPUT. THIS TIMER IS IN SECONDS AND HAS A MAX OF 30 SECONDS. SETTING THIS TO ZERO WILL BYPASS THE TIMER.

CONTINUOUS-ON-DEMAND FUNCTIONALITY NOTES:

- IF 1ST STROKE REQUIRES PALM BUTTONS IS SELECTED AND THE “INITIATE AUTO STROKE” INPUT IS OFF, THE PALM BUTTONS WILL ONLY ALLOW YOU TO COMPLETE ONE STROKE. IF THE “INITIATE AUTO STROKE” INPUT IS ON, THE PRESS WILL CONTINUE TO RUN UNTIL THE “INITIATE AUTO STROKE” INPUT IS TURNED OFF.
- IF AT ANY POINT IN THE STROKE THE “INITIATE AUTO STROKE” INPUT IS TURNED OFF, THE PRESS WILL TOP STOP AND REMAIN ARMED. IF THE “INITIATE AUTO STROKE” INPUT IS AGAIN TURNED ON, THE CLUTCH WILL ENGAGE.
- ANY OF THE FOLLOWING WILL DISARM THE UNIT:
 - I. EMERGENCY STOP OPEN
 - II. IMMEDIATE STOP OPEN
 - III. TOP STOP OPEN
 - IV. ANY MODE CHANGE
 - V. PP150 RESET BUTTON PUSHED
 - VI. TIE DOWN FAULT (ONLY IF 1ST STK REQ. PB...ONCE THROUGH BOTTOM, THIS FAULT IS BYPASSED)
 - VII. ANY LATCHED FAULT IN THE PP150
 - VIII. THE ARM TIMEOUT TIMER IS COMPLETED (ONLY IF THE CLUTCH IS OFF AND TIMEOUT IS ENABLED)

NOTE: AUTO SINGLE AND CONTINUOUS ON DEMAND REQUIRE FULL PRESS GUARDING BY END CUSTOMER. TOLEDO INTEGRATED SYSTEMS IS NOT RESPONSIBLE FOR INCORRECT WIRING OR INSUFFICIENT GUARDING WHILE USING EITHER OF THESE TWO AUTO FEATURES.

16 HYDRAULIC OVERLOAD MONITORING

INPUT

THE PP150 IS EQUIPPED WITH ONE INPUT [TB 39] TO MONITOR A HYDRAULIC OVERLOAD LIMIT SWITCH. THIS INPUT CAN BE CONFIGURED TO TRIGGER A HYDRAULIC OVERLOAD FAULT EITHER WHEN IT GOES LOW, OR WHEN IT GOES HI. REFER TO THE SAMPLE SCREEN SHOT IN (FIG. 16.1). WHEN THE “INPUT FAULT HI” HAS A CHECKMARK, THE UNIT WILL DECLARE A HYDRAULIC OVERLOAD FAULT WHEN THE INPUT GOES HIGH.

OUTPUT

THERE IS ONE RELAY (DRY CONTACT) OUTPUT [TB 72 & 73] TO CONTROL THE HYDRAULIC OL “PUMP/RESET/HOLD” SOLENOID. THIS OUTPUT CAN ALSO BE CONFIGURED TO BE LOW OR HI. WHEN THE “OUTPUT HI” HAS A CHECKMARK, THE OUTPUT WILL REMAIN ON WHEN

THE HYDRAULIC OVERLOADS ARE NORMAL. ONCE THE INPUT INDICATES THAT THE HYDRAULIC OVERLOADS HAVE FAULTED OUT, THE OUTPUT WILL GO LOW UNTIL THE OVERLOADS ARE COMMANDED TO RESET.

TOGGLE

IF THE OUTPUT HAS TO PULSE HI AND LO TO RESET THE OVERLOADS, SET THE “RESET TIMER” VALUE TO BE A NUMBER OTHER THAN ZERO. IF NO PULSE IS REQUIRED, SET THE VALUE TO ZERO.

THE HYDRAULIC OVERLOAD SETTINGS CAN BE CONFIGURED IN THE SCREEN USING THE CONFIG/ADVANCED DIP SWITCHES. (SEE FIGURES 16.1 & 16.2)



(FIGURE 16.1)

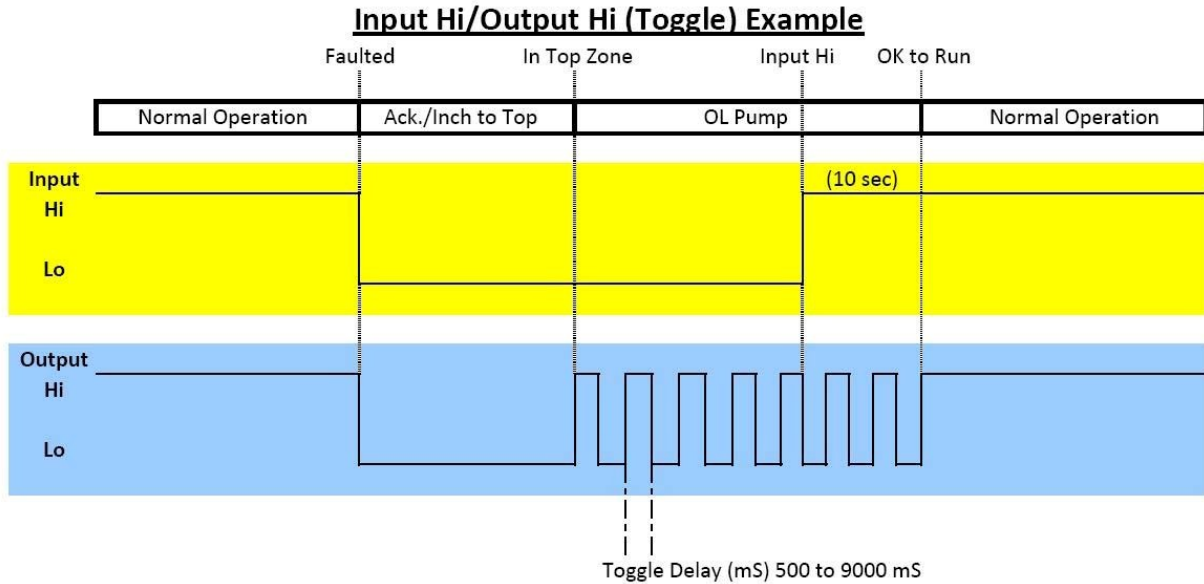


(FIGURE 16.2)

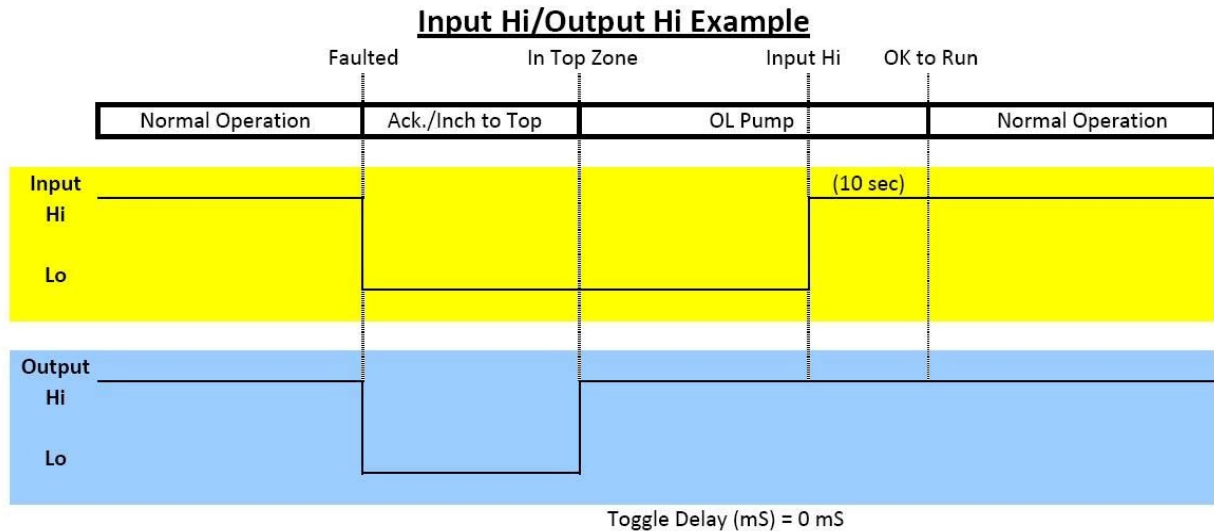
SAMPLE PROCEDURE WITH “INPUT FAULT LOW” UNCHECKED AND “OUTPUT HI” CHECKED:

- IF THE MONITORED INPUT EVER TURNS OFF, THE OUTPUT WILL TURN OFF AND THE PRESS WILL IMMEDIATE STOP.
- THE PP150 WILL REPORT A HYDRAULIC OL FAULT AND REQUIRE YOU TO PUSH THE RESET BUTTON TO ACKNOWLEDGE THE FAULT.
- ONCE THE FAULT HAS BEEN ACKNOWLEDGED, THE CONTROL WILL AUTOMATICALLY TELL YOU TO INCH THE PRESS EITHER FWD OR REV TO THE TOP ZONE. (IF YOU DO NOT HAVE REVERSE ON YOUR MOTOR YOU WILL EITHER HAVE TO DEAD INCH THE PRESS FWD THRU BOTTOM OR UNWIRE THE MAIN MOTOR FWD INPUT [22] TO ALLOW THE PP150 TO STROKE.)
- ONCE IN THE TOP ZONE, THE PP150 WILL AGAIN STOP THE PRESS AND TURN ON THE HYDRAULIC OL “PUMP/HOLD” OUTPUT.
- ONCE THE INPUT TURNS BACK ON FOR 10 CONTINUOUS SECONDS, THE HYDRAULIC OL FAULT WILL BE CLEARED.

FIGURES 16.3-16.6 SHOW HOW THE INPUT AND OUTPUT SETTINGS AFFECT THE SYSTEM. RELAYS MAY NEED TO BE ADDED TO THE OUTPUT IN ORDER TO INTEGRATE THE SYSTEM INTO THE HYDRAULIC OVERLOAD SYSTEM (EX, IF THE SYSTEM HAS 2 VALVES, ECT).

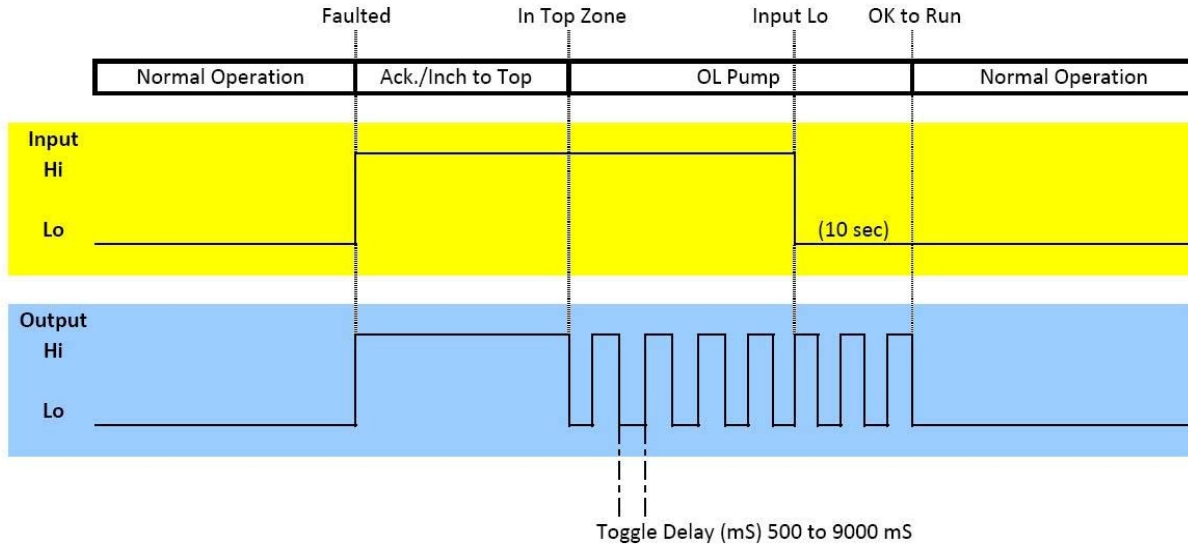


(FIGURE 16.3)



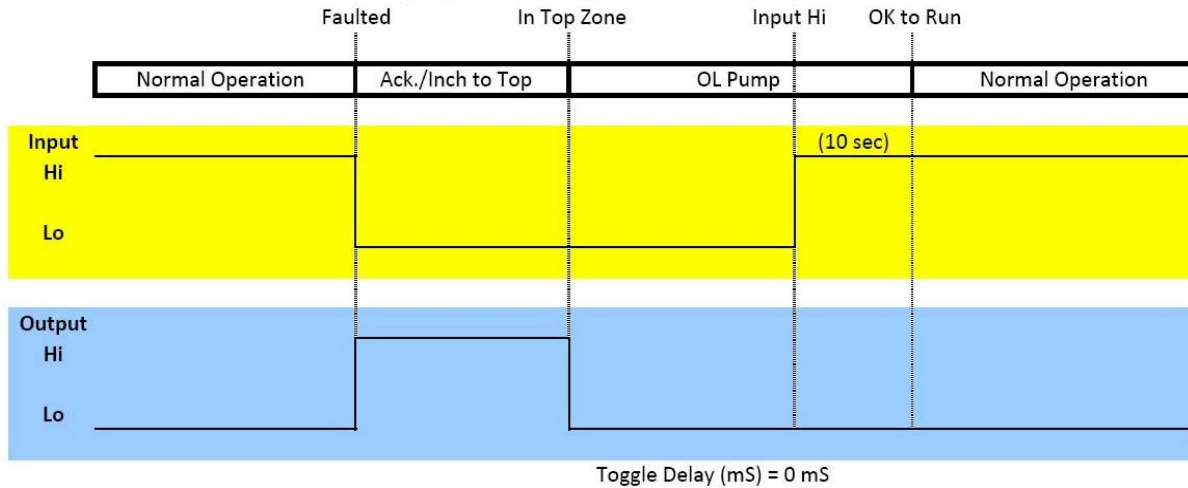
(FIGURE 16.4)

Input Lo/Output Lo (Toggle) Example



(FIGURE 16.5)

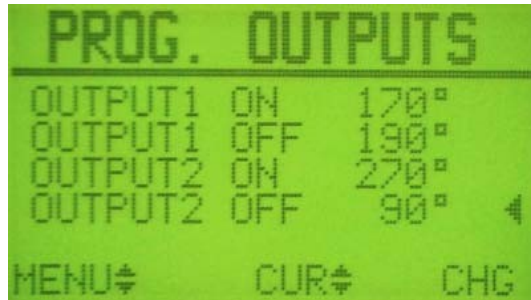
Input Hi/Output Lo Example



(FIGURE 16.6)

17 PROGRAMMABLE OUTPUTS

THE PP150 IS EQUIPPED WITH TWO PROGRAMMABLE OUTPUTS [TB 86 & 87]. THESE OUTPUTS ARE PROGRAMMED TO TURN ON ONCE DURING EACH STROKE AND ARE SETTABLE THROUGH EITHER THE PP150 SCREEN OR OVER ETHERNET (IF OPTION PURCHASED). FIGURE 17.1 SHOWS THE SCREEN USED TO MODIFY THE OUTPUT WINDOWS. THE EXAMPLE SHOWS THE FIRST OUTPUT TURNING ON AT 170° AND OFF AT 190° (TYPICAL PILOT RELEASE EXAMPLE). THE SECOND EXAMPLE SHOWS THE SECOND OUTPUT TURNING ON AT 270° AND TURNING OFF AT 90° (TYPICAL FEED WINDOW).



(FIG. 17.1)

THE M0 AND M1 OUTPUTS SHARE THE SAME TERMINALS AS THE “MESSAGE BITS”. ONLY ONE OPTION CAN BE USED (EITHER MSG. BITS OR PLS OUTPUTS). THE PROGRAMMABLE OUTPUTS/“PLS” MUST BE ENABLED TO ENSURE M0 AND M1 CYCLE ACCORDING TO THE SELECTED WINDOWS. THE TOGGLE FROM PLS/MSG CAN BE CONFIGURED IN THE SCREEN USING THE CONFIG/ADVANCED DIP SWITCHES. (SEE FIGURES 17.2 & 17.3)



(FIGURE 17.2)



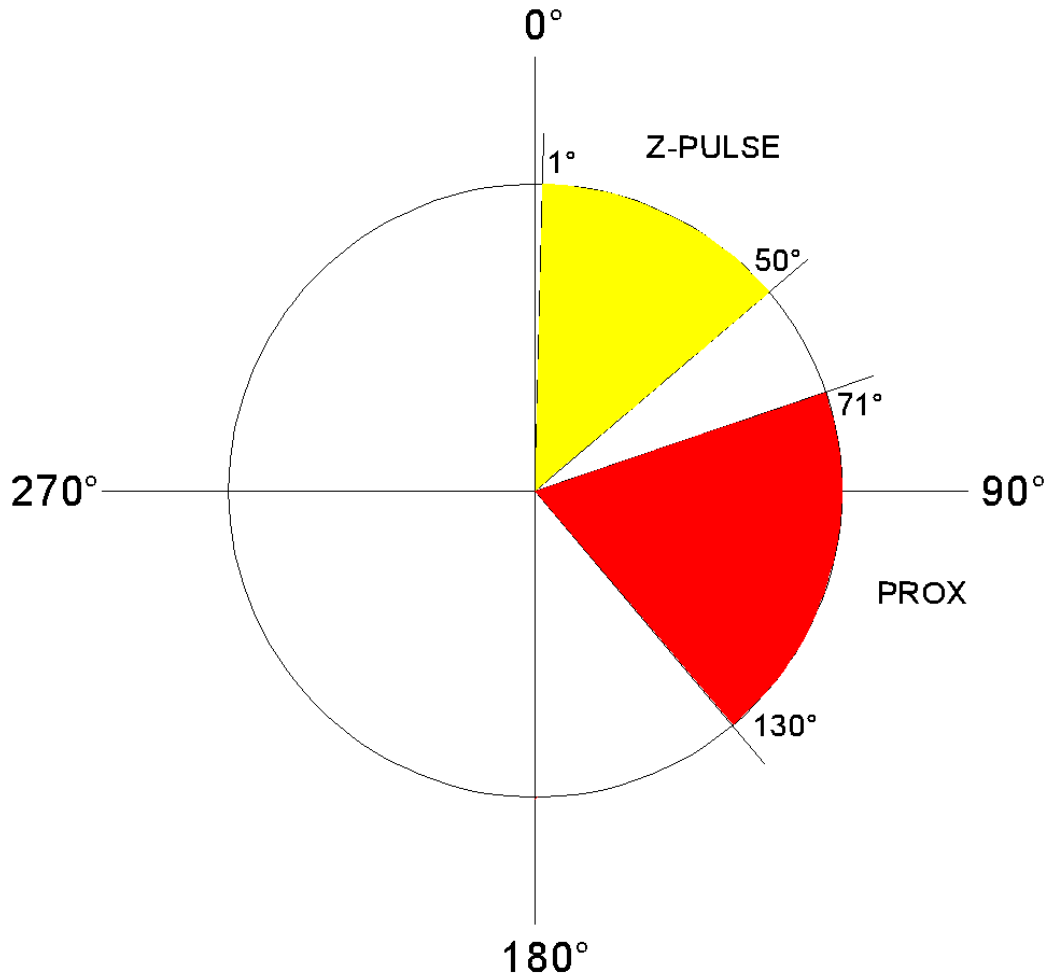
(FIGURE 17.3)

(NOTE: THE M0 AND M1 OUTPUTS ARE SINKING (NPN) OUTPUTS AND ARE DESIGNED TO BE RUN TO A SINKING INPUT OF AN AUX. DEVICE OR TO THE COMMON OF A DC RELAY.)

SAFETY NOTE: THE PROGRAMMABLE OUTPUTS SHOULD NEVER BE RUN INTO THE PROX. CHECK INPUT.

18 MUTE LIGHT CURTAINS ON UPSTROKE WITH ENCODER SETUP

IF THE USER SELECTS MUTE CURTAINS UNDER LC MUTE/TOP STOP AND AN ENCODER IS USED, THE Z-PULSE AND PROX MUST BE TIMED AS BELOW.



MAIN

RESOLVER

ENCODER

CAMS

PROMPTS/FAULTS
RESOLVER FAULT
MENU# 022

POSITION CONTROL
RESOLVER ENCODER HARD CAMS ETXHWARE USER 3.21
MENU# CUR# APPLY

SC OFFSET ZONE2
IF SPEED > 600SPH4
STOP OFFSET 0°
STOP EARLY 269°
STOP ANGLE 269°
MENU# CUR# CHG

POSITION CONTROL
RESOLVER ENCODER HARD CAMS ETXHWARE USER 3.21
MENU# CUR# APPLY

SC OFFSET ZONE2
IF SPEED > 600SPH4
STOP OFFSET 0°
STOP EARLY 269°
STOP ANGLE 269°
MENU# CUR# CHG

BRAKE MONITOR
STOP TIME 103MS
STOP DECS 24°
STOP LIMIT 300MS
MENU#

SAVE/RESTORE
SAVE CURRENT RESTORE SAVED FACTORY DEFAULTS
MENU# CUR# APPLY

SC OFFSET ZONE1
IF SPEED > 500SPH
STOP OFFSET 11°
STOP EARLY 269°
STOP ANGLE 269°
MENU# CUR# CHG

SAVE/RESTORE
SAVE CURRENT RESTORE SAVED FACTORY DEFAULTS
MENU# CUR# APPLY

SC OFFSET ZONE1
IF SPEED > 500SPH
STOP OFFSET 11°
STOP EARLY 269°
STOP ANGLE 269°
MENU# CUR# CHG

LAST BRAKE TEST
STOP TIME 0MS
STOP DECS 0SPH
TEST SPEED 0SPH
MENU#

HYD. OL/PLS
INPUT FLT LO OUTPUT HI
RESET TIMER 0MS
ENABLE PLS OUTPUT
ENABLE HSG OUTPUT
MENU# CUR# APPLY

SPEED COMP TOP 2
ENABLE SPEED COMP
CAL MODE ON/OFF
FAST VALUES OK
SLOW VALUES OK
MENU# CUR# APPLY

HYD. OL/PLS
INPUT FLT LO OUTPUT HI
RESET TIMER 0MS
ENABLE PLS OUTPUT
ENABLE HSG OUTPUT
MENU# CUR# APPLY

SPEED COMP TOP 2
ENABLE SPEED COMP
CAL MODE ON/OFF
FAST VALUES OK
SLOW VALUES OK
MENU# CUR# APPLY

PROX INFO
LAST ON 15°
LAST OFF 31°
HINDOOR ON 354°
HINDOOR OFF 54°
MENU#

AUTO-SINGLE/CONT
1ST STK REQ PB
REQ OFF TO ARM
ENABLE TIMEOUT
ARM TIMEOUT 600S
CONT DELAY 0S
MENU# CUR# APPLY

SPEED COMP TOP 1
FAST SPH 400SPH4
FIRST STOP 75°
SLOW SPH 100SPH
SLOW STOP 300°
MENU# CUR# CHG

AUTO-SINGLE/CONT
1ST STK REQ PB
REQ OFF TO ARM
ENABLE TIMEOUT
ARM TIMEOUT 600S
CONT DELAY 0S
MENU# CUR# APPLY

SPEED COMP TOP 1
FAST SPH 400SPH4
FIRST STOP 75°
SLOW SPH 100SPH
SLOW STOP 300°
MENU# CUR# CHG

MOST RECENT FLT.
RESOLVER FAULT
MENU# 022

E-NET HEARTBEAT
CURRENT HB 44MS
FLT LIMIT 500MS
MENU# CUR# CHG

LC MUTE/TOP STOP
MUTE CURTAINS CONT IMM TOP STOP INCH STOP AT TOP
MENU# CUR# APPLY

E-NET HEARTBEAT
CURRENT HB 44MS
FLT LIMIT 500MS
MENU# CUR# CHG

LC MUTE/TOP STOP
MUTE CURTAINS CONT IMM TOP STOP INCH STOP AT TOP
MENU# CUR# APPLY

PREVIOUS FAULT
PROX CYCLED OUTSIDE HINDOOR
MENU# 021

SUBNET MASK
OCTET 1 255
OCTET 2 255
OCTET 3 255
OCTET 4 0
MENU# CUR# CHG

ARM CONTINUOUS 2
HINDOOR ON 270°
HINDOOR OFF 90°
CONT. ARM TIMEOUT 5S
MENU# CUR# CHG

SUBNET MASK
OCTET 1 255
OCTET 2 255
OCTET 3 255
OCTET 4 0
MENU# CUR# CHG

ARM CONTINUOUS 2
HINDOOR ON 270°
HINDOOR OFF 90°
CONT. ARM TIMEOUT 5S
MENU# CUR# CHG

TWO FAULTS AGO
RESOLVER FAULT
MENU# 000

IP ADDRESS
ENABLE ETHERNET
OCTET 1 192
OCTET 2 168
OCTET 3 16
OCTET 4 254
MENU# CUR# APPLY

ARM CONTINUOUS 1
ANYWHERE TOP ZONE HINDOOR SET ON NEXT PG->
MENU# CUR# APPLY

IP ADDRESS
ENABLE ETHERNET
OCTET 1 192
OCTET 2 168
OCTET 3 16
OCTET 4 254
MENU# CUR# APPLY

ARM CONTINUOUS 1
ANYWHERE TOP ZONE HINDOOR SET ON NEXT PG->
MENU# CUR# APPLY

PROG. OUTPUTS
OUTPUT1 ON 170°
OUTPUT1 OFF 190°
OUTPUT2 ON 270°
OUTPUT2 OFF 90°
MENU# CUR# CHG

COUNTERS
LIFETIME 66
BATCH COUNT UP
PARTS/STROK 1
MENU# CUR# CLEAR

SOFT CAMS
B-CAM ON 35°
B-CAM OFF 190°
T-CAM ON 170°
T-CAM OFF 269°
MENU# CUR# CHG

COUNTERS
LIFETIME 66
BATCH COUNT UP
PARTS/STROK 1
MENU# CUR# CLEAR

SOFT CAMS
B-CAM ON 35°
B-CAM OFF 190°
T-CAM ON 170°
T-CAM OFF 269°
MENU# CUR# CHG

LAST STOP REASON
RUN BUTTONS RELEASED
MENU# 008

LED DISPLAY
ANGLE ONLY SPH
ANGLE THEN BATCH
BATCH LEFT ONLY
MENU# CUR# APPLY

PROX SETUP
LAST PROX ON
CAL MODE ON/OFF VERIFIED
DEBOUNCE 20MS
MENU# CUR# APPLY

LED DISPLAY
ANGLE ONLY SPH
ANGLE THEN BATCH
BATCH LEFT ONLY
MENU# CUR# APPLY

CAL. ENCODER
DESIRED DEG 300°
CAL MODE ON/OFF
Z-PULSE POS 59°
MENU# CUR# CHG

COUNTERS
LIFETIME 66
BATCH PRE 0
BATCH LEFT 0
STOP WHEN DONE
MENU# CUR# CHG

BRAKE TEST 2
START/STOP TEST
MENU# CUR# APPLY

RESOLVER OFFSET
OFFSET 76°
MENU# CUR# CHG

BRAKE TEST 2
START/STOP TEST
MENU# CUR# APPLY

BRAKE TEST 2
START/STOP TEST
MENU# CUR# APPLY

BRAKE TEST 1
TEST SPEED 0SPH
BT TIMEOUT 20S
BH FLT LHM 257MS
MENU# CUR# CHG

BRAKE TEST 1
TEST SPEED 0SPH
BT TIMEOUT 20S
BH FLT LHM 257MS
MENU# CUR# CHG

BRAKE TEST 1
TEST SPEED 0SPH
BT TIMEOUT 20S
BH FLT LHM 257MS
MENU# CUR# CHG

BRAKE TEST 1
TEST SPEED 0SPH
BT TIMEOUT 20S
BH FLT LHM 257MS
MENU# CUR# CHG

BRAKE TEST 1
TEST SPEED 0SPH
BT TIMEOUT 20S
BH FLT LHM 257MS
MENU# CUR# CHG

SW1 SETTING MAIN SCREENS

OTHER SETTINGS
BYP HOT IN INCH
CLT ENGAGE 501MS
MULTI RBRAR 7S
DRYFLT FLT 800MS
CVALUE FLT HIGH
MENU# CUR# APPLY

OTHER SETTINGS
BYP HOT IN INCH
CLT ENGAGE 501MS
MULTI RBRAR 7S
DRYFLT FLT 800MS
CVALUE FLT HIGH
MENU# CUR# APPLY

OTHER SETTINGS
BYP HOT IN INCH
CLT ENGAGE 501MS
MULTI RBRAR 7S
DRYFLT FLT 800MS
CVALUE FLT HIGH
MENU# CUR# APPLY

OTHER SETTINGS
BYP HOT IN INCH
CLT ENGAGE 501MS
MULTI RBRAR 7S
DRYFLT FLT 800MS
CVALUE FLT HIGH
MENU# CUR# APPLY

SW1 SETTING ADVANCED SCREENS (RESOLVER, ENCODER & CAM SCREENS)

SC OFFSET ZONE4
IF SPEED > 800SPH4
STOP OFFSET 0°
STOP EARLY 269°
STOP ANGLE 269°
MENU# CUR# CHG

SC OFFSET ZONE4
IF SPEED > 800SPH4
STOP OFFSET 0°
STOP EARLY 269°
STOP ANGLE 269°
MENU# CUR# CHG

SC OFFSET ZONE4
IF SPEED > 800SPH4
STOP OFFSET 0°
STOP EARLY 269°
STOP ANGLE 269°
MENU# CUR# CHG

SC OFFSET ZONE4
IF SPEED > 800SPH4
STOP OFFSET 0°
STOP EARLY 269°
STOP ANGLE 269°
MENU# CUR# CHG

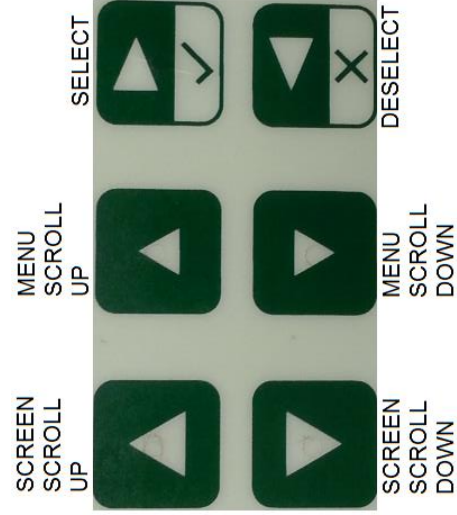
SW1 SETTING DIAGNOSTICS

SC OFFSET ZONE3
IF SPEED > 700SPH4
STOP OFFSET 0°
STOP EARLY 269°
STOP ANGLE 269°
MENU# CUR# CHG

SC OFFSET ZONE3
IF SPEED > 700SPH4
STOP OFFSET 0°
STOP EARLY 269°
STOP ANGLE 269°
MENU# CUR# CHG

SC OFFSET ZONE3
IF SPEED > 700SPH4
STOP OFFSET 0°
STOP EARLY 269°
STOP ANGLE 269°
MENU# CUR# CHG

SC OFFSET ZONE3
IF SPEED > 700SPH4
STOP OFFSET 0°
STOP EARLY 269°
STOP ANGLE 269°
MENU# CUR# CHG



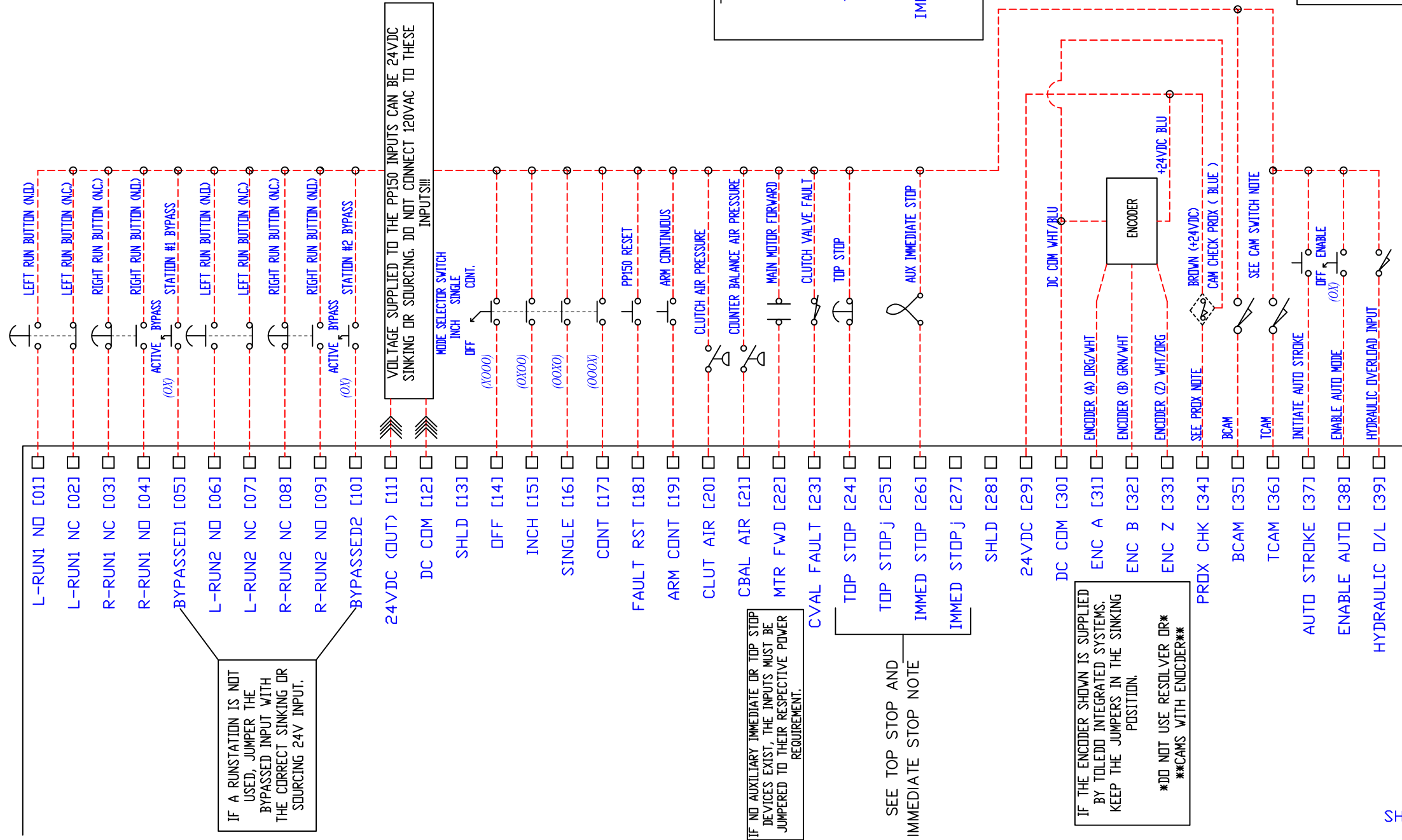
DIAGNOSTIC

PG-01
M0 00000
M1 00000
M2 00000
M3 00000
M4 00000
M5 00000
MSSG H0 TEST
00000
01000
02000
03000
04000
05000
06000
07000
08000
09000
10000
PG-01
40-000
41-000
42-000
43-000
44-000
45-000
46-000
47-000
48-000
49-000
PG-05

PG-02
LED TEST
15-OFF
16-OFF
17-OFF
18-OFF
19-ARM
PG-02
02-INT
03-INT
08-INT
09-INT
10-INT
11-INT
12-INT
13-INT
14-INT
15-INT
16-INT
17-INT
18-INT
19-INT
PG-06
02-INT
03-INT
08-INT
09-INT
10-INT
11-INT
12-INT
13-INT
14-INT
15-INT
16-INT
17-INT
18-INT
19-INT
RELAY FAULT TEST

PG-03
LCD TEST
00000
01000
02000
03000
04000
05000
06000
07000
08000
09000
10000
PG-03
02-INT
03-INT
08-INT
09-INT
10-INT
11-INT
12-INT
13-INT
14-INT
15-INT
16-INT
17-INT
18-INT
19-INT
RELAY FAULT TEST

PG-04
SHITC
00000
01000
02000
03000
04000
05000
06000
07000
08000
09000
10000
PG-04
02-INT
03-INT
08-INT
09-INT
10-INT
11-INT
12-INT
13-INT
14-INT
15-INT
16-INT
17-INT
18-INT
19-INT
RELAY FAULT TEST

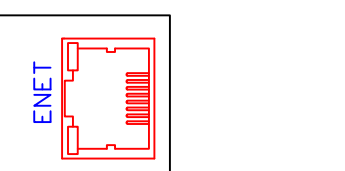


IF A RUNSTATION IS NOT USED, JUMPER THE BYPASSED INPUT WITH THE CORRECT SINKING OR SOURCING 24V INPUT.

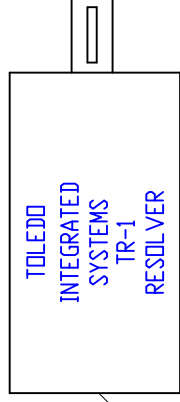
IF NO AUXILIARY IMMEDIATE OR TOP STOP DEVICES EXIST, THE INPUTS MUST BE JUMPERED TO THEIR RESPECTIVE POWER REQUIREMENT.

SEE TOP STOP AND IMMEDIATE STOP NOTE

IF THE ENCODER SHOWN IS SUPPLIED BY TOLEDO INTEGRATED SYSTEMS, KEEP THE JUMPERS IN THE SINKING POSITION.
 **DO NOT USE RESOLVER DR*
 CAMS WITH ENCODER



FOR REVERSE DIRECTION SWITCH S1 AND S3
 TR-1 CABLE DOC. ND. 11630

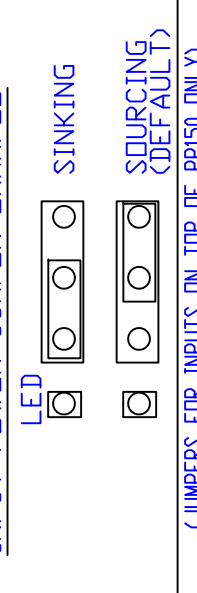


DO NOT USE ENCODER OR CAMS WITH RESOLVER

IMPORTANT
 ALL AC LINES MUST BE RUN IN SEPARATE CONDUIT FROM ALL DC LINES

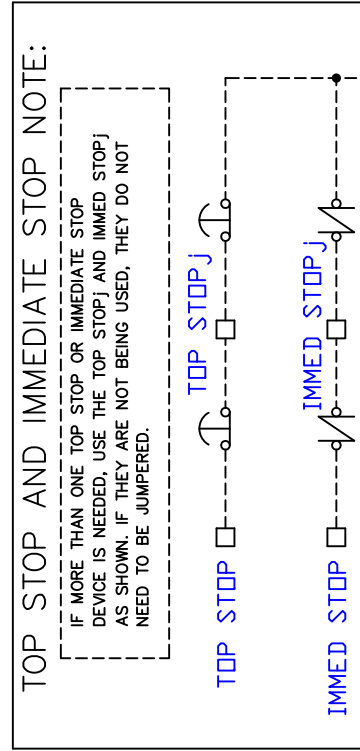
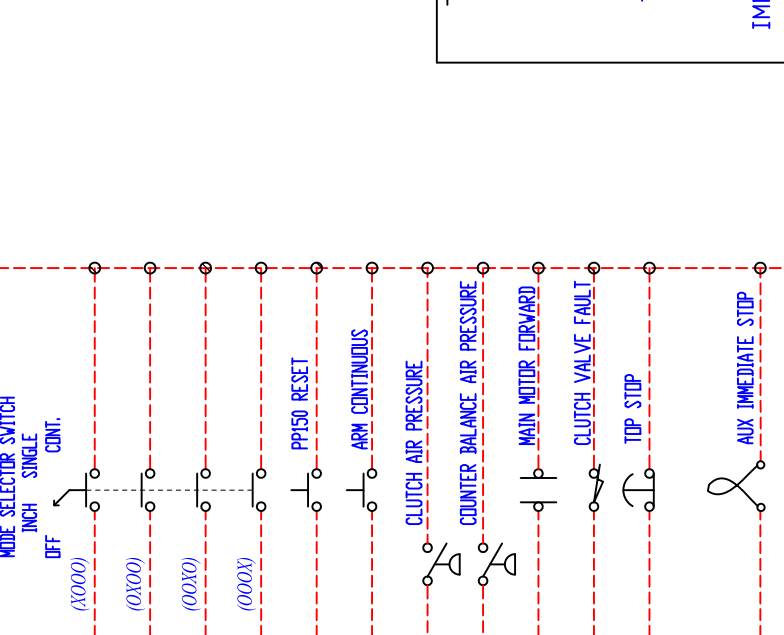
THE PP150 IS SHIPPED WITH ALL 24VDC INPUT JUMPERS SET FOR SOURCING. TO CHANGE THE INPUTS TO SINKING, THE JUMPER ON THE I/O BOARD MUST BE CHANGED AS SHOWN. (SEE PAGE 51 IN MANUAL FOR PICTURE)

INPUT POWER JUMPER EXAMPLE



(JUMPERS FOR INPUTS ON TOP OF PP150 ONLY)

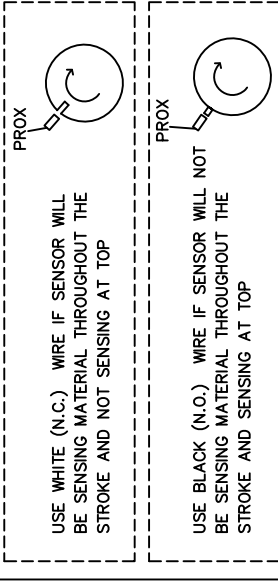
VOLTAGE SUPPLIED TO THE PP150 INPUTS CAN BE 24VDC SINKING OR SOURCING. DO NOT CONNECT 120VAC TO THESE INPUTS!!!



TOP STOP AND IMMEDIATE STOP NOTE:

IF MORE THAN ONE TOP STOP OR IMMEDIATE STOP DEVICE IS NEEDED, USE THE TOP STOPJ AND IMMED STOPJ AS SHOWN. IF THEY ARE NOT BEING USED, THEY DO NOT NEED TO BE JUMPERED.

PROX NOTE:

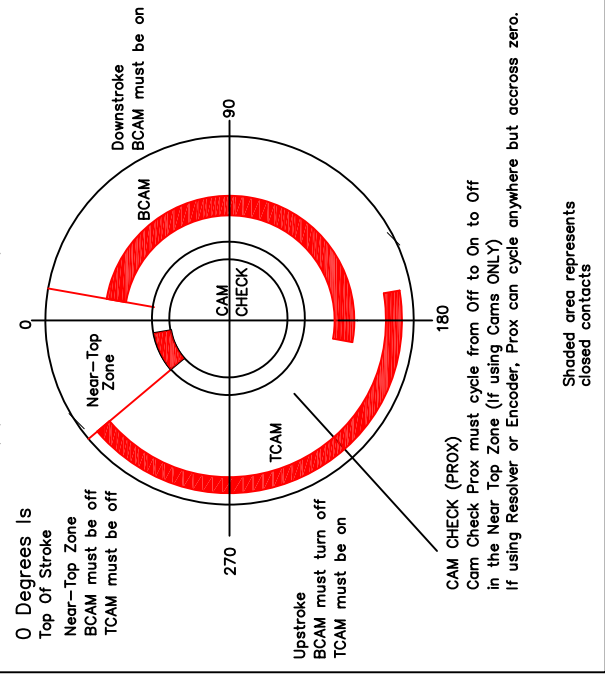


IF THE PROX IS SUPPLIED BY TOLEDO INTEGRATED SYSTEMS, KEEP THE JUMPERS IN THE SOURCING POSITION.

APPROX HARD CAM SETTINGS

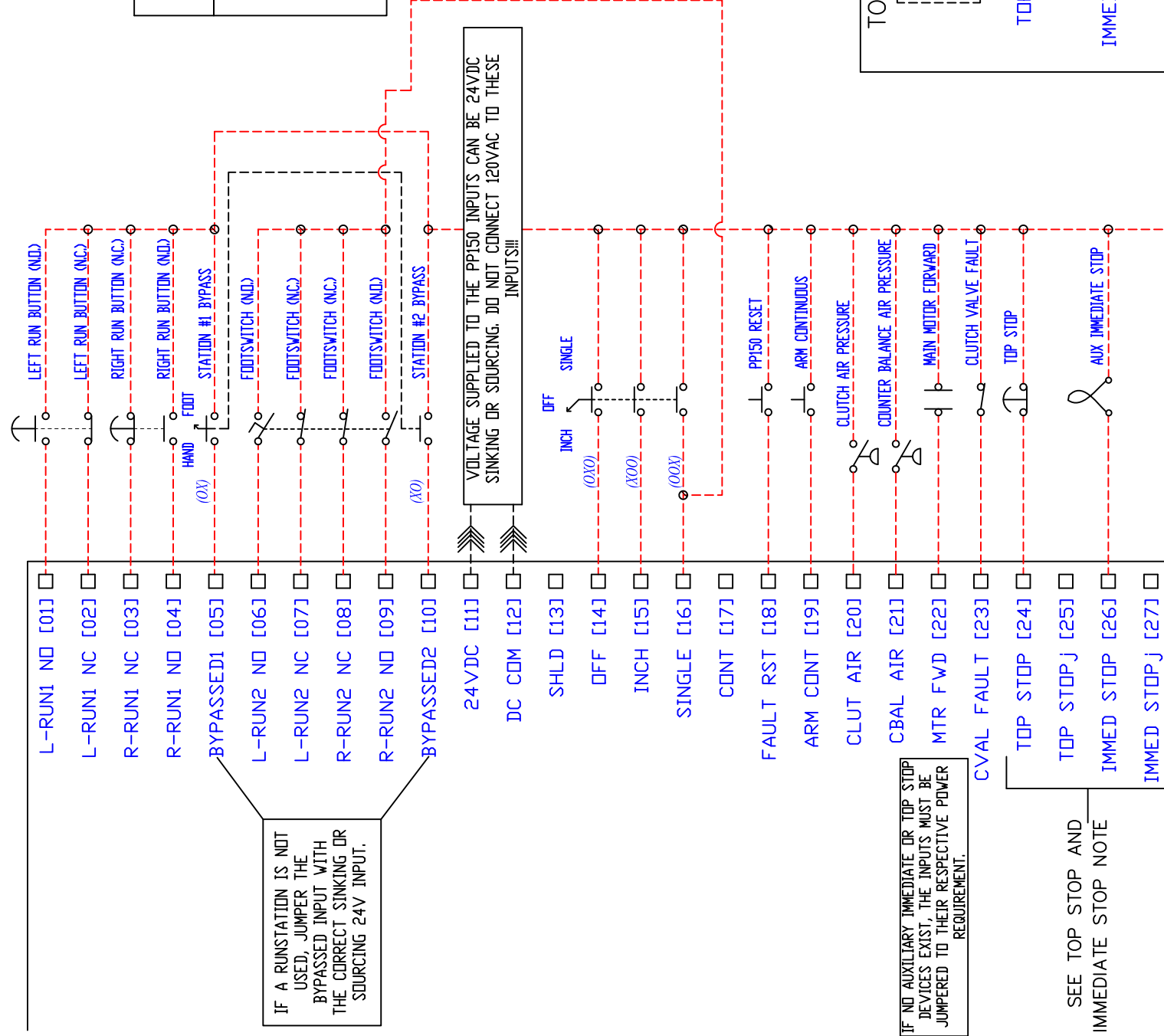
	CLOSE	OPEN
TCAM	170	310
BCAM	10	190
CAM CHECK PROX	320	350

(With Res. or Enc. Prox can cycle anywhere but Top.)
 (Optimal 250-290)



Shaded area represents closed contacts

Designed By:	Wing Ki	Date:	1/18/07	Dwg Index:	150
Drawn By:	Joy Stricker	Date:	6/3/2007	File Name:	102.DWG
Modified By:	Bob Camp	Date:	10/10/2019	Dwg.Size:	B
				Dwg.Type:	ELEC.
				Page	1 of 9
				Doc No:	102



THE PP150 IS SHIPPED WITH ALL 24VDC INPUT JUMPERS SET FOR SOURCING. TO CHANGE THE INPUTS TO SINKING, THE JUMPER ON THE I/O BOARD MUST BE CHANGED AS SHOWN. (SEE PAGE 51 IN MANUAL FOR PICTURE)

INPUT POWER JUMPER EXAMPLE

LED SINKING

SOURCING (DEFAULT)

(JUMPERS FOR INPUTS ON TOP OF PP150 ONLY)

IF A RUNSTATION IS NOT USED, JUMPER THE BYPASSED INPUT WITH THE CORRECT SINKING OR SOURCING 24V INPUT.

IF NO AUXILIARY IMMEDIATE OR TOP STOP DEVICES EXIST, THE INPUTS MUST BE JUMPERED TO THEIR RESPECTIVE POWER REQUIREMENT.

SEE TOP STOP AND IMMEDIATE STOP NOTE

IF THE ENCODER SHOWN IS SUPPLIED BY TOLEDO INTEGRATED SYSTEMS, KEEP THE JUMPERS IN THE SINKING POSITION.
DO NOT USE RESOLVER DR
CAMS WITH ENCODER

TOP STOP AND IMMEDIATE STOP NOTE:
IF MORE THAN ONE TOP STOP OR IMMEDIATE STOP DEVICE IS NEEDED, USE THE TOP STOP J AND IMMED STOP J AS SHOWN. IF THEY ARE NOT BEING USED, THEY DO NOT NEED TO BE JUMPERED.

TOP STOP J TOP STOP J

IMMED STOP J IMMED STOP J

DC COM OR 24VDC

PROX NOTE:

USE WHITE (N.C.) WIRE IF SENSOR WILL BE SENSING MATERIAL THROUGHOUT THE STROKE AND NOT SENSING AT TOP

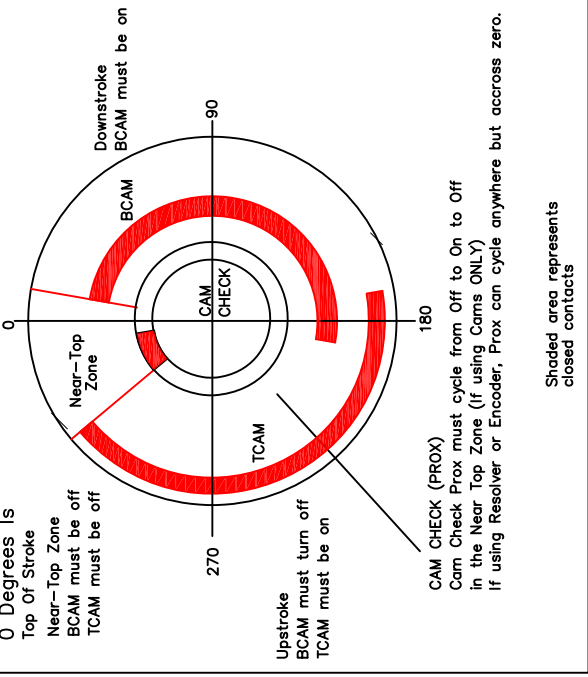
USE BLACK (N.O.) WIRE IF SENSOR WILL NOT BE SENSING MATERIAL THROUGHOUT THE STROKE AND SENSING AT TOP

IF THE PROX IS SUPPLIED BY TOLEDO INTEGRATED SYSTEMS, KEEP THE JUMPERS IN THE SOURCING POSITION.

APPROX HARD CAM SETTINGS

	CLOSE	OPEN
TCAM	170	310
BCAM	10	190
CAM CHECK PROX	320	350

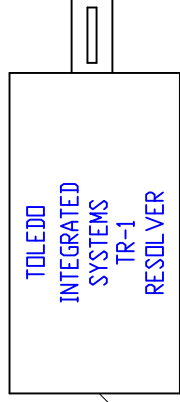
(With Res. or Enc. Prox can cycle anywhere but Top.)



CAM SWITCH NOTE:
CONTACTS WITH BOUNCE MAY CAUSE NUISANCE CAM FAULTS

ONLY ONE POSITION CHECKING DEVICE WILL BE USED BY THE PP150. CONNECT EITHER A RESOLVER, AN ENCODER, OR BCAM AND TCAM. THE PROX CHECK INPUT IS NEEDED FOR ALL THREE.

FOR REVERSE DIRECTION SWITCH S1 AND S3
TR-1 CABLE DOC. NO. 11630



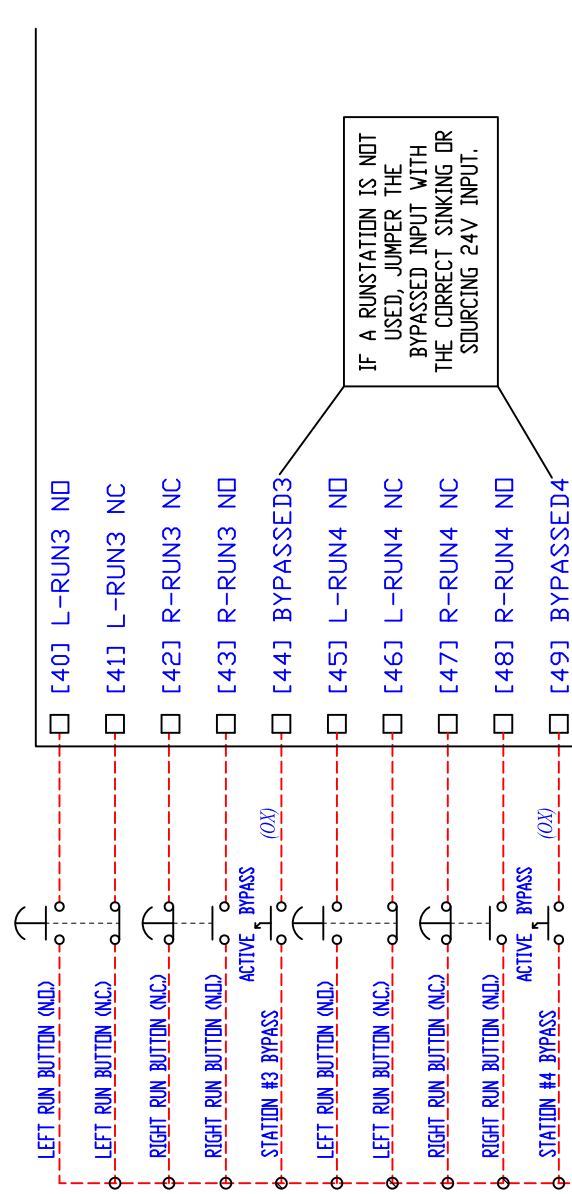
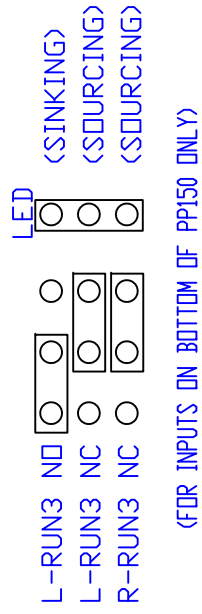
DO NOT USE ENCODER OR CAMS WITH RESOLVER

IMPORTANT
ALL AC LINES MUST BE RUN IN SEPARATE CONDUIT FROM ALL DC LINES

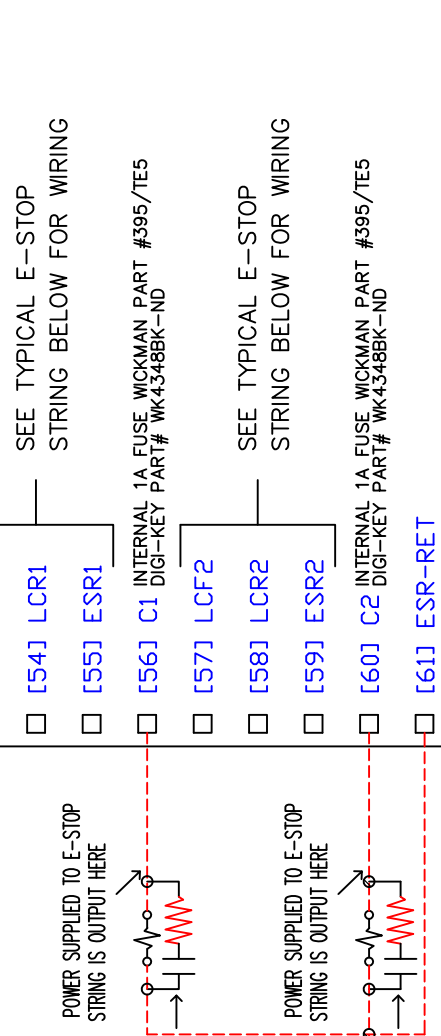
THE PP150 IS SHIPPED WITH ALL 24VDC INPUT JUMPERS SET FOR SOURCING. TO CHANGE THE INPUTS TO SINKING, THE JUMPER ON THE I/O BOARD MUST BE CHANGED AS SHOWN.

SEE PAGE 51 OF THE PP150 MANUAL FOR PICTURE EXAMPLE OF JUMPERS

INPUT POWER JUMPER EXAMPLE



VOLTAGE SUPPLIED TO THE PP150 INPUTS CAN BE 24VDC SINKING (DC COM) OR SOURCING (24VDC). DO NOT CONNECT 120VAC TO THESE INPUTS!!!

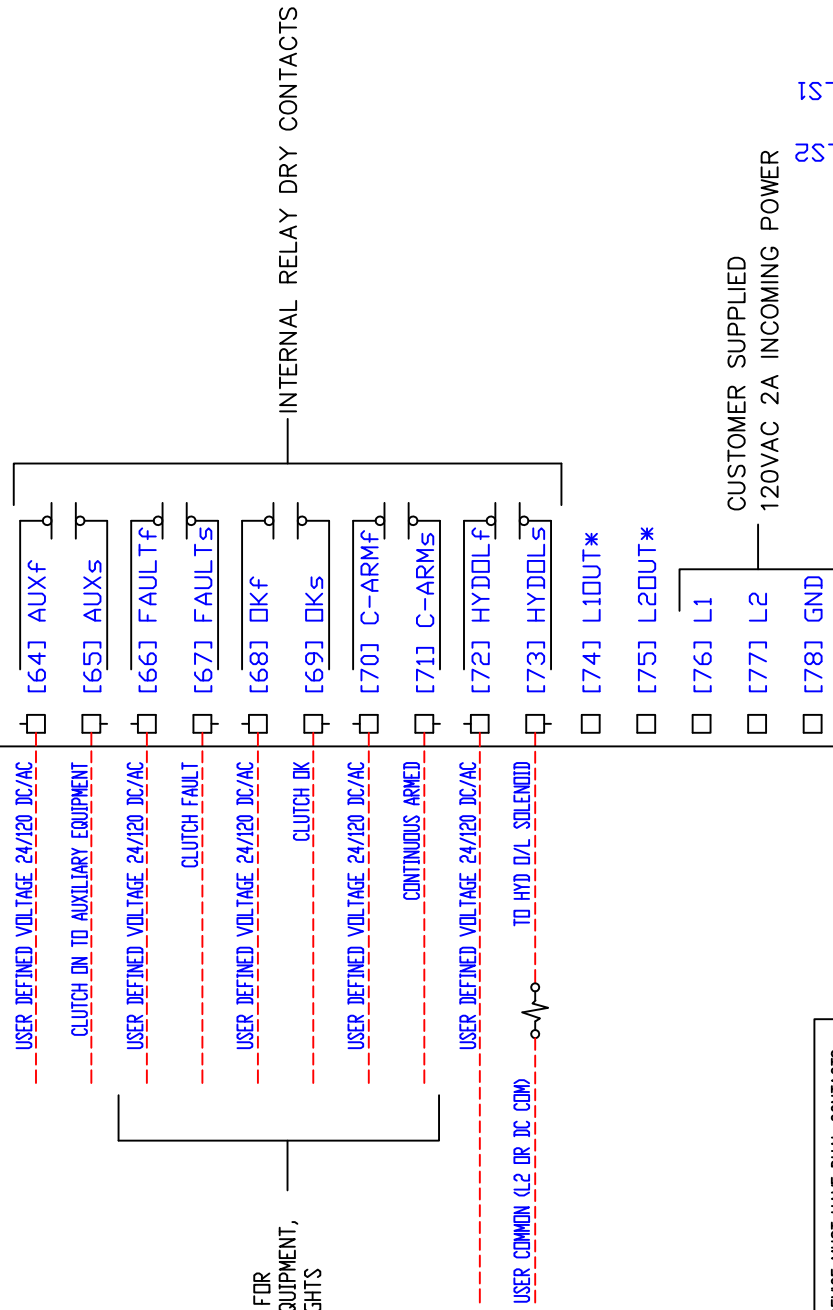


NOTE: RC NETWORKS SUPPLIED WITH THE PRESS PILOT 150 MUST BE INSTALLED AT THE SOLENOID VALVE

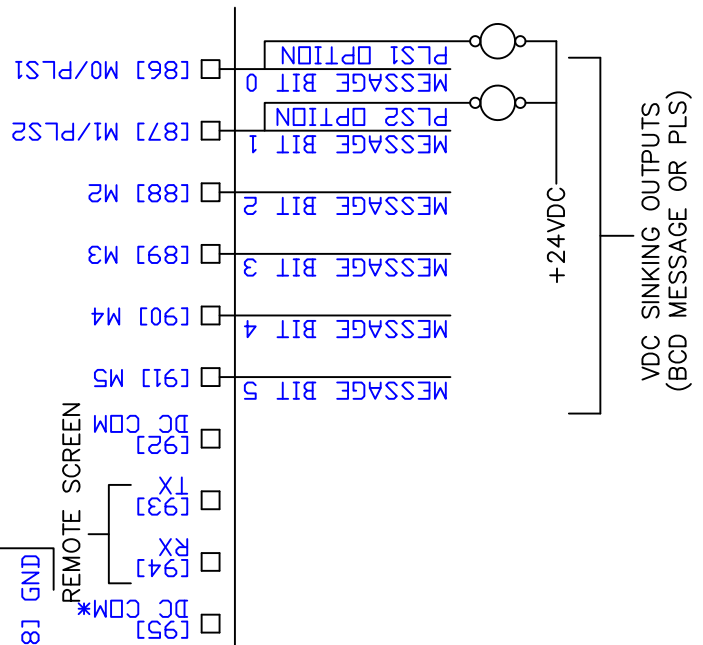
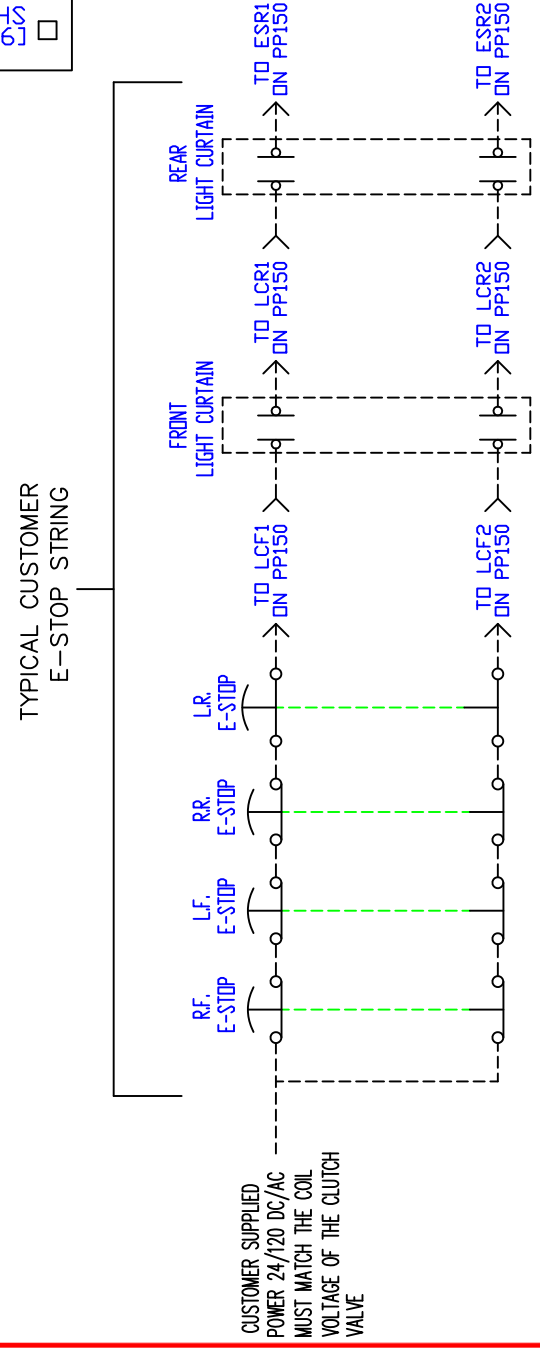
USE DIODE (EXAMPLE PN: 1N4001) FOR DC CLUTCH SOLENOIDS

CONNECT THE NEUTRAL OF THE E-STOP SUPPLIED VOLTAGE HERE

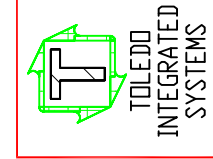
(FOR EXAMPLE: IF 24VDC IS SUPPLIED TO THE E-STOP STRING, DC COM WOULD BE SUPPLIED HERE IF L1 IS SUPPLIED TO THE E-STOP STRING, L2 WOULD BE SUPPLIED HERE)



NOTE: FOR PROPER REDUNDANCY EACH E-STOP DEVICE MUST HAVE DUAL CONTACTS
USE ONE CONTACT FROM EACH E-STOP DEVICE IN ESR1 STRING
USE ONE CONTACT FROM EACH E-STOP DEVICE IN ESR2 STRING

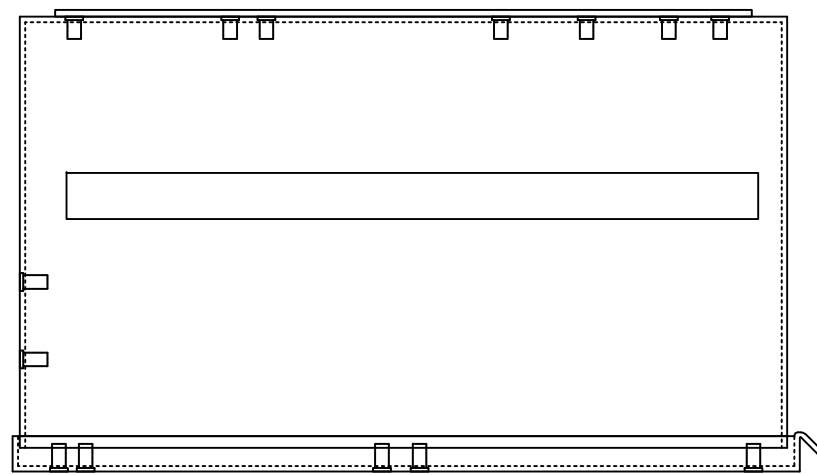
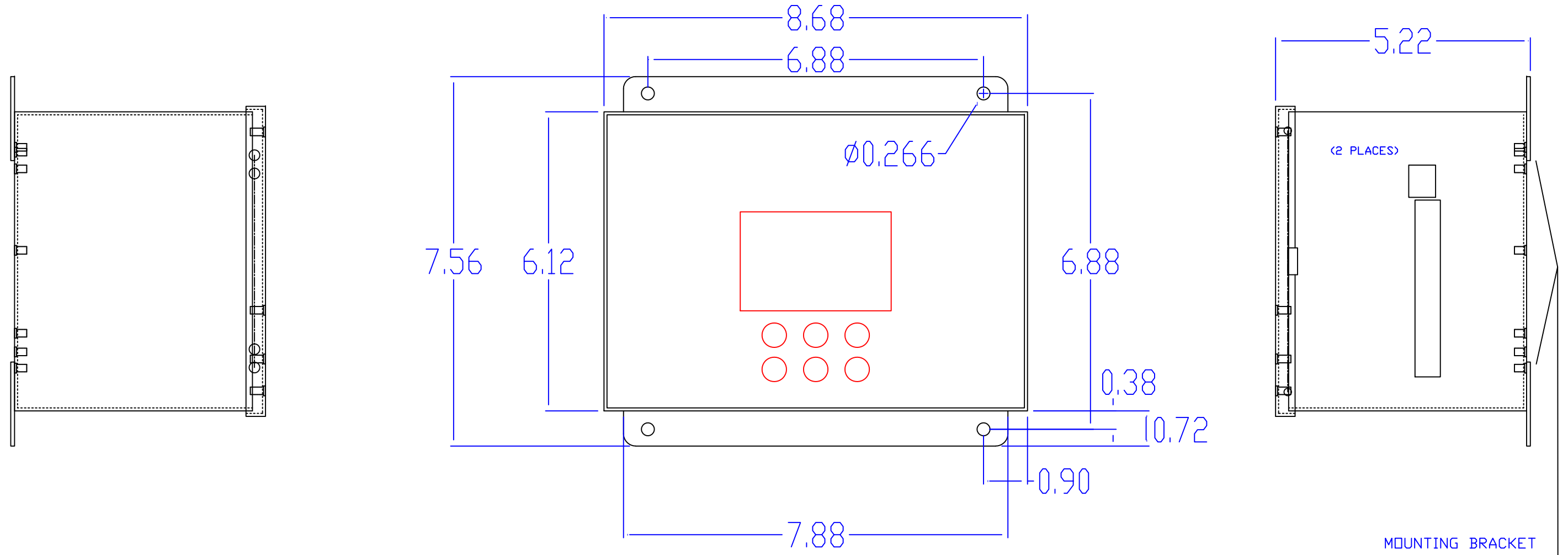


IMPORTANT
ALL AC LINES MUST BE RUN IN SEPARATE CONDUIT FROM ALL DC LINES

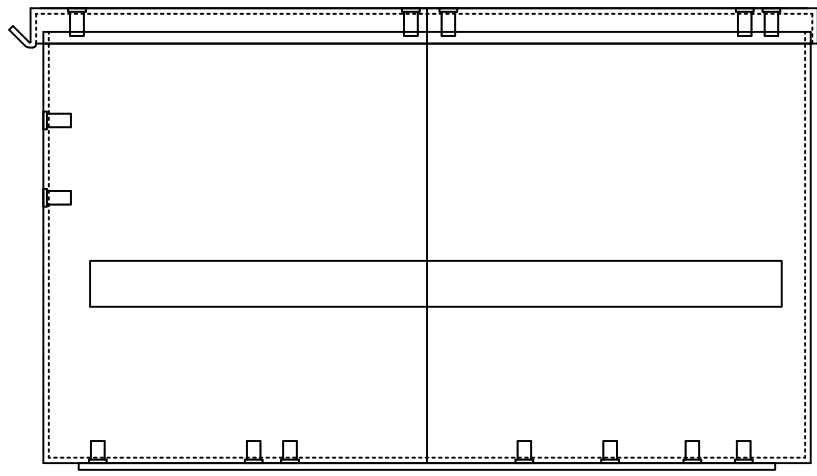


Designed By: Wing Ki	Date: 1/18/07	I/O WIRING SERIES 150	Dwg Index: SERIES 150
Drawn By: Joy Stricker	Date: 6/3/2007	PAGE 2	File Name: 104.DWG
Modified By: Bob Camp	Date: 10/11/2019	CLUTCH CONTROL	Doc No: 104
		Dwg.Size: B	Dwg.Type: ELEC.
		Page 3 of 9	

REV	DATE	DESCRIPTION	ECD	SIGN
A		AS BUILT	.	.



SHOWING TOP VIEW



SHOWING TOP VIEW

NOTES:
1) ALL DIMENSIONS ARE IN INCHES

<p>TOLEDO INTEGRATED SYSTEMS</p>	Designed By: Wing Ki	Date: 1/18/07	PP150 DIMENSIONS CLUTCH CONTROL	Dwg Index: SERIES 150
	Drawn By: Jay Stricker	Date: 6/3/2007		File Name: 105.DWG
	Modified By: Bob Camp	Date: 10/2/2009	Dwg.Size: B	Dwg.Type: ELEC.

11.122

7.022

∅0.205 x6

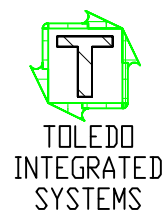
CUTOUT

0.305

0.434

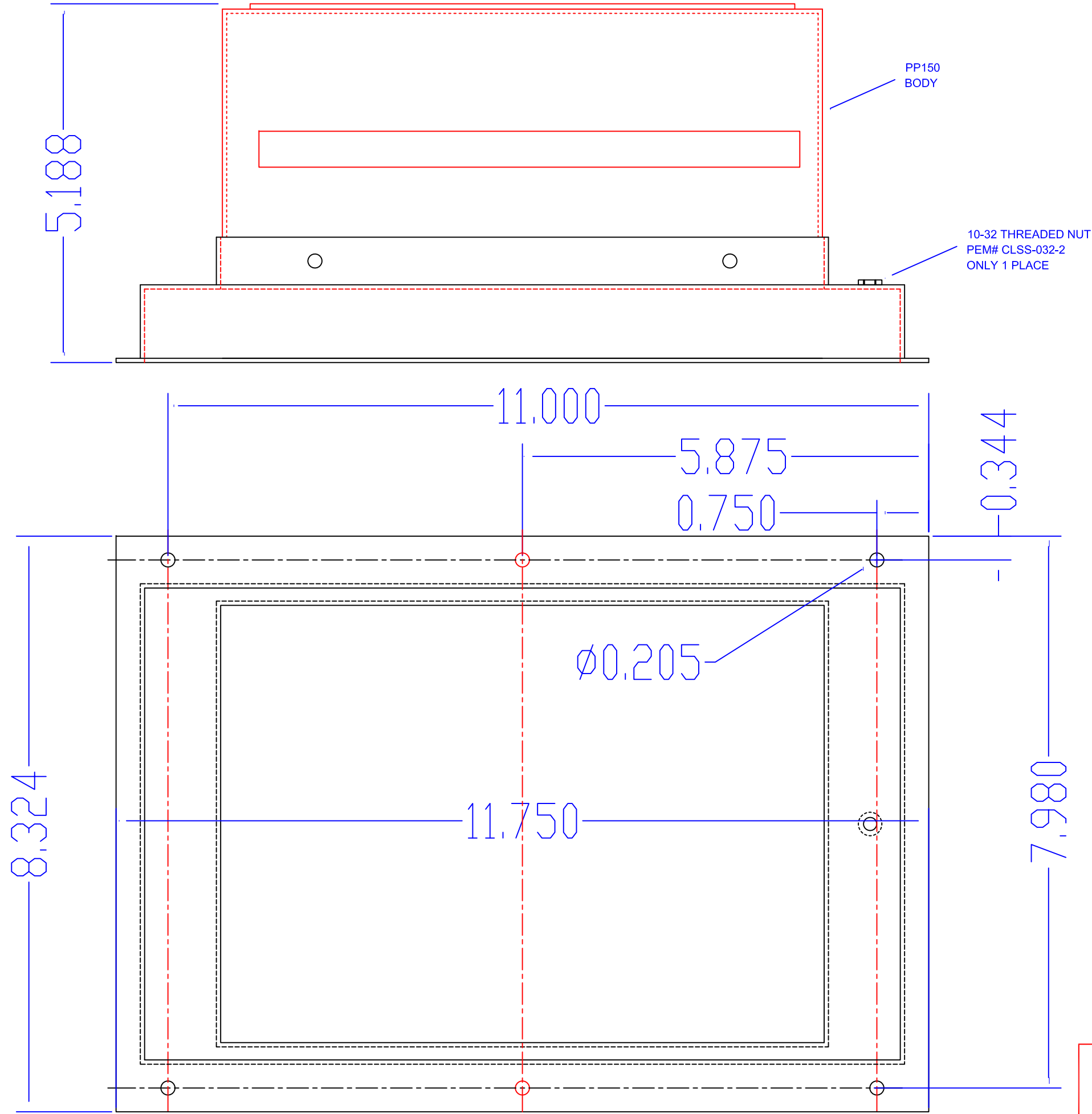
CL

PAGE 106




Designed By: S.Steinhardt	Date: 7/24/07	PP150 FLUSH MOUNT CUTOUT		Dwg Index: SERIES 150
Drawn By: S.Steinhardt	Date: 7/24/07			File Name: 106.DWG
Modified By: B.Nelson	Date: 3/4/14	Dwg.Size: B	Dwg.Type: ELEC.	Page 5 of 9 Doc No: 106

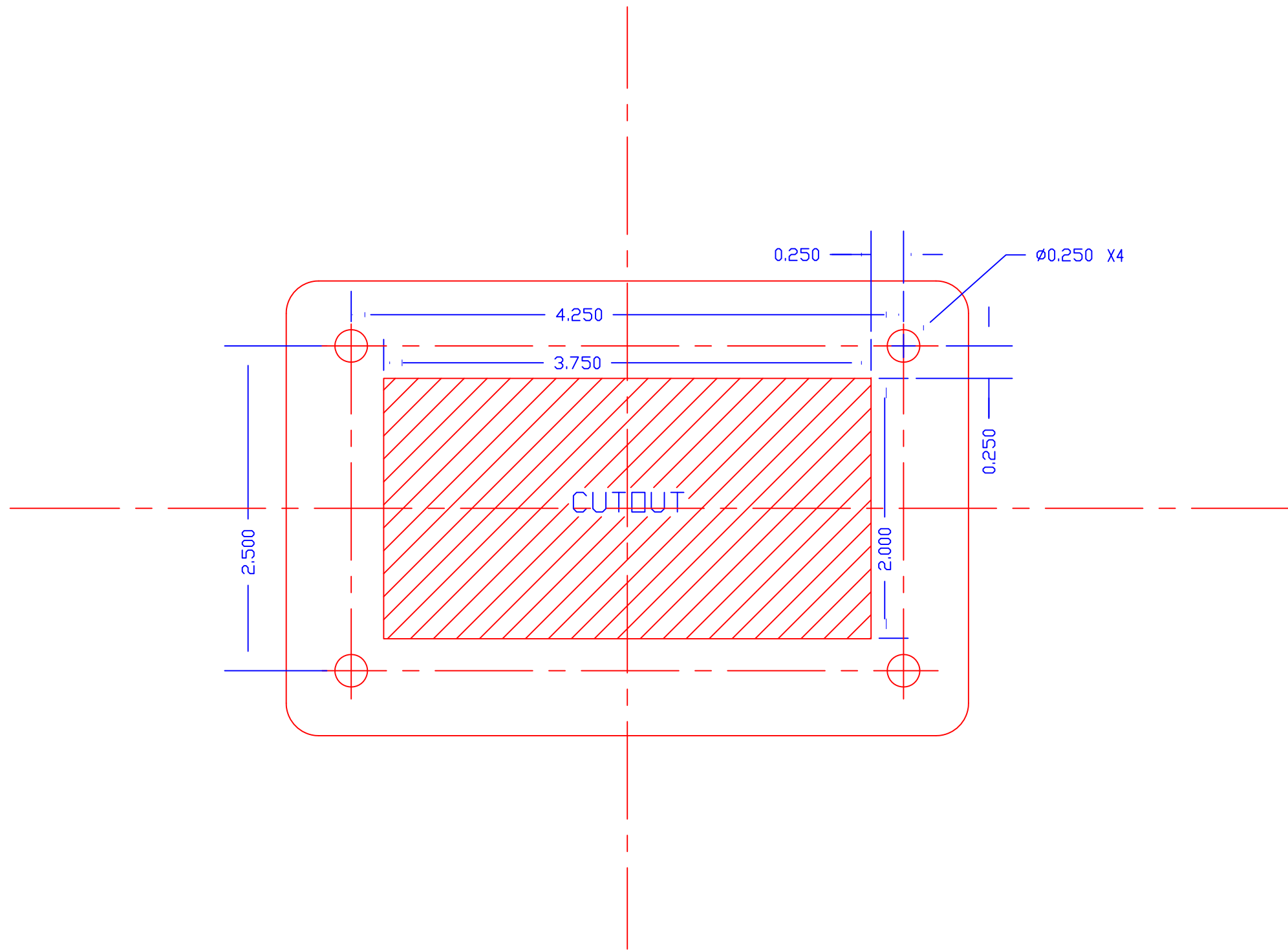
REV	DATE	DESCRIPTION	ECD	SIGN
A		AS BUILT	.	.
B	4/18/13	UPDATED FOR NARROW BRACKET	.	JLM

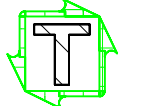


NOTES:

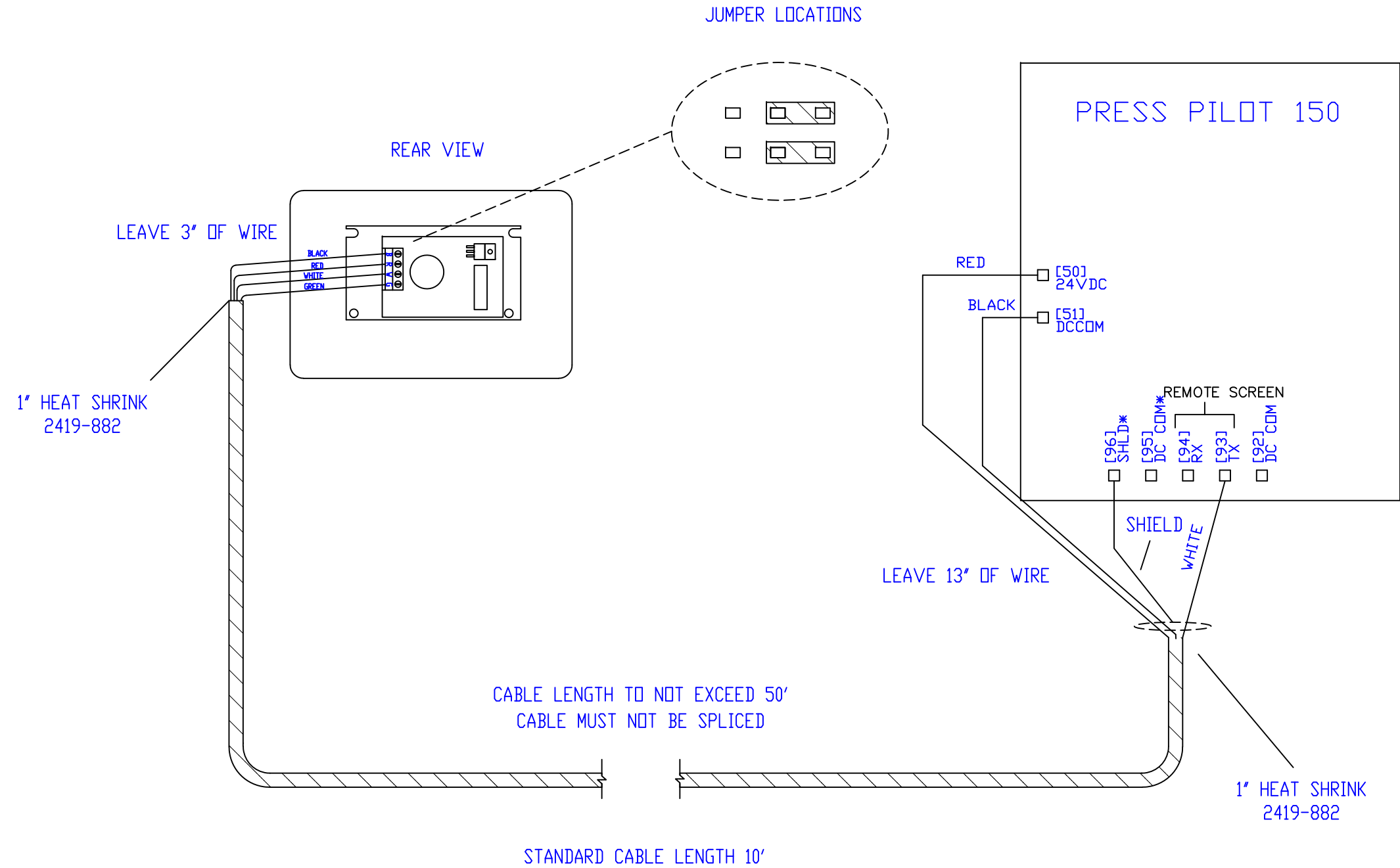
1) ALL DIMENSIONS ARE IN INCHES.


 TOLEDO INTEGRATED SYSTEMS	Designed By: Wing Ki	Date: 1/18/07	PP150 FLUSH MOUNT DIMENSIONS		Dwg Index: SERIES 150
	Drawn By: Jay Stricker	Date: 6/25/2007			File Name: 107.DWG
	Modified By: Bob Camp	Date: 10/2/2009	Dwg.Size: B	Dwg.Type: ELEC.	Page 6 of 9



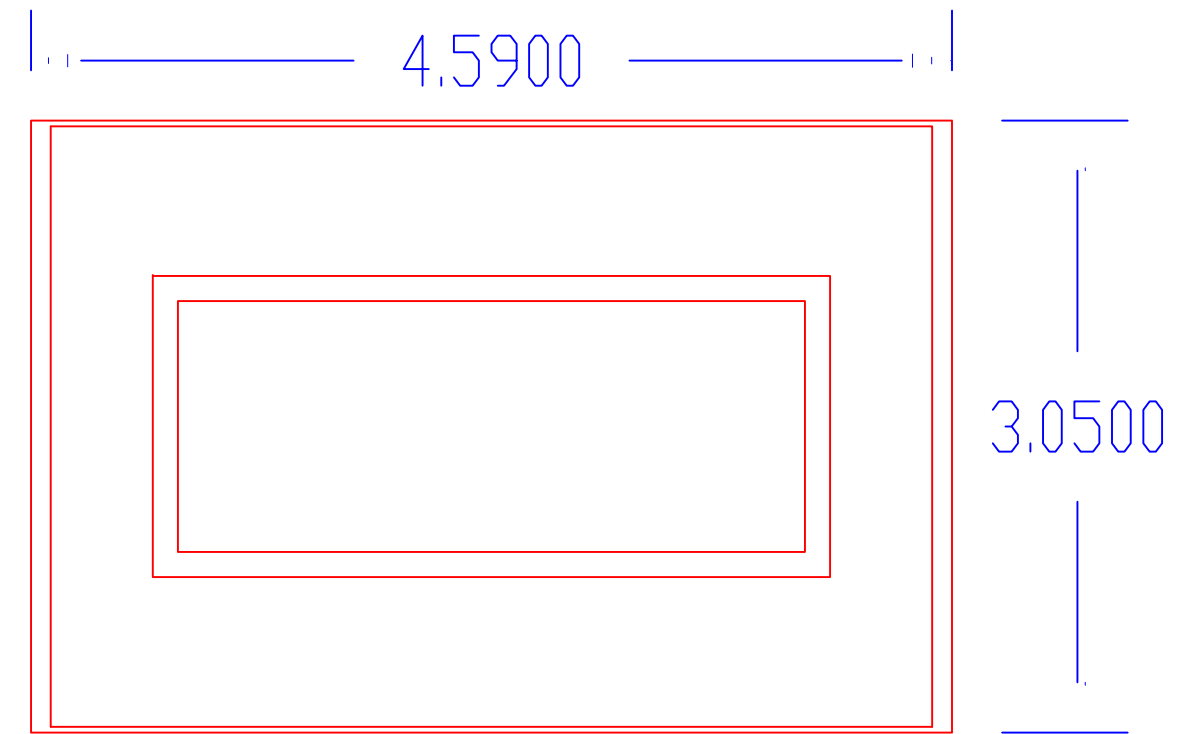
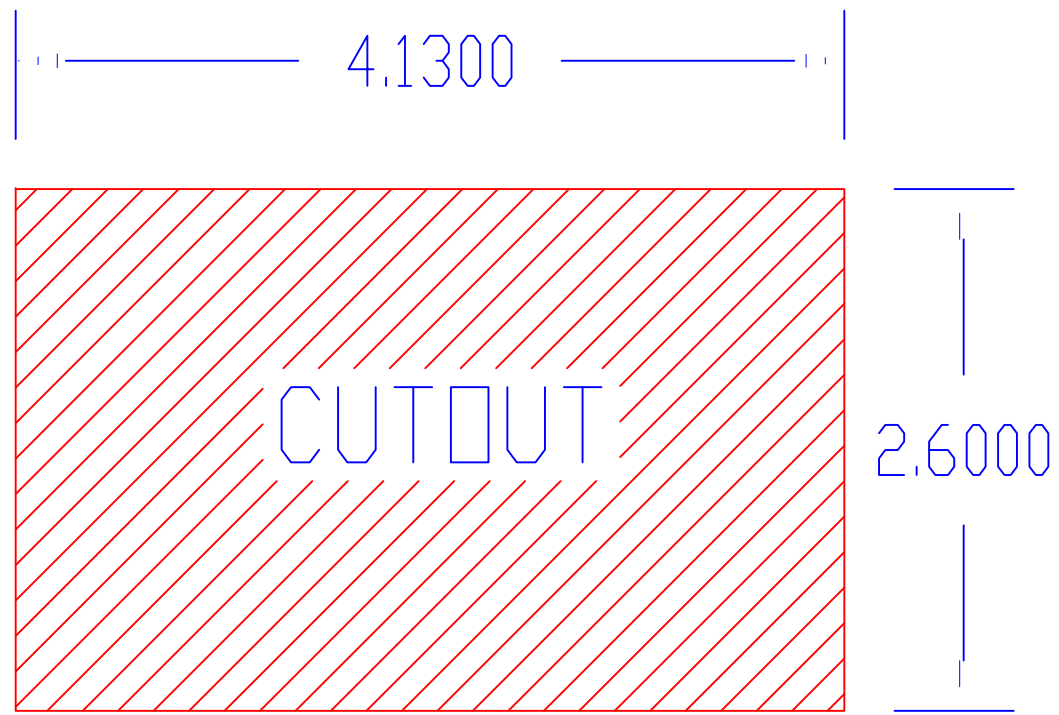
 TOLEDO INTEGRATED SYSTEMS	Designed By: S.Steinhardt	Date: 7/24/07	LCD CUTOUT FOR PP150 REMOTE DISPLAY		Dwg Index: SERIES 150
	Drawn By: S.Steinhardt	Date: 7/24/07			File Name: 108.DWG
	Modified By: B.Nelson	Date: 3/4/14	Dwg.Size: B	Dwg.Type: ELEC.	Page 7 of 9


REV	DATE	DESCRIPTION	ECD	SIGN
A	9/30/09	AS BUILT		.



 TOLEDO INTEGRATED SYSTEMS	Designed By: Bob Camp	Date: 9/30/2009	PP150 REMOTE LCD HOOKUP		Dwg Index: SERIES 150
	Drawn By: Bob Camp	Date: 9/30/2009			File Name: 109.DWG
	Modified By: Bob Camp	Date: 10/2/2009	Dwg.Size: B	Dwg.Type: INST	Page 8 of 9

REV	DATE	DESCRIPTION	ECO	SIGN
A	3/4/14	AS BUILT		.



 TOLEDO INTEGRATED SYSTEMS	Designed By: Brian Nelson	Date: 3/4/2014	PP150 REMOTE SCREEN CUTOUT AND DIMENSIONS		Dwg Index: SERIES 150
	Drawn By: Brian Nelson	Date: 3/4/2014			File Name: 110.DWG
	Modified By: Brian Nelson	Date: 3/4/2014	Dwg.Size: B	Dwg.Type: INST	Page 9 of 9

TOLEDO INTEGRATED SYSTEMS
TOLEDO TRANSDUCERS INC.

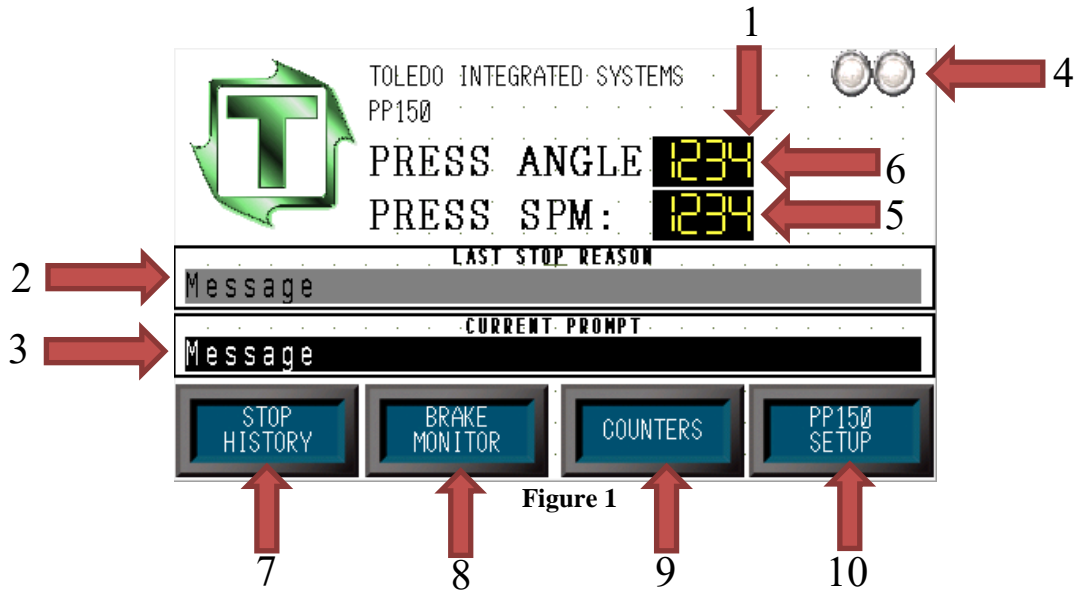


PRESS PILOT 150
REMOTE DISPLAY



MANUAL
AND
INSTALLATION GUIDE

SECTION 1 HOME SCREEN



This screen shows:

- 1) Touch the press angle display to navigate to the press angle display (See section 2).
- 2) This field displays the most recent reason for the clutch disengaging.
- 3) This field displays the current PP150 prompt. This prompt could be a message or a fault.
- 4) These lights will flash when communication via Ethernet is occurring.
- 5) SPM: Current strokes per minute.
- 6) Angle: The current angle of the press.
- 7) Touch the stop history button to navigate to the stop history page. (See section 3)
- 8) Touch the brake monitor button to navigate to the brake monitor page. (See section 4)
- 9) Touch the counters button to navigate to the counters page. (See section 5)
- 10) Touch the PP150 setup button to navigate to the settings menu page. (See section 6)

SECTION 2 PRESS ANGLE

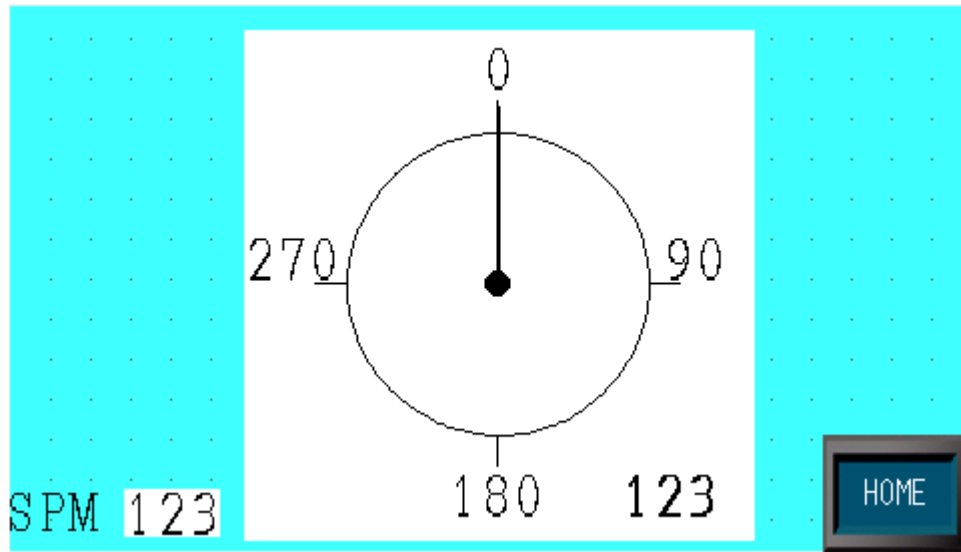


Figure 2

Navigate to the PRESS ANGLE screen by touching the press angle display on the HOME screen.

This screen shows a graphic representation of the current press angle and strokes per minute (SPM).

Touch the HOME button to return to the HOME screen.

SECTION 3 FAULTS

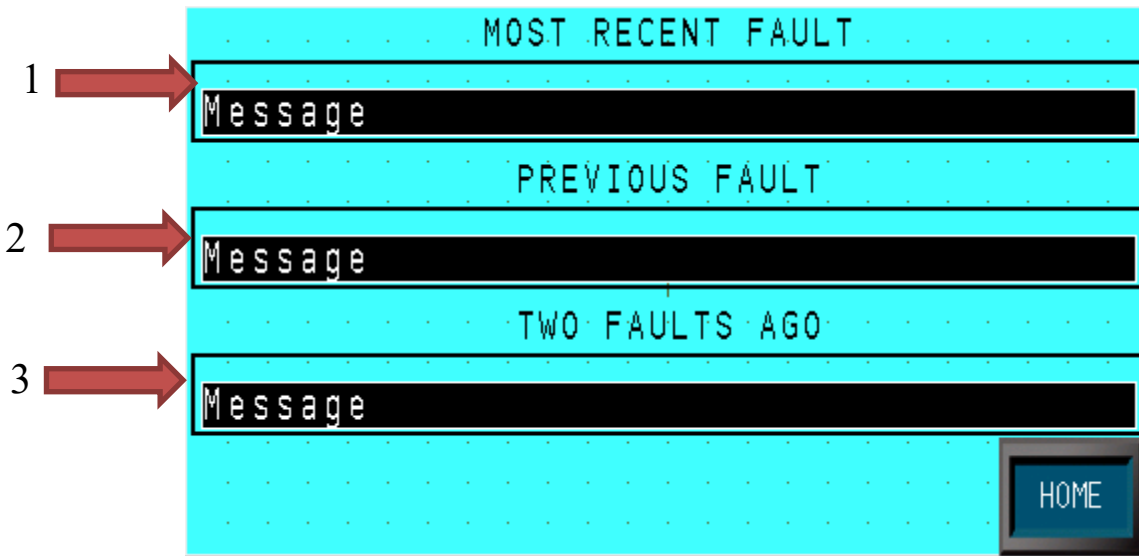


Figure 3

Navigate to the FAULTS screen by touching the stop history button on the HOME screen.

This screen shows (1) the most recent fault, (2) the previous fault, (3) and two faults ago. The fault number and a brief description are given.

Touch the HOME button to return to the HOME screen.

SECTION 4 BRAKE MONITOR

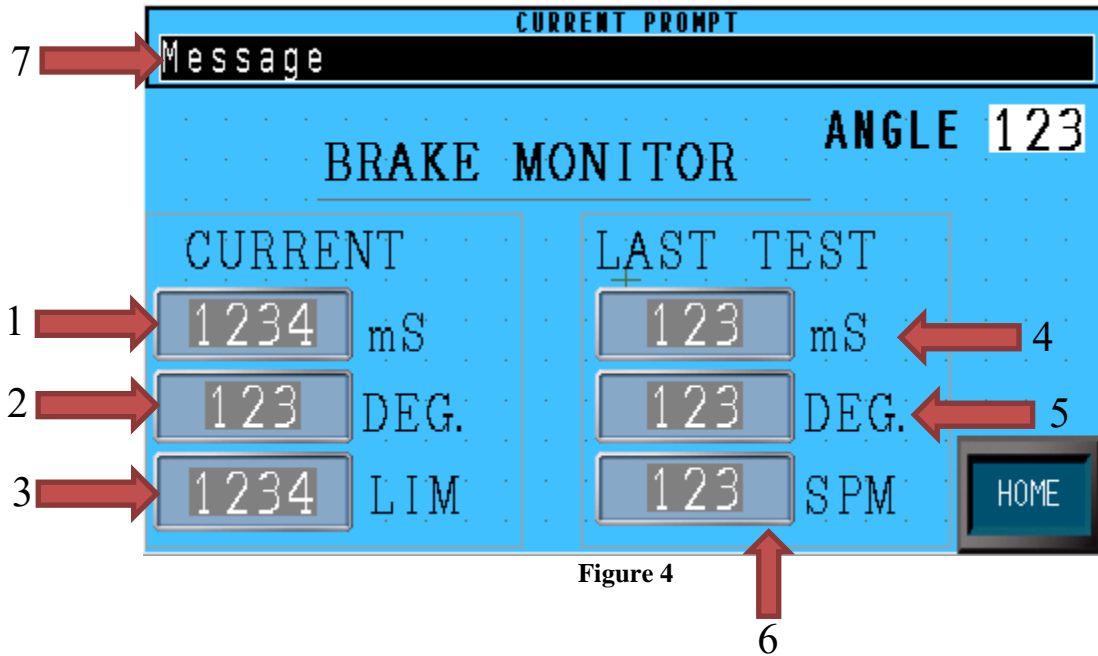


Figure 4

Navigate to the BRAKE MONITOR screen by touching the brake monitor button on the HOME screen.

This screen shows:

- 1) Last stop time (mS).
- 2) Last degrees to stop (Degrees).
- 3) Max. Limit for stop time (mS).
- 4) Last 90 degree test stop time (mS).
- 5) Last 90 degree test degrees to stop (Degrees).
- 6) Last 90 degree test actual speed (mS).
- 7) Current prompt/fault.

Touch the HOME button to return to the HOME screen.

SECTION 5 COUNTERS

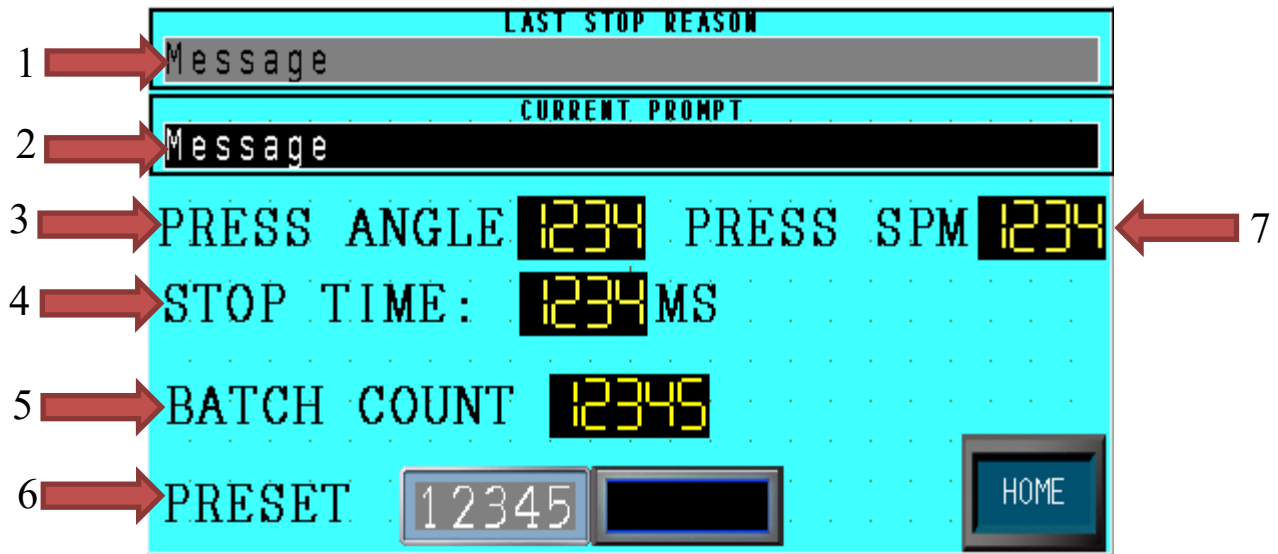


Figure 4

Navigate to the COUNTERS screen by touching the counters button on the HOME screen.

This screen shows:

- 1) This field displays the most recent reason for the clutch disengaging.
- 2) This field displays the current PP150 prompt. This prompt could be a message or a fault.
- 3) Angle: The current angle of the press.
- 4) Stop time: Last stop time (mS).
- 5) Batch count: Shows the number of parts made in the batch.
- 6) Preset: Sets the number of parts per batch.
- 7) SPM: Current strokes per minute.

Touch the HOME button to return to the HOME screen.

SECTION 6 SETTINGS MENU

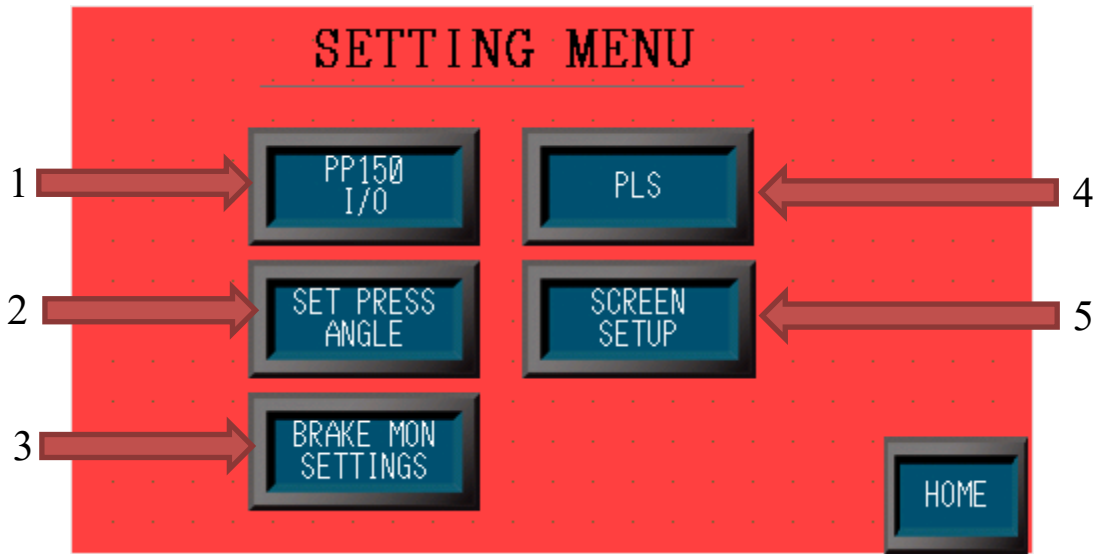


Figure 6

Navigate to the SETTINGS MENU screen by touching the PP150 setup button on the HOME screen.

Use this screen to navigate to any of the settings sub screens.

This screen shows:

- 1) Pilot Press 150 input/output button.
- 2) Press Angle Settings button.
- 3) Break Monitor Settings button.
- 4) Programmable Limit Switch button.
- 5) Screen Settings button.

Touch the HOME button to return to the HOME screen.

6.1 PP150 I/O

Touch PP150 I/O on the settings menu (Figure 6) to access this screen.

There are three screens. Scroll through the screens by touching the arrows.

All inputs and outputs are shown. If the bubble next to the name of a signal is lit blue the signal is currently on.

These screen shows:

- 1) Example input off.
- 2) Example input on.

Touch the RETURN button to return to the SETTINGS MENU screen.

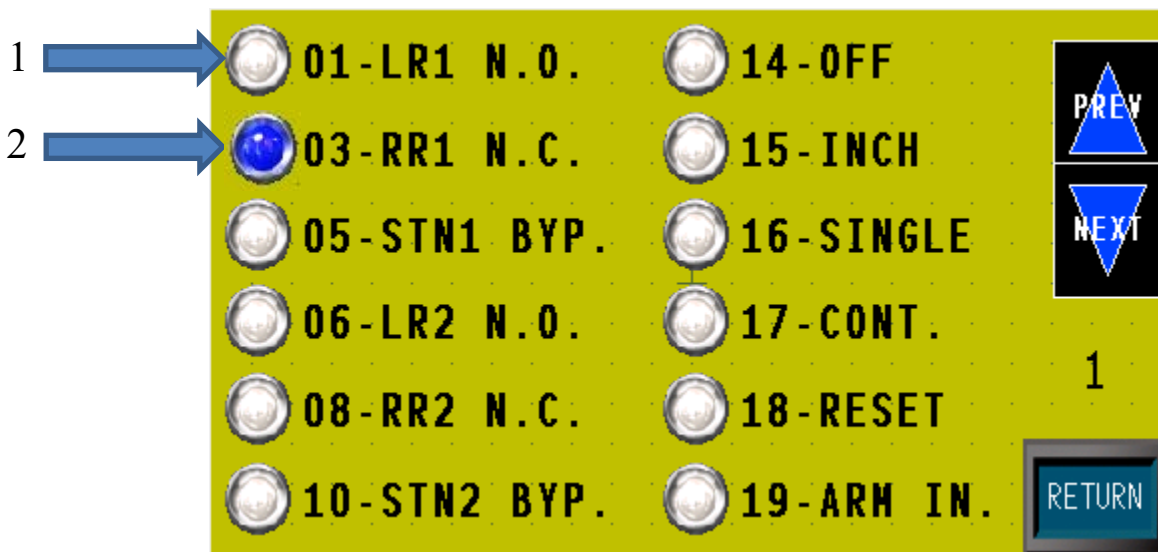


Figure 7

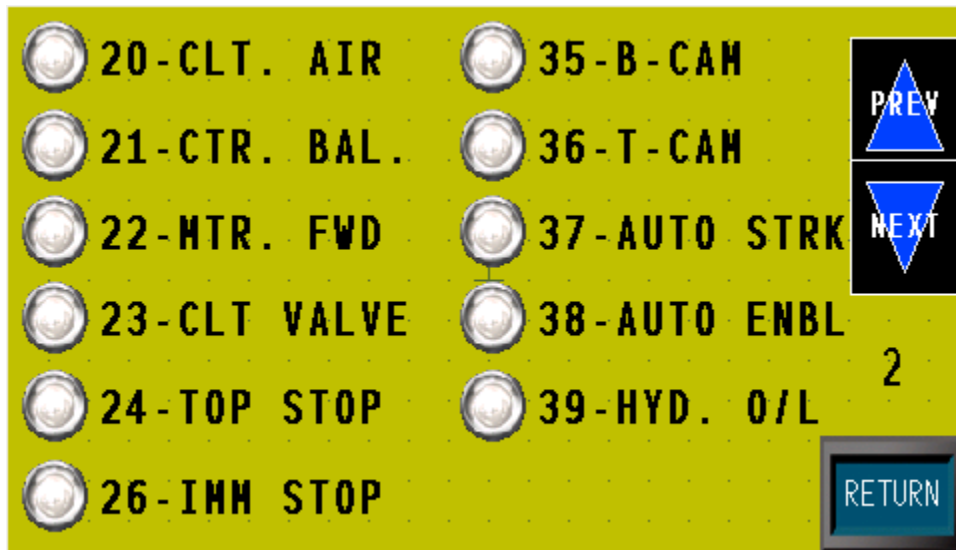


Figure 8

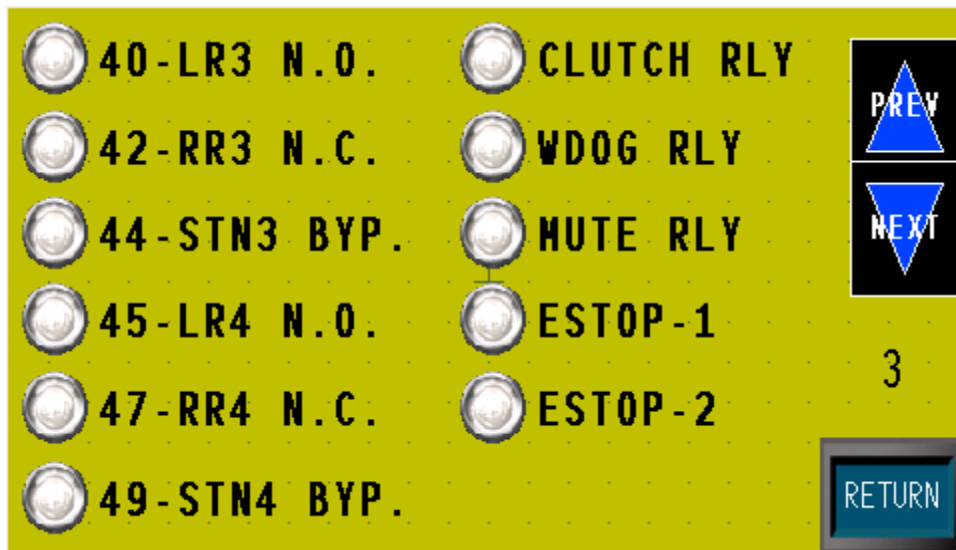


Figure 9

6.2 Programmable Limit Switches

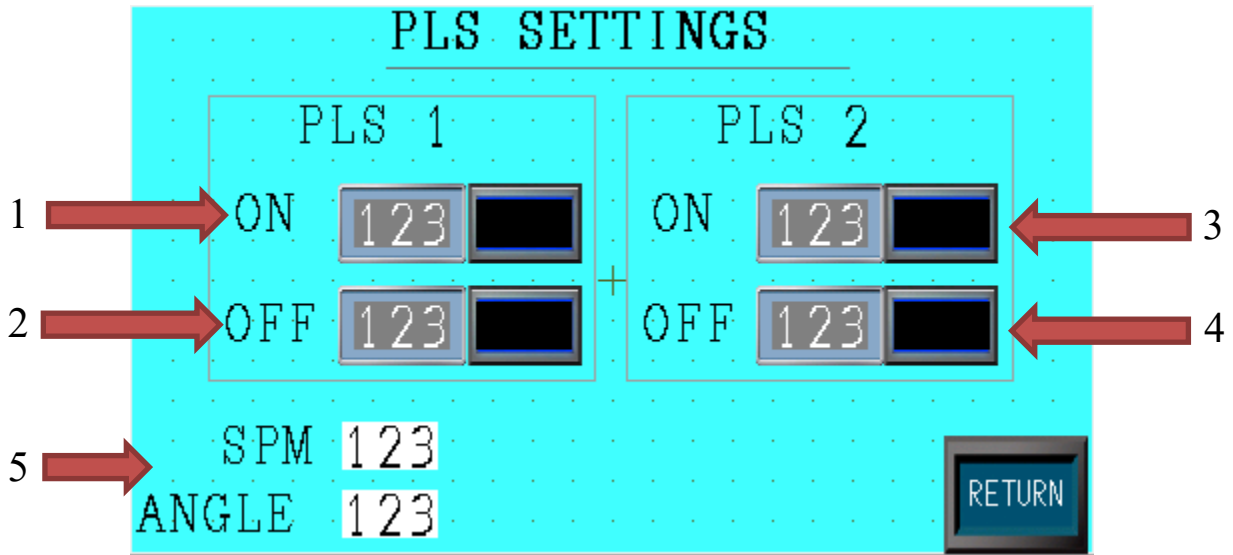


Figure 10

Touch the PLS button on the settings menu (Figure 6) to access this screen. The Programmable Limit Switches will only be valid if activated in the pp150.

This screen shows:

- 1) Programmable Limit Switch 1 turn on angle (Push to change).
- 2) Programmable Limit Switch 1 turn off angle (Push to change).
- 3) Programmable Limit Switch 2 turn on angle (Push to change).
- 4) Programmable Limit Switch 2 turn off angle (Push to change).
- 5) Current SPM and press angle.

Touch the RETURN button to return to the SETTINGS MENU screen.

6.3 Press Angle Settings

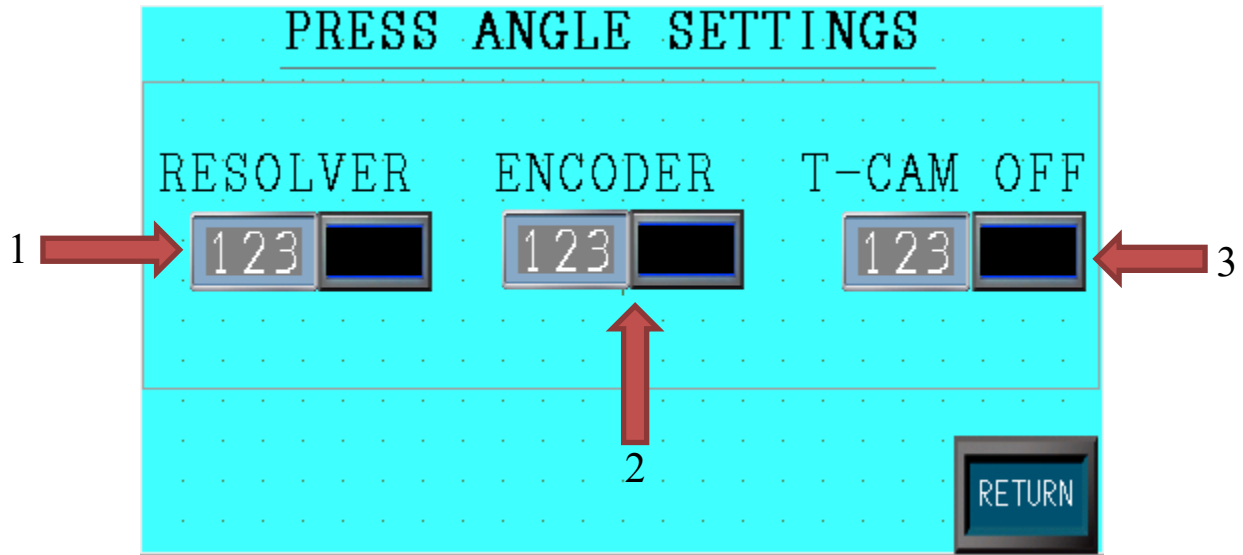


Figure 11

Touch SET PRESS ANGLE on the settings menu (Figure 6). Then, enter the correct password to access this screen.

This screen shows:

- 1) **If using a resolver** enter current press position to change resolver angle. *Note: touching “Enter” will change the angle immediately.*
- 2) **If using an encoder** enter current press position to change encoder angle. *Note: touching “Enter” will change the angle immediately. You must stroke press 1 revolution in inch mode to save encoder position.*
- 3) Enter desired angle to turn off clutch during a single stroke of top situation. 0 will bypass the screen’s setting and use what is in the PP150.

Touch the RETURN button to return to the SETTINGS MENU screen.

6.4 Screen Setup

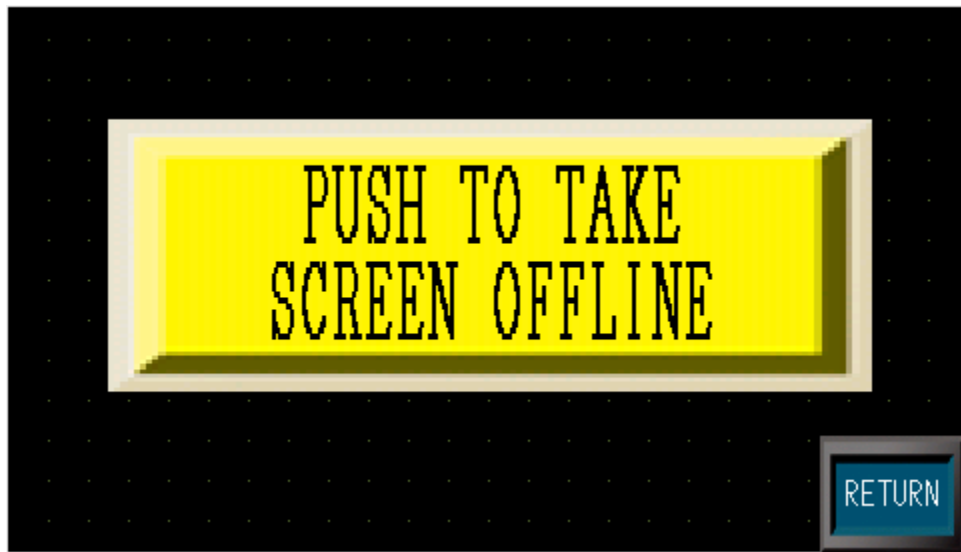


Figure 12

Touch SCREEN SETUP on the settings menu (Figure 6). Then, enter the correct password to access this screen.

This screen is for use by Toledo Integrated Systems. If access is required, please contact Toledo Integrated Systems.

Touch the RETURN button to return to the SETTINGS MENU screen.

6.5 Brake Monitor Settings

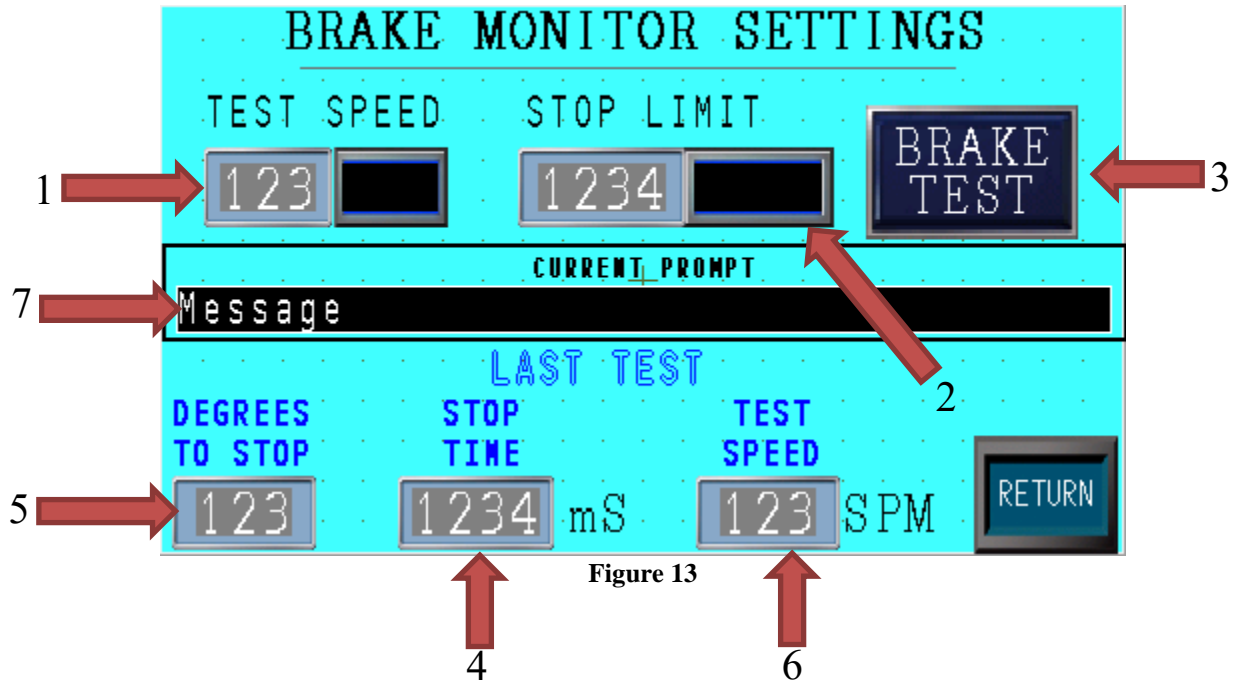


Figure 13

Touch BRAKE MON SETTINGS on the settings menu (Figure 6). Then, enter the correct password to access this screen.

This screen shows:

- 1) Enter the speed the press needs to exceed during a 90 degree brake test.
- 2) Press to begin 90 degree brake test. This will stop the press at 90 degrees if the SPM is greater than the test speed (Number 4 above)
- 3) Max. stop time (mS)
- 4) Last 90 degree test stop time (mS).
- 5) Last 90 degree test degrees to stop (Degrees).
- 6) Last 90 degree test actual speed (mS).
- 7) Current prompt/fault.

Touch the RETURN button to return to the SETTINGS MENU screen.

SECTION 6 LAYOUTS

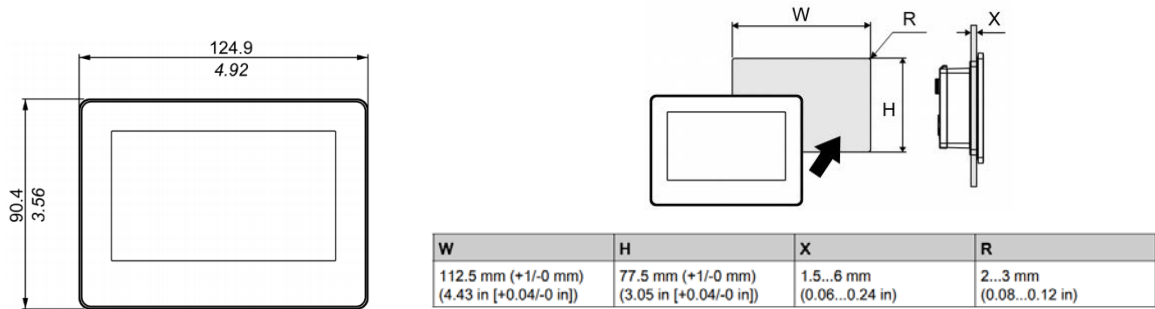


Figure 13

Figure 13 provides the dimensions needed for the cutout in order to mount the Remote Display, as well as the size of the Remote Display itself.

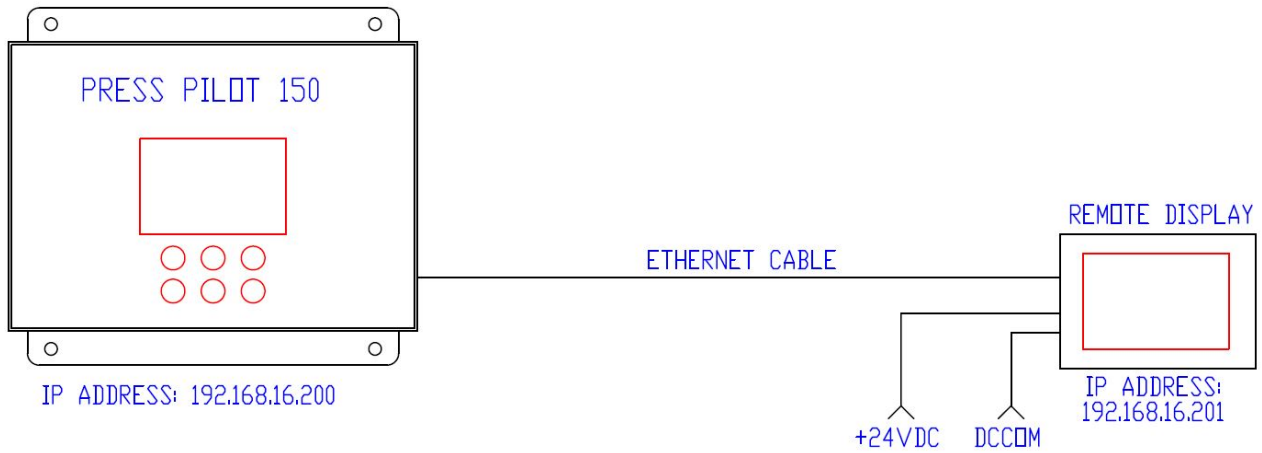


Figure 14

Figure 14 displays the method for connecting the remote display to the Press Pilot 150, including the proper designation of IP addresses.