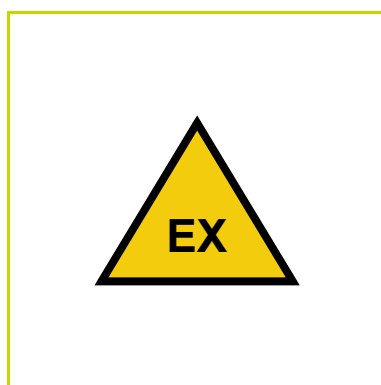


EX CERTIFICATE – IECEx

vibro-meter®


IECEx LCIE 21.0005X
for
TQ9xx proximity sensors
and IQS9xx signal conditioners



Note: Although the Ex certificate may be included in more than one language, the liability of the notified body applies only on the text of the original copy of the certificate that it published.

Document reference IECEx LCIE 21.0005X
Edition 2 – January 2024

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IECEX Certificate of Conformity

Page 2 of 4
Issue No: 2

Certificate No.:	IECEX LCIE 21.0005X		
Date of issue:	2023-10-03		
Manufacturer:	MEGGITT SA Route de Moncor 4 1752 Villars-sur-Glâne Switzerland		
Manufacturing locations:	MEGGITT SA Route de Moncor 4 1752 Villars-sur-Glâne Switzerland		

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 equipment 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 60079-0:2017	Explosive atmospheres - Part 0: Equipment - General requirements
IEC 60079-7:2017	Explosive atmospheres - Part 7: Equipment protection by increased safety "e"


Edition: 3.1

This Certificate **does not** indicate compliance with 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 Reports:
FR/LC/IE/EXTR21.0014/00 **FR/LC/IE/EXTR23.0041/01**

Quality Assessment Report:
FR/LC/QAR06.0006/18



IECEX Certificate of Conformity


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Issue No: 2

INTERNATIONAL ELECTROTECHNICAL COMMISSION
IEC Certification System for Explosive Atmospheres
for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.:	IECEX LCIE 21.0005X		Certificate history: Issue 1 (2023-07-19) Issue 0 (2024-03-30)
Status:	Current		
Date of Issue:	2023-10-03		
Applicant:	MEGGITT SA Route de Moncor 4 1752 Villars-sur-Glâne Switzerland		
Equipment:	TQ 9** Proximity sensor and IQS 9** Signal conditioner, resp. types 111-9**-000-*** and 204-9**-000-***		
Optional accessory:			
Type of Protection:	ec		
Marking:	Exec IIC T6...T3 Gc for TQ 9** proximity sensor Exec IIC T6...T5 Gc for IQS 9** signal conditioner See annex for full marking.		


Approved for issue on behalf of the IECEx
Certification Body:

Position:

Signature: 
(for printed version)



Date: 2023-10-03
(for printed version)

Julien GAUTHIER
Certification Officer



LABORATOIRE CENTRAL DES
INDUSTRIES ELECTRIQUES
S.A.S au capital de 12 345 984 €
RCS Nanterre B 408 803 174
N° de TVA Intracommunautaire: FR 12 345 984 4
L.C.I.E.
F - 92266 FONTENAY-AUX-ROSES

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 www.iecex.com or use of this QR Code.


Certificate issued by:
Laboratoire Central des Industries Electriques (LCIE)
33 Avenue du General Leclerc
FR-92260 Fontenay-aux-Roses
France

Document reference IECEx LCIE 21.0005X
Edition 2 - January 2024

IECEX LCIE 21.0005X for TQ9xx proximity sensors and IQS9xx signal conditioners

EX CERTIFICATE – IECEx

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IECEx Certificate of Conformity

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Issue No: 2

Certificate No.: **IECEx LCIE 21.0005X**

Date of issue: 2023-10-03

DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)

Issue 1:


- Solves components obsolescence on IQS9**.
- Modification of the PCB layout.
- Addition of IQS910 already included in the initial range details.

Issue 2:

- Editorial correction of the report (EXTR No. FR/LCIE/EXTR23.0041/01)

Annex:

[Annex 01 to Certificate IECEx LCIE 21.0005X Issue 2.pdf](#)



IECEx Certificate of Conformity

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Issue No: 2

Certificate No.: **IECEx LCIE 21.0005X**

Date of issue: 2023-10-03

EQUIPMENT:
Equipment and systems covered by this Certificate are as follows:

The TQ 9** proximity sensor and the IQS 9** signal conditioner are part of a proximity measurement system. The system can also include an EA 9** extension cable which is not covered by this certificate.

The proximity system allows a contactless measurement of the relative displacement of moving machine elements such as the shaft. The system output voltage or current is proportional to the distance between the sensor head and the metallic target.

The TQ 9** sensor has an integral coaxial cable, terminated with a self-locking miniature coaxial connector. Its active part comprises of a coil of wire that is moulded inside the sensor head made of a thermoplastic material. The sensor body is made of stainless steel.

The IQS 9** signal conditioner contains a high-frequency modulator/demodulator that supplies the driving signal to the coil of the sensor. This generates an electromagnetic field in the sensor head, which then induces eddy currents into the metallic target. When the target moves, the eddy currents change, which causes a change in the electrical characteristics of the TQ 9** that the signal conditioner converts into a signal that is proportional to the distance to the target. The electronics of the conditioner is mounted in a metallic housing and it is totally embedded into a silicone casting compound.

The signal conditioner has a coaxial connector for the connection to the proximity sensor. The output of the IQS 9** conditioner can be configured as a current (2-wire transmission mode) or a voltage signal (3-wire transmission mode). For test purposes, the IQS 9** includes a "raw" voltage output signal and a test input signal that allow the measurement chain/system operation to be tested in situ.

SPECIFIC CONDITIONS OF USE: YES as shown below:
See annex for whole specific conditions of use.



MARKING

• For the **TQ 9** proximity sensor**:

MEGGITT SA or VIBRO-METER or MFR S3960
 Address : ...9**-000-*** (1)
 Type : 111-9**-000-*** (1)
 Serial number : ...
 Year of construction : ...
 Ex ec IIC T6...T3 Gc (2)
 IECEX LCIE 21.0005X
 -40 °C ≤ T_{amb} ≤ +180 °C

WARNING – DO NOT CONNECT/DISCONNECT WHEN ENERGIZED

Reduced marking:

MEGGITT SA or VIBRO-METER or MFR S3960
 Type : 111-9**-000-*** (1)
 Serial number : ...
 Year of construction : ...
 Ex ec IIC T6...T3 Gc (2)
 IECEX LCIE 21.0005X

• For the **IQS 9** signal conditioner**:

MEGGITT SA or VIBRO-METER or MFR S3960
 Address : ...204-9**-000-*** (1)
 Type : 204-9**-000-*** (1)
 Serial number : ...
 Year of construction : ...
 Ex ec IIC T6...T5 Gc (2)
 IECEX LCIE 21.0005X
 -40 °C ≤ T_{amb} ≤ +85 °C

Reduced marking:

MEGGITT SA or VIBRO-METER or MFR S3960
 Type : 204-9**-000-*** (1)
 Serial number : ...
 Year of construction : ...
 Ex ec IIC T6...T5 Gc (2)
 IECEX LCIE 21.0005X
 -40 °C ≤ T_{amb} ≤ +85 °C

(1) Completed as per the type
 (2) See the specific conditions of use

RANGE DETAILS

• For **TQ 9** proximity sensor**:

111 - 9 - * - * - 000 - * - * - *	Minor modification number (FFF = Form Fit Function) 0 to 9 (each modification increases the number by 1)
	Cable, cable protection and protection sheath types (according to customers applications) 00 to 99
	Dimension of the measurement element (Sensor tip) 1 = ∅ 5mm nominal 2 = ∅ 8mm nominal 3 = ∅ 18mm nominal 4 to 9 = Other dimensions
	Housing type (straight, reverse, right-angle 90° or customized) 0 to 9

TQ 9** type designation above will be completed by digits for example related to the thread type of sensor/body, the body length, the integral cable length or whether the total system length.

• For **IQS 9** signal conditioner**:

204 - 9 - * - * - 000 - * - * - *	Minor modification number (FFF = Form Fit Function) 0 to 9 (each modification increases the number by 1)
	Customized version (special target material or mounting) 00 to 99
	Conditioner type 00 = Analog output 10 = 4-20mA output 11 to 99 = Other

IQS 9** type designation above will be completed by digits for example related to the measuring range and sensitivity, the total system length or whether the type of mounting.

RATINGS

For signal conditioner IQS 9**, 2-wire transmission mode (output current signal):

- Maximum voltage: 30 V DC
- Maximum current consumption: 22 mA
- Maximum power consumption: 0.7 W

For signal conditioner IQS 9**, 3-wire transmission mode (output voltage signal):

- Maximum voltage: 30 V DC
- Maximum current consumption: 9.5 mA
- Maximum power consumption: 0.3 W



SPECIFIC CONDITIONS OF USE

- a. Temperature class of the equipment depending on the ambient operating temperature range:

TQ 9** Proximity sensor:

T6 : for $-40\text{ °C} \leq T_{\text{amb}} \leq +75\text{ °C}$

T5 : for $-40\text{ °C} \leq T_{\text{amb}} \leq +90\text{ °C}$

T4 : for $-40\text{ °C} \leq T_{\text{amb}} \leq +125\text{ °C}$

T3 : for $-40\text{ °C} \leq T_{\text{amb}} \leq +180\text{ °C}$

IQS 9** Signal conditioner:

T6 : for $-40\text{ °C} \leq T_{\text{amb}} \leq +70\text{ °C}$

T5 : for $-40\text{ °C} \leq T_{\text{amb}} \leq +85\text{ °C}$

- b. The IQS 9** signal conditioner shall be installed in a certified enclosure that provides a degree of protection of at least IP54, according to IEC 60079-0.
- c. The equipment shall only be used in an area of at least pollution degree 2, as defined in IEC 60664-1.
- d. Transient protection shall be provided that is set at a level not exceeding 140 % of the peak rated voltage value at the supply terminals to the IQS 9** signal conditioner.
- e. Connections shall not be connected or disconnected when energized.
- f. The sensor head shall be protected against any risk of mechanical danger.
- g. A minimum degree of protection IP54, in accordance with IEC 60079-0, shall be ensured at the point of connection of the proximity sensor TQ 9** with the EA 9** extension cable.
- h. It is the user's responsibility to provide adequate earth continuity of the sensor body via the mounting arrangement.
- i. The equipment shall be installed according to the instruction manual provided by the manufacturer.

ROUTINE TESTS

Each sample of the TQ 9** sensor shall be subjected to a dielectric strength test according to clause 7.1 of IEC 60079-7 under 500 V r.m.s.