PANTHER®

Terminal

User's Guide

B14945800A
(12/98)

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
(614) 438-4511

FCC Notice

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

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

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

PRECAUTIONS

READ this manual BEFORE operating or servicing this equipment.

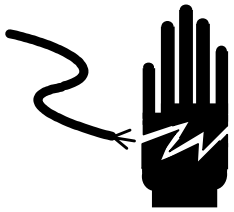
FOLLOW these instructions carefully.

SAVE this manual for future reference.

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

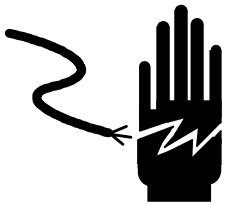
ALWAYS DISCONNECT this equipment from the power source before cleaning or performing maintenance.

CALL METTLER TOLEDO for parts, information, and service.



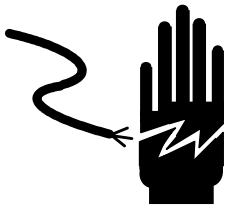
WARNING

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.



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 OR BODILY HARM.

CAUTION

OBSERVE PRECAUTIONS FOR HANDLING ELECTROSTATIC SENSITIVE DEVICES.

Declaration of conformity
Konformitätserklärung
Déclaration de conformité
Declaración de Conformidad
Verklaring de overeenstemming
Dichiarazione di conformitá

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.

CE Conformity / CE-Konformität / Conformité CE

90/384/EU	Nonautomatic Balances and Scales / Nichteselbsttätige Waagen / Balances à Functionnement non automatique
EN45501:1992	Adopted European Standard / Norme Européenne Adoptée / Angenommene Europäische Norm
89/336/EU	EMC Directive / EMU-Richtlinie / Directive concernant la CEM
EN55022, B	Emissions / Funkstörungen
EN50081-1	Immunity
73/23/EU	Low Voltage / Niederspannung / basse tension
EN60950	el. Safety / el. Sicherheit / sécurité el.

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

UL1950	el. Safety / el. Sicherheit / sécurité el. (if UL mark is applied)
C22.2 No. 950-M89	el. Safety / el. Sicherheit / sécurité el. (If cUL mark is applied)
FCC, Part 15, class A	Emissions / Funkstörungen

Darrell Flocken, Manager - Weights & Measures
Office of Weights and Measures
Worthington, Ohio USA
Revised February 1997 (added compliance to Non-automatic Weighing Instrument Directive)

according to EN45014

CONTENTS

1 Introduction

This manual describes basic operation of and servicing for the PANTHER Industrial Scale Terminal, a high performance basic capability weighing instrument. The PANTHER terminal has been designed to meet the needs of simple weight indicating applications, over/under manual checkweighing applications, and high speed batch processing applications.

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.

Ease-of-Installation

Multi-Voltage Power Supply - The PANTHER terminal utilizes a universal power supply which can be used with 100, 120, 220 or 240 VAC sources, meeting global requirements. The harsh enclosure unit is shipped with an integral power cord. To receive the appropriate plug for the installing location, use the appropriate country finish code. The panel mount units are shipped without a power cord since panel installations vary so widely. A terminal strip is used for power connection, giving you the flexibility to tie into a power strip or power terminal block wherever it may be located within or outside of your enclosure.

Simple Mounting - The Panel Mount PANTHER terminal requires only a simple rectangular panel cutout and the drilling of four mounting holes. The Harsh Environment (Desk/Wall) PANTHER terminal uses cord grips for quick cable installation and sealing. The bracket included allows you to place the PANTHER terminal on a desktop, mount it to a wall or be attached to a METTLER TOLEDO column.

Terminal Strip Connections - All wiring terminations are made to terminal strips. All connections are clearly marked for load cell, discrete input/output, serial output, and power termination.

Ease-of-Use

Operator Display - The bright vacuum fluorescent display provides easy viewing in even the poorest lighting conditions.

Keyboard - The PANTHER terminal's tactile-feel keyboard has large, easy-to-target keys. The key overlay is constructed of a durable polyester material that resists physical wear and chemical attack. Universal symbols are used on the keys, eliminating the need for translation of key legends.

Flexibility

Configuration - A "program block" menu tree allows the PANTHER to be configured quickly to fit a wide variety of applications. Navigation in the menu tree is simple and consistent: only a few keys are used to access the PANTHER terminal's set-up parameters.

Input and Output - The serial and discrete I/O capabilities provide you with fundamental data output capabilities for connection to printers or process controllers such as DCS or SCADA devices which utilize the METTLER TOLEDO Continuous Output. Discrete input and output allow you to control valves and feeders in processing applications utilizing coincidence setpoints.

Reliability

ISO 9001 Quality - The PANTHER terminal was developed, produced, and tested in a METTLER TOLEDO facility that has been audited and registered according to international ISO 9001 quality standards.

Factory Assembly - The PANTHER terminal can be factory assembled to any available combination of standard and optional features. Factory assembled models will be tested as a system, including all internal functions and external I/O, and shipped ready for installation "out of the box."

Performance Standards - The PANTHER terminal is designed to meet all international weights and measures and electrical safety standards. It also has high immunity to external influences such as radio frequency and electromagnetic interference and static discharge.

Standard Features

The PANTHER terminal comes 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, as are drawings for replacing existing METTLER TOLEDO Model 8510 panel mount instruments. Single instrument panel mount kits are available for replacing instruments utilizing a "standard 19 inch" panel opening. PANTHER terminals come with the following standard hardware features:

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

- Sleek fabricated stainless steel enclosure
- NEMA 4X (IP65) protection
- Stainless steel stand for desk or wall mounting
- Power cord (6 feet/2 meters)
- NEMA 4X (IP65) sealable cord grips
- No exterior screws or latches (except for stand mounting)
- Five LEDs for indication of over / under condition or setpoint status

Hardware Features Panel Model

- Extruded aluminum chassis
- Stainless steel front bezel
- NEMA 4 (IP65) front panel
- Three LEDs for indication of over / under or setpoint status

Software Features Both Models

- Scale functions
  - DigiTOL® and Digital 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 is used with more than four analog load cells.

- Analog output - both models
  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
  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.

Specifications

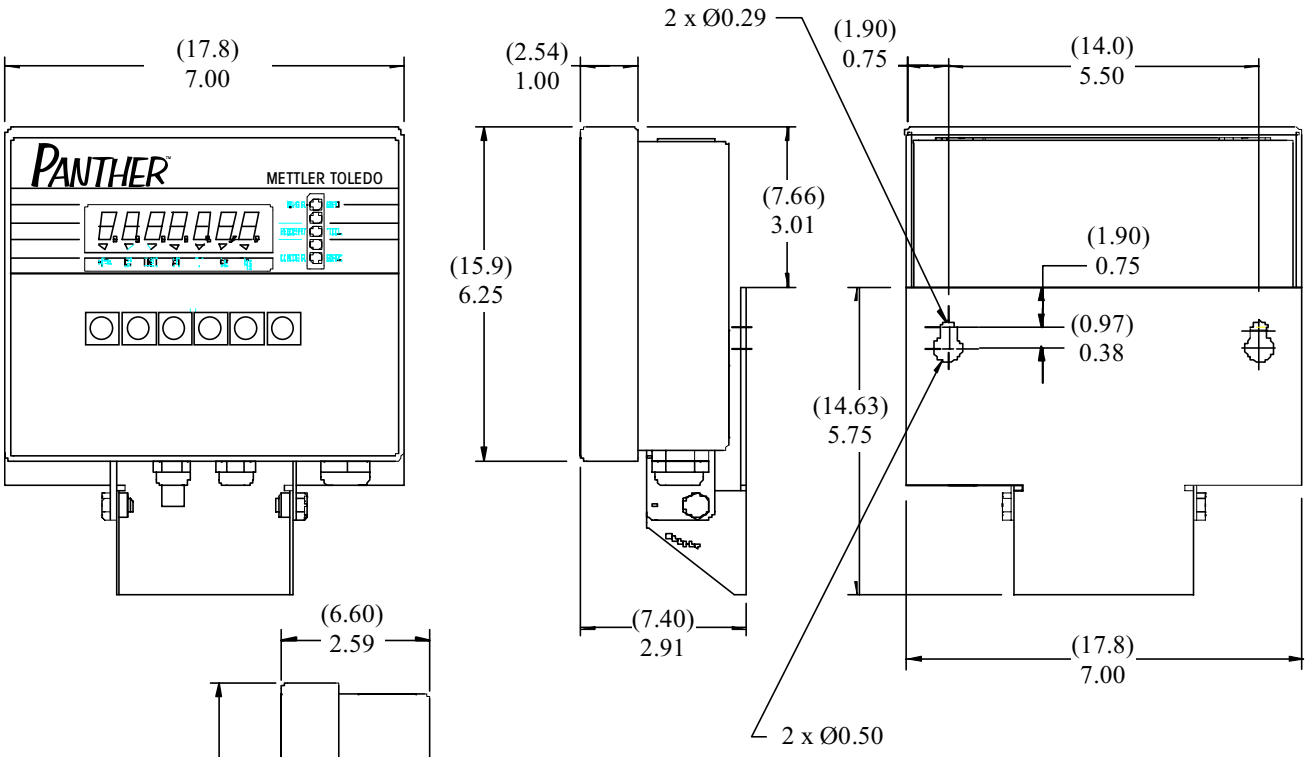
The PANTHER terminal conforms to the specifications listed in this chapter.

Physical Dimensions

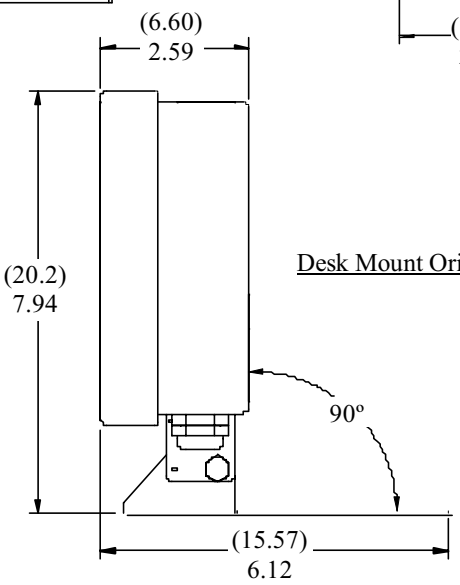
The PANTHER Harsh Environment model measures:

- 6.25 in. (15.9 cm) high × 7.00 in. (17.8 cm) wide at the front of the terminal
- 2.59 in. (6.6 cm) deep

Wall Mount Orientation



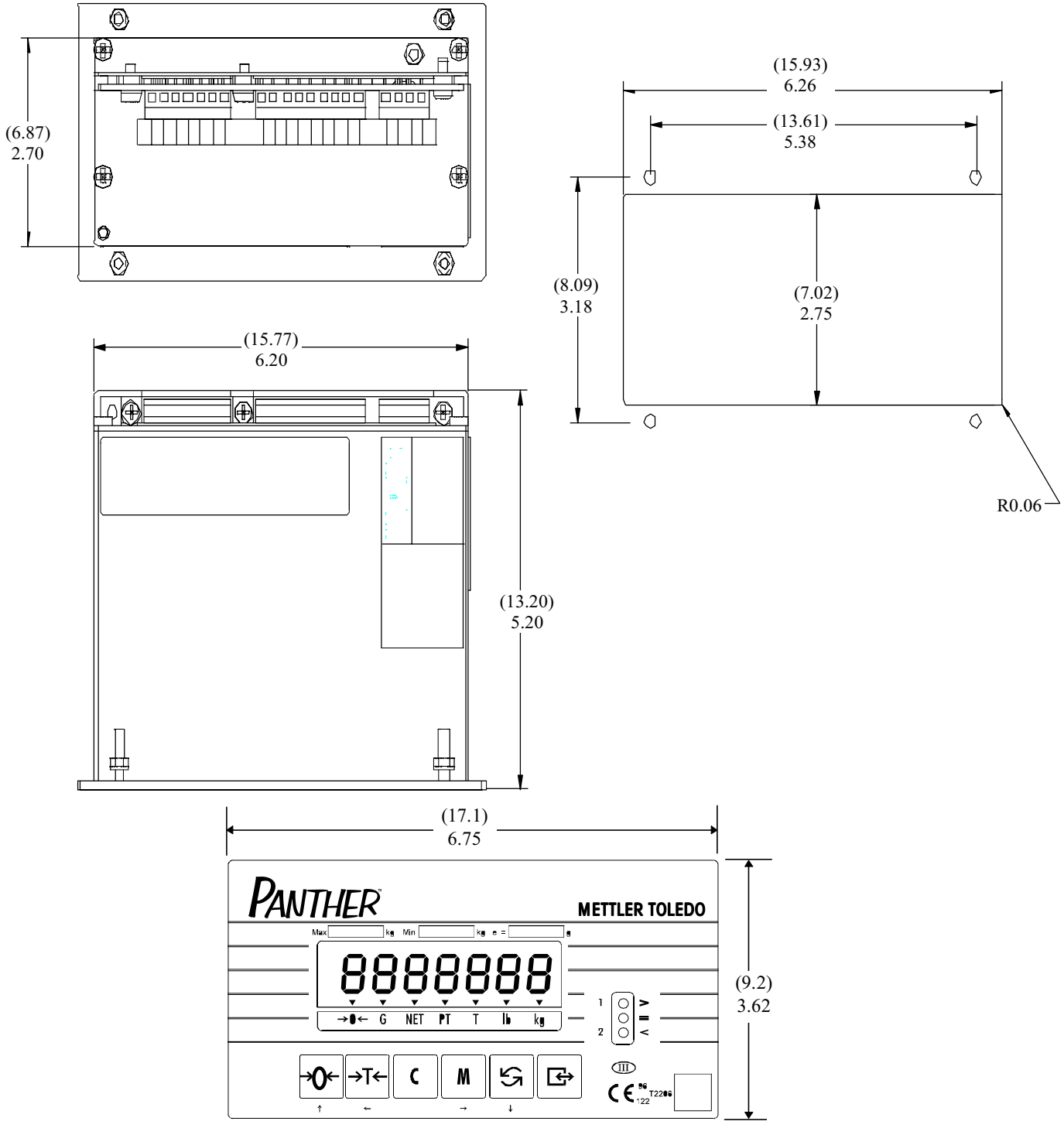
Desk Mount Orientation



The PANTHER Panel Mount model measures:

- 3.62 in. (9.2 cm) high × 6.75 in. (17.1 cm) wide at the front of the terminal
- 5.20 in. (13.2 cm) deep (the optional high level optos add 1.25 in. [3.17 cm] to the depth)

Refer to the following diagram when installing the Panel Mount PANTHER.



Power Requirements

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

The integrity of the power ground for equipment is important for both safety and dependable operation of the PANTHER 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 assure extraneous electrical noise pulses are minimized. It is important that equipment does not share power lines with noise generating equipment like heavy load switching, motor starter circuits, RF thermal heaters, inductive loads and the like.

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 gives guidelines about limits that assure good connections. Visual inspections and a query of the user will provide information about equipment sharing the power line.

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

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.

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 are 23 to 16 AWG.

Display and Keyboard

The PANTHER Panel Mount front panel is made of stainless steel sealed to NEMA 4 (IP65) specifications. The Harsh Environment front panel is fabricated stainless steel, and when locked onto the rear enclosure, is sealed to NEMA 4X (IP65) specifications.

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 Panel Mount and Harsh Environment display lens is polyester. Lenses for both models have hardcoating to resist damage to the lens.

Temperature and Humidity

The PANTHER 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.

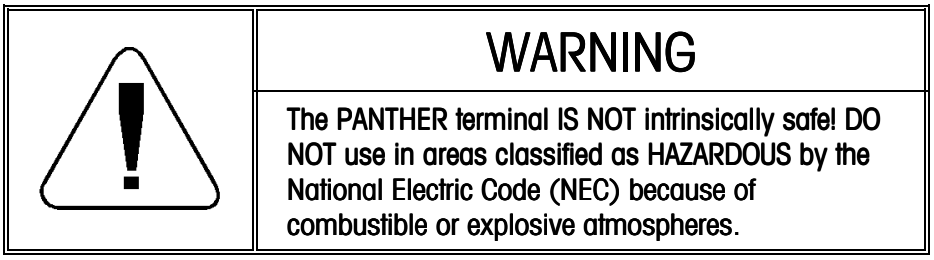
Environmental Protection

The Harsh Environment enclosure meets NEMA 4X (IP65) requirements for a dust-tight and splash-proof enclosure.

The keyboard/display enclosure for the panel mount version meets NEMA 4 (IP65) requirements for dust-tight and splash-proof applications when properly installed in an appropriate enclosure. The rest of the panel mount enclosure meets NEMA 1 (IP30) requirements and provides no protection against dust or water ingress.

Hazardous Areas

The PANTHER is not intrinsically safe! The PANTHER terminal is capable of operation with scales and barriers located in a hazardous area. Contact your Authorized METTLER TOLEDO representative for information about hazardous area applications.



Standards Compliance

The following compliance standards apply to the PANTHER terminal.

UL and cUL Listing

The PANTHER terminals have been tested and comply with UL 1950. They carry the UL and cUL labels.

CSA Certification

The PANTHER terminal is designed to meet CSA standard C22.2 No 143-1975, Office Machines.

Weights and Measures Approval (U.S.)

The PANTHER terminal meets or exceeds requirements for Class III. It has been approved by NTEP of the National Conference on Weights and Measures under COC number 96-125A1.

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 refference 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

Ordering Information

Please refer to the following Factory Number Reference chart when ordering equipment. A detailed description of each designation is given to help you determine accurately the specifications for the desired model.

PANTHER TERMINAL MODEL CONFIGURATION Ex: PTPN-1800-000						
PT	XX	X	X	X	X	XXX
Terminal	Enclosure & Display Type	Scale Type Option	Output Option	High Level Output Option	Software Option	Destination Market
PANTHER Terminal	PN = Panel, numeric display HN = Harsh Environment (Desk/Wall), numeric display	1 = Analog Scale Interface 3 = DigiTOL Scale Interface	0 = No Option 8 = Analog Output (not available when used with more than 4 analog load cells	0 = No High Level Setpoint Option 1 = 3 Optos (Panel Only)	Always = 0	Country specific codes available

Enclosures

Harsh Enclosure (HN)

This enclosure provides NEMA 4X (IP65) protection. A keyboard and display are standard. The enclosure is a fabricated stainless steel box with a removable cover. A unique latching design provides a secure seal and a sleek appearance. The unit is designed to sit on a flat surface or can be mounted to a wall or to METTLER TOLEDO columns. The bottom of the enclosure contains grip bushings to seal all cables entering the enclosure.

Panel Enclosure (PN)

This enclosure is designed to be mounted into a panel. Four threaded studs are used to mount the unit through a flat panel. The front panel and associated panel clamping mechanism are designed to provide a NEMA 4 (IP65) seal and accommodate a panel thickness from 16 to 11 gauge.

Numeric Display

The front of the PANTHER terminal contains a single seven-character vacuum fluorescent display with a domed keyboard on a stainless steel front housing. The fluorescent display is a seven-digit, 0.5 in. (12.7 mm) high display that can indicate weight values in standard use or display recalled information, errors, and other messages. Each of the seven digits has a decimal point/comma and an annunciator associated with it. The

enunciators under the display are illuminate to indicate gross or net weights, a preset tare value, the center of zero, motion.

The keyboard is designed to give the operator positive feedback to key depression. The keyboard universally understood symbols for functions including Memory, Tare, Select, Clear, Zero, Enter/Print, and Function. These keys allow access to setup and other scale functions.

The harsh enclosure version includes five multi-colored LEDs. These are used to indicate over or under tolerance conditions for manual checkweighing applications. In setpoint applications, these LEDs indicate the status of the individual setpoints. The panel mount version includes three LEDs which indicate similar conditions.

Accessories

Analog Output

The PANTHER terminal offers an optional Analog Output port for output ranges of 4 to 20 mA or 0 to 10 VDC, plus a status indicator. This output uses a 16 bit D/A converter for a very precise output. The output status is an optically isolated, open collector type with a 30 volt maximum limit. The Analog option can be installed in either enclosure style, but is not available when the PANTHER is used with more than four analog load cells.

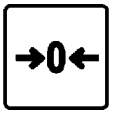
High Level Discrete Output

The High Level Discrete Output option provides high level AC interfacing (28 to 280 VAC) for use with the standard low level discrete outputs. Three output blocks can be installed on the rear of the panel enclosure. AC connections are made via terminal strips on the rear panel. Other versions of output blocks can be installed to control DC voltage rather than AC voltage. The high level discrete output is available only for the panel enclosure.

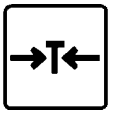
2 PANTHER Terminal Operations

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

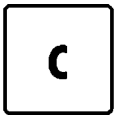
PANTHER Keypad



The **Zero** key is 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.



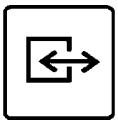
The **Tare** key is used subtract the weight of the object on the scale platform from subsequent indications of weight. This is most often the weight of an empty container. Once this value is "tared," the indication of weight will change to indicate net weight. To tare the scale, place an empty container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

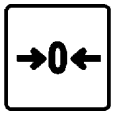
The **Select** key allows the operator to switch between the primary and secondary weighing units. To change weighing units, press this button. Each initiation of this button will either switch the display units from the primary to the secondary units, or back to the primary from the secondary. A cursor 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.

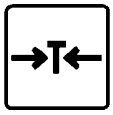
Operator Functions

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



Determine the weight of the material inside a container, weighing in the NET mode

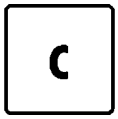
Place an empty container on the scale platform

Press the Tare button

Fill the container or place a filled container of equivalent weight on the scale

The indicator will display the net weight and the NET cursor will light.

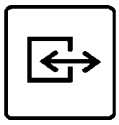
Clearing a tare weight:



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

Printing 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.

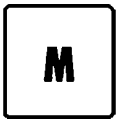
Advanced Operator Functions

Entry of Setpoint Data During Normal Operation

The PANTHER terminal is provided with the capability 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). The setpoint control may be used with optional high level outputs available with the PANTHER Panel Mount version. These high level outputs may be used in conjunction with external devices that may be provided by other parties.

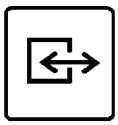
A setpoint is a target value that you may wish to use to stop a feeding or discharging device. When the weight on the scale exceeds the setpoint value, the setpoint output is turned off. In addition to the setpoint values, the PANTHER terminal provides the ability to enter and use preact values. Preact 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 Technical Manual for details).



With the scale in the normal operating mode, press the M (Memory) key.

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

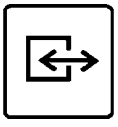


Press the Transact (Print) key if you **do NOT** wish to enter or adjust this setpoint value and to proceed to the next step (adjusting the value of the next setpoint) .

OR

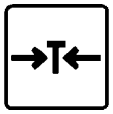
Press the Select key to change the display to "SP1 1" indicating that you DO wish to enter or adjust the first setpoint value.

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


OR


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 C to clear the current entry.

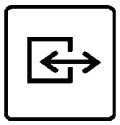
To move the active digit to the right, use the M (Memory) key (a small right arrow appears below the key).



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.

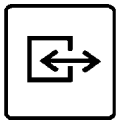
Use the above keys to change the digits representing the setpoint value. You may use the Memory (move right) and Tare (move left) keys and the Select (increase number) key in any combination you wish.



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

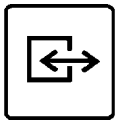
"SP2 0" is now displayed, indicating that you **do NOT** wish to edit the value for setpoint 2

If you wish to adjust the value of setpoint 2, follow steps 3 - 9 as described above.



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

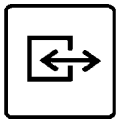
Preact is the amount of material which may be in suspension immediately after a signal to close or turn off a feeder is sent. The preact amount is entered as a value relative to the setpoint. For example, if you wish to have a final weight on the scale of 100 kg, and the material which will fall from 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

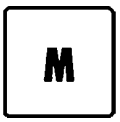
Press the Select key to change the display to "P1 1" indicating that you DO wish to enter or adjust the preact value for the first setpoint.



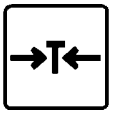
OR

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 C to clear the current value.



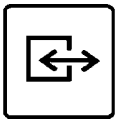
To move the active digit to the right, use the M (Memory) key (a small right arrow appears below the key).



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.

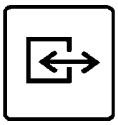
Use the above keys to change the digits representing the preact value. You may use the Memory (move right) and Tare (move left) keys and the Select (increase number) key in any combination you wish



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

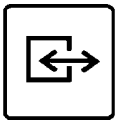
"P2 0" is now displayed, indicating that you **do NOT** wish to edit the preact value for setpoint 2

If you wish to adjust the preact value, follow steps 13 - 19 as 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.

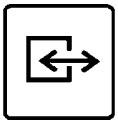


If you **do NOT** wish to adjust the zero tolerance value, press the Transact (Print) key

OR

Press the Select key to change the display to "L 1" indicating that you DO wish to adjust the zero tolerance value.

"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.

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" indicator. 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.

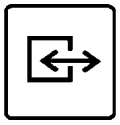
In addition to the specific target values, high and low accept zones may be specified. These zones may be determined as a percentage of the target value or as a number of increments of weight as related to the target value. The high and low accept zones define the acceptable tolerances around a target 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.

This mode of operation must be enabled during setup (refer to the Technical Manual for details)

With the scale in the normal operating mode, press the M (Memory) key.

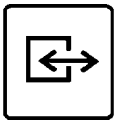
The display shows "SP1 0" indicating that you **do NOT** wish to enter or adjust the first target value.



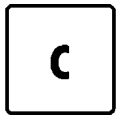
Press the Transact (Print) key if you **do NOT** wish to enter or adjust this target value and to proceed to the next step (adjusting the value of the next target).

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.

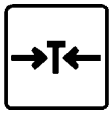

OR


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 target value. The most significant digit blinks indicating it may be adjusted. Press C to clear the current value.

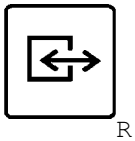
To move the active digit to the right, use the M (Memory) key (a small right arrow appears below the key).



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.



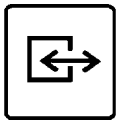
When the proper setpoint value is displayed, press the Transact (Print) key to accept your entry.

R

"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 steps 3 - 9 as described above.

Repeat for targets 3 and 4.



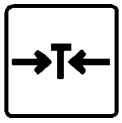
Press the Transact (Print) key to move on to adjusting high and low zone values (this capability must have been enabled in Setup).

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.

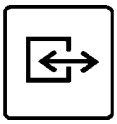
To move the active digit to the right, use the M (Memory) key (a small right arrow appears below the key).



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.

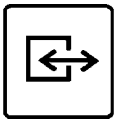
"F5.8.2 xx" is now displayed, indicating the current high accept zone value.

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.

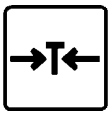
If you wish to adjust this value, follow steps 16 - 20 as described above. Otherwise, press the Transact (Print) key to move on to the next step.

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

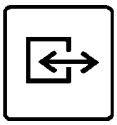


If you wish to adjust this value, follow steps 16 - 20 as described above. Otherwise, press the Transact (Print) key to return to the normal weighing mode.

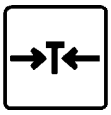
To select a target value to be used, the scale must be at gross zero.



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.

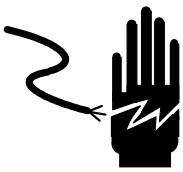
3 Basic Service Information

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.

Installation, Programming and Service

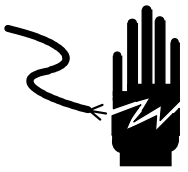


WARNING

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**. Installation, programming, and service should be performed only by qualified personnel. 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 all service and maintenance should be performed by qualified personnel.

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	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.

METTLER TOLEDO

Publication Problem Report

If you find a problem with our documentation, please complete and fax this form to (614) 438-4355

Publication Name: METTLER TOLEDO Panther Terminal User's Guide_____

Publication Part Number: B14945800A_____ Publication Date: 12/98_____

PROBLEM(S) TYPE:	DESCRIBE PROBLEM(S):	INTERNAL USE ONLY
☐ Technical Accuracy	☐ Text ☐ Illustration	
☐ Completeness What information is missing?	☐ Procedure/step ☐ Illustration ☐ Definition ☐ Example ☐ Guideline ☐ Feature ☐ Explanation ☐ Other (please explain below)	☐ Info. in manual ☐ Info. not in manual
☐ Clarity What is not clear?		
☐ Sequence What is not in the right order?		
☐ Other Comments Use another sheet for additional comments.		

Your Name: _____ Location: _____

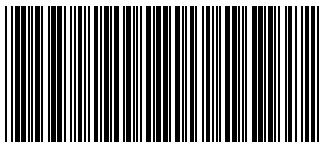
Phone Number: (___)_____

Fax this completed form to Marketing at (614) 438-4355

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

P/N: B14945800A

(12/98)



B14945800A