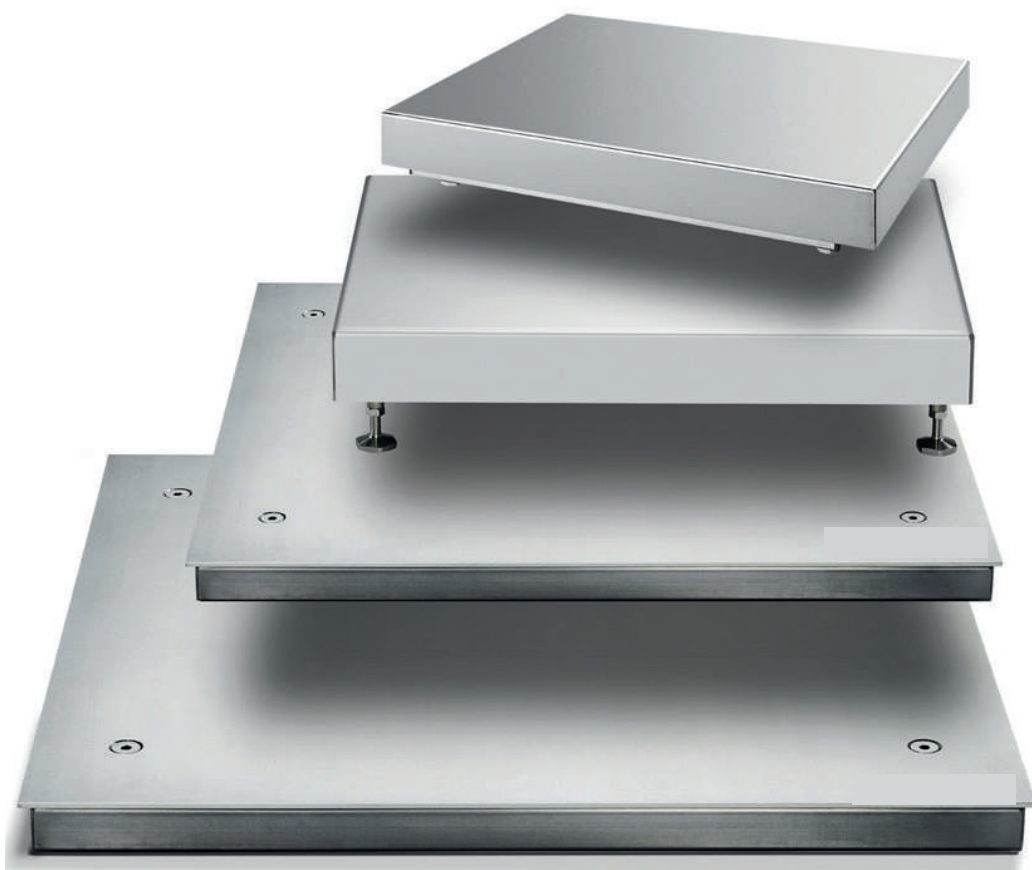


Operating Instructions

Combics Minebea Intec

Models CAPXS.U

Stainless Steel Weighing Platforms for Use in Hazardous Locations



Contents

2	Symbols
2	Intended Use
3	Safety Instructions
4	Warranty
5	Setting Up the Scale
7	Installation
8	Operating Limits
9	Care and Maintenance
10	Accessories
12	Certificates

The following symbols are used in these instructions:

- Indicates required steps
- Indicates steps required only under certain conditions
- > Describes what happens after you have performed a certain step
- Indicates an item in a list
- ⚠ Indicates a hazard

Make sure you observe the following warning and safety information in its entirety during installation and operation, as well as while performing maintenance and repair work on the equipment. It is important that all personnel using the Combics equipment understand this information, and have access to it at all times.

Furthermore, the warning and safety information supplied with any electrical equipment connected, such as the indicator, must be observed as well. The warning and safety information can be supplemented by the equipment operator. Make sure all operating personnel are informed of any additions to these instructions.

Intended Use

The weighing platform and the connected indicator are intended exclusively for use in weighing.

Safety Instructions

The weighing platform is approved/certified by FM Approvals for use in hazardous locations in the USA and in Canada according to FM Approvals and CSA standards, respectively (see enclosed Certificates of Compliance). This intrinsically safe device is suitable for use in Class I, II, III, Division 1 Group A, B, C, D, E, F, G T4, Class I, Zone 1, Group IIC, T4 and Class II, Zone 20, hazardous locations at an ambient temperature range of -20°C to +40°C or +60°C (-4°F to +104°F or +140°F) depending on the electrical parameters supplied to the weighing platform (see enclosed Control Drawing 35739-003-07-A4). Division 1 includes Division 2, Zone 1 includes Zone 2, and Zone 20 includes Zones 21 and 22. If the weighing platform is used in Class I,II,III, Division 2 Group A,B,C,D,E,F,G or Class I, Zone 2 or Class II, Zone 22, and is connected to a non-intrinsically safe device, the instructions given on page 2 of the enclosed Control Drawing must be followed.

- The weighing platform can be operated indoors or outdoors.
- Improper use or handling, however, can result in damage and/or injury.
- The installation must be done in accordance with the Control Drawing 35739-003-07-A4 enclosed at the end of this manual.
- If you use this equipment in installations and under ambient conditions requiring higher safety standards, you must comply with the provisions as specified in the applicable regulations for installation in your country.
- Please make sure the currently valid regulations (e.g., National Electrical Code) and standards for installation in the hazardous locations are strictly observed.
- The weighing platform may be used and operated by qualified personnel only. The permitted uses of the weighing platform are specified in the Certificate of Compliance.
- Do not expose the weighing platform to aggressive chemical vapors or to extreme temperatures, moisture, shock, or vibration.
- The permissible temperature range during operation only for the platform is -10°C to +40°C (-14°F to +104°F). The accuracy of the platform cannot be guaranteed for higher temperatures.
- If you use suction lifting equipment to lift the load plate, always wear gloves, hard-toed safety boots and protective clothing. Warning: Danger of personal injury! Only reliable personnel who are qualified to perform such work are allowed to use suction lifting equipment.
- Suspension points are designated on models of 40 x 40 inches and larger. If you need to transport or lift the scale or load plate using a crane, do not stand underneath the suspended scale or load plate.
- Make sure to observe the applicable safety rules and regulations for the prevention of accidents.
- Do not damage the cable junction box or the load cells during transportation.
- Installation in a hazardous location must be performed by a trained technician who is familiar with the assembly and operation of the equipment, as well as with the procedure for putting the system into operation. Furthermore, the trained technician must have the required qualifications and must be familiar with the relevant guidelines and regulations. If you need assistance, contact your local Minebea Intec dealer or the Minebea Intec Service Center.
- Any installation work that does not conform to the instructions in this manual will result in forfeiture of all claims under the manufacturer's warranty. Be sure to observe all restrictions listed in the Certificate of Compliance and the enclosed Control Drawing. Operating the weighing platform beyond the limits imposed by these restrictions is not permitted, and is considered use of the equipment for other than its intended purpose.
- Have the equipment inspected at appropriate intervals for correct functioning and safety by a trained technician.
- The junction box may be opened only by authorized service technicians who have been trained by Minebea Intec and who follow Minebea Intec' standard operating procedures for maintenance and repair work.
- Always make sure the weighing platform is disconnected from AC power before performing any installation, cleaning, maintenance or repair work. If the equipment housing is opened by anyone other than persons authorized by Minebea Intec, all claims under the manufacturer's warranty are forfeited. Use only original Minebea Intec spare parts.
- Handle the equipment in accordance with its protection (IP) rating. The international protection rating of the weighing platform is IP67 (dust-tight and protected against short-term immersion). Do not damage the IP protection when cleaning the equipment. The IP protection rating is ensured only if the rubber gasket is installed on the junction box and all cable gland screw fasteners are connected securely. Any installation work that does not conform to the instructions in this manual will result in forfeiture of all claims under the manufacturer's warranty.
- If you use cables purchased from another manufacturer, check the pin assignments.
- Before connecting the cable to equipment, check the pin assignments in the cable against those specified and disconnect any wires that are assigned differently. The operator shall be solely responsible for any damage or injuries that occur when using cables not supplied by Minebea Intec.
- When using the weighing platform in hazardous locations, make sure there is no current or voltage in the equipment before connecting or disconnecting current carrying cables to or from the platform.
- Disconnect the platform from AC power before connecting or disconnecting cables.
- Avoid exposing the weighing platform to static electricity; be sure to connect the equipotential bonding (grounding) conductor to the junction box. Disconnecting equipotential bonding conductors is not permitted!
- If you see any indication that the weighing platform cannot be operated safely (for example, due to damage), turn off the platform and lock it in a secure place so that it cannot be used for the time being. Observe the relevant safety precautions and inform personnel as required.
- The cable jacket of all connecting cables, as well as the conductors inside the equipment housing, is made of PVC. Chemicals that corrode these materials must be kept away from these cables.
- Make sure the weighing instrument is not exposed to substances that release chlorine ions at the place of use. If such exposure cannot be ruled out, the operator is responsible for establishing and observing appropriate safety precautions, to be checked at regular intervals for continued effectiveness.

Warranty

Do not miss out on the benefits of our full warranty. Please contact your local Minebea Intec office or dealer for further information. If available, complete the warranty registration card, indicating the date of installation, and return the card to your Minebea Intec office or dealer.

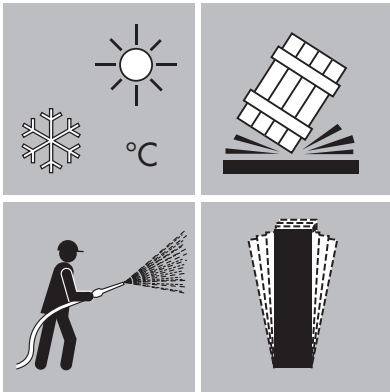
EMC Declaration

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

Shielded Cables: Connections between the devices and peripherals must be made using shielded cables in order to maintain compliance with FCC radio frequency emission limits.

Modifications: Any modifications made to this devices that are not approved by Minebea Intec may void the authority granted to the user by the FCC to operate this equipment.

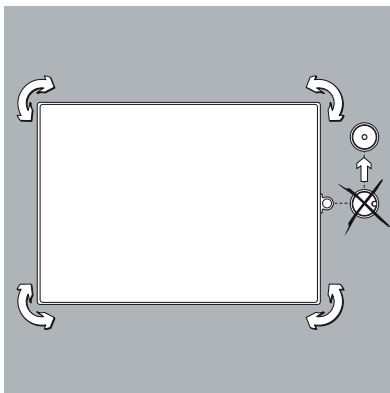
Setting Up the Scale



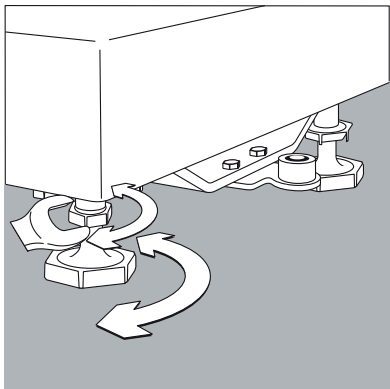
- Choose a suitable place to set up the weighing platform. This place should have a dry, horizontal and even surface. The operating temperature range only for the platform is between -10°C and $+40^{\circ}\text{C}$ (-14°F and $+104^{\circ}\text{F}$). The allowable structural load-carrying capacity of a floor or surface must be sufficient to support both the weight of the weighing platform and its maximum weighing capacity.

If you need to use the weighing platform in areas exposed to heavy traffic (e.g., fork-lift trucks), you should install a protective frame, consisting of angular braces, around the weighing platform.

Do not expose the weighing platform unnecessarily to aggressive chemical vapors or to extreme temperatures, moisture, shock, or vibration, which could result in damage.



- The air bubble must be centered within the circle on the level indicator.



- Level the weighing platform using the leveling feet as described below.
- Check to ensure that all leveling feet rest securely on the work surface.
 - > Each of the leveling feet must support an equal load!
- Loosen the locknuts on the leveling feet using a 1/2-inch open-end wrench.
 - > Adjusting the leveling feet:
To raise the weighing platform, extend the leveling feet (turn clockwise).
To lower the weighing platform, retract the leveling feet (turn counterclockwise).
- After leveling the weighing platform, retighten the locknuts securely as described below:
Low-capacity platforms (1 load cell): tighten the locknuts against the platform frame;
high-capacity platforms (4 load cells): tighten the locknuts against the platform feet.



- If the weighing platform is in a hazardous location, it must be grounded (i.e., an equipotential bonding conductor must be connected). This connection should be made by a trained technician.

All Combics weighing platforms are equipped with a connector for the grounding conductor.

This is located either below the load pan, on the junction box, or on the lower frame of the weighing platform. The position is marked in each case by the symbol shown here, indicating the grounding connection.

The grounding conductor is connected to a threaded bolt or terminal screw, or a drill hole is provided. If a drill hole is provided, use a stainless steel screw and nut to connect the grounding conductor. Use of a tooth lock washer is recommended, to prevent the screw from coming loose. The wire used for the grounding conductor should have a gauge or cross-sectional diameter of at least 4 mm^2 (0.006 in^2), with a suitable ring lug attached. Connect all equipment, including peripheral devices, to the equipotential bonding conductor.

Conditions for Installation in Hazardous Locations

Before putting the equipment into operation, it is important to make sure that the cable of the power supply is correctly connected to the power outlet (mains supply).

All equipment must be connected to the equipotential bonding conductor via grounding cable (not included in delivery) connected to the grounding terminals on each device. The dimensions of the grounding cable are specified in national regulations for electrical installations. Installation must be performed by a trained technician in accordance with national regulations and generally acknowledged rules of engineering.

Use only cabling and extensions approved by Minebea Intec, as these are made in accordance with the restrictions on permissible cable lengths imposed by both the capacitance and inductivity values (see Control Drawing) and the requirements for electromagnetic compatibility.

Before putting the weighing system into operation for the first time, make sure there is no hazard of explosion present at the place of installation. If there is any indication that the equipment does not function properly (e.g., display remains blank, or no display backlighting) due to damage during transportation, disconnect the equipment from power and notify your nearest Minebea Intec Service Center.

The weighing platform specifications for Ui, li, Pi, Ta, temperature class, Ci and Li are listed in the enclosed Control Drawing. These parameters (Entity Concept) must be taken into account when connecting an indicator to the platform.

The explosion-protected weighing system must be installed in accordance with acknowledged rules of engineering. These include national laws and regulations (e.g., National Electrical Code).

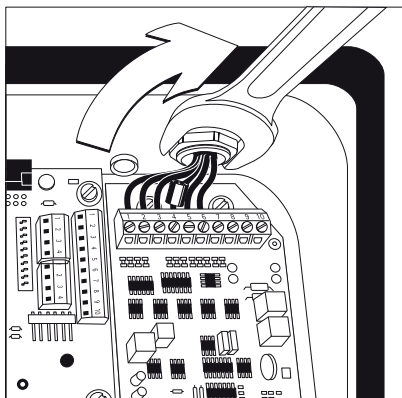
Furthermore, national regulations for accident prevention and environmental protection must be observed at all times.

Before the platform is operated in a hazardous location, it must be inspected either by a certified electrician or under the guidance and supervision of a certified electrician to make sure that the weighing system complies with the applicable regulations. Determine whether the installation must be registered with technical inspection authorities in your country. Regular inspections must also be performed on the system during operation. The system should be inspected at intervals short enough to permit the prevention or early detection of defects that arise as a result of normal wear and tear.

The longest permissible interval period is 3 years. Other conditions and standards that regulate the installation and operation of the equipment and are applicable in your country must be met as well. When performing inspections, generally acknowledged rules of engineering relevant to these conditions must also be applied.

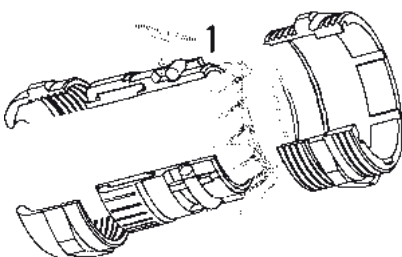
If the terminal housing is opened by anyone other than persons authorized by Minebea Intec, or if the terminal is installed or operated incorrectly, this will result in forfeiture of the approval for use in the stated hazardous location(s) and of all claims under the manufacturer's warranty.

Installation

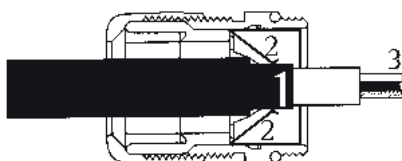


- Connect the cable of the weighing platform to a suitable indicator.

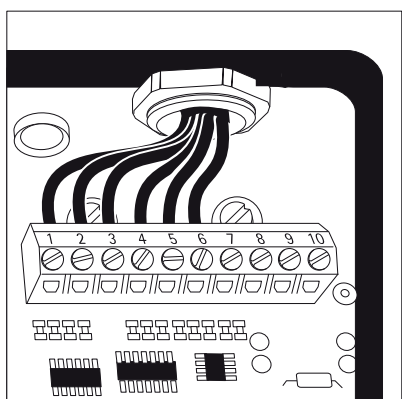
Note:
The cable gland along with the screw fasteners is already pre-assembled.
Use extreme care when attaching or detaching a cable.



- Strip off the insulation at the cable end and attach the cable as follows:
 - Route the cable through the cable gland.
 - Properly tighten the screw fasteners of the cable gland
 - Remove the sheathing from a section of the cable end (see illustration). The shield (1) must have contact with the clamps (2).
 - Expose approximately 15 cm (6 inches) of the wires (3) for installation.



- Attach the cable to the weighing platform as follows:
 - Expose approximately 5 cm (2 inches) of the wires for installation.
 - Expose approximately 1 cm (1/2 inch) of the wires and attach ferrules to the wires.
 - Securely attach the wires to the screw terminals



Wiring Diagram for the Indicator

No.	Signal name	Meaning	Conductor coloring
1	BR_POS	Bridge supply voltage (+)	Blue
2	SENSE_POS	Sense (+)	Green
3	OUT_POS	Measuring voltage (+)	White
4	OUT_NEG	Measuring voltage (-)	Red
5	SENSE_NEG	Sense (-)	Gray
6	BR_NEG	Bridge supply voltage (-)	Black or brown

- Use a screwdriver to tighten the terminal screws.

Models Code

Example for the order number of a Combics weighing platform: CAPXS4U-1000KK

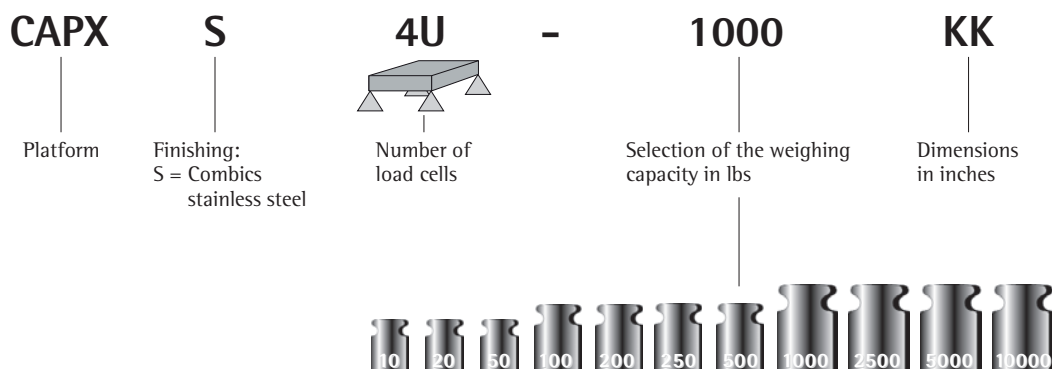


Chart 1, Specifications/Dimensions of Specific Models

Code	CC	DD	EE	GE	GG	HG	HH	KK	NN	RN	RR
Width (inches)	10	12	18	18	24	24	30	36	48	48	60
Length (inches)	10	12	18	24	24	30	30	36	48	60	60

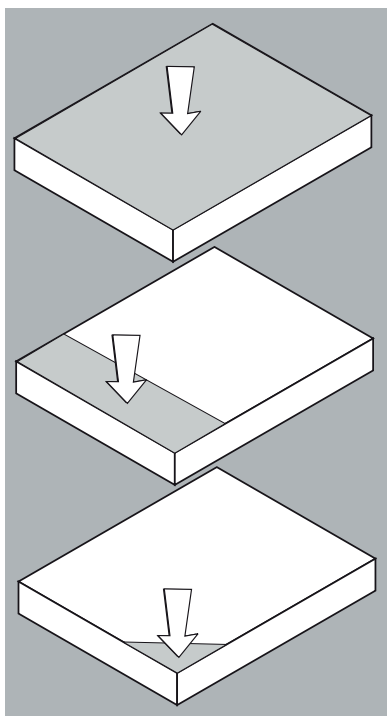
Cable lengths

The cable lengths supplied with the weighing platforms as standard equipment are listed in the table below.

Designation	CC	DD	EE	GE	GG	HG	HH	KK	NN	RN	RR
Length (ft) appr	10	10	10	10	10	10	20	20	20	20	20

Resolutions

Up to 30,000 d in non commercial applications.



You should not place loads on the scale that exceed its maximum weighing capacity. Depending on the position of the load (center, side, one-sided corner load), the maximum capacity of the weighing platform is in lbs as follows:

Model*	Center	Side	Corner
CC	110	77	44
DD	286	187	99
EE	660	440	220
GE	660	440	220
GG	990	660	330
HG	1980	1320	660
HH	1980	1320	660
KK	9900	6600	3300
NN	9900	6600	3300
RN	9900	6600	3300
RR	9900	6600	3300

* Steel or Stainless steel

Care and Maintenance

Cleaning

- Unplug the scale from the AC power before cleaning.
To clean the weighing platform in a dry area: use a piece of cloth wet with a commercially available cleaning agent to wipe it down. Follow the manufacturer's instructions for the cleaning agent.
- △ Never use concentrated acids, bases, solvents or pure alcohol to clean the weighing platform.
- To clean the weighing platform in a wet area, wash it down using a gentle stream of water (60°C, 140°F max.) sprayed over the top of the load plate.
- △ Do not use high-pressure cleaning equipment to clean the weighing platform.
 - > If the water that you use to clean the weighing platform is too hot or too cold, the difference in temperature between the water and the weighing platform can cause condensation within the weighing platform. This condensation may cause the weighing platform to malfunction.
- If the scale is installed in a pit, make sure that no debris builds up between the crevices between the pit and the platform to prevent weighing errors.
- Regularly remove debris from the bottom of the pit.

Cleaning the Interior of the Platform

- To clean the inside of the weighing platform, remove the load plate. Be especially careful when removing the load plate from scales of 36 × 36 inches or larger.
- △ Please follow the safety instructions.
- Use compressed air to blow debris out of the interior of the scale or flush out using a gentle stream of water (60°C, 140°F max.). Be sure that no debris builds up in the gap between the load receptor and the fastening plate in order to prevent compromising the overload protection.

Corrosive Environment

- Remove all traces of corrosive substances from the weighing platform on a regular basis.

Cleaning Stainless Steel Surfaces

Clean all stainless steel parts regularly. Remove the stainless steel weighing pan and thoroughly clean it separately, outside the hazardous location. Use a damp cloth or sponge to clean any stainless steel parts on the scale. You can use any commercially available household cleaning agent that is suitable for use on stainless steel. Clean stainless steel surfaces by wiping them down. Then clean the load plate thoroughly, making sure to remove all residues. Use a damp cloth or sponge to wipe down any stainless steel parts on the scale again. Afterwards, allow the scale to dry. If desired, you can apply oil to the cleaned surfaces as additional protection. Do not use stainless steel cleaning agents that contain soda lye (caustic), acetic acid, hydrochloric acid, sulfuric acid or citric acid. The use of steel wool sponges is not permitted. Solvents are permitted for use only on stainless steel parts.

Drive-on ramp, painted, for platform sizes:

Platform size in inch	Accessory no.
30 × 24	YAR-CWP-24
30 × 24	YAR-CWP-30
30 × 30	YAR-CWP-30
36 × 36	YAR-CWP-36
48 × 48	YAR-CWP-48
60 × 48	YAR-CWP-48
60 × 48	YAR-CWP-60
60 × 60	YAR-CWP-60

Drive-on ramp, painted (tread plate), for platform sizes:

Platform size in inch	Accessory no.
30 × 24	YAR-CWPT-24
30 × 24	YAR-CWPT-30
30 × 30	YAR-CWPT-30
36 × 36	YAR-CWPT-36
48 × 48	YAR-CWPT-48
60 × 48	YAR-CWPT-48
60 × 48	YAR-CWPT-60
60 × 60	YAR-CWPT-60

Drive-on ramp, stainless steel, for platform sizes:

Platform size in inch	Accessory no.
30 × 24	YAR-CWS-24
30 × 24	YAR-CWS-30
30 × 30	YAR-CWS-30
36 × 36	YAR-CWS-36
48 × 48	YAR-CWS-48
60 × 48	YAR-CWS-48
60 × 48	YAR-CWS-60
60 × 60	YAR-CWS-60

Drive-on ramp, stainless steel (tread plate) for platform sizes:

Platform size in inch	Accessory no.
30 × 24	YAR-CWST-24
30 × 24	YAR-CWST-30
30 × 30	YAR-CWST-30
36 × 36	YAR-CWST-36
48 × 48	YAR-CWST-48
60 × 48	YAR-CWST-48
60 × 48	YAR-CWST-60
60 × 60	YAR-CWST-60

Drive-on ramp, AISI 316 Ti stainless steel for platform sizes:

Platform size in inch	Accessory no.
30 × 24	YAR-CWSS-24
30 × 24	YAR-CWSS-30
30 × 30	YAR-CWSS-30
36 × 36	YAR-CWSS-36
48 × 48	YAR-CWSS-48
60 × 48	YAR-CWSS-48
60 × 48	YAR-CWSS-60
60 × 60	YAR-CWSS-60

Drive-on ramp, AISI 316 Ti stainless steel (tread plate) for platform sizes:

Platform size in inch	Accessory no.
30 × 24	YAR-CWSST-24
30 × 24	YAR-CWSST-30
30 × 30	YAR-CWSST-30
36 × 36	YAR-CWSST-36
48 × 48	YAR-CWSST-48
60 × 48	YAR-CWSST-48
60 × 48	YAR-CWSST-60
60 × 60	YAR-CWSST-60

Frame for pit installation, painted, for platform sizes:

Platform size in inch	Accessory no.
30 × 24	YEG-HG-P
30 × 30	YEG-HH-P
36 × 36	YEG-KK-P
48 × 48	YEG-NN-P
60 × 48	YEG-RN-P
60 × 60	YEG-RR-P

Frame for pit installation, stainless steel, for platform sizes:

Platform size in inch	Accessory no.
30 × 24	YEG-HG-S
30 × 30	YEG-HH-S
36 × 36	YEG-KK-S
48 × 48	YEG-NN-S
60 × 48	YEG-RN-S
60 × 60	YEG-RR-S

Roller conveyor, painted, for platform sizes:

Size in inch	Accessory no.
12.6 × 9.5	YRC01DCA
15.8 × 11.8	YRC01EDA
19.7 × 15.8	YRC01FEA

Roller conveyor, stainless steel, for platform sizes:

Size in inch	Accessory no.
12.6 × 9.5	YRC01DCS
15.8 × 11.8	YRC01EDS
19.7 × 15.8	YRC01FES

Roller-ball load plate, for platform sizes:

Size in inch	Accessory no.
15.8 × 11.8	YLP01CWS
19.7 × 15.8	YLP02CWS

Set of stainless steel floor fasteners

	Accessory no.
(2 fastening plates, 4 special dowel screws)	YFP01CWS

Column, painted, for attaching indicator to platform, for sizes:

Size in inch	Accessory no.
CC (10 × 10), height 13	YDH01CWP
DD (12 × 12), height 19.7	YDH02CWP
EE (18 × 18), height 19.7	YDH02CWP
EE (18 × 18), height 29.5	YDH03CWP

Column, stainless steel, for attaching indicator to platform, for sizes:

Size in inch	Accessory no.
CC (10 × 10), height 13	YDH01CWS
DD (12 × 12), height 19.7 and	YDH02CWS
EE (18 × 18), height 19.7	YDH02CWS
EE (18 × 18), height 29.5	YDH03CWS

Bench, painted

Size in inch	Accessory no.
DD (12 × 12) height 24.18 Adjustable to a max. height of 25.31	YWT01CWP
EE (18 × 18) height 24.18 Adjustable to a max. height of 25.31	YWT02CWP

Bench, stainless steel for size:

Size in inch	Accessory no.
DD (12 × 12) height 24.18 Adjustable to a max. height of 25.31	YWT01CWS
EE (18 × 18) height 24.18 Adjustable to a max. height of 25.31	YWT02CWS

Column for bench, stainless steel, for attaching indicator, adjustable height

Size in inch	Accessory no.
5.8 × 11.8 height	YDH01WTCWS

Plate for attaching indicator and printer to bench stand

	YPP01CWS
--	----------

Set of castors for bench

(2 guide castors, 2 lockable castors)	YR001WTCW
---------------------------------------	-----------

Retainer for bar code scanner, for attachment to bench stand

	YBH01CWS
--	----------

CERTIFICATE OF CONFORMITY		 Member of the FM Global Group
1.	HAZARDOUS (CLASSIFIED) LOCATION ELECTRICAL EQUIPMENT PER US REQUIREMENTS	
2.	Certificate No:	FM18US0227X
3.	Equipment: (Type Reference and Name)	Model CAPX..U-.....-....., IUX.4-.....-..... and IFX.4-.....-..... Weighing Platforms and Model YDI05-Z Interface Converter
4.	Name of Listing Company:	Minebea Intec Bovenden GmbH & Co. KG
5.	Address of Listing Company:	Leinetal 2 37120, Bovenden Germany
6.	The examination and test results are recorded in confidential report number: 3023378 dated 3 rd March 2006	
7.	FM Approvals LLC, certifies that the equipment described has been found to comply with the following Approval standards and other documents: FM Class 3600:2018, FM Class 3610:2010, FM Class 3611:2018, FM Class 3810:2018, ANSI/ISA 60079-0:2009, ANSI/UL 60079-11:2009	
8.	If the sign 'X' is placed after the certificate number, it indicates that the equipment is subject to specific conditions of use specified in the schedule to this certificate.	
9.	This certificate relates to the design, examination and testing of the products specified herein. The FM Approvals surveillance audit program has further determined that the manufacturing processes and quality control procedures in place are satisfactory to manufacture the product as examined, tested and Approved.	
10.	Equipment Ratings: For CAPX..U-.....-....., IUX.4-.....-....., IFX.4-.....-..... Weighing Platforms. Intrinsically Safe circuits or connections for Class I, II, III, Division 1, Groups A, B, C, D, E, F and G T4 at Ta* when connected per 35739-003-07-A4; Class I Zone 1, AEx ia IIC T4 at Ta* when connected per 35739-003-07-	
Certificate issued by:		
 J.E. Marquedant VP, Manager - Electrical Systems		1 October 2019 Date
To verify the availability of the Approved product, please refer to www.approvalguide.com		
<u>THIS CERTIFICATE MAY ONLY BE REPRODUCED IN ITS ENTIRETY AND WITHOUT CHANGE</u>		
FM Approvals LLC, 1151 Boston-Providence Turnpike, Norwood, MA 02062 USA T: +1 (1) 781 762 4300 F: +1 (1) 781 762 9375 E-mail: information@fmapprovals.com www.fmapprovals.com		
F 347 (Mar 16)		Page 1 of 3

SCHEDULE



US Certificate Of Conformity No: FM18US0227X

A4, Class I, Division 2, Groups A, B, C and D T4 at Max. Ta=50°C; Class II, III, Division 2, Groups E, F and G T4 at Ta=50°C and Class II, Zone 20, IIIC T4 at Ta=* when connected as per control drawings 35739-003-07-A4.

*see table below

V _{max}	I _{max}	P _i	C _i (cable)	L _i (cable)	T _a
17Vdc	410mA	1.25W	162pF/m	0.6μH/m	60°C
13Vdc	410mA	2.00W	162pF/m	0.6μH/m	40°C

For YDI05-Z.. Interface Converter.

Associated Intrinsically Safe for Class I, II, III, Divisions 1 and 2, Groups A, B, C, D, E, F and G as per control drawing 65710-800-07-A4; Entity; Class II, [Zone 20], [Ex ia] IIIC as per control drawing 65710-800-07-A4; Entity Class I, [Zone 0], [Ex ia] IIC as per control drawing 65710-800-07-A4; Entity

11. The marking of the equipment shall include:

For Models CAPX, IUX.4 and IFX.4

Class I, II, III, Division 1, Groups A, B, C, D, E, F and G; T4 Ta = * – 35739-003-07-A4; Entity

Class I, Division 2, Groups A, B, C, D; T4 Ta = +50°C

Class II, III, Division 2, Groups E, F, G; T4 Ta = +50°C

Class II, [Zone 20], [AEx ia] IIIC T4 Ta = * – 35739-003-07-A4;

Class I, Zone 0, AEx ia IIC T4 Ta* – 35739-003-07-A4; Entity

V _{max}	I _{max}	P _i	C _i (cable)	L _i (cable)	T _a
17Vdc	410mA	1.25W	162pf/m	0.6μH/m	60°C
13Vdc	410mA	2.00W	162pf/m	0.6μH/m	40°C

For Model YDI05-Z

Associated Intrinsically Safe Equipment for:

Class I, II, III, Division 1, Groups A, B, C, D, E, F and G –65710-800-07-A4; Entity

Zone [20], AEx [ib] IIIC – 65710-800-07-A4; Entity

Class [I], Zone [1], AEx [ia] IIC –65710-800-07-A4; Entity

12. **Description of Equipment:**

The Model CAPX..U-....., IUX.4-..... and IFX.4-..... are stainless steel bench and floor Weighing Platforms based on strain-gauge load cells. They can be connected to any indicator that fulfils the requirements of the desired type of protection. The load cells within the weighing platform are powered by the indicator which also measures the change in resistance within the load cell corresponding to the load that is applied onto the weighing platform.

The Model YDI05-Z. is an intrinsically safe barrier and interface converter. It is used to connect devices located in
THIS CERTIFICATE MAY ONLY BE REPRODUCED IN ITS ENTIRETY AND WITHOUT CHANGE

FM Approvals LLC, 1151 Boston-Providence Turnpike, Norwood, MA 02062 USA
T: +1 (1) 781 762 4300 F: +1 (1) 781 762 9375 E-mail: information@fmaprovals.com www.fmaprovals.com

F 347 (Mar 16)

Page 2 of 3

SCHEDULE



US Certificate Of Conformity No: FM18US0227X

the non-hazardous area with devices located in hazardous locations. The signals that are exchanged between non-hazardous and hazardous areas can be converted between different protocols within YDI05-Z.

Model CAPX..U-....., IUX.4-..... and IFX.4-..... Weighing Platforms

Model YDI05-Z Interface Converter

13. Specific Conditions of Use:

14. Test and Assessment Procedure and Conditions:

This Certificate has been issued in accordance with FM Approvals US Certification Requirements.

15. Schedule Drawings

A copy of the technical documentation has been kept by FM Approvals.

16. Certificate History

Details of the supplements to this certificate are described below:

Date	Description
3 rd March 2006	Original Issue.
11 th November 2018	<u>Supplement 5:</u> Report Reference: – RR214399 dated 11 th November 2018. Description of the Change: Conversion of certificate to new format, update of several FM Approval standards, change name on certificate to Minebea Intertec GmbH, remove Model CS3X, Update FM standards to 2018 revision date.
1 st October 2019	<u>Supplement 6:</u> Report Reference: – RR219894 dated 1 st October 2019. Description of the Change: Correct typing errors.

THIS CERTIFICATE MAY ONLY BE REPRODUCED IN ITS ENTIRETY AND WITHOUT CHANGE

FM Approvals LLC. 1151 Boston-Providence Turnpike, Norwood, MA 02062 USA
T: +1 (1) 781 762 4300 F: +1 (1) 781 762 9375 E-mail: information@fmapprovals.com www.fmapprovals.com

F 347 (Mar 16)

Page 3 of 3

CERTIFICATE OF CONFORMITY



1. **HAZARDOUS LOCATION ELECTRICAL EQUIPMENT PER CANADIAN REQUIREMENTS**
2. **Certificate No:** FM18CA0109X
3. **Equipment:** CAPX..U, IUX.4 and IFX.4 Platforms, and YDIO5-Z Interface Converter
4. **Name of Listing Company:** Minebea Intertec Bovenden GmbH & CO. KG
5. **Address of Listing Company:** Leinetal 2
37120, Bovenden
Germany
6. The examination and test results are recorded in confidential report number:


3023378C dated 10th March 2006
7. FM Approvals LLC, certifies that the equipment described has been found to comply with the following Approval standards and other documents:

CAN/CSA-C22.2 No. 157-92:2006, CAN/CSA-C22.2 No. 213:208, CAN/CSA-C22.2 No. 142:2004,
CAN/CSA-C22.2 No. 60079-0:2007, CAN/CSA-C22.2 No. 60079-11:2002
8. If the sign 'X' is placed after the certificate number, it indicates that the equipment is subject to specific conditions of use specified in the schedule to this certificate.
9. This certificate relates to the design, examination and testing of the products specified herein. The FM Approvals surveillance audit program has further determined that the manufacturing processes and quality control procedures in place are satisfactory to manufacture the product as examined, tested and Approved.
10. Equipment Ratings:

For CAPX..U, IUX.4-..., IFX.4- Weighing Platforms.

Intrinsically Safe circuits or connections for Class I, II, III, Division 1, Groups A, B, C, D, E, F and G T4 at Ta* when connected per 35739-003-07-A4 ; Zone 0, Ex ia IIC T4 at Ta* when connected per 35739-003-07-A4 ,

Certificate issued by:


J.E. Marquedant
VP, Manager - Electrical Systems

31 October 2019
Date

To verify the availability of the Approved product, please refer to www.approvalguide.com

THIS CERTIFICATE MAY ONLY BE REPRODUCED IN ITS ENTIRETY AND WITHOUT CHANGE

FM Approvals LLC, 1151 Boston-Providence Turnpike, Norwood, MA 02062 USA
T: +1 (1) 781 762 4300 F: +1 (1) 781 762 9375 E-mail: information@fmaprovals.com www.fmaprovals.com

F 348 (Mar 16)

Page 1 of 4

SCHEDULE



Canadian Certificate Of Conformity No: FM18CA0109X

Class I, Division 2, Groups A, B, C and D T4 at Max. Ta=50°C; Dust- Ignition proof for Class II, III, Division 2, Groups E, F and G T4 at Ta=50°C.

Vmax	Imax	Pi	Ci (cable)	Li (cable)	Ta
17Vdc	410mA	1.25W	162pf/m	0,6µH/m	60°C
13Vdc	410mA	2.00W	162pf/m	0,6µH/m	40°C

For YDI05-Z. Interface Converter.

Associated Intrinsically Safe for Class 1, II, III, Divisions 1 and 2, Groups A, B, C, D, E, F and G as per control drawing 65710-800-07-A4; Entity; Zone [20], Ex [ia] IIC as per control drawing 65710-800-07-A4; Entity Zone 1, Ex [ia] IIC as per control drawing 65710-800-07-A4; Entity

11. The marking of the equipment shall include:

For Models CAPX, IUX.4 and IFX.4

Class I, II, III, Division 1, Groups A, B, C, D, E, F and G – 35739-003-07-A4; T4 Ta*; Entity

Class I, Division 2, Groups A, B, C, D; T4 Ta = +50°C

Class II, III, Division 2, Groups E, F, G; T4 Ta = +50°C

Zone 0, Ex ia IIC T4 Ta* – 35739-003-07-A4; Entity

Vmax	Imax	Pi	Ci (cable)	Li (cable)	Ta
17Vdc	410mA	1.25W	162pf/m	0,6µH/m	60°C
13Vdc	410mA	2.00W	162pf/m	0,6µH/m	40°C

For Model YDI05-Z

Associated Intrinsically Safe Equipment for:

Class I, II, III, Division 1, 2, Groups A, B, C, D, E, F and G –65710-800-07-A4; Entity

Zone [20], Ex [ia] IIC – 65710-800-07-A4; Entity

Class [I], Zone [0], Ex [ia] IIC–65710-800-07-A4; Entity

THIS CERTIFICATE MAY ONLY BE REPRODUCED IN ITS ENTIRETY AND WITHOUT CHANGE

FM Approvals LLC. 1151 Boston-Providence Turnpike, Norwood, MA 02062 USA
T: +1 (1) 781 762 4300 F: +1 (1) 781 762 9375 E-mail: information@fmaprovals.com www.fmaprovals.com

F 348 (Mar 16)

Page 2 of 4

SCHEDULE



Canadian Certificate Of Conformity No: FM18CA0109X

12. Description of Equipment:

The Model CAPX..U-....., IUX.4-..... and IFX.4-..... are stainless steel bench and floor Weighing Platforms based on strain-gauge load cells. They can be connected to any indicator that fulfils the requirements of the desired type of protection. The load cells within the weighing platform are powered by the indicator which also measures the change in resistance within the load cell corresponding to the load that is applied onto the weighing platform.

The Model YDI05-Z. is an intrinsically safe barrier and interface converter. It is used to connect devices located in the non-hazardous area with devices located in hazardous locations. The signals that are exchanged between non-hazardous and hazardous areas can be converted between different protocols within YDI05-Z.

Model CAPX..U-....., IUX.4-..... and IFX.4-..... Weighing Platforms

Model YDI05-Z Interface Converter

13. Specific Conditions of Use:

1. The Model CAPX, IUX.4 and IFX.4 are configured for the ratings of Class I, II, III, Division 1 Groups A, B, C, D, E, F and G and Zone 1, Ex ia IIC according to the following Table:

Vmax	Imax	Pi	Ci (cable)	Li (cable)	Ta
17Vdc	410mA	1.25W	162pf/m	0,6µH/m	60°C
13Vdc	410mA	2.00W	162pf/m	0,6µH/m	40°C

14. Test and Assessment Procedure and Conditions:

This Certificate has been issued in accordance with FM Approvals Canadian Certification Scheme.

15. Schedule Drawings

A copy of the technical documentation has been kept by FM Approvals.

16. Certificate History

Details of the supplements to this certificate are described below:

THIS CERTIFICATE MAY ONLY BE REPRODUCED IN ITS ENTIRETY AND WITHOUT CHANGE

FM Approvals LLC. 1151 Boston-Providence Turnpike, Norwood, MA 02062 USA
T: +1 (1) 781 762 4300 F: +1 (1) 781 762 9375 E-mail: information@fmaprovals.com www.fmaprovals.com

F 348 (Mar 16)

Page 3 of 4

SCHEDULE



Canadian Certificate Of Conformity No: FM18CA0109X

Date	Description
10 th March 2006	Original Issue.
11 th November 2018	<u>Supplement 5:</u> Report Reference: – RR214399 dated 11 th November 2018. Description of the Change: Conversion of certificate to new format, change name on certificate to Minebea Intertec GmbH, remove Model CS3X.
31 st October 2019	<u>Supplement 6:</u> Report Reference: – RR221055 dated 31 October 2019. Description of the Change: Correction of typing error.

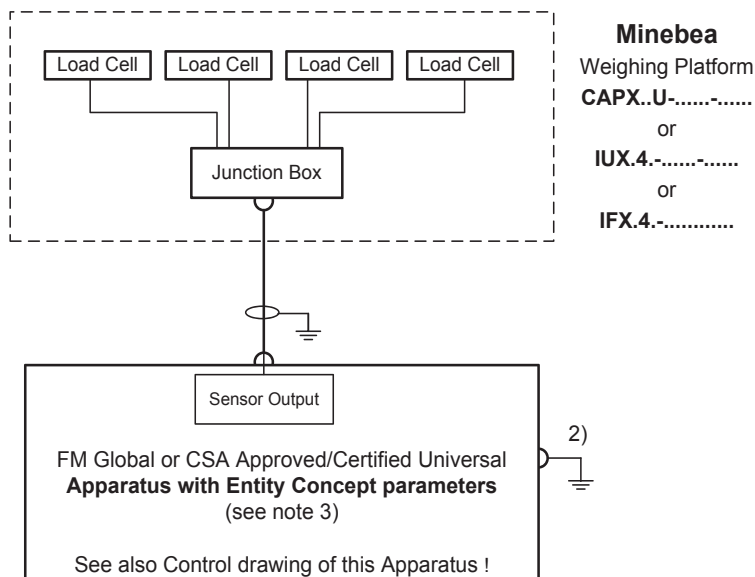
THIS CERTIFICATE MAY ONLY BE REPRODUCED IN ITS ENTIRETY AND WITHOUT CHANGE

FM Approvals LLC. 1151 Boston-Providence Turnpike, Norwood, MA 02062 USA
T: +1 (1) 781 762 4300 F: +1 (1) 781 762 9375 E-mail: information@fmaprovals.com www.fmaprovals.com

F 348 (Mar 16)

Page 4 of 4

Hazardous (Classified) Location
Class I,II,III, Division 1, Groups A,B,C,D,E,F,G T4
Class I, Zone 1, Groups IIA, IIB, IIC T4
Class II, Zone 20



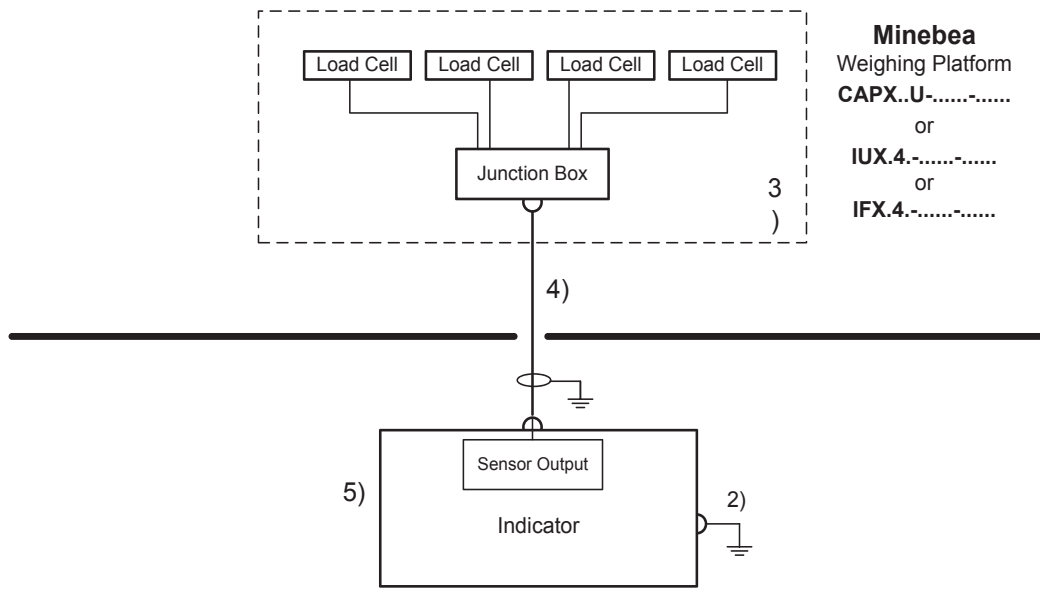
Parameters of the weighing platform:

Ui	Ii	Pi	Ci	Li	Ta
17 V	410 mA	1,25 W	162 pF/m 49 pf/ft	0,6 µH/m 0,18µH/ft	+60°C / +140°F
13 V	410 mA	2,00 W	162 pF/m 49 pf/ft	0,6 µH/m 0,18µH/ft	+40°C / +104°F



- 1) In the **USA**: The installation must be in accordance with the National Electrical Code ®, NFPA 70, Article 504 or 505 and ANSI / ISA-RP 12.6.
 In **Canada**: The installation must be in accordance with the Canadian Electrical Code ®, Part1, Section 18.
- 2) In the **USA**: The Apparatus must be connected to a suitable ground electrode per National Electrical Code ®, NFPA 70, Article 504 or 505. The resistance of the ground pad must be less than 1 ohm.
 In **Canada**: The Apparatus must be connected to a suitable ground electrode per Canadian Electrical Code ®, Part 1. The resistance of the ground pad must be less than 1 ohm.
- 3) The Entity Concept allows interconnection of intrinsically safe apparatus with associated apparatus not specifically examined in combination as a system when the approved values of Voc, Isc and Pmax resp. Uo, Io, Po of the associated apparatus are less than or equal to Vmax, Imax and Pmax resp. Ui, Ii, Pi of the intrinsically safe apparatus and the approved values of Ca and La resp. Co and Lo of the associated apparatus are greater than Ci and Li of the intrinsically safe apparatus plus all cable parameters.
- 4) Ambient temperature range: -20°C +40°C or +60°C (-4°F + 104°F or +140°F)
 Maximum ambient temperature for IUX.4-.....-....., IFX.4-.....-..... : +40°C (+ 104°F)
- 5) **WARNING**: SUBSTITUTION OF COMPONENTS MAY IMPAIR INTRINSIC SAFETY.

	2019-04-10		Control Drawing		
	T. Hiller		35739-003-07-A4	Revision 03	Sheet 1 of 2

Hazardous (Classified) Location
Class I,II,III, Division 2, Groups A,B,C,D,E,F,G T4
Class I, Zone 2, Groups IIA, IIB, IIC T4
Class II, Zone 22



- 1) In the **USA**: The installation must be in accordance with the National Electrical Code®, NFPA 70, Article 504 or 505 and ANSI / ISA-RP 12.6.
 In **Canada**: The installation must be in accordance with the Canadian Electrical Code®, Part1, Section 18.
- 2) In the **USA**: The Apparatus must be connected to a suitable ground electrode per National Electrical Code®, NFPA 70, Article 504 or 505. The resistance of the ground pad must be less than 1 ohm.
 In **Canada**: The Apparatus must be connected to a suitable ground electrode per Canadian Electrical Code®, Part 1. The resistance of the ground pad must be less than 1 ohm.
- 3) Ambient temperature range for the weighing platform: -20°C +60°C (-4°F + 104°F or +140°F)
- 4) The cable from the indicator to the weighing platform must be a NRTL approved/certified (flexible) conduit or the cable is connected to the output of the indicator via NRTL approved/certified barriers (limitation to maximum voltage of 17V) or the indicator is NRTL approved/certified for Division 2.
- 5) The indicator must be installed outside hazardous locations or must be approved/certified by an NRTL for use in hazardous locations.
- 6) **WARNING**: SUBSTITUTION OF COMPONENTS MAY IMPAIR INTRINSIC SAFETY.

	2019-04-10 T. Hiller		Control Drawing		
			35739-003-07-A4	Revision 03	Sheet 2 of 2

Minebea Intec Bovenden GmbH & Co. KG
Leinetal 2
37120 Bovenden, Germany

Phone +49 (0) 551.309.83.0
Fax +49 (0) 551.309.83.190

www.minebea-intec.com

Copyright by Minebea Intec, Bovenden, Germany.
No part of this publication may be reprinted or
translated in any form or by any means without prior
written permission from Minebea Intec.
All rights reserved.

The status of the information, specifications and
illustrations in this manual is indicated by the date given
below. Minebea Intec reserves the right to make changes
to the technology, features, specifications, and design
of the equipment without notice.

Date: March 2020

Printed in Germany on paper that has been bleached
without any use of chlorine. MS · KT
Publication No.: WCA6005-en20037