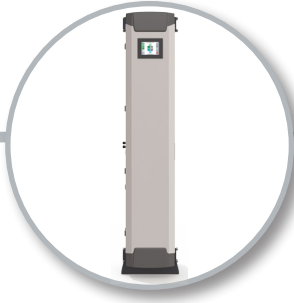


nano



GEN2 i4.0 nitrogen gas generator  
inlet dew-point monitoring



# GEN<sub>2</sub>i4.0

## nitrogen gas generator

### 1.1 general information

This manual is copyrighted, all rights reserved. It may not, in whole or in part, be copied, photocopied, reproduced, translated, or reduced to any electronic medium or machine readable form without prior consent in writing from nano-purification solutions. It may not be distributed through the internet or computer bulletin board systems without prior consent from nano-purification solutions.

©2020 nano-purification solutions.

**range:** GEN<sub>2</sub> i4.0 PSA nitrogen gas generators  
**models:** GEN<sub>2</sub> i4.0 -1110, 2110, 3110, 2130, 3130, 4130, 6130, 8130, 10130 & 12130  
**doc no:** 17-110-7001  
**issue:** 001

### 1.2 manufacturers details and support

#### nano-purification solutions ltd. (Manufacturer)

**address:** Dukeway  
Team Valley Trading Estate  
Gateshead  
NE11 0PZ  
United Kingdom  
**telephone:** +44 (0) 191 497 7700  
**internet:** www.n-psi.co.uk  
**e-mail:** sales@n-psi.co.uk

#### nano-purification solutions inc.

**address:** 5509 David Cox Road  
Charlotte, NC 28269  
USA  
**telephone:** +1 (704) 897-2182  
**internet:** www.n-psi.com  
**e-mail:** support@n-psi.com

#### nano-purification solutions inc.

**address:** 7 Petrie Street  
St. Catharines,  
Ontario  
L2P 3J6  
Canada  
**telephone:** +1 (905) 684-6266  
**internet:** www.n-psi.com  
**e-mail:** support@n-psi.com

#### nano-purification solutions GmbH

**address:** Mommenpesch, 46  
D-47839 Krefeld  
Germany  
**telephone:** +49 2151 4828 418  
**internet:** www.n-psi.de  
**e-mail:** sales@n-psi.de



#### annotations



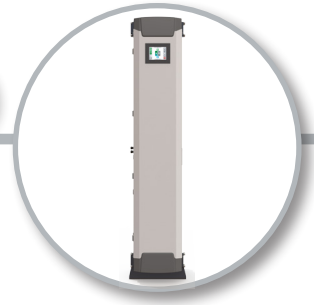
**CAUTIONS:** indicate any situation or operation that may result in potential damage to the product, injury to the user, or render the product unsafe.



**NOTES:** highlight important sections of information where particular care and attention should be paid.

# GEN<sub>2</sub> i4.0

## nitrogen gas generator

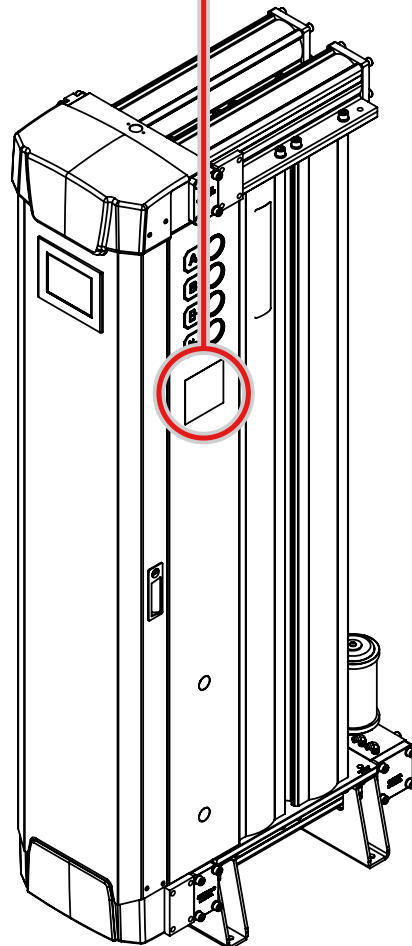
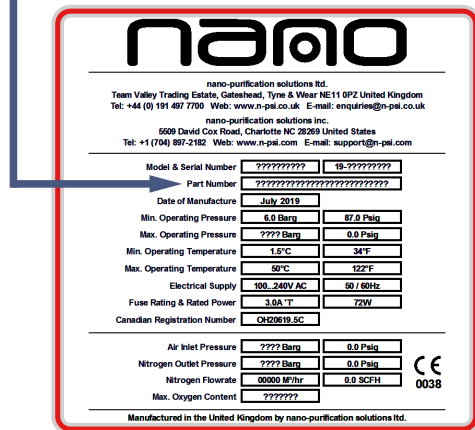
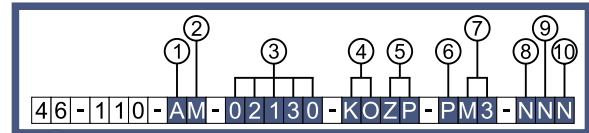


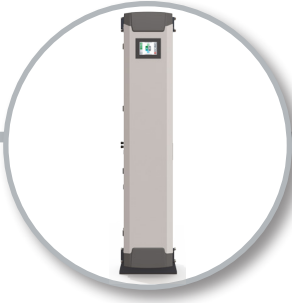
### 1.3 generator identification



This information can be found on the product rating label as shown.

1. Connection		
G		BSP
A		NPT
2. Pressure Rating		
M	0...12barg	0...174psig
S	0...16barg	0...232psig
3. Model Code		
0 1 1 1 0	1x 110 Column	
0 2 1 1 0	2x 110 Column	
0 3 1 1 0	3x 110 Column	
0 2 1 3 0	2x 130 Column	
0 3 1 3 0	3x 130 Column	
0 4 1 3 0	4x 130 Column	
0 6 1 3 0	6x 130 Column	
0 8 1 3 0	8x 130 Column	
1 0 1 3 0	10x 130 Column	
1 2 1 3 0	12x 130 Column	
4. Internal Dryer (Option)		
K O		Not Fitted
K S		Fitted
5. Oxygen Purity		
Z C		5% to 0.5%
Z P		1000ppm to 10ppm
6. Purity Dependant Energy Saving Technology (Optional)		
N		Not Fitted
P		Fitted
7. Flow Rating		
M 2	0...60 M <sup>3</sup> /hr	0...2119 SCFH
M 3	61...120 M <sup>3</sup> /hr	2154...4237 SCFH
M 4	121...300 M <sup>3</sup> /hr	4273...10594 SCFH
8. Dewpoint Sensor Technology (Optional)		
N		Not Fitted
I		Inlet Dewpoint Monitoring
O		Outlet Dewpoint Monitoring
9. Additional Options		
N		Not Fitted
C		Column Pressure Monitoring
F		External Flow Measurement
B		Both
10. Communication Options		
N		Not Fitted
M		Modbus Communication Package
E		Ethernet IP Communication Package





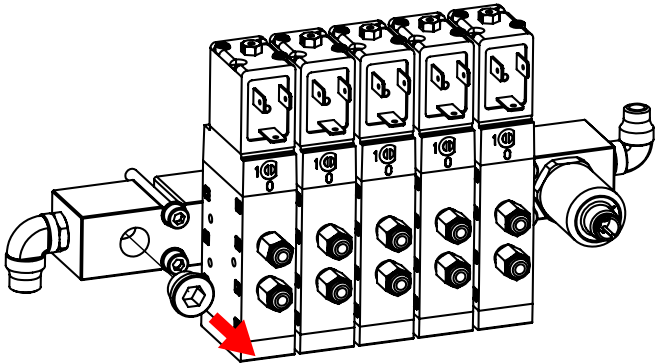
# GEN<sub>2</sub>i4.0

## nitrogen gas generator

### 2.0 installation process

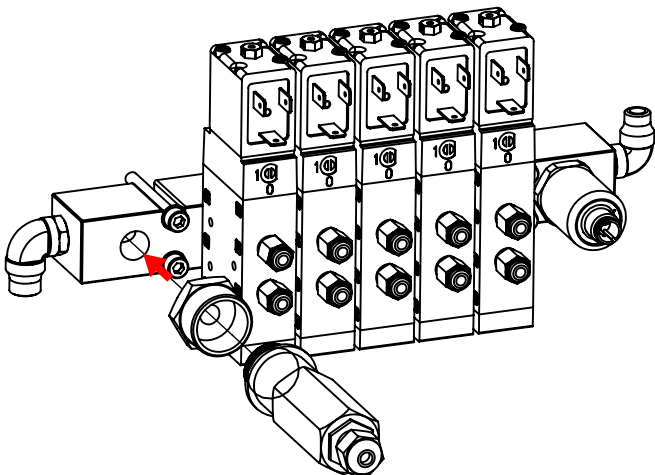
Prior to installing the inlet dewpoint monitoring kit, you must first shutdown and de-pressurize the generator.

- Fully close the inlet ball valve supplying compressed air to the nitrogen generator.
- Fully close all other ball valve too and from the nitrogen generator including the too buffer, from buffer and nitrogen outlet isolation valves.
- Locate the 'STOP' button in the bottom right of the HMI screen and hold down for 3 seconds, the generator will begin it's shutdown procedure. At this point the generator will complete it's half cycle and then exhaust both columns until fully de-pressurized.
- The generator will remain in standby until manually re-started. When the generator is in stanby mode all symbols will revert to their grey colour to symbolise no activity within the system.
- Locate and fully open the two vent valves, these can be found on the top and bottom manifold inside the process enclosure.
- Wait for generator to fully depressurize this may take up to 10minutes due to the characteristics of the CMS degassing.
- Only once the generator is fully depressurized may you proceed with the installation of the retrofit kit.



#### Step 1

Locate and remove the 1/4" VSR blanking plug located on the compressed air inlet pilot valve block.



#### Step 2

Fit the 1/4" to 1/2" adaptor to the pilot valve block and then screw in the SF52 Dewpoint sensor until tight.

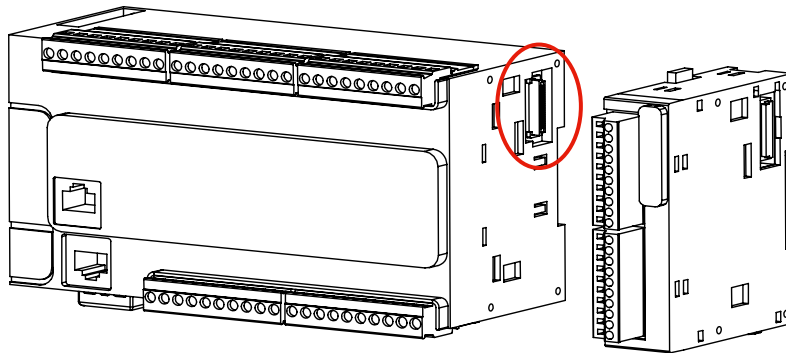
**No thread tape or glue will be required as both fittings come supplied with bonded seals.**

# GEN<sub>2</sub> i4.0

## nitrogen gas generator

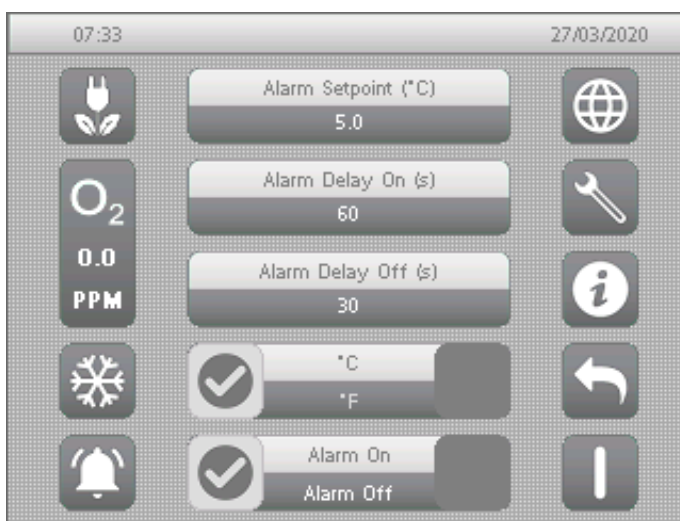


On the right side of the PLC remove the din rail end stop. There is a stick used to cover the adaption port on the PLC, remove the sticker and then fit the additional analog input module as shown below. The module should snap onto the din rail and then slide along until the unit is hard against the PLC. The green snap tab can then be pushed down to lock the module onto the PLC.



Now the module has been installed, pull the dewpoint sensor lead through one of the spare glands mounted to the bottom of the controller base plate. Feed the wire through the cable trunking and up to the new IO module. Use the wiring diagram as seen on page 8, terminate all wires from the dewpoint sensor and the additional wiring harness supplied. Once all the additional components have been installed, go to the HMI and login as Engineer. Follow the path below until you reach dewpoint selection and select 'Inlet';  
*Engineer > Build Details > Configuration > Installed Add-ons > Dew-point > Inlet Dew-point*

Now the inlet dewpoint feature has been activated, you can return to the settings page and enter the desired dewpoint settings.



- **Alarm Setpoint (°C or °F)**  
When the dewpoint is greater than the setpoint entered the alarm will activate.
- **Alarm Delay On (s)**  
How long before the alarm activates.
- **Alarm Delay Off (s)**  
How long before the alarm deactivates.
- **°C or °F Selection**  
Changes the display parameter for dewpoint.
- **Alarm On or Off Selection**  
Option to see a visual alarm or not.

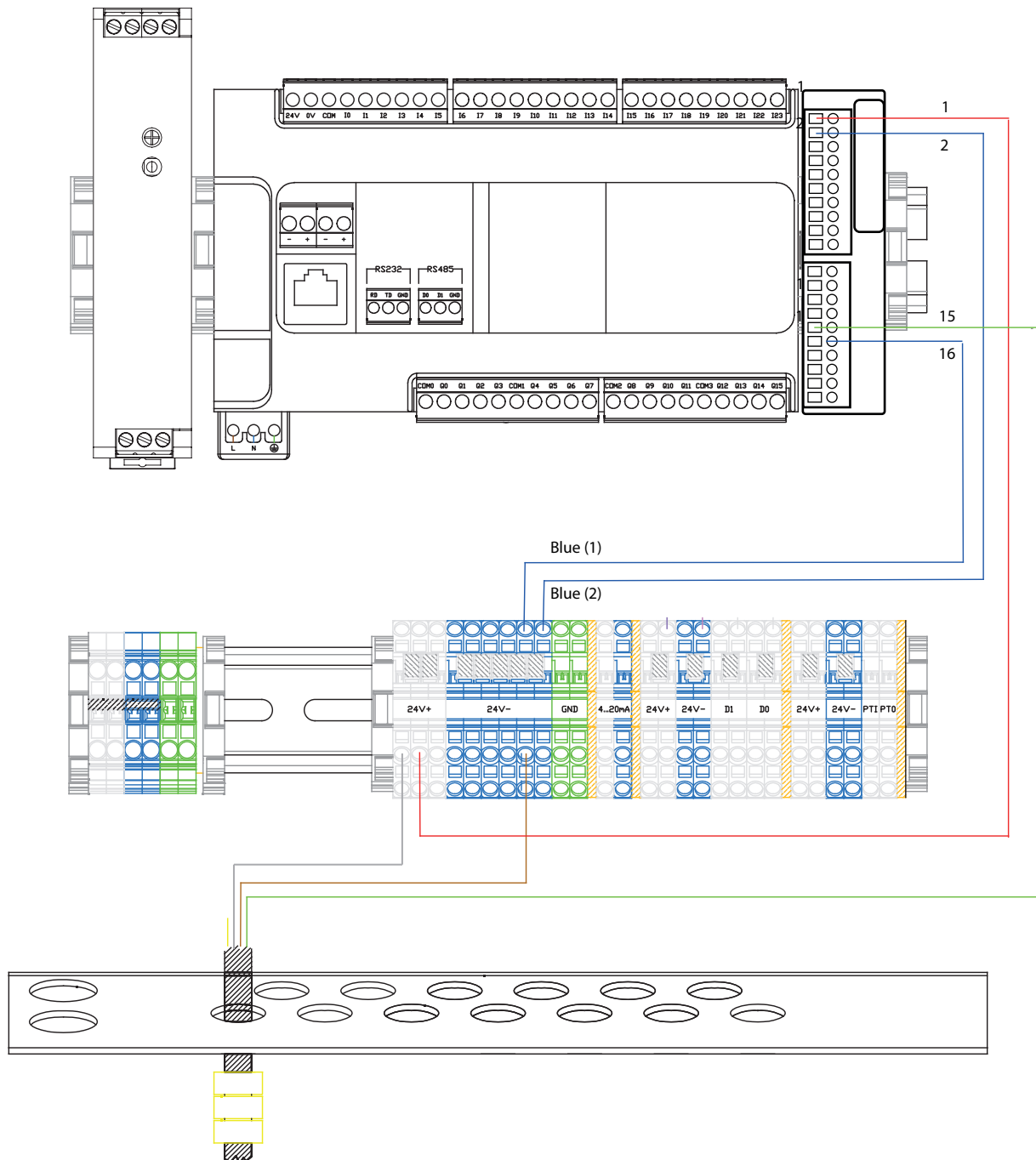
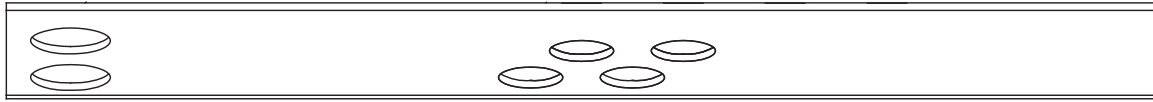


*Even if the alarm selection is set to 'Alarm Off' the HMI will record any alarm activation in the alarm record. The alarm selection is only there to choose whether you see a visual alarm or not.*



# GEN<sub>2</sub> i4.0

## nitrogen gas generator







---



**nano-purification solutions ltd.**

Dukesway,  
Team Valley Trading Estate,  
Gateshead,  
NE11 0PZ  
United Kingdom

Telephone: +44 (0) 191 497 7700  
Internet: [www.n-psi.co.uk](http://www.n-psi.co.uk)  
E-mail: [sales@n-psi.co.uk](mailto:sales@n-psi.co.uk)



**nano-purification solutions GmbH**

Mommenpesch, 46,  
D-47839,  
Krefeld,  
Germany

Telephone: +49 2151 4828 418  
Internet: [www.n-psi.de](http://www.n-psi.de)  
E-mail: [sales@n-psi.de](mailto:sales@n-psi.de)



**nano-purification solutions inc.**

5509 David Cox Road  
Charlotte NC 28269  
USA

Telephone: +1 (704) 897-2182  
Fax: +1 (704) 897-2183  
Internet: [www.n-psi.com](http://www.n-psi.com)  
E-mail: [support@n-psi.com](mailto:support@n-psi.com)



**nano-purification solutions inc.**

7 Petrie Street,  
St Catharines, Ontario,  
L2p 3J6  
Canada

Telephone: +1 (905) 684-6266  
Fax: +1 (704) 897-2183  
Internet: [www.n-psi.com](http://www.n-psi.com)  
E-mail: [support@n-psi.com](mailto:support@n-psi.com)