FP7000 Classic
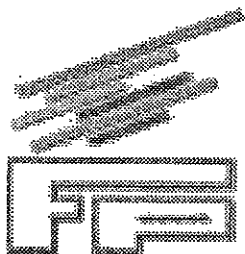### Intrinsically Safe
PAINT MIXING SCALE

OWNERS MANUAL

FILLON PICHON

FP7000 Classic
Intrinsically Safe
PAINT MIXING SCALE
Owner' Manual

Fillon Technologies N. A., Inc.
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East Providence, RI 02914-1006
1 (800) 777-1583

Table of Contents

Important Notice

To get the most out of your scale and for your safety, please read the installation and operating instructions carefully before operating your scale.

Hazardous Location Approval

Your FP7000 CLASSIC Digital Scale is fully approved for use in the following Hazardous Locations:
USA: FMRC Approval (Class I, Division 1, Group C, D)
Canada: CSA Approval (Class I, Division 1, Group C, D)

Safe Area

Your FP7000 CLASSIC Digital Scale power supply is designed to be installed in the Safe Area, outside of the Hazardous Location.

Service

All repairs and service to the scale MUST be carried out and duly certified by Fillon Technologies N. A., Inc. Any tampering with the scale will automatically and immediately void the Approval and Warranty and relieve the manufacturer of any liability for subsequent damage or injury caused to or by the product.

Radio Frequency Energy
Canadian Department of Communications

This digital apparatus does not exceed the Class A limits for radio noise emissions from a digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.
Le présent appareil numerique n'emét pas de bruits radioeléctriques depassant les limités applicables aux appareils numeriques de la classe a préscrites dans le reglément sur le brouillage Radioeléctrique Edicté par le Ministre des Communications du Canada.

FCC Warning

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 this 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 must correct the interference.

Standard Equipment

Your FP7000 CLASSIC scale is shipped in a single carton containing the following items:

- Scale
- Pan Support
- Weighing Pan
- Power Supply
- Transparent Tower Cover
- Transparent Base Cover
- Owner's Manual

Note: **DO NOT DISCARD THE ORIGINAL PACKAGING.** If returned for service or repair, the scale must be safely packed in the original foam and carton.

Installation

1. Choose a suitable site for the scale as far away as possible from sources of heat, vibration, and air currents. A digital scale is an electrically sensitve instrument. We therefore recommend that it be connected to an independent circuit and not run on the same circuit as equipment with large power requirements.

2. POWER SUPPLY CONNECTION - Safe Area
   a. Locate the power supply in the Safe Area near the Hazardous Location.
   b. The AC cord from the power supply can be plugged directly into a standard electrical outlet in the Safe Area.
   c. The DC cable from the power supply should be run to the scale in the Hazardous Location.

3. SCALE CONNECTION - Hazardous Location
   IMPORTANT: Installations in the USA must conform to the following:
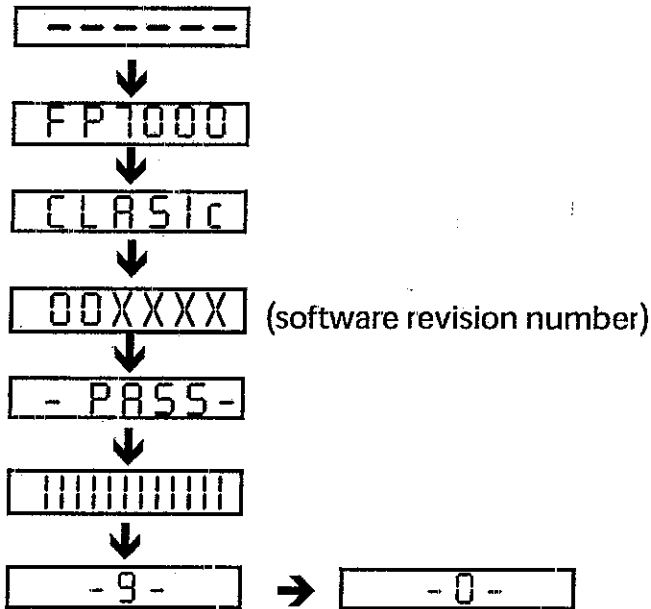   a. The scale must not be permanantly attached to any structure in the Hazardous Location.
   b. The DC cable from the power supply should be plugged into its mating connector at the rear of the scale.
   c. Connect a wire (18 AWG or larger) from IS ground to the IS ground screw on the rear of the scale.

Note: Consult with the local regulatory authority if you are unsure of the applicable electrical code.

Commissioning and Operation

1. POWER

a. Once the main power is applied, the display will light up and an automatic test of all electronic functions will take place. The scale will display:

```
[ ------ ]
    ↓
[ FP1000 ]
    ↓
[ CLASIC ]
    ↓
[ 00XXXX ]  (software revision number)
    ↓
[ -PASS- ]
    ↓
[ |||||||||||| ]
    ↓
[ -9- ]  →  [ -0- ]
```

b. Upon successful completion of the test, the display will show:

```
[ -BUSY- ]
```

and the scale will automatically tare to:

```
[     0.0 ]
```

Allow fifteen minutes for warm-up, then calibrate the scale before using. (see "CALIBRATION", page 7). If an Error Code is displayed (eg. HHHHHH) see "Troubleshooting", page 12. If the scale will not tare to zero, "0.0", call Fillon Technologies, N. A., Inc. at 1 (800)777-1583 or your local Fillon distributor.

c. The display will turn off if no weighing operation is performed for a predetermined length of time. This sleep mode is immediately terminated if any key is pressed or the pan is touched.

Display/Keypad

Pan

Pan Support
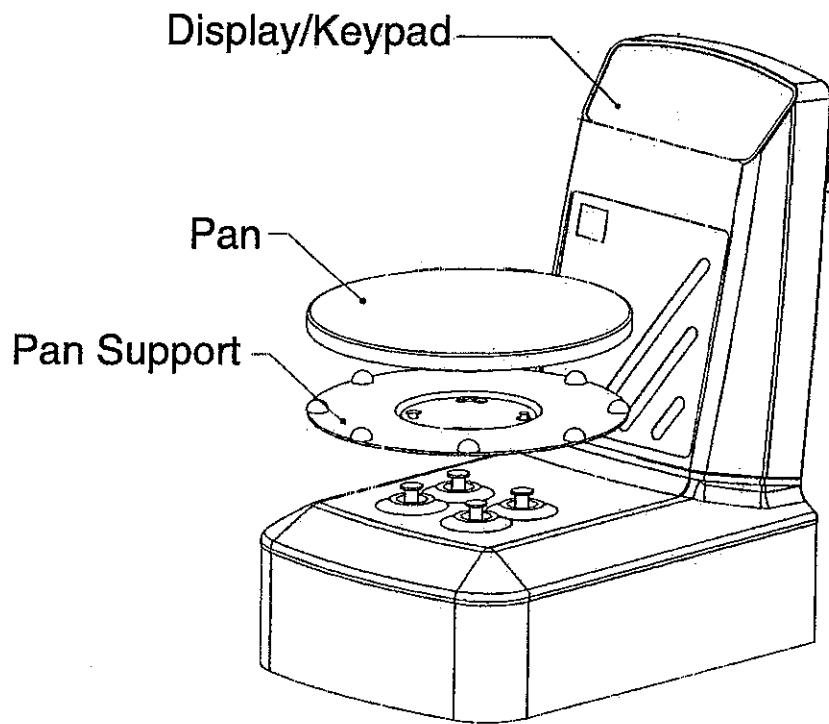
FP7000 CLASSIC
Front View

CALIBRATION

To ensure accurate results, all precision scales should be calibrated regularly, especially after new installation or relocation. Failing to calibrate the scale will not result in bad mixes, but quantities mixed may not be correct.

    a. After the initial warm-up, press the **Tare** key to obtain a zero reading: 0.0 .

    b. Place a calibration weight on the pan. The scale can be calibrated with a 1000g, 2000g, 3000g, 4000g, 5000g, 6000g or 7000g calibration weight. For most applications, a 1000g or 2000g weight is suitable.

    Example: Place a 1,000 g weight in the center of the weighing pan. The display should read: 1000.0. If it does not, proceed to step c.

    c. Press and hold the **Cal** key. | - - - - - - | appears in the display followed by | A C A L |. Release the **Cal** key. The calibration of the scale is now set to match the value of the calibration weight on the pan.

    d. Remove the weight from the pan. The display will return to zero and the scale will be ready for weighing operations.

Key Functionality

Tare
    Sets the display to zero grams. This key is used to zero out the weight of an empty container prior to mixing paint and to eliminate any drift from zero before setting the calibration value.

Cal
    A calibration weight must be placed on the pan for this key to work. Pressing and holding the **Cal** key displays | - - - - - - | followed by | A C A L |. Releasing the **Cal** key automatically adjusts the scale's calibration and displays the value of the calibration weight. If no calibration weight is placed on the pan, or if the weight differs by more then 1% in either direction from the selected calibration point, the display will present | N O C A L | for approximately three seconds and then return to the weighing mode.

Display Messages (Normal Operation)

Message	Meaning
FP7000	Scale model displayed at power-on.
CLASiC	2-key version identification at power-on.
00xxxx	Firmware date-code i.d. at power-on.
... ...	Display is being restored after exiting 'SLEEP' mode.
BUSy	The **Tare** key has been pressed and the scale is waiting for a stable weight condition before displaying zero.
A CAL	Calibration of the scale is being adjusted to match the on-pan calibration weight.

Error Messages

Message	Meaning
no CAL	Calibration cannot be performed due to incorrect weight on the pan.
StOFLo	Unexpected hardware error detected (the scale must be unplugged and re-powered to restore normal operation).
rESET	Operator forced reset and restart of the scale as if it is being powered on for the first time. (Initiated by the operator pressing and holding **Tare** and **Cal** keys simultaneously until the "rESEt" message is displayed).

Technical Service Messages

CRASh?   Operator requested re-calibration initiated by holding down both keys (**Tare** and **Cal**) at power-on display of

[FP7000] .

Normal Operation

1. After powering on the scale, allow it to warm-up for 15 minutes prior to use. Although not required, calibration is also recommended prior to mixing paint. (see Calibration, p. 7).

2. Clear all items from the pan.

3. Place an empty container on the pan. The tare weight will be displayed in grams.

4. Press **Tare**. The weight display will show zero.

5. Pour the first ingredient and view the weight change displayed on the LED readout.

6. Pour each additional ingredient as needed.

7. Remove the container from the pan.

8. Press **Tare** to zero the display (optional).

9. Return to step 3 to start a new mix.

Sleep Mode

When not in use for a period of 30 minutes, the scale will automatically shut off the weight display to reduce power consumption. Weight information is not lost during this "sleep" mode and the display will become active again if either key is pressed or if the pan is touched.

Serial Data Interface

The FP 7000 CLASSIC scale comes equipped with an RS232 interface for outputting weight data. It is designed to support communication with a computer or other device without using the complete RS232 protocol since only the transmit data line of the standard interface is used. When operated in Hazardous Locations, any external equipment that uses the RS232 interface must be connected to the scale through an MTL761AC safety barrier.

Data Format

The 9600 baud serial character format is:

1 start bit
7 data bits
1 even parity
1 stop bit

Output

All messages output by the scale include 8 printable ASCII characters, then Enter (ØD Hex), then Line Feed (ØA Hex), which completes the message. If the text of a message (i.e., a weight value or a status or error report) requires fewer than 8 characters, then leading character positions are filled with space characters (code 2Ø Hex) to fill out the message length to 8 characters.

RS232 Serial Data Port

The RS232 serial data port on the scale is located on the rear panel of the scale base. It consists of a 9 position D subminiature receptacle connector. The pins are assigned as follows:

Data from Scale	Pin 3
Signal Common	Pin 5
Cable Shield	Connector Shell

Note: Make no connection to pins 1, 2, 4, 6, 7, 8, or 9.

Routine Maintenance

Daily

1. Remove weighing pan and thoroughly clean (top, bottom and edges) to remove any paint which may have accumulated.

2. Remove pan support by pressing on the support while rotating counter clockwise. Thoroughly clean the area immediately beneath the weighing pan and pan support.

CAUTION: With the pan support removed, do not allow liquids or small objects to enter the scale through the small openings around the pan support mounting posts.

Monthly

1. Calibrate scale.

2. For safety reasons, check that the AC mains cable has no visible signs of damage.

Cleaning Splash Covers

To avoid build-up of static electricity, which may interfere with the scale operation, it is important to clean splash covers:

    a. in a non-hazardous location, and

    b. with a cloth moistened with paint thinner or a mild solvent.

Troubleshooting

Service Codes

The following service codes may appear on the display and are provided to alert you to some of the problems commonly encountered when using digital scales.

————	This indicates that the scale cannot produce a stable reading. Check for excessive draft or vibration.
HHHHHH	The 7000g capacity has been exceeded by 5% or more.
LLLLLL	a. Scale may have been switched on without the weighing pan and pan support attached. Install the pan support and pan on the scale, and press the **Tare** key. b. There may be interference beneath the pan. Make sure that the area beneath the pan is clean and that the dust cover is not touching the pan or pan support.
noCAL	The calibration cannot proceed. Refer to "**Calibration,**" p. 7 for the right procedure.
Blank Display	Scale may have gone to sleep after 30 minutes of inactivity. Restore the display by pressing one of the keys or by touching the pan. If the display remains off, check the cable connection to the scale from the power supply. Also, check to make sure the AC mains is providing power to the power supply and that the connection to the mains is intact.

Service and Repairs

1.   IMPORTANT: All repairs and service to the scale MUST be carried out and duly certified by Fillon Technologies, N. A., Inc. in order for the warranty to remain valid. Any tampering with the scale will automatically and immediately void the warranty and relieve the manufacturer of any liability for subsequent damage or injury caused to or by the product.

2.   If your scale does not operate correctly:
     FIRST - Gather the following information:
              • Model Number: FP7000 CLASSIC
              • Serial Number (on label at the rear of scale)
              • Date of Installation
              • Name of Supplier
     THEN - Call Fillon Technologies, N. A., Inc. Toll Free Service Desk at 1(800) 777-1583 (Monday through Friday, 8 a.m. - 4:30 p.m. EST). If calling from outside the USA or Canada call country code 1-401-431-1580.

3.   You may be asked to return the goods for inspection or repair. If so, you should follow the procedure detailed below.

Returned Goods Procedure

1.   Enter all details of the scale's problem on the packing list or include a note with the scale.

2.   Use the original packaging to ship the scale.

3.   Ship scale pre-paid via surface transport adequately insured. Repaired goods will be returned using a surface freight carrier pre-paid and insured.

IMPORTANT: RETURN AUTHORIZATION MUST ALWAYS BE OBTAINED FROM FILLON TECHNOLOGIES N. A., INC. BEFORE GOODS ARE RETURNED.

Specifications

Weighing Range .... 0-7000 grams (7kg)

Increments. ....0.1g (tenth of a gram)

Tare Range .... 0-7000 grams

Stabilization Time* ....< 1.5 seconds

Display Update Rate ....6 times/second

Operating Temperature   IS T 4 .... up to 25°C (77°F)
                                        I S T3 .... upto50°C (122°F)

Weighing Pan .... 19 cm (7.5 in.) diameter

Overall Scale Dimensions ....Depth: 31.5 cm ($12^3/_8$ in.)
                                                Width: 20.5 cm ($8^1/_8$ in.)
                                               Height: 34.0 cm ($13^3/_8$ in.)

Power Consumption .... 2.5 Watts

Input voltage to Power Supply .... 110 V $^+/-$ 10 % 50/60 Hz

* In an environment free of draft and vibration.

Summary of Cautions

1. Warning: The FP7000 CLASSIC Power supply is designed to be installed in the Safe Area and should not be used in the presence of combustible vapors.

2. IMPORTANT: All repairs and service to the scale MUST be carried out, and duly certified by Fillon Technologies, N. A., Inc. in order for the warranty to remain valid. Any tampering with the scale will automatically and immediately void the warranty and relieve the manufacturer of any liability for subsequent damage or injury caused to or by the product. For further information please contact Fillon Technologies, N. A., Inc. at 1-800-777-1583 or your local distributor.

3. DO NOT DISCARD THE ORIGINAL PACKAGING. Always use the original carton for shipment or movement of the scale to a new location.

4. Do not locate the scale near sources of heat, draft, or vibration.

5. NOTICE: To prevent damage to the weighing mechanism, NEVER secure a lid onto a paint can while it is on the weighing pan.

6. Clean dust covers and exposed scale surfaces with a cloth moistened with paint thinner or a mild solvent.

7. IMPORTANT: RETURN AUTHORIZATION MUST ALWAYS BE OBTAINED FROM FILLON TECHNOLOGIES N.A., INC. BEFORE GOODS ARE RETURNED.

Standard Warranty

Fillon Technologies, N. A., Inc. (hereafter called FTNA) warrants each new scale to be free from defects in materials and workmanship for a period of five years from the date of shipment from the warehouse.

During the warranty period, FTNA will replace and/or repair any part of the scale which it determines is defective.

Not included under the terms of this Warranty are parts which are damaged as a result of accident, misuse, or abuse. Damage due to lightning, power surges, normal wear and tear, modification, or tampering is not covered by the Warranty.

All warranty claims must be made by first contacting FTNA at 1 (800) 777-1583 (9 a.m. to 4:30 p.m. EST, Monday through Friday). Under no circumstances should the scale be returned to FTNA or its appointed Service Agents for inspection, replacement and/or repair without the express consent of FTNA. This consent will take the form of a Return Authorization (RA) number issued by FTNA to identify and track the scale during shipping and repair.

All repairs and service to the scale must be carried out and duly certified by FTNA in order for the Warranty to remain valid. Any tampering with the scale will automatically and immediately void the Warranty and relieve the manufacturer of any liability for subsequent damage caused to or by the product.

In no event will FTNA be liable to any individual or business entity for any damages, including any incidental or consequential damages, expenses, lost profits, lost savings, or other damages arising out of the inability to use the scale.

In Case of Returned Goods:

a. All goods must be properly packaged in original packaging. Manufacturer is not liable for damage due to inadequate packaging.

b. The Return Authorization number must be obtained prior to shipping. Freight must be prepaid and the scale must be insured.

— CONNECTION POINT FOR IS GND

← TO 406-EX POWER SUPPLY
IN NON-HAZARDOUS AREA
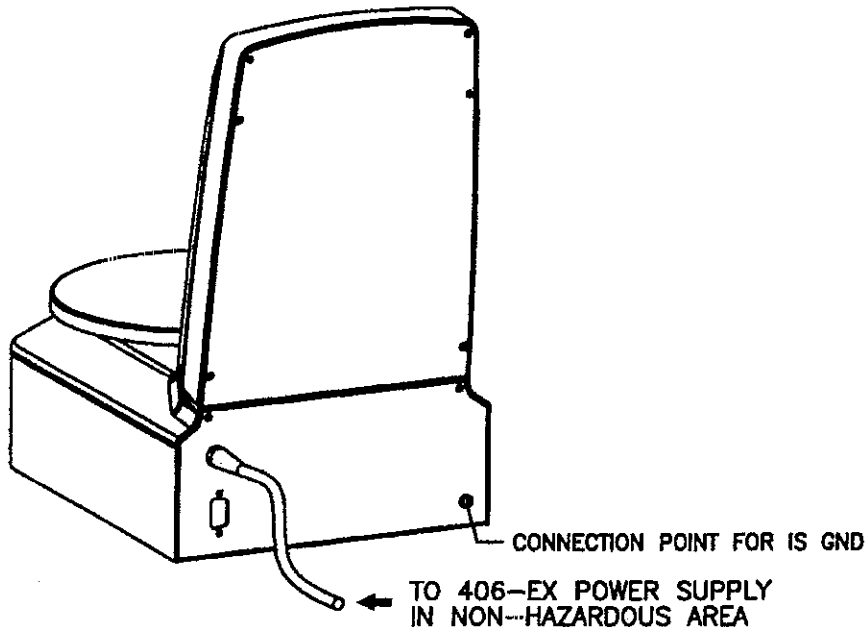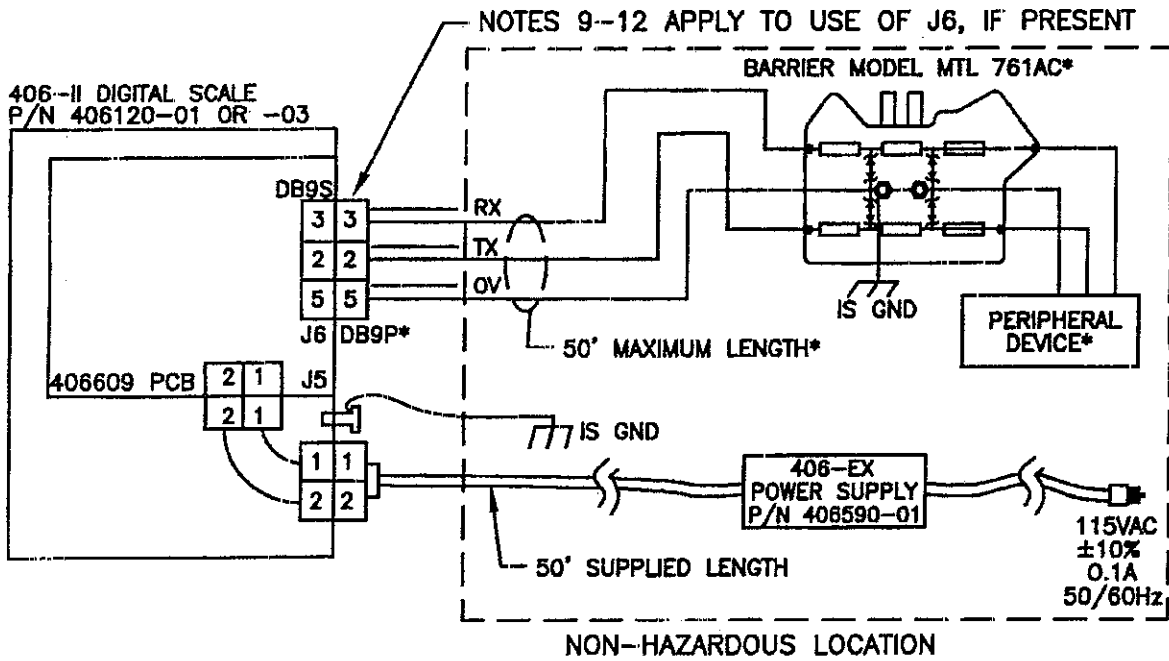
NOTES:

1. SCALE MUST NOT BE PERMANENTLY ATTACHED TO ANY STRUCTURE IN THE HAZARDOUS AREA.

2. ANY TAMPERING WITH, OR REPLACEMENT OF, ANY SYSTEM COMPONENT WILL AUTOMATICALLY AND IMMEDIATELY VOID THE APPROVAL AND WARRANTY, AND WILL RELIEVE THE MANUFACTURER OF ANY LIABILITY FOR SUBSEQUENT DAMAGE CAUSED TO OR BY THE PRODUCT.

3. POWER SUPPLY (MODEL 406-EX) CONTAINS AN INTEGRAL DIODE SAFETY BARRIER.

4. INSTALLATION SHOULD BE IN ACCORDANCE WITH ANSI/ISA RP12.6 "INSTALLATION OF INTRINSICALLY SAFE SYSTEMS FOR HAZARDOUS (CLASSIFIED) LOCATIONS" AND THE NATIONAL ELECTRICAL CODE (ANSI/NFPA 70).

5. THE CONFIGURATION OF ASSOCIATED APPARATUS MUST BE FM APPROVED.

6. ASSOCIATED APPARATUS MANUFACTURER'S INSTALLATION DRAWING MUST BE FOLLOWED WHEN INSTALLING THIS EQUIPMENT.

7. NO REVISION TO DRAWING WITHOUT PRIOR FMRC APPROVAL.

8. RESISTANCE BETWEEN IS GROUND AND EARTH GROUND MUST BE LESS THAN 1 OHM.

9. EXTERNAL EQUIPMENT USING THE RS232 COMMS CAPABILITY MUST BE CONNECTED THROUGH AN MTL761AC SAFETY BARRIER.

10. FOR DB9S PINS 3 & 5 AND/OR DB9S PINS 2 & 5:
   $Vmax = Voc$ or Vt, $Imax = Isc$ or It, $Ca = Ci + Ccable$, $La = Li + Lcable$
   WHERE Ci IS CONSIDERED 0 FOR BARRIERS WITH Voc OR Vt GREATER THAN 8.5 VOLTS
   IF Voc OR Vt IS LESS THAN 8.5 VOLTS, Ci = 18.7 uF.
   FOR J5 PINS 1 & 2:
   $Vmax = Voc$ or Vt, $Imax = Isc$ or It, $Ca = Ci + Ccable$, $La = Li + Lcable$

11. CONTROL EQUIPMENT CONNECTED TO BARRIER MUST NOT USE OR GENERATE MORE THAN 250 VRMS OR DC.

12. BARRIERS MUST BE INSTALLED IN AN ENCLOSURE THAT MEETS THE REQUIREMENTS OF ANSI/ISA S82.01.

CLASSIFIED LOCATION: CLASS I, DIVISION 1, GROUP C, D

POWER INPUT: CONNECT TO MODEL 406-EX POWER SUPPLY ONLY

NOTES 9-12 APPLY TO USE OF J6, IF PRESENT

BARRIER MODEL MTL 761AC*

406-II DIGITAL SCALE
P/N 406120-01 OR -03

DB9S

3	3	RX
2	2	TX
5	5	OV

J6 DB9P*

IS GND

PERIPHERAL DEVICE*

50' MAXIMUM LENGTH*

| 406609 PCB | 2 | 1 | J5 |
| | 2 | 1 | |

IS GND

| 1 | 1 |
| 2 | 2 |

406-EX
POWER SUPPLY
P/N 406590-01

115VAC
±10%
0.1A
50/60Hz

50' SUPPLIED LENGTH

NON-HAZARDOUS LOCATION

*INDICATES CUSTOMER-SUPPLIED PARTS

THIS DRAWING CANNOT BE CHANGED WITHOUT PRIOR APPROVAL FROM FM

REVISION RECORD		APPROVALS	
REV.	ECO #	INITIALS	DATE
A	NOT RELEASED		
B	6029	C.S.	2/15/00

TOLERANCES
EXCEPT AS NOTED
XX = ±.01
XXX = ±.005
≤ 6" = ±1/32
> 6" = ±1/16
± 0° 30'
DO NOT SCALE DRAWING

THIRD ANGLE
PROJECTION

setra
Boxborough, MA, USA

J. DELUCO   8/2/99
C. SURPRISE   1/21/00

DRAWING, CONTROL, 406-II, UNITED STATES

SS2053-01

B   B