



IECEX Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification Scheme for Explosive Atmospheres

for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.: IECEx SEV 18.0016X

Issue No: 0

Certificate history:

Issue No. 0 (2018-06-20)

Status: **Current**

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Date of Issue: **2018-06-20**

Applicant: **Eilersen Electric A/S**
Kokkedal Industripark 4
DK-2980 Kokkedal
Denmark

Equipment: **Weighing System 4000 (See Annexe for Exact Types)**

Optional accessory:

Type of Protection: **Intrinsic safety "ia"**

Marking:

Power Supply Module:

[Ex ia Gb]

[Ex ia Db]

IF-Modules:

[Ex ia Gb] IIC

[Ex ia Db] IIIC:

Load Cells:

Ex ia IIC T6 Gb

Ex ia III C T85°C Db

Approved for issue on behalf of the IECEx
Certification Body:

Martin Plüss

Position:

Manager Product Certification

Signature:

(for printed version)

Date:

2018-06-20

1. This certificate and schedule may only be reproduced in full.
2. This certificate is not transferable and remains the property of the issuing body.
3. The Status and authenticity of this certificate may be verified by visiting the [Official IECEx Website](http://www.iecex.com).

Certificate issued by:

Electrosuisse div. Testing and Certification
Luppenstrasse 3
CH-8320 FEHRALTORF
Switzerland



Electrosuisse
Product Testing



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Date of Issue: **2018-06-20** Page 2 of 3
Manufacturer: **Eilersen Electric A/S**
Kokkedal Industripark 4
DK-2980 Kokkedal
Denmark

Additional Manufacturing location(s):

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements. This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended.

STANDARDS:

The apparatus and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards:

IEC 60079-0 : 2011 Explosive atmospheres - Part 0: General requirements
Edition:6.0
IEC 60079-11 : 2011 Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
Edition:6.0

*This Certificate **does not** indicate compliance with electrical safety and performance requirements other than those expressly included in the Standards listed above.*

TEST & ASSESSMENT REPORTS:

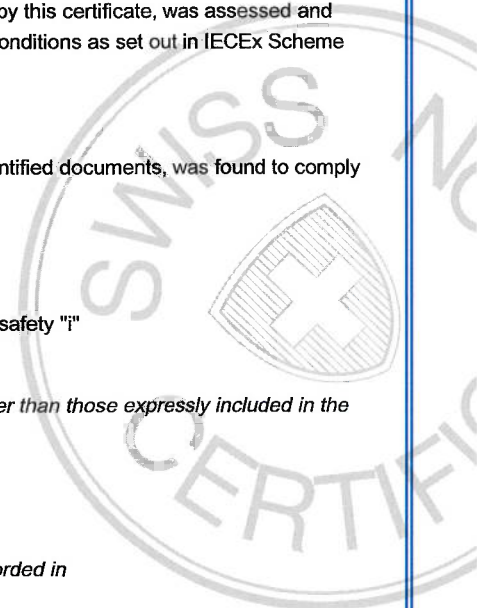
A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in

Test Report:

[CH/SEV/ExTR18.0018/00](#)

Quality Assessment Report:

[SE/SP/QAR17.0001/00](#)





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Schedule

EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

The weighing system 4000 consists of power supply module type 4051A, IF module types 4015A, 4040A and 4040B, and weighing cells types CL-Ex, CM-Ex, CH-Ex, BL-Ex, BM-Ex, BH-Ex, XBL-Ex, XBM-Ex, XBH-Ex, HBL-Ex, HBM-Ex, HBH-Ex, TL-Ex, TM-Ex, DLC-Ex, DXLC-Ex, ELCL-Ex.

The power supply module type 4051A is used for the intrinsically safe supply of power to the IF module types 4015A, 4040A and 4040B. The power supply module is an accessory device with an intrinsically safe prelimiter "[Ex ia]" and power circuits in "[Ex ia] IIC" type of explosion protection installed outside of the area at risk.

The IF module is used to supply the weighing cells and galvanically disconnected signal transmission to the evaluation devices. The IF module is an accessory device in "[Ex ia] IIC" type of explosion protection installed outside of the area at risk.

The modules are mounted in a module carrier house provided for installation into a module rack. The module carrier housing - the protective housing of the module has IP20 type of protection or more.

The weighing cells are intrinsically safe equipment in "Ex ia IIC" type of protection that may be installed within the area of risk. The weighing cells are connected to the IF module using a screened coaxial cable and a BNC plug. Up to four weighing cells can be connected to an IF module.

SPECIFIC CONDITIONS OF USE: YES as shown below:

For detailed Conditions See Annexe to certificate

Annex:

[IECEX SEV 18.0016 X Annexe Issue 0.pdf](#)

Annexe to: IECEx SEV 18.0016 X**Issue No.: 0**
page 1 of 4**Applicant Name:** Eilersen Electric A/S
Kokkedal Industripark 4, DK-2980 Kokkedal, Denmark
Electrical Apparatus: Weighing System 4000**Description**

The weighing system 4000 consists of power supply module type 4051A, IF module types 4015A, 4040A and 4040B, and weighing cells types CL-Ex, CM-Ex, CH-Ex, BL-Ex, BM-Ex, BH-Ex, XBL-Ex, XBM-Ex, XBH-Ex, HBL-Ex, HBM-Ex, HBH-Ex, TL-Ex, TM-Ex, DLC-Ex, DXLC-Ex, ELCL-Ex.

The power supply module type 4051A is used for the intrinsically safe supply of power to the IF module types 4015A, 4040A and 4040B. The power supply module is an accessory device with an intrinsically safe prelimiter "[Ex ia]" and power circuits in "[Ex ia] IIC" type of explosion protection installed outside of the area at risk.

The IF module is used to supply the weighing cells and galvanically disconnected signal transmission to the evaluation devices. The IF module is an accessory device in "[Ex ia] IIC" type of explosion protection installed outside of the area at risk.

The modules are mounted in a module carrier house provided for installation into a module rack. The module carrier housing - the protective housing of the module has IP20 type of protection or more.

The weighing cells are intrinsically safe equipment in "Ex ia IIC" type of protection that may be installed within the area of risk. The weighing cells are connected to the IF module using a screened coaxial cable and a BNC plug. Up to four weighing cells can be connected to an IF module.

Type reference:**Power supply module type:**
4051A

IF module types:	with interface types:	
4015A	4-20mA	4X79A
4040A	Profibus DP	4X35A
4040B	DeviceNet	4X37A
	RS485	4X40A
	EtherNet/IP	4X50A
	EtherCAT	4X60A
	PROFINET	4X70A

weighing cell types:

CL-Ex	XBL-Ex	TL-Ex
CM-Ex	XBM-Ex	TM-Ex
CH-Ex	XBH-Ex	DLC-Ex
BL-Ex	HBL-Ex	DXLC-Ex
BM-Ex	HBM-Ex	ELCL-Ex
BH-Ex	HBH-Ex	

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Intrinsically safe Ratings:
Power Supply Module Type 4051A

Power Input circuit

 Rated voltage $U_m = 25.2$ VDC

(2 pole Connector IN 24V)

Only for connection to a galvanically save separated supply circuit (PELV System) which is limited with a fuse to the rated current.

Output- and Supply circuit

With intrinsically safe prelimiter [Ex ia Gb] for the weighing system with the following maximum ratings:

(2 pole Connector OUT 24V)

 $U_o \leq 25.2$ V
 $I_o \leq 783.0$ mA
 $P_o \leq 2.0$ W

Only for connection to the IF-Module Type 4015A, 4040A and 4040B outside of the hazardous area.

Output- and Supply circuit

In type of protection intrinsically safety Ex ia IIC Gb

(2 pole Connector OUT 12V)

Maximum values:

 $U_o \leq 12.6$ V
 $I_o \leq 428.0$ mA
 $P_o \leq 845.0$ mW
 $C_o \leq 1.15$ μ F (maximum external capacitance)
 $L_o \leq 0.18$ mH (maximum external inductance)

or

Output- and Supply circuit

With the type of protection intrinsic safety Ex ia IIC Gb

(2 pole Connector OUT 6V)

Maximum values:

 $U_o \leq 6.3$ V
 $I_o \leq 253.0$ mA
 $P_o \leq 405.0$ mW
 $C_o \leq 31.0$ μ F (maximum external capacitance)
 $L_o \leq 0.5$ mH (maximum external inductance)

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Intrinsically safe Ratings:
IF-Module Types 4015A and 4040A

 Output- and Supply circuit
 (2 pole Connector J3; 0/24V)

Only for connection to the Power Supply Module with intrinsically prelimiter [Ex ia Gb] with the following maximum values:

$$U_i \leq 25.2 \text{ V}$$

$$I_i \leq 783.0 \text{ mA}$$

$$P_i \leq 2.0 \text{ W}$$

Only for connection to the IF-Module Type 4015A, 4040A and 4040B outside of the hazardous area.

 interface supply circuit
 (2Pol. Steckverbindung J2 | 0/24V)

 Non-intrinsically safe ($U_{max.} = 24\text{VDC}$)

The intrinsic safe circuits are galvanically save separated from the non-intrinsic safe circuits up to a peak voltage of 90 V.

 Load cell supply and signal circuit
 (Connection with BNC Connector)

In type of protection intrinsically safety Ex ia IIC Gb

Maximum values:

$$U_o \leq 20.4 \text{ V}$$

$$I_o \leq 81.0 \text{ mA}$$

$$P_o \leq 413.0 \text{ mW}$$

$$C_o \leq 206.0 \text{ nF} \quad (\text{maximum external capacitance})$$

$$L_o \leq 6.0 \text{ mH} \quad (\text{maximum external inductance})$$

Load cells

 Supply and signal circuit
 (Connection with BNC Connector)

With the type of protection intrinsic safety Ex ia IIC Gb only for connection to a certified intrinsically safe circuit.

Maximum values:

$$U_i \leq 20.4 \text{ V}$$

$$I_i \leq 81.0 \text{ mA}$$

$$P_i \leq 413.0 \text{ mW}$$

$$C_i = 0 \text{ nF} \quad (\text{negligible small})$$

$$L_i = 0 \text{ mH} \quad (\text{negligible small})$$

Rated ambient temperature range (°C)

-40 °C ... +50 °C

“Conditions of Certificaton”

1. The power supply module type 4051A and IF module types 4015A, 4040A and 4040B may be installed only outside of the area at risk of explosion.
2. The power supply module type 4051A and IF module types 4015A, 4040A and 4040B must be installed in such a way that at least IP20 type of protection according to standard IEC/EN 60529 is achieved.
3. The power supply module type 4051A may be connected only to a feed current circuit if it safely galvanically disconnected (PELV power circuit) and limited by to the rated current by a fusible link.
4. The maximum voltage of IF module types 4015A, 4040A and 4040B on non-intrinsically safe power circuits must not exceed $60 V_{eff}$ in case of a fault.
5. The output and supply power circuit (2-pole plug connection OUT 24V) of the power supply module type 4051A may only be conducted outside of the area at risk of explosion.
6. According to RL 2014/34/EU (ATEX 114) Appendix I, the weighing cells are devices of equipment group II , category 2G, which, according to RL 99/92/EC (ATEX 137) can be used in zones 1 and 2, as well as gas groups IIA, IIB, and IIC, which are potentially explosive due to combustible substances in the temperature classes T1 to T6.
The requirements of IEC/EN 60079-14 must be observed for use/installation
7. According to RL 2014/34/EU (ATEX 114) Appendix I, the weighing cells are devices of equipment group II , category 20, which, according to RL 99/92/EG (ATEX 137) can be used in zones 21 and 22 in the presence of combustible dusts.
The requirements of IEC/EN 60079-14 must be observed for use/installation
8. The weighing cells are connected to IF module type 4015A, 4040A and/or 4040B by a screened coaxial cable with a maximum length of 1'200 m using a BNC plug or a screened Ex certified cable with a capacitance of <100 nF.
9. The weighing cells connected with the screen are to be included in the equipotential bonding (PA/PE) of the system along the entire length of the cable route.
10. The highest permissible ambient temperature range is -40 to +50 °C.
11. In addition, the "ATEX 4000 System" diagram of the manufacturer (Eilersen Electric A/S) must be observed for the connection of the weighing system.