



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

Certificate No.: **IECEx EESF 21.0014X**

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Certificate history:

Status: **Current**

Issue No: 3

[Issue 2 \(2024-01-31\)](#)

[Issue 1 \(2021-11-30\)](#)

[Issue 0 \(2021-06-16\)](#)

Date of Issue: 2025-05-26

Applicant: **Valmet Flow Control Oy**
Vanha Porvoontie 229
Vantaa FI-01380
Finland

Equipment: **Intelligent Valve Controllers NDX___0, NDX___1 and NDX___2**

Optional accessory: n/a

Type of Protection: **Intrinsically Safe or Increased safety**

Marking: **Ex ia IIC T6...T4 Ga**

Ex ia IIIC T₂₀₀85 °C...T₂₀₀115 °C Da

Ex ib IIC T6...T4 Gb

Ex ib IIIC T₂₀₀85 °C...T₂₀₀115 °C Db

Ex ic IIC T6...T4 Gc

Ex ic IIIC T85 °C...T115 °C Dc

Ex ec IIC T6...T4 Gc

IP66

Approved for issue on behalf of the IECEx
Certification Body:

Jenni Hirvelä

Position:

Senior Expert

Signature:
(for printed version)

Date:
(for printed version)

2025-05-26

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Certificate issued by:

Eurofins Electric & Electronics Finland Oy
Kivimiehentie 4
Espoo FI-02150
Finland





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Date of issue: 2025-05-26

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Manufacturer: **Valmet Flow Control Oy**
Vanha Porvoontie 229
Vantaa FI-01380
Finland

Manufacturing
locations: **Valmet Flow Control Oy**
Vanha Porvoontie 229
Vantaa FI-01380
Finland

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 60079-11:2023](#) Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
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:

[FI/EESF/ExTR21.0016/03](#)

Quality Assessment Report:

[NO/DNV/QAR09.0008/16](#)



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EQUIPMENT:

Equipment and systems covered by this Certificate are as follows:

NDX valve positioners are intended for linear or rotary travel control valves. The NDX monitors valve position and controls the actuator of the device. NDX is connected to a control system (DCS) via 4 – 20 mA current loop which provides power supply to NDX and data communication between NDX and DCS utilizing HART communication protocol. The NDX includes floating 4 – 20 mA current transmitter/sink interface that can be used for indicating the valve position to the control system. Current loop for power supply and HART communication (mA loop) and current loop for Position Transmitter (PT loop) are separate I.S. circuits. NDX_ _ _1 and NDX_ _ _2 variant incorporates two current transmitter/sink interfaces complying with NAMUR standard.

The NDX produces pneumatic control signal for the actuator and monitors the pressure of air supply and actuator channel for diagnostic purposes. For valve position sensing, the NDX uses contactless measurement method based on sensing the direction of the magnetic field created by a target magnet on the valve shaft.

The NDX enclosures are made of cast aluminium and plastic (NDX_ _ _0/1) or cast aluminium entirely (NDX_ _ _2). LUI (Local User Interface) with LCD display and capacitive keypad is intended for controlling and monitoring valve and positioner operation locally.

Prestage unit in the device converts the electronic control signal from the main board to pneumatic control signal for the actuator.

The enclosure provides type of protection IP66 in accordance with IEC 60079-0.

SPECIFIC CONDITIONS OF USE: YES as shown below:

See "Additional Information"



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Equipment (continued):

The maximum input values of the NDX mA and PT loop interfaces are:

$U_i \leq 28 \text{ V}$

$I_i \leq 120 \text{ mA}$

$P_i \leq 1 \text{ W}$

$C_i < 3.7 \text{ nF}$

$L_i < 10.9 \text{ }\mu\text{H}$

The maximum input values of NAMUR-DO1 and NAMUR-DO2 interfaces in NDX__1 and NDX__2 are:

$U_i \leq 16 \text{ V}$

$I_i \leq 25 \text{ mA}$

$P_i \leq 100 \text{ mW}$

$C_i < 23.4 \text{ nF}$

$L_i < 27.8 \text{ }\mu\text{H}$

The maximum input values for type of protection "ec" are:

$U \leq 28 \text{ V}$ (mA and PT loop interfaces)

$U \leq 16 \text{ V}$ (NAMUR-DO1 and NAMUR-DO2 interfaces)



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DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)

New document revisions. IS descriptions amended.



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Additional information: SPECIFIC CONDITIONS:

Ex ia/ ib:

1. The maximum allowed ambient temperature ranges according to different T Classes are:
 - Tamb -40 °C ... +50 °C for temperature class T6 (IIC) or T₂₀₀85 °C for dust (IIIC)
 - Tamb -40 °C ... +65 °C for temperature class T5 (IIC) or T₂₀₀100 °C for dust (IIIC)
 - Tamb -40 °C ... +80 °C for temperature class T4 (IIC) or T₂₀₀115 °C for dust (IIIC)
2. The permissible ambient temperature range depends on the used configuration.
3. At an ambient temperature $\geq +70$ °C, the temperature rating of the connection cable shall be in accordance with maximum ambient temperature range.
4. Temperature Classes for dust are based on measurement w.r.t. total immersion to dust required for category 1 D (EPL Da) equipment.
5. For Equipment category 1 G (EPL Ga), the enclosure parts or enclosures made of aluminium alloy shall not be subjected to friction or impacts due to spark ignition hazard.
6. For type NDX__0 the impact test was made according to low risk of mechanical danger. The device shall be protected from high-level impacts.
7. The non-conductive plastic covers, enclosure coating and attached non-metallic labels may be subject to electrostatic charging. therefore, all charge-generating mechanism, such as forcible rubbing, cleaning with pressurized air or high-pressure steam shall be avoided. The following warning is included in the manual: "Electrostatic Hazard: Clean only with damp cloth, etc.".
8. The metallic marking labels are not earthed and have 56 pF capacitance with respect to earth. If a charge-generating mechanism is present, an incendive level of charge could migrate to unearthed metal parts and subsequently discharge to earthed metal object if brought near to these parts. Precautions are required to avoid any charge-generation and/or discharge to earthed metal objects
9. The valve controller shall be connected according to manufacturer's instructions..
10. The equipment is provided with cable gland entries with or without an adapter. Entry devices must comply to applied ambient temperature range and conform to requirements of EN IEC 60079-0.
11. The valve controller shall be installed only by trained and qualified personnel.

Ex ic/ ec:

1. The maximum allowed ambient temperature ranges according to different T Classes are:
 - Tamb -40 °C ... +50 °C for temperature class T6 (IIC) or T85 °C for dust (IIIC)
 - Tamb -40 °C ... +65 °C for temperature class T5 (IIC) or T100 °C for dust (IIIC)
 - Tamb -40 °C ... +85 °C for temperature class T4 (IIC) or T115 °C for dust (IIIC)
2. The permissible ambient temperature range depends on the used configuration.
3. At an ambient temperature $\geq +70$ °C, the temperature rating of the connection cable shall be in accordance with maximum ambient temperature range.
4. Temperature Classes for dust are based on measurement w.r.t. total immersion to dust required for category 1 D (EPL Da) equipment.
5. The impact test of NDX__0 enclosure was made according to low risk of mechanical danger. The device shall be protected from high-level impacts..
6. The non-conductive plastic covers, enclosure coating and attached non-metallic labels may be subject to electrostatic charging. therefore, all charge-generating mechanism, such as forcible rubbing, cleaning with pressurized air or high-pressure steam shall be avoided. The following warning is included in the manual: "Electrostatic Hazard: Clean only with damp cloth, etc.".
7. The valve controller shall be connected according to manufacturer's instructions.
8. The metallic marking labels are not earthed and have 56 pF capacitance with respect to earth. If a charge-generating mechanism is present, an incendive level of charge could migrate to unearthed metal parts and subsequently discharge to earthed metal object if brought near to these parts. Precautions are required to avoid any charge-generation and/or discharge to earthed metal objects.
9. The equipment is provided with cable gland entries with or without an adapter. Entry devices must comply to applied ambient temperature range.
10. Provisions shall be made to provide the transient protection at a level not exceeding 40% of the rated supply voltage.
11. The valve controller shall be installed only by trained and qualified personnel.

Annex:

[Annex to IECEx EESF 21.0014X.pdf](#)

Annex to IECEx EESF 21.0014X

NDX Product Type Nomenclature:

1	PRODUCT GROUP Neles Intelligent Valve Controller Series NDX
2	PNEUMATIC ACTION
1	Single Acting
2	Double Acting (Available with 5. sign 2, 5. sign 1)
3	PNEUMATIC CAPACITY Normal Capacity (80 Nm ³ /h)
5	
4	FAIL ACTION
1	Fail safe
5	ENCLOSURE
0	Compact - Aluminum with composite cover (Available with 2. sign 1)
1	Standard - Aluminum with composite cover
2	Flameproof/Explosion Proof - Aluminum
6	COMMUNICATION / INPUT SIGNAL RANGE
H	4-20 mA with HART
T	4-20 mA with HART + PT
N	4-20 mA (no HART)
M	4 - 20 mA + PT (no HART)
D	4-20 mA with HART + 2 x DO (Available with 5. sign 2., 5. sign 1)
L	4-20 mA with HART + PT + DO (Available with 5. sign 2., 5. sign 1)
F	FOUNDATION fieldbus, physical layer according to IEC 61158-2. (Available with 5. sign 2., 5. sign 1)
P	Profibus PA, physical layer according to IEC 61158-2. (Available with 5. sign 2., 5. sign 1)
7	TEMPERATURE RANGE
G	General: -40..+85 °C
8	Standard; Ex i & I/O extension capable
9	APPROVALS FOR HAZARDOUS AREAS (1/2)
N	No approval
A	ATEX / IECEx Ex d IIB+H ₂ certification
X	ATEX / IECEx Ex i certification (Not available with 8. sign /)
E	ATEX / IECEx Ex d certification (Available with 5. sign 2)
U	cCSAus Ex i certification (Not available with 8. sign /)
F	cCSAus Ex d certification (Available with 5. sign 2)
C	CCC (China) Ex i certification
D	CCC (China) Ex d certification (Available with 5. sign 2)
Z	Inmetro (Brazil) Ex i certification
B	Inmetro (Brazil) Ex d certification
P	CCOE (India) Ex i certification
I	CCOE (India) Ex d certification
W	KOSHA (Korea) Ex i certification (Available with 5. sign 0 and 2)
K	KOSHA (Korea) Ex d certification (Available with 5. sign 2)
T	Japan Ex i certification
J	Japan Ex d certification (Available with 5. sign 2)
S	GOST (Russia) Ex i certification (Available with 5. sign 0 and 2)
R	GOST (Russia) Ex d certification (Available with 5. sign 2)
10	APPROVALS FOR HAZARDOUS AREAS (2/2)
N	No approval
A	ATEX / IECEx Ex d IIB+H ₂ certification
X	ATEX / IECEx Ex i certification (Not available with 8. sign /)
E	ATEX / IECEx Ex d certification (Available with 5. sign 2)
U	cCSAus Ex i certification (Not available with 8. sign /)
F	cCSAus Ex d certification (Available with 5. sign 2)

C	CCC (China) Ex i certification																			
D	CCC (China) Ex d certification (Available with 5. sign 2)																			
Z	Inmetro (Brazil) Ex i certification																			
B	Inmetro (Brazil) Ex d certification																			
P	CCOE (India) Ex i certification																			
I	CCOE (India) Ex d certification																			
W	KOSHA (Korea) Ex i certification (Available with 5. sign 0 and 2)																			
K	KOSHA (Korea) Ex d certification (Available with 5. sign 2)																			
T	Japan Ex i certification																			
J	Japan Ex d certification (Available with 5. sign 2)																			
S	GOST (Russia) Ex i certification (Available with 5. sign 0 and 2)																			
R	GOST (Russia) Ex d certification (Available with 5. sign 2)																			
11											PNEUMATIC CONNECTIONS & GAUGES									
0											1/4 NPT without gauges (no block, no gauges)									
1											1/4 NPT with gauges (block with 1/4 NPT threads+ gauges)									
2											G1/4 without gauges (block with G1/4 threads)									
3											G1/4 with gauges (block with G1/4 threads + gauges)									
12											VARIANT									
N											Neles									
C											Neles, Chinese ID plates (for non-approval version)									
L											Neles, without Local User Interface									
V											VVC Brand labeled (Applicable to 5. sign “0”)									
13											DIAGNOSTICS									
0											Advanced diagnostics									
1											Premium diagnostics									
14											SPECIAL VERSION									
0											None									
W											Cover without window for flameproof/explosion proof enclosure									
15											RESERVED (I/O EXTENSION)									
0											None									
16											RESERVED									
0											None									
17											Characters 18-20 received for partner identification									
-											* * *									
											Partner's identification – shall not affect hazardous area approvals.									
											Special feature – shall not affect hazardous area approvals									
N D Y											2 5 1 2 T G _ X N 0 N 0 0 0 0 - 6 6 8 Y SAMPLE MODEL CODE (Char = 21)									