8624

Remote Display

Technical Manual

902377 00A
2/96

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
Training Center
P.O. Box 1705
Columbus, Ohio 43216
(614) 438-4400

WARNING!

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

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.

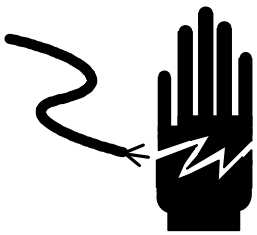
DO NOT allow untrained personnel to operate, clean, inspect, maintain, service, or tamper with this equipment.

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 POWER SOURCE.

DO NOT REMOVE THE GROUND CONNECTION.

WARNING

DISCONNECT ALL POWER TO THIS UNIT BEFORE 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 DISCONNECTION 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.

1 Introduction

The Mettler Toledo Model 8624 Remote Weight Display allows an operator to view weight and status with most Mettler Toledo instruments. Three enclosure types permit the 8624 to be located in control panels, harsh environments such as food processing plants or areas where an explosion hazard exists. Additionally, a remote serial output port is provided allowing connection of other peripheral devices such as printers or interface accessories.

Features

The Display can be setup to display gross, tare, net or accumulated weight information.

Auto recognition mode automatically adjusts to most Mettler Toledo and Masstron instruments without jumper or switch changes.

A multidrop feature allows “chaining” of up to 7 displays in one communication loop.

ASCII input can be 20 mA current loop, RS232, RS422/485 or optional fiber optic.

A serial output port can be programmed to transmit Standard or Toledo Continuous data to a printer or other remote device.

Includes a switching power supply that allows connection to a 90 VAC to 260 VAC, 50 to 60 Hz power source without jumper changes.

The display has (6) bright 0.8 inch high red LED characters with discrete descriptors below them to identify the selected mode. There are three basic model types:

- NEMA 1 type painted sheet metal panel mount (8624 - 0021)
- NEMA 4X type stainless wall mount (8624 - 0011)
- NEMA 7/9 type explosion proof wall mount Class I, Group C, D or Class II, Group E, F, G, Division 1 or 2, temperature rating T6 (8624 - 0031)

System Description

The 8624 display consists of two (2) electronic components as described below:

Power Supply

Input voltages of 90 to 260 VAC 50/60 Hz are reduced to 5 VDC to run the logic and 12 VDC for the ASCII communications I/O. A standard “off-the-shelf” open frame switching type power supply is incorporated to simplify the design and accommodate field replacement.

Logic/Display PCB

This Logic/Display PCB receives serial ASCII data, decodes it and formats the data for presentation on the LED display. This PCB also contains the program DIP switches to change operation modes and printer parameters.

Specifications

The 8624 display consists of two (2) electronic components as described below:

Electrical

The 8624 is designed to work from a 90-260VAC, 49-61Hz power line. Power consumption is less than 10 VA. A plug in terminal block for AC power is provided for all models.

Data Input

The 8624 is capable of receiving continuous data via either RS232, RS422/485, 20 mA current loop at 4800 baud or 9600 baud, or optional Fiber Optics. Data must be 1 start bit, 7 data bits, 1 parity bit, 1 or 2 stop bits. The logic automatically recognizes 4800 or 9600 baud Toledo continuous data (checksum in or out) or Masstron continuous 4800 baud format. The Mettler I.D. series, Mettler SM/PM, or Hi-Speed formats are switch selectable.

Data Output

The 8624 provides data output via RS232, RS422/485, 20 mA active current loop, or optional Fiber Optics. Data output format is either "8142 Demand Printer Format" (300 Baud) or standard Toledo Continuous data as received from the scale indicator (4800/9600 Baud).

20 mA current loop power (+12 VDC) is supplied by the 8624 Display. Data is 1 start bit, 7 data bits, 1 even parity bit, and 1 stop bit (no checksum). See Section 2.9 for interfacing and Section 4.1 for data format details.

RFI Susceptibility

The 8624 meets the requirements of the European Norm. 45501 for RFI susceptibility as listed below with a maximum of one display increment of change when calibrated for recommended builds.

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

Environmental

The front bezel is Mylar ™ (trademark of DuPont). Corrosive environments which react with Mylar must be avoided.

The NEMA 4X (IP66) enclosure is designed for applications requiring a water tight, corrosion resistant stainless steel enclosure. The unit may be installed outdoors in direct contact with weather elements.

The NEMA 7/9 Explosion proof enclosure is constructed of cast aluminum with a glass viewing window. It is hazardous area rated for Class I, Group C, D or Class II, Group E, F, G, Division 1 or 2, N.E.C. temperature rating of T6. It is also rated NEMA 4 for use in wash down environments.

The NEMA 1 General purpose enclosure is constructed of a painted, mild steel and is suitable for panel mount applications. Only the front panel is dust tight.

Temperature Range

The 8624 will operate properly between 0 and +40C (+32 to +104F) with relative humidity between 10% and 95% non-condensing.

The 8624 may be stored between -50 C and +65 C (-50F to +150F) with relative humidity between 10% and 95% non-condensing.

Shipping Weight Specifications

The following are the approximate shipping weight(s) for the various 8624 remote display indicators:

- NEMA 4X 8.5 pounds (18.7 kg)
- NEMA 7/9 15 pounds (33 kg)
- NEMA 1 5 pounds (11 kg)

Physical Dimensions

The following dimensions are for the various 8624 Remote Weight Displays:

- NEMA 4X is housed in a gasketed wall mount enclosure 8" wide x 6.5" high x 3.5" deep.

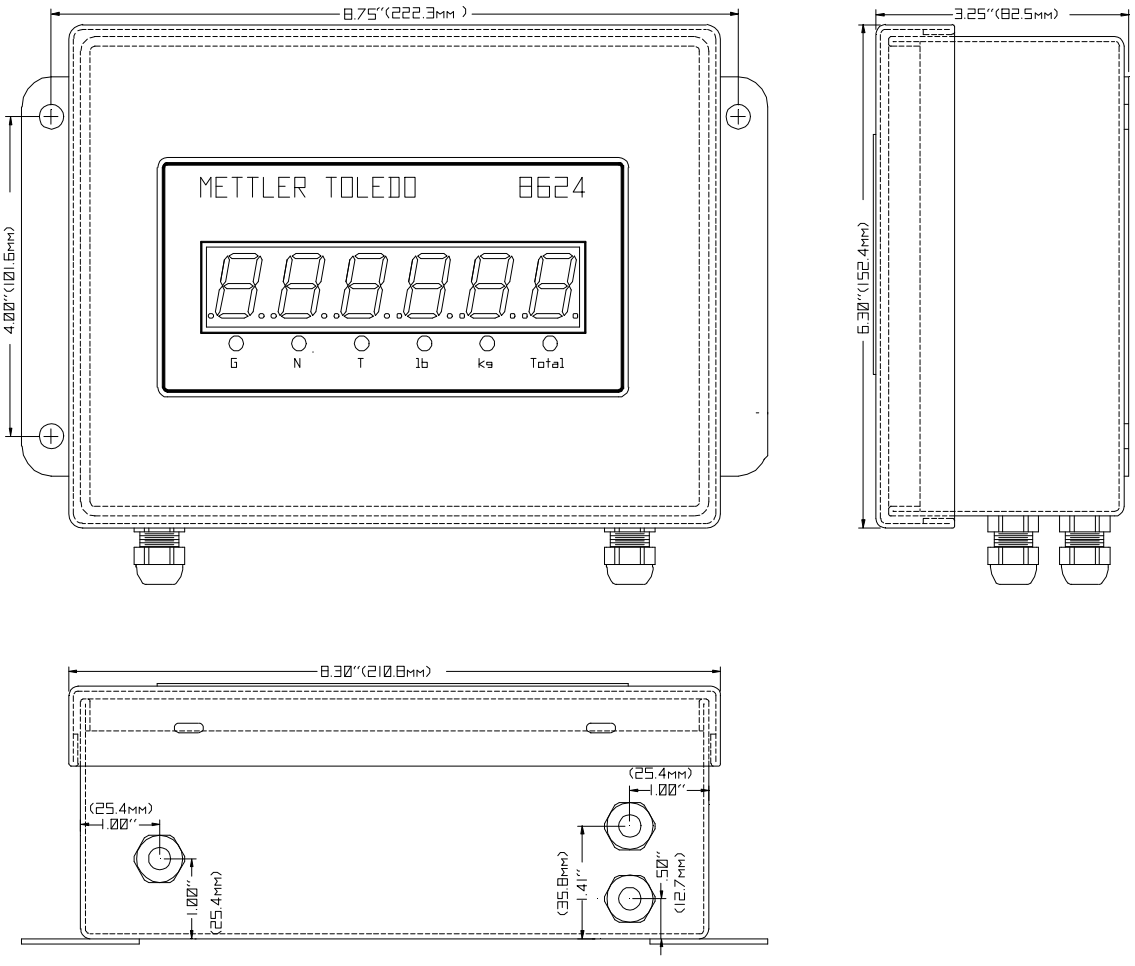


Figure 1 - NEMA 4X Enclosure Dimensions

- NEMA 7/9 unit is housed in an explosion proof enclosure with a front screw on window, 8" wide x 8" high x 5" deep.

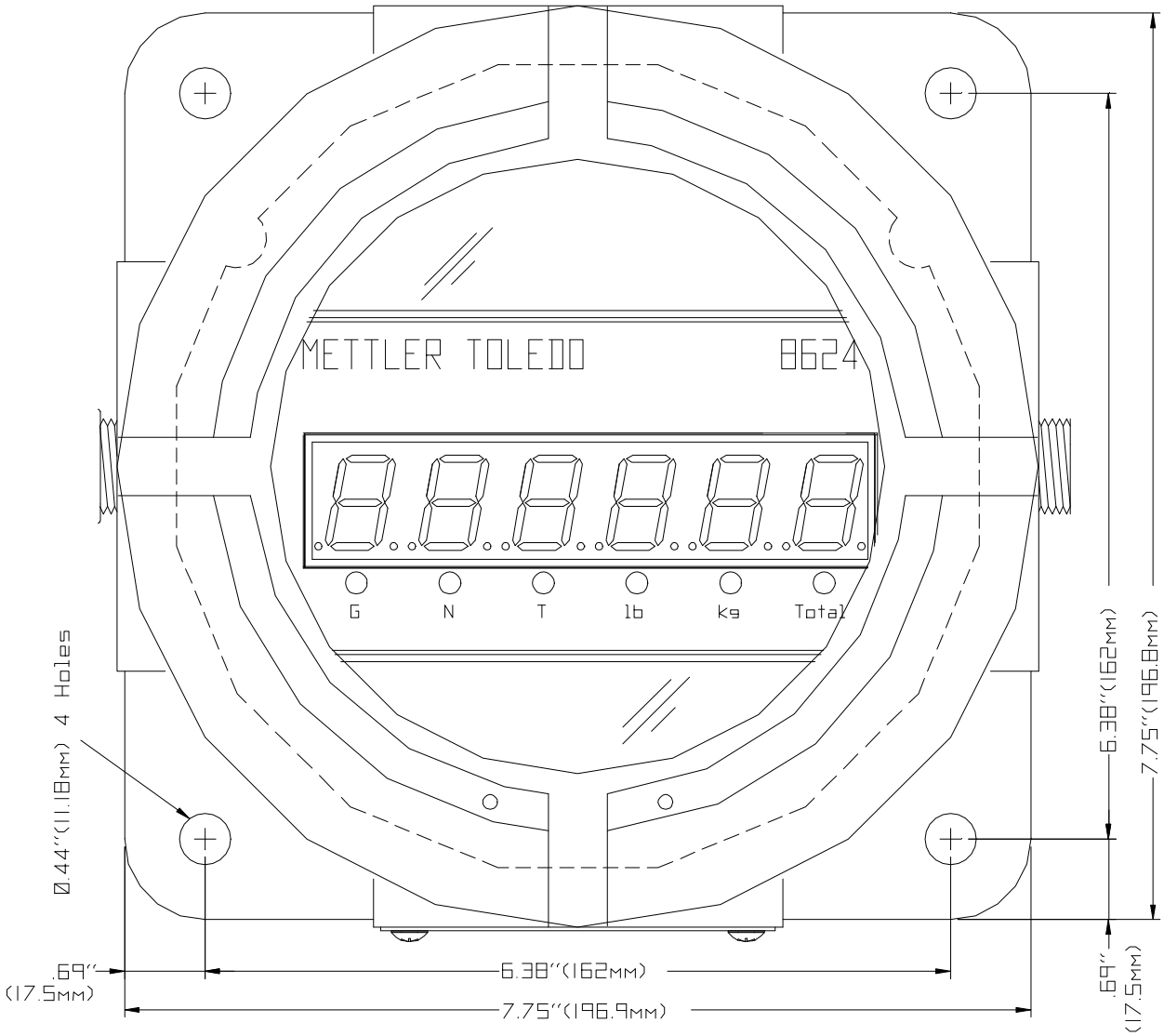
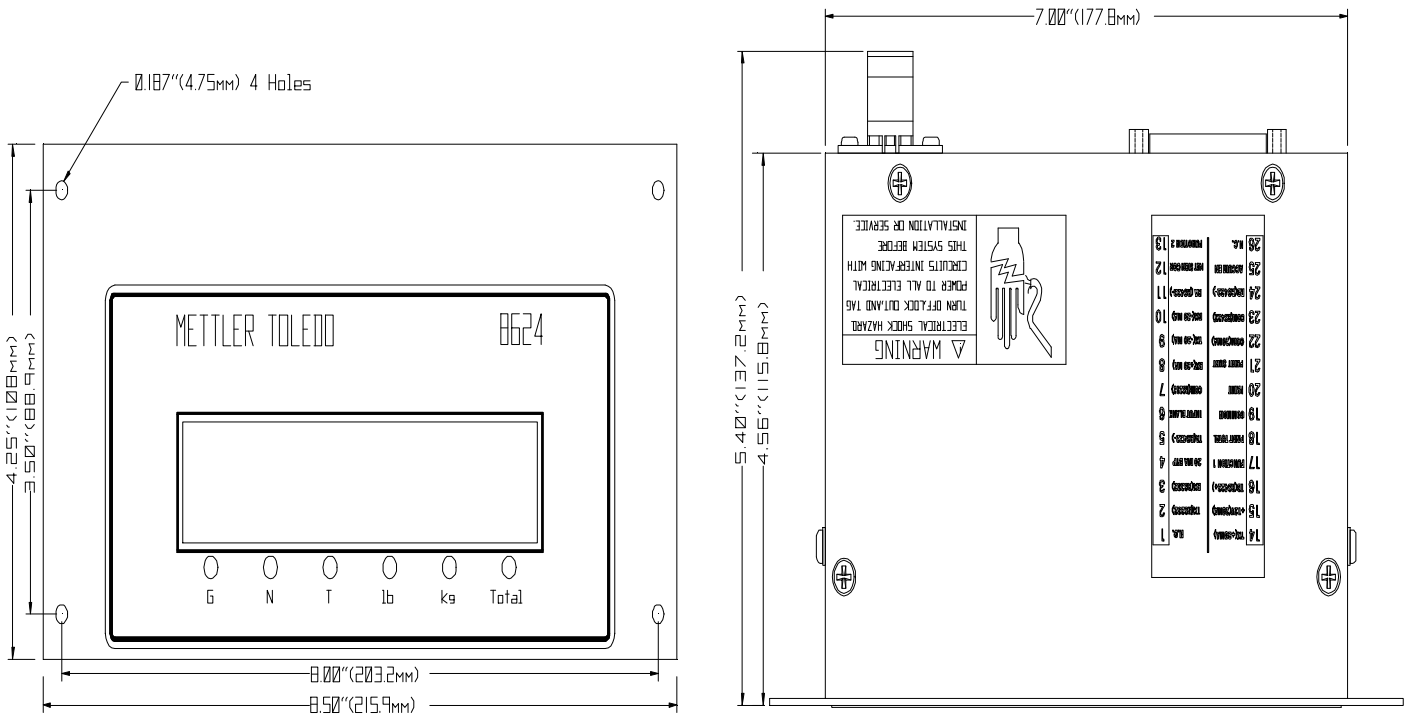


Figure 2 - Explosion Proof Enclosure Dimensions

- NEMA 1 panel mount unit is housed in a sheet metal enclosure 6.25" wide x 6.5" deep x 4" high. The front panel is 4" high x 8.5" wide and requires a 3.75" x 7.62" cutout.



Front View **Top View**

Figure 3 - Panel Mount Dimensions

2 INSTALLATION INSTRUCTIONS

WARNING!

Only permit qualified personnel to service this equipment. Exercise care when making checks, tests and adjustments that must be made with power on. Failure to observe these precautions can result in bodily harm and (or) property damage.

Pon

NOTE: The proper environment enhances the operation and longevity of the scale.

NOTE: Packaging material is recyclable natural fiber with biodegradable adhesives.

Please inspect the package as it is delivered by the carrier.

- If the shipping container is damaged, check for internal damage and file a freight claim with the carrier if necessary.
- If the container is undamaged, open the box, remove the unit and place it on a solid, flat surface.

Please keep the packing material and box in case the display needs to be returned to Mettler Toledo. The 8624 is a precision instrument and may be permanently damaged if not shipped in factory-approved packaging.

Package contents for the 8624 include:

- 8624 Remote Indicator
- Service Manual

The 8624 Remote Indicator is fully assembled at the factory.

To install components other than those installed at the factory, refer to Section 5, Troubleshooting and Maintenance.

1. Locate a suitable environment for the 8624. Refer to Section 1 for environmental specifications.
2. Remove the 8624 by grasping the bottom front and the back of the unit and pulling up out of the box.

3. Remove the packing material from each side of the 8624.

4. The following are specifics for each of the various 8624:

- When inspecting NEMA 4X units, do not discard the gasket sealant tube supplied. It will be used after installation to insure a watertight seal.

- When inspecting NEMA 7/9 units, unscrew the front cover with care. Be sure threads of the lid are lubricated to prevent seizing. If little or no lubricant is on the threads, apply a small amount of petroleum jelly to threads before re-assembly.

Mounting

The 8624 Remote Display has been designed for quick, convenient, easy installation into enclosures (Panel Mount) and to a flat, sturdy vertical surface (Wall Mount and Explosion Proof).

Panel Mounting

Using the Template Dimensions shown below as a guide, cut a hole in the enclosure the 8624 is to be mounted in.

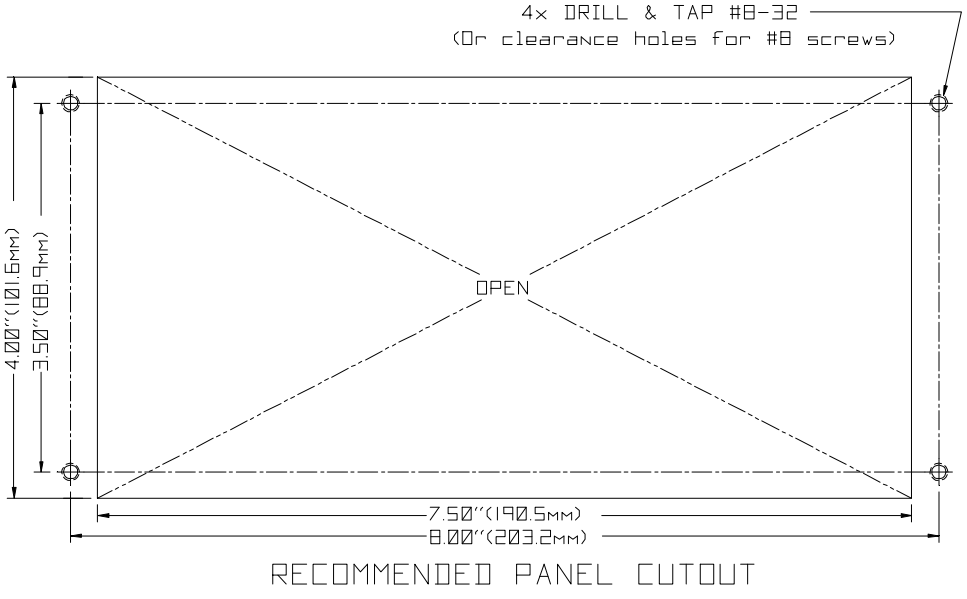


Figure 4 - Panel Cutout Template

Step 1. Slide Display into panel cutout (A) from the front side of the panel.

Step 2. Use (4) 8-32 screws (B) and nuts to attach display to panel.

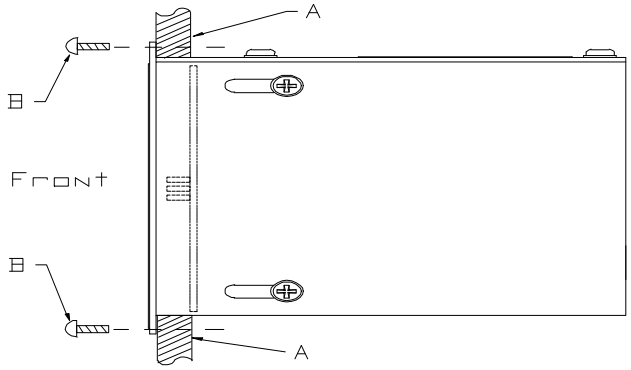


Figure 5 - Panel Screw Location

Wall and Explosion Mounting

The 8624 Wall and Explosion Proof Enclosures are self contained enclosures that can be easily mounted to any flat, vertical surface. Refer to the dimensional information in Chapter 1 for spacing of mounting bolts. Mettler Toledo does not supply the mounting hardware with the unit.

Wiring

The 8624 wiring information is provided on the interconnect drawings located in the cover pouch on the rear cover. To gain access to the inside of the enclosures to accomplish wiring, follow the instructions described next.

NEMA 4 Wall Mount Access and Cable Threading

The 8624 Wall mount NEMA 4X model uses four spring clips to lock the front panel in place and seal the enclosure to NEMA 4X specifications. These clips are attached to the enclosure body. Please refer to Figure 6.

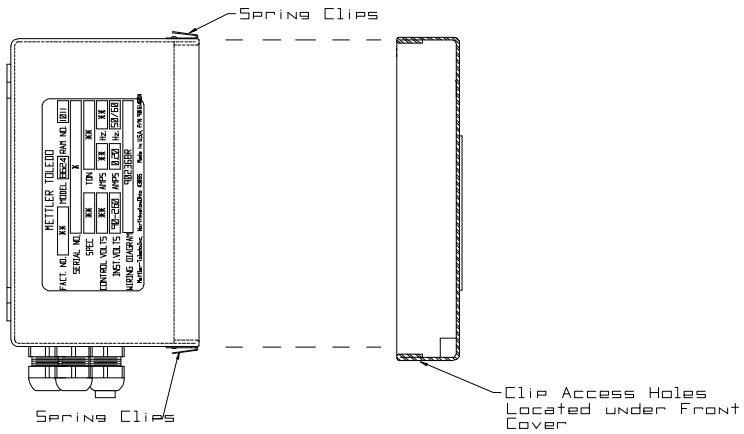


Figure 6 - NEMA 4 Wall Enclosure Internal Access

Access

Squeezing the Front Panel and the Rear Enclosure together will release some of the holding force on the clip, making it easier to "pop" the clip.

To access the PCB for internal wiring and setting switches, separate the front panel from the enclosure. Do this by inserting the tip of a flat-blade screwdriver into each slot one at a time which are located on the bottom of the front panel assembly. Gently push the screwdriver in toward the enclosure until a quiet "pop" is heard. Repeat this process for the other bottom clip. After releasing the bottom of the front panel, lift it out until it completely clears the enclosure.

CAUTION!
THE RELEASE CLIPS BEHIND THE COVER ARE SHARP. DO NOT GRASP THE COVER IN THE VICINITY OF THE SLOTS. CUT FINGERS MAY OTHERWISE RESULT WHEN THE COVER IS REMOVED.

Then squeeze the top of the front panel to the enclosure slightly and raise it to clear the two top clips. The cover will swing down hinged by two wire cables at the bottom.

Cable Threading

Thread cables into the ports as shown in Figure 7. Wire according to External Wiring Diagram Print number 902368 00A which is supplied in the rear cover pouch of this manual.

Note the Option Port is shown dotted. This port is not standard and may be ordered separately or installed by the factory upon request. Refer to Section 5, Option Kits, for part numbers of the kits.

Re-Install Front Panel

To re-install the Front Panel, squeeze the Front Panel and Rear Enclosure together until all four spring clips "pop", locking the panel assembly to the enclosure.

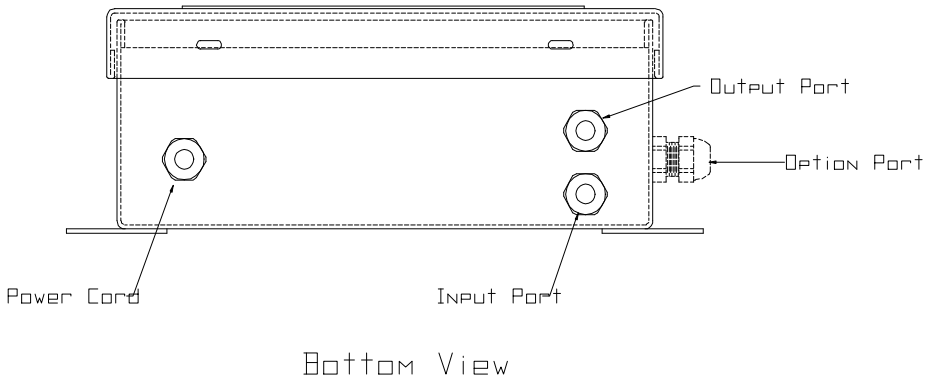


Figure - 7 NEMA 4 Port Designations

Explosion Proof Enclosure Wiring Access

WARNING!
DO NOT REMOVE DISPLAY COVER UNTIL POWER HAS BEEN REMOVED AND AREA HAS BEEN CLASSIFIED AS NON-HAZARDOUS.

To access the wiring terminal blocks in the Explosion Proof Enclosure, Turn the front lid counter clockwise until it is removed. Refer to Figure 8.

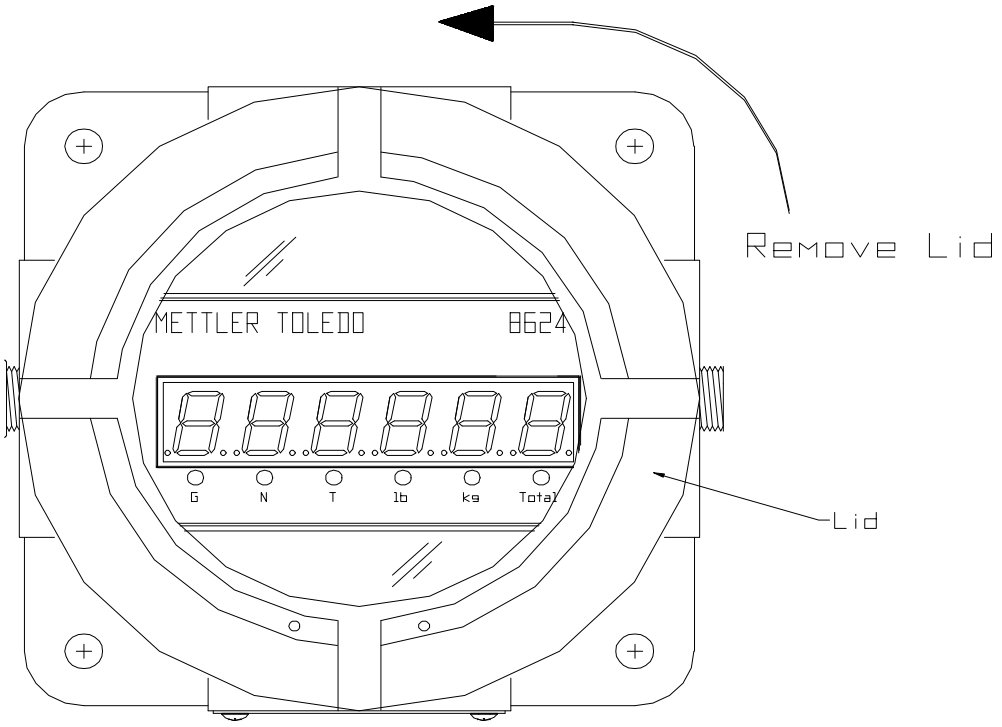


Figure 8 - Explosion Proof Enclosure Access

Remove the two screws holding the display bezel and PCB in place.

Thread cable through conduit and wire according to External Wiring Diagram Print number 902369 00A which is supplied in the rear cover pouch of this manual.

Upon completion of the wiring, Re-install the Bezel/PCB, and the lid. Prior to re-installing the Explosion Proof Lid, Mettler Toledo recommends wiping the threads clean and then coating them with petroleum jelly or equal.

Tighten the lid before applying AC Power

Panel Mount Wiring

The 8624 Panel Mount incorporates external plugs for cable interconnect. It is not necessary to access the inside of the enclosure.

After mounting the Panel Mount Enclosure, attach the power cord and input and output cables to the respective port connectors as shown in Figure 9.

Refer to the External Wiring Diagram Print number 902370 00A which is supplied in the rear cover pouch of this manual for option wiring.

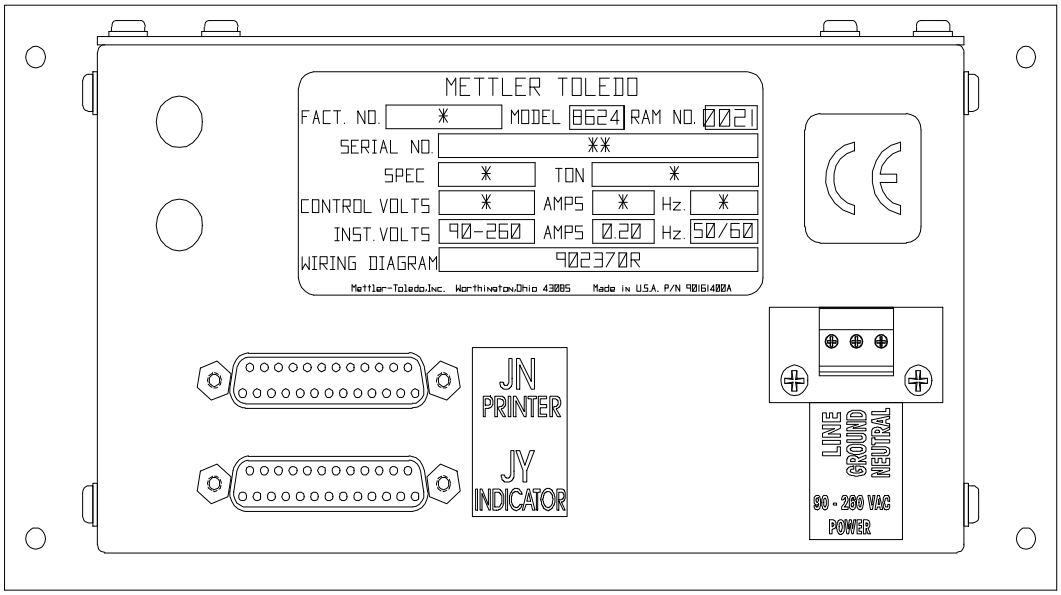


Figure - 9 Panel Mount I/O Connections

Display PCB Jumpers

There are two jumpers on the Display PCB which determine the selection of the input mode and the type of output mode of the 8624.

W1 - Normal/Loop Through Jumper

Placing the W1 jumper between the center pin and the Loop Through selection causes the output from the 8624 to mirror the input. This is especially helpful if the input continuous data is required to be transmitted to another remote display or device.

Placing the W1 jumper between the center pin and the Normal Selection will allow a weight only output on demand at 300 Baud. The 8624 Display is shipped from the factory with W1 set for Normal Selection.

W2 - Input Mode Selection Jumper

W2 must be removed when communicating with Fiber Optics.

The W2 jumper determines how data is to be received from the indicator. The selections are 20mA Current Loop, RS232, or RS485. The 8624 Display is shipped from the factory with W2 set for 20mA Current loop reception. Failure to match the jumper with the mode of transmission from the indicator will cause the 8624 to display an error code.

Please refer to Figure 10 for Jumper locations.

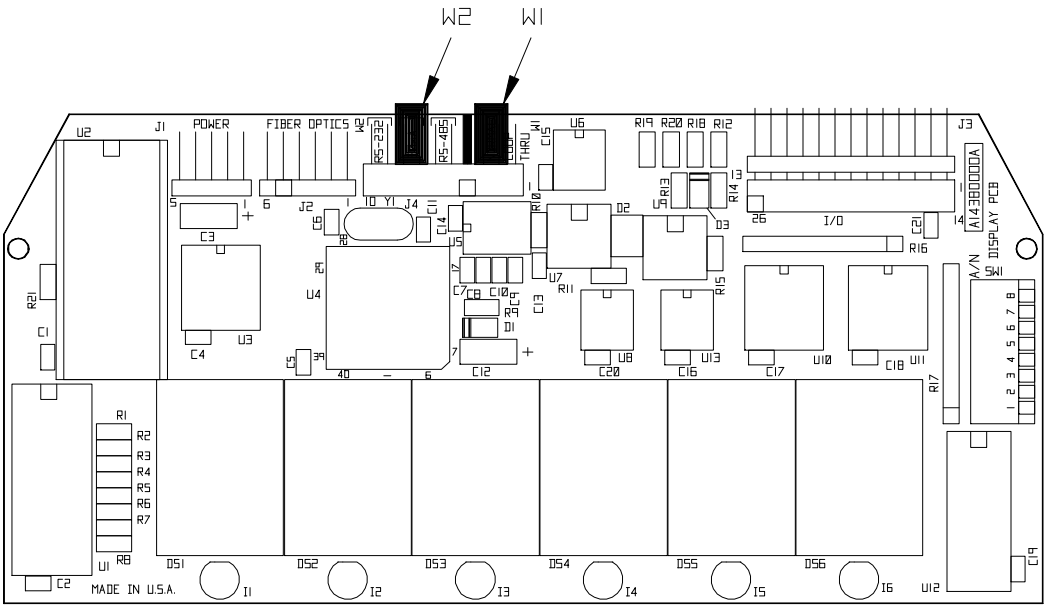


Figure 10 - Input/Output Mode Jumper Locations

Electrical Connections

The 8624 provides terminal block termination for all electrical connections except the JN and JY ports on the 8624 Panel Mount Enclosure.

Power Connection

The power connections for the NEMA 4X Wall Enclosure and the Explosion Proof Enclosure are located internally within the enclosure. The Power connections for the Panel Mount Enclosure is located on the outside rear of the enclosure. Refer to the Power Cord Connection Chart, Table 1, below for proper wiring information for the power cords offered by Mettler Toledo.

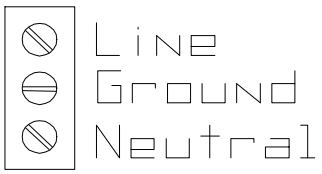


Figure 11 - Power Connection

Part Number	Destination	Wire Color	Connection
115066 00B	North America	Black Green White	Line Ground Neutral
140530 00A 138937 00A 140532 00A	Australia China U.K European Schuko	Brown Green/Yellow Blue	Line Ground Neutral

Table 1 - Power Cord Connection Chart

Data I/O Wiring

NOTE: If terminals 8 and 10 are inadvertently reversed, the display will not operate, but no damage occurs. It will indicate --4-- (open loop)

20mA Host Indicator to 8624

- Term 8 + 20mA loop input (isolated)
- Term 10 - 20mA loop input (isolated)
- Term 4 + 20mA loop input -100 ohm bypass. (Used for +20mA loop if other devices are also used in the series loop.)

Display to Printer

- Term 9 + 20mA printer input
- Term 22 - 20mA printer input
- Jumper term 14 to term 15

RS232 Host indicator to display (RS232 Jumper installed)

- Term 3 RS232 Data from Host Indicator
- Term 7 Logic Common

Display to Printer

- Term 2 RS232 Data to Printer
- Term 7 Logic Common

RS422/485 Host Indicator to display (J4 5-6 Jumper Installed)

- Term 24 + Data (B) from Host
- Term 11 - Data (A) from Host
- Term 23 Logic Common

Display to Printer

- Term 16 + Data (B) to Printer
- Term 5 - Data (A) to Indicator

Fibre Optics (Optional)

Host Indicator to display: (all Jumpers Must be removed)

- Install Optional Fibre Optic Kit of Parts, Model 0961-0077, and plug Fibre Optic line from host indicator into J3 (blue connector) on the Fibre Optic PCB.

Display to printer:

- Plug Fibre Optic line from printer into J2 (black connector) on the Fibre Optic PCB.

Pushbutton Input Wiring

If remote Total, Sub-total, Print pushbuttons are used, they must be wired as shown in Figure 12. All wiring is at 5VDC logic levels so cable length must be less than 6 feet. Under no circumstances should other wiring be included with the pushbutton wiring. Also refer to the appropriate external wiring diagram included in the rear pouch of this manual.

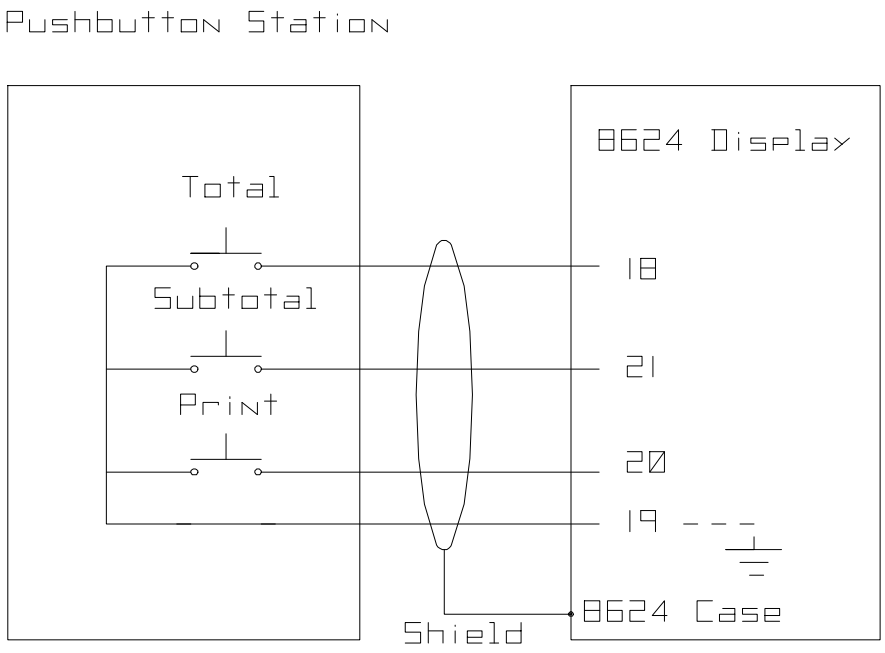


Figure 12 - Remote Input Wiring

Power Up Sequencing

At Power Up, the 8624 performs a number of self tests and automatically senses the baud rate and parity. During this time it will display the following sequence:

- All display segments and cursor LED's will light, then blank.
- The software number, 902201 will then be displayed followed by the revision level [reV 1].
- Then one 8 with associated cursor will scroll from left to right.
- Now each display segment will then count up from 1 to 9 simultaneously showing 111111,222222, etc.

The 8624 will now display the weight which is displayed on the Indicator or an error code. If an error code is displayed please refer to the Troubleshooting Chapter to identify and correct the problem.

3 Programming

The 8624 is designed to automatically accept most Toledo or Masstron continuous formats. However, some special system applications will require unconventional switch and wiring configurations.

Special programming can be accomplished by a combination of switch settings and installation of jumpers on the terminal block of the NEMA 4X Wall and Explosion Proof units or the JN and JY connectors of the panel mount.

Switch and Jumper Access

Switch 1 is located on the Display PCB. Please refer to Figure 12 for the switch location. The off position is when the switch is up and away from the PCB.

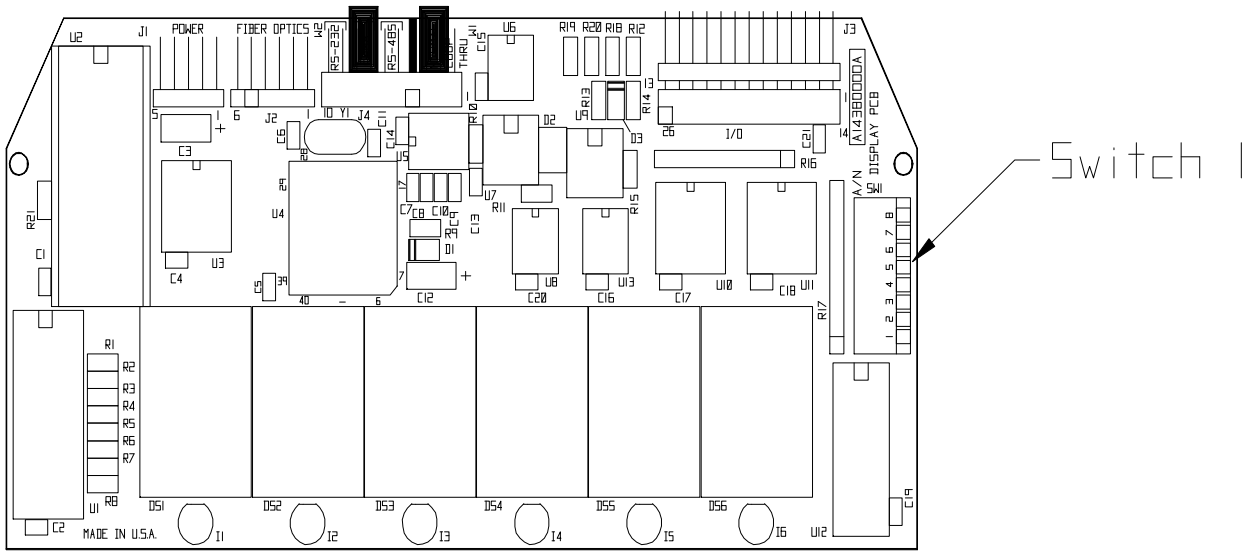


Figure 13 - Switch 1 Location

To access Switch 1 in the NEMA 4X Wall and Explosion Proof Enclosure it will be necessary to open it as described in Chapter 2. To access Switch 1 in the Panel Enclosure, loosen the cover screws as shown in Figure 13.

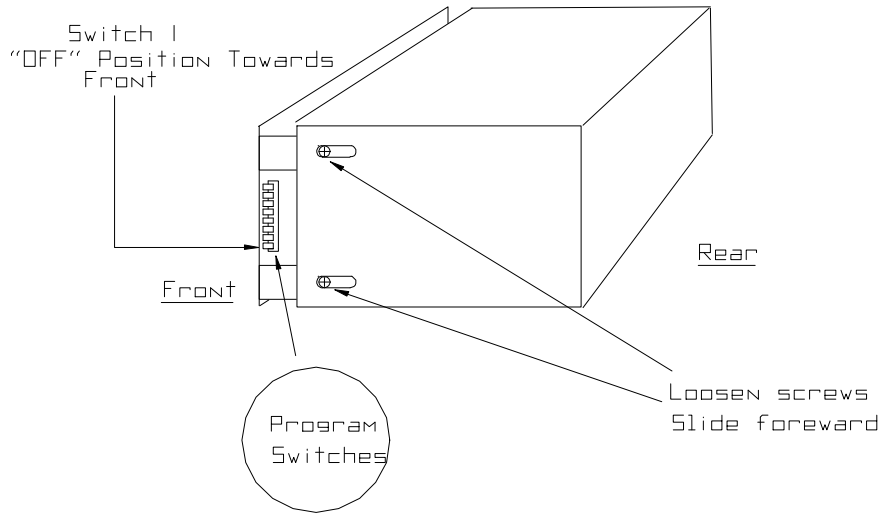


Figure 14 - Panel Unit Switch Location

Switch Settings

Switch 1-1 and 1-2 work together to enable various input data formats.

SW 1 - 1	SW 1 - 2	Input Data Format
OFF	OFF	Toledo/Masstron/TSM Input
ON	OFF	Mettler High Precision
OFF	ON	Hi Speed Continuous
ON	ON	Special

Table 2 - Switch 1-1 and 1-2 Settings

Switch 1-3, 1-4, and 1-5 combine to select the Multidrop address.

When in “Toledo” input format.

SW 1 - 3	SW 1 - 4	SW 1 - 5	Multidrop Address
OFF	OFF	OFF	No Multidropping
ON	OFF	OFF	Address 1
OFF	ON	OFF	Address 2
ON	ON	OFF	Address 3
OFF	OFF	ON	Address 4
ON	OFF	ON	Address 5
OFF	ON	ON	Address 6
ON	ON	ON	Address 7

Table 3 - Switch 1-3, 1-4, and 1-5 Settings

Switch 1 - 6, 1 - 7, and 1 - 8 combine to select 300 Baud Data Output Formats in the “normal” mode (W1 Jumper set to normal).

SW 1 - 6	SW 1 - 7	SW 1 - 8	Output Data Format
OFF	OFF	OFF	Gross or Net Weight Only
ON	OFF	OFF	Gross - Tare - Net 1 Line
OFF	ON	OFF	Gross - Tare - Net 3 Lines

Table 4 - Switch 1-6, 1-7, and 1-8 Settings

Displayed Data Jumpers

The 8624 offers the ability to select what data is to be displayed by placing jumpers on the terminal block of the NEMA 4X and Explosion Proof Enclosures, or in the Cable connection of JN or JY on the Panel Enclosure.

Place Jumper(s) on the following terminal numbers (NEMA 7/9 or NEMA 4X or the following PN/PY connector pin numbers) to select the following internal functions.

Terminal pins 6, 13, 17, 19, and 25 are TTL logic inputs. Terminal pin 19 is logic ground.

CAUTION!
DO NOT RUN THE FOLLOWING TERMINAL (PN, PY PINS) WIRING IN CONDUIT CONTAINING OTHER WIRING WITH 30 VOLTS OR HIGHER. THIS COULD CAUSE MALFUNCTIONS AND/OR MISINFORMATION SENT TO THE 8624

Jumper Placement	Display Data
No Jumpers	Display Net Weight
Jumper Pin 13 to Pin 19	Display Tare Weight
Jumper Pin 17 to Pin 19	Display Gross Weight
Jumper Pin 13 & 17 to Pin 19	Display Total Weight
Jumper Pin 25 to Pin 19	Enable Internal Accumulation
Jumper Pin 6 to Pin 19	Disable Input Time Out/Blanking
Jumper Pin 12 to Pin 19	Enable Net Sign Correction

Table 5 - Display Selection Jumpers

Input Control Jumpers

The 8624 offers the ability to install a momentary contact switch across pins on the terminal block of the NEMA 4X and Explosion Proof Enclosures, or in the Cable connection of JN or JY on the Panel Enclosure for print, subtotal, or total commands.

The following inputs require a momentary ground signal of at least 50 ms to initiate a print cycle (only one print/signal will occur).

All inputs are at 5 VDC logic levels and are susceptible to noise if cabled to remote locations. Mettler Toledo recommends a maximum cable length of six feet using shielded, 20 gauge cable. Terminate the shield to chassis ground.

Optional Pushbutton Kits are available from Mettler Toledo. Refer to Chapter 6 for option part numbers.

NOTE: Terminals 18, 20 and 21 are TTL Logic Inputs. Terminal (Pin 19) is Logic Ground.

Terminal (Pin) Selection	Function
18 to 19	Print Total and reset the Accumulator
21 to 19	Print Sub-total with no Accumulator Reset
20 to 19	Print Weight and add to the Accumulator

Table 6 - Input Control Jumper Selections

4 OPERATION

Main Logic

NOTE: Parity must be sent for all formats but it may be either odd, even, fixed mark or fixed space. If 8 data bits are not received, the display will show the --3-- error code.

The display board accepts continuously updating serial ASCII data via a 20 mA current loop, RS232, RS422/485 or Fiber Optics. Four basic input selection modes are provided. Modes 1, 2 and 3 are standard, while mode 4 is special and reserved for future applications. See applicable system or supplementary documentation for further details if this mode is utilized.

Mode 1: SW1-1 and 2 OFF = Toledo, Masstron and TSM.

Mode 2: SW1-1 ON and SW1-2 OFF = Mettler High Precision.

Mode 3: SW1-1 OFF and SW1-2 ON = Hi-Speed.

Mode 4 SW1-1 and 2 ON = Future Applications

Mode 1 (Sw1-1 & 2 off)

This mode is very versatile and will automatically accept data from Toledo, Masstron or TSM indicators without SW1 changes. The input recognition is automatic upon power-up and will check and initialize the following data.

Toledo Data

The Toledo data must be 4800 or 9600 baud continuous format with or without checksum. See the Mettler Toledo model 8142 technical manual (TM 008142 I03) for format examples.

Masstron M5000 Data

Masstron Data must be 4800 Baud 8 Bit continuous. (Must be same that the Masstron M5000 Indicator Provides). See the Mettler Toledo Model M5000 Technical Manual (M300700).

Toledo TSM-3004 Series Data

This special format is used when custom scale systems are utilized. The printer output and the totalizer are NOT supported in this mode. When this format is recognized, the SW1 dip switches 3-7 are reassigned to match the designation on MS129 software. The new SW1 switch functions are as follows:

3, 4 = Unit address for up to 4 codes.

SW1-3	SW1-4	Recognition Character
OFF	OFF	NUL
OFF	ON	EOT
ON	OFF	BS
ON	ON	FF

Table 7 - Recognition Characters Selection

SW1-5	SW1-6	SW1-7	Decimal Point Location
OFF	OFF	OFF	No Decimal Point
ON	OFF	OFF	.X
OFF	ON	OFF	.XX
ON	ON	OFF	.XXX
OFF	OFF	ON	.XXX
ON	OFF	ON	.XXXX
OFF	ON	ON	.XXXXX
ON	ON	ON	Undefined

Table 8 - Decimal Point Location

Multidrop Data

NOTES: Even though the software will support up to 7 devices on one multidrop line, 20mA hardware may not. It is important to remember when using multidrop devices with a 20mA configuration, there may not be enough source voltage to supply 20mA to the combination. A separate power supply may be required. Contact Mettler-Toledo for application assistance. In general, RS485 operation is preferred for this type of multidrop application.

Standard Toledo models 8132 and 8142 will NOT support the multidrop described above, due to the status word C Bits 0,1 and 2 are always 0. Only host indicators that can support more than one scale can be supplied this way. Consult your local Mettler Toledo office for application assistance.

If the internal accumulator is enabled, any attempt to change the display multidrop address will cause the total weight to be sent to the printer, accumulator cleared and the error code --6-- will be displayed until the unit is re-powered.

Each display MUST receive a valid block of data (not including status word C) to prevent data blanking. If, upon power-up, the display does not initially receive a multidrop address intended for it, error code --6-- will be displayed until a block of data intended for it is received. After that, valid blocks of data intended for other displays on the same multidrop line will prevent timeout blanking.

The host must continuously send data at the minimum rate of 4 seconds per update to prevent loss of data blanking. This "Timeout/Blank" feature can be disabled by jumpering terminals 6 and 19.

The "8142 Format" multidrop feature allows up to seven (7) different displays to share the same 20mA loop or RS422/485 data line sent from a single host Indicator (using the same format as a Mettler-Toledo model 8142).

RS232 communications does not allow more than one display to host connection. See "Loopthru" section for alternate connections. SW1-3, 4, 5 switches can be set for up to 7 different recognition codes and will respond only to the input data that matches this preset code. The host indicator data status word C bits 0, 1 and 2 must match SW1 switches 3, 4, and 5 for the display to activate. At all other times the display blanks providing that valid data representing other host codes are being sent within the timeout period. If SW1-3, 4, 5 are all OFF, the display will respond to any input status word C bit 0, 1, 2 code.

Example for 1 Host and 2 Displays in a loop.

- Display #1 has SW1-3 ON, 4 OFF, 5 OFF
- Display #2 has SW1-3 OFF, 4 ON, 5 OFF

Host sends data with status word C bits 0 ON, 1 OFF, 2 OFF. Display #1 will now display and hold the host sent data. The host then sends data with status word C bits 0 OFF, 1 ON, 2 OFF. Only display #2 responds. Display #1 will hold its previous value.

Mode 2 Mettler High Precision Data

This mode is reserved for Mettler Instruments.

The following describes the data string format of PM and SM model scales and balances.

Each valid weighing result is available, uniformly formatted, at the data output. The data string can be divided into 3 blocks: A two character Identification block, labeled (I) which contains the stability status of the weighing result. A nine character long block, labeled (D) which contains the weighing result including the decimal point and polarity sign in the case of negative results. All character blocks in the data field to the left of the weighing result are padded with spaces. The filed labeled (U) contains the unit of weight, e.g., kg. This field will vary in length depending on the currently selected unit of weight. The three blocks are separated by spaces (∪). The data string is always separated by a Carriage Return (CR) and Line Feed (LF).

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
I	I	∪	D	D	D	D	D	D	D	D	D	∪	U	U	U	CR	LF]

Character		
1	Transmission Mode	∪ Initiated with transfer when configured for S.STB. S Initiated with send instructions or when the balance is in the "Send Continuous Mode."
2	Stability Status	∪ Stable weighing result. D Unstable result (Dynamic). * Result of animal weighing.
4...12	Weighing Result	9 Character field including decimal point and polarity sign (only when results are negative). When in Delta Display or Delta Range, the lost digit is displayed as a space.

14...16	Weight Unit g, kg, lb, oz, ozt, tl, GN, C.M., k, %, PCS, unit vary depending selected characters in length.	0...3 characters, followed immediately by CR, LF: dwt, ct, STK, empty. The block will upon the currently unit of weight. The string can, therefore, vary between 16 and 18

Example: SD∪∪∪-24.375∪oztCrLf

Invalid Results: Under extraordinary operating conditions, e.g., during underload, overload, error conditions, etc., the balance will not produce a valid weigh result. Under these circumstances the balance will respond depending upon how the data transmission is being initiated:

Balance configuration: S. All or S. Cont; Data transfer initiated with print key, configured print bar.

∪l CrLf	Invalid result
∪l + CrLf	Overload
∪l - CrLf	Underload

Data transmission initiated with instructions S, SI, SIR or S.Cont:

Sl CrLf	Invalid result
S1 + CrLf	Overload
S1 - CrLf	Underload

The preceding messages occur immediately after initiation of transmission. In all other cases the balance waits for an available valid result.

Special Information Messages of Balance

TA CrLf	Taring with key

Standard ∪∪V10.xx.xx Start message, software version. Occurs on power up.

ET CrLf	Transmission Error
ES CrLf	Syntax Error
EL CrLf	Logistics Error

For a full explanation of the Preceding error messages as well as a comprehensive description of the Data Interface, you are referred to the following publication:

Mettler Operating Instructions for appropriate model.

Bi-directional data interface of PM balances

DataPac-M ME-702178

MultiRange Data String Format

The following description applies to all serial data interfaces currently used in the various MultiRange indicators:

Indicators	Interfaces
ID5/ID2	082 (20mA and RS232) 083 (20mA only) 089 (20mA and RS232)
ID1	RS232 (standard)
ID1 Plus	101 (RS232) 102 (20mA)

The above mentioned indicators can be configured to send various types of information from the serial port. Only the data string as it pertains to the currently displayed weight will be discussed in this section.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
I	I	∪	D	D	D	D	D	D	D	D	D	D	∪	U	U	U	CR	LF

Data Mode 3

This mode is reserved for future use.

Data Mode 4

This mode is special and reserved for custom applications. There are no formats supported in the standard 8624 display.

Totalizer

The 8624 has an internal accumulator register that will accumulate net weights each time the print pushbutton is pressed. The accumulation function is enabled by jumpering terminals 25 and 19. A number of unique properties exist with the accumulator. They are as follows:

- The accumulator has a single register with an 8 digit capacity.
- It runs concurrently with all display mode functions when 25 and 19 are jumpered. However, the total weight is displayed ONLY with 13 and 17 jumpered to 19.
- The accumulator increments with all print operations initiated from either the indicator or display. Only the net weight is accumulated. Positive and negative values are accommodated to achieve a true "credit balance" operation.
- Lb or kg values (not both) are handled within a given accumulation. If a mixed accumulation is attempted, the display will show --2--- until the indicator is switched back to the original units.
- The display will flash if the accumulated value exceeds 6 digits.
- An automatic total cycle will commence (sending the total weight to a printer and clear the accumulator) if the accumulation exceeds 99,000,000 (within 6 digits of overflow).
- If the 25 to 19 jumper connection is broken at any time, the accumulator will reset itself to zero. No printout will take place. This allows resetting the accumulator remotely, without causing a print.
- If the display multidrop address is changed with data in the accumulator, the total weight is sent to the printer and accumulator resets. The display will then show error code --6--- until the power is recycled.
- If 13 and 17 are NOT jumpered to 19 therefore not displaying the total weight, the display will switch to the total weight for 5 seconds whenever the total or subtotal pushbutton is pressed.

Printer Interface

NOTE: The display output transistor for the 20mA current loop is NOT a current source. It is only a switch to turn the data OFF and ON. Therefore, the total current drawn by the loop is equal to the source voltage (12 VDC at the display power supply). Divided by the total loop resistance (wire and internal resistors and diode drop). Under normal wire resistance and printer conditions, the display voltages (+12V) is sufficient to produce at least 20mA of loop current. Since most printers are compatible with loop currents of 18 to 35mA, no attempt is made in the display to regulate the current 20mA. If 12VDC is insufficient to provide a 20mA current flow a remote power supply MUST be used.

The ASCII data output from this display is configured to be human readable when sent to a printer. It is 300 baud serial ASCII data (1 start bit, 7 data bits, 1 even parity bit.

Data is sent to the printer for the following conditions:

- During the power-up sequence a 40 character message identifying the software version.
- Each time the local or indicator print pushbutton is pressed, the designated weight information will be printed.
- Each time the subtotal or total pushbutton is pressed, the accumulated weight along with the designated identification will be printed.

Data Output Formats

NOTE: All weight data fields are 6 active characters in length. If required, this will be expanded to 7 characters when a decimal point with 6 active weight digits, or a negative 6 digit weight is transmitted. The minus sign will be transmitted prior to the most significant weight character. All non-significant leading zeros will be transmitted as spaces.

NOTE: The display printer output will print only gross-tare-net or accumulated weight. It cannot print time/date, consecutive numbering, ID, etc. from the weight indicator it is connected to. The printer would need to be connected directly to the weight indicator to accomplish this function.

There are six (6) possible “print command demand data” output types at 300 baud. They are:

- Net or gross weight only.

STX,X,X,X,X,X,X,SP,L,B,CR,LF (for gross weight)

STX,X,X,X,X,X,X,SP,L,B,SP,N,E,T,CR,LF (for net weight)

- Gross-tare-net single line.

STX,X,X,X,X,X,X,SP,L,B,SP,X,X,X,X,X,X,SP,L,B,SP,T,R,
SP,X,X,X,X,X,X,SP,L,B,SP,N,E,T,CR,LF

- Gross-tare-net three lines.

STX,X,X,X,X,X,X,SP,L,B,CR,LF,
X,X,X,X,X,X,SP,L,B,SP,T,R,CR,LF
X,X,X,X,X,X,SP,L,B,SP,N,E,T,CR,LF

- Net or gross weight only expanded.

STX, SO,X,X,X,X,X,X,SP,L,B,SI,CR,LF (GROSS WT)

STX,SO,X,X,X,X,X,X,SP,L,B,SP,N,E,T,SI,CR,LF (NET WT)

- Gross-tare-net single line with net weight expanded.

STX,X,X,X,X,X,X,SP,L,B,SP,X,X,X,X,X,X,SP,L,B,SP,T,R,
SP,SO,X,X,X,X,X,X,SP,L,B,SP,N,E,T,SI,CR,LF

- Gross-tare-net three lines with net weight expanded.

STX,X,X,X,X,X,X,SP,L,B,CR,LF
X,X,X,X,X,X,SP,L,B,SP,T,R,CR,LF
SO,X,X,X,X,X,X,SP,L,B,SP,N,E,T,SI,CR,LF

5 TROUBLESHOOTING and MAINTENANCE

Preventative Maintenance

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.

The following tips will help to ensure long service life of the 8624.

- If the wall mount unit is interfaced via metal conduit. Be sure to provide a vapor seal where the conduit enters the display. This will prevent the conduit from "breathing" with swings in temperature and moisture. Check these seals periodically for moisture buildup.
- Be sure the silicone rubber door gasket on the NEMA 4X unit is firmly fastened. Reseal or replace if necessary.
- Check the door gasket for lubrication on the NEMA 4X unit. The gasket is coated with silicone grease at the factory for a good seal. Re-coat with silicone grease or "Petroleum Jelly" if necessary. Inspect for any frayed or loose wires on the terminal strip or connector. After time has passed sometimes the terminal screws loosen. It's good practice to check for this every time the display is opened.
- Check the overlay for foreign material on the inside. Clean the lens only with mild detergent and water on a clean cloth. DO NOT use petroleum solvents.

WARNING!!

Do not open the Explosion Proof enclosure until all power has been removed. This includes Display AC power, Host and Indicator power.

- The explosion proof NEMA 7/9 display must have a fresh light coat of grease (petroleum jelly or silicone) on the threads every other time the lid is removed. Wipe the old coat clean BEFORE applying a new coat! Also, avoid damage to face surfaces and threads of the enclosure. Proper metal to metal seals must be maintained to preserve the explosion proof enclosure rating.

Error Code Details

An error code will appear on the display any time the logic senses a fault and will appear as shown below:

Display Description

--1--- INSTRUMENT ERROR. This only occurs if the host instrument sends an error message. It is **NOT** display generated. The only unmodified instrument that can send this signal is the Masstron M5000.

--2--- LB/KG ACCUMULATION ERROR. This will occur if the host instrument is switched from lb to kg or vice versa and a print request is made with a non zero accumulator. Switch back to the original units to clear the error. (The accumulator will not accumulate mixed units)

--3--- NO DATA ERROR (closed loop). This will occur if the display is properly terminated to an instrument but is not sending any valid data. This also will be displayed for improper data. If proper data is being sent but at a rate slower than once every 4 seconds, the code will momentarily be shown. The error will automatically clear upon receipt of valid data.

--4--- NO DATA ERROR (open 20mA loop). This will occur whenever the 20 mA loop is broken and the logic detects a constant “spacing” condition. Note that during this time error code --5--- will occur momentarily because a baud rate search is concurrently being made. See below.

--5--- AUTOBAUD MISMATCH ERROR. This code will momentarily appear whenever the logic attempts to find a baud rate match. This only occurs at power-up or during open loop conditions.

--6--- MULTIDROP ERROR. This will occur only if, after power up, the host instrument never sends a recognition code that matches that particular display address. As soon as the first displayable block of data is sent the error is cleared and the proper data displayed.

------ OVER CAPACITY. This occurs whenever the host instrument is out of range and sends its “over capacity” message.

FLASHING DISPLAY

This occurs whenever the internal accumulator exceeds six (6) digits and the total weight is displayed.

Self Test Description

At power-up, the display electronics automatically sequence through a number of separate test functions. This provides the user and service technician a means of identifying possible faults with the display electronics.

The sequence is as follows:

- All display segments and cursor LED's will light, then blank.
- The software number, 902201 will then be displayed followed by the revision level [reV 1].
- Then one 8 with associated cursor will scroll from left to right.
- Now each display segment will then count up from 1 to 9 simultaneously showing 111111,222222, etc.

The 8624 will now display the weight which is displayed on the Indicator or an error code. If an error code is displayed, refer to the previous section to identify and correct the problem.

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.

Troubleshooting

After the diagnostics and error codes are verified there is very little left that is unchecked. However, a brief check list follows that may uncover something that may have been overlooked.

Remember that Error Code (----4---) means "Open Input Loop".
DO NOT try to repair the display if the host device is not properly connected.

- Check the 20mA loop for sufficient current. Most printers will work down to about 15mA. Currents as high as 35mA are OK.
- Check for proper AC line voltage. The supply has a universal input to work from 90 to 260 VAC without jumper or wire changes but voltages lower than 90VAC will cause problems.
- Check for proper grounds to the case of the instrument.
- If the printer doesn't operate, check for 20mA to the printer.
- Check for proper printer loop polarity. The power-up diagnostics do not check for improperly connected output devices.
- Verify the output device baud rate. It must be set for 300.
- Verify that +12 VDC (+/- 1/2 VDC) exists on external terminal 15 with respect to 19 with no printer connected.

6

Parts and Accessories

Refer to the following Diagrams and Data Tables when ordering parts and accessories for the 8624.

* All part numbers shown in this section may have an alpha prefix revision not illustrated on the following pages.

Accessories

The following table includes Part Numbers for Optional Accessories, including optional line cords.

*Part Number	Description	Factory Number
115066 00B	Power Cord, 115 VAC with North American Plug	0964 - 0079
140532 00A	Power Cord, 230 VAC European Schuko	0964 - 0080
140530 00A	Power Cord, 230 VAC, Australia/China	0964 - 0081
138947 00A	Power Cord, 230 VAC, United Kingdom	0964 - 0082
900396 00A	Remote Total Button Kit - NEMA 12	0964 - 0017
900398 00A	Remote Total and Sub-Total Button Kit - NEMA 12	0964 - 0016
900418 00A	Remote Total Button Kit - Nema 7/9	0964 - 0029
900419 00A	Remote Total/Subtotal Button Kit - Nema 7/9	0964 - 0028
902321 00A	Fiber Optic Kit of Parts	0961 - 0077

Recommended Spare Parts

Mettler Toledo recommends that you keep the following spare replacement parts in the quantities listed.

*Part Number	Description	QTY.
143800 00A	Display Logic PCB	1
902282 00A	Power Supply, +5 VDC & ±12 VDC	1
902366 00A	Terminal Block (Nema 4X and 7/9 Units only)	1
0961 - 0078	Spare Parts Kit (Includes PCB and Power Supply	(Ref)

Interconnect Cables

The following Tables list the available interconnect cables for connection between the 8624 and the Indicator, and the 8624 and the Printer.

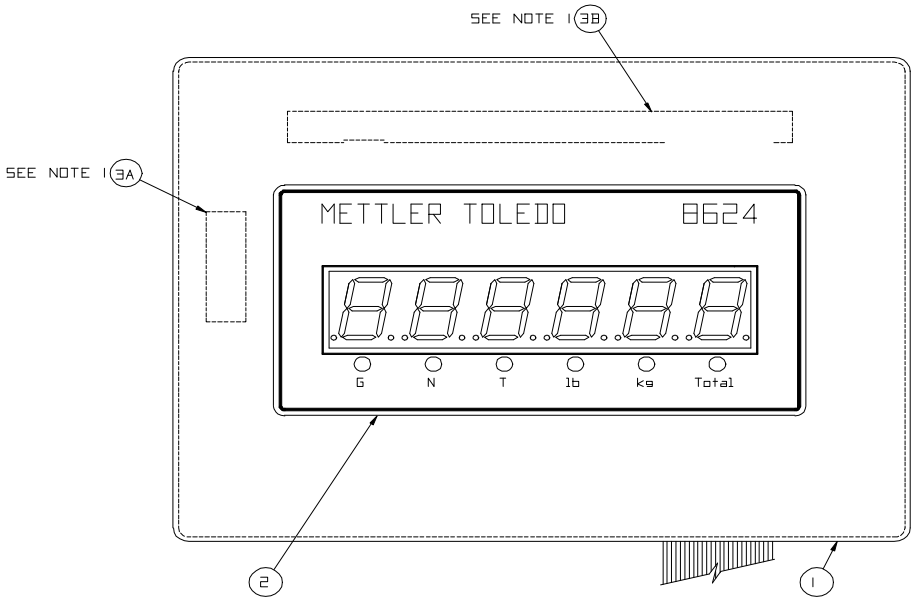
Indicator to 8624

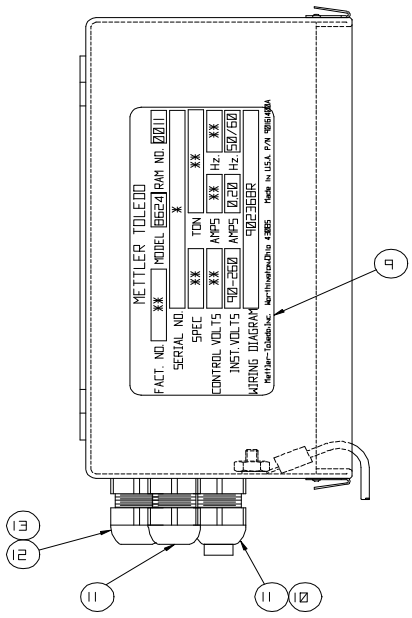
Indicator	Cable Length	Factory Number	*Part Number
8140, 8142, 8146, 8520, 8530 DESK/RACK	20 Ft.	0960 - 0164	900564 00A
8140, 8142, 8146, 8530 9150 WALL (20mA)	20 Ft.	0960 - 0168	900568 00A
M5000 DESK/WALL (20mA)	20 Ft.	0960 - 0166	900566 00A
M8141/8525 (Fiber Optic)	50 Ft. 100 Ft.	0900 - 0268 0900 - 0269	136584 00A 136585 00A
M8141 (Fiber Optic)	150 Ft. 200 Ft. 250 Ft.	0900 - 0270 0900 - 0271 0900 - 0272	136586 00A 136587 00A 136588 00A
Jaguar, Lynx (20 mA and RS232)	15 Ft.	0900 - 0258	133717 00A
8510SS, Jaguar, Lynx (RS232 only)	15 Ft	0900 - 0309	146560 00A
8510PM (RS232 only)	20 FT.	0900 - 0255	131911 00A

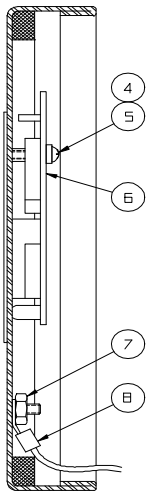
8624 to Printer

Printer	Cable Length	Factory Number	*Part Number
8855	20 Ft.	0960 - 0175	900593 00A
8842, 8843, 8844, 8845 (20 mA)	20 Ft.	0960 - 0176	900594 00A
8804, 8806, 8860 (20mA)	20 Ft.	0960 - 0177	900595 00A
301, 307 (20mA)	20 Ft.	0960 - 0178	900596 00A
MP750 (RS232)	20 Ft.	0960 - 0141	900452 00A
8807, 8856, 8861, 8865 (RS232)	20 Ft.	0960 - 0143	900454 00A

Wall Mount Parts, External and Cover Parts

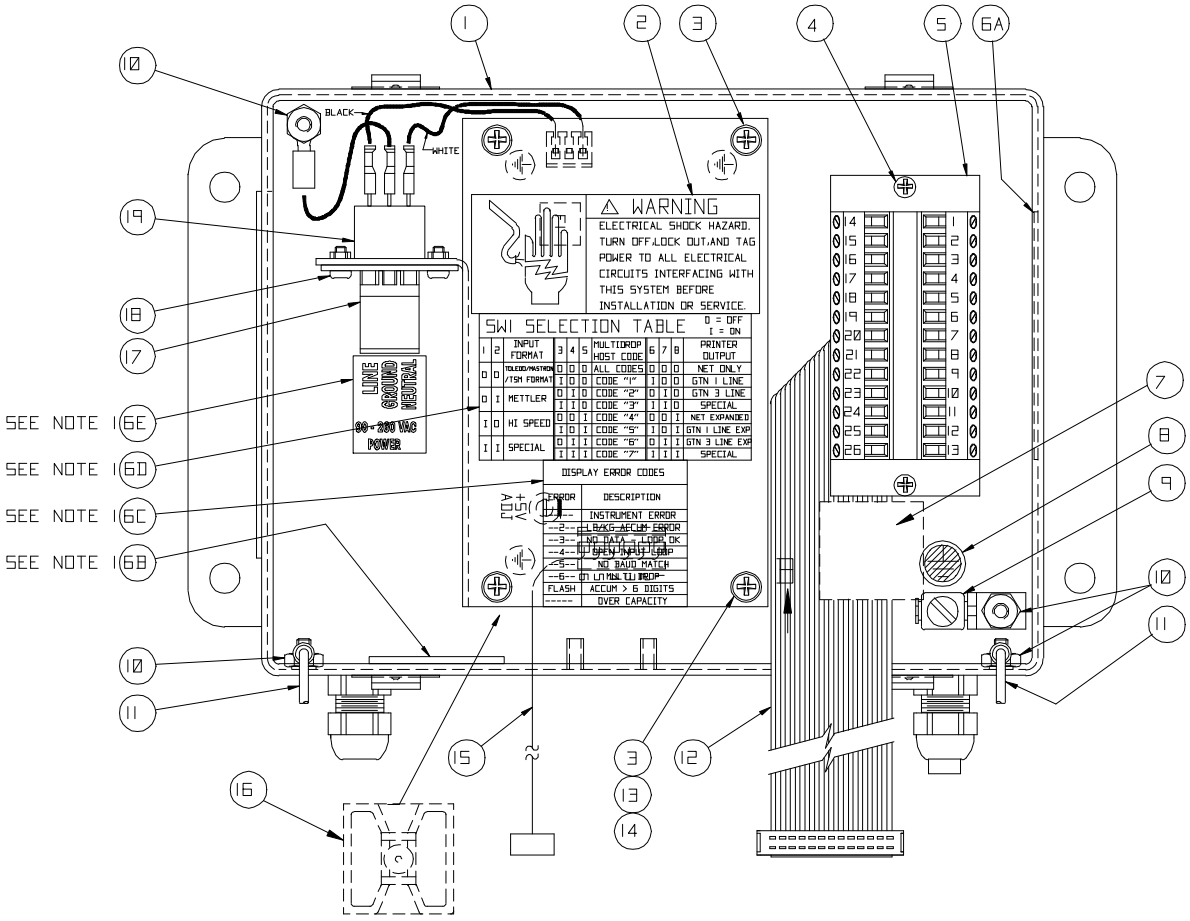


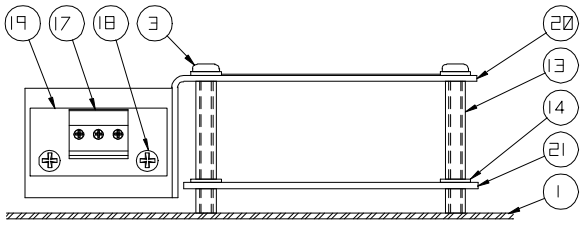




Parts List - Wall Mount, External			
Ref #	*Part Number	Description	Qty
1	902361 00A	Cover, Stainless Steel, NEMA 4X	1
2	902378 00A	Bezel - Lens	1
3A,B	A902732 00A	ID Label (Multiple Parts)	1
4	R01916 050	Screw, 4-40 x 25	4
5	MZ0901030030	Washer, Nylon #4	2
6	143800 00A	Display Logic PCB	1
7	R03298 00A	Hex Nut, 8-32 W/Washer	6
8	144675 00A	Hinge Cable	2
9	901614 00A	Label, Serial	1
10	129038 00A	Plug	1
11	129018 00A	Cord Connector and Nut	2
12	140540 00A	Cord Connector and Nut	1
13	129038 00A	Plug	1

Wall Mount Internal Parts

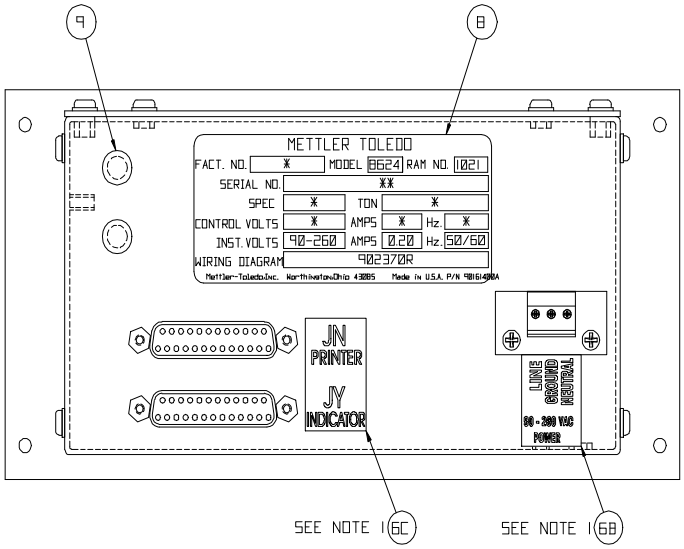


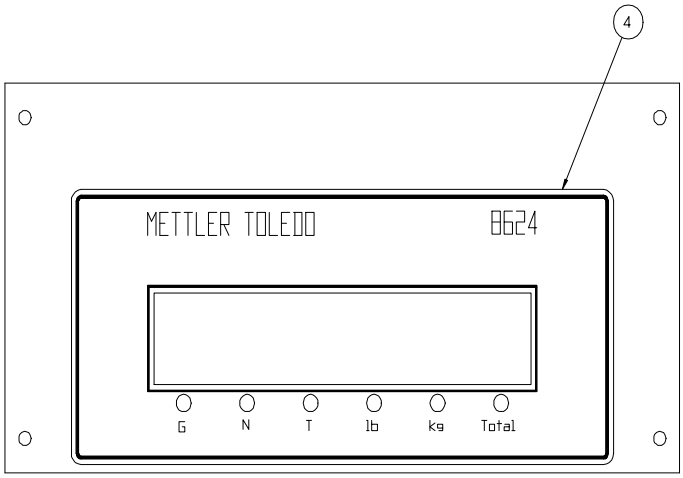


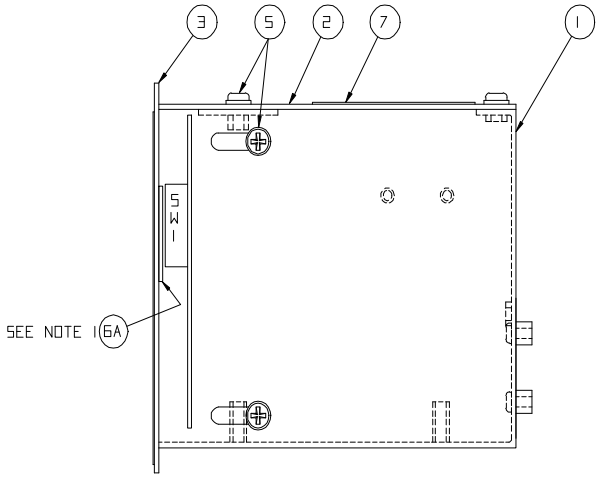
Parts List - Wall Mount, Internal			
Ref #	*Part Number	Description	Qty
1	902382 00A	Enclosure, NEMA 4X, Stainless Steel	1
2	902379 00A	Label, Electrical Shock Hazard	1
3	R01375 050	Screw, Mach rnd hd6-32x.375 W/Washer	4
4	R01865 050	Screw, 4-40 x 1/2	2
5	902366 00A	Terminal Block	1
6A-E	A902732 00A	ID Label (Multiple Parts)	1
7	112855 00A	Cable Clamp, Flat	1
8	129430 00A	Label, Ground Symbol	1
9	098701 00A	Ground Lug	1
10	R03298 00A	Hex Nut, 8 - 32 W/Washer	6
11	144675 00A	Hinge Cable	2
12	902375 00A	Harness Assembly	1
13	KN771633 020	Standoff, 6-32	4
14	R02676 00A	Washer, Flat	4
15	902285 00A	Harness, DC Power Supply	1
16	121911 00A	Clamp (Cable Tie)	1
NS	KN768945 020	Cable Tie	1
17	902292 00A	Connector, Terminal Block Plug, 3 Pos.	1
18	R01916 050	Screw, 4-40 x 25	4
19	902400 00A	Harness Assembly, AC Power	1
20	902286 00A	Mounting Plate	1
21	902282 00A	Power Supply	1
NS	A900301 00A	**Optional Fibre Optic PCB	1
NS	902275 00A	**Harness, Fibre Optic to Logic PCB	1
NS	R02400 00A	**Screw, 4-40 X..43 Lg	2
NS	MZ0901030030	**Washer, Flat Nylon	2

** Indicates parts are included in the Optional Fibre Optic Kit, Part Number 902391 00A.

Panel Mount, External Parts

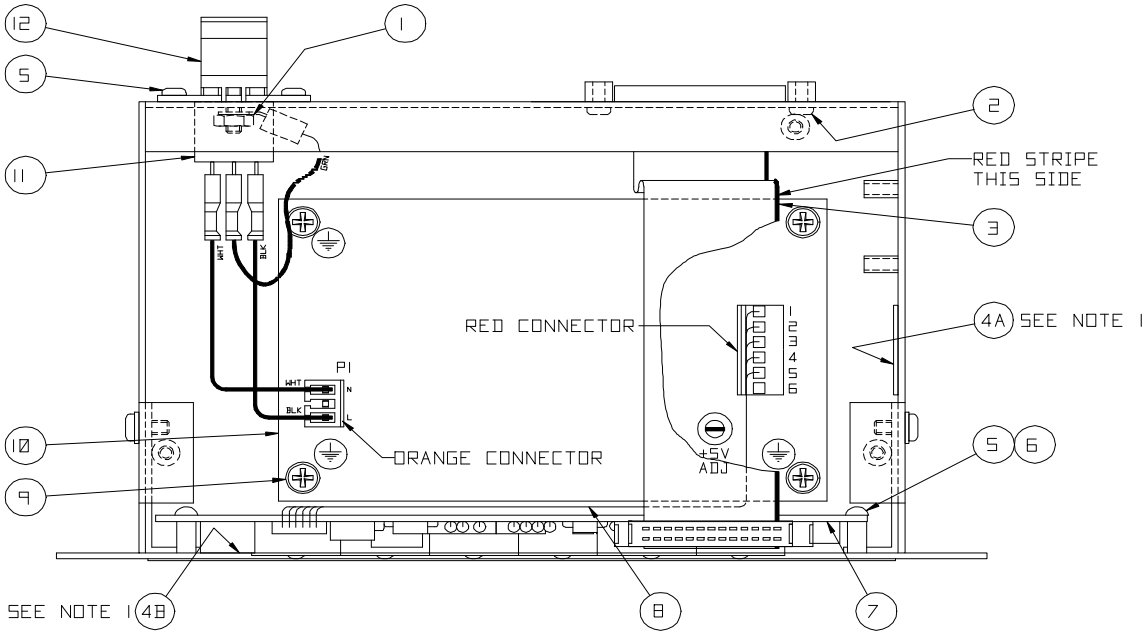


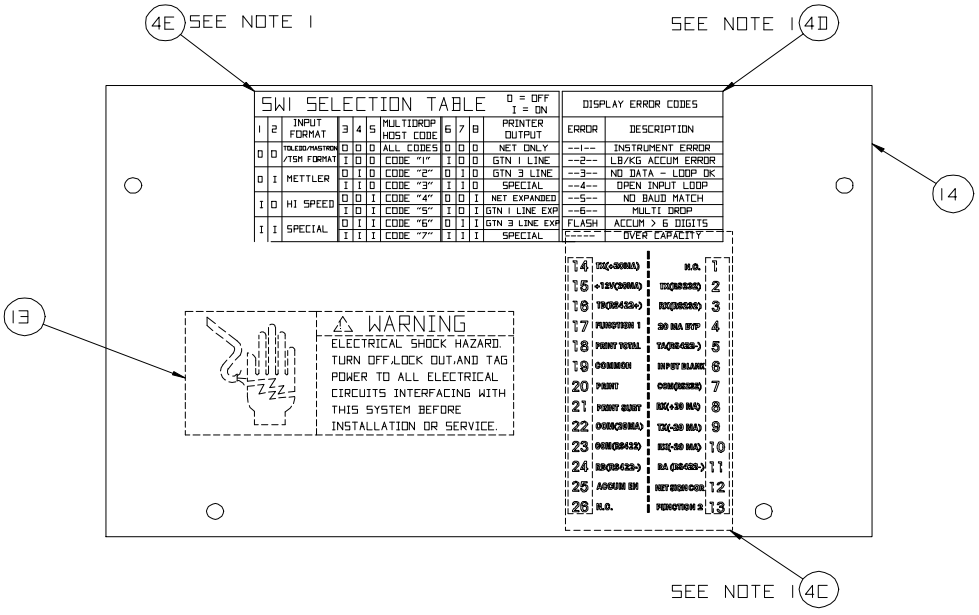




Parts List - Panel Mount, External			
Ref #	*Part Number	Description	Qty
1	902365 00A	Enclosure, Panel Mount	1
2	900682 00A	Top Plate Assembly	1
3	902364 00A	Front Plate Assembly	1
4	902378 00A	Display Lens	1
5	R05211 00A	Screw, #6-32 x 5/16, W/Washer, Black	10
6A-C	A902372 00A	Label, ID (Multiple Parts)	1
7	902379 00A	Label, Hazardous Area	1
8	901614 00A	Label, Serial	1
9	R02617 00A	Hole plug	1

Panel Mount Internal Parts

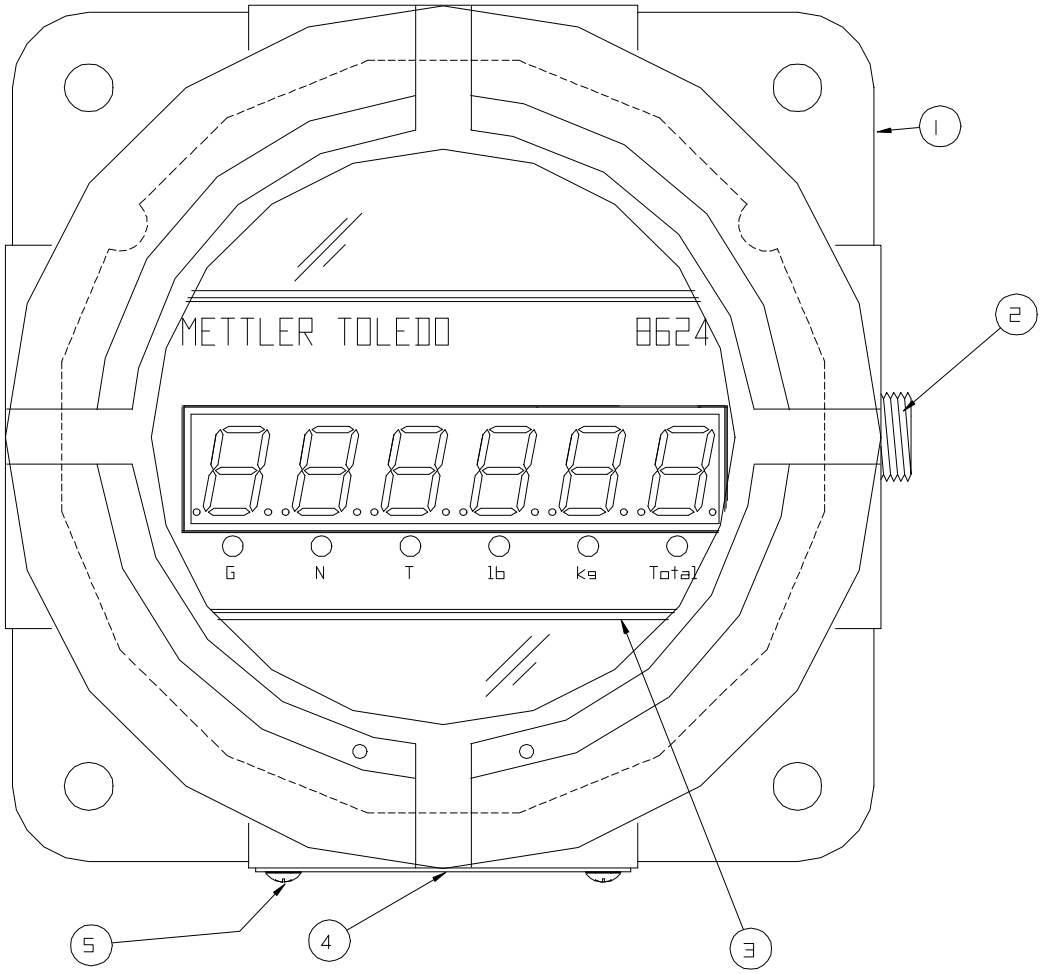




Parts List - Panel Mount, Internal			
Ref #	*Part Number	Description	Qty
1	R03283 00A	Nut, #6-32, W/Washer	1
2	R05212 00A	Screw, #4 - 40 x .18 W/Washer	4
3	900558 00A	Ribbon Harness Assembly	1
4A-E	A902372 00A	Label, ID (Multiple Parts)	1
5	R01916 050	Screw, #4 - 40 x .250	4
6	MZ0901030030	Washer, #4 Nylon	2
7	143800 00A	Display PCB	1
8	902285 00A	Harness Assembly, DC Power	1
9	R01375 050	Screw, #6-32 x .375 W/Washer	4
10	902282 00A	Power Supply	1
11	902400 00A	Harness Assembly, AC Power	1
12	902292 00A	Connector, 3 Position Terminal Block	1
NS	A900301 00A	**Optional Fibre Optic PCB	1
NS	902275 00A	**Harness, Fibre Optic to Logic PCB	1
NS	R02400 00A	**Screw, 4-40 X..43 Lg	2
NS	MZ0901030030	**Washer, Flat Nylon	2

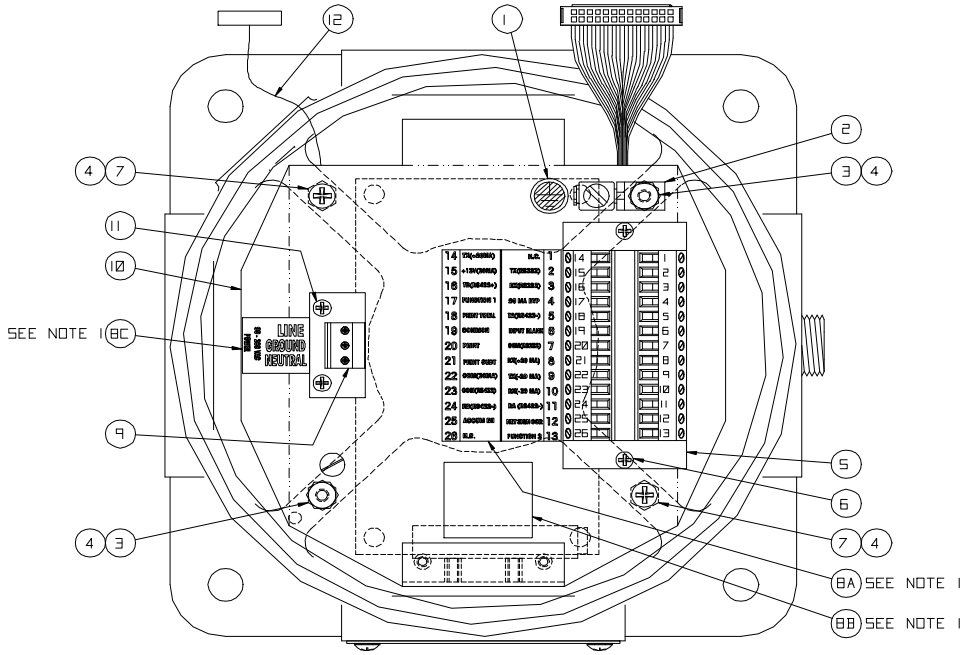
** Indicates parts are included in the Optional Fibre Optic Kit, Part Number 902391 00A.

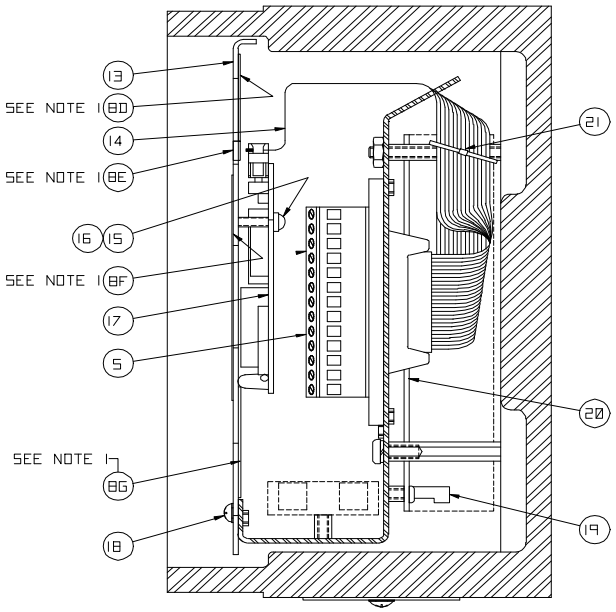
Explosion Proof Enclosure, External



Parts List - Explosion Proof, External			
Ref #	*Part Number	Description	Qty
1	900423 00A	Enclosure, NEMA 7/9	1
2	KN770100 020	Hole Plug, 1/2”	1
3	902378 00A	Bezel - Lens	1
4	C118907 00A	Serial Plate	1
5	R00510 030	Drive Screw, #4-32 x .18	1

Explosion Proof Enclosure, Internal





Parts List - Explosion Proof, Internal			
Ref #	*Part Number	Description	Qty
1	129430 00A	Label, Ground Symbol	1
2	098701 00A	Ground Lug	1
3	R03298 00A	Hex Nut, #8-32, W/Washer	2
4	902425 00A	Stud, 8-32 x 1.38 Lg	4
5	902366 00A	Terminal Block	1
6	R01865 050	Screw, #4-40 x 1/2	2
7	R01239 050	Screw w/Lockwasher, #6-32 x .31	2
8A-G	A902372 00A	ID Label (Multiple Parts)	1
9	902292 00A	Connector, Terminal Block, 3 Pos.	1
10	902374 00A	Base Plate	1
11	R01916 050	Screw, #4-40 x .25	4
12	902285 00A	Harness Assembly, DC Power	1
13	900677 00A	Cover Plate	1
14	902375 00A	Harness, 13” Ribbon	1
15	R01916 050	Screw, #4-40 x .25	4
16	MZ0901030030	Nylon Washer, #4	2
17	14380000A	Display PCB	1
18	R05211 00A	Screw, #6-32 x .31, W/Washer	7
19	098701 00A	Ground Lug	1
20	902282 00A	Power Supply	1
21	KN768945 020	Cable Tie	1
NS	A900301 00A	**Optional Fibre Optic PCB	1
NS	902275 00A	**Harness, Fibre Optic to Logic PCB	1
NS	R02400 00A	**Screw, 4-40 X..43 Lg	2
NS	MZ0901030030	**Washer, Flat Nylon	2

** Indicates parts are included in the Optional Fibre Optic Kit, Part Number 902391 00A.

7 REFERENCE DRAWINGS

(*)902371 00A	NEMA 7/9 Assembly
(*)902376 00A	NEMA 1 Assembly
(*)902363 00A	NEMA 4X Assembly
(*)902367R	General Internal Wiring Diagram (all units)
(*)902368R	NEMA 4X External Connections
(*)902369R	NEMA 7/9 External Connections
(*)902370R	NEMA 1 External Connections

(*) = May Have Alpha Revision Prefix

The drawings referenced above are important for use in installing and maintaining the product described in this manual. Replacements will be provided, at no cost, upon receipt of a written request sent to:

METTLER-TOLEDO, INC.
Systems Division
60 Collegeview Road
Westerville, Ohio 43081
Attn: Design Center
(FAX NUMBER (614) 841-5100)

Declaration of Conformity (CE)

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: 8624-0011-000 Wall Mount Version
8624-0021-000 Panel Mount Version

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
89/336/EU EMC Directive / EMU-Richtlinie / Directive concernant la CEM
EN55022, B 01.04.87 Emissions / Funkstörungen
EN50081-1 Immunity
73/23/EU Low Voltage / Niederspannung / basse tension
EN61010 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
September, 1995

according to EN45014

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: 8624-0031-000 Hazardous Area Enclosure

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

89/336/EU EMC Directive / EMU-Richtlinie / Directive concernant la CEM

EN55022, A 01.04.87	Emissions / Funkstörungen
EN50081-1	Immunity

73/23/EU Low Voltage / Niederspannung / basse tension

EN61010	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
September, 1995

according to EN45014