



# 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 ITS 16.0048X** Page 1 of 4 [Certificate history:](#)  
Status: **Current** Issue No: 1 [Issue 0 \(2016-07-22\)](#)  
Date of Issue: 2022-05-09  
Applicant: **ABB S.p.A**  
via L. Vaccani 4  
22016 Tremezzina - Loc. Ossuccio (Como)  
**Italy**  
Equipment: **Field indicator model JDF200**  
Optional accessory:  
Type of Protection: **Ex d, Ex i, Ex t, Ex ec**  
Marking: Ex ia IIC Tx Ga  
Ex ta III C Tx Da IP67  
Ex ia III C Tx Da IP67  
Ex db IIC Tx Gb  
Ex tb III C Tx Db IP67  
Ex ec IIC Tx Gc  
Ex ic IIC Tx Gc  
Ex tc III C Tx Dc IP67  
IECEX ITS 16.0048X

Approved for issue on behalf of the IECEx  
Certification Body:

**Mark Newman**

Position:

**Certificate Officer**

Signature:  
(for printed version)

Date:  
(for printed version)

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Certificate issued by:

**Intertek Testing & Certification Limited**  
ITS House, Cleeve Road  
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Surrey, KT22 7SA  
**United Kingdom**

**intertek**



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Manufacturer: **ABB S.p.A.**  
via L. Vaccani 4  
22016 Tremezzina - Loc. Ossuccio (Como)  
**Italy**

Manufacturing locations: **ABB S.p.A.**  
via L. Vaccani 4  
22016 Tremezzina - Loc. Ossuccio  
(Como)  
**Italy**

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 60079-1:2014-06](#) 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 60079-31:2013](#) Explosive atmospheres - Part 31: Equipment dust ignition protection by enclosure "t"  
Edition:2

[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 Reports:

[GB/ITS/ExTR15.0061/00](#)

[GB/ITS/ExTR15.0061/01](#)

Quality Assessment Report:

[IT/CES/QAR07.0001/14](#)



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## **EQUIPMENT:**

Equipment and systems covered by this Certificate are as follows:

Field Indicator JDF200 series. It provides remote indications of a process variable. JDF200 has a programmable signal display, providing alphanumeric plus bargraph indication.

The display is protected with a tempered glass window with a thickness of 10mm (for model JDF...L1...), or 6 mm (for model JDF...L5...). The window is fixed in the enclosure with a cemented joint. The enclosure consists of a stainless steel or aluminium alloy, main body and a cover secured together by a threaded joint M84x1.5 that has a locking socket head screw.

The type code, the ambient temperatures and the correct ratings are reported in the Annex.

For models installed using Intrinsic Safety, the entity parameters are noted in the Annex.

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

- Installation cables suitable for specific max temp are indicated in the annex.
- The ambient temperature is not indicated on the label but only in the user manual.
- The enclosure can be made of aluminium. The installation of the equipment must take this into account with respect to impact and frictional sparking for it to be suitable for Group II for EPL Ga.
- The final user can choose the level of protection of the equipment when the equipment is with the option EN, EW, E7, EI and EH on the type code for the Hazardous Area certifications. When the selection is made, it is not possible to change it. The same procedure has to be applied for all the other codes when a multiple choice for the type of protection is present on the label.
- Instruction manual reports information to reduce the risk of electrostatic charge.
- Details about electrical voltage supply in function of the type of protection are indicated in the user manual and in product certification details.



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## **DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)**

### **Issue 1:**

- Updated IEC60079-0 from edition 6th to 7th
- Updated standard from IEC 60079-15 edition 4 to IEC 60079-7 edition 5.1.
- Updated marking from "Ex nA IIC Tx Gc" to "Ex ec IIC Tx Gc"
- Update "Specific condition of Use"
- Update type code, change not relevant for type of protection.

### **Annex:**

[IECEX ITS 16.0048X Annex for IECEx CoC\(1\).pdf](#)

<b>Certificate No:</b>	IECEX ITS 16.0048X	<b>Issue No. 1</b>
<b>Annex No. 1</b>		

## 1. Description of the equipment

Field Indicator JDF200 series. It provides remote indications of a process variable. JDF200 features a programmable signal display, providing alphanumeric plus bar graph indication. The display is protected with a tempered glass window with a thickness of 10mm (for model JDF...L1...), or 6 mm (for model JDF...L5...). The window is fixed in the enclosure with a cemented joint. The enclosure consists of a main body and a cover manufacturer in aluminium alloy or AISI 316 L stainless steel and secured together by a threaded joint M84x1.5 and locked with a hexagon socket screw.

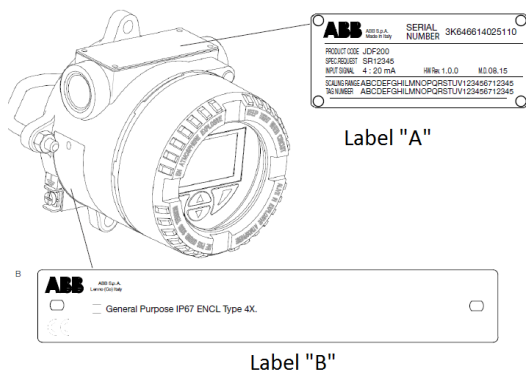
There are two basic types of the JDF200 Field Indicator differing in the functioning of the display (touch or not, see the type code). The touch version is the JDF200...L5 and the nontouch JDF...L1.

Both the L1 and L5 versions provide a degree of protection of IP67. The enclosure is sealed by an O-ring positioned between the cover and the main frame at the end of the threaded and by the cemented joint. All electronic circuits are protected with a limitation of the energy of sparks and surface temperature (intrinsic safety and non-sparking).

Only the JDF...L1 model is an explosion proof housing, Ex db type of protection.

The class temperature change in function of the ambient temperature and the alimentation.

The label are positioned as show in the figure:



Where:

- Label "A" is the product serial number label;
- Label "B" is the certification label.

And the type code is:

	digit	Coding	Meaning
Commercial code	JDF200		
Housing material and electrical connection	*	A	Aluminum alloy: ½ in. – 14 NPT;
		B	Aluminum alloy: M20 x 1.5 (CM20);
		S	AISI 316L ss (I2 or I3 additional code required): ½ in. – 14 NPT;
		T	AISI 316L ss (I2 or I3 additional code required): M20 x 1.5 (CM20);

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		C	AISI 316L ss painted (I2 or I3 additional code required): ½ in. –14 NPT;
		D	AISI 316L ss painted (I2 or I3 additional code required): M20 x 1.5 (M20).
Input signal/additional options	*	7	4 to 20 mA (Options requested by “Additional ordering code”).
Integral LCD	**	L1	digital LCD integral display with integrated keypad;
		L5	digital LCD integral display with TTG (Through-The-Glass) activated keypad (NOT EXPLOSION PROOF).
Hazardous area certifications:	**	E1	ATEX Intrinsic Safety II 1G Ex ia IIC Tx Ga and II 1D Ex ta IIIC Tx Da IP67 and II 1D Ex ia IIIC Tx Da IP67
		E2	ATEX Explosion Proof II 2G Ex db IIC Tx Gb and II 2D Ex tb IIIC Tx Db IP67 (Note 1);
		E3	ATEX No sparking and Intrinsic Safety II 3G Ex ec IIC Tx Gc and II 3G Ex ic IIC Tx Gc and II 3D Ex tc IIIC Tx Dc IP67
		WU	UKCA Intrinsic Safety II 1G Ex ia IIC Tx Ga and II 1D Ex ta IIIC Tx Da IP67 and II 1D Ex ia IIIC Tx Da IP67
		WY	UKCA Explosion Proof II 2G Ex db IIC Tx Gb and II 2D Ex tb IIIC Tx Db IP67 (Note 1);
		WW	UKCA No sparking and Intrinsic Safety II 3G Ex ec IIC Tx Gc and II 3G Ex ic IIC Tx Gc and II 3D Ex tc IIIC Tx Dc IP67
		EW	Combined ATEX - Intrinsic Safety, Explosion Proof and No sparking Ex ec and Intrinsic Safety Ex ic (E1 + E2 + E3) (Note 1);
		E7	Combined ATEX - Intrinsic Safety and Explosion Proof (E1 + E2) (Note 1);
		E5	Combined ATEX, IECEx, Intertek (USA) and Intertek (Canada) (PENDING) (EW + EV + EU + EI) Note A (Note 1);
		WZ	Combined UKCA - Intrinsic Safety, Explosion Proof and No sparking Ex ec and Intrinsic Safety Ex ic (WU + WY + WW) (Note 1);
		EU	Intertek (Canada) approval (Note 1);
		EV	Intertek (USA) approval Note A (Note 1);
		EJ	Intertek (USA and Canada) Intrinsic Safety and Dustproof Note A
		EK	Intertek (USA and Canada) Explosion Proof Note A (Note 1)
		EL	Intertek (USA and Canada) Nonincendive Note A
E8	IECEX Intrinsic Safety Ex ia IIC Tx Ga and Ex ta IIIC Tx Da IP67 and Ex ia IIIC Tx Da IP67		
E9	IECEX Explosion Proof Ex db IIC Tx Gb and Ex tb IIIC Tx Db IP67 (Note 1);		
ER	IECEX No sparking and Intrinsic Safety Ex ec IIC Tx Gc and Ex ic IIC Tx Gc and Ex tc IIIC Tx Dc IP67		

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			EI Combined IECEx - Intrinsic Safety, Explosion Proof and No sparking Ex nA and Intrinsic Safety Ex ic (E8 + E9 + ER) (Note 1); EH Combined IECEx - Intrinsic Safety and Explosion Proof (E8 + E9) (Note 1); Wx for additional certification code, x can be various Ex for additional certification code, x can be various
Operating manual (multiple selection allowed)	**	M1	German
		M2	Italian
		M3	Spanish;
		M4	French;
		M5	English;
		M6	Chinese.
		Mx	for additional languages, x can be various
Plates language:	**	Tx	can be various
Additional tag plate:	**	Ix	x can be various For example I1 is "supplemental wired-on stainless steel plate".
Certificates not related with the Ex certification. (multiple selection allowed)	**	Cx	x can be various For example C1 is "Inspection certificate EN 10204-3.1 of calibrating point (9-point)"
Temperature Limit (mandatory for US Certifications)	**	NB	Installation to be performed down to -40 °C (-40 °F) ambient temperature"
		NC	Installation to be performed in an extended range down to -50°C (-58 °F) ambient temperature
Certificates not related with the Ex certification. (multiple selection allowed)	**	Zx	x can be various For example Z1 is "One certified stainless steel plug"

Note 1: not available with integral LCD code L5.

Note A: See relative report for US Certification



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The relation between the type of protection, electrical rating and the temperature classes are:

Type of protection	T4/T135	T4/T135	T5/T100	T6/T85
Ex ia IIC Tx Ga Ex ia IIIC Tx Da IP67	-50°C < Ta < +85°C Ui= 30 Vdc Ii= 100 mA Pi= 0.75 W Ci=6nF Li=0H	-50°C < Ta < +70°C Ui= 30 Vdc Ii= 160 mA Pi= 1 W Ci=6nF Li=0H	-50°C < Ta < +40°C Ui= 30 Vdc Ii= 100 mA Pi= 1,75 W Ci=6nF Li=0H	-50°C < Ta < +40°C Ui= 30 Vdc Ii= 50 mA Pi= 0.4 W Ci=6nF Li=0H
Ex ta IIIC Tx Da IP67	-50°C < Ta < +85°C V= 30 Vdc Limited at 58mA*	-50°C < Ta < +70°C V= 30 Vdc Limited at 95mA*	-50°C < Ta < +40°C V= 30 Vdc Limited at 58mA*	-50°C < Ta < +40°C V= 30 Vdc Limited at 28mA*
Ex db IIC Tx Gb Ex tb IIIC Tx Db IP67	-50°C < Ta < +75°C V= 42Vdc I= 100 mA	N/A	-50°C < Ta < +75°C V= 42Vdc I= 100 mA	-50°C < Ta < +75°C V= 42Vdc I= 100 mA
Ex ec IIC Tx Gc Ex tc IIIC Tx Dc IP67	-50°C < Ta < +75°C V= 42Vdc I= 100 mA	-50°C < Ta < +70°C V= 30Vdc I= 160 mA	-50°C < Ta < +40°C V= 42Vdc I= 40 mA	-50°C < Ta < +40°C V= 42Vdc I= 40 mA
Ex ic IIC Tx Gc	-50°C < Ta < +75°C Ui= 42Vdc Ii= 100 mA Pi= 1 W Ci=6nF Li=0H	-50°C < Ta < +70°C Ui= 30Vdc Ii= 160 mA Pi= 1 W Ci=6nF Li=0H	-50°C < Ta < +40°C Ui= 42Vdc Ii= 40 mA Pi= 1 W Ci=6nF Li=0H	-50°C < Ta < +40°C Ui= 42Vdc Ii= 40 mA Pi= 1 W Ci=6nF Li=0H

Technical Documents			
Title:	Drawing No.:	Rev. Level:	Date:
JDF 200 LOCAL FIELD INDICATOR	DH3251	0	17/02/2015
JDF200 - FIELD INDICATOR	AU 3188 / 1	01	28/04/2016
* JDF200 - Field indicator	DH3242	0	06/07/2016
Field Indicator	DH 3243	0	15/10/2014
* Field Indicator "JDF200" Safety Plates	DH3253	1	26/11/2020
Model JDF Field Indicator	DS/JDF-EN	A	02.2016
* 2600T Series Model JDF200 Field Indicator	OI/JDF200-EN	F	06.2021
2600T Series-Field meter intrinsic safety evaluation	TRT.320.09	-	28/04/2016
Common HMI Type B with touch-key	9280346 P1	02	06/10/2011
Common HMI: "Type B"	DH3084	02	26/03/2008
Part list – Common HMI : "Type B"	AU 3042/3	3	26/03/2008
PCB Board HMI Type B with Touch Key	9280349	B	06/06/2012
JDF200 and HMI coupling	TRT.377.01	1	23/05/2016

\* drawings that have been updated or are new

### Required Manufacturer Routine Testing

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Test	Title/Description of Test	Standard and Clause
1	<p>Dielectric test</p> <p>It is required, for IEC 60079-7, that the manufacturer shall perform an electric strength test at:</p> <ul style="list-style-type: none"><li>• 500Vac for 60s or</li><li>• 700Vdc for 60s or</li><li>• 600Vac for 100ms</li><li>• 850Vdc for 100ms</li></ul> <p>All tests shall be recorded</p>	IEC 60079-7 ed. 5.1

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