

Reg No: 1999/027771/07

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GOVERNMENT APPROVED TEST LABORATORY

IN TERMS OF ARP 0108: "REGULATORY REQUIREMENTS FOR EXPLOSION PROTECTED APPARATUS"

IA CERTIFICATE (IMPORT)

Page 1 of 5

Date Issued: **25 Jul 2025**

Certificate Validity: **25 Jul 2028**

IA Certificate Validity: In accordance with ARP 0108 and the National Code of Practice, import IA certificates has a validity period of three (3) years from the date of issue. The IA certificate's validity period depends on the validity of the international document that it is based upon, and it is invalidated should the international certificate be cancelled or the product quality assurance or notification becomes invalid. Equipment imported under a valid IA certificate and handed over to the end user, the IA Certificate validity falls away and the Ex equipment remains compliant with the relevant standards for its lifetime, provided the equipment is maintained in its original certified configuration. No modifications are allowed. Imported apparatus not sold by the IA certificate expiry date is deemed to not be covered by this IA Certificate and this IA Certificate shall undergo a renewal process. Renewal of this IA certificate is the responsibility of the IA Certificate Holder. The IA Certificate Holder must provide and maintain records to the end-user, of date of sale for traceability purposes.

Certificate Number:

S-XPL/22.1475 X

Issue Number: 1

Equipment:

Intelligent Valve Controllers

Model / Type:

NDX 0, NDX 1 and NDX 2

IA Certificate Holder:

Valmet South Africa (Pty) Ltd

IA Certificate Holder Location:

237 Albert Amon Road, Meadowdale, Germiston

Manufacturer:

Valmet Flow Control Oy

Manufacturer Location:

Vanha Porvoontie 229, Vantaa FI-01380, Finland

Serial No:

All serial numbers, imported between issued- and validity date and all serial numbers covered by either valid QAN or QAR.

Identified by Inspection Authority Number

S-XPL/22.1475 X

And as described in the Explolabs file number **XPL/23106/22.1475 Issue 1** is hereby certified "Explosion Protected (Refer to clause 1, for Ex Rating)", having been examined and inspected in accordance with the relevant requirements of the South African National Standards.

SANS 60079-0: 2019 Ed 6

Explosive atmospheres Part 0: Equipment — General requirements

IEC 60079-0: 2017 Ed 7

SANS 60079-11: 2012 Ed 4

Explosive atmospheres Part 11: Equipment protection by intrinsic safety "I"

IEC 60079-11: 2011 Ed 6

SANS 60079-11: 2024 Ed 5

Explosive atmospheres Part 11: Equipment protection by intrinsic safety "I"

IEC 60079-11: 2023 Ed 7

SANS 60079-7: 2019 Ed 4

Explosive atmospheres Part 7: Equipment protection by increased safety "e"

IEC 60079-7:2015 Ed 5

Risk of ignition provided:

Protection afforded	Equipment Protection Level (EPL)	Performance of protection	Conditions of operation	T class or Max Surface Temp (°C)
	Group			
Very high	Ga Group II	Two independent means of protection or safe even when two faults occur independently of each other	Equipment remains functioning in zones 0, 1 and 2	T6 (85°C)... T4 (135°C)
Very high	Da Group III		Equipment remains functioning in zones 20, 21 and 22	T85°C... T115°C
High	Gb Group II	Suitable for normal operation and frequently occurring disturbances or equipment where faults are normally taken into account	Equipment remains functioning in zones 1 and 2	T6 (85°C)... T4 (135°C)
High	Db Group III		Equipment remains functioning in zones 21 and 22	T85°C... T115°C
Enhanced	Gc Group II	Suitable for normal operation	Equipment remains functioning in zone 2	T6 (85°C)... T4 (135°C)
Enhanced	Dc Group III		Equipment remains functioning in zone 22	T85°C... T115°C

1. GENERAL

The marking of the Intelligent Valve Controllers shall include the following:

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

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.

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

Ui ≤ 28 V

Ii ≤ 120 mA

Pi ≤ 1 W

Ci < 3.7 nF

Li < 10.9 μH

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)

Based on the following documentation: IECEx EESF 21.0014X Issue No: 3

2. INSTALLATION INSTRUCTIONS

It is the IA Certificate Holder's responsibility to supply OEM installation instructions with each unit offered for sale as required by IEC/SANS 60079-0, clause 30.

The equipment shall be installed, operated, and maintained in accordance with the manufacturer's instructions and the applicable South African standards and regulations.

3. SPECIAL CONDITIONS FOR SAFE USE *(denoted by "X" after certificate number)*

Ex ia/ ib:

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)

The permissible ambient temperature range depends on the used configuration.

At an ambient temperature $\geq +70 \text{ }^{\circ}\text{C}$, the temperature rating of the connection cable shall be in accordance with maximum ambient temperature range.

Temperature Classes for dust are based on measurement w.r.t. total immersion to dust required for category 1 D (EPL Da) equipment.

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.

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.

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."

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. The valve controller shall be connected according to manufacturer's instructions.

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.

The valve controller shall be installed only by trained and qualified personnel.

DOCUMENT No: XPL0213	RELEASE DATE: 11/03/2025	REV: 9
This document is an Explabs Controlled Document – Responsibility falls on personnel to ensure correct revision is applied as noted in the electronic system.		

Ex ic/ ec:

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)

The permissible ambient temperature range depends on the used configuration.

At an ambient temperature $\geq +70$ °C, the temperature rating of the connection cable shall be in accordance with maximum ambient temperature range.

Temperature Classes for dust are based on measurement w.r.t. total immersion to dust required for category 1 D (EPL Da) equipment.

The impact test of NDX__0 enclosure was made according to low risk of mechanical danger. The device shall be protected from highlevel impacts.

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.".

The valve controller shall be connected according to manufacturer's instructions.

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.

The equipment is provided with cable gland entries with or without an adapter. Entry devices must comply to applied ambient temperature range.

Provisions shall be made to provide the transient protection at a level not exceeding 40% of the rated supply voltage.

The valve controller shall be installed only by trained and qualified personnel.

4. CONDITIONS OF CERTIFICATION

This approval is granted based on the submitted documentation.

Any modifications or alterations to the equipment will invalidate this IA Certificate.

The Certificate Holder is responsible for maintaining accurate records of the equipment and this IA Certificate.

All production units must be covered by either a QAN (Quality Assurance Notification) or QAR (Quality Assurance Report).

Renewal: This IA certificate may be renewed under a valid Quality Assurance Notification (QAN) or Quality Assurance Report (QAR). Imported apparatus not sold by the IA certificate expiry date must undergo this renewal process. This condition remains the responsibility of the IA Certificate Holder. Renewal of this IA certificate is the responsibility of the IA Certificate Holder.

Renewal involves a document review, including:

- Verification of the latest ATEX/IECEx certificate.
- Confirmation of a valid QAN/QAR.

Certificate holders are responsible for submitting these documents.

5. MARKING

The equipment shall bear the manufacturer's original marking plate containing all relevant Ex-certification details (applicable under the ATEX Directive). The following (or similar) information shall be clearly and permanently marked on all units:

IA Certificate Holder : Valmet South Africa (Pty) Ltd
Ex Rating : 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
IA Certificate No : S-XPL/22.1475 X

This certification indicates compliance with R10.1 of the Mines Health and Safety Act and/or EMR 9(2) of the Occupational Health and Safety Act, provided that the apparatus is used as relevant in accordance with:

- SANS 10086 and IEC/SANS 61241-14 requirements as applicable;
 - Any conditions mentioned in the above report;
 - Any relevant requirements and codes of practice enforced in terms of the Mine Health and Safety Act or Occupational Health and Safety Act; and
 - Any restrictions and conditions enforced by the Chief Inspector of Mines or the Principal Inspector or the Chief Inspector: Occupational Health and Safety.
- A revision certificate replaces all previous versions of the certificate.
* - Only covers equipment Imported between the "Issued" and "Expire" dates.
If and when your QAN (Quality Assurance Notification) or QAR (Quality Assurance Report) Certificate for your equipment manufacturer expires during the valid period of the IA Certification (issued for your equipment) and a new certificate is not submitted, the existing IA Certification will then be cancelled. It is thus the Certificate Holder's responsibility to always submit the updated and valid QAN/QAR certificate(s) to Explolabs (Pty) Ltd

Reviewed by:



CC Lourens

Technical Specialist

EXPLOLABS EXPLOSION PREVENTION SERVICES

This report/certificate shall not be reproduced except in full without the written approval of the company Explolabs (Pty) Ltd shall not be liable for any losses or damages sustained on account of any failure or omission to properly perform our duties in terms of any contract undertaken by us. This disclaimer is immutable and automatically incorporated in any contract undertaken by us; notwithstanding anything to the contrary, save for the express written waiver of our managing director. By marking the equipment in accordance with the documentation/standard, the manufacturer attests on his own responsibility that the equipment has been constructed in accordance with the applicable requirements of the relevant standards and that the routine verifications and tests have been successfully completed and that the product complies with the documentation and standard(s). The contents of electronic reports/certificates cannot be guaranteed. Original certification documents will be kept on file at Explolabs (Pty) Ltd

NDX Product Type Nomenclature:

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11. sign		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. sign		VARIANT																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
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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. sign		DIAGNOSTICS																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
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14. sign		SPECIAL VERSION																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
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15. sign		RESERVED (I/O EXTENSION)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
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17. sign		Characters 18-20 reserved for partner identification																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
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*		Special feature – shall not affect hazardous area approvals																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
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