HBK
HOTTINGER BRÜEL & KJÆR

ENGLISH DEUTSCH FRANÇAIS ITALIANO ESPAÑOL PORTUGUÊS

Safety Instructions
Sicherheitshinweise
Consignes de sécurité
Note sulla sicurezza
Instrucciones de seguridad
Indicações de segurança

Zone 1/21 - Ex i

C16, C2, U2, C2A, HLC, PW15AH, PW25, PW27, PW29, RSC, RTN, Z6, Z7, PW10, PW12, PW15, PW16, PW22, PWS, SP4, Z16, Z6R

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All product descriptions are for general information only. They are not to be understood as a guarantee of quality or durability.

Änderungen vorbehalten.
Alle Angaben beschreiben unsere Produkte in allgemeiner Form. Sie stellen keine Beschaffenheits- oder Haltbarkeitsgarantie dar.

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BG

Забележка за безопасността при използване на електрическо оборудване в зони с риск от експлозия. Ако не разбирате настоящото ръководство, можете да го поръчате преведено на родния ви език.

Декларация за съответствие на ЕК

С настоящата декларация и обозначението CE доставчикът, Hottinger Baldwin Messtechnik, гарантира, че продуктът съответства на приложимите европейски разпоредби. Директивите, стандартите и документите са посочени в Декларацията за съответствие.

CZ

Bezpečnostní oznámení pro elektrická zařízení k použití v oblastech s nebezpečím exploze. Není-li tento návod srozumitelný, můžete si objednat návod, který přeložíme do vašeho rodného jazyka.

Prohlášení o shodě EC

Na základě tohoto prohlášení a značky CE dodavatel Hottinger Baldwin Messtechnik zaručuje, že produkt je v souladu s platnými Evropskými normami. Normy, směrnice a dokumenty jsou uvedeny v Prohlášení o shodě.

DK

Sikkerhedsbemærkning for elektrisk udstyr til brug i områder med risiko for eksplosion. Hvis denne brugsvejledning ikke er forståelig, kan du bestille brugsvejledninger oversat til dit modersmål hos os.

EF overensstemmelseserklæring

Med denne erklæring og CE-mærket garanterer leverandøren, Hottinger Baldwin Messtechnik, at produktet er i overensstemmelse med gældende europæiske direktiver. Direktiverne, standarder og dokumenter er angivet i Overensstemmelseserklæring.

DE

Sicherheitshinweise für elektrische Betriebsmittel zur Verwendung in explosionsgefährdeten Bereichen. Sollte diese Anleitung nicht verständlich sein, können Sie bei uns eine in Ihre Landessprache übersetzte Anleitung bestellen.

EG-Konformitätserklärung

Der Lieferant Hottinger Baldwin Messtechnik garantiert mit dieser Erklärung und der CE-Kennzeichnung, dass das Produkt den geltenden europäischen Richtlinien entspricht. Die angewendeten Richtlinien, Normen und Dokumente sind in der Konformitätserklärung aufgeführt.

EL

Ειδοποίηση ασφάλειας για χρήση ηλεκτρικού εξοπλισμού σε περιοχές όπου υφίσταται κίνδυνος έκρηξης. Εάν αυτό το εγχειρίδιο δεν είναι κατανοητό, μπορείτε να μας το ζητήσετε μεταφρασμένο στη μητρική σας γλώσσα.

Δήλωση Συμμόρφωσης ΕΚ

Με αυτή τη δήλωση και το σήμα CE, ο προμηθευτής Hottinger Baldwin Messtechnik εγγυάται ότι το προϊόν είναι σύμμορφο με τις ισχύουσες ευρωπαϊκές οδηγίες. Οι οδηγίες, τα πρότυπα και τα έγγραφα παρατίθενται στη Δήλωση Συμμόρφωσης.

EN

Safety notice for electrical equipment for use in areas at risk of explosion. If this manual is not understandable, you can order a manual translated into your native language from us.

EC Conformity Declaration

With this declaration and the CE mark, the supplier Hottinger Baldwin Messtechnik guarantees that the product complies with the applicable European directives. The directives, standards, and documents are listed in the Declaration of Conformity.

ES

Instrucciones de seguridad para equipos eléctricos para uso en atmósferas potencialmente explosivas. En caso de no entender el presente manual, puede pedirnos un manual traducido al idioma de su país.

Declaración de conformidad CE

El proveedor Hottinger Baldwin Messtechnik garantiza con esta declaración y el marcado CE que el producto cumple con las directivas europeas aplicables. Las directivas, normas y documentos aplicados se enumeran en la declaración de conformidad.

ET

Ohutusteade elektriseadmete kasutamise kohta plahvatusohtlikus keskkonnas. Kui see juhend pole arusaadav, saate meilt tellida teie emakeelde tõlgitud juhendi.

EÜ vastavusdeklaratsioon

Tarnija Hottinger Baldwin Messtechnik kinnitab käesoleva deklaratsiooni ja CE-vastavusmärgisega, et toode vastab kohaldatavatele Euroopa direktiividele. Direktiivid, standardid ja dokumendid on loetletud vastavusdeklaratsioonis.

FI

Turvallisuusilmoitus koskien sähkölaitteita, joita käytetään räjähdysvaarallisissa tiloissa.
Jos tämä opas ei ole kielen vuoksi ymmärrettävä, voitte tilata meiltä äidinkielellenne käännetyn oppaan.

EU-vaatimustemukaisuusvakuutus

Tällä vakuutuksella ja CE-merkinnällä toimittaja Hottinger Baldwin Messtechnik takaa, että tuote noudattaa sovellettavia Euroopan unionin direktiivejä.
Direktiivit, standardit ja asiakirjat ovat lueteltu vaatimustenmukaisuusvakuutuksessa.

FR

Consigne de sécurité pour les équipements électriques utilisés dans les zones à risque d'explosion.
Si la compréhension de ce manuel pose des problèmes, vous pouvez demander à obtenir une commande de manuel traduit dans votre langue maternelle.

Déclaration de conformité de la CE

Avec cette déclaration et le marquage de la CE, le fournisseur, Hottinger Baldwin Messtechnik, assure que le produit est conforme aux directives européennes en vigueur. Les directives, les normes, et les documents sont classés dans la déclaration de conformité.

IE

Fógra sábháilteachta le haghaidh trealaimh leictrigh a ceapadh lena úsáid i limistéir ina d'fhéadfadh pléascadh tarlú. Mura bhfuil an lámhleabhar seo intuigthe, is féidir lámhleabhar arna aistriú chuig do theanga dhúchais féin a iarraidh orainn.

Dearbhú Comhréireachta an Comhphobail Eorpaigh

Ráthaíonn an soláthraí Hottinger Baldwin Messtechnik, leis an dearbhú seo agus leis an gcomhartha CE, go gcloíonn an táirge leis na Treoracha Eorpacha is infheidhme. Tá na treoracha, na caighdeáin agus na doiciméid liostaithe sa Dearbhú Comhréireachta.

HU

Biztonsági figyelmeztetés az elektromos berendezések robbanásveszélyes környezetben való használatával kapcsolatban. Amennyiben jelen kézikönyv nem érthető, megrendelheti tőlünk, annak saját anyanyelvére fordított változatát.

EK Megfelelőségi nyilatkozat

Jelen nyilatkozattal és a CE jelöléssel együtt, a beszállító (Hottinger Baldwin Messtechnik) garantálja, hogy a termék megfelel a vonatkozó európai irányirányelveknek. Az irányelvek, szabványok és dokumentumok listája a Megfelelőségi Nyilatkozatban található.

HR

Sigurnosna napomena za električnu opremu koja se koristi na područjima s rizikom od eksplozije. Ako ovaj priručnik nije razumljiv, možete od nas naručiti priručnik preveden na svoj materinji jezik.

EZ-izjava o sukladnosti

Ovom izjavom i oznakom CE dobavljač Hottinger Baldwin Messtechnik jamči da je proizvod sukladan s primjenjivim europskim direktivama. Direktive, norme i dokumenti navedeni su u Izjavi o sukladnosti

IT

Avviso di sicurezza per le attrezzature elettriche, relativo all'utilizzo in aree a rischio di esplosione. Qualora questo manuale non fosse comprensibile, è possibile ordinare il manuale tradotto da noi, nella lingua richiesta.

Dichiarazione di conformità CE

Con questa dichiarazione e il marchio CE, il fornitore Hottinger Baldwin Messtechnik garantisce che il prodotto è conforme alle direttive europee applicabili. Le direttive, gli standard e i documenti sono elencati nella Dichiarazione di conformità.

LT

Saugos įspėjimas dėl elektros įrangos naudojimo tose vietose, kuriose kyla sprogimo pavojus. Jeigu šios naudojimo instrukcijos nesuprantate, pas mus galite užsisakyti naudojimo instrukciją, išverstą į Jūsų gimtąją kalbą.

EB atitikties deklaracija

Kartu su šia deklaracija ir CE ženklu tiekėjas, „Hottinger Baldwin Messtechnik", garantuoja, kad šis gaminys atitinka galiojančias Europos direktyvas. Direktyvos, standartai ir dokumentai yra išvardyti atitikties deklaracijoje.

LV

Drošības paziņojums par elektrisko aprīkojumu izmantošanai vietās, kur pastāv sprādzienbīstamība. Ja šī rokasgrāmata nav saprotama, varat no mums pasūtīt jūsu dzimtajā valodā tulkotu rokasgrāmatu.

EK atbilstības deklarācija

Ar šo deklarāciju un CE marķējumu piegādātājs Hottinger Baldwin Messtechnik garantē, ka produkts atbilst attiecīgajām Eiropas direktīvām. Direktīvas, standarti un dokumenti ir norādīti atbilstības deklarācijā.

MT

Notifika ta' sigurtà għal-tagħmir elettriku għall-użu f'positijiet ta' riskju ta' splużjoni. Jekk dan il-manwal ma jiftiehemx, tista' tordna l-manwal tradott fil-lingwa tiegħek mingħandna.

Dikjarazzjoni ta' Konformità ĊE

B'din id-dikjarazzjoni u l-marka ĊE, il-fornitur Hottinger Baldwin Messtechnik jiggarantixxi li l-prodott jimxi ma' Direttivi Ewropej applikabbli. Id-direttivi, l-istandards u d-dokumenti huma elenkati fid-Dikjarazzjoni ta' Konformità.

NL

Veiligheidsmededeling voor elektrische apparatuur voor gebruik in ruimten met explosiegevaar. Als deze handleiding niet duidelijk is, kunt u bij ons een handleiding in uw moedertaal aanvragen.

EC-verklaring van naleving

Met deze verklaring en de CE-markering garandeert leverancier Hottingen Baldwin Messtechnik dat het product voldoet aan de van kracht zijnde Europese normen. De normen, standaarden en documenten staan vermeld in de Verklaring van naleving.

PL

Zasady zachowania bezpieczeństwa dotyczące urządzeń elektrycznych do użytku w obszarach zagrożonych wybuchem. Jeśli niniejsza instrukcja nie jest zrozumiała, można u nas zamówić instrukcję przełożoną na Państwa język ojczysty.

Deklaracja zgodności WE

Za pomocą niniejszej deklaracji oraz oznakowania CE dostawca, Hottinger Baldwin Messtechnik, gwarantuje, że wyrób spełnia wymagania obowiązujących wytycznych europejskich. Wytyczne, normy i dokumenty mające zastosowanie są wymienione w niniejszej Deklaracji zgodności.

PT

Aviso de segurança para equipamentos elétricos para uso em áreas de risco de explosão. Se este manual não for compreensível, pode pedir-nos o manual traduzido na sua língua nativa.

Declaração de Conformidade CE

Com esta declaração e com a marcação CE, o fornecedor Hottinger Baldwin Messtechnik garante que o produto está em conformidade com as Diretivas Europeias aplicáveis. As diretivas, as normas e os documentos estão listados na Declaração de Conformidade.

RO

Avertisment de siguranţă referitor la echipamentul electric pentru utilizare în zonele cu risc de explozii. Dacă acest manual nu este înţeles, dumneavoastră puteţi solicita de la noi traducerea acestuia în limba nativă.

Declaraţie de conformitate CE

Împreună cu această declaraţie şi marcajul CE, furnizorul Hottinger Baldwin Messtechnik garantează că acest produs satisface directivele europene aplicabile. Directivele, standardele, şi documentele sunt prezentate în Declaraţia de conformitate.

SK

Bezpečnostná oznámenia pre elektrické zariadenia na použitie v oblastiach s nebezpečenstvom explózie. Ak nie je tento návod zrozumiteľný, môžete si objednať návod, ktorý preložíme do vášho rodného jazyka.

Vyhlásenie o zhode EC

Na základe tohto vyhlásenia a značky CE dodávateľ Hottinger Baldwin Messtechnik zaručuje, že produkt je v súlade s platnými Európskymi normami. Normy, smernice, normy a dokumenty sú uvedené v Vyhlásenie o zhode.

SI

Varnostno obvestilo za električno opremo za uporabo na območjih, kjer obstaja nevarnost eksplozije. Če ta priročnik ni razumljiv, lahko pri nas naročite prevod priročnika v vaš materni jezik.

Izjava o skladnosti ES

S to izjavo in oznako CE dobavitelj Hottinger Baldwin Messtechnik zagotavlja, da je proizvod v skladu z veljavno evropsko direktivo. Direktive, standardi in dokumenti so navedeni v Izjavi o skladnosti.

SE

Säkerhetsmeddelande för elektrisk utrustning för användning i områden med explosionsrisk. Om den här bruksanvisningen inte är begriplig kan du beställa en bruksanvisning översatt på ditt modersmål från oss.

EG-deklaration om överensstämmelse

Med den här deklarationen och CE-märkningen garanterar leverantören, Hottinger Baldwin Messtechnik, att produkten efterlever direktiven inom EU. Direktiv, standarder och dokument är listade i deklarationen om överensstämmelse.

HBK
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ENGLISH DEUTSCH FRANÇAIS ITALIANO ESPAÑOL PORTUGUÊS

Safety Instructions







Zone 1/21 - Ex i

C16, C2, U2, C2A, HLC, PW15AH, PW25, PW27, PW29, RSC, RTN, Z6, Z7, PW10, PW12, PW15, PW16, PW22, PWS, SP4, Z16, Z6R

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1 GENERAL

1.1 Purpose of the document

This document supplements the requirements and explanations of the original mounting instructions with regard to the explosion protection version of HBK load cells. The content is only relevant to explosion protection.

Please refer to the original mounting instructions for general safety instructions and other aspects affecting installation, starting up, maintenance or repair.

This document is only valid in conjunction with the original mounting instructions.

1.2 Target groups

This document is directed at project planners, buyers and fitters with relevant qualifications and knowledge of the pertinent legal and safety regulation requirements.

2 APPLIED STANDARDS

The equipment is based on the following standards and editions:

ATEX

- EN IEC 60079-0:2018 Edition 7.0
- EN 60079-11:2012 Edition 6.0

IECEx

- IEC 60079-0:2017 Edition 7.0
- IEC 60079-11:2011 Edition 6.0

FM US

- FM 3600:2018
- FM 3610:2018
- FM 3810:2018
- ANSI/ISA 60079-0:2013
- ANSI/UL 60079-11:2014
- ANSI/IEC 60529:2004

FM CA

- CAN/CSA-C22.2 No. 61010-1:2012

- CAN/CSA-C22.2 No. 60079-0:2015
- CAN/CSA-C22.2 No. 60079-11:2014
- CSA-C22.2 No. 60529:R2015

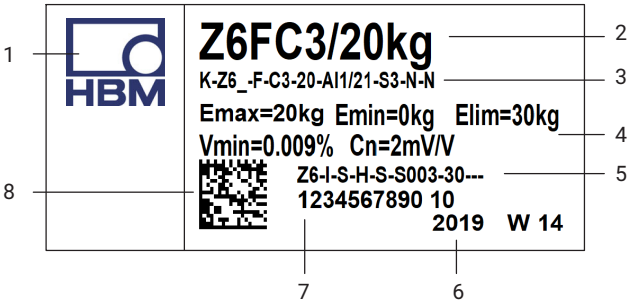
NEPSI

- GB 3836.1-2010
- GB 3836.4-2010
- GB 12476.1-2013
- GB 12476.4-2010

3 MARKING AND CODING

3.1 General type plate

The general type plate is made up as follows:



No.	Description
1	HBM logo, hologram
2	Basic type as listed
3	Order code (occasional)
4	Characteristic data
5	**Marking relevant to explosion protection (Ex-string)**
6	Year of construction
7	Customer order number
8	QR code

3.2 Ex-string

The letters and numerical sequence of marking 5, the so-called Ex-string, express the essential explosion protection characteristics of the load cell in an abbreviated form. Use this coding in this document, the EU-type examination certificate and the IECEx certificate to find additional information about whether and which additional measures are required.

Ex-string format: *GT Z-W-G-S-LLLL-TT-OV-C-E*

Item	Significance	Variables
GT	Load cell basic type	-
Z	Intrinsic safety	I = intrinsically safe N or blank = not intrinsically safe
W	Material	S = stainless steel A = aluminum W = tool steel (nickel-plated)
G	Encapsulation	H = welded P = potted
S	Shield bonding	S = connected directly to the cell C / C1 = connected to the cell via a capacitor (1 nF) N or blank = not connected
	Special instructions: The following applies when S = S: The shield is connected to the housing. Additional potential equalization between the grounding of the control device and the sheathing of the load cell must ensure that current does not flow over the shield. The distance must not be greater than 50 m. The following applies when S = C/C1: 10 nF must not be exceeded in the circuit. The following applies when S = N or blank: The housing must be conductively connected to ground by the link to the mechanical construction (max. 1 MΩ).	

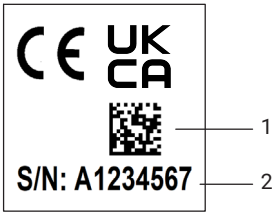
Item	Significance	Variables
LLLL	Connection type and cable length	V = 4-wire variant and cable length in m (3 digits) S = 6-wire variant and cable length in m (3 digits) P4 = 4-pin plug and cable length in m (2 digits) P6 = 6-pin plug and cable length in m (2 digits)
	Special instructions: Standard values for inductance and capacitance must be taken into account in the definition of cable length. C_i = 200 pF/m L_i = 1 µH/m They must be multiplied by the cable length and taken into account in accordance with EN /IEC 60079-14 sections 16.2.2.2 and 16.2.4. The following applies when LLLL = P***: only allowed in intrinsically safe circuits. Cable installations must always be protected against electrostatic charge. Please refer to the mounting instructions for the color coding of the individual wires.	
TT	Temperature value	10 = min. ambient temperature -10°C 25 = min. ambient temperature -25°C 30 = min. ambient temperature -30°C
	Special instructions: In temperature class T6, the acceptable maximum ambient temperature is 30°C. Load cell connection cables in zones 21 and 22 must be protected against electrostatic charge.	
OV	Switching circuit for overvoltage protection	blank = not present OV1 = response voltage < 500 V OV2 = response voltage > 500 V
	Special instructions: The following applies when OV = OV1: The cell is fitted with overvoltage protection (response voltage < 500 V). A potential equalization line must be laid between the load cell housing and the control device.	
C	Coating	c = insulating coating blank = not coated
	Special instructions: The following applies when C = C: The cell has an insulating coating. It can only be used if the housing is protected against electrostatic charge. In intrinsically safe circuits, the housing must be connected to ground because of ESD (< 1 MΩ), *see E*.	

Item	Significance	Variables
E	Grounding	E = Grounding terminal clamps fitted (outside) blank = No grounding connection fitted
	Special instructions: The following applies when E = blank: The load cell must be fastened (screwed on) to integrate it into the potential equalization of the system (max. 1 MΩ to ground). The following applies when E = E: A potential equalization connection is provided in the load cell. Pay attention to technical regulations and standards when selecting and operating the equipment. You have the following options: - Direct connection by single-stranded conductors with a cross-section of up to 1.5 mm^2 - Direct connection via finely-stranded conductors with a cross-section of up to 2.5 mm^2 - Connection with a cross-section of up to 6 mm^2 at the same time as using a ring or flat terminal lug with a 4 mm hole	

General information

- Make sure that intrinsically safe and non-intrinsically safe circuits are installed separately from one another.
- Always choose connection cables of a quality that meets thermal and mechanical requirements.
- The test voltage for the cables must be at least 500 V (alternating voltage).

3.3 Serial number plate



No.	Description
1	QR code
2	Serial number

3.4 Supplementary explosion protection plate for zone 1/21

The supplementary plate with data relevant to explosion protection is made up as follows:

ATEX/IECEx

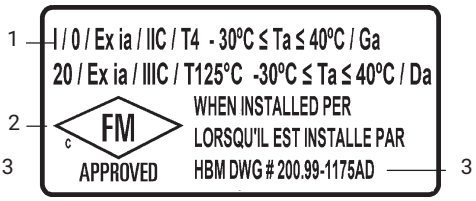


No.	Description
1	EU-type examination certificate number / Ex-HBK marking
2	IECEx certificate number
3	Marking according to ATEX and IECEx
4	Manufacturer / Applicant
5	CE mark with notified body
6	ATEX mark
-	Temperature range (only for certain variants; not shown here)

FM US



FM CA



No.	Description
1	Equipment Ratings
2	FM Approved Mark for US/CA
3	Control drawing Drawing number

4 FURTHER INFORMATION

These load cells are passive devices for use in potentially explosive atmospheres.

Load cells approved in accordance with EU-type examination procedure BVS 13 ATEX E 108X and IECEx Certificate IECEx BVS 13.0109X for use in equipment group II, equipment category 2 in zone 1 (gases/vapors/mists) and for use in zone 21 (air/dust mixtures), comply with "intrinsic safety" type of protection Ex ia IIC/IIB for connection to an intrinsically safe circuit with the following maximum values (Ex-string characteristic Z[1] = I):

U_i	I_i	P_i	Zone	Temperature class at ambient temperature T_a	Load cell cable	
					L_i per m	C_i per m cable
30 V	500 mA	4 W	1	T6: -TT[1] °C < T_a <+ 30 °C	0.85 µH/m	162 pF/m
			1	T4: -TT[1] °C < T_a <+ 70 °C		
			21	T125 °C: -TT[1] °C < T_a <+ 70 °C		

[1] See Ex-string

Use in zones 1 and 21 simultaneously is not permitted.

The load cells must be protected against external impacts. Objects of Ø > 25 mm must not reach the load cells.

For load cell approved in accordance with FM Approvals, control drawings, special conditions and certificate of conformity has to take into account.

5 INSTALLATION AND STARTING UP

5.1 General

Installation conditions

Only install devices that are intended for use in the relevant zones and categories.

Local guidelines and installation conditions as per EN/IEC 60079-14 must be complied with during installation.

Intrinsically safe and non-intrinsically safe circuits must be installed separately, the prescribed distance apart.

Extension cables must meet the relevant requirements for mechanical and thermal resistance. They must be able to resist a test voltage of at least 500 V AC.

Other applicable documents

As well as the instructions in this document, you must also pay attention to the information in the mounting instructions and on the type plate.

Type examination certificate

In Europe, you need an EU-type examination certificate for devices used in zones 0/1/20/21, which must be issued by a notified body for explosion protection.

5.2 Technical information

Power, voltage and amperage

The power P_0 of all the supply devices must be less than or the same as power Pi of a load cell. The same applies to the voltage and amperage.

Intrinsically safe circuits

The installation of an intrinsically safe circuit requires a control drawing (system description), which must be produced by the installer/operator.

Potential equalization

Take suitable measures to prevent electrostatic charge.

Ambient conditions

The load cells must have relevant protection when they are being used in an adverse environment.

An interval suitable to the particular case must be specified for eliminating dust deposits.

Prevent the build-up of ice on the equipment.

Material-related application limitations

In the context of your application, please note that aggressive media, especially salts containing chlorine, can also attack all grades of stainless steel and their welded seams. In such cases, the operator must provide additional means of protection, the effectiveness of which must be verified by regular checks at suitable intervals.

Mechanical stress

Avoid inappropriate bending, vibrational and torsional stress on the load cell.

Damage and blocking

Never use load cells in a potentially explosive atmosphere if the enclosure is damaged.

In a potentially explosive atmosphere, never use force to release components that are jammed or blocked (by ice or corrosion, for example).

Reuse

Load cells that were installed in a non-intrinsically safe circuit may not be reused in an intrinsically safe circuit.

6 INSPECTION, MAINTENANCE AND REPAIR

6.1 Note

Measures for maintenance and repair must only be carried out by suitably qualified HBK specialists. Unauthorized conversions and modifications are prohibited (see original mounting instructions).

6.2 Inspection cycles

Activity	Visual inspection (monthly)	Extended inspection (every six months)	Detailed inspection (annually)
The load cell is inspected for integrity, removal of dust deposits	•		
The load cell is inspected for correct seating, cracks or fractures		•	
The electrical system is checked for integrity and functionality			•
The processing of measured values is checked			•
Checking the overall system	The operator is responsible for this!		

6.3 Cleaning agents

Do not use cleaning agents containing acids or substances that release (chlorine) ions, as these will also attack all grades of stainless steel and their welded seams. Should this result in corrosion, it could cause the load cell to fail.

7 CERTIFICATES

7.1 IECEx certificates

Use the following link to find IECEx-type certificates on the Internet:
https://www.iecex-certs.com/#/search

7.2 EU-Type Examination Certificate

The EU-Type Examination Certificate BVS 13 ATEX E 108 X in English and German can be found at the end of this documentation and on the HBM Internet pages under
https://www.hbm.com/fileadmin/mediapool/hbmdoc/technical/C05318.pdf

7.3 EU Declaration of Conformity

The EU Declaration of Conformity in English and German can be found at the end of this documentation.

7.4 UK Declaration of Conformity

The UK Declaration of Conformity in English can be found at the end of this documentation.

7.5 FM Approval - Certificate of Conformity (US)

The FM Approval - Certificate of Conformity (US) in English can be found at the end of this documentation.

7.6 FM Approval - Certificate of Conformity (Canada)

The FM Approval - Certificate of Conformity (Canada) in English can be found at the end of this documentation.

7.7 Control Drawing I.S.

The Control Drawing I.S. in English and French can be found at the end of this documentation.

7.8 Ex NEPSI - Certificate of Conformity (China)

The Ex NEPSI explosion protection certificate of conformity in Chinese and English is attached at the end of this document.

HBK
HOTTINGER BRÜEL & KJÆR

ENGLISH DEUTSCH FRANÇAIS ITALIANO ESPAÑOL PORTUGUÊS

Sicherheitshinweise

Zone 1/21 - Ex i

C16, C2, U2, C2A, HLC, PW15AH, PW25, PW27, PW29, RSC, RTN, Z6, Z7, PW10, PW12, PW15, PW16, PW22, PWS, SP4, Z16, Z6R

HBM

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1 ALLGEMEINES

1.1 Zweck des Dokuments

Das vorliegende Dokument ergänzt die Bestimmungen und Ausführungen der Original-Montageanleitung in Bezug auf die Explosionsschutzausführung der HBK-Wägezellen. Es werden lediglich Ex-relevante Inhalte dargestellt.

Für allgemeine Sicherheitshinweise und weitere Aspekte, die die Aufstellung, Inbetriebnahme, Wartung oder Reparatur betreffen, beachten Sie bitte die Original-Montageanleitung.

Dieses Dokument ist nur in Verbindung mit der Original-Montageanleitung gültig.

1.2 Zielgruppen

Das vorliegende Dokument richtet sich an Projektierer, Einkäufer, Monteure mit entsprechender Qualifizierung und Kenntnis der einschlägigen Bestimmungen zu Rechts- und Sicherheitsvorschriften.

2 ANGEWANDTE NORMEN

Die Ausrüstung der Geräte basiert auf folgenden Normen und Editionen:

ATEX

- EN IEC 60079-0:2018 Edition 7.0
- EN 60079-11:2012 Edition 6.0

IECEx

- IEC 60079-0:2017 Edition 7.0
- IEC 60079-11:2011 Edition 6.0

FM US

- FM 3600:2018
- FM 3610:2018
- FM 3810:2018
- ANSI/ISA 60079-0:2013
- ANSI/UL 60079-11:2014
- ANSI/IEC 60529:2004

FM CA

- CAN/CSA-C22.2 No. 61010-1:2012
- CAN/CSA-C22.2 No. 60079-0:2015
- CAN/CSA-C22.2 No. 60079-11:2014
- CSA-C22.2 No. 60529:R2015

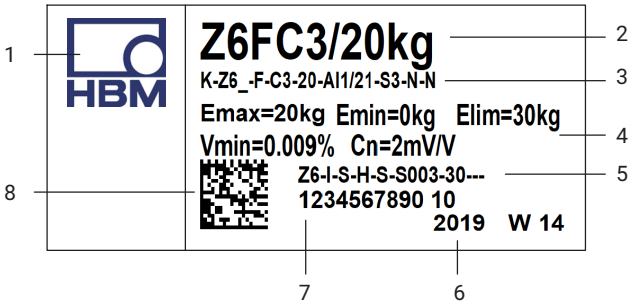
NEPSI

- GB 3836.1-2010
- GB 3836.4-2010
- GB 12476.1-2013
- GB 12476.4-2010

3 KENNZEICHNUNG UND KODIERUNG

3.1 Allgemeines Typenschild

Das allgemeine Typenschild setzt sich wie folgt zusammen:



Nr.	Bezeichnung
1	HBM Logo, Hologramm
2	Grundtyp gemäß Auflistung
3	Bestellcode (kasual)
4	Charakteristische Daten
5	**Ex-relevante Kennzeichnung (Ex-String)**
6	Baujahr

7	Kundenauftragsnummer
8	QR-Code

3.2 Ex-String

Die Buchstaben- und Zahlenfolge der Kennzeichnung 5, der sog. Ex-String, gibt in komprimierter Form die wesentlichen Ex-Merkmale der Wägezelle wieder. Anhand dieser Kodierung finden Sie in diesem Dokument sowie in der EU-Baumusterprüfbescheinigung und dem IECEx Zertifikat weitere Hinweise, ob und welche zusätzliche Maßnahmen erforderlich sind.

Ex-String-Format: *GT Z-W-G-S-LLLL-TT-OV-C-E*

Pos.	Bedeutung	Variablen
GT	Grundtyp Wägezelle	-
Z	Eigensicherheit	I = eigensicher N oder leer = nicht eigensicher
W	Material	S = Edelstahl A = Aluminium W = Werkzeugstahl (Nickel-beschichtet)
G	Kapselung	H = geschweißt P = vergossen
S	Schirmverbindung	S = direkt mit Zelle verbunden C / C1 = über Kondensator (1 nF) mit Zelle verbunden N oder leer = nicht verbunden
	Spezielle Hinweise: Für den Fall S = S gilt: Der Schirm ist mit dem Gehäuse verbunden. Ein zusätzlicher Potentialausgleich zwischen der Erdung des Vorschaltgerätes und der Ummantelung der Wägezelle muss gewährleisten, dass über den Schirm kein Strom fließt. Eine Distanz über 50 m ist nicht erlaubt. Für den Fall S = C/C1 gilt: Im Stromkreis dürfen 10 nF nicht überschritten werden. Für den Fall S = N oder leer gilt: Das Gehäuse muss über die Anbindung an die mechanische Konstruktion leitfähig (max. 1 MΩ) mit Erde verbunden sein.	

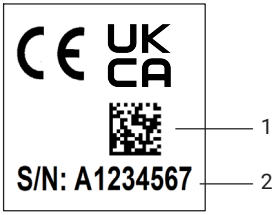
Pos.	Bedeutung	Variablen
LLLL	Verbindungsart und Kabellänge	V = 4-Leiter Variante und Kabellänge in m (3-stellig) S = 6-Leiter Variante und Kabellänge in m (3-stellig) P4 = 4-pol. Stecker und Kabellänge in m (2-stellig) P6 = 6-pol. Stecker und Kabellänge in m (2-stellig)
	Spezielle Hinweise: Bei der Definition der Kabellänge müssen die Standardwerte für Induktivität und Kapazität berücksichtig werden. C_i = 200 pF/m L_i = 1 µH/m Sie sind mit der Kabellänge zu multiplizieren und nach EN/IEC 60079-14 Abs. 16.2.2.2 bzw. 16.2.4 zu berücksichtigen. Für den Fall LLLL = P*** gilt: nur in eigensicheren Stromkreisen erlaubt. Kabel sind stets gegen elektrostatische Aufladung geschützt zu verlegen. Die Farbcodierung der Einzeladern entnehmen Sie bitte der Montageanleitung.	
TT	Temperaturangabe	10 = min. Umgebungstemperatur -10°C 25 = min. Umgebungstemperatur -25°C 30 = min. Umgebungstemperatur -30°C
	Spezielle Hinweise: In der Temperaturklasse T6 beträgt die erlaubte Umgebungs-Höchsttemperatur 30 °C. Die Anschlusskabel der Wägezellen müssen in den Zonen 21 und 22 gegen elektrostatische Aufladung gesichert sein.	
OV	Schaltkreis für Überspannungsschutz	leer = nicht vorhanden OV1 = Ansprechspannung < 500 V OV2 = Ansprechspannung > 500 V
	Spezielle Hinweise: Für den Fall OV = OV1 gilt: Die Zelle ist mit einen Überspannungsschutz (Ansprechspannung < 500 V) ausgestattet. Es muss eine Potentialausgleichsleitung zwischen dem Wägezellengehäuse und dem Vorschaltgerät gezogen werden.	
C	Beschichtung	c = isolierend beschichtet leer = nicht beschichtet
	Spezielle Hinweise: Für den Fall C = C gilt: Die Zelle ist isolierend beschichtet. Sie darf nur eingesetzt werden, wenn das Gehäuse gegen elektrostatische Aufladung geschützt ist, *siehe E*.	

Pos.	Bedeutung	Variablen
E	Erdung	E = Erdungsanschlusskemme vorhanden (außerhalb) leer = kein Erdungsanschluss vorhanden
	Spezielle Hinweise: Für den Fall E = leer gilt: Die Wägezelle muss durch die Befestigung (Anschrauben) in den Potentialausgleich der Anlage eingebunden werden (max 1 MΩ zur Erde). Für den Fall E = E gilt: An der Wägezelle ist ein Potenzialausgleichsanschluss vorgesehen. Achten Sie bei der Auswahl und dem Betrieb der Ausrüstung auf die technischen Regeln und Standards. Sie haben folgende Optionen: - Direkte Verbindung per Einzelstrang-Leiter mit einem Querschnitt bis zu 1,5 mm^2 - Direkte Verbindung durch Feindrähte mit einem Querschnitt von bis zu 2,5 mm^2 - Verbindung mit einem Querschnitt von bis zu 6 mm^2 bei gleichzeitiger Verwendung eines Ring- oder Flachklemmenschuhs mit 4 mm Bohrung	

Generelle Hinweise

- Achten Sie darauf, dass eigensichere und nicht-eigensichere Stromkreise getrennt voneinander installiert werden.
- Wählen Sie Anschlusskabel stets in einer den thermischen und mechanischen Anforderungen entsprechenden Qualität.
- Die Prüfspannung für Kabel muss mindestens 500 V (Wechselspannung) betragen.

3.3 Seriennummernschild



Nr.	Bezeichnung
1	QR-Code
2	Seriennummer

3.4 Ex-Schutz Zusatzschild für Zone 1/21

Das Zusatzschild mit Ex-relevanten Daten setzt sich wie folgt zusammen:

ATEX/IECEx

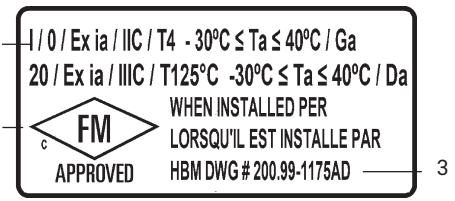


Nr.	Bezeichnung
1	EU-Baumusterprüfbescheinigung / Ex-Kennzeichnung von HBK
2	IECEx-Zertifikat Nummer
3	Kennzeichnung nach ATEX und IECEx
4	Hersteller / Antragsteller
5	CE-Kennzeichnung mit Benannter Stelle
6	ATEX-Kennzeichnung
-	Temperaturbereich (nur bei bestimmten Varianten; hier nicht abgebildet)

FM US



FM CA



Nr.	Bezeichnung
1	Bemessungsdaten des Geräts
2	Kennzeichen „FM Approved“ für Zulassung in USA/Kanada
3	Zeichnungsnummer der Kontrollzeichnung (Control Drawing)

4 WEITERE INFORMATIONEN

Diese Wägezellen sind passive Betriebsmittel für den Einsatz in explosionsgefährdeten Bereichen.

Die gemäß EU-Baumusterprüfung BVS 13 ATEX E 108 X und IECEx Certificate IECEx BVS 13.0109 X für den Einsatz in Gerätegruppe II, Gerätekategorie 2 in Zone 1 (Gase/Dämpfe/Nebel) und für den Einsatz in Zone 21 (Staub/Luft-Gemische) zugelassenen Wägezellen entsprechen der Zündschutzart “Eigensicherheit” Ex ia IIC/IIB für den Anschluss an einen eigensicheren Stromkreis mit den folgenden Höchstwerten (Ex-String Merkmal Z[1)] = I):

U_i	I_i	P_i	Zone	Temperaturklasse bei Umgebungstemperatur T_a	Wägezellenkabel	
					L_i pro m	C_i pro m Kabel
30 V	500 mA	4 W	1	T6: -TT[1)] °C < T_a <+ 30 °C	0,85 µH/m	162 pF/m
			1	T4: -TT[1)] °C < T_a <+ 70 °C		
			21	T125 °C: -TT[1)] °C < T_a<+ 70 °C		

1) Siehe Ex-String

Ein Einsatz in Zone 1 und 21 gleichzeitig ist nicht zulässig.

Die Wägezellen müssen gegen äußere Stöße geschützt werden. Objekte mit Ø > 25 mm dürfen nicht zu den Wägezellen gelangen.

Bei einer Wägezelle, die nach den Anforderungen von FM Approvals zugelassen ist, müssen Kontrollzeichnungen (Control Drawings), besondere Bedingungen und die Konformitätserklärung (Certificate of Conformity) berücksichtigt werden.

5 INSTALLATION- UND INBETRIEBNAHME

5.1 Allgemeines

Aufstellbedingungen

Installieren Sie ausschließlich Geräte, die zur Verwendung in den entsprechenden Zonen und Kategorien vorgesehen sind.

Bei der Installation müssen die lokalen Richtlinien und Aufstellbedingungen nach EN/IEC 60079-14 beachtet werden.

Eigensichere und nicht eigensichere Stromkreise müssen getrennt mit vorgegebenem Abstand installiert werden.

Verlängerungskabel müssen die relevanten Anforderungen an mechanische und thermische Beständigkeit erfüllen. Sie müssen mindestens einer Prüfspannung von 500 V AC widerstehen.

Mitgeltende Unterlagen

Beachten Sie neben den Hinweisen in diesem Dokument auch die Angaben in der Montageanleitung und auf dem Typenschild.

Baumusterprüfbescheinigung

In Europa benötigen Sie für Geräte zum Einsatz in den Zonen 0/1/20/21 eine EU-Baumusterprüfbescheinigung, ausgestellt durch eine benannte Stelle für Explosionsschutz.

5.2 Technische Hinweise

Leistung, Spannung und Stromstärke

Die Leistung P_0 aller Versorgungseinrichtungen muss kleiner oder gleich der Leistung Pi einer Wägezelle sein. Gleiches gilt für die Spannung und Stromstärke.

Eigensichere Stromkreise

Die Installation eines eigensicheren Stromkreises erfordert eine Kontrollzeichnung (Systembeschreibung), die durch den Aufsteller/Betreiber angefertigt werden muss.

Potentialausgleich

Ergreifen Sie geeignete Maßnahmen zur Vermeidung elektrostatischer Aufladung.

Umgebungsbedingungen

Die Wägezellen müssen entsprechend geschützt werden, wenn sie in einem widrigen Umfeld zum Einsatz kommen.

Je nach Einzelfall muss ein Intervall zur Beseitigung von Staubablagerungen festgelegt werden.

Verhindern Sie die Bildung von Eis auf der Ausrüstung.

Materialbedingte Einsatzbeschränkungen

Beachten Sie in Ihrem Anwendungsfeld, dass auch nicht rostende Stähle und deren Schweißnähte durch aggressive Medien, insbesondere chlorhaltige Salze, angegriffen werden können. In diesen Fällen sind von Betreiberseite zusätzliche Schutzmaßnahmen vorzusehen, welche durch regelmäßige Kontrollen in angemessenen Abständen auf ihre Wirksamkeit zu prüfen sind.

Mechanische Belastungen

Vermeiden Sie unsachgemäße Biege-, Vibrations- und Torsionsbeanspruchung der Wägezelle.

Beschädigungen und Blockaden

Verwenden Sie niemals Wägezellen in einem explosionsgefährdeten Bereich, wenn die Einhausung beschädigt ist.

Verwenden sie zur Lösung verklemmter oder blockierter Geräteteile (z. B durch Eis oder Korrosion) in einer potentiell explosiven Umgebung niemals Gewalt.

Wiederverwendung

Wägezellen, die in einem nicht-eigensicheren Stromkreis eingebaut waren, dürfen nicht in einem eigensicheren Stromkreis wiederverwendet werden.

6 INSPEKTION, WARTUNG UND INSTANDSETZUNG

6.1 Hinweis

Die Durchführung von Wartungs- und Instandsetzungsmaßnahmen darf ausschließlich durch entsprechend qualifiziertes HBK-Fachpersonal erfolgen. Eigenmächtige Umbauten oder Veränderungen sind verboten (siehe Original-Montageanleitung).

6.2 Inspektionszyklen

Aktivität	Visuelle Inspektion (monatlich)	erweiterte Inspektion (halbjährlich)	detaillierte Inspektion (jährlich)
Inspektion der Wägezelle auf Unversehrtheit, Entfernung von Staubablagerungen	•		
Inspektion der Wägezelle auf korrekten Sitz sowie Risse oder Brüche		•	
Kontrolle des elektrischen Systems auf Unversehrtheit und Funktionalität			•
Kontrolle der Verarbeitung der gemessenen Werte			•
Kontrolle des Gesamtsystems	Obliegt der Verantwortung des Betreibers!		

6.3 Reinigungsmittel

Verwenden Sie keine Reinigungsmittel, die Säuren oder Stoffe, die (Chlor-) Ionen freisetzen enthalten, da diese auch nichtrostende Stähle sowie deren Schweißnähte angreifen. Die dadurch möglicherweise auftretende Korrosion kann zum Ausfall der Wägezelle führen.

7 ZERTIFIKATE

7.1 IECEx-Zertifikate

Die Zertifikate nach IECEx finden Sie unter folgendem Link im Internet:
https://www.iecex-certs.com/#/search

7.2 Baumusterprüfbescheinigung

Die Baumusterprüfbescheinigung BVS 13 ATEX E 108 X in englischer und deutscher Sprache finden Sie am Ende dieser Dokumentation, sowie auf der Homepage von HBM unter https://www.hbm.com/fileadmin/mediapool/hbmdoc/technical/C05317.pdf

7.3 EU-Konformitätserklärung

Die EU-Konformitätserklärung in englischer und deutscher Sprache finden Sie am Ende dieser Dokumentation.

7.4 UK-Konformitätserklärung

Die UK-Konformitätserklärung in englischer Sprache finden Sie am Ende dieser Dokumentation.

7.5 FM Approval - Certificate of Conformity (US)

Das FM Approval - Certificate of Conformity (US) in englischer Sprache ist am Ende dieser Dokumentation beigefügt.

7.6 FM Approval - Certificate of Conformity (Canada)

Das FM Approval - Certificate of Conformity (Canada) in englischer Sprache ist am Ende dieser Dokumentation beigefügt.

7.7 Control Drawing I.S.

Das Control Drawing I.S. in englischer und französischer Sprache ist am Ende dieser Dokumentation beigefügt.

7.8 Ex NEPSI - Certificate of Conformity (China)

Das Explosionsschutz-Konformitätszertifikat Ex NEPSI in chinesischer und englischer Sprache ist am Ende dieser Dokumentation beigefügt.

HBK
HOTTINGER BRÜEL & KJÆR

ENGLISH DEUTSCH **FRANÇAIS** ITALIANO ESPAÑOL PORTUGUÊS

Consignes de sécurité

Zone 1/21 - Ex i

C16, C2, U2, C2A, HLC, PW15AH, PW25, PW27, PW29, RSC, RTN, Z6, Z7, PW10, PW12, PW15, PW16, PW22, PWS, SP4, Z16, Z6R

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1 GÉNÉRALITÉS

1.1 Objectif du document

Le présent document vient compléter les dispositions et modèles des instructions de montage d'origine avec la version antidéflagrante des pesons HBK. Seules les informations concernant la protection antidéflagrante sont fournies.

Pour les consignes de sécurité générales et autres informations concernant l'installation, la mise en service, l'entretien ou la réparation, se reporter aux instructions de montage d'origine.

Ce document est uniquement valide en combinaison avec les instructions de montage d'origine.

1.2 Personnes concernées

Le présent document s'adresse aux concepteurs, acheteurs et installateurs disposant des qualifications correspondantes et connaissant les règlements et consignes de sécurité en vigueur.

2 NORMES APPLIQUÉES

L'équipement des appareils se réfère aux normes et éditions suivantes :

ATEX

- EN IEC 60079-0:2018 Édition 7.0
- EN 60079-11:2012 Édition 6.0

IECEx

- IEC 60079-0:2017 Édition 7.0
- IEC 60079-11:2011 Édition 6.0

FM US

- FM 3600:2018
- FM 3610:2018
- FM 3810:2018
- ANSI/ISA 60079-0:2013
- ANSI/UL 60079-11:2014
- ANSI/IEC 60529:2004

FM CA

- CAN/CSA-C22.2 No. 61010-1:2012
- CAN/CSA-C22.2 No. 60079-0:2015
- CAN/CSA-C22.2 No. 60079-11:2014
- CSA-C22.2 No. 60529:R2015

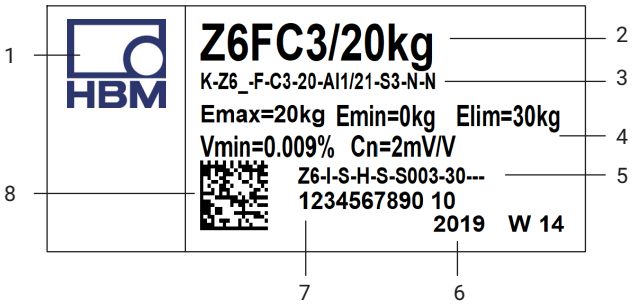
NEPSI

- GB 3836.1-2010
- GB 3836.4-2010
- GB 12476.1-2013
- GB 12476.4-2010

3 MARQUAGE ET CODAGE

3.1 Plaque signalétique générale

La plaque signalétique générale se présente comme suit :



N°	Désignation
1	Logo HBM, hologramme
2	Type de base selon la liste
3	Code de commande (aléatoire)
4	Caractéristiques
5	**Marquage relatif à la protection antidéflagrante (chaîne Ex)**
6	Année de fabrication

N°	Désignation
7	Numéro de commande client
8	Code QR

3.2 Chaîne Ex

La série de lettres et de chiffres de la désignation 5, appelée chaîne Ex, indique en abrégé les principales caractéristiques antidéflagrantes du peson. Ce code permet de trouver dans le présent document ainsi que dans le certificat d'examen CE de type et le certificat IECEx d'autres indications pour savoir si des mesures supplémentaires sont requises et si oui, lesquelles.

Format de la chaîne Ex : *GT Z-W-G-S-LLLL-TT-OV-C-E*

Pos.	Signification	Variables
GT	Type de base du peson	-
Z	Sécurité intrinsèque	I = sécurité intrinsèque N ou vide = sans sécurité intrinsèque
W	Matériau	S = Acier inoxydable A = Aluminium W = Acier à outils (revêtu de nickel)
G	Enveloppe	H = soudée P = coulée
S	Connexion du blindage	S = relié directement au peson C / C1 = relié au peson via un condensateur (1 nF) N ou vide = pas relié
	Remarques particulières : Si S = S : le blindage est raccordé au boîtier. Une ligne d'équipotentialité supplémentaire entre la terre du ballast et l'enveloppe du peson doit garantir qu'aucun courant ne circule dans le blindage. La distance ne doit pas dépasser 50 m. Si S = C/C1 : il ne faut pas dépasser 10 nF au total dans le circuit. Si S = N ou vide : le boîtier doit être connecté à la terre via une liaison conductrice (max. 1 MΩ) le raccordant à la construction mécanique.	

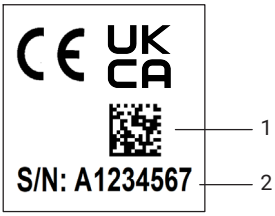
Pos.	Signification	Variables
LLLL	Type de connexion et longueur de câble	V = variante à 4 fils et longueur de câble en m (3 chiffres) S = variante à 6 fils et longueur de câble en m (3 chiffres) P4 = connecteur à 4 broches et longueur de câble en m (2 chiffres) P6 = connecteur à 6 broches et longueur de câble en m (2 chiffres)
	Remarques particulières : Pour la longueur de câble, il faut tenir compte des valeurs standards d'inductance et de capacité. C_i = 200 pF/m L_i = 1 µH/m^{-1} Elles doivent être multipliées par la longueur du câble. Il convient ensuite de respecter la norme EN IEC 60079-14 paragraphe 16.2.2.2 ou 16.2.4. Si LLLL = P*** : ne peut être utilisé que dans des circuits en sécurité intrinsèque. Les câbles doivent toujours être protégés contre les charges électrostatiques. Le code de couleurs des différents fils est indiqué dans les instructions de montage.	
TT	Indication de température	10 = température ambiante mini. -10°C 25 = température ambiante mini. -25°C 30 = température ambiante mini. -30°C
	Remarques particulières : Pour la classe de température T6, la température ambiante maximale autorisée est 30 °C. Les câbles de liaison des pesons doivent être protégés contre les charges électrostatiques dans les zones 21 et 22.	
OV	Circuit de protection contre les surtensions	Vide = pas disponible OV1 = tension de réponse < 500 V OV2 = tension de réponse > 500 V
	Remarques particulières : Si OV = OV1 : le peson est doté d'une protection contre les surtensions (tension de réponse < 500 V). Il faut poser une ligne d'équipotentialité entre le boîtier du peson et le ballast.	

Pos.	Signification	Variables
C	Revêtement	c = revêtement isolant Vide = pas de revêtement
	Remarques particulières : Si C = C : le peson est revêtu d'une couche isolante. Il ne doit être utilisé que si le boîtier est protégé contre les charges électrostatiques, *voir E*.	
E	Mise à la terre	E = bornes de mise à la terre présentes (extérieures) Vide = aucune borne de mise à la terre présente
	Remarques particulières : Si E = vide : Le peson doit être intégré à la ligne d'équipotentialité de l'installation (max. 1 MΩ par rapport à la terre) au moyen de la fixation (vissage). Si E = E : le peson est doté d'un raccord pour l'équipotentialité. Pour choisir et utiliser l'équipement, se reporter aux normes et règles techniques. On distingue les possibilités suivantes : - Raccordement direct par un conducteur monobrin d'une section maxi. de 1,5 mm^2 - Raccordement direct par un conducteur multibrin d'une section maxi. de 2,5 mm^2 - Raccordement par une section de 6 mm^2 maxi. en utilisant simultanément une cosse plate ou ronde présentant un alésage de 4 mm	

Remarques générales

- Veiller à installer les circuits en sécurité intrinsèque séparés des circuits sans sécurité intrinsèque.
- Toujours prendre des câbles de liaison d'une qualité correspondant aux conditions thermiques et mécaniques.
- La tension d'essai des câbles doit être d'au moins 500 V (tension alternative).

3.3 Plaque avec le numéro de série



N°	Désignation
1	Code QR
2	Numéro de série

3.4 Plaque supplémentaire sur la protection antidéflagrante pour zone 1/21

La plaque supplémentaire comportant les données antidéflagration se présente comme suit :

ATEX/IECEx

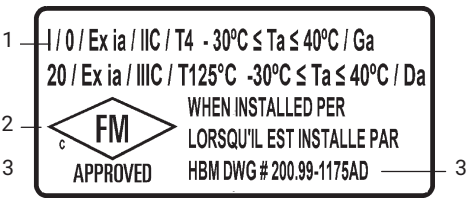


N°	Désignation
1	Numéro du certificat d'examen CE de type / Marquage HBK relatif à la protection antidéflagrante
2	Numéro de certificat IECEx
3	Marquage selon ATEX et IECEx
4	Fabricant / Demandeur
5	Marquage CE avec organisme notifié
6	Marquage ATEX
-	Plage de température (uniquement pour certaines variantes ; non représentée ici)

FM US



FM CA



N°	Désignation
1	Caractéristiques nominales de l'équipement
2	Marquage "FM Approved" (agréé FM) pour les États-Unis / le Canada
3	Numéro du dessin de contrôle

4 INFORMATIONS COMPLÉMENTAIRES

Ces pesons sont des appareils passifs utilisables en atmosphères explosibles.

Les pesons homologués selon l'examen CE de type BVS 13 ATEX E 108X et le certificat IECEx BVS 13.0109X pour une utilisation dans le groupe d'appareils II, catégorie 2 dans la zone 1 (gaz / vapeurs / brouillards) et dans la zone 21 (mélanges air/poussières) présentent le degré de protection "sécurité intrinsèque" Ex ia IIC/IIB pour le raccordement à un circuit en sécurité intrinsèque présentant les valeurs maximales suivantes (chaîne Ex, caractéristique Z[1)] = I) :

U_i	I_i	P_i	Zone	Classe de température pour la température ambiante T_a	Câble de peson	
					L_i par m	C_i par m de câble
30 V	500 mA	4 W	1	T6 : -TT[1)] °C < T_a <+ 30 °C	0,85 µH/m	162 pF/m
			1	T4 : -TT[1)] °C < T_a <+ 70 °C		
			21	T125 °C : -TT[1)] °C < T_a <+ 70 °C		

[1)] Voir la chaîne Ex

Il est interdit d'utiliser le peson en même temps en zone 1 et 21.

Les pesons doivent être protégés contre les chocs extérieurs. Les objets d'un Ø > 25 mm ne doivent pas atteindre les pesons.

Pour les capteurs de pesage agréés FM, il convient de prendre en compte les dessins de contrôle, les conditions spéciales et la déclaration de conformité.

5 INSTALLATION ET MISE EN SERVICE

5.1 Généralités

Conditions d'installation

Installer uniquement des appareils prévus pour une utilisation dans les zones et catégories correspondantes.

Lors de l'installation, respecter impérativement les directives et les conditions d'installation locales selon la norme EN/IEC 60079-14.

Les circuits en sécurité intrinsèque doivent être installés à la distance prescrite des circuits sans sécurité intrinsèque.

Les rallonges doivent satisfaire les exigences en termes de résistance mécanique et thermique. Elles doivent pouvoir au moins résister à une tension d'essai de 500 V AC.

Documents également applicables

Outre les instructions du présent document, respecter également les indications figurant dans les instructions de montage et sur la plaque signalétique.

Certificat d'examen CE de type

En Europe, pour pouvoir utiliser des appareils dans des zones 0/1/20/21, il est nécessaire de disposer d'un certificat d'examen CE de type établi par un organisme notifié pour la certification antidéflagration.

5.2 Remarques techniques

Puissance, tension et intensité

La puissance P_0 de tous les dispositifs d'alimentation doit être inférieure ou égale à la puissance Pi d'un peson. Il en va de même pour la tension et l'intensité.

Circuits en sécurité intrinsèque

L'installation d'un circuit en sécurité intrinsèque nécessite un dessin de contrôle (description du système) qui doit être établi par l'installateur / l'exploitant.

Ligne d'équipotentialité

Prendre des mesures appropriées pour éviter les charges électrostatiques.

Conditions ambiantes

Les pesons doivent être dûment protégés s'ils sont utilisés dans un environnement défavorable.

Il faut définir au cas par cas un intervalle pour éliminer les dépôts de poussière.

Éviter que de la glace ne se forme sur l'équipement.

Restrictions d'utilisation liées aux matériaux

Tenir compte dans le domaine d'application que mêmes les aciers inoxydables et leurs soudures peuvent être attaqués par des substances agressives, notamment des sels chlorés. Dans ce cas, l'exploitant doit prendre des mesures de protection supplémentaires et vérifier leur efficacité par des contrôles réguliers effectués à des intervalles appropriés.

Sollicitations mécaniques

Éviter les flexions, vibrations et torsions non conformes du peson.

Endommagements et blocages

Ne jamais utiliser les pesons en atmosphère explosible lorsque l'enveloppe est endommagée.

Ne jamais utiliser la force pour débloquer des éléments coincés ou grippés de l'appareil (par ex. par de la glace ou de la corrosion) dans un environnement potentiellement explosif.

Réutilisation

Les pesons qui ont été utilisés dans un circuit sans sécurité intrinsèque ne doivent pas être réutilisés dans un circuit en sécurité intrinsèque.

6 INSPECTION, ENTRETIEN ET RÉPARATION

6.1 Note

Seul du personnel spécialisé qualifié de HBK est autorisé à effectuer les opérations d'entretien et de réparation. Il est interdit de procéder à des transformations ou modifications sans accord préalable (voir les instructions de montage d'origine).

6.2 Cycles d'inspection

Opération	Inspection visuelle (mensuelle)	Inspection plus approfondie (semestrielle)	Inspection détaillée (annuelle)
Contrôle de l'état du peson, élimination des dépôts de poussière	•		
Contrôle de l'ajustement correct du peson, ainsi que de l'absence de fissures ou de cassures		•	
Contrôle de l'état et de la fonctionnalité de l'installation électrique			•
Contrôle du traitement des valeurs mesurées			•
Contrôle de l'installation globale	De la responsabilité de l'exploitant !		

6.3 Produits de nettoyage

Ne pas utiliser de produits de nettoyage contenant des acides ou substances libérant des ions (chlore) qui attaquent également les aciers inoxydables et leurs cordons de soudure. La corrosion éventuelle qui peut en résulter est susceptible d'entraîner la défaillance du peson.

7 CERTIFICATS

7.1 Certificats IECEx

Les certificats IECEx sont disponibles sur Internet sous le lien suivant :
https://www.iecex-certs.com/#/search

7.2 Attestation d'examen de type

L'attestation d'exam de type en anglais et allemand est disponible en fin du présent document et sur Internet : https://www.hbm.com/fileadmin/mediapool/hbmdoc/technical/C05318.pdf.

7.3 Déclaration de conformité UE

La déclaration de conformité UE en anglais et allemand est disponible en fin du présent document.

7.4 Déclaration de conformité UK

La déclaration de conformité UK en anglais est disponible en fin du présent document.

7.5 FM Approval - Certificate of Conformity (US)

Le document FM Approval - Déclaration de conformité (États-Unis) est fourni en anglais à la fin de ce document.

7.6 FM Approval - Certificate of Conformity (Canada)

Le document FM Approval - Déclaration de conformité (Canada) est fourni en anglais à la fin de ce document.

7.7 Dessin de côntrole S.I.

Le dessin de contrôle S.I. est fourni en anglais et français à la fin de ce document.

7.8 Ex NEPSI - Certificate of Conformity (Chine)

Le certificat de conformité de la protection antidéflagrante Ex NEPSI est disponible en langues chinoise et anglaise à la fin du présent document.

HBK
HOTTINGER BRÜEL & KJÆR

-+

ENGLISH DEUTSCH FRANÇAIS **ITALIANO** ESPAÑOL PORTUGUÊS

Note sulla sicurezza







Zone 1/21 - Ex i

C16, C2, U2, C2A, HLC, PW15AH, PW25, PW27, PW29, RSC, RTN, Z6, Z7, PW10, PW12, PW15, PW16, PW22, PWS, SP4, Z16, Z6R

HBM

Brüel & Kjær

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1 INFORMAZIONI GENERALI

1.1 Scopo di questo documento

Il presente documento completa le disposizioni e versioni delle Istruzioni di montaggio originali, in relazione alla versione antideflagrante delle celle di carico HBK. Vengono trattati solo gli argomenti rilevanti per le versioni Ex.

Per le note generali sulla sicurezza e gli ulteriori aspetti relativi all'installazione, messa in funzione, manutenzione e riparazione, si prega di osservare le Istruzioni di montaggio originali.

Questo documento è valido solo se accompagnato dalle Istruzioni di montaggio originali.

1.2 Destinatari

Il presente documento è destinato a progettisti, uffici acquisti e montatori, aventi le corrispondenti qualifiche e competenze concernenti le normative legali e sulla sicurezza rilevanti.

2 NORME UTILIZZATE

La struttura degli strumenti si basa sulle seguenti norme ed edizioni:

ATEX

- EN IEC 60079-0:2018 Ed. 7.0
- EN 60079-11:2012 Ed. 6.0

IECEx

- IEC 60079-0:2017 Ed. 7.0
- IEC 60079-11:2011 Ed. 6.0

FM US

- FM 3600:2018
- FM 3610:2018
- FM 3810:2018
- ANSI/ISA 60079-0:2013
- ANSI/UL 60079-11:2014
- ANSI/IEC 60529:2004

FM CA

- CAN/CSA-C22.2 No. 61010-1:2012
- CAN/CSA-C22.2 No. 60079-0:2015
- CAN/CSA-C22.2 No. 60079-11:2014
- CSA-C22.2 No. 60529:R2015

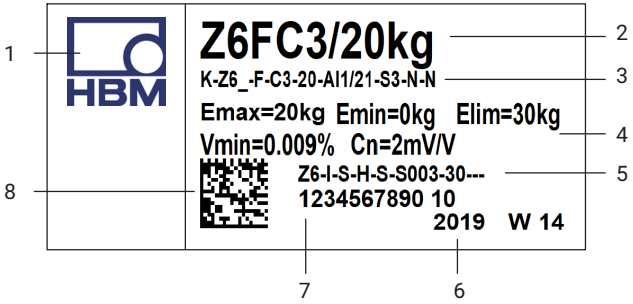
NEPSI

- GB 3836.1-2010
- GB 3836.4-2010
- GB 12476.1-2013
- GB 12476.4-2010

3 MARCATURA E CODIFICA

3.1 Targhetta generale

La targhetta generale è composta come segue:



No.	Designazione
1	Marchio HBM, Ologramma
2	Tipo base come elencato
3	No. di catalogo (casuale)
4	Dati caratteristici
5	**Marcature rilevanti Ex (stringa Ex)**
6	Anno di costruzione

7	Numero ordine del cliente
8	Codice QR

3.2 Stringa Ex

La sequenza di lettere e cifre nella marcatura 5, la cosiddetta Stringa Ex, indica nuovamente le caratteristiche Ex essenziali in forma compatta. Utilizzando questa codifica, in questo documento, nel certificato di approvazione di tipo e nel certificato IEC Ex, si trovano ulteriori indicazioni concernenti se e quali misure supplementari sono necessarie.

Formato della Stringa Ex: *GT Z-W-G-S-LLLL-TT-OV-C-E*

Pos.	Significato	Variabili
GT	Tipo base della cella di carico	-
Z	Antideflagranza	I = sicurezza intrinseca N o mancante = non antideflagrante
W	Materiale	S = Acciaio inossidabile A = Alluminio W = Acciaio per utensili (nichelato)
G	Incapsulamento	H = saldato P = inglobato
S	Connessione dello schermo	S = collegato direttamente alla cella C / C1 = collegato alla cella tramite un condensatore (1 nF) N o mancante = non collegato
	Nota speciale: Nel caso in cui S = S vale: La calza (schermo) del cavo è collegata alla custodia. La supplementare equalizzazione del potenziale fra la terra dello strumento a monte e l'involucro della cella di carico deve garantire che non fluisca alcuna corrente sullo schermo. Una distanza superiore a 50 m non è consentita. Nel caso in cui S = C/C1 vale: Nel circuito non è consentito il superamento di 10 nF. Nel caso in cui S = N o mancante vale: Tramite la giunzione alla struttura meccanica conduttrice, la custodia deve essere collegata alla terra (max. 1 MΩ).	

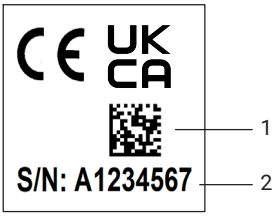
Pos.	Significato	Variabili
LLLL	Tipo di collegamento e lunghezza del cavo	V = Variante a 4 fili e lunghezza del cavo in m (3 cifre) S = Variante a 6 fili e lunghezza del cavo in m (3 cifre) P4 = Variante con spina a 4 poli e lunghezza del cavo in m (2 cifre) P6 = Variante con spina a 6 poli e lunghezza del cavo in m (2 cifre)
	Nota speciale: Per determinare la lunghezza del cavo, si devono considerare i valori standard dell'induttanza e della capacità. C_i = 200 pF/m L_i = 1 µH/m Essi devono essere moltiplicati per la lunghezza del cavo e presi in considerazione secondo la EN / IEC 60079-14, par. 16.2.2.2 e 16.2.4. Nel caso in cui LLLL = P*** vale: consentito solo nei circuiti a sicurezza intrinseca. I cavi devono essere posati sempre in modo che siano protetti dalle scariche elettrostatiche. Il codice colori dei singoli fili si trova nelle Istruzioni di montaggio.	
TT	Dati sulla temperatura	10 = min. temperatura ambiente -10°C 25 = min. temperatura ambiente -25°C 30 = min. temperatura ambiente -30°C
	Nota speciale: Nella classe di temperatura T6, la massima temperatura ambiente ammessa è di 30 °C. I cavi di collegamento delle celle di carico nelle Zone 21 e 22 devono essere protetti dalle scariche elettrostatiche.	
OV	Circuito per la protezione da sovratensioni	mancante = non disponibile OV1 = Tensione d'innesco < 500 V OV2 = Tensione d'innesco > 500 V
	Nota speciale: Nel caso in cui OV = OV1 vale: La cella è dotata di protezione da sovratensioni (tensione d'innesco < 500 V). Si deve considerare l'equalizzazione del potenziale fra la custodia della cella di carico e lo strumento a monte.	

Pos.	Significato	Variabili
C	Rivestimento	c = rivestimento isolante mancante = non rivestita
	Nota speciale: Nel caso in cui C = C vale: La cella ha il rivestimento isolante. Essa può essere impiegata solo quando la custodia è protetta dalle scariche elettrostatiche, *vedi E*.	
E	Messa a terra	E = morsetti di messa a terra presenti (esterno) mancante: nessuna messa a terra presente
	Nota speciale: Nel caso in cui E = mancante vale: La cella di carico deve essere integrata mediante fissaggio (avvitamento) nella compensazione di potenziale dell'impianto (max. 1 MΩ verso terra). Nel caso in cui E = E vale: Per la cella di carico è prevista l'equalizzazione del potenziale. Nella scelta e nell'esercizio delle apparecchiature, fare attenzione ai regolamenti ed alle norme tecniche. Si hanno le seguenti opzioni: - Connessione diretta tramite conduttore singolo con sezione fino a 1,5 mm^2 - Connessione diretta tramite conduttore a trefoli con sezione fino a 2,5 mm^2 - Connessione fino a 6 mm^2 con l'impiego contemporaneo di un anello o di un morsetto piatto con foro da 4 mm	

Note generali

- Assicurarsi che i circuiti a sicurezza intrinseca e non a sicurezza intrinseca siano installati separatamente fra loro.
- Scegliere sempre i cavi di collegamento che abbiano la qualità corrispondente ai requisiti termici e meccanici necessari.
- La tensione di prova per il cavo deve essere di almeno 500 V (corrente alternata).

3.3 Targhetta col Numero di Serie



No.	Designazione
1	Codice QR
2	Numero di Serie

3.4 Targhetta ausiliaria per protezione Ex della Zona 1/21

La targhetta ausiliaria con i dati rilevanti Ex è composta come segue:

ATEX/IECEx



No.	Designazione
1	Numero di certificato dell'esame di tipo CE/marcatura HBK Ex
2	Numero del certificato IEC Ex
3	Marcatura secondo ATEX ed IEC Ex
4	Produttore/richiedente
5	Marchio CE con ente legale
6	Marcatura ATEX
-	Campo di temperatura (solo per certe varianti; qui non è mostrato)

FM US



FM CA



No.	Designazione
1	Dati nominali apparecchiatura
2	Marchio omologato FM per US/CA
3	Numero disegno di controllo

4 ULTERIORI INFORMAZIONI

Queste celle di carico sono dispositivi passivi per l'impiego in ambienti con pericolo di esplosione.

Secondo il certificato di prova di tipo CE BVS 13 ATEX E 1008 X ed il certificato IEC Ex BVS 13.0109 X per l'impiego nel Gruppo strumenti II, Categoria strumenti 2 nella Zona 1 (Gas/Vapori/Nebbia) e per l'impiego nella Zona 21 (Miscele di Polvere/Aria), le celle di carico approvate corrispondono al tipo di ignizione "Sicurezza Intrinseca" Ex ia IIC/IIB per il collegamento a circuiti a sicurezza intrinseca con i seguenti valori massimi (Indicazione Stringa Ex Z[1)] = I):

U_i	I_i	P_i	Zona	Classe di temperatura alla temperatura ambiente T_a	Cavo cella di carico	
					L_i al m	C_i al m di cavo
30 V	500 mA	4 W	1	T6: -TT[1)] °C < T_a <+ 30 °C	0,85 µH/m	162 pF/m
			1	T4: -TT[1)] °C < T_a <+ 70 °C		
			21	T125 °C: -TT[1)] °C < T_a <+ 70 °C		

[1)] Vedere la Stringa Ex

Non è ammesso l'utilizzo contemporaneo nella Zona 1 e nella zona 21.

Le celle di carico devono essere protette da urti esterni. Gli oggetti con Ø > 25 mm non devono giungere a contatto delle celle di carico.

Per cella di carico conforme alle omologazioni FM, devono essere considerati i disegni di controllo, le condizioni speciali e la dichiarazione di conformità.

5 INSTALLAZIONE E MESSA IN FUNZIONE

5.1 Informazioni generali

Condizioni di installazione

Installare solo strumentazione il cui impiego sia destinato alle rispettive Zone e Categorie.

Durante l'installazione si devono rispettare le direttive e le condizioni di montaggio locali disposte dalla EN/IEC 60079-14.

I circuiti a sicurezza intrinseca e non a sicurezza intrinseca devono essere installati separatamente ed alla distanza prescritta.

I cavi di prolungamento devono soddisfare i requisiti meccanici ed elettrici pertinenti. Essi devono resistere ad una tensione di prova di almeno 500 V CA.

Documentazione integrativa

Oltre alle indicazioni di questo documento, osservare anche le informazioni contenute nelle Istruzioni di montaggio e nella targhetta.

Certificazione della prova di tipo

Per l'impiego degli strumenti nelle Zone 0/1/20/21, in Europa è necessaria la Certificazione di prova di tipo EC rilasciata da un Ente notificato per la protezione dalle esplosioni.

5.2 Note tecniche

Potenza, tensione e corrente

La potenza P_0 di tutte le utenze deve essere inferiore od eguale a quella Pi di una cella di carico. Lo stesso vale per la tensione e la corrente.

Circuito a sicurezza intrinseca

L'installazione di un circuito a sicurezza intrinseca richiede uno Schema di controllo (Descrizione del sistema), che deve essere approntato dall'installatore / operatore.

Equalizzazione del potenziale

Prendere le adeguate misure per evitare le scariche elettrostatiche.

Condizioni ambientali

Quando vengono impiegate in un ambiente sfavorevole, le celle di carico devono essere adeguatamente protette.

A seconda dei casi, lasciare uno spazio opportuno per facilitare la rimozione dei sedimenti di polvere.

Impedire la formazione di ghiaccio sulle attrezzature.

Restrizioni d'impiego dovute ai materiali

Per il proprio campo di applicazione, notare che anche gli acciai inossidabili ed i relativi cordoni di saldatura possono essere attaccati dai media aggressivi, in particolare dai sali di cloro. In questi casi, l'operatore deve prevedere ulteriori misure di protezione, di cui verificare l'efficacia mediante controlli periodici ad opportuni intervalli di tempo.

Sollecitazioni meccaniche

Impedire sollecitazioni improprie di flessione, vibrazione e torsione delle celle di carico.

Danneggiamenti e bloccaggi

Non utilizzare mai le celle di carico in aree con pericolo di esplosione quando la custodia è danneggiata.

Non usare mai la violenza per sbloccare parti di attrezzature (p. es. a causa di ghiaccio o corrosione) in ambienti potenzialmente esplosivi.

Riutilizzazione

Le celle di carico che sono state impiegate in circuiti non a sicurezza intrinseca, non devono mai essere riutilizzate in circuiti a sicurezza intrinseca.

6 ISPEZIONE, MANUTENZIONE E RIPARAZIONE

6.1 Nota

I lavori di manutenzione e riparazione possono essere eseguiti esclusivamente da personale professionale appositamente qualificato della HBK. Sono vietate le trasformazioni o modifiche non previamente autorizzate (vedere le Istruzioni di montaggio originali).

6.2 Cicli di ispezione

Attività	Ispezione visuale (mensile)	Ispezione estesa (semestrale)	Ispezione dettagliata (annuale)
Controllo dell'integrità delle celle di carico, rimozione dei sedimenti di polvere	•		
Controllo della posizione corretta, di cricche o fratture delle celle di carico		•	
Controllo dell'integrità e della funzionalità del sistema elettrico			•
Controllo dell'elaborazione dei valori di misura			•
Controllo di tutto il sistema	Sono tutte responsabilità dell'operatore!		

6.3 Detergenti

Non utilizzare detergenti che contengano acidi o sostanze che rilascino ioni (di cloro), poiché essi attaccano anche gli acciai inossidabili ed i relativi cordoni di saldatura. La probabile corrosione da loro provocata potrebbe causare il guasto delle celle di carico.

7 CERTIFICATI

7.1 Certificati IEC Ex

I certificati IEC Ex si trovano nella seguente connessione (link) in Internet:
https://www.iecex-certs.com/#/search

7.2 Certificazione di collaudo modello

La versione inglese e tedesca del certificato d'esame del tipo BVS 13 ATEX E 108 X è allegata alla fine della presente documentazione e può essere consultata sul sito web di HBM, all'indirizzo https://www.hbm.com/fileadmin/mediapool/hbmdoc/technical/C05318.pdf.

7.3 Dichiarazione di conformità UE

La Dichiarazione di conformità UE in lingua inglese e tedesca è allegata alla fine della presente documentazione.

7.4 Dichiarazione di conformità UK

La Dichiarazione di conformità UK in lingua inglese è allegata alla fine della presente documentazione.

7.5 FM Approval - Certificate of Conformity (US)

L'omologazione FM - Dichiarazione di conformità (US) in inglese è riportata in appendice a questa documentazione.

7.6 FM Approval - Certificate of Conformity (Canada)

L'omologazione FM - Dichiarazione di conformità (Canada) in inglese è riportata in appendice a questa documentazione.

7.7 Control Drawing I.S.

Il disegno di controllo I.S. in inglese e in francese è riportato in appendice a questa documentazione.

7.8 Ex NEPSI - Certificato di conformità (Cina)

Il certificato di conformità per la protezione antideflagrante Ex NEPSI in cinese e inglese è allegato alla fine di questa documentazione.

HBK
HOTTINGER BRÜEL & KJÆR

ENGLISH DEUTSCH FRANÇAIS ITALIANO **ESPAÑOL** PORTUGUÊS

Instrucciones de seguridad

Zone 1/21 - Ex i

C16, C2, U2, C2A, HLC, PW15AH, PW25, PW27, PW29, RSC, RTN, Z6, Z7, PW10, PW12, PW15, PW16, PW22, PWS, SP4, Z16, Z6R

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1 GENERALIDADES

1.1 Propósito del documento

Este documento complementa las disposiciones y las versiones de las instrucciones de montaje originales en relación a la versión de protección contra las explosiones de las células de carga HBK. Solamente se describen contenidos relevantes a entornos explosivos (EX).

Para la seguridad general y otros aspectos relacionados con la instalación, operación, mantenimiento o reparación, tenga en cuenta las instrucciones de instalación originales.

Este documento sólo es válido en relación con las instrucciones de instalación originales.

1.2 Grupos destinatarios

Este documento está dirigido a los ingenieros de proyectos, compradores y montadores con las cualificaciones correspondientes y el conocimiento de las normas legales y de seguridad pertinentes.

2 NORMAS APLICADAS

El equipamiento de los dispositivos se basa en las siguientes normas y ediciones:

ATEX

- EN IEC 60079-0:2018 Ed. 7.0
- EN 60079-11:2012 Ed. 6.0

IECEx

- IEC 60079-0:2017 Ed. 7.0
- IEC 60079-11:2011 Ed. 6.0

FM US

- FM 3600:2018
- FM 3610:2018
- FM 3810:2018
- ANSI/ISA 60079-0:2013
- ANSI/UL 60079-11:2014
- ANSI/IEC 60529:2004

FM CA

- CAN/CSA-C22.2 No. 61010-1:2012
- CAN/CSA-C22.2 No. 60079-0:2015
- CAN/CSA-C22.2 No. 60079-11:2014
- CSA-C22.2 No. 60529:R2015

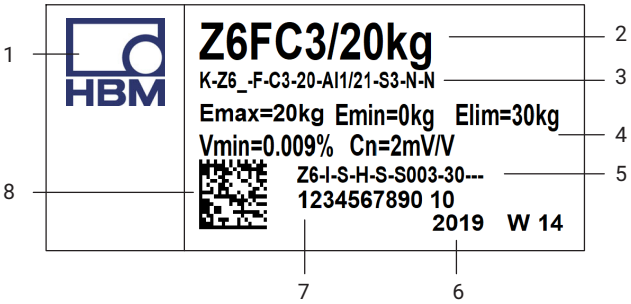
NEPSI

- GB 3836.1-2010
- GB 3836.4-2010
- GB 12476.1-2013
- GB 12476.4-2010

3 IDENTIFICACIÓN Y CODIFICACIÓN

3.1 Placa de identificación general

En general, la placa de identificación se compone de la siguiente manera:



Nº.	Designación
1	Logotipo HBM, holograma
2	Tipo básico según el listado
3	Referencia de pedido (casual)
4	Características específicas
5	**Identificación relevante para los entornos explosivos (Ex) (cadena Ex)**
6	Año de fabricación

Nº.	Designación
7	Número de pedido de cliente
8	Código QR

3.2 Cadena Ex

La secuencia de letras y números de la identificación 5, llamada cadena Ex, describe de forma comprimida las características de los entornos explosivos (EX) esenciales de la célula de carga. Esta codificación permite conocer en este documento, así como en el certificado de examen CE de tipo y el certificado IECEx, más indicaciones acerca de si se necesitan medidas adicionales y cuáles.

Formato de la cadena Ex: *GT Z-W-G-S-LLLL-TT-OV-C-E*

Pos.	Significado	Variables
GT	Tipo básico, célula de carga	-
Z	Seguridad intrínseca	I = con seguridad intrínseca N o vacío = sin seguridad intrínseca
W	Material	S = Acero inoxidable A = Aluminio W = Acero para herramientas (niquelado)
G	Envoltura	H = soldado P = encapsulado
S	Conexión del blindaje	S = conectado directamente con la célula C / C1 = conectado con la célula a través del condensador (1 nF) N o vacío = no conectado
	Indicaciones especiales: En S = S significa: El blindaje está conectado a la carcasa. Deberá garantizarse una compensación de potencial adicional entre la puesta a tierra de la reactancia y el revestimiento de la célula de pesaje para que no fluya ninguna corriente por el blindaje. No se permite una distancia superior a 50 m. En S = C/C1 significa: El circuito no debe exceder 10 nF. En S = N o vacío significa: La carcasa debe estar conectada a tierra a través de la conexión a la construcción mecánica conductora (máx. 1 MΩ).	

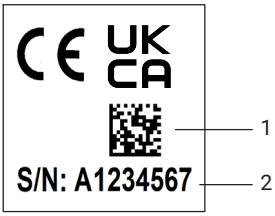
Pos.	Significado	Variables
LLLL	Tipo de conexión y longitud del cable	V = Variante de 4 hilos y longitud de cable en m (3 dígitos) S = Variante de 6 hilos y longitud de cable en m (3 dígitos) P4 = Enchufe macho de 4 polos y longitud de cable en m (2 dígitos) P6 = Enchufe macho de 6 polos y longitud de cable en m (2 dígitos)
	Indicaciones especiales: Al definir la longitud del cable, deben tenerse en cuenta los valores predeterminados para la inductancia y la capacitancia. C_i = 200 pF/m L_i = 1 µH/m Estos deberán multiplicarse por la longitud del cable y tenerse en cuenta según EN /IEC 60079-14 párr. 16.2.2.2 o 16.2.4. En LLLL = P*** significa: permitido sólo en circuitos de seguridad intrínseca. Los cables deben tenderse y protegerse siempre contra la carga electrostática. Consulte el código de colores de los conductores individuales en las instrucciones de montaje.	
TT	Indicación de la temperatura	10 = temperatura ambiente mín. -10°C 25 = temperatura ambiente mín. -25°C 30 = temperatura ambiente mín. -30°C
	Indicaciones especiales: En la clase de temperatura T6, la temperatura ambiente máxima permitida es de 30 °C. El cable de conexión de las células de carga debe estar protegido contra las cargas electrostáticas en las zonas 21 y 22.	
OV	Circuito de protección contra sobretensiones	vacío = inexistente OV1 = tensión de funcionamiento < 500 V OV2 = tensión de funcionamiento > 500 V
	Indicaciones especiales: En OV = OV1 significa: La celda está equipada con una protección a sobretensión (tensión de funcionamiento < 500 V). Se debe sacar una compensación del potencial entre la carcasa de la célula de carga y la reactancia.	

Pos.	Significado	Variables
C	Revestimiento	c = recubrimiento aislante vacío = no recubierto
	Indicaciones especiales: En C = C significa: La célula cuenta con un recubrimiento aislante. Sólo se debe utilizar si la carcasa está protegida contra la carga electrostática, *véase E*	
E	Puesta a tierra	E = Bornes de conexión a tierra disponibles (exterior) vacío = Ningún borne de conexión a tierra disponible
	Indicaciones especiales: En E = vacío significa: La célula de carga debe de fijarse (atornillada) a la compensación de potencial de la instalación (máx. 1 MΩ a tierra). En E = E significa: En la célula de carga se ha provisto una conexión de compensación de potencial. Para la selección y operación de los equipos, tener en cuenta las reglas y normas técnicas. Existen las siguientes opciones: - Conexión directa a través de conductores de cadena sencilla con una sección transversal de 1,5 mm^2 - Conexión directa a través de alambres finos con una sección transversal de hasta 2,5 mm^2 - Conexión con una sección transversal de hasta 6 mm^2 durante el uso simultáneo de un terminal de bornes planos o anulares con orificio de 4 mm	

Indicaciones generales

- Asegúrese de que los circuitos de seguridad intrínseca y no intrínseca se instalan separados el uno del otro.
- Seleccione siempre un cable de conexión cuya calidad se corresponda con las necesidades térmicas y mecánicas.
- La tensión de ensayo para el cable debe ser como mínimo de 500 V (tensión alterna).

3.3 Placa del número de serie



Nº.	Designación
1	Código QR
2	Número de serie

3.4 Placa complementaria de protección Ex

La placa complementaria con los datos relativos a la protección contra explosiones (Ex) se compone de la siguiente manera:

ATEX/IECEx

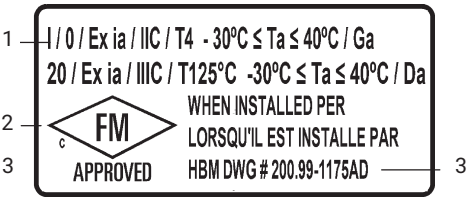


Nº.	Designación
1	Número de certificado de examen CE de tipo / Marcado Ex-HBK
2	Número de certificado IECEx
3	Marcado según ATEX e IECEx
4	Fabricante / Solicitante
5	Marcado CE con organismo notificado
6	Marcado ATEX
-	Rango de temperatura (sólo en ciertas variantes; no se muestra aquí)

FM US



FM CA



Nº.	Designación
1	Características de los equipos
2	Marcado FM Approved para EE.UU./CA
3	Dibujo de control Número de dibujo

4 MÁS INFORMACIÓN

Las presentes células de carga son equipos pasivos para su aplicación en zonas con peligro de explosión.

Las células de carga aprobadas conforme al examen CE de tipo BVS 13 ATEX E 108X e IECEx Certificate IECEx BVS 13.0109X para su aplicación en el grupo de aparato II, categoría de aparto 2 en la zona 1 (gases/vapores/niebla) y para su aplicación en la zona 21 (mezclas de polvo/aire) cumplen con el tipo de protección contra ignición "seguridad intrínseca" Ex ia IIC/IIB para la conexión con un circuito con seguridad intrínseca con los siguientes valores máximos (característica de cadena Ex Z[1)] = I):

U_i	I_i	P_i	Zona	Clase de temperatura a temperatura ambiente T_a	Cable de célula de carga	
					L_i por m	C_i por m de cable
30 V	500 mA	4 W	1	T6: -TT[1)] °C < T_a <+ 30 °C	0,85 µH/m	162 pF/m
			1	T4: -TT[1)] °C < T_a <+ 70 °C		
			21	T125 °C: -TT[1)] °C < T_a <+ 70 °C		

[1)] Véase Cadena Ex

No se permite una aplicación simultánea en la zona 1 y la zona 21.

Las células de carga deben estar protegidas contra choques externos. Los objetos con un Ø > 25 mm no deben alcanzar las células de carga.

Para células de carga aprobadas de conformidad con las homologaciones FM, se deben tomar en cuenta los dibujos de control, condiciones especiales y declaración de conformidad.

5 INSTALACIÓN Y PUESTA EN SERVICIO

5.1 Generalidades

Condiciones de colocación

Instale sólo dispositivos cuyo uso está destinado para las respectivas zonas y categorías.

Durante la instalación, los reglamentos locales y las condiciones de instalación deben cumplir con EN/IEC 60079-14.

Los circuitos de seguridad intrínseca y no intrínsecamente seguros deben instalarse por separado a una distancia predeterminada.

Los cables de prolongación deben cumplir con los requisitos pertinentes para la resistencia mecánica y térmica. Deberán resistir al menos una tensión de ensayo de 500 V AC.

Documentos aplicables

Observe además de las recomendaciones de este documento también la información contenida en el manual de instalación y en la placa de identificación.

Certificado de examen CE de tipo

En Europa, para utilizar equipos en zonas 0/1/20/21 se necesita un certificado de examen UE de tipo expedido por un organismo notificado para la protección contra explosiones.

5.2 Indicaciones técnicas

Potencia, tensión e intensidad de corriente

La potencia P_0 de todos los servicios públicos debe ser menor o igual a la potencia Pi de una célula de carga. Lo mismo se aplica a la tensión y la intensidad de corriente.

Circuitos de seguridad intrínseca

La instalación de un circuito de seguridad intrínseca requiere un plano de control (descripción del sistema) realizado por el instalador/operador.

Compensación de potencial

Tome las medidas adecuadas para evitar la carga electrostática.

Condiciones ambientales

Las células de carga deben estar adecuadamente protegidas cuando se utilizan en un entorno adverso.

Según el caso, se debe especificar un intervalo para la eliminación de depósitos de polvo.

Prevenir la formación de hielo en el equipo.

Restricciones de aplicación relacionadas con el material

Compruebe que en su campo de aplicación tampoco los aceros inoxidables y sus soldaduras puedan ser atacados por medios agresivos, sobre todo por las sales con contenido en cloro. En estos casos deben tomarse medidas de protección adicionales por parte del explotador, cuya efectividad será verificada mediante inspecciones periódicas a intervalos razonables.

Cargas mecánicas

Evite esfuerzos inadecuados de flexión, vibraciones y torsión en la célula de carga.

Daños y bloqueos

Nunca utilizar células de carga en zonas con peligro de explosiones si la carcasa está dañada.

Nunca intente soltar piezas atascadas o bloqueadas del aparato (por ejemplo, por el hielo o la corrosión) con violencia si se encuentran en una atmósfera potencialmente explosiva.

Reutilización

Las celdas de carga que se han instalado en un circuito no intrínsecamente seguro no deben reutilizarse en un circuito de seguridad intrínseca.

6 INSPECCIÓN, MANTENIMIENTO Y REPARACIÓN

6.1 Nota

La ejecución de trabajos de mantenimiento y reparación solamente debe ser realizada por personal profesional de HBK debidamente cualificado. Las manipulaciones y modificaciones por cuenta propia no autorizadas están prohibidas (ver instrucciones de montaje originales).

6.2 Ciclos de inspección

Actividad	Inspección visual (mensual)	Inspección ampliada (semestral)	Inspección detallada (anual)
Inspección de la integridad de la célula de carga, eliminación de depósitos de polvo	•		
Inspección de la célula de carga para el asiento apropiado, así como en busca de grietas o fracturas		•	
Control de la integridad del sistema eléctrico y su funcionamiento			•
Control del procesamiento de los valores medidos			•
Control del sistema global	Es la responsabilidad del operador		

6.3 Productos de limpieza

No utilice productos de limpieza que contengan ácidos o sustancias que liberan iones (cloro), ya que estos también atacan los aceros inoxidables y sus soldaduras. La corrosión que pudiera surgir por dicha causa puede conducir a un fallo de la célula de carga.

7 CERTIFICADOS

7.1 Certificados IECEx

Los certificados IECEx se encuentran en el siguiente enlace en Internet:
https://www.iecex-certs.com/#/search

7.2 Certificado de examen de tipo

Encontrará el certificado de examen CE de tipo BVS 13 ATEX E 108 X en los idiomas inglés y alemán se encuentra al final de esta documentación, y en el sitio web de HBM en https://www.hbm.com/fileadmin/mediapool/hbmdoc/technical/C05318.pdf

7.3 Declaración de conformidad para la UE

La Declaratión de conformidad para la UE en los idiomas inglés y alemán se encuentra al final de esta documentación.

7.4 Declaración de conformidad UK

La Declaratión de conformidad UK en inglés se encuentra al final de esta documentación.

7.5 FM Approval - Certificate of Conformity (US)

La Declaración de conformidad FM Approval (EE.UU.) en inglés se encuentra al final de este documento.

7.6 FM Approval - Certificate of Conformity (Canada)

La Declaración de conformidad FM Approval (Canadá) en inglés se encuentra al final de este documento.

7.7 Control Drawing I.S.

El Dibujo de control I.S.. en inglés y francés se encuentra al final de este documento.

7.8 Ex NEPSI - Certificado de conformidad (China)

El certificado de conformidad de protección contra explosiones Ex NEPSI en los idiomas chino e inglés se adjunta al final de esta documentación.

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ENGLISH DEUTSCH FRANÇAIS ITALIANO ESPAÑOL **PORTUGUÊS**

Indicações de segurança

Zone 1/21 - Ex i

C16, C2, U2, C2A, HLC, PW15AH, PW25, PW27, PW29, RSC, RTN, Z6, Z7, PW10, PW12, PW15, PW16, PW22, PWS, SP4, Z16, Z6R

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1 GERAL

1.1 Finalidade do documento

O documento complementa as prescrições e versões do manual de montagem original no respeitante à versão de proteção antiexplosão das células de carga HBK. Só se encontra representado o conteúdo relevante em termos de proteção antiexplosão.

Para informações gerais e outros aspectos relacionados com a instalação, colocação e funcionamento, manutenção ou reparo observe o manual de montagem original.

O presente documento só é válido junto com o manual de montagem original.

1.2 Grupos-alvo

O presente documento destina-se a projetistas, compradores, técnicos de montagem com as qualificações e conhecimentos conformes às regras aplicáveis ao nível legal e das prescrições de segurança.

2 NORMAS APLICÁVEIS

O equipamento do aparelho se baseia nas seguintes normas e edições:

ATEX

- EN IEC 60079-0:2018 Ed. 7.0
- EN 60079-11:2012 Ed. 6.0

IECEx

- IEC 60079-0:2017 Ed. 7.0
- IEC 60079-11:2011 Ed. 6.0

FM US

- FM 3600:2018
- FM 3610:2018
- FM 3810:2018
- ANSI/ISA 60079-0:2013
- ANSI/UL 60079-11:2014
- ANSI/IEC 60529:2004

FM CA

- CAN/CSA-C22.2 No. 61010-1:2012

- CAN/CSA-C22.2 No. 60079-0:2015
- CAN/CSA-C22.2 No. 60079-11:2014
- CSA-C22.2 No. 60529:R2015

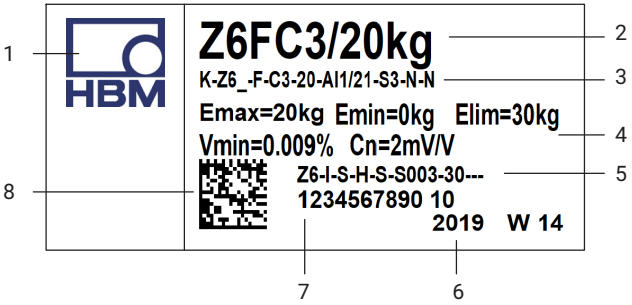
NEPSI

- GB 3836.1-2010
- GB 3836.4-2010
- GB 12476.1-2013
- GB 12476.4-2010

3 MARCAÇÃO E CODIFICAÇÃO

3.1 Placa de características gerais

A placa de características gerais é composta como segue:



Nº	Designação
1	Logotipo HBM, holograma
2	Tipo base de acordo com a listagem
3	Código de encomenda (específico)
4	Dados característicos
5	**Marcação relevante ao nível de proteção antiexplosão (cadeia de caracteres Ex)**
6	Ano de fabricação
7	Número de pedido do cliente
8	Código QR

3.2 Cadeia de caracteres Ex

A sequência de letras e números da marcação 5, a chamada cadeia de caracteres Ex, transmite as características mais importantes da proteção antiexplosão (Ex) da célula de carga, de forma comprimida. Com base nesta codificação você encontrará no presente documento, assim como no exame do tipo CE e no certificado IECEx, indicações adicionais com medidas adicionais eventualmente necessárias.

Formato Cadeia de caracteres EX: *GT Z-W-G-S-LLLL-TT-OV-C-E*

Pos.	Significado	Variáveis
GT	Tipo base Célula de carga	-
Z	Segurança intrínseca	I = intrínseca N ou vazio = não intrínseca
W	Material	S = Aço inoxidável A = Alumínio W = Aço para ferramentas (niquelado)
G	Encapsulamento	H = soldado P = encapsulado
S	Conexão de blindagem	S = ligar diretamente às células Ligar C / C1 = através de condensador (1 nF) à célula N ou vazio = não ligado
	Indicações especiais: No caso em que S = S é válido: a blindagem está conectada à carcaça. A compensação de potencial adicional entre a conexão de terra do balastro e a camisa da célula de carga serve para assegurar que não passa corrente pela blindagem. Não é permitida uma distância superior a 50 m. No caso em que S = C/C1 é válido: no circuito elétrico não podem ser ultrapassados os 10 nF. No caso em que S = N ou vazio é válido: o aterramento da carcaça deve ser implementado através da conexão de um condutor à estrutura mecânica (máx. 1 MΩ).	

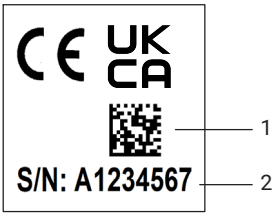
Pos.	Significado	Variáveis
LLLL	Tipo de conexão e comprimentos de cabo	V = 4 Condutor Variante e comprimentos de cabos em m (3 posições) S = 6 Condutor Variante e comprimentos de cabos em m (3 posições) P4 = Plugue de 4 polos e comprimentos de cabos em m (2 posições) P6 = Plugue de 6 polos e comprimentos de cabos em m (2 posições)
	Indicações especiais: Na definição dos comprimentos de cabo devem ser considerados os valores padrão de indutividade e capacidade. C_i = 200 pF/m L_i = 1 µH/m Estes devem ser multiplicados pelos comprimentos de cabo e estar em conformidade com a EN /IEC 60079-14 secç. 16.2.2.2 e 16.2.4. No caso em que LLLL = P*** é válido: apenas permitido em circuitos elétricos de segurança intrínseca. Os cabos devem ser sempre protegidos contra carga eletroestática. A codificação por cores dos condutores individuais pode ser consultada no manual de montagem.	
TT	Indicação da temperatura	10 = Temperatura ambiente mín. -10 °C 25 = Temperatura ambiente mín. -25 °C 30 = Temperatura ambiente mín. -30 °C
	Indicações especiais: Na classe de temperatura T6 a temperatura ambiente máxima permitida é de 30 °C. Os cabos de conexão da célula de carga devem ser protegidos contra carga eletroestática nas zonas 21 e 22.	
OV	Circuito associado para proteção contra picos de tensão	vazio = não disponível OV1 = Tensão de operação < 500 V OV2 = Tensão de operação > 500 V
	Indicações especiais: No caso em que OV = OV1 é válido: A célula está protegida com proteção contra picos de tensão (tensão de operação< 500 V). Deve ser estabelecida uma linha equipotencial entre a carcaça da célula de carga e o balastro.	

Pos.	Significado	Variáveis
C	Revestimento	c = revestimento isolador vazio = não revestido
	Indicações especiais: No caso em que C = C é válido: A célula tem revestimento isolador. Utilizar apenas, se a caixa estiver protegida contra as cargas eletrostáticas, *E ver*.	
E	Aterramento	E = terminais de aterramento disponíveis (por fora) vazio = nenhum terminal de aterramento disponível
	Indicações especiais: No caso em que E = vazio é válido: As células de pesagem precisam ser ligadas à conexão equipotencial da instalação através da fixação (aparafusamento) (máx. 1 MΩ para aterrar). No caso em que E = E é válido: Na célula de carga está prevista uma conexão equipotencial. Ao escolher e operar os equipamentos observe as regras e os padrões técnicos. Existem as seguintes opções: - Conexão direta por condutor unifásico com uma secção transversal de até 1,5 mm^2 - Conexão direta por condutor de arame fino com uma secção transversal de até 2,5 mm^2 - Conexão com secção transversal de até 6 mm^2 com utilização simultânea de anel ou base de terminal plano com furo de 4 mm	

Indicações gerais

- Observe que os circuitos elétricos de segurança intrínseca e não intrínseca devem ser instalados separados um do outro.
- Selecione sempre cabos de conexão com uma qualidade conforme aos requisitos térmicos e mecânicos.
- A voltagem de cálculo para o cabo deve ser no mínimo de 500 V (tensão alternada).

3.3 Placa do número de série

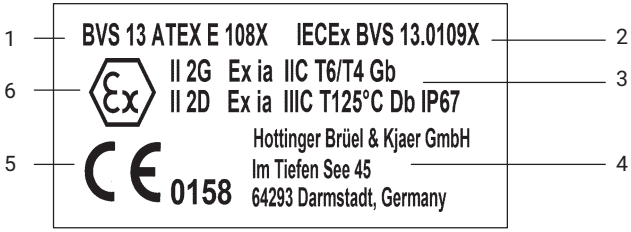


Nº	Designação
1	Código QR
2	Número de série

3.4 Proteção contra explosões Placa adicional para zona 1/21

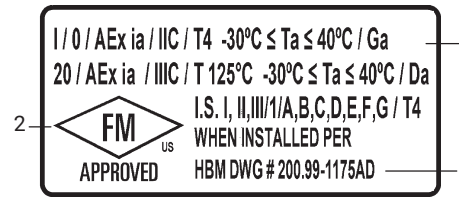
A placa adicional com informações relevantes sobre proteção antiexplosão é composta como segue:

ATEX/IECEx

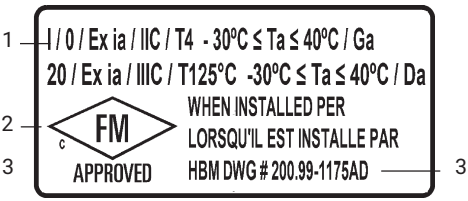


Nº	Designação
1	Número de certificado de exame tipo UE / marcação Ex HBK
2	Número de certificado IECEx
3	Marcação segundo a ATEX e IECEx
4	Fabricante / Requerente
5	Marcação CE por órgão notificado
6	Marcação ATEX
-	Gama de temperatura (apenas com determinadas variantes não ilustradas no presente documento)

FM US



FM CA



Nº	Designação
1	Classificações de equipamentos
2	Marca aprovada pela FM para EUA/CA
3	Desenho de controle Número do desenho

4 MAIS INFORMAÇÕES

Estas células de carga são equipamentos passivos para uso em áreas potencialmente explosivas.

As células de carga autorizadas, de acordo com o exame do tipo CE BVS 13 ATEX E 108X e certificados IECEx e IECEx BVS 13.0109X, para utilização no grupo de aparelhos II, categoria de aparelho 2 na zona 1 (gás/ vapores/névoa) e para utilização na zona 21 (mistura pó/ar), correspondem ao tipo de proteção anti-ignição "Segurança intrínseca" antiexplosão Ex ia IIC/IIB para conexão em um circuito elétrico de segurança intrínseca com os seguintes níveis máximos (cadeira de caracteres Ex Característica Z[1)] = I):

U_i	I_i	P_i	Zona	Classe de temperatura com temperatura ambiente T_a	Cabo de células de pesagem	
					L_i por m	C_i por m de cabo
30 V	500 mA	4 W	1	T6: -TT[1)] °C < T_a <+ 30 °C	0,85 µH/m	162 pF/m
			1	T4: -TT[1)] °C < T_a <+ 70 °C		
			21	T125 °C: -TT[1)] °C < T_a <+ 70 °C		

[1)] Ver cadeia de caracteres Ex

Não são permitidas utilizações na zona 1 e 21 simultaneamente.

As células de carga devem ser protegidas contra choques externos. Objetos com mais de Ø > 25 mm não podem entrar dentro das células de cargas.

Para células de carga aprovadas em conformidade com as aprovações FM, devem ser considerados os desenhos de controle, condições especiais e certificado de conformidade.

5 INSTALAÇÃO E COLOCAÇÃO EM FUNCIONAMENTO

5.1 Geral

Condições de instalação

Instalar somente aparelhos cujas especificações permitam a utilização nas zonas e categorias correspondentes.

Durante a utilização devem ser consideradas as diretrizes locais e condições de instalação do local, de acordo com a EN/IEC 60079-14.

Os circuitos elétricos de segurança intrínseca e não intrínseca devem ser instalados separadamente, com as distâncias predefinidas.

Os cabos de extensão devem preencher as especificações relevantes quanto à resistência mecânica e térmica. Estes devem resistir a uma voltagem de cálculo mínima de 500 V CA.

Documentos aplicáveis

Observe as indicações do presente documento e ainda as informações do manual de montagem e da placa de características.

Exame do tipo

Na Europa, os aparelhos para aplicação nas zonas 0/1/20/21 requerem um exame do tipo CE, emitido por organismo notificado com competências em proteção contra explosões.

5.2 Indicações técnicas

Potência, tensão e intensidade de corrente

A potência P_0 de todos os dispositivos de alimentação deve ser menor ou igual à potência Pi de uma célula de carga. O mesmo se aplica à tensão e intensidade de corrente.

Circuito elétrico de segurança intrínseca

A instalação de um circuito elétrico de segurança intrínseca requer um desenho de controle (descrição do sistema) que deverá ser elaborado pelo instalador/operador.

Compensação de potencial

Utilize medidas adequadas para evitar a carga eletrostática.

Condições do ambiente

Quando usadas em ambientes adversos, as células de carga devem ser protegidas em conformidade.

Deve ser determinado um intervalo para eliminação das deposições de poeira, com base no caso individual.

Evitar a formação de gelo no equipamento.

Limitações de uso relacionadas com o material

Observe, em relação ao seu campo de aplicação, que os ácidos inoxidáveis e suas partes soldadas não deverão ser agredidos por meios agressivos, especialmente por sais clorados. Nestes casos, devem ser definidas medidas de proteção adicionais pelo operador, cuja eficácia deverá ser testada através de controles realizados em intervalos regulares.

Cargas mecânicas

Evitar os esforços de flexão, vibração e torção incorretos da célula de carga.

Danos e bloqueios

Nunca utilizar as células de cargas em áreas potencialmente explosivas, se a caixa estiver danificada.

Nunca usar movimentos violentos em ambientes potencialmente explosivos para solucionar peças do aparelho obstruídas ou bloqueadas (por ex. por gelo ou corrosão).

Reutilização

As células de carga incorporadas em um circuito elétrico de segurança não intrínseca não podem ser reutilizadas em um circuito elétrico de segurança intrínseca.

6 INSPEÇÃO, MANUTENÇÃO E CONSERVAÇÃO

6.1 Indicação

A execução de medidas de manutenção e de conservação são da exclusiva responsabilidade de pessoal técnico qualificado da HBK. As mudanças e alterações feitas por conta própria são proibidas (ver manual de montagem original).

6.2 Ciclos de inspeção

Atividade	Inspeção visual (mensal)	Inspeção avançada (semianual)	Inspeção detalhada (anual)
Inspeção da célula de carga quanto à integridade, remoção de deposições de poeira	•		
Inspeção da célula de carga quanto à fixação correta assim como à existência de fissuras e rupturas		•	
Controle do sistema elétrico quanto à integridade e funcionalidade			•
Controle do processamento dos valores medidos			•
Controle do sistema global	É da responsabilidade exclusiva do operador!		

6.3 Produtos de limpeza

Não utilize produtos de limpeza que contenham ácidos e substâncias que liberem íons (de cloro) já que estes também agridem os aços inoxidáveis e suas partes soldadas. A eventual corrosão ocorrida assim, pode provocar falhas na célula de carga.

7 CERTIFICADOS

7.1 Certificados IECEx

Os certificados conforme a IECEx estão disponíveis no seguinte link:
https://www.iecex-certs.com/#/search

7.2 Exame do tipo

Você encontrará a Certificado de exame de tipo BVS 13 ATEX E 108 X nos idiomas inglês e alemão no final desta documentação e pode ser encontrado na página da HBM, no endereço https://www.hbm.com/fileadmin/mediapool/hbmdoc/technical/C05318.pdf

7.3 Declaração de conformidade UE

Você encontrará a Declaração de conformidade UE nos idiomas inglês e alemão no final desta documentação.

7.4 Declaração de conformidade UK

Você encontrará a Declaração de conformidade UK em inglês no final desta documentação.

7.5 FM Approval - Certificate of Conformity (US)

O Certificado de Aprovação FM - Certificado de Conformidade (EUA) em inglês pode ser encontrado no final desta documentação.

7.6 FM Approval - Certificate of Conformity (Canada)

O Certificado de Aprovação FM - Certificado de Conformidade (Canadá) em inglês pode ser encontrado no final desta documentação.

7.7 Control Drawing I.S.

O Desenho de Controle I.S. em inglês e francês pode ser encontrado no final desta documentação.

7.8 Ex NEPSI - Certificado de conformidade (China)

O certificado de conformidade sobre proteção contra explosões Ex NEPSI em idioma chinês e inglês encontra-se anexado ao final desta documentação.

Translation

EU-Type Examination Certificate Supplement 5

2 **Equipment intended for use in potentially explosive atmospheres Directive 2014/34/EU**

3 EU-Type Examination Certificate Number: **BVS 13 ATEX E 108 X**

4 Product: **Load cell type *** *-*-*-*-*-******-**-*-***

5 Manufacturer: **Hottinger Brüel & Kjaer GmbH**

6 Address: **Im Tiefen See 45, 64293 Darmstadt, Germany**

7 This supplementary certificate extends EU-Type Examination Certificate No. BVS 13 ATEX E 108 X to apply to products designed and constructed in accordance with the specification set out in the appendix of the said certificate but having any acceptable variations specified in the appendix to this certificate and the documents referred to therein.

8 DEKRA Testing and Certification GmbH, Notified Body number 0158, in accordance with Article 17 of Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014, certifies that this product has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of products intended for use in potentially explosive atmospheres given in Annex II to the Directive.
The examination and test results are recorded in the confidential Report No. BVS PP 14.2007 EU.

9 The Essential Health and Safety Requirements are assured in consideration of:

EN IEC 60079-0:2018	**General requirements**
EN IEC 60079-7:2015 + A1:2018	**Increased Safety "e"**
EN 60079-11:2012	**Intrinsic Safety "i"**
EN 60079-31:2014	**Protection by Enclosure "t"**

10 If the sign "X" is placed after the certificate number, it indicates that the product is subject to the Special Conditions for Use specified in the appendix to this certificate.

11 This EU-Type Examination Certificate relates only to the design and construction of the specified product. Further requirements of the Directive apply to the manufacturing process and supply of this product. These are not covered by this certificate.

12 The marking of the product shall include the following:

Ex **See cl. 15.2**

DEKRA Testing and Certification GmbH
Bochum, 2021-02-21

Signed: Jörg-Timm Kilisch

Managing Director

DEKRA Testing and Certification GmbH, Handwerkstr. 15, 70565 Stuttgart, Germany
Certification body: Dinnendahlstr. 9, 44809 Bochum, Germany
Phone +49.234.3696-400, Fax +49.234.3696-401, e-mail DTC-Certification-body@dekra.com

13 **Appendix**

14 **EU-Type Examination Certificate**

BVS 13 ATEX E 108 X
Supplement 5

15 **Product description**

15.1 **Subject and type**

Load cell type *** *-*-*-*-*****-**-*-*

15.2 **Description**

The load cells are used in hazardous areas as parts of weighing platforms. Depending on the variant the electrical connection is either done by a permanently connected cable or by a connector with cable (only for Ex i).

Depending on the variant regarding the relevant "Special conditions for safe use" the load cells may be used in areas requiring EPL Ga or EPL Gb or EPL Da or EPL Db or EPL Dc or EPL Ma or EPL Mb equipment.

Marking

	Category and Marking		Type
	I M1 Ex ia I Ma or I M2 Ex ia I Mb or II 1G Ex ia IIC T6/T4 Ga or II 2G Ex ia IIC T6/T4 Gb or II 1D Ex ia IIIC T125°C Da II 2D Ex ia IIIC T125°C Db	or	 *** I-*-*-*-V*****-**-*-* *** I-*-*-*-S*****-**-*-*
	II 1G Ex ia IIC T6/T4 Ga or II 2G Ex ia IIC T6/T4 Gb		*** I-*-*-*-P*****-**-*-* *** I-*-*-*-P*****-**-*-*
	II 3G Ex ec IIC T6/T4 Gc II 2D Ex tb IIIC T125°C Db	and	*** N-*-H-*-V*****-**-*-* *** N-*-H-*-S*****-**-*-*

Reason for the supplement:
Change of the manufacturer's name

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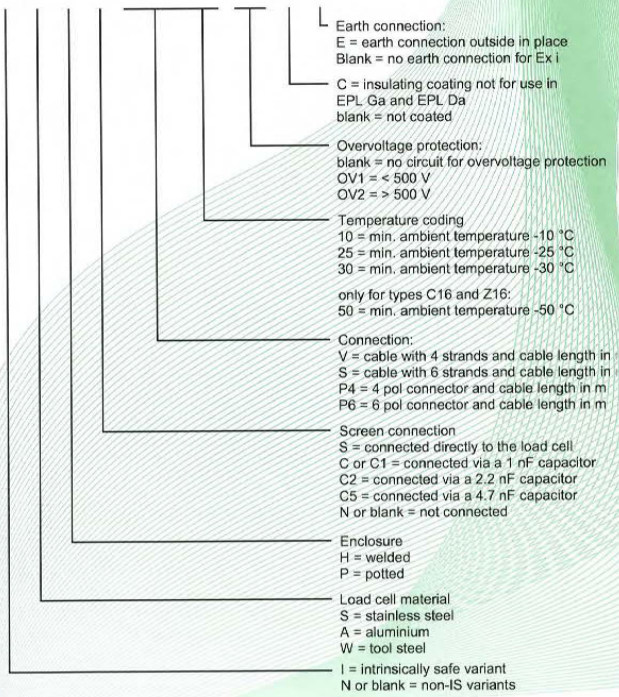
DEKRA Testing and Certification GmbH, Handwerkstr. 15, 70565 Stuttgart, Germany
Certification body: Dinnendahlstr. 9, 44809 Bochum, Germany
Phone +49.234.3696-400, Fax +49.234.3696-401, e-mail DTC-Certification-body@dekra.com

Load cell type *** *_*_*_*_******_**_*_*

Instead of the *** in the complete denomination letters and numerals will be inserted which characterize the following variants:

C2
U2
HLC
PW
RSC
RTN
SP4
Z6
Z6R
Z7
C16
Z16

* _ * _ * _ * _ * * * * * * _ * * _ * _ *



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15.3 **Parameters**

Voltage	U_i	DC	30	V
Current	I_i		500	mA
Power	P_i		4	W
Effective internal capacitance			negligible	
Type *** I-*-*-*-V*****-**-*-* or Type *** I-*-*-*-S*****-**-*-* (with connected cable)			162	pF/m
Effective internal inductance			negligible	
Type *** I-*-*-*-V*****-**-*-* or Type *** I-*-*-*-S*****-**-*-* (with connected cable)			0.85	µH/m
Ambient temperature range	T_a			
Variants marked with EPL Da, Db , Ma or Mb			up to +70 °C	
Variants marked with temperature class T4			up to +70 °C	
Variants marked with temperature class T6			up to +30 °C	
Variants type *** *-*-*-*-****10-**-*-*: min. ambient temperature			-10 °C	
Variants type *** *-*-*-*-****25-**-*-*: min. ambient temperature			-25 °C	
Variants type *** *-*-*-*-****30-**-*-*: min. ambient temperature			-30 °C	
Variants type *** *-*-*-*-****50-**-*-*: min. ambient temperature			-50 °C	
Max. surface temperature for EPL Da, EPL Db and EPL Dc			125 °C	
Degree of protection			IP67	

16 **Report Number**

BVS PP 14.2007 EU, as of 2021-02-12

17 **Special Conditions for Use**

17.1 If the load cells are installed in areas requiring EPL Ga gas group IIC, EPL Da or EPL Db equipment (depending on the variant), the cables (permanently connected or fastened at the connector) have to be installed in a way that electrostatic charging / discharging will be precluded.

17.2 Load cells type *** *-A-*-*-******-**-*-* (aluminium enclosure) may only be installed in areas requiring EPL Ga or EPL Da or EPL Ma or EPL Mb equipment (depending on the variant), if they are mounted in a way that impact is precluded.

17.3 For load cells type *** *-*-*-S-******-**-*-* and type *** *-*-*-*-******-0V1-*-* equipotential bonding along the external circuits has to be guaranteed.

17.4 Load cells type *** *-*-*-*-******-**-C-* may only be installed in areas requiring EPL Gb, EPL Gc, EPL Db, EPL Dc, EPL Ma or EPL Mb equipment (depending on the variant); installation in areas requiring EPL Ga or EPL Da equipment is only permitted if the load cells are protected against electrostatic charging / discharging.

17.5 The enclosure of load cells type *** *-*-*-*-******-**-*-E has to be earthed.

17.6 The load cells can be used in following ambient temperature ranges (see instructions):

Variants marked with temperature class T4: max. ambient temperature +70 °C
Variants marked with temperature class T6: max. ambient temperature +30 °C
Variants marked with EPL Da, Db , Ma or Mb: max. ambient temperature +70 °C

Variants type *** *-*-*-*-****10-**-*-*: min. ambient temperature -10 °C
Variants type *** *-*-*-*-****25-**-*-*: min. ambient temperature -25 °C
Variants type *** *-*-*-*-****30-**-*-*: min. ambient temperature -30 °C
Variants type *** *-*-*-*-****50-**-*-*: min. ambient temperature -50 °C

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17.7 For load cells type *** N-*-*-*-V*****-**-*-* or type *** N-*-*-*-S*****-**-*-* applies:

The end of the permanently connected cable should either be connected outside the hazardous area or inside a suitable (e.g. Ex e, Ex n resp. Ex t) enclosure.

17.8 If the type of protection Ex e is used, the equipment is intended for installation in an area providing at least pollution degree 2.

18 **Essential Health and Safety Requirements**

The Essential Health and Safety Requirements are covered by the standards listed under item 9.

19 **Drawings and Documents**

Drawings and documents are listed in the confidential report.

We confirm the correctness of the translation from the German original.
In the case of arbitration only the German wording shall be valid and binding.

DEKRA Testing and Certification GmbH
Bochum, 2021-02-12
BVS-Pe/MGR A20201322

Managing Director

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EU-Baumusterprüfbescheinigung Nachtrag 5

1

2 **Geräte zur bestimmungsgemäßen Verwendung in explosionsgefährdeten Bereichen Richtlinie 2014/34/EU**

3 Nr. der EU-Baumusterprüfbescheinigung: **BVS 13 ATEX E 108 X**

4 Produkt: **Wägezellen Typ *** *-*-*-*-*-******-**-*-***

5 Hersteller: **Hottinger Brüel & Kjaer GmbH**

6 Anschrift: **Im Tiefen See 45, 64293 Darmstadt, Deutschland**

7 Dieser Nachtrag erweitert die EU-Baumusterprüfbescheinigung Nr. BVS 13 ATEX E 108 X um Produkte, die gemäß der Spezifikation in der Anlage der Bescheinigung festgelegt, entwickelt und konstruiert wurden. Die Ergänzungen sind in der Anlage zu diesem Zertifikat und in der zugehörigen Dokumentation festgelegt.

8 Die Zertifizierungsstelle der DEKRA Testing and Certification GmbH, benannte Stelle Nr. 0158 gemäß Artikel 17 der Richtlinie 2014/34/EU des Europäischen Parlaments und des Rates vom 26. Februar 2014, bescheinigt, dass das Produkt die wesentlichen Gesundheits- und Sicherheitsanforderungen für die Konzeption und den Bau von Produkten zur bestimmungsgemäßen Verwendung in explosionsgefährdeten Bereichen gemäß Anhang II der Richtlinie erfüllt.
Die Ergebnisse der Prüfung sind in dem vertraulichen Prüfprotokoll BVS PP 14.2007 EU niedergelegt.

9 Die wesentlichen Gesundheits- und Sicherheitsanforderungen werden erfüllt unter Berücksichtigung von:

EN IEC 60079-0:2018	**Allgemeine Anforderungen**
EN IEC 60079-7:2015 + A1:2018	**Erhöhte Sicherheit „e“**
EN 60079-11:2012	**Eigensicherheit „i“**
EN 60079-31:2014	**Schutz durch Gehäuse „t“**

10 Falls das Zeichen „X" hinter der Bescheinigungsnummer steht, wird in der Anlage zu dieser Bescheinigung auf besondere Bedingungen für die sichere Anwendung des Produktes hingewiesen.

11 Diese EU-Baumusterprüfbescheinigung bezieht sich nur auf den Entwurf und Bau der beschriebenen Produkte.
Für den Herstellungsprozess und die Abgabe der Produkte sind weitere Anforderungen der Richtlinie zu erfüllen, die nicht durch diese Bescheinigung abgedeckt sind.

12 Die Kennzeichnung des Produktes muss die folgenden Angaben enthalten:

Ex **Siehe Abs. 15.2**

DEKRA Testing and Certification GmbH
Bochum, 12.02.2021

Geschäftsführer

DEKRA Testing and Certification GmbH, Handwerkstraße 15, 70565 Stuttgart
Zertifizierungsstelle: Dinnendahlstraße 9, 44809 Bochum
Telefon +49.234.3696-400, Fax +49.234.3696-401, DTC-Certification-body@dekra.com

13 **Anlage zur**

14 **EU-Baumusterprüfbescheinigung**

BVS 13 ATEX E 108 X
Nachtrag 5

15 **Beschreibung des Produktes**

15.1 **Gegenstand und Typ**

Wägezellen Typ *** *-*-*-*-******-**-*-*

15.2 **Beschreibung**

Die Wägezellen werden im explosionsgefährdeten Bereich als Teile von Wägeeinrichtungen verwendet. Je nach Ausführung erfolgt der Anschluss über eine fest angeschlossene Leitung oder über einen Steckverbinder mit Leitung (nur für Ex i).
Je nach Ausführung, unter Berücksichtigung der zutreffenden „Auflagen / Bedingungen für die sichere Anwendung", können die Wägezellen in Bereichen, die EPL Ga oder EPL Gb oder EPL Da oder EPL Db oder EPL Dc oder EPL Ma oder EPL Mb Betriebsmittel erfordern, eingesetzt werden.

Kennzeichnung

	Kategorie und Kennzeichnung		Typ
Ex	I M1 Ex ia I Ma	oder	
	I M2 Ex ia I Mb	oder	
	II 1G Ex ia IIC T6/T4 Ga	oder	*** I-*-*-*-V*****-**-*-*
	II 2G Ex ia IIC T6/T4 Gb	oder	*** I-*-*-*-S*****-**-*-*
	II 1D Ex ia IIIC T125°C Da	oder	
	II 2D Ex ia IIIC T125°C Db		
	II 1G Ex ia IIC T6/T4 Ga	oder	*** I-*-*-*-P*****-**-*-*
	II 2G Ex ia IIC T6/T4 Gb		*** I-*-*-*-P*****-**-*-*
	II 3G Ex ec IIC T6/T4 Gc	und	*** N-*-H-*-V*****-**-*-*
	II 2D Ex tb IIIC T125°C Db		*** N-*-H-*-S*****-**-*-*

Grund des Nachtrags:
Änderung des Herstellernamens

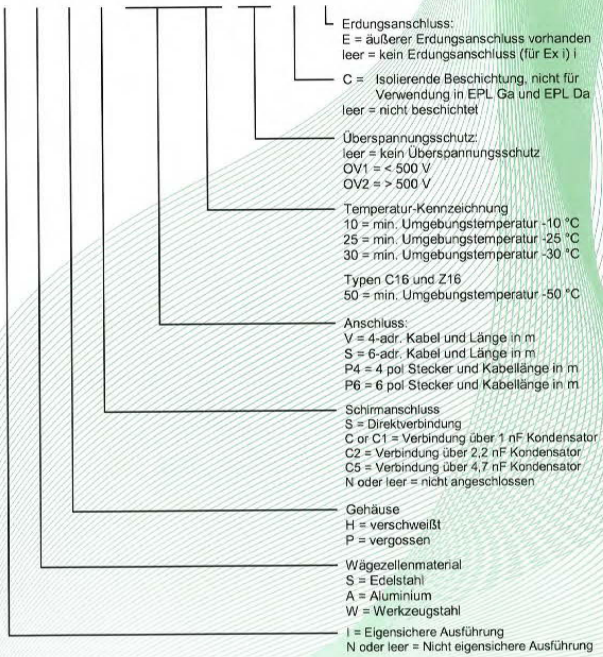
DEKRA Testing and Certification GmbH, Handwerkstraße 15, 70565 Stuttgart
Zertifizierungsstelle: Dinnendahlstraße 9, 44809 Bochum
Telefon +49.234.3696-400, Fax +49.234.3696-401, DTC-Certification-body@dekra.com

Wägezellen Typ *** *_*_*_*_******_**_*_*

Anstelle der *** werden in der vollständigen Benennung Ziffern und Buchstaben eingefügt, die folgende Varianten kennzeichnen:

C2
U2
HLC
PW
RSC
RTN
SP4
Z6
Z6R
Z7
C16
Z16

* _ * _ * _ * _ * * * * * * * _ * * _ * _ *



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Kenngrößen

Spannung	U_i	DC	30	V
Stromstärke	I_i		500	mA
Leistung	P_i		4	W
Wirksame innere Kapazität			vernachlässigbar	
Typ *** I-*-*-*-V*****-**-*-* oder Typ *** I-*-*-*-S*****-**-*-* (mit Anschlussleitung)			162	pF/m
Wirksame innere Induktivität			vernachlässigbar	
Typ *** I-*-*-*-V*****-**-*-* oder Typ *** I-*-*-*-S*****-**-*-* (mit Anschlussleitung)			0,85	µH/m
Umgebungstemperaturbereich	T_a			
Geräte mit Kennzeichnung EPL Da, Db, Dc, Ma oder Mb			bis +70	°C
Geräte mit Kennzeichnung Temperaturklasse T4			bis +70	°C
Geräte mit Kennzeichnung Temperaturklasse T6			bis +30	°C
Geräte Typ *** *-*-*-*-****10-**-*-*: Min. Umgebungstemperatur			-10	°C
Geräte Typ *** *-*-*-*-****25-**-*-*: Min. Umgebungstemperatur			-25	°C
Geräte Typ *** *-*-*-*-****30-**-*-*: Min. Umgebungstemperatur			-30	°C
Geräte Typ *** *-*-*-*-****50-**-*-*: Min. Umgebungstemperatur			-50	°C
Max. Oberflächentemperatur für EPL Da, EPL Db und EPL Dc			125	°C
Schutzgrad			IP67	

16 **Prüfprotokoll**

BVS PP 14.2007 EU, Stand 12.02.2021

17 **Besondere Bedingungen für die Verwendung**

17.1 Wenn die Wägezellen in Bereichen installiert werden, die EPL Ga Gruppe IIC, EPL Da oder EPL Db Geräte (je nach Ausführung) erfordern, müssen die Anschlussleitungen (fest oder an den Steckverbinder angeschlossen) so geschützt verlegt werden, dass elektrostatische Auf- / Entladungen ausgeschlossen sind.

17.2 Wägezellen Typ *** *-A-*-*-******-**-*-* (Aluminiumgehäuse) dürfen nur in Bereichen errichtet werden, die EPL Ga oder EPL Da oder EPL Ma oder EPL Mb Geräte (je nach Ausführung) erfordern, wenn ein mechanischer Stoß ausgeschlossen ist.

17.3 Bei den Wägezellen Typ *** *-*-*-S-******-**-*-* und Typ *** *-*-*-*-******-0V1-*-* muss entlang des eigensicheren Stromkreises Potenzialausgleich herrschen.

17.4 Wägezellen Typ *** *-*-*-*-******-**-C-* dürfen nur in Bereichen errichtet werden, in denen EPL Gb, EPL Db, EPL Dc, EPL Ma or EPL Mb Geräte (je nach Ausführung) gefordert werden; die Errichtung in Bereichen, die EPL Ga oder EPL Da Geräte erfordern, ist nur zulässig, wenn für die Geräte elektrostatische Auf- / Entladungen ausgeschlossen sind.

17.5 Das Gehäuse der Wägezellen Typ *** *-*-*-*-******-**-*-E muss geerdet werden.

17.6 Die Wägezellen dürfen nur unter den folgenden Umgebungstemperaturbedingungen verwendet werden (siehe Betriebsanleitung):

Geräte gekennzeichnet mit Temperaturklasse T4: max. Umgebungstemperatur +70 °C
Geräte gekennzeichnet mit Temperaturklasse T6: max. Umgebungstemperatur +30 °C
Geräte gekennzeichnet mit EPL Da, Db, Ma oder Mb: max. Umgebungstemperatur +70 °C
Geräte Typ *** *-*-*-*-****10-**-*-*: min. Umgebungstemperatur -10 °C
Geräte Typ *** *-*-*-*-****25-**-*-*: min. Umgebungstemperatur -25 °C
Geräte Typ *** *-*-*-*-****30-**-*-*: min. Umgebungstemperatur -30 °C
Geräte Typ *** *-*-*-*-****50-**-*-*: min. Umgebungstemperatur -50 °C

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17.7 Für die Wägezellen Typ *** N-*-*-*-V*****-**-*-* oder Typ *** N-*-*-*-S*****-**-*-* gilt:
Das Ende der fest angeschlossenen Leitung muss entweder außerhalb des explosionsgefährdeten Bereiches oder innerhalb des explosionsgefährdeten Bereiches in einem entsprechenden Gehäuse (z. B. Ex e, Ex n bzw. Ex t) angeschlossen werden.

17.8 Wenn die Zündschutzart Ex e verwendet wird, darf das Gerät nur in Bereichen mit mindestens Verschmutzungsgrad 2 eingesetzt werden.

18 **Wesentliche Gesundheits- und Sicherheitsanforderungen**

Die wesentlichen Gesundheits- und Sicherheitsanforderungen sind durch die unter Abschnitt 9 gelisteten Normen abgedeckt.

19 **Zeichnungen und Unterlagen**

Die Zeichnungen und Unterlagen sind in dem vertraulichen Prüfprotokoll gelistet.

DEKRA Testing and Certification GmbH, Handwerkstraße 15, 70565 Stuttgart
Zertifizierungsstelle: Dinnendahlstraße 9, 44809 Bochum
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HBK
HOTTINGER BRÜEL & KJÆR

EU Declaration of Conformity (No. 314/2022-10)

1. Product model no.:
   C16..., C2..., U2A..., C2A..., HLC..., PW15AH..., PW25..., PW27..., PW29..., PW4L..., RSC..., RTN..., Z6..., Z6R..., Z7..., Z16..., PW10..., PW12..., PW15..., PW16..., PW22..., PWS..., SP4...
   (Ex IIG for zone 1 and Ex IID for zone 21, see EU type examination certificate)
2. Name and address of the authorised representative:
   Hottinger Brüel & Kjaer GmbH, Im Tiefen See 45, 64293 Darmstadt, Germany
3. This declaration of conformity is issued under the sole responsibility of the manufacturer:
   Hottinger Brüel & Kjaer GmbH, Im Tiefen See 45, 64293 Darmstadt, Germany
4. Object of the declaration:
   Load Cell
5. The object of the declaration described above is in conformity with:
   (I) EMC: 2014/30/EU
   (II) ATEX: 2014/34/EU
   (III) ROHS: 2011/65/EU + (EU) 2015/863
6. References to the relevant harmonised standards used or references to the other technical specifications in relation to which conformity is declared:
   (I) EN 61326-1:2013, EN 61326-2-3:2013
   (II) EN IEC 60079-0:2018, EN 60079-11:2012
   (III) EN IEC 63000:2018
7. Where applicable, the notified body (a) performed (b) and issued the certificate (c):
   (a.1) 0158: DEKRA Testing and Certification GmbH, Dinnendahlstraße 9, 44809 Bochum, Germany
   (a.2) 0158: DEKRA Testing and Certification GmbH, Dinnendahlstraße 9, 44809 Bochum, Germany
   (b.1) EU Type Examination
   (b.2) Certificate Surveillance audit
   (c.1) BVS 13 ATEX E 108 X
   (c.2) BVS ** ATEX ZQS/E124
8. Where applicable, description of accessories and components, including software, which allow the radio equipment to operate as intended and covered by the EU declaration of conformity:
   -
9. Additional information:
   -

Signed for and on behalf of: **Hottinger Brüel & Kjaer GmbH**

Darmstadt, 2022-10-17

ppa. Nina Rosen

Nina Rosen, General Counsel & Head of Compliance

български (bg)

ЕС декларация за съответствие
1. Модел на устройство:..
2. Наименование и адрес на неговия упълномощен представител:..
3. Настоящата декларация за съответствие е издадена на отговорността на производителя: ..
4. Предмет на декларацията:…
5. Предметът на декларацията, описан по-горе, отговаря на съответното законодателство на Съюза за хармонизация:..
6. Позоваване на използваните хармонизирани стандарти, включително датата на стандарта, или позоваване на други технически спецификации, включително датата на спецификацията, по отношение на които се декларира съответствие:..
7. Където е приложимо, нотифициран орган … (наименование, номер) … извърши … (описание на извършеното) … и издаде сертификата: ..
8. Където е приложимо, описание на аксесоари и компоненти, включително софтуер, които позволяват на радиоустройството да работи по предназначение: ..
9. Допълнителна информация:..
Подпис за и от името на:..
(място и дата на издаване):..
(име, длъжност) (подпис):..

čeština (cs)

EU PROHLÁŠENÍ O SHODĚ
1. Model č.:..
2. Jméno a adresa výrobce nebo jeho zplnomocněného zástupce:..
3. Toto prohlášení o shodě vydal na vlastní odpovědnost výrobce:..
4. Předmět prohlášení:
5. Výše popsaný předmět prohlášení je ve shodě s:..
6. Odkazy na příslušné harmonizované normy, které byly použity nebo odkazy na technické specifikace, na jejichž základě se shoda prohlašuje: ..
7. Kde je to vhodné, oznámení jména subjektu a číslo, popis intervence a osvědčení: ..
8. Kde je to vhodné, popis příslušenství a komponentů, včetně softwaru, které umožňují radiovému zařízení fungovat, jak bylo zamýšleno: ..
9. Dodatečné informace:..
Podepsáno za a jménem:..
(místo a datum vydání): ..
(jméno, funkce) (podpis):..

dansk (da)

EU-OVERENSSTEMMELSESERKLÆRING
1. Model nr.:..
2. Navn og adresse på repræsentant:..
3. Denne overensstemmelseserklæring udstedes på fabrikantens ansvar:..
4. Erklæringens genstand
5. Genstanden for erklæringen, som beskrevet ovenfor, er i overensstemmelse med:..
6. Referencer til de relevante anvendte harmoniserede standarder eller referencer til de tekniske specifikationer, som der erklæres overensstemmelse med:..
7. Hvor det er relevant, det bemyndigede organ navn og nummer, beskrivelse af aktiviteten og udstedt attesten:..
8. Hvor det er relevant, beskrivelse af tilbehør og komponenter, herunder software, som får radioudstyret til at fungere efter hensigten:..
9. Supplerende oplysninger:..
Underskrevet for og på vegne af:..
(sted og dato):..
(navn, stilling) (underskrift):..

Deutsch (de)

EU-KONFORMITÄTSERKLÄRUNG
1. Modell Nr.:..
2. Name und Anschrift des Bevollmächtigten:..
3. Die alleinige Verantwortung für die Ausstellung dieser Konformitätserklärung trägt der Hersteller:..
4. Gegenstand der Erklärung:..
5. Der oben beschriebene Gegenstand der Erklärung erfüllt die Vorschriften der:..
6. Angabe der einschlägigen harmonisierten Normen, die zugrunde gelegt wurden, oder Angabe der technischen Spezifikationen, für die die Konformität erklärt wird:..
7. Gegebenenfalls Namen und Nummer der notifizierten Stelle, Beschreibung ihrer Mitwirkung und Bescheinigung:..
8. Gegebenenfalls Beschreibung des Zubehörs und der Bestandteile, einschließlich Software, die den bestimmungsgemäßen Betrieb der Funkanlagen ermöglichen:..
9. Zusatzangaben:..
Unterzeichnet für und im Namen von:..
(Ort und Datum der Ausstellung):..
(Name, Funktion) (Unterschrift):..

eesti keel (et)

ELi VASTAVUSDEKLARATSIOON
1. Tootenumber:..
2. Volitatud esindaja nimi ja aadress:
3. Käesolev vastavusdeklaratsioon on välja antud tootja ainuvastutusel:..
4. Deklareeritav toode:..
5. Eespool kirjeldatud deklareeritav ese on kooskõlas:…
6. Viited kasutatud harmoneeritud standarditele või viited muudele tehnilistele spetsifikatsioonidele, millele vastavust deklareeritakse:..
7. Vajaduse korral: teavitatud asutus … (nimi, number) … teostas … (tegevuse kirjeldus) … ja andis välja tõendi :..
8. Vajaduse korral selliste tarvikute ja osade, samuti tarkvara kirjeldus, mis võimaldavad raadioseadet kasutada ettenähtud otstarbel ja kooskõlas ELi vastavusdeklaratsiooniga:..
9. Lisateave:..
Alla kirjutanud (kelle poolt/nimel):..
(väljaandmise koht ja kuupäev):..
(nimi, ametinimetus) (allkiri):..

ελληνικά (el)

ΔΗΛΩΣΗ ΣΥΜΜΟΡΦΩΣΗΣ ΕΕ
1. Αριθμός Μοντέλου:..
2. Όνομα και διεύθυνση του εξουσιοδοτημένου αντιπροσώπου του κατασκευαστή:..
3. Η παρούσα δήλωση συμμόρφωσης εκδίδεται με αποκλειστική ευθύνη του κατασκευαστή:..
4. Αντικείμενο της δήλωσης:..
5. Το ανωτέρω περιγραφόμενο αντικείμενο της δήλωσης είναι σύμφωνο με:..
6. Αναφορές στα σχετικά εναρμονισμένα πρότυπα που χρησιμοποιούνται ή αναφορές στις λοιπές τεχνικές προδιαγραφές σε σχέση με τις οποίες δηλώνεται η συμμόρφωση:..
7. Όπου απαιτείται εφαρμογή, ο κοινοποιημένος οργανισμός (ονομασία, αριθμός) πραγματοποίησε (περιγραφή της παρέμβασης) και χορήγησε το πιστοποιητικό:..
8. Όπου έχει εφαρμογή, περιγραφή των παρελκόμενων και εξαρτημάτων, συμπεριλαμβανομένου του λογισμικού, που επιτρέπουν στον ραδιοεξοπλισμό να λειτουργεί όπως προβλέπεται:..
9. Συμπληρωματικές πληροφορίες:..
Υπογραφή για λογαριασμό και εξ ονόματος:..
(τόπος και ημερομηνία έκδοσης):..
(όνομα, θέση) (υπογραφή):..

English (en)

EU DECLARATION OF CONFORMITY
1. Product model No.:..
2. Name and address of the authorised representative:..
3. This declaration of conformity is issued under the sole responsibility of the manufacturer:..
4. Object of the declaration:..
5. The object of the declaration described above is in conformity with:..
6. References to the relevant harmonised standards used or references to the technical specifications in relation to which conformity is declared:..
7. Where applicable, notified body name and number, description of intervention and certificate:..
8. Where applicable, description of accessories and components, including software, which allow the radio equipment to operate as intended:..
9. Additional information:..
Signed for and on behalf of:..
(place and date of issue):..
(name, function) (signature):..

español (es)

DECLARACIÓN DE CONFORMIDAD UE
1. Nombre del Modelo:..
2. Nombre y dirección del representante:..
3. Esta declaración de conformidad se expide bajo la exclusiva responsabilidad del fabricante:
4. Objeto de la declaración:..
5. El objeto de la declaración descrita anteriormente es conforme con:..
6. Referencias a las normas armonizadas aplicadas o referencias a las especificaciones técnicas en relación con las cuales se declara la conformidad:..
7. Cuando proceda, el nombre y número del organismo notificado y certificado:..
8. Cuando proceda, descripción de los accesorios y componentes, incluido el software, que permiten que el equipo radioeléctrico funcione como estaba previsto:..
9. Información adicional:..
Firmado por y en nombre de:..
(lugar y fecha de emisión):..
(nombre, cargo) (firma):..

français (fr)

DÉCLARATION DE CONFORMITÉ de l'UE
1. Référence produit:..
2. Nom et adresse du mandataire:.
3. La présente déclaration de conformité est établie sous la seule responsabilité du fabricant:..
4. Objet de la déclaration:..
5. L'objet de la déclaration décrit ci-dessus est conforme à:…
6. Références aux normes harmonisées applicables ou aux spécifications techniques par rapport auxquelles la conformité est déclarée: ...
7. Le cas échéant, nom de l'autorité notifiée et numéro, description de l'intervention et du certificat:..
8. Le cas échéant, description des accessoires et composants, logiciels inclus, permettant le bon fonctionnement de l'équipement radio:..
9. Informations complémentaires:..
Signé par et au nom de:..
(date et lieu d'établissement):..
(nom, fonction) (signature):..

hrvatski (hr)

EU IZJAVA O SUKLADNOSTI
1. Model br.:..
2. Ime i adresa ovlaštenog zastupnika proizvođača:.
3. Ova izjava o sukladnosti izdaje se na isključivu odgovornost proizvođača:..
4. Predmet izjave:..
5. Gore opisan predmet izjave u skladu je s:..
6. Upućivanje na odgovarajuće usklađene norme koje se upotrebljavaju ili upućivanje na druge tehničke specifikacije u odnosu na koje se deklarira sukladnost:..
7. Prema potrebi, naziv i broj prijavljenog tijela, opis intervencije i potvrda o ispitivanju:..
8. Prema potrebi, opis dodatne opreme i sastavnica, uključujući softver, koji omogućuju normalan rad radijske opreme:..
9. Dodatne informacije:..
Potpisano za i u ime:..
(mjesto i datum izdavanja):..
(ime, funkcija) (potpis):..

italiano (it)

DICHIARAZIONE UE DI CONFORMITÀ
1. Modello n.:..
2. Nome e Indirizzo del:..
3. La presente dichiarazione di conformità è rilasciata sotto la responsabilità esclusiva del fabbricante:..
4. Oggetto della dichiarazione:..
5. L'oggetto della dichiarazione di cui sopra è conforme alla:
6. I riferimenti alle pertinenti norme armonizzate utilizzate o i riferimenti alle specifiche tecniche in relazione alle quali è dichiarata la conformità:..
7. Ove applicabile, nome dell'ente notificato e numero, descrizione dell'intervento e certificato:..
8. Ove applicabile, descrizione degli accessori e dei componenti, incluso il software, che permettono all'apparato radio di operare come previsto:..
9. Ulteriori informazioni:..
Firmato in vece e per conto di:..
(luogo e data del rilascio):..
(nome e cognome, funzione) (firma):..

latviešu valoda (lv)

ES ATBILSTĪBAS DEKLARĀCIJA
1. Modela Nr.:..
2. Ražotāja pilnvarotā pārstāvja nosaukums un adrese:..
3. Šī atbilstības deklarācija ir izdota vienīgi uz šāda ražotāja atbildību:..
4. Deklarācijas priekšmets:..
5. Iepriekš aprakstītais deklarācijas priekšmets ir saskarā ar:..
6. Norādes uz izmantotajiem atbilstošajiem harmonizētajiem standartiem vai norādes uz tehniskajiem raksturlielumiem, saistībā ar kuriem ir deklarēta atbilstība:..
7. Kur attiecināms, pilnvarotās iestādes nosaukums un numurs, veiktās darbības apraksts un sertifikāts:..
8. Kur attiecināms, piederumu un komponentu, ieskaitot programmatūru, kas ļauj radioiekārtai darboties kā paredzēts, apraksts:..
9. Papildu informācija:..
Turpmāk norādītā vārdā parakstīts:..
(izdošanas vieta un datums):..
(vārds, uzvārds, amats) (paraksts):..

lietuvių kalba (lt)

ES ATITIKTIES DEKLARACIJA
1. Modelio Nr.:...
2. Gamintojo įgaliotojo atstovo pavadinimas ir adresas:..
3. Ši atitikties deklaracija išduota tik gamintojo atsakomybe:
4. Deklaracijos objektas:..
5. Pirmiau aprašytas deklaracijos objektas atitinka:..
6. Taikytų darniųjų standartų nuorodos arba techninių specifikacijų, pagal kurias buvo deklaruota atitiktis, nuorodos:..
7. Jei tinkama, įgaliotosios įstaigos pavadinimas ir numeris, atlikto veiksmo aprašymas ir sertifikatas:..
8. Jei tinkama, priedų ir komponentų, įskaitant programinę įrangą, kurios dėka radijo įranga veikia kaip numatyta, aprašymas:..
9. Papildoma informacija:..
Už ką ir kieno vardu pasirašyta:..
(išdavimo data ir vieta):..
(vardas ir pavarde, pareigos) (parašas):..

magyar (hu)

EU–megfeleloségi nyilatkozat
1. Készülék típus:..
2. A gyártó meghatalmazott képviselojének neve és címe:
3. E megfeleloségi nyilatkozat a gyártó kizárólagos felelosségére kerül kibocsátásra:..
4. A nyilatkozat tárgya:..
5. E nyilatkozat fent leírt tárgya összhangban van:
6. Hivatkozások az alkalmazott, vonatkozó harmonizált szabványokra, amelyekkel kapcsolatban a megfeleloséget kinyilatkoztatják:..
7. Ahol alkalmazható, a bejelentett testület neve és száma, a beavatkozás és a tanúsítvány leírása:..
8. Ahol alkalmazható, a tartozékok és alkatrészek leírását, beleértve a szoftvert, amely lehetové teszi, hogy a rádióberendezés a szándékolt módon muködjön:..
9. Kiegészító információk:..
nevében aláírva:..
(kibocsátás helye és kelte):..
(név, beosztás) (aláírás):..

Malti (mt)

DIKJARAZZJONI TAL-KONFORMITÀ TAL-UE
1. Il-mudell Nru.:..
2. L-isem u l- indirizz tar-rapprezentant :..
3. Din id-dikjarazzjoni tal-konformità tinħareg taħt irresponsabbiltà unika tal-manifattur:..
4. L-għan tad-dikjarazzjoni:..
5. L-għan tad-dikjarazzjoni deskritta hawn fuq huwa konformi:..
6. Referenzi għall-istandards armonizzati rilevanti li ntużaw, jew referenzi għall-ispeċifikazzjonijiet tekniċi fir-rigward tagħhom hija dikjarata konformità:..
7. Fejn applikabbli, korp notifikat l-isem u n-numru, iddeskrizzjoni tal-intervent u ċertifikat:..
8. Fejn ikun applikabbli, deskrizzjoni tal-aċċessorji u lkomponenti, inkluż is-software, li jippermettu t-tagħmir tar-radju li jaħdem kif intiż:..
9. Informazzjoni addizzjonali:..
Iffirmat għal u f'isem:..
(post u data tal-ħrug):..
(isem, funzjoni) (firma):..

Nederlands (nl)

EU-CONFORMITEITSVERKLARING
1. Model nr.:..
2. Naam en adres van de gemachtigde:
3. Deze conformiteitsverklaring wordt verstrekt onder volledige verantwoordelijkheid van de fabrikant:
4. Voorwerp van de verklaring:..
5. Het hierboven beschreven voorwerp is conform:..
6. Vermelding van de toegepaste relevante geharmoniseerde normen of van de andere technische specificaties waarop de conformiteitsverklaring betrekking heeft:..
7. Indien van toepassing, aangemelde instantie naam en nummer, beschrijving van de werkzaamheden en certificaat:..
8. Indien van toepassing, beschrijving van de accessoires en onderdelen, met inbegrip van software, die het mogelijk maken dat de radioapparatuur functioneert zoals bedoeld: …
9. Aanvullende informatie:..
Ondertekend voor en namens:..
(plaats en datum van afgifte):..
(naam, functie) (handtekening):..

polski (pl)

DEKLARACJA ZGODNOŚCI UE
1. Nazwa modelu:..
2. Nazwa/imię i nazwisko upowaznionego przedstawiciela producenta:..
3. Niniejsza deklaracja zgodności wydana zostaje na wyłączną odpowiedzialność producenta:..
4. Przedmiot deklaracji:..
5. Opisany powyżej przedmiot deklaracji jest zgodny z:..
6. Odwołuje się do odnośnych norm zharmonizowanych, które zastosowano lub do specyfikacji technicznych, w odniesieniu do których deklarowana jest zgodność:..
7. Jeżeli stosowne, nazwa jednostki notyfikowanej oraz numer, opis interwencji oraz certyfikat:..
8. Jeżeli stosowne, opis akcesoriów oraz komponentów, włączając oprogramowanie, które pozwalają na zgodną z przeznaczeniem pracę sprzętu radiowego:..
9. Dodatkowe informacje:..
Podpisano w imieniu:..
(miejsce i data wydania):..
(nazwisko, stanowisko) (podpis):..

português (pt)

DECLARAÇÃO DE CONFORMIDADE UE
1. Modelo Nº:..
2. Nome e endereço do mandatário:..
3. A presente declaração de conformidade é emitida sob a exclusiva responsabilidade do fabricante:..
4. Objeto da declaração:..
5. O objeto da declaração acima mencionada está em conformidade com:..
6. Referências às relevantes normas harmonizadas utilizadas ou referências às especificações técnicas em relação às quais é declarada a conformidade:..
7. Quando aplicável, nome e número do organismo notificado, descrição da intervenção e certificado:..
8. Quando aplicável, a descrição de acessórios e componentes, incluindo software, que permitem que o equipamento de rádio funcione da forma prevista:..
9. Informações adicionais:..
Assinado por e em nome de:..
(local e data da emissão):..
(nome, cargo) (assinatura):..

Română (ro)

DECLARAȚIE DE CONFORMITATE UE
1. Număr model:..
2. Denumirea și adresa reprezentantului:..
3. Această declarație de conformitate este eliberată pe propria răspundere a producătorului:..
4. Obiectul declarației:..
5. Obiectul declarației descrise mai sus este conform cu:..
6. Se face referință la standardele armonizate relevante care au fost folosite sau la specificațiile tehnice relativ la care este declarată conformitatea:..
7. Unde este valabil, numele și numărul organismului notificat, descrierea intervenției și certificatul:..
8. Unde este valabil, descrierea accesoriilor și a componentelor, inclusiv software, care permit echipamentului radio să funcționeze așa cum a fost destinat:..
9. Informații suplimentare:..
Semnat pentru și din partea:..
(locația și data publicării):..
(nume, funcție)(semnătură):..

slovenčina (sk)

VYHLÁSENIE O ZHODE EÚ
1. Číslo modelu:..
2. Meno a adresa splnomocneného zástupcu výrobcu:..
3. Toto vyhlásenie o zhode sa vydáva na výhradnú zodpovednosť výrobcu:..
4. Predmet vyhlásenia:..
5. Vyššie opísaný predmet vyhlásenia je v zhode so:..
6. Odkazy na príslušné použité harmonizované normy alebo odkazy na technické špecifikácie, na základe ktorých sa vyhlasuje zhoda:..
7. V prípade potreby, meno notifikovanej osoby, popis intervencie a certifikát:..
8. V prípade potreby , popis príslušenstva a komponentov, vrátane softvéru, ktorý zabezpečuje prevádzku rádiového zariadenia podľa predpokladu:..
9. Dodatočné informácie:..
Podpísané za a v mene:..
(miesto a dátum vydania):..
(meno, funkcia) (podpis):..

slovenščina (sl)

IZJAVA EU O SKLADNOSTI
1. Oznaka modela:..
2. Ime in naslov pooblaščenega zastopnika proizvajalca:..
3. Ta izjava o skladnosti se izda na lastno odgovornost proizvajalca:..
4. Predmet izjave:..
5. Predmet navedene izjave je v skladu z:..
6. Napotila za relevantne usklajene standarde v uporabi ali napotila k tehničnim specifikacijam v zvezi za katere je deklarirana skladnost:..
7. Kjer je to ustrezno, obveščen naziv telesa in številka, opis intervencije in certifikat:..
8. Kjer je to ustrezno, opis dodatkov in komponent, vključno s programsko opremo, ki omogoča namenjeno delovanje radijski opremi:..
9. Dodatne informacije:..
Podpisano za in v imenu:..
(kraj in datum izdaje):..
(ime, naziv) (podpis):..

suomi (fi)

EU-VAATIMUSTENMUKAISUUSVAKUUTUS
1. Malli nro:..
2. Valmistajan paikallisen edustajan nimi ja osoite:..
3. Tämä vaatimustenmukaisuusvakuutus on annettu valmistajan yksinomaisella vastuulla:..
4. Vakuutuksen kohde:..
5. Edellä kuvattu vakuutuksen kohde on vaatimusten mukainen:..
6. Viittaus niihin asiaankuuluviin yhdenmukaistettuihin standardeihin, joita on käytetty, tai viittaus teknisiin eritelmiin, joiden perusteella vaatimustenmukaisuusvakuutus on annettu:..
7. Tarvittaessa, ilmoitettu laitos ja numero, toimenpiteen kuvaus ja todistus:..
8. Tarvittaessa, kuvaus niistä lisälaitteista ja osista, myös ohjelmistoista, jotka mahdollistavat radiolaitteen käyttötarkoituksen mukaisen käytön:..
9. Lisätietoja:..
Puolesta allekirjoittanut:..
(antamispaikka ja -päivämäärä):..
(nimi, tehtävä) (allekirjoitus):..

svenska (sv)

EU-FÖRSÄKRAN OM ÖVERENSSTÄMMELSE
1. Modell nr:..
2. Namn och adress till den representanten:..
3. Denna försäkran om överensstämmelse utfärdas på tillverkarens eget ansvar:..
4. Föremål för försäkran:..
5. Föremålet för försäkran ovan överensstämmer med:..
6. Hänvisningar till de relevanta harmoniserade standarder som använts eller hänvisningar till de tekniska specifikationer enligt vilka överensstämmelsen försäkras:..
7. I tillämpliga fall: Det anmälda organet, namn och nummer, beskrivning av åtgärden och utfärdat intyget:..
8. I tillämpliga fall, en beskrivning av tillbehör och komponenter, inklusive programvara, som gör det möjligt för radioutrustningen att fungera som avsett:..
9. Ytterligare information:..
Undertecknat för:..
(ort och datum):..
(namn, befattning) (namnteckning):..

norsk (no)

EU-samsvarserklæring
1. Modell nr:..
2. Navn og adresse på representant:..
3. Denne samsvarserklæringen er utstedt på produsentens eneansvar:..
4. Erklæringens gjenstand:..
5. Erklæringens gjenstand beskrevet ovenfor er i samsvar med:..
6. Henvisninger til de relevante harmoniserte standardene som er brukt eller henvisninger til de spesifikasjonene det erklæres samsvar med:..
7. Hvor gjeldende, teknisk kontrollorgans navn og nummer, beskrivelse av intervensjon og sertifikat:..
8. Hvor gjeldende, beskrivelse av tilbehør og deler, inkludert programvare, som tillater radioutstyret til å operere som forutsatt:..
9. Tilleggsopplysninger:..
Undertegnet for og på vegne av:..
(sted og utstedelsesdato):..
(navn, stilling) (underskrift):..

HBK
HOTTINGER BRÜEL & KJÆR

UK Declaration of Conformity (No. 314/2022-10)

1. Product model no.:
   C16..., C2..., U2A..., C2A..., HLC..., PW15AH..., PW25..., PW27..., PW29..., PW4L..., RSC..., RTN..., Z6..., Z6R..., Z7..., Z16..., PW10..., PW12..., PW15..., PW16..., PW22..., PWS..., SP4...
   (Ex IIG for zone 1 and Ex IID for zone 21, see EU type examination certificate)
2. Name and address of the authorised representative:
   Hottinger Bruel & Kjaer UK Limited, Technology Centre Advanced Manufacturing Park, Brunel Way Catcliffe, Rotherham, South Yorkshire, S60 5WG, United Kingdom
3. This declaration of conformity is issued under the sole responsibility of the manufacturer:
   Hottinger Brüel & Kjaer GmbH, Im Tiefen See 45, 64293 Darmstadt, Germany
4. Object of the declaration:
   Load cell
5. The object of the declaration described above is in conformity with:
   (I) EMC: Electromagnetic Compatibility Regulation 2016, No. 1091
   (II) Equipment and Protective Systems Intended for use in Potentially Explosive Atmospheres Regulations 2016, No. 1107*
   (III) RoHS: The Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulation 2012, No. 3032
6. References to the relevant harmonised standards used or references to the other technical specifications in relation to which conformity is declared:
   (I) EN 61326-1:2013, EN 61326-2-3:2013
   (II) EN IEC 60079-0:2018, EN 60079-11:2012
   (II) EN IEC 63000:2018:2018
7. Where applicable, the notified body (a) performed (b) and issued the certificate (c):
   (a.1) 0158: DEKRA Testing and Certification GmbH, Dinnendahlstraße 9, 44809 Bochum, Germany
   (a.2) 0158: DEKRA Testing and Certification GmbH, Dinnendahlstraße 9, 44809 Bochum, Germany
   (b.1) EU Type Examination
   (b.2) Certificate Surveillance audit
   (c.1) BVS 13 ATEX E 108 X
   (c.2) BVS ** ATEX ZQS/E124
8. Where applicable, description of accessories and components, including software, which allow the radio equipment to operate as intended and covered by the EU declaration of conformity:
   -
9. Additional information:
   ***The product is certified pursuant to the EU Type Examination certificate stated in 7. On the 20th of June 2022, the British Government announced that ATEX relevant products will comply with the relevant UK regulation until the end of the validity of an existing EU Type Examination certificate, but not longer than 31st of December 2027. On that basis, the UKCA mark was applied.**

Signed for and on behalf of: **Hottinger Brüel & Kjaer GmbH**

Darmstadt, 2022-10-31

Nina Rosen, General Counsel & Head of Compliance

FM APPROVAL - CERTIFICATE OF CONFORMITY (US)

CERTIFICATE OF CONFORMITY

FM Approvals

1. HAZARDOUS (CLASSIFIED) LOCATION ELECTRICAL EQUIPMENT PER US REQUIREMENTS
2. Certificate No: FM18US0176X
3. Equipment: (Type Reference and Name) Model C2 series, U2, C16, Z16, HLC, PW series, RSC, RTN, SP4, Z6 series and Z7 load cells
4. Name of Listing Company: Hottinger Brüel & Kjaer GmbH
5. Address of Listing Company: Im Tiefen See 45 Darmstadt 64293 Germany
6. The examination and test results are recorded in confidential report number:

   3060655 dated 19th February 2019
7. FM Approvals LLC, certifies that the equipment described has been found to comply with the following Approval standards and other documents:

   FM 3600:2018 FM 3610:2018, FM 3810:2018, ANSI/ISA 60079-0:2013, ANSI/UL 60079-11:2014, ANSI/IEC 60529:2004
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.

Certificate issued by:

J.E. Marquedant
VP, Manager - Electrical Systems

30 March 2021
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@fmapprovals.com, www.fmapprovals.com

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SCHEDULE

US Certificate Of Conformity No: FM18US0176X

10. Equipment Ratings:

Intrinsically Safe for Class I, II, and III, Division 1, Groups A, B, C, D, E, F and G: T4 for -30°C ≤ Ta ≤ 40°C ambient*;
AEx ia for Class I, Zone 0, Group IIC, T4; -30°C ≤ Ta ≤ 40°C*;
AEx ia for Zone 20, Group IIIC, T125°C; -30°C ≤ Ta ≤ 40°C*;
IP67.
*For the models C16 and Z16, the minimum ambient temperature is -50°C; for the models PW25 and PW27, the minimum ambient temperature is -10°C.

11. The marking of the equipment shall include:

IS / I, II, III / 1 / A, B, C, D, E, F, G / T4; -30°C ≤ Ta ≤ 40°C*,
I / 0 / AEx ia / IIC / T4; -30°C ≤ Ta ≤ 40°C / Ga*;
20 / AEx ia / IIIC / T125°C; -30°C ≤ Ta ≤ 40°C / Da*;
IP67.

*For the models C16 and Z16, the minimum ambient temperature is marked as -50°C; for the models PW25 and PW27, the minimum ambient temperature is -10°C.

12. **Description of Equipment:**

General - HBM Load Cells and Sensors are precision primary weighing devices used in industrial scales. They are transducers that are used to create an electrical signal whose magnitude is directly proportional to the force being measured.

Construction – The heart of the load cell are spring elements made of steel or aluminum, on which strain gages are applied for sensing the deflection. The strain gages are protected against environmental influences by a stainless steel housing or by potting with silicon rubber.

Ratings – See Table below.

Pi (W)	Ui (V)	Ii (mA)
1.3	16	666
1.3	17	533
1.3	18	429
1.3	19	364
1.3	20	309
1.3	21	262

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SCHEDULE

US Certificate Of Conformity No: FM18US0176X

1.3	22	224
1.3	23	193
1.3	24	168

BT-Z-W-G-S-LLLL-TT-OV-C-E series. Load cell.

BT = Base type C2, U2, C16, Z16, HLC, PW, RSC, RTN, SP4, Z6, VBB or Z7
Z = Safety variants
I = Intrinsic safety
N or blank = Not I.S. variant.
W = Load cell material
S = stainless steel;
A = aluminum;
W = tool nickel (nickel-coated).
G = Enclosure
H = welded;
P = potted.
S = Screen connection
S = connected to cell;
C or C1 = connected to cell via 1 nF capacitor;
C2 = connected to cell via 2.2 nF capacitor;
C5 = connected to cell via 4.7 nF capacitor;
N or blank = not connected.
LLLL = Connection
V = 4-cable method and cable length in m;
S = 6-cable method and cable length in m;
P4 = 4-pole plug and cable length in m;
P6 = 6-pole plug and cable length in m.
TT = Temperature coding
10 = min. ambient temperature of -10°C;
25 = min. ambient temperature of -25°C;
30 = min. ambient temperature of -30°C;
50 = min. ambient temperature of -50°C (only for C16 and Z16).
OV = Over-voltage protection
blank = no circuit for over-voltage protection
OV1 = response voltage < 500V;
OV2 = response voltage > 500V;
C = Coating
C = insulating coated. Not for use in EPL Ga (zone 0) and EPL Da (zone 20);
blank = not coated.

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SCHEDULE

US Certificate Of Conformity No: FM18US0176X

E = Earth connection
E = earth connection outside in place;
blank = no earth connection.

Each load cell model is available in the following configurations.

Type /Family I.S. :	Ex-String (see left: General type Plate) BT -Z-W-G-S-LLLL-TT-OV-C-E
C16	C16-I-S-H-S-S***-50---E
	C16-I-S-H-S-S***-50-OV1--E
C2	C2 -I-S-H-S-S***-30---E
C2A	C2 -I-S-H-S-S***-30---E
HLC	HLC-I-S-H-S-S***-30---
PW10	PW -I-A-P-S-S***-30---
PW12	PW -I-A-P-S-S***-30---
PW15	PW -I-S-P-S-S***-30---
PW15AH	PW -I-S-H-S-S***-30---
PW15PH	PW -I-S-H-S-P6**-30---
PW16	PW -I-A-P-S-S***-30---
PW22	PW -I-A-P-S-S***-30---
PW25	PW -I-S-H-S-S***-10---
PW27	PW -I-S-H-S-S***-10---
PW29	PW -I-S-H-S-S***-30---
PW4L	PW -I-A-P-S-V***-30---
PWS	PW -I-S-P-S-S***-30---
PWS[1)]	PW –I-S-H-N-S***-30---
PWS[1)]	PW –I-S-P-N-S***-30---
RSC	RSC-I-S-H-S-S***-30---
RTN	RTN-I-S-H-S-V***-30---E
RTN[1)]	RTN-I-S-H-C1-V***-30---E
SP4	PW -I-A-P-S-S***-30---
U2	U2 -I-S-H-S-S***-30---E
Z16	Z16-I-S-H-S-S***-50---E

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SCHEDULE

US Certificate Of Conformity No: FM18US0176X

	Z16-I-S-H-S-S***-50-OV1--E
Z6	Z6 -I-S-H-S-S***-30---
Z6[1)]	VBB -I-S-H-S-S***-30---
Z6R	Z6 -I-S-H-S-S***-30---
Z7	Z7 -I-W-P-S-S***-30---
	Z7 -I-S-P-S-S***-30---

1) Customized version for Private Labeler, VBB identical to Z6.

13. **Specific Conditions of Use:**

1. A portion of the enclosure is non-conducting and, under certain extreme conditions, may generate an ignition-capable level of electrostatic charges. The user shall ensure that the equipment is not installed in a location where it may be subjected to external conditions (such as high-pressure steam) which might cause a build-up of electrostatic charges on non-conducting surfaces. Additionally, cleaning of the equipment should be done only with a damp cloth.

2. The load cell models PWxx and SP4 (with option W = A) contain aluminum and are considered to constitute a potential risk of ignition by impact or friction. Care must be taken into account during installation to preclude impact or friction.

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
19th February 2019	Original Issue.
19th September 2019	Supplement 1 Report Reference: RR219546 19th September 2019. Description of the Change: Changing the entity parameters. Adding variants to models RTN, Z6 and PWS.
12th February 2021	Supplement 2 Report Reference: RR226207 dated 12th February 2021. Description of the Change: Company name change.
30th March 2021	Supplement 3

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

SCHEDULE

US Certificate Of Conformity No: FM18US0176X

	Report Reference: RR227444 dated 30th March 2021. Description of the Change: Correction of error in Supplement 2.

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

FM APPROVAL - CERTIFICATE OF CONFORMITY (CANADA)

CERTIFICATE OF CONFORMITY

1. HAZARDOUS LOCATION ELECTRICAL EQUIPMENT PER CANADIAN REQUIREMENTS
2. Certificate No: FM18CA0144X
3. Equipment: (Type Reference and Name) Model C2 series, U2, C16, Z16, HLC, PW series, RSC, RTN, SP4, Z6 series and Z7 load cells
4. Name of Listing Company: Hottinger Brüel & Kjaer GmbH
5. Address of Listing Company: Im Tiefen See 45
   Darmstadt 64293
   Germany
6. The examination and test results are recorded in confidential report number:

   3060655 dated 19th February 2019
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. 61010-1:2012, CAN/CSA-C22.2 No. 60079-0:2015,
   CAN/CSA-C22.2 No. 60079-11:2014, CSA-C22.2 No. 60529:R2015,
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.

Certificate issued by:

J.E. Marquedant
VP, Manager - Electrical Systems

12 February 2021
Date

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

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F 348 (Mar 16) Page 1 of 5

SCHEDULE

Canadian Certificate Of Conformity No: FM18CA0144X

10. Equipment Ratings:

Ex ia for Class I, Zone 0, Group IIC, T4; -30°C ≤ Ta ≤ 40°C*;
Ex ia for Zone 20, Group IIIC, T125°C; -30°C ≤ Ta ≤ 40°C*,
IP67.
*For the models C16 and Z16, the minimum ambient temperature is -50°C; for the models PW25 and PW27, the minimum ambient temperature is -10°C.

11. The marking of the equipment shall include:

I / 0 / Ex ia / IIC / T4; -30°C ≤ Ta ≤ 40°C / Ga*;
20 / Ex ia / IIIC / T125°C; -30°C ≤ Ta ≤ 40°C / Da*;
IP67.

*For the models C16 and Z16, the minimum ambient temperature is marked as -50°C; for the models PW25 and PW27, the minimum ambient temperature is -10°C.

12. **Description of Equipment:**

General - HBM Load Cells and Sensors are precision primary weighing devices used in industrial scales. They are transducers that are used to create an electrical signal whose magnitude is directly proportional to the force being measured.

Construction – The heart of the load cell are spring elements made of steel or aluminum, on which strain gages are applied for sensing the deflection. The strain gages are protected against environmental influences by a stainless steel housing or by potting with silicon rubber.

Ratings – See Table below.

Pi (W)	Ui (V)	Ii (mA)
1.3	16	666
1.3	17	533
1.3	18	429
1.3	19	364
1.3	20	309
1.3	21	262
1.3	22	224

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SCHEDULE

Canadian Certificate Of Conformity No: FM18CA0144X

1.3	23	193
1.3	24	168

BT-Z-W-G-S-LLLL-TT-OV-C-E series. Load cell.

BT = Base type C2, U2, C16, Z16, HLC, PW, RSC, RTN, SP4, Z6, VBB or Z7
Z = Safety variants
I = Intrinsic safety
N or blank = Not I.S. variant.
W = Load cell material
S = stainless steel;
A = aluminum;
W = tool nickel (nickel-coated).
G = Enclosure
H = welded;
P = potted.
S = Screen connection
S = connected to cell;
C or C1 = connected to cell via 1 nF capacitor;
C2 = connected to cell via 2.2 nF capacitor;
C5 = connected to cell via 4.7 nF capacitor;
N or blank = not connected.
LLLL = Connection
V = 4-cable method and cable length in m;
S = 6-cable method and cable length in m;
P4 = 4-pole plug and cable length in m;
P6 = 6-pole plug and cable length in m.
TT = Temperature coding
10 = min. ambient temperature of -10°C;
25 = min. ambient temperature of -25°C;
30 = min. ambient temperature of -30°C;
50 = min. ambient temperature of -50°C (only for C16 and Z16).
OV = Over-voltage protection
blank = no circuit for over-voltage protection
OV1 = response voltage < 500V;
OV2 = response voltage > 500V;
C = Coating
C = insulating coated. Not for use in EPL Ga (zone 0) and EPL Da (zone 20);
blank = not coated.
E = Earth connection

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SCHEDULE

Canadian Certificate Of Conformity No: FM18CA0144X

E = earth connection outside in place;
blank = no earth connection.

Each load cell model is available in the following configurations.

Type /Family I.S. :	Ex-String (see left: General type Plate) BT -Z-W-G-S-LLLL-TT-OV-C-E
C16	C16-I-S-H-S-S***-50---E
	C16-I-S-H-S-S***-50-OV1--E
C2	C2 -I-S-H-S-S***-30---E
C2A	C2 -I-S-H-S-S***-30---E
HLC	HLC-I-S-H-S-S***-30---
PW10	PW -I-A-P-S-S***-30---
PW12	PW -I-A-P-S-S***-30---
PW15	PW -I-S-P-S-S***-30---
PW15AH	PW -I-S-H-S-S***-30---
PW15PH	PW -I-S-H-S-P6**-30---
PW16	PW -I-A-P-S-S***-30---
PW22	PW -I-A-P-S-S***-30---
PW25	PW -I-S-H-S-S***-10---
PW27	PW -I-S-H-S-S***-10---
PW29	PW -I-S-H-S-S***-30---
PW4L	PW-I-A-P-S-V***-30---
PWS	PW -I-S-P-S-S***-30---
PWS[1)]	PW –I-S-H-N-S***-30---
PWS[1)]	PW –I-S-P-N-S***-30---
RSC	RSC-I-S-H-S-S***-30---
RTN	RTN-I-S-H-S-V***-30---E
RTN[1)]	RTN-I-S-H-C1-V***-30---E
SP4	PW -I-A-P-S-S***-30---
U2	U2 -I-S-H-S-S***-30---E
Z16	Z16-I-S-H-S-S***-50---E
	Z16-I-S-H-S-S***-50-OV1--E

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SCHEDULE

Canadian Certificate Of Conformity No: FM18CA0144X

Z6	Z6 -I-S-H-S-S***-30---
Z6[1)]	VBB -I-S-H-S-S***-30---
Z6R	Z6 -I-S-H-S-S***-30---
Z7	Z7 -I-W-P-S-S***-30---
	Z7 -I-S-P-S-S***-30---

1) Customized version for Private Labeler, VBB identical to Z6.

13. **Specific Conditions of Use:**

1. A portion of the enclosure is non-conducting and, under certain extreme conditions, may generate an ignition-capable level of electrostatic charges. The user shall ensure that the equipment is not installed in a location where it may be subjected to external conditions (such as high-pressure steam) which might cause a build-up of electrostatic charges on non-conducting surfaces. Additionally, cleaning of the equipment should be done only with a damp cloth.
2. The load cell models PWxx and SP4 (with option W = A) contain aluminum and are considered to constitute a potential risk of ignition by impact or friction. Care must be taken into account during installation to preclude impact or friction.

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**

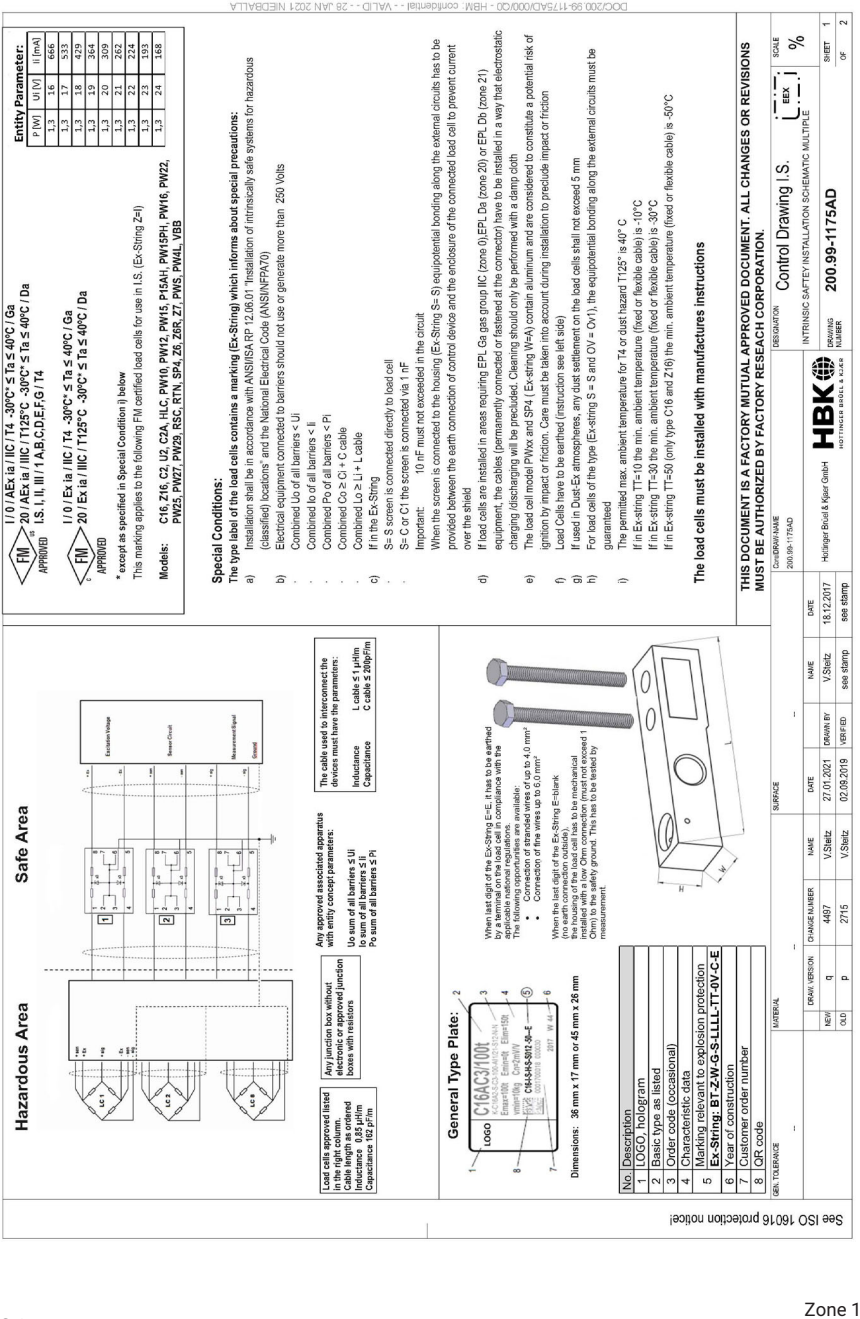
Details of the supplements to this certificate are described below:

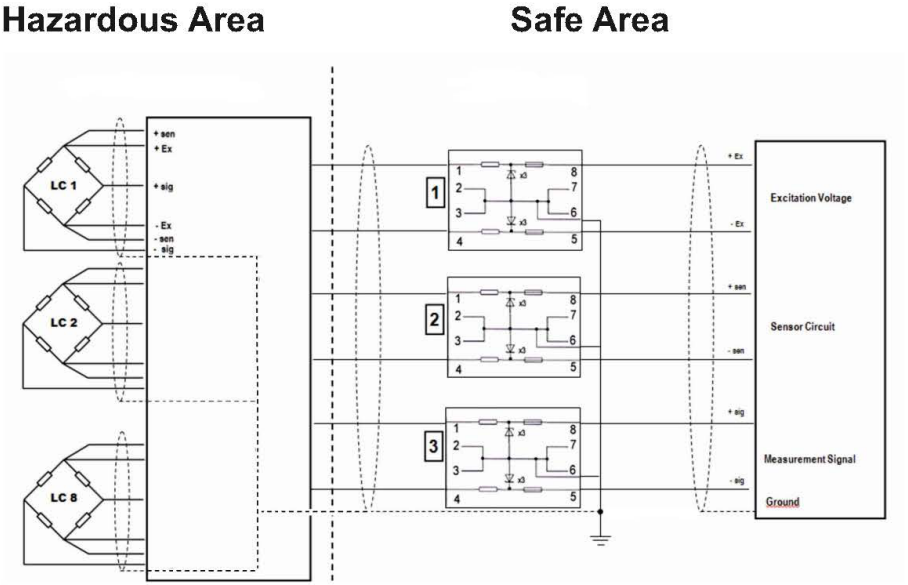
Date	Description
19th February 2019	Original Issue.
19th September 2019	Supplement 1 Report Reference: RR219546 dated 19th September 2019. Description of the Change: Changing the entity parameters. Adding variants to models RTN, Z6 and PWS.
12th February 2021	Supplement 2 Report Reference: RR226207 dated 12th February 2021. Description of the Change: Company name change.

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CONTROL DRAWING I.S.





Load cells approved listed in the right column.
Cable length as ordered
Inductance 0,85 µH/m
Capacitance 162 pF/m

Any junction box without electronic or approved junction boxes with resistors

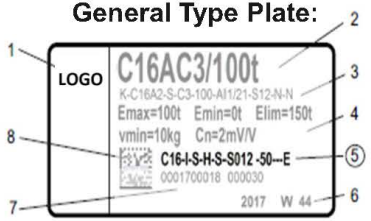
Any approved associated apparatus with entity concept parameters:

Uo sum of all barriers ≤ Ui
Io sum of all barriers ≤ Ii
Po sum of all barriers ≤ Pi

The cable used to interconnect the devices must have the parameters:

Inductance	L cable ≤ 1 µH/m
Capacitance	C cable ≤ 200pF/m

General Type Plate:



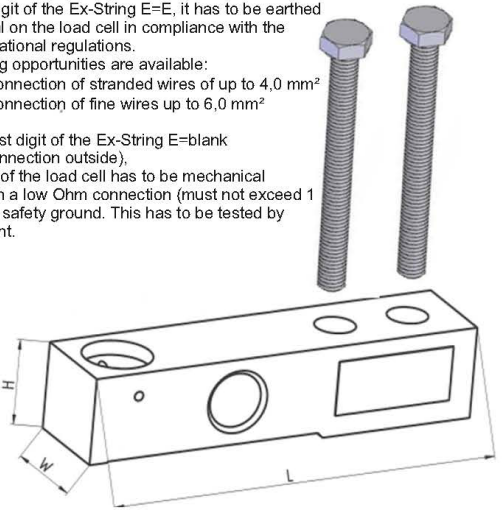
Dimensions: 36 mm x 17 mm or 45 mm x 26 mm

No.	Description
1	LOGO, hologram
2	Basic type as listed
3	Order code (occasional)
4	Characteristic data
5	Marking relevant to explosion protection
	Ex-String: BT-Z-W-G-S-LLLL-TT-0V-C-E
6	Year of construction
7	Customer order number
8	QR code

When last digit of the Ex-String E=E, it has to be earthed by a terminal on the load cell in compliance with the applicable national regulations.
The following opportunities are available:

- Connection of stranded wires of up to 4,0 mm²
- Connection of fine wires up to 6,0 mm²

When the last digit of the Ex-String E=blank (no earth connection outside),
the housing of the load cell has to be mechanical installed with a low Ohm connection (must not exceed 1 Ohm) to the safety ground. This has to be tested by measurement.



See ISO 16016 protection notice!

GEN. TOLERANCE	MATERIAL	SURFACE
--	--	--

	DRAW. VERSION	CHANGE NUMBER	NAME	DATE		NAME
NEW	q	4497	V.Steitz	27.01.2021	DRAWN BY	V.Steitz
OLD	p	2715	V.Steitz	02.09.2019	VERIFIED	see stamp

FM US APPROVED

I / 0 / AEx ia / IIC / T4 -30°C* ≤ Ta ≤ 40°C / Ga
20 / AEx ia / IIIC / T125°C -30°C* ≤ Ta ≤ 40°C / Da
I.S. I, II, III / 1 A,B,C,D,E,F,G / T4

FM C APPROVED

I / 0 / Ex ia / IIC / T4 -30°C* ≤ Ta ≤ 40°C / Ga
20 / Ex ia / IIIC / T125°C -30°C* ≤ Ta ≤ 40°C / Da

*** except as specified in Special Condition i) below**

This marking applies to the following FM certified load cells for use in I.S. (Ex-String Z=I)

Models: **C16, Z16, C2, U2, C2A, HLC, PW10, PW12, PW15, P15AH, PW15PH, PW16, PW22, PW25, PW27, PW29, RSC, RTN, SP4, Z6, Z6R, Z7, PWS, PW4L, VBB**

Entity Parameter:

P [W]	Ui [V]	Ii [mA]
1,3	16	666
1,3	17	533
1,3	18	429
1,3	19	364
1,3	20	309
1,3	21	262
1,3	22	224
1,3	23	193
1,3	24	168

Special Conditions:

The type label of the load cells contains a marking (Ex-String) which informs about special precautions:

a) Installation shall be in accordance with ANSI/ISA RP 12.06.01 "Installation of intrinsically safe systems for hazardous (classified) locations" and the National Electrical Code (ANSI/NFPA70)

b) Electrical equipment connected to barriers should not use or generate more than 250 Volts

- Combined Uo of all barriers < Ui
- Combined Io of all barriers < Ii
- Combined Po of all barriers < Pi
- Combined Co ≥ Ci + C cable
- Combined Lo ≥ Li + L cable

c) If in the Ex-String

- S= S screen is connected directly to load cell
- S= C or C1 the screen is connected via 1 nF

Important: 10 nF must not exceeded in the circuit

When the screen is connected to the housing (Ex-String S= S) equipotential bonding along the external circuits has to be provided between the earth connection of control device and the enclosure of the connected load cell to prevent current over the shield

M: confidential - - VALID - - 28 JAN 2021 NIEDBALLA

d) If load cells are installed in areas requiring EPL Ga gas group IIC (zone 0),EPL Da (zone 20) or EPL Db (zone 21) equipment, the cables (permanently connected or fastened at the connector) have to be installed in a way that electrostatic charging /discharging will be precluded. Cleaning should only be performed with a damp cloth

e) The load cell model PWxx and SP4 (Ex-string W=A) contain aluminum and are considered to constitute a potential risk of ignition by impact or friction. Care must be taken into account during installation to preclude impact or friction

f) Load Cells have to be earthed (instruction see left side)

g) If used in Dust-Ex atmospheres, any dust settlement on the load cells shall not exceed 5 mm

h) For load cells of the type (Ex-string S = S and OV = Ov1), the equipotential bonding along the external circuits must be guaranteed

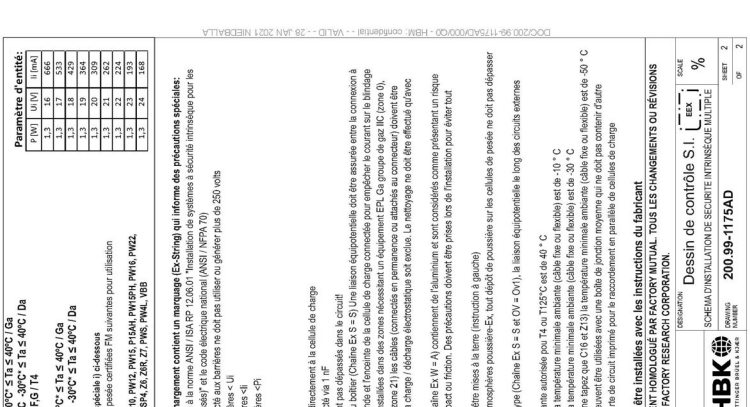
i) The permitted max. ambient temperature for T4 or dust hazard T125° is 40° C
If in Ex-string TT=10 the min. ambient temperature (fixed or flexible cable) is -10°C
If in Ex-string TT=30 the min. ambient temperature (fixed or flexible cable) is -30°C
If in Ex-string TT=50 (only type C16 and Z16) the min. ambient temperature (fixed or flexible cable) is -50°C

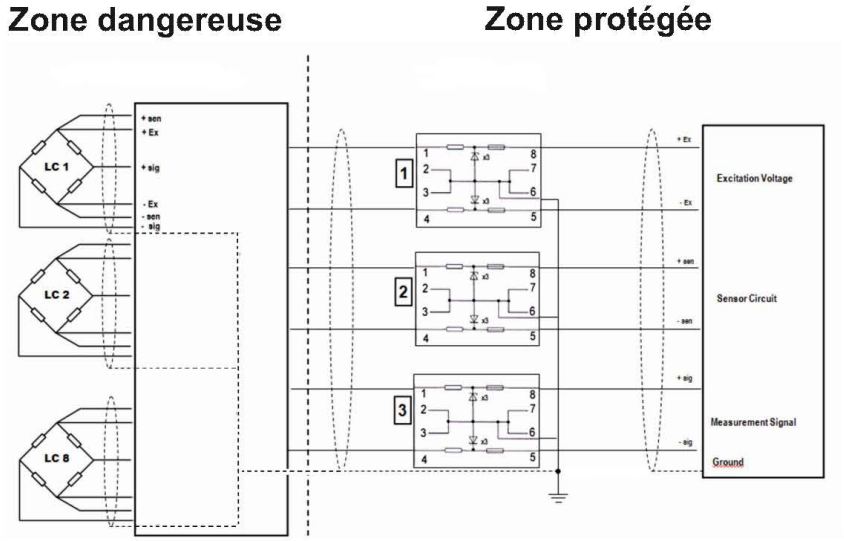
The load cells must be installed with manufactures instructions

THIS DOCUMENT IS A FACTORY MUTUAL APPROVED DOCUMENT. ALL CHANGES OR REVISIONS MUST BE AUTHORIZED BY FACTORY RESEACH CORPORATION.

	CorelDRAW-NAME: 200.99-1175AD	DESIGNATION: Control Drawing I.S. EEX	SCALE: %
DATE: 18.12.2017 see stamp	Hottinger Brüel & Kjaer GmbH HBK HOTTINGER BRÜEL & KJÆR	INTRINSIC SAFTEY INSTALLATION SCHEMATIC MULTIPLE	
		DRAWING NUMBER: 200.99-1175AD	SHEET 1 OF 2

DESSIN DE CÔNTROLE S.I.





Cellules de charge approuvées figurant dans la colonne de droite.
Longueur de câble comme commandé
Inductance 0,85 µH / m
Capacité 162 pF / m

Chaque boîtier de raccordement sans électronique ou des boîtiers de raccordement homologués avec des résistances

Tout appareil approuvé avec des paramètres de concept :

Uo somme de toutes les barrières ≤ Ui
Io somme de toutes les barrières ≤ Ii
Po somme de toutes les barrières ≤ Pi

Le câble utilisé pour connecter le les appareils doivent avoir les paramètres suivants:
Inductance L câble ≤ 1 µH / m
Câble de capacitance C ≤ 200pF / m
Longueur maximale: 100 m

Plaque d'identification générale:



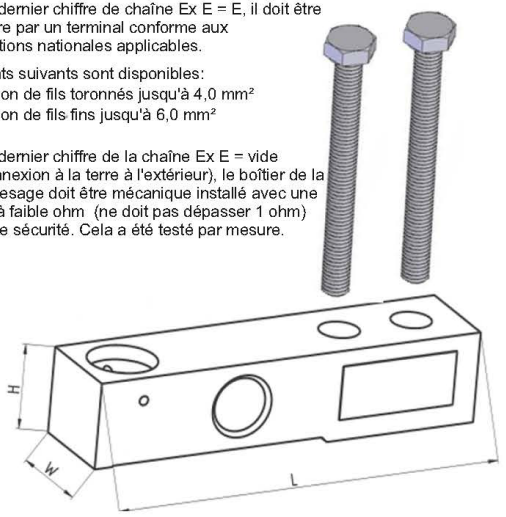
Dimensions: 36 mm x 17 mm or 45 mm x 26 mm

No.	Description
1	LOGO, hologram
2	trapez comme indiqué
3	code de commande (occasionnel)
4	Données caractéristiques
5	Marquage pertinent pour la protection contre les explosions
	Chaîne Ex: BT-Z-W-G-S-LLLL-TT-0V-C-E
6	Année de construction
7	Numér de commande client
8	QR Code

Lorsque le dernier chiffre de chaîne Ex E = E, il doit être mis à la terre par un terminal conforme aux réglementations nationales applicables.

Les éléments suivants sont disponibles:
- Connexion de fils toronnés jusqu'à 4,0 mm²
- Connexion de fils fins jusqu'à 6,0 mm²

Lorsque le dernier chiffre de la chaîne Ex E = vide (pas de connexion à la terre à l'extérieur), le boîtier de la cellule de pesage doit être mécanique installé avec une connexion à faible ohm (ne doit pas dépasser 1 ohm) au terrain de sécurité. Cela a été testé par mesure.



See ISO 16016 protection notice!

GEN. TOLERANCE	MATERIAL	SURFACE
--	--	--

	DRAW. VERSION	CHANGE NUMBER	NAME	DATE		NAME
NEW	q	4497	V.Steitz	27.01.2021	DRAWN BY	V.Steitz
OLD	p	2715	V.Steitz	02.09.2019	VERIFIED	see stamp

FM US APPROVED

I / 0 / AEx ia / IIC / T4 -30°C* ≤ Ta ≤ 40°C / Ga
20 / AEx ia / IIIC / T125°C -30°C* ≤ Ta ≤ 40°C / Da
I.S. I, II, III / 1 A,B,C,D,E,F,G / T4

FM C APPROVED

I / 0 / Ex ia / IIC / T4 -30°C* ≤ Ta ≤ 40°C / Ga
20 / Ex ia / IIIC / T125°C -30°C* ≤ Ta ≤ 40°C / Da

*** sauf comme spécifié dans la condition spéciale i) ci-dessous**

Ce marquage s'applique aux cellules de pesée certifiées FM suivantes pour utilisation en I.S. (Chaîne Ex Z = I)

Modèles: C16, Z16, C2, U2, C2A, HLC, PW10, PW12, PW15, P15AH, PW15PH, PW16, PW22, PW25, PW27, PW29, RSC, RTN, SP4, Z6, Z6R, Z7, PWS, PW4L, VBB

Paramètre d'entité:

P [W]	Ui [V]	Ii [mA]
1,3	16	666
1,3	17	533
1,3	18	429
1,3	19	364
1,3	20	309
1,3	21	262
1,3	22	224
1,3	23	193
1,3	24	168

Conditions spéciales:

L'étiquette de type des cellules de chargement contient un marquage (Ex-String) qui informe des précautions spéciales:

a) L'installation doit être conforme à la norme ANSI / ISA RP 12.06.01 "Installation de systèmes à sécurité intrinsèque pour les emplacements dangereux (classés)" et le code électrique national (ANSI / NFPA 70)

b) L'équipement électrique connecté aux barrières ne doit pas utiliser ou générer plus de 250 volts

- Uo combiné de toutes les barrières < Ui
- Io combiné de toutes les barrières <Ii
- Po combiné de toutes les barrières <Pi
- Co combiné ≥ Câble Ci + C
- Lo combiné ≥ câble Ii + L

c) Si dans l'ex-string

- S = S L'écran est connecté directement à la cellule de charge
- S = C ou C1 l'écran est connecté via 1 nF

C'est important: 10 nF ne seront pas dépassés dans le circuit!

Lorsque l'écran est connecté au boîtier (Chaîne Ex S = S) Une liaison équipotentielle doit être assurée entre la connexion à la terre du dispositif de commande et l'enceinte de la cellule de charge connectée pour empêcher le courant sur le blindage

ntial - - VALID - - 28 JAN 2021 NIEDBALLA

d) Si des cellules de pesée sont installées dans des zones nécessitant un équipement EPL Ga groupe de gaz IIC (zone 0), EPL Da (zone 20) ou EPL Db (zone 21) les câbles (connectés en permanence ou attachés au connecteur) doivent être installés de manière à ce que la charge / décharge électrostatique soit exclue. Le nettoyage ne doit être effectué qu'avec un chiffon humide

e) Les capteurs PWxx et SP4 (Chaîne Ex W = A) contiennent de l'aluminium et sont considérés comme présentant un risque potentiel d'inflammation par impact ou friction. Des précautions doivent être prises lors de l'installation pour éviter tout impact ou frottement

f) Les cellules de charge doivent être mises à la terre (instruction à gauche)

g) En cas d'utilisation dans des atmosphères poussière-Ex, tout dépôt de poussière sur les cellules de pesée ne doit pas dépasser 5 mm

h) Pour les cellules de pesée de type (Chaîne Ex S = S et OV = Ov1), la liaison équipotentielle le long des circuits externes doit être garantie

i) La température minimale ambiante autorisée pou T4 ou T125°C est de 40 ° C
Si dans la Chaîne Ex TT = 10 la température minimale ambiante (câble fixe ou flexible) est de -10 ° C
Si dans la Chaîne Ex TT = 30 la température minimale ambiante (câble fixe ou flexible) est de -30 ° C
Si dans la Chaîne Ex TT = 50 (ne tapez que C16 et Z13) la température minimale ambiante (câble fixe ou flexible) est de -50 ° C

j) Plusieurs cellules de pesage peuvent être utilisées avec une boîte de jonction moyenne qui ne doit pas contenir d'autre appareil électronique qu'une carte de circuit imprimé pour le raccordement en parallèle de cellules de charge

Les cellules de charge doivent être installées avec les instructions du fabricant

CE DOCUMENT EST UN DOCUMENT HOMOLOGUÉ PAR FACTORY MUTUAL. TOUS LES CHANGEMENTS OU RÉVISIONS DOIVENT ÊTRE AUTORISÉS PAR FACTORY RESEARCH CORPORATION.

	CorelDRAW-NAME 200.99-1175AD	DESIGNATION Dessin de contrôle S.I. EEX SCHEMA D'INSTALLATION DE SECURITE INTRINSÈQUE MULTIPLE	SCALE %
DATE 18.12.2017 see stamp	Hottinger Brüel & Kjaer GmbH HBK HOTTINGER BRÜEL & KJÆR	DRAWING NUMBER 200.99-1175AD	SHEET 2 OF 2

DOC/200.99-1175AD/000/Q0 - HBM: confidential

防 爆 合 格 证

证 号：GYJ21.3313X

由 Hottinger Brüel & Kjaer GmbH 制造的产品：
（地址：Im Tiefen See 45, 64293 Darmstadt, Germany）

名 称 称重传感器

型号规格 a b - c - d - e - f g - h - i - j

防爆标志 Ex ia Ⅰ Ma, Ex ia Ⅰ Mb, Ex ia ⅡC T4/T6 Ga, Ex ia ⅡC T4/T6 Gb, Ex iaD 20 T125, Ex iaD 21 T125, Ex nA ⅡC T4/T6 Gc, Ex tD A21 IP67 T125℃

产品标准 /

图样编号 1.1109-131、1.1515-131、1.1608-131、1.1800-1311.2230-131、2.1010-400、2.3040-400、2.3055-400、2.4014-131、2.4020-131、2.4101-131、200.00-9220.3、200.00-9221.3、200.00-9222.3、200.00-9223.3、200.00-9224.3、200.00-9225.3、200.00-9226.3、200.00-9226AD、200.00-9220AD、1.1413-131

经图样及技术文件的审查和样品检验，确认上述产品符合 GB 3836.1-2010, GB 3836.4-2010, GB 3836.20-2010, GB 3836.8-2014, GB 12476.1-2013, GB 12476.4-2010, GB 12476.5-2013 标准，

特颁发此证。

本证书有效期：2021 年 10 月 18 日至 2026 年 10 月 17 日

备注
1. 安全使用注意事项见本证书附件。
2. 证书编号后缀“X”表明产品具有安全使用特殊条件，内容见本证书附件。
3. 型号规格说明见本证书附件。
4. 本安电气参数见本证书附件。
5. 本证书同时适用于霍丁格必凯（苏州）电子测量技术有限公司（地址：江苏省苏州市高新区横山路 106 号）生产的同型号产品。

站长

国家级仪器仪表防爆安全监督检验站

颁发日期 二〇二一 年 十 月 十八 日

本证书仅对与认可文件和样品一致的产品有效。

地址：上海市漕宝路103号 网址：www.nepsi.org.cn 电话：+86 21 64368180
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版本05

EXPLOSION PROTECTION
CERTIFICATE OF CONFORMITY

Cert NO.GYJ21.3313X

This is to certify that the product

	Load Cell
manufactured by	Hottinger Brüel & Kjaer GmbH
	(Address:Im Tiefen See 45, 64293 Darmstadt, Germany)
which model is	a b - c - d - e - f g - h - i - j
Ex marking	Ex ia Ⅰ Ma, Ex ia Ⅰ Mb, Ex ia ⅡC T4/T6 Ga, Ex ia ⅡC T4/T6 Gb, Ex iaD 20 T125℃, Ex iaD 21 T125℃, Ex nA ⅡC T4/T6 Gc, Ex tD A21 IP67 T125℃
product standard	/
drawing number	1.1109-131、1.1515-131、1.1608-131、1.1800-1311.2230-131、2.1010-400、2.3040-400、2.3055-400、2.4014-131、2.4020-131、2.4101-131、200.00-9220.3、200.00-9221.3、200.00-9222.3、200.00-9223.3、200.00-9224.3、200.00-9225.3、200.00-9226.3、200.00-9226AD、200.00-9220AD、1.1413-131

has been inspected and certified by NEPSI, and that it conforms to GB 3836.1-2010,GB 3836.4-2010,GB 3836.20-2010,GB 3836.8-2014, GB 12476.1-2013,GB 12476.4-2010,GB 12476.5-2013.

This Approval shall remain in force until 2026.10.17

Remarks
1.Conditions for safe use are specified in the attachment(s) to this certificate.
2.Symbol "X" placed after the certification number denotes specific conditions of use, which are specified in the attachment(s) to this certificate.
3.Model designation is specified in the attachment(s) to this certificate.
4.Intrinsic safety parameters specified in the attachment(s) to this certificate.
5.This certificate is also applicable for the product with the same type manufactured by Hottinger Bruel & Kjaer Co.,Ltd. (address: No.106 HengShan Road, Suzhou, Jiangsu Province, China).

Director

National Supervision and Inspection Centre for Explosion Protection and Safety of Instrumentation

Issued Date 2021.10.18

This Certificate is valid for products compatible with the documents and samples approved by NEPSI.

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Edition 05

国家级仪器仪表防爆安全监督检验站

National Supervision and Inspection Centre for Explosion Protection and Safety of Instrumentation

(GYJ21.3313X) (Attachment Ⅰ)

GYJ21.3313X 防爆合格证附件Ⅰ

由Hottinger Brüel & Kjaer GmbH和霍丁格必凯（苏州）电子测量技术有限公司生产的*a b - c - d - e - f g - h - i - j*型称重传感器，经国家级仪器仪表防爆安全监督检验站(NEPSI)检验，符合下列标准：

GB 3836.1-2010 爆炸性环境 第1部分：设备 通用要求

GB 3836.4-2010 爆炸性环境 第4部分：由本质安全型“i”保护的设备

GB 3836.8-2010 爆炸性环境 第8部分：由 “n”型保护的设备

GB 3836.20-2010 爆炸性环境 第20部分：设备保护级别（EPL）为Ga级的设备

GB 12476.1-2013 可燃性粉尘环境用电气设备 第1部分：通用要求

GB 12476.4-2010 可燃性粉尘环境用电气设备 第4部分：本质安全型“iD”

GB 12476.5-2013 可燃性粉尘环境用电气设备 第5部分：外壳保护型“tD”

产品防爆标志为：Ex ia Ⅰ Ma，Ex ia Ⅰ Mb，Ex ia ⅡC T4/T6 Ga，Ex ia ⅡC T4/T6 Gb，Ex nA ⅡC T4/T6 Gc，Ex iaD 20 T125，Ex iaD 21 T125，Ex tD A21 IP67 T125℃，防爆合格证号为GYJ21.3313X。

本证书认可的产品为：*a b - c - d - e - f g - h - i - j*，其中

a 可选代码为：C2，U2，HLC，PW，RSC，RTN，SP4，Z6，Z6R，Z7，C16，Z16

b 可选代码为：I，N 或空

c 可选代码为：S，A，W

d 可选代码为：H，P

e 可选代码为：S，C，C1，C2，C5，N 或空

f 可选代码为：V，S，P4，P6

g 可选代码为：10，25，30，50

h 可选代码为：OV1，OV2 或空

i 可选代码为：C 或空

j 可选代码为：E 或空

一、 产品安全使用特定条件

证书编号后缀“X”表明产品具有安全使用特殊条件：

1. 当铝合金外壳产品在使用在要求设备保护等级为Ga的爆炸性环境时，须采用额外防护措施，防止由于冲击或摩擦引起的点燃危险。

2. 型号为*a b* - S - *d - e - f g - h - i - j* 或*a b - c - d - e - f g* – OV1 - *i - j* 的产品无法通过500V绝缘节点强度试验，安装时需要特殊考虑。

3. 型号为*a b - c - d - e - f g - h* - C - *j* 的产品不能在要求设备保护等级为Ga和Da的爆炸性环境使用。

4. 型号为*a* N - *c - d - e* - V *g - h - i – j*和*a* N - *c - d - e* - S *g - h - i - j*的产品为永久电缆引入连接方式，应有适当措施连接电缆的自由端，且电缆必须有防止机械损伤的保护。

5. 如果产品的防爆型式为Ex nA，则其使用区域的污染等级应不高于GB/T16935.1-2008定义的2级。

二、 产品使用注意事项

1. 产品最高使用环境温度与防爆标志关系如下表：

产品最高使用环境温度	产品防爆标志
+30℃	Ex ia Ⅰ Ma，Ex ia Ⅰ Mb，Ex ia ⅡC T6 Ga，Ex ia ⅡC T6 Gb，Ex nA ⅡC T6 Gc，Ex iaD 20 T125℃，Ex iaD 21 T125℃，Ex tD A21 IP67 T125℃
+70℃	Ex ia Ⅰ Ma，Ex ia Ⅰ Mb，Ex ia ⅡC T4 Ga，Ex ia ⅡC T4 Gb， Ex nA ⅡC T4 Gc，Ex iaD 20 T125℃，Ex iaD 21 T125℃，Ex tD A21 IP67 T125℃

2. 产品最低使用环境温度与型号关系如下

产品最低使用环境温度	产品型号
-10℃	*a b - c - d - e - f* 10 - *h - i - j*
-25℃	*a b - c - d - e - f* 25 - *h - i - j*
-30℃	*a b - c - d - e - f* 30 - *h - i - j*
-50℃	*a b - c - d - e - f* 50 - *h - i - j*

3. 型号为*a* I - *c - d - e - f g - h - i - j* 的产品本安参数如下：

最大输入电压 U_i (V)		D.C. 30	
最大输入电流 I_i (mA)		500	
最大输入功率 P_i (W)		4	
最大内部等效参数	C_i (μF)	当产品型号为： *a* I - *c - d - e* - V *g - h - i – j* *a* I - *c - d - e* - S *g - h - i - j*	电缆参数162pF/m
		其他型号	≈0
	L_i (mH)	当产品型号为： *a* I - *c - d - e* - V *g - h - i – j* *a* I - *c - d - e* - S *g - h - i - j*	电缆参数0.85μH/m
		其他型号	≈0

4. 防爆标志为Ex ia Ⅰ Ma，Ex ia Ⅰ Mb，Ex ia ⅡC T4/T6 Ga，Ex ia ⅡC T4/T6 Gb，Ex iaD 20 T125℃和Ex iaD 21 T125℃的产品必须与已通过防爆认证的关联设备配套共同组成本安防爆系统方可使用于爆炸性气体环境。其系统接线必须同时遵守称重传感器和所配关联设备的使用说明书要求，接线端子不得接错。

5. 产品外壳防护等级为： IP67。

6. 型号为 a b - c - d - e - f g - h - i - E 的产品外壳设有接地端子，用户在安装使用时应可靠接地。

7. 用户不得自行更换该产品的零部件，应会同产品制造商共同解决运行中出现的故障，以杜绝损坏现象的发生。

8. 用户在安装、使用和维护控制箱时，须同时严格遵守产品使用说明书和下列标准：

GB3836.13-2013 “爆炸性环境第13部分：设备的修理、检修、修复和改造”

GB/T 3836.15-2017 爆炸性环境 第15部分：电气设备的设计、选型和安装

GB/T 3836.16-2017 爆炸性环境 第16部分：电气装置的检查和维护

GB/T 3836.18-2017 爆炸性环境 第18部分： 本质安全电气系统

GB 50257-2014 “电气装置安装工程爆炸和火灾危险环境电力装置施工及验收规范”

GB 15577-2018 粉尘防爆安全规程

三、 制造厂责任

1. 制造厂必须将上述使用注意事项纳入产品的使用说明书中。
2. 制造厂必须严格按照NEPSI认可的文件资料生产。
3. 涉及产品防爆性能和温度的更改和维修，需提交NEPSI重新检验认可。
4. 产品铭牌中应至少包括下列内容：

a) NEPSI认可标志
b) 产品防爆标志
c) 防爆合格证号
d) 使用环境温度范围

国家级仪器仪表防爆安全监督检验站
二〇二一年十月十八日

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