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- [1] **EU-TYPE EXAMINATION CERTIFICATE**
- [2] Equipment and protective systems intended for use in potentially explosive atmospheres.
Directive 2014/34/EU
- [3] EU – type examination certificate (module B):
KDB 17ATEX0066X **issue 0**
- [4] Equipment :
Weighing indicator of PUE HX5.EX-* type
Scale of HX5.EX-* type
- [5] Manufacturer:
RADWAG WAGI ELEKTRONICZNE Witold Lewandowski
- [6] Address:
ul. Bracka 28, 26-600 Radom, POLAND
- [7] This product and any acceptable variation thereto is specified in the schedule to this certificate.
- [8] Główny Instytut Górnictwa, Notified Body number 1453 in accordance with Directive 2014/34/EU of 26 February 2014, certifies that this equipment or protective system has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres given in Annex II to the Directive 2014/34/EU. The examination and test results are recorded in confidential report **KDB No. 17.086 [T-7491]**
- [9] Compliance with the Essential Health and Safety Requirements has been met by compliance with:
EN 60079-0:2012 + A11:2013; EN 60079-11:2012
- [10] In case if the sign „X“ is placed after the certificate number, it indicates special conditions for safe use, specified in the schedule to this certificate.
- [11] This EU-type examination certificate relates only to the construction, evaluation and tests of product accordance with Directive 2014/34/EU. The certificate does not include other requirements of the Directive relating to manufacturing process and putting into the market of the equipment or protective device.
- [12] Equipment marking in accordance with point 15 of this document.



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mgr inż. Piotr Madej

ATEX Certification
Specialist



KIEROWNIK
Zespołu Certyfikacji Wyrobów
KG "BARBARA" Mikołów

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Page 1 of 4

Główny Instytut Górnictwa, 40-166 Katowice, Plac Gwarków 1, POLAND, www.gig.eu
(Certification Body-Certification Team-Kopalnia Doświadczalna "Barbara" Mikołów)
Certification Body accredited by PCA, Nr AC038

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Issue 0 is the initial certification. The document without signatures and seals is invalid.



[15] Description:

The Weighing indicator of PUE HX5.EX-* type is an intrinsically safe equipment featuring analog interface for cooperation with load cells, RS232 and RS485 communication interfaces, and digital inputs and outputs. Weighing indicator is a measuring equipment used for designing and construction of scales of HX5.EX-* type.

Indicator's housing is made of stainless steel, it guarantees IP66/IP68 ingress protection. At the back of the indicator's housing, cable glands and ports for connecting external devices are mounted.

Depending on indicator's interfaces set, the following marking of indicator type is applied: PUE HX5.EX-tt, where "tt" stands for:

- "-1": standard design equipped with A/D converter input, two RS232 interfaces and two RS485 interfaces;
- "-2": standard design expanded with four digital isolated inputs and outputs,
- "-3": standard design expanded with four digital isolated inputs,
- "-4": standard design expanded with four digital isolated outputs.

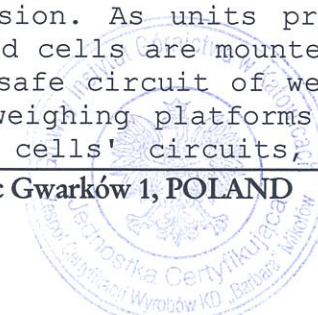
Weighing indicator marking:

	II 2G Ex ib IIC T4 Gb	or
	II 2D Ex ib IIIC T60°C Db	or
	II 2G Ex ib IIC T4 Gb II 2D Ex ib IIIC T60°C Db	

Weighing indicator is powered using power supply, with intrinsically safe output circuit, of PM01.EX-1 or PM01.EX-2 type, manufactured by Radwag WAGI ELEKTRONICZNE Witold Lewandowski, Radom, explosion safety of which has been approved by EU type examination certificate EU KDB 17ATEX0063X, and marking of which is:

- PM01.EX-1		II 2G Ex eb mb [ib] IIC T4 Gb II 2D Ex tb [ib] IIIC T60°C Db	or
- PM01.EX-2		II (2)G [Ex ib Gb] IIC II (2)D [Ex ib Db] IIIC.	

On the basis of the above listed PUE HX5.EX-* indicator types, after connecting it to a weighing platform, a scale is constructed. Weighing platform may be comprised of a single load carrier or of multiple load carriers (mechanically separated). The platform is made of stainless steel or steel protected against corrosion. As units processing mass, certified load cells are used, which load cells are mounted to the platform and powered from an intrinsically safe circuit of weighing indicator of PUE HX5.EX-* type. In case of weighing platforms with multiple load carriers, for connection of load cells' circuits, an additional



[13]
[14]

SCHEDULE
EU-type Examination Certificate
KDB 17ATEX0066X issue 0



housing made of stainless steel, guaranteeing IP66/68 ingress protection, is used.

The following method of coding scale type is applied: HX5.EX-tt.vv.xx.zz, where respective symbols stand for:

- „tt”: digit „1” ... „4” corresponding to interfaces set of the above listed type of PUE HX5.EX-* indicator;
- „vv”: quantity of load cells mounted to the weighing platform, values „2”... „8” (lack of any value stands for „1”) and additional symbols „N”, „P”, „P2”;
- „xx”: platform capacity;
- „zz”: construction-related details (platform size, material, shape).

Scale marking:

	II 2G Ex ib IIB T4 Gb	or
	II 2G Ex ib IIC T4 Gb	or
	II 2D Ex ib IIIC T60°C...135°C* Db	or
	II 2G Ex ib IIC T4 Gb II 2D Ex ib IIIC T60°C...135°C* Db	

* Scale temperature is conditioned by temperature of used load cell in accordance with respective EC or EU type examination certificate.

Technical parameters:

Ambient temperature range: - 10°C do + 40°C

Indicator's ingress protection: IP66/68

Intrinsic safety parameters:

- power supply, marked as PM01.EX, with permanently fixed cable, from power supply, with an intrinsically safe output circuit, of PM01.EX-1 or PM01.EX-2 type,
- analog interface, marked as PLATFORM, with permanently fixed cable (used to connect load cells): $U_o=5,88V$, $I_o=87mA$, $P_o=0,51W$, $C_o=1\mu F$, $L_o=110\mu H$;
- digital interfaces with permanently fixed cables:
 - OUT cables pairs (outputs):
1-2, 3-4, 5-6, 7-8: $U_i=30V$, $I_i=any\ value$, $P_i=0,49W$, L_i , C_i - negligibly small;
 - IN cables pairs (inputs):
1-2, 3-4, 5-6, 7-8: $U_i=30V$, $I_i=any\ value$, $P_i=any\ value$, L_i , C_i - negligibly small;
 - 9-10 OUT cable pair and 9-10 IN cable pair (parallel connected): $U_o=13,65V$, $I_o=42mA$, $P_o=0,52W$, total value C_o and L_o is: $C_o=0,49\mu F$, $L_o=0,5mH$, respectively.

Circuits of digital interfaces, IN and OUT, marked as numbers 1-2, 3-4, 5-6, 7-8 are galvanically isolated one from another and from remaining circuits of the device;



[13]
[14]

SCHEDULE
EU-type Examination Certificate
KDB 17ATEX0066X issue 0



- RS232 interface, connectors marked as RS232(1), RS232(2):
 $U_o=23,6V(\pm 11,8V)$, $I_o=81mA$; $P_o=0,51W$, $C_o=100nF$, $L_o=0,5mH$, L_i , C_i - negligibly small, $U_i=24,2V(\pm 12,1V)$, $I_i=40mA$, P_i -any value;
- RS485 interface, connectors marked as RS485, IM01.EX:
 $U_o=5,88V$, $I_o=55mA$, $P_o=81mW$, $C_o=1,7\mu F$, $L_o=5mH$, L_i , C_i - negligibly small, $U_i=6V$, $I_i=65mA$.

[16] Test report:

„Sprawozdanie z oceny ATEX” (ATEX Assessment Report)
KDB Nr 17.086.

[17] Special conditions for safe use:

- The indicator must be powered using exclusively PM01.EX-1 or PM01.EX-2 power supply, both of them manufactured by RADWAG WAGI ELEKTRONICZNE Witold Lewandowski, Radom, EU type examination certificate KDB 17ATEX0063X.
- Caution - ELECTROSTATIC HAZARDS - read manual.
- Device with permanently connected cables - read manual.
- For the purpose of designing the weighing platform, it is necessary to use intrinsically safe load cells only with level of protection "ia" or "ib", according with ATEX 94/9/EC or ATEX 2014/34/EU directive, and meeting requirements for group II, category 1 or 2, respectively to particular explosion risk.

[18] Essential health and safety requirements:

Met by compliance with standards listed below:

EN 60079-0:2012 + A11:2013; EN 60079-11:2012
(PN-EN 60079-0:2013-03+A11:2014-03, PN-EN 60079-11:2012)

Document's history:

- EU-Type Examination Certificate KDB 17ATEX0066X, **this document**.

