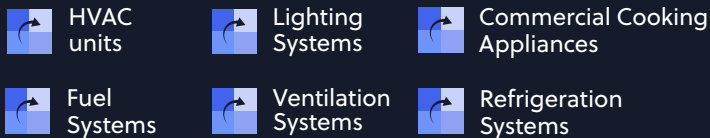# Nexus T8 Device

The Nexus devices are intelligent IoT modules that connect to the cloud via a multi-carrier cellular connection.

These devices contain an active library of machine and/or system profiles for auto setup and commissioning.

This library allows for monitoring and controlling a variety of machine types such as:

- HVAC units
- Lighting Systems
- Commercial Cooking Appliances
- Fuel Systems
- Ventilation Systems
- Refrigeration Systems

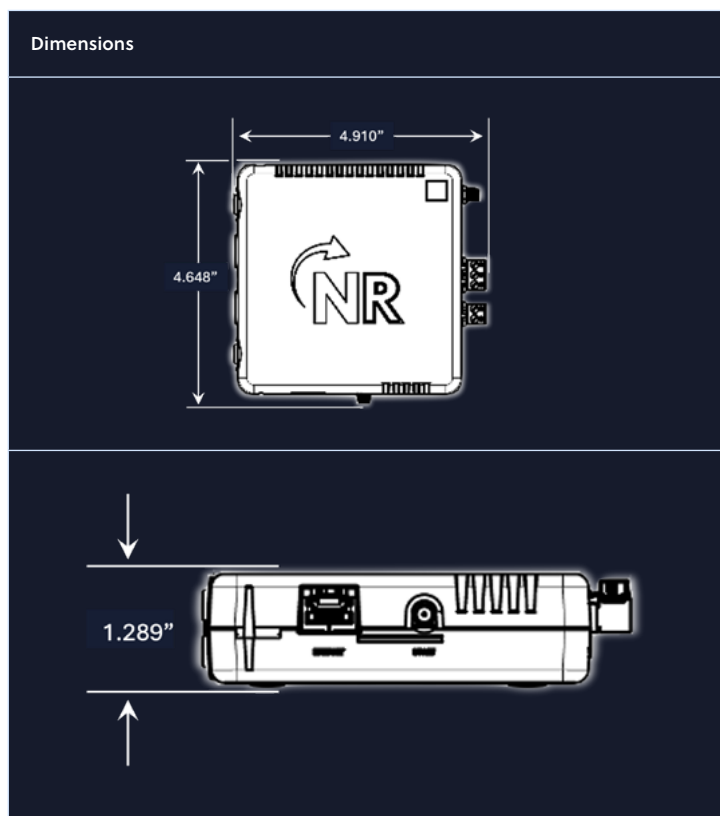And many other commercial and industrial spaces and systems

Features

- Cloud connectivity via multi-carrier LTE Cat M1 or NB-IoT
- QR Code for Mobile App Commissioning
- Industrial BLE – 2.4 GHz Wireless
- Mesh network for inter-device data relaying
- Remote configuration and firmware updates via cloud – auto or scheduled
- 6 Triac outputs for 24VAC load switching
- 2 universal outputs, configurable as 0–10V analog or 0–12VDC digital
- 8 universal inputs, supporting 0–10V,   4–20mA, resistive, or dry contact signals
- Hardware-selectable internal/external power routing for Triac outputs
- Magnetic and bracket-based mounting options

Common Applications

- Packaged DX HVAC Control
  - Gas/Electric Heat
  - Heat Pump Type O
  - Heat Pump Type B
- Lighting Control – ON/OFF, Dimming
- Ventilation Hoods
- Refrigeration Systems
- Universal Inputs/Outputs
  - Unit Heaters
  - Exhaust Fans
  - Pumps
  - Vestibule Heaters
  - Air Curtains
  - Miscellaneous Sensor Monitoring
  - Etc.

Power Supply Input

Voltage Range	24VAC/DC; ±15%; Class 2
Frequency Range	50/60Hz
Power Consumption	17VA max

Standards and Regulations

FCC	Compliant with part 15 of FCC rules
PTCRB	Compliant with PTCRB standards
ISED	Listed by ISED

Radios

Bluetooth	Industrial BLE 5.0
Cellular	CAT M1/NB-IoT Standards

Environmental

Operating Temp	-40°F to 140°F (-40°C to 60°C)
Storage Temp	-40°F to 185°F (-40°C to 85°C)
Relative Humidity	5% to 95% non-condensing

Hardware

Processor	Arm Cortex-M33 @ 64MHz
Real Time Clock (RTC)	Built-in RTC w/battery backup
Wire Connectors	5mm pitch

Dimensions

Universal Inputs (UI)

General	
Input Type	Universal; software configurable
Input Resolution	16-Bit analog / digital converter
Power Supply Output	24VDC; maximum 140mA
Counter	
Type	Dry contact
Max Frequency	1Hz maximum
Minimum Duty cycle	500ms ON / 500ms OFF
Contact	
Type	Dry Contact
0 to 10VDC	
Range	0 to 10VDC (40kΩ input impedance)
4 to 20mA	
Range	4 to 20mA No external resistor needed
Resistance/ Thermistor	
Range	0 to 350 kΩ

Universal Outputs (UO)

General	
Output Type	Universal; software configurable
Output Resolution	10-bit digital to analog converter
Output Protection	Built-in snubbing diode to protect against back-EMF
Load Resistance	Minimum 200 Ω Maximum 500 Ω for 0-20mA output
0-12VCD On/Off	
Range	0 or 12VDC
Source Current	Maximum 60 mA at 12VDC
0-10VDC	
Range	0 to 10VDC
Source Current	Maximum 60 mA at 10VDC

Digital Outputs (DO)

Counter	
Output Type	24VAC Triac
Max. Current per Output	0.5A continuous 1A @ 15% duty cycle for a 10-minute period
Power Source	Internal or External (dipswitch adjustable)

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