PANTHER®
PANTHER® PLUS

- ☐ Installation Guide
- ☐ Guía de instalación
- ☐ Installationsanleitung
- ☐ Guide d'installation
- ☐ Guida all'installazione dei terminali
- ☐ Installationshandledning

16528600A
(7/03).01

PANTHER®
PANTHER® PLUS
Installation Guide

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 or her 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.

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CUSTOMER FEEDBACK

Your feedback is important to us! If you have a problem with this product or its documentation, or a suggestion on how we can serve you better, please fill out and send this form to us. Or, send your feedback via email to: quality_feedback.mtwt@mt.com. If you are in the United States, you can mail this postpaid form to the address on the reverse side or fax it to (614) 438-4355. If you are outside the United States, please apply the appropriate amount of postage before mailing.

Your Name:		Date:
Organization Name:		METTLER TOLEDO Order Number:
Address:		Part / Product Name:
		Part / Model Number:
		Serial Number:
		Company Name for Installation:
Phone Number: ( )	Fax Number: ( )	Contact Name:
E-mail Address:		Phone Number:

Please check the appropriate box to indicate how well this product met your expectations in its intended use?	
	Met and exceeded my needs
	Met all needs
	Met most needs
	Met some needs
	Did not meet my needs

Comments/Questions:

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

☐ Retail ☐ Light Industrial ☐ Heavy Industrial ☐ Custom

RESPONSE: Include Root Cause Analysis and Corrective Action Taken.

FOLD THIS FLAP FIRST

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Mettler-Toledo, Inc.
Quality Manager - MTWT
P.O. Box 1705
Columbus, OH 43216
USA

Please seal with tape.

PRECAUTIONS

READ this manual BEFORE operating or servicing this equipment.

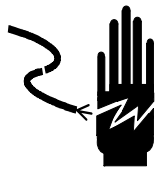
FOLLOW these instructions carefully.

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.

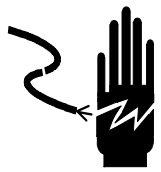


WARNING

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.

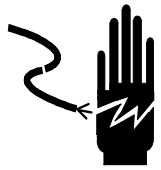
CAUTION

OBSERVE PRECAUTIONS FOR HANDLING ELECTROSTATIC SENSITIVE DEVICES.



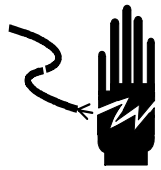
WARNING

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 AND /OR PROPERTY DAMAGE.



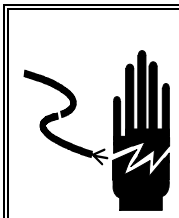
WARNING

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



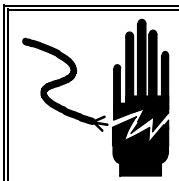
WARNING

WHEN THIS EQUIPMENT IS INCLUDED AS A COMPONENT PART OF A SYSTEM, THE RESULTING DESIGN MUST BE REVIEWED BY QUALIFIED PERSONNEL WHO ARE FAMILIAR WITH THE CONSTRUCTION AND OPERATION OF ALL COMPONENTS IN THE SYSTEM AND THE POTENTIAL HAZARDS INVOLVED. FAILURE TO OBSERVE THIS PRECAUTION COULD RESULT IN BODILY HARM AND/OR PROPERTY DAMAGE.



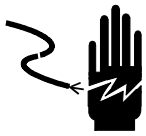
WARNING

IF THIS DEVICE IS USED IN AN AUTOMATIC OR MANUAL FILLING CYCLE, ALL USERS MUST PROVIDE A HARD-WIRED EMERGENCY STOP CIRCUIT OUTSIDE THE DEVICE CIRCUITRY. FAILURE TO OBSERVE THIS PRECAUTION COULD RESULT IN BODILY INJURY AND/OR PROPERTY DAMAGE.



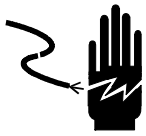
WARNING

POWER OUTLETS MUST BE EASILY ACCESSIBLE AND LOCATED NO FURTHER THAN THE LENGTH OF THE POWER CORD SUPPLIED WITH THE PRODUCT. FAILURE TO DO SO COULD IN RESULT IN PERSONAL INJURY AND/OR PROPERTY.



WARNING

METTLER TOLEDO ASSUMES NO RESPONSIBILITY FOR CORRECT INSTALLATION OF THIS EQUIPMENT WITH A DIVISION 2 OR ZONE 2/22 AREA. THE INSTALLER MUST BE FAMILIAR WITH ALL DIVISION 2 OR ZONE 2/22 WIRING AND INSTALLATION REQUIREMENTS.

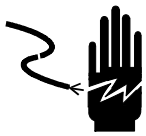


WARNING

EARLIER MODELS OF THE PANTHER TERMINAL THAT ARE NOT MARKED (FACTORY-LABELED) AS DIVISION 2 OR EUROPEAN CATEGORY 3 APPROVED MUST NOT BE INSTALLED INTO A DIVISION 2 OR ZONE 2/22 ENVIRONMENT.

WARNING

IN ORDER TO INSTALL THE DIVISION 2 APPROVED PANTHER PANEL MOUNT UTILIZING THE FACTORY MUTUAL APPROVAL, METTLER TOLEDO CONTROL DRAWING 155907R MUST BE FOLLOWED WITHOUT EXCEPTION. IN ORDER TO INSTALL THE CATEGORY 3 PANTHER PANEL MOUNT TERMINAL USING THE KEMA APPROVAL CERTIFICATE 02atex1163x ALL LOCAL REGULATIONS MUST BE FOLLOWED WITHOUT EXCEPTION. FAILURE TO DO SO COULD RESULT IN BODILY HARM AND/OR PROPERTY DAMAGE.

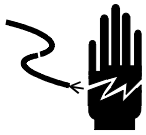


WARNING

FOR EUROPEAN ZONE 2/22 HAZARDOUS AREA APPLICATIONS, THE PANTHER CATEGORY 3 INSTALLATION GUIDE (*)16684500A AND THE KEMA TYPE EXAMINATION CERTIFICATE MUST BE FOLLOWED WITHOUT EXCEPTION.

WARNING

IF THE KEYBOARD, DISPLAY LENS OR ENCLOSURE IS DAMAGED ON A DIVISION 2 APPROVED OR CATEGORY 3 MARKED PANTHER PANEL-MOUNT TERMINAL THAT IS BEING USED IN A DIVISION 2 OR ZONE 2/22 AREA, THE DEFECTIVE COMPONENT MUST BE REPAIRED IMMEDIATELY. REMOVE AC POWER AND DO NOT RE-APPLY POWER UNTIL THE DISPLAY LENS, KEYBOARD OR ENCLOSURE HAS BEEN REPAIRED OR REPLACED BY QUALIFIED SERVICE PERSONNEL. FAILURE TO DO SO COULD RESULT IN BODILY HARM AND/OR PROPERTY DAMAGE.



WARNING

THE PANTHER TERMINAL HAS A FACTORY MUTUAL TEMPERATURE RATING OF T3A (180° C) AND A KEMA TEMPERATURE RATING OF T4 (135° C). IT MUST NOT BE USED IN AREAS WHERE THE AUTO IGNITION TEMPERATURE OF THE HAZARDOUS MATERIAL IS BELOW THIS RATING.

CONTENTS

For your notes

1 Introduction

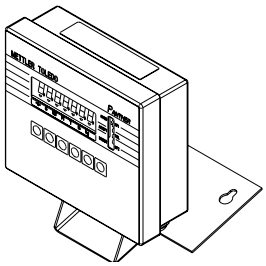
Overview

The following information is intended to help you install the PANTHER and PANTHER PLUS terminals and the various option cards. Please read the information thoroughly prior to beginning installation. Only qualified technicians should perform any internal wiring installation of options, or programming.

NOTE: **ONLY** the analog version of the PANTHER panel-mount terminal is approved for use in Division 2 and Zone 2/22 areas. Refer to the PANTHER (Analog) Panel-Mount Terminal Division 2 Installation Guide in the back of this manual for Division 2 areas. Refer to the European Category 3 G/D Installation Guide, (*)16684500A, for Zone 2/22 Areas.

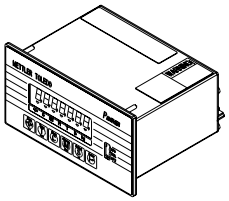
Inspection and Contents Checklist

1. If the terminal's shipping container appears damaged upon delivery, check inside for damage. File a freight claim with the carrier if necessary.
2. If the container was undamaged, unpack the container if you have not already done so. Keep the original packing materials for future use.
3. Make sure the terminal package contains the following:
   - PANTHER or PANTHER PLUS terminal (refer to model identification chart on the next page to confirm you are working with the correct model)



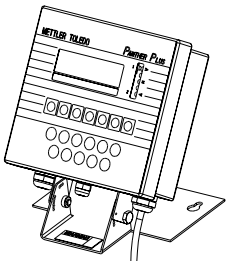
PANTHER
Harsh Environment Terminal
(PTHN)

- Installation Guide
- Security Seal
- Capacity Sheet Labels
- Cursor Legends Labels
- Address Labels
- Hardware Kit
- Documentation CD



PANTHER
Panel-mount Terminal
(PTPN)

- Installation Guide
- Security Seal
- Capacity Sheet Labels
- Cursor Legend Labels
- Address Labels
- Gasket
- CE Indicator Label
- Hardware Kit
- Documentation CD



PANTHER Plus
Harsh Environment Terminal
(PTHK)

- Installation Guide
- Security Seal
- Capacity Sheet Labels
- Cursor Legends Labels
- Address Labels
- Hardware Kit
- Documentation CD

Use the information below to confirm the correct model number for the terminal with which you will be working. The model number is found on the data plate on the side of the terminal.

P T XX - X X X X - X X X

PANTHER Terminal

Enclosure/Display Type
PN – Panel mount, numeric display
HN – Harsh environment (desk/wall), numeric display
HK (PANTHER Plus, harsh plus keyboard)
PC – Panel-mount custom
HC – Harsh environment custom

Scale Interface
1--Analog load cell
3– DigiTOL load cell

Interface Option
0--No Option
5—Modbus Plus
6—Allen-Bradley
8—Analog output (not available when used with more than 4 analog load cells)
9--Profibus

Setpoint Option
0—None
1—3 Opto Setpoint (panel-mount only)

Unused
0—Always

Destination Market

Note: Throughout this manual, the following terms are used:

- **PTHN** -- PANTHER harsh environment terminal.
- **PTPN** -- PANTHER panel-mount terminal
- **PTHK** -- PANTHER PLUS terminal (a PANTHER harsh environment terminal with a keypad).

Warnings/Precautions

WARNING

ONLY PERMIT QUALIFIED PERSONNEL TO INSTALL AND 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 AND/OR PROPERTY DAMAGE.

CAUTION

OBSERVE PRECAUTIONS FOR HANDLING ELECTROSTATIC SENSITIVE DEVICES.

Location/Environmental Considerations

- Operating temperature: 14°F to 113°F (–10°C to 45°C) at 10% to 95% humidity, noncondensing.
- Storage temperature: –40°F to 140°F (–40°C to 60°C) at 10% to 95% humidity, noncondensing.
- Enclosure rating: TYPE 4X (IP65) requirements for a dust-tight and splash-proof enclosure for the PANTHER panel-mount terminal.
- **The PANTHER and PANTHER PLUS terminals are not intrinsically safe!** However, they are capable of operation with scales and barriers located in hazardous areas. Contact your authorized METTLER TOLEDO representative for assistance with hazardous area applications.

  NOTE: **ONLY** the analog version of the PANTHER panel-mount terminal is approved for use in Division 2 and Zone 2/22 areas. Refer to the PANTHER (Analog) Panel-Mount Terminal Division 2 Installation Guide in the back of this manual for Division 2 areas. Refer to the European Category 3 G/D Installation Guide, (*)16684500A, for Zone 2/22 Areas.

WARNING

TO USE THE PANTHER PANEL-MOUNT ANALOG TERMINAL IN AN AREA CLASSIFIED AS CLASS I, II OR III, DIVISION 2, GROUPS A, B, C, D, F OR G, METTLER TOLEDO CONTROL DRAWING 155907R MUST BE FOLLOWED WITHOUT EXCEPTION. TO USE THE PANTHER PANEL-MOUNT ANALOG TERMINAL IN AN AREAR CLASSIFIED AS ZONE 2/22, ATEX CERTIFICATE 02atex 1163X AND ALL LOCAL REGULATIONS MUST BE FOLLOWED. FAILURE TO DO SO COULD RESULT IN BODILY HARM AND/OR PROPERTY DAMAGE.

THE PANTHER PLUS TERMINAL, THE DIGITOL PANEL-MOUNT VERSION AND THE ANALOG HARSH VERSION OF THE PANTHER TERMINAL ARE NOT APPROVED FOR USE IN DIVISION 2 OR ZONE 2/22 AREAS. DO NOT INSTALL THESE VERSIONS IN HAZARDOUS AREAS!

WARNING

THE PANTHER AND PANTHER PLUS TERMINALS ARE NOT INTRINSICALLY SAFE! DO NOT USE IN AREAS CLASSIFIED AS HAZARDOUS BY THE NATIONAL ELECTRIC CODE (NEC) BECAUSE OF COMBUSTIBLE OR EXPLOSIVE ATMOSPHERES.

Dimensions and Mounting Instructions

PTHN/PTHK

Using the hardware kit provided, mount the terminal to a wall or flat surface such as a desk, referencing the dimensions and drawings in Figure 1. Note: The dimension and mounting instructions are the same for the PANTHER harsh environment terminal and the PANTHER PLUS terminal.

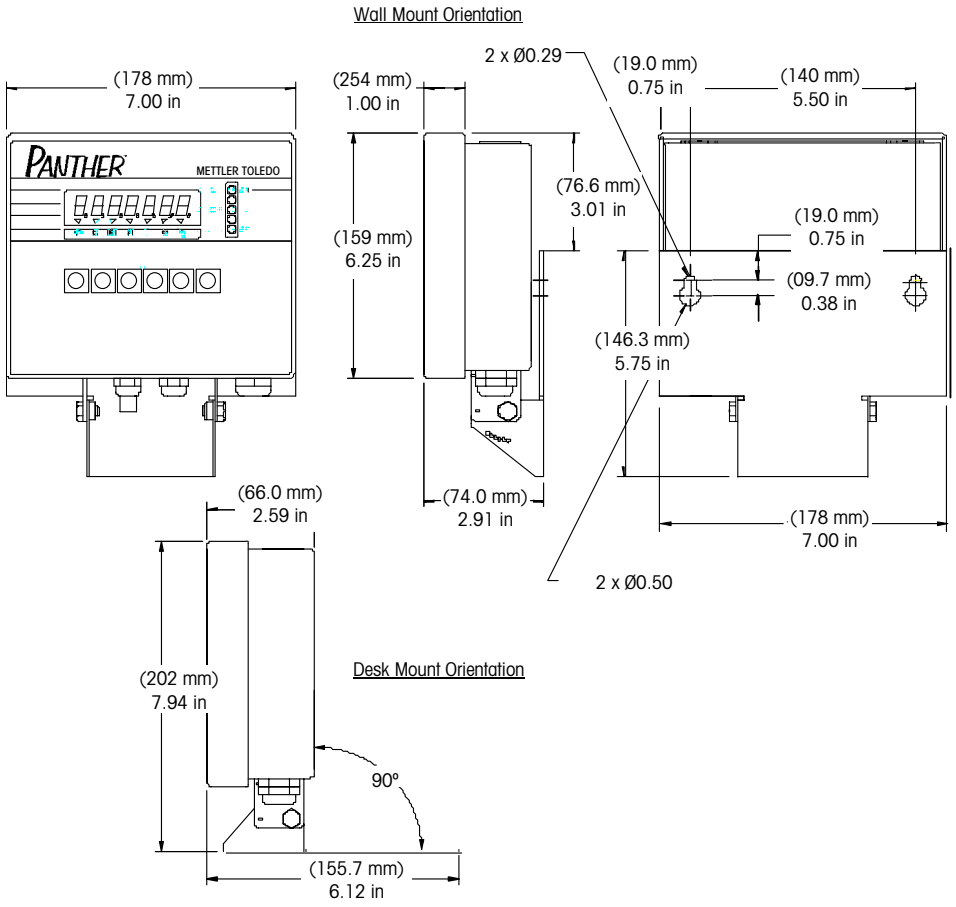


Figure 1: Dimensions for PANTHER harsh environment terminal and PANTHER PLUS terminal (PANTHER harsh terminal shown)

PTPN

To mount the panel-mount PANTHER terminal, refer to the dimensional drawings below and the cutout template provided. Note: The cutout template is for reference only and is not shown at actual size. In addition, keep in mind that the optional high-level optos add 1.25 in. (31.7 mm) to the depth.

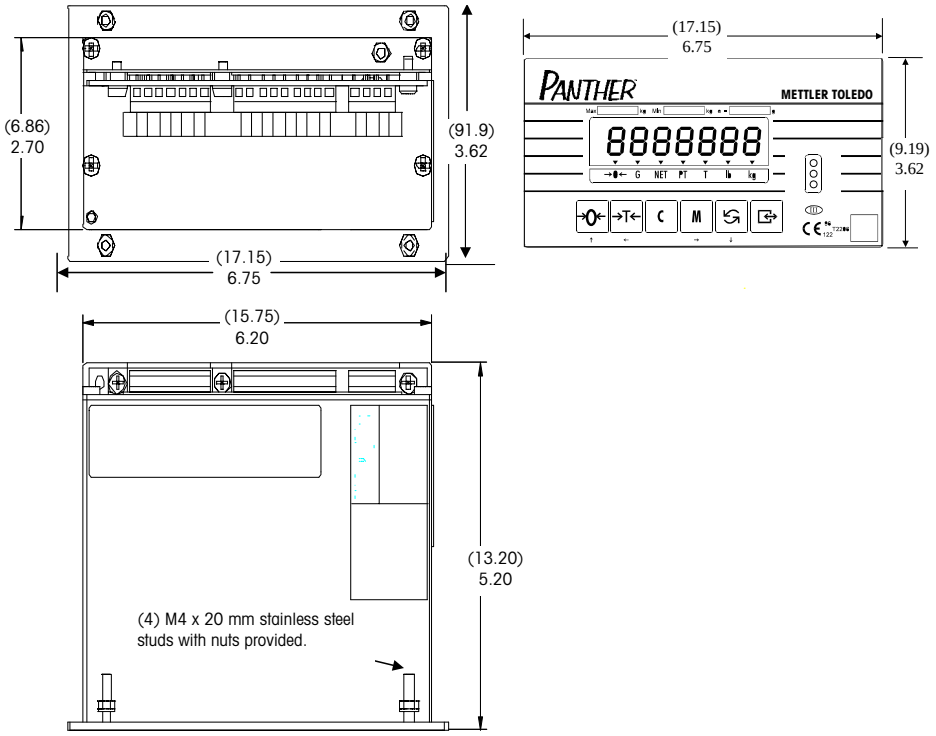


Figure 2: PANTHER Panel-mount Terminal

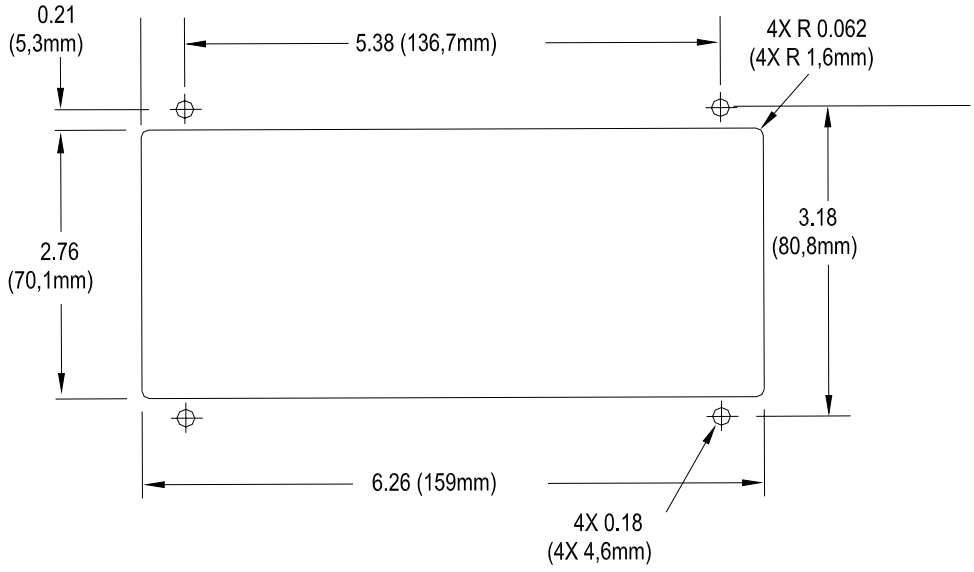


Figure 3: PANTHER Panel-mount Mounting Template

Accessing the Terminal's Controller PCB

To make the necessary wiring connections, you must access the terminal's Controller PCB. Access to the PTHN/PTHK's Controller board requires opening the terminal. Access to the PTPN's Controller board is provided directly on the back of the unit.

PTHN/PTHK

1. Insert the tip of a flat-blade screwdriver into one of the two slots ("A" on Figure 4) on the bottom of the front panel.
2. Push in toward the enclosure. Do not pry at an angle. You should hear a "pop" when the cover has been released.
3. Push in on the side of the slot closest to the bottom of the cover. Repeat for the other slot.

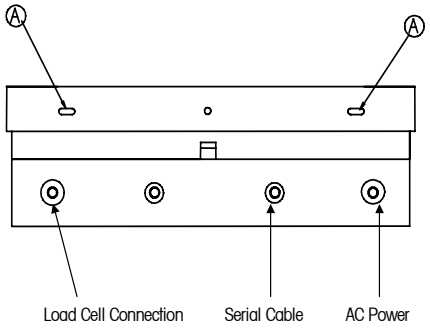


Figure 4

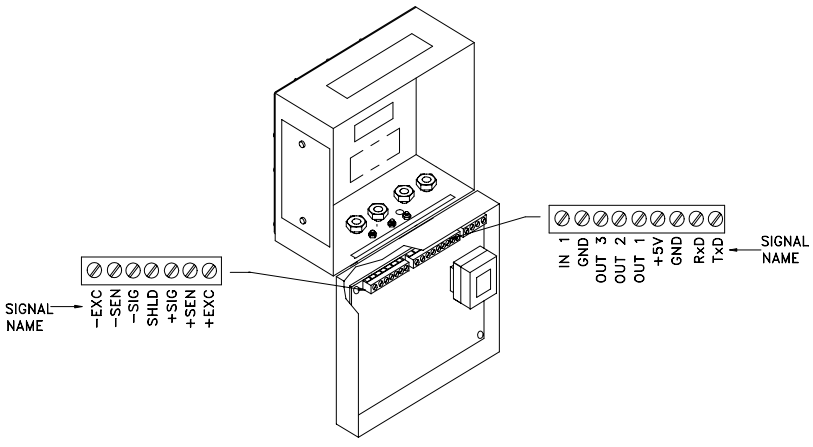


Figure 5

4. Lift the bottom of the front panel out until it completely clears the enclosure.
5. Squeeze the top of the front panel to the enclosure and raise it to clear the two top clips. The cover will swing down (Figure 5), hinged by a wire cable at the bottom.

Note: When the cover swings down, the terminal strips on the Controller PCB can be seen. (See Figure 6.) You will make the electrical connections using these terminal strips. Note: The PCB will be upside down.

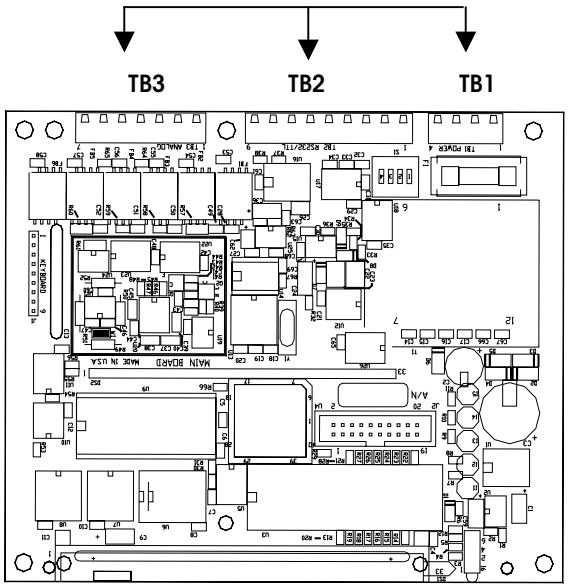


Figure 6

6. Pass the cables that enter the enclosure through an appropriately sized cable grip before connecting the wires.
7. Make the required electrical connections per the instructions in the section entitled Electrical Connections.
8. Re-secure the back cover.
9. Tighten the cable grip to provide a water-tight seal around the cable. This will allow any internal cable slack to be received through the cable grip.
10. Push the bottom of the front cover over the enclosure. A snap sound indicates that the cover is in place. Squeeze the front cover to the enclosure at all four corners to verify that all four clips are properly engaged.

PTPN

Access to the PANTHER panel-mount model is at the back of the terminal where all connections are made to the terminal strips on the controller PCB (Figure 7 shows the back of both the DigiTOL and analog versions which are identical although TB3 will be labeled differently.)

If access inside the unit is necessary, remove the two screws holding the cover plate at the rear of the unit and lift the cover plate over the terminal strips. Doing so will reveal the entire Controller PCB. See Figures 8 and 9.

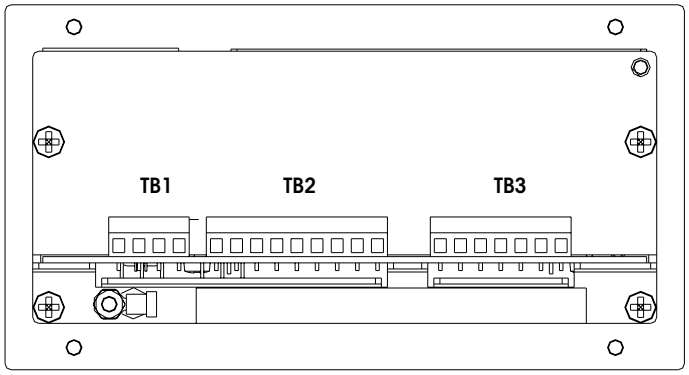


Figure 7: Back of PTPN

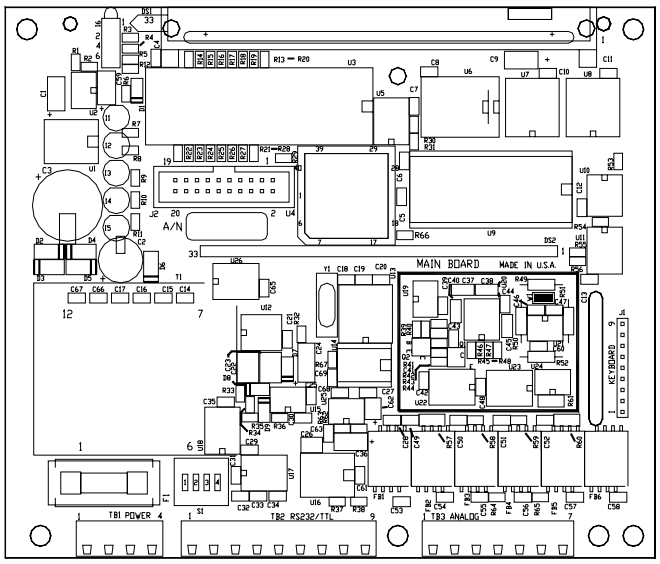


Figure 8: Analog PCB

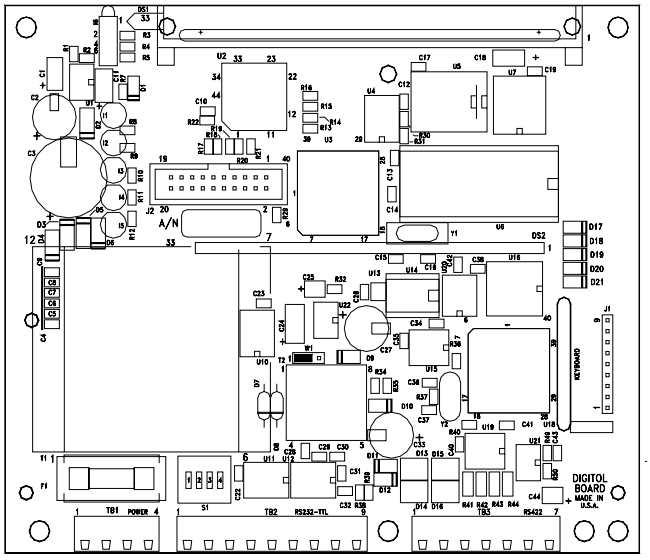


Figure 9: DigiTOL PCB

2 Electrical Connections

Before Making Connections

Before making any connections, verify the type of load cell interface. The fifth character of the product ID indicates if the unit is analog or DigiTOL® (1=Analog, 3=DigiTOL).

⚠ CAUTION

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

Analog Load Cell Connections

Determine maximum cable length. 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:

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

Recommended Maximum Cable Length Based on TSR and Cable Gauge			
TSR (Ohms)	**24 Gauge (feet/meters)**	**20 Gauge (feet/meters)**	**16 Gauge (feet/meters)**
350	800/244	2000/610	4000/1219
87 (4-350Ω cells)	200/61	600/183	1000/305
45 (8-350 Ω cells)	100/31	300/91	500/152

If an analog version of the PANTHER panel-mount terminal is used in a hazardous area classified as Division 2 or Zone 2/22, or if only the load cells will be in a hazardous area classified as Division 2 or Zone 2/22, METTLER TOLEDO control drawing 155907R must be followed for Division 2 Areas. Refer to the Division 2 guide at the end of this manual. Refer to the Panther European Category 3 G/D Installation Manual, (*)16684500A, for Zone 2/22 area installation.

Connect to TB3 of the terminal's Controller PCB.

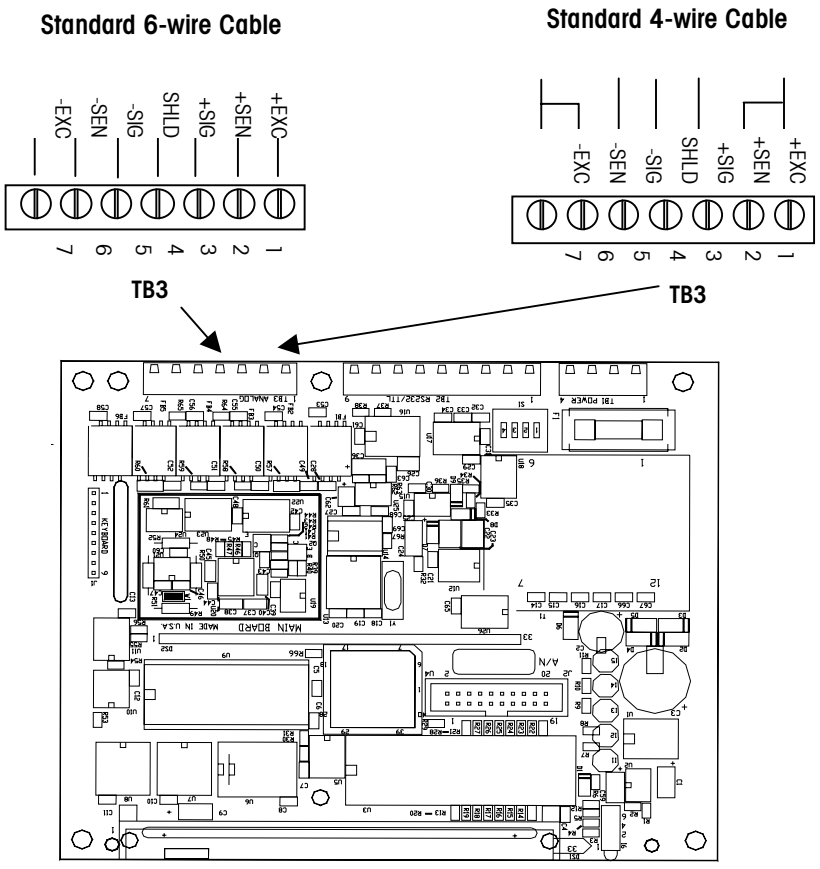


Figure 10: Wiring for PTHN/PTHK

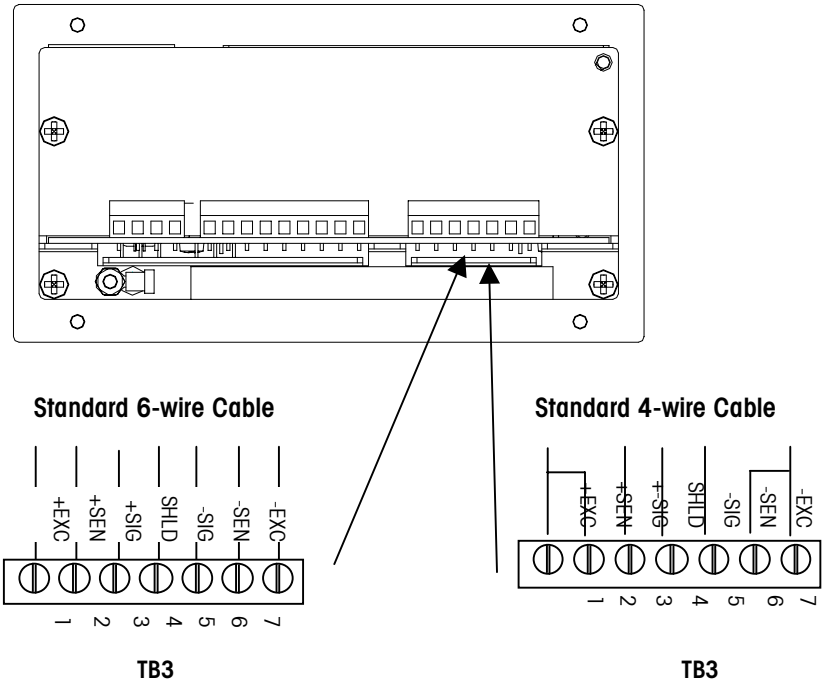


Figure 11: Wiring for PTPN

UltraRes and DigiTOL® Load Cell Connections

The maximum cable length for all DigiTOL® bases is 50 feet (15.24 meters). Connect UltraRes or DigiTOL® bases to TB3 on the PANTHER terminal as follows:

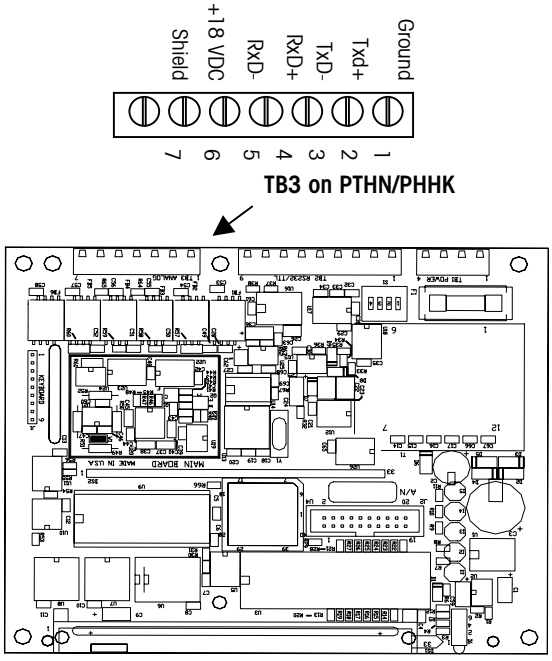


Figure 12: Wiring for PTHN/PTHK

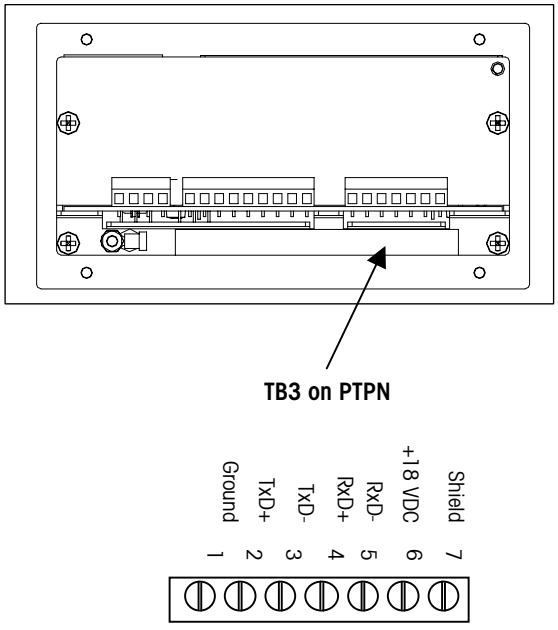


Figure 13: Wiring for PTPN

PANTHER TB3		Color Code		UltraRes or DigiTOL B/P Base	
Ground	1	Blue	7	Ground
TxD+	2	Red	1	RxD A
TxD-	3	NC White	4	Batt In
RxD+	4	Black	8	TxD A
RxD-	5	Yellow	6	TxD B
+18 VDC	6	Green	5	+ 20 VDC
Shield	7	Orange		

DigiTOL J-Box Connections

The maximum cable length for the DigiTOL J-Box is 300 feet (91.4 meters).

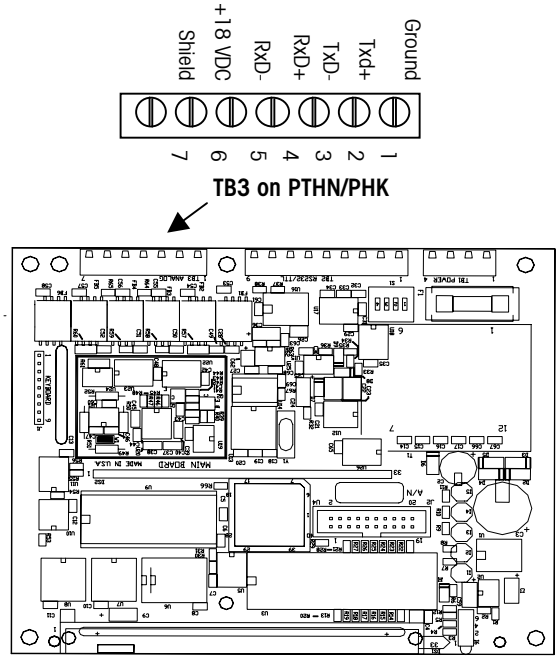


Figure 14: Wiring for PTHN/PTHK

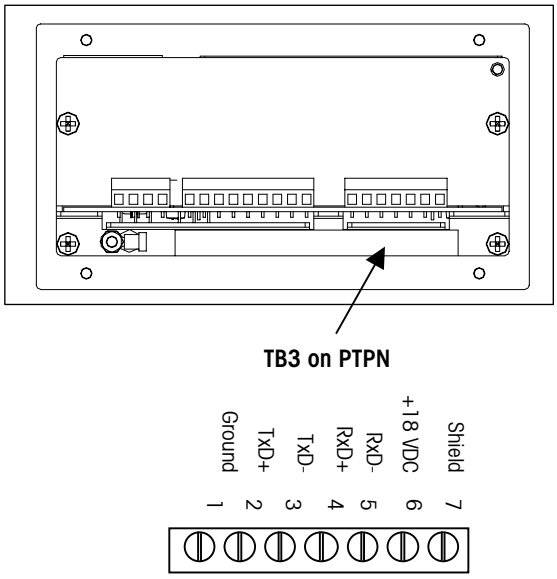


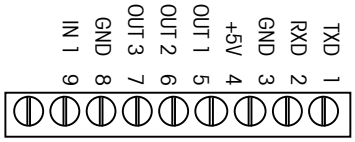
Figure 15: Wiring for PTPN

PANTHER TB3		Color Code	Enhanced DigiTOL J-Box	
Ground	1	Blue	7	Ground (TB2)
TxD+	2	Red	1	RxD A (TB1)
TxD-	3	White	4	Batt In (TB 1)
RxD+	4	Black	8	TxD A (TB1)
RxD-	5	Yellow	6	TxD B (TB1)
+18 VDC	6	Green	5	+20 VDC (TB2)
Shield	7	Orange		

Serial Connections (All Models)

Main PCB Serial Port Connection

The COM 1 serial port is bi-directional. The maximum recommended cable length for RS-232 communications is 50 feet (15.24 meters).



TB2 on PTHN/PHK

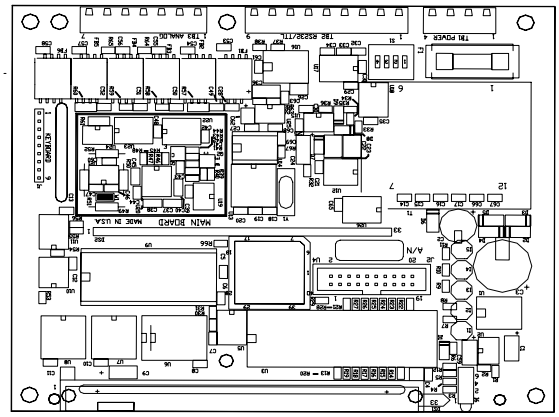
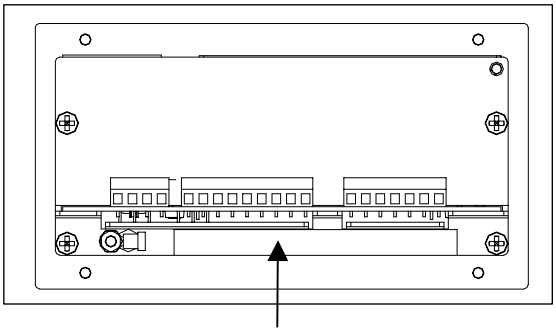


Figure 16: Wiring for PTHN/PTHK



TB2 on PTPN

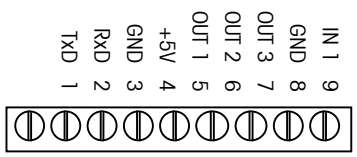


Figure 17: Wiring for PTPN

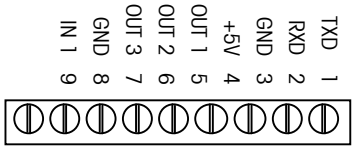
PANTHER TB2 COM1		
TXD	1	RS-232 Transmit
RXD	2	RS-232 Receive
GND	3	Signal Ground

Pin Connection for METTLER TOLEDO Devices Using COM 1		
PANTHER TB2 COM1	**8806 8807 8808 8845 8846* 8857 8861 8863* 8865 8867***	**8617-TB2 9323-TB2 9325-TBS**
TXD	3	2
RXD	--	--
GND	7	3

*Connections shown for use with the adapter plug included with these models.

Discrete I/O Connection

Refer to the appendix of the PANTHER and/or PANTHER Plus Terminal Technical Manual(s) for information



TB2 on PTHN/PHK

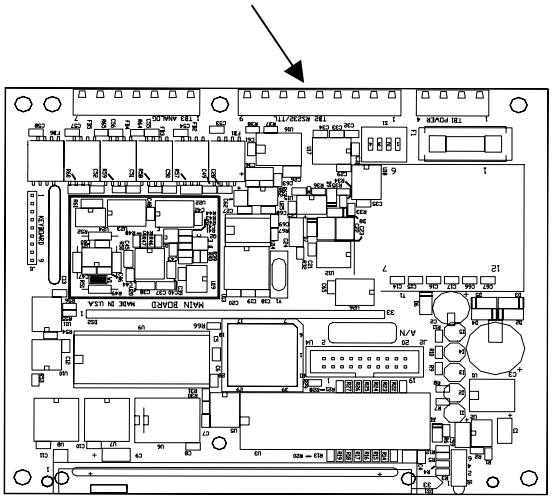
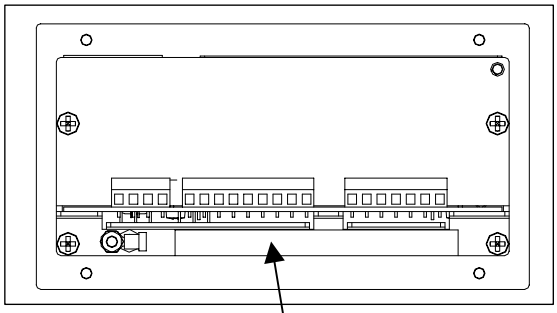


Figure 18: Wiring for PTHN/PTHK



TB2 on PTPN

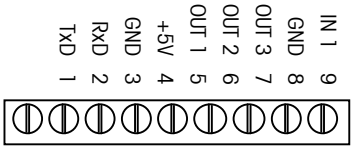


Figure 19: Wiring for PTPN

TB2

4	+5 VDC, current limited to 15 mA	
5	OUT1	TTL Level, 5 VDC maximum
6	OUT2	TTL Level, 5 VDC maximum
7	OUT3	TTL Level, 5 VDC maximum
8	GND	
9	IN1	$V_{IN\ LOW}$ = 0.0 - 0.8 VDC, $V_{IN\ HIGH}$ = 3.5 - 5.0 VDC.

Power

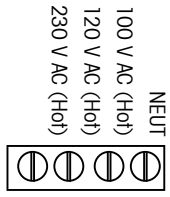
Universal (manually selectable) power supply:

Operates:	85 to 264 VAC.
Line frequency:	49 to 63 Hz.
Power consumption:	12 Watts maximum.

The integrity of the power ground for equipment is important for both safety and dependable operation of the terminal and its associated scale base. A poor ground can result in an unsafe condition if an electrical short develops in the equipment. A good ground connection is needed to minimize extraneous electrical noise pulses. The terminal should not share power lines with noise-generating equipment. To confirm ground integrity, use a commercial branch circuit analyzer like an ICE model SureTest ST-1D. If adverse power conditions exist, a dedicated power circuit or power line conditioner may be required.

PTHN/PTHK

The harsh environment PANTHER and PANTHER PLUS terminals are both shipped with the power cord installed at the factory. Before applying power, confirm that the power cord is wired properly for the AC voltage where the terminal will be used. The power cord connects to the TB1 terminal strip on the controller PCB.



TB1

TB1 on PTHN/PHK

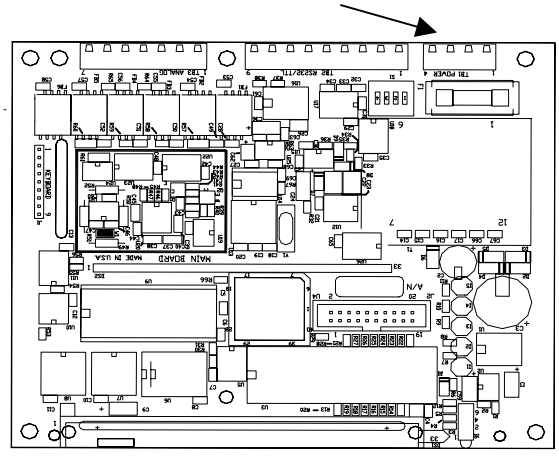


Figure 20: Wiring for PTHN/PTHK

Standard MT Power Cord Colors	
Neutral	Blue
Hot	Brown
Ground (Chassis)	Green/Yellow

PTPN

No power cord is shipped with the panel-mount model. Wiring to terminal strip TB1 on the rear of the terminal is shown below. Ground is connected to the chassis ground.

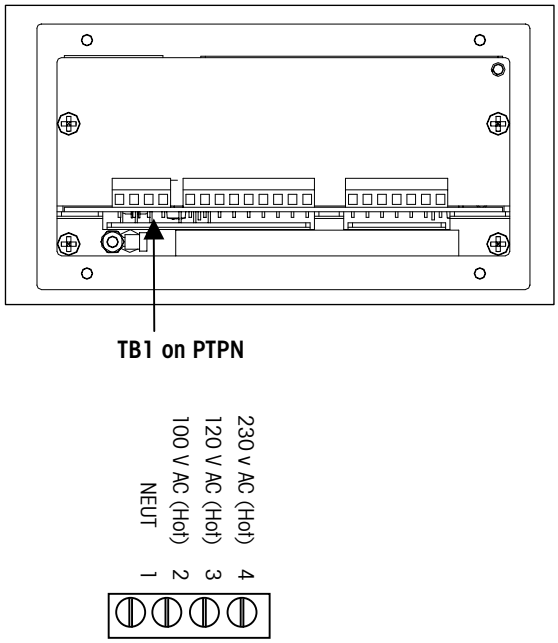


Figure 21: Wiring for PTHN/PTHK

3 Installing/Wiring Option Cards

Options

Various option cards are available for use with the PANTHER and/or PANTHER Plus terminals. They include:

- Analog Output
- Allen-Bradley RIO
- Modbus Plus
- Profibus
- Setpoint Output (panel-mount only)

If the option cards were ordered separately, the instructions for installing them will be included with the option cards. More detailed information about each of these options is in the PANTHER and/or PANTHER PLUS technical manuals.

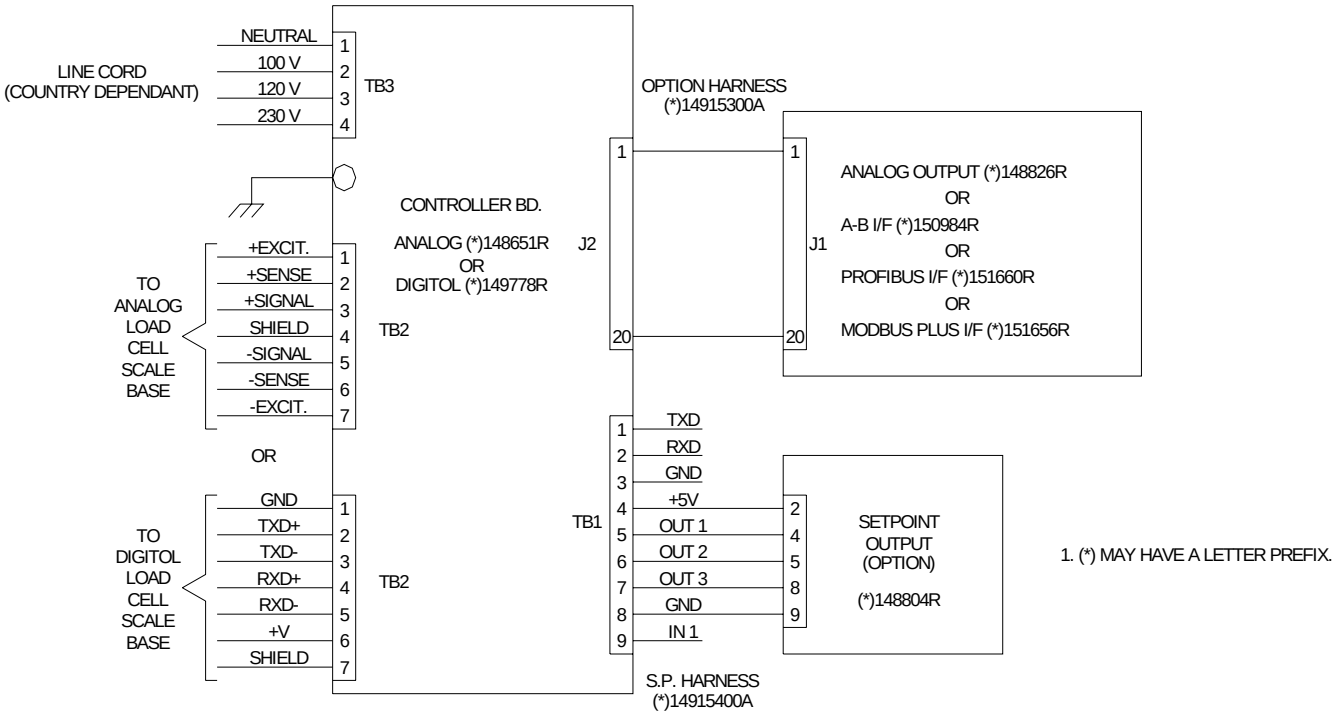
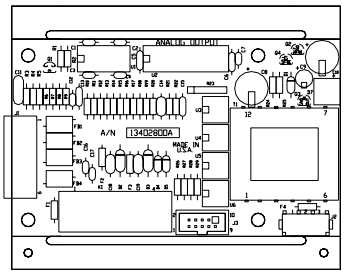
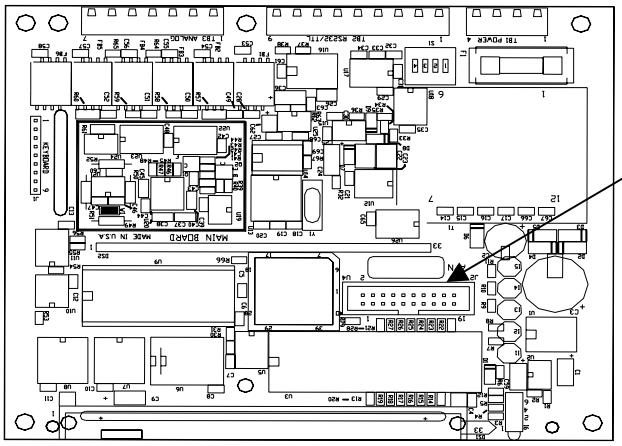
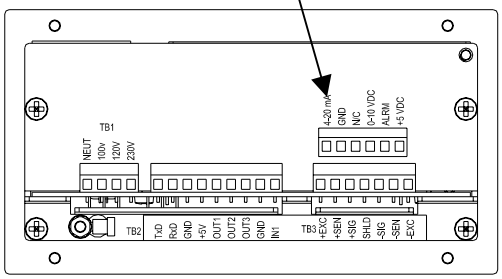


Figure 22: Interconnect Diagram for PANTHER/PANTHER PLUS

Analog Output Option (0917-0246)







Analog Output Terminal Strip		
J2	1	4-20 mA
	2	GND
	3	N.C.
	4	0-10 V
	5	ALARM
	6	+5V

The Analog Output Option Kit provides output ranges of 0-10 VDC or 4 - 20 mA plus an optically isolated open collector status indication output. The Analog Output PCB may be installed in either the harsh environment PANTHER and PANTHER PLUS terminals or in the panel-mount PANTHER terminal.

The maximum recommended cable length for the 0-10 VDC output is 50 feet (15.2 meters). The recommended cable is shielded 2-conductor stranded 20-gauge cable (Belden #8762 or equivalent, available from METTLER TOLEDO using part number 510220190.

4 to 20mA

	1	4-20mA	+
	2	GND	-
J2	3	N.C.	
	4	0-10 VDC	
	5	ALRM*	
	6	+5 VDC	

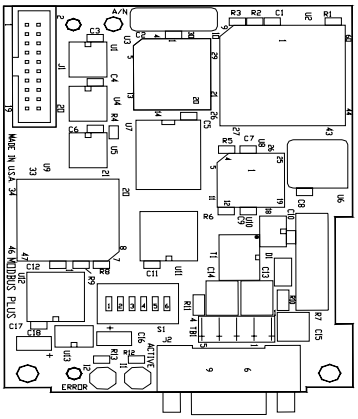
Customer Device (4-20mA)

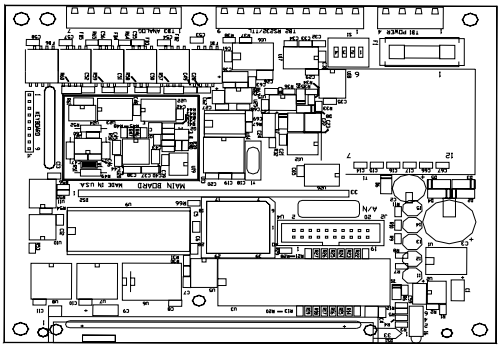
0 to 10 VDC

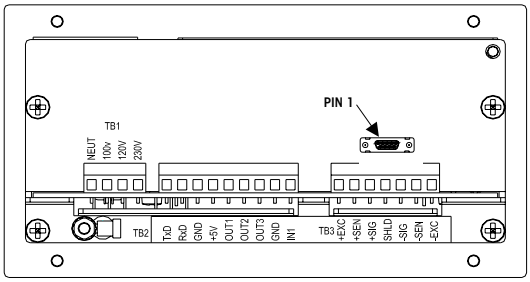
	1	4-20mA	
	2	GND	-
J2	3	N.C	
	4	0-10 VDC	+
	5	ALRM*	
	6	+5 VDC	

Customer Device (0-10VDC)

Modbus Plus Option







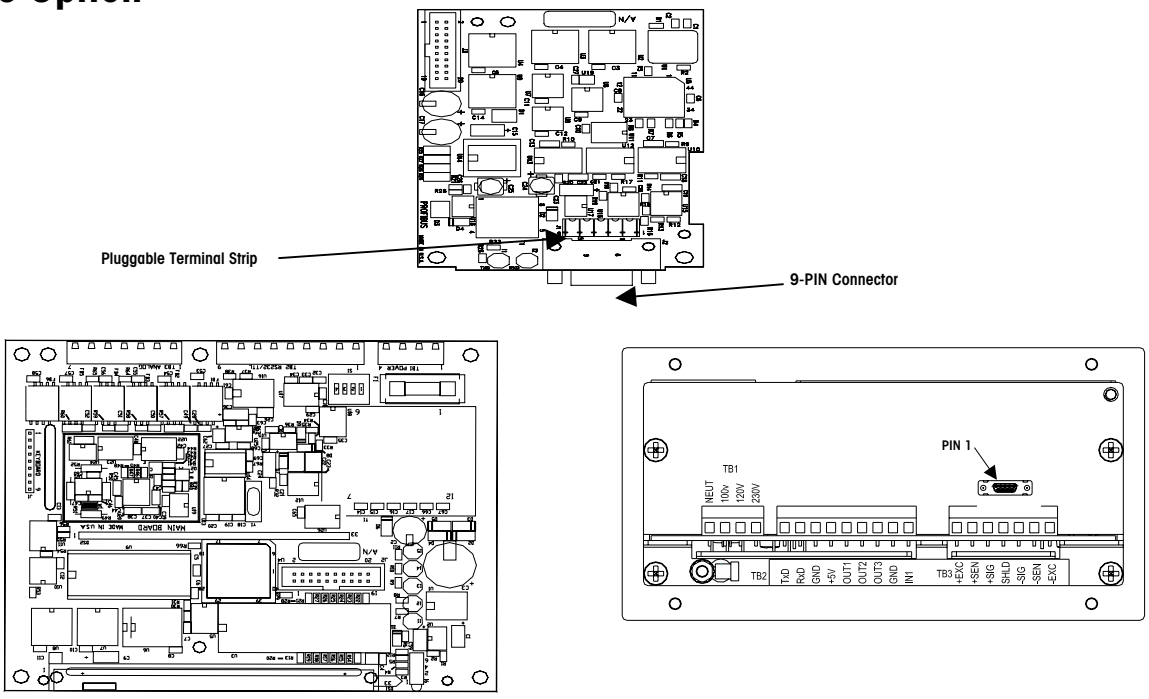
There are two connections for the Modbus Plus Interface.

- The standard connection for the PANTHER panel-mount terminal is the DE-9 female connector. Wiring instructions come with the connector. The Modbus Plus network uses pins 1, 2, and 3 of the DE-9 connector (supplied by Modicon).
- The PANTHER harsh environment terminal must use a pluggable terminal strip. When the terminal strip is used, the Modbus Pigtail Cable kit 0900-0320 is available.

The Modbus Plus pigtail is wired to the PANTHER terminal as follows:

DE-9		Terminal Strip
1	White	1
2	Green	2
3	Black	3

Profibus Option

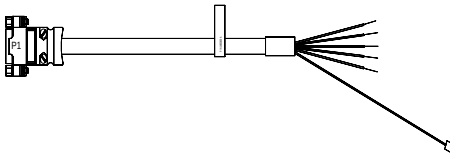


The PROFIBUS connection is available at two locations on the PROFIBUS PCB. The first is a female 9-pin D subminiature connector, which is the PROFIBUS standard connection. The field connector assembly is not supplied by METTLER TOLEDO. This connection is the preferred connection in the panel-mount terminal.

Female DE-9

1 GND (isolated)
2 N.C.
3 TX/RX+
4 RTS
5 GND (isolated)
6 +5V (isolated)
7 N.C.
8 TX/RX-
9 N.C.

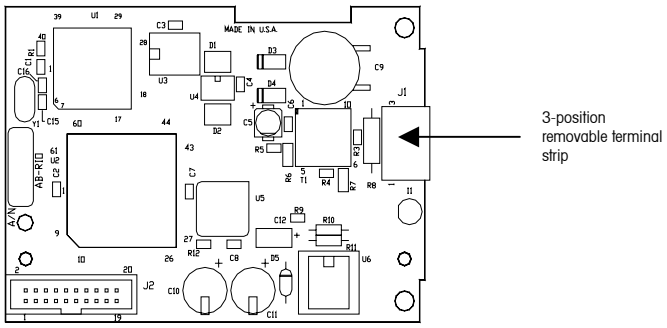
For the PANTHER harsh environment terminal, the pluggable terminal strip must be used. In these cases, an optional pigtail harness is available to wire from the terminal strip to a female 9-pin D connector. The adapter harness can be ordered using factory number 0900-0311. The adapter is shown here.

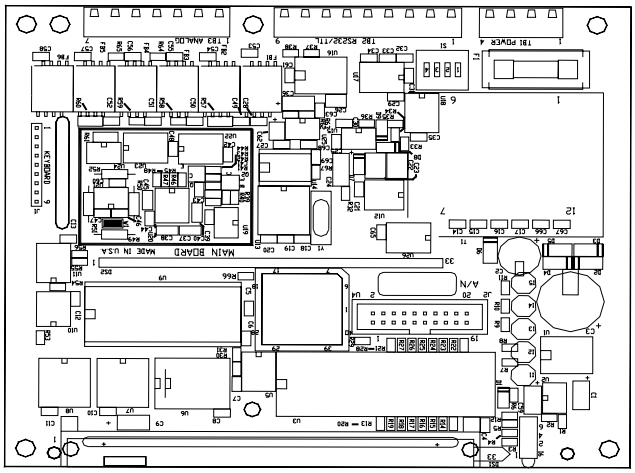


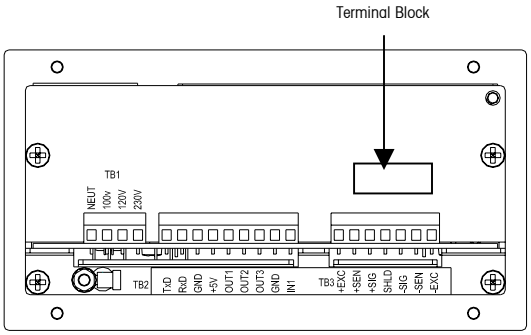
Terminal strip

1 RTS
2 TXD/RXD+
3 TXD/RXD-
4 +5 V (isolated)
5 GND (isolated)

Allen Bradley RIO Option





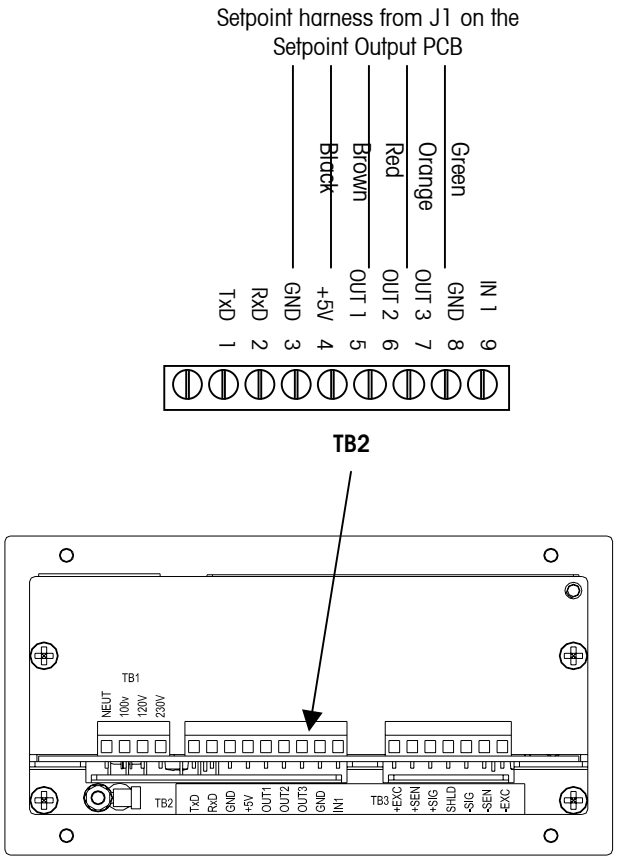


The PANTHER Allen-Bradley Option Kit provides connectivity to an Allen-Bradley PLC using the remote I/O (RIO) protocol. The kit may be installed in either the harsh environment PANTHER or PANTHER PLUS terminals or in the panel-mount PANTHER terminal.

Electrical: centered, transformer isolated line drivers
Connector: Three position removable terminal strip wired from left to right (rear connector view) as: Blue
Shield
Clear

Setpoint Output Option (Panel-Mount Only)

The Setpoint Output Option Kit provides high-level AC interfacing (28 - 280 VAC) for the three standard low-level discrete outputs. Attach the loose ends of the harness to the following terminals on the terminal Controller PCB:



PANTHER®
PANTHER® PLUS

Guía de instalación de terminales industriales

INTRODUCCIÓN

Esta publicación está designada solamente como una guía para los individuos que hayan recibido entrenamiento técnico en METTLER TOLEDO para dar servicio a este producto de METTLER TOLEDO.

Para obtener información acerca del entrenamiento técnico de METTLER TOLEDO por favor escriba a:

METTLER TOLEDO
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ADVERTENCIA!

Este equipo genera, usa, y puede irradiar energía de radio frecuencia y si no es instalada y usada apropiadamente de acuerdo con el manual de instrucciones, puede causar interferencias perjudiciales para las comunicaciones de radio. Este equipo ha sido examinado y se encontró que cumple con los límites para un dispositivo de computación Clase A de conformidad con la Subparte J de la Parte 15 de las Reglas del FCC, las cuales son designadas para proveer una protección razonable contra tales interferencias cuando son puestos en funcionamiento en un ambiente comercial. El funcionamiento de este equipo en un área residencial seguramente causará interferencias, en cuyo caso, el propietario es responsable de los gastos en que se incurra al tomar las medidas necesarias para corregir la interferencia.

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Nombre:	Fecha:
Nombre de la empresa:	Número de Orden Mettler Toledo
Dirección:	Nombre de Parte / Producto:
	Número de Parte / Modelo:
	Número de Serie:
Teléfono: ( ) Fax: ( )	Nombre de la empresa de instalación:
Dirección E-mail:	Nombre del contacto:
	Teléfono:

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	Cumplió y excedió mis requisitos
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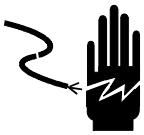
NO deje que el personal sin capacitar opere, limpie, inspeccione, mantenga, efectúe el servicio o manipule indebidamente este equipo.

DESCONECTE SIEMPRE este equipo de la fuente de alimentación antes de limpiar o efectuar el mantenimiento.

LLAME a METTLER TOLEDO para obtener piezas, información y servicio.

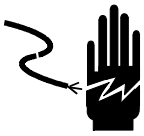


ADVERTENCIA

DESCONECTE TODA LA CORRIENTE DE ESTA UNIDAD ANTES DE INSTALAR, EFECTUAR EL SERVICIO, LIMPIAR O QUITAR EL FUSIBLE. DE NO HACER ESTO SE PUEDEN PRODUCIR LESIONES CORPORALES Y DAÑOS MATERIALES.

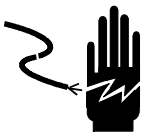
PRECAUCION

OBSERVE LAS PRECAUCIONES PARA MANIPULAR DISPOSITIVOS SENSIBLES A LAS DESCARGAS ELECTROSTÁTICAS.



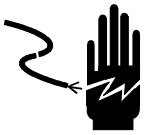
ADVERTENCIA

PERMITA SÓLO AL PERSONAL CAPACITADO QUE EFECTÚE EL SERVICIO DE ESTE EQUIPO. TENGA CUIDADO AL EFECTUAR COMPROBACIONES, PRUEBAS Y AJUSTES QUE DEBAN HACERSE CON LA CORRIENTE CONECTADA. DE NO OBSERVAR ESTAS PRECAUCIONES SE PUEDEN PRODUCIR LESIONES CORPORALES Y DAÑOS MATERIALES.



ADVERTENCIA

PARA LOGRAR UNA PROTECCIÓN CONTINUA ADECUADA CONTRA EL PELIGRO DE DESCARGA, CONECTE SÓLO A UNA TOMA DE CORRIENTE BIEN CONECTADA A TIERRA. NO DESCONECTE LA CLAVIJA DE TIERRA.



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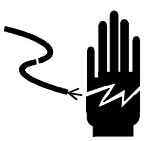
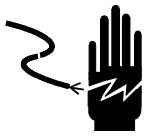


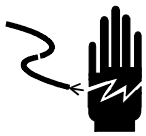
ADVERTENCIA

SI SE USA ESTE DISPOSITIVO EN UN CICLO DE LLENADO AUTOMÁTICO O MANUAL, TODOS LOS USUARIOS DEBEN PROPORCIONAR UN CIRCUITO DE PARADA DE EMERGENCIA CABLEADO FUERA DE LOS CIRCUITOS DEL DISPOSITIVO. DE NO OBSERVAR ESTA PRECAUCIÓN SE PUEDEN PRODUCIR LESIONES CORPORALES Y DAÑOS MATERIALES.



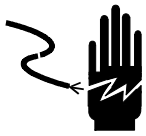
ADVERTENCIA

LAS TOMAS DE CORRIENTE DEBEN SER FÁCILMENTE ACCESIBLES Y ESTAR UBICADAS A UNA DISTANCIA QUE NO SEA MAYOR QUE LA LONGITUD DEL CORDÓN DE ALIMENTACIÓN INCLUIDO CON EL PRODUCTO. DE NO HACER ESTO SE PUEDEN PRODUCIR LESIONES PERSONALES Y DAÑOS MATERIALES.



ADVERTENCIA

METTLER TOLEDO NO ASUME RESPONSABILIDAD ALGUNA POR LA INSTALACIÓN CORRECTA DE ESTE EQUIPO EN UN ÁREA DE LA DIVISIÓN 2 O ZONA 2/22. QUIEN LO INSTALE DEBE ESTAR FAMILIARIZADO CON TODOS LOS REQUERIMIENTOS DE CABLEADO E INSTALACIÓN DE LA DIVISIÓN 2 O ZONA 2/22.

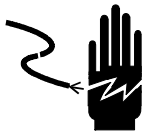


ADVERTENCIA

LOS MODELOS ANTERIORES DEL TERMINAL PANTHER QUE NO ESTÁN MARCADOS (MARCACIÓN DE FÁBRICA) COMO APROBADOS PARA LA CATEGORÍA 3 EUROPEA O DIVISIÓN 2 NO DEBEN INSTALARSE EN UN AMBIENTE DE LA ZONA 2/22 O DE LA DIVISIÓN 2.

ADVERTENCIA

PARA INSTALAR EL SOPORTE DEL PANEL PANTHER APROBADO PARA LA DIVISIÓN 2 UTILIZANDO LA APROBACIÓN DE FACTORY MUTUAL, DEBE SEGUIRSE LA ILUSTRACIÓN DE CONTROL DE METTLER TOLEDO 155907R SIN NINGUNA EXCEPCIÓN. PARA INSTALAR LA TERMINAL DEL SOPORTE DEL PANEL PANTHER DE LA CATEGORÍA 3 UTILIZANDO EL CERTIFICADO DE APROBACIÓN KEMA 02atex1163x DEBEN SEGUIRSE LAS REGULACIONES SIN NINGUNA EXCEPCIÓN. EL NO REALIZAR ESTO PUEDE CONDUCIR A ACCIDENTES Y/O DAÑOS MATERIALES.

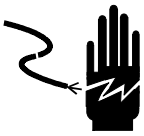


ADVERTENCIA

PARA LAS APLICACIONES DE ÁREA PELIGROSA DE LA ZONA EUROPEA 2/22, DEBE SEGUIRSE SIN NINGUNA EXCEPCIÓN LA GUÍA DE INSTALACIÓN CATEGORÍA 3 DE PANTHER (*)16684500A Y EL CERTIFICADO DE EXAMINACIÓN TIPO KEMA.

ADVERTENCIA

SI HAY UN DAÑO EN EL TECLADO, EN EL LENTE LECTOR O EN EL ENCAJE DE UN TERMINAL DE MONTAJE DE UN PANEL PANTHER ANALÓGICO CON MARCACIONES PARA DIVISIÓN 2 O CATEGORÍA 3 QUE SE ESTÁ USANDO EN UN ÁREA CLASIFICADA COMO ZONA 2/22, EL COMPONENTE DEFECTUOSO SE DEBE ARREGLAR INMEDIATAMENTE. RETIRE INMEDIATAMENTE LA CORRIENTE ALTERNA Y NO LA VUELVA A SUMINISTRAR HASTA QUE EL LENTE LECTOR, EL TECLADO O EL ENCAJE HAYA SIDO REPARADO O CAMBIADO POR PERSONAL DE SERVICIO CALIFICADO. EL NO REALIZARLO PUEDE CONDUCIR A ACCIDENTES Y/O DAÑOS MATERIALES.



ADVERTENCIA

EL TERMINAL PANTHER TIENE UNA CLASIFICACIÓN DE TEMPERATURA MUTUAL DE FABRICA DE T3A (180° C) Y UNA CLASIFICACIÓN DE TEMPERATURA KEMA DE T4 (135° C). ESTE NO DEBE SER UTILIZADO EN ÁREAS DONDE LA TEMPERATURA DE AUTO-IGNICIÓN DEL MATERIAL PELIGROSO ESTÉ POR DEBAJO DE ESTA CLASIFICACIÓN.

CONTENIDO

1 Introducción

Generalidades

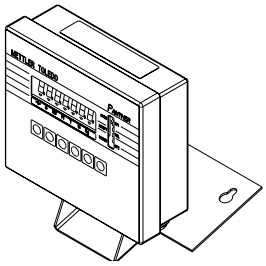
La siguiente información tiene como finalidad ayudar a instalar las terminales PANTHER y PANTHER PLUS y las diversas tarjetas de opciones. Lea bien la información antes de empezar la instalación. Cualquier instalación de cables internos de opciones, o programación debe ser realizada solamente por técnicos capacitados.

NOTA: **SÓLO** la versión analógica de la terminal de montaje del panel PANTHER está aprobada para utilizarse en las áreas de División 2 y Zona 2/22. Para las áreas de la División 2, refiérase a la guía de instalación para la División 2 de la terminal de montaje PANTHER (analógico) que se encuentra al respaldo de este manual. Refiérase a la Guía de Instalación de la Categoría Europea 3 G/D, (*)16684500A, para las áreas de la Zona 2/22.

Inspección y lista de comprobación del contenido

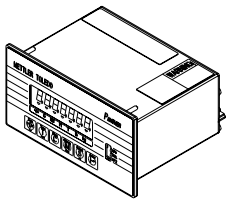
1. Si parece que está dañada la caja de envío de la terminal después de la entrega, compruebe el interior para ver si está dañada. Envíe una reclamación al transportista, si es necesario.
2. Si el embalaje no estaba dañado, desembale el recipiente si aún no lo ha hecho. Conserve los materiales de embalaje originales para usar en el futuro.
3. Asegúrese de que el paquete de la terminal contenga lo siguiente:

   • Terminal PANTHER o PANTHER PLUS (consulte la tabla de identificación de modelos de la página siguiente para confirmar si está trabajando con el modelo correcto)



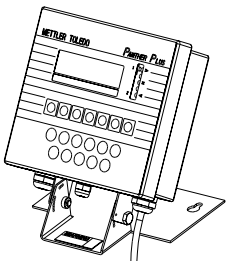
Terminal PANTHER para ambientes rigurosos (PTHN)

- Guía de instalación
- Sello de seguridad
- Etiquetas de capacidad
- Etiquetas de leyendas del cursor
- Etiquetas de direcciones
- Juego de tornillería
- CD de documentación



Terminal PANTHER de montaje en panel (PTPN)

- Guía de instalación
- Sello de seguridad
- Etiquetas de capacidad
- Etiquetas de leyenda del cursor
- Etiquetas de direcciones
- Empaquetadura
- Etiqueta indicadora CE
- Juego de tornillería
- CD de documentación



Terminal PANTHER Plus para ambientes rigurosos (PTHK)

- Guía de instalación
- Sello de seguridad
- Etiquetas de capacidad
- Etiquetas de leyendas del cursor
- Etiquetas de direcciones
- Juego de tornillería
- CD de documentación

Use esta información para confirmar el número de modelo correcto de la terminal con la que estará trabajando. El número de modelo se encuentra en la placa de datos del lado de la terminal.

P T XX - X X X X - X X X

Terminal PANTHER

Tipo de recinto/pantalla
PN – Montaje en papel, pantalla numérica
HN – Ambiente riguroso (despacho/pared), pantalla numérica
HK (PANTHER Plus, riguroso más teclado)
PC – Montaje en panel especial
HC – Ambiente riguroso especial

Interfaz de la balanza
1—Celda de carga analógica
3– Celda de carga DigiTOL

Opción de interfaz
0—Sin opción
5—Modbus Plus
6—Allen-Bradley
8—Salida analógica (no disponible cuando se usa con más de 4 celdas de carga analógicas)
9--Profibus

Opción de punto de control
0—Ninguna
1—3 Punto de control Opto (montaje en panel solamente)

Sin usar
0—Siempre

Mercado de destino

Nota: En este manual se usan los términos siguientes:

PTHN – Terminal PANTHER para ambientes rigurosos.
PTPN – Terminal PANTHER de montaje de panel
PTHK -- Terminal PANTHER PLUS (terminal PANTHER para ambientes rigurosos con un teclado).

Advertencias/ Precauciones

ADVERTENCIA

PERMITA SÓLO AL PERSONAL CAPACITADO QUE EFECTÚE EL SERVICIO DE ESTE EQUIPO. TENGA CUIDADO AL EFECTUAR COMPROBACIONES, PRUEBAS Y AJUSTES QUE DEBAN HACERSE CON LA CORRIENTE CONECTADA. DE NO OBSERVAR ESTAS PRECAUCIONES SE PUEDEN PRODUCIR LESIONES CORPORALES Y DAÑOS MATERIALES.

PRECAUCIÓN

OBSERVE LAS PRECAUCIONES PARA MANIPULAR DISPOSITIVOS SENSIBLES A LAS DESCARGAS ELECTROSTÁTICAS.

Consideraciones de ubicación / ambientales

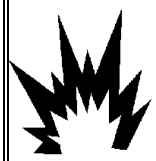
- Temperatura de operación: 14°F a 113°F (–10°C a 45°C) para una humedad del 10% al 95%, sin condensado.
- Temperatura de almacenamiento: –40°F a 140°F (–40°C a 60°C) para una humedad del 10% al 95% de humedad, sin condensado.
- Clasificación del recinto: Requisitos TIPO 4X (IP65) para un recinto hermético al polvo y a prueba de salpicaduras para la terminal PANTHER de montaje en panel.
- **¡Las terminales PANTHER y PANTHER PLUS no son intrínsecamente seguras!** No obstante, pueden operar con básculas y barreras ubicadas en áreas peligrosas. Póngase en contacto con su representante autorizado de METTLER TOLEDO para obtener ayuda en las aplicaciones de áreas peligrosas.

  NOTA: **SÓLO** la versión analógica de la terminal de montaje del panel PANTHER está aprobada para utilizarse en las áreas de División 2 y Zona 2/22. Para las áreas de la División 2, refiérase a la guía de instalación para la División 2 de la terminal de montaje PANTHER (analógico) que se encuentra al respaldo de este manual. Refiérase a la Guía de Instalación de la Categoría Europea 3 G/D, (*)16684500A, para las áreas de la Zona 2/22.

ADVERTENCIA

PARA UTILIZAR LA TERMINAL ANALÓGICA DEL SOPORTE DEL PANEL PANTHER EN UN ÁREA CLASIFICADA COMO CLASE I, II O III, DIVISIÓN 2, GRUPOS A, B, C, D, F O G, DEBE SEGUIRSE SIN NINGUNA EXCEPCIÓN LA ILUSTRACIÓN DE CONTROL DE METTLER TOLEDO 155907R. PARA UTILIZAR LA TERMINAL ANALÓGICA DEL SOPORTE DEL PANEL PANTHER EN UN ÁREA CLASIFICADA COMO ZONA 2/22, DEBEN SEGUIRSE EL CERTIFICADO ATEX 02atex 1163X Y TODAS LAS REGULACIONES LOCALES. EL NO REALIZAR ESTO PUEDE CONDUCIR A ACCIDENTES Y/O DAÑOS MATERIALES.

EL TERMINAL PANTHER PLUS, LA VERSIÓN DIGITOL DEL SOPORTE DEL PANEL Y LA VERSIÓN ANALÓGICA HARSH DE LA TERMINAL PANTHER NO ESTÁN APROBADAS PARA EL USO EN LAS ÁREAS DE LA DIVISIÓN 2 O DE LA ZONA 2/22. ¡NO INSTALE ESTAS VERSIONES EN ÁREAS PELIGROSAS!



¡ADVERTENCIA!

LAS TERMINALES PANTHER Y PANTHER PLUS NO SON INTRÍNSECAMENTE SEGURAS! NO USE EN ÁREAS CLASIFICADAS COMO PELIGROSAS POR EL CÓDIGO ELÉCTRICO NACIONAL (NEC) DEBIDO A ATMÓSFERAS COMBUSTIBLES O EXPLOSIVAS.

Dimensiones e instrucciones de montaje

PTHN/PTHK

Use el juego de tornillería incluido para montar la terminal a una pared o superficie plana tal como una mesa de despacho, consultando las dimensiones y dibujos de la Figura 1. Nota: Las dimensiones e instrucciones de montaje son las mismas para la terminal PANTHER para ambientes rigurosos y la terminal PANTHER PLUS.

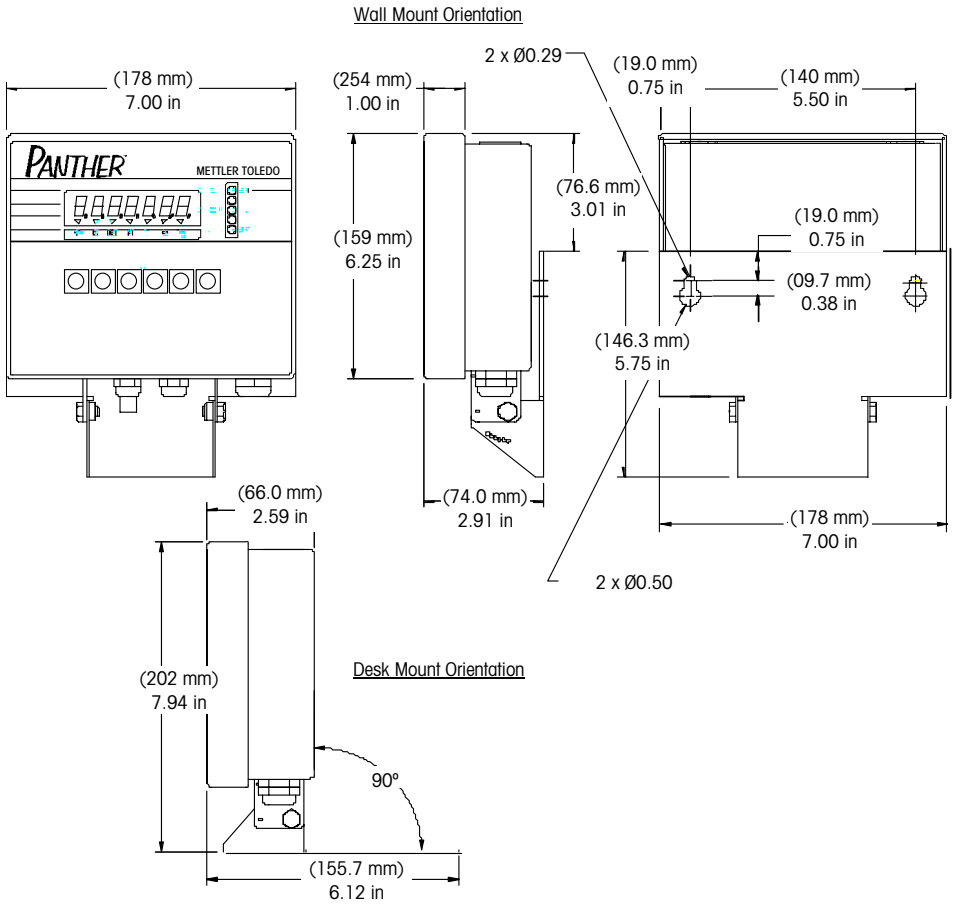


Figura 1: Dimensiones de la terminal PANTHER para ambientes rigurosos y la terminal PANTHER PLUS (se muestra la PANTHER para ambientes rigurosos)

PTPN

Para montar la terminal PANTHER de montaje en panel, consulte los dibujos de dimensiones de abajo y la plantilla de recorte proporcionada. Nota: La plantilla de recorte sirve de referencia solamente y no se muestra en su tamaño real, tenga en cuenta que los "optos" optativos de alto nivel añaden 1,25 pulg (31,7 mm) a la dimensión de profundidad.

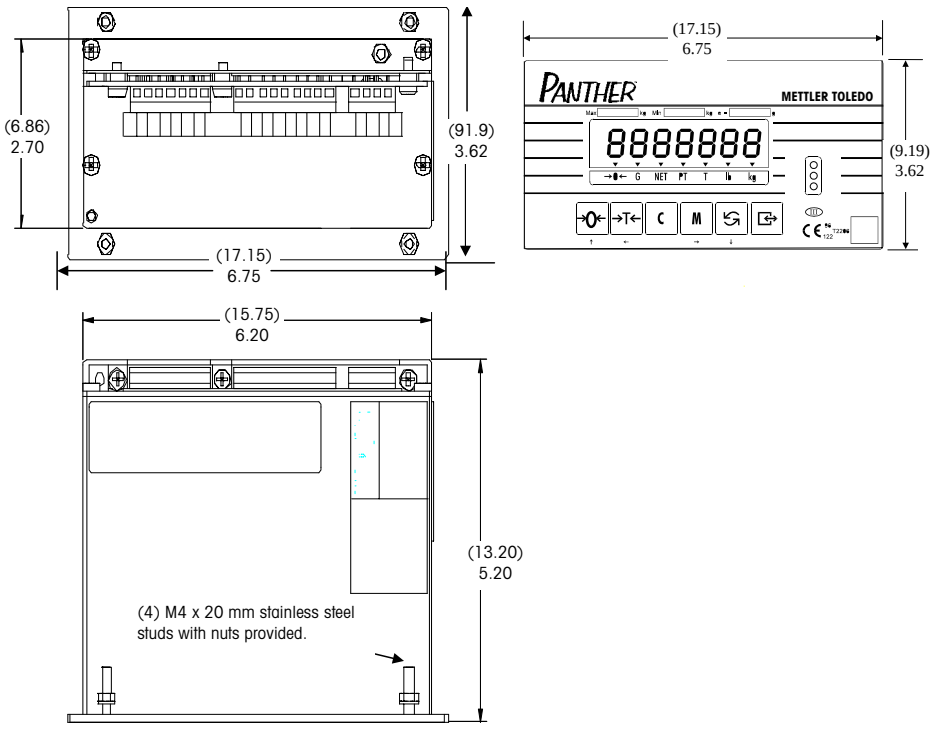


FIGURE 2: TERMINAL PANTHER DE MONTAJE EN PANEL

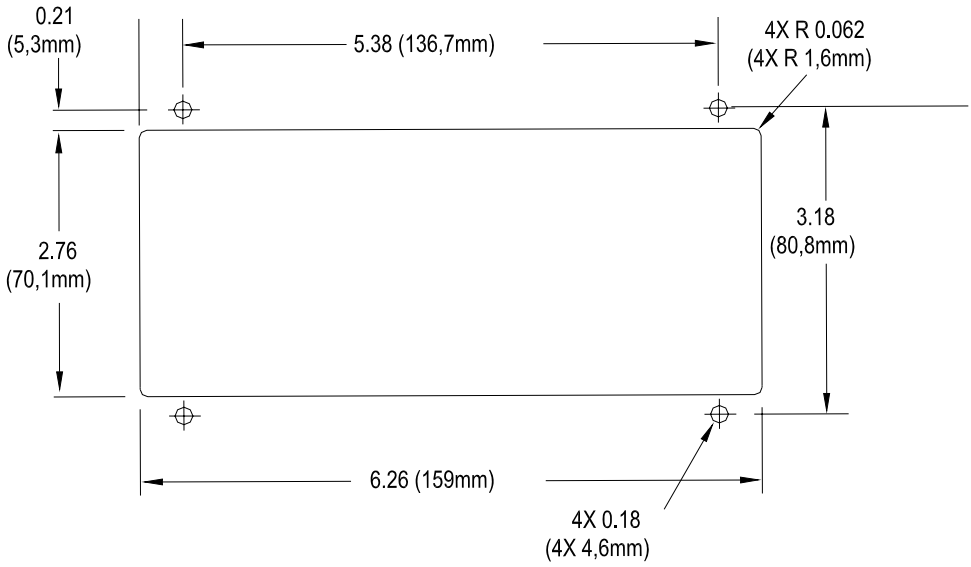


FIGURA 3: PLANTILLA DE LA PANTHER DE MONTAJE EN PANEL

Acceso al PCB del controlador de la terminal

Para efectuar las conexiones de cables necesarias, hay que tener acceso al PCB del controlador de la terminal. El acceso al tablero del controlador de PTHN/PTHK requiere la apertura de la terminal. El acceso al tablero del controlador de PTPN se incluye directamente en la parte de atrás de la unidad.

PTHN/PTHK

1. Introduzca la punta de un destornillador de hoja plana en una de las dos ranuras ("A" en la Figura 4) de la parte inferior del panel delantero.
2. Empuje hacia el recinto. No apalanque en ángulo. Se debe oír un "chasquido" cuando se haya soltado la tapa.
3. Empuje por el lado de la ranura más próxima a la parte inferior de la tapa. Repita esto para la otra ranura.

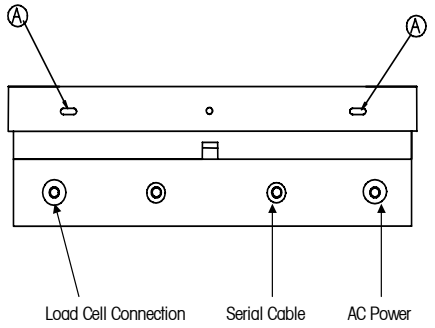


Figura 4

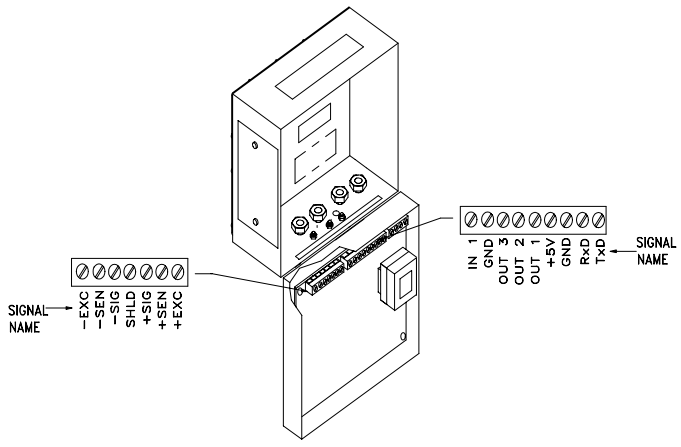


Figura 5

4. Levante y saque la parte inferior del panel delantero hasta que salga completamente del recinto.
5. Apriete la parte superior del panel delantero contra el recinto y súbalo hasta sacarlo de las dos presillas superiores. La tapa se abatirá hacia abajo (Figura 5), articulada por un cable en la parte inferior.

Nota: Cuando la tapa se abate hacia abajo, se pueden ver las tiras de terminales en el PCB del controlador. (Vea la Figura 6). Podrá efectuar las conexiones eléctricas usando estas tiras de terminales. Nota: El PCB estará boca abajo.

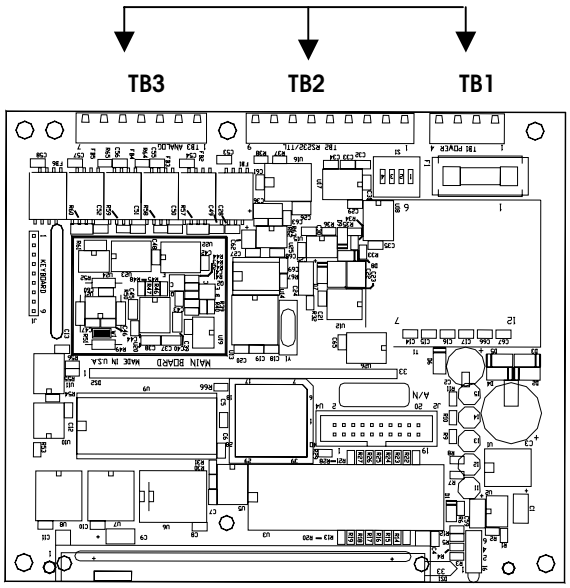


FIGURA 6

Pase los cables que entran en el recinto por una grapa tiradora de cables de tamaño apropiado antes de conectar los cables.

Efectúe las conexiones eléctricas necesarias según las instrucciones indicadas en la sección titulada Conexiones eléctricas.

Vuelva a sujetar la tapa de atrás.

Apriete la grapa tiradora de cables para formar un sello hermético al agua alrededor del cable. Esto permitirá eliminar cualquier comba interna de los cables a través de la grapa tiradora.

Empuje la parte inferior de la tapa delantera sobre el recinto. Un chasquido indica que la tapa está colocada. Apriete la tapa delantera sobre el recinto en las cuatro esquinas para verificar que las cuatro presillas estén bien enganchadas.

PTPN

El acceso al modelo de PANTHER de montaje en panel es por la parte de atrás de la terminal, donde se efectúan todas las conexiones a las tiras de terminales en el PCB del controlador (la Figura 7 muestra la parte de atrás de las versiones DigiTOL y analógica que son idénticas, aunque el TB3 tendrá una etiqueta diferente).

Si es necesario tener acceso al interior de la unidad, quite los dos tornillos que sujetan la cubierta en la parte de atrás de la unidad y levante la cubierta sobre las tiras de terminales. Al hacer eso se dejará al descubierto todo el PCB del controlador. Vea las Figuras 8 y 9.

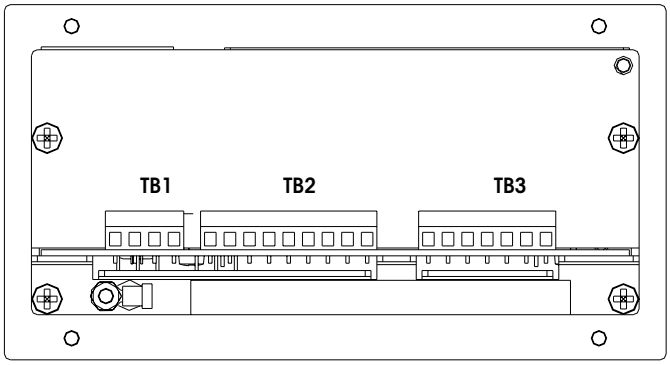


Figura 7: Parte de atrás de PTPN

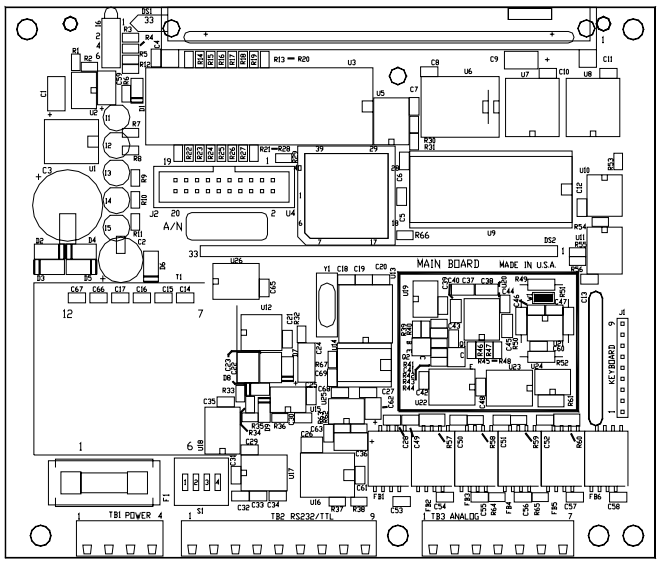


Figura 8: PCB analógico

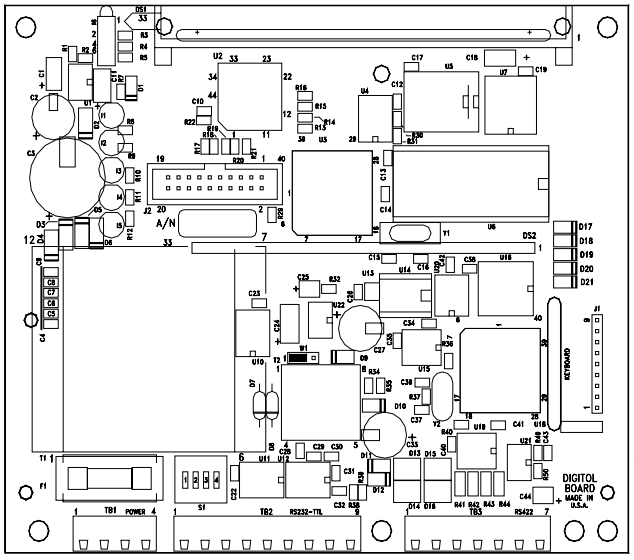


Figura 9: PCB DigiTOL

2 Conexiones eléctricas

Antes de hacer las conexiones

Antes de efectuar cualquier conexión, verifique el tipo de interfaz de celda de carga. El quinto carácter del identificador del producto indica si la unidad es analógica o DigiTOL® (1=Analógica, 3=DigiTOL).

⚠ PRECAUCIÓN

PARA EVITAR DAÑOS EN EL PCB O CELDA DE CARGA, DESCONECTE LA CORRIENTE DE LA TERMINAL Y ESPERA AL MENOS 30 SEGUNDOS ANTES DE CONECTAR O DESCONECTAR CUALQUIER MAZO DE CABLES O CONECTAR O DESCONECTAR CUALQUIER BASE ULTRARES O DIGITOL®.

Conexiones de la celda de carga analógica

Determine la máxima longitud de los cables. La máxima longitud de los cables para las conexiones de la celda de carga analógica a la terminal dependen de la resistencia total de la báscula (RTB) de la base de la báscula. Para calcular la RTB:

$$\text{RTB} = \frac{\text{Resistencia de la entrada de la celda de carga (ohmios)}}{\text{Número de celdas de carga}}$$

Longitud máxima recomendada de los cables basada en la RTB y el calibre de los cables

RTB (ohmios)	Calibre 24 (pies/metros)	Calibre 20 (pies /metros)	Calibre 16 (pies/metros)
350	800/244	2000/610	4000/1219
87 (4 celdas – 350 Ω)	200/61	600/183	1000/305
45 (8 celdas – 350 Ω)	100/31	300/91	500/152

Si se usa una versión analógica de la terminal PANTHER de montaje en panel en un área peligrosa clasificada como División 2 o si sólo las celdas de carga estarán en un área peligrosa clasificada como División 2, se debe seguir el dibujo de control de METTLER TOLEDO 155907R. Consulte la guía de la División 2 al final de este manual.

Conecte a TB3 del PCB del controlador de la terminal.

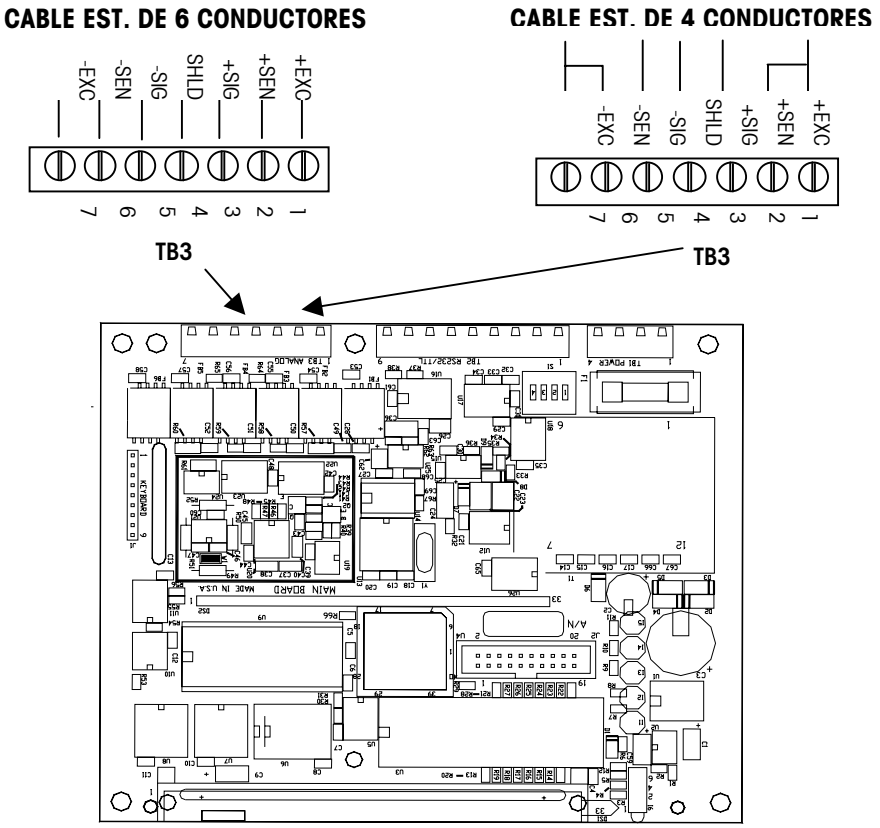


Figura 10: Conexiones para PTHN/PTHK

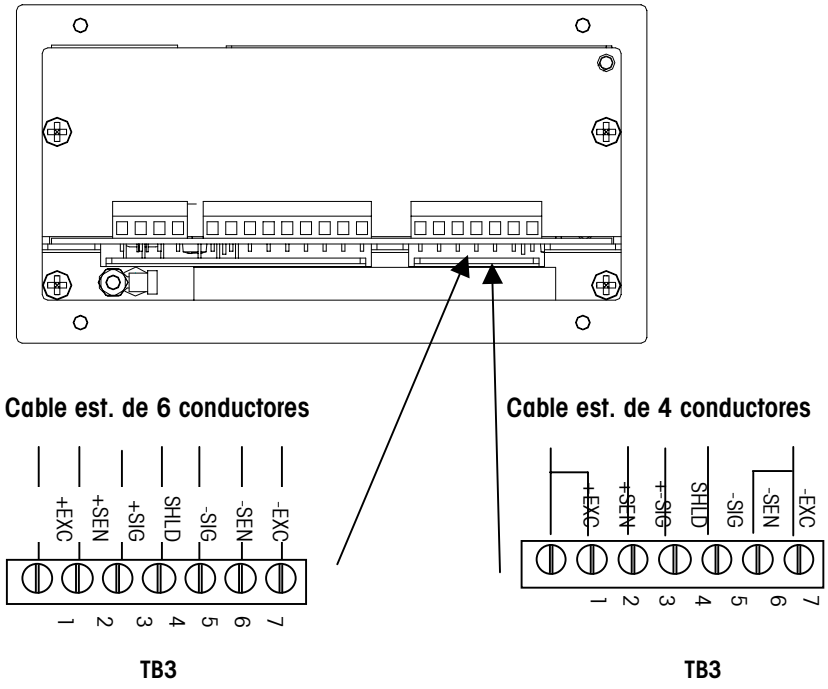


Figura 11: Conexiones para PTPN

Conexiones de celdas de carga UltraRes y DigiTOL®

La máxima longitud de cables para todas las bases DigiTOL® es de 50 pies (15,24 metros). Conecte bases UltraRes o DigiTOL® a TB3 en la terminal PANTHER de la forma siguiente:

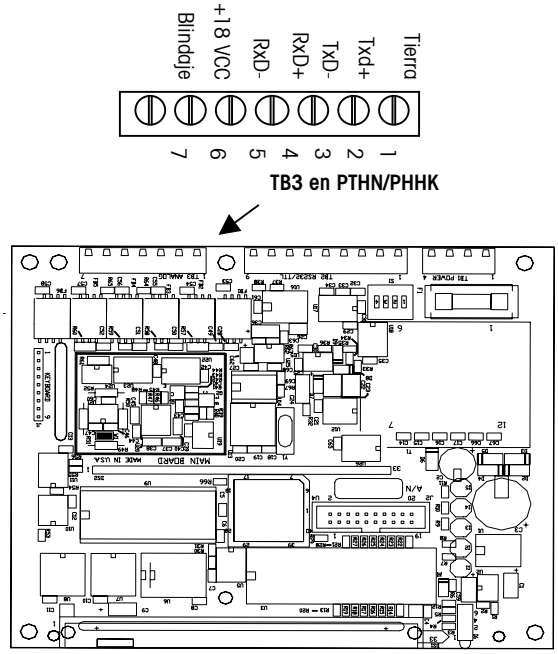


Figura 12: Conexiones para PTHN/PTHK

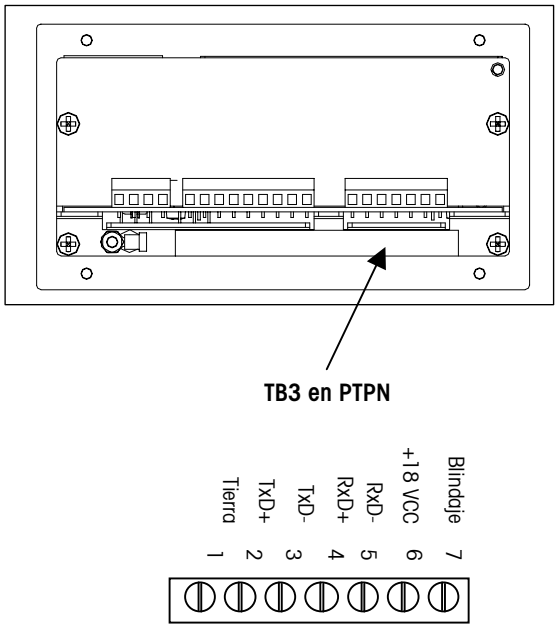


Figura 13: Conexiones para PTPN

PANTHER TB3		Código de color		Base UltraRes o DigiTOL B/P	
Tierra	1	Azul	7	Tierra
TxD+	2	Rojo	1	RxD A
TxD-	3	NC Blanco	4	Entrada pila
RxD+	4	Negro	8	TxD A
RxD-	5	Amarillo	6	TxD B
+18 VCC	6	Verde	5	+ 20 VCC
Blindaje	7	Anaranjado		

Conexiones de caja de empalmes DigiTOL

La longitud máxima de los cables para la caja de empalmes DigiTOL es de 300 pies (91,4 metros).

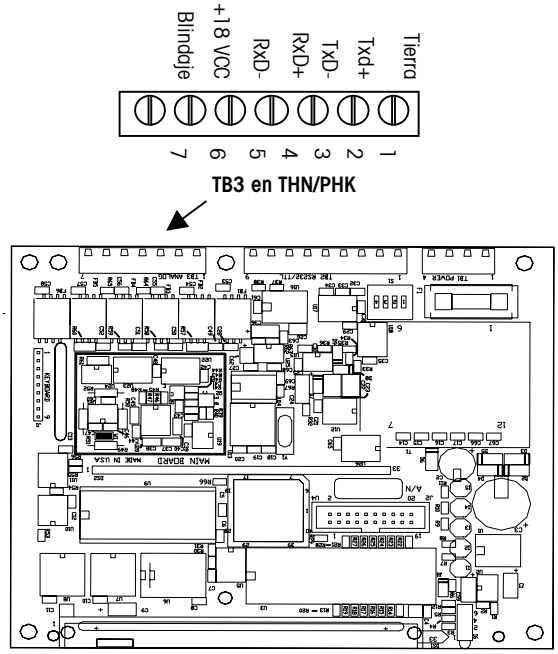


Figura 14: Conexiones para PTHN/PTHK

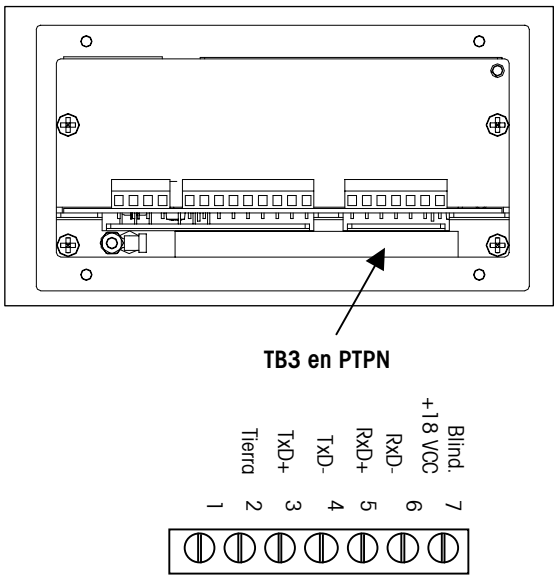


Figura 15: Conexiones para PTPN

PANTHER TB3		Código de color	Caja de empalmes DigiTOL mejorada	
Tierra	1	Azul	7	Tierra (TB2)
TxD+	2	Rojo	1	RxD A (TB1)
TxD-	3	Blanco	4	Batt In (TB 1)
RxD+	4	Negro	8	TxD A (TB1)
RxD-	5	Amarillo	6	TxD B (TB1)
+18 VCC	6	Verde	5	+20 VCC (TB2)
Blindaje	7	Anaranjado		

Conexiones en serie (todos los modelos)

Conexión del puerto en serie del PCB principal

El puerto en serie COM 1 es bidireccional. La máxima longitud recomendada del cable para las comunicaciones RS-232 son 50 pies (15,24 metros).

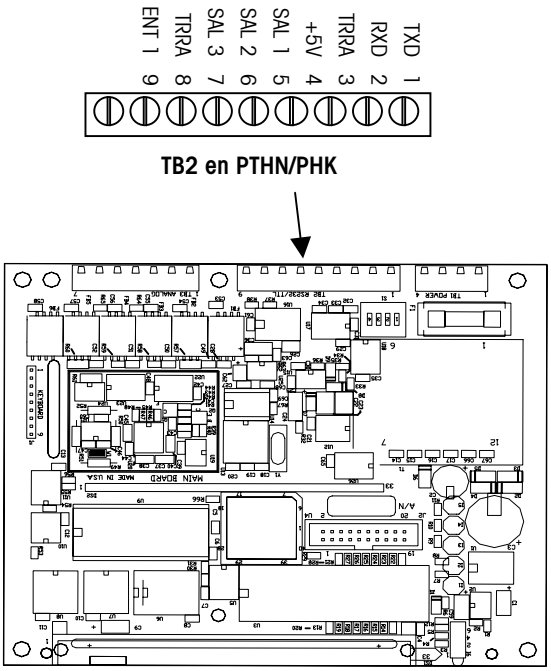


Figura 16: Conexiones para PTHN/PTHK

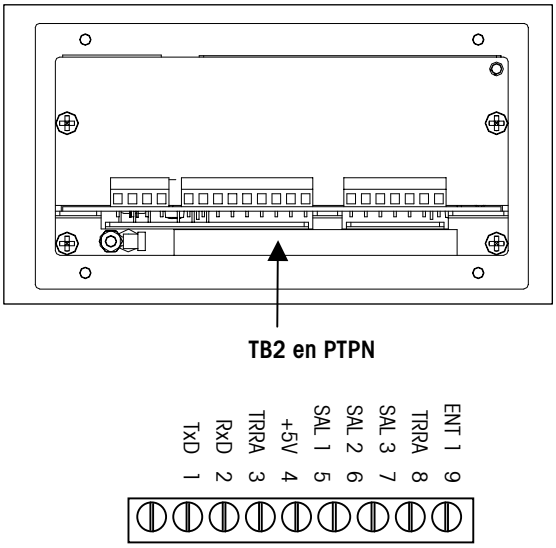


Figura 17: Conexiones para PTPN

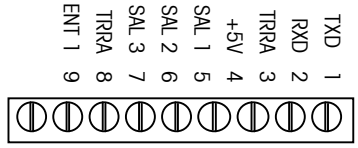
PANTHER TB2 COM1		
TXD	1	RS-232 Trans.
RXD	2	RS-232 Recibir
GND	3	Señal de tierra

Conexión de clavijas para dispositivos METTLER TOLEDO que usen COM 1		
PANTHER TB2 COM1	**8806 8807 8808 8845 8846* 8857 8861 8863* 8865 8867***	**8617-TB2 9323-TB2 9325-TBS**
TXD	3	2
RXD	--	--
TIERRA	7	3

*Conexiones mostradas para usar con el enchufe de adaptador incluido en estos modelos.

Conexión discreta de E/S

Consulte el apéndice de los manuales técnicos de la terminal PANTHER o PANTHER Plus para obtener información



TB2 en PTHN/PHK

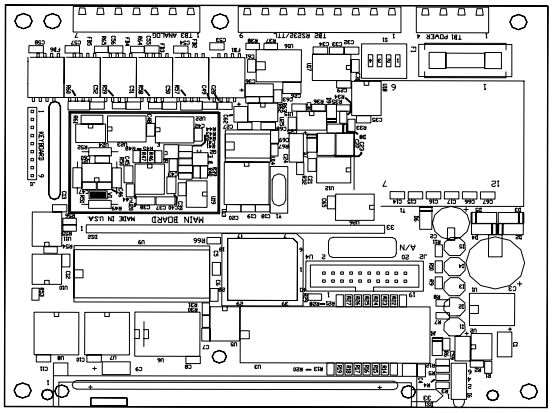
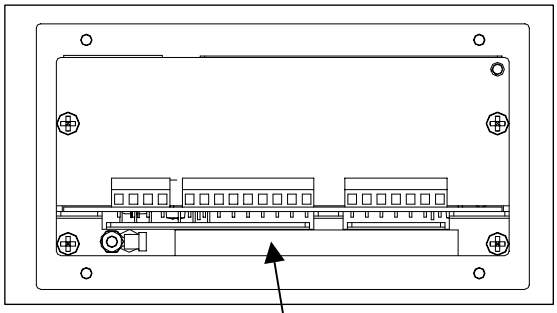


Figura 18: Conexiones para PTHN/PTHK



TB2 en PTPN

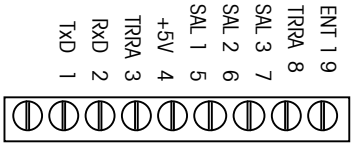


Figura 19: Conexiones para PTPN

TB2

4	+5 VCC, corriente limitada a 15 mA	
5	SALIDA 1	Nivel TTL, 5 VCC máximo
6	SALIDA 2	Nivel TTL, 5 VCC máximo
7	SALIDA 3	Nivel TTL, 5 VCC máximo
8	TIERRA	
9	ENTRADA 1	$V_{ENT\ BAJA}$ = 0,0 – 0,8 VCC, $V_{ENT\ ALTA}$ = 3,5 – 5,0 VCC.

Corriente

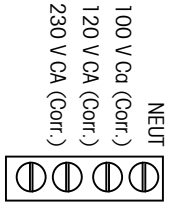
Fuente de alimentación universal (selección manual):

Opera: 85 a 264 VCA.
Frecuencia de la línea: 49 a 63 Hz.
Consumo de potencia: 12 vatios como máximo.

La integridad de la puesta a tierra de corriente para equipos es importante tanto para la seguridad como para la operación fiable de la terminal y su base de báscula asociada. Una conexión a tierra defectuosa puede resultar en una condición peligrosa si se produce un cortocircuito en el equipo. Se necesita una buena conexión a tierra para reducir al mínimo los impulsos de ruido eléctrico extraños. La terminal no debe compartir líneas de corriente con equipos generadores de ruido. Para confirmar la integridad de la puesta a tierra, use un analizador de ramales comercial como el ICE modelo SureTest ST-1D. Si existen condiciones de alimentación eléctrica adversas, tal vez sea necesario usar un circuito de alimentación especial o acondicionador de líneas de alimentación.

PTHN/PTHK

Las terminales PANTHER y PANTHER PLUS para ambientes rigurosos se envían con el cordón de alimentación instalado en fábrica. Antes de conectar la corriente, confirme que el cordón de alimentación esté bien cableado para el voltaje de CA donde se usará la terminal. El cordón de alimentación se conecta a la tira de terminales TB1 del PCB del controlador.



TB1

TB1 en PTHN/PHK

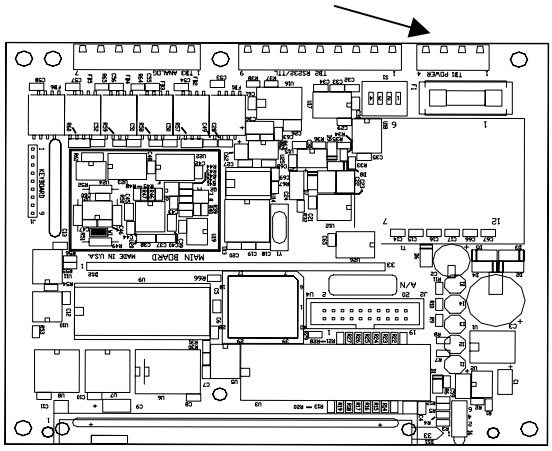
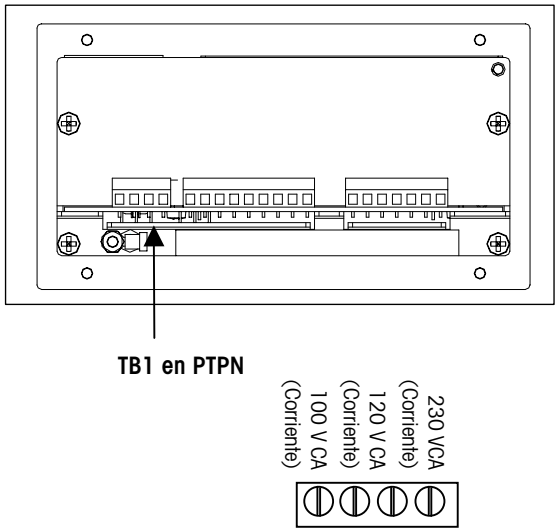


Figura 20: Conexiones para PTHN/PTHK

Colores de cordones de alimentación Colors	
Neutro	Azul
Con corriente	Café
Tierra (chasis)	Verde/Amarillo



PTPN

No se envía ningún cordón de alimentación con el modelo de montaje en panel. Abajo se muestran las conexiones con la tira de terminales TB1 de la parte trasera de la terminal. La puesta a tierra está conectada a la tierra del chasis.

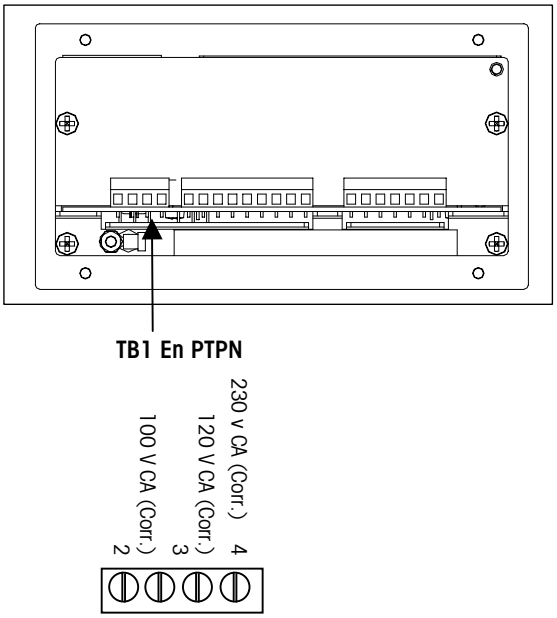


FigurA 21: Conexiones para PTHN/PTHK

3 Instalación/Conexiones de tarjetas de opciones

Opciones

Se dispone de varias tarjetas de opciones para usar con las terminales PANTHER o PANTHER Plus. Incluyen lo siguiente:

- Salida analógica
- Allen-Bradley RIO
- Modbus Plus
- Profibus
- Salida de punto de control (montaje en panel solamente)

Si las tarjetas de opciones se pidieron por separado, las instrucciones para instalarlas se incluirán con las tarjetas de opciones. Los manuales técnicos de PANTHER y PANTHER PLUS incluyen información más detallada sobre cada una de estas opciones.

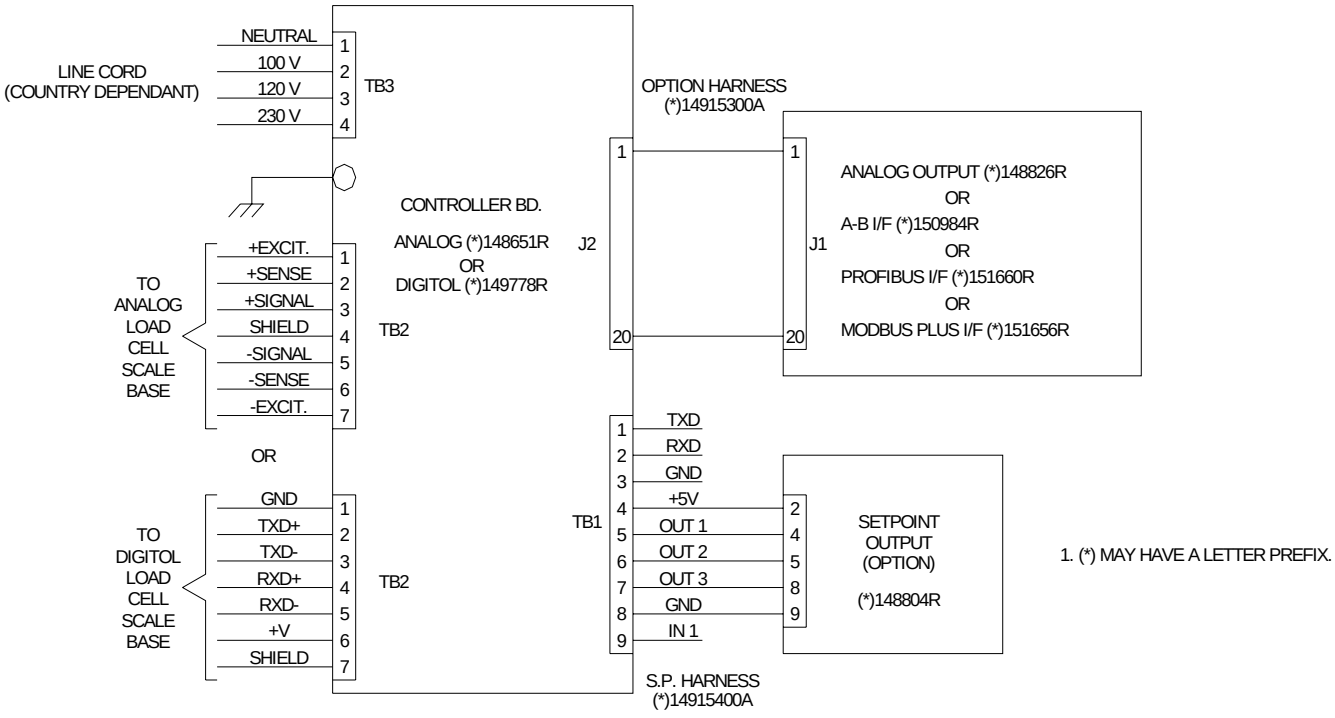
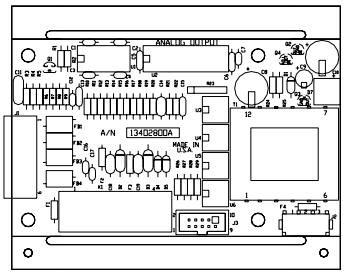
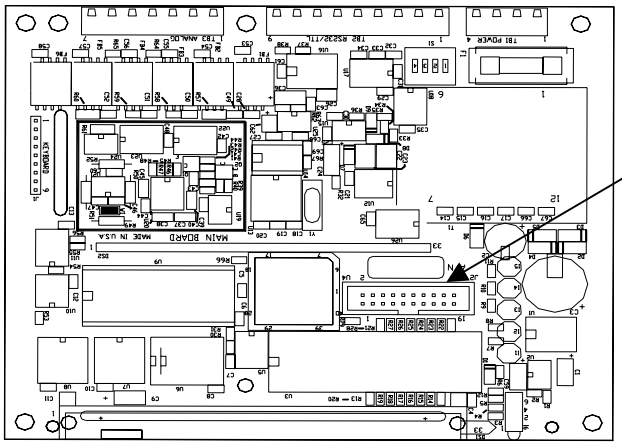


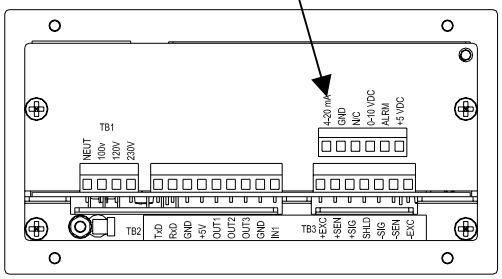
Figura 22: Diagrama de interconexiones para PANTHER/PANTHER PLUS

Opción de salida analógica (0917-0246)





Tira de terminales de salida analógicos		
J2	1	4-20 mA
	2	TIERRA
	3	N.C.
	4	0-10 V
	5	ALARMA
	6	+5V



El juego de opciones de salida analógicas proporciona las gamas de salida de 0-10 VCC o 4 - 20 mA más una salida de indicación de estado de colector abierto aislada ópticamente. El PCB de salida analógica puede instalarse en las terminales PANTHER y PANTHER PLUS para ambientes rigurosos o en la terminal PANTHER de montaje en panel.

La máxima longitud de cables recomendada para la salida de 0-10 VCC es de 50 pies (15,2 metros). El cable recomendado es un cable trenzado blindado de 2 conductores de calibre 20 (Belden No. 8762 o equivalente, disponible de METTLER TOLEDO usando el número de pieza 510220190.

4 a 20mA

Dispositivo del cliente (4-20 mA)

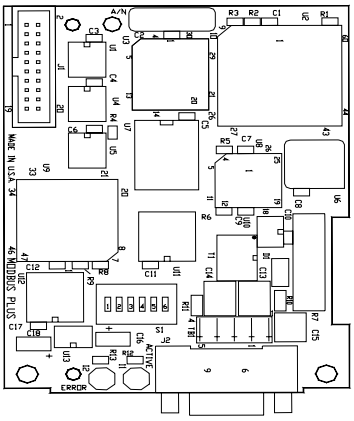
J2		
1	4-20mA	+
2	TIERRA	-
3	N.C.	
4	0-10 VCC	
5	ALARMA*	
6	+5 VCC	

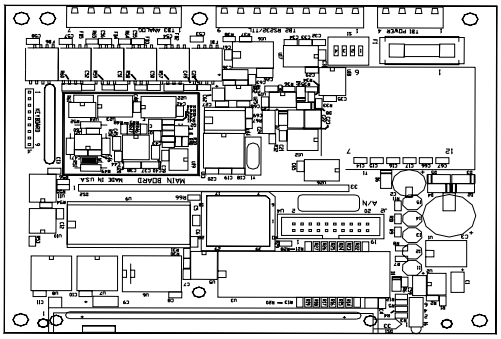
0 a 10 VCC

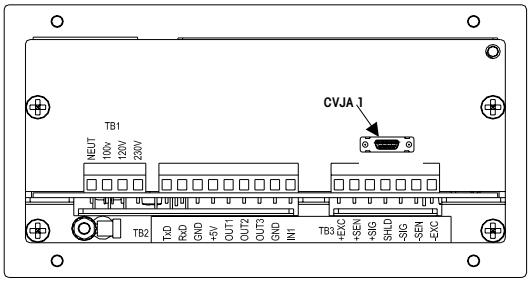
Dispositivo del cliente (0-10 VCC)

J2		
1	4-20mA	
2	TIERRA	-
3	N.C	
4	0-10 VCC	+
5	ALARMA*	
6	+5 VCC	

Opción Modbus Plus







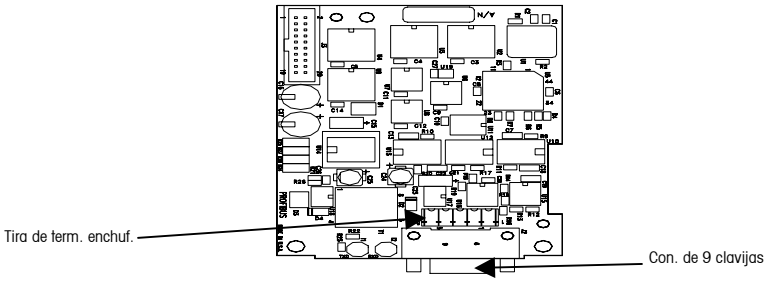
Hay dos conexiones para la interfaz Modbus Plus.

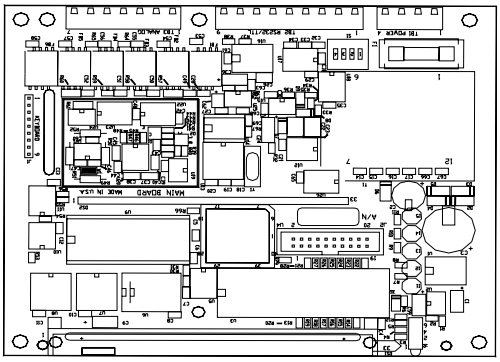
- La conexión estándar para la terminal PANTHER de montaje en panel es el conector hembra DE-9. El conector incluye las instrucciones de las conexiones. La red Modbus Plus usa las clavijas 1, 2 y 3 del conector DE-9 (suministradas por Modicon).
- La terminal PANTHER para ambientes rigurosos debe usar una tira de terminales enchufable. Cuando se use la tira de terminales, se dispone del juego de cables flexibles Modbus 0900-0320.

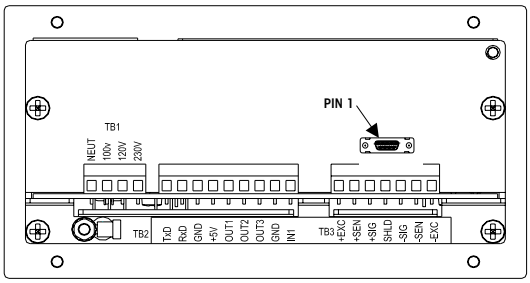
El cable flexible Modbus está conectado a la terminal PANTHER de la forma siguiente:

DE-9		Tira de terminales
1	Blanco	1
2	Verde	2
3	Negro	3

Opción Profibus



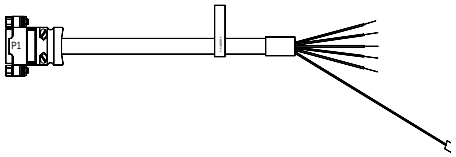




La conexión PROFIBUS está disponible en dos lugares del PCB PROFIBUS. La primera es un conector subminiatura D hembra de 9 clavijas, que es la conexión PROFIBUS estándar. El conjunto de conector de obra no lo suministra METTLER TOLEDO. Esta conexión es la conexión preferida en la terminal de montaje de panel.

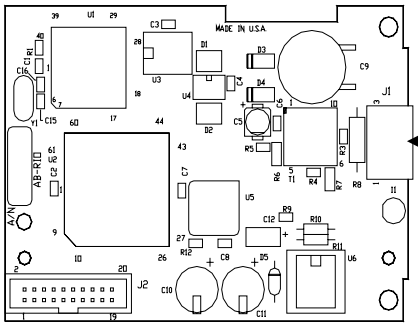
Hembra DE-9
1 TIERRA (aislada)
2 N.C.
3 TX/RX+
4 LISTO PARA ENVIAR
5 TIERRA (aislada)
6 +5V (aislada)
7 N.C.
8 TX/RX-
9 N.C.

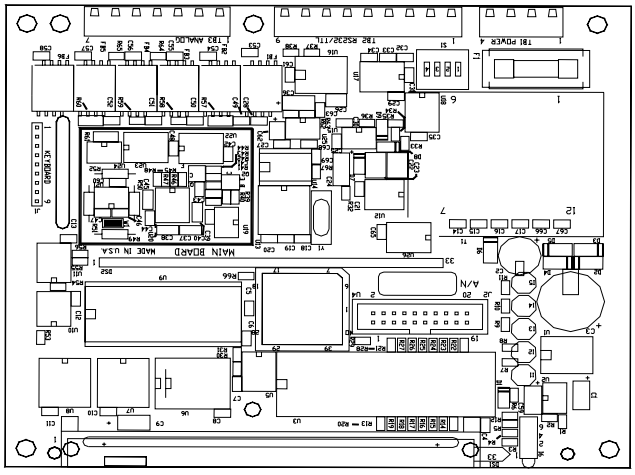
En el caso de la terminal PANTHER para ambientes rigurosos, se debe usar la tira de terminales enchufable. En estos casos, se dispone de un mazo de cables flexibles optativo para conectar de la tira de terminales al conector D hembra de 9 clavijas. El mazo de cables del adaptador puede pedirse usando el número de fábrica 0900-0311. El adaptador de muestra aquí.

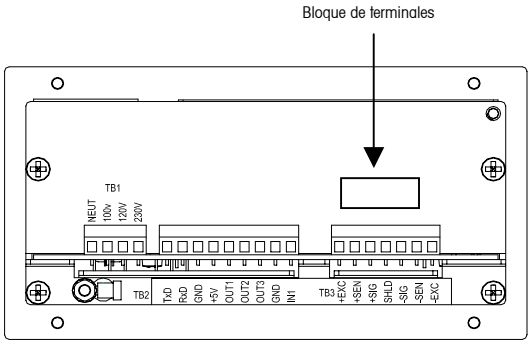


Tira de terminales
1 LISTO PARA ENVIAR
2 TXD/RXD+
3 TXD/RXD-
4 +5 V (aislada)
5 TIERRA (aislada)

Opción Allen Bradley RIO







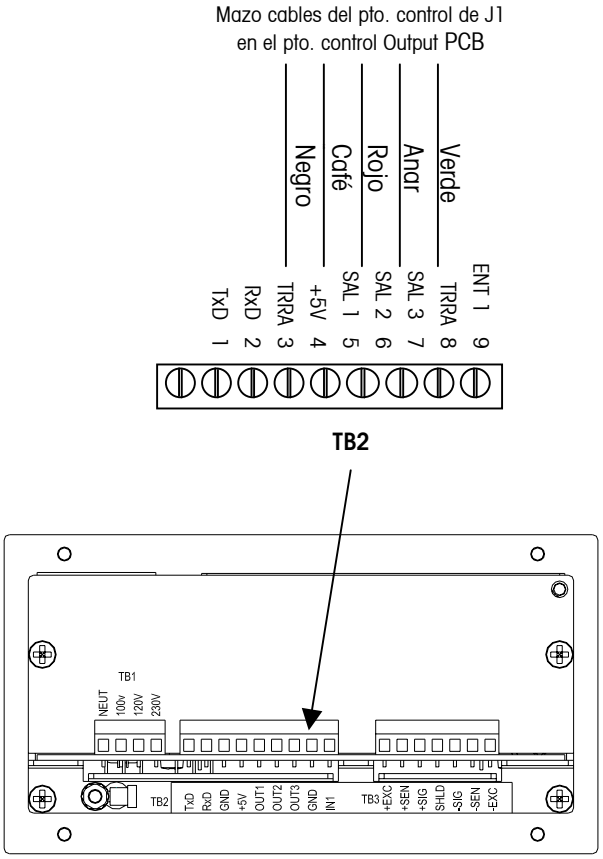
El juego de la opción Allen-Bradley de PANTHER permite la conectividad con el PLC de Allen-Bradley usando el protocolo de E/S remoto (RIO). El juego puede instalarse en las terminales PANTHER o PANTHER PLUS para ambientes rigurosos o en la terminal PANTHER de montaje en panel.

Sistema eléctrico: centrado, impulsores de líneas aislados del transformador
Conector: Tira de terminales desmontable de tres posiciones conectada de izquierda a derecha (vista del conector trasero) como:

Azul
Blindaje
Transparente

Opción de salida de punto de control (montaje en panel solamente)

El juego de opción de salida de punto de control permite una interfaz de CA de alto nivel (28 - 280 VCA) para las tres salidas discretas de bajo nivel estándar. Conecte los extremos sueltos del mazo de cables a las terminales siguientes en el PCB del controlador de terminales:



PANTHER® und PANTHER® PLUS

Industrie-Terminal

Installationsanleitung

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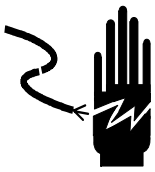

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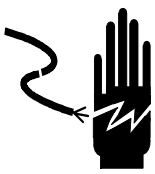
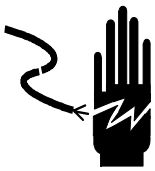


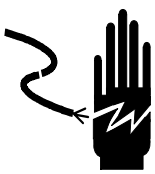
⚠ ACHTUNG

DIESES GERÄT DARF NUR VON QUALIFIZIERTEM PERSONAL GEWARTET WERDEN. BEI PRÜFUNGEN, TESTS UND EINSTELLUNGEN, DIE BEI EINGESCHALTETER STROMZUFUHR DURCHGEFÜHRT WERDEN MÜSSEN, VORSICHTIG VORGEHEN. DIE NICHTBEACHTUNG DIESER VORSICHTSMASSNAHMEN KANN ZU VERLETZUNGEN UND/ODER SACHSCHÄDEN FÜHREN.



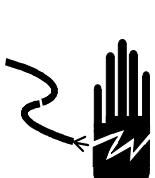
⚠ ACHTUNG

ZUR GEWÄHRLEISTUNG EINES KONTINUIERLICHEN SCHUTZES GEGEN STROMSCHLAG NUR AN EINE ORDNUNGSGEMÄSS GEERDETE STECKDOSE ANSCHLIESSEN. DEN ERDUNGSSTIFT NICHT ENTFERNEN.



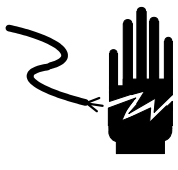
⚠ ACHTUNG

WENN DIESES GERÄT ALS KOMPONENTE IN EIN SYSTEM INTEGRIERT WIRD, MUSS DIE DARAUS ENTSTEHENDE KONSTRUKTION VON QUALIFIZIERTEM PERSONAL ÜBERPRÜFT WERDEN, DAS MIT DEM BAU UND BETRIEB ALLER KOMPONENTEN IM SYSTEM UND DEN POTENZIELLEN GEFAHREN VERTRAUT IST. DIE NICHTBEACHTUNG DIESER VORSICHTSMASSNAHMEN KÖNNTE ZU VERLETZUNGEN UND/ODER SACHSCHÄDEN FÜHREN.



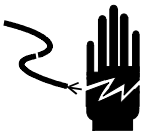
⚠ ACHTUNG

FALLS DIESES GERÄT IN EINEM AUTOMATISCHEN ODER MANUELLEN BEFÜLLUNGSZYKLUS EINGESETZT WIRD, MÜSSEN ALLE BENUTZER EINEN FEST VERDRAHTETEN NOTSTOPPSCHALTKREIS BEREITSTELLEN, DER SEPARAT VOM GERÄTESCHALTKREIS LIEGT. DIE NICHTBEACHTUNG DIESER VORSICHTSMASSNAHMEN KÖNNTE ZU VERLETZUNGEN UND/ODER SACHSCHÄDEN FÜHREN.



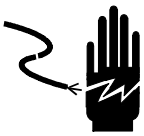
⚠ ACHTUNG

STROMANSCHLÜSSE MÜSSEN LEICHT ZUGÄNGLICH SEIN UND DÜRFEN SICH NICHT AUSSERHALB DER REICHWEITE DES MIT DEM PRODUKT GELIEFERTEN NETZKABELS BEFINDEN. MISSACHTUNG KANN ZU VERLETZUNGEN UND/ODER SACHSCHADEN FÜHREN.



ACHTUNG

METTLER TOLEDO ÜBERNIMMT KEINE VERANTWORTUNG FÜR DIE KORREKTE INSTALLATION DIESES GERÄTES INNERHALB EINES ALS DIVISION 2 ODER ZONE 2/22 KLASSIFIZIERTEN BEREICHS. DER INSTALLIERER MUSS MIT ALLEN VERDRAHTUNGS- UND INSTALLATIONSANFORDERUNGEN DER DIVISION 2 ODER ZONE 2/22 VERTRAUT SEIN.

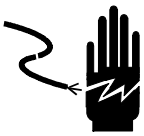


ACHTUNG

ÄLTERE MODELLE DES PANTHER-TERMINALS, DIE NICHT (AB WERK) ALS DIVISION 2 MARKIERT ODER ALS EUROPÄISCHE KATEGORIE 3 ZUGELASSEN SIND, DÜRFEN NICHT IN EINER UMGEBUNG DER DIVISION 2 ODER ZONE 2/22 INSTALLIERT WERDEN.

ACHTUNG

BEI DER INSTALLATION EINES GEMÄSS DIVISION 2 ZUGELASSENEN PANTHER-TERMINALS FÜR DEN SCHALTTAFELEINBAU UNTER VERWENDUNG DER FACTORY MUTUAL-ZULASSUNG MUSS DIE METTLER TOLEDO KONTROLLZEICHNUNG 155907R AUSNAHMSLOS BEFOLGT WERDEN. ZUR INSTALLATION DES PANTHER-TERMINALS DER KATEGORIE 3 FÜR DEN SCHALTTAFELEINBAU UNTER VERWENDUNG DES KEMA-ZULASSUNGSZERTIFIKATS 02atex1163x MÜSSEN ALLE ÖRTLICHEN VORSCHRIFTEN AUSNAHMSLOS BEFOLGT WERDEN. MISSACHTUNG KANN ZU VERLETZUNGEN UND/ODER SACHSCHÄDEN FÜHREN.

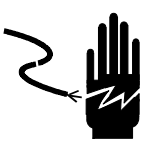


ACHTUNG

FÜR EXPLOSIONSGEFÄHRDETE BEREICHE DER EUROPÄISCHEN ZONE 2/22 MÜSSEN DAS INSTALLATIONSHANDBUCH (*)16684500A UND DAS KEMA-TYPENPRÜFUNGSZERTIFIKAT AUSNAHMSLOS BEFOLGT WERDEN.

ACHTUNG

FALLS DIE TASTATUR, DIE ANZEIGELINSE ODER DAS GEHÄUSE EINES GEMÄSS DIVISION 2 ZUGELASSENEN ODER MIT KATEGORIE 3 MARKIERTEN, IN EINEM BEREICH DER DIVISION 2 ODER ZONE 2/22 EINGESETZTEN PANTHER-TERMINALS FÜR DEN SCHALTTAFELEINBAU BESCHÄDIGT WIRD, MUSS DIE DEFEKTE KOMPONENTE SOFORT REPARIERT WERDEN. DIE WECHSELSTROMZUFUHR UNTERBRECHEN UND KEINEN STROM ZUFÜHREN, BIS DIE ANZEIGELINSE, DIE TASTATUR ODER DAS GEHÄUSE DURCH QUALIFIZIERTE SERVICE-TECHNIKER REPARIERT ODER ERSETZT WURDE. MISSACHTUNG KANN ZU VERLETZUNGEN UND/ODER SACHSCHÄDEN FÜHREN.



ACHTUNG

DAS PANTHER-TERMINAL VERFÜGT ÜBER EINE TEMPERATURNENNLEISTUNG VON T3A (180 °C) GEMÄSS FACTORY MUTUAL UND EINE TEMPERATURNENNLEISTUNG VON T4 (135 °C) GEMÄSS KEMA. ES DARF NICHT IN BEREICHEN EINGESETZT WERDEN, IN DENEN DIE SELBSTENTZÜNDUNGSTEMPERATUR DES EXPLOSIONSGEFÄHRDETEN MATERIALS UNTER DIESER KLASSIFIZIERUNG LIEGT.

INHALT

For your notes

1 Einleitung

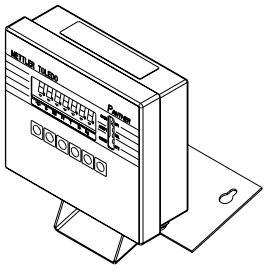
Überblick

Die folgenden Informationen dienen als Richtlinien für die Installation der PANTHER- und PANTHER PLUS-Terminals und der verschiedenen Optionskarten. Bitte lesen Sie die Informationen gründlich durch, bevor Sie mit der Installation beginnen. Alle internen Verdrahtungen, die Installation von Optionen oder Programmierung sollte nur von qualifizierten Technikern durchgeführt werden.

HINWEIS: **NUR** die Analog-Version des PANTHER-Terminals für den Schalttafeleinbau ist zur Verwendung in Bereichen der Division 2 und Zone 2/22 zugelassen. Weitere Angaben für Bereiche der Division 2 finden Sie in der Installationsanleitung zum PANTHER-Terminal für den Schalttafeleinbau (Analog) für Bereiche der Division 2 weiter hinten in diesem Handbuch. Informationen für Bereiche der Zone 2/22 finden Sie im Installationshandbuch der Europäischen Kategorie 3 G/D (*)16684500A.

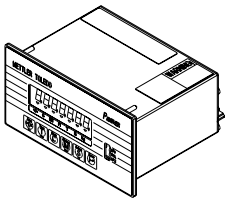
Inspektion und Prüfliste für Inhalt

1. Wenn der Versandkarton des Terminals bei der Auslieferung beschädigt erscheint, überprüfen Sie den Inhalt auf Schäden. Reichen Sie gegebenenfalls einen Schadensersatzanspruch beim Transportunternehmen ein.
2. Wenn der Versandkarton nicht beschädigt war, packen Sie ihn aus, falls noch nicht geschehen. Bewahren Sie das Original-Verpackungsmaterial für den zukünftigen Gebrauch auf.
3. Stellen Sie sicher, daß das Paket mit dem Terminal folgende Bestandteile enthält:
   - PANTHER- oder PANTHER PLUS-Terminal (siehe Modellidentifizierungsdiagramm auf der nächsten Seite, um zu bestätigen, dass Sie mit dem richtigen Modell arbeiten)



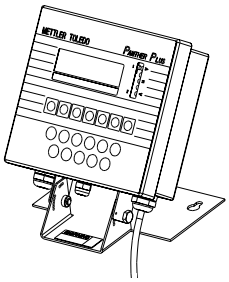
PANTHER-Terminal für raue Umgebungen (PTHN)

- Installationsanleitung
- Sicherheitssiegel
- Etiketten mit Höchstlast
- Etiketten mit der Cursor-Legende
- Adressetiketten
- Befestigungsmaterial
- Dokumentations-CD



PANTHER-Terminal für den Schalttafeleinbau (PTPN)

- Installationsanleitung
- Sicherheitssiegel
- Etiketten mit Höchstlast
- Etiketten mit der Cursor-Legende
- Adressetiketten
- Dichtung
- CE-Indikatoretikett
- Befestigungsmaterial
- Dokumentations-CD



PANTHER Plus-Terminal für raue Umgebungen (PTHK)

- Installationsanleitung
- Sicherheitssiegel
- Etiketten mit Höchstlast
- Etiketten mit der Cursor-Legende
- Adressetiketten
- Befestigungsmaterial
- Dokumentations-CD

Bestimmen Sie anhand der nachstehenden Informationen die korrekte Modellnummer für das Terminal, mit dem Sie arbeiten werden. Die Modellnummer befindet sich auf dem Datenschild seitlich am Terminal.

P T XX - X X X X - X X X

PANTHER-Terminal

Gehäuse-/Anzeigetyp
PN – Schalttafeleinbau, numerische Anzeige
HN – Raue Umgebung (Tisch/Wand), numerische Anzeige
HK (PANTHER Plus, raue Umgebung plus Tastatur)
PC – Schalttafeleinbau, Spezialanfertigung
HC – Raue Umgebung, Spezialanfertigung

Waagenschnittstelle
1--Analog-Wägezelle
3– DigiTOL-Wägezelle

Schnittstellenoption
0--Keine Option
5—Modbus Plus
6—Allen-Bradley
8—Analog-Ausgang (nicht verfügbar, wenn er zusammen mit mehr als 4 Analog-Wägezellen verwendet wird)
9--Profibus

Sollwertoption
0—Keine
1—3 Opto-Sollwert (nur Schalttafeleinbau)

Unbelegt
0—Immer

Zielmarkt

Hinweis: Im gesamten Handbuch werden folgende Begriffe verwendet:

PTHN -- PANTHER-Terminal für raue Umgebungen.
PTPN -- PANTHER-Terminal für den Schalttafeleinbau
PTHK -- PANTHER PLUS-Terminal (ein PANTHER-Terminal für raue Umgebungen mit einem Tastenfeld).

Warnhinweise/Vorsichtsmaßnahmen

ACHTUNG

DIESES GERÄT DARF NUR VON QUALIFIZIERTEM PERSONAL INSTALLIERT UND GEWARTET WERDEN. BEI PRÜFUNGEN, TESTS UND EINSTELLUNGEN, DIE BEI EINGESCHALTETER STROMZUFUHR DURCHGEFÜHRT WERDEN MÜSSEN, VORSICHTIG VORGEHEN. DIE NICHTBEACHTUNG DIESER VORSICHTSMASSNAHMEN KANN ZU VERLETZUNGEN UND/ODER SACHSCHÄDEN FÜHREN.

VORSICHT

BEACHTEN SIE DIE ENTSPRECHENDEN VORSICHTSMASSNAHMEN BEIM UMGANG MIT GERÄTEN, DIE EMPFINDLICH AUF ELEKTROSTATIK REAGIEREN.

Aufstellungsort/Umgebungserwägungen

- Betriebstemperatur –10 °C bis 45 °C (14 °F bis 113 °F) bei 10 % bis 95 % Feuchtigkeit, nicht kondensierend.
- Lagertemperatur: –40 °C bis 60 °C (-40 °F bis 140 °F) bei 10 % bis 95 % Feuchtigkeit, nicht kondensierend.
- Gehäuseschutzart: Anforderungen gemäß TYP 4X (IP65) an ein staubdichtes und spritzfestes Gehäuse für das PANTHER-Terminal für den Schalttafeleinbau.
- **Die PANTHER- und PANTHER PLUS-Terminals sind nicht eigensicher!** Sie sind jedoch für den Betrieb mit Waagen und Barrieren ausgelegt, die sich in explosionsgefährdeten Bereichen befinden. Wenden Sie sich an Ihren autorisierten METTLER TOLEDO Vertreter für weitere Auskünfte über den Einsatz in Ex-Bereichen.

HINWEIS: **NUR** die Analog-Version des PANTHER-Terminals für den Schalttafeleinbau ist zur Verwendung in Bereichen der Division 2 und Zone 2/22 zugelassen. Weitere Angaben für Bereiche der Division 2 finden Sie in der Installationsanleitung zum PANTHER-Terminal für den Schalttafeleinbau (Analog) für Bereiche der Division 2 weiter hinten in diesem Handbuch. Informationen für Bereiche der Zone 2/22 finden Sie im Installationshandbuch der Europäischen Kategorie 3 G/D (*)16684500A.

ACHTUNG!

UM DAS PANTHER-ANALOGTERMINAL FÜR DEN SCHALTTAFELEINBAU IN EINEM BEREICH BENUTZEN ZU KÖNNEN, DER ALS KLASSE I, II ODER III, DIVISION 2, GRUPPE A, B, C, D, F ODER G KLASSIFIZIERT IST, MUSS DIE KONTROLLZEICHNUNG 155907R VON METTLER TOLEDO AUSNAHMSLOS BEFOLGT WERDEN. ZUR VERWENDUNG DES PANTHER-ANALOGTERMINALS FÜR DEN SCHALTTAFELEINBAU IN EINEM ALS ZONE 2/22 KLASSIFIZIERTEN BEREICHS MUSS DAS ATEX-ZERTIFIKAT 02atex 1163x UND ALLE ÖRTLICHEN VORSCHRIFTEN AUSNAHMSLOS BEFOLGT WERDEN. MISSACHTUNG KANN ZU VERLETZUNGEN UND/ODER SACHSCHÄDEN FÜHREN.

DAS PANTHER PLUS-TERMINAL, DAS DIGITOL-MODELL FÜR DEN SCHALTTAFELEINBAU UND DIE ANALOG-VERSION FÜR RAUE UMGEBUNGEN DES PANTHER-TERMINALS SIND NICHT ZUR VERWENDUNG IN BEREICHEN DER DIVISION 2 ODER ZONE 2/22 ZUGELASSEN. DIESE VERSIONEN DÜRFEN NICHT IN EXPLOSIONSGEFÄHRDETEN BEREICHEN INSTALLIERT WERDEN!

ACHTUNG!

DIE PANTHER- UND PANTHER PLUS-TERMINALS SIND NICHT EIGENSICHER! SIE DÜRFEN NICHT IN BEREICHEN VERWENDET WERDEN, DIE GEMÄSS DEM NEC (US-ELEKTROVORSCHRIFT) AUF GRUND BRENNBARER ODER EXPLOSIVER UMGEBUNGEN ALS EXPLOSIONSGEFÄHRDET EINGESTUFT WURDEN.

Abmessungen und Montageanweisungen

PTHN/PTHK

Montieren Sie das Terminal mit dem mitgelieferten Befestigungsmittelsatz an einer Wand oder auf einer flachen Oberfläche, z. B. einem Schreibtisch. Beziehen Sie sich dabei auf die Abmessungen und Zeichnungen in Abbildung 1. Hinweis: Die Abmessungen und Montageanweisungen sind für das PANTHER-Terminal für raue Umgebungen und das PANTHER PLUS-Terminal gleich.

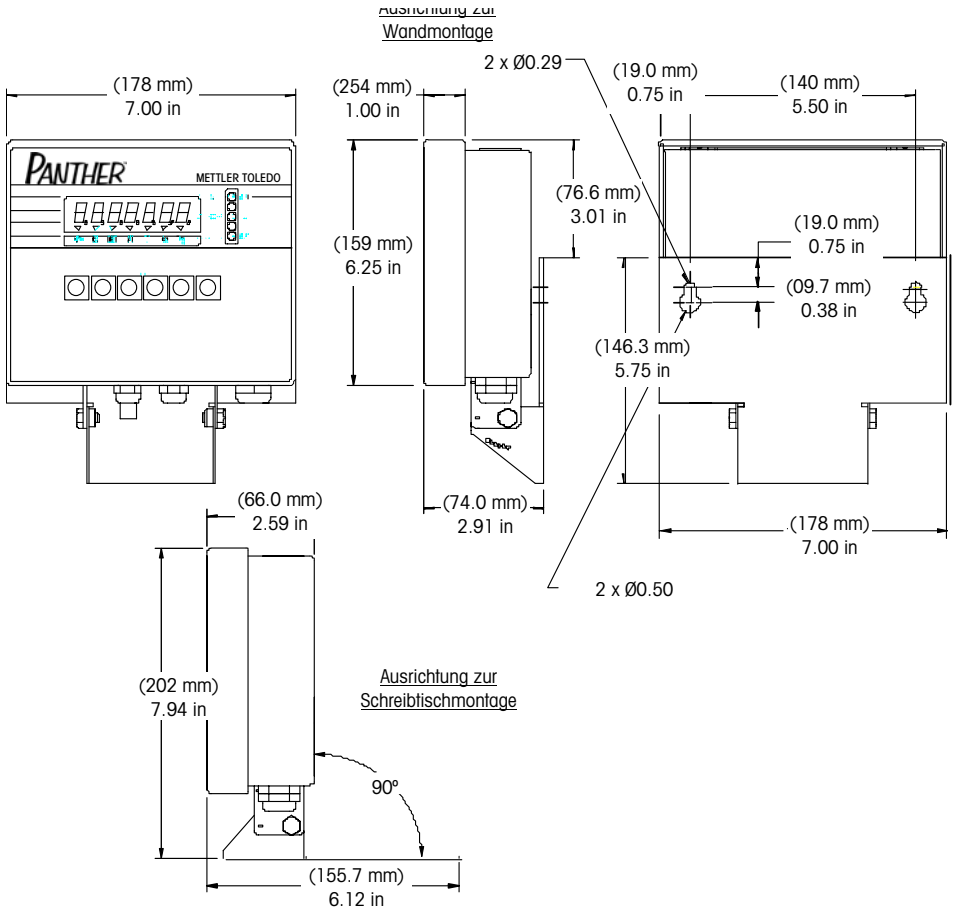


Abbildung 1: Abmessungen des PANTHER-Terminals für raue Umgebungen und PANTHER PLUS-Terminals (PANTHER-Terminal für raue Umgebungen abgebildet)

PTPN

Zur Montage des PANTHER-Terminals für den Schalttafeleinbau beziehen Sie sich auf die unten aufgeführten Maßzeichnungen und die Ausschnittsschablone. Hinweis: Die Ausschnittsschablone dient nur Referenzzwecken und ist nicht in ihrer tatsächlichen Größe abgebildet. Achten Sie außerdem darauf, dass durch die optionalen Hochpegel-Optos die Höhe um 31,7 mm (1,25 in.) angehoben wird.

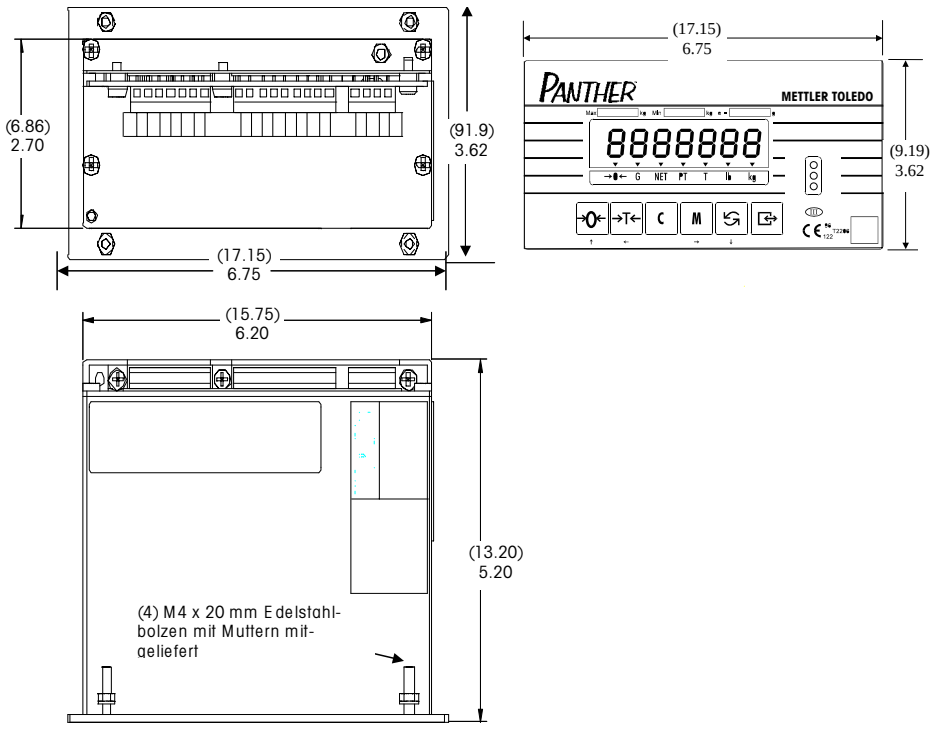


Abbildung 2: PANTHER-Terminal für den Schalttafeleinbau

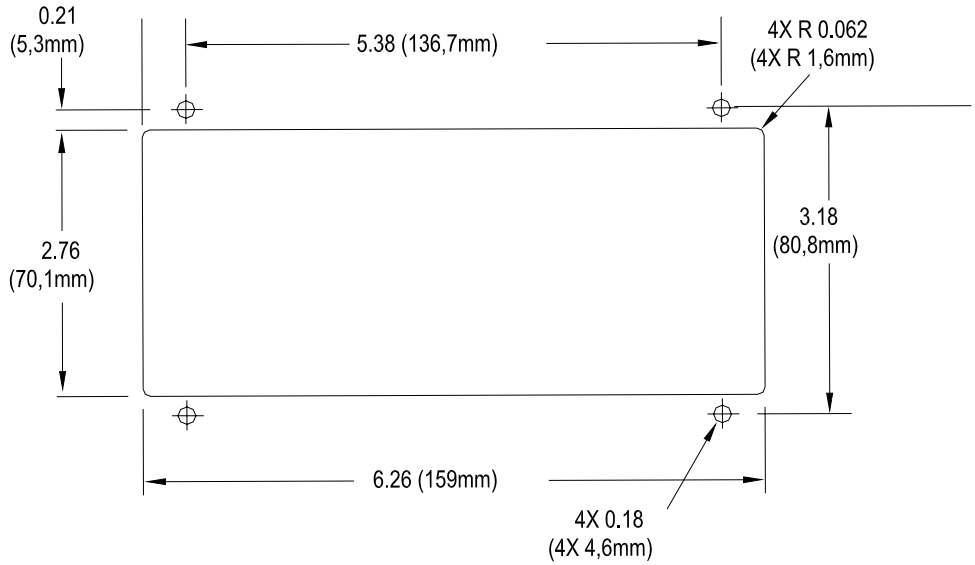


Abbildung 3: PANTHER-Montageschablone für den Schalttafeleinbau

Zugriff auf die Controller-Leiterplatte des Terminals

Zur Herstellung der erforderlichen Verdrahtungsanschlüsse müssen Sie auf die Controller-Leiterplatte des Terminals zugreifen. Um auf die Controller-Leiterplatte des PTHN- bzw. PTHK-Terminals zugreifen zu können, muss das Terminal geöffnet werden. Der Zugriff auf die Controller-Leiterplatte des PTPN-Terminals ist direkt über die Rückseite des Geräts möglich.

PTHN/PTHK

1. Die Spitze eines Flachkopfschraubendrehers in einen der beiden Schlitze („A" in Abbildung 4) an der Unterseite der Vorderplatte einführen.
2. Zum Gehäuse hin nach innen drücken. Dabei nicht in einem Winkel hebeln. Wenn sich die Abdeckung löst, hören Sie einen dumpfen Laut.
3. Die Seite des Schlitzes, die sich der Unterseite der Abdeckung am nächsten befindet, nach innen drücken. Derselbe Vorgang wird für den anderen Schlitz wiederholt.

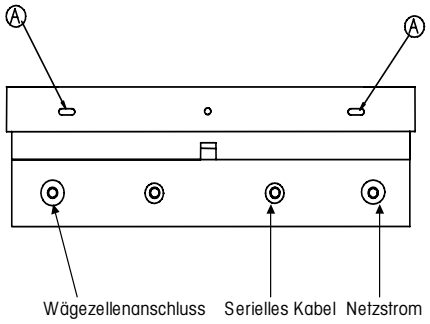


Abbildung 4

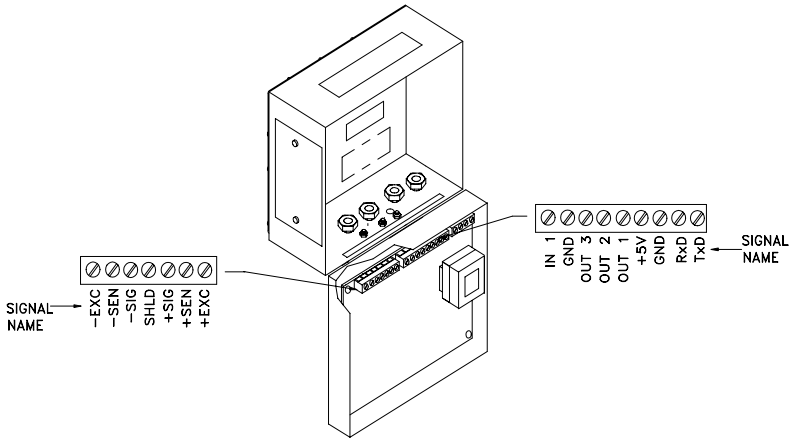


Abbildung 5

4. Die Unterseite der Vorderplatte wird so weit herausgehoben, bis sie ganz vom Gehäuse gelöst ist.
5. Die Oberseite der Vorderplatte in Richtung Gehäuse drücken und anheben, um die Platte von den beiden oberen Klammern zu lösen. Die Abdeckung schwingt

jetzt nach unten (Abbildung 5) und ist an einem Drahtkabel an der Unterseite aufgehängt.

Hinweis: Wenn die Abdeckung nach unten schwingt, werden die Klemmenleisten auf der Controller-Leiterplatte sichtbar. (Siehe Abbildung 6.) Die Elektroanschlüsse werden mithilfe dieser Klemmenleisten hergestellt. Hinweis: Die Leiterplatte ist dabei in umgedrehter Position.

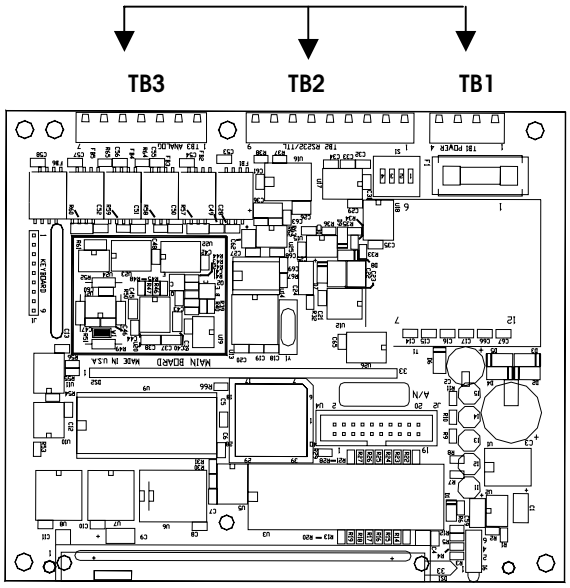


ABBILDUNG 6

6. Die in das Gehäuse führenden Kabel durch einen Kabelschuh der entsprechenden Größe ziehen, bevor die Kabel angeschlossen werden.
7. Die Elektroanschlüsse werden gemäß den Anweisungen hergestellt, die im Abschnitt „Elektroanschlüsse" zu finden sind.
8. Die hintere Abdeckung wieder befestigen.
9. Den Kabelschuh so weit festziehen, daß das Kabel wasserfest abgedichtet ist. Dadurch kann eventuell vorhandenes Kabelspiel über den Kabelschuh aufgenommen werden.
10. Die Unterseite der vorderen Abdeckung über das Gehäuse drücken. Ein Knacken zeigt an, dass die Abdeckung eingerastet ist. Die vordere Abdeckung an allen vier Ecken drücken, um sicherzustellen, dass alle vier Klammern fest sitzen.

PTPN

Der Zugriff auf das PANTHER-Terminal für den Schalttafeleinbau erfolgt über die Rückseite des Terminals, wo alle Anschlüsse an den Klemmenleisten auf der Controller-Leiterplatte hergestellt werden (Abbildung 7 zeigt die Rückseite sowohl der DigiTOL- als auch der Analog-Version, die identisch sind, auch wenn TB3 anders beschriftet ist).

Falls der Zugriff auf das Geräteinnere erforderlich ist, werden die beiden Schrauben, mit denen die Abdeckplatte an der Rückseite des Geräts befestigt ist, gelöst und die Abdeckplatte über den Klemmenleisten wird abgenommen. Dadurch wird die gesamte Controller-Leiterplatte sichtbar. Siehe Abbildungen 8 und 9.

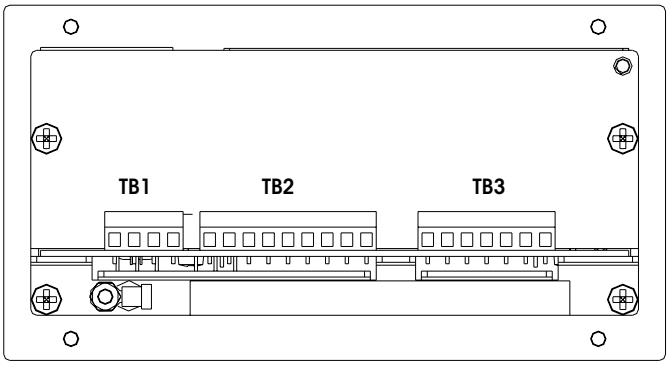


Abbildung 7: Rückseite des PTPN

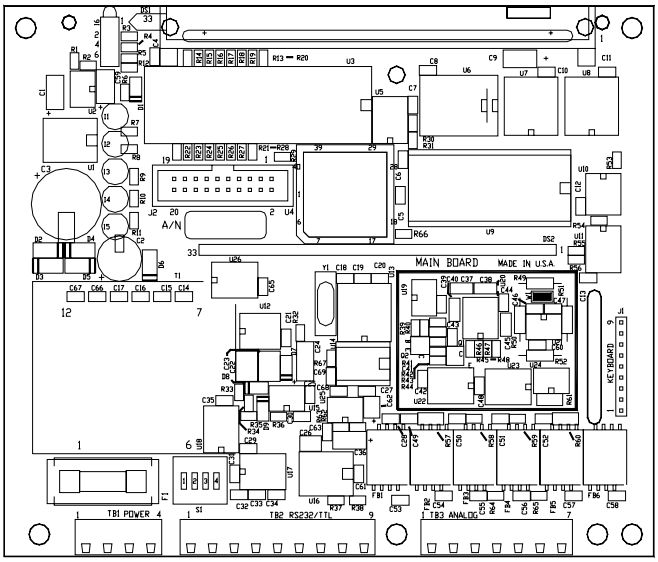


Abbildung 8: Analog-Leiterplatte

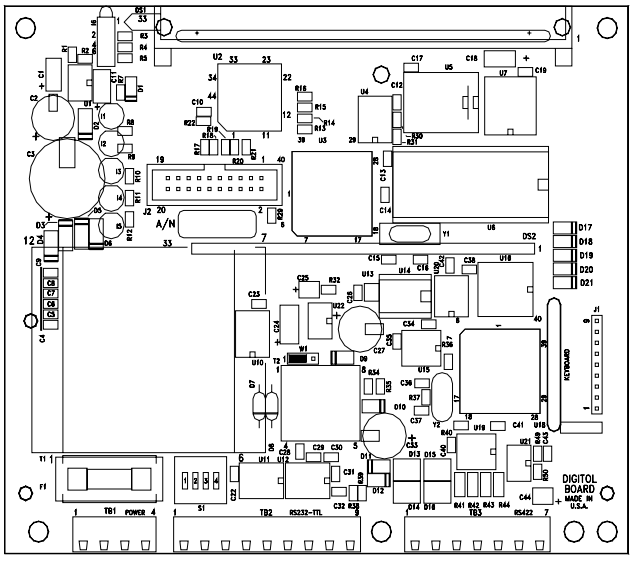


Abbildung 9: DigiTOL-Leiterplatte

2 Elektroanschlüsse

Vor dem Herstellen von Anschlüssen

Bevor Sie irgendwelche Anschlüsse herstellen muss die Art der Wägezellenschnittstelle überprüft werden. Das fünfte Zeichen der Produkt-ID gibt an, ob es sich um eine Analog- oder DigiTOL®-Wägezelle handelt (1 = Analog, 3 = DigiTOL).

⚠ VORSICHT

UM EINE BESCHÄDIGUNG DER LEITERPLATTE ODER WÄGEZELLE ZU VERMEIDEN, DIE STROMZUFUHR ZUM TERMINAL UNTERBRECHEN UND VOR ANSCHLUSS ODER ABTRENNEN VON KABELBÄUMEN ODER ULTRARES- ODER DIGITOL®-WÄGEBRÜCKEN MINDESTENS 30 SEKUNDEN LANG WARTEN.

Analog-Wägezellen-Anschlüsse

Legen Sie die maximale Kabellänge fest. Die maximale Kabellänge für Analog-Wägezellen-Anschlüsse an das Terminal hängt vom Gesamtwaagenwiderstand (Total Scale Resistance - TSR) der Wägebrücke ab. Zur Berechnung des TSR gehen Sie folgendermaßen vor:

$$TSR = \frac{\text{Wägezelleneingangswiderstand (Ohm)}}{\text{Anzahl der Wägezellen}}$$

Empfohlene maximale Kabellänge basierend auf TSR und Kabelstärke			
TSR (Ohm)	**24 Gauge (Fuß/Meter)**	**20 Gauge (Fuß/Meter)**	**16 Gauge (Fuß/Meter)**
350	800/244	2000/610	4000/1219
87 (4-350Ω Zellen)	200/61	600/183	1000/305
45 (8-350 Ω Zellen)	100/31	300/91	500/152

An TB3 der Controller-Leiterplatte des Terminals anschließen.

Wenn eine Analogversion des PANTHER-Terminals für den Schalttafeleinbau in explosionsgefährdeten Bereichen verwendet wird, die als Division 2 klassifiziert sind, oder wenn sich nur die Wägezellen in einem als Division 2 klassifizierten explosionsgefährdeten Bereich befinden, muss die Kontrollzeichnung 155907R von METTLER TOLEDO befolgt werden. Siehe die Anleitung bezüglich Division 2 am Ende dieses Handbuchs.

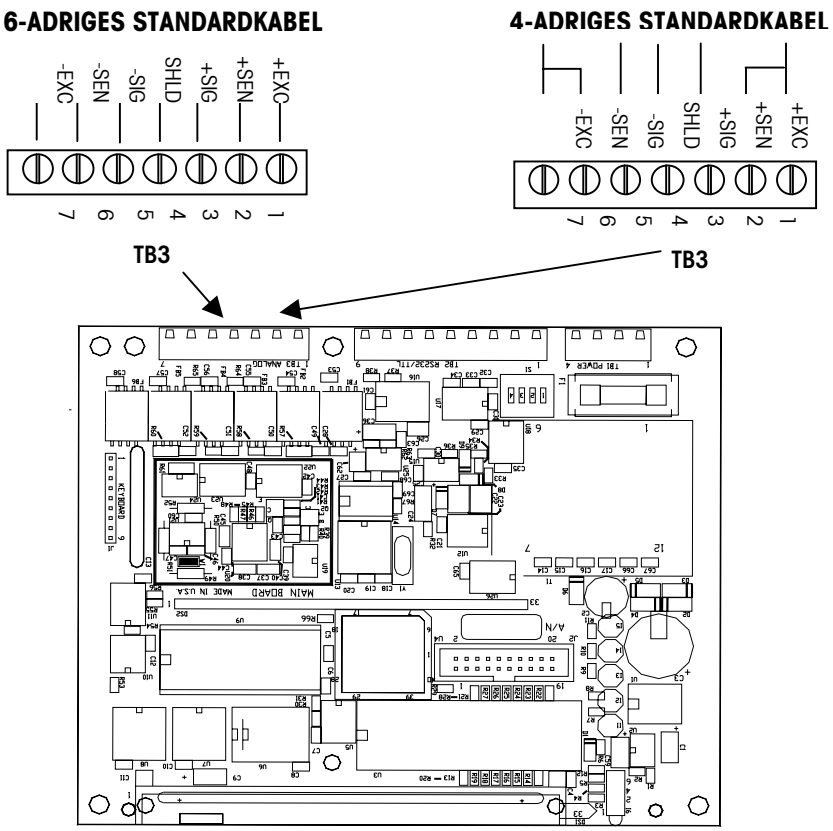


Abbildung 10: Verdrahtung für PTHN/PTHK

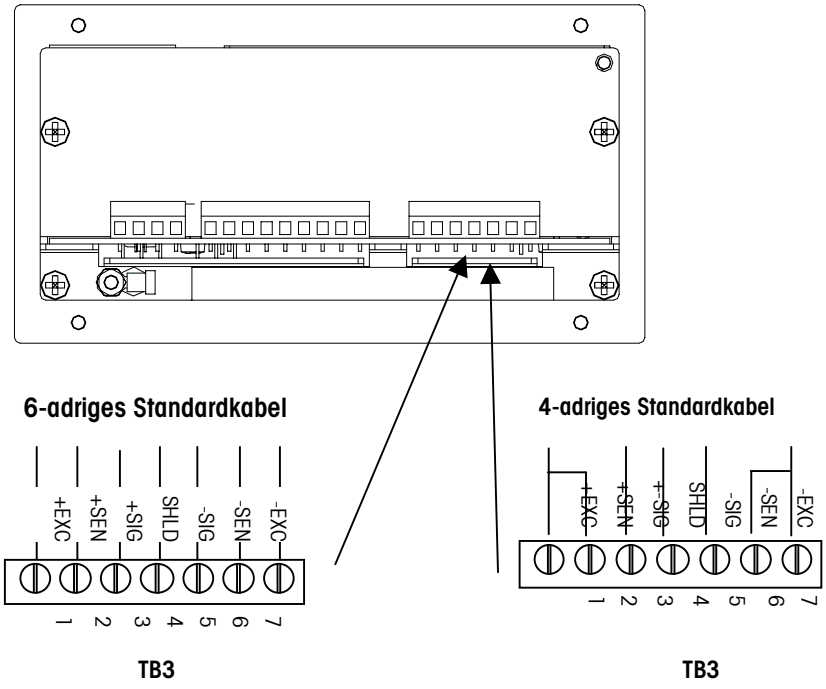


Abbildung 11: Verdrahtung für PTPN

UltraRes- und DigiTOL®-Wägezellenanschlüsse

Die maximal empfohlene Kabellänge für DigiTOL®-Wägebrücken beträgt 15, 24 m (50 ft.). Schließen Sie UltraRes- oder DigiTOL®-Wägebrücken wie folgt an TB3 des PANTHER-Terminals an:

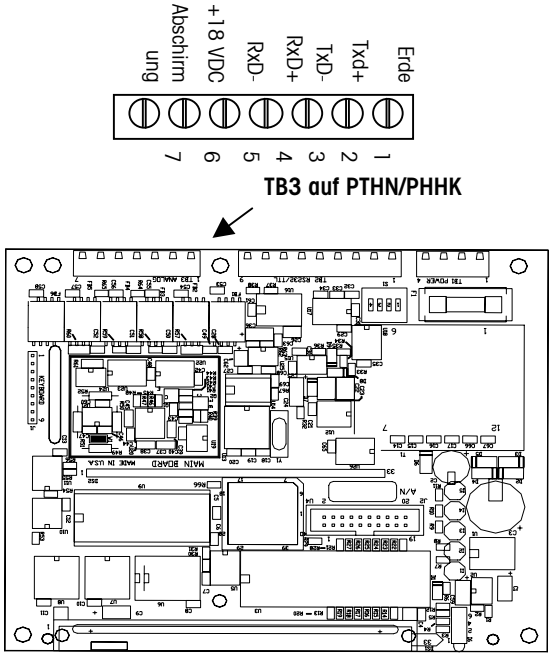


Abbildung 12: Verdrahtung für PTHN/PTHK

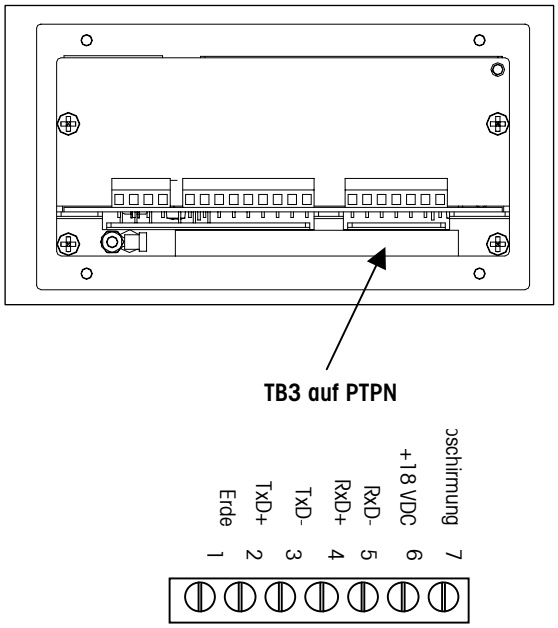


Abbildung 13: Verdrahtung für PTPN

PANTHER TB3		Farbcode	UltraRes oder DigiTOL B/P-Wägebrücke	
Erde	1	Blau	7	Erde
TxD+	2	Rot	1	RxD A
TxD-	3	nicht angeschl.	4	Batt In
RxD+	4	Schwarz	8	TxD A
RxD-	5	Gelb	6	TxD B
+18 VD C	6	Grün	5	+ 20 V DC
Abschirmung	7	Orange		

DigiTOL J-Box-Anschlüsse

Die maximal empfohlene Kabellänge für die DigiTOL-J-Box beträgt 91,4 m (300 ft.).

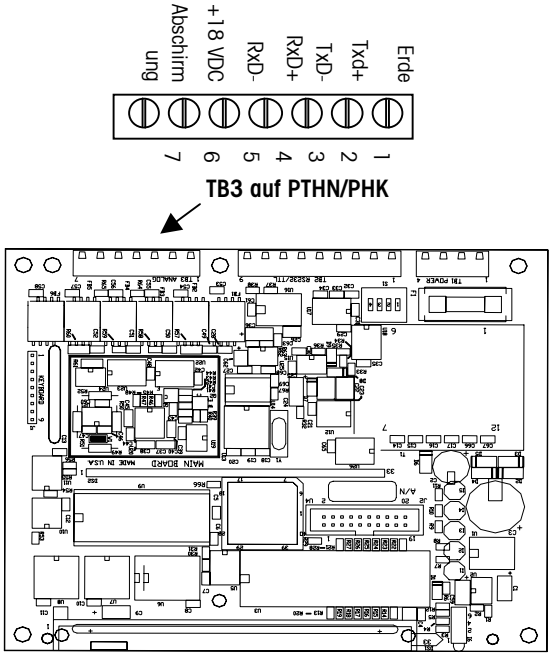


Abbildung 14: Verdrahtung für PTHN/PTHK

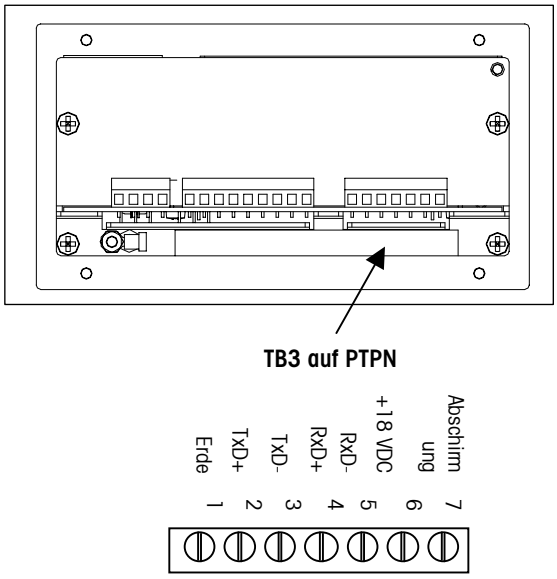


Abbildung 15: Verdrahtung für PTPN

PANTHER TB3		Farbcode		Erweiterte DigiTOL J-Box	
Erde	1	Blau	7	Erde (TB2)	
TxD+	2	Rot	1	RxD A (TB1)	
TxD-	3	Weiß	4	Batt In (TB 1)	
RxD+	4	Schwarz	8	TxD A (TB1)	
RxD-	5	Gelb	6	TxD B (TB1)	
+18 V DC	6	Grün	5	+20 V DC (TB2)	
Abschirmung	7	Orange			

Serielle Anschlüsse (Alle Modelle)

Serielle Schnittstelle an der Hauptplatine

Die serielle Schnittstelle COM 1 ist bidirektional. Die maximale empfohlene Kabellänge für die RS-232-Kommunikation beträgt 15,24 m (50 ft).

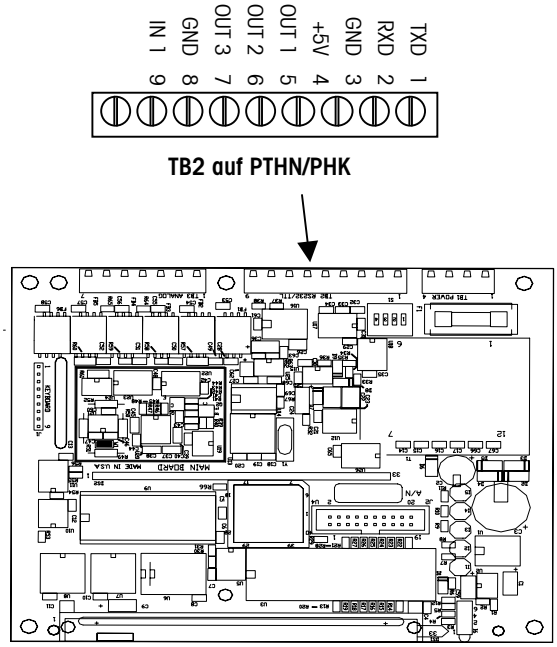


Abbildung 16: Verdrahtung für PTHN/PTHK

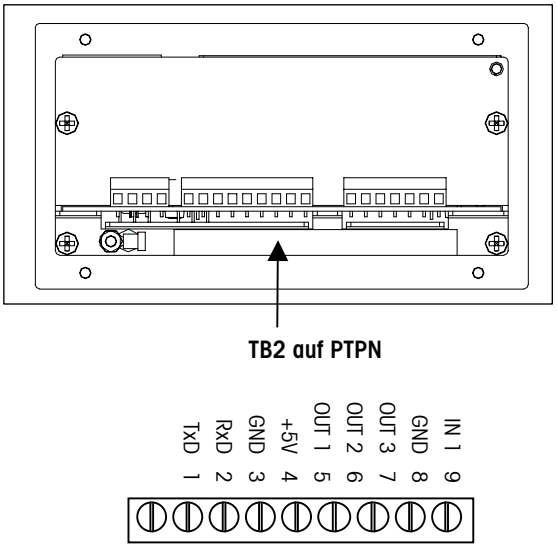


Abbildung 17: Verdrahtung für PTPN

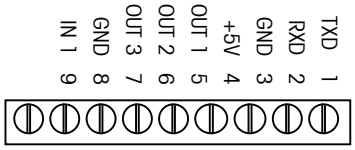
PANTHER TB2 COM1		
TXD	1	RS-232 Senden
RXD	2	RS-232 Empfangen
GND	3	Betriebserde

Stift-Anschluss für METTLER TOLEDO-Geräte mit COM1		
PANTHER TB2 COM1	**8806 8807 8808 8845 8846* 8857 8861 8863* 8865 8867***	**8617-TB2 9323-TB2 9325-TBS**
TXD	3	2
RXD	--	--
GND	7	3

* Die gezeigten Anschlüsse dienen zur Verwendung mit dem Adapterstecker, der mit diesen Modellen geliefert wird.

Diskreter I/O-Anschluss

Weitere Informationen finden Sie im Anhang der technischen Handbücher zum PANTHER- und/oder PANTHER PLUS-Terminal.



TB2 auf PTHN/PHK

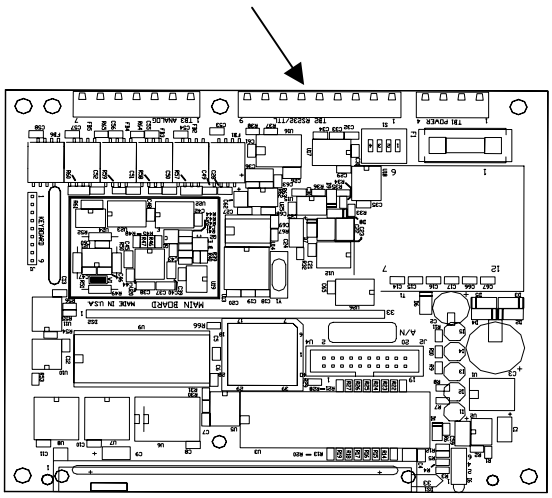
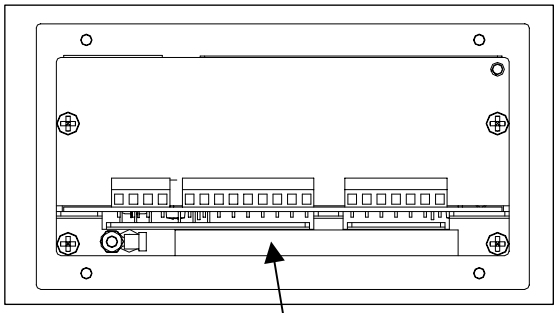


Abbildung 18: Verdrahtung für PTHN/PTHK



TB2 auf PTPN

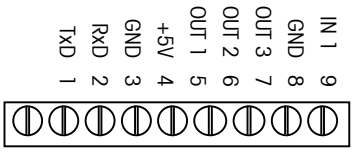


Abbildung 19: Verdrahtung für PTPN

TB2

4	+5 V DC, Strom max. 15 mA	
5	OUT1	TTL-Pegel, max. 5 V DC
6	OUT2	TTL-Pegel, max. 5 V DC
7	OUT3	TTL-Pegel, max. 5 V DC
8	GND	
9	IN1	$V_{IN\ LOW}$ = 0,0 - 0,8 V DC, $V_{IN\ HIGH}$ = 3,5-5,0 V DC.

Stromversorgung

Universalnetzteil (manuell wählbar):

Betrieb: 85 bis 264 V AC.

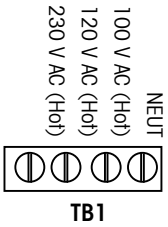
Leitungsfrequenz: 49 bis 63 Hz.

Stromverbrauch: max. 12 W.

Die Unversehrtheit der Erdung der Geräte ist für die Sicherheit und den zuverlässigen Betrieb des Terminals und der dazugehörigen Wägebrücke von entscheidender Bedeutung. Eine schlechte Erdung kann zu einem Gefahrenzustand führen, wenn im Gerät ein Kurzschluss entsteht. Außerdem wird ein guter Erdungsanschluss benötigt, um externe elektrische Rauschimpulse so weit wie möglich auszuschalten. Das Terminal sollte keine Stromleitungen mit Geräten mitbenutzen, die Störimpulse erzeugen. Zur Sicherstellung einer zuverlässigen Erdung verwenden Sie einen handelsüblichen Abzweigschaltkreisanalysator wie z. B. ein ICE-Modell SureTest ST-1D. Wenn in Bezug auf die Stromversorgung ungünstige Bedingungen vorliegen, ist u. U. die Verwendung eines dedizierten Stromkreises oder eines Netzschutzgerätes erforderlich.

PTHN/PTHK

Das PANTHER- und das PANTHER PLUS-Terminal für raue Umgebungen werden beide mit werkseitig installiertem Netzkabel ausgeliefert. Vergewissern Sie sich vor dem Anschluss des Geräts an den Netzstrom unbedingt, ob das Netzkabel ordnungsgemäß für die Wechselspannung am Einsatzort verdrahtet ist. Das Netzkabel wird an die Klemmenleiste TB1 auf der Controller-Leiterplatte angeschlossen.



TB1 auf PTHN/PHK

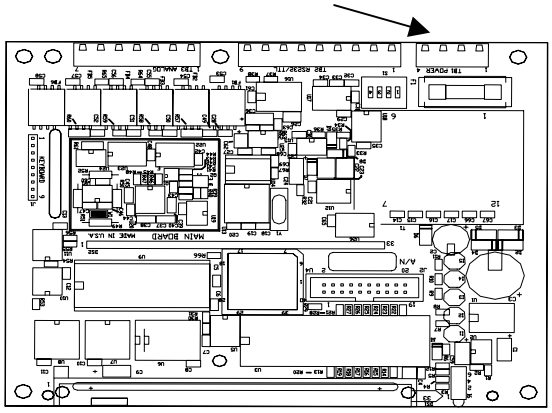


Abbildung 20: Verdrahtung für PTHN/PTHK

MT-Standardnetzkabelfarben	
Neutralleiter	Blau
Stromführend	Braun
Erde (Chassis)	Grün/Gelb

PTPN

Das Modell für den Schalttafeleinbau wird ohne Netzkabel geliefert. Die Verdrahtung zur Klemmenleiste TB1 an der Rückseite des Terminals ist unten dargestellt. Die Erde wird an die Chassis-Erde angeschlossen.

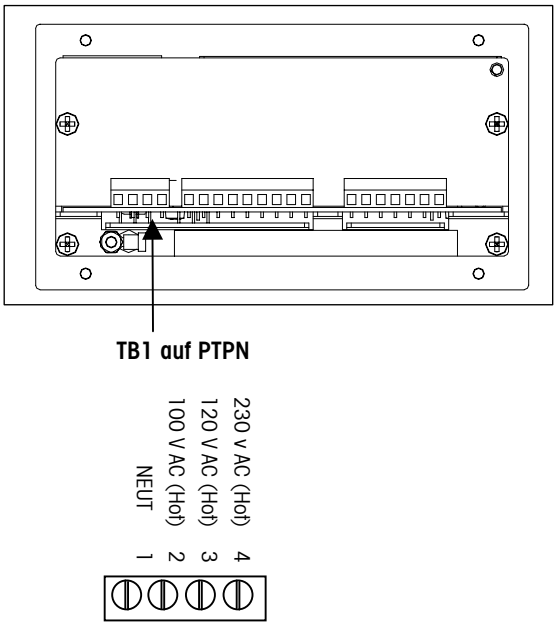


Abbildung 21: Verdrahtung für PTHN/PTHK

3 Installation/Verdrahtung von Optionskarten

Optionen

Zur Verwendung mit dem PANTHER- und/oder PANTHER PLUS-Terminal stehen verschiedene Optionskarten zur Verfügung. Sie umfassen:

- Analog-Ausgang
- Allen-Bradley RIO
- Modbus Plus
- Profibus
- Sollwertausgang (nur für den Schalttafeleinbau)

Wenn die Optionskarten separat bestellt werden, liegen die Anweisungen zur Installation bei. Ausführlichere Informationen über jede Option finden Sie in den technischen Handbüchern zum PANTHER- und/oder PANTHER PLUS-Terminal.

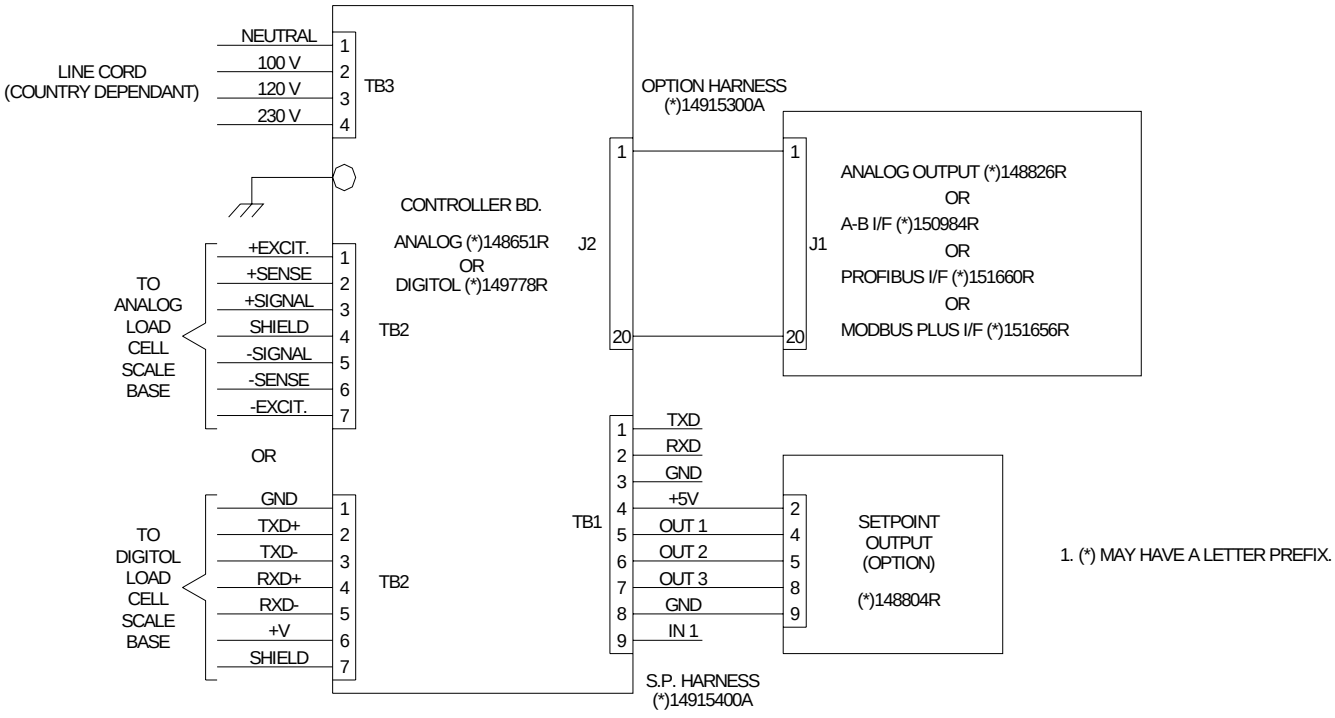
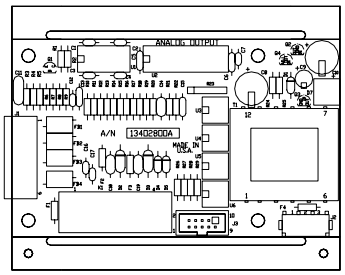
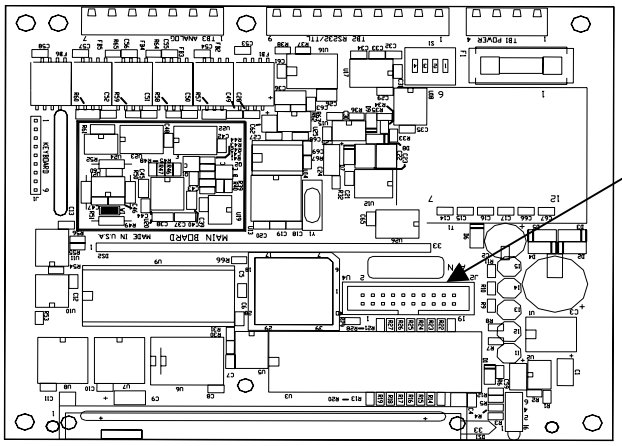


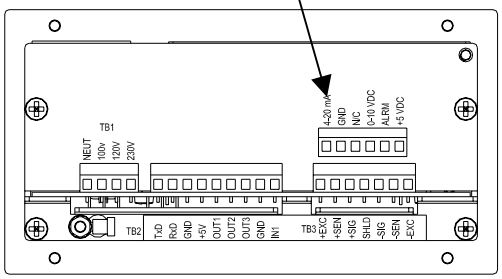
Abbildung 22: Verdrahungsplan für PANTHER/PANTHER PLUS

Analogausgangsoption (0917-0246)





Analogausgangs-Klemmenleiste		
J2	1	4-20 mA
	2	GND
	3	N.C.
	4	0-10 V
	5	ALARM
	6	+5V



Der Analogausgangsoptions-Bausatz bietet einen Ausgangsbereich von 0-10 V DC oder 4 - 20 mA sowie einen optisch isolierten Statusanzeigenausgang mit offenem Kollektor. Die Analogausgangsleiterplatte kann im PANTHER- sowie im PANTHER PLUS-Terminal für raue Umgebungen oder im PANTHER-Terminal für den Schalttafeleinbau installiert werden.

Die maximal empfohlene Kabellänge für den 0-10 V DC-Ausgang beträgt 15,2 m (50 ft). Das empfohlene Kabel ist ein geschirmtes doppeladriges Litzenkabel mit 20 Gauge (Belden #8762 oder gleichwertig, erhältlich von METTLER TOLEDO unter der Teilenummer 510220190).

4 bis 20mA

Kunden-gerät (4-20 mA)

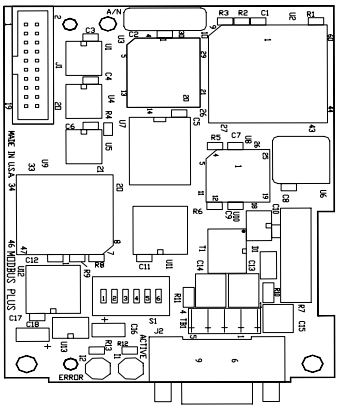
J2	1	4-20mA	+
	2	GND	-
	3	nicht angeschl.	
	4	0-10 V DC	
	5	ALRM*	
	6	+5 VDC	

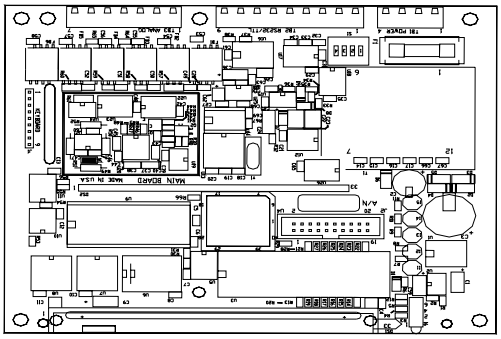
0 bis 10 V DC

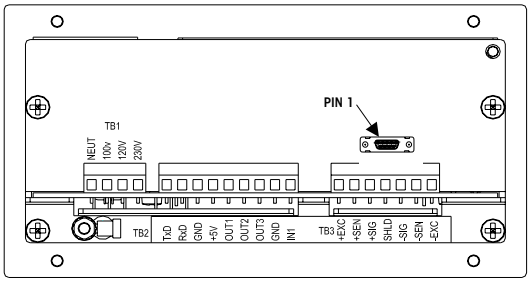
Kunden-gerät (0-10 V DC)

J2	1	4-20mA	
	2	GND	-
	3	N.C	
	4	0-10 VDC	+
	5	ALRM*	
	6	+5 V DC	

Modbus Plus-Option







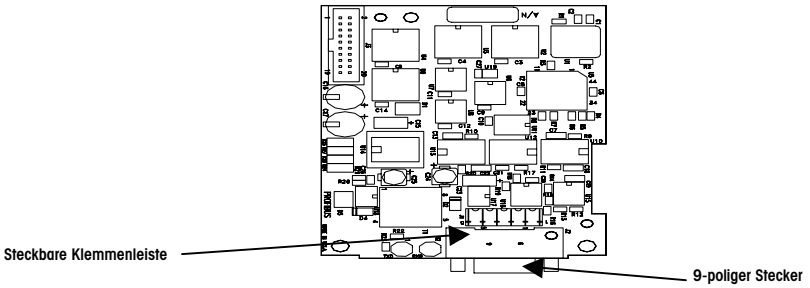
Für die Modbus Plus-Schnittstelle gibt es zwei Anschlussmöglichkeiten.

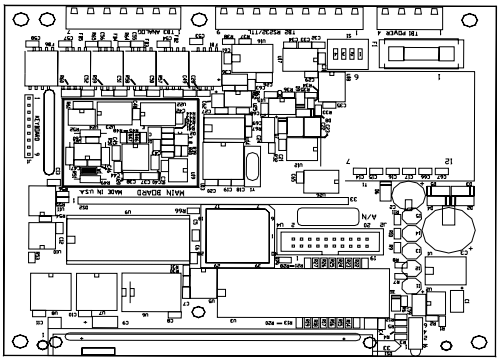
- Der Standardanschluss für das PANTHER-Terminal für den Schalttafeleinbau ist ein DE-9-Buchsenstecker. Die Verdrahtungsanweisungen werden mit dem Stecker geliefert. Das Modbus Plus-Netzwerk verwendet Stift 1, 2 und 3 der DE-9-Steckerbuchse (von Modicon erhältlich).
- Für das PANTHER-Terminal für raue Umgebungen muss eine steckbare Klemmenleiste verwendet werden. Wenn die Klemmenleiste verwendet wird, kann der Bürstenlitzenkabelsatz 0900-03200 eingesetzt werden.

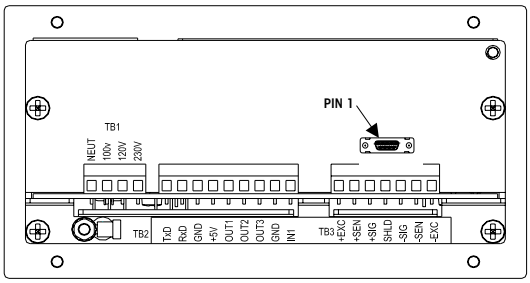
Das Modbus Plus-Bürstenlitzenkabel wird wie folgt mit dem PANTHER-Terminal verdrahtet:

DE-9		Klemmenleiste
1	Weiß	1
2	Grün	2
3	Schwarz	3

Profibus-Option





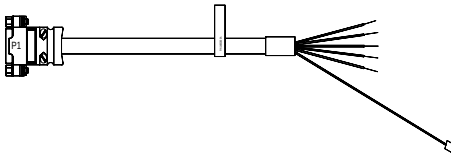


An der PROFIBUS-Options-Leiterplatte befinden sich zwei PROFIBUS-Anschlüsse. Beim ersten Anschluss handelt es sich um eine 9-polige D-Subminiatur-Steckerbuchse; dies ist der Standardanschluss für PROFIBUS. Die Feldsteckerbaugruppe ist nicht im METTLER TOLEDO-Lieferumfang enthalten. Hierbei handelt es sich um den bevorzugten Anschluss des Terminal für den Schalttafeleinbau.

DE-9-Buchse

1 GND (isoliert)
2 nicht angeschl.
3 TX/RX+
4 RTS
5 GND (isoliert)
6 +5V (isoliert)
7 nicht angeschl.
8 TX/RX-
9 nicht angeschl.

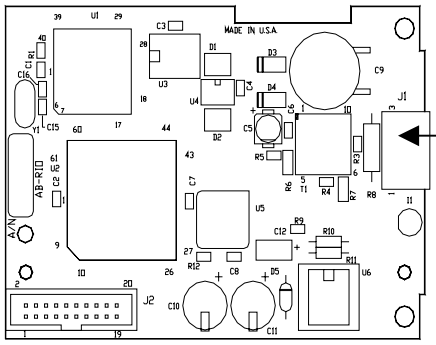
Für das PANTHER-Terminal für raue Umgebungen muss die steckbare Klemmenleiste verwendet werden. In diesen Fällen kann die Verdrahtung von der Klemmenleiste zu einer 9-poligen D-Steckerbuchse über einen optionalen Bürstenlitzen-Kabelbaum erfolgen. Der Adapter-Kabelbaum kann unter der Werksnummer 0900-0311 bestellt werden. Die folgende Abbildung zeigt den Adapter.

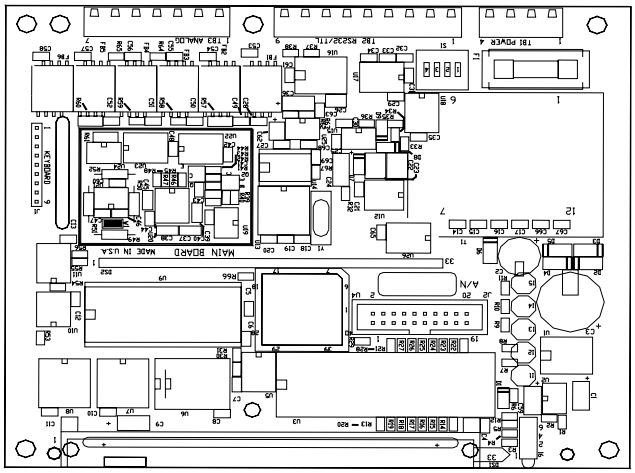


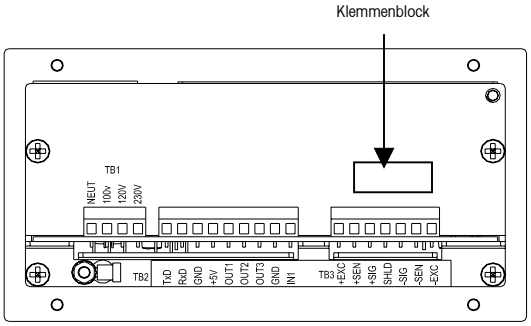
Klemmenleiste

1 RTS
2 TXD/RXD+
3 TXD/RXD-
4 +5 V (isoliert)
5 GND (isoliert)

Allen Bradley RIO-Option







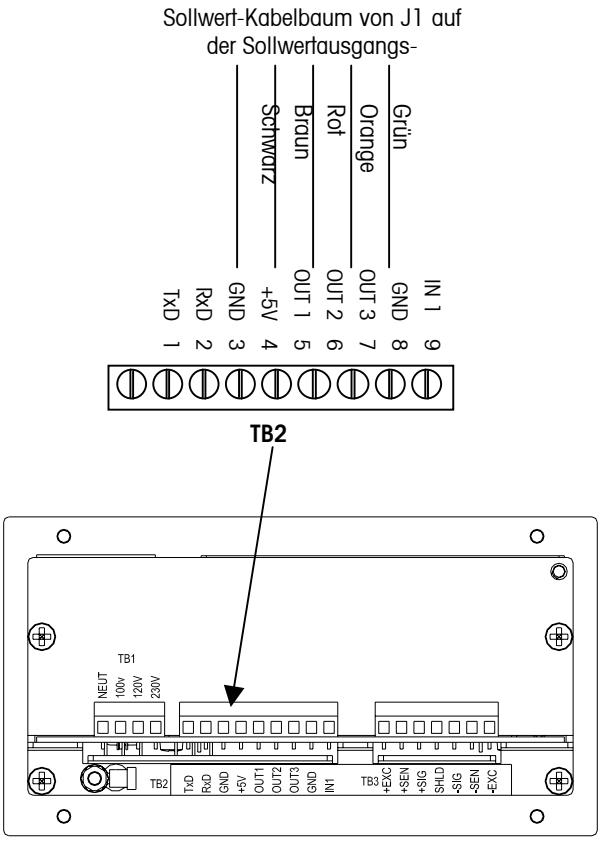
Der PANTHER Allen-Bradley-Options-Bausatz erlaubt die Anbindung an einen Allen-Bradley-PLC unter Verwendung des Remote-I/O-(RIO)-Protokolls. Der Bausatz kann im PANTHER- sowie im PANTHER PLUS-Terminal für raue Umgebungen oder im PANTHER-Terminal für den Schalttafeleinbau installiert werden.

Elektrik: zentrierte, vom Transformator isolierte Kabeltreiber
Steckeranschluss: ausbaubare Klemmenleiste mit drei Positionen, verdrahtet von links nach rechts (Ansicht hinterer Anschluss):

Blau
Abschirmung
Durchsichtig

Sollwertausgangsoption (nur Schalttafeleinbau)

Der Sollwertausgangsoptions-Bausatz bietet eine Hochpegel-Wechselstromschnittstelle (28 - 280 V AC) für die drei diskreten Tiefpegelstandardausgänge. Verbinden Sie die losen Enden des Kabelbaums mit den folgenden Klemmen auf der Controller-Leiterplatte des Terminals:



Guide d'installation du terminal

PANTHER®

PANTHER® PLUS

INTRODUCTION

Cette publication est fournie seulement comme support aux personnes ayant reçu une Formation Technique dans l'entretien du produit de METTLER TOLEDO.

Vous pouvez obtenir des informations sur la Formation Technique de METTLER TOLEDO en écrivant à:

METTLER TOLEDO
1900 Polaris Parkway
Columbus, Ohio 43240-2020 USA
(614) 438-4511

Remarque FCC

Cet équipement se conforme au paragraphe 15 des Règlements FCC ainsi qu'aux Règlements sur les Interférences Radio définis par le Ministère canadien des Communications. Le fonctionnement est sujet aux conditions suivantes: (1) cet équipement ne doit pas créer d'interférences nuisibles, et (2) cet équipement doit tolérer toute interférence reçue, y compris les interférences qui pourraient provoquer une opération indésirable.

Cet équipement a été testé et trouvé en règle avec les limitations établies pour un équipement numérique de Classe A au paragraphe 15 des règlements FCC. Le but de ces limitations est d'assurer une protection raisonnable contre les interférences nuisibles lors de l'utilisation de l'équipement dans un milieu commercial. Cet équipement produit, utilise, et peut émettre de l'énergie de fréquence radio, et s'il n'est pas installé et utilisé en conformité avec le manuel d'instruction il peut créer des interférences nuisibles aux communications radio. L'utilisation de cet équipement dans un quartier résidentiel va certainement provoquer des interférences nuisibles auquel cas l'usager sera obligé de rectifier les interférences à ses propres frais.

METTLER TOLEDO SE RÉSERVE LE DROIT DE FAIRE DES AMÉLIORATIONS OU DES MODIFICATIONS SANS AVIS PRÉALABLE.

COMMENTAIRES DES CLIENTS

METTLER TOLEDO

Vôtre opinion est important! Si vous avez des difficultés avec ce produit, cette documentation, ou simplement une suggestion que nous permettons de mieux vous servir, veuillez remplir ce formulaire et nous le faire parvenir. Si vous êtes aux États-Unis, vous pouvez le poster en port payé à l'adresse indiquée au verso ou le transmettre par télécopieur au (614) 438-4355 ou par courrier électronique au quality_feedeback.mtwt@mt.com. Si vous êtes à l'extérieur des États-Unis, veuillez apposer un affranchissement approprié avant de le poster.

Votre nom :	Date :
Nom de l'organisation :	N° de commande Mettler Toledo :
Adresse:	Nom du produit ou de la pièce :
	Numéro du produit ou de la pièce :
	Numéro de série :
Téléphone : ( ) Télécopie : ( )	Entreprise où est installé l'équipement :
E-mail :	Personne contact :
	Téléphone :

Jusqu'à quel point ce produit a-t-il répondu à vos attentes dans son cadre d'utilisation prévu?	
	Répond et dépasse mes besoins
	Répond à tous les besoins
	Répond à la plupart des besoins
	Répond à certains besoins
	N'a pas répondu à mes besoins

Commentaires :

NE PAS ÉCRIRE DANS L'ESPACE CI-DESSOUS. RÉSERVÉ À METTLER TOLEDO

☐ Détail ☐ Industriel léger ☐ Industriel lourd ☐ Systèmes

RÉPONSE : Comprend une analyse des causes fondamentales et une description des mesures correctrices qui ont été prises.

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MISES EN GARDE

LIRE ce guide AVANT de faire fonctionner ou de réparer cet appareil.

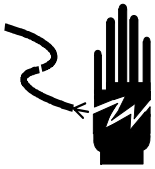
RESPECTER soigneusement ces instructions.

CONSERVER ce guide à titre de référence ultérieure.

NE PAS laisser de personnel non qualifié faire fonctionner, nettoyer, inspecter, maintenir, réparer ou modifier cet appareil.

TOUJOURS DÉBRANCHER cet appareil de la source d'alimentation avant de le nettoyer ou de le réparer.

CONTACTER METTLER TOLEDO pour les pièces, informations et service requis.

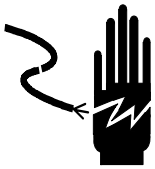


AVERTISSEMENT

METTRE L'APPAREIL HORS TENSION AVANT DE PASSER À L'INSTALLATION, RÉPARATION, NETTOYAGE OU D'ENLEVER LES FUSIBLES. SI CETTE CONSIGNE N'EST PAS RESPECTÉE, DES BLESSURES ET/OU DES DOMMAGES MATÉRIELS PEUVENT EN RÉSULTER.

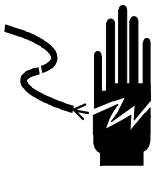
ATTENTION

TOUJOURS MANIPULER LES APPAREILS SENSIBLES À DES CHARGES ÉLECTROSTATIQUES AVEC PRÉCAUTION.



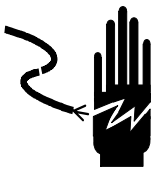
AVERTISSEMENT

SEUL UN PERSONNEL QUALIFIÉ EST AUTORISÉ À RÉPARER CET APPAREIL. PRENDRE LES PRÉCAUTIONS NÉCESSAIRES LORS DE L'INSPECTION, TESTS ET RÉGLAGES QUI DOIVENT ÊTRE FAITS AVEC L'APPAREIL SOUS TENSION. NE PAS RESPECTER CES CONSIGNES PEUT ENTRAÎNER DES BLESSURES ET/OU DES DOMMAGES MATÉRIELS.



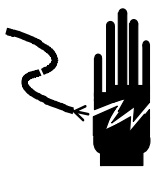
AVERTISSEMENT

POUR ASSURER UNE PROTECTION SANS FAILLE CONTRE LES CHOCS ÉLECTRIQUES, BRANCHER UNIQUEMENT DANS UNE PRISE CORRECTEMENT MISE À LA TERRE. NE PAS ENLEVER LA BROCHE DE MISE À LA TERRE.



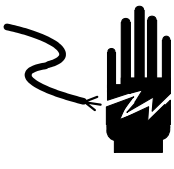
AVERTISSEMENT

LORSQUE CET APPAREIL EST INCLUS COMME COMPOSANT D'UN SYSTÈME, LA CONCEPTION EN RÉSULTANT DOIT ÊTRE PASSER EN REVUE PAR UN PERSONNEL QUALIFIÉ CONNAISSANT BIEN LA FABRICATION ET LE FONCTIONNEMENT DE TOUS LES COMPOSANTS DU SYSTÈME AINSI QUE LES DANGERS POTENTIELS INHÉRENTS. NE PAS RESPECTER CETTE CONSIGNE PEUT ENTRAÎNER DES BLESSURES ET/OU DES DOMMAGES MATÉRIELS.



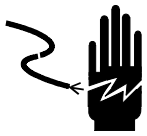
AVERTISSEMENT

SI CET APPAREIL EST UTILISÉ DANS UN CYCLE DE REMPLISSAGE AUTOMATIQUE OU MANUEL, LES UTILISATEURS DOIVENT FOURNIR UN CIRCUIT D'ARRÊT D'URGENCE CABLÉ EXTERNE À LA CIRCUITERIE DE L'APPAREIL. NE PAS RESPECTER CETTE CONSIGNE PEUT ENTRAÎNER DES BLESSURES ET/OU DES DOMMAGES MATÉRIELS.



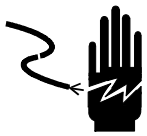
AVERTISSEMENT

LES PRISES DE COURANT DOIVENT ÊTRE FACILEMENT ACCESSIBLES ET SITUÉES À UNE DISTANCE AU MOINS ÉGALE À LA LONGUEUR DU CORDON FOURNI AVEC LE PRODUIT. SI CETTE CONSIGNE N'EST PAS RESPECTÉE, DES BLESSURES ET/OU DES DOMMAGES MATÉRIELS PEUVENT EN RÉSULTER.



AVERTISSEMENT

METTLER TOLEDO N'ENDOSSE AUCUNE RESPONSABILITÉ POUR L'INSTALLATION CORRECTE DE CET ÉQUIPEMENT DANS UNE DIVISION 2 OU ZONES 2/22. L'INSTALLATEUR DOIT BIEN CONNAÎTRE LES CONDITIONS D'INSTALLATION ET DE CÂBLAGE DE LA DIVISION 2 OU ZONES 2/22.

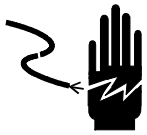


AVERTISSEMENT

LES ANCIENS MODÈLES DU TERMINAL PANTHER QUI NE SONT PAS ÉTIQUETÉS (EN USINE) COMME APPROUVÉS POUR LES CATÉGORIES DIVISION 2 OU CATÉGORIE EUROPÉENNE 3 NE DOIVENT PAS ÊTRE INSTALLÉS DANS DES ENVIRONNEMENTS DE DIVISION 2 OU DE ZONES 2/22.

AVERTISSEMENT

POUR INSTALLER LE TERMINAL PANTHER MONTAGE SUR TABLEAU APPROUVÉ POUR LA DIVISION 2, SELON L'HOMOLOGATION FACTORY MUTUAL, LE SCHÉMA TECHNIQUE 155907R METTLER TOLEDO DOIT ÊTRE SUIVI DANS SON INTÉGRALITÉ. POUR INSTALLER LE TERMINAL PANTHER MONTAGE SUR TABLEAU OU CATÉGORIE 3, SELON LE CERTIFICAT D'HOMOLOGATION KEMA 02atex1163x TOUS LES RÈGLEMENTS LOCAUX DOIVENT ÊTRE SUIVIS SANS EXCEPTION. SI CETTE CONSIGNE N'EST PAS RESPECTÉE, DES BLESSURES ET/OU DES DOMMAGES MATÉRIELS PEUVENT EN RÉSULTER.

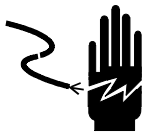


AVERTISSEMENT

POUR LES APPLICATIONS EUROPÉENNES DANS LES ZONES DANGEREUSES ZONES 2/22, LE GUIDE D'INSTALLATION PANTHER CATÉGORIE 3 (*)16684500A AINSI QUE LE CERTIFICAT D'INSPECTION TYPE KEMA DOIVENT ÊTRE RESPECTÉS SANS EXCEPTION.

AVERTISSEMENT

SI LE CLAVIER, L'ÉCRAN OU LE BOÎTIER SONT ENDOMMAGÉS SUR UN TERMINAL PANTHER AVEC MONTAGE SUR TABLEAU APPROUVÉ POUR LA DIVISION 2 OU CATÉGORIE 3 UTILISÉ DANS UNE DIVISION 2 OU DES ZONES 2/22, LE COMPOSANT DÉFECTUEUX DOIT ÊTRE RÉPARÉ IMMÉDIATEMENT. COUPER LE COURANT C.A. ET NE PAS REMETTRE L'APPAREIL SOUS TENSION TANT QUE L'ÉCRAN, LE CLAVIER OU LE BOÎTIER N'ONT PAS ÉTÉ RÉPARÉS OU REMPLACÉS PAR UN TECHNICIEN QUALIFIÉ. SI CETTE CONSIGNE N'EST PAS RESPECTÉE, DES BLESSURES ET/OU DES DOMMAGES MATÉRIELS PEUVENT EN RÉSULTER.



AVERTISSEMENT

LE TERMINAL PANTHER A UNE TEMPÉRATURE NOMINALE FACTORY MUTUAL DE T3A (180 °C) ET UNE TEMPÉRATURE NOMINALE KEMA DE T4 (135 °C). IL NE DOIT PAS ÊTRE UTILISÉ DANS DES ENVIRONNEMENTS OÙ LA TEMPÉRATURE D'AUTO-INFLAMMATION DES MATIÈRES DANGEREUSES EST INFÉRIEURE À CETTE VALEUR.

TABLE DES MATIÉRES

Note

1 Introduction

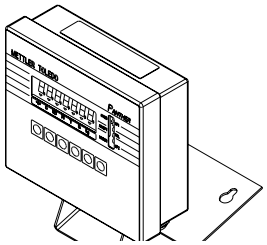
Présentation générale

Les informations suivantes sont EXCLUSIVEMENT destinées à vous aider à installer les terminaux PANTHER et PANTHER PLUS ainsi que les diverses cartes optionnelles. Prière de lire attentivement ces informations avant de commencer. Le câblage interne pendant l'installation d'options ou la programmation doivent être exclusivement effectués par des techniciens qualifiés.

REMARQUE : **SEULE** la version analogique du terminal PANTHER montage sur tableau est approuvée pour usage dans les zones de Division 2 ou Zones 2/22. Se reporter au Guide d'installation du terminal PANTHER (version analogique) montage sur tableau pour Division 2 situé au dos de ce manuel pour de plus amples informations sur les zones Division 2. Se reporter au guide d'installation de Catégorie européenne 3 G/D, (*)16684500A, pour les Zones 2/22.

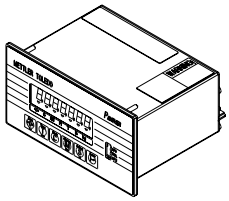
Inspection et liste de contrôle du contenu

1. Si le conteneur d'expédition du terminal semble endommagé après sa livraison, inspecter l'intérieur afin de détecter tout dommage. Remplir le formulaire de réclamation en cas de problème pendant le transport avec le transporteur, si besoin.
2. Si le conteneur est intact, le déballer. Conserver l'emballage d'expédition pour toute utilisation ultérieure.
3. Veiller à ce que l'emballage du terminal contienne les éléments suivants :
4. Terminal PANTHER ou PANTHER PLUS (se reporter au tableau des références en page suivante pour l'identification du modèle approprié à utiliser).



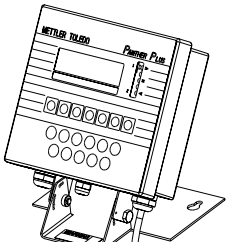
PANTHER
Terminal pour environnement hostile (PTHN)

- Guide d'installation
- Indicateur d'effraction
- Étiquette de capacité
- Étiquettes du curseur
- Étiquettes d'adresse
- Kit matériel
- CD documentation



PANTHER
Terminal montange sur tableau
(PTPN)

- Guide d'installation
- Indicateur d'effraction
- Étiquette de capacité
- Étiquettes du curseur
- Étiquettes d'adresse
- Joint
- Étiquette indicateur CE
- Kit matériel
- CD documentation



PANTHER Plus
Terminal pour environnement hostile (PTHK)

- Guide d'installation
- Indicateur d'effraction
- Étiquette de capacité
- Étiquettes du curseur
- Étiquettes d'adresse
- Kit matériel
- CD documentation

Utiliser les informations ci-dessous pour confirmer le numéro du modèle pour le terminal avec lequel le travail est censé être fait. Le numéro du modèle se trouve sur la plaque signalétique sur le côté du terminal.

P T XX - X X X X - X X X

Terminal PANTHER

Type d'enceinte/Affichage
PN – Montage sur tableau, affichage numérique
HN – Environnement hostile (bureau/mur), affichage numérique
HK (PANTHER Plus, pour environnement hostile avec pavé numérique)
PC – Montage sur tableau personnalisé
HC – Environnement hostile personnalisé

Interface de la balance
1 Cellule de pesage analogique
3 Cellule de pesage DigiTOL

Option d'interface
0--Nº option
5—Modbus Plus
6—Allen-Bradley
8—Sortie analogique (non disponible si utilisée avec plus de 4 cellules de pesage analogiques)
9--Profibus

Option de point de réglage
0—Aucun
1—3 Point de réglage Opto (montage sur tableau uniquement)

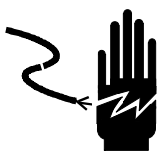
Inutilisé
0—Toujours

Marché cible

Remarque : Les termes suivants sont utilisés dans ce guide :

PTHN -- Terminal PANTHER pour environnement hostile.
PTPN -- Terminal montage su tableau
PTHK -- Terminal PANTHER PLUS (un terminal PANTHER pour environnement hostile avec pavé numérique).

Avertissements/Mises en garde



AVERTISSEMENT

SEUL UN PERSONNEL QUALIFIÉ EST AUTORISÉ À INSTALLER ET RÉPARER CET APPAREIL. PRENDRE LES PRÉCAUTIONS NÉCESSAIRES LORS DE L'INSPECTION, TESTS ET RÉGLAGES QUI DOIVENT ÊTRE FAITS AVEC L'APPAREIL SOUS TENSION. NE PAS RESPECTER CES CONSIGNES PEUT ENTRAÎNER DES BLESSURES ET/OU DES DOMMAGES MATÉRIELS.

ATTENTION

TOUJOURS MANIPULER LES APPAREILS SENSIBLES À DES CHARGES ÉLECTROSTATIQUES AVEC PRÉCAUTION.

Conditions ambiantes-/emplacement

- Température de fonctionnement : 14°°F à 113 °F (–10 °C à 45 °C) avec entre 10 % et 95 % d'humidité relative, sans condensation
- Température de stockage : –40°°F à 140 °F (–40 °C à 60 °C) avec entre 10 % et 95 % d'humidité relative, sans condensation
- Enceinte : caractéristiques TYPE 4X (IP65) de l'enceinte étanche aux poussières et aux éclaboussures pour le terminal PANTHER avec montage sur tableau.
- **Les terminaux PANTHER et PANTHER PLUS ne sont pas intrinsèquement sûrs !** Ils sont cependant capables de fonctionner avec des balances et dispositifs de protection situés dans des zones dangereuses. Pour de plus amples informations sur les applications en zones dangereuses, contacter un représentant METTLER TOLEDO agréé.

REMARQUE : **SEULE** la version analogique du terminal PANTHER montage sur tableau est approuvée pour usage dans les zones de Division 2 ou Zones 2/22. Se reporter au Guide d'installation du terminal PANTHER (version analogique) montage sur tableau pour Division 2 situé au dos de ce manuel pour de plus amples informations sur les zones Division 2. Se reporter au guide d'installation de Catégorie européenne 3 G/D, (*)16684500A, pour les Zones 2/22.

AVERTISSEMENT

POUR UTILISER LE TERMINAL PANTHER VERSION ANALOGIQUE MONTAGE SUR TABLEAU DANS UNE ZONE DE CLASSE I, II OU III, DIVISION 2, GROUPES A, B, C, D, F OU G, LE SCHÉMA TECHNIQUE 155907R DE METTLER TOLEDO DOIT ÊTRE STRICTEMENT RESPECTÉ. POUR UTILISER LE TERMINAL ANALOGIQUE PANTHER AVEC MONTAGE SUR TABLEAU DANS UNE ZONE CLASSÉE 2/22, VOUS DEVEZ RESPECTER LE CERTIFICAT ATEX 02atex 1163X ET TOUT RÉGLEMENT LOCAL. SI CETTE CONSIGNE N'EST PAS RESPECTÉE, DES BLESSURES ET/OU DES DOMMAGES MATÉRIELS PEUVENT EN RÉSULTER.

LE TERMINAL PANTHER PLUS, LA VERSION DIGITOL AVEC MONTAGE SUR TABLEAU ET LA VERSION ANALOGIQUE POUR ENVIRONNEMENT HOSTILE DU TERMINAL PANTHER NE SONT PAS APPROUVÉS POUR USAGE DANS LES ZONES DIVISION 2 OU ZONES 2/22. NE PAS INSTALLER CES VERSIONS DANS DES ZONES DANGEREUSES !

AVERTISSEMENT!

LES TERMINAUX PANTHER ET PANTHER PLUS NE SONT PAS INTRINSÈQUEMENT SÛRS ! NE PAS L'UTILISER DANS DES ZONES CLASSÉES DANGEREUSES PAR LE CODE NATIONAL D'ÉLECTRICITÉ (NEC) EN RAISON D'ATMOSPHÈRES COMBUSTIBLES OU EXPLOSIBLES.

Dimensions et Instructions de montage :

PTHN/PTHK

Avec le kit matériel fourni, installer le terminal sur un mur ou une surface plane telle qu'un bureau en utilisant les dimensions et les schémas de la Figure 1. Remarque : les dimensions et instructions de montage sont les mêmes pour le terminal d'environnement hostile PANTHER et le terminal PANTHER PLUS.

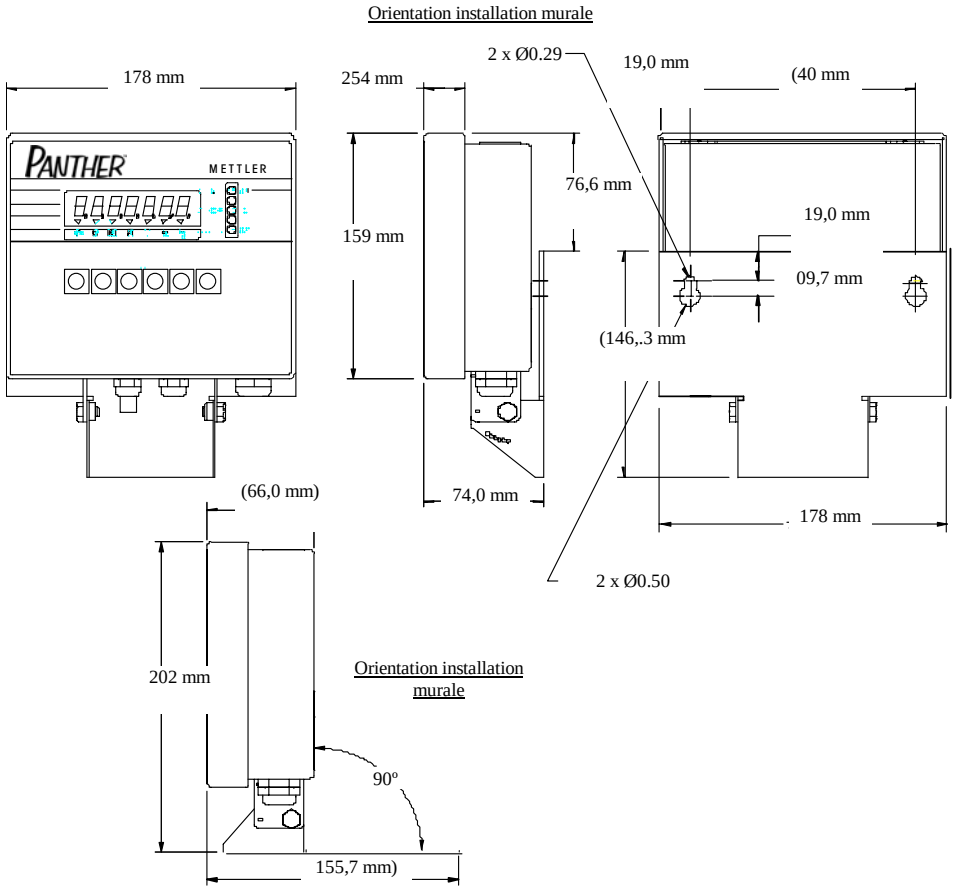


Figure 1 : Dimensions pour terminal PANTHER environnement hostile et terminal PANTHER PLUS (terminal PANTHER pour environnement hostile illustré)

PTPN

Pour installer le terminal PANTHER avec montage sur tableau, se reporter aux schémas de dimension et à la maquette de découpe fournis. Remarque : la maquette de découpe sert de référence uniquement et n'est pas illustrée dans des dimensions réelles. Ne pas oublier que les optos à niveau élevé facultatif ajoutent environ 3,7 mm à la profondeur.

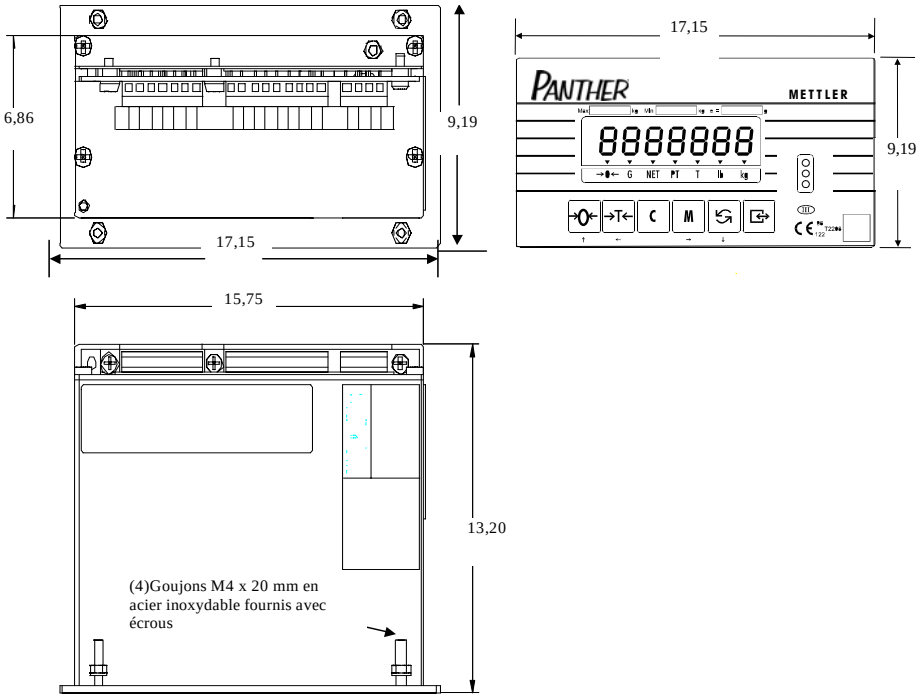


FIGURE 2: TERMINAL PANTHER AVEC MONTAGE SUR TABLEAU

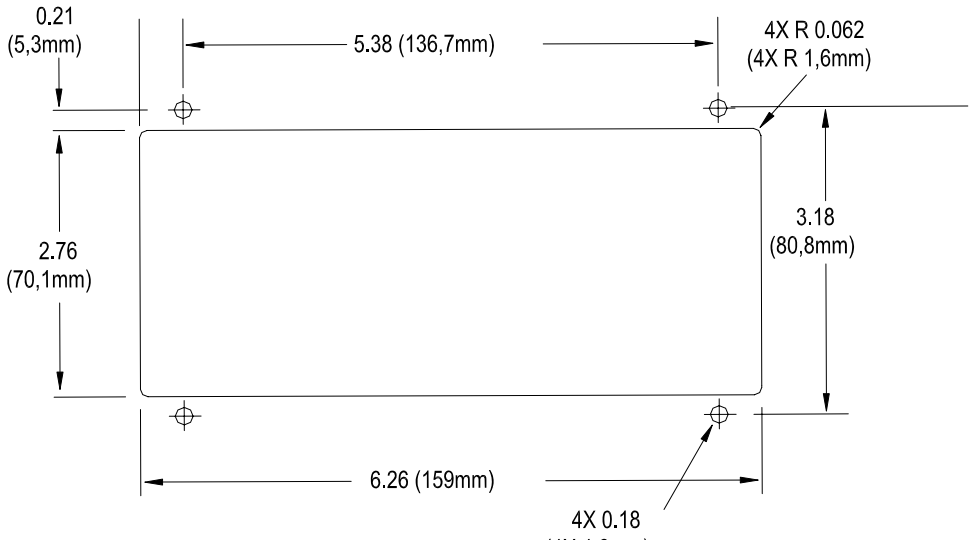


FIGURE 3 : MAQUETTE D'INSTALLATION DU TERMINAL PANTHER MONTAGE SUR TABLEAU

Accès à la carte du contrôleur du terminal

Pour effectuer les raccordements nécessaires, il faut accéder à la carte du contrôleur du terminal. Il faut ouvrir le terminal pour pouvoir accéder à la carte du contrôleur de PTHN/PTHK. L'accès à la carte du contrôleur de PTPN se trouve au dos de l'appareil.

PTHN/PTHK

1. Introduire l'extrémité d'un tournevis plat dans l'une des deux fentes (4) (A sur la Figure 4) en bas du panneau avant.
2. Pousser à l'intérieur en direction de l'enceinte. Ne pas écarter à l'angle. Un « pop » devrait se faire entendre lorsque le couvercle est enlevé.
3. Pousser sur le côté de la fente la plus proche du bas du couvercle. Répéter pour l'autre fente.

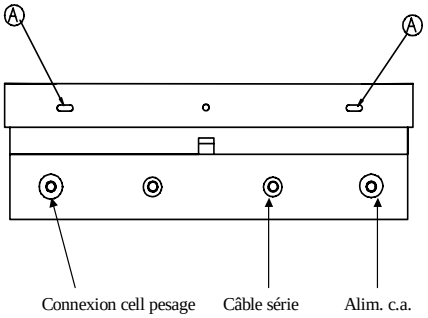


Figure 4

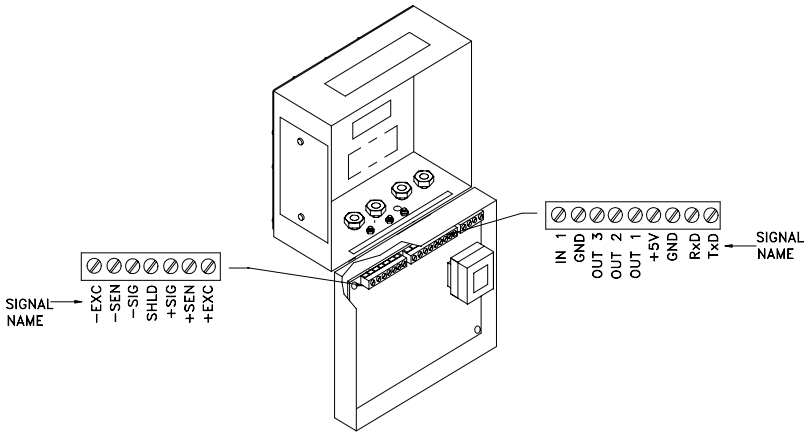


Figure 5

4. Soulever le bas du panneau avant jusqu'à ce qu'il soit totalement dégagé de l'enceinte.
5. Serrer la partie supérieure du panneau avant contre l'enceinte et la soulever pour dégager les deux clips supérieurs. Le couvercle se dégage en glissant vers le bas (Figure 5), retenu par le câble en bas.

Remarque : lorsque le couvercle est en bas, les borniers de la carte du contrôleur sont visibles (se reporter à la Figure 6). Les connexions électriques sont effectuées à l'aide de ce bornier. Remarque : la carte doit se trouver face en dessous.

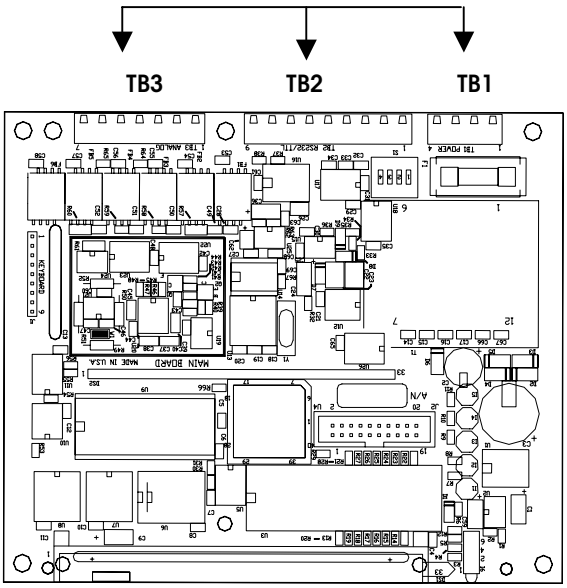


FIGURE 6

6. Faire passer les câbles entrant dans l'enceinte à travers un serre-câbles de taille appropriée avant de brancher les conducteurs.
7. Veiller à ce que les connexions électriques soient conformes aux instructions stipulées dans la section Connexions électriques.
8. Remettre le couvercle en place.
9. Resserrer le serre-câbles afin d'offrir une étanchéité à l'eau autour du câble. Cette mesure permet en outre de passer tout excès de câble dans l'enceinte.
10. Pousser le bas du couvercle avant par dessus l'enceinte. Un son d'enclenchement indique que le couvercle est en place. Serrer le couvercle avant contre l'enceinte aux quatre coins pour garantir que les quatre clips sont correctement engagés.

PTPN

L'accès au modèle PANTHER montage sur tableau s'effectue au dos du terminal où toutes les connexions sont effectuées sur le bornier de la carte du contrôleur (la Figure 7 illustre le dos des versions DigiTOL et analogique qui sont identiques bien que TB3 soit étiqueté différemment).

S'il faut accéder à l'intérieur de l'appareil, enlever les deux vis retenant la plaque du couvercle à l'arrière de l'appareil et la soulever. La carte du contrôleur est alors visible dans son intégralité. Se reporter aux Figures 8 et 9.

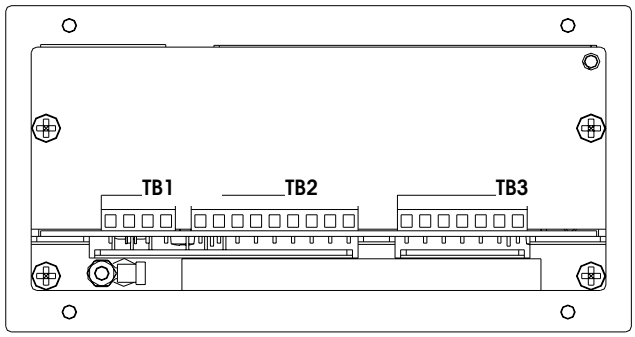


Figure 7 : Vue arrière de PTPN

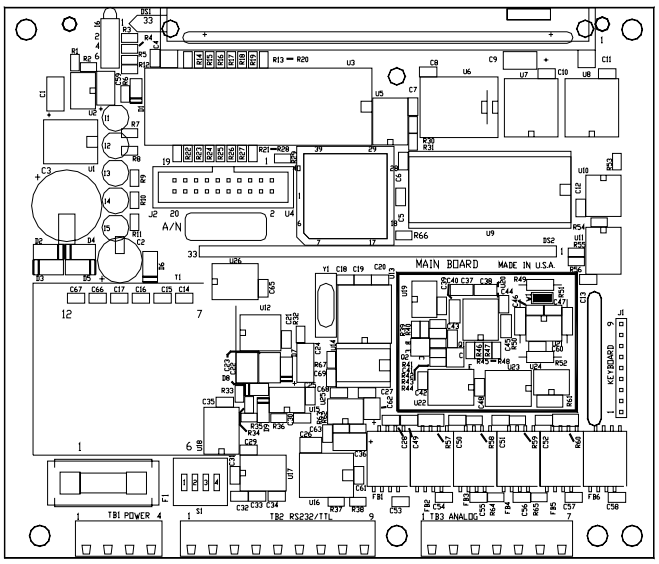


Figure 8 : Carte analogique

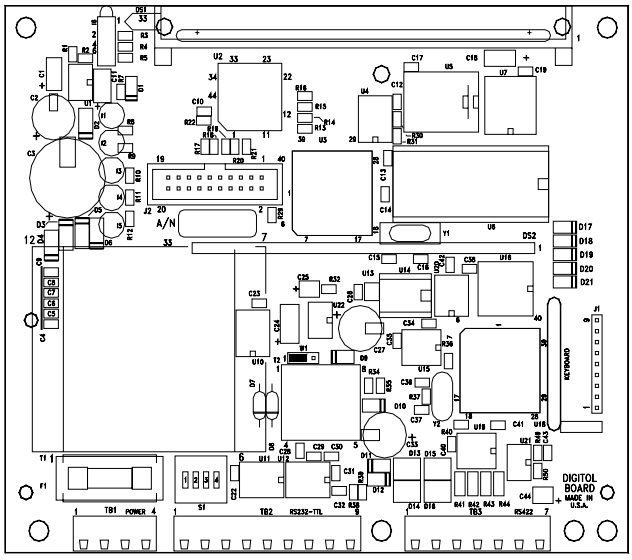


Figure 9 : Carte DigiTOL

2 Connexions électriques

Avant d'effectuer les connexions

Avant d'effectuer les connexions, vérifier le type de l'interface de la cellule de pesage. Le 5e caractère de l'ID du produit indique si la version de l'appareil est analogique ou DigiTOL® (1=Analogique, 3=DigiTOL).

⚠ ATTENTION

POUR ÉVITER D'ENDOMMAGER LA CARTE OU LA CELLULE DE PESAGE, DÉCONNECTER L'ALIMENTATION DU TERMINAL ET ATTENDRE AU MOINS 30 SECONDES AVANT DE BRANCHER OU DE DÉBRANCHER TOUT FAISCEAU ÉLECTRIQUE OU CONNECTER OU DÉCONNECTER LES BASES ULTRARES OU DIGITOL®.

Raccordement de la cellule de pesage analogique

5. Déterminer la longueur maximale. La longueur maximale de câble pour la connexion des cellules de pesage analogiques au terminal dépend de la résistance totale de la base de la balance (TSR). Calcul de la TSR

$$TSR = \frac{\text{Résistance d'entrée des cellules de pesage (Ohms)}}{\text{Nbre de cellule de pesage}}$$

Longueur max recommandée pour câble en fonction de TSR et du calibre du câble			
TSR (Ohms)	**Calibre 24 (pieds/mètres)**	**Calibre 20 (pieds/mètres)**	**Calibre 16 (pieds/mètres)**
350	800/244	2000/610	4000/1219
87 (cellules 4-350Ω)	200/61	600/183	1000/305
45 (cellules à 8-350 Ω)	100/31	300/91	500/152

Si une version analogique du terminal PANTHER montage sur tableau est utilisée dans des zones dangereuses classées sous Division 2 ou si seuls les cellules de pesage se trouvent dans une zone dangereuse Division 2, il faut respecter le schéma des contrôles 155907 de METTLER TOLEDO. Pour de plus amples informations sur la Division 2, se reporter aux informations à la fin de ce manuel.

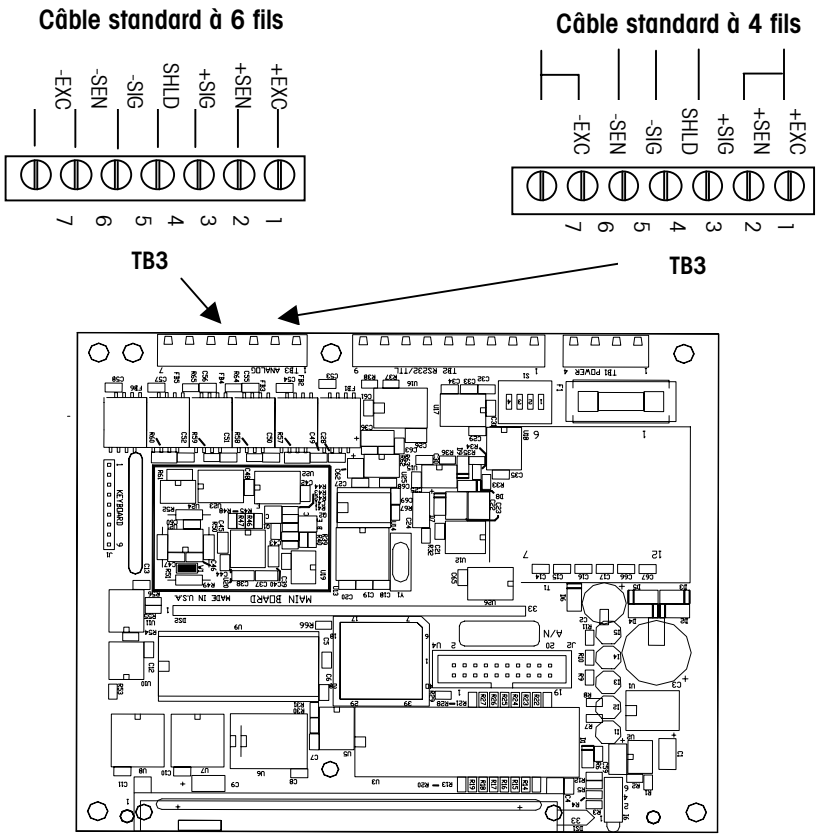


Figure 10 : Câblage pour PTHN/PTHK

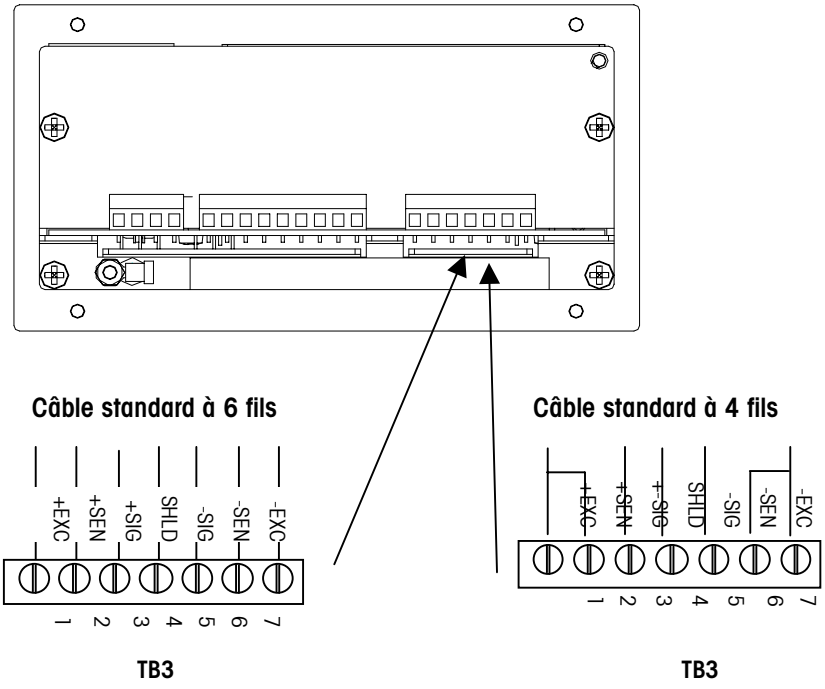


Figure 11 : Câblage pour PTPN

Connexions des cellules de pesage UltraRes et DigiTOL®

La longueur maximale de câble recommandée pour toutes les bases DigiTOL® est de 15,24 mètres. Brancher comme suit les bases UltraRes ou DigiTOL® au TB3 du terminal PANTHER :

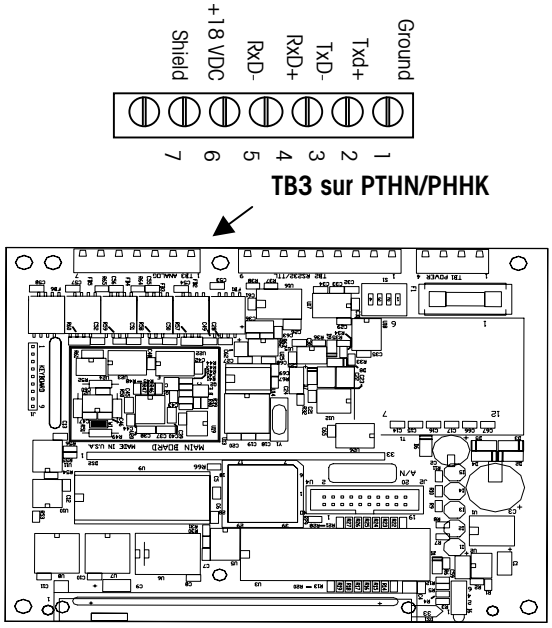


Figure 12 : Câblage pour PTHN/PTHK

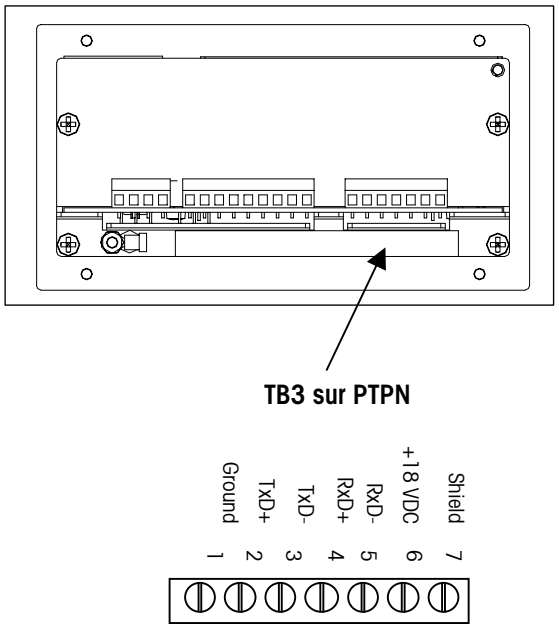


Figure 13 : Câblage pour PTPN

PANTHER TB3		Code couleur		Base UltraRes ou DigiTOL B/P	
Ground	1		Bleu	7	Ground
TxD+	2		Rouge	1	RxD A
TxD-	3	NC	Blanc	4	Batt In
RxD+	4		Noir	8	TxD A
RxD-	5		Jaune	6	TxD B
+18 V c.c.	6		Vert	5	+20 V c.c.
Shield	7		Orange		

Connexions de la boîte de jonction DigiTOL

La longueur maximale de câble recommandée pour la boîte de jonction DigiTOL est de 91,4 mètres.

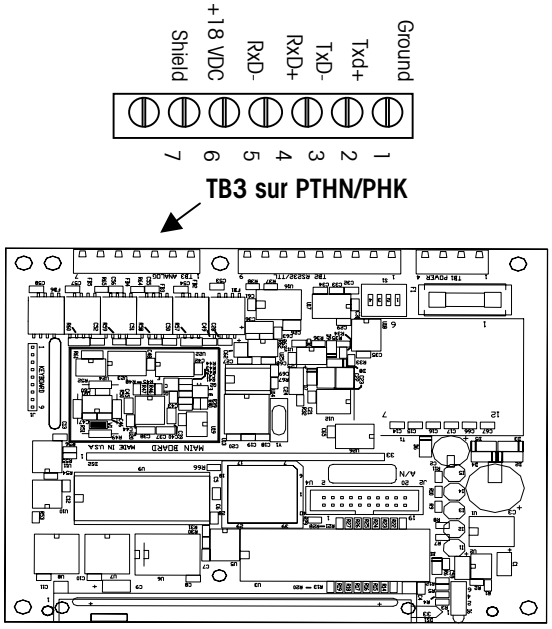


Figure 14 : Câblage pour PTHN/PTHK

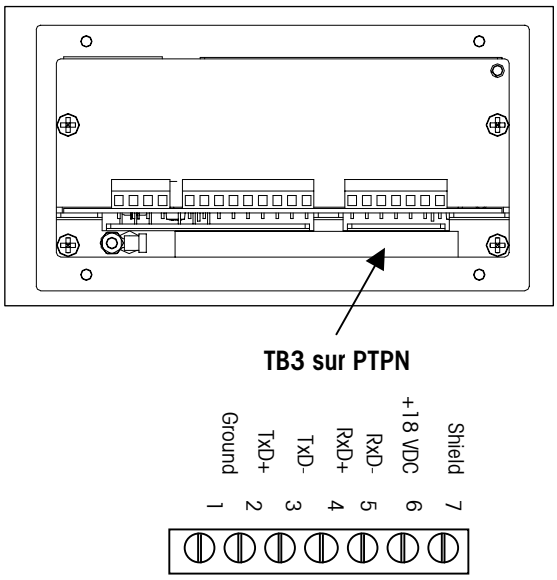


Figure 15 : Câblage pour PTPN

PANTHER TB3		Code couleur	Boîte de jonction DigiTOL améliorée	
Ground	1	Bleu	7	Ground (TB2)
TxD+	2	Rouge	1	RxD A (TB1)
TxD-	3	Blanc	4	Batt In (TB 1)
RxD+	4	Noir	8	TxD A (TB1)
RxD-	5	Jaune	6	TxD B (TB1)
+18 V c.c.	6	Vert	5	+20 V c.c (TB2)
Shield	7	Orange		

Connexions en série (tous les modèles)

Connexions du port série de la carte principale

Le port série COM 1 est bidirectionnel. La longueur maximale du câble recommandée pour la communication RS-232 est de 15,24 mètres.

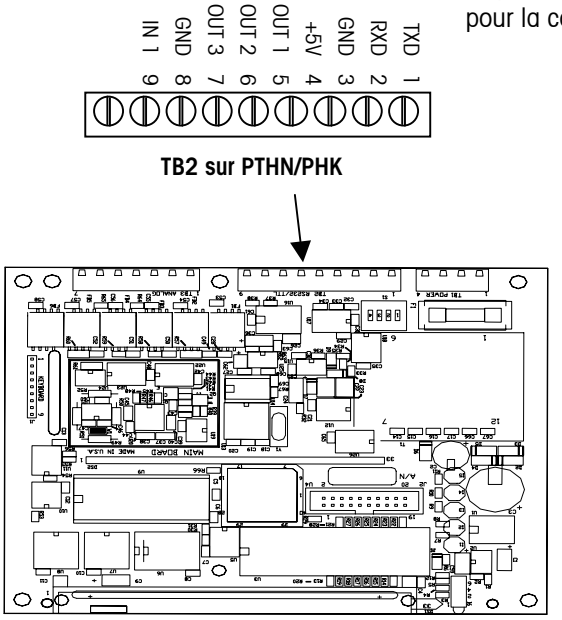


Figure 16 : Câblage pour PTHN/PHK

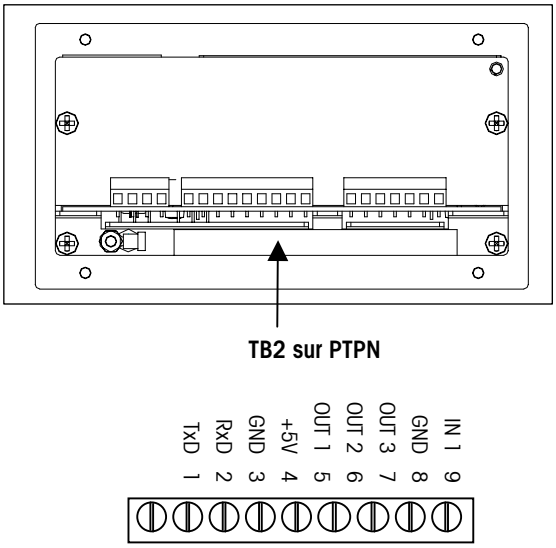


Figure 17 : Câblage pour PTPN

PANTHER TB2 COM1		
TXD	1	Transmission RS-232
RXD	2	Réception RS-232
GND	3	Masse (GND) signal

Connexions des broches pour unités METTLER TOLEDO utilisant le port COM 1		
PANTHER TB2 COM1	**8806 8807 8808 8845 8846* 8857 8861 8863* 8865 8867***	**8617-TB2 9323-TB2 9325-TBS**
TXD	3	2
RXD	--	--
GND	7	3

*Connexions illustrées pour utilisation avec prise adaptateur comprise avec ces modèles.

Connexions pour les E/S discrètes

Se reporter à l'annexe des Manuels techniques des terminaux PANTHER et/ou PANTHER Plus pour de plus amples informations.

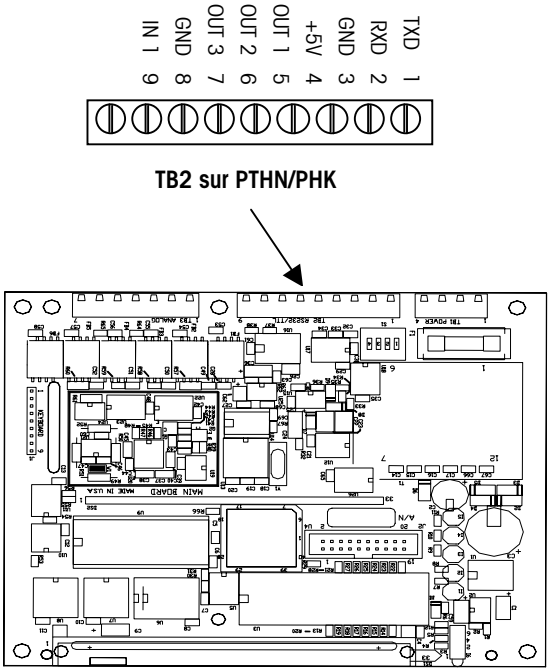


Figure 18 : Câblage pour PTHN/PTHK

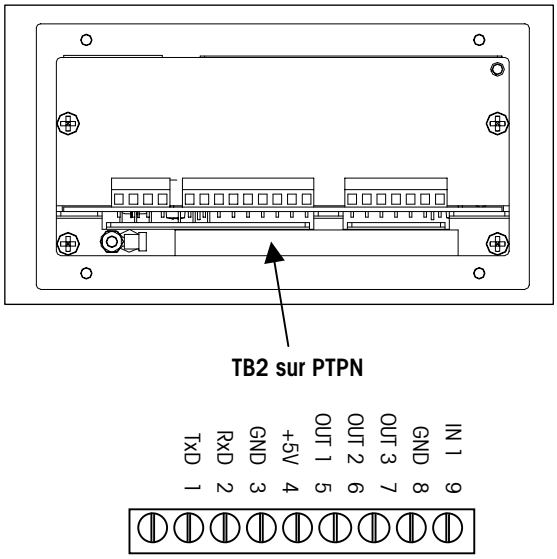


Figure 19 : Câblage pour PTPN

TB2

4	+5 V c.c, courant limité à 15 mA	
5	OUT1	Niveau TTL, 5 V c.c maximum
6	OUT2	Niveau TTL, 5 V c.c maximum
7	OUT3	Niveau TTL, 5 V c.c maximum
8	GND	
9	IN1	$V_{ENTRÉE\ BAS}$ = 0,0 - 0,8 V c.c $V_{ENTRÉE\ HAUTE}$ = 3,5 - 5,0 V c.c.

Alimentation

Alimentation électrique universelle (sélection manuelle) :

Courant : 85 à 264 V c.a.

Fréquence ligne : 49 à 63 Hz.

Consommation électrique : 12 Watts maximum.

L'intégrité de la mise à la terre de l'appareil est importante pour la sécurité ainsi que pour l'exploitation sûre du terminal et de ses bases de pesage. Une mise à la terre défectueuse peut s'avérer dangereuse en cas de court-circuit dans l'appareil. Une bonne mise à la terre est nécessaire afin de minimiser les impulsions électriques parasites. Le terminal ne doit pas partager de lignes avec les appareils générateurs de bruit. Pour vérifier la qualité de la mise à la terre, il est recommandé d'utiliser un analyseur de circuit de dérivation du commerce tel qu'un modèle ICE SureTest ST-1D. En cas de problème, installer un circuit d'alimentation dédié ou un stabilisateur de tension de secteur.

PTHN/PTHK

Les terminaux PANTHER et PANTHER PLUS pour environnement hostile sont expédiés de l'usine avec un cordon d'alimentation. Avant de connecter l'alimentation, veiller à ce que le cordon soit correctement acheminé pour une tension c.a. où le terminal sera utilisé. Le cordon d'alimentation se connecte au bornier TB1 sur la carte du contrôleur.

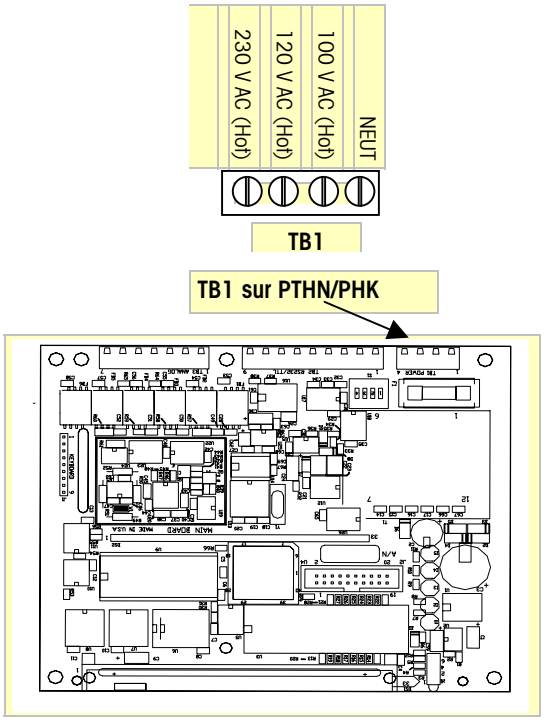


Figure 20 : Câblage pour PTHN/PTHK

Couleurs des cordons d'alimentation MT	
Neutre	Bleu
Sous tension	Marron
Terre (châssis)	Vert/Jaune

PTPN

Le modèle montage sur tableau n'est pas livré avec un cordon d'alimentation. Le câblage au bornier TB1 situé à l'arrière du terminal est illustré ci-dessous. La terre est connectée au châssis.

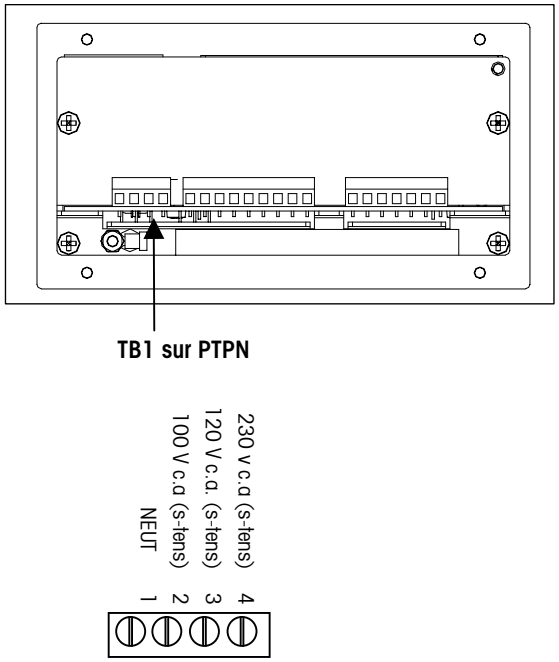


Figure 21 : Câblage sur PTHN/PTHK

3 Installation/câblage des cartes optionnelles

Options

Diverses cartes optionnelles peuvent être installées sur les terminaux PANTHER et/ou PANTHER Plus. Les options sont les suivantes :

- Sortie analogique
- Allen-Bradley RIO
- Modbus Plus
- Profibus
- Sortie du point de réglage (montage sur tableau uniquement)

Si les cartes optionnelles sont commandées séparément, les instructions d'installation seront incluses avec les cartes. Pour de plus amples informations sur chacune de ces options, se reporter aux manuels techniques PANTHER et/ou PANTHER PLUS.

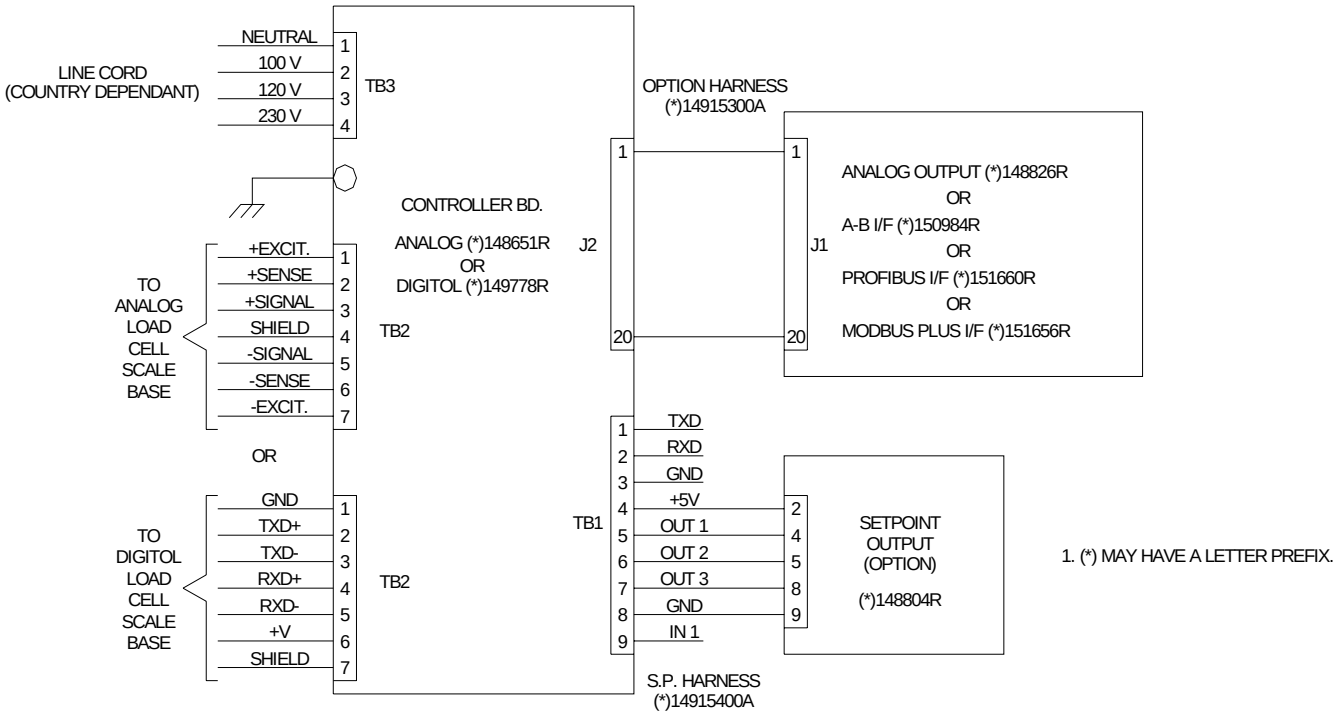
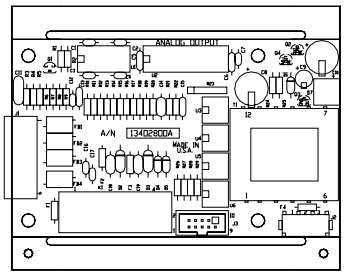
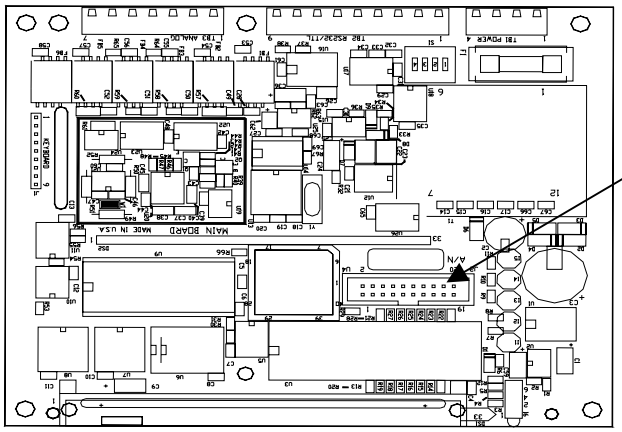


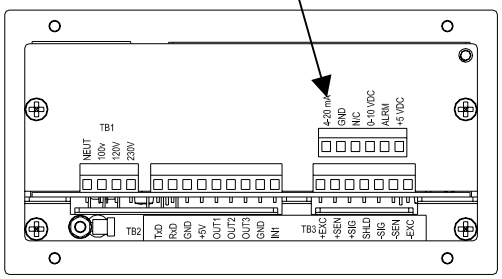
Figure 22 : Schéma interconnexion pour PANTHER/PANTHER PLUS

Option de sortie analogique (0917-0246)





Bprnier sortie analogique		
J2	1	4-20 mA
	2	GND
	3	N.C.
	4	0-10 V
	5	ALARM
	6	+5V



Le kit optionnel de sortie analogique offre une plage de sortie entre 0 et 10 V c.c. ou 4 et 20 mA plus une sortie indicatrice de l'état du collecteur ouvert isolé optiquement. La carte de sortie analogique peut être installée soit sur le terminal d'environnement hostile PANTHER et PANTHER PLUS soit sur le terminal PANTHER avec montage sur tableau.

La longueur maximale de câble recommandée pour la sortie entre 0 et 10 V c.c est de 15,2 mètres. Le câble recommandé est un câble blindé à 2 conducteurs toronnés de calibre 1 (Belden nº 8762 ou produit équivalent, disponible auprès de METTLER TOLEDO sous la référence 510220190).

4 à 20mA

CAppareil client (4 et 20mA)

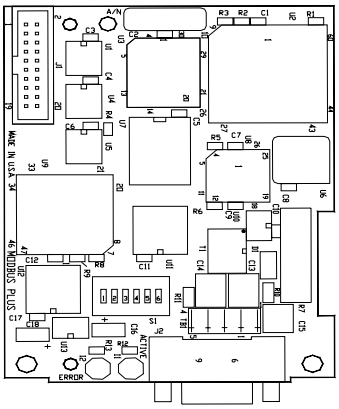
J2	1	4-20mA	+
	2	GND	-
	3	N.C.	
	4	0-10 V c.c.	
	5	ALRM*	
	6	+5 V c.c.	

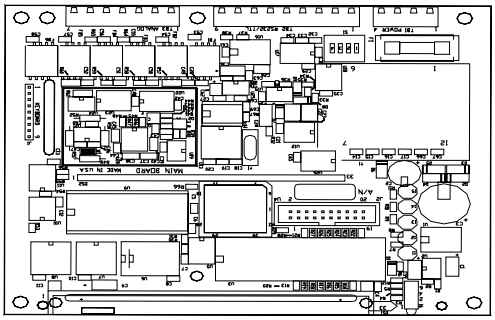
Entre 0 et 10 V c.c.

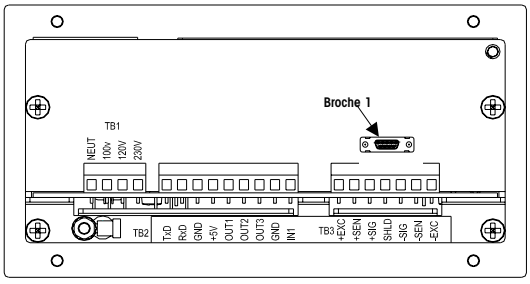
Appareil client (0 et 10 V c.c.)

J2	1	4-20mA	
	2	GND	-
	3	N.C	
	4	0-10 V c.c.	+
	5	ALRM*	
	6	+5 V c.c.	

Kit Modbus Plus







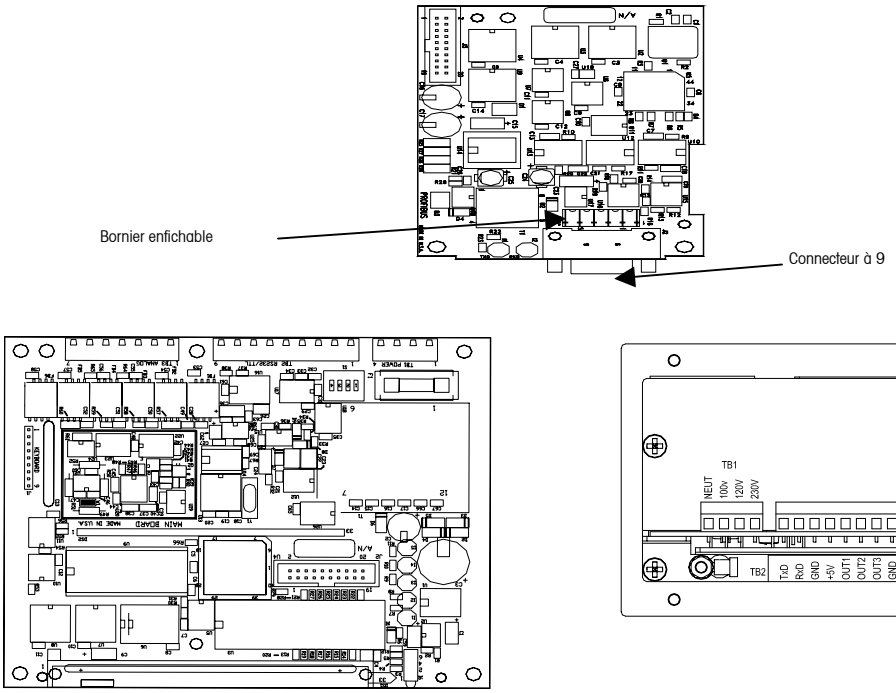
L'interface Modbus Plus est dotée de deux connexions.

- La connexion standard du terminal PANTHER montage sur tableau est un connecteur femelle DE-9. Des instructions de câblage sont jointes au connecteur. Le réseau Modbus Plus se sert des broches 1, 2 et 3 du connecteur DE-9 (fourni par Modicon).
- Le terminal PANTHER pour environnement hostile se sert d'un bornier enfichable. Lorsque le bornier est utilisé, un kit pour câble queue de cochon Modbus 0900-0320 est disponible.

La queue de cochon Modbus Plus est câblé au terminal PANTHER comme suit.

DE-9		Bornier
1	Blanc	1
2	Vert	2
3	Noir	3

Option Profibus

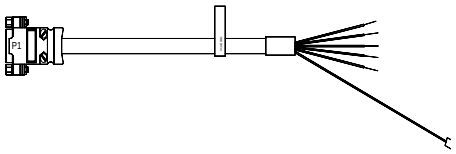


La connexion PROFIBUS est disponible à deux emplacements sur la carte PROFIBUS. Le premier est un connecteur femelle ultra-miniaturisé D à 9 broches qui représente la connexion PROFIBUS standard. Le connecteur n'est pas fourni par METTLER TOLEDO. Cette connexion est recommandée dans le cas du terminal montage sur tableau.

Femelle DE-9

1 GND (isolé)
2 N.C.
3 TX/RX+
4 RTS
5 GND (isolé)
6 +5V (isolé)
7 N.C.
8 TX/RX-
9 N.C.

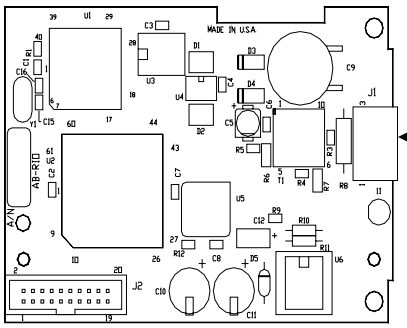
Le bornier enfichable hostile doit être utilisé dans le cas du terminal PANTHER environnement hostile. Dans ces cas, un faisceau optionnel avec raccord queue de cochon est disponible pour la connexion entre le bornier et connecteur femelle D à 9 broches. Le faisceau de l'adaptateur peut être commandé sous la référence 0900-0311. L'adaptateur est illustré ici.

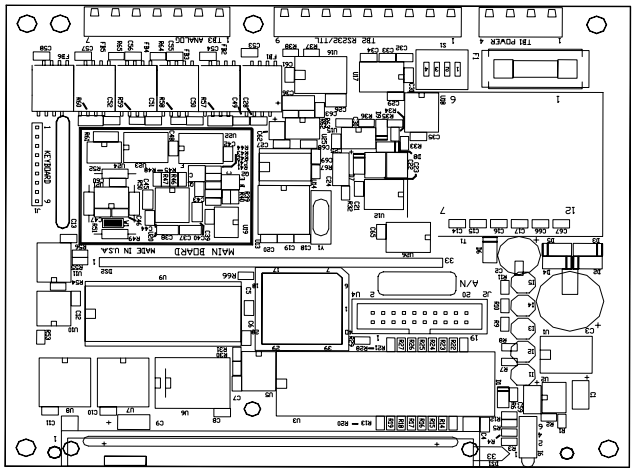


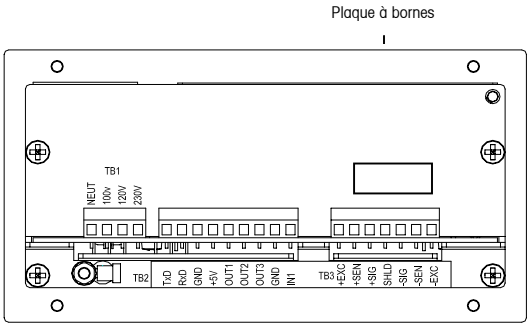
Bornier

1 RTS
2 TXD/RXD+
3 TXD/RXD-
4 +5 V (isolé)
5 GND (isolé)

Option Allen-Bradley RIO







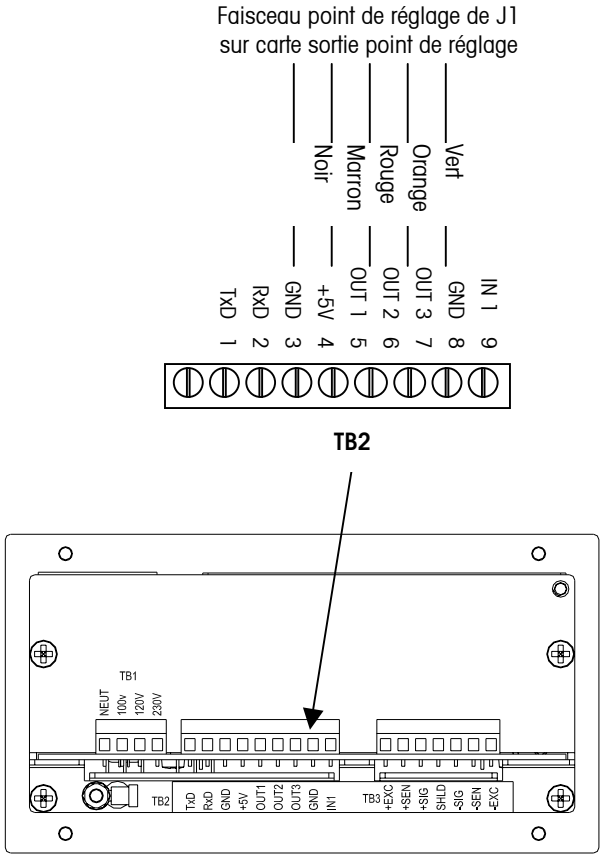
Le kit optionnel Allen-Bradley de PANTHER permet de se connecter au contrôleur programmable d'Allen-Bradley par le biais du protocole E/S distant (RIO). Le kit peut être installé soit sur le terminal d'environnement hostile PANTHER ou PANTHER PLUS soit sur le terminal PANTHER avec montage sur tableau.

Électricité : circuit d'excitation isolée par transformateur, centré
Connecteur : bornier amovible à trois positions, câblé de la gauche vers la droite (vue du connecteur arrière) comme suit.

Bleu
Protection
Transparent

Option de sortie du point de réglage (montage sur tableau uniquement)

Le kit optionnel de sortie du point de réglage fournit une interface c.a à haut niveau (28 - 280 V c.a) pour trois sorties discrètes standard à bas niveau. Connecter les extrémités libres du faisceau aux borniers suivants sur la carte du contrôleur.



Guida all'installazione dei terminali

PANTHER®

PANTHER® PLUS

INTRODUZIONE

Il presente manuale deve essere usato solo da personale che abbia seguito corsi tecnici sul relativo prodotto METTLER TOLEDO. Si possono richiedere informazioni sui corsi tecnici METTLER TOLEDO scrivendo a:

METTLER TOLEDO
1900 Polaris Parkway
Columbus, Ohio USA 43240
+1 614 438 4511

Avvertenza relativa alla normativa FCC

Questo apparecchio è conforme alla Parte 15 delle norme FCC (Comitato Federale USA per le Telecomunicazioni) e alle norme sull'interferenza radio emesse dal Department of Communications canadese. Il funzionamento è soggetto alle seguenti condizioni: (1) l'apparecchio non deve causare interferenza dannosa e (2) l'apparecchio deve accettare qualsiasi interferenza ricevuta, comprese eventuali interferenze che possano causare un funzionamento non voluto.

In base alle prove a cui è stato sottoposto, si è rilevato che questo apparecchio è conforme ai limiti stabiliti per i dispositivi digitali di Classe A secondo la Parte 15 delle norme FCC. Questi limiti sono stati concepiti per dare protezione ragionevole contro interferenze dannose quando l'apparecchio funziona in ambiente commerciale. Questo apparecchio genera, impiega e può irradiare energia a radiofrequenza e se non è installato e usato seguendo il manuale d'istruzioni, può causare interferenza dannosa per le comunicazioni radio. Il funzionamento di questo apparecchio in un'area residenziale può facilmente causare interferenza nelle comunicazioni radio, e in questo caso chi usa l'apparecchio deve adottare a proprie spese tutte le misure necessarie a eliminare l'interferenza.

INFORMAZIONI SUGLI ORDINATIVI

Quando si ordinano componenti, è essenziale specificarne il numero di codice, perché gli ordinativi vengono inoltrati tramite sistemi meccanografici, utilizzando solo il numero di codice e la quantità indicati. Gli ordinativi non vengono controllati per determinare se il numero di codice e la descrizione corrispondono.

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Se incontrare qualche problema durante l'utilizzo di questo prodotto, o se desiderate semplicemente darci qualche suggerimento per potervi servire meglio, vi preghiamo di ritornarci questo questionario debitamente compilato. Le vostre informazioni ci aiuteranno a migliorare le prestazioni del prodotto, la qualità e il servizio. Se risiedete negli Stati Uniti, potete rispedire il questionario prepagato all'indirizzo riportato sul retro dello stesso, o inviarlo via fax al numero (614) 438-4355. Se risiedete all'estero, vi preghiamo di affrancare la busta con l'importo adeguato prima della spedizione. Potete anche effettuare la spedizione via fax al suddetto numero.

Nome:	Data:
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Indirizzo:	Nome del componente/prodotto:
	Numero del componente/modello:
	Numero di serie:
Numero di tel.: ( ) Numero di fax: ( )	Nome della società installatrice:
Indirizzo E-mail:	Nome dell'interlocutore:
	Numero di telefono:

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	Soddisfa alcune necessità
	Non ha soddisfatto le mie necessità

Commenti:

NON SCRIVERE NELLO SPAZIO SOTTOSTANTE; PER USO INTERNO DI METTLER TOLEDO

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PRECAUZIONI

LEGGERE il presente manuale PRIMA di mettere in funzione o eseguire interventi di assistenza su quest'attrezzatura.

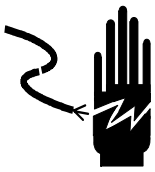
SEGUIRE scrupolosamente le presenti istruzioni.

CONSERVARE il presente manuale per consultazioni future.

NON consentire a personale non addestrato di utilizzare, pulire, controllare, eseguire interventi di manutenzione e assistenza su o manomettere questa attrezzatura.

SCOLLEGARE SEMPRE quest'attrezzatura dalla fonte di alimentazione elettrica prima di eseguire interventi di pulizia o di manutenzione.

CONTATTARE METTLER TOLEDO per richiedere componenti, informazioni e assistenza.

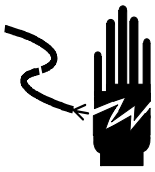


AVVERTENZA

SCOLLEGARE L'ALIMENTAZIONE ELETTRICA A QUESTA UNITÀ PRIMA DI ESEGUIRE INTERVENTI DI INSTALLAZIONE, ASSISTENZA, PULIZIA O DI RIMOZIONE DEL FUSIBILE. LA MANCATA OSSERVANZA DI QUESTA AVVERTENZA PUÒ COMPORTARE LESIONI FISICHE E/O DANNI MATERIALI.

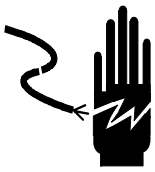
ATTENZIONE

OSSERVARE LE PRECAUZIONI PER LA MOVIMENTAZIONE DEI DISPOSITIVI SENSIBILI ALLE SCARICHE ELETTROSTATICHE.



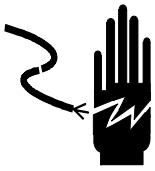
AVVERTENZA

PERMETTERE SOLTANTO A PERSONALE QUALIFICATO DI EFFETTUARE INTERVENTI DI ASSISTENZA SU QUEST'ATTREZZATURA. PRESTARE ATTENZIONE DURANTE L'ESECUZIONE DI CONTROLLI, PROVE E REGOLAZIONI CHE DEVONO ESSERE EFFETTUATI CON L'ALIMENTAZIONE ELETTRICA INSERITA. LA MANCATA OSSERVANZA DI QUESTA AVVERTENZA PUÒ COMPORTARE LESIONI FISICHE E/O DANNI MATERIALI.



AVVERTENZA

PER UNA PROTEZIONE COSTANTE NEI CONFRONTI DEL PERICOLO DI SCOSSE ELETTRICHE, COLLEGARE L'ATTREZZATURA ESCLUSIVAMENTE AD UNA PRESA DEBITAMENTE MESSA A TERRA. NON RIMUOVERE IL POLO DI MESSA A TERRA DALLA SPINA.

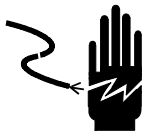


AVVERTENZA

SE QUESTA ATTREZZATURA VIENE INCLUSA COME UN COMPONENTE DI UN SISTEMA, LA CONFIGURAZIONE DERIVANTE DEVE ESSERE RIVISTA DA PERSONALE QUALIFICATO CHE ABBIA FAMILIARITÀ CON LA COSTRUZIONE ED IL FUNZIONAMENTO DI TUTTI I COMPONENTI DEL SISTEMA E CON I RISCHI POTENZIALI CONNESSI AD ESSI. LA MANCATA OSSERVANZA DI QUESTA AVVERTENZA PUÒ COMPORTARE LESIONI FISICHE E/O DANNI MATERIALI.

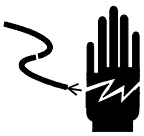
AVVERTENZA

SE QUESTO DISPOSITIVO VIENE UTILIZZATO IN UN CICLO DI RIEMPIMENTO AUTOMATICO O MANUALE, TUTTI GLI UTENTI DEVONO FORNIRE UN CIRCUITO DI ARRESTO DI EMERGENZA CABLATO ALL'ESTERNO DEI CIRCUITI DEL DISPOSITIVO. LA MANCATA OSSERVANZA DI QUESTA AVVERTENZA PUÒ COMPORTARE LESIONI FISICHE E/O DANNI MATERIALI.



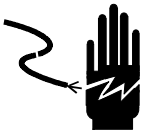
AVVERTENZA

LE PRESE ELETTRICHE DEVONO ESSERE FACILMENTE ACCESSIBILI E UBICATE AD UNA DISTANZA NON SUPERIORE ALLA LUNGHEZZA DEL CAVO DI ALIMENTAZIONE FORNITO IN DOTAZIONE CON IL PRODOTTO. LA MANCATA OSSERVANZA DI QUESTA AVVERTENZA PUÒ COMPORTARE LESIONI FISICHE E/O DANNI MATERIALI.



AVVERTENZA

METTLER TOLEDO NON ASSUME NESSUNA RESPONSABILITÀ PER L'INSTALLAZIONE CORRETTA DI QUESTA ATTREZZATURA IN UN'AREA CLASSIFICATA COME DIVISIONE 2 O ZONA 2/22. L'ADDETTO ALL'INSTALLAZIONE DEVE CONOSCERE BENE TUTTE LE NORMATIVE RELATIVE AL CABLAGGIO E ALL'INSTALLAZIONE PER DIVISIONE 2 O ZONA 2/22.

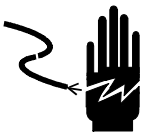


AVVERTENZA

I MODELLI PRECEDENTI DEL TERMINALE PANTHER CHE NON SONO MARCATI (CON ETICHETTA APPLICATA IN FABBRICA) IN MODO DA INDICARE CHE SONO OMOLOGATI PER DIVISIONE 2 O CATEGORIA EUROPEA 3 NON DEVONO ESSERE INSTALLATI IN UN AMBIENTE CLASSIFICATO COME DIVISIONE 2 O ZONA 2/22.

AVVERTENZA

IN MODO DA POTRER INSTALLARE IL PANNELLO DI MONTAGGIO PANTHER OMOLOGATO PER DIVISIONE 2 UTILIZZANDO L'APPROVAZIONE FACTORY MUTUAL, VA SEGUITO SENZA ECCEZIONE ALCUNA IL DISEGNO DI CONTROLLO METTLER TOLEDO 155907R . IN MODO DA POTER INSTALLARE IL TERMINALE PANTHER DI CATEGORIA 3 UTILIZZANDO IL CERTIFICATO DI APPROVAZIONE KEMA 02atex1163x VANNO SEGUITE SENZA ECCEZIONE TUTTE LE NORMATIVE LOCALI. IN CASO CONTRARIO SI POTRANNO CAUSARE DANNI ALLE COSE ED ALLE PERSONE.

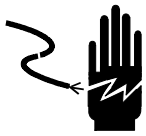


AVVERTENZA

PER APPLICAZIONI IN AREA PERICOLOSA ZONA EUROPEA 2/22, VANNO SEGUITE SENZA ECCEZIONE LA GUIDA ALL'INSTALLAZIONE (*)16684500A PER PANTHER CATEGORIA 3 E IL CERTIFICATO DI CONTROLLO DI TIPO KEMA.

AVVERTENZA

SE LA TASTIERA, LA LENTE O L'ALLOGGIAMENTO DI UN TERMINALE DI MONTAGGIO OMOLOGATO PER DIVISIONE 2 O MARCATO PER CATEGORIA 3 UTILIZZATO IN UN'AREA DIVISIONE 2 O ZONA 2/22 SONO DANNEGGIATI, VANNO RIPARATI IMMEDIATAMENTE. STACCARE L'ALIMENTAZIONE A CA E NON RICOLLEGARLA FINCHÉ LA LENTE, LA TASTIERA O L'ALLOGGIAMENTO SIANO STATI RIPARATI O SOSTITUITI DA PERSONALE QUALIFICATO. IIN CASO CONTRARIO SI POTRANNO CAUSARE DANNI ALLE COSE E ALLE PERSONE.



AVVERTENZA

IL TERMINALE PANTHER HA UN'OMOLOGAZIONE FACTORY MUTUAL PER TEMPERATURA DI T3A (180° C) E UN'OMOLOGAZIONE KEMA DI T4 (135° C). NON VA UTILIZZATO IN AREE DOVE LA TEMPERATURA DI AUTO COMBUSTIONE DEL MATERIALE PERICOLOSO SIA INFERIORE A QUESTI VALORI.

INDICE

1 Introduzione

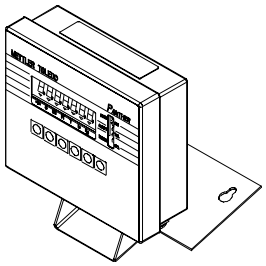
Descrizione generale

Le informazioni seguenti si prefiggono di aiutarvi ad installare i terminali PANTHER e PANTHER PLUS e le varie schede opzionali. Leggere attentamente le istruzioni prima di iniziare l'installazione. Qualsiasi installazione del cablaggio interno degli optional o programmazione deve essere eseguita esclusivamente a cura di tecnici qualificati.

NOTA: **SOLO** la versione analogica del terminale con montaggio a panello PANTHER è approvata per utilizzo in aree classificate come Divisione 2 e Zona 2/22. Consultare la Guida all'installazione del terminale con montaggio a pannello PANTHER (Analogico) per aree classificate come Divisione 2 riportata alla fine di questo manuale. Consultare la Guida all'installazione relativa alla categoria europea 3 G/D, (*)16684500A, per aree classificate come Zona 2/22.

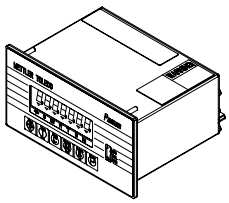
Ispezione e checklist dei contenuti

1. Se l'imballaggio di spedizione del terminale sembra essere danneggiato al momento della consegna, controllare che non sia danneggiato anche l'interno. Presentare un reclamo al trasportatore, se necessario.
2. Se l'imballaggio non è danneggiato, disimballare se non lo si è già fatto. Conservare i materiali d'imballaggio originali per l'uso futuro.
3. Assicurarsi che l'imballaggio del terminale contenga quanto segue: terminale PANTHER o PANTHER PLUS (fare riferimento alla scheda d'identificazione del modello nella pagina seguente per assicurarsi di lavorare con il modello corretto).



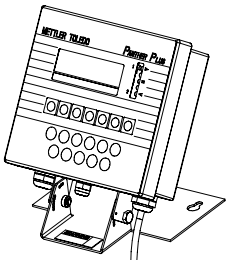
Terminale da tavolo/parete PANTHER (PTHN)

- Guida all'installazione
- Sigillo di sicurezza
- Etichette di capacità
- Etichette di legenda del cursore
- Etichette dell'indirizzo
- Kit di ferramenti
- Documentazione su CD



Terminale da pannello PANTHER (PTPN)

- Guida all'installazione
- Sigillo di sicurezza
- Etichette di capacità
- Etichette di legenda del cursore
- Etichette dell'indirizzo
- Guarnizione
- Etichetta del marchio CE
- Kit di ferramenti
- Documentazione su CD



Terminale da tavolo/parete PANTHER Plus (PTHK)

- Guida all'installazione
- Sigillo di sicurezza
- Etichette di capacità
- Etichette di legenda del cursore
- Etichette dell'indirizzo
- Kit di ferramenti
- Documentazione su CD

Utilizzare le informazioni seguenti per accertarsi del numero di modello corretto per il terminale con cui lavorerete. Il numero di modello si trova sulla targhetta dati ubicata sul lato del terminale.

P T XX - X X X X - X X X

Terminale PANTHER

Châssis/tipo di display
PN – Versione da pannello, display numerico
HN – Versione da tavolo/parete, display numerico
HK (PANTHER Plus, versione da tavolo/parete con tastiera)
PC – Versione da pannello personalizzata
HC – Versione da tavolo/parete personalizzata

Interfaccia bilancia
1--Cella di carico analogica
3– Cella di carico DigiTOL

Optional interfaccia
0--Nessun optional
5—Modbus Plus
6—Allen-Bradley
8—Uscita analogica (non disponibile se usata con più di 4 celle di carico analogiche)
9--Profibus

Optional setpoint
0—Nessuno
1—3 Setpoint uscite di potenza (solo versione da pannello)

Non utilizzato
0—Sempre

Mercato di destinazione

Nota: nel presente manuale, vengono utilizzati i termini seguenti:

PTHN -- terminale da tavolo/parete PANTHER.
PTPN -- terminale da pannello PANTHER.
PTHK -- terminale PANTHER PLUS (un terminale da tavolo/parete PANTHER con una tastiera).

Avvertenze/precauzioni

AVVERTENZA

PERMETTERE SOLTANTO A PERSONALE QUALIFICATO DI EFFETTUARE INTERVENTI DI INSTALLAZIONE E ASSISTENZA SU QUESTA ATTREZZATURA. PRESTARE ATTENZIONE DURANTE L'ESECUZIONE DI CONTROLLI, PROVE E REGOLAZIONI CHE DEVONO ESSERE EFFETTUATI CON L'ALIMENTAZIONE ELETTRICA INSERITA. LA MANCATA OSSERVANZA DI QUESTE PRECAUZIONI PUÒ COMPORTARE LESIONI FISICHE E/O DANNI MATERIALI.

ATTENZIONE

OSSERVARE LE PRECAUZIONI PER LA MOVIMENTAZIONE DEI DISPOSITIVI SENSIBILI ALLE SCARICHE ELETTROSTATICHE.

Posizione/considerazioni ambientali

- Temperatura d'esercizio: da 14°F a 113°F (da –10°C a 45°C) ad un tasso di umidità non condensante dal 10% al 95%.
- Temperatura di stoccaggio: da –40°F a 140°F (da –40°C a 60°C) ad un tasso di umidità non condensante dal 10% al 95%.
- Classificazione châssis: requisiti TIPO 4X (IP65) per un châssis a prova di polvere e spruzzi per il terminale da pannello PANTHER.
- **I terminali PANTHER e PANTHER PLUS non sono intrinsecamente sicuri!** Tuttavia, possono funzionare con bilance e barriere ubicate in aree pericolose. Contattare il proprio rappresentante autorizzato di METTLER TOLEDO per ricevere assistenza sulle applicazioni in aree pericolose.

  NOTA: **SOLO** la versione analogica del terminale con montaggio a panello PANTHER è approvata per utilizzo in aree classificate come Divisione 2 e Zona 2/22. Consultare la Guida all'installazione del terminale con montaggio a pannello PANTHER (Analogico) per aree classificate come Divisione 2 riportata alla fine di questo manuale. Consultare la Guida all'installazione relativa alla categoria europea 3 G/D, (*)16684500A, per aree classificate come Zona 2/22.

AVVERTENZA

PER UTILIZZARE IL TERMINALE CON MONTAGGIO A PANNELLO PANTHER IN UN'AREA CLASSIFICATA COME CLASSE I, II O III, DIVISIONE 2, GRUPPI A, B, C, D, F O G, VA SEGUITO SENZA ECCEZIONE ALCUNA IL DISEGNO DI CONTROLLO METTLER TOLEDO 155907R. PER USARE IL TERMINALE ANALOGICO PANTHER MONTATO SU PANNELLO IN UN'AREA CLASSIFICATA COME ZONA 2/22, VANNO SEGUITI IL CERTIFICATO ATEX 02atex 1163X E TUTTE LE NORMATIVE LOCALI. IN CASO CONTRARIO SI POTRANNO CAUSARE DANNI ALLE COSE E ALLE PERSONE.

IL TERMINALE PANTHER PLUS, LA VERSIONE DIGITOL CON MONTAGGIO A PANNELLO E LA VERSIONE ANALOGICA PER AMBIENTI MOLTO DIFFICILI DEL TERMINALE PANTHER NON SONO APPROVATI PER UTILIZZO IN AREE CLASSIFICATE COME DIVISIONE 2 O ZONA 2/22. NON INSTALLARE QUESTE VERSIONI IN ZONE PERICOLOSE!

AVVERTENZA!

I TERMINALI PANTHER E PANTHER PLUS NON SONO INTRINSECAMENTE SICURI! NON UTILIZZARLI IN AREE CLASSIFICATE COME PERICOLOSE DAL NATIONAL ELECTRIC CODE (NEC) A CAUSA DI ATMOSFERE COMBUSTIBILI O ESPLOSIVE.

Dimensioni e istruzioni di montaggio

PTHN/PTHK

Utilizzando il kit di ferramenti fornito in dotazione, montare il terminale su una parete o su una superficie piana come una scrivania, facendo riferimento alle dimensioni ed ai disegni della Figura 1. Nota: le dimensioni e le istruzioni di montaggio sono le stesse per il terminale da tavolo/parete PANTHER e il terminale PANTHER PLUS.

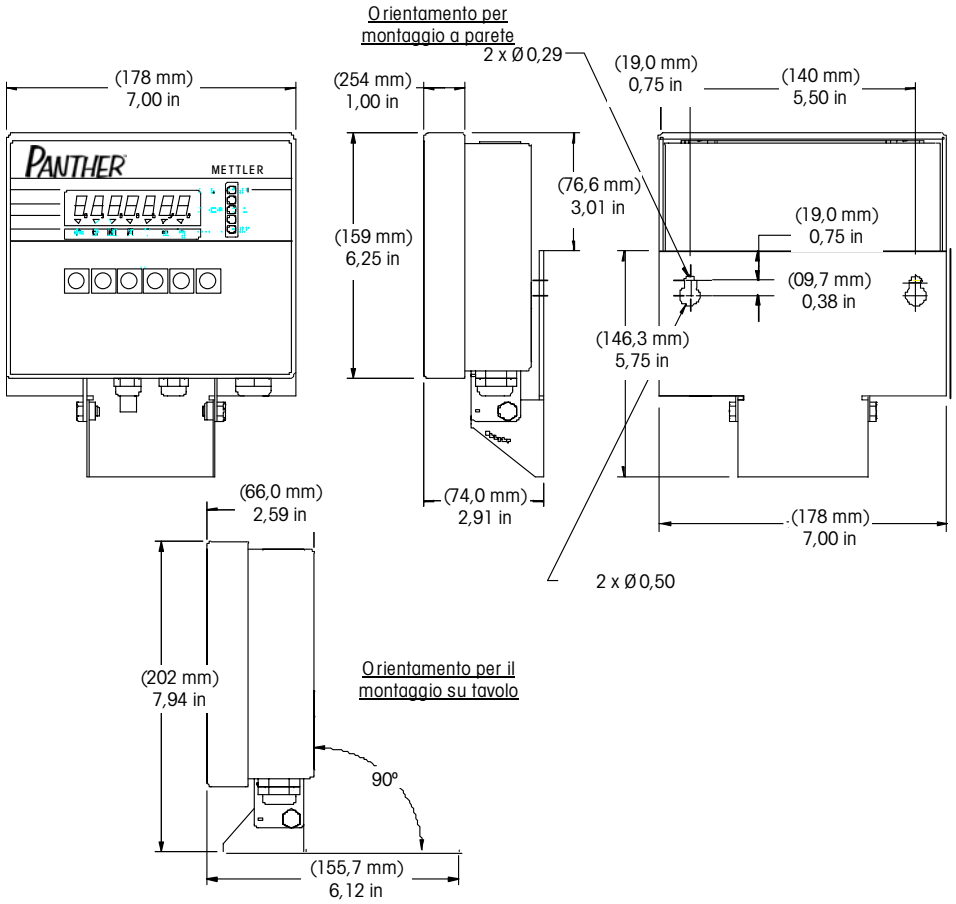


Figura 1: dimensioni del terminale da tavolo/parete PANTHER e del terminale PANTHER PLUS (la figura mostra il terminale da tavolo/parete PANTHER)

PTPN

Per montare il terminale da pannello PANTHER, fare riferimento ai disegni quotati sottostanti ed alla sagoma di montaggio fornita. Nota: la sagoma viene fornita solo a titolo di riferimento e non è illustrata con le dimensioni effettive. Inoltre, ricordare che le uscite di potenza opzionali aggiungono 1,25 pollici (31,7 mm) di profondità.

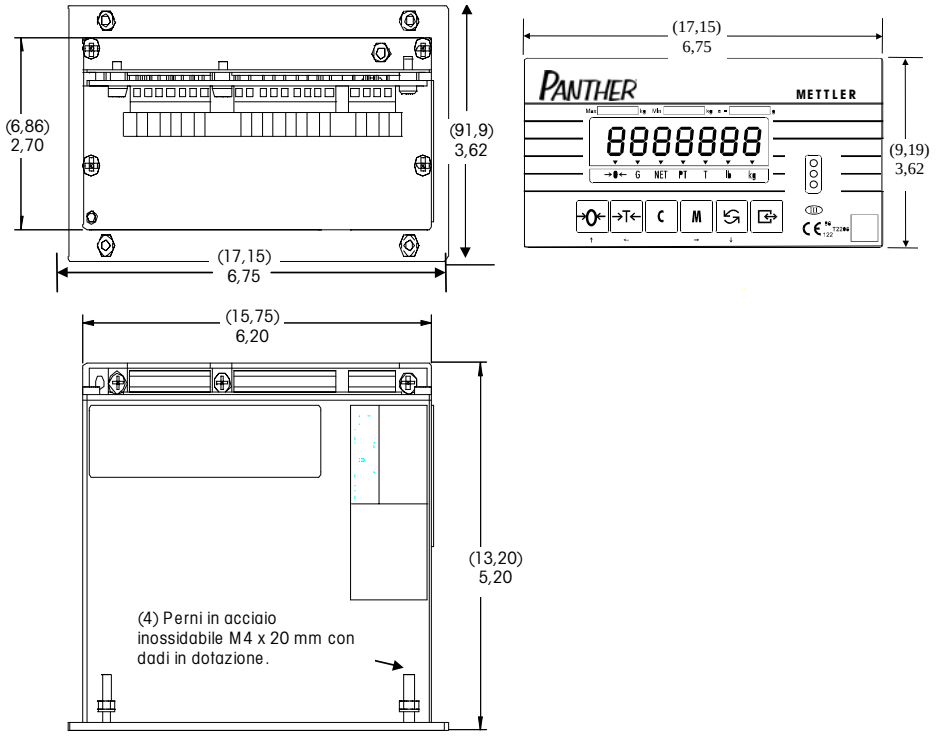


FIGURA 2: TERMINALE DA PANNELLO PANTHER

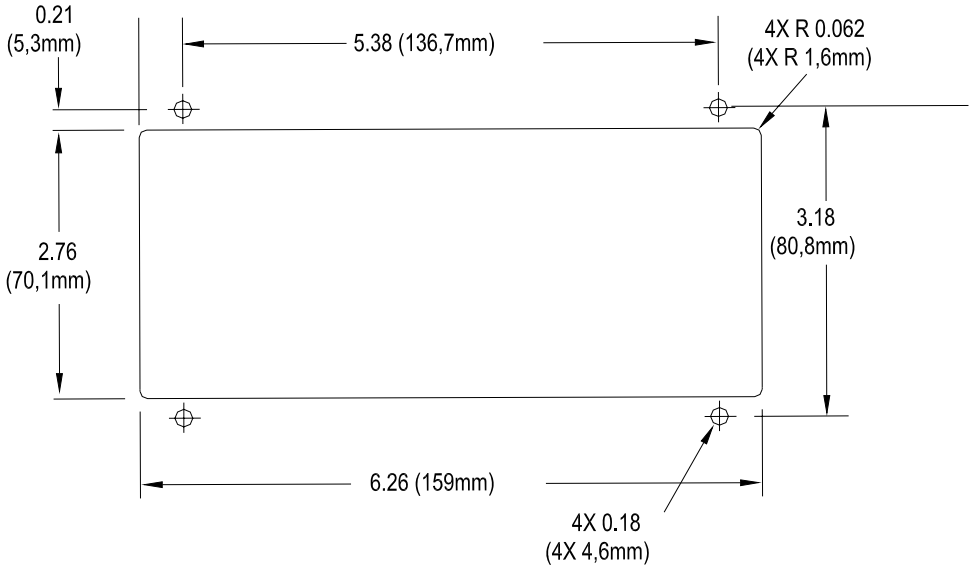


FIGURA 3: SAGOMA DI MONTAGGIO PER LA VERSIONE DA PANNELLO PANTHER

Accesso al circuito stampato del controller del terminale

Per eseguire i collegamenti necessari per il cablaggio, occorre accedere al circuito stampato del controller del terminale. L'accesso al circuito stampato del controller di PTHN/PTHK richiede l'apertura del terminale. L'accesso al circuito stampato del controller di PTPN è possibile direttamente dal retro dell'unità.

PTHN/PTHK

1. Inserire la punta di un cacciavite a testa piatta in una delle due asole ("A" nella Figura 4) sul fondo del pannello frontale.
2. Spingere verso il châssis. Bisogna fare leva in modo diretto (né da un lato né dall'altro). Si dovrebbe udire uno scatto quando il coperchio viene rilasciato.
3. Spingere sul lato dell'asola più vicina al fondo del coperchio. Ripetere questa procedura per l'altra apertura.

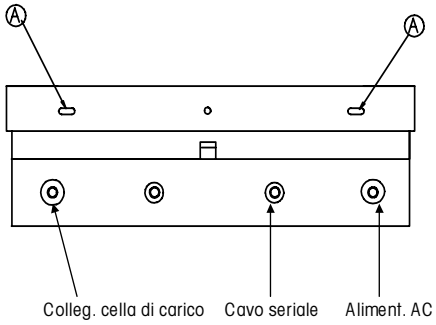


Figura 4

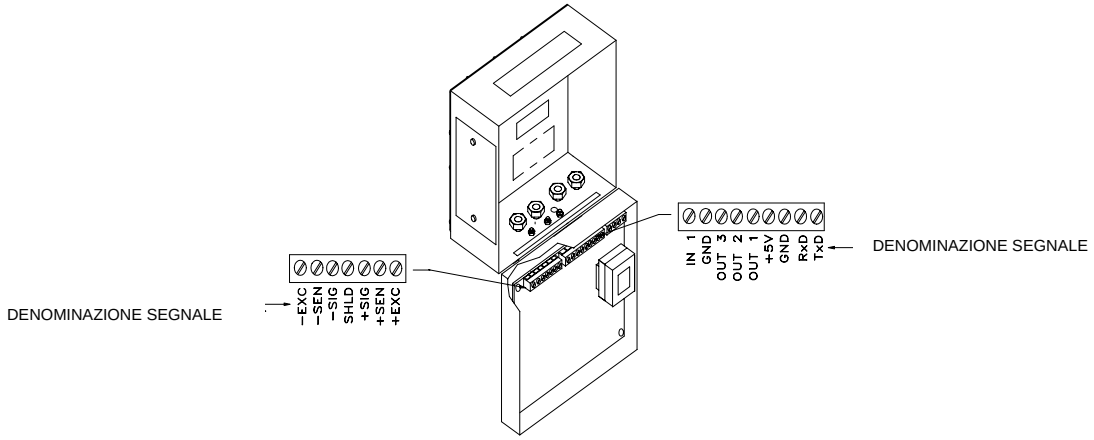


Figura 5

4. Sollevare il fondo del pannello frontale fino a quando viene liberata completamente dal châssis.

5. Schiacciare il lato superiore del pannello frontale verso il châssis e sollevarlo per liberare i due fermi superiori. Il coperchio si orienta verso il basso (Figura 5), incernierato da un cavo sul fondo.

Nota: quando il coperchio si orienta verso il basso, è possibile vedere le morsettiere sul circuito stampato del controller (Vedere la Figura 6). Eseguire i collegamenti elettrici utilizzando queste morsettiere. Nota: il circuito stampato è capovolto.

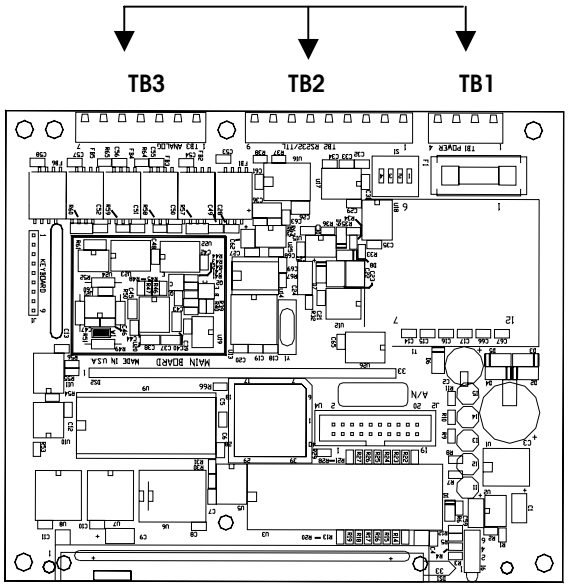


FIGURA 6

6. Infilare i cavi che entrano nel châssis attraverso un passacavi di dimensioni adeguate prima di collegare i fili.
7. Eseguire i collegamenti elettrici necessari come indicato nelle istruzioni della sezione Collegamenti elettrici.
8. Fissare di nuovo il coperchio posteriore.
9. Stringere il passacavi per fornire una chiusura di tenuta all'acqua intorno al cavo. Ciò consentirà di ricevere attraverso il passacavi qualsiasi allentamento interno del cavo.
10. Spingere il fondo del coperchio anteriore sul châssis. Un rumore di incastro indica che il coperchio è inserito in posizione. Spingere il coperchio anteriore verso il châssis su tutti i quattro angoli per verificare che tutti i quattro fermi siano inseriti correttamente.

PTPN

L'accesso al modello da pannello PANTHER si trova sul retro del terminale dove vengono realizzati tutti i collegamenti alle morsettiere sul circuito stampato del controller (la Figura 7 mostra il retro delle versioni DigiTOL e analogica che sono identiche, sebbene TB3 venga etichettata in modo diverso.)

Se è necessario accedere all'interno dell'unità, rimuovere le due viti che trattengono la piastra di copertura sul retro dell'unità e sollevare la piastra di copertura sulle morsettiere. Facendo questo si scopre l'intero circuito stampato del controller. Vedere le Figure 8 e 9.

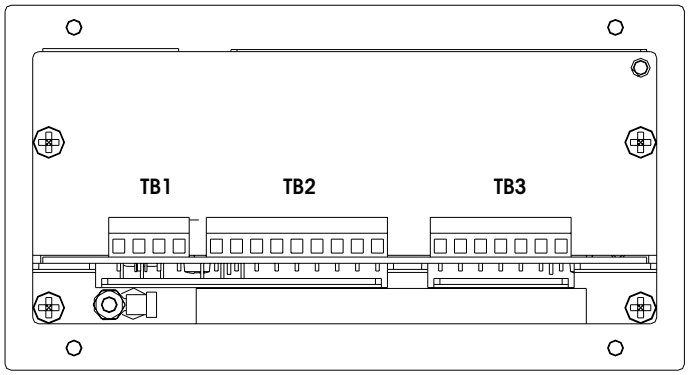


Figura 7: retro di PTPN

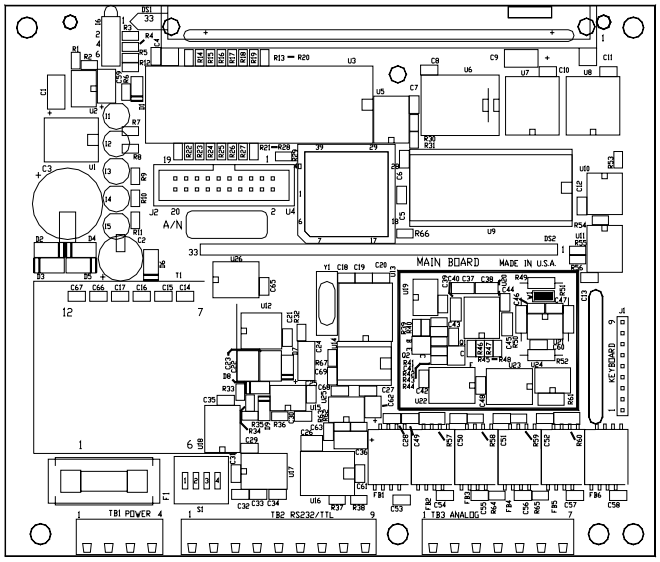


Figura 8: circuito stampato analogico

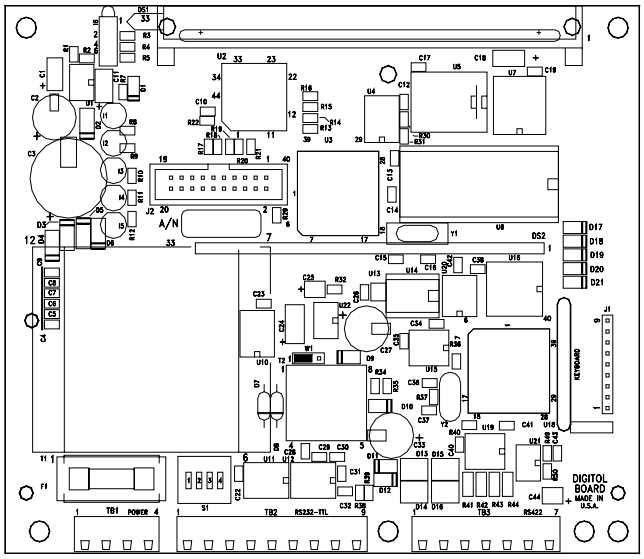


Figura 9: circuito stampato DigiTOL

2 Collegamenti elettrici

Prima di effettuare i collegamenti

Prima di effettuare qualsiasi collegamento, verificare il tipo di interfaccia delle celle di carico. Il quinto carattere dell'identificazione del prodotto indica se l'unità è analogica o DigiTOL® (1 = analogica, 3 = DigiTOL).

⚠ ATTENZIONE

PER EVITARE DI DANNEGGIARE IL CIRCUITO STAMPATO O LA CELLA DI CARICO, DISINSERIRE L'ALIMENTAZIONE ELETTRICA DAL TERMINALE ED ATTENDERE ALMENO 30 SECONDI PRIMA DI COLLEGARE O SCOLLEGARE QUALSIASI CABLAGGIO E DI COLLEGARE O SCOLLEGARE QUALSIASI BASE ULTRARES O DIGITOL®.

Collegamenti delle celle di carico analogiche

Stabilire la lunghezza massima del cavo. La lunghezza massima del cavo per i collegamenti delle celle di carico analogiche al terminale dipende dalla resistenza totale della bilancia (RTB) sulla base della stessa. Per calcolare l'RTB:

$$\text{RTB} = \frac{\text{Resistenza d'ingresso delle celle di carico (ohm)}}{\text{Numero di celle di carico}}$$

Lunghezza del cavo massima consigliata sulla base dell'RTB e della misura del cavo

RTB (ohm)	Misura 24 (piedi/metri)	Misura 20 (piedi/metri)	Misura 16 (piedi/metri)
350	800/244	2000/610	4000/1219
87 (celle da 4-350Ω)	200/61	600/183	1000/305
45 (celle da 8-350 Ω)	100/31	300/91	500/152

Se si usa una versione analogica del terminale da pannello PANTHER in una zona pericolosa classificata come Divisione 2 o se solo le celle di carico devono essere installate in un'area pericolosa classificata come Divisione 2, occorre osservare il disegno di controllo 155907R di METTLER TOLEDO. Fare riferimento alla guida sulla Divisione 2 alla fine del presente manuale.

Collegarsi a TB3 del circuito stampato del controller del terminale.

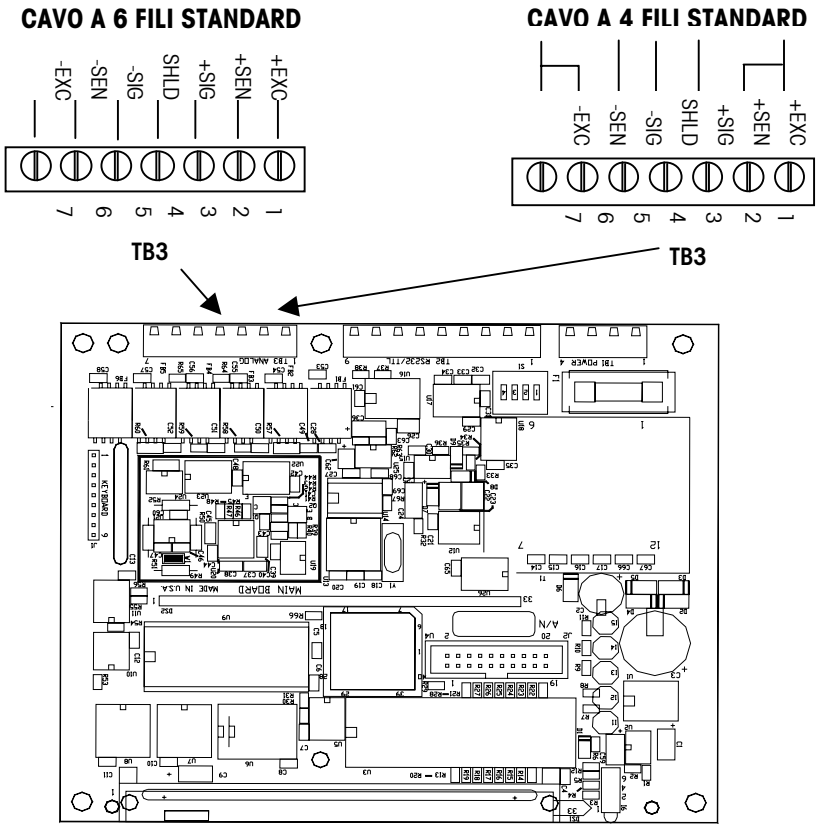


Figura 10: cablaggio per PTHN/PTHK

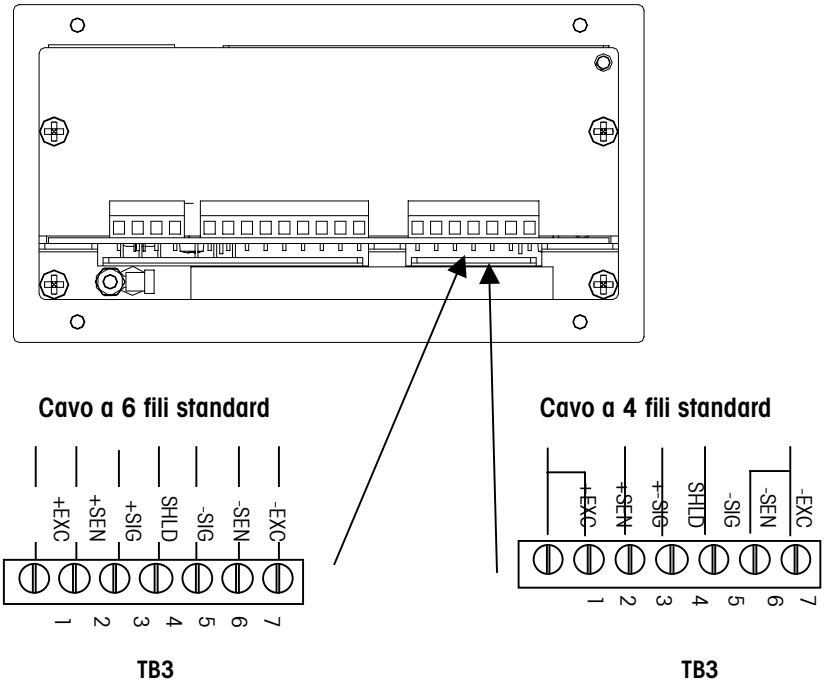


Figura 11: cablaggio per PTPN

Collegamenti delle celle di carico UltraRes e DigiTOL®

La lunghezza massima del cavo per tutte le basi DigiTOL® è di 50 piedi (15,24 metri). Collegare le basi UltraRes o DigiTOL® a TB3 sul terminale PANTHER come segue:

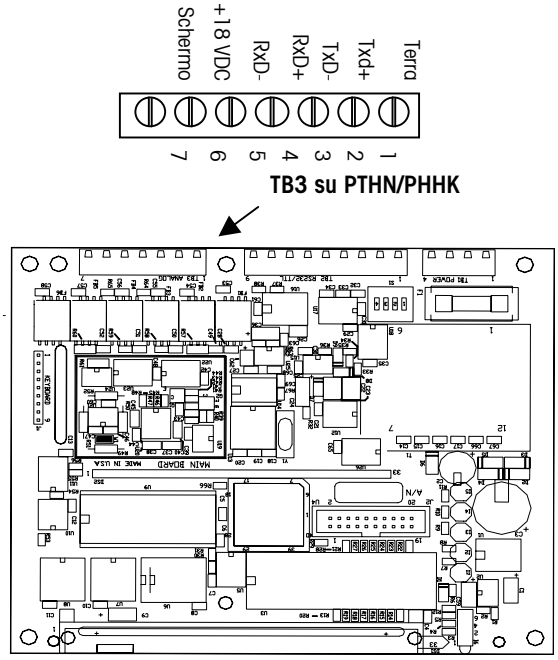


Figura 12: cablaggio per PTHN/PTHK

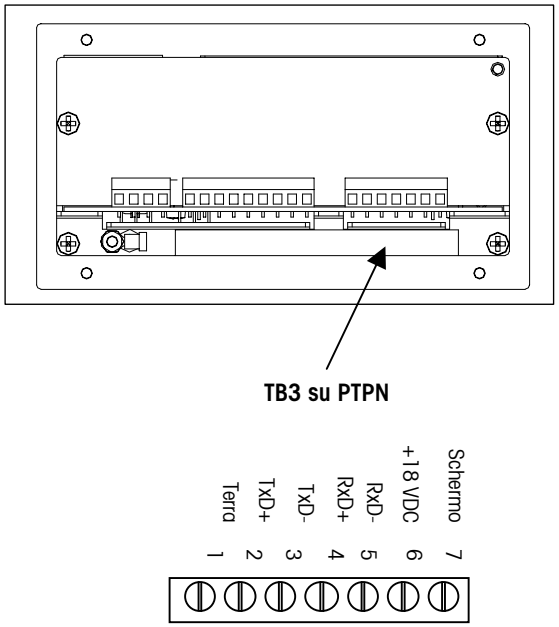


Figura 13: cablaggio per PTPN

PANTHER TB3		Codice colore		Base B/P UltraRes o DigiTOL	
Terra	1	Blu	7	Terra
TxD+	2	Rosso	1	RxD A
TxD-	3	NC Bianco	4	Batt In
RxD+	4	Nero	8	TxD A
RxD-	5	Giallo	6	TxD B
+18 VDC	6	Verde	5	+ 20 VDC
Schermo	7	Arancione		

Collegamenti della scatola di connessione DigiTOL

La lunghezza massima del cavo per la scatola di connessione DigiTOL è di 300 piedi (91,4 metri).

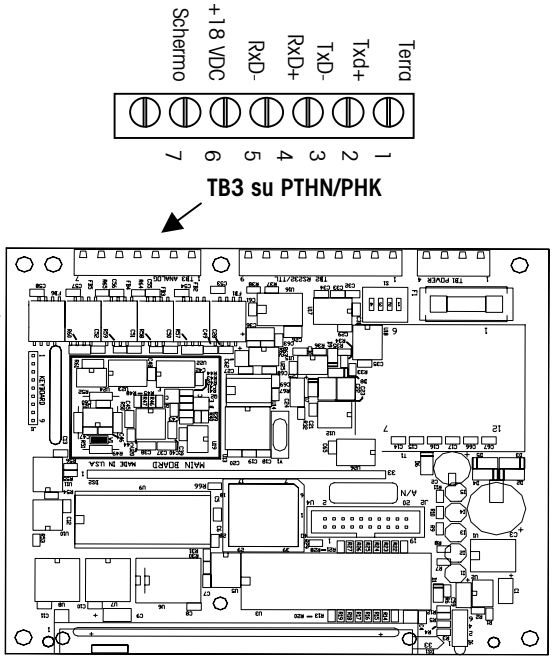


Figura 14: cablaggio per PTHN/PTHK

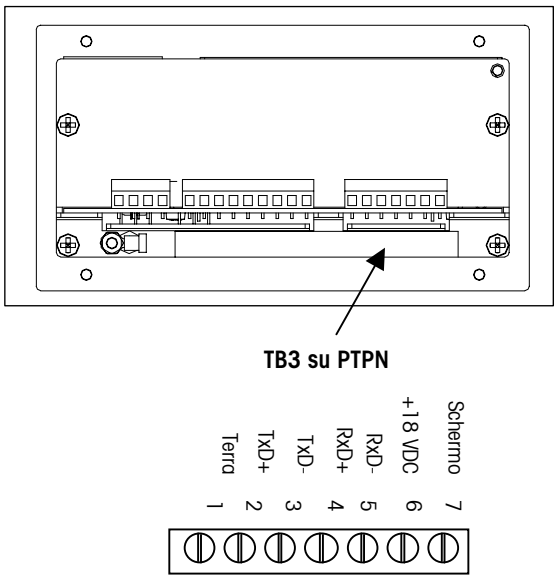


Figura 15: cablaggio per PTPN

PANTHER TB3		Codice colore	Scatola di connessione DigiTOL potenziata	
Terra	1	Blu	7	Terra (TB2)
TxD+	2	Rosso	1	RxD A (TB1)
TxD-	3	Bianco	4	Batt In (TB 1)
RxD+	4	Nero	8	TxD A (TB1)
RxD-	5	Giallo	6	TxD B (TB1)
+18 VDC	6	Verde	5	+20 VDC (TB2)
Schermo	7	Arancione		

Collegamenti seriali (tutti i modelli)

Collegamento della porta seriale del circuito stampato principale

La porta seriale COM 1 è bidirezionale. La lunghezza massima del cavo consigliata per le comunicazioni RS-232 è di 50 piedi (15,24 metri).

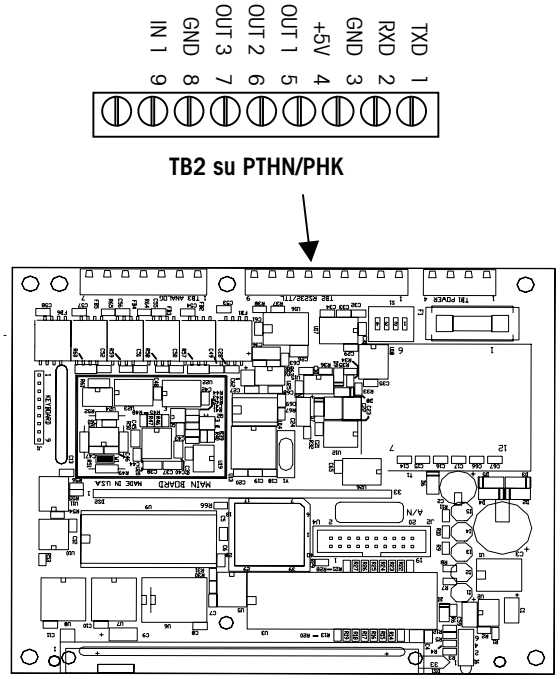


Figura 16: cablaggio per PTHN/PTHK

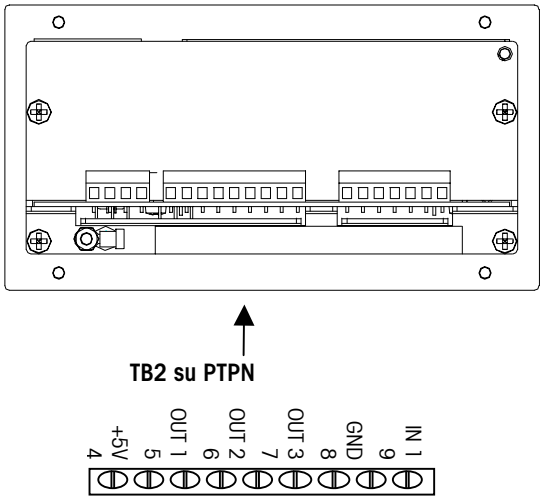


Figura 17: cablaggio per PTPN

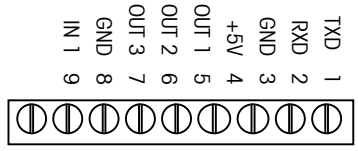
PANTHER TB2 COM1		
TXD	1	RS-232, trasm.
RXD	2	RS-232, ricez.
GND	3	Segnale di terra

Collegamento dei pin per i dispositivi METTLER TOLEDO con l'uso di COM 1		
PANTHER TB2 COM1	**8806 8807 8808 8845 8846* 8857 8861 8863* 8865 8867***	**8617-TB2 9323-TB2 9325-TBS**
TXD	3	2
RXD	--	--
GND	7	3

*Collegamenti indicati per l'uso con la spina dell'adattatore fornita in dotazione con questi modelli.

Collegamento degli I/O discreti

Fare riferimento all'appendice del manuale tecnico/dei manuali tecnici del terminale PANTHER e/o PANTHER Plus per ulteriori informazioni.



TB2 su PTHN/PHK

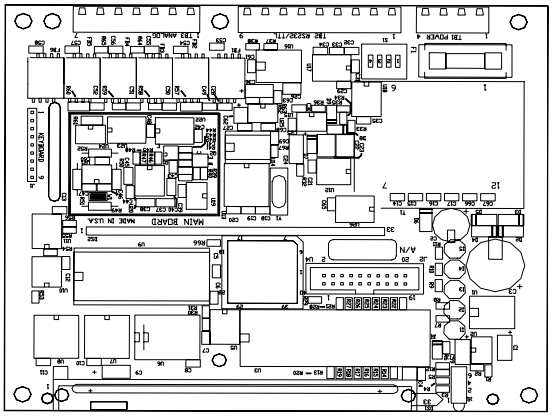
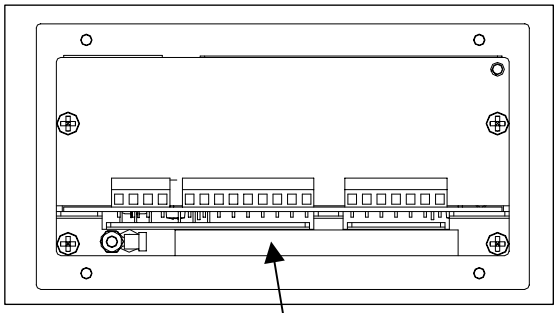


Figura 18: cablaggio per PTHN/PTHK



TB2 su PTPN

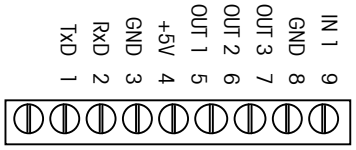


Figura 19: cablaggio per PTPN

TB2

4	+5 VDC, corrente limitata a 15 mA	
5	OUT1	Livello TTL, 5 VDC max.
6	OUT2	Livello TTL, 5 VDC max.
7	OUT3	Livello TTL, 5 VDC max.
8	GND	
9	IN1	$V_{IN\ LOW}$ = 0,0 - 0,8 VDC, $V_{IN\ HIGH}$ = 3,5 - 5,0 VDC.

Alimentazione elettrica

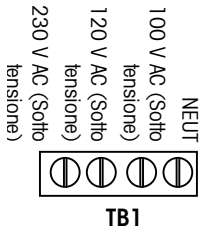
Alimentazione elettrica universale (a selezione manuale):

Esercizio:	da 85 a 264 VAC.
Frequenza di linea:	da 49 a 63 Hz.
Assorbimento:	12 Watt max.

L'integrità della messa a terra dell'alimentazione elettrica per l'attrezzatura è importante sia per la sicurezza che per il funzionamento affidabile del terminale e della bilancia annessa. Una messa a terra carente può comportare una condizione di insicurezza se nell'attrezzatura si verifica un cortocircuito elettrico. Un buon collegamento di messa a terra è necessario per contenere al minimo gli impulsi di disturbi elettrici estranei. Il terminale non dovrebbe condividere linee elettriche con attrezzature che generano disturbi. Per accertarsi dell'integrità della messa a terra, utilizzare un analizzatore per circuiti derivati come un modello ICE SureTest ST-1D. In caso di condizioni di alimentazione elettrica avversa, può essere necessario un circuito elettrico dedicato o un condizionatore per linee elettriche.

PTHN/PTHK

I terminali da tavolo/parete PANTHER e PANTHER PLUS vengono entrambi inviati con il cavo di alimentazione installato dal produttore. Prima di inserire l'alimentazione elettrica, assicurarsi che il cavo di alimentazione sia cablato correttamente per la tensione a corrente alternata (AC) su cui verrà utilizzato il terminale. Il cavo di alimentazione si collega alla morsettiera TB1 sul circuito stampato del controller.



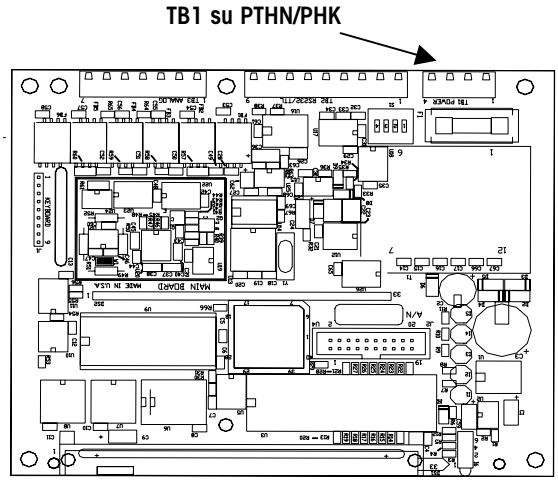


Figura 20: cablaggio per PTHN/PTHK

Colori standard dei cavi di alimentazione MT standard	
Neutro	Blu
Sotto tensione	Marrone
Terra (châssis)	Verde/giallo

PTPN

Non viene fornito in dotazione nessun cavo di alimentazione per il modello da pannello. Il cablaggio alla morsettiera TB1 sul retro del terminale è illustrato qui sotto. La terra è collegata alla terra del châssis.

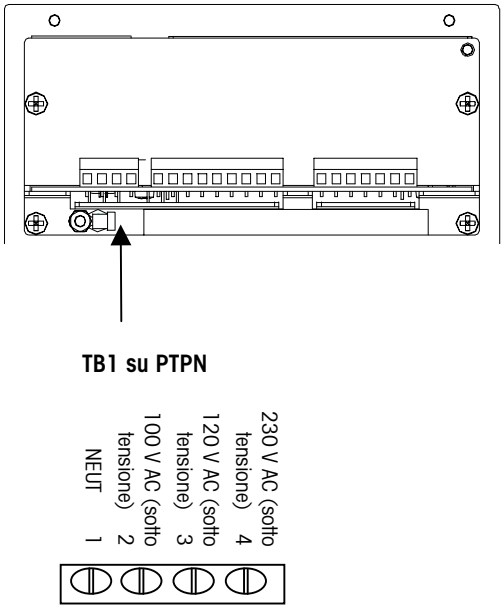


Figura 21: cablaggio per PTHN/PTHK

3 Installazione/cablaggio delle schede opzionali

Optional

Sono disponibili diverse schede opzionali per l'uso con i terminali PANTHER e/o PANTHER Plus. Comprendono:

- uscita analogica
- I/O remoti Allen-Bradley
- Modbus Plus
- Profibus
- uscita di setpoint (solo nella versione da pannello).

Se le schede opzionali vengono ordinate separatamente, le istruzioni per la loro installazione vengono allegate alle schede opzionali stesse. Per informazioni più dettagliate su ognuna di queste opzioni, si rimanda ai manuali tecnici di PANTHER e/o di PANTHER PLUS.

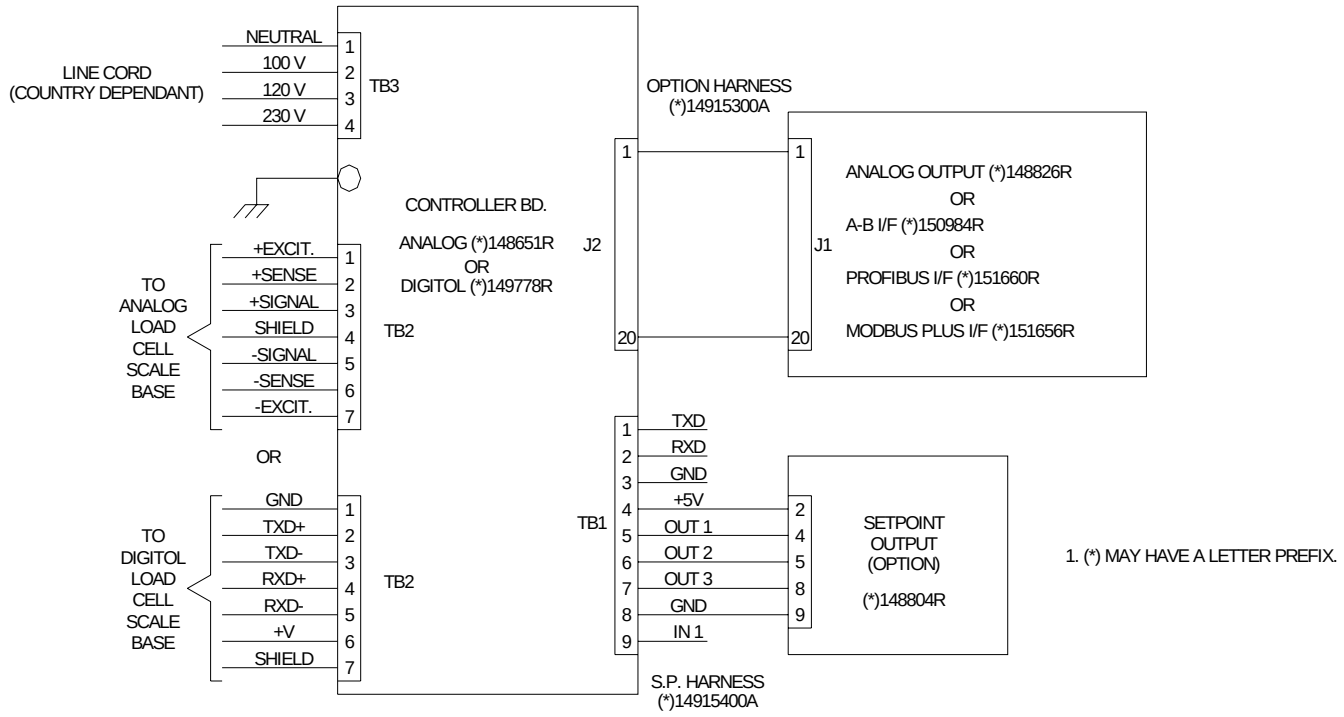
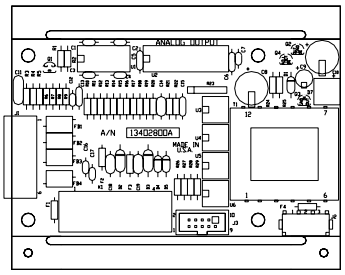
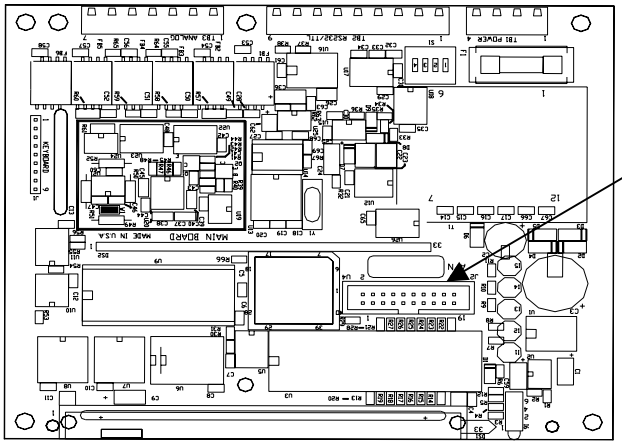


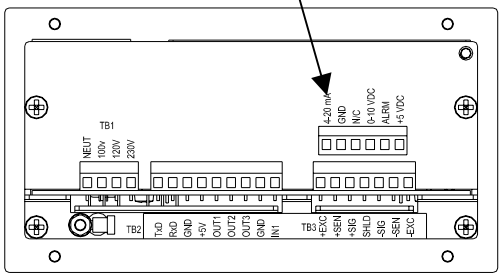
Figura 22: schema d'interconnessione per PANTHER/PANTHER PLUS

Kit opzionale delle uscite analogiche (0917-0246)



Morsettiera uscite analogiche		
J2	1	4-20 mA
	2	GND
	3	N.C.
	4	0-10 V
	5	ALLARME
	6	+5V





Il kit opzionale delle uscite analogiche fornisce gamme di uscita di 0-10 VDC o 4 - 20 mA oltre ad un'uscita di indicazione dello stato del collettore aperto isolata otticamente. Il circuito stampato dell'uscita analogica può essere installato sia nei terminali da tavolo/parete PANTHER e PANTHER PLUS che nel terminale da pannello PANTHER.

La lunghezza del cavo massima consigliata per l'uscita da 0-10 VDC è di 50 piedi (15,2 metri). Il cavo consigliato è un cavo di misura 20 a 2 conduttori attorcigliati schermato (Belden n. 8762 o equivalente, disponibile presso METTLER TOLEDO con il codice pezzo 510220190.

Da 4 a 20 mA

Cliente
Dispositivo (4-20 mA)

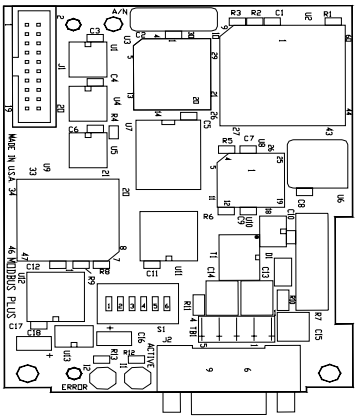
J2	1	4-20 mA	+
	2	GND	-
	3	N.C.	
	4	0-10 VDC	
	5	ALRM*	
	6	+5 VDC	

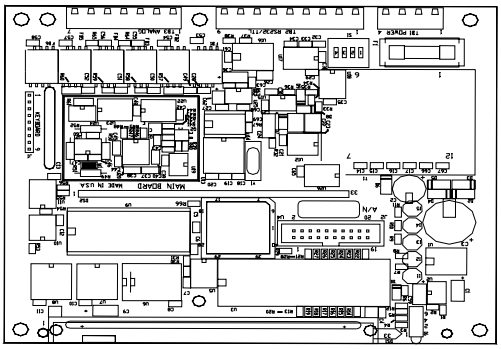
Da 0 a 10 VDC

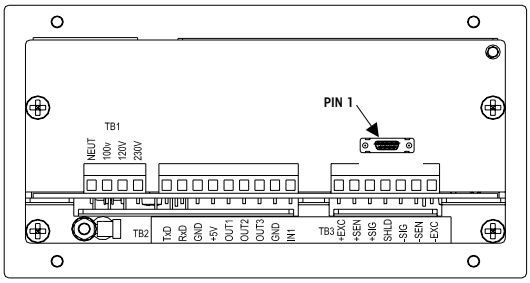
Cliente
Dispositivo (0-10 VDC)

J2	1	4-20 mA	
	2	GND	-
	3	N.C	
	4	0-10 VDC	+
	5	ALRM*	
	6	+5 VDC	

Modbus Plus opzionale







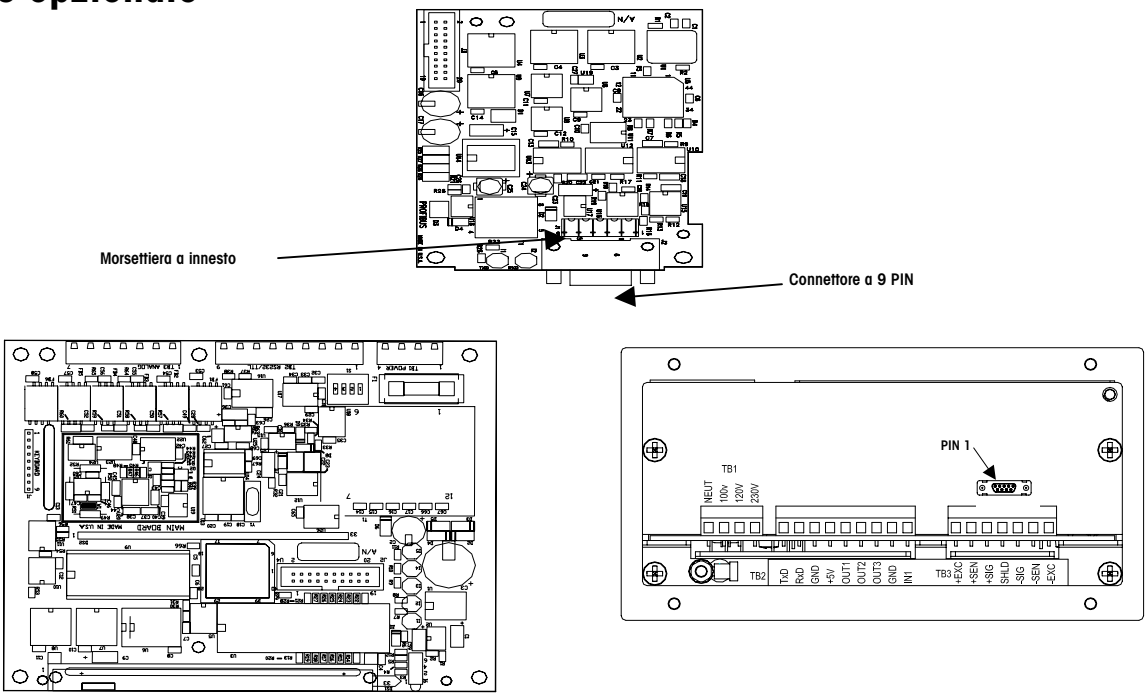
Esistono due collegamenti per l'interfaccia Modbus Plus.

- Il collegamento standard per il terminale da pannello PANTHER è il connettore femmina DE-9. Le istruzioni di cablaggio vengono fornite in dotazione al connettore. La rete Modbus Plus utilizza i pin 1, 2 e 3 del connettore DE-9 (fornito da Modicon).
- Il terminale da tavolo/parete PANTHER deve utilizzare una morsettiera a innesto. Se si usa la morsettiera, è disponibile il kit del cavo a spirale Modbus 0900-0320.

Il cavo a spirale Modbus Plus è collegato al terminale PANTHER come segue:

DE-9		Morsettiera
1	Bianco	1
2	Verde	2
3	Nero	3

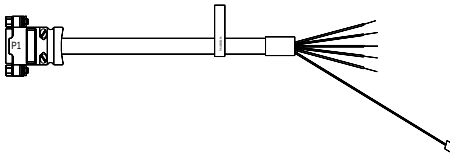
Profibus opzionale



Il collegamento del PROFIBUS è disponibile in due punti del circuito stampato del PROFIBUS. Il primo è un connettore femmina ultraminiaturizzato D a 9 pin che è il collegamento standard del PROFIBUS. Il gruppo del connettore di campo non viene fornito da METTLER TOLEDO. Questo è il collegamento da preferirsi nel terminale da pannello.

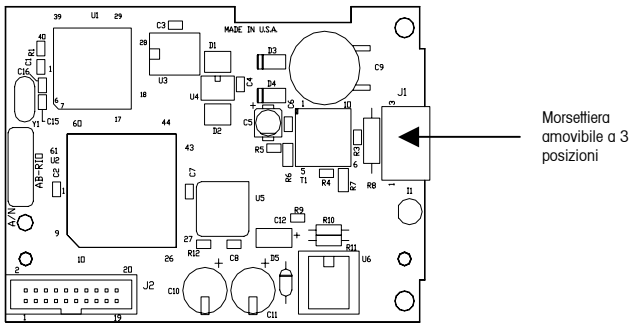
Femmina DE-9
1 GND (isolato)
2 N.C.
3 TX/RX+
4 RTS
5 GND (isolato)
6 +5V (isolato)
7 N.C.
8 TX/RX-
9 N.C.

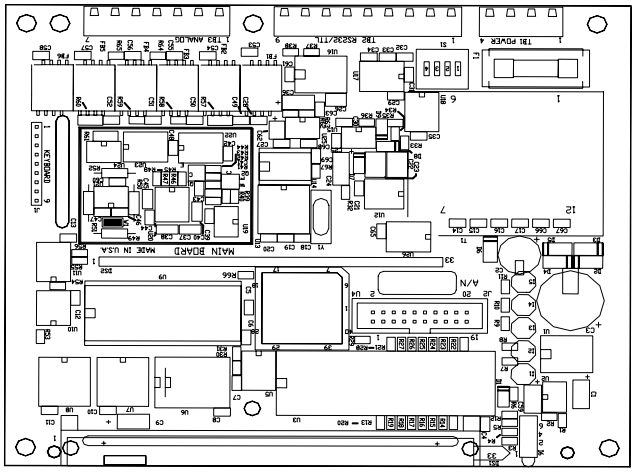
Per il terminale da tavolo/parete PANTHER, deve essere utilizzata la morsettiera a innesto. In questi casi, è disponibile un cablaggio a spirale opzionale per eseguire un collegamento dalla morsettiera al connettore femmina D a 9 pin. Il cablaggio dell'adattatore può essere ordinato utilizzando il codice del produttore 0900-0311. L'adattatore è illustrato qui.

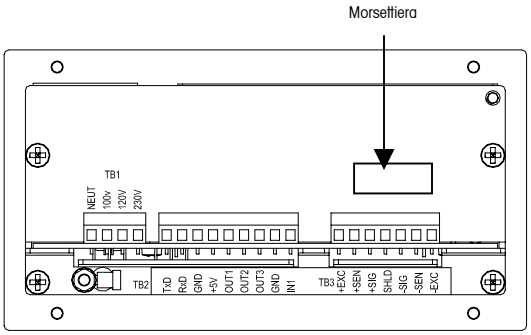


Morsettiera
1 RTS
2 TXD/RXD+
3 TXD/RXD-
4 +5 V (isolato)
5 GND (isolato)

I/O remoti Allen Bradley opzionali







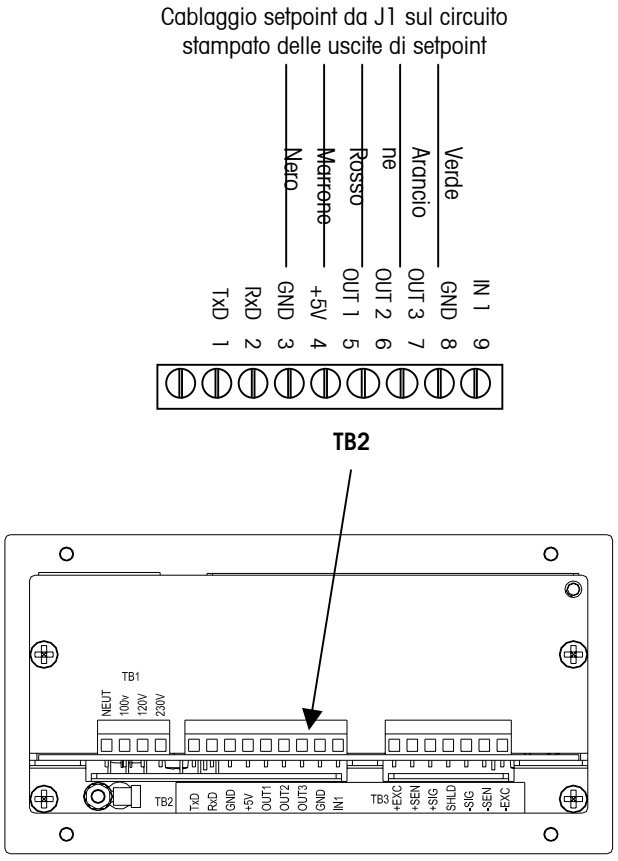
Il kit opzionale Allen-Bradley per PANTHER fornisce la connettività ad un PLC Allen-Bradley utilizzando il protocollo degli I/O remoti (RIO). Il kit può essere installato sia nei terminali da tavolo/parete PANTHER o PANTHER PLUS che nel terminale da pannello PANTHER.

Parte elettrica: eccitatori di linea centrati, isolati dal trasformatore
Connettore: morsettiera amovibile a tre posizione, cablata da sinistra a destra (vista del connettore posteriore) nel modo seguente:

Blu
Schermo
Trasparente

Kit opzionale delle uscite di setpoint (solo per la versione da pannello)

Il kit opzionale delle uscite di setpoint fornisce un'interfaccia AC di potenza (28 - 280 VAC) per tre uscite discrete di livello basso standard. Collegare le estremità libere del cablaggio ai morsetti seguenti sul circuito stampato del controller del terminale:



PANTHER® - PANTHER® PLUS

terminaler

Installationshandledning

INTRODUKTION

Den här publikationen är ämnad som vägledning för personer som använder denna produkt från METTLER TOLEDO.

Information angående teknisk utbildning från METTLER TOLEDO kan erhållas genom att skriva till:

METTLER TOLEDO AB
Serviceavdelningen, Teknisk Support
Box 92161, 120 08 Stockholm
08 - 702 50 00

METTLER TOLEDO FÖRBEHÅLLER SIG RÄTTEN ATT GÖRA FÖRBÄTTRINGAR ELLER ÄNDRINGAR UTAN MEDDELANDE DÄROM.

FÖRSIKTIGHETSÅTGÄRDER

LÄS denna handbok INNAN du använder eller utför service på denna utrustning.

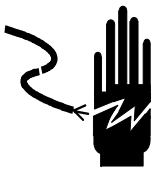
FÖLJ dessa instruktioner noggrant.

SPARA denna handbok för framtida behov.

TILLÅT ALDRIG outbildad personal att använda, rengöra, inspektera, utföra underhåll eller service, eller experimentera på denna utrustning.

KOPPLA ALLTID FRÅN utrustningen från strömkällan innan du rengör eller utför underhåll på utrustningen.

KONTAKTA METTLER TOLEDO för reservdelar, information och service.

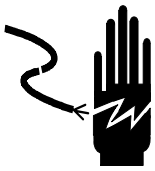


⚠ VARNING

SE TILL ATT DU KOPPLAR FRÅN ALL STRÖMFÖRSÖRJNING TILL DENNA ENHET INNAN DU INSTALLERAR, UTFÖR SERVICE, RENGÖR ELLER TAR BORT SÄKRINGEN. UNDERLÅTELSE ATT GÖRA DETTA KAN ORSAKA PERSON- OCH/ELLER EGENDOMSSKADA.

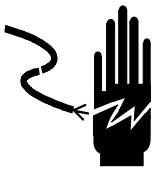
⚠ VAR FÖRSIKTIG!

IAKTTA FÖRSIKTIGHETSÅTGÄRDER VID HANTERING AV KÄNSLIG ELEKTROSTATISK UTRUSTNING.



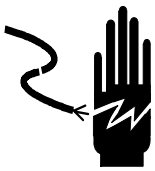
⚠ VARNING

LÅT ENDAST KVALIFICERAD PERSONAL UTFÖRA SERVICE PÅ DENNA UTRUSTNING. UTÖVA FÖRSIKTIGHET VID UTFÖRANDE AV KONTROLLER, TESTER OCH JUSTERINGAR SOM MÅSTE GENOMFÖRAS MED STRÖM PÅSLAGEN. UNDERLÅTENHET ATT IAKTTA DESSA FÖRSIKTIGHETSÅTGÄRDER KAN LEDA TILL PERSON- OCH/ELLER EGENDOMSSKADA.



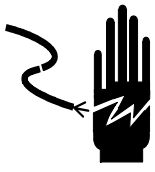
⚠ VARNING

KOPPLA ENDAST APPARATEN TILL ETT JORDAT UTTAG FÖR FORTSATT SKYDD MOT RISKEN FÖR ELEKTRISK STÖT. AVLÄGSNA ALDRIG JORDNINGSDONET.



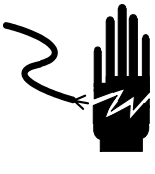
⚠ VARNING

NÄR DENNA UTRUSTNING INGÅR SOM KOMPONENTUTGÖRANDE DEL AV ETT SYSTEM, MÅSTE DEN FÄRDIGSTÄLLDA UTFORMNINGEN GRANSKAS AV KVALIFICERAD PERSONAL SOM ÄR FÖRTROGEN MED KONSTRUKTIONEN OCH ARBETSFUNKTIONEN HOS SYSTEMETS SAMTLIGA KOMPONENTER OCH DE POTENTIELLA RISKER SOM FÖRELIGGER. UNDERLÅTENHET ATT IAKTTA DENNA FÖRSIKTIGHETSÅTGÄRD KAN RESULTERA I PERSON- OCH/ELLER EGENDOMSSKADA.



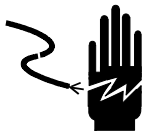
⚠ VARNING

OM DENNA UTRUSTNING ANVÄNDS VID AUTOMATISK ELLER MANUELL FYLLNINGSCYKEL, MÅSTE ALLA ANVÄNDARE ÅSTADKOMMA EN FAST INKOPPLAD NÖDSTOPPKRETS UTANFÖR ENHETENS STRÖMKRETS. UNDERLÅTELSE ATT IAKTTA DENNA FÖRSIKTIGHETSÅTGÄRD KAN RESULTERA I PERSON- OCH/ELLER EGENDOMSSKADA.



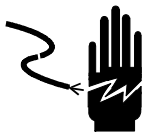
⚠ VARNING

STRÖMUTTAG MÅSTE VARA LÄTTÅTKOMLIGA OCH EJ BEFINNA SIG LÄNGRE BORT ÄN LÄNGDEN AV DEN ELSLADD SOM MEDFÖLJER DENNA PRODUKT. UNDERLÅTELSE ATT FÖLJA DESSA ANVISNINGAR KAN RESULTERA I PERSON- ELLER EGENDOMSSKADA.



VARNING

METTLER TOLEDO ÅTAGER SIG INGET ANSVAR FÖR KORREKT INSTALLATION AV DENNA UTRUSTNING I SAMBAND MED DIVISION 2- ELLER ZON 2/22-OMRÅDE. INSTALLATÖREN MÅSTE VARA FÖRTROGEN MED ALLA KRAV SOM GÄLLER INSTALLATION OCH LEDNINGSDRAGNING I SAMBAND MED DIVISION 2 ELLER ZON 2/22.

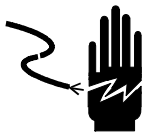


VARNING

TIDIGARE MODELLER AV PANTHER TERMINAL VILKA INTE ÄR MÄRKTA (FACTORY-ETIKETTERADE) SOM DIVISION 2 ELLER EUROPEISK KATEGORI 3-GODKÄNDA FÅR EJ INSTALLERAS I EN DIVISION 2- ELLER ZON 2/22-MILJÖ.

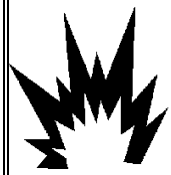
VARNING

FÖR ATT INSTALLERA GODKÄNT DIVISION 2 PANTHER PANELMONTAGE UNDER UTNYTTJANDE AV FACTORY MUTUAL-GODKÄNNANDE, MÅSTE METTLER TOLEDO REGLERRITNING 155907R FÖLJAS UTAN UNDANTAG. FÖR ATT INSTALLERA KATEGORI 3 PANTHER TERMINAL MED PANELMONTAGE UNDER UTNYTTJANDE AV KEMA GODKÄNNANDE-CERTIFIKAT 02atex1 163x, MÅSTE ALLA LOKALA BESTÄMMELSER FÖLJAS UTAN UNDANTAG. UNDERLÅTENHET ATT GÖRA DETTA KAN RESULTERA I KROPPS- ELLER EGENDOMSSKADA.



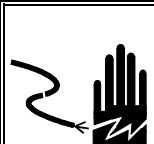
VARNING

FÖR APPLIKATIONER RÖRANDE RISKFYLLT EUROPEISK ZON 2/22-OMRÅDE, MÅSTE HANDLEDNING FÖR INSTALLATION AV PANTHER KATEGORI 3 (*)16684500A OCH UNDERSÖKNINGSCERTIFIKAT AV KEMA-TYP FÖLJAS UTAN UNDANTAG.



VARNING

VID SKADA PÅ TANGENTBORD, SKÄRMLINS ELLER INNESLUTNING PÅ DIVISION 2-GODKÄND ELLER KATEGORI 3-MÄRKT PANTHERTERMINAL MED PANELMONTAGE, SOM ANVÄNDS INOM ETT DIVISION 2- ELLER ZON 2 ELLER ZON 2/22-OMRÅDE, MÅSTE DEN DEFEKTA KOMPONENTEN OMEDELBART REPARERAS. KOPPLA BORT VÄXELSTRÖMMEN OCH ÅTERINKOPPLA EJ STRÖMMEN FÖRRÄN SKÄRMLINSEN, TANGENBORDET ELLER INNESLUTNINGEN HAR REPARERATS ELLER BYTS UT AV KVALIFICERAD SERVICEPERSONAL. UNDERLÅTENHET ATT GÖRA DETTA KAN RESULTERA I KROPPS- ELLER EGENDOMSSKADA.



VARNING

PANTHER-TERMINALEN HAR EN FACTORY MUTUAL-MÄRKNING FÖR TEMPERATUR PÅ T3A (180° C) OCH EN KEMA-MÄRKNING FÖR TEMPERATUR PÅ T4 (135° C). TERMINALEN FÅR EJ ANVÄNDAS INOM OMRÅDEN DÄR TEMPERATUREN FÖR SJÄLVANTÄNDNING AV RISKFYLLT MATERIAL BEFINNER SIG UNDER DESSA MÄRKDATA.

CONTENTS

1 Introduktion

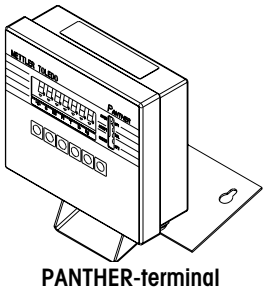
Översikt

Följande information är avsedd att underlätta vid installation av terminalerna PANTHER och PANTHER PLUS samt de alternativkort som finns till förfogande. Läs noggrant igenom informationen innan du börjar installationen. Installation som avser invändig ledningsdragning av alternativen eller programmering ska utföras endast av kompetenta tekniker.

OBS! Det är **ENDAST** den analoga versionen av PANTHER-terminalen med panelmontage som är godkänd för användning inom Division 2- och Zon 2/22-områden. Se efter i Handledning för installation av PANTHER (analog) terminal med panelmontage, Division 2, längst bak i denna handbok för Division 2-områden. Se efter i Handledning för installation av Europeisk kategori 3 G/D, (*)16684500A, för Zon 2/22-områden.

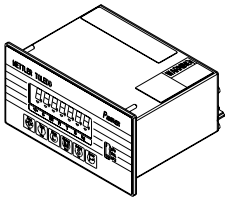
Inspektion samt kontrollista över innehållet

1. Om behållaren för leverans av terminalen förefaller vara skadad vid mottagandet av leveransen, ska en skadeundersökning av innehållet utföras. Lämna i förekommande fall in en skadeanspråksansökan till leverantören.
2. Om behållaren var oskadad, ska behållaren packas ur om detta inte redan har gjorts. Se till att behålla originalförpackningsmaterialet för eventuellt framtida behov.
3. Se till att terminalemballaget innehåller följande:
   - PANTHER- eller PANTHER PLUS-terminal (se efter i förteckningen över modellidentifikation på nästa sida för att bekräfta att det rör sig om korrekt modelll)



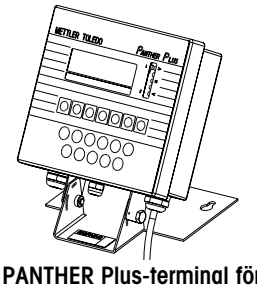
PANTHER-terminal för påfrestande miljö (PTHN)

- Installationshandledning
- Säkerhetstätning
- Arketiketter för kapacitet
- Markörförklaring – Etiketter
- Addressetiketter
- Hårdvaresats
- Dokumentation CD



PANTHER panelmonterad terminal (PTPN)

- Installationshandledning
- Säkerhetstätning
- Arketiketter för kapacitet
- Markörförklaring – Etiketter
- Addressetiketter
- Packning
- CE-indikeringsetikett
- Hårdvaresats
- Dokumentation CD



PANTHER Plus-terminal för påfrestande miljö (PTHK)

- Installationshandledning
- Säkerhetstätning
- Arketiketter för kapacitet
- Markörförklaring – Etiketter
- Addressetiketter
- Hårdvaresats
- Dokumentation CD

Använd informationen nedan för att bekräfta korrekt modellnummer för den terminal som du ska arbeta med. Modellnumret återfinns på dataplåten på sidan av terminalen.

P T XX - X X X X - X X X

PANTHER Terminal

Inneslutning/skärmtyp
PN – Panelmontering, numerisk display
HN – Påfrestande miljö/omgivning (skrivbords-/vägg-), numerisk display
HK (PANTHER Plus, för påfrestande miljö plus tangentbord)
PC – Panelmonterad av kundanpassad typ
HC – För påfrestande miljö och av kundanpassad typ

Våg-gränssnitt
1--Analog laddningscell
3– DigiTOL laddningscell

Gränssnitt – Alternativ
0—Inget alternativ
5—Modbus Plus
6—Allen-Bradley
8—Analog utgång (ej tillgänglig vid användning av fler än 4 analoga laddningsceller)
9--Profibus

Ledvärde – Alternativ
0—Inget
1—3 Opto ledvärde (endast panelmonterad)

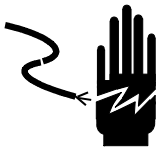
Oanvänd
0—Alltid

Destinationsmarknad

Anm.: I denna handbok används genomgående följande termer:

- **PTHN** – PANTHER-terminal för påfrestande miljö/omgivning.
- **PTPN** -- PANTHER panelmonterad terminal
- **PTHK** -- PANTHER PLUS-terminal (en PANTHER-terminal för påfrestande miljö/omgivning med ett tangentbord).

Varningar/Försiktighets-åtgärder



⚠ VARNING

LÅT ENDAST KVALIFICERAD PERSONAL UTFÖRA INSTALLATION OCH SERVICE PÅ DENNA UTRUSTNING. UTÖVA FÖRSIKTIGHET VID UTFÖRANDE AV KONTROLLER, TESTER OCH JUSTERINGAR SOM MÅSTE GENOMFÖRAS MED STRÖM PÅSLAGEN. UNDERLÅTENHET ATT IAKTTA DESSA FÖRSIKTIGHETSÅTGÄRDER KAN LEDA TILL PERSON- OCH/ELLER EGENDOMSSKADA.

⚠ VAR FÖRSIKTIG!

IAKTTA FÖRSIKTIGHETSÅTGÄRDER VID HANTERING AV KÄNSLIG ELEKTROSTATISK UTRUSTNING.

Lokalitet/Miljömässig hänsyn

- Arbetstemperatur: –10°C till 45°C vid 10% till 95% luftfuktighet, icke-kondenserande.
- Förvaringstemperatur: –40°C till 60°C vid 10% till 95% luftfuktighet, icke-kondenserande.
- Inneslutning – märkning: TYP 4X (IP65) –krav på en dammtät och stänk(vatten)skyddad inneslutning för PANTHER panelmonterad terminal.
- **PANTHER och PANTHER PLUS-terminalerna är ej säkra till sin natur!** De är emellertid funktionsdugliga med vågar och barriärer som befinner sig på riskfyllda områden. Kontakta lokal auktoriserad representant för METTLER TOLEDO när det gäller hjälp med applikationer på riskfyllt område.

  OBS! Det är **ENDAST** den analoga versionen av PANTHER-terminalen med panelmontage som är godkänd för användning inom Division 2- och Zon 2/22-områden. Se efter i Handledning för installation av PANTHER (analog) terminal med panelmontage, Division 2, längst bak i denna handbok för Division 2-områden. Se efter i Handledning för installation av Europeisk kategori 3 G/D, (*)16684500A, för Zon 2/22-områden.

⚠ VARNING

FÖR ATT ANVÄNDA PANTHER ANALOG TERMINAL MED PANELMONTAGE INOM ETT OMRÅDE SOM ÄR KLASSIFICERAT SOM KLASS I, II ELLER III, DIVISION 2, GRUPP A, B, C, D, F ELLER G, MÅSTE METTLER TOLEDO REGLERRITNING 155907R FÖLJAS UTAN UNDANTAG. FÖR ATT ANVÄNDA PANTHER ANALOG TERMINAL MED PANELMONTAGE INOM ETT OMRÅDE KLASSIFICERAT SOM ZON 2/22, MÅSTE ATEX-CERTIFIKAT 02atex 1163X SAMT ALLA LOKALA BESTÄMMELSER FÖLJAS. UNDERLÅTENHET ATT GÖRA DETTA KAN RESULTERA I KROPPS- ELLER EGENDOMSSKADA.

PANTHER PLUS-TERMINALEN, DIGITOL?? PANELMONTAGEVERSIONEN OCH PANTHER-TERMINALENS ANALOGA HARSH-VERSION ÄR EJ GODKÄNDA FÖR ANVÄNDNING INOM DIVISION 2- ELLER ZON 2/22-OMRÅDEN. DESSA VERSIONER FÅR EJ INSTALLERAS PÅ RISKFYLLDA OMRÅDEN!

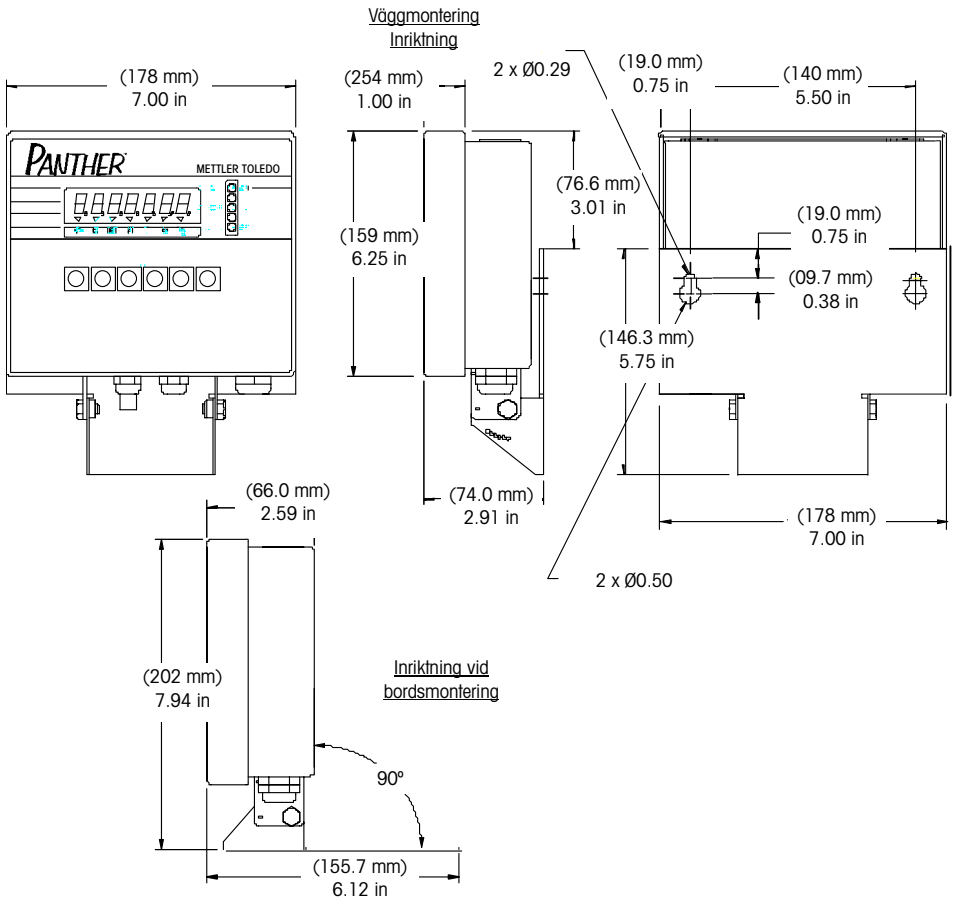
⚠ VARNING!

PANTHER- OCH PANTHER PLUS-TERMINALER ÄR EJ SÄKRA TILL SIN NATUR! DE FÅR DÄRFÖR EJ ANVÄNDAS PÅ OMRÅDEN SOM KLASSIFICERATS SOM RISKFYLLDA AV NEC (NATIONAL ELECTRIC CODE) PÅ GRUND AV ELDFARLIG ELLER EXPLOSIV ATMOSFÄR.

Dimensioner och monteringsinstruktioner

PTHN/PTHK

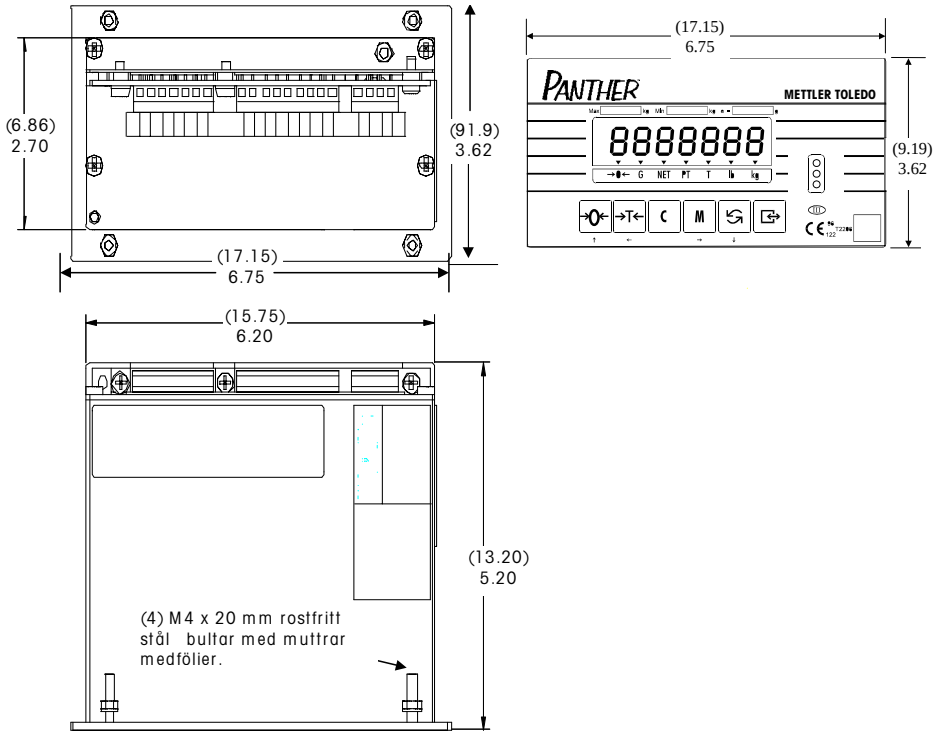
Använd medföljande sats med hårdvara (beslag) och montera terminalen på en vägg eller en plan yta, exv. ett skrivbord, med åtlydande av dimensionerna och ritningarna i Figur 1. Obs! Instruktionerna för dimensioner och montering är samma för både PANTHER-terminal för påfrestande miljö och PANTHER PLUS-terminal.



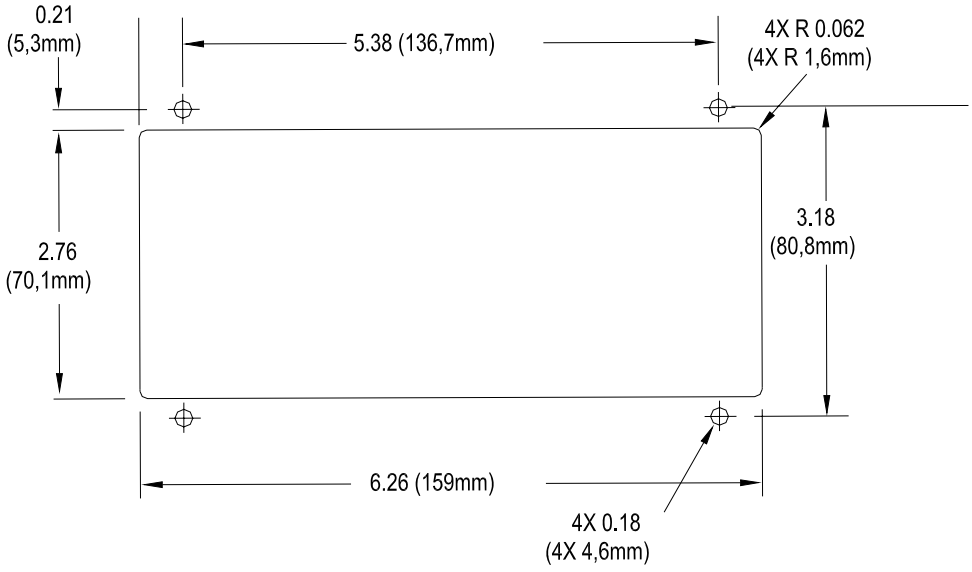
Figur 1: Dimensioner för PANTHER-terminal för påfrestande miljö och PANTHER PLUS-terminal (PANTHER-terminalen för påfrestande miljö visas)

PTPN

Montera PANTHER panelmonterad terminal genom att studera dimensionsritningarna nedan och den utskurna mallen som medföljer. Obs! Den utskurna mallen är endast avsedd som referenshjälp och visas inte i rätt storlek. Tänk dessutom på att det till djupet läggs valfria högnivå-Opto-halvledarrelän på 31,7 mm.



Figur 2: PANTHER Panelmonterad terminal



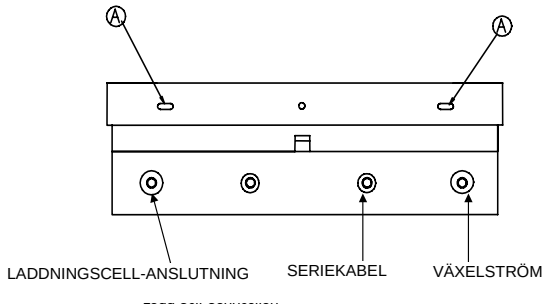
Figur 3: PANTHER panelmonterad monteringsmall

Åtkomst av terminalens kontroller-PCB

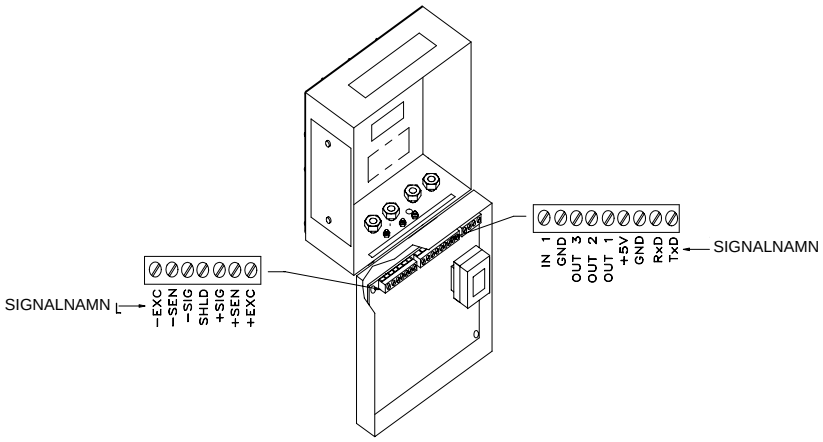
För att utföra de nödvändiga ledningsanslutningarna måste du kunna komma åt terminalens kontroller-kretskort (PCB). Åtkomst av PTHN/PTHK:s kontrollerkort kräver ett öppnande av terminalen. Det direkta tillträdet till PTPN:s kontrollerkort sker från enhetens baksida.

PTHN/PTHK

1. För in spetsen av en skruvmejsel med plant blad i ett av de två slitsarna ("A" i Figur 4) på botten av frontpanelen.
2. Skjut in i riktning mot inneslutningen. Bänd ej i någon vinkel. Ett poppande ljud hörs när luckan lossnar.
3. Tryck in på sidan av slitsen som är närmast luckans botten. Upprepa förfarandet för den andra slitsen.



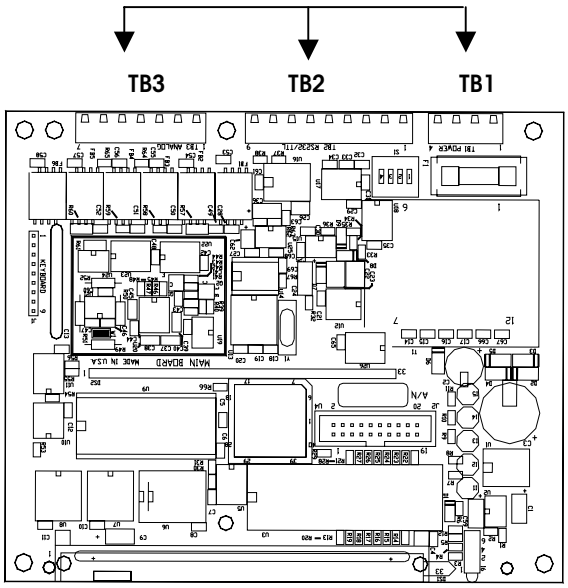
Figur 4



Figur 5

1. Lyft ut frontpanelens botten tills den går helt fri från inneslutningen.
2. Kläm på frontpanelens ovandel mot inneslutningen och lyft den så att de två översta clipsen går fria. Luckan svängs nedåt (Figur 5), i en ledförbindning nedtill med en trådkabel.

Obs! När luckan svänger ner kan man se anslutningsplintarna på kontroller-kretskortet (PCB). (Se Figur 6.) Du utför de elektriska kopplingarna med användning av dessa remsor/lister. Obs! Kretskortet kommer att vara upp och ner.



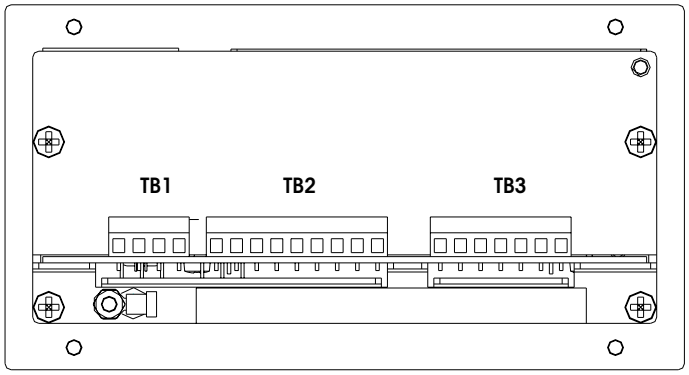
Figur 6

8. Låt kablarna, som går in i inneslutningen, löpa genom ett kabelfäste av lämplig storlek innan ledningstrådarna ansluts.
9. Utför de erforderliga elektriska anslutningarna i enlighet med de instruktioner som finns i avsnittet Elektriska kopplingar.
10. Sätt tillbaka bakluckan så att den blir säkert fastgjord.
11. Dra åt kabelfästet så att en vattentät förslutning åstadkommes runt kabeln. Detta möjliggör att en slapp inre kabel kan tas upp genom kabelfästet.
12. Skjut bottendelen av frontluckan över inneslutningen. Ett insnäppande ljud indikerar att luckan är på sin plats. Kläm frontluckan mot inneslutningen vid alla fyra hörnen och se till att samtliga fyra clips är i korrekt ingrepp.

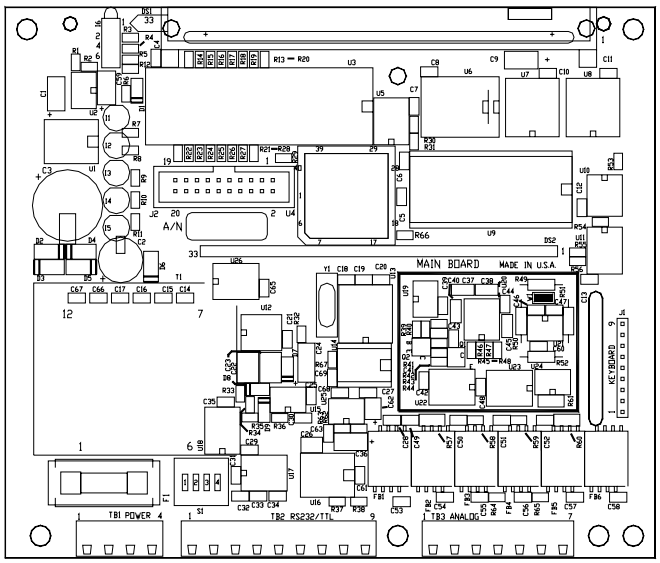
PTPN

Åtkomst av PANTHER panelmonterad modell äger rum på terminalens baksida där utförandet sker av alla förbindelser med anslutningsplintarna på kontroller-kretskortet (Figur 7 visar baksidan av både DigiTOL och de analoga versionerna, vilka är identiska även om TB3 har annorlunda etikett.)

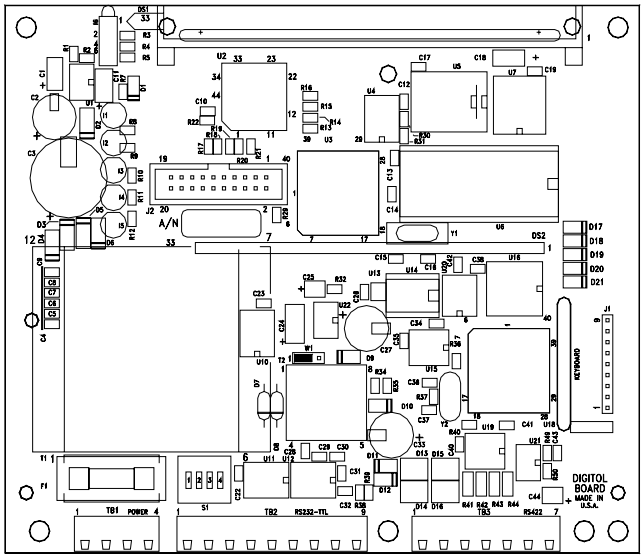
Om det blir nödvändigt med åtkomst inuti enheten, ska de två skruvar som håller luckplåten baktill på enheten avlägsnas och luckplåten lyftas över anslutningsplintarna. Hela kontroller-kretskortet framstår då i öppen dager. Se Figur 8 och 9.



Figur 7: Back of PTPN



Figur 8: Analog PCB



Figur 9: DigiTOL PCB

2 Elektriska kopplingar

Innan anslutningar görs

Innan några kopplingar utförs måste typen av laddningscell-gränssnitt kontrolleras. Det är det femte tecknet hos produkt-ID som anger om enheten är analog eller DigiTOL® (1=Analog, 3=DigiTOL).

⚠ VARNING!

UNDVIK SKADA PÅ KRETSKORT ELLER LADDNINGSCELL GENOM ATT TA BORT STRÖM FRÅN TERMINALEN OCH VÄNTA I MINST 30 SEKUNDER FÖRE TILL- ELLER URKOPPLING AV HARNESK ELLER TILL- ELLER URKOPPLING AV NÅGON ULTRARES- ELLER DIGITOL®-BAS.

Kopplingar av analoga laddningsceller

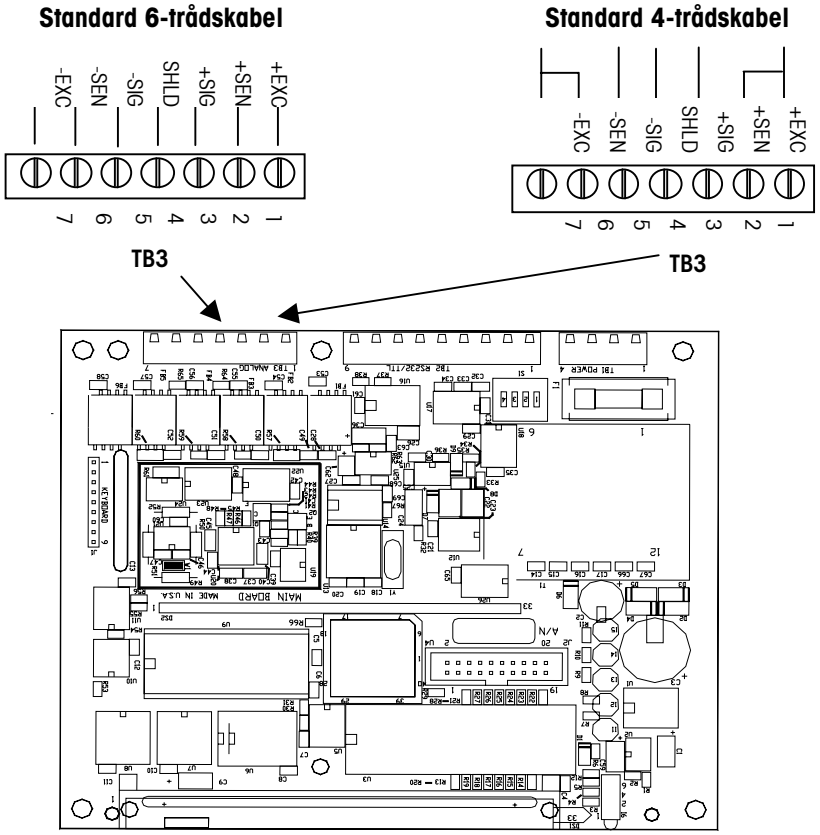
Bestäm maximal kabellängd. Den maximala kabellängden för anslutningar av typen analoga laddningsceller med terminalen beror på vågmotståndet (TSR) hos vågbasen. Beräkna TSR enl. följande:

$$TSR = \frac{\text{Laddningscellens ingående motstånd (Ohm)}}{\text{Antal laddningsceller}}$$

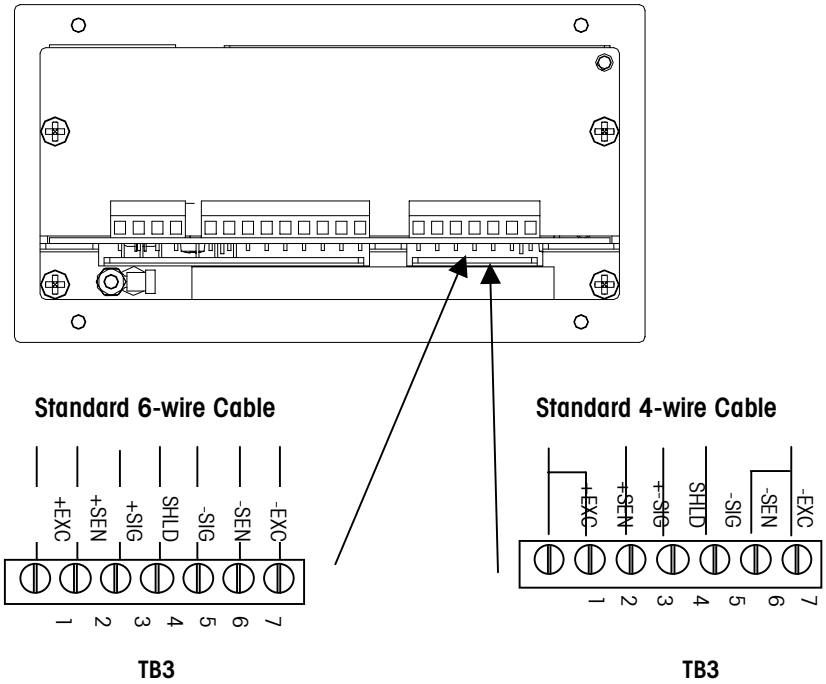
Rekommenderad maximal kabellängd baserat på TSR och kabelstorl.			
TSR (Ohm)	**24-storl. (fot/meter)**	**20-storl. (fot/meter)**	**16-storl. (fot/meter)**
350	800/244	2000/610	4000/1219
87 (4-350Ω-celler)	200/61	600/183	1000/305
45 (8-350 Ω-celler)	100/31	300/91	500/152

Vid användning av en analog version av PANTHER panelmonterad terminal på riskfyllt område enligt klassifikation Division 2, eller ifall endast laddningscellerna kommer att befinna sig på sådant enl. Division 2 klassificerat område, måste METTLER TOLEDO kontrollritning 155907R följas. Se efter i Division 2-handledningen i slutet av denna handbok.

Koppla till TB3 hos terminalens kontroller-PCB.



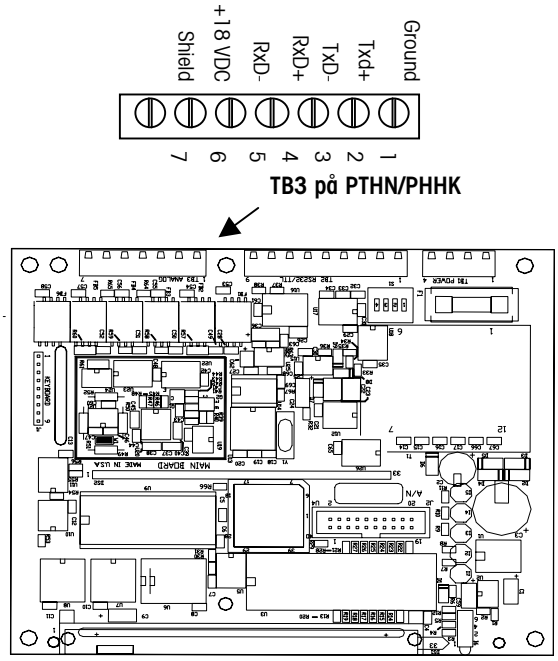
Figur 10: Ledningsdragning för PTHN/PTHK



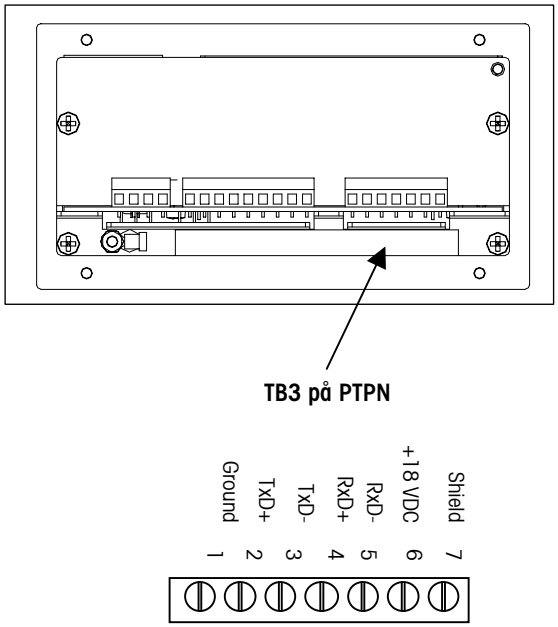
Figur 11: Ledningsdragning för PTPN

Kopplingar med UltraRes- och DigiTOL® laddningsceller

Maximal kabellängd för alla DigiTOL®-baser är 50 fot (15,24 meter). Koppla UltraRes eller DigiTOL® baser till TB3 på PANTHER-terminalen enl. följande:



Figur 12: Ledningsdragning för PTHN/PTHK

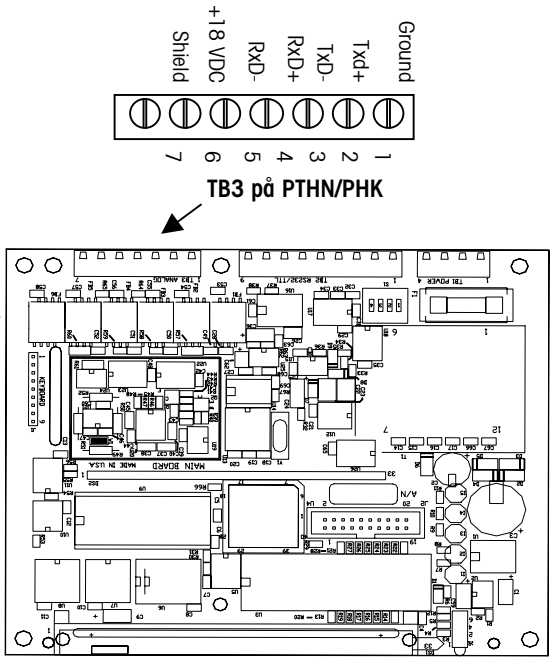


Figur 13: Ledningsdragning för PTPN

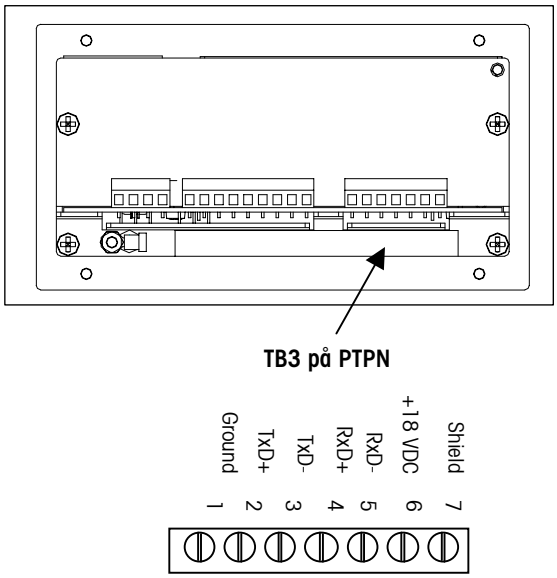
PANTHER TB3			Färgkod		UltraRes eller DigiTOL B/P Bas	
Jord	1		Blå	7	Jord	
TxD+	2		Röd	1	RxD A	
TxD-	3	NC	Vit	4	Batt In	
RxD+	4		Svart	8	TxD A	
RxD-	5		Gul	6	TxD B	
+18 VDC	6		Grön	5	+ 20 VDC	
Skärm	7		Orange			

Kopplingar med DigiTOL J-Box (kopplingsdosa)

Maximal kabellängd för DigiTOL J-Box är 300 fot (91,4 meter).



Figur 14: Ledningsdragning för PTHN/PTHK



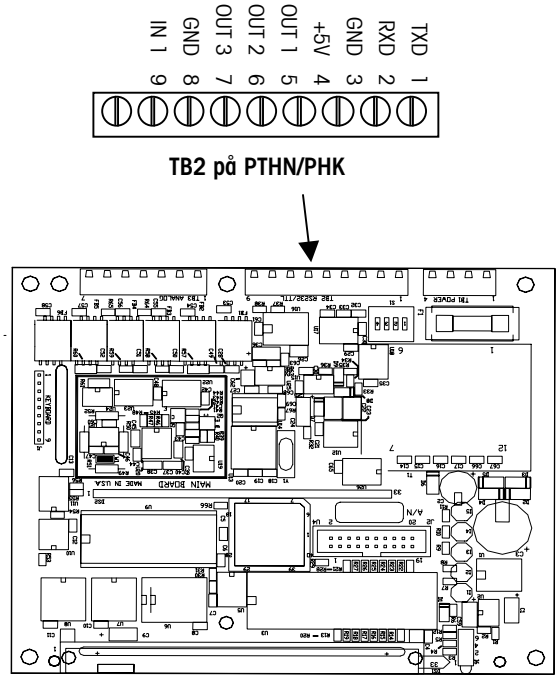
Figur 15: Wiring for PTPN

PANTHER TB3		Färgkod		Utökad DigiTOL J-Box	
Jord	1	Blå	7	Jord (TB2)	
TxD+	2	Röd	1	RxD A (TB1)	
TxD-	3	Vit	4	Batt In (TB 1)	
RxD+	4	Svart	8	TxD A (TB1)	
RxD-	5	Gul	6	TxD B (TB1)	
+18 VDC	6	Grön	5	+20 VDC (TB2)	
Skärm	7	Orange			

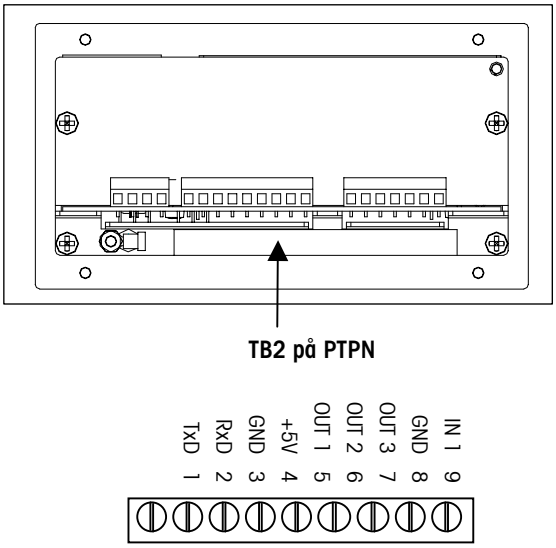
Seriekopplingar (Alla Modeller)

Huvud-PCB Serieport-koppling

COM 1 serieport är tvåriktad. Rekommenderad maximal kabellängd för RS-232-kommunikation är 50 fot (15,24 meter).



Figur 16: Ledningsdragning för PTHN/PTHK



Figur 17: Ledningsdragning för PTPN

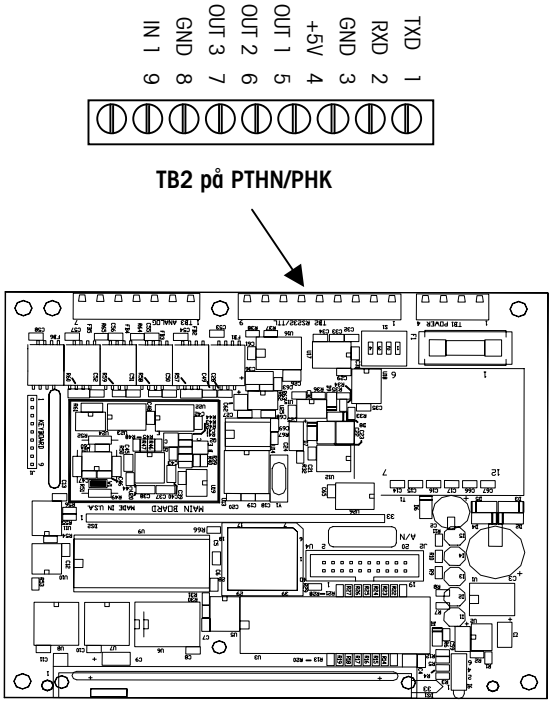
PANTHER TB2 COM1		
TXD	1	RS-232 Sänd
RXD	2	RS-232 Mottag
GND	3	Signal jord

Stiftanslutning för METTLER TOLEDO-utrustning som använder COM 1		
PANTHER TB2 COM1	**8806 8807 8808 8845 8846* 8857 8861 8863* 8865 8867***	**8617-TB2 9323-TB2 9325-TBS**
TXD	3	2
RXD	--	--
GND	7	3

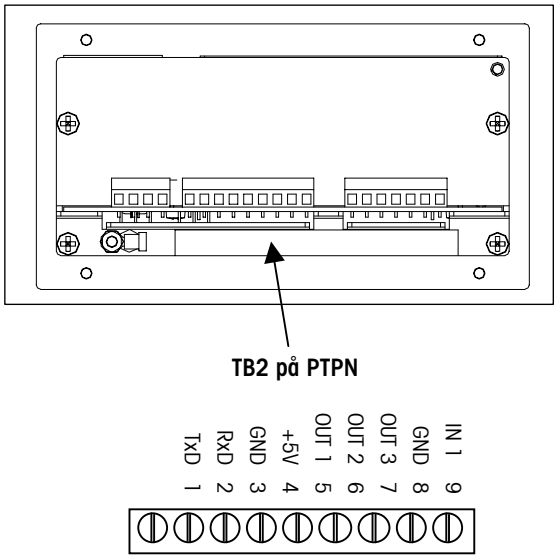
*Anslutningar som visas för användning med den adapterkontakt som medföljer dessa modeller.

Diskret I/O-anslutning

Se efter i bilagorna i tekniska handbok för PANTHER- och/eller PANTHER Plus-terminalen för närmare upplysningar



Figur 18: Ledningsdragning för PTHN/PTHK



Figur 19: Ledningsdragning för PTPN

TB2

4	+5 VDC, ström begränsad till 15 mA	
5	OUT1	TTL-nivå, 5 VDC maximum
6	OUT2	TTL-nivå, 5 VDC maximum
7	OUT3	TTL-nivå, 5 VDC maximum
8	GND	
9	IN1	$V_{IN\ LOW}$ = 0.0 - 0.8 VDC, $V_{IN\ HIGH}$ = 3.5 - 5.0 VDC.

Ström

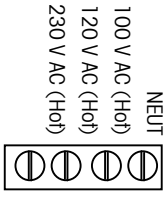
Universell (manuellt väljbar) strömförsörjning:

Funktionell drift:	85 till 264 VAC.
Ledningsfrekvens:	49 till 63 Hz.
Strömförbrukning:	12 Watt maximalt.

Integriteten i jordningen av ström för utrustningen är viktig både beträffande säkerhet och tillförlitlig drift för terminalen och dess tillhörande vågbas. Undermålig jordning kan leda till ett osäkert tillstånd om elektrisk kortslutning uppstår i utrustningen. En bra jordförbindning krävs för att minimera främmande elektriska bruspulser. Terminalen bör inte dela elledningar med brusalstrande utrustning. Bekräfta jordningsintegritet med hjälp av ett i handeln förekommande analyseringsdon för strömförgrening, exv. ett SureTest ST-1D av ICE-modell. Om undermåliga strömförhållanden råder kan det eventuellt krävas ett konditioneringsdon för strömkrets eller kraftledning.

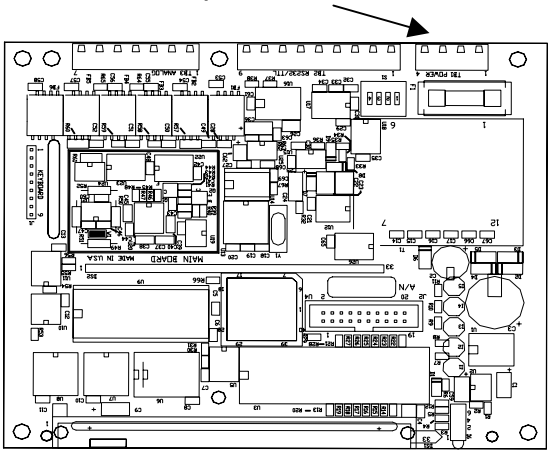
PTHN/PTHK

PANTHER- och PANTHER PLUS-terminalerna för påfrestande miljö levereras båda med elsladd som installerats på fabriken. Innan strömmen slås på ska det bekräftas att sladden är korrekt lindad för den växelströmsspänning där terminalen ska användas. Elsladden ansluts till TB1 anslutningsplint på kontroller-kretskortet.



TB1

TB1 på PTHN/PHK

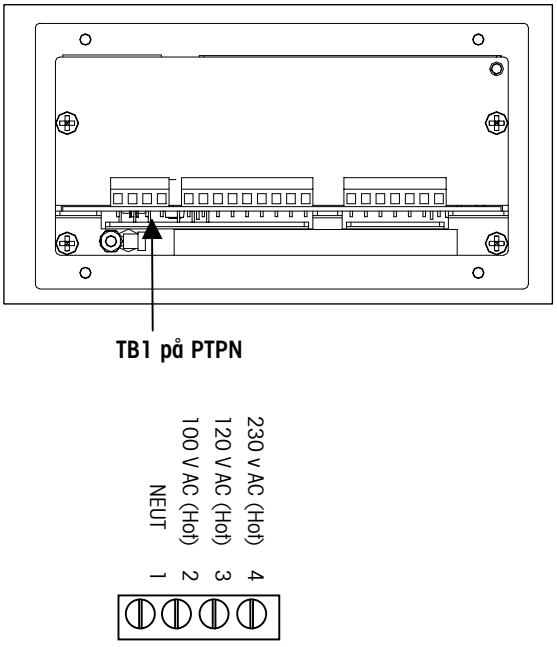


Figur 20: Ledningsdragning för PTHN/PTHK

Standard MT elsladdfärger	
Neutral	Blå
Het	Brun
Jord (Chassi)	Grön/Gul

PTPN

Ingen elsladd levereras med panelmonterad modell. Nedan visas ledningsdragning till anslutningsplinten TB1 på terminalens baksida. Jord förbinds med chassits jord.



Figur 21: Ledningsdragning för PTHN/PTHK

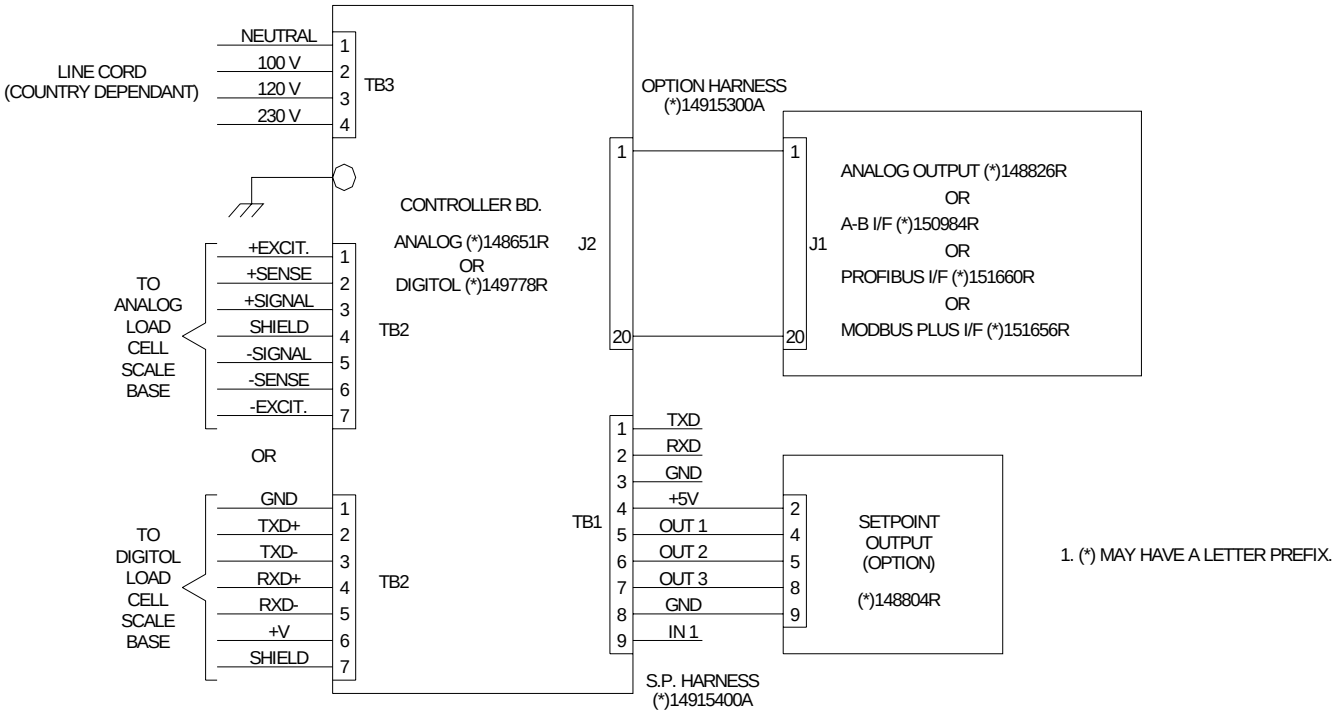
3 Installering/ledningsdragning av alternativkort

Alternativ

Det finns till förfogande en mängd olika alternativkort för användning med PANTHER och/eller PANTHER Plus-terminaler. Dessa innefattar:

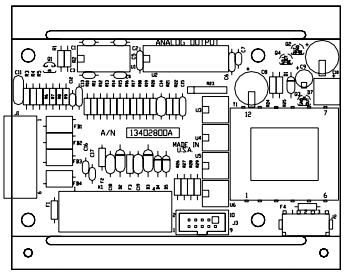
- Analog utgång
- Allen-Bradley RIO
- Modbus Plus
- Profibus
- Ledvärdeutgång (endast panelmonterad)

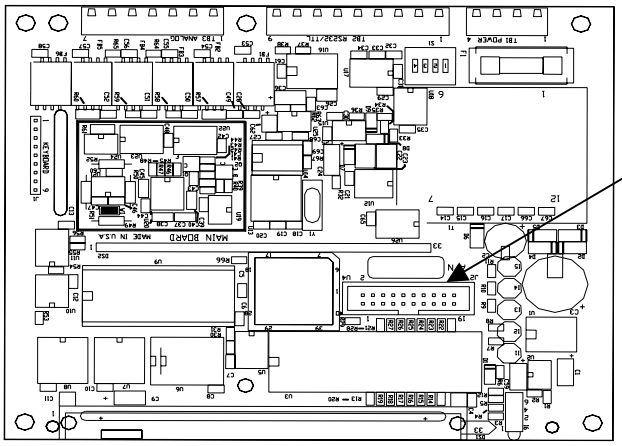
Om alternativkorten beställdes separat, medföljer med alternativkorten instruktionerna för installering av dessa. Mer detaljerad information om vart och ett av dessa alternativ återfinns i teknisk handbok för PANTHER och/eller PANTHER PLUS.



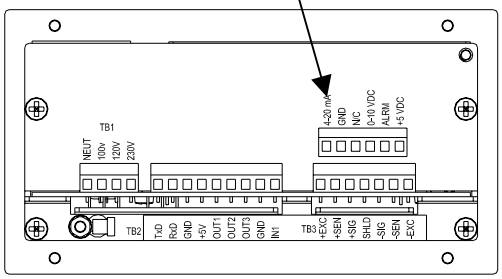
Figur 22: Kopplingsdiagram för PANTHER/PANTHER PLUS

Analog utgång – Alternativ (0917-0246)





Anslutningsplint med analog utgång		
J2	1	4-20 mA
	2	GND
	3	N.C.
	4	0-10 V
	5	ALARM
	6	+5V



Alternativsatsen för analog utgång erbjuder utgångsintervall på 0-10 VDC eller 4 - 20 mA plus en utgång för statusindikation med en valfritt isolerad öppen kollektor. Det analoga utgångs-kretskortet kan installeras antingen i PANTHER- och PANTHER PLUS-terminaler för påfrestande miljö eller i PANTHER panelmonterad terminal.

Rekommenderad maximal kabellängd för 0-10 VDC-utgången är 50 fot (15,2 meter). Den rekommenderade kabeln utgör en avskärmad 2-ledarekabel av storlek 20 (Belden #8762 eller motsvarande, som kan beställas från METTLER TOLEDO med omnämnande av artikelnummer 510220190.

4 till 20mA

Kundanpassad utrustning (4-20mA)

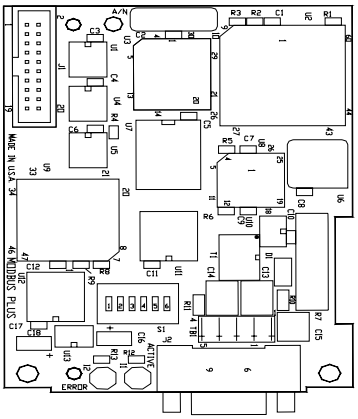
J2	1	4-20mA	+
	2	GND	-
	3	N.C.	
	4	0-10 VDC	
	5	ALRM*	
	6	+5 VDC	

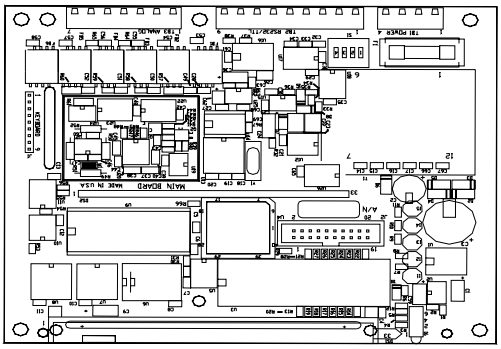
0 till 10 VDC

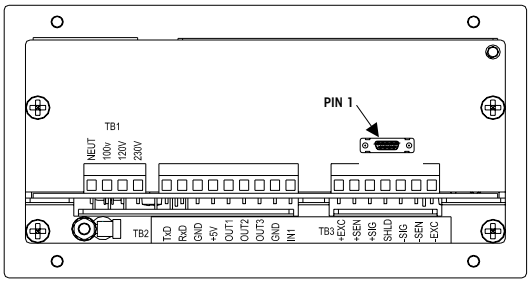
Kundanpassad utrustning (0-10VDC)

J2	1	4-20mA	
	2	GND	-
	3	N.C	
	4	0-10 VDC	+
	5	ALRM*	
	6	+5 VDC	

Modbus Plus – Alternativ







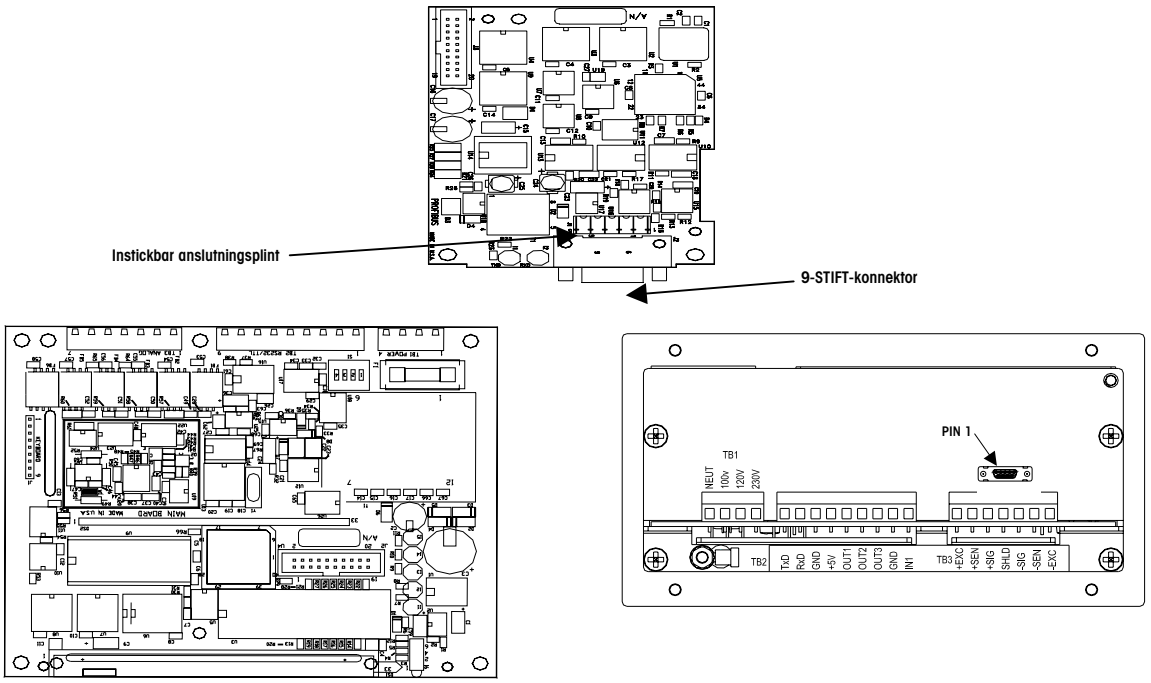
Det finns två anslutningar för gränssnittet Modbus Plus.

- Standardanslutningen för PANTHER panelmonterad terminal är honformig DE-9-konnektor. Instruktioner för ledningsdragning medföljer konnektorn. Modbus Plus-nätet använder stift 1, 2 och 3 hos DE-9-konnektorn (levereras av Modicon).
- PANTHER-terminalen för påfrestande miljö måste använda en instickbar anslutningsplint. När anslutningsplinten används, står Modbus Pigtail Cable-setet 0900-0320 till förfogande.

Den 'tobaksflätade' Modbus Plus-kabeln kopplas till PANTHER-terminalen enl. följande:

DE-9		Anslutningsplint
1	Vit	1
2	Grön	2
3	Svart	3

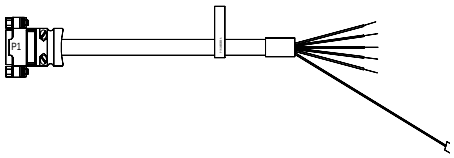
Profibus – Alternativ



PROFIBUS-anslutningen är tillgänglig på två ställen på PROFIBUS PCB-kretskortet. Det första är en honformig 9-stifts D-subminiatyr-konnektor, vilken utgör standard PROFIBUS-anslutning. Fältkonnektor-enheten levereras inte av METTLER TOLEDO. Detta är den anslutning som är att föredra i den panelmonterade terminalen.

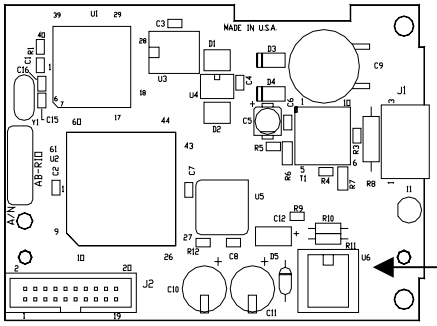
Honformig DE-9
1 GND (isolerad)
2 N.C.
3 TX/RX+
4 RTS
5 GND (isolerad)
6 +5V (isolerad)
7 N.C.
8 TX/RX-
9 N.C.

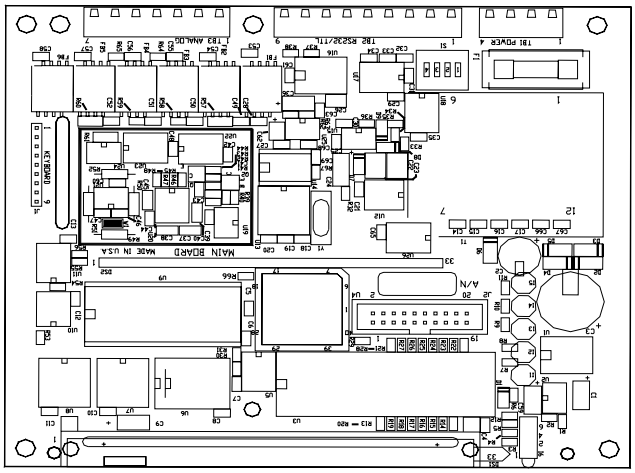
Vad beträffar PANTHER-terminalen för påfrestande miljö , måste den instickbara anslutningsplinten användas. I dessa fall står ett valfritt harnesk av typ 'tobaksflätad' till förfogande för ledningsdragning från anslutningsplinten till en honformig 9-stifts D-konnektor. Adapterharnesket kan beställas med omnämnande av fabriksnummer 0900-0311. Adaptern visas här.

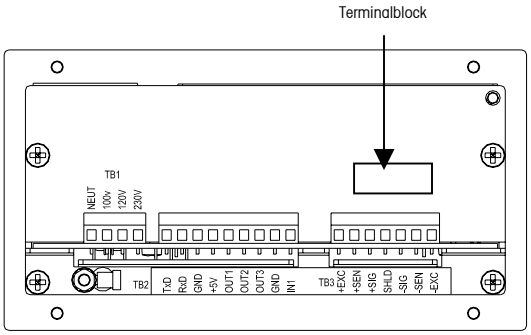


Anslutningsplint
1 RTS
2 TXD/RXD+
3 TXD/RXD-
4 +5 V (isolerad)
5 GND (isolerad)

Allen Bradley RIO – Alternativ





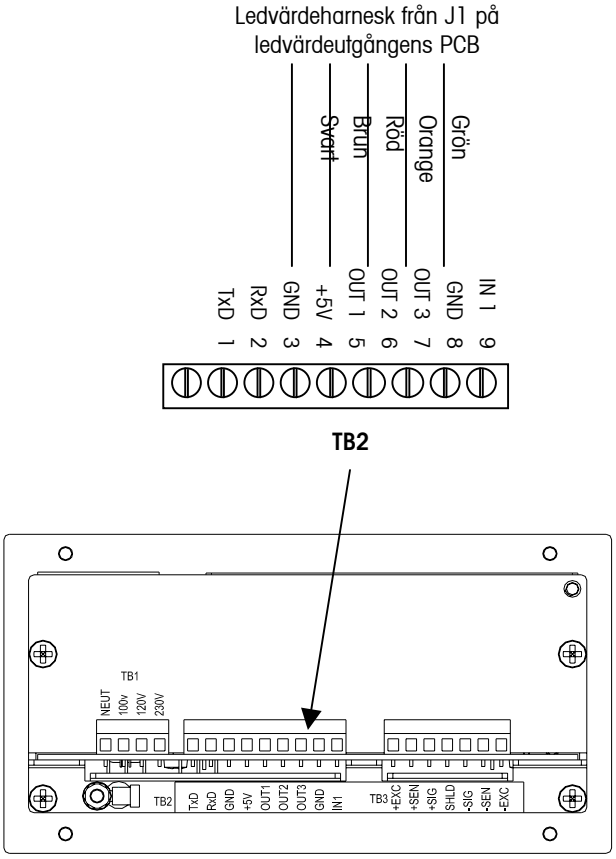


Alternativsatsen PANTHER Allen-Bradley erbjuder kopplingsmöjlighet till en Allen-Bradley PLC med användning av ett protokoll för fjärr-Inmatning/Utmatning (RIO, Remote Input/Output). Satsen kan installeras antingen i PANTHER- eller PANTHER PLUS-terminaler för påfrestande miljö eller i PANTHER panelmonterad terminal.

Elektriskt: centrerat, transformatorisolerade ledningsdriver
Konnektor: 3-läges flyttbar anslutningsplint dragen från vänster till höger (vy bakifrån konnektor) såsom: Blå
Skärm
Genomskinlig

Ledvärdeutgång (Endast panelmonterad)

Alternativsatsen Ledvärdeutgång erbjuder högnivå AC-interface (28 - 280 VAC) för de tre diskreta lågnivå utgångarna av standardtyp. Förbind harneskets lösa ändar med följande polklämmor på terminalens kontroller-kretskort (PCB):



PANTHER®

Panel-Mount Terminal

Division 2
Installation Guide

15791600A
(7/03).01

CUSTOMER FEEDBACK

Your feedback is important to us! 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. If you are in the United States, you can mail this postpaid form to the address on the reverse, or fax it to (614) 438-4355. If you are outside the United States, please apply the appropriate amount of postage before mailing. You can also send your feedback via email to: quality_feedback.mtwt@mt.com.

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	

COMMENTS/QUESTIONS:

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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UNITED STATES

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FIRST CLASS PERMIT NO. 414 COLUMBUS, OH

POSTAGE WILL BE PAID BY ADDRESSEE

Mettler-Toledo, Inc.
Quality Manager - MTWI
P.O. Box 1705
Columbus, Ohio 43240
USA

Please seal with tape.

INTRODUCTION

This publication is provided solely as a guide for individuals who have received Technical Training in servicing and installing the METTLER TOLEDO product.

Information regarding METTLER TOLEDO Technical Training may be obtained by writing to:

METTLER TOLEDO
1900 Polaris Parkway
Columbus, Ohio USA 43240
(US and Canada) 614-438-4511
(All Others) 614-438-4888

NOTICE

This document is associated with an agency-approved product. No changes to this document are permitted without agency approval.

PRECAUTIONS

READ this manual BEFORE installing, operating or servicing this equipment.

FOLLOW these guidelines 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.

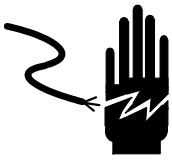
CALL METTLER TOLEDO for parts, information, and service.

WARNING!

METTLER TOLEDO ASSUMES NO RESPONSIBILITY FOR CORRECT INSTALLATION OF THIS EQUIPMENT WITHIN A DIVISION 2 AREA. THE INSTALLER MUST BE FAMILIAR WITH ALL DIVISION 2 WIRING AND INSTALLATION REQUIREMENTS.

WARNING!

THE PANTHER PANEL-MOUNT TERMINAL IS NOT INTRINSICALLY SAFE! DO NOT USE WITHIN AREAS CLASSIFIED AS HAZARDOUS DIVISION 1 OR ZONE 0/1 BECAUSE OF COMBUSTIBLE OR EXPLOSIVE ATMOSPHERES.



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.

WARNING!

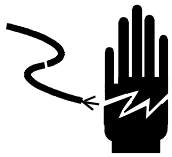
THE PANTHER PANEL-MOUNT TERMINAL HAS A TEMPERATURE RATING OF T4a (120° C). IT MUST NOT BE USED IN AREAS WHERE THE AUTO IGNITION TEMPERATURE OF THE HAZARDOUS MATERIAL IS BELOW THIS RATING.

WARNING!

PREVIOUS MODELS OF THE PANTHER PANEL-MOUNT TERMINAL WHICH ARE NOT FACTORY-LABELED FOR DIVISION 2 COMPLIANCE MAY NOT BE INSTALLED INTO A DIVISION 2 ENVIRONMENT. THE PANTHER HARSH ENVIRONMENT TEMRINAL IS NOT APPROVED FOR USE IN AREAS CLASSIFIED AS DIVISION 2.

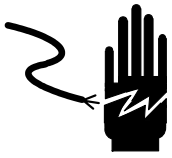
CAUTION

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.

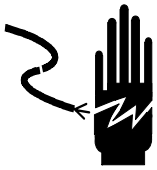


WARNING!

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

WARNING!

IN ORDER TO USE THE ANALOG PANTHER PANEL-MOUNT TERMINAL IN AN AREA CLASSIFIED AS CLASS I, II OR III, DIVISION 2, GROUPS A, B, C, D, F OR G, METTLER TOLEDO CONTROL DRAWING 155907R MUST BE FOLLOWED WITHOUT EXCEPTION. FAILURE TO DO SO COULD RESULT IN BODILY HARM AND/OR PROPERTY DAMAGE.

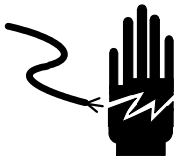


WARNING!

WHEN THIS EQUIPMENT IS INCLUDED AS A COMPONENT PART OF A SYSTEM, THE RESULTING DESIGN MUST BE REVIEWED BY QUALIFIED PERSONNEL WHO ARE FAMILIAR WITH THE CONSTRUCTION AND OEPRATION OF ALL COMPONENTS IN THE SYSTEM AND THE POTENTIAL HAZARDS INVOLVED. FAILURE TO OBSERVE THIS PRECAUTION COULD RESULT IN BODILY HARM AND/OR PROPERTY DAMAGE.

WARNING!

IF THIS DEVICE IS USED IN AN AUTOMATIC OR MANUAL FILLING CYCLE, ALL USERS MUST PROVIDE A HARD-WIRED EMERGENCY STOP CIRCUIT OUTSIDE THE DEVICE CIRCUITRY. FAILURE TO OBSERVE THIS PRECAUTION COULD RESULT IN BODILY INJURY AND/OR PROPERTY DAMAGE.



WARNING

POWER OUTLETS MUST BE EASILY ACCESSIBLE AND LOCATED NO FURTHER THAN THE LENGTH OF THE POWER CORD SUPPLIED WITH THE PRODUCT. FAILURE TO DO SO COULD IN RESULT IN PERSONAL INJURY AND/OR PROPERTY.

Mettler-Toledo Inc.

Columbus, Ohio

Declaration of Conformance to SMA Standard
Production Meets Type

(Year of Declaration 2002)

We the manufacturer of

Model	Certificate and Number	Issued by
Panther	CoC 96-125	NCWM
Panther Plus	CoC 96-125	NCWM

declare in our responsibility the conformance of the above listed models and types to the mentioned certificates and the requirements of the SMA standard.

This declaration becomes valid when the SMA Compliance Logo, having our name or trademark is applied to the device or its accompanying documentation.

CONTENTS

1

Introduction

This installation guide describes basic concepts about Division 2 hazardous areas and provides installation guidelines for installing the Factory Mutual approved PANTHER panel-mount terminal into hazardous environments rated as Division 2. Only PANTHER panel-mount terminals which are factory-labeled as approved for Division 2 may be installed into Division 2 hazardous areas. Refer to the next chapter for details of the required data plate markings. Previous models of the PANTHER terminal which are not factory-labeled for Division 2 compliance may not be installed into Division 2 environments. The PANTHER harsh environment terminal is NOT approved for use in areas classified as Division 2.

Only analog load cell versions of the PANTHER panel-mount terminal have bee approved for use in a Division 2 area. DigiTOL versions of the PANTHER panel-mount terminal are NOT approved for use in areas classified as Division 2.

WARNING

METTLER TOLEDO ASSUMES NO RESPONSIBILITY FOR CORRECT INSTALLATION OF THIS EQUIPMENT WITHIN A DIVISION 2 AREA. THE INSTALLER MUST BE FAMILIAR WITH ALL DIVISION 2 WIRING AND INSTALLATION REQUIREMENTS.

At the end of this guide, there is a METTLER TOLEDO control drawing number 155907R. The PANTHER panel-mount terminal must be installed according to this control drawing. No exceptions are permitted. In addition, the installer must be familiar with all other wiring and installation requirements for Division 2 areas.

WARNING

IN ORDER TO USE THE ANALOG PANTHER PANEL-MOUNT TERMINAL IN AN AREA CLASSIFIED AS CLASS I, II OR III, DIVISION 2, GROUPS A, B, C, D, F OR G, METTLER TOLEDO CONTROL DRAWING 155907R MUST BE FOLLOWED WITHOUT EXCEPTION. FAILURE TO DO SO COULD RESULT IN BODILY HARM AND/OR PROPERTY DAMAGE.

The PANTHER panel-mount terminal has been approved for use in an area classified as Division 2. This approval DOES NOT mean that the PANTHER panel-mount terminal can be used in Division 1 areas. Different precautions must be taken when installing equipment into a Division 1 area. Please consult your local METTLER TOLEDO representative regarding applications in a Division 1 area.

WARNING

THE PANTHER PANEL-MOUNT TERMINAL IS NOT INTRINSICALLY SAFE! DO NOT USE WITHIN AREAS CLASSIFIED AS HAZARDOUS DIVISION 1 OR ZONE 0/1 BECAUSE OF COMBUSTIBLE OR EXPLOSIVE ATMOSPHERES.

Hazardous Area Classification

A hazardous (explosive) area is classified as a Division 2 area when the hazard is either not present during normal operating conditions or is present only for very short periods of time. This typically happens in an area adjacent to a Division 1 area. The area must be classified by an agent of the customer. **METTLER TOLEDO DOES NOT CLASSIFY HAZARDOUS AREAS**.

The PANTHER panel-mount terminal has been Factory Mutual approved for use in areas classified as:

Class I, II, III, Division 2, Groups A, B, C, D, F, G Temp = T4a

when installed in a nationally recognized, test laboratory-approved, dust-tight enclosure appropriate for the environment and installed per METTLER TOLEDO control drawing 155907R.

WARNING

THE PANTHER PANEL-MOUNT TERMINAL HAS A TEMPERATURE RATING OF T4a (120° C). IT MUST NOT BE USED IN AREAS WHERE THE AUTO IGNITION TEMPERATURE OF THE HAZARDOUS MATERIAL IS BELOW THIS RATING.

Protection Approaches

Various protection methods are used by manufacturers of equipment located within a Division 2 classified area. METTLER TOLEDO uses non-incendive circuits. All inputs and outputs to the PANTHER panel-mount terminal have been classified as incendive (capable of arcing or sparking – such as switches or relays) or non-incendive (incapable of arcing or sparking). Depending upon how a specific input or output is defined, it must be protected accordingly. For installation in the United States, refer to the current version of the National Electrical Code (NFPA 70, Articles 500 – 504) and ANSI/ISA-RP12.6 for specific requirements. For locations outside the US, refer to the electrical regulations for the country of installation for the specific wiring requirements.

As a general guide, if a signal is rated as non-incendive and is connected to another non-incendive device and the non-incendive field circuit parameters agree in the correct manner, no special protection of the signal is required. The 155907R control drawing and this manual both contain a list of field circuit parameters for each non-incendive output from the PANTHER panel-mount terminal, including voltage, current, capacitance and inductance values. Comparing these values from the PANTHER panel-mount terminal with those of other approved apparatuses (such as load cells) enable the PANTHER panel-mount terminal to be used with METTLER TOLEDO's or other manufacturers' load cells in an approved system. (Refer to Chapter 2.)

If a signal cannot be classified as non-incendive, follow the electrical regulations for the country of installation for specific wiring requirements of incendive equipment in a Division 2 area.

WARNING

TO USE THE ANALOG PANTHER PANEL-MOUNT TERMINAL IN AN AREA CLASSIFIED AS CLASS I, II OR III, DIVISION 2, GROUPS A, B, C, D, F OR G, METTLER TOLEDO CONTROL DRAWING 155907R MUST BE FOLLOWED WITHOUT EXCEPTION. FAILURE TO DO SO COULD RESULT IN BODILY HARM AND/OR PROPERTY DAMAGE.

For your notes

2 Installation

Before installing the PANTHER panel-mount terminal in an area classified as Division 2, read and understand the METTLER TOLEDO control drawing 155907R in the last chapter of this guide. Make note of the inputs and outputs that will be used and the type of protection required for each I/O. Also note that the PANTHER panel-mount terminal must be installed into a Nationally Recognized Test Laboratory approved dust tight enclosure appropriate for the environment.

WARNING

METTLER TOLEDO ASSUMES NO RESPONSIBILITY FOR CORRECT INSTALLATION OF THIS EQUIPMENT WITHIN A DIVISION 2 AREA. THE INSTALLER MUST BE FAMILIAR WITH ALL DIVISION 2 WIRING AND INSTALLATION REQUIREMENTS.

WARNING

IN ORDER TO USE THE ANALOG PANTHER PANEL-MOUNT TERMINAL IN AN AREA CLASSIFIED AS CLASS I, II OR III, DIVISION 2, GROUPS A, B, C, D, F OR G, METTLER TOLEDO CONTROL DRAWING 155907R MUST BE FOLLOWED WITHOUT EXCEPTION. FAILURE TO DO SO COULD RESULT IN BODILY HARM AND/OR PROPERTY DAMAGE.

Confirm that the data plate on the PANTHER panel-mount terminal indicates that it has been approved for use in Division 2 areas. The data plate is located on the top of the housing near the back panel. If the PANTHER panel-mount terminal is one that has been approved for use in Division 2 areas by Factory Mutual, there will be two data plates present, and the approval data plate will look like the example below.

METTLER TOLEDO
MODEL: PANTHER
SUITABLE FOR USE IN CL I GP A-D DIV 2,CL II GP F,G DIV 2,CL III DIV 2
WHEN INSTALLED PER METTLER TOLEDO DRAWING 155907R.
Ta = 45°C Temperature ID = T4B (120°C)
FM APPROVED

Mettler-Toledo,Inc. Columbus,Ohio 43240 Made in U.S.A.

If the PANTHER panel-mount terminal data plate does not include the approval information as shown above, the PANTHER panel-mount terminal cannot be installed in a Division 2 area.

WARNING

THE PANTHER PANEL-MOUNT TERMINAL IS NOT INTRINSICALLY SAFE! DO NOT USE WITHIN AREAS CLASSIFIED AS HAZARDOUS DIVISION 1 OR ZONE 0/1 BECAUSE OF COMBUSTIBLE OR EXPLOSIVE ATMOSPHERES.

Non-incendive Inputs and Outputs

If a specific input or output is rated non-incendive, then a list of the field circuit parameters for that I/O will be given. If a Division 2 approved apparatus will be connected to a PANTHER terminal non-incendive input or output, then a comparison must be made between the field circuit parameters of both devices including the connecting cable. These field circuit parameters include voltage, current, capacitance and inductance. The two devices must compare as follows in order for the wiring to be considered non-incendive:

V_{max} (Maximum voltage permitted) $\geq$ $\underline{V_t \text{ (Total voltage output)}}$

I_{max} (Maximum current permitted) $\geq$ $\underline{I_t \text{ (Total current output)}}$

C_i (Input capacitance) + C_{cable} (Cable capacitance) $\leq$ $\underline{C_a \text{ (Allowable capacitance)}}$

L_i (Input inductance) + L_{cable} (Cable inductance) $\leq$ $\underline{L_a \text{ (Allowable inductance)}}$

The field circuit parameters associated with the PANTHER panel-mount terminal are underlined in the above formulas. The other parameters are related to the other approved apparatus or the connecting cable.

If the above conditions are not true, then the circuit must be treated as an incendive input or output and protected accordingly. If the parameters compare favorably as shown above, then no special protection is required for the wiring. Always refer to the electrical regulations for the country of installation for specific wiring requirements.

The following inputs and outputs are rated non-incendive on the PANTHER panel-mount terminal. The field circuit parameters for each I/O are also listed.

- Load Cell

  V_t = 5.5 VDC

  I_t = 166 mA

  C_a = 590 µF

  L_a = 1.3 mH

- RS-232 Port

  V_t = 5.5 VDC

  I_t = 166 mA

  C_a = 600 µF

  L_a = 0.22 mH

- Analog Output

  V_t = 13.6 VDC

  I_t = 289 mA

  C_a = 3 µF

  L_a = 0.7 mH

- Profibus Interface

V_t = 5.5 VDC

I_t = 171 mA

C_a = 218 µF

L_a = 0.45 mH

Incendive Inputs and Outputs

If a specific input or output is rated incendive, then special wiring precautions must be taken to protect the wiring in the Division 2 area. Refer to the electrical regulations for the country of installation for specific wiring requirements.

All inputs and outputs to the PANTHER panel-mount unit not listed above as non-incendive must be treated as incendive. They include:

- AC power input
- Discrete inputs and outputs
- Allen Bradley RIO
- Modbus Plus interface

Temperature Rating

It is important that the temperature rating of the PANTHER panel-mount terminal be appropriate for the environment in which it will be used. FM has approved the PANTHER panel-mount terminal for a temperature rating of T4a. This indicates that the maximum surface temperature of the terminal will not exceed 120°C (248°F). This value must be lower than the Auto Ignition Temperature (AIT) of the hazardous product in order to be safe. If the AIT of the hazardous product is lower than the T4a rating of the PANTHER panel-mount terminal, the panel-mount terminal **MUST NOT BE USED** in that environment.

WARNING

THE PANTHER PANEL-MOUNT TERMINAL HAS A TEMPERATURE RATING OF T4a (120° C). IT MUST NOT BE USED IN AREAS WHERE THE AUTO IGNITION TEMPERATURE OF THE HAZARDOUS MATERIAL IS BELOW THIS RATING.

Application Example Using Load Cells

The following is an example of applying the PANTHER terminal in a Division 2 application connecting a model 2158 Vertex floor scale with 50 feet of load cell cable. The field circuit parameters for all devices and cables in the load cell line (including the load cells and junction box) must also be known.

Terminal model:	PANTHER terminal (Division 2 approved)
Base model:	2158 Vertex (with Division 2 approved cells)
Load cell model:	METTLER TOLEDO 0745A
Quantity of load cells:	4
Load cell cable length:	50 feet
Junction box PCB p/n:	13640300A

PANTHER field circuit parameters from control drawing 155907R:

V_t = 5.5 VDC

I_t = 166 mA

C_a = 590 µF

L_a = 1.3 mH

Load cell field circuit parameters from 745A load cell control drawing:

V_{max} = 25 VDC

I_{max} = 600 mA

C_i = 0 µF

L_i = 29 µH

Load cell cable default values from PANTHER terminal control drawing 155907R:

C_{cable} p= 60 F / foot

L_{cable} = 0.2 µH / foot

The 2158 junction box PCB was determined to not have significant capacitance or inductance impact. Values shown below should be used.

C_i = 0 pF

L_i = 0 µH

Compare these values using the formulas provided in the previous section of this chapter and determine if all four criteria pass or fail. Note that the field circuit parameters for capacitance (but not inductance) of the load cell must be multiplied by the quantity of load cells used. Also, the field circuit parameters for the load cell cable must be multiplied by the total load cell cable length.

Formula	**Pass or Fail**
V_{max} must be $\geq V_t$	
25 VDC $\geq$ 5.5 VDC	**PASS**
I_{max} must be $\geq I_t$	
600 mA $\geq$ 166 mA	**PASS**
$C_i + C_{cable} \leq C_a$	
C_i = 0 µF * 4 cells = 0 µF (load cells)	
C_i = 0 µF (junction box)	
C_{cable} = 60 pF / foot * 50 feet = 3 nF	
(0 µF + 0 µF + 3 nF) $\leq$ 590 µF	**PASS**
$L_i + L_{cable} \leq L_a$	
L_i = 29 µH (the largest inductance value of a single cell is used)	
L_i = 0 µH (junction box)	
L_{cable} = 0.2 µH / foot * 50 feet = 10 µH	
(29 µH + 0 µH + 10 µH) $\leq$ 1.3 mH	**PASS**

In addition to the formulas above, the temperature rating of the PANTHER panel-mount terminal must be checked against the AIT (Auto Ignition Temperature) of the hazardous product. For this example, the hazardous product has an AIT of 200°C (393°F) which is higher than the rating of the panel-mount terminal, which is 120°C (248°F). This indicates the temperature comparison test passes.

Since all four field circuit parameters compare favorably and pass the formula evaluation and the temperature comparison test passes, the products listed in this example may be safely installed into a Division 2 area. They must be installed according to control drawing 155907R using all pertinent local and national standards. Note that the load cells must also be approved for use in Division 2 areas and the field circuit parameters and temperature ratings must be known. If the load cells used (regardless of manufacturer) do not have Division 2 approval, they cannot be connected to the PANTHER panel-mount terminal in an area classified as Division 2.

For your notes

3 Special Requirements

When a PANTHER panel-mount terminal is installed inside an area classified as Division 2, some special requirements must be considered. This chapter discusses these items. The METTLER TOLEDO control drawing155907R must also be reviewed for any special requirements.

Enclosures

Only PANTHER panel-mount terminals which are factory-labeled as approved for Division 2 may be installed into a Division 2 hazardous area. Also note that a Nationally Recognized Test Laboratory approved dust tight enclosure is also required for proper installation. This note is on the METTLER TOLEDO control drawing 155907R.

WARNING

PREVIOUS MODELS OF THE PANTHER PANEL-MOUNT TERMINAL WHICH ARE NOT FACTORY LABELED FOR DIVISION 2 COMPLIANCE MAY NOT BE INSTALLED INTO A DIVISION 2 ENVIRONMENT. THE PANTHER HARSH ENVIRONMENT TERMINAL IS NOT APPROVED FOR USE IN AREAS CLASSIFIED AS DIVISION 2.

Areas With Different Classifications

The PANTHER panel-mount terminal has been approved for use in an area classified as Division 2. This approval **DOES NOT** mean that the PANTHER panel-mount terminal can be used in Division 1 areas. Different precautions must be taken when installing equipment into a Division 1 area.

If any portion of the installation involves an area classified as Division 1, then the complete system should be configured to be compatible with a Division 1 classification. For instance, if the panel-mount terminal will be installed in a Division 2 area but the load cells will be located within a Division 1 area, a load cell barrier is required. These barriers are available through METTLER TOLEDO.

Applications involving a mixture of Division 1 and Division 2 area classifications should be discussed with METTLER TOLEDO. Please consult your local METTLER TOLEDO representative regarding these types of applications.

Replacement Parts

If a failure occurs in a PANTHER panel-mount terminal that is installed in a Division 2 area, note that only certain revisions of some components may be used as replacements. The following parts must be at least the letter revision indicated (or newer) to be installed on a Division 2 PANTHER panel-mount terminal. A newer revision of a part number with a 'D" revision would begin with the letter 'E', 'F', 'G', etc.

PANTHER Main PCB	'D'15201500A
Profibus PCB	'A'15166100A
Keyboard Overlay	'E'14828300A

WARNING

IF THE KEYBOARD, DISPLAY LENS OR ENCLOSURE IS DAMAGED ON A PANTHER PANEL-MOUNT TERMINAL THAT IS USED IN AN AREA CLASSIFIED AS DIVISION 2, THE DEFECTIVE COMPONENT MUST BE REPAIRED IMMEDIATELY. REMOVE AC POWER AND DO NOT REAPPLY AC POWER UNTIL THE DISPLAY LENS, KEYBOARD OR ENCLOSURE HAS BEEN REPLACED BY QUALIFIED SERVICE PERSONNEL. FAILURE TO DO SO COULD RESULT IN BODILY HARM AND/OR PROPERTY DAMAGE.

4

Control Drawings

Only PANTHER panel-mount terminals which are factory-labeled as approved for Division 2 may be installed into a Division 2 hazardous area.

WARNING

IN ORDER TO USE THE ANALOG PANTHER PANEL-MOUNT TERMINAL IN AN AREA CLASSIFIED AS CLASS I, II OR III, DIVISION 2, GROUPS A, B, C, D, F OR G, METTLER TOLEDO CONTROL DRAWING 155907R MUST BE FOLLOWED WITHOUT EXCEPTION. FAILURE TO DO SO COULD RESULT IN BODILY HARM AND/OR PROPERTY DAMAGE.

KEMA Approval (Europe)

The PANTHER panel-mount terminal has been submitted to KEMA for certification as meeting requirements of EN 50021 : 1999, Electrical apparatus for potentially explosive atmospheres, Type of protection "n" - but the evaluation is not yet complete and a certificate has not yet been issued.

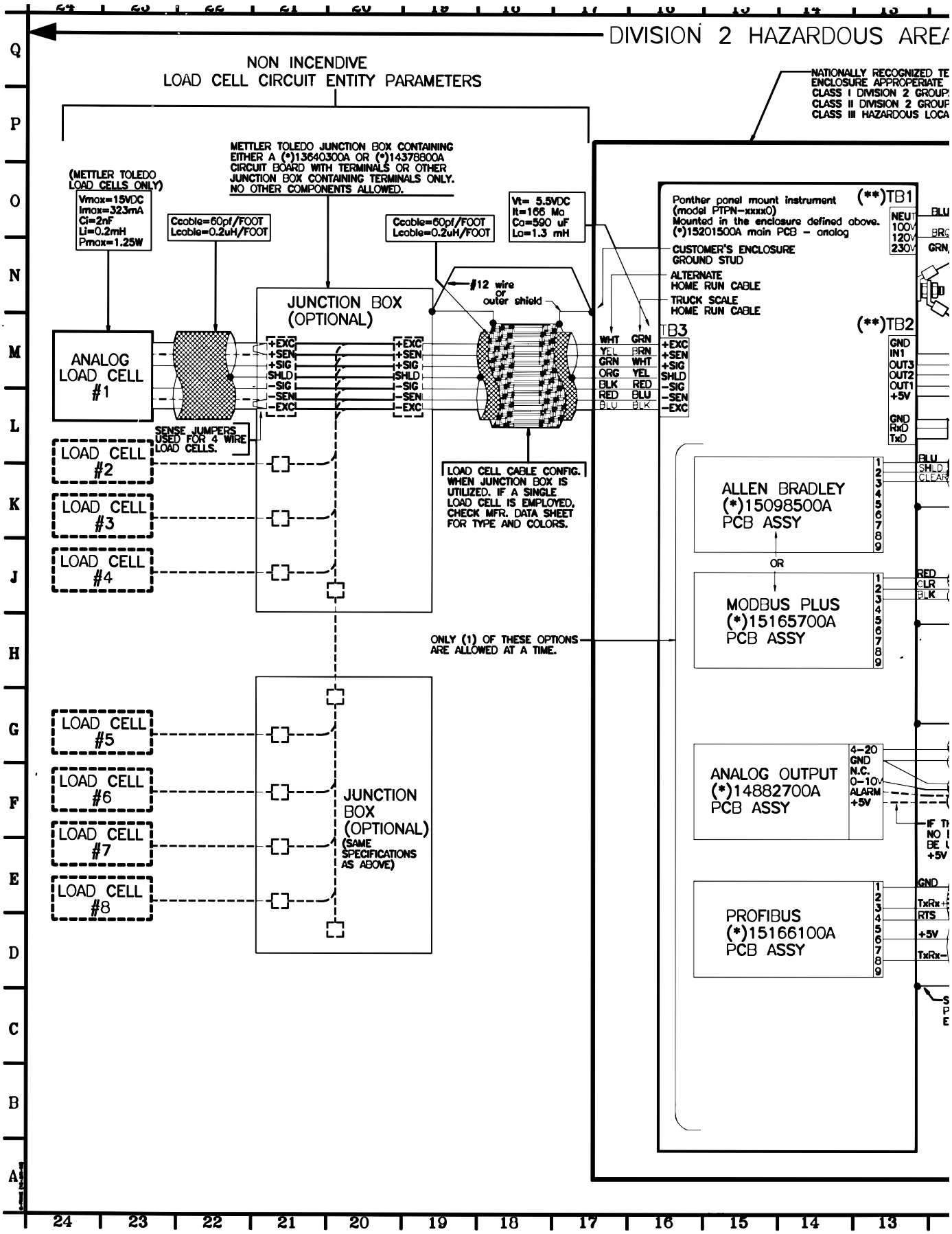
Until this certificate is issued, the PANTHER panel-mount terminal must not be used in areas classified as Zone 2 according to harmonized European standards.

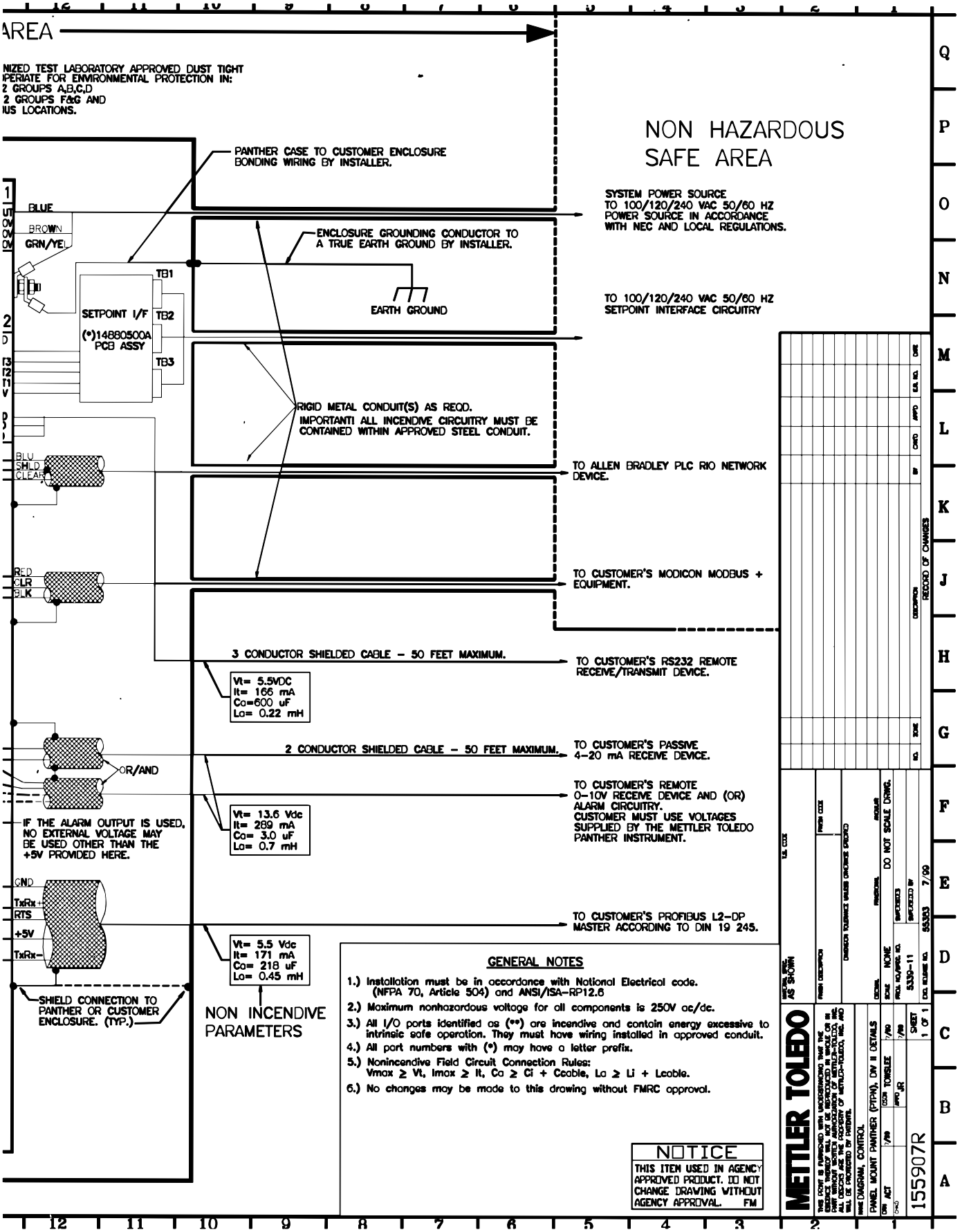
The PANTHER panel-mount terminal is NOT approved for Zone 2 applications!

Factory Mutual Approval (United States)

Factory Mutual has evaluated the PANTHER panel-mount terminal and found that it meets the NEC standards for use in hazardous areas classified as Division 2 when installed per METTLER TOLEDO control drawing 155907R.

A copy of METTLER TOLEDO control drawing 155907R is shown on the next pages. No deviation from this drawing is permitted.


DIVISION 2 HAZARDOUS AREA
NON INCENDIVE
LOAD CELL CIRCUIT ENTITY PARAMETERS
NATIONALLY RECOGNIZED TE
ENCLOSURE APPROPERIATE
CLASS I DIVISION 2 GROUP
CLASS II DIVISION 2 GROUP
CLASS III HAZARDOUS LOCA
METTLER TOLEDO JUNCTION BOX CONTAINING EITHER A (*)13640300A OR (*)14378800A CIRCUIT BOARD WITH TERMINALS OR OTHER JUNCTION BOX CONTAINING TERMINALS ONLY. NO OTHER COMPONENTS ALLOWED.
(METTLER TOLEDO LOAD CELLS ONLY)
Vmax=15VDC
Imax=323mA
Ci=2nF
Li=0.2mH
Pmax=1.25W
Ccable=60pf/FOOT
Lcable=0.2uH/FOOT
Ccable=60pf/FOOT
Lcable=0.2uH/FOOT
Vt= 5.5VDC
It=166 Ma
Ca=590 uF
La=1.3 mH
Panther panel mount instrument
(model PTPN-xxxx0)
Mounted in the enclosure defined above.
(*)15201500A main PCB - analog
(**)TB1
CUSTOMER'S ENCLOSURE GROUND STUD
ALTERNATE HOME RUN CABLE
TRUCK SCALE HOME RUN CABLE
#12 wire or outer shield
JUNCTION BOX (OPTIONAL)
ANALOG LOAD CELL #1
LOAD CELL #2
LOAD CELL #3
LOAD CELL #4
SENSE JUMPERS USED FOR 4 WIRE LOAD CELLS.
+EXC
+SEN
+SIG
SHLD
-SIG
-SEN
-EXC
TB3
WHT GRN
YEL BRN
GRN WHT
ORG YEL
BLK RED
RED BLU
BLU BLK
(**)TB2
GND
IN1
OUT3
OUT2
OUT1
+5V
GND
RxD
TxD
LOAD CELL CABLE CONFIG. WHEN JUNCTION BOX IS UTILIZED. IF A SINGLE LOAD CELL IS EMPLOYED, CHECK MFR. DATA SHEET FOR TYPE AND COLORS.
ALLEN BRADLEY
(*)15098500A
PCB ASSY
OR
MODBUS PLUS
(*)15165700A
PCB ASSY
ONLY (1) OF THESE OPTIONS ARE ALLOWED AT A TIME.
ANALOG OUTPUT
(*)14882700A
PCB ASSY
4-20
GND
N.C.
0-10V
ALARM
+5V
PROFIBUS
(*)15166100A
PCB ASSY
GND
TxRx+
RTS
+5V
TxRx-
LOAD CELL #5
LOAD CELL #6
LOAD CELL #7
LOAD CELL #8
JUNCTION BOX (OPTIONAL)
(SAME SPECIFICATIONS AS ABOVE)


AREA
NIZED TEST LABORATORY APPROVED DUST TIGHT
IPERIATE FOR ENVIRONMENTAL PROTECTION IN:
2 GROUPS A,B,C,D
2 GROUPS F&G AND
IUS LOCATIONS.
NON HAZARDOUS
SAFE AREA
PANTHER CASE TO CUSTOMER ENCLOSURE
BONDING WIRING BY INSTALLER.
SYSTEM POWER SOURCE
TO 100/120/240 VAC 50/60 HZ
POWER SOURCE IN ACCORDANCE
WITH NEC AND LOCAL REGULATIONS.
BLUE
BROWN
GRN/YEL
ENCLOSURE GROUNDING CONDUCTOR TO
A TRUE EARTH GROUND BY INSTALLER.
TB1
SETPOINT I/F
TB2
(*)14880500A
PCB ASSY
TB3
EARTH GROUND
TO 100/120/240 VAC 50/60 HZ
SETPOINT INTERFACE CIRCUITRY
RIGID METAL CONDUIT(S) AS REQD.
IMPORTANT! ALL INCENDIVE CIRCUITRY MUST BE
CONTAINED WITHIN APPROVED STEEL CONDUIT.
BLU
SHLD
CLEAR
TO ALLEN BRADLEY PLC RIO NETWORK
DEVICE.
RED
CLR
BLK
TO CUSTOMER'S MODICON MODBUS +
EQUIPMENT.
3 CONDUCTOR SHIELDED CABLE - 50 FEET MAXIMUM.
TO CUSTOMER'S RS232 REMOTE
RECEIVE/TRANSMIT DEVICE.
Vt= 5.5VDC
It= 166 mA
Co=600 uF
Lo= 0.22 mH
2 CONDUCTOR SHIELDED CABLE - 50 FEET MAXIMUM.
TO CUSTOMER'S PASSIVE
4-20 mA RECEIVE DEVICE.
OR/AND
TO CUSTOMER'S REMOTE
0-10V RECEIVE DEVICE AND (OR)
ALARM CIRCUITRY.
CUSTOMER MUST USE VOLTAGES
SUPPLIED BY THE METTLER TOLEDO
PANTHER INSTRUMENT.
Vt= 13.6 Vdc
It= 289 mA
Co= 3.0 uF
Lo= 0.7 mH
IF THE ALARM OUTPUT IS USED,
NO EXTERNAL VOLTAGE MAY
BE USED OTHER THAN THE
+5V PROVIDED HERE.
GND
TxRx+
RTS
+5V
TxRx-
TO CUSTOMER'S PROFIBUS L2-DP
MASTER ACCORDING TO DIN 19 245.
Vt= 5.5 Vdc
It= 171 mA
Co= 218 uF
Lo= 0.45 mH
SHIELD CONNECTION TO
PANTHER OR CUSTOMER
ENCLOSURE. (TYP.)
NON INCENDIVE
PARAMETERS
GENERAL NOTES
1.) Installation must be in accordance with National Electrical code.
(NFPA 70, Article 504) and ANSI/ISA-RP12.6
2.) Maximum nonhazardous voltage for all components is 250V ac/dc.
3.) All I/O ports identified as (**) are incendive and contain energy excessive to
intrinsic safe operation. They must have wiring installed in approved conduit.
4.) All part numbers with (*) may have a letter prefix.
5.) Nonincendive Field Circuit Connection Rules:
Vmax ≥ Vt, Imax ≥ It, Ca ≥ Ci + Ccable, La ≥ Li + Lcable.
6.) No changes may be made to this drawing without FMRC approval.
NOTICE
THIS ITEM USED IN AGENCY
APPROVED PRODUCT. DO NOT
CHANGE DRAWING WITHOUT
AGENCY APPROVAL. FM
RECORD OF CHANGES
DO NOT SCALE DRWG.
METTLER TOLEDO
PANEL MOUNT PANTHER (PTPM), DIV II DETAILS
155907R
SHEET 1 OF 1

For your notes

METTLER TOLEDO
1900 Polaris Parkway
Columbus, Ohio 43240
Phone (US and Canada) 800-786-0038
614-438-4511
(All Others) 614-438-4888
Internet: www.mt.com

P/N: 15791600A

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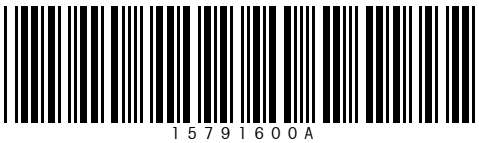

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1900 Polaris Parkway
Columbus, Ohio 43240
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