

# Nitrogen purifier

NPH 20-400

## A new approach to high-purity nitrogen

The Atlas Copco NPH 20-400 introduces a new, more cost-efficient way to produce very high-purity nitrogen: two-stage on-site generation. The NPH works in tandem with a nitrogen generator, allowing the generator to produce N<sub>2</sub> with a 99.9% purity. Using a small amount of hydrogen to remove the remaining oxygen, the NPH boosts this lower purity to 99.999% and even up to 99.9999%. This two-step process requires 40% less compressed air to give you significant energy savings. This in turn can contribute to a smaller carbon footprint. Adding an NPH to an existing nitrogen gas generation system will boost your installation's N<sub>2</sub> production capacity, potentially even doubling it.



### Energy savings

- Requires 40% less feed air than high purity N<sub>2</sub> produced by only a generator.
- This energy efficiency can help lower your carbon emissions.
- Allows for a smaller compressor and N<sub>2</sub> generator.



### Top performance

- Guaranteed very high N<sub>2</sub> purity: 99.999% and even up to 99.9999%.
- Boost and even double the output of your existing N<sub>2</sub> generation system.
- Does not strain your site's electrical system.
- H<sub>2</sub> produces no harmful byproducts, only water and heat.



### Superior reliability

- Continuous supply of N<sub>2</sub> at a guaranteed very high purity.
- Designed for minimal maintenance to reduce downtime and service costs.
- Can be combined with traditional gas deliveries.

## Built for reliable, automated operation

### Advanced Elektronikon® Touch controller

- HD color touchscreen.
- Purity alerts and connectivity options.

### Reactor

- High-grade catalyst built into a proven aluminum extruded design with low pressure drop.
- N<sub>2</sub> purity above 99.999% and even up to 99.9999%.
- Continuous temperature and moisture monitoring.

### Fully automated operation

- Automatic start-up and standby.
- Autonomous operation (with most N<sub>2</sub> generators) thanks to onboard instrumentation.
- Feed N<sub>2</sub> check & restore: purity monitoring and interception.
- Optional outlet N<sub>2</sub> check & restore: purity monitoring and interception with adjustable limit.
- Overflow protection at start-up versus an empty N<sub>2</sub> net and during operation.

### Smart and safe H<sub>2</sub> handling

- Precise H<sub>2</sub> dosing based on feed N<sub>2</sub> flow monitoring and purity measurements.
- Evacuation valve set prevents H<sub>2</sub> accumulation in the machine.



## Two-stage N<sub>2</sub> generation



As low as 2.9 air-to-N<sub>2</sub>!

>99.999% nitrogen with the air-to-nitrogen ratio of 99.9% nitrogen!

## Technical specifications

	Nitrogen capacity		Nitrogen inlet purity	Nitrogen outlet purity	Hydrogen consumption	Dimensions (W x D x H)		Weight	
	Nm <sup>3</sup> /h	Scfm				mm	in	kg	lbs
NPH 20	Nm <sup>3</sup> /h	20	99.9%	>99.999%	0.002 Nm <sup>3</sup> per Nm <sup>3</sup> of N <sub>2</sub>	775 x 840 x 2015	31 x 33 x 79	232	511
	Scfm	11.8							
NPH 40	Nm <sup>3</sup> /h	40							
	Scfm	24							
NPH 60	Nm <sup>3</sup> /h	60							
	Scfm	35							
NPH 80	Nm <sup>3</sup> /h	80							
	Scfm	47							
NPH 100	Nm <sup>3</sup> /h	100							
	Scfm	59							
NPH 120	Nm <sup>3</sup> /h	120							
	Scfm	71							
NPH 140	Nm <sup>3</sup> /h	140							
	Scfm	82							
NPH 160	Nm <sup>3</sup> /h	160							
	Scfm	94							
NPH 200	Nm <sup>3</sup> /h	200							
	Scfm	118							
NPH 250	Nm <sup>3</sup> /h	250							
	Scfm	147							
NPH 300	Nm <sup>3</sup> /h	300							
	Scfm	177							
NPH 350	Nm <sup>3</sup> /h	350							
	Scfm	206							
NPH 400	Nm <sup>3</sup> /h	400							
	Scfm	235							

### Performance reference conditions:

Inlet nitrogen quality according to ISO 8573-1:2010: [1-2-1]

### Flow unit reference conditions:

- Nm<sup>3</sup>/h: 20°C – 1bar(a) – 0% RH  
- Scfm: 68°F – 14.5psi(a) – 0% RH

### General notes:

Nitrogen purity expressed as 100% minus oxygen content. Besides oxygen, traces of hydrogen can be present in the outlet nitrogen.

## Options

- Outlet nitrogen check & restore
- Room oxygen alarm (wall mount)
- Room hydrogen alarm (wall mount)