



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 DEK 11.0042X

Issue No: 2

Certificate history:

Status: **Current**

[Issue No. 2 \(2019-02-22\)](#)

[Issue No. 1 \(2016-07-27\)](#)

Date of Issue: **2019-02-22**

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[Issue No. 0 \(2011-04-22\)](#)

Applicant: **Fluidwell B.V.**
Voltaweg 23
5466 AZ Veghel
The Netherlands

Equipment: **Indicator Model F1 Series**

Optional accessory:

Type of Protection: **Ex i**

Marking:
Ex ia IIC/IIB T4 Ga
Ex ia IIIC T₂₀₀ 100 °C Da

*Approved for issue on behalf of the IECEx
Certification Body:*

R. Schuller

Position:

Certification manager

*Signature:
(for printed version)*

Date:

2019-02-22

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](#).

Certificate issued by:

DEKRA Certification B.V.
Meander 1051,
6825 MJ Arnhem
The Netherlands





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Manufacturer: **Fluidwell B.V.**
Votaweg 23
5466 AZ Veghel
The Netherlands

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 : 2017 Explosive atmospheres - Part 0: Equipment - General requirements
Edition:7.0

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:

[NL/DEK/ExTR11.0033/02](#)

Quality Assessment Report:

[NL/DEK/QAR12.0019/04](#)



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Schedule

EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

The range of Indicators includes the following basic models with different signal input types:

Model F1..-P-XI,	indicators with digital input (coil, switch, npn, pnp, active or Namur);
Model F1..-A-XI,	indicators with analog input ((0)4 ... 20 mA);
Model F1..-R-XI,	indicators with analog input (0 ... 100 KOhm);
Model F1..-U-XI,	indicators with analog input (0 ... 10 V);
Model F1..-T-XI,	indicators with PT100 input.

The range of Indicators Series F1 includes the basic models with their variations as indicated in Annex 1.

The enclosure of the indicator provides a degree of protection of at least IP65 in accordance with IEC 60529.

Ambient temperature range: -40 °C to +70 °C, only for EPL Da the maximum ambient temperature is limited to 50 °C, see specific conditions of use.

The maximum temperature of the enclosure T_{200} 100 °C is referred to an ambient temperature of 50 °C and a maximum dust layer thickness of 200 mm.

When used in a potentially explosive atmosphere requiring apparatus of EPL Db, the equipment may be used with a maximum dust layer thickness of 5 mm.

Electrical data

See Annex 1.

SPECIFIC CONDITIONS OF USE: YES as shown below:

When the enclosure of the Indicator is made of aluminium alloy, when used in a potentially explosive atmosphere requiring apparatus of equipment protection level Ga, the Indicator shall be installed so, that even in the event of rare incidents, an ignition source due to impact or friction sparks between the enclosure and iron/steel is excluded.

For EPL Da the ambient temperature T_a shall not exceed 50 °C.



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DETAILS OF CERTIFICATE CHANGES (for issues 1 and above):

- Evaluation to the latest edition of standards
- Minor changes to the construction

Annex:

[223345200-Annex1.pdf](#)

For the combined connection of the different supply, input and output circuits, the installation instructions of the manufacturer shall be observed. From the safety point of view the circuits shall be considered to be connected to earth. The following conditions of use shall be observed:

The indicator is classified as group IIB/IIIC. However, classification of the indicator as group IIC is possible, only under the following conditions:

- The indicator is either supplied by
 - the internal supply (option -PC); or
 - the external supply connected to terminals 0 and 1 (option -PD); or
 - the circuit supply connected to terminals 7 and 8 (option -AP);

The maximum values for any of those circuits are those as defined for group IIB/IIIC;

- no other active external intrinsically safe circuits may be connected to the indicator, with exception of circuits connected to terminals 3 and 4 and/or terminals 5 and 6; the maximum values for any of those circuits are those as defined for group IIB/IIIC

	Electrical data	Model F1 .. -A Model F1 .. -U	Model F1 .. -P Model F1 .. -T	Model F1 .. -R
Internal supply (Connector) Option -PC	For use with the certified replaceable battery type FW-LiBAT-... or to another certified non rechargeable battery in type of protection intrinsic safety Ex ia IIB/IIIC/IIIC, with the following maximum values: $U_i = 4 \text{ V}$ $I_i = 50 \text{ mA}$ $P_i = 200 \text{ mW}$ $L_i = 0 \text{ mH}$ $C_i = 0 \text{ }\mu\text{F}$			
	In type of protection intrinsic safety Ex ia IIB/IIIC or Ex ia IIC (as indicated below), only for connection to a certified intrinsically safe circuit, with following maximum values:			
External supply input Option -PD Terminals 0 and 1	$U_i = 30 \text{ V}$ $I_i = 100 \text{ mA}$ $P_i = 750 \text{ mW}$ $L_i = 0 \text{ mH}$ $C_i = 0 \text{ }\mu\text{F}$	Ex ia IIB/IIIC If external circuits are connected to the external supply outputs, terminals 0 and 2 and where applicable terminals 9 and 11 and/or 12 and 14, the total amount of external capacitance and inductance of the circuits, connected to that terminals, is added to the effective internal capacitance C_i and inductance L_i of this external supply input circuit.		
Active inputs (Active pulse, 0/4-20mA, 0-10V)	$U_i = 30 \text{ V}$ $I_i = 100 \text{ mA}$ $P_i = 750 \text{ mW}$ $L_i = 0 \text{ mH}$ $C_i = 0 \text{ }\mu\text{F}$	Ex ia IIB/IIIC terminals 9 and 10, terminals 12 and 13, terminals 17 and 18, terminals 17 and 19		
Pulse outputs Option -OT Terminals 3 and 4, terminals 5 and 6	$U_i = 30 \text{ V}$ $I_i = 100 \text{ mA}$ $P_i = 750 \text{ mW}$ $L_i = 0 \text{ mH}$ $C_i = 0 \text{ }\mu\text{F}$	Ex ia IIB/IIIC		
Analog output "open drain" Option -AF and -AP	$U_i = 30 \text{ V}$ $I_i = 100 \text{ mA}$ $P_i = 750 \text{ mW}$ $L_i = 0 \text{ mH}$ $C_i = 17 \text{ nF}$	Ex ia IIB/IIIC <u>Option -AF</u> : terminals 7 and 8 with respect to terminals 0, 3, 5, 9, 12 and 15. <u>Option -AP</u> : terminals 7 and 8.		
Pulse/status inputs Terminals 15 and 16	$U_i = 30 \text{ V}$ $I_i = 100 \text{ mA}$ $P_i = 750 \text{ mW}$ $L_i = 0 \text{ mH}$ $C_i = 0 \text{ nF}$	Or in type of protection intrinsic safety Ex ia IIB/IIIC or Ex ia IIC, with the following maximum values: $U_o = 5,4 \text{ V}$, $I_o = 1 \text{ mA}$, $P_o = 2 \text{ mW}$, $L_o = 1 \text{ H}$, $C_o = 65 \text{ }\mu\text{F}$		
Data communication circuit Terminals 26, 27, 28, 29, 30 and 31	$U_i = 30 \text{ V}$ $I_i = 250 \text{ mA}$ $P_i = 850 \text{ mW}$ $L_i = 0 \text{ mH}$ $C_i = 0 \text{ nF}$	Ex ia IIB/IIIC		

	Electrical data	Model F1 .. -A Model F1 .. -U	Model F1 .. -P Model F1 .. -T	Model F1 .. -R
In type of protection intrinsic safety Ex ia IIB/IIC or Ex ia IIC, with following maximum values:				
Coil, Switch, PNP, NAMUR inputs In combination <u>with</u> external supply (with option -PD)	$U_0 = 8,7 \text{ V}$ $I_0 = 25 \text{ mA}$ $P_0 = 150 \text{ mW}$ Ex ia IIB/IIC $L_0 = 210 \text{ mH}$ $C_0 = 50 \text{ }\mu\text{F}$	Terminals 13 and 14	Terminals 10 and 11, terminals 13 and 14	Terminals 13 and 14
Coil, Switch, NPN inputs In combination <u>with</u> external supply (with option -PD)	Ex ia IIC $L_0 = 52,6 \text{ mH}$ $C_0 = 5,9 \text{ }\mu\text{F}$	Terminals 12 and 13	Terminals 9 and 10, terminals 12 and 13	Terminals 12 and 13
Coil, Switch, PNP inputs In combination <u>without</u> external supply (without option -PD)	$U_0 = 5,4 \text{ V}$ $I_0 = 5,2 \text{ mA}$ $P_0 = 7 \text{ mW}$ Ex ia IIB/IIC $L_0 = 210 \text{ mH}$ $C_0 = 50 \text{ }\mu\text{F}$	Terminals 13 and 14	Terminals 10 and 11, terminals 13 and 14	Terminals 13 and 14
Coil, Switch, NPN inputs In combination <u>without</u> external supply (without option -PD)	Ex ia IIC $L_0 = 1 \text{ H}$ $C_0 = 65 \text{ }\mu\text{F}$	Terminals 12 and 13	Terminals 9 and 10, terminals 12 and 13	Terminals 12 and 13
Potentiometer inputs In combination <u>with</u> external or circuit supply (with option -PD, -AP) Terminals 9, 10 and 11, terminals 12, 13 and 14	$U_0 = 5,4 \text{ V}$ $I_0 = 162 \text{ mA}$ $P_0 = 750 \text{ mW}$ Ex ia IIB/IIC $L_0 = 5,3 \text{ mH}$ $C_0 = 1000 \text{ }\mu\text{F}$	N.A.	N.A.	Applicable
Pt100 inputs In combination <u>with</u> external or circuit supply (with option -PD, -AP) Terminals 20, 21 and 22, terminals 23, 24 and 25	Ex ia IIC $L_0 = 1 \text{ mH}$ $C_0 = 65 \text{ }\mu\text{F}$	Applicable		
Potentiometer inputs In combination <u>without</u> external or circuit supply (without options -PD, -AP) Terminals 9, 10 and 11, terminals 12, 13 and 14	$U_0 = 5,4 \text{ V}$ $I_0 = 40 \text{ mA}$ $P_0 = 200 \text{ mW}$ Ex ia IIB/IIC $L_0 = 5,3 \text{ mH}$ $C_0 = 1000 \text{ }\mu\text{F}$	N.A.	N.A.	Applicable
Pt100 inputs In combination <u>without</u> external or circuit supply (without options -PD, -AP) Terminals 20, 21 and 22, terminals 23, 24 and 25	Ex ia IIC $L_0 = 20 \text{ mH}$ $C_0 = 65 \text{ }\mu\text{F}$	Applicable		
External supply outputs When <u>both</u> terminal 10 and terminal 13 are configured either as analog inputs (0/4-20mA, 0-10V) or as not available	The maximum output values, including the maximum allowed external capacitance and inductance values are equal to the parameters of the intrinsically safe circuit, connected to the external supply input at terminals 0 and 1.	Ex ia IIB/IIC Terminals 0 and 2, terminals 9 and 11, terminals 12 and 14.	Ex ia IIB/IIC Terminals 0 and 2.	Ex ia IIB/IIC Terminals 0 and 2.
External supply outputs When <u>either</u> terminal 10 or terminal 13 is <u>not</u> configured as analog input (0/4-20mA, 0-10V) but is / are available		Ex ia IIB/IIC Only Terminals 0 and 2		