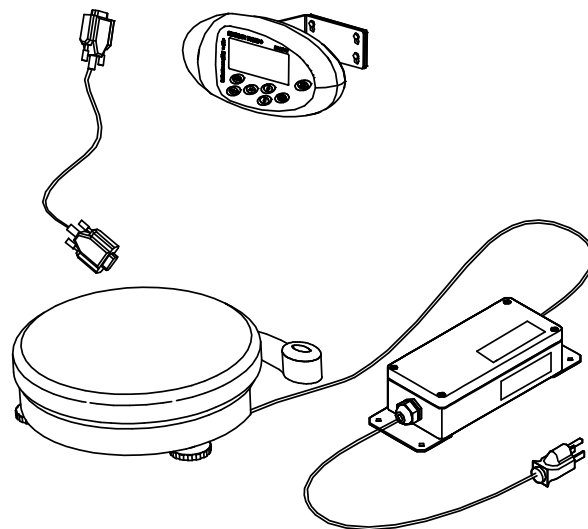
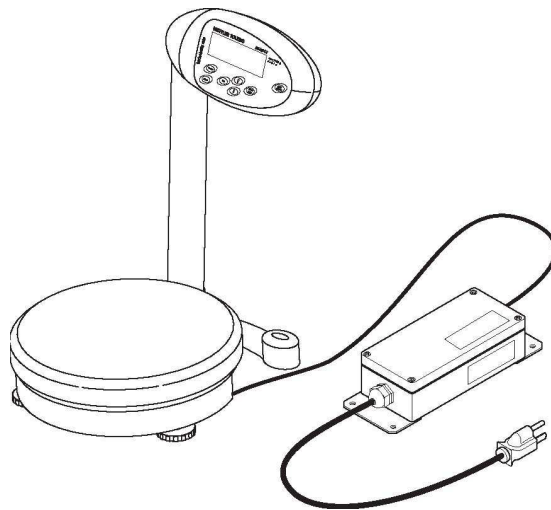


**METTLER TOLEDO**

# Installation and Maintenance instructions

METTLER TOLEDO

BBA242x Paint Mixing Scales with Panda-EX1P Power Supply Unit



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## 1 Documentation for the BBA242x Paint Mixing Scale with Panda-EX1P Power Supply Unit

The BBA242x Paint Mixing Scale with the Panda-EX1P Power Supply Unit is accompanied by the following documentation:

- Installation and maintenance instructions
- Operating instructions

These installation and maintenance instructions apply to all scales with a type designation containing the letters BBA242x. The individual model designations may also include numbers detailing the weighing range and additional letters which indicate special versions.

These instructions contain information for the installation and start-up of the scale and the power supply unit, as well as all requirements necessary for safe operation of the system. You will find all information on the weighing applications and the interface operation in the operating instructions.

## 2 Application range

The BBA242x Paint Mixing Scales are approved for use in a hazardous area classified as zone 1 or zone 2, gas group IIB and temperature class T4. Then, they are FMRC and CSA approved to the classification: Class 1, Division 1, Group CD.

The Panda-EX1P Power Supply Unit must be installed in the safe area. If local installation regulations permit, the power supply unit may also be installed in zone 2. Installation in US Division 2 is not approved.

The RS232 interface built in the scale is intrinsically safe.

The only peripherals which may be attached are those fitted with an interface having the same limiting values and approved as intrinsically safe, see section "Technical data".

## 3 Cautionary notes regarding installation

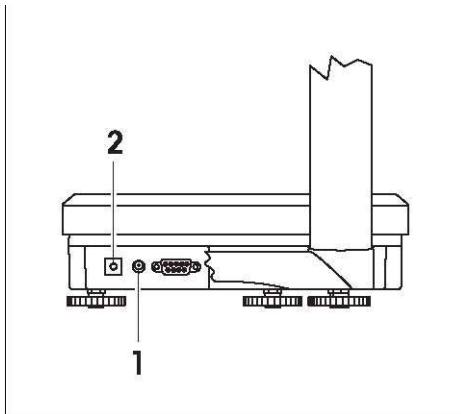


- ▲ Perform the installation only as described in these instructions and in the appropriate control drawing.
  - ▲ It is essential to comply with national regulations regarding grounding and connection to the power supply.
- 
- ▲ No changes whatsoever may be made to the scale or the power supply unit.
  - ▲ Service work and repairs must be carried out only by personnel authorized by METTLER TOLEDO.
  - ▲ Check that the scale and power supply unit are in perfect condition with regard to safety before putting into operation for the first time and at least after every 3 years of service.

## 4 Installation on the scale

- ▲ In all installation work, refer to the appropriate control drawing:
  - Installation drawing 72227513
  - Installation drawing for US 72227512
  - Installation drawing for Canada 72227511

### Attaching power cable to the scale



- Turn the scale on its side so that the connection socket (1) on the bottom is accessible.
- Route the blue cable from the Panda -EX1P Power Supply Unit to the scale and plug connector into the scale.
- Use a grounding cable (cross-section  $\geq 1 \text{ mm}^2$ ) to connect the grounding screw (2) to the nearest connection of the grounding system of the building electrical installation.
- Turn the scale back to the proper position.

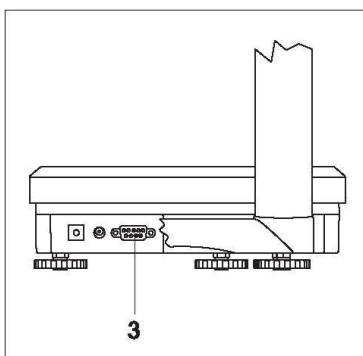
### Ensuring admissibility of the peripheral unit

If a peripheral unit needs to be connected, its RS232 interface must also be intrinsically safe and approved to maintain the intrinsic safety.

- Ensure that the electrical limiting values of the peripheral match the limiting values printed on the scale next to the socket.

If this is not the case, install an approved barrier, e.g. MTL 761P.

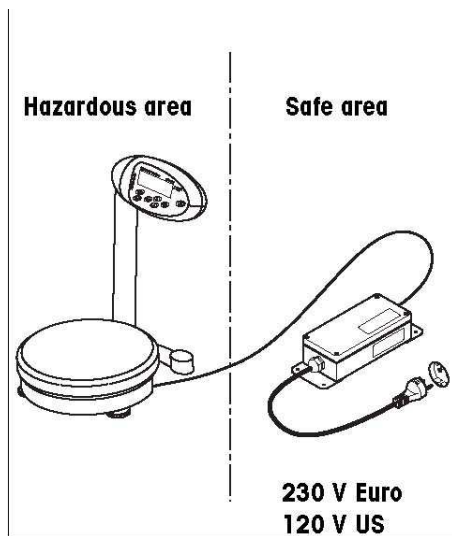
### Attaching peripheral unit



- Connect the cable from the peripheral device to the 9-pin I/O socket (3) of the scale. Fix all connectors by tightening screws.

## 5 Installation of the Panda-EX1P Power Supply Unit

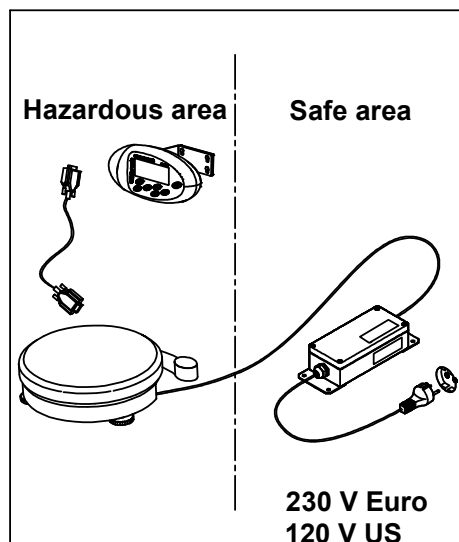
### Installation in the safe area



- Install the power supply in the safe area near a wall socket.  
If required, the power supply unit can be permanently fixed by using the mounting plates and the 4 screws.
- Route the power line cable and the cable to the scale so that they are protected against damage. Cables must not be kinked or bent at sharp angles.
- Plug the power plug into the wall socket of the building electrical installation.

Note: The type 71147341 of the Panda-EX1P/230V is delivered without plug. Fit a 3-pole plug to the cable observing the lead colors:

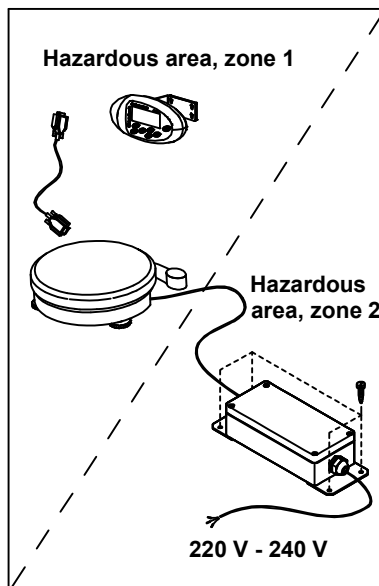
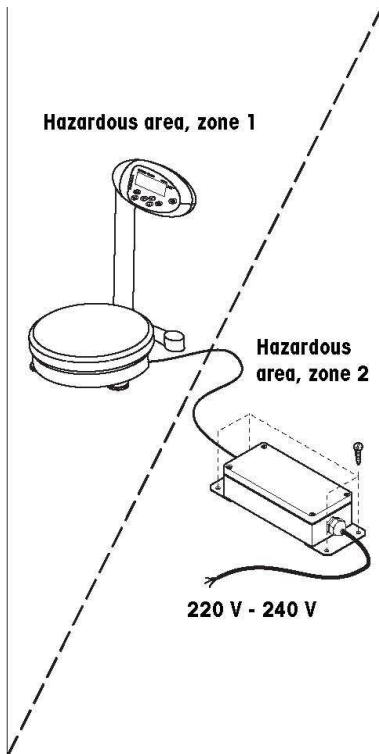
yellow/green lead	ground
brown lead	phase
blue lead	neutral



As neither the power supply unit nor the scale have an on/off switch, the power plug serves as a power disconnecting device.

The scale is ready for operation as soon as the power plug is plugged in.

## Installation in the hazardous area of zone 2 (only Panda-EX1P/230V)



If the power supply unit is installed in zone 2, the power cable must be attached to the screw terminals of the building electrical installation.

### Requirement

An all-pole power disconnecting device must be installed on the supply side of the screw terminals of the building electrical installation.

### Procedure

- Permanently install the power supply unit using the mounting plates and 4 screws to the building electrical installation near a connection device.
- Route the power line cable and the cable to the scale so that they are protected against damage. Cables must not be kinked or bent at sharp angles
- Attach power cable to the screw terminals of the building electrical installation as follows:

Yellow/green lead	ground
Brown lead	phase
Blue lead	neutral
- Switch on the power. The scale is ready for use.

## 6 Operation and maintenance

### Safety measures during operation

- ▲ Power supply unit and scale may be operated only when the housing is closed.
- ▲ **Warning: Because of the danger of static discharge, a protective cover may only be used if it is statically uncritical.**

### Control

- Inspect the cables, connectors and accessories at regular intervals. Ensure they are free from cracks and other mechanical or chemical damage. If such damage is found, inform METTLER TOLEDO service.

### Cleaning

- ▲ When cleaning the scale, ensure that the terminal and particularly the membrane keypad are not damaged.
- ▲ **Warning :Avoid extensive dry rubbing on the scale parts since this may cause static discharges.**

## 7 Directives and test standards

Since the Panda-EX1P power supply is always used on scale BBA242x, the list of directives and standards is contained in the operating instructions of the scale.

## 8 Technical data

### Panda-EX1P Power Supply Unit

Classification 230 V type

ATEX EEx II (2) G [EEx ib] II B

ATEX EEx II 3 (2)G EEx nA [ib] IIB T4

Mains input

230 V, 50 Hz, 60 mA;  $U_m = 250$  V

Safety output

$U_o$ : 14.3 V,  $I_o$ : 2.28 A,  $P_o$ : 4.2 W,  $C_o$ : 2.28  $\mu$ F,

$L_o/R_o$ : 17.5  $\mu$ H/ $\Omega$

Classification 120 V type

Associated Int. Safe, output Class I, Div 1 / GP C,D

Mains input

120 V, 60 Hz, 120 mA;  $U_m = 250$  V

Safety output

$U_o$ : 14.3 V,  $I_o$ : 2.28 A,  $P_o$ : 4.2 W,  $C_o$ : 2.28  $\mu$ F,

$L_o/R_o$ : 17.5 H/ $\Omega$

Dimensions (w x d x h)

235 x 80 x 60 mm

Hole distance

214 x 62 mm (center of mounting holes)

Weight

1.43 kg

Degree of enclosure protection

IP 65

Ambient temperature

0 to 40 °C

Notice: Panda-EX1P power supply unit can be replaced by an power supply unit which have intrinsic safety parameter:  $U_o$ : 14.3 V,  $I_o$ : 2.28 A,  $P_o$ : 4.2 W,  $C_o$ : 3.3 nF,  $L_o$ : 0

### BBA242x Intrinsically safe data interface

Connection socket

9-pin socket D-subminiature, female

Pin assignment

Pin	Assignment
Pin 2	TXD (inverted)
Pin 3	RXD (inverted)
Pin 5	GND (0V, connected to housing ground)
Pins 1, 4, 6, 7, 8, 9	not connected

Nominal rating

min.  $\pm 5$  V at 3  $\mu$ A

max.  $\pm 11$  V at 300  $\Omega$  source resistance

Values for intrinsic safety

$U_o = 11.6$  V;  $I_o = 56.8$  mA;  $P_o = 165$  mW;

$C_o = 2.11$   $\mu$ F;  $L_o = 15$  mH

$U_i = \pm 11$  V;  $I_i = 28$  mA;  $P_i = 148$  mW;

$C_i = 1.3$  nF;  $L_i = 0$

Enclosure Protection

IP4X, **warning : indoor use. Don't exposed to rain.**

**Recommended barriers from MTL Instruments Ltd**

Type 761P

Channel 1/2:  $U_o = \pm 9$  V,  $I_o = 25$  mA,

Working voltage =  $\pm 7.2$  V

The TXD output of an external RS232 port must be limited by a source resistance of approx. 300  $\Omega$ .

**Note: BBA242x need to connect to ground by Using a grounding cable (cross-section  $\geq 1$  mm<sup>2</sup>) to connect the grounding screw**

2.



## 9 FCC and Canadian EMC reglementation

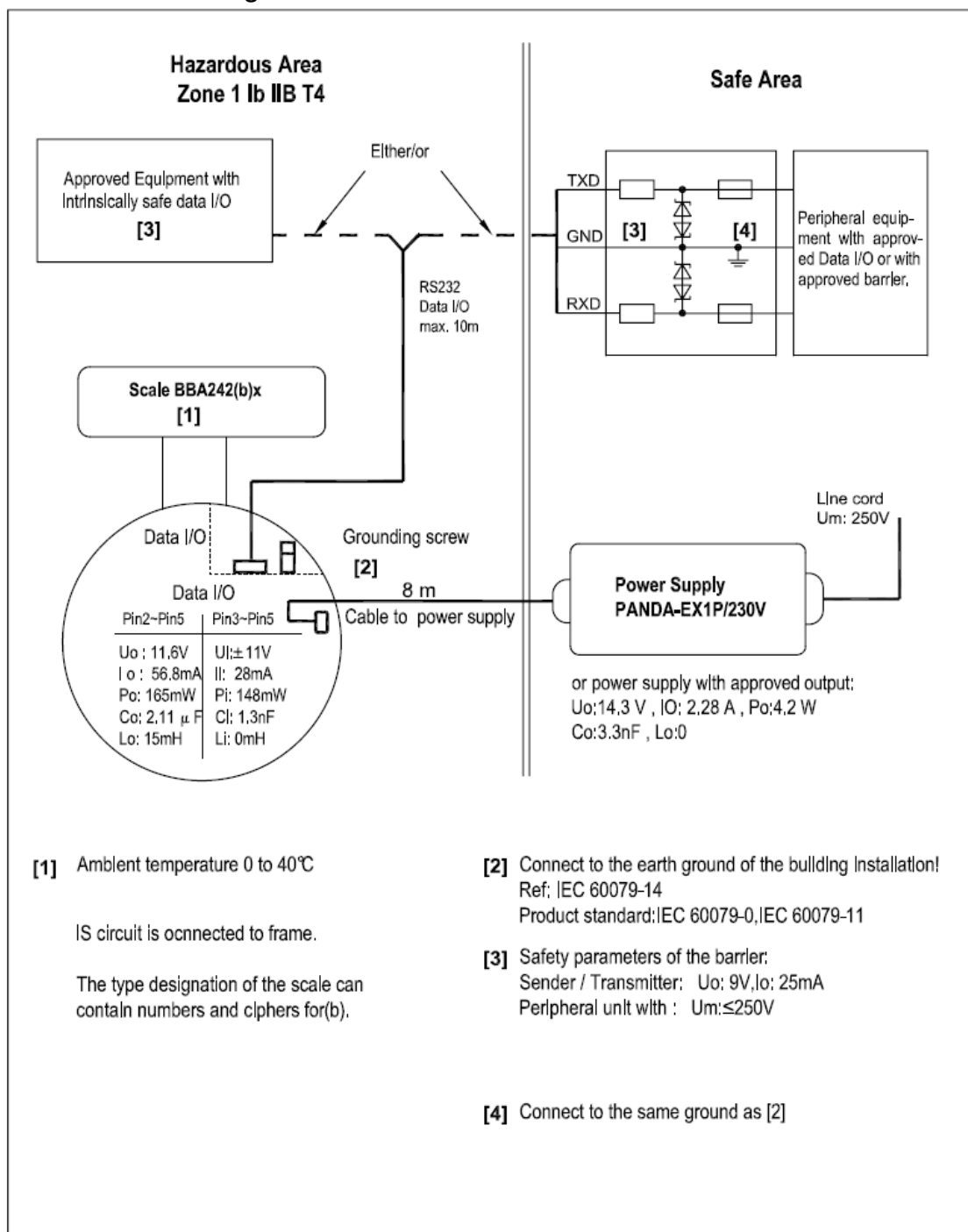
This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to both Part 15 of the FCC Rules and the radio interference regulations of the Canadian Department of Communications. These limits are designed to provide reasonable protection against harmful interference 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.

ICES-001 Notice for Industrial, Scientific and Medical Radio Frequency Generators: This ISM apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

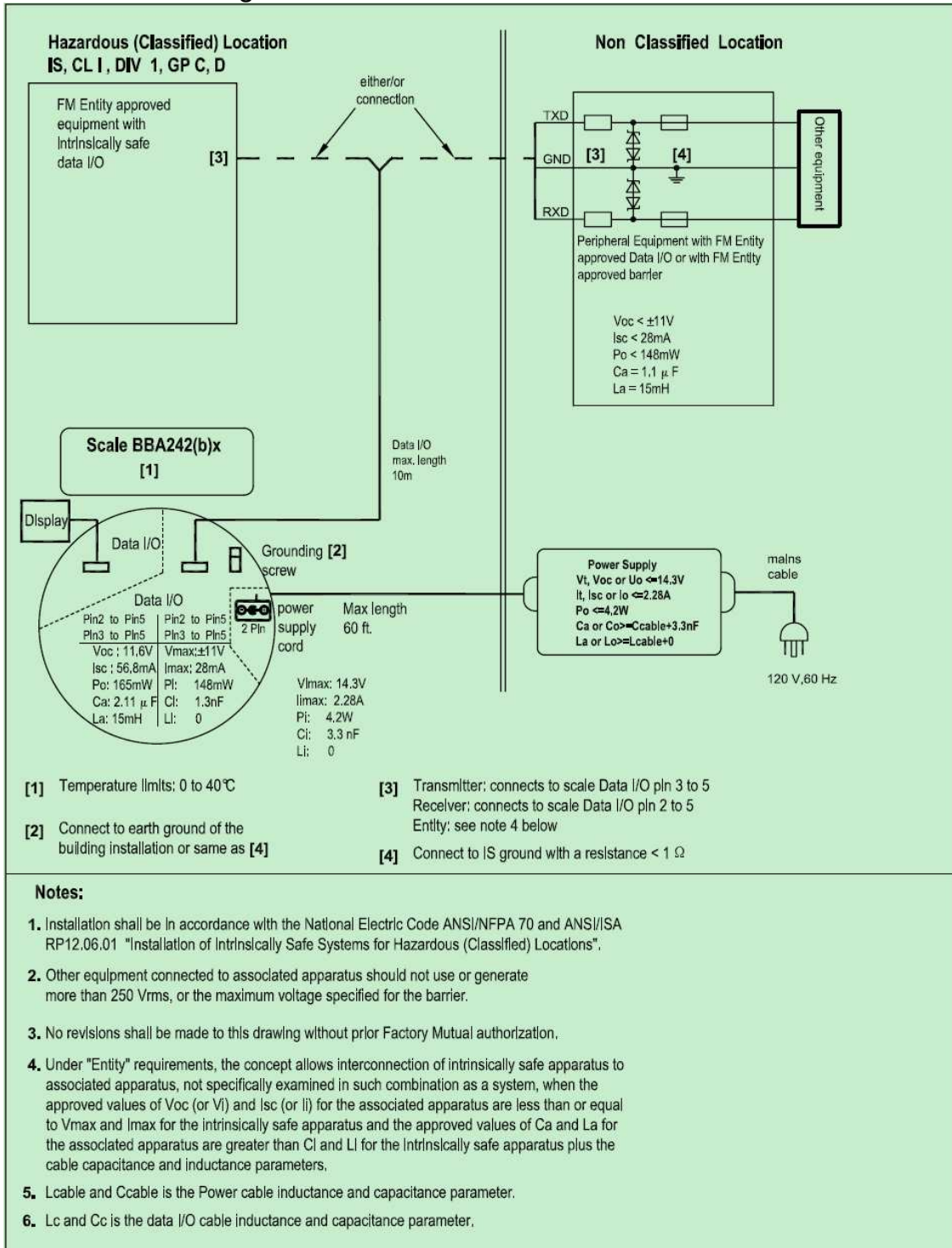
Please note that this requirement is only for generators which operate at over 10 000 Hz.

Avis de l'ICES-001, générateurs de radiofréquences dans le domaine industriel, scientifique et médical: Cet appareil ISM (industriel, scientifique et médical) satisfait à toutes les exigences définies par la réglementation canadienne en matière d'équipements générant des perturbations radioélectriques. Veuillez noter qu'il s'agit d'une exigence concernant uniquement les générateurs fonctionnant au-delà de 10 000 Hz.

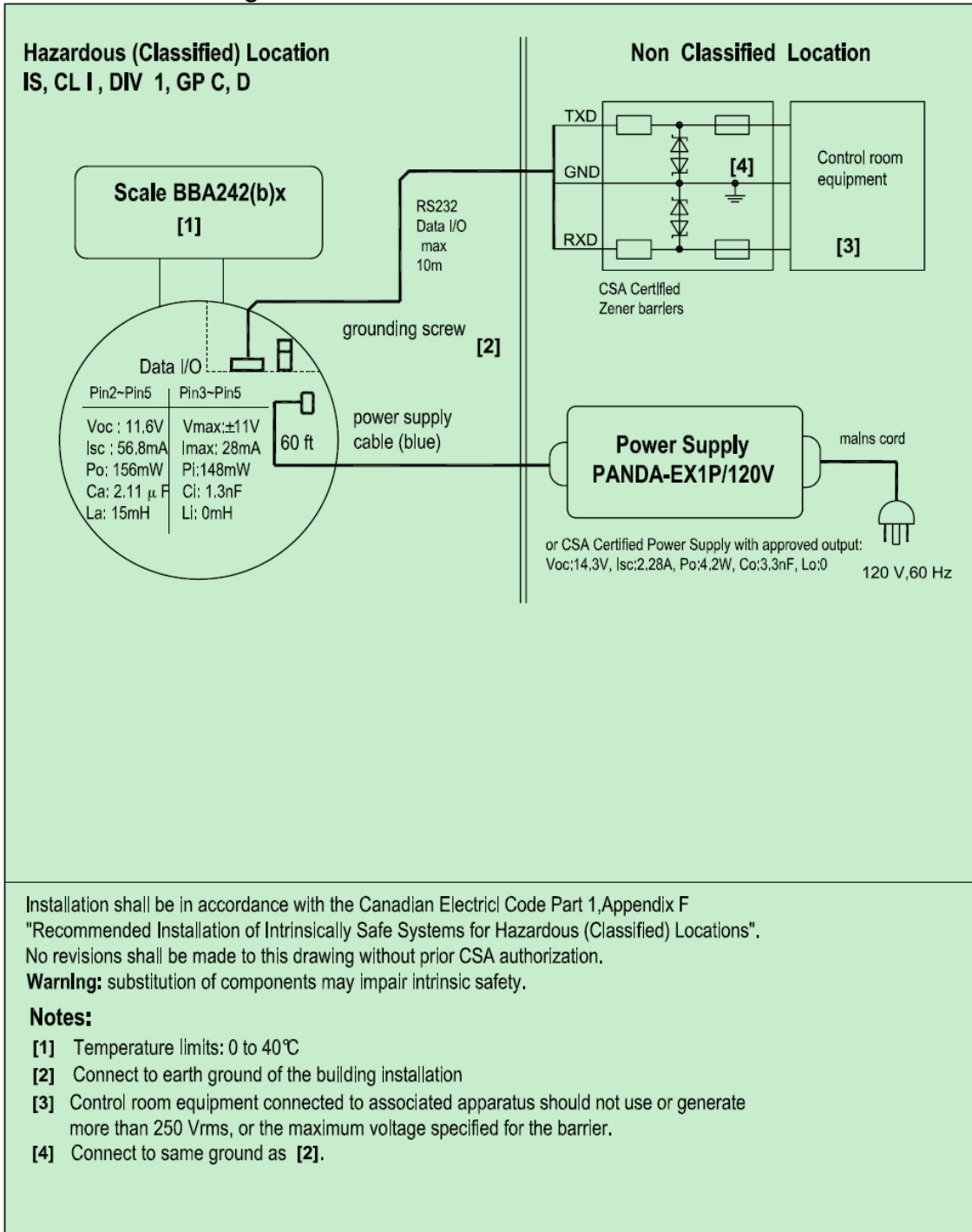
# Installation Drawing 72227513A



# Installation Drawing 72227512A



# Installation Drawing 72227511A



**To protect your METTLER TOLEDO product's future:  
METTLER TOLEDO service assures the quality, measuring accuracy and  
preservation of value of all METTLER TOLEDO products for years to come.  
Please send for full details about our attractive terms of service. Thank you.**

**\*72227281\***

Subject to technical changes and to the availability  
of the accessories supplied with the instruments.  
Technische Änderungen und Änderungen im  
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72227281 Printed in China

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