PANTHER®

Terminal

User's Guide

D14945800A
(4-02)

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	

PROBLEM:

UNACCEPTABLE DELIVERY:

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

OUT OF BOX ERROR:

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

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

Comments:

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

☐ Retail ☐ Light Industrial ☐ Heavy Industrial ☐ Systems

RESPONSE: Include Root Cause Analysis and Corrective Action Taken.

FOLD THIS FLAP FIRST

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POSTAGE WILL BE PAID BY ADDRESSEE

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

Please seal with tape.

DECLARATION OF CONFORMITY
Konformitätserklärung
Déclaration de conformité
Declaración de Conformidad
Conformiteitsverklaring
Dichiarazione di conformità

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

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

Model/Type: **Panther**

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

in combination with a weighing platform produced by Mettler-Toledo is in conformity with the following directives and standards.

Council directive on the harmonization of the laws of the Member states:	**standards:**
relating to non-automatic weighing instruments (90/384/EEC) amended by directive (93/68/EEC)	EN 45501:1992
relating to electromagnetic compatibility (89/336/EEC) amended by directive (93/68/EEC; 92/31/EEC)	EN 55022, B EN 50082-2
relating to electrical equipment designed for use within certain voltage limits (73/23/EEC amended by directive (93/68/EEC)	EN 60950

Worthington, Ohio USA, November, 2000 **Mettler-Toledo, Inc.**

Darrell Flocken, Manager - Weights & Measures
Office of Weights and Measures

Original issue:	January, 1997	
Revised:	February, 1997	added compliance to Non-automatic Weighing Instrument Directive
	November, 2000	added compliance to Heavy Industrial Immunity, EN 50082-2

INTRODUCTION

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

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

METTLER TOLEDO
1900 Polaris Parkway
Columbus, Ohio 43240
Phone (US and Canada): (614) 438-4511
Phone (International): (614) 438-4888

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.

This manual correctly describes the operation and functionality of the PANTHER terminal containing software versions as follows. The software number is displayed during the power-up sequence.

Model	Software Number	Revision
PANTHER Analog	G14891100A	L7.1
PANTHER Analog	C15379000A	L3.1
PANTHER DigiTOL	E14988700A	L5.1

METTLER TOLEDO RESERVES THE RIGHT TO MAKE REFINEMENTS OR CHANGES WITHOUT NOTICE.

PRECAUTIONS

READ this manual BEFORE operating or servicing this equipment.

FOLLOW these instructions carefully.

SAVE this manual for future reference.

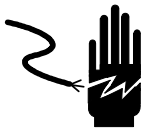
DO NOT allow untrained personnel to operate, clean, inspect, maintain, service, or tamper with this equipment.

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

CALL METTLER TOLEDO for parts, information, and service.

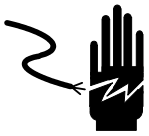
WARNING

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

DISCONNECT ALL POWER TO THIS UNIT BEFORE REMOVING THE FUSE OR SERVICING.

CAUTION

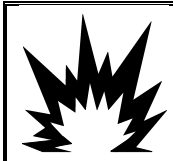
BEFORE CONNECTING/DISCONNECTING ANY INTERNAL ELECTRONIC COMPONENTS OR INTERCONNECTING WIRING BETWEEN ELECTRONIC EQUIPMENT ALWAYS REMOVE POWER AND WAIT AT LEAST THIRTY (30) SECONDS BEFORE ANY CONNECTIONS OR DISCONNECTIONS ARE MADE. FAILURE TO OBSERVE THESE PRECAUTIONS COULD RESULT IN DAMAGE TO OR DESTRUCTION OF THE EQUIPMENT AND/OR BODILY HARM.

CAUTION

OBSERVE PRECAUTIONS FOR HANDLING ELECTROSTATIC SENSITIVE DEVICES.

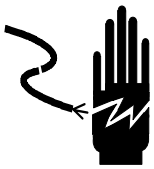
WARNING

IN ORDER TO USE THE PANTHER PANEL-MOUNT TERMINAL IN AN AREA CLASSIFIED AS CLASS I, II AND 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

THE PANTHER 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!

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.

CONTENTS

1 Introduction

This manual describes basic operation of the PANTHER Industrial Scale Terminal. All installation and servicing should be provided only by authorized personnel.

Overview

The PANTHER terminal combines simple operation with the flexibility to be used with a wide range of analog and DigiTOL® load cell scale bases while providing fast, digitally filtered response to changes in weight. It is available in two models.

The stainless steel harsh environment model is suitable for use on a desktop or other flat surface. It can easily be mounted on a wall using the same mounting bracket used for desktop applications, or can be attached to a METTLER TOLEDO column. A panel-mount model is also available. In addition, drawings are available for replacing existing METTLER TOLEDO Model 8510 panel-mount terminals. Single terminal panel-mount kits are available for replacing instruments utilizing a "standard 19-inch" panel opening.

Standard Features

PANTHER terminals come with the standard hardware features listed on the following pages.

Hardware Features Both Models

- Seven-digit numeric vacuum fluorescent display
- Six-position keypad
- Screw terminal wiring connectors
- Single board design
  - Zero and tare weight power loss protection
  - Standard analog load cell input for up to eight 350Ω cells
  - COM1 bi-directional serial port (RS-232)
  - One discrete input; three discrete outputs
  - Option expansion connector

Hardware Features Harsh Model (PTHN)

- Sleek fabricated stainless steel enclosure
- Stainless steel stand for desk or wall mounting
- Power cord (6 feet/2 meters)
- No exterior screws or latches (except for stand mounting)
- Five LEDs for indication of over / under condition or setpoint status

Hardware Features
Panel-Mount Model (PTPN)

- Extruded aluminum chassis; Stainless steel front bezel
- Certified TYPE 4, 4X, 12
- Three LEDs for indication of over / under or setpoint status

Software Features
Both Models

- Scale functions
  - DigiTOL® and DigiTOL J-Box support
  - Analog (powers up to eight 350 Ohm cells) scales supported
  - 10,000 d display resolution
  - Pushbutton tare
  - Tare interlock
  - Automatic tare above threshold
  - Automatic clear to gross below threshold
  - Units switching (lb, kg, g, oz, lb/oz, troy oz, dwt, tons, metric ton)
  - Automatic zero maintenance
  - Motion detection and indication
  - Zero indication in either gross or net mode
  - TraxDSP™ vibration rejection
- Operator interface
  - Consistent and intuitive operator interaction
  - Program block setup menu
- Memory functions
  - Storage of zero and tare values during power-loss conditions
  - Storage of four target weights for use in over/under applications
  - Storage of two setpoint values with preact in setpoint applications
- Serial data functions
  - Three pre-defined output templates
  - Output on demand
  - Print initiation from keyboard, remote ASCII command, or discrete input
  - Automatic print at setpoint
  - Print interlock to prevent duplicate prints
  - Continuous data output
  - Serial command input
- Discrete I/O functions
  - One programmable input
    - Print
    - Tare
    - Zero
    - Switch Units
  - Three discrete outputs
    - Setpoint 1 & 2 Coincidence
    - Zero Tolerance

Optional Features

The analog option can be installed in either enclosure style, but is not available when the PANTHER terminal is used with more than four analog load cells.

- Analog output - both models.
  The analog output option provides one 16-bit analog output port with user configurable output ranges of 4 to 20 mA, or 0 to 10 VDC plus a status output. Connection is via a terminal strip.
- High-level discrete output – panel-mount model only.
  The high-level discrete output option provides high-level AC interfacing (28 to 280 VAC) for the standard low-level discrete outputs. Up to three output blocks can be installed as part of the panel enclosure. AC connections are made via terminal strips on the back panel. Other versions of output blocks (DC) can be installed to control DC voltages rather than AC voltage.
- PLC network

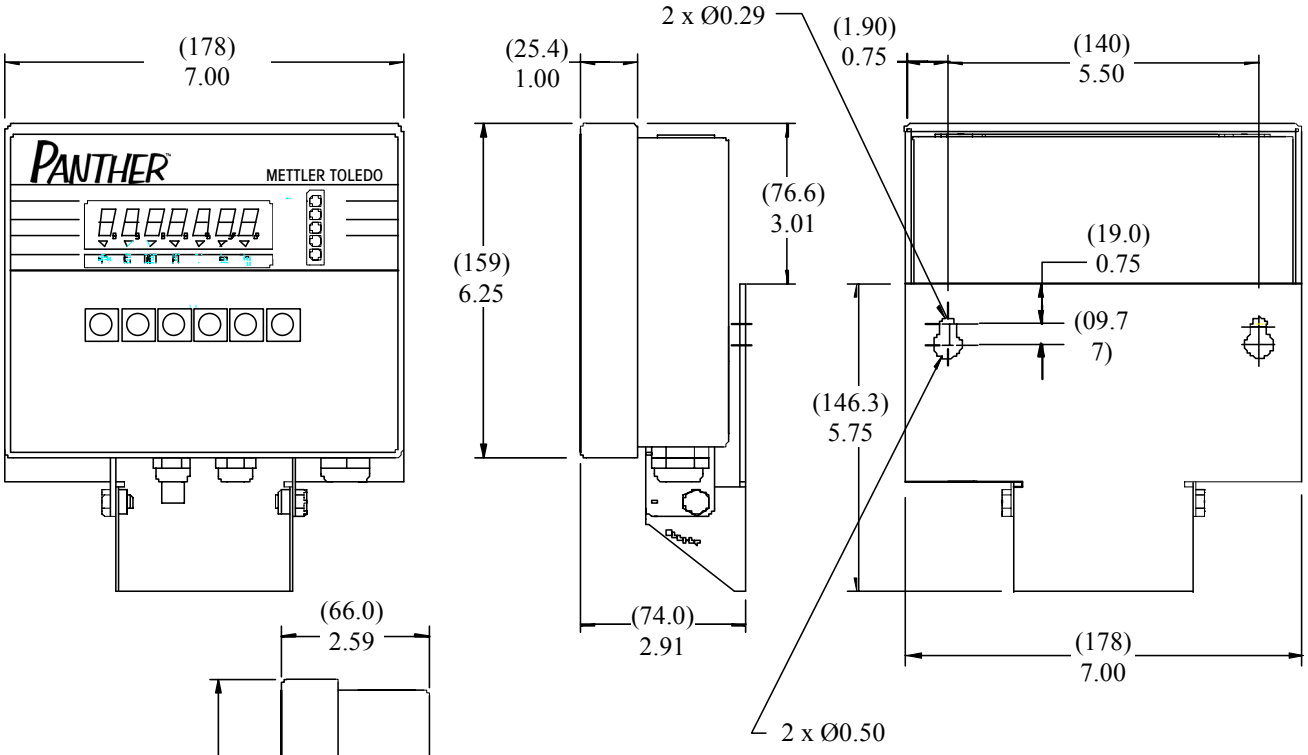
Specifications

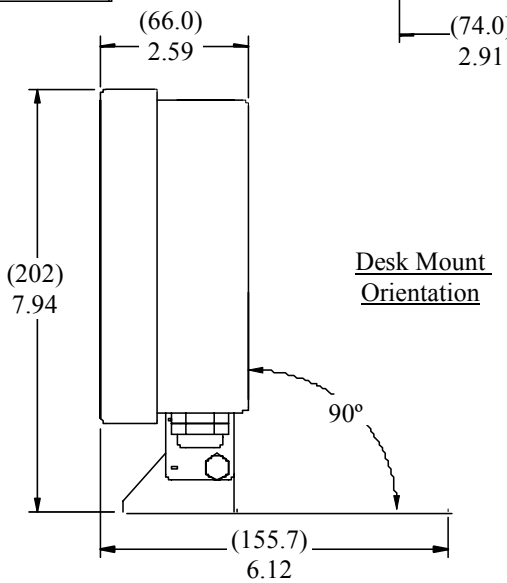
Physical Dimensions

The PANTHER harsh environment model measures:

- 6.25 in. (159 mm) high × 7.00 in. (178 mm) wide at the front of the terminal
- 2.59 in. (66 mm) deep

Wall Mount Orientation



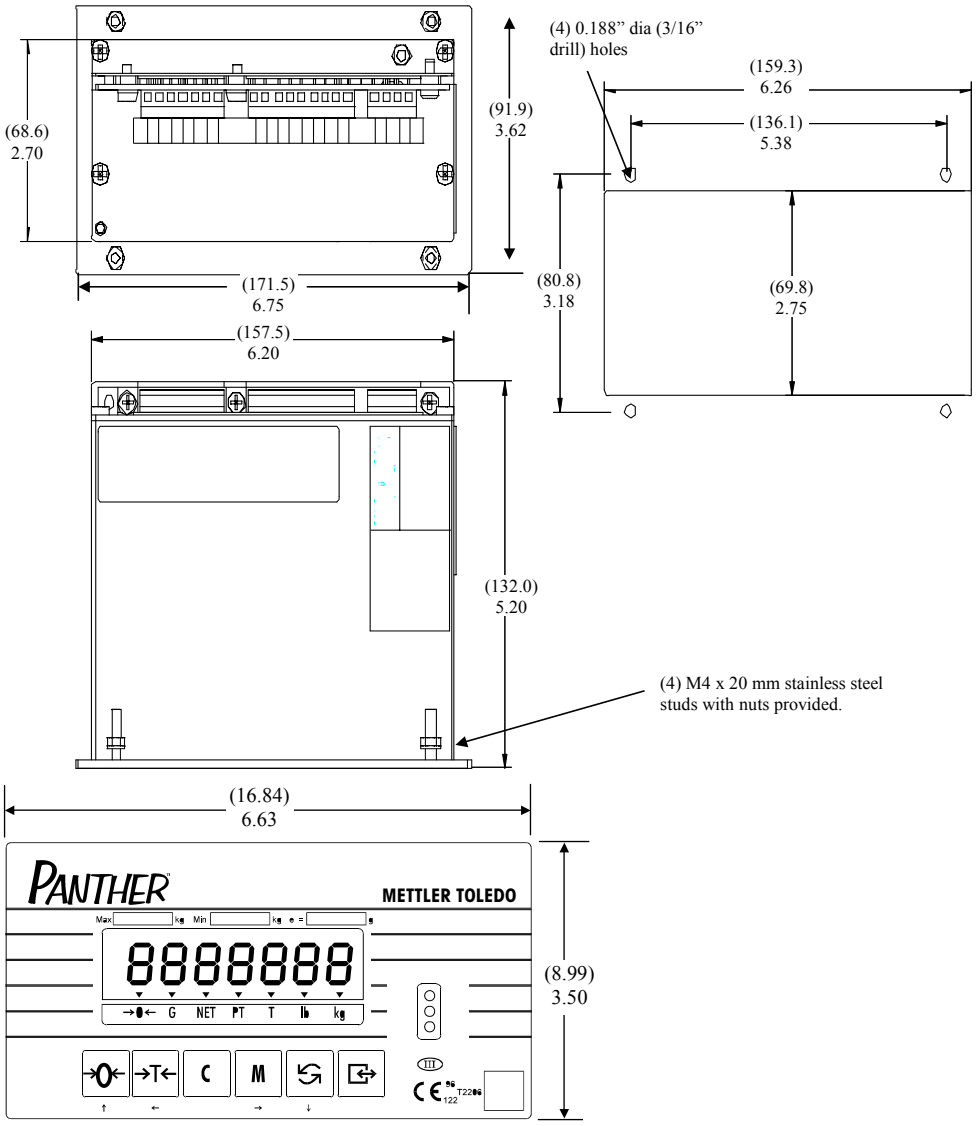


Desk Mount Orientation

The PANTHER panel-mount model measures:

- 3.62 in. (92 mm) high × 6.75 in. (171 mm) wide at the front of the terminal
- 5.20 in. (132 mm) deep (The optional high-level optos add 1.25 in. (31.7 mm) to the depth.)

Refer to the following diagram when installing the panel-mount terminal.



Power Requirements

The PANTHER terminal is provided with a universal power supply, which operates from 85 to 264 VAC and with a line frequency of 49 to 63 Hz. Power consumption is 12 Watts maximum. Power is applied via a terminal strip (on the panel-mount version) or a permanently attached line cord (on harsh enclosure version).

The integrity of the power ground is important for 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 assures extraneous electrical noise pulses are minimized. The power line for the PANTHER must not be shared with equipment such as motors, relays, or heaters that generate line noise.

To confirm ground integrity, a commercial branch circuit analyzer like an ICE model SureTest ST-1D (or equivalent) is recommended. This instrument uses a high amperage pulse to check ground resistance. It measures the voltage from the neutral wire to the ground connection and will provide an assessment of the line loading. Instructions with the instrument provide guidelines about limits that assure good connections. Visual inspections and a query of the user will provide information about equipment sharing the power line. If adverse power conditions exist, a dedicated power circuit or power line conditioner may be required.

When the PANTHER panel-mount terminal is installed within an enclosure which resides within an area classified as Division 2, special AC wiring requirements must be met. These requirements are shown on METTLER TOLEDO control drawing 155907R in the PANTHER Panel-Mount Terminal Division 2 Installation Guide (*15791600A).

Controller PCB

The PANTHER terminal has one discrete input and three discrete outputs (5 Volts DC). Each discrete output can sink up to 20 mA maximum. The maximum current that can be drawn from the +5 Volts DC supply is 15 mA.

The discrete input for PANTHER is programmable as tare, print, zero, and unit switching. Three outputs are used for setpoint coincidence and zero tolerance or zone outputs.

The PANTHER terminal's COM1 serial port is an RS-232 transmission port. COM1 will also support receipt of an ASCII command set which will cause the indicator to Clear, Tare, Zero, Print or change Units. COM1 can also be configured as an SICS Host Interface port.

Connections to the Controller PCB are made using screw terminal strips. The wire size range for these terminal strips is 16 to 22 AWG.

Temperature and Humidity

The PANTHER terminal can be operated between a temperature range from 14 to 113 °F (–10 to 45 °C) at 10% to 95% humidity, noncondensing.

The storage temperature range is from –40 to 140 °F (–40 to 60 °C) at 10% to 95% humidity, noncondensing.

Display and Keyboard

The PANTHER panel-mount terminal's front panel is made of stainless steel and is certified to TYPE 4, 4X and 12 specifications. The harsh environment terminal's front panel is fabricated stainless steel.

The display is a seven-character, seven-segment, 0.5 in. (12.7 mm) vacuum fluorescent, numeric display. The keyboard consists of a flat membrane switch covered with a domed polyester overlay. The display lens on both models is polyester. Lenses for both models have hardcoating to resist damage to the lens.

Environmental Protection

The harsh environment PANTHER terminal enclosure is designed as dust-tight and splash-proof enclosure.

The keyboard/display enclosure for the panel-mount version is certified TYPE 4, 4X and 12 requirements for dust-tight and splash-proof applications when properly installed in an appropriate enclosure. The rest of the panel-mount enclosure meets TYPE 1 requirements and provides no protection against dust or water ingress.

The PANTHER panel-mount terminal has been approved by Factory Mutual for use in areas classified as Class I, II and III, Division 2, Groups A, B, C, D, F and G when installed in a dust-tight enclosure and connected per METTLER TOLEDO control drawing 155907R.

Hazardous Areas

The PANTHER panel-mount terminal has been approved by Factory Mutual for use in areas classified as Class I, II and III, Division 2, Groups A, B, C, D, F and G when installed in a National Testing Laboratory approved dust-tight enclosure and connected per METTLER TOLEDO control drawing 155907R. Refer to the PANTHER Panel-Mount Terminal Division 2 Installation Guide (*15791600A) for additional details.

WARNING

TO USE THE PANTHER PANEL-MOUNT TERMINAL IN AN AREA CLASSIFIED AS CLASS I, II AND 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 terminal is not intrinsically safe but is capable of operation with load cells and bases in a Division 1 or Zone 1 hazardous area when used with approved barriers or when purging is utilized. Contact your authorized METTLER TOLEDO representative for information about hazardous area applications for the PANTHER terminal.

WARNING

THE PANTHER 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.

Standards Compliance

UL and cUL Listing

The PANTHER terminal has been tested and complies with UL 1950. The PANTHER terminal is designed to meet CSA standard C22.2 No 143-1975, Office Machines. It carries the UL and cUL labels.

Weights and Measures Approval

The PANTHER terminal meets or exceeds requirements for Class III/IIIL, 10000e NTEP division accuracy requirements in accordance with the National Institute of Standards and Technology (NIST) Handbook 44. A certificate of conformance 96-125A2 has been issued under the National Type Evaluation Program (NTEP) of the National Conference on Weights and Measures.

The PANTHER terminal was submitted for approval to the Canadian Weights and Measures Laboratories in Canada. After evaluation, the PANTHER terminal was found to meet and/or exceed requirements for Class III, 10000d rating and approval AM-5162 was issued by statutory authority of the Minister of Industry, Science and Technology of Canada.

The PANTHER terminal was submitted for approval to The Nederlands Meetindtituut (NMi) in the Netherlands. After evaluation, the PANTHER terminal was found to meet and/or exceed the requirements for a Class III, 5000 division and a Class IIII, 1000 division weighing instrument. The NMi issued EC type-approval certificate TC2969 Rev. 4 in accordance to Council Directive 90/384/EEC on Non-automatic Weighing Instruments.

The PANTHER terminal was submitted for approval to National Standards Commission (NSC) in Australia. After evaluation, the PANTHER terminal was found to meet and/or exceed requirements for Class III, 3000d rating and a Supplementary Certificate of Approval S353 was issued by the NSC in accordance to DOCUMENT 100 for Non-automatic Weighing Instruments.

Conducted and Radiated Emissions (RFI)

The PANTHER terminal meets or exceeds FCC docket 80-284 for conducted and radiated emissions requirements as a Class A digital device.

Radio Frequency Interference Susceptibility

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

RFI Susceptibility			
	U.S.A.	Canadian	EC
Radio reference Frequency	Field Strength	Transmitted Power at Specified Distance	Field Strength
27 MHz	3 volts/meter	4 Watts at 2 meters	N/A
144 MHz	N/A	N/A	N/A
169 MHz	3 volts/meter	N/A	N/A
464 MHz	3 volts/meter	4 Watts at 2 meters	N/A
27-1000 MHz	N/A	N/A	3 volts/meter

AC Power Line Voltage Variation

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

AC Power Line Voltages						
Specification	AC Line Voltage			Line Frequency in Hz		
Line Voltage Variation	Minimum	Nominal	Maximum	Minimum	Nominal	Maximum
NIST H-44	100	120	130	59.5	60	60.5
Canadian	108	120	132	58.8	60	61.2
OIML-SP7/SP2	102 187 204	120 220 240	132 242 264	58.8 49.0 49.0	60 50 50	61.2 51 51

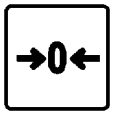
NOTES

2

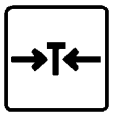
PANTHER Terminal Operations

This chapter provides general information that an operator will need to become familiar with the terminal and to perform its functions.

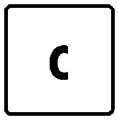
PANTHER Keypad



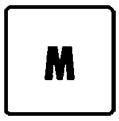
The **Zero** keys are used to compensate for small changes in weight when the scale platform is empty. These changes in weight are most often caused by material spilling onto the weighing platform. To zero the indication of weight, press this button.



The **Tare** key is used to subtract the weight of the object on the scale platform from subsequent indications of weight. This is most often the weight of an empty container. Once this value is tared, the indication of weight will change to indicate net weight. To tare the scale, place an empty container on the scale and press this button.

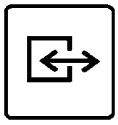


The **Clear** key is used to clear a previously entered tare value. To clear the tare value, press this button. The indication of weight will return to the gross mode, showing the total weight of the objects on the scale platform.



The **Memory** key is used to access setpoint or target weight values. Operator access to these values must be enabled in the set up mode. Refer to the advanced operation section for details on how to change these values.

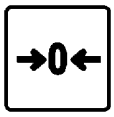
The **Select** key allows the operator to switch between the primary and secondary-weighing units. To change weighing units, press this button. Each initiation of this button will either switch the display units from the primary to the secondary units, or back to the primary from the secondary. A cursor will change indicating which units are being displayed. This key is also used in the setup and programming modes to select between yes and no replies and to change displayed values.



The **Transact (Print)** key is used to initiate a serial output of the weight data. To request this transmission of data, press this button. The actual format of the data string is determined in set-up. This key is also used to accept a response to a setup or programming question.

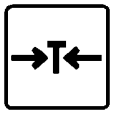
Operator Functions

Zero the Scale



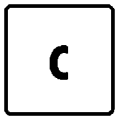
If the scale platform is empty and the NET cursor is NOT lit, press the zero button to compensate for any material, which may be on the scale platform. The zero button is limited to compensating weight that is between ±2% (or ±20%, if programmed accordingly) of the scale's weighing capacity.

Tare Operations



To determine the weight of the material inside a container, weighing in the NET mode:

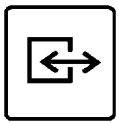
- Place an empty container on the scale platform.
- Press the **Tare** button.
- Fill the container or place a filled container of equivalent weight on the scale.
- The terminal will display the net weight and the NET cursor will light.



To clear a tare weight:

- With the scale in the net weight mode (a tare weight previously entered), press the **Clear** key.
- The net cursor will go out and the net weight will be displayed.

Print Operations



To print a weight:

- If desired, tare the weight of an empty container using the steps described above.
- Place a load on the weighing platform.
- Press the **Transact** (Print) key.

Advanced Operator Functions

Entry of Setpoint Data During Normal Operation

The PANTHER terminal is capable of two coincidence setpoints with preact control. While setpoint values are always entered as positive values, the controls can be set up to turn outputs off when either a positive value (feeding into something on the scale) or a negative weight value (discharging from the scale into a container) is entered. The setpoint control may be used with optional high-level outputs available with the panel-mount version. These high level outputs may be used in conjunction with external devices provided by other parties.

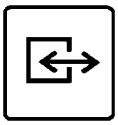
A setpoint is a target value that you can use to stop a feeding or discharging device. When the weight on the scale exceeds the setpoint value, the setpoint output is turned off.

In addition to the setpoint values, the PANTHER terminal provides the ability to enter and use preact values. Preact is used to anticipate the amount of material which may be between the feeder and the scale when the feeder is turned off, or may be used to anticipate the reaction time of the feeder or gate.

A zero tolerance value is also available. This can be used as a control check to make sure the hopper or scale has returned to within a preset tolerance of zero before the next operation may begin.

The setpoint mode of operation must be enabled during setup. Refer to the PANTHER Terminal Technical Manual for details.

With the scale in the normal operating mode, press the **Memory** key.

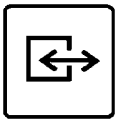


The display shows **[SP1 0]** indicating that you do NOT wish to enter or adjust the first setpoint value.

Press the **Transact** (Print) key if you do NOT wish to enter or adjust this setpoint value and to proceed to the next step (adjusting the value of the next setpoint).

OR

Press the **Select** key to change the display to **[SP1 1]** indicating that you DO wish to enter or adjust the first setpoint value.

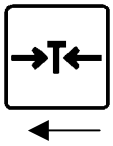


OR

Press the **Transact** (Print) key to verify your selection or press the **Select** key to change the response back to a 0 or no.

The display will now show the current value stored as setpoint value. The most significant digit blinks indicating it may be adjusted. You may press the **Clear** key to clear the current entry.

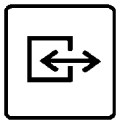
To move the active digit to the right, use the **Memory** key. A small right arrow appears below the key.



To move the active digit to the left, use the **Tare** key. A small left arrow appears below the key.

To increase the value of the flashing digit (for example, to change from 3 to 4), use the **Select** key.

Use the above keys to change the digits representing the setpoint value. You may use the **Memory** (move right) and **Tare** (move left) keys and the **Select** (increase number) key in any combination you wish.

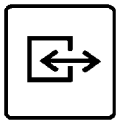


When the proper setpoint value is displayed, press the **Transact** (Print) key to accept your entry.

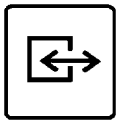
[SP2 0] is now displayed, indicating you do NOT wish to edit the value for setpoint 2.

If you wish to adjust the value of setpoint 2, follow the steps described above.

Press the **Transact** (Print) key to move on to adjusting preact values. This capability must have been enabled in setup.

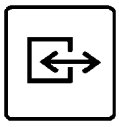


Preact is the amount of material, which may be suspended in the feeder immediately after a signal to close or turn off a feeder is sent. The preact amount is entered as a value relative to the setpoint. For example, if you wish to have a final weight on the scale of 100 kg, and the material which will fall from the feeder as it stops will add another 2 kg, set your preact value for 2. When the material settles on the scale, the final weight should be 100 kg.



The display now shows **[P1 0]** indicating that you do NOT wish to adjust or enter a preact value for setpoint 1. If you do NOT wish to adjust the preact value for setpoint 1, press the **Transact** (Print) key.

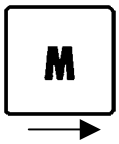
Or, press the **Select** key to change the display to **[P1 1]** indicating that you DO want to enter or adjust the preact value for the first setpoint.



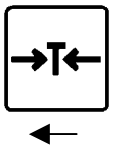
OR

Press the **Transact** (Print) key to verify your selection or press the **Select** key to change the response back to a 0 or no.

The display will now show the current value stored as the preact value. The most significant digit blinks indicating it may be adjusted. Press the **Clear** key to clear the current value.



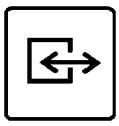
To move the active digit to the right, use the **Memory** key. A small right arrow appears below the key.



To move the active digit to the left, use the **Tare** key. A small left arrow appears below the key.

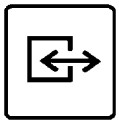
To increase the value of the flashing digit (for example to change from 3 to 4), use the **Select** key.

Use the above keys to change the digits representing the preact value. You may use the **Memory** (move right) and **Tare** (move left) keys and the **Select** (increase number) key in any combination you wish



When the proper preact value is displayed, press the **Transact** (Print) key to accept your entry.

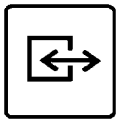
[P2 0] is now displayed, indicating that you do NOT wish to edit the preact value for setpoint 2



If you wish to adjust the preact value, follow the steps described above.

Press the **Transact** (Print) key to move on to adjusting the zero tolerance range. This capability must have been enabled in setup.

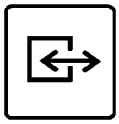
[L 0] is now displayed, indicating that you do NOT wish to adjust the zero tolerance value.



If you do NOT wish to adjust the zero tolerance value, press the **Transact** (Print) key or press the **Select** key to change the display to **[L 1]** indicating that you DO wish to adjust the zero tolerance value.

OR

[F5.4 x] is displayed, where x is either 0,1, or 5 representing that number of increments.



Press the **Transact** (Print) key to verify your selection or press the **Select** key to change the response to another value.

OR

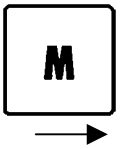
The display will now return to the normal weighing mode.

Entry of Target Over/Under Values During Normal Operation

The PANTHER terminal is designed as an Over/Under terminal. In this mode of operation, a series of LEDs are used to indicate if a weight on the scale platform is within acceptable tolerances of a target weight. Four different target values may be stored within the PANTHER terminal and recalled by the operator.

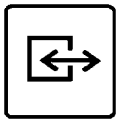
In addition to the specific target values, high and low accept zones may be specified. These zones may be determined as a percentage of the target value or as a number of increments of weight as related to the target value. The high and low accept zones define the acceptable tolerances around a target value. The high and low zones define the point at which the item being checked is outside of an acceptable tolerance around a target weight.

Setting of target values and tolerance values must be enabled in the setup of the PANTHER terminal. This mode of operation must be enabled during setup. Refer to the PANTHER Terminal Technical Manual for details.



With the scale in the normal operating mode, press the **Memory** key.

The display shows **[SP1 0]** indicating that you do NOT wish to enter or adjust the first target value.

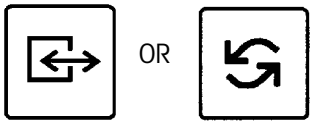


Press the **Transact** (Print) key if you do NOT wish to enter or adjust this target value and to proceed to the next step (adjusting the value of the next target).

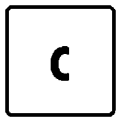
OR

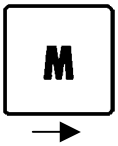
Press the **Select** key to change the display to **[SP1 1]** indicating that you DO wish to enter or adjust the first target value.

Press the **Transact** (Print) key to verify your selection or press the **Select** key to change the response back to a 0 or no.

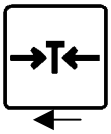


The display will now show the current value stored as target value. The most significant digit blinks indicating it may be adjusted. Press the **Clear** key to clear the current value.





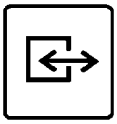
To move the active digit to the right, use the **Memory** key. A small right arrow appears below the key.



To move the active digit to the left, use the **Tare** key. A small left arrow appears below the key.

To increase the value of the flashing digit, for example to change from 3 to 4, use the **Select** key.

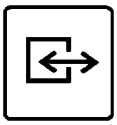
Use the above keys to change the digits representing the target value. You may use the **Memory** (move right) and **Tare** (move left) keys and the **Select** (increase number) key in any combination you wish.



When the proper setpoint value is displayed, press the **Transact** (Print) key to accept your entry.

[SP2 0] is now displayed, indicating that you do NOT wish to edit the value for target 2.

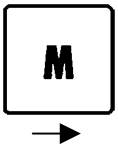
If you wish to adjust the value of target 2, follow the steps described above. Repeat for targets 3 and 4.



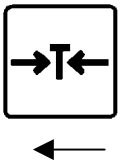
Press the **Transact** (Print) key to move on to adjusting high and low zone values. This capability must have been enabled in setup.

Acceptable tolerance zones may be set for both high and low weights. Access to these values by the operator must be enabled in the setup of the PANTHER terminal. If this has not been enabled, the following steps will not be available to the operator.

The display now shows **[F5.8.1 xx]** indicating the current high zone value. This value may be between 0.0 and 4.0% of the target value or within 0 to 15 increments of target value. Selection of percentage or weight units is determined in setup. The display will now show the current value stored as the high zone value. The most significant digit blinks indicating it may be adjusted.



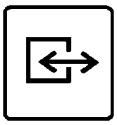
To move the active digit to the right, use the **Memory** key. A small right arrow appears below the key.



To move the active digit to the left, use the **Tare** key. A small left arrow appears below the key.

To increase the value of the flashing digit (for example, to change from 0 to 1), use the **Select** key.

Use these keys to change the digits representing the high zone value. You may use the **Memory** (move right) and **Tare** (move left) keys and the **Select** (increase number) key in any combination you wish



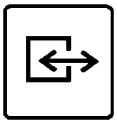
When the proper high zone value is displayed, press the **Transact** (Print) key to accept your entry.

[F5.8.2 xx] is now displayed, indicating the current high accept zone value.

If you wish to adjust this value, follow steps 16 - 20 as described above. Otherwise, press the **Transact** (Print) key to move on to the next step.

[F5.8.3 xx] is now displayed, indicating the current low accept zone value.

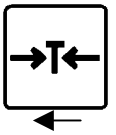
If you wish to adjust this value, follow the steps described above. Otherwise, press the **Transact** (Print) key to move on to the next step.



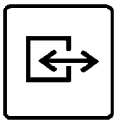
[F5.8.4 xx] is now displayed, indicating the current low zone value.

If you wish to adjust this value, follow the steps described above. Otherwise, press the **Transact** (Print) key to return to the normal weighing mode.

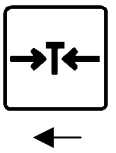
To select a target value to be used, the scale must be at gross zero.



Press the **Tare** key. **[SP1]** is displayed momentarily, and is followed by the current target 1 value.



If you wish to use this target, press the **Transact** (Print) key.



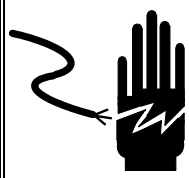
If you wish to use a different value, press the **Tare** key to display the next target.

3 Basic Service Information

Cleaning and Maintenance

You may wipe the PANTHER terminal's keypad and cover with a clean, soft cloth that has been dampened with a mild glass cleaner. Do not use any type of industrial solvent such as toluene or isopropanol (IPA) as it could damage the terminal's finish. Do not spray cleaner directly on the terminal.

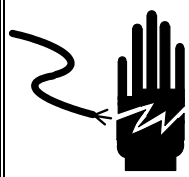
Regular maintenance inspections and calibration by a qualified service technician are recommended.



⚠ WARNING

IF THE KEYBOARD, DISPLAY LENS OR ENCLOSURE IS DAMAGED ON A PANTHER PANEL-MOUNT TERMINAL THAT IS BEING USED IN AN AREA CLASSIFIED AS DIVISION 2, 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 REPLACED BY QUALIFIED SERVICE PERSONNEL. FAILURE TO DO SO COULD RESULT IN BODILY HARM AND/OR PROPERTY DAMAGE.

Installation, Programming and Service

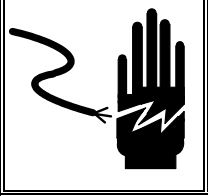


⚠ WARNING

ONLY PERMIT QUALIFIED PERSONNEL TO SERVICE THE TERMINAL. 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.

Information on installing, programming, and servicing the PANTHER terminal is found in the PANTHER Terminal Technical Manual. Only qualified personnel should perform installation, programming, and service. Please contact your local METTLER TOLEDO representative for assistance.

Error Codes



⚠ WARNING

ONLY PERMIT QUALIFIED PERSONNEL TO SERVICE THE TERMINAL. 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.

The following errors codes can be used as a reference should you encounter problems when using the PANTHER terminal. Please remember that qualified personnel should perform all service and maintenance.

Error	Description	Corrective Measures
E1	PROGRAM MEMORY ERROR	Check power supply voltages. Replace Main Logic PCB.
E2	INTERNAL RAM ERROR	Check power supply voltages. Replace Main Logic PCB.
E3	EEPROM MEMORY ERROR	Press the **Clear** key. Check power supply voltages. Reprogram. Recalibrate. Replace Main Logic PCB.
E4	EXTERNAL RAM ERROR	Replace Main Logic PCB.
E7	A/D CIRCUIT MALFUNCTION OR NO ANALOG LOAD CELL CONNECTED	Program for correct load cell type. Check load cells and cables. Check power supply voltages. Replace Main Logic PCB
E8	DigiTOL LOAD CELL COMMUNICATION ERROR	Cycle power. Check load cells and cables. Check power supply voltages. Replace Main Logic PCB.
E9	DigiTOL LOAD CELL OUT OF RANGE	Recalibrate. Replace load cell.
E10	DigiTOL LOAD CELL RAM ERROR	Cycle power. Check power supply voltages. Replace load cell.
E13	DigiTOL LOAD CELL ROM ERROR	Cycle power. Check power supply voltages. Replace Main Logic PCB.
E16	INTERNAL MATH ERROR	Press CLEAR to acknowledge. Unit will reset.
E20	PREACT VALUE IS GREATER THAN SETPOINT VALUE	Clear preact value, then re-enter setpoint value
E32	INSUFFICIENT TEST WEIGHT USED FOR CALIBRATION	Recalibrate using more test weight
E34	TEST WEIGHT EXCEEDS 105% OF CAPACITY	Use less than 105% of capacity Press CLEAR and re-enter
E35	SPAN CALIBRATION ERROR	Recalibrate. If error persists, check programming or replace load cell.
E36	ANALOG LOAD CELL OUT OF RANGE	Recalibrate. Replace load cell
E50	WEIGHT CAN NOT BE DISPLAYED IN ALTERNATE UNITS	Some alternate units combinations are illegal. Choose another scale build or disable alternate units.
E60	STACK OVERFLOW.	Press CLEAR. Unit resets.
EEE	POSITIVE MORE THAN ZERO CAPTURE LIMIT OF 2% OF SCALE CAPACITY	Remove material from scale base. Disable AZM in setup. Cycle power.
-EEE	NEGATIVE MORE THAN ZERO CAPTURE LIMIT OF 2% OF SCALE CAPACITY	Disable AZM in setup. Calibrate scale. Cycle power.
------	NO ANALOG LOAD CELL DETECTED	Check load cell wiring. Replace load cell. Replace Main PCB.

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