

South-Tek N2-BLAST® Nitrogen Generator

Installation & Startup Checklist — Field Commissioning Guide
Rev 4 | Fire Protection Systems (All FPS Models)

Warranty Activation — Submit completed checklist to: support@southteksystems911.zendesk.com	Technical Support (910) 415-1880	Installation Manuals www.southteksystems.com
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1. Purpose of the Nitrogen Generator

South-Tek nitrogen generators replace compressed air with high-purity nitrogen in dry and pre-action fire protection systems. Compressed air contains oxygen and moisture that accelerate internal pipe corrosion, leading to pipe failure, leaks, and premature system replacement.

The N2-BLAST® system:

- Removes oxygen from the supervisory gas supply
- Maintains stable nitrogen pressure across the fire protection system
- Continuously purges trapped moisture from low-point drains via AutoPurge
- Extends piping service life and reduces long-term maintenance cost

The generator operates together with the compressor, integrated or external dryer, nitrogen storage tank, and AutoPurge devices to maintain nitrogen purity and supervisory pressure.

2. Purpose of This Checklist

This checklist confirms:

- Safe electrical and mechanical installation
- Proper pressure configuration and leak testing
- Nitrogen purge and AutoPurge operation
- Alarm and monitoring functionality
- Contractor certification prior to placing the system in service

■ This checklist must be completed and submitted before placing the system into service. Submission activates the South-Tek limited warranty.

3. Safety Requirements — Read Before Starting

■ Pressurized gas and electrical hazard. Review all items below before beginning work.

- Lockout/tagout electrical supply before wiring or electrical work
- Depressurize all piping before performing any mechanical work
- Verify supply voltage matches unit nameplate before powering on
- Confirm all safety relief valves are installed and unobstructed
- Wear eye protection whenever the cabinet door is open while running
- Use hearing protection during compressor operation
- Never disable or bypass safety devices or relief valves
- Do not exceed rated pressure on any component

Nitrogen is not toxic but can displace oxygen in confined spaces. Install the unit in a well-ventilated room that is not sealed off from normal living-space air changes. Do not directly inhale nitrogen gas.

Model	Operating Temperature Range
FPS-500, FPS-900	40°F – 100°F (4°C – 38°C)
FPS-1650, FPS-3250, FPS-5000	40°F – 100°F (4°C – 38°C)
FPS-10000, FPS-16500, FPS-22500	40°F – 90°F (4°C – 32°C)

4. Site & Installation Information

Date: _____

Facility / End User: _____

Site Contact: _____

Phone: _____

Installer Company: _____

Installer Name: _____

5. System Identification

N2-BLAST® Model: _____

Serial Number: _____

System includes (check all that apply):

- Integral compressor (FPS-500, FPS-900, FPS-1650)
- External compressor (FPS-3250, FPS-5000, FPS-10000, FPS-16500, FPS-22500)
- Integrated air dryer (FPS-3250/5000 and FPS-10000/16500/22500)
- Quick-Check® purity manifold
- AutoPurge system(s)

6. Electrical Verification

All South-Tek FPS generators are single phase. Verify voltage before powering on.

Nameplate Voltage: _____

Measured Voltage: _____

- Voltage verified within ±10% of nameplate rating
- Dedicated circuit provided
- Proper disconnect installed and labeled

If voltage not verified, explain: _____

7. Compressor Verification

Integral compressor models (FPS-500, FPS-900, FPS-1650):

- 4 shipping bolts removed from underside of cabinet before startup
- Pre-compressor intake filter present and unobstructed

External compressor models (FPS-3250, FPS-5000, FPS-10000, FPS-16500, FPS-22500):

External Compressor Model: _____

Serial Number: _____

- Compressor installed on solid flat surface with adequate clearance (see manufacturer manual)
- Compressor fills largest zone to supervisory pressure within 30 minutes per NFPA
- Rotation verified (if applicable)
- Integrated air dryer powered on — no alarms
- Auto drains connected and routed to a safe location

NOTE Do not adjust factory compressor cut-in/cut-out pressure settings without written approval from South-Tek Systems.

8. Mechanical Installation Check

All models:

- Generator cabinet upright and level
- Cabinet securely mounted — wall flanges (FPS-500/900) or floor anchor bolts (all floor-standing models) fastened
- 36" minimum clearance in front of cabinet for maintenance access
- 6" minimum clearance on all sides for ventilation
- Additional clearance provided on side with PLC/touchscreen for full access
- Drain lines routed individually to nearest site drain, left open to atmosphere
- Safety relief valves installed and unobstructed
- Bypass piping installed per arrangement drawing

FPS-10000, FPS-16500, FPS-22500 only:

- Forklift or properly rated lifting equipment used for unloading and positioning
- Unit unbolted from shipping crate before removal — crate stored for potential return shipment
- Four floor anchor bolt holes present on support legs — anchoring per local codes confirmed
- 24" flex tubing (½" ID, rated ≥200 PSI / 135°F) installed between compressor outlet and generator air inlet to reduce vibration

9. Pressure Setup

N2 Storage Tank Standby (Cut-Out) Pressure

The standby pressure is the N2 tank pressure at which the generator automatically enters standby mode. Do not adjust factory-preset cut-in or cut-out settings without first contacting South-Tek Systems.

Model Family	Typical Standby Range	Recorded Reading
FPS-500, FPS-900 (integral compressor)	60–70 PSIG	_____ PSIG
FPS-1650 (integral compressor)	60–70 PSIG	_____ PSIG
FPS-3250, FPS-5000, FPS-10000, FPS-16500, FPS-22500 (external compressor)	Confirm against factory settings label	_____ PSIG

External Compressor — Air Inlet Regulator (FPS-3250/5000/10000/16500/22500)

With the generator OFF and no flow, verify the regulator at the air inlet inside the cabinet reads:

120–125 PSIG (static, no-flow condition)

- Air inlet regulator verified at 120–125 PSIG (static)

Maximum allowed inlet pressure: 150 PSIG. Operating above this voids warranty.

10. Dryer Verification

Applies to models with an integrated or external air dryer. Skip this section for FPS-500, FPS-900, and FPS-1650.

- Dryer powered ON and no active alarms
- Auto drains connected and functional
- Drain lines routed to a safe location
- Dew point within specification before proceeding

11. Fire Protection System Verification

- System flushed prior to nitrogen commissioning
- Hydrostatic test complete and documented
- AutoPurge devices closed during hydrostatic testing

Leak Test Result:

Observed Pressure Drop: _____ Over (hours): _____

System Type	NFPA Acceptance Limit	Result
New system	≤ 1.5 PSI per 24 hours	■ Pass ■ Fail
Existing system	≤ 3 PSI per 2 hours	■ Pass ■ Fail

■ Repair all leaks before proceeding. A leaking system will continuously overdraw the nitrogen generator, trigger BlastOff alarms, and shorten generator life.

12. AutoPurge System Setup

Number of APS units installed: _____

For each APS unit, verify:

- Installed above a water collection area
- Positioned at least 24" above the low-point drain
- Flow setting correct for the system (see APS documentation)
- Set to supervisory pressure prior to commissioning
- Purging visually confirmed — flow visible
- Not obstructed by piping, debris, or physical interference

NOTE If using a Quick-Check00ae purity manifold, APS flow setting must be position 201cD201d. Verify before commissioning.

13. Purity Monitoring

Quick-Check® Model (if installed): _____

- Sampling tubing connected and free of kinks
- Visible flow through the sample line confirmed
- Purity reading active and stable before system handoff

Installer demonstrated the following to the facility contact:

- How to read purity monitor / controller display
- Alarm interpretation and response
- Annual filter replacement and maintenance requirements

14. Compressor Performance Test

Bypass the nitrogen generator. Confirm the compressor fills the largest zone to supervisory pressure within 30 minutes per NFPA requirements.

Supervisory Pressure Target: _____ PSI

- **PASS** — largest zone reached supervisory pressure within 30 minutes
- **FAIL** — document issue and resolve before commissioning:

Failure details: _____

15. Alarm & BMS Verification

All models:

- Common alarm relay wired to BMS or monitoring panel
- Alarm activates correctly on test
- Alarm clears correctly after reset

FPS-500, FPS-900 — BlastOff® Simulation Test:

Hold SET button for 7 seconds → enter passcode 6557 → press ENT → hold SET for 5 seconds to trigger alarm. Confirm audible buzzer activates and alarm dry contact trips for 2 seconds.

- BlastOff® simulation test passed — alarm contact confirmed

FPS-1650, FPS-3250, FPS-5000, FPS-10000, FPS-16500, FPS-22500 — BlastOff® Simulation Test:

Navigate to Maintenance → Alarm Contacts on the SMART-Trak® touchscreen. Toggle the BlastOff alarm contact ON and confirm the BMS receives the signal. Reset after test.

- BlastOff® alarm contact tested and confirmed at BMS

Larger models with automatic bypass (FPS-1650/3250/5000/10000/16500/22500):

- Bypass alarm relay wired (if BMS integration required)
- Automatic bypass tested — generator switches to air compressor correctly

Optional communications:

- Ethernet/Modbus TCP or RTU configured and communication verified (if used)
- Static IP entered and connection status confirmed on SMART-Trak® screen (if applicable)

16. Filter & Maintenance Awareness

All FPS filters must be replaced every 1,000 run hours or 1 year, whichever comes first. The filter alarm is a maintenance reminder — the system continues to run.

- Facility contact notified of filter replacement schedule and part number

Filter alarm reset procedure varies by controller:

Controller	Models	Reset Procedure
7-segment PLC display	FPS-500, FPS-900	Hold the DOWN (-) button for 7 seconds. Display shows FILTER RESET and audible beep confirms.
SMART-Trak® touchscreen	FPS-1650, FPS-3250, FPS-5000, FPS-10000, FPS-16500, FPS-22500	Go to Alarms → Filter Alarm → Active. Press Change Filters, then hold the reset button to acknowledge.

17. Final Commissioning Checks

- System fully pressurized to standby pressure — no active alarms
- AutoPurge device(s) functioning and purging confirmed
- Nitrogen purity verified and within specification
- FPS supervisory pressure stable — no drop observed over 5-minute monitor
- All cabinet doors and covers secured
- Area around equipment clean and clear of tools or debris
- Filter alarm counter reset after initial startup (if hours accumulated during commissioning)
- Commissioning summary reviewed with facility contact

18. Common Startup Issues — Quick Reference

Symptom	Likely Cause	Action
Rapid compressor cycling	Leak in FPS piping	Perform leak test per Section 11; locate and repair before continuing
BlastOff® alarm active	Nitrogen overdraw or leak	Inspect all fittings with soapy water; isolate system sections to locate leak; do not repeatedly power cycle without finding cause
No AutoPurge flow visible	Debris, incorrect setting, or closed valve	Check APS flow setting; verify no debris at orifice; confirm isolation valves open
Bypass alarm active on startup	Bypass handle left in bypass position	Return bypass handle to normal run position; alarm clears automatically
Low nitrogen purity	Excessive demand, system leak, or CMS issue	Verify no active leaks; confirm FPS supervisory pressure is stable; contact South-Tek if purity does not recover
Filter alarm on startup	Hour counter accumulated during testing	Replace filters if 1,000 hours/1 year exceeded; reset alarm per Section 16 procedure for your controller
System will not start / no display	No power or tripped breaker	Check circuit breaker; verify supply voltage; confirm main disconnect is ON

Contact South-Tek Systems if issues remain unresolved: (910) 415-1880 | support@southteksystems911.zendesk.com

19. Contractor Certification

By signing below, I certify that this system was installed and commissioned in accordance with South-Tek Systems' guidelines, applicable NFPA standards, and all local authority having jurisdiction (AHJ) requirements. All checklist items have been verified or documented with explanations where items do not apply.

Installer Name (Print): _____ Company: _____

Signature: _____ Date: _____

Submit completed checklist to: support@southteksystems911.zendesk.com | Tel: (910) 415-1880
South-Tek Systems, LLC · 3700 US Highway 421 North, Wilmington, NC 28401 · www.southteksystems.com
N2-BLAST® FPS Installation & Startup Checklist · Rev 4 · For all FPS Models