# JAGXTREME® and



In-Motion Weighing
Controllers
Installation Guide

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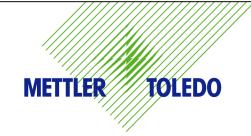
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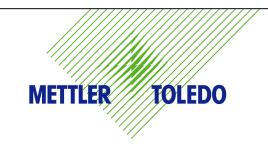
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This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his or her own expense.

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READ this manual BEFORE operating or servicing this equipment.

FOLLOW these instructions carefully.

SAVE this manual for future reference.

DO NOT allow untrained personnel to operate, clean, inspect, maintain, service, or tamper with this equipment.

ALWAYS DISCONNECT this equipment from the power source before cleaning or performing maintenance.

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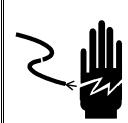


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ONLY PERMIT QUALIFIED PERSONNEL TO SERVICE THIS EQUIPMENT. EXERCISE CARE WHEN MAKING CHECKS, TESTS AND ADJUSTMENTS THAT MUST BE MADE WITH POWER ON. FAILING TO OBSERVE THESE PRECAUTIONS CAN RESULT IN BODILY HARM.





FOR CONTINUED PROTECTION AGAINST SHOCK HAZARD, CONNECT TO PROPERLY GROUNDED OUTLET ONLY. DO NOT REMOVE THE GROUND PRONG.

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# 1

### Introduction

The JAGXTREME in-motion controller and the 9482 EXPRESSWEIGH controller are designed to provide high speed processing of in-motion weights from boxes or other products as they pass over an analog load cell scale conveyor. The resultant weight is displayed and may also be transmitted to a peripheral such as a printer or computer.

The JAGXTREME in-motion controller consists of a general purpose JAGXTREME terminal with a single analog scale interface and custom hardware and software designed for high speed weight processing. This version requires ASCII commands to begin and end the weight processing.

The EXPRESSWEIGH controller consists of a METTLER TOLEDO panel mount JAGXTREME terminal installed in a stainless steel certified TYPE 4 and TYPE 12 enclosure. An analog load cell interface is provided for one scale only. Custom hardware and software designed for high speed weight processing have been added to provide a complete solution for in-motion weighing. This version is designed to connect to DC photo eyes or switches to begin and end the weight processing cycle.

### Mounting

The JAGXTREME in-motion controller is designed to sit on a desk or other flat surface. An optional bracket is available to mount this unit to a wall or column. The JAGXTREME controller's overall dimensions and mounting dimensions with the optional bracket are shown in Figure 1-1.

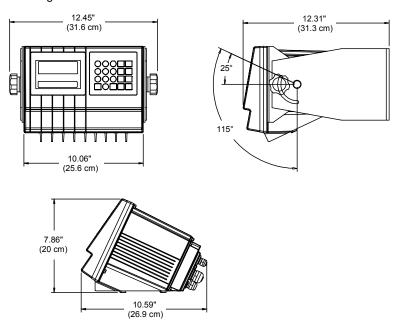


Figure 1-1

# METTLER TOLEDO JAGXTREME and EXPRESSWEIGH In-Motion Controllers Installation Guide

The EXPRESSWEIGH controller mounts to a wall or floor stand using the four brackets at the rear of the enclosure. The EXPRESSWEIGH controller's overall dimensions and the mounting dimensions are shown in Figure 1-2.

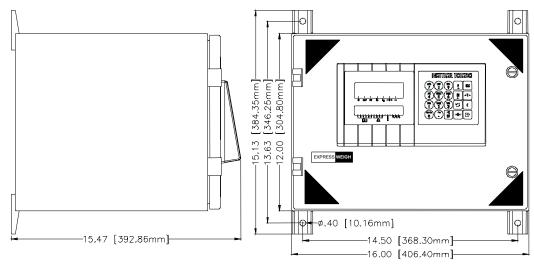


Figure 1-2

### **Electrical Requirements**

The JAGXTREME controller uses a switching power supply, which can operate from 85 to 264 VAC with a line frequency of 47 to 63 Hz. Power consumption is approximately 20 VA. All terminations are via terminal strip connectors inside the rear housing of the controller.

The EXPRESSWEIGH controller uses switching power supplies, which can operate from 85 to 264 VAC with a line frequency of 47 to 63 Hz. Power consumption of the standard unit is approximately 25 VA. All terminations are via terminal strips inside the enclosure.

The integrity of the power ground for this equipment is important for both safety and dependable operation of the controller. A poor ground can result in an unsafe condition if an electrical short develops in the equipment. A good ground connection is needed to assure extraneous electrical noise influences are minimized. It is important that the controller does not share power lines with noise generating equipment such as motor starter circuits, RF thermal heaters, or inductive loads. If adverse power conditions exist, a dedicated power circuit or power line conditioner may be required.

The EXPRESSWEIGH includes an internal 24 VDC power supply which supplies power for the photoeyes and discrete input/output signals. The I/O is buffered through optical isolators and is available on terminal strips inside the enclosure.

### **Options and Accessories**

The following optional PCBs are compatible with both the JAGXTREME and EXPRESSWEIGH controllers:

- 0917-0223 Multifunction PCB Adds two additional serial ports.
- 0917-0213 Allen-Bradley RIO I/F Provides connectivity to Allen Bradley PLCs.
- 0917-0243 PROFIBUS I/F Provides connectivity to PROFIBUS-compatible PLC signals.
- 0900-0311 PROFIBUS pigtail cable Extends PROFIBUS connection to outside the general purpose JAGXTREME enclosure.
- 0917-0250 PROFIBUS DP type files Description of communication parameters for PROFIBUS system.
- 0917-0254 Modbus Plus I/F Provides connectivity to PLCs using Modbus Plus
- 0900-0320 Modbus Plus pigtail cable Extends Modbus Plus connection to outside the general purpose JAGXTREME enclosure.

In addition, the following accessories are available:

- **0917-0209 JAGXTREME controller wall/column mount kit** Bracket that mounts the general purpose JAGXTREME enclosure to a wall or column.
- 0917-0338 EXPRESSWEIGH controller spare parts kit Kit that includes spare parts, which might be needed for service of the EXPRESSWEIGH controller.

**NOTES** 

# 2

### Installation

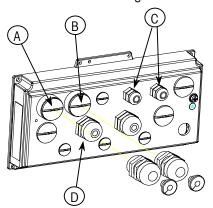
### **Suitable Location**

Before installing the JAGXTREME in-motion controller or the EXPRESSWEIGH controller, select an appropriate location for the controller in an area where exposure to severe environmental conditions such as dust, dirt, moisture, vibration, etc. is minimized. Care should be taken to ensure sufficient space is provided around the enclosure to allow for adequate ventilation and easy access through the rear panel of the JAGXTREME controller or the front door of the EXPRESSWEIGH controller. In addition, make sure enough space is also provided at the bottom of the EXPRESSWEIGH controller's enclosure for all cable entrances.

The JAGXTREME controller has been designed to meet TYPE 4 standards, and the EXPRESSWEIGH controller has been tested and certified to TYPE 4 and TYPE 12 enclosure ratings.

### **Cable Entrances**

The JAGXTREME in-motion controller does not require special considerations for routing input and output cables. Refer to Figure 2-1 below for a description of which grip bushing to use for which connection on the rear housing of the controller.



Reference Letter	Suggested Cable		
А	QWERTY Keyboard		
В	Ethernet Cable		
С	Serial I/O Cables, PLC I/F Cabling		
D	Analog Load Cell Cabling		

Figure 2-1

The EXPRESSWEIGH controller does not have factory-installed holes in the enclosure for cables entering and exiting. The required holes must be made at the time of installation based upon the orientation of the enclosure and the desired entrance points for the cables. The required inputs and outputs are:

- AC power
- Photoeye cable
- · Load cell cable

# METTLER TOLEDO JAGXTREME and EXPRESSWEIGH In-Motion Controllers Installation Guide

Note: To maintain TYPE 4 and/or 12 environmental rating, wiring is to be provided through UL Listed conduit hubs, fittings or equivalent of the same TYPE rating.

In addition, the following optional inputs/outputs may be required for the EXPRESSWEIGH controller:

- Serial ports
- Ethernet
- PLC interface connections
- QWERTY keyboard
- Controller running output
- Scale empty output
- Alarm output
- Silence alarm input
- Run Permissive input

METTLER TOLEDO recommends that these input and output holes be located on the bottom of the EXPRESSWEIGH enclosure to best maintain the environmental integrity of the enclosure. All connections to the enclosure must be sealed appropriately for the environment and installed correctly according to all national, local and other relevant electrical standards.

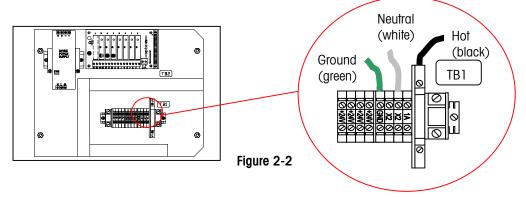
### Wire Terminations

The following sections describe the requirements for routing and terminating the input and output connections to the JAGXTREME in-motion controller and the EXPRESSWEIGH controller. In addition, there is a wiring schematic (p/n 907505R) in the last section of this manual, which may be used as a reference.

### **AC Power**

The JAGXTREME in-motion controller comes with a standard AC power cord. This cord may be plugged into any suitable power source, which meets the power requirements described in the previous chapter.

The EXPRESSWEIGH controller must have AC power run to the enclosure (typically through conduit depending upon electrical regulations). METTLER TOLEDO recommends the AC power input should be brought in at the back right corner of the bottom of the EXPRESSWEIGH controller's enclosure. This provides the easiest access to the terminals and fuse module for the high voltage lines marked X1, X2 and GND. Refer to Figure 2-2 for the location of the X1, X2 and GND terminals on TB1. Power lines running more than one foot (0.3m) internal to the enclosure should be twisted and routed as far away from other low voltage wiring as practical.



Any external high voltage lines (40 volts and higher) must be run separate from any external low voltage control signal wiring.

### **Load Cell**

The load cell cable must be terminated on the rear of the Analog PCB to the terminal strip labeled "CHANNEL 1" in both the JAGXTREME controller and the EXPRESSWEIGH controller. Figure 2-3 below shows the load cell connector on the rear of the Analog PCB where the incoming load cell cable is to be terminated. METTLER TOLEDO includes a 25-foot (8 m) length of six conductor, shielded 24-gauge load cell cable (p/n 14264100A) with the EXPRESSWEIGH controller for this purpose. There is no load cell cable included with the JAGXTREME controller.

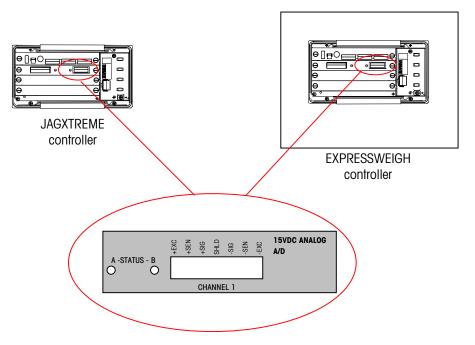


Figure 2-3

A color code chart is shown next with the most common METTLER TOLEDO load cell color codes. Before connecting load cells to the JAGXTREME or EXPRESSWEIGH controller, confirm which signal is which color wire.

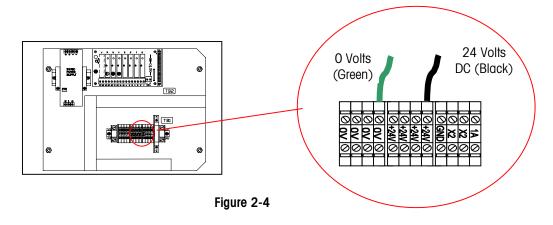
Signal Name	6-Wire Load Cell Color Code	4-Wire Load Cell Color Code
+ Excitation	White	Green
+ Sense	Yellow	(jumper to + Ex.)
+Signal	Green	White
Ground	Orange (shield)	Yellow (orange)
- Signal	Black	Red
-Sense	Red	(jumper to - Ex.)
- Excitation	Blue	Black

### **Photo Eyes**

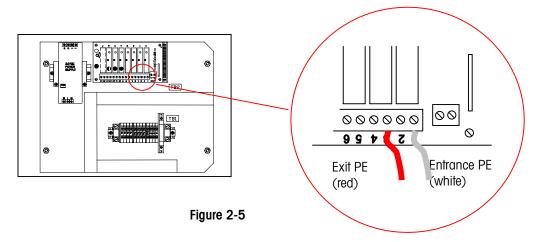
The JAGXTREME in-motion controller is not designed to connect directly to photo eyes but is meant to be operated with serial commands from a host device only. Do not connect photo eyes to the JAGXTREME controller.

# METTLER TOLEDO JAGXTREME and EXPRESSWEIGH In-Motion Controllers Installation Guide

The EXPRESSWEIGH controller is compatible with 24 VDC photo eyes or arrays. The 24-volt supply and ground to power the photo eyes is available from the TB1 terminal strip as shown in Figure 2-4. METTLER TOLEDO includes a four-conductor, 16-gauge, 25-foot (8 m) cable (p/n 15099800A) for this purpose. Other cables with similar specifications may be substituted if required. If another cable is used, the colors shown next may be different.



This four-conductor cable is also used to route the input signals from the entrance and exit photoeyes back to terminals 1 and 3 on TB2 as shown in Figure 2-5.



### **Discrete Signal Inputs**

The JAGXTREME and EXPRESSWEIGH controllers can receive a discrete signal to generate an output of the instantaneous weight on the scale or to zero the scale. In applications where a package or parcel is brought onto the scale and stopped, this signal may be used to trigger a data output before the package exits the scale and breaks the exit photoeye. A custom print function must be programmed in setup using discrete input 3 or 4 on PAR 1 and wired appropriately. The zero command only operates within normal operating parameters of the zero function. No other input signals are supported on the JAGXTREME controller. This trigger must connect logic ground to the programmed discrete input for at least 100ms. Refer to Figure 2-6 for wiring details.

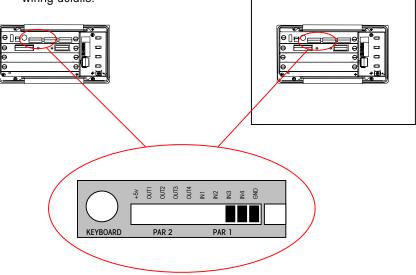
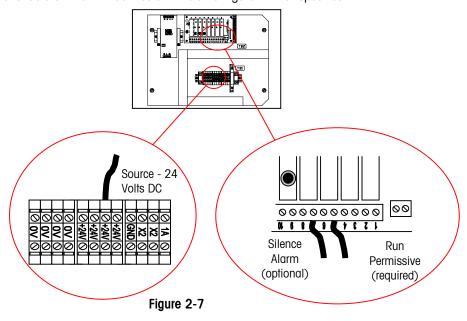


Figure 2-6

The EXPRESSWEIGH controller provides 24-volt DC optos for a Run Permissive and a Silence Alarm input. The Run Permissive <u>MUST BE</u> connected in order for the controller to operate. The Silence Alarm input is not required but may be connected if desired. The Run Permissive input is on terminal 5 and the Silence Alarm input is on terminal 7 of the TB2 connector on the opto PCB. The source voltage for both these inputs is available on the TB1 connector. Refer to Figure 2-7 for specifics.



### **Discrete Signal Outputs**

The JAGXTREME controller can provide simple discrete signal outputs, which indicate scale status. These include motion, center of zero, over capacity and under zero. Connection for these outputs are made on the PAR2 output terminal block on the back of the Controller PCB. These output signals are typically routed through an Opto 22 device to convert to a higher voltage level. Only OUT4 can be used in the EXPRESSWEIGH controller. Typical connections are shown in Figure 2-8 below.

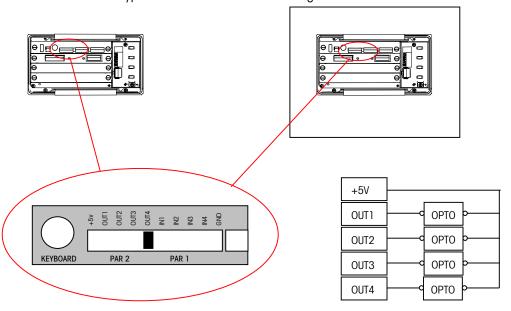
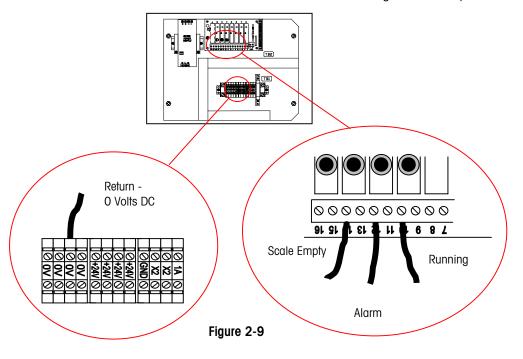


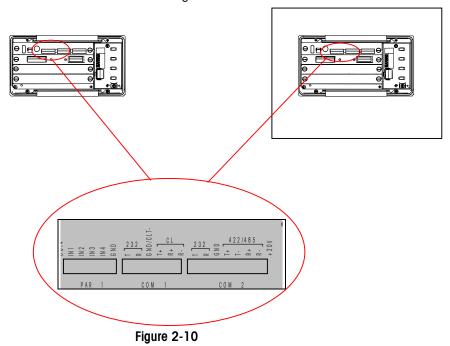
Figure 2-8

The EXPRESSWEIGH controller provides three custom discrete output signals - Alarm, Scale Empty and Scale Running. These signals are available on terminals 10, 12 and 14 respectively on terminal block TB2. All of these signals are designed to be referenced to the 0 volt DC terminal on TB1. Refer to Figure 2-9 for a pictorial view.



### **Serial Ports**

The JAGXTREME and EXPRESSWEIGH controllers both include two serial ports standard. COM 1 provides RS-232 and 20mA current loop connections. COM2 provides RS-232 and RS-422/RS-485 connections. These serial ports are located on the back of the Controller PCB as shown in Figure 2-10.



# Routing and Securing Cables

The JAGXTREME controller has grip bushings on the rear housing to secure all cables entering the enclosure.

The EXPRESSWEIGH controller provides metal loops on the rear of the instrument power supply and several adhesive pads on the side of the instrument case to secure cables. Nylon wire ties are included to secure the cabling to these supports. When securing the cables, be certain enough slack is present in all cables to fully open the front door. Refer to Figure 2-11.

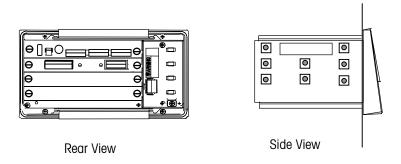


Figure 2-11

### **Programming**

After all connections have been made to the JAGXTREME or EXPRESSWEIGH controller, the controllers must be programmed for the specific application in which they will be used. Refer to the Technical Manual included on the documentation CD-ROM for programming specifics.

### **Closing the Enclosures**

After installation and programming are complete on the JAGXTREME controller, be certain all PCBs are securely fastened, and all screw terminals are tight. Make sure no wires are pinched between the housing and rear cover when attaching the rear cover. Also, be certain that the round gasket that seals the rear cover to the housing is in place and not pinched. Secure with the four screws in the corners of the rear housing.

After installation and programming are complete on the EXPRESSWEIGH controller, make certain no wires are in the way then close the front door. Rotate the two front panel latches clockwise 1/4 turn using a large flat blade screwdriver.

3

# **Drawings**

The drawings in this chapter provide additional information regarding the wiring and installation of the standard 9482 EXPRESSWEIGH controller. In addition to these drawings, the installer must be familiar with local and national electrical code regulations. These drawings are also included on the documentation CD-ROM that accompanies each JAGXTREME and EXPRESSWEIGH in-motion controller.

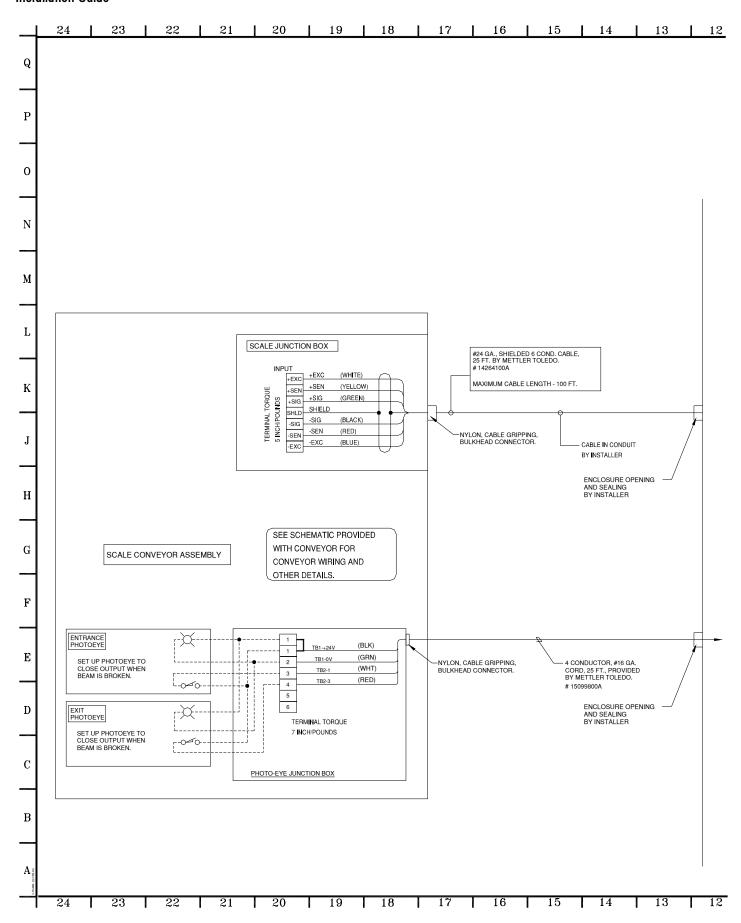
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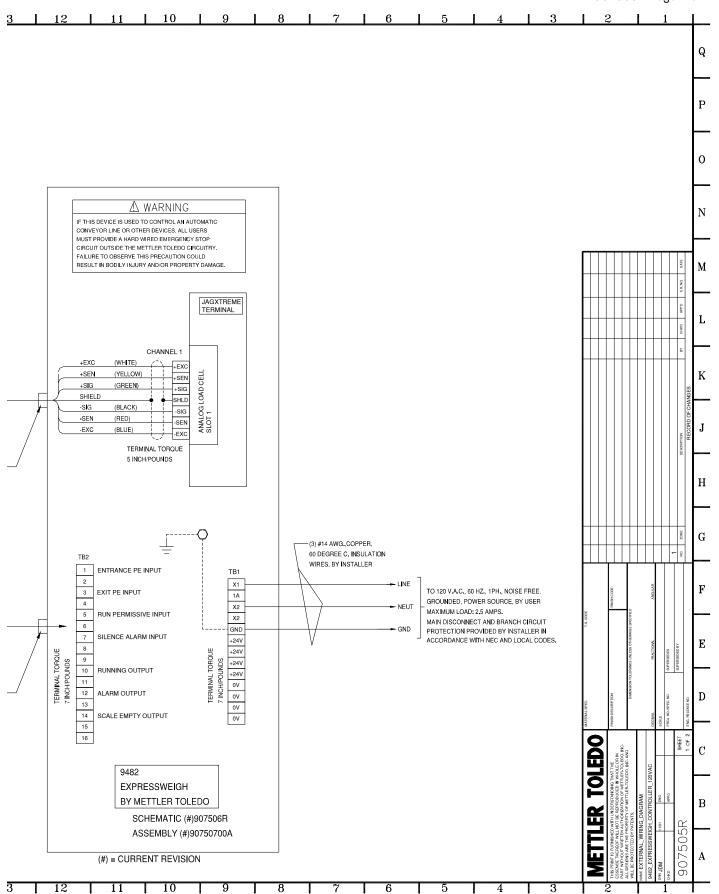
907505R - Page 1 of 2

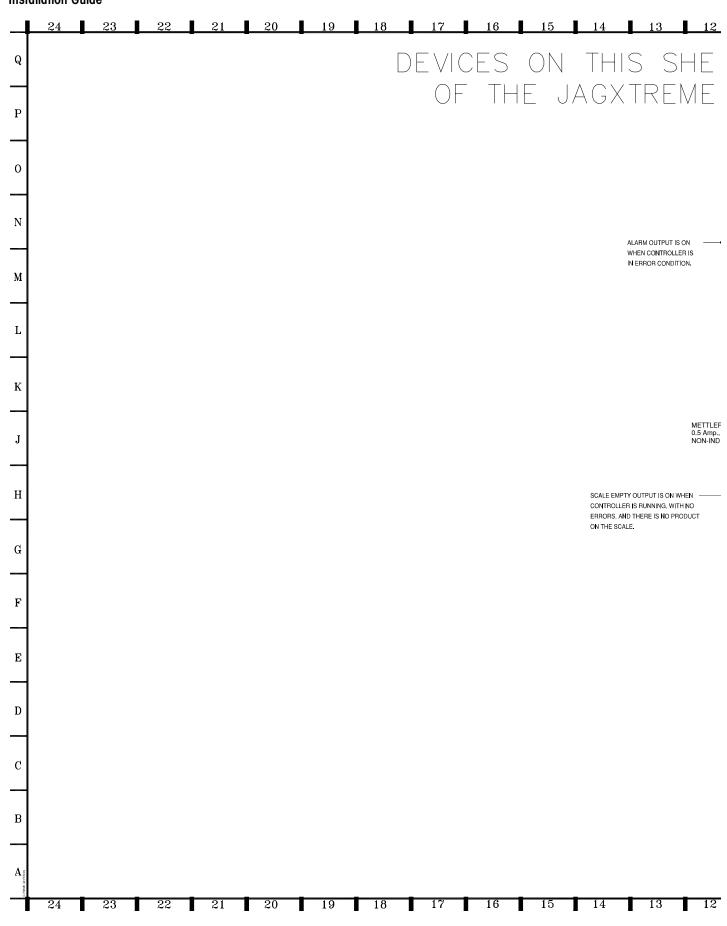
907505R - Page 2 of 2

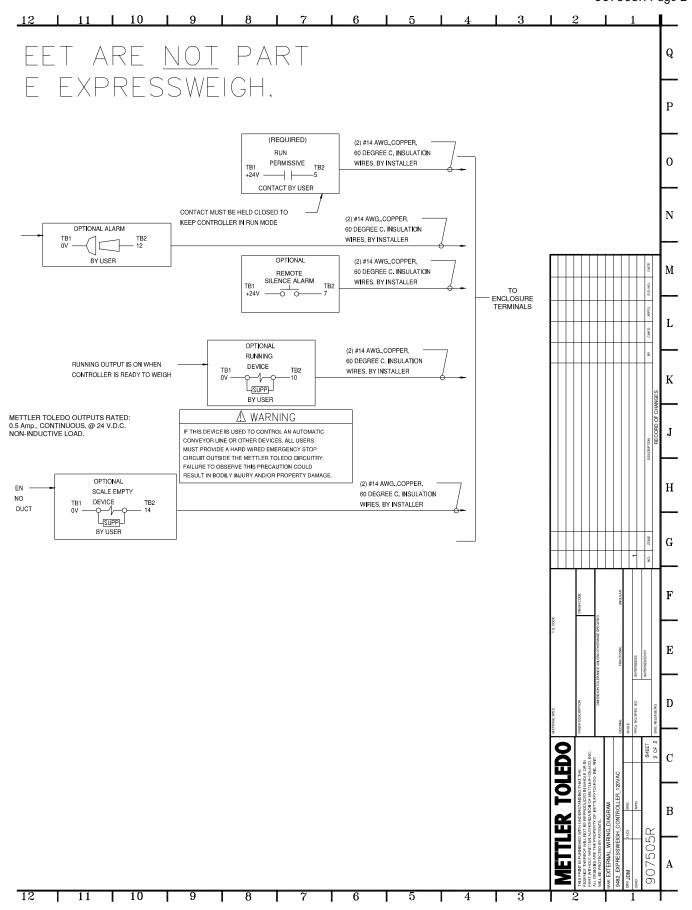
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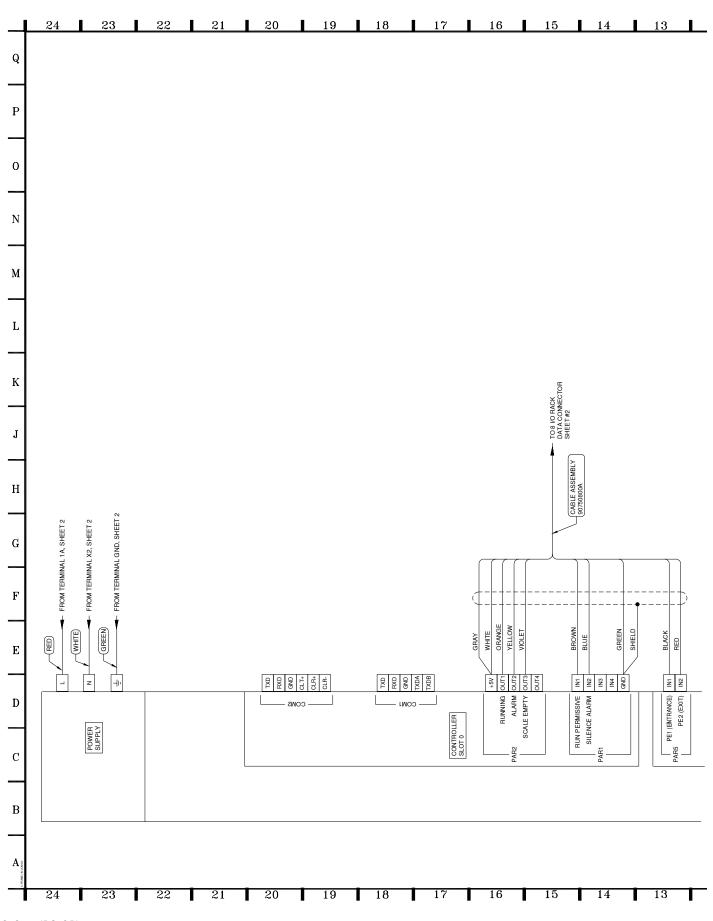
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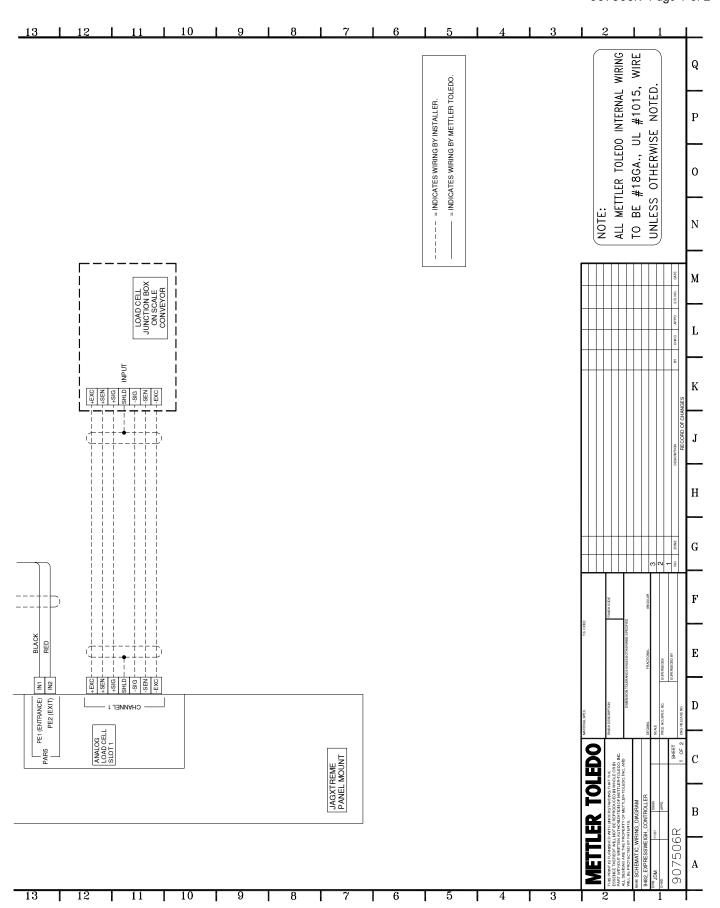


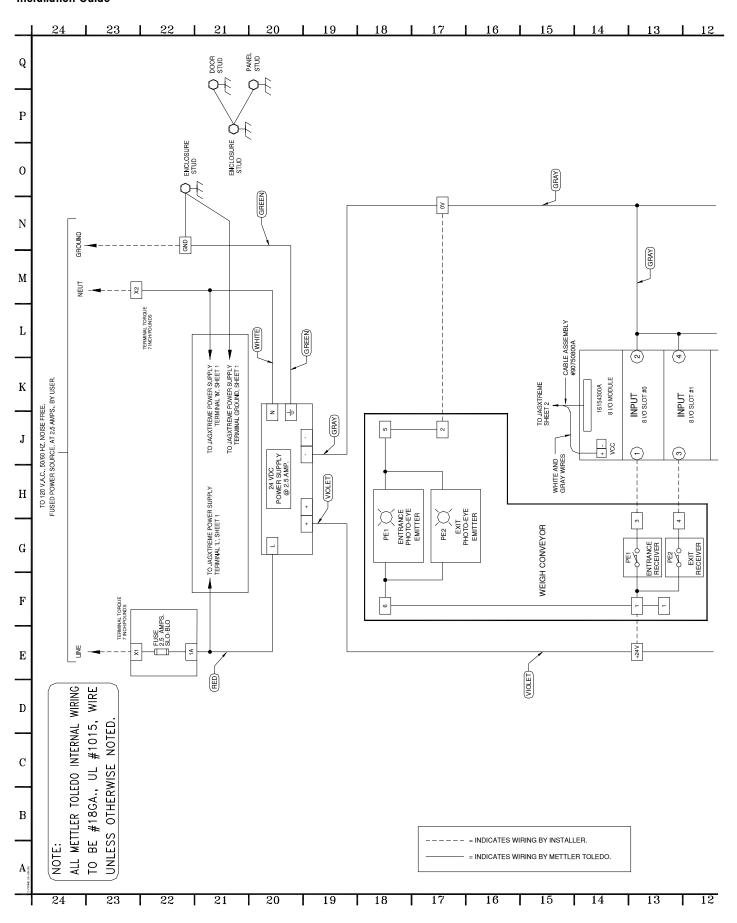


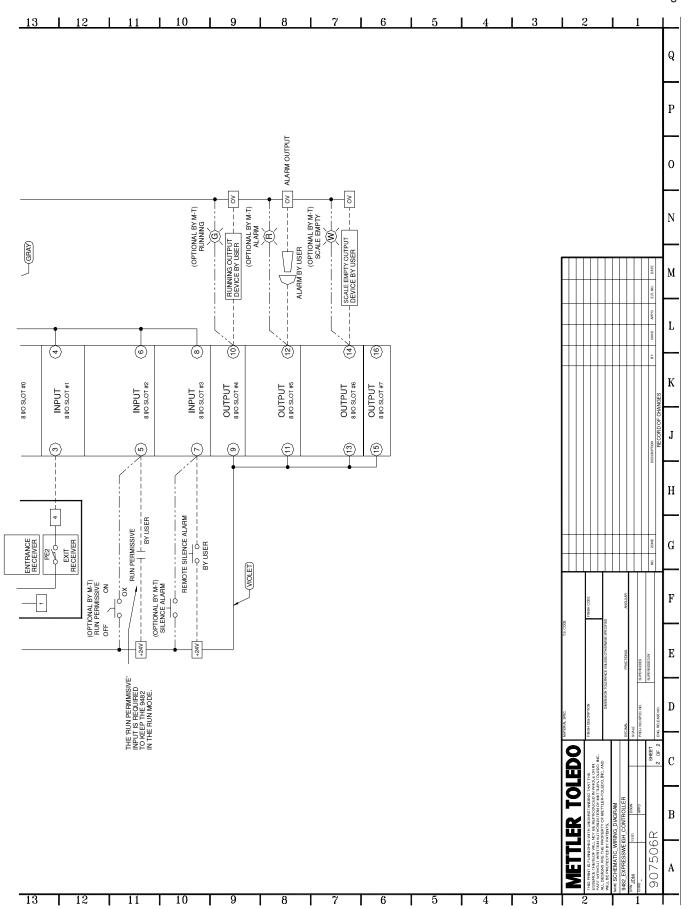












**NOTES** 

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