Modbus TCP Integration Guide – PSA Nitrogen Generator (N2-GEN CP/TS/CS/S Series)

Reference: O&M; Manual Rev 11 (06/16/2020). Generated 2026-03-04.

1) Connection Settings

Protocol	Modbus TCP/IP
Port	502
Device Role	Slave
Transport	Ethernet (static IP required)

2) Addressing Notes

Some clients use zero-based offsets. If your software asks for an offset instead of a 4xxxx/0xxxx address, subtract 1 from the address shown in the manual (e.g., 40006 → offset 5; 40119 → offset 118; coil 00013 → offset 12).

3) Holding Registers (16-bit)

Tag / Point	Unitronics	Modbus Address	Units	Access
Nitrogen Storage Pressure	MI 118	40119	PSIG / kPa	R
Oxygen Concentration (%)	MI 5	40006	% O2	R
Oxygen Concentration (PPM)	MI 112	40113	PPM	R
Supply Air Pressure	MI 161	40162	PSIG / kPa	R
Supply Air Flow	MI 155	40156	SCFM / SCMH	R
Nitrogen Flow	MI 167	40168	SCFH / SLPM	R
Supply Air Temperature	MI 173	40174	°F / °C	R
Supply Air Pressure Dewpoint	MI 255	40256	°F / °C	R
N2 Generator Cut-In Pressure	MI 20	40021	PSIG / kPa	R/W
N2 Generator Cut-Out Pressure	MI 21	40022	PSIG / kPa	R/W
Low Tank Pressure Alarm Point	MI 98	40099	PSIG / kPa	R/W
O2% Alarm Point	MI 14	40015	% O2	R/W
O2 PPM Alarm Point	MI 16	40017	PPM	R/W
Duplex Switch-Over Hours Setpoint	MI 239	40240	Hours	R
Duplex Current Run Hours	MI 242	40243	Hours	R

4) Holding Registers (32-bit)

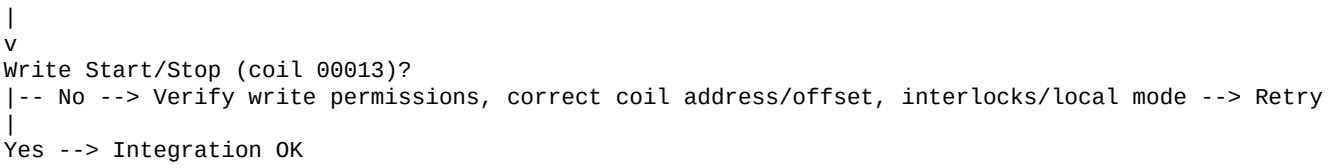
Tag / Point	Unitronics	Modbus Address	Units	Access
Staging Current Run Hours	ML 36	28709	Hours	R
Staging Switch-Over Hours Setpoint	ML 37	28710	Hours	R
Generator Total Run Hours	ML 14	28687	Hours	R

5) Coils (Discrete)

Tag / Point	Unitronics	Coil Address	States	Access
Start / Stop	MB 12	00013	0=Off, 1=On	R/W
Running / Standby	MB 7	00008	0=Standby, 1=Running	R
Common Alarm	MB 61	00062	0=Good, 1=Alarm	R
Common Alarm Toggle	MB 19	00020	0=Off, 1=On	R/W
BlastOff Alarm	MB 2050	02051	0=Good, 1=Alarm	R
Oxygen Concentration Alarm	MB 0	00001	0=Good, 1=Alarm	R
PurityProtect On/Off	MB 225	00226	0=Off, 1=On	R/W
Low Tank Pressure Alarm	MB 106	00107	0=Good, 1=Alarm	R
Particulate Filter Status	MB 14	00015	0=Good, 1=Change Needed	R
Coalescing Filter Status	MB 28	00029	0=Good, 1=Change Needed	R
Absorbing Filter Status	MB 29	00030	0=Good, 1=Change Needed	R
Local Alarm Buzzer Toggle	MB 227	00228	0=Off, 1=On	R/W
PSA Staging Toggle	MB 170	00171	0=Off, 1=On	R/W
PSA Duplex Toggle	MB 208	00209	0=Off, 1=On	R/W
Duplex - Set Primary	MB 211	00212	Set primary on start-up	R/W
Duplex Identification	MB 210	00211	0=Secondary, 1=Primary	R

6) Troubleshooting Flow

```
Start
|
v
Ping generator IP?
|-- No --> Check link/switch/VLAN, IP/subnet, static IP config --> Retry
|
Yes
|
v
Connect to TCP port 502?
|-- No --> Firewall/ACL, port blocked, wrong IP, controller not on network --> Retry
|
Yes
|
v
Values plausible?
|-- No --> Check addressing mode (4xxxx vs offset), subtract-1 offset, 16/32-bit type, word order
--> Retry
|
Yes
```


Write Start/Stop (coil 00013)?
No --> Verify write permissions, correct coil address/offset, interlocks/local mode --> Retry
Yes --> Integration OK