



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 FMG 12.0001X Issue No: 5 Certificate history:
Status: **Current** Page 1 of 5 Issue No. 5 (2015-03-30)
Date of Issue: **2015-03-30** Issue No. 4 (2015-02-03)
Applicant: **Flowsolve US Inc Springville Operations** Issue No. 3 (2014-07-30)
1350 North Mountain Springs Parkway Issue No. 2 (2014-03-12)
Springville, UT 84663 Issue No. 1 (2014-01-20)
United States of America Issue No. 0 (2012-11-21)
United States of America

Electrical Apparatus: **Logix 420, Logix 505+, Logix 510+ and Logix 520MD+ Digital Positioner**
Optional accessory:

Type of Protection: **Type i, Type n and Type t**

Marking: See attached Annex

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

J.E.Marquedant

Position:

Manager, Electrical Systems

*Signature:
(for printed version)*

Date:

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:

FM Approvals LLC
1151 Boston-Providence Turnpike
Norwood, MA 02062
United States of America





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Manufacturer: **Flowsolve US Inc Springville Operation**
1350 North Mountain Springs Parkway
Springville, UT 84663
United States of America

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 electrical 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 Edition:6.0	Explosive atmospheres - Part 0: General requirements
IEC 60079-11 : 2011 Edition:6.0	Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
IEC 60079-15 : 2010 Edition:4	Explosive atmospheres - Part 15: Equipment protection by type of protection "n"
IEC 60079-26 : 2006 Edition:2	Explosive atmospheres - Part 26: Equipment with equipment protection level (EPL) Ga
IEC 60079-31 : 2013 Edition:2	Explosive atmospheres - Part 31: Equipment dust ignition protection by enclosure "t"

*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:

US/FMG/ExTR12.0001/00	US/FMG/ExTR12.0001/01	US/FMG/ExTR12.0001/02
US/FMG/ExTR12.0001/03	US/FMG/ExTR12.0001/04	US/FMG/ExTR12.0001/05

Quality Assessment Report:

GB/SIR/QAR07.0005/00	GB/SIR/QAR07.0005/01	GB/SIR/QAR07.0005/02
GB/SIR/QAR07.0005/03		



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Schedule

EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

See attached Annex

CONDITIONS OF CERTIFICATION: YES as shown below:

1. To prevent the risk of electrostatic sparking the enclosure shall only be cleaned with a damp cloth.
2. The Digital Positioner enclosure contains aluminum and is considered to present a potential risk of ignition by impact or friction. Care must be taken into account during installation and use to prevent impact or friction.
3. Provision shall be made externally to provide transient overvoltage protection to a level not to exceed 140% of the peak rated input voltage.
4. For type nA or type tb installation only air or inert gas may be connected to the air supply line.



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

- Inclusion of Ex nA IIC and Ex tb IIIC protection method.
- Change IP rating for Logix 505+, Logix510+ and LogixMD+ to IP65 for Ex n IIC and Ex tb IIIC protection method.
- Confirm IP66 rating for Logix 420
- Update to documentation.



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Additional information:

See attached Annex

Annex:

[Annex to IECEx FME 12.0001X.pdf](#)

Description:

The Logix 505+, Logix 510+, Logix 520MD+ and Logix 420 of Digital Positioners are two-wire 4-20 mA single/double acting analog/digital positioners. They combine piezo-valve technology with inner-loop feedback to provide control. The Positioners are designed to be configured at the valve through the local user interface. Optional colored LED's and/or LCD allow the user to determine the condition of the device.

The Logix 505+ and Logix 510+ are less populated versions of the Logix 520MD+ Digital Positioner. The housing for the Logix 505+, Logix 510+ and Logix 520MD+ Digital Positioners is identical and is constructed of an aluminum alloy and is essentially rectangular in shape with a four bolt cover for the main compartment. The metal enclosure is anodized and coated with a Polyester based paint. The cover for the main compartment has two polycarbonate viewing windows for the LED's, the Optional LCD display. It also has an option for a third polycarbonate indication window that is either flat lens or dome indication. The base of the housing has four ½" NPT or M20 conduit openings, a cylindrical rotary shaft and two pneumatic output ports with one pneumatic supply port.

The housing for the Logix 420 Digital Positioner is constructed of an aluminum alloy and is essentially circular in shape with a screw on cover for the main compartment. The Logix 420 contains a depopulated Logix 520MD+ on a different shaped circuit board to fit into the rounded Logix 420 enclosure. The metal enclosure is anodized and coated with a Polyester based paint. The cover for the main compartment has a glass viewing window for the LED's, the Optional LCD display. The base of the housing has a single ½" NPT or M20 conduit openings, a cylindrical rotary shaft and a single pneumatic output ports with one pneumatic supply port.

The Logix 505+, Logix 510+, Logix 520MD+ and Logix 420 Digital Positioners comprise the following:

- Main Circuit Board
- Piezo Relay (Optional Single or Double Acting Mechanical Configuration)
- Hall Effect Sensor
- Feedback Potentiometer

Additionally the Logix 505+, Logix 510+ and Logix 520MD+ Digital Positioners comprise the following:

- Optional Field Installable Switches.

Additionally the Logix 510+ and Logix 520MD+ Digital Positioners comprise the following:

- Internal Pressure board
- Optional Field Installable MFC Auxiliary Card
- Optional Remote Mount Terminal Board
- Optional V to I Auxiliary Card

Markings:

Logix 505+, Logix 510+ and Logix 520MD+ Digital Positioners:

Ex ia IIC T4 Ta = -20°C to +85°C, T6 Ta = -52°C to +45°C Ga IP66
Ex nA IIC T4 Ta = -20°C to +85°C, T6 Ta = -52°C to +45°C Gc IP65
Ex tb IIIC T100°C Ta = -52°C to +85°C Db IP65

Logix 420 Digital Positioners:

Ex ia IIC T4 Ta = -20°C to +85°C, T6 Ta = -52°C to +45°C Ga IP66
Ex nA IIC T4 Ta = -20°C to +85°C, T6 Ta = -52°C to +45°C Gc IP66
Ex tb IIIC T100°C Ta = -52°C to +85°C Db IP66

Model Code Structure and Entity Parameters:

5a37-bcdefg-hi-jklm. Digital Positioner.

Entity Parameters:

	4-20 Input / V to I	MFC Card	Limit Switch
Ui (V)	30	30	10.6
Ii (mA)	100	100	29.7
Pi (mW)	800	800	79
Ci (nF)	0	0	1
Li (µH)	47	0	1

Remote Mount Terminals	
Uo (V)	5
Io (mA)	79
Po (mW)	129
Co (µF)	2
Lo (µH)	100

- a = Communication and Diagnostics: 05+, 10+, 20MD+, 21MD+ or 22MD+.
- b = Housing: W, Y, B or A.
- c = Threaded Connection: 1, 2 or 3.
- d = Feedback Shaft: D or R.
- e = Action: 1, 2 or 3.
- f = Position Indicator: 0, F or D.
- g = Special Option 0 or 1.
- h = Manifold: 00 or GM.
- i = Pressure Gauge: 0, 1, 2, 3, 4, A or B.
- j = LCD: 0 or 1.
- k = Auxiliary Card Slot 1: 0, 1, or 2.
- l = Auxiliary Card Slot 2: 0 or 1.
- m = Switch: 0, 2 or 7.

420-40-abc-de. Digital Positioner.

Entity Parameters:

	4-20 Input
Ui (V)	30
Ii (mA)	100
Pi (mW)	800
Ci (nF)	0
Li (µH)	47

- a = General Options: W or N.
- b = Threaded Connection: 1, 2 or 3.
- c = Feedback Shaft: D or R.
- d = Gauge: 0, 1, 2, 3, 4, A or B.
- e = Display: 0, 1 or 2.