Toledo Integrated Systems
Toledo Transducers

RAM VIEW

Resolver Based

Shut Height System

Technical Manual – Revision C

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Article I.   Limited Warranty

The software is warranted by the manufacturer, Toledo Integrated Systems, to be free from defects in workmanship for one year from the date of manufacturer's shipment. This warranty is limited to the functions of SlimWare as stated in this manual. If modifications are made to the software, Toledo Integrated Systems will not be responsible for SlimWare.

All products subject to this warranty must be returned for examination, repair or replacement to:

F.O.B. Toledo Integrated Systems
6834 Spring Valley Dr.
Holland, OH 43528

The express warranty set forth herein is in lieu of all other warranties, expressed or implied, including without limitation any warranties of merchant-ability or fitness for particular purpose. All such warranties are hereby disclaimed and excluded by the manufacturer.

Repair or replacement of defective products as provided above is the sole and exclusive remedy provided there under. The manufacturer shall not be liable for any further loss, damages, or expenses, including incidental or consequential damages, directly or indirectly arising from the sale or use of this product.

Any unauthorized changes to the program will void this warranty.

There are no warranties that extend beyond those expressly set forth herein.

Table of Contents

1.   Overview

This screen software is used to monitor the ram of a press and give fault when one is detected. If a fault occurs, a signal is sent to the press. This signal prevents the press from running.

This software allows the modification of the desired position, run tolerance, upper adjustment limit, and lower adjustment limit. The shut height can also be calibrated from this unit.
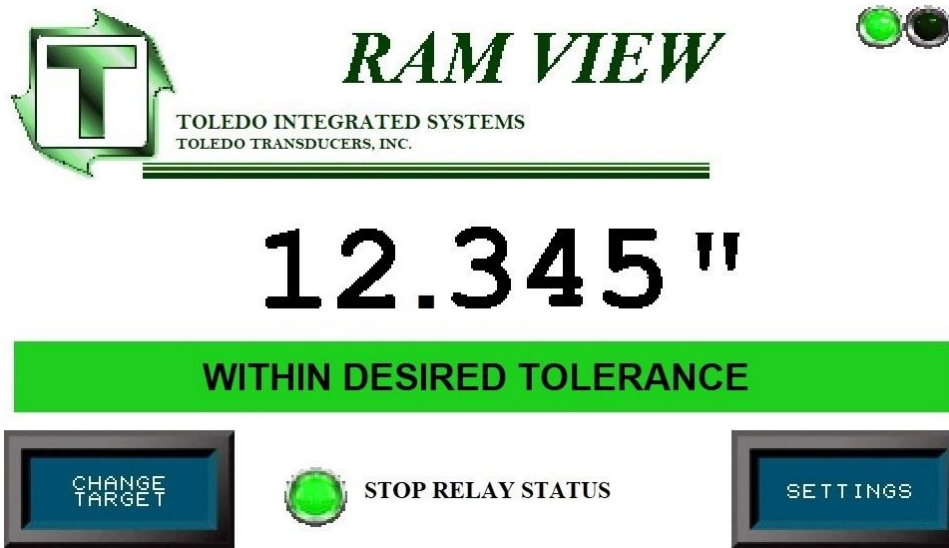
2. Home Screen

Figure 2-1 – Home Screen

The home screen acts as a hub for the program. The home screen includes indicator lights, current position, current status, last fault, navigation buttons, and a fault reset button.

- **Indicator Lights** – In the top right-hand corner of the screen are two (2) blue LEDs. These LEDs monitor the transmit and receive status located on the ZT unit. If these LEDs are idle, this is due to a communication error.
- **Current Position** – This is the current shut height of the ram and it needs to be within the job run tolerance to run the current job. The text will be in green if the current position is within the run tolerance and red if it is not within the run tolerance.
- **Current Status** – Displays the current status of the press. Can be one of the following messages:
  - **Within Desired Tolerance –** the ram is within the desired tolerance
  - **1 – Above Tolerance –** the ram is above the high tolerance position
  - **2 – Below Tolerance –** the ram is below the low tolerance position
  - **3 – Above High Limit –** the ram is above the upper adjustment limit
  - **4 – Below Low Limit –** the ram is below the lower adjustment limit
  - **5 – Adjusting Pos Up… -** the ram is being adjusted up
  - **6 – Adjusting Pos Down… -** the ram is being adjusted down
  - **7 – Faulted See Below** – there is currently a fault
  - **8 – In Cal Mode… -** the shut height is in calibration mode

- **Last Fault** – Displays the current fault. Can be one of the following messages:
  - **No Fault Present –** no fault is currently present
  - **1 – Above Desired Tolerance –** the ram is above the high tolerance position
  - **2 – Below Desired Tolerance –** the ram is below the low tolerance position
  - **3 – Above High Limit –** the ram is above the upper adjustment limit
  - **4 – Below Low Limit –** the ram is below the lower adjustment limit
  - **5 – Resolver Fault –** the resolver is showing fault
- **Navigation** – These buttons allow the user to navigate to the various pages throughout the software.
  - **Fault History** – Touching this button will load the fault history page. From the history page, the previous ten (10) faults can be viewed easily.
  - **Calibration** – Touching this button will load the calibration page. The run tolerance can be modified or disabled, shut height can be calibrated, the adjustment levels can be modified, and the unit of measurement can be changed from this page forward.
- **Fault Output Status** – Displays the status of the fault relay. If a fault is detected, then this is replaced with a Fault Reset button shown in Figure 2-2. To reset the current fault, first find the cause for the fault. Once the cause has been corrected, touch the fault reset button on this page.
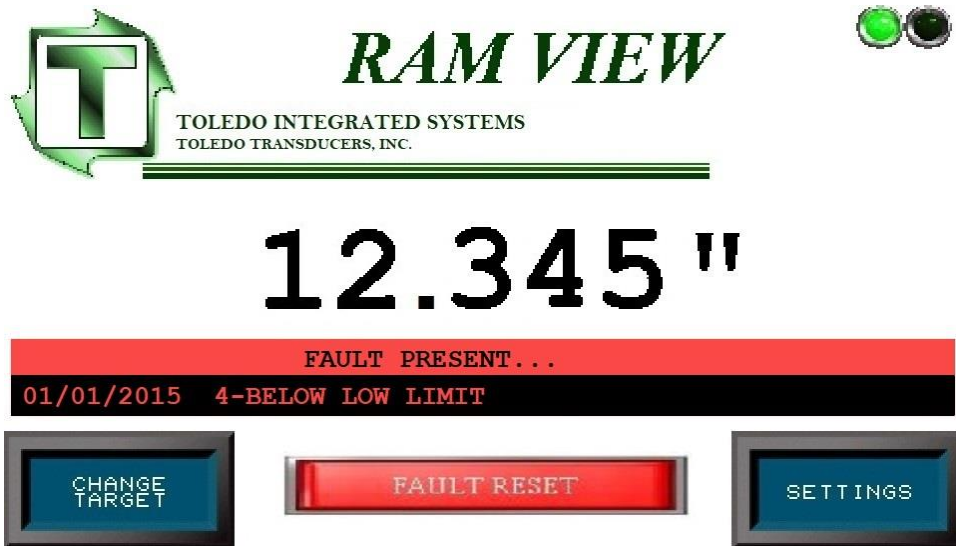

Figure 2-2 – Home Screen Fault Reset

3.   Fault History

Figure 3-1 – Fault History Screen

The fault history page displays the previous ten (10) faults and displays the status of the fault relay. If a fault is detected, then this is replaced with a Fault Reset button shown in Figure 3-2. To reset the current fault, first find the cause for the fault. Once the cause has been corrected, touch the fault reset button on this page.

Figure 3-2 – Fault History Screen Fault Reset

4.   Calibration

Figure 4-1 – Password Screen

To enter the settings page, a password must be entered. To return to the home page, touch the ESC key.
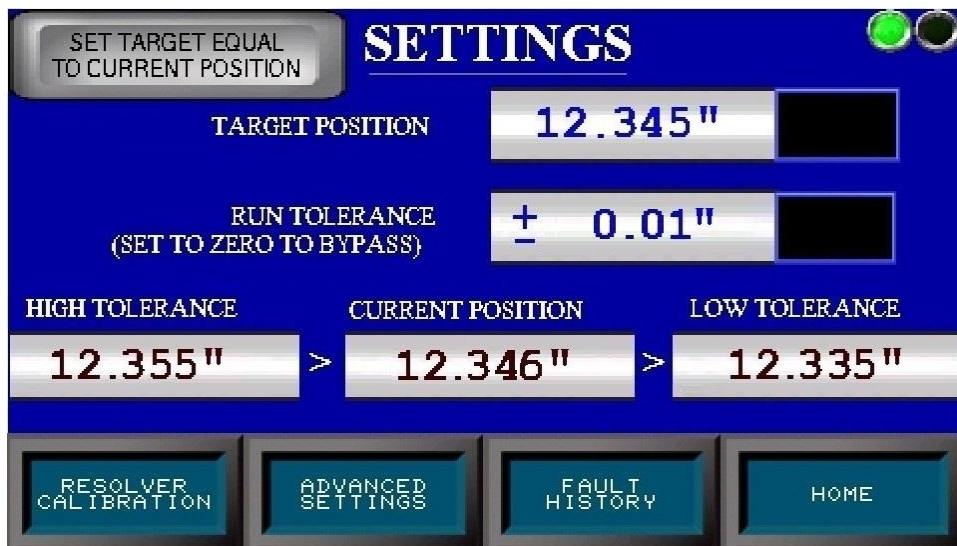

Figure 4-2 – Settings Screen

The settings page is used to modify the target position and run tolerance. Additional navigation buttons are also displayed.

- **Target Position** – This is the desired shut height of the ram and is the base for the run tolerance. It can be modified by touching the black button to the right, entering the new value on the pop-up keypad, and touching the ENTER key.

- **Run Tolerance** – To run the press, the ram needs to be within the run tolerance. It can be modified by touching the black button to the right, entering the new value on the pop-up keypad, and touching the ENTER key. It can also be bypassed by entering a value of zero (0).
- **High Tolerance** – This is the high run tolerance of the press. It is calculated by adding the run tolerance to the target position.
- **Current Position** – This is the current shut height of the ram and it needs to be within the job run tolerance to run the current job.
- **Low Tolerance** – This is the low run tolerance of the press. It is calculated by subtracting the run tolerance from the target position.
- **Navigation** – These buttons allow the user to navigate to the various pages throughout the software.
    - **Resolver Calibration** – Touching this button will load the shut height calibration page. The shut height can be calibrated from this page.
    - **Advanced Settings** – Touching this button will load the advanced settings page. The upper and lower adjustment limits can be modified from this page. The unit of length can also be selected from this page.
    - **Home** – Touching this button will load the home page.

I. Shut Height Calibration

Figure 4-3 – Shut Height Calibration Screen

The shut height can be calibrated from this page. The current position and resolver counts are also displayed on this page. The resolver count is the raw data from the resolver.

To calibrate the shut height, follow these steps:

1) Touch the PUSH TO ENTER CAL MODE button.

2) Move the press to a known upper position.

3) Enter the known upper position. To do this, touch the black button to the right, enter the new value on the pop-up keypad, and touch ENTER. Touch the ACCEPT UPPER POSITION button.

4) Move the press to a known lower position.

5) Enter the known lower position. To do this, touch the black button to the right, enter the new value on the pop-up keypad, and touch ENTER. Touch the ACCEPT LOWER POSITION button.

6) Once the upper and lower positions are accepted, the system will automatically exit calibration mode.

7) The shut height calibration is complete.

A copy of this procedure can be accessed by touching the CALIBRATION PROCEDURES button.

Touch the PUSH TO CANCEL CAL MODE button anytime to take the Shut Height out of calibration mode.
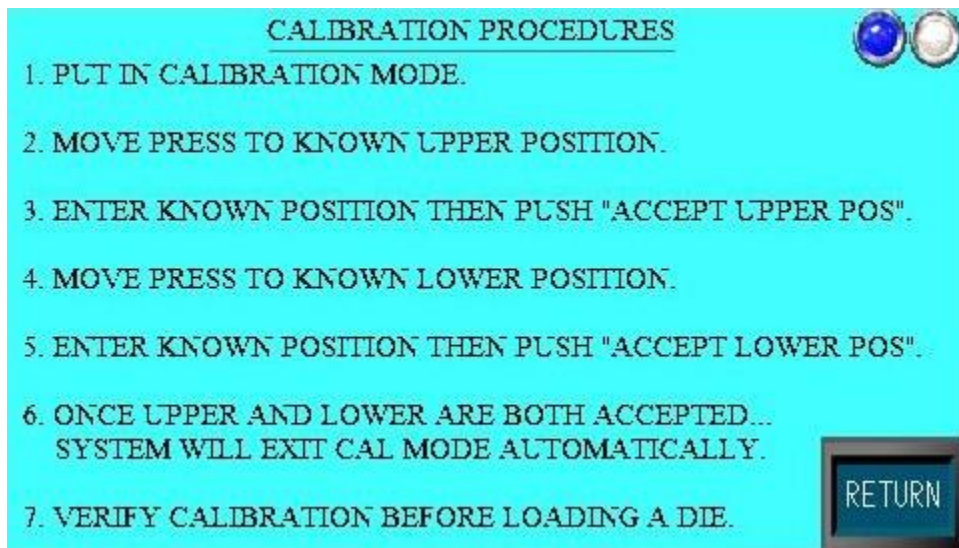
A.   Calibration Procedure

Figure 4-4 – Calibration Procedure Screen

This page lays out the procedure to calibrate the shut height. To return to the shut height calibration page, touch the RETURN button.

II. Advanced Settings

Figure 4-5 – Advanced Settings Screen

The upper and lower adjustment limits can be modified from this page. To modify an adjustment limit, touch the black button to the right, enter the new value on the pop-up keypad, and touch the ENTER key.

The current resolver position is also displayed, and the unit of length can be changed from this page. The unit of length can be either in inches or millimeters. To change the unit of length, touch the desired unit.

If at any time the current position is above the upper adjustment limit, relay 2 (RL2a and RL2B) will open (see electrical prints). This contact should be wired in series with the ram adjust up push button. This will inhibit adjustment above the programmed upper limit.
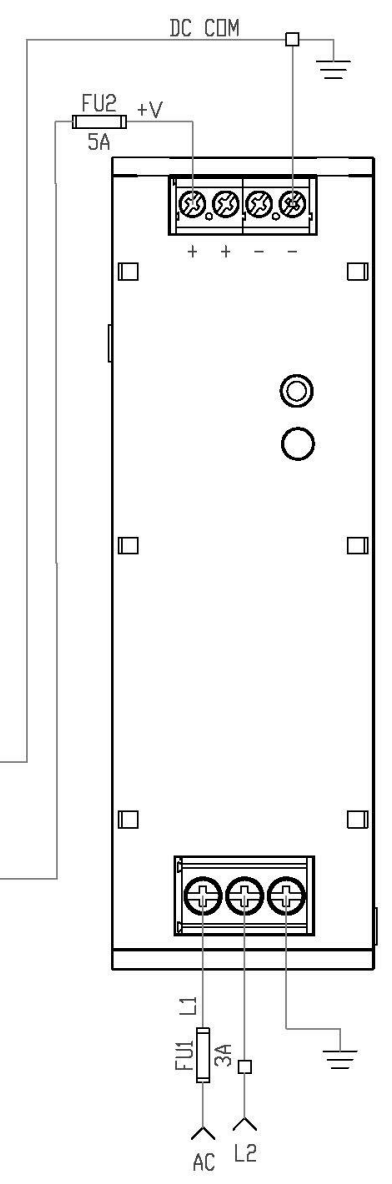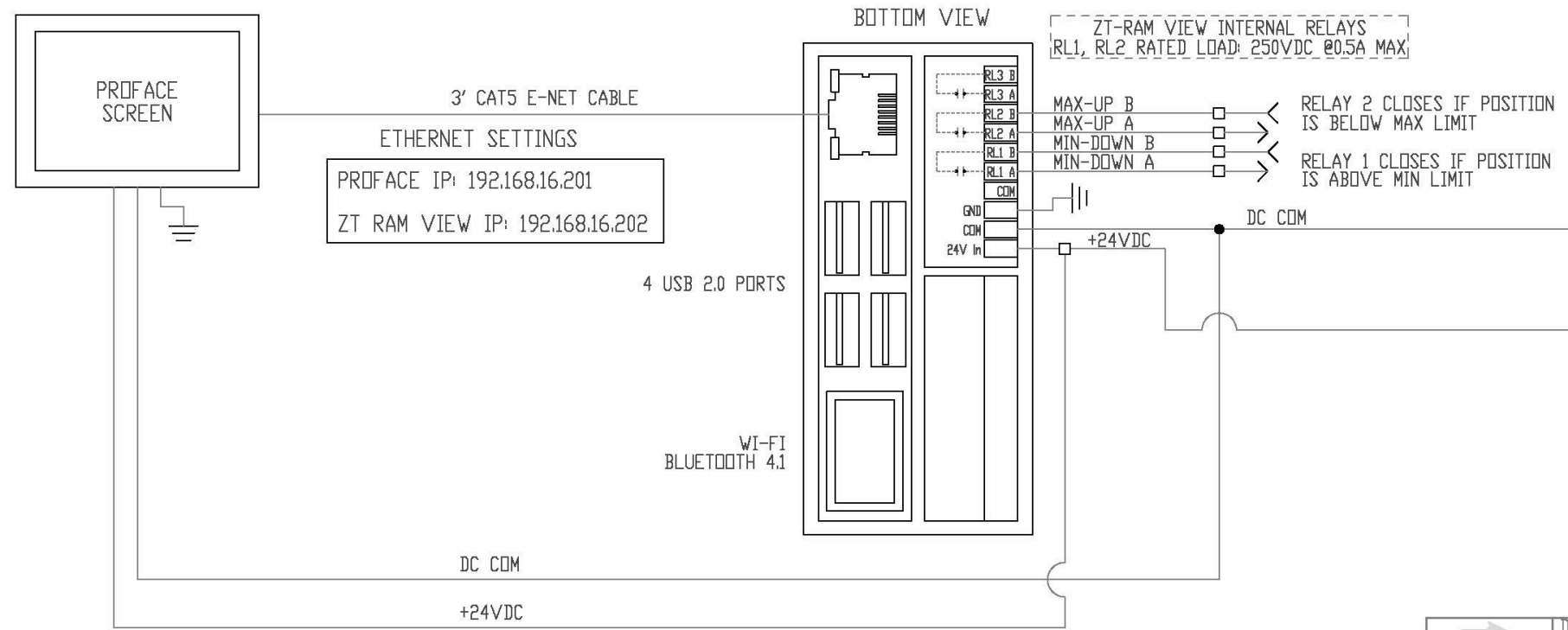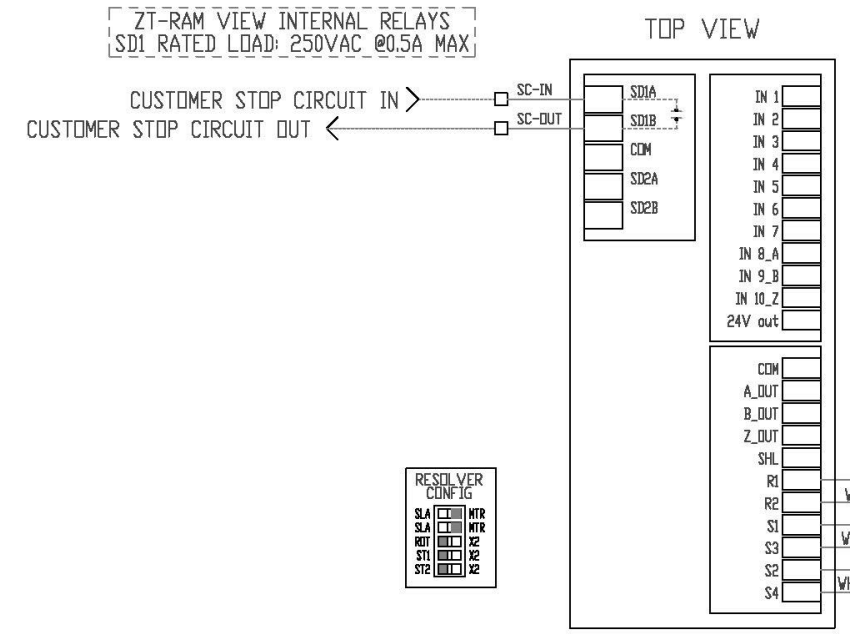
If at any time the current position is below the lower adjustment limit, relay 1 (RL1a and RL1B) will open (see electrical prints). This contact should be wired in series with the ram adjust down push button. This will inhibit adjustment below the programmed lower limit.

ZT RAM VIEW MODULE

REV	DATE	DESCRIPTION
A	7/28/20	AS BUILT
B	5/23/22	ADD RELAY RATINGS
C	2/9/24	ADD INTERPOSING RELAYS
D	7/24/24	REMOVE INTERPOSING RELAYS UPDATE RELAY RATINGS

01-01
01-02
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01-46
01-47
01-48

ZT-RAM VIEW INTERNAL RELAYS
SD1 RATED LOAD: 250VAC @0.5A MAX

TOP VIEW

CUSTOMER STOP CIRCUIT IN
CUSTOMER STOP CIRCUIT OUT

SC-IN
SC-OUT

SD1A
SD1B
COM
SD2A
SD2B

IN 1
IN 2
IN 3
IN 4
IN 5
IN 6
IN 7
IN 8_A
IN 9_B
IN 10_Z
24V out

COM
A_OUT
B_OUT
Z_OUT
SHL
R1
R2
S1
S3
S2
S4

RESOLVER CONFIG
SLA — MTR
SLA — MTR
RDT — X2
ST1 — X2
ST2 — X2

BLUE
WHT/BLUE
GREEN
WHT/GREEN
ORANGE
WHT/ORANGE

TR-1

TOLEDO RESOLVER

DC COM

FU2 +V
5A

+ + - -

BOTTOM VIEW

ZT-RAM VIEW INTERNAL RELAYS
RL1, RL2 RATED LOAD: 250VDC @0.5A MAX

PROFACE SCREEN

3' CAT5 E-NET CABLE

ETHERNET SETTINGS

PROFACE IP: 192.168.16.201
ZT RAM VIEW IP: 192.168.16.202

4 USB 2.0 PORTS

WI-FI
BLUETOOTH 4.1

RL3 B
RL3 A
RL2 B
RL2 A
RL1 B
RL1 A
COM
GND
COM
24V In

MAX-UP B
MAX-UP A
MIN-DOWN B
MIN-DOWN A

RELAY 2 CLOSES IF POSITION IS BELOW MAX LIMIT

RELAY 1 CLOSES IF POSITION IS ABOVE MIN LIMIT

+24VDC
DC COM

DC COM

DC COM
+24VDC

FU1 L1
3A
AC L2

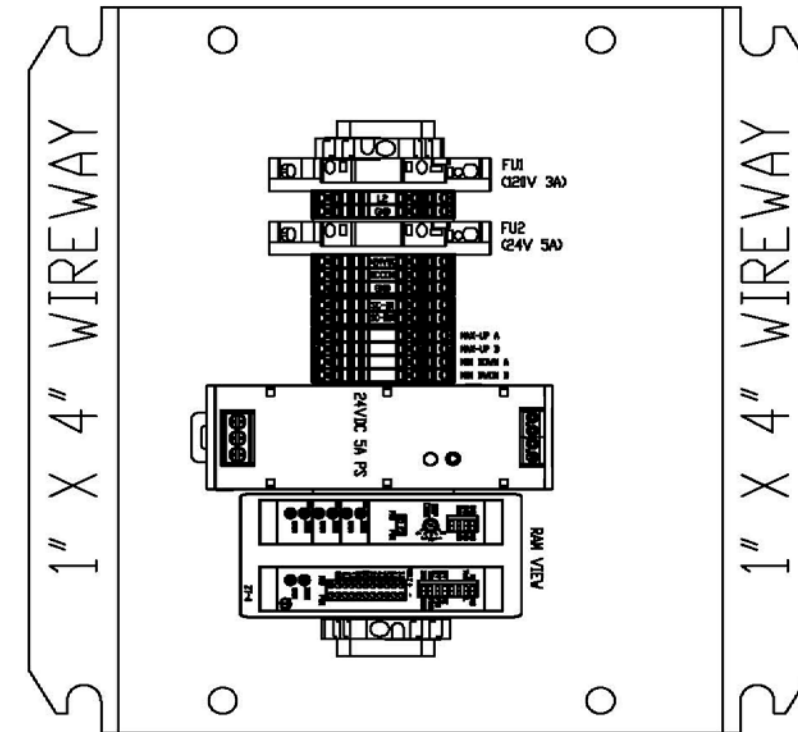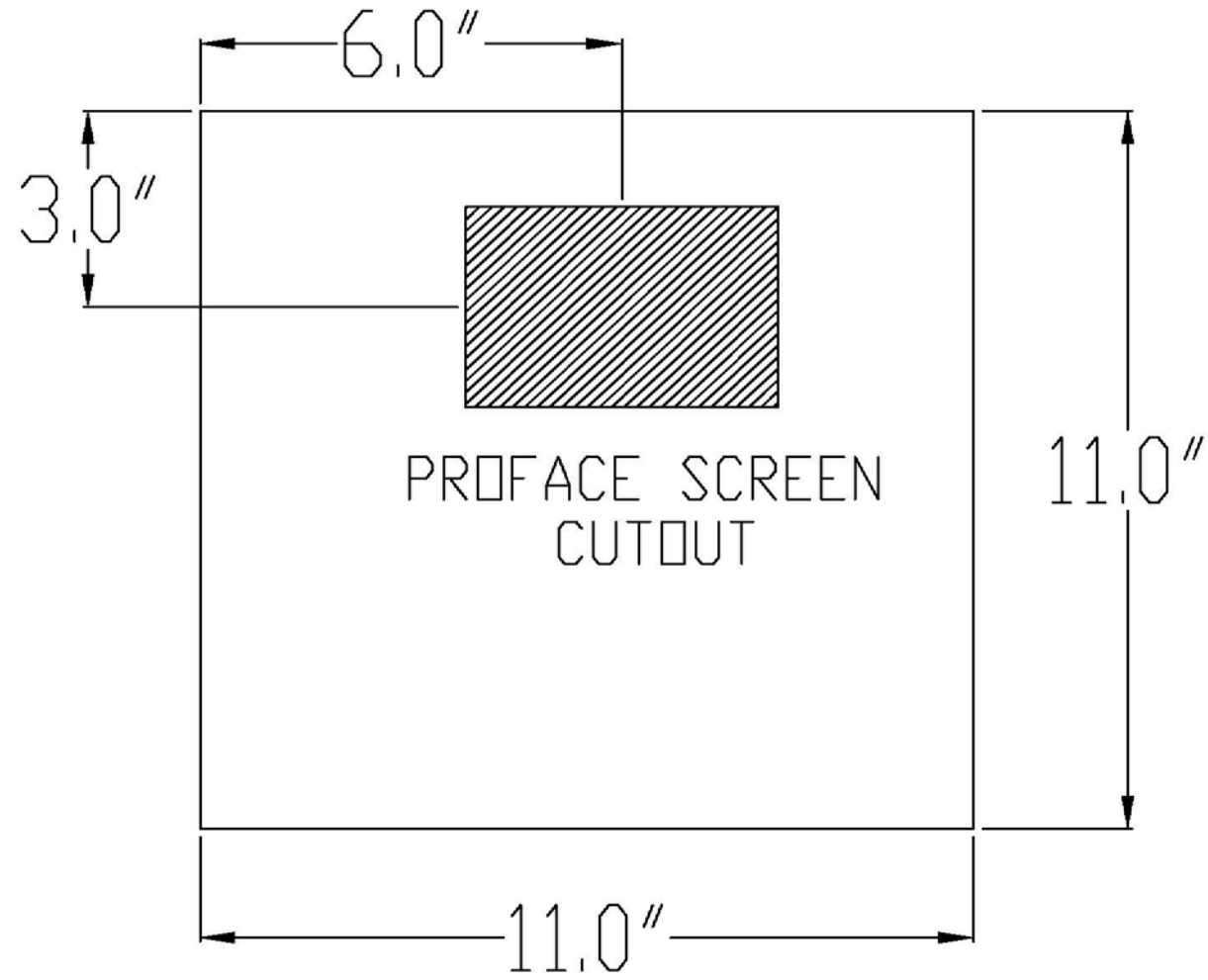|	Designed By: SAM PIETSCHMAN	Date: 7/28/2020		RAM VIEW WIRING	Dwg Index: RAM VIEW
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9
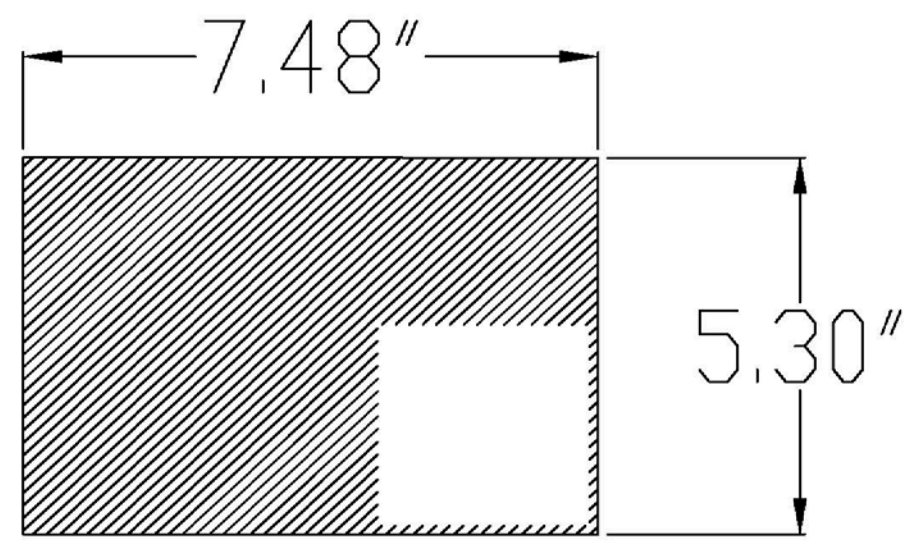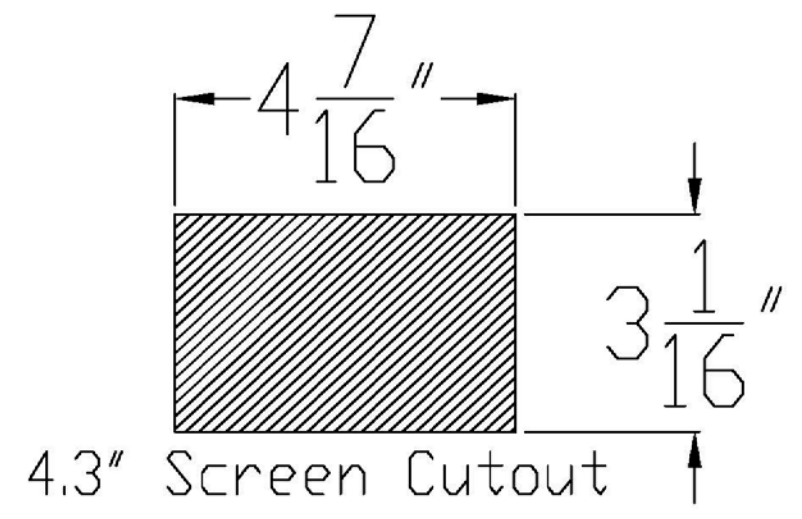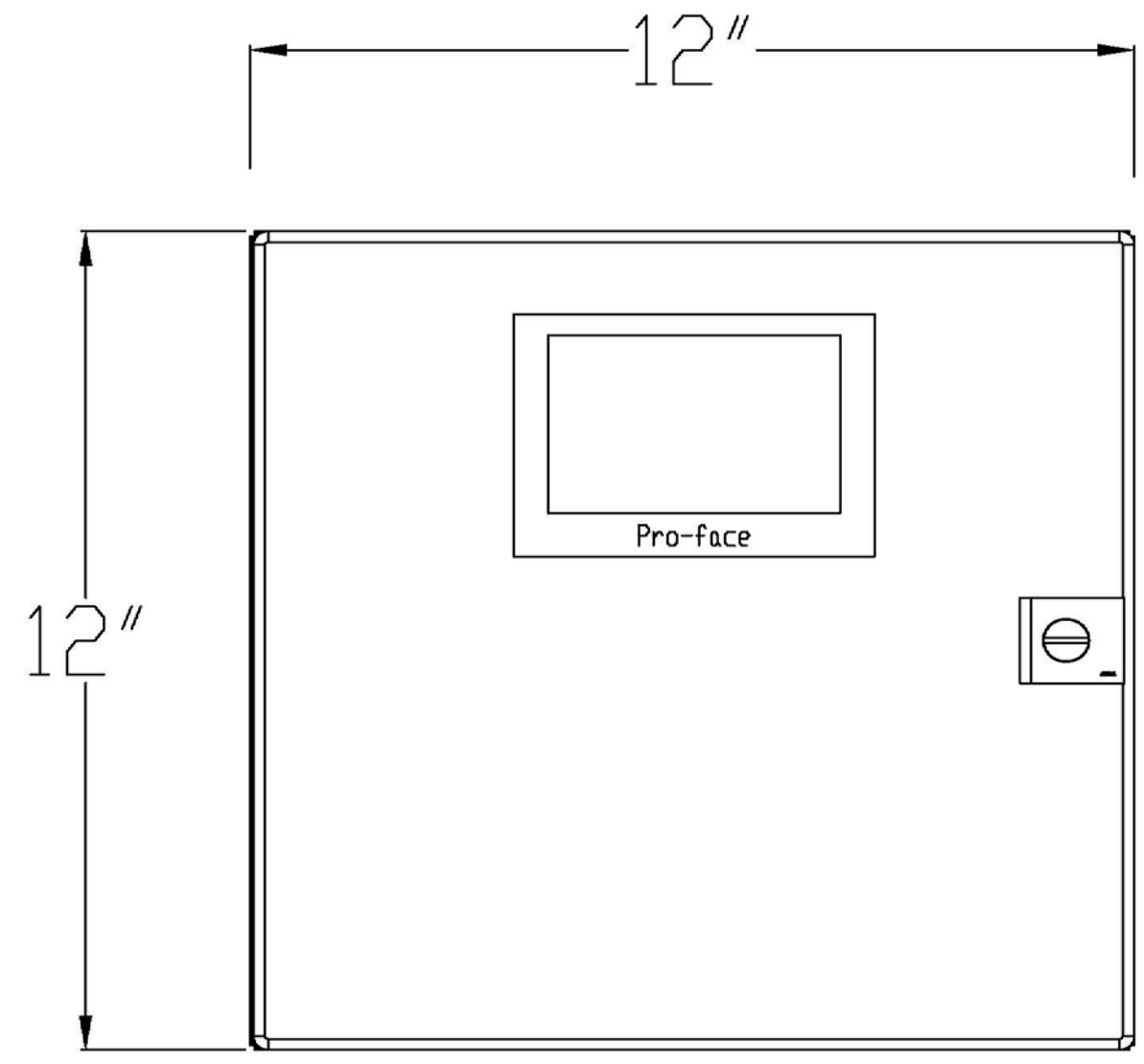
4.3" Screen Cutout

7" Screen Cutout
(Optional Upgrade)

	Designed By: BENJAMIN HOTZ	Date: 5/30/2019	RAM VIEW SCREEN		Dwg Index: RAM VIEW
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	Modified By: S. STEINHARDT	Date: 10/8/2020	Dwg.Size: B	Dwg.Type: ASSY.	Page 1 of 2
					Doc No: ENCLOSURE

11

6.0"

3.0"

11.0"

PROFACE SCREEN
CUTOUT

11.0"

1" X 4" WIREWAY

1" X 4" WIREWAY

FU1
(120V 3A)

FU2
(24V 5A)

24VDC 5A PS

RAM VIEW

13

Tap for 1/4-20
0.3750
0.2500
Tap for 1/4-20
Tap for 1/4-20
Tap for 1/4-20
Tap for 1/4-20
2.0000

0.2500
0.2500
0.3750
1.5000
3.0000
0.2500
0.2500
0.3750
0.2500
0.3580
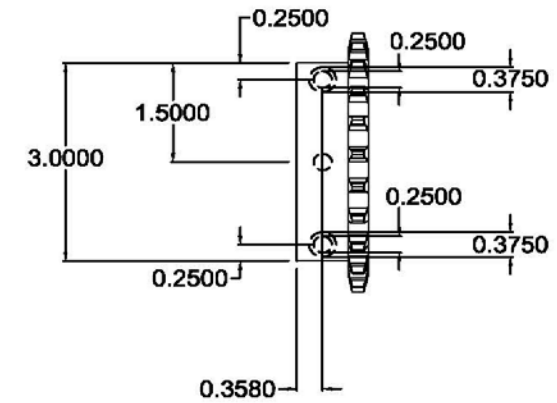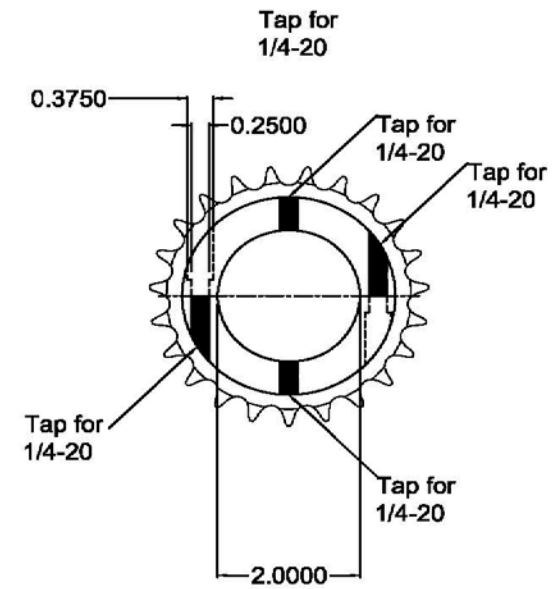
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