



# IECEX Certificate of Conformity

## INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification System for Explosive Atmospheres

for rules and details of the IECEx Scheme visit [www.iecex.com](http://www.iecex.com)

Certificate No.: **IECEX CML 23.0096X** Page 1 of 3 [Certificate history:](#)

Status: **Current** Issue No: 0

Date of Issue: 2023-09-06

Applicant: **METRIX INSTRUMENT CO.**  
8824 Fallbrook  
Houston  
TEXAS 77064  
USA  
**United States of America**

Equipment: **Vibration transmitter type ST5484E-\*\*\*\_\*\*\*\*\_\*\* and Vibration switches type SW5484E-\*\*\*\_\*\*\*\*\_\*\***

Optional accessory:

Type of Protection: **Intrinsic Safety Ex "i", Flameproof Ex "d", Increased Safety Ex "e"**

Marking: Ex ia IIC T4 Ga Ta = -40 °C to +100 °C  
Ex db IIC T\* Gb where T4: Ta = -40°C to +100°C  
T6: Ta = -40°C to +73°C  
Ex ec IIC T\* Gc where T4: -40°C ≤ Tamb ≤ +100°C  
T6: -40°C ≤ Tamb ≤ +73°C

Approved for issue on behalf of the IECEx  
Certification Body:

**Ben Trafford**

Position:

**Certification Officer**

Signature:  
(for printed version)

Date:  
(for printed version)

2023-09-06

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Certificate issued by:

**Eurofins E&E CML Limited**  
Unit 1, Newport Business Park  
New Port Road  
Ellesmere Port, CH65 4LZ  
**United Kingdom**



METRIX DOC NO: 1924539  
REV: B



# IECEX Certificate of Conformity

Certificate No.: **IECEX CML 23.0096X**

Page 2 of 3

Date of issue: 2023-09-06

Issue No: 0

Manufacturer: **METRIX INSTRUMENT CO.**  
8824 Fallbrook  
Houston  
TEXAS 77064  
USA  
**United States of America**

Manufacturing  
locations:

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  
Edition:7.0

[IEC 60079-1:2014](#) Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"  
Edition:7.0

[IEC 60079-11:2011](#) Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"  
Edition:6.0

[IEC 60079-7:2017](#) Explosive atmospheres - Part 7: Equipment protection by increased safety "e"  
Edition:5.1

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 Report:

[GB/CML/ExTR23.0131/00](#)

Quality Assessment Report:

[GB/BAS/QAR10.0017/08](#)



# IECEX Certificate of Conformity

Certificate No.: **IECEX CML 23.0096X**

Page 3 of 3

Date of issue: 2023-09-06

Issue No: 0

## EQUIPMENT:

Equipment and systems covered by this Certificate are as follows:

### **Vibration transmitter type ST5484E-\*\*\*-\*\*\*\*-\*\* (Ex ia IIC T4 Ga)**

The **ST5484E Vibration Transmitter** is used to detect vibration level of machine. It provides an output current in the range 4-20 mA proportional to the vibration level.

### **Vibration transmitters type ST5484E-\*\*\*-\*\*\*\*-\*\* & Vibration switches type SW5484E-\*\*\*-\*\*\*\*-\*\* (Ex db IIC T\* Gb)**

The **ST5484E Vibration Transmitter** is used to detect vibration level of machines and combines an accelerometer and a signal conditioner in a single unit. It provides an output a current in the range 4-20 mA, proportional to the vibration level. Additionally, it can also be provided with an optional dynamic output.

The **SW5484E Vibration Switch** adds switching features, when compared to the **ST5484E Vibration Transmitter** which can be used in auto-shutdown circuit that trips the machine under high vibration conditions.

### **Vibration transmitters type ST5484E-\*\*\*-\*\*\*\*-\*\* & Vibration switches type SW5484E-\*\*\*-\*\*\*\*-\*\* (Ex ec IIC T\* Gc)**

The **ST5484E Vibration Transmitter** is used to detect vibration level of machines and combines an accelerometer and a signal conditioner in a single unit. It provides an output a current in the range 4-20 mA, proportional to the vibration level. Additionally, it can also be provided with an optional dynamic output.

The **SW5484E Vibration Switch** adds a switching feature, when compared to the **ST5484E Vibration Transmitter** which can be used in auto-shutdown circuit that trips the machine under high vibration conditions.

SEE ANNEX for DETAILS

## SPECIFIC CONDITIONS OF USE: YES as shown below:

SEE ANNEX for DETAILS

## Annex:

[Certificate Annex IECEX CML 23.0096X Issue 0.pdf](#)

**Annexe to:** IECEx CML 23.0096X Issue 00  
**Applicant:** Metrix Instrument Co.  
**Apparatus:** Vibration transmitter type ST5484E-\*\*\*-\*\*\*\*-\*\* and Vibration switches type SW5484E-\*\*\*-\*\*\*\*-\*\*

## Description

### Vibration transmitter type ST5484E-\*\*\*-\*\*\*\*-\*\* (Ex ia IIC T4 Ga)

The **ST5484E Vibration Transmitter** is used to detect vibration level of machine. It provides an output current in the range 4-20 mA proportional to the vibration level.

The sensor printed circuit boards are installed inside a stainless-steel enclosure which may be optionally mounted on an 8200 series Killark metallic enclosure. The entire sensor unit is encapsulated.

The equipment provides different connection types: 2 or 4-wire flying leads, 2 or 4-pin terminal block, 2-pin MIL terminal.

The equipment must be installed per drawing 9278.

## Ratings

### Vibration transmitter - Type : ST5484E-AAA-BBCD-EF

Intrinsic safety electrical parameters:

Ui:	29.6 V
Ii:	100 mA
Pi:	0.75 W
Ci:	70 nF
Li:	0.6 uH



Certificate Annex IECEx  
 Version: 8.0 Approval: Approved

Eurofins E&E CML Limited  
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 New Port Road  
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## Vibration transmitters type **ST5484E-\*\*\*-\*\*\*\*-\*\*** & Vibration switches type **SW5484E-\*\*\*-\*\*\*\*-\*\*** (Ex db IIC T\* Gb)

The **ST5484E Vibration Transmitter** is used to detect vibration level of machines and combines an accelerometer and a signal conditioner in a single unit. It provides an output a current in the range 4-20 mA, proportional to the vibration level. Additionally, it can also be provided with an optional dynamic output.

The **SW5484E Vibration Switch** adds a switching feature, when compared to the **ST5484E Vibration Transmitter** which can be used in auto-shutdown circuit that trips the machine under high vibration conditions.

Each device consists of a stainless-steel cylindrical housing, with 1 inch NPT external thread.

Printed circuit boards are mounted in the metallic housing and filled with potting compound to totally encase the electronics. The device is secured into a certified conduit capped elbow of type Y-3-EX from Killark that provides the flameproof protection.

The electrical connections to the ST5484E Vibration Transmitter are either:

- 2-Pin or 4-Pin terminal block, or
- Flying leads (2-wire or 4-wire),

A terminal block may also be mounted inside the conduit capped elbow to facilitate electrical connections.

The **SW5484E Vibration Switch** has a permanent cable (flying leads). The cable entry has a 5 K thermal rise above the ambient operating temperature of the device.

### Ratings

<b>ST5484E-***-****-** Vibration transmitters &amp; SW5484E-***-****-** Vibration switches, with conduit capped elbow</b>	
Supply voltage: 11-30 V DC	For SW5484E, the maximum current which can pass through each solid-state switch is 100 mA DC only.



## Vibration transmitters type **ST5484E-\*\*\*-\*\*\*\*-\*\*** & Vibration switches type **SW5484E-\*\*\*-\*\*\*\*-\*\*** (Ex ec IIC T\* Gc)

The **ST5484E Vibration Transmitter** is used to detect vibration level of machines and combines an accelerometer and a signal conditioner in a single unit. It provides an output a current in the range 4-20 mA, proportional to the vibration level. Additionally, it can also be provided with an optional dynamic output.

The **SW5484E Vibration Switch** adds a switching feature, when compared to the **ST5484E Vibration Transmitter** which can be used in auto-shutdown circuit that trips the machine under high vibration conditions.

Each device consists of a stainless-steel cylindrical housing, with 1 inch NPT external thread.

Printed circuit boards are mounted in the metallic housing and filled with potting compound to totally encase the electronics. The device is secured into a certified conduit capped elbow of type Y-3-EX from Killark that provides a degree of Ingress Protection IP66. The assembly forms the complete ST5484E transmitter.

The electrical connections to the ST5484E Vibration Transmitter are either:

With certified conduit elbow of type Y-3-EX

- 2-Pin or 4-Pin terminal block, or
- Flying leads (2-wire or 4-wire), or

Without certified conduit elbow of type Y-3-EX

- 2-Pin MIL terminal

A terminal block may also be mounted inside the conduit capped elbow to facilitate electrical connections.

The **SW5484E Vibration Switch** is provided with either an 8-Pin M12 connector (laser welded to housing), or with a permanently connected cable (flying leads and a certified cable gland. The cable entry has a 5 K thermal rise above the ambient operating temperature of the device.

### Ratings

<b>ST5484E-***-****-** Vibration transmitters &amp; SW5484E-***-****-** Vibration switches</b>	
Supply voltage: 11-30 V DC	For SW5484E, the maximum current which can pass through each solid-state switch is 100 mA DC only.



## Nomenclature

<b>ST5484E Vibration Transmitter (ST5484E-AAA-BBCD-EF, with AAA, BBCD and EF)</b>			
<b>AAA (3 digits): Range</b>			
<b>Model ST5484E-</b>		<b>A1</b>	<b>A2</b>
<b>Peak</b>	<b>RMS</b>		
121	151	1.0 IPS	25.4 mm/s
122	152	0.5 IPS	12.7 mm/s
123	153	2.0 IPS	50.8 mm/s
124	154	5.0 IPS	125 mm/s
126	156	0.8 IPS	20.3 mm/s
132	162	3.0 IPS	76.2 mm/s
<b>BB (2 digits): housing material and stud size</b>			
10-19, 30	316 SST housing, multiple stud sizes		
<b>C (1 digit): hazardous area certification</b>			
7	ATEX/IECEX, Ex ia IIC T4 Ga		
8	ATEX/IECEX, Ex db IIC T4 Gb (includes elbow)		
C	ATEX, Ex ec IIC T4 Gc (includes elbow when (D) = 0, 1, 2, 3, 5, or 6)		
D	IECEX, Ex ec IIC T4 Gc (includes elbow when (D) = 0, 1, 2, 3, 5, or 6)		
<b>D: Connection type</b>			
0	24" Flying Leads, 2-wire (4-20 mA output only)		
1	24" Flying Leads, 4-wire (4-20 mA output and dynamic raw acceleration signal)		
2	Terminal Block, 2-wire (4-20 mA output only)		
3	Terminal Block, 4-wire (4-20 mA output and dynamic raw acceleration signal)		
4	2-Pin MIL-style (4-20 mA output only)		
5	72" Flying Leads, 2-wire (4-20 mA output only)		
6	72" Flying Leads, 4-wire (4-20 mA output and dynamic raw acceleration signal)		
6	10 meter (33 feet) Flying leads, 8-wire (when option C = C or D)		
7	5 meter (16.5 feet) Flying leads, 8-wire (when option C = C or D)		

<b>ST5484E Vibration Transmitter (ST5484E-AAA-BBCD-EF, with AAA, BBCD and EF)</b>	
8	88-Pin M12 (when option C = C or D)
<b>E : high pass (-3db)</b>	
0	2 Hz
1	5 Hz
2	10 Hz
3	20 Hz
4	50 Hz
5	100 Hz
6	200 Hz
X	CUSTOM
<b>F : low pass (-3db)</b>	
0	1500 Hz
1	500 Hz
2	1000 Hz
3	2000 Hz
4	250 Hz
5	230 Hz
X	CUSTOM



<b>SW5484E Vibration Switch (SW5484E-AAA-BBCD-EF, with AAA, BBCD and EF)</b>			
<b>AAA (3 digits): range</b>			
<b>Model SW5484E-</b>		<b>A1</b>	<b>A2</b>
<b>Peak</b>	<b>RMS</b>		
121	151	1.0 IPS	25.4 mm/s
122	152	0.5 IPS	12.7 mm/s
123	153	2.0 IPS	50.8 mm/s
124	154	5.0 IPS	125 mm/s
126	156	0.8 IPS	20.3 mm/s
132	162	3.0 IPS	76.2 mm/s
<b>BB (2 digits): housing material and stud size</b>			
10-19, 30	316 SST housing, multiple stud sizes		
<b>C (1 digit): hazardous area certification</b>			
8	ATEX/IECEX Ex db IIC T4 Gb (explosion proof, includes Y-3-EX capped elbow)		
C	ATEX, Ex ec IIC T4 Gc		
D	IECEX, Ex ec IIC T4 Gc		
<b>D: Connection type</b>			
0	24" Flying Leads, 2-wire (4-20 mA output only)		
1	24" Flying Leads, 4-wire (4-20 mA output and dynamic raw acceleration signal)		
2	Terminal Block, 2-wire (4-20 mA output only)		
3	Terminal Block, 4-wire (4-20 mA output and dynamic raw acceleration signal)		
4	2-Pin MIL-style (4-20 mA output only)		
5	72" Flying Leads, 2-wire (4-20 mA output only)		
6	72" Flying Leads, 4-wire (4-20 mA output and dynamic raw acceleration signal)		
6	10 meter (33 feet) Flying leads, 8-wire (when option C = C or D)		
7	5 meter (16.5 feet) Flying leads, 8-wire (when option C = C or D)		
8	88-Pin M12 (when option C = C or D)		
<b>E : high pass (-3db)</b>			



<b>SW5484E Vibration Switch (SW5484E-AAA-BBCD-EF, with AAA, BBCD and EF)</b>	
0	2 Hz
1	5 Hz
2	10 Hz
3	20 Hz
4	50 Hz
5	100 Hz
6	200 Hz
X	CUSTOM
<b>F : low pass (-3db)</b>	
0	1500 Hz
1	500 Hz
2	1000 Hz
3	2000 Hz
4	250 Hz
5	230 Hz
X	CUSTOM

## Ratings

### ST5484E Vibration Transmitter: Ex ia IIC T4 Ga

Intrinsic safety electrical parameters:	Ui:	29.6 V
	Ii:	100 mA
	Pi:	0.75 W
	Ci:	70 nF
	Li:	0.6 $\mu$ H

### ST5484E Vibration Transmitter and SW5484E Vibration Switch: Ex dB IIC T4 Gb

Supply voltage:	11-30 VDC
For SW5484E, the maximum current which can pass through each solid-state switch is 100 mA DC only.	

### ST5484E Vibration Transmitter and SW5484E Vibration Switch: Ex ec IIC T4 Gc

Supply voltage:	11-30 VDC
For SW5484E, the maximum current which can pass through each solid-state switch is 100 mA DC only.	

## Conditions of Manufacture

### All versions

- i. Where the product incorporates certified parts or safety critical components, the manufacturer of the product defined on this certificate shall continually monitor these parts/components for any modifications introduced by the manufacturer(s) of these constituent parts. If the manufacturer of any constituent part introduces any changes which affect the compliance of the certified product that is the subject of this certificate, the manufacturer is required to have this certificate updated.

### Vibration transmitters type ST5484E-\*\*\*-\*\*\*\*-\*\* & Vibration switches type SW5484E-\*\*\*-\*\*\*\*-\*\* (Ex ec IIC T4 Gc):

- ii. In accordance with clause 7.1 of standard IEC 60079-7, each product manufactured shall be subjected to a dielectric strength test at 500 V a.c. for 1 minute. Alternatively, the test may be carried out at 600 V a.c. for 100 ms. No breakdown shall occur.

## Specific Conditions of Use

### Vibration transmitter type ST5484E-\*\*\*-\*\*\*\*-\*\* (Ex ia IIC T4 Ga)

- i. The intrinsically safe apparatus shall only be connected to associated intrinsically safe apparatus certified for the intended use. This association shall comply with the requirements of EN/IEC 60079-25 standard.
- ii. Ambient temperature range: -40 °C to +100 °C
- iii. When the optional aluminum elbow enclosure is used, the equipment must be installed in such a way that, even in the event of rare incidents, the aluminum enclosure cannot be an ignition source due to impacts or frictions.
- iv. The models equipped with terminals or flying leads shall be mounted on an additional enclosure having a protection degree of at least IP20 and conform to EN/IEC 60079-0.
- v. For the models equipped with additional dynamic output, this output cannot be used when the equipment is situated in hazardous area.
- vi. The equipment must be installed in accordance with drawing 9278.

### Vibration transmitters type ST5484E-\*\*\*-\*\*\*\*-\*\* & Vibration switches type SW5484E-\*\*\*-\*\*\*\*-\*\* (Ex db IIC T4 Gb)

- i. The final user shall use an Ex d certified entry device at the elbow's entry while respecting the installation requirements of EN/IEC 60079-14. For ST5484E transmitters with flying leads, a flameproof entry device with sealing compound (barrier seal) shall be used.
- ii. The equipment does not incorporate an external earth facility. It is the responsibility of the user to ensure adequate earth continuity.
- iii. The disassembling of the device from its conduit capped elbow is not allowed.
- iv. Ambient temperature range for T4 Temperature Code: -40 °C to +100 °C  
Ambient temperature range for T6 Temperature Code: -40 °C to +73 °C

### Vibration transmitters type ST5484E-\*\*\*-\*\*\*\*-\*\* & Vibration switches type SW5484E-\*\*\*-\*\*\*\*-\*\* (Ex ec IIC T4 Gc)

- i. 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 device.
- ii. The device does not incorporate an external earth facility. It is the responsibility of the user to ensure adequate earth continuity.
- iii. For ST5484E transmitters with certified capped elbow:
  - The user shall use an Ex eb certified entry device at the capped elbow's entry while respecting the installation requirements of EN/IEC 60079-14.
  - Disconnect the device from supply circuit before opening the capped conduit elbow.
  - The disassembling of the transmitter from its capped elbow is not allowed.



- iv. For ST5484E transmitters with 2-Pin MIL connector: the mating female connector provided by the end user shall be in accordance with all applicable clauses of IEC 60079-0 and IEC 60079-7. A minimum degree of protection IP54 according to EN/IEC 60529 shall be ensured.  
The mating connector shall not be connected or disconnected when energized.
- v. For ST5484E transmitters with flying leads: the flying leads shall be suitably protected from impact and shall be terminated within a suitably certified enclosure or in safe area. The installation shall guarantee that no pulling force will be applied to the leads.
- vi. For SW5484E with 8-Pin M12 connector: the mating female connector provided by the end user shall be in accordance with all applicable clauses of EN/IEC 60079-0 and EN/IEC 60079-7. A minimum degree of protection IP54 according to EN/IEC 60529 shall be ensured.  
The mating connector shall not be connected or disconnected when energized.
- vii. For SW5484E with permanent cable and separately certified cable gland: according to specific conditions of use of certificates IECEx CML 19.0062X of TRUSEAL TSMc M16x1.5 cable gland, the end user shall provide suitable additional clamping of the cable to ensure that pulling is not transmitted to the terminations.
- viii. Ambient temperature range for T4 Temperature Code: -40 °C to +100 °C  
Ambient temperature range for T6 Temperature Code: -40 °C to +73 °C



**The following pages are the prior revisions of this certificate.**



# IECEX Certificate of Conformity

## INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification System for Explosive Atmospheres

for rules and details of the IECEX Scheme visit [www.iecex.com](http://www.iecex.com)

Certificate No.: **IECEX LCIE 22.0005X** Page 1 of 3 [Certificate history:](#)  
Status: **Current** Issue No: 0  
Date of Issue: 2022-02-10  
Applicant: **Metrix Instrument Co.**  
8824 Fallbrook Drive  
Houston, Texas 77064  
**United States of America**  
Equipment: **ST5484E-\*\*\*-\*\*\*\*-\*\* Vibration transmitters & SW5484E-\*\*\*-\*\*\*\*-\*\* Vibration switches**  
Optional accessory:  
Type of Protection: **Increased safety "ec"**  
Marking: Ex ec IIC T4 Gc  
-40 °C ≤ T<sub>amb</sub> ≤ +100 °C  
(refer to Annex for full marking)

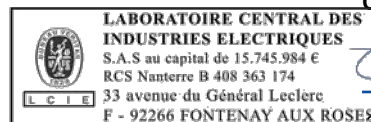
Approved for issue on behalf of the IECEX  
Certification Body:

**Julien GAUTHIER**

Position:

**Certification Officer**

Signature:  
(for printed version)



2022-02-10

Date:

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2. This certificate is not transferable and remains the property of the issuing body.
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Certificate issued by:

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



METRIXDOC NO: 1924539  
REV: A



# IECEX Certificate of Conformity

Certificate No.: **IECEX LCIE 22.0005X**

Page 2 of 3

Date of issue: 2022-02-10

Issue No: 0

Manufacturer: **Metrix Instrument Co.**  
8824 Fallbrook Drive  
Houston, Texas 77064  
**United States of America**

Additional  
manufacturing  
locations:

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  
Edition:7.0

[IEC 60079-7:2017](#) Explosive atmospheres - Part 7: Equipment protection by increased safety "e"  
Edition:5.1

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 Report:

[FR/LCIE/ExTR22.0016/00](#)

Quality Assessment Report:

[GB/BAS/QAR10.0017/07](#)





# IECEX Certificate of Conformity

Certificate No.: **IECEX LCIE 22.0005X**

Page 3 of 3

Date of issue: 2022-02-10

Issue No: 0

**EQUIPMENT:**

Equipment and systems covered by this Certificate are as follows:

The ST5484E Vibration Transmitter is used to detect vibration level of machines and combines an accelerometer and a signal conditioner in a single unit. It transmits at the output a current in the range 4-20 mA, proportional to the vibration level. It can also be provided with an optional dynamic output.

The SW5484E Vibration Switch adds switching featured, when compared to the ST5484E, which can be used in auto-shutdown circuit that trips the machine under high vibration conditions.

Refer to Annex for full equipment description, range details and ratings.

**SPECIFIC CONDITIONS OF USE: YES as shown below:**

Refer to Annex for specific conditions of use.

**Annex:**

[Annex 01 to certificate IECEx LCIE 22.0005X issue 0.pdf](#)



# Annex 01 to Certificate IECEX LCIE 22.0005X issue 0



## FULL EQUIPMENT DESCRIPTION

The ST5484E Vibration transmitter is used to detect vibration level of machines and combines an accelerometer and a signal conditioner in a single unit. It transmits at the output a current in the range 4-20 mA, proportional to the vibration level. It can also be provided with an optional dynamic output.

The SW5484E Vibration switch adds switching featured, when compared to the ST5484E, which can be used in auto-shutdown circuit that trips the machine under high vibration conditions.

The devices consist of a stainless steel housing in cylindrical shape. The electronics (i.e. the printed circuit boards fitted with electronic components) is mounted in the metallic housing which is filled with potting compounds. By this way, the electronics is totally encased in the potting compounds.

Depending on the model, the electrical connection of ST5484E transmitter is done via:

- 2-Pin or 4-Pin terminal block;
- Flying leads (2-wire or 4-wire);

In the versions above, the device is screwed, thanks to 1 inch NPT external thread, into a certified conduit elbow of type Y-3-EX from Killark providing a degree of protection IP66. The assembly forms the complete ST5484E transmitter. A terminal block can be mounted inside the conduit capped elbow to make the connection easier.

- A 2-Pin MIL connector: the MIL connector is assembled to the housing by laser welding.

Depending on the model, the SW5484E Vibration switch is manufactured with a 8-Pin M12 connector (assembled to the housing by laser welding), or with a permanent cable (flying leads version) and a certified cable gland. The selection of the cable shall be done in function of the ambient operating temperature range of the device and by taking into account a heating of 5 K at the entry.

### Integrated IECEx Ex equipment:

Product designation	Manufacturer	Type	Certificate number	Marking & T <sub>amb</sub>	Reference standards
Capped elbow	Killark	Y-3-EX	IECEX QPS 16.0012X	Ex db IIC Gb Ex tb IIIC Db IP66  T <sub>amb</sub> : -50°C to +100°C	IEC 60079-0:2017 Ed. 7.0 IEC 60079-1:2014 Ed. 7.0 IEC 60079-31:2013 Ed. 2
Metallic cable gland	CMP Products Ltd	TRUSEAL TSM <sub>e</sub> M16x1.5	IECEX CML 19.0062X	Ex eb IIC Gb Ex ta IIIC Da IP66  T <sub>amb</sub> : -60°C to +105°C	IEC 60079-0:2017 Ed. 7.0 IEC 60079-7:2017 Ed. 5.1 IEC 60079-31:2013 Ed. 2

## MARKING

METRIX

Address : ...

Type : ST5484E-\*\*\*-\*\*\*\*-\*\*<sup>(1)</sup> or SW5484E-\*\*\*-\*\*\*\*-\*\*<sup>(1)</sup>

Serial number : ...

Year of construction : ...

Ex ec IIC T4 Gb

IECEX LCIE 22.0005X

-40 °C ≤ T<sub>amb</sub> ≤ +100 °C

WARNING – DO NOT SEPARATE WHEN ENERGIZED (for products with MIL or M12 connector)

<sup>(1)</sup> Completed as per the type





# Annex 01 to Certificate IECEx LCIE 22.0005X issue 0



**For SW5484E Vibration switch:**

SW5484E — \*\*\* — \*\* \* \* — \* \*

(A) (B) (C) (D) (E) (F)

(A) : Range (full scale)			
***		Description	
Model		A1	A2
SW5484E			
Peak	RMS		
121	151	1.0 IPS	25.4 mm/s
122	152	0.5 IPS	12.7 mm/s
123	153	2.0 IPS	50.8 mm/s
124	154	5.0 IPS	125 mm/s
126	156	0.8 IPS	20.3 mm/s
132	162	3.0 IPS	76.2 mm/s

(E) : High pass (-3 dB)	
*	Description
0	2 Hz
1	5 Hz
2	10 Hz
3	20 Hz
4	50 Hz
5	100 Hz
6	200 Hz
X	Custom

(B) : Housing material and stud size	
**	Description
10-19, 30	316 stainless steel housing, multiple stud sizes

(C) : Hazardous area certification	
*	Description
C	(increased safety) ATEX, Ex ec IIC T4 Gc
D	(increased safety) IECEx, Ex ec IIC T4 Gc

(D) : Connection type	
*	Description
8	8-Pin M12
7	5 meter (16.5 feet) Flying leads, 8-wire
6	10 meter (33 feet) Flying leads, 8-wire

(F) : Low pass (- 3 dB)	
*	Description
0	1500 Hz
1	500 Hz
2	1000 Hz
3	2000 Hz
4	250 Hz
5	230 Hz
X	Custom

## RATINGS

Supply voltage: 11-30 V DC

For SW5484E, the maximum current which can pass through each solid-state switch is 100 mA DC only.

## FULL SPECIFIC CONDITIONS OF USE

- a. 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 device.
- b. The device does not incorporate an external earth facility. It is the responsibility of the user to ensure adequate earth continuity.
- c. For ST5484E transmitters with certified capped elbow:
  - The user shall use an Ex eb certified entry device at the capped elbow's entry while respecting the installation requirements of IEC 60079-14.
  - Disconnect the device from supply circuit before opening the capped conduit elbow.
  - The disassembling of the transmitter from its capped elbow is not allowed.
- d. For ST5484E transmitters with 2-Pin MIL connector: the mating female connector provided by the end user shall be in accordance with all applicable clauses of IEC 60079-0 and IEC 60079-7. A minimum degree of protection IP54 according to IEC 60529 shall be ensured.  
The mating connector shall not be connected or disconnected when energized.



## Annex 01 to Certificate IECEx LCIE 22.0005X issue 0



- e. For ST5484E transmitters with flying leads: the flying leads shall be suitably protected from impact and shall be terminated within a suitably certified enclosure or in safe area. The installation shall guarantee that no pulling force will be applied to the leads.
- f. For SW5484E with 8-Pin M12 connector: the mating female connector provided by the end user shall be in accordance with all applicable clauses of IEC 60079-0 and IEC 60079-7. A minimum degree of protection IP54 according to IEC 60529 shall be ensured.  
The mating connector shall not be connected or disconnected when energized.
- g. For SW5484E with permanent cable and separately certified cable gland: according to specific conditions of use of certificate No. IECEx CML 19.0062X of TRUSEAL TSMc M16x1.5 cable gland, the end user shall provide suitable additional clamping of the cable to ensure that pulling is not transmitted to the terminations.

### ROUTINE TESTS

In accordance with clause 7.1 of standard IEC 60079-7, each product manufactured shall be subjected to a dielectric strength test at 500 V a.c. for 1 minute. Alternatively the test may be carried out at 600 V a.c. for 100 ms. No breakdown shall occur.