

MOTT GAS PURIFIERS HIGH PURITY BULK SERIES



Mott N₂ Bulk Gas Purifier System (Model HP180-N-CA)

Feature Overview

- Fully Automated PLC Controls with HMI (Human Machine Interface)
- Adsorber Purifier with Catalyst for CH₄ Removal
- Electric Gas Preheaters with Closed-Loop Temperature Controls
- Alarm Relay / Remote Contact Shutdown / Gas Relay
- All Metal Enclosure with Doors
- Impurities Removed to < 1 ppb: H₂O, CH₄, CO, CO₂, O₂, H₂

Included Features

- Inlet & Outlet Isolation Valves
- Inlet Mass Flow Meter (4-20mA Output)
- Inlet & Outlet Pressure Transducers (4-20mA Output)
- High Temperature Hardware Interlock
- Auto or Manual Bypass
- Over Pressurization Safety System
- Integrated Particle Filtration
- MODBUS Data Communication Port
- Ground Fault Protection (GFI)
- Emergency Off Button (EMO)
- Separate Control Power
- Purifier Hold Down Brackets & Lifting Points
- Uninterruptible Power Supply (UPS)
- ASME Stamp/CE Marking (must be specified on order)

Purifier Specifications

- **Dimensions:** 180cm x 120 cm x 155 cm (H x L x W)
- **Weight:** < 1050Kg
- **Clearance Required:** 1 meter on all sides
- **Regen H₂ Specs:** 5N's Purity, 2.4 slpm, 6.9-17.3 barg
- **Inlet & Outlet Connections:** 1" MVCR
- **Instrument Air Connection:** 3/8" Compression
- **Burst Disk Pressure:** 19.2 barg (Customizable)
- **Integrated Particle Filtration:** 0.003µm (3nm)
- **Wetted Surface Finish:** 316L SS, EP 12Ra Maximum



Purifier Specifications

Max Flow Rate	180Nm ³ /hr
Min Flow Rate	9 Nm ³ /hr
Inlet Pressure (min-max)	3.5-17.3 barg
Max Pressure Drop @ 6.9 barg	< 0.7 bard (standard)
Inlet Gas Temp(min-max)	0° - 35°C
Outlet Gas Temp	Cooling water +15°C

Control System Details

- Control & Display Interface
- Automatic Alarm Response & Display
- (Including Valve Operation)
- System Temperatures
- Heater Power Levels
- Optional Gas Pressure Readouts
- Warning and Alarm Status
- and Optional Gas Flow
- Totalizer Readout

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Mott N₂ Gas Purifier Proposal

Customer:

End User:

Working Gas: Nitrogen (N₂)

Additional Details and Specifications

Impurity	Inlet	Mott Purifier Outlet
O ₂	≤ 3ppm	≤ 1 ppbv
H ₂ O	≤ 5 ppm	≤ 1 ppbv
Hydrocarbons	≤ 0.2 ppm	≤ 1 ppbv
CO	Not specified	Not specified**
H ₂	Not specified	Not specified**
CO ₂	Not specified	Not specified**
CH ₄	Not specified	Not specified**
Particles	Not specified	Integrated 1.5nm Filter

**Mott can calculate outlet specifications if inlet specs are provided

Facilities Requirements:

- **Main Power:** 400 VAC, 3 Phase, 50/60 Hz – 15 kW
- **Control Power:** 110 or 220 VAC, 1 Phase, 50/60 Hz – 100 W
- **Average Power at Max Flow:** 5 kW
- **Instrument Air:** 6.6 – 9.7 barg
- **Indoor Temperature:** 5° - 35°C

Instrument Air Pressure	Instrument Air Inlet	Process Gas Pressure Relief	Indoor Temperature		
6.6 – 9.7 barg	3/8 in Comp	1/2 in Tube Stub	5-35 °C		
Regen H ₂ Pressure	Hydrogen Inlet	Regen H ₂ Purity	Regen H ₂ Flow Rate	Regen N ₂ Flow Rate	
6.9-17.3 barg	1/4 in Tube Stub	99.999%	2.4 slpm (1 Nm ³ total)	7 Nm ³ /hr (110 Nm ³ total)	
Regeneration Vent	Regen Vent Temp	O ₂ /CDA Pressure	O ₂ /CDA Purity	O ₂ /CDA Flow Rate	(Only one of O ₂ or CDA required)
1/2 in Tube Stub	225 °C	0.7 barg above N ₂	99.999%	2.4 / 12 sccm	