

ACT350xx

Weighing Transmitter



METTLER TOLEDO

ACT350xx Weighing Transmitter

METTLER TOLEDO Service

Essential Services for Dependable Performance of Your ACT350xx Weighing Transmitter

Congratulations on choosing the quality and precision of METTLER TOLEDO. Proper use of your new equipment according to this Manual and regular calibration and maintenance by our factory-trained service team ensures dependable and accurate operation, protecting your investment. Contact us about a service agreement tailored to your needs and budget. Further information is available at www.mt.com/service.

There are several important ways to ensure you maximize the performance of your investment:

1. **Register your product:** We invite you to register your product at www.mt.com/productregistration so we can contact you about enhancements, updates and important notifications concerning your product.
2. **Contact METTLER TOLEDO for service:** The value of a measurement is proportional to its accuracy – an out of specification scale can diminish quality, reduce profits and increase liability. Timely service from METTLER TOLEDO will ensure accuracy and optimize uptime and equipment life.
 - a. **Installation, Configuration, Integration and Training:** Our service representatives are factory-trained, weighing equipment experts. We make certain that your weighing equipment is ready for production in a cost effective and timely fashion and that personnel are trained for success.
 - b. **Initial Calibration Documentation:** The installation environment and application requirements are unique for every industrial scale so performance must be tested and certified. Our calibration services and certificates document accuracy to ensure production quality and provide a quality system record of performance.
 - c. **Periodic Calibration Maintenance:** A Calibration Service Agreement provides on-going confidence in your weighing process and documentation of compliance with requirements. We offer a variety of service plans that are scheduled to meet your needs and designed to fit your budget.
 - d. **GWP® Verification:** A risk-based approach for managing weighing equipment allows for control and improvement of the entire measuring process, which ensures reproducible product quality and minimizes process costs. GWP (Good Weighing Practice), the science-based standard for efficient life-cycle management of weighing equipment, gives clear answers about how to specify, calibrate and ensure accuracy of weighing equipment, independent of make or brand.

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NOTICE

This document is associated with an agency-approved product. No changes to this document are permitted without agency approval.

ORDERING INFORMATION

It is most important that the correct part number is used when ordering parts. Parts orders are machine processed, using only the part number and quantity as shown on the order. Orders are not edited to determine if the part number and description agree.

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FCC Notice











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








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

- Declaration of Conformity is available at <http://glo.mt.com/global/en/home/search/compliance.html/compliance/>.

Warnings and Cautions

- READ this manual BEFORE operating or servicing this equipment and 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 accessories.

	<p style="text-align: center;"> WARNING</p> <p>METTLER TOLEDO ASSUMES NO RESPONSIBILITY FOR CORRECT INSTALLATION OF THIS EQUIPMENT WITHIN A ZONE 2 AREA. THE INSTALLER MUST BE FAMILIAR WITH ALL ZONE 2 WIRING AND INSTALLATION REQUIREMENTS. THIS EQUIPMENT MUST NEVER BE INSTALLED IN A DIVISION 2 ENVIRONMENT.</p>
	<p style="text-align: center;"> WARNING</p> <p>DO NOT USE THE ACT350xx Analog / ACT350xx POWERCELL TRANSMITTER WITHIN AREAS CLASSIFIED AS HAZARDOUS DIVISION 1 OR ZONE 0/1/20/21 BECAUSE OF COMBUSTIBLE OR EXPLOSIVE ATMOSPHERES. FAILURE TO COMPLY WITH THIS WARNING COULD RESULT IN BODILY HARM AND/OR PROPERTY DAMAGE.</p>
	<p style="text-align: center;"> WARNING</p> <p>THE ACT350xx ANALOG / ACT350xx POWERCELL WEIGHING TRANSMITTER HAS A TEMPERATURE RATING OF T4 (135° C) FOR GAS IN A ZONE 2 ENVIRONMENT. IT MUST NOT BE USED IN AREAS WHERE THE AUTO IGNITION TEMPERATURE OF THE HAZARDOUS MATERIAL IS BELOW THIS RATING. THIS EQUIPMENT MUST NEVER BE INSTALLED IN A DIVISION 2 ENVIRONMENT.</p>
	<p style="text-align: center;"> WARNING</p> <p>ONLY THE COMPONENTS SPECIFIED IN THIS MANUAL CAN BE USED IN THIS WEIGHING TRANSMITTER. ALL EQUIPMENT MUST BE INSTALLED IN ACCORDANCE WITH THE INSTALLATION INSTRUCTIONS DETAILED IN THIS MANUAL. INCORRECT OR SUBSTITUTE COMPONENTS AND/OR DEVIATION FROM THESE INSTRUCTIONS CAN IMPAIR THE SAFETY OF THE WEIGHING TRANSMITTER AND COULD RESULT IN BODILY INJURY AND/OR PROPERTY DAMAGE.</p>
	<p style="text-align: center;"> WARNING</p> <p>VERSIONS OF THE ACT350 ANALOG/ ACT350 POWERCELL WEIGHING TRANSMITTER THAT ARE NOT FACTORY-LABELED AS ZONE 2 MUST NOT BE INSTALLED INTO A ZONE 2 ENVIRONMENT. NO VERSION OF THE ACT350 ANALOG/ACT350 POWERCELL WEIGHING TRANSMITTER CAN EVER BE INSTALLED IN A DIVISION 2 ENVIRONMENT. VERSIONS FACTORY LABELED AS DIVISION 2 MUST BE INSTALLED IN A SAFE AREA BUT MAY TRANSMIT SIGNALS TO LOAD CELLS IN A DIVISION 2 ENVIRONMENT WITHOUT THE USE OF A SAFETY BARRIER.</p>

	<p style="text-align: center;"> WARNING</p> <p>IN ORDER TO INSTALL THE ACT350xx TRANSMITTER IN THE US OR CANADA, METTLER TOLEDO CONTROL DRAWINGS 30315298 or 30369059 MUST BE FOLLOWED WITHOUT EXCEPTION. IN ORDER TO INSTALL THE CATEGORY 3 MARKED ACT350 UTILIZING THE EUROPEAN APPROVAL, THE DEKRA APPROVAL CERTIFICATE 18ATEX0036X/ IECEx DEK 18.0022X AND ALL LOCAL REGULATIONS MUST BE FOLLOWED WITHOUT EXCEPTION. FAILURE TO DO SO COULD RESULT IN BODILY HARM AND/OR PROPERTY DAMAGE.</p>
	<p style="text-align: center;"> WARNING</p> <p>THE ACT350xx ANALOG / ACT350xx POWERCELL WEIGHING TRANSMITTER MUST BE INSTALLED AND MAINTAINED PER THE SPECIAL CONDITIONS LISTED IN CHAPTER 2 OF THIS MANUAL WITHOUT EXCEPTION. FAILURE TO DO SO COULD RESULT IN BODILY HARM AND/OR PROPERTY DAMAGE.</p>
	<p style="text-align: center;"> WARNING</p> <p>DO NOT INSTALL, DISCONNECT OR PERFORM ANY SERVICE ON THIS EQUIPMENT BEFORE POWER HAS BEEN SWITCHED OFF AND THE AREA HAS BEEN SECURED AS NON-HAZARDOUS BY PERSONNEL AUTHORIZED TO DO SO BY THE RESPONSIBLE PERSON ON-SITE.</p>
	<p style="text-align: center;">NOTICE</p> <p>OBSERVE PRECAUTIONS FOR HANDLING ELECTROSTATIC SENSITIVE DEVICES.</p>

Disposal of Electrical and Electronic Equipment

In conformance with the European Directive 2002/96/EC on Waste Electrical and Electronic Equipment (WEEE) this device may not be disposed of in domestic waste. This also applies to countries outside the EU, per their specific requirements.



Please dispose of this product in accordance with local regulations at the collecting point specified for electrical and electronic equipment.

If you have any questions, please contact the responsible authority or the distributor from which you purchased this device.

Should this device be passed on to other parties (for private or professional use), the content of this regulation must also be related.

Thank you for your contribution to environmental protection.

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1 Introduction

1.1. Overview

This installation guide describes some basic concepts about Division 2 and Zone 2/22 hazardous areas and provides guidelines for installing ACT350xx Analog / ACT350xx POWERCELL Weighing Transmitter.

ATEX and IECEx certified versions of the ACT350xx Analog / ACT350xx POWERCELL Weighing Transmitter are approved for installation and use in Zone 2 areas.

FM approved versions of the ACT350xx Analog / ACT350xx POWERCELL Weighing Transmitter are approved as Associated Non-Incendive Field Wiring Apparatus and must always be installed in a safe area. The ACT350xx Analog / ACT350xx POWERCELL can be used with load cells located Division 2 and Zone 2/22 hazardous areas without the use of a barrier.

	 WARNING
	METTLER TOLEDO ASSUMES NO RESPONSIBILITY FOR CORRECT INSTALLATION OF THIS EQUIPMENT WITHIN A ZONE 2 AREA. THE INSTALLER MUST BE FAMILIAR WITH ALL ZONE 2 WIRING AND INSTALLATION REQUIREMENTS. THIS EQUIPMENT MUST NEVER BE INSTALLED IN A DIVISION 2 ENVIRONMENT.

1.2. FM and DEKRA Approvals



The approval by FM Approvals applies to:

- The passing of the Analog Load cell or POWERCELL connections from a safe area to a Division 2 location per the National Electrical Code (NEC) in the United States.
- The passing of the Analog Load cell or POWERCELL connections from a safe area to a Division 2 location per the Canadian Electric Code (CEC) in Canada.

The approval by DEKRA applies to:

- Zone 2 applications that require compliance to European ATEX directive (2014/34/EU).
- Zone 2 applications installed to standard IEC 60079-14.

These approvals may also be acceptable in other worldwide locations. Confirm with the customer or with local authorities the acceptance of these approvals before installation. Regardless of the installation location, all local and national wiring and installation requirements must be followed during installation.

	 WARNING
	<p>IN ORDER TO INSTALL THE ACT350xx TRANSMITTER IN THE US OR CANADA, METTLER TOLEDO CONTROL DRAWINGS 30315298 or 30369059 MUST BE FOLLOWED WITHOUT EXCEPTION. IN ORDER TO INSTALL THE CATEGORY 3 MARKED ACT350 UTILIZING THE EUROPEAN APPROVAL, THE DEKRA APPROVAL CERTIFICATE 18ATEX0036X/ IECEx DEK 18.0022X AND ALL LOCAL REGULATIONS MUST BE FOLLOWED WITHOUT EXCEPTION. FAILURE TO DO SO COULD RESULT IN BODILY HARM AND/OR PROPERTY DAMAGE.</p>

1.3. Product Markings

Due to special conditions associated with the approval of the ACT350xx Analog/ ACT350xx POWERCELL Weighing Transmitter to U.S. and Canadian standards as well as the ATEX directive and IECEx standards, not all versions of the ACT350 Weighing Transmitter are marked in exactly the same way.

When ordering an ACT350 Weighing Transmitter, it is important to know which approval markings are required. Please have this information available for the local authorized METTLER TOLEDO sales representative.

1.3.1. U.S. Approval

The ACT350xx Analog / ACT350xx POWERCELL Weighing Transmitters have been approved by FM Approvals (FM17US0354X) as Associated Non-Incendive Field Wiring Apparatus and include the following markings:

Model ACT350xx Analog Transmitters

ANI, Class I, II, III Division 2, Groups A, B, C, D, F and G; NIFW

ANI, Zone 2, IIC; NIFW

ANI, Zone 22 IIIB; NIFW

Ta = -10°C to +40°C

Model ACT350xx POWERCELL Transmitters

ANI, Class I, II, III Division 2, Groups C, D, F and G; NIFW

ANI, Zone 2, IIB; NIFW

ANI, Zone 22 IIIB; NIFW

Ta = -10°C to +40°C

All approved versions must be installed per METTLER TOLEDO control drawings 30315298 (ACT350xx Analog) or 30369059 (ACT350xx POWERCELL) without exception.

- Please note both models ACT350xx Analog and ACT350xx POWERCELL must always be installed in a safe area.

1.3.2. Canadian Approval

The ACT350xx Analog / ACT350xx POWERCELL Weighing Transmitters have been approved by FM Approvals (FM17CA0171X) as Associated Non-Incendive Field Wiring Apparatus and include the following markings:

Model ACT350xx Analog Transmitters

ANI, Class I, II, III Division 2, Groups A, B, C, D, F and G; NIFW

Ta = -10°C to +40°C

Model ACT350xx POWERCELL Transmitters

ANI, Class I, II, III Division 2, Groups C, D, F and G; NIFW


Ta = -10°C to +40°C

All approved versions must be installed per METTLER TOLEDO control drawings 30315298 (ACT350xx Analog) or 30369059 (ACT350xx POWERCELL) without exception.

- Please note both models ACT350xx Analog and ACT350xx POWERCELL must always be installed in a safe area.

1.3.3. European ATEX Approval

The ACT350xx Analog / ACT350xx POWERCELL Weighing Transmitters have been evaluated as Above ground Category 3 Gas environments by DEKRA Certifications, B.V. and issued Type Examination Certificate DEKRA 18ATEX0036X. This authorizes METTLER TOLEDO to mark the Weighing Transmitter as:

II 3 G Ex nA IIC T4 Gc
 II 3 G Ex ec IIC T4 Gc
-10°C ≤ Ta ≤ +40°C

1.3.4. Global IECEx Approval

The ACT350xx Analog / ACT350xx POWERCELL Weighing Transmitters have been IECEx certified by DEKRA for use in Zone 2 locations and issued Certificate of Conformity IECEx DEK 18.0022X. This authorizes METTLER TOLEDO to mark the Weighing Transmitter as:

Ex ec IIC T4 Gc
Ex nA IIC T4 Gc
-10°C ≤ Ta ≤ +40°C

2 Installation

2.1. Before Installation

Before installing the ACT350xx Analog / ACT350xx POWERCELL Weighing Transmitter in the US and Canada, read and understand METTLER TOLEDO control drawings 30315298 (ACT350xx Analog) or 30369059 (ACT350xx POWERCELL), included in the appendix of this guide. Make note of the inputs and outputs that will be used and the type of protection required for each I/O.

Before installing the Category 3 rated ACT350xx Analog / ACT350xx POWERCELL Weighing Transmitter into an area classified as Zone 2 according to the European ATEX directive, read and understand METTLER TOLEDO installation drawing, 30467204 (ACT350xx Analog) or 30369090 (ACT350xx POWERCELL), and the specific conditions of use listed on Type Examination Certificate DEKRA 18ATEX0036X included in the appendix of this guide.

For installation in an ATEX Zone 2 location, the ACT350xx Analog / ACT350xx POWERCELL Weighing Transmitters must be installed into an ATEX approved enclosure with a minimum IP54 rating (not included). The ACT350xx Analog / ACT350xx POWERCELL Weighing Transmitters may also be located in a Zone 22 environment when installed in an ATEX approved dust tight enclosure of EPL c. (Ex tc Dc) Note: Both models rely on the dust protection provided by the supplemental enclosure and are not approved or marked for direct installation into a Zone 22 environment.

For installation in an IEC Zone 2 location, the ACT350xx Analog / ACT350xx POWERCELL Weighing Transmitters must be installed into an IECEx approved enclosure with a minimum IP54 rating (not included). The ACT350xx Analog / ACT350xx POWERCELL Weighing Transmitters may also be located in a Zone 22 environment when installed in an IECEx approved dust tight enclosure of EPL c. (Ex tc Dc) Note: Both models rely on the dust protection provided by the supplemental enclosure and are not approved or marked for direct installation into a Zone 22 environment.

Before beginning the installation, confirm that the correct markings are on the ACT350xx Analog / ACT350xx POWERCELL Weighing Transmitter indicating that the Weighing Transmitter has been approved for use in Zone 2 areas. The required markings are shown in section 1.3 of this guide.

If the ACT350 Weighing Transmitter does not include the approval markings as shown in section 1.3 of this guide, the Weighing Transmitter cannot be installed in the hazardous area.

2.2. Installation Using Associated NIFW Approval

Versions of the ACT350xx approved for the United States and Canada are approved as Associated Non-Incendive Field Wiring Apparatus and must only be installed in the unclassified (safe) area. Refer to the National Electrical Code, Canadian Electrical Code, or applicable local ordinance for allowed wiring methods.

2.2.1. Analog Load Cell

The analog load cell connection is rated non-incendive on the ACT350xx Analog Weighing Transmitter. Connection of the load cells must be per the details shown on drawing 30315298. The ACT350xx Analog Weighing Transmitter must be powered using a Listed power supply that provides between 12 and 30VDC and at least xx A. The non-incendive field circuit wiring (NIFW) parameters are listed here:

NIFW Parameters
$V_{oc} = 5.16 \text{ VDC}$
$I_{sc} = 221 \text{ mA}$
$C_a = 1 \text{ } \mu\text{F}$
$L_a = 0.6 \text{ mH}$

2.2.2. POWERCELL Digital Load Cell

The digital POWERCELL load cell connection is rated non-incendive on the ACT350xx POWERCELL Weighing Transmitter. This interface uses a power supply and bi-directional communication lines in separate NIFW Circuits. Connection of the POWERCELL Digital Load Cells must be per the details shown on drawing 30369059.

The ACT350xx POWERCELL Weighing Transmitter must be powered using a Listed power supply that provides 12VDC and at least xx A. Applying more than 12VDC to the input of the ACT350xx POWERCELL Weighing Transmitter will cause improper operation.

NOTE: Because the ACT350xx POWERCELL Weighing Transmitter is an Associated NIFW apparatus, no NIFW rules need to be evaluated when the transmitter is receiving (listening).



NIFW Parameters	Power Circuit	Communications (Transmitting)
V_{oc}	12.6 VDC	5.16
I_{sc}	1187 mA	200mA
C_a	10 μF	325 μF
L_a	150 μH	0.4 mH

2.3. Non-Sparking Approval

The ACT350xx Analog / ACT350xx POWERCELL has been approved as a non-sparking device for Zone 2 environments. This permits the equipment to be physically located within a Zone 2 area. This includes analog load cells. Note that the load cell in the platform must also have a non-sparking approval and the maximum supply voltage listed on the certificate must not be exceeded by the ACT350xx Analog / ACT350xx POWERCELL Weighing Transmitter.

2.4. Temperature Rating

It is important that the temperature rating of the ACT350xx Analog/ ACT350xx POWERCELL Weighing Transmitter be appropriate for the environment in which it will be used. The ACT350xx Analog / ACT350xx POWERCELL Weighing Transmitter has been approved with a temperature rating of T4 (135°C) for gas. This value must be lower than the Auto Ignition Temperature (AIT) of the hazardous product in order to be safe. If the AIT of the hazardous product is lower than the temperature rating of the ACT350xx Analog / ACT350xx POWERCELL Weighing Transmitter, the ACT350xx Analog / ACT350xx POWERCELL Weighing Transmitter **MUST NOT BE USED** in that environment.

	 WARNING
	THE ACT350XX ANALOG / ACT350XX POWERCELL WEIGHING TRANSMITTER HAS A TEMPERATURE RATING OF T4 (135° C) FOR GAS. IT MUST NOT BE USED IN AREAS WHERE THE AUTO IGNITION TEMPERATURE OF THE HAZARDOUS MATERIAL IS BELOW THIS RATING.

2.5. Division 2 Application Example Using Load Cells

- Note: There are many methods that may be used to install properly approved equipment within hazardous areas. In our example, the non-incendive field circuit parameters (electrical approval data) were compared to those of the load cells connected to make sure the combination is safe. In other applications (specifically in Europe), only a confirmation of a certain IP rating and maximum surface temperature may be required to connect the devices.

The following is an example of applying the ACT350xx Analog Weighing Transmitter in a Division 2 application connecting a model 2158 Vertex floor scale with 50 feet of load cell cable. The non-incendive field wiring circuit (NIFW) parameters for all devices and cables in the load cell line (including the load cells and junction box) must also be known.

Weighing Transmitter model:	ACT350xx Analog Weighing Transmitter
Base model:	2158 VERTEX® (with approved cells)
Load cell model:	METTLER TOLEDO 0745A
Number of load cells:	4
Load cell cable length:	50 feet
Junction box model:	AJB641SX

ACT350xx Analog load cell NIFW parameters from control drawing 30315298:

$$V_{oc} / U_o = 5.16 \text{ VDC}$$

$$I_{sc} / I_o = 221 \text{ mA}$$

$$C_a / C_o = 1 \text{ } \mu\text{F}$$

$$L_a / L_o = 0.6 \text{ mH}$$

Load cell NIFW parameters from model 745A load cell control drawing:

$$V_{max} = 25 \text{ VDC}$$

$$I_{max} = 600 \text{ mA}$$

$$C_i = 0 \text{ } \mu\text{F}$$

$$L_i = 29 \text{ } \mu\text{H}$$

Default load cell cable values from ACT350xx Weighing Transmitter control drawing 30315298:

$$C_{cable} = 60 \text{ pF / foot}$$

$$L_{cable} = 0.2 \text{ } \mu\text{H / foot}$$

The 2158 junction box is considered to be a simple apparatus. The 2158 is completely passive and has no components capable of storing energy, so there are no NIFW parameters associated with it.

Now, compare these values using the formulas provided in the previous section of this chapter and determine if all four criteria pass or fail. Note that the NIFW parameters for capacitance and inductance of the load cell must be multiplied by the quantity of load cells used. Also note that the field circuit parameters for the load cell cable must be multiplied by the total load cell cable length.

Formula	Pass or Fail
U_i / V_{max} must be $\geq U_o / V_{oc}$ $25 \text{ VDC} \geq 5.16 \text{ VDC}$	PASS
I_i / I_{max} must be $\geq I_o / I_{sc}$ $600 \text{ mA} \geq 221 \text{ mA}$	PASS
$C_i + C_{cable} \leq C_a$ $C_i = 0 \text{ } \mu\text{F} * 4 \text{ cells} = 0 \text{ } \mu\text{F}$ (load cells) $C_i = 0 \text{ } \mu\text{F}$ (junction box) $C_{cable} = 60 \text{ pF / foot} * 50 \text{ feet} = 3000\text{pF} = 0.003 \text{ } \mu\text{F}$ $(0 \text{ } \mu\text{F} + 0 \text{ } \mu\text{F} + 0.003 \text{ } \mu\text{F}) \leq 1 \text{ } \mu\text{F}$	PASS
$L_i + L_{cable} \leq L_a / L_o$ $L_i = 29 \text{ } \mu\text{H}$ (load cells) * 4 cells = 0.116 mH $L_i = 0 \text{ } \mu\text{H}$ (junction box) $L_{cable} = 0.2 \text{ } \mu\text{H / foot} * 50 \text{ feet} = 10 \text{ } \mu\text{H} = 0.01\text{mH}$ (0.116 mH + 0 mH + 0.01 mH) $\leq 0.6 \text{ mH}$	PASS

In addition to the formulas above, the temperature rating of the ACT350xx Analog / ACT350xx POWERCELL Weighing Transmitter must be checked against the AIT (Auto Ignition Temperature) of the hazardous product. For this example, the hazardous product has an AIT of 200°C (393°F), which is higher than the rating of the ACT350xx Analog / ACT350xx POWERCELL Weighing Transmitter approval value of 85°C (203°F) for dust and 100°C (211°F) for gas. This indicates the temperature comparison test passes.

Since all four NIFW parameters compare favorably and pass the formula evaluation and the temperature comparison test passes, the load cells listed in this example may be safely installed into a Division 2 area. All equipment must be installed according to their corresponding control drawing using all pertinent local and national codes and regulations.

2.6. Installation Procedure

Once the information in this chapter and in all other suggested regulatory documents has been read and understood, the ACT350xx Analog / ACT350xx POWERCELL Weighing Transmitter may be installed.

Special installation requirements for the ACT350xx Analog / ACT350xx POWERCELL Weighing Transmitters are described below.

They are also listed in the Special Conditions for Safe Use section of this manual.

In addition to the information in this chapter, instructions, control drawings, installation drawings and details listed in the certificates found in Chapter 3 and Appendix A of this manual must be followed during the installation.

3 Special Requirements

When an ACT350xx Analog / ACT350xx POWERCELL Weighing Transmitter is installed inside a hazardous area, some special requirements must be considered. This chapter discusses these items.

3.1. Enclosure

- Note that the ACT350xx Analog / ACT350xx POWERCELL Weighing Transmitter cannot be installed in a hazardous area in the U.S. and Canada per METTLER TOLEDO control drawings 30315298 (ACT350xx Analog) and 30369059E (ACT350xx POWERCELL).

An ATEX certified enclosure with a minimum ingress protection rating of IP54 is required for installation in Europe. An IECEx certified enclosure with a minimum ingress protection rating of IP54 is required for installation according to the IECEx approval.

3.2. Areas with Different Classifications

The ACT350xx Analog / ACT350xx POWERCELL Weighing Transmitter has been approved for use with load cells located in an area classified as Division 2 or as Zone 2. This approval DOES NOT mean that the ACT350xx Analog / ACT350xx POWERCELL Weighing Transmitter can be used in or connected directly to equipment located in Division 1, Zone 0/1 or Zone 20/21 areas. Different precautions must be taken when installing equipment into these areas. METTLER TOLEDO offers other Weighing Terminals for use in Division 1, Zone 0/1 or Zone 20/21 areas.

3.3. Special Conditions of Use

To prevent ignition of flammable or combustible atmosphere, disconnect power before servicing.

1. The ACT350xx Analog / ACT350xx POWERCELL Weighing Transmitter shall only be used in an area of at least pollution degree 2 as defined in IEC/EN 60664-1.
2. The ACT350xx Analog / ACT350xx POWERCELL Weighing Transmitter shall be installed in an enclosure providing a minimum ingress protection of IP54 in accordance with IEC/EN 60079-0.
3. Provision shall be made to prevent the rated voltage from being exceeded by transient disturbances of more than 119V.



 **WARNING**

THE ACT350XX ANALOG / ACT350XX POWERCELL WEIGHING TRANSMITTER MUST BE INSTALLED AND MAINTAINED PER THE ABOVE SPECIAL CONDITIONS WITHOUT EXCEPTION. FAILURE TO DO SO COULD RESULT IN BODILY HARM AND/OR PROPERTY DAMAGE.

A Approval Documents

A.1. Approval Documents

A.1.1. United States

FM Approvals LLC has investigated the ACT350xx Analog / ACT350xx POWERCELL Weighing Transmitter and issued a Certificate of Compliance indicating compliance to the U.S. requirements for a Division 2 and Zone 2/22 Associated NIFW apparatus. The certificate for this approval can be found at <https://www.mt.com/us/en/home/search/compliance.html>

A.1.2. Canada

FM Approvals LLC has investigated the ACT350xx Analog / ACT350xx POWERCELL Weighing Transmitter and issued a Certificate of Compliance indicating compliance to Canadian requirements for a Division 2 and Zone 2 Associated NIFW Apparatus. The certificate for this approval can be found at <https://www.mt.com/us/en/home/search/compliance.html>

A.1.3. Control Drawing (U.S. and Canada)

In order to meet the U.S. and Canadian Division 2 requirements, control drawings 30315298 and 30369059 are provided. Review this drawing before installation. If there are any questions regarding the details in the control drawing, please contact the local METTLER TOLEDO representative. Refer to sections A.2 and A.3 for the drawing.

A.1.4. Europe (ATEX)

DEKRA Certification, B.V. has issued a Type Examination Certificate indicating compliance of the ACT350xx Analog / ACT350xx POWERCELL Weighing Transmitter with European requirements for Essential Health and Safety Requirements and the ATEX directive 2014/34/EU for Category 3 equipment. Review this certificate for details of the approval. The certificate for this approval can be found at <https://www.mt.com/us/en/home/search/compliance.html>

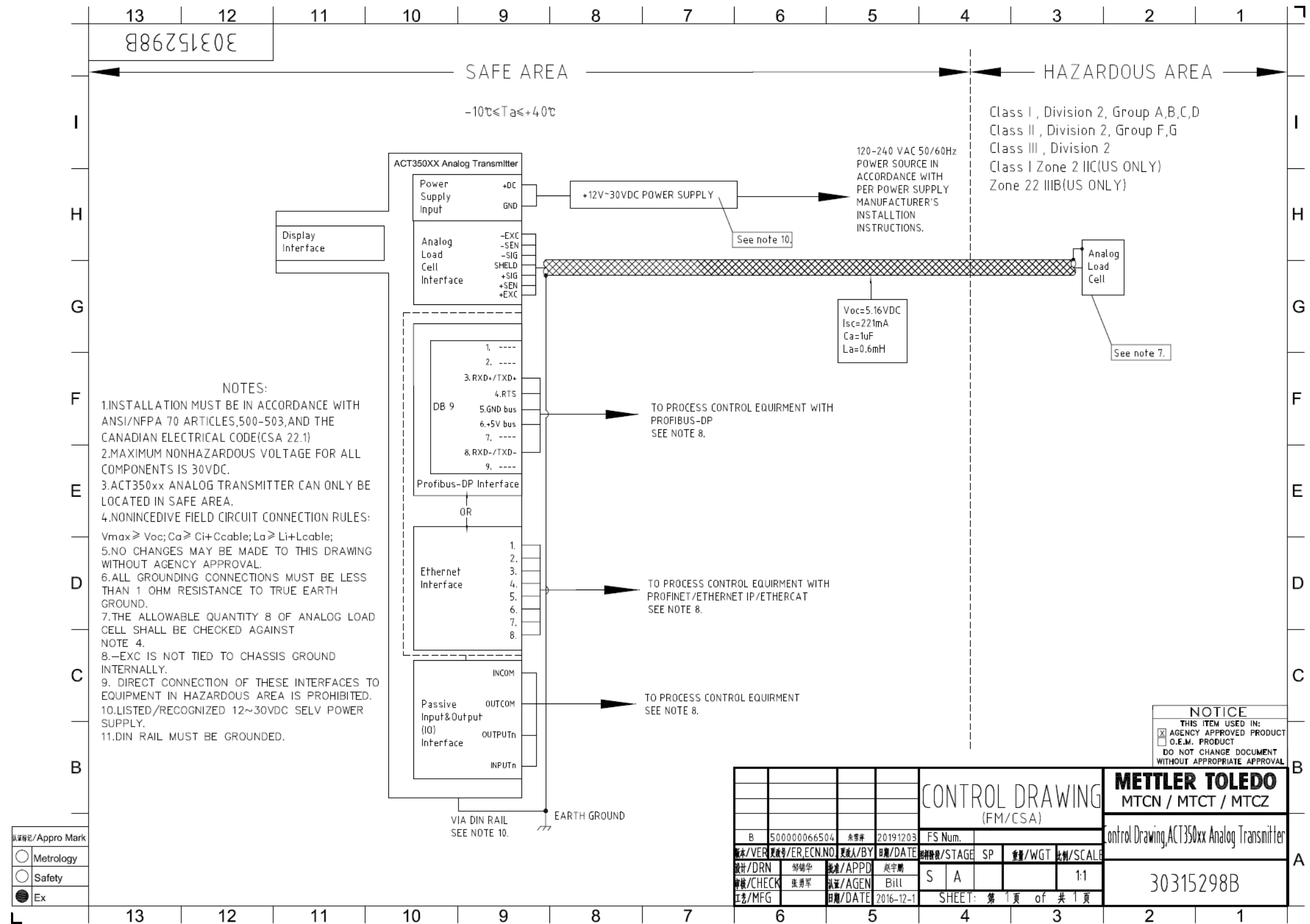
A.1.5. Global and International (IECEx)

DEKRA Certification, B.V. has issued an IECEx Certificate of Conformity indicating compliance of the ACT350xx Analog/ ACT350xx POWERCELL Weighing Transmitter with IECEx Certification Scheme for Explosive Atmospheres. Review this certificate for details of the approval. The certificate for this approval can be found at <https://www.mt.com/us/en/home/search/compliance.html>

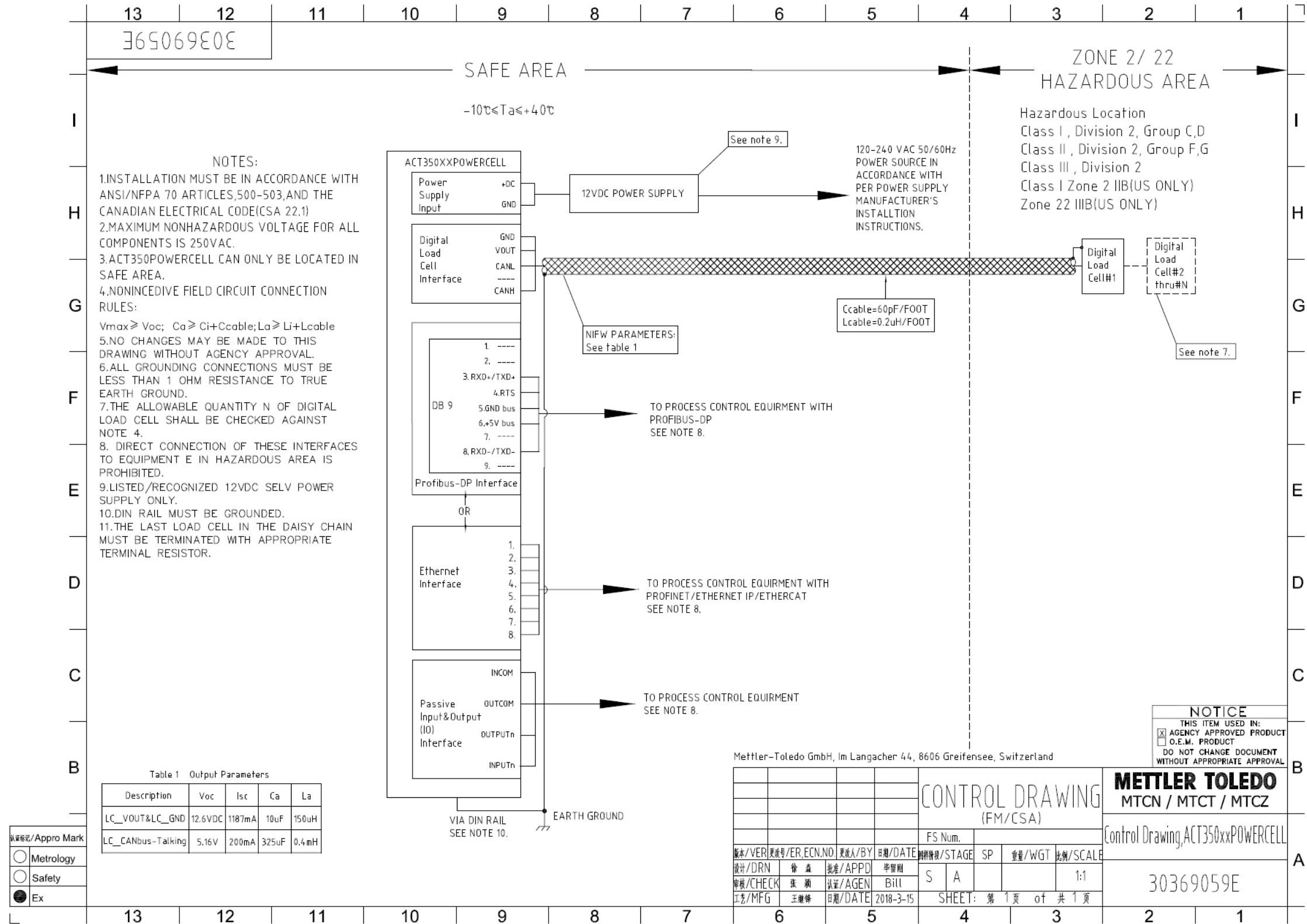
A.1.6. Installation Drawing (ATEX and IECEx)

An ATEX/IECEx installation drawing was created to assist when installing the ACT350xx Analog / ACT350xx POWERCELL into Zone 2/22 areas. This drawing is a guide for installation and connection of the ACT350xx Analog / ACT350xx POWERCELL Weighing Transmitter when used in a Zone 2 or Zone 22 hazardous area based on the ATEX or IECEx approval. Review this drawing before installation. If there are any questions regarding the details in the drawing, please contact the local METTLER TOLEDO representative. Refer to sections A.4 and A.5 for the drawing.

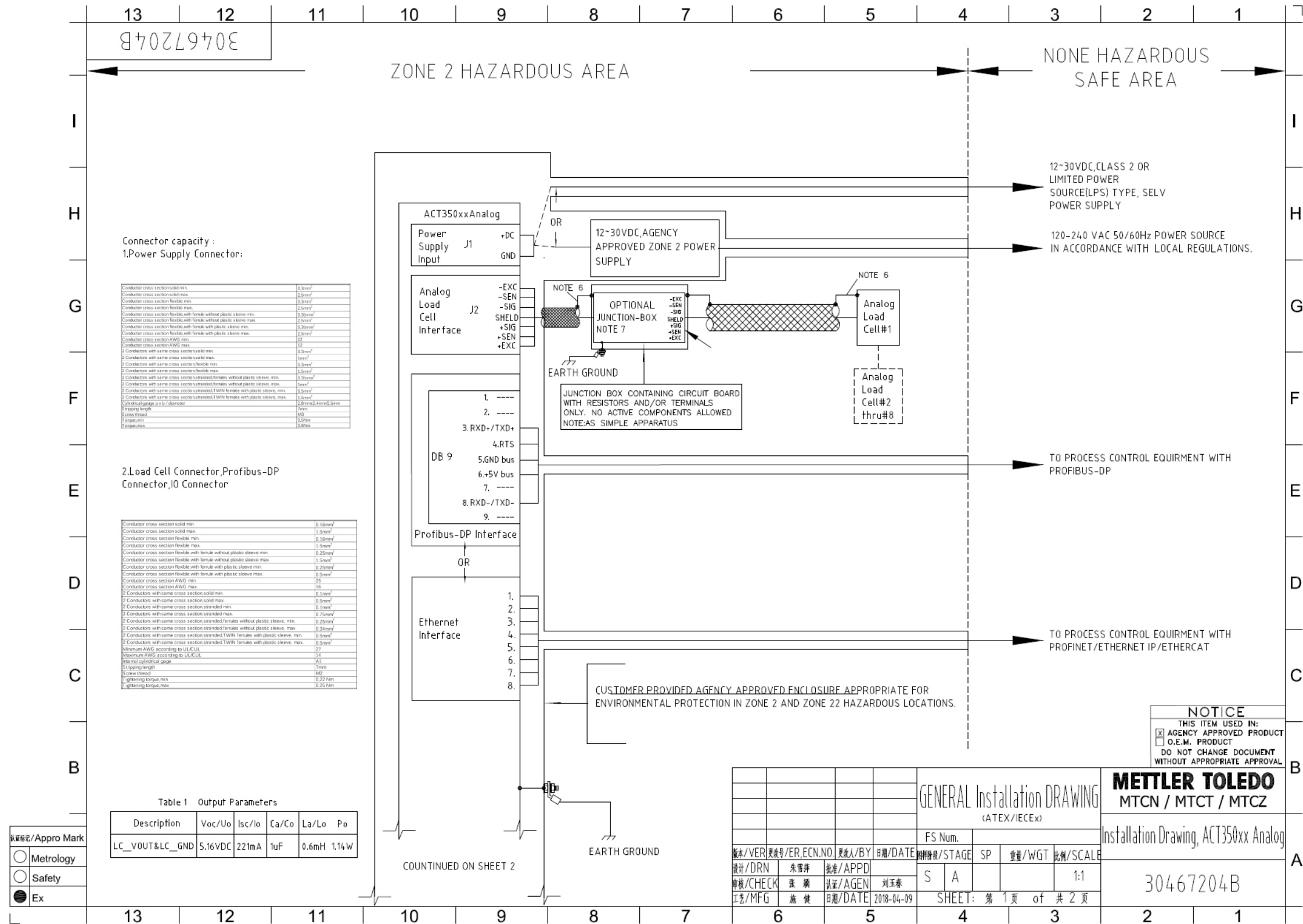
A.2. Control Drawing (US and Canada), Analog Model



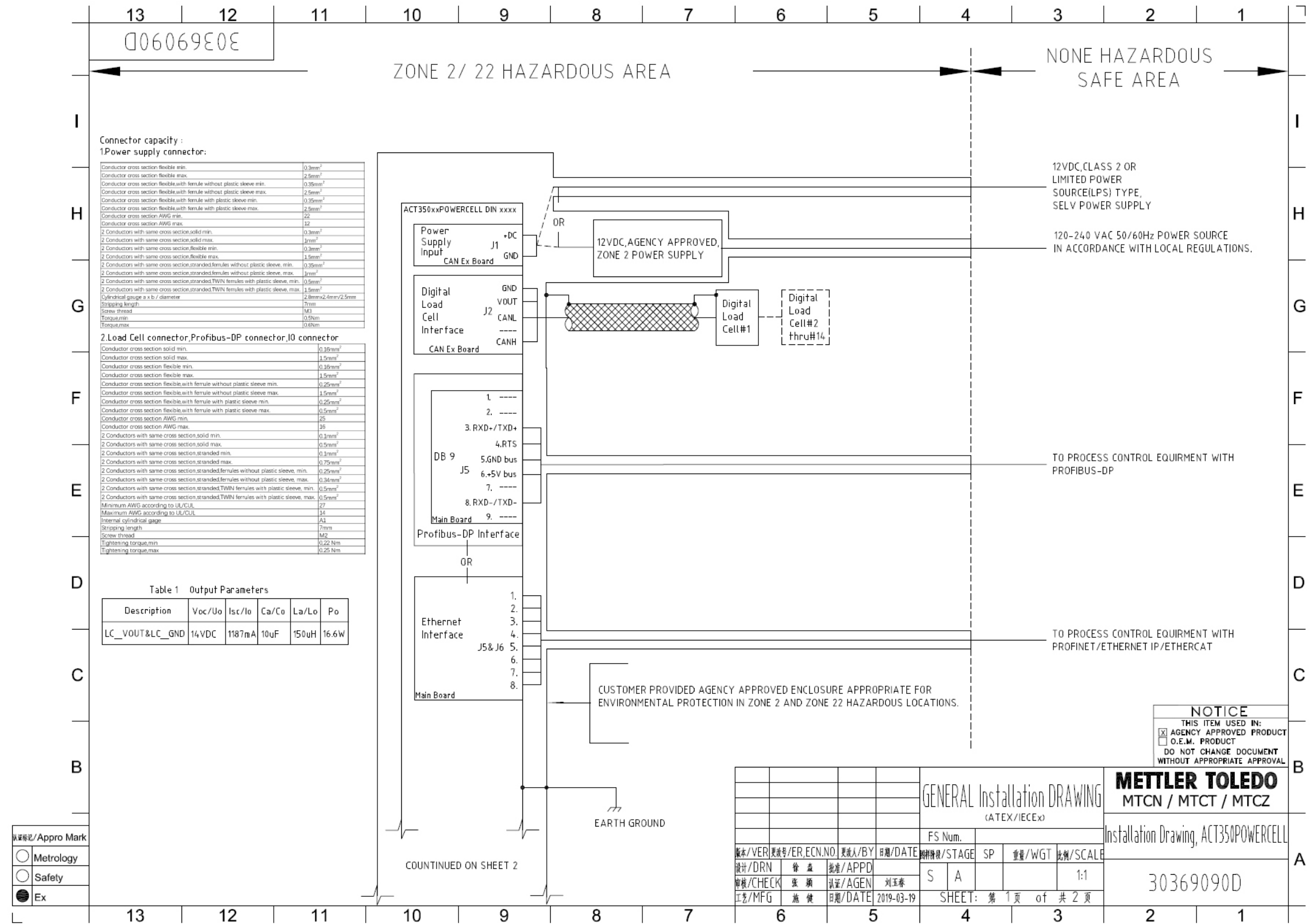
A.3. Control Drawing (US and Canada), POWERCELL Model

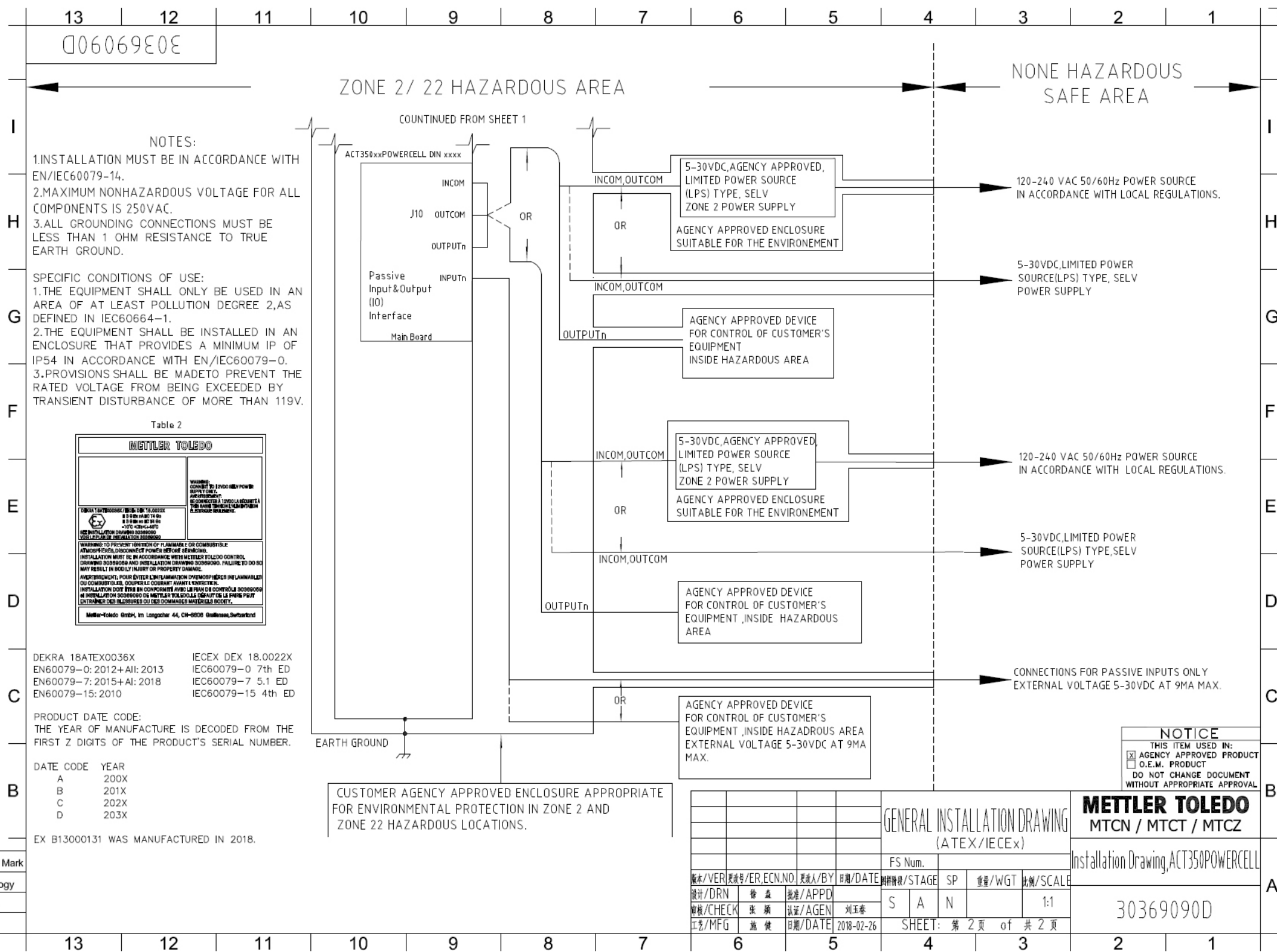


A.4. Global and International (ATEX and IECEx), Analog Model



A.5. Global and International (ATEX and IECEx), POWERCELL Model





NOTES:
 1. INSTALLATION MUST BE IN ACCORDANCE WITH EN/IEC60079-14.
 2. MAXIMUM NONHAZARDOUS VOLTAGE FOR ALL COMPONENTS IS 250VAC.
 3. ALL GROUNDING CONNECTIONS MUST BE LESS THAN 1 OHM RESISTANCE TO TRUE EARTH GROUND.

SPECIFIC CONDITIONS OF USE:
 1. THE EQUIPMENT SHALL ONLY BE USED IN AN AREA OF AT LEAST POLLUTION DEGREE 2, AS DEFINED IN IEC60664-1.
 2. THE EQUIPMENT SHALL BE INSTALLED IN AN ENCLOSURE THAT PROVIDES A MINIMUM IP OF IP54 IN ACCORDANCE WITH EN/IEC60079-0.
 3. PROVISIONS SHALL BE MADE TO PREVENT THE RATED VOLTAGE FROM BEING EXCEEDED BY TRANSIENT DISTURBANCE OF MORE THAN 119V.

Table 2

METTLER TOLEDO	
<p>WARNING: CONSULT TO ENIGMA HIGH POWER SUPPLY FOR THE APPROPRIATE CONNECTIONS TO THE POWER SUPPLY AND TO THE POWER SUPPLY.</p> <p>WARNING: TO PREVENT IGNITION OF FLAMMABLE OR COMBUSTIBLE ATMOSPHERES, DISCONNECT POWER BEFORE SERVICING. INSTALLATION MUST BE IN ACCORDANCE WITH METTLER TOLEDO CONTROL DRAWING 30369090D AND INSTALLATION DRAWING 30369090D. FAILURE TO DO SO MAY RESULT IN BODILY INJURY OR PROPERTY DAMAGE.</p> <p>HAUTDRUCKUNG: VOR JEDEM ARBEITEN DIE VERBODEN ODER VERBODEN IM FLAMMBAREN ODER COMBUSTIBLES, DEN STROM ABZUSCHNITTEN. DIE INSTALLATION MUSS IN ÜBEREINSTEMMUNG MIT DEN KONTROLLE ZIEHUNGS- ODER INSTALLATIONSSCHRIEBEN VON METTLER TOLEDO DURCHFÜHRT WERDEN. SONSTIGES VERFAHREN KÖNNT ZU VERLETZUNGEN ODER BESCHÄDIGUNGEN FÜHREN.</p> <p>Mettler-Toledo GmbH, Im Langgöcher 44, CH-8000 Gröden, Switzerland</p>	<p>WARNING: CONSULT TO ENIGMA HIGH POWER SUPPLY FOR THE APPROPRIATE CONNECTIONS TO THE POWER SUPPLY AND TO THE POWER SUPPLY.</p>

DEKRA 18ATEX0036X IECEx DEX 18.0022X
 EN60079-0: 2012+A11: 2013 IEC60079-0 7th ED
 EN60079-7: 2015+A1: 2018 IEC60079-7 5.1 ED
 EN60079-15: 2010 IEC60079-15 4th ED

PRODUCT DATE CODE:
 THE YEAR OF MANUFACTURE IS DECODED FROM THE FIRST Z DIGITS OF THE PRODUCT'S SERIAL NUMBER.

DATE CODE	YEAR
A	200X
B	201X
C	202X
D	203X

EX B13000131 WAS MANUFACTURED IN 2018.

- 认证标志/Appro Mark
- Metrology
 - Safety
 - Ex

NOTICE
 THIS ITEM USED IN:
 AGENCY APPROVED PRODUCT
 O.E.M. PRODUCT
 DO NOT CHANGE DOCUMENT WITHOUT APPROPRIATE APPROVAL

GENERAL INSTALLATION DRAWING (ATEX/IECEx)		METTLER TOLEDO MTCN / MTCT / MTCZ
FS Num.		Installation Drawing, ACT350POWERCELL
版本/VER	更改号/ER, ECN, NO.	更改人/BY
设计/DRN	张益	批准/APPD
审核/CHECK	张颖	认证/AGEN
工艺/MFG	日期/DATE	日期/DATE
SHEET: 第 2 页 of 共 2 页		30369090D

METTLER TOLEDO Service

To protect your product's future:

Congratulations on choosing the quality and precision of METTLER TOLEDO. Proper use according to these instructions and regular calibration and maintenance by our factory-trained service team ensure dependable and accurate operation, protecting your investment. Contact us about a service agreement tailored to your needs and budget.

We invite you to register your product at www.mt.com/productregistration so we can contact you about enhancements, updates and important notifications concerning your product.

www.mt.com/ind-ACT350-downloads

For more information

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30578411 Rev. 03, 05/2020



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