JAGXTREME

Industrial Terminal
Installation Guide

15888800A
7/00

CUSTOMER FEEDBACK

If you have a problem with this product, or just a suggestion on how we can serve you better, please fill out this form and send it to us. Your feedback will help us to improve product performance, quality and service. Mail to the address on the reverse, or fax to (614) 438-4355.

Your Name:	Date:
Organization Name:	Mettler Toledo Order Number
Address:	Part / Product Name:
	Part / Model Number:
	Serial Number:
Phone Number: ( ) Fax Number: ( )	Company Name of Installation:
E-mail Address:	Contact Name:
	Phone Number:

How well did this product meet your expectations in its intended use?	Comments:
☐ Met and exceeded my needs	
☐ Met all needs	
☐ Met most needs	
☐ Met some needs	
☐ Did not meet my needs	

PROBLEM:

UNACCEPTABLE DELIVERY:

- ☐ Shipped late
- ☐ Shipped early
- ☐ Shipped to incorrect location
- ☐ Other (Please Specify)

OUT OF BOX ERROR:

- ☐ Wrong item
- ☐ Wrong part
- ☐ Missing equipment
- ☐ Equipment failure

- ☐ Wrong documentation
- ☐ Missing documentation
- ☐ Incorrectly calibrated
- ☐ Other (Please specify)

Comments:

DO NOT WRITE IN SPACE BELOW; FOR METTLER TOLEDO USE ONLY

☐ Retail ☐ Light Industrial ☐ Heavy Industrial ☐ Systems

RESPONSE: Include Root Cause Analysis and Corrective Action Taken.

FOLD THIS FLAP FIRST

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Mettler-Toledo, Inc.
Quality Manager - MTWI
1150 Dearborn Drive
Worthington, OH 43085
USA

Please seal with tape.

Declaration of Conformity
Konformitätserklärung
Déclaration de Conformité
Declaración de Conformidad
Verklaring de Overeenstemming
Dichiarazione di Conformitá

We/Wir/Nous/WU/Noi: **Mettler-Toledo, Inc.**
1150 Dearborn Drive
Worthington, Ohio 43085 USA

declare under our sole responsibility that the product,
erklären, in alleiniger Verantwortung, daß dieses Produkt,
déclarons sous notre seule responsabilité que le produit,
declaramos, bajo nuestra sola responsabilidad, que el producto,
verklaren onder onze verantwoordelijkheid, dat het product,
dichiariamo sotto nostra unica responsabilitá, che il prodotto,

Model/Type: **Jaguar**

to which this declaration relates is in conformity with the following standard(s) or other normative document(s).
auf das sich diese Erklärung bezieht, mitder/den folgenden Norm(en) oder Richtlinie(n) übereinstimmt.
Auquel seréfère cette déclaration est conforme à la (aux) norme(s) ou au(x) document(s) normatif(s).
Al que se refiere esta declaración es conforme a la(s) norma(s) u otro(s) documento(s) normativo(s).
Waarnaar deze verklaring verwijst, aan de volende norm(en) of richtlijn(en) beantwoordt.
A cui si riferisce questa dichiarazione è conforme alla/e sequente/i. norma/e o documento/i normativo/i.

CE Conformity / CE-Konformität / Conformité CE

90/384/EU	Nonautomatic Balances and Scales / Nichteselbsttätige Waagen / Balances à Functionnement non automatique
EN45501:1992	Adopted European, Standard / Norme Européenne Adoptée / Angenommene Europäische Norm
89/336/EU	EMC Directive / EMU-Richtlinie / Directive concernant la CEM
EN55022, A 01.04.87	Emissions / Funkstörungen

Other Directives and Standards / Andere Richtlinien und Normen / Autres documents
corresponding to local requirements / entsprechend lokalen Anforderungen / correspondant aux exigences locales

73/23/EU	Low Voltage / Niederspannung / basse tension
EN61010	el. Safety / el. Sicherheit / sécurité el.
UL1950	el. Safety / el. Sicherheit / sécurité el. (if UL mark is applied)
C222.2 No. 950-M89	el. Safety / el. Sicherheit / sécurité el. (if CUL mark is applied)
FCC, Part 15, class A	Emissions / Funkstdörungen

Office of Weights and Measures
Worthington, Ohio USA
October, 1996
A14074900A
according to EN45014

FCC Notice

This device complies with Part 15 of the FCC Rules and the Radio Interference Requirements of the Canadian Department of Communications. Operation is subject to the following conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

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 own expense.

ORDERING INFORMATION

It is most important that the correct part number is used when ordering parts. Parts orders are machine processed, using only the part number and quantity as shown on the order. Orders are not edited to determine if the part number and description agree.

COPYRIGHT

PRECAUTIONS

READ this manual BEFORE operating or servicing this equipment.

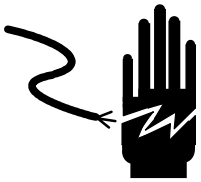
FOLLOW these instructions carefully.

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.

CALL METTLER TOLEDO for parts, information, and service.

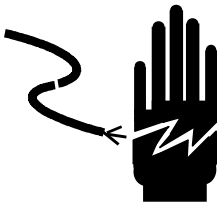


⚠ WARNING

DISCONNECT ALL POWER TO THIS UNIT BEFORE INSTALLING, SERVICING, CLEANING, OR REMOVING THE FUSE. FAILURE TO DO SO COULD RESULT IN BODILY HARM AND/OR PROPERTY DAMAGE.

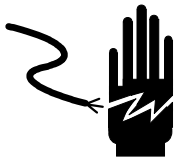
⚠ CAUTION

OBSERVE PRECAUTIONS FOR HANDLING ELECTROSTATIC SENSITIVE DEVICES.



⚠ WARNING

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.



⚠ WARNING

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

CONTENTS

Installation Guide

Introduction

The following information is intended ONLY to help you install the JAGXTREME terminal. Any internal wiring, installation of options or programming should be performed only by qualified technicians. This information is found in the JAGXTREME Terminal Technical Manual provided on the Documentation CD that is included with the terminal.

Note that separate installation instructions are provided in this document for the various enclosure types: General Purpose, Panel Mount/Panel Mount-Blind Chassis, Harsh Environment, and Harsh Environment Wall Mount.

Unpacking and Inspection

1. If upon delivery the shipping container for the JAGXTREME terminal appears damaged, check for internal damage and file a freight claim with the carrier if required.
2. If the container is undamaged, unpack the terminal from its protective package and inspect each component for damage.
3. Verify that you have the correct package contents. To install the terminal, you need the terminal, the screwdriver provided, and these instructions. You may also need common hand tools, such as flat and Phillips head screwdrivers for the general purpose unit and a drill and wrenches for use with the harsh environment unit. All other package contents should remain in the box.

   Package contents for all JAGXTREME terminals include:

   - JAGXTREME terminal
   - Screwdriver
   - Installation instructions
   - Set of capacity labels
   - Weights and Measures sealing screws
   - Mating connectors for the I/O port
   - Cable tie wraps
   - JAGXTREME documentation CD-ROM

If you are not saving the packaging, please recycle the materials

   Package contents for the panel mount and blind chassis JAGXTREME terminals also include:

   - 6 nylon cable ties
   - 2 mm Allen wrench (panel mount only)

   Package contents for the harsh environment JAGXTREME terminal also include:

   - 2 stainless steel wall mount brackets
   - 4 stainless steel bolts for attaching the wall mount brackets

Standards Compliance

UL and cUL Listing

The JAGXTREME terminal has been tested and complies with UL 1950 and CSA 22.2 No. 950-M89. The JAGXTREME terminal carries the UL and cUL labels.

Weights and Measures Approval (US)

The JAGXTREME terminal meets or exceeds requirements for Class III or IIIL devices. Certificate of Conformance No. 94-096A4 was issued under the National Type Evaluation Program of the National Conference on Weights and Measures.

Weights and Measures Approval (Canada)

The JAGXTREME terminal meets or exceeds requirements for a 10,000 division rating and approval AM-5041 has been issued by statutory authority of the Minister of Industry, Science and Technology of Canada.

CE Conformity

The JAGXTREME terminal conforms to the following European Union regulations:

- 90/384/EU—Non-automatic Balances and Scales
- EN45501:1992—Adopted European Standard
- 89/336/EU—EMC Directive
- EN55022, A 01.04.87

Weights and Measures Approval (Australia)

The JAGXTREME terminal meets the requirements for Class III and IIIL non-automatic weighing instruments as defined in the National Standards Commission, Document 100. The National Standards Commission has approved the JAGXTREME terminal for use with approved and compatible platforms.

Conducted and Radiated Emissions (RFI)

The JAGXTREME terminal meets or exceeds FCC Part 15 for conducted and radiated emissions requirements as a Class A digital device.

Radio Frequency Interference Susceptibility

The JAGXTREME terminal meets US, Canadian, and European requirements for RFI susceptibility as listed in the following table with a maximum of one display increment of change when calibrated for recommended builds.

Radio Interference Frequency	Field Strength
26-1000 MHz	3 volts/meter

AC Power Line Voltage Variation

The JAGXTREME terminal meets NIST H-44, Canadian Gazette Part 1, and OIML-SP7/SP2 line voltage variation specifications as listed in the following table.

AC Power Line Voltages						
Specification	AC Line Voltage			Line Frequency in Hz		
Line Voltage Variation	Minimum	Nominal	Maximum	Minimum	Nominal	Maximum
NIST H-44	100	120	130	59.5	60	60.5
Canadian	108	120	132	58.8	60	61.2
OIML-SP7/SP2	102	120	132	58.8	60	61.2
	187	220	242	49.0	50	51
	204	264	264	49.0	50	51

Environmental Considerations

Temperature and Humidity

- Operating temperature: 14 to 113ºF (-10 to 45ºC) at 10% to 95% humidity, non-condensing.
- Storage temperature: -40 to 140ºF (-40 to 60ºC) at 10% to 95% humidity, non-condensing.

Environmental Protection

The JAGXTREME terminal is not intrinsically safe and must not be installed in areas classified as hazardous by the National Electric Code (NEC) unless appropriate hazardous area options provided by METTLER TOLEDO are used and the installation is performed by a qualified service technician.

WARNING!

THE JAGXTREME TERMINAL IS NOT INTRINSICALLY SAFE! DO NOT USE IN AREAS CLASSIFIED AS HAZARDOUS BY THE NATIONAL ELECTRIC CODE (NEC) BECAUSE OF COMBUSTIBLE OR EXPLOSIVE ATMOSPHERES.

Power Considerations

- 85 to 264 VAC with a line frequency of 47 to 63 Hz.
- Power consumption -- 20 Watts maximum.
- Power termination -- single three-position removable terminal strip.
- The wire size range -- 16 to 12 AWG.

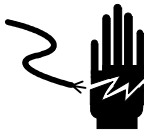
The integrity of the power ground for equipment is important for safety and for the dependable operation of the terminal and its associated scale bases. A poor ground can result in an unsafe condition if an electrical short develops in the equipment. A good ground connection is needed to assure extraneous electrical noise pulses are minimized. It is important that the equipment does not share power lines with noise generating equipment like heavy load switching, motor starter circuits, RF thermal heaters, and inductive loads.

To confirm ground integrity, a commercial branch circuit analyzer is recommended. This instrument uses a high amperage pulse to check ground resistance. It measures the voltage from the neutral wire to the ground connection and will provide an assessment of the line loading. Instructions with the instrument give guidelines about limits that assure good connections. Visual inspections and a query of the user will provide information about equipment sharing the power line.

The power line for the terminal must not be shared with equipment such as motors, relays, or heaters that generate line noise. If adverse power conditions exist, a dedicated power circuit or power line conditioner may be required.

WARNING!

USE ONLY THE POWER CORD SUPPLIED OR AN EQUIVALENT TYPE. U.S. MODELS USE TYPE SJT CORD; EC MODELS USE HARMONIZED TYPE H05VV-F CORDS.



WARNING!

IMPROPER INSTALLATION OF THE POWER CABLE WILL RESULT IN APPLYING 120 VAC TO GROUND. THE HOT WIRE MUST BE ON TOP. THE TERMINAL SCREWS SHOULD FACE AWAY FROM THE OPTION CIRCUIT BOARD SLOTS.

CAUTION

FOR PANEL MOUNT INSTALLATIONS:

• INCLUDE A POWER DISCONNECT SWITCH IN AC POWER WIRING.

• SWITCH MUST BE WITHIN 10 FEET (3 METERS) AND EASILY ACCESSIBLE TO OPERATOR.

• SWITCH MUST BE CLEARLY IDENTIFIED AS DISCONNECT FOR TERMINAL POWER.

• SWITCH AND/OR CIRCUIT BREAKER MUST COMPLY WITH APPROPRIATE ELECTRICAL CODES (FOR EC—IEC947).

FOR DESK/WALL INSTALLATIONS:

• POWER CORD PLUG MUST BE CLEARLY IDENTIFIED AS DISCONNECT FOR TERMINAL POWER.

• POWER CORD MUST BE PLUGGED INTO OUTLET WITHIN 10 FEET (3 METERS) AND EASILY ACCESSIBLE TO OPERATOR.

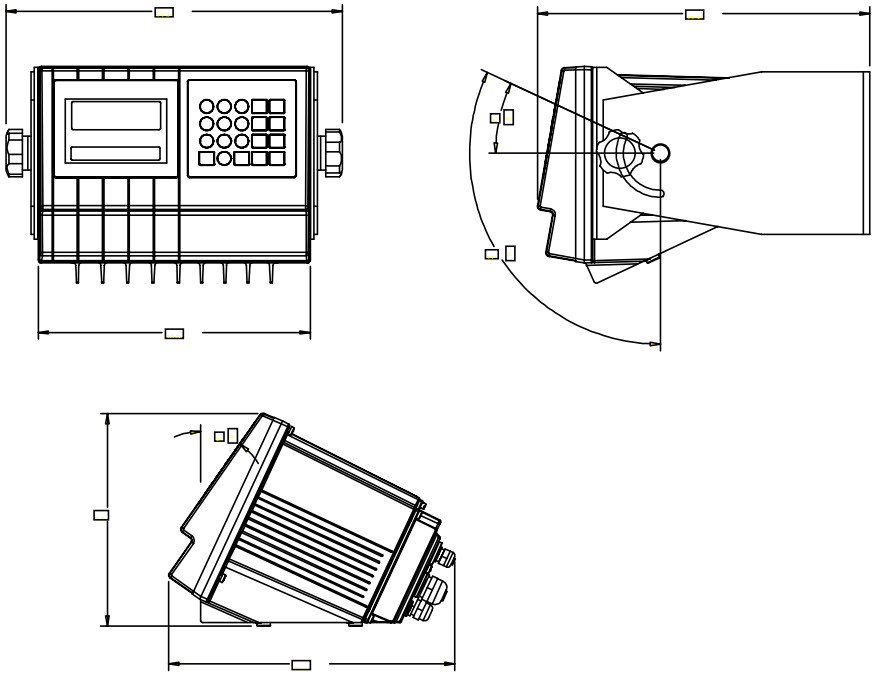
CAUTION

DO NOT APPLY AC POWER TO THE JAGXTREME TERMINAL. POWER SHOULD NOT BE APPLIED UNTIL A QUALIFIED SERVICE TECHNICIAN HAS COMPLETED ALL INTERNAL WIRING.

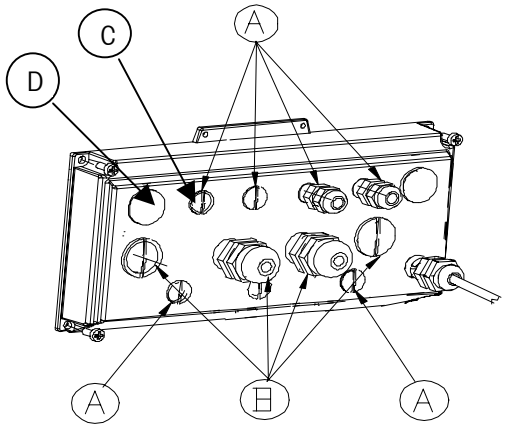
Installing the General Purpose Model

Dimensions:

- 12.45 in. (25 cm) wide x 7.86 in. (20 cm) high
- 10.6 in (27 cm) deep



1. Place the terminal at the operating site. Refer to the illustrations on this page and the next when following the directions provided here.
2. Remove the four screws securing the rear access cover to the main housing using a Phillips head screwdriver.
4. With the rear access cover removed, you can now make connections to the unit. (Refer to the illustration and table below for suggested wire connections.)
5. Pass the cables that enter the enclosure through an appropriately sized cable grip **before** connecting the wires.
6. Tighten the cable grip to provide a water-tight seal around the cable after re-securing the back cover. This allows any internal cable slack to be received through the cable grip.
7. Connect a PC/AT type keyboard, if desired, using an optional external keyboard connector kit (P/N 0917-0215).
8. Continue to the section entitled Connecting the Load Cell.



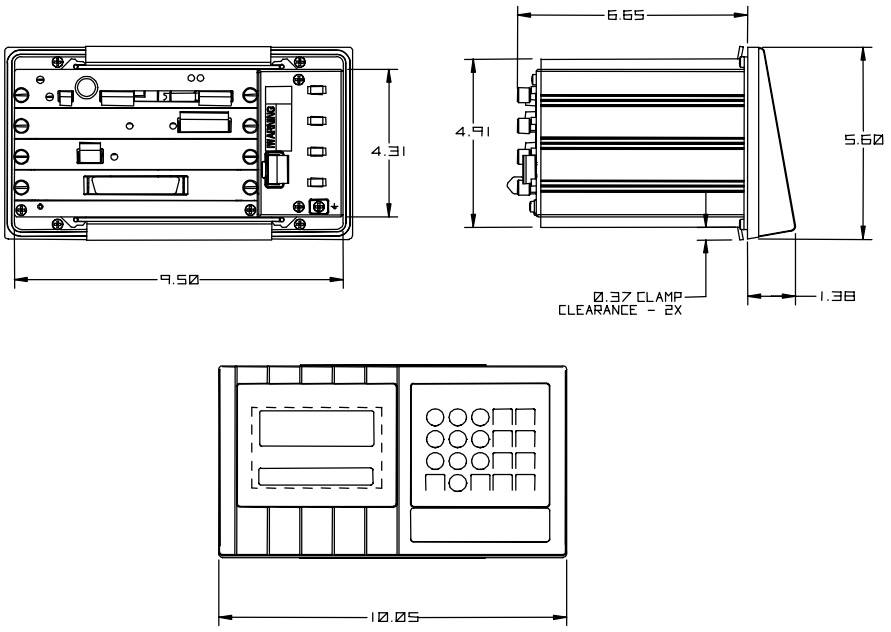
Reference Letter	Suggested Cable
A	Serial I/O Cables (Except DigiTOL) PLC I/F Cabling
B	Analog Load Cell Cabling DigiTOL Load Cell Cabling
C	Ethernet
D	QWERTY

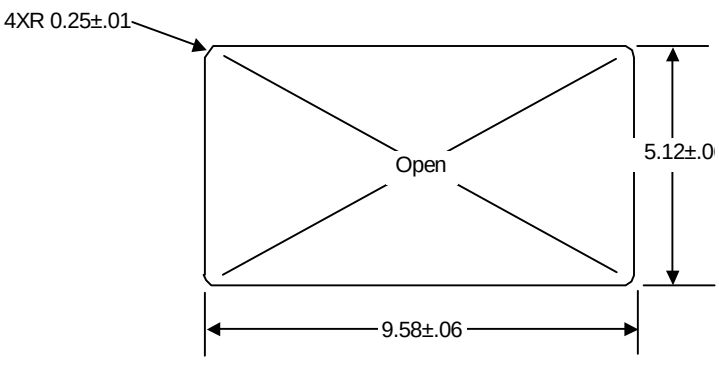
General Purpose Model Wiring Connections and Cable

Installing the Panel Mount Model

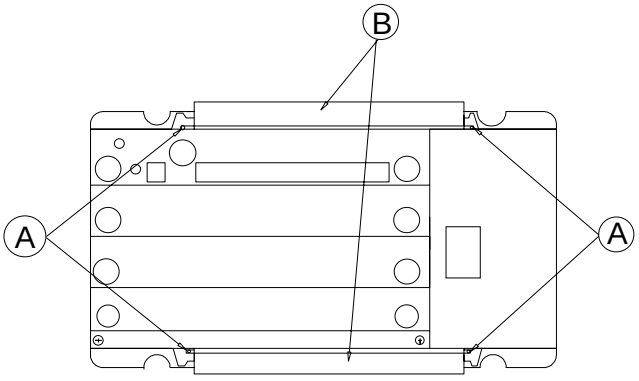
Dimensions (Panel Mount):

- 10.05 in. (25.5 cm) x 5.6 in. (14 cm) at the front of the terminal
- 9.5 in. (24 cm) x 4.91 in. (12.5 cm) at the rear
- 8.03 in. (21 cm) deep





1. Refer to the illustrations provided.
2. Cut an opening 9.58 in. (24.33 cm) × 5.12 in. (13.0 cm) to accommodate the terminal. The tolerance for the panel cutout is ±0.06 in. (0.15 cm).
3. Using the Allen wrench included with the unit, remove the four retaining set screws (A) located at the rear of the enclosure in the top and bottom mounting plate grooves.
4. Remove both mounting plates (B).
5. Insert the terminal through the panel opening from the front until it is flush against the panel. Confirm that the terminal is installed right side up.
6. Slide the top and bottom mounting plates back in the grooves and push them flush against the panel from the back. The flared end of the plate should contact the back of the panel.
7. Holding the unit in place, replace the four set screws and tighten until the unit is secured and the front panel gasket is compressed.
8. Inspect the front of the terminal for a good seal to the front of the enclosure.
9. Continue to the section entitled Connecting the Load Cell.



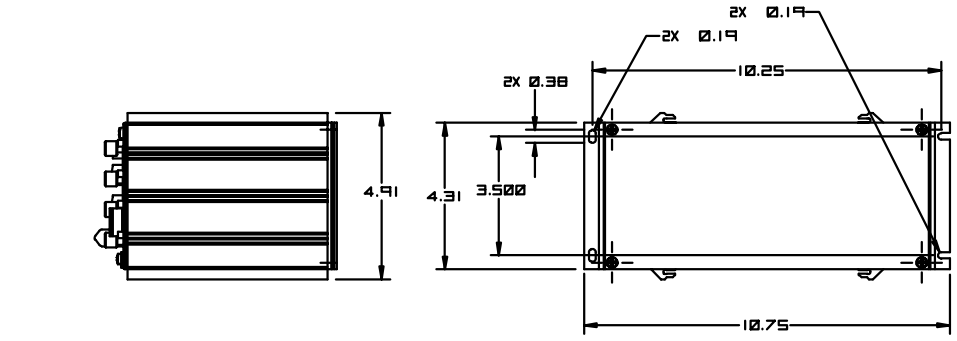
Installing the Blind Panel Mount Unit

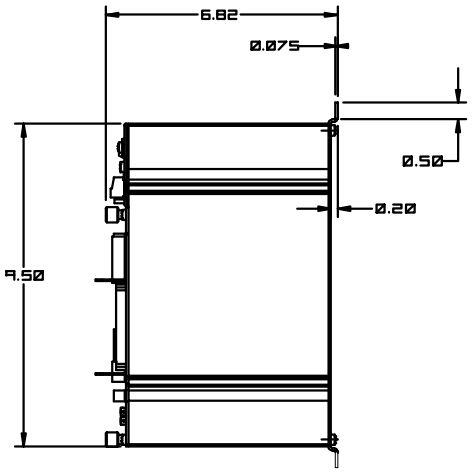
Panel Mount Enclosure—Blind Chassis (PB)

The front of the panel mount enclosure has a blank plate to cover the electronics and to provide a method of mounting. There is no keyboard or display on the front of the unit. This allows the terminal's use as a "blind" terminal (installed behind a panel,) sharing another JAGXTREME terminal's keyboard and display via the Ethernet connection. The terminal enclosure has a NEMA 1 or IP30 rating with a "blind" front panel.

The blind chassis mount model measures:

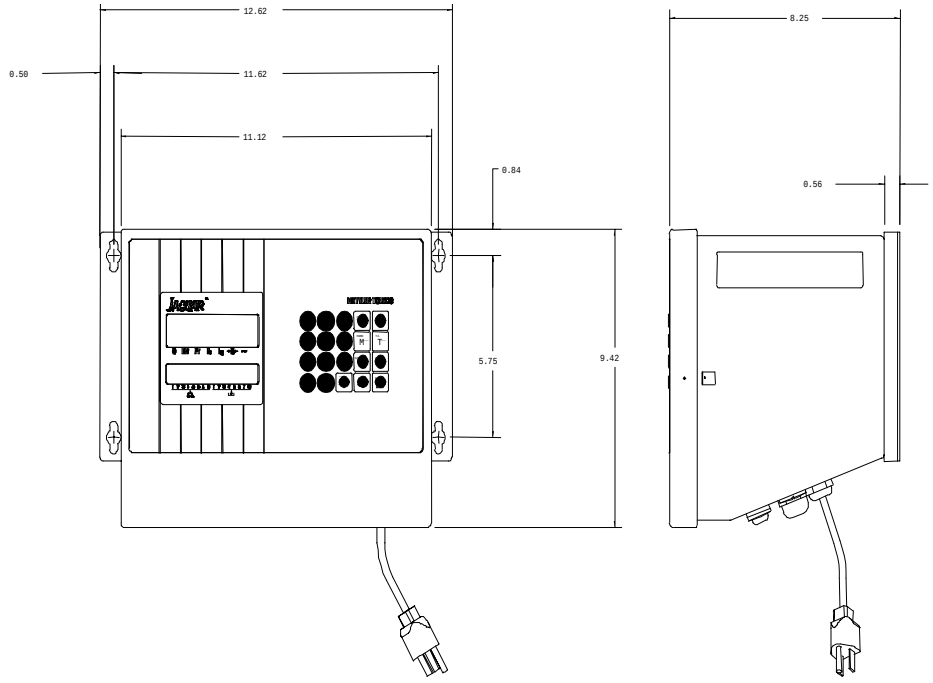
- 10.75 in. (27 cm) × 4.31 in. (10.9 cm) at the base
- 10.25 in. (26 cm) × 3.91 in. (10 cm) c-c mounting
- 9.5 in. (24.1 cm) × 5.00 in. (13 cm) chassis



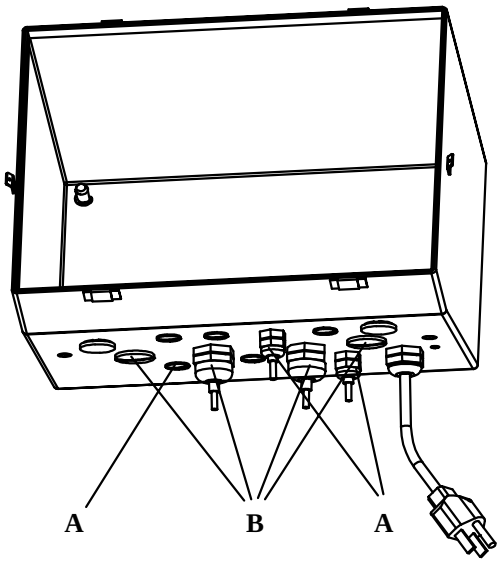


Harsh Environment Enclosure

Dimensions: 12.62 in (32.1 cm) x 8.03 in (21 cm) x 9.3 in (23.6 cm)



1. Disconnect power.
2. Locate the two slots on the bottom lip of the front of the harsh environment enclosure.
3. Gently insert the blade of a slotted screwdriver into one of the slots and press inward (toward the enclosure). This releases a pressure tab that allows the access panel of the enclosure to open slightly.
4. Repeat steps 2 and 3 for the other slot.
5. Remove the access panel away from the enclosure. The access panel is connected to the Controller PCB by a cable and cannot be removed without disconnecting the cable. You should be able to access the unit with the front panel connected.
6. With the access cover removed, you are now ready to make connections to the unit. The illustration and table below describe the recommended wiring connections.
7. Proceed to the section entitled Connecting the Load Cell.



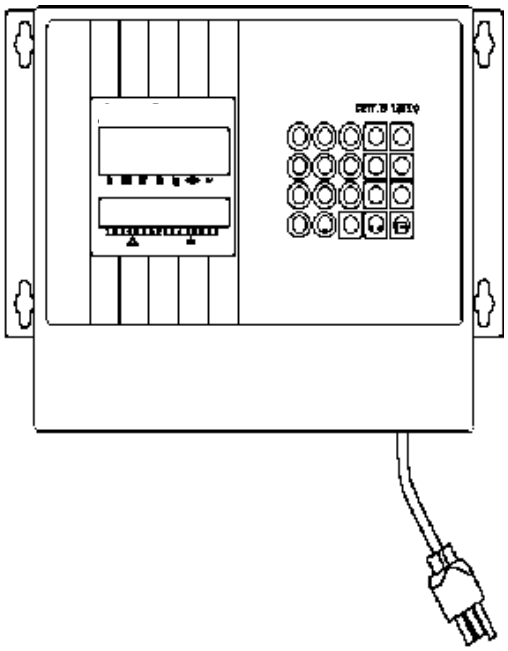
Reference Letter	Suggested Cable
A	Serial I/O Cables (Except DigiTOL) PLC I/F Cabling
B	Analog Load Cell Cabling DigiTOL Load Cell Cabling
C	Ethernet Cabling

Installing the Wall Mount Harsh Environment Enclosure

Dimensions: 12.62 in (32.1 cm) x 8.03 in (21 cm) x 9.3 in (23.6 cm)

1. Locate the two mounting brackets that came in the JAGXTREME terminal package.
2. Mount the brackets using the four stainless steel screws supplied with the unit. Refer to figure below and note the correct positioning of the brackets. The slotted holes must protrude beyond the enclosure and the bracket tabs must point toward the front as shown.

* Shown with wall mount brackets (included with enclosure) installed.



3. Tighten the brackets to the back of the enclosure (torque 25 inch pounds).
4. Using the dimensions above, prepare the mounting surface to accept the enclosure. The mounting surface and brackets must be able to support a total of 45 lb (20 kg).
5. Place the enclosure on the mounting surface and secure with appropriate fasteners. Continue to the section entitled Connecting the Load Cell.

Connecting the Load Cell

Make the load cell connection to the Controller PCB (DigiTOL scales), the optional Analog A/D PCB (analog load cells), or the POWERCELL I/O PCB.

WARNING!

IF THE SCALE IS LOCATED IN A HAZARDOUS ENVIRONMENT, A SPECIAL ANALOG LOAD CELL BOARD MUST BE USED WITH A METTLER TOLEDO INTRINSIC SAFETY MODULE (BARRIER). LOAD CELLS MUST BE ON APPROVED LISTING 122502 AND INSTALLED IN ACCORDANCE WITH 118164 AND 103998.

CAUTION

TO AVOID DAMAGE TO THE PCB OR LOAD CELL, REMOVE POWER FROM THE JAGXTREME TERMINAL AND WAIT AT LEAST 30 SECONDS BEFORE CONNECTING OR DISCONNECTING ANY HARNESS.

CAUTION

DO NOT ATTACH AN ANALOG LOAD CELL TO THE DIGITOL SCALE INPUT ON THE CONTROLLER PCB COM2. DO NOT ATTACH A DIGITOL SCALE TO THE ANALOG LOAD CELL INPUT ON THE OPTIONAL ANALOG A/D PCB. DOING SO MAY RESULT IN DAMAGE TO THE LOAD CELL OR PCB.

Analog Load Cell Connections

The maximum cable length for analog load cell connections to the terminal depends on the total scale resistance (TSR) of the scale base. To calculate TSR:

$$TSR = \frac{\text{Load Cell Input Resistance (Ohms)}}{\text{\#Load Cells}}$$

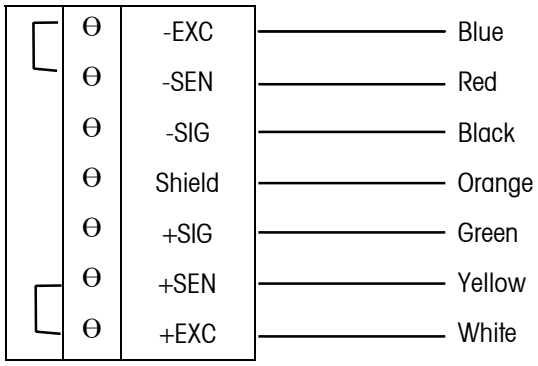
The chart below gives recommended cable lengths based on TSR and cable gauge.

Recommended Maximum Cable Length			
TSR (Ohms)	24 Gauge* (feet/meters)	20 Gauge (feet/meters)	16 Gauge (feet/meters)
350	800/243.84	2000/609.6	4000/1219.2
87	200/60.96	600/182.88	1000/304.8
58	100/30.48	300/91.44	500/152.4
35	70/21.336	190/57.91	350/106.68

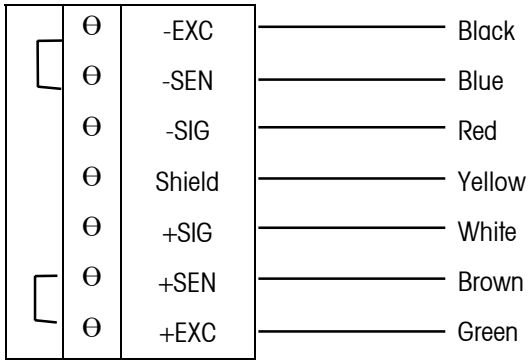
* Refer to the section entitled Cables/Connectors in Chapter 6 of this manual.

The following diagrams describe analog load cell terminal strip wiring for standard 6-wire cable, Masstron 6-wire cable, and standard 4-wire cable.

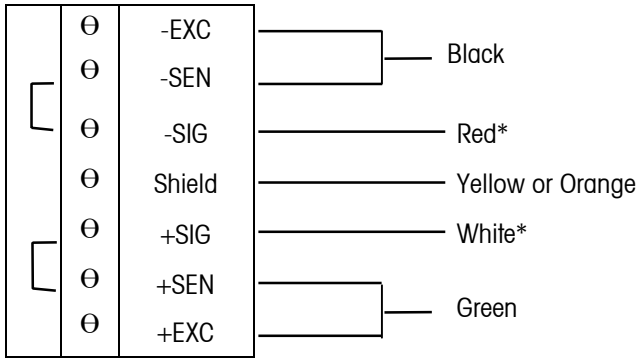
Standard 6-wire Cable



Masstron 6-wire Cable



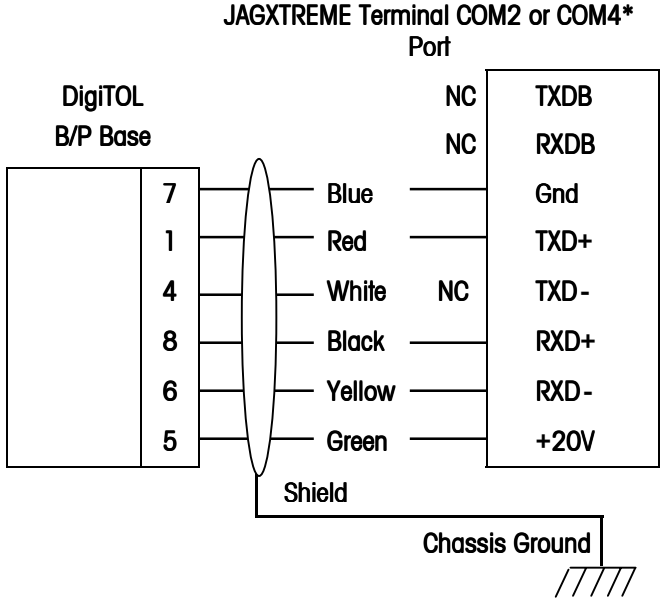
4-wire Cable



* If an increase in load results in a decrease in weight display, reverse the signal wires (+SIG and –SIG).

UltraRes and DigiTOL Load Cell Connections

The maximum recommended cable length for all DigiTOL bases is 50 feet (15.24 meters). The following diagram describes DigiTOL load cell terminal strip wiring.



*When interfacing a DigiTOL or UltraRes base to COM4 (available on the optional Multifunction PCB), W2 must be set for 20V. Refer to the section entitled JAGXTREME Terminal Jumper and Switch Settings in this chapter.

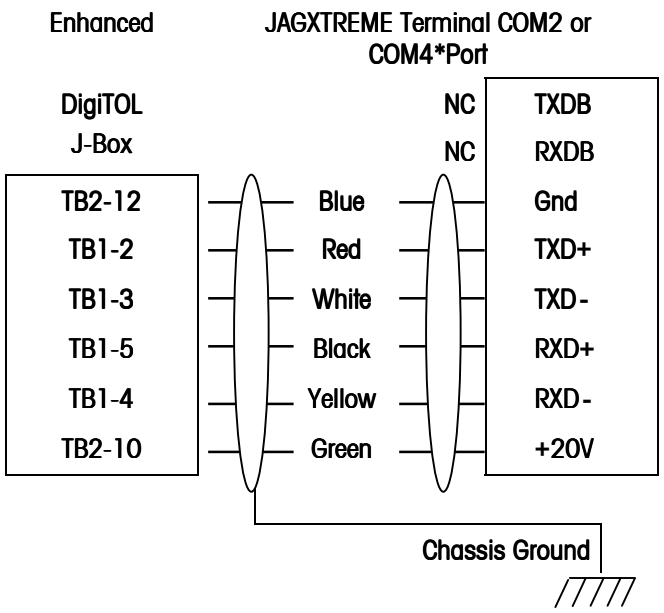
Enhanced DigiTOL J-Box Connections

Use the following table to determine the cable gauge and recommended distance between the JAGXTREME terminal and the Enhanced DigiTOL J-Box.

Cable Gauge	Cable Distance	Part Number
6 cond. 24 AWG	Up to 150 feet (45.72 meters)	510624370 or 14264100A
*6 cond. 20 AWG	Up to 300 feet (91.44 meters)	510620370

*6 conductor 16 AWG cable can also be used. The maximum cable distance remains 300 feet.

The following diagrams describe DigiTOL terminal strip wiring.

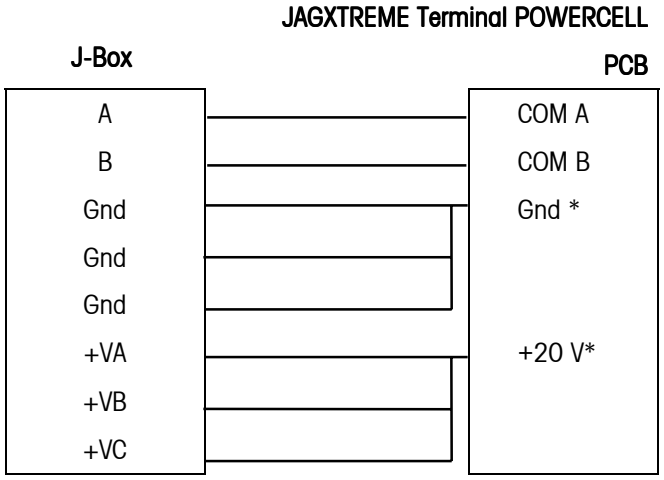


POWERCELL Connections (Non-Hazardous Area POWERCELL Applications)

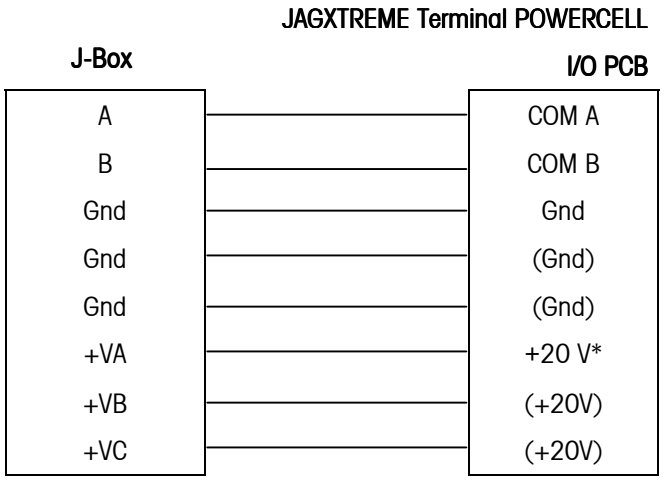
Recommended maximum cable distance is 900 feet (274.32 meters) for all non-hazardous applications regardless of the number of cells (assuming 16 or 20 gauge wire).

For more details on installations in hazardous areas using POWERCELL Intrinsic Safety Barriers, refer to the POWERCELL installation instructions (P/N 142463 00A), and Print TC100442 (included in the POWERCELL installation instructions).

*There should be three +20V and three ground wires in the cable between the Junction Box and the POWERCELL PCB.



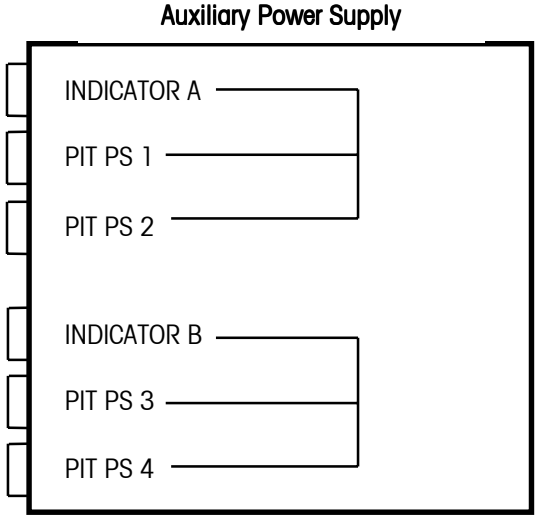
Connection for revised JAGXTREME terminal POWERCELL PCB.



External power connector Pin 1 is +V and Pin 2 is ground.

POWERCELL Connections to DigiTOL Scales with POWERCELLs and Pit Power Supplies

For applications in which the POWERCELL PCB is connected to a DigiTOL Scale with POWERCELLs, the JAGXTREME terminal must be wired with the auxiliary power supply (P/N 0917-0168 for 100/110/120 VAC operation, 0917-0169 for 220/240 VAC operation).

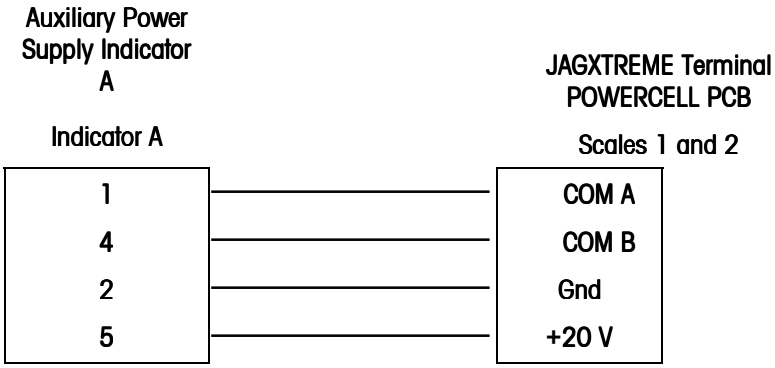


The purpose of the auxiliary power supply is to provide two identical circuits, each with a 24 VDC power supply output capable of driving up to two Pit Power Supplies. Each Pit Power Supply can drive a maximum of 12 load cells. As shown above, the INDICATOR A and B inputs are connected to the PIT PS outputs. The two circuits are completely isolated. The only exception is the same 24 VDC power supply output being used for PIT PS1 and 3. The second 24 VDC supply is shared between PIT PS2 and 4.

If only one channel is needed, INDICATOR A must be used.

The W1 jumper is located on the printed circuit board in the Auxiliary Power Supply. The W1 jumper enables and disables the circuit that senses voltage at the INDICATOR B input. If this circuit is enabled (W1 removed) and input voltage at pin 5 of both INDICATOR A and B is not present, the 24 VDC output at PIT PS 1, 2, 3, and 4 will be turned OFF. If only the INDICATOR A input is being used, jumper W1 must be inserted shorting both pins.

Connect the JAGXTREME terminal to the Auxiliary Power Supply as follows:



If a second JAGXTREME terminal exists, the interface cable between the second terminal and the Auxiliary Power Supply would be wired the same. However, the interface cable would plug into the Auxiliary Power Supply at INDICATOR B. The W1 jumper on the Auxiliary Power Supply **must not** be shorting the two pins together.

Replacing an Existing 8146 or 8530 on a DigiTOL Scale having an Auxiliary Power Supply and Pit Power Supply(s)

Wire the JAGXTREME terminal POWERCELL PCB to the Auxiliary Power Supply as shown previously. The home-run cables plugged into PIT PS 1, 2, 3, or 4 can be left as is.

Replacing an Existing 8530 on a DigiTOL Scale with a Pit Power Supply and not having an Auxiliary Power Supply

An Auxiliary Power Supply must be supplied. Wire the JAGXTREME terminal POWERCELL PCB to the Auxiliary Power Supply as shown previously. Plug the home-run cable from the 8530 into PIT PS 1.

Shield wire must be connected to chassis ground or "GND" terminal at the JAGXTREME terminal end for reliable operation.

You can purchase this adapter harness (0900-0284) or cut the base cables and wire directly to the terminals.

Replacing an Existing 8146 or 8530 on a DigiTOL Scale if a Second Scale Is Present

The POWERCELL PCB should be programmed for two scales (Scale 1 + Scale 2 = 24 load cells maximum). The home-run cable(s) should be plugged into PIT PS 1 (and PIT PS 2 if a second home-run cable exists).

Replacing an Existing 8146 or 8530 on a DigiTOL Scale if a Third Scale Is Present

The first JAGXTREME terminal with a POWERCELL PCB should be wired as indicated previously. The second terminal with a POWERCELL PCB should be wired into INDICATOR B of the Auxiliary Power Supply and the home-run cable going to the third scale should be plugged into PIT PS 3 or 4.

Home-Run Cable Maximum Length

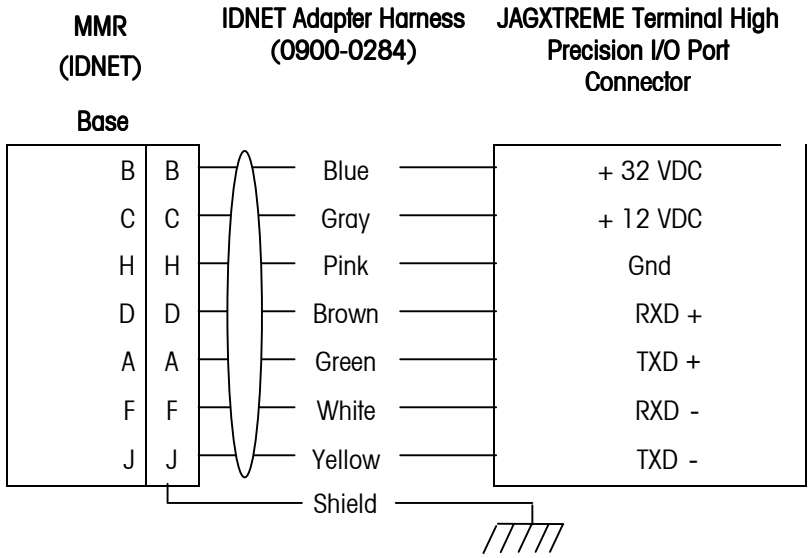
The maximum cable distance from the PIT Power Supply to the JAGXTREME terminal POWERCELL PCB depends on the number of POWERCELLs, home-run cable gauge, and the AC power voltage level. Use the following table to determine the cable gauge and recommended cable distance:

Number of Cells	Home-Run Cable Distance	
	20 Gauge (Feet/Meters)	16 Gauge (Feet/Meters)
4	900/274.32	900/274.32
6	712/217.018	900/274.32
8	475/144.78	900/274.32
10	332/101.19	878/267.61
12	237/72.24	644/196.29

MMR (IDNET) Base Cable Connections

The maximum recommended cable length for MMR (IDNET) bases is 300 feet (91.44 meters.)

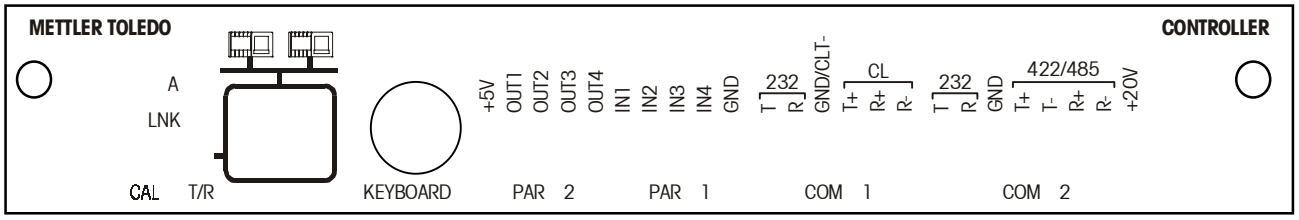
The following diagram describes MMR cell terminal strip wiring.



Serial Port Connections— Controller PCB

Refer to the following diagrams for proper cable connections to the JAGXTREME terminal's serial ports COM1 and COM2. COM1 and COM2 are located on the Controller board, which is positioned in the top slot.

The COM1 and COM2 terminal strips will accommodate wire sizes from 23 to 16 AWG. The terminal strips may be removed to facilitate wiring. Removal of the terminal strips permits easier viewing of the terminal designations printed on the board back plate.



For enclosures using the pass-through cable grips, you must pass the cable through the grip, grommet, and housing before wiring to the connector.

COM1 20 mA (Controller PCB Serial Port)

The following diagram and table describe COM1 pin-to-pin cable connections using a 20 mA loop. The maximum recommended cable length for 20 mA interfacing is 1000 feet (304.8 meters).

JAGXTREME Terminal COM1

Θ	TXDA	
Θ	RXDA	
Θ	Gnd	Signal Ground (Active Current Loop Transmit -)
Θ	CLTX+	Active Current Loop Transmit +
Θ	CLRX+	Current Loop Receive +
Θ	CLRX-	Current Loop Receive -

Compatible METTLER TOLEDO Serial Devices								
JAGXTREME Terminal COM1	8804* 8860*	8806**	8855	8842 8843 8844 8845 8856***	8622 8623	8614 8616 8619	8617 9323 9325	MP750
TXDA	—	—	—	—	—	—	—	—
RXDA	—	—	—	—	—	—	—	—
GND	18	18	22	23	10	12	9	11
CLTX+	16	16	3	25	8	11	8	25
CLRX+	—	11	—	—	—	—	—	—
CLRX–	—	22	—	—	—	—	—	—

* Pinout shown is for use with Plug In Adapter (8804 P/N 127358 00A; 8860 P/N 128019 00A).

** This cable also requires jumper pins 12 to 23 at the 8806 end of the Interface cable.

*** The 8856 requires the optional 20 mA to RS-232 Adapter (P/N 900936 00A) for 20 mA loop applications.

COM1 RS-232 (Controller PCB Serial Port)

The following diagram and table describe COM1 pin-to-pin cable connections using an RS-232 cable. Maximum recommended cable length is 50 feet (15.24 meters).

JAGXTREME Terminal COM 1

Θ	TXD	RS-232 Transmit
Θ	RXD	RS-232 Receive
Θ	GND	Signal Ground
Θ	CLTX+	
Θ	CLRX+	
Θ	CLRX-	

Pin Connection for METTLER TOLEDO Devices Using COM1 RS-232			
JAGXTREME Terminal COM1	**8622 8804**, 8806 8840, 8842 8843, 8844 8845, 8855*** 8856, 8860** 8865, MP750**	**8617-TB2 9323-TB2 9325-TB2**	**8618**
TXDA	3*	2	InputCom
RXDA	—	—	—
GND	7*	3	RS232 Input
CLTX+	—	—	—
CLRX+	—	—	—
CLRX–	—	—	—

*Each of these devices uses this connection.

**Pinout shown is for use without Plug In Adapter (8804 P/N 127358 00A, 8860 P/N 128019 00A).

***The 8855 using RS-232 must have the 129618 00A Interface PCB. The baud rate for the JAGXTREME terminal must be set to 300 baud. If the interface PCB is part number 123654 00A or 137651 00A, the JAGXTREME terminal TXDA terminal must be connected to Pin 2 of the 8855 Interface PCB. In this case, set the JAGXTREME terminal baud rate to 1200.

COM2/COM4 RS-232 (Controller PCB Serial Port)

The following describes COM2 pin-to-pin cable connections using an RS-232 cable and the connections to COM4 when an optional Multifunction I/O PCB is installed. The maximum recommended cable length for RS-232 is 50 feet (15.24 meters). Maximum recommended total distance for RS-422 and RS-485 is 2000 feet (609.6 meters).

JAGXTREME Terminal COM2/COM4

The W2 jumper on the Multifunction I/O PCB determines the COM4+20 V terminal voltage output. Please refer to the section entitled JAGXTREME Terminal Jumper and Switch Settings in this chapter.

Θ	TXD	RS-232 Transmit
Θ	RXD	RS-232 Receive
Θ	GND	Signal Ground
Θ	TXD+	RS-422/485 Transmit +
Θ	TXD-	RS-422/485 Transmit -
Θ	RXD+	RS-422/485 Receive +
Θ	RXD-	RS-422/485 Receive -
Θ	+20 V	+20 VDC Supply

Pin Connection for METTLER TOLEDO Devices Using COM2 RS-232/RS-485			
JAGXTREME Terminal COM2	**8622 8804** 8806 8840 8842 8843 8844 8845 8855*** 8856 8860** 8865 MP750**	**8617-TB2 9323-TB2 9325-TB2**	**8618**
TXDB	3*	2	—
RXDB	—	—	—
GND	7*	3	—
TXD+	—	—	RS-485B
TXD–	—	—	RS-485A
RXD+	—	—	—
RXD–	—	—	—
+20 V	—	—	—

*Each of these devices uses this connection.

Pinout shown is for use **without Plug In Adapter, (8804 P/N 127358 00A; 8860 P/N 128019 00A).

***The 8855 using RS-232 must have the 129618 00A Interface PCB. The JAGXTREME terminal must be set to 300 baud. If the interface PCB is part number 123654 00A or 137651 00A, the JAGXTREME terminal TXDA terminal must be connected to Pin 2 of the 8855 Interface PCB. In this case the JAGXTREME terminal must be set to 1200 baud.

Discrete Wiring

The Controller PCB contains four discrete input and four discrete output connections.

For more information see the section entitled Inputs in Appendix 2 at the back of this manual.

PAR 1 Input Connections

The input connections must be referenced to ground. A switch or relay contact may be used to make this connection. The remote device should hold the input at logic ground for at least 100 ms. Scale functions are performed when the input is held to ground (leading edge triggered). The maximum recommended cable length between the remote device and the JAGXTREME terminal is 10 feet (3.04 meters).

Each of the four PAR 1 inputs can be configured for different remote inputs including input from the JAGXTREME keypad (Tare, Clear, Zero, Select, Escape, and Enter). PAR 1 inputs can also be configured for remote print, unit switching, alternate scale selection, or template selection. Polarity (switch to ground or open a ground connection to initiate remote input) can also be selected. Refer to Chapter 3.

For more information see the section entitled Outputs in Appendix 2 at the back of this manual.

PAR 1 Terminal

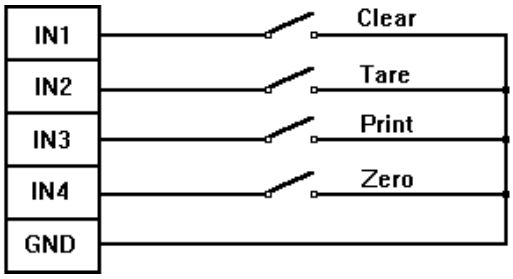


Figure 2-g: Input Wiring Example

PAR 2 Output Connections (Setpoints)

Each of the four PAR 2 outputs can be configured to announce Setpoints 1 through 12 coincidence. The 12 setpoint outputs can be configured to request either Feed or Fast Feed, or announce setpoint tolerance status. The standard number of setpoints is 4. Eight additional setpoints are available if a multifunction PCB is installed.

PAR 2 outputs can also be configured to announce "current scale status" conditions such as:

- Net or Gross Mode
- Gross Zero
- Motion
- Over Capacity
- Under Zero

Refer to Chapter 3 for details on configuring PAR 2 discrete outputs. Outputs are negative-true, open collector type.

PAR 2 outputs can be referenced to the 5 volt supply available on the PAR2 connector or can sink up to 35 mA of current and have a maximum voltage of 30 volts DC from an external source. The maximum cable length between the remote device and JAGXTREME terminal is 10 feet (3.04 meters).

PAR 2 Terminal

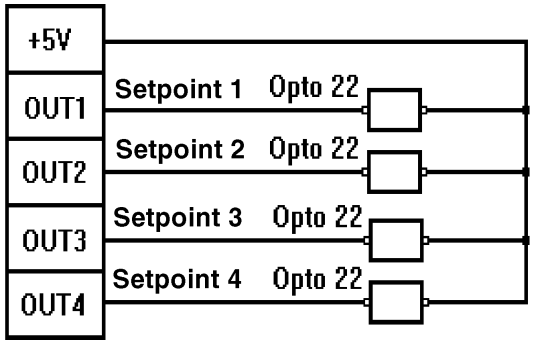
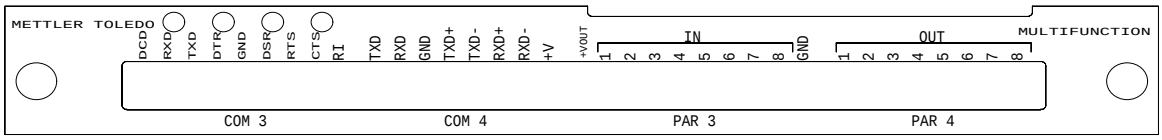


Figure 2-h: Output Wiring Example

Optional Multifunction I/O PCB Serial and Discrete Connections

This section gives proper cable connections to COM 3, COM 4, PAR 3, AND PAR 4 which are located on the optional Multifunction I/O PCB.



COM3 Interconnect Wiring

COM3 supplies all inputs and outputs to allow full handshaking and modem interfacing. The COM3 port is only available with the optional Multifunction PCB. When interfacing COM3 to devices other than those listed for COM2 RS-232, refer to the documentation for the particular device for handshaking needs and suggested wiring.

The following general interconnect options are offered for the 9 and 25 pin connectors.

COM3 With Full Handshaking

COM3	DB25	DB9	DCE
DCD	—	—	
RXD	2	2**	**This connection is only required for devices that input data to the JAGXTREME terminal, such as devices that send ASCII "C, T, P, Z, or U".
TXD	3	3	
DTR	6	6	
GND	7	5	
DSR	20	4	
RTS	5	8	
CTS	4	7	
RI	—	—	

COM4 Interconnect Wiring

The wiring instructions for the COM2 serial port apply to COM4 on the Multifunction PCB. Refer to the section presented earlier in this chapter entitled COM2/COM4 RS-232 (Controller PCB Serial Port) to interface COM4 to DigiTOL scales and printers.

PAR 3 Discrete Input Port

Each of the eight PAR 3 inputs can be configured for different remote inputs including input from the JAGXTREME keypad (Tare, Clear, Zero, Select, Escape, and Enter). PAR 3 inputs can also be configured for remote print, unit switching, alternate scale selection, or template selection. Polarity (switch to ground or open a ground connection to initiate remote input) can also be selected. Refer to Chapter 3.

The wiring instructions for the PAR 1 discrete inputs apply to PAR 3 on the Multifunction PCB. Refer to the section entitled PAR 1 Input Connections for wiring details.

PAR 4 Discrete Output Port

Each of the eight PAR 4 outputs can be configured to announce Setpoints 1 through 12 coincidence. The 12 setpoint outputs can be configured to request either Feed or Fast Feed, or to announce setpoint tolerance status. PAR 4 outputs can also be configured to announce "current scale status" conditions such as:

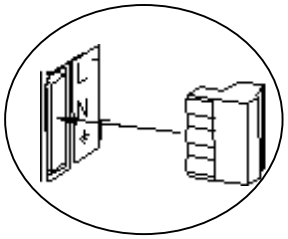
- Net or Gross Mode
- Gross Zero
- Motion
- Over Capacity
- Under Zero

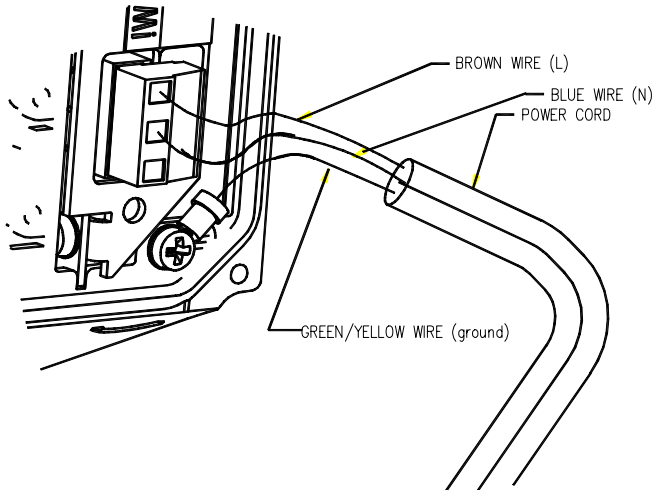
The +VOUT is jumper selectable for +5, +12, or +20 VDC. Polarity output is active at the selected +VDC. Refer to Chapter 3 for details on configuring PAR 4 discrete outputs.

The wiring instructions for the PAR 2 discrete outputs apply to PAR 4 on the Multifunction PCB. Please refer to the section entitled PAR 2 Output Connections for wiring details.

Connecting the Power Cable

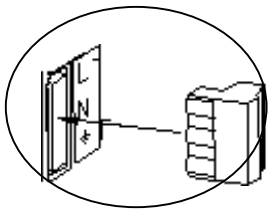
A power cord is provided with the general purpose and harsh environment JAGXTREME terminals. Connection to the panel mount JAGXTREME terminal must be made at installation. The AC power connection must be wired as follows for wall/desk mount and panel mount models:

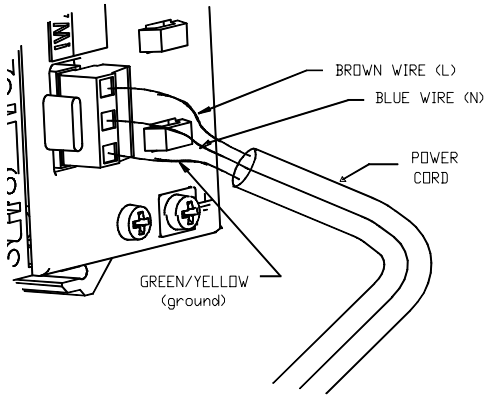




Note: Some regions and/or power cords may use different color codes than shown.

Power Connection for Wall/Desk Mount Terminal





Power Connections for Panel Mount Terminal

The terminal strip will accommodate wire sizes from 16 to 12 AWG. The wire size used must meet all local and national electrical codes. On panel mount models, you must secure the wiring with a cable tie as a strain relief. Cable ties are supplied loose. If the power terminal strip is removed from the terminal, reinsert it until it is completely seated in the jack at the rear of the enclosure. A clip holds the connector securely in place.

An auxiliary chassis ground screw is located at the lower right corner of the power supply cabinet. This ground connection is provided for surge voltage protection applications and for chassis ground. On panel mount models (JXPx) you must connect a safety ground to this screw.

Ethernet Connection

The JAGXTREME terminal can be connected to LAN, WAN, automation or enterprise systems using ETHERNET, a standard network hardware platform.

The ETHERNET connection on the rear of the JAGXTREME terminal Controller PCB is designed for an RJ45 connector. METTLER TOLEDO recommends using Category 5 cable, which provides unshielded, four twisted pair cable.

Depending upon the equipment to which the JAGXTREME terminal will be connected, either a "crossover" or standard cable is required.

- When connecting directly between a PC and a JAGXTREME terminal (point to point connection), a crossover cable is used.
- To connect the JAGXTREME terminal to other equipment through a hub, a standard cable is normally used as the hub provides the crossover connections. Refer to the specifications of the hub used to determine if a crossover cable is required.

Additional Information

The JAGXTREME terminal can now be configured via the front panel or web server interface. This procedure should be performed only by qualified technicians following the instructions provided in the JAGXTREME Terminal Technical Manual. Once setup is complete, the unit can be sealed if required.

METTLER TOLEDO

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Publication Part Number: 15888800A **Publication Date: 7/00**

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METTLER TOLEDO
Scales & Systems
1900 Polaris Parkway
Columbus, Ohio 43240
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