



NLP

Controller Line

Featuring a fresh server design, retrofit capability, and innovative smart decoders, NLP is the flexible controller solution for your irrigation demands.

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NLP Overview

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NLPNet Platform

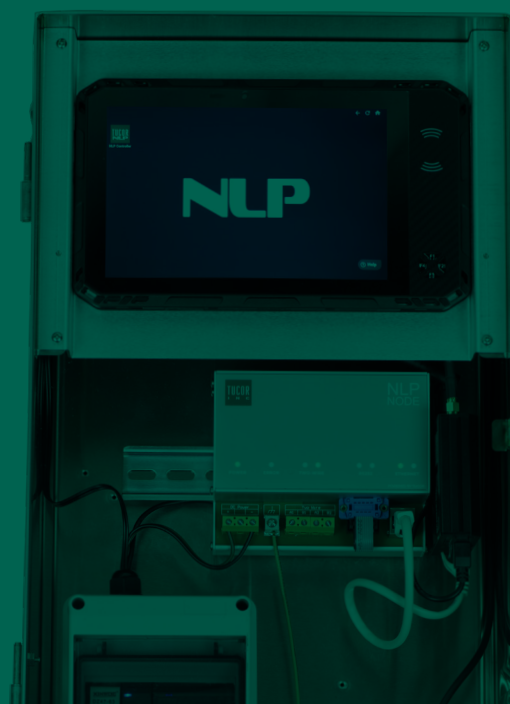
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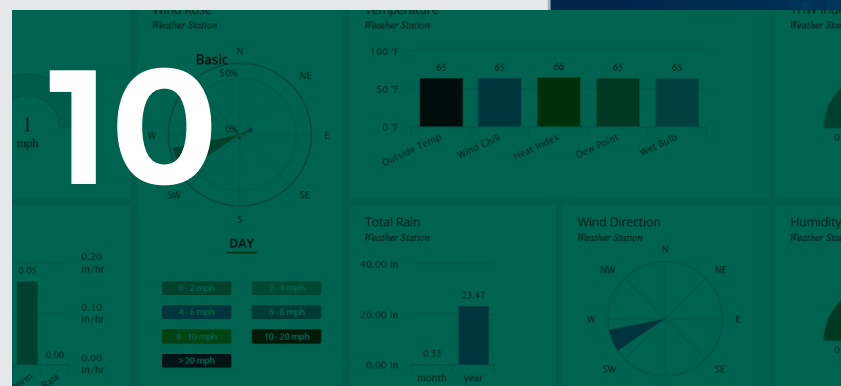
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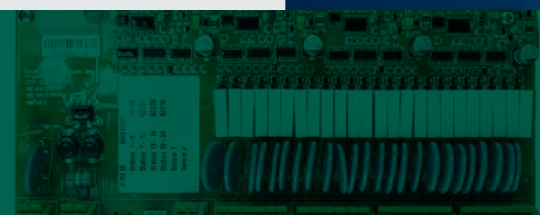
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NLP Options and Parts List



Since 1995, Tucor's mission has been to provide top-quality water management products that solve problems and measurably conserve customer resources. Holding seven patents, Tucor is known as an early innovator in commercial irrigation. As a family-owned and operated small business, we take pride in our products, customers, and employees, striving for excellence in everything we do.

How We Work

Purpose-driving innovation

Real-world problems drive our desire for product innovation.

Quality at our core

We source the highest-quality possible components and take pride in our products.

Conservation for all

The best resource-conserving technologies are the ones that can be easily applied and effectively utilized.

Who We Support

Aquaculture	Large Residences	School Districts and Universities
Condensed Farms	HOAs	Vineyards
Golf Courses	Nurseries	Wastewater
Greenhouses	Parks	

Tucor's NLP Controller blends flexibility, scalability, and powerful features in a controller that can accommodate any commercial site's needs.



An Innovative Controller Line for Commercial Irrigation

From the simplest 50-valve decoder retrofit to a 500-valve system, the NLP can manage complex irrigation requirements with intelligent, water-saving algorithms that balance plant needs with limited water resources.

The NLP can seamlessly retrofit all Tucor legacy 2-Wire controllers, preserving your decoder and controller data.

Important Resource-Saving Features

- Up to 500 station capacity
- Split watering between as many as 50 programs
- Insert custom 'skip days' to account for holidays, shutdowns, and more
- 2-Wire diagnostics available with new NG decoder series
- Sophisticated flow management of up to 20 points of connection and 100 pipe sections
- Watering-saving smart irrigation algorithms ("MAD") recalculate every second for accurate, station-based watering
- Water use simulation with potential irrigation alarms in seconds
- Prioritization of up to 255 stations or station-groups, giving important plant matter resources in times of drought

The NLP Commercial Controller



Flexibility & Scalability

Manage up to 500 decoders and 125 sensors across 20 points of connection, with support for up to 50 programs and advanced features like hydraulic-based scheduling and MAD-based programming. Alternatively, you can create a simple program in minutes.

Connectivity & Display

Connect and communicate with your controller almost instantly using multiple modes of communication. With the NLP's ruggedized touchscreen display, you can modify and view changes in real-time, even during an irrigation event.

2-Wire Intelligence

The NLP's advanced 2-Wire technology upholds Tucor's 25+ year legacy of high-quality 2-Wire irrigation controllers. It detects leaks, predicts future issues, and records individual decoder data to expedite troubleshooting and prevent future problems on large systems.

Resource Protection

Our intelligent irrigation engine balances plant needs with resource restrictions to make the most of limited water supply, pump capacity, and run times. You can simulate a year of irrigation in minutes to stress-test schedules with potential time and water constraints.

Practical Conservation that Counts



Time

Access our responsive NLPNet anywhere via your computer or mobile device.

Slash installation time by automatically adding new NG Series decoders with a click of a button.

Determine solenoid faults, splice issues, and more using the NLP's built-in diagnostics tools.

Forecast the next year of irrigation to stress-test your intended irrigation schedules against time and water constraints.



Water

Set leak-detecting alarms with a flow meter and master valve at up to 20 points of connection.

Deliver precise water amount to stations in MAD (Managed Allowable Depletion) mode. Recalculates station-level water needs every second, including real-time rainfall.

Prevent irrigation run-off with automatic cycle and soak.



Money

Save money on wire by choosing a Tucor 2-Wire system over a conventionally-wired system.

Active flow, 2-Wire, and status alarms help prevent costly plant matter losses and expensive leaks.



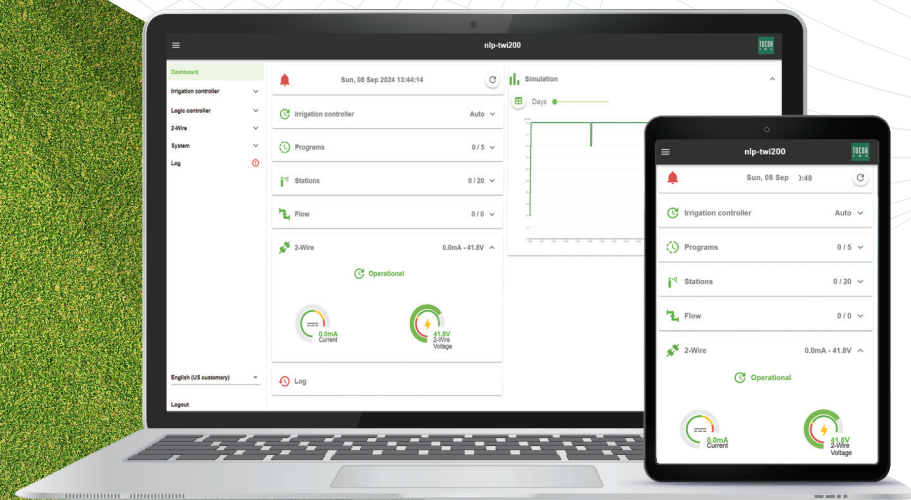
Electricity

In Hydraulic mode, the NLP reorganizes simultaneous station run by expected flow, maximizing station run and slashing total pump run time.

With the NLP's new NG decoders, the NLP can run up to 40 stations simultaneously.

Feature	NLP Offering
Stations	240, upgrade to 500
Sensors	Up to 125+
Simultaneous Station Run/Timing	40/irrigate in seconds
Programs	50
Weather	Remote-only (API)
Water Window	Up to 100 "timeslots": start/stop time and exclude days, make timeslots "passive"
Calendar-Based	Yes
MAD	Weather-corrected or MAD-based (station-level)
Remote Access	NLPNet (cloud-based)
Flow Sensors (High Frequency Pulse)	20
Priority	(Optional) Prioritize POC, station, and station group for operation/irrigation
Master Valves (N/O or N/C)	20
Advanced Logic	Full logic engine for irrigation based on sensor inputs
Data Sharing/Integration	End-to-end API

NLPNET PLATFORM



Remote Management Tools that Give You Time and Peace of Mind

- Multiple user levels with password protections and user log timestamps
- Accumulated water usage and rain data
- Updated remote access platform
- Real-time data update (sync-less)
- Over-the-air firmware upgrades
- On-demand controller backups
- 2-Wire, flow, and status alarms by company or device

Software	Features
ACT-E-NLP	NLP one-time activation fee/re-activation fee for Ethernet connections.
ACT-AIR-NLP	NLP one-time activation fee/re-activation fee for cellular connections.
R-1-E-NLP	NLP yearly remote access for Ethernet connections.
R-1-AIR-NLP	NLP yearly remote access for Cellular connections.
R-1-API-NLP-DAVIS	NLP yearly Davis Weather Station access - API only. One subscription required per device shared. Link up to 100 controllers per one subscription.

NLP NG SERIES DECODER

Accelerate installation time with automatic decoder discovery with the press of a button

Identify line issues with enhanced diagnostics

- Issues with solenoid or connection (leak current)
- Confirm activation of solenoid (ping decoder)
- Determine potential cable issues (voltage)



Use a universal sensor decoder to connect flow, rain, pressure, level & other sensors.

Multiple output models available (1, 2, 4, and 6)

Limit short circuits with added protection in every decoder.

NLP Decoders	Features
NG-050	Single address, new generation decoder for 1 output
NG-200	Dual address, new generation decoder for 2 outputs with built-in SP-100
NG-400	Multi-address, new generation decoder for 4 outputs with built-in SP-100
NG-600	Multi-address, new generation decoder for 6 outputs with built-in SP-100
SP-100	Tucor universal line surge protector - install every 500 feet and at end of wire runs
SD-110	Configurable sensor decoder for pulse, analog and digital sensors (supports 1 input)

Maximum Wire Distances by Wire Type

300 Decoders total to 30 active

Nominal wire size	KM	Miles
16 AWG	1.6	1
14 AWG	2.5	1.6
12 AWG	4	2.5

Approximate Values for demonstration purposes only. Only valid for Tucor 2-Wire. Assumes new wire and even distribution. Heavy sensor use will affect these calculations. 16 AWG wire shown for demonstration purposes only.

SMART IRRIGATION A System that Grows with You

ET-BASED IRRIGATION

Use historical or live ET data to give your system a Smart Irrigation upgrade

Basic

Implement basic Smart Irrigation practices by using ET to adjust runtimes

- Adjust individual or all programs with automatic ET-based correction
- ET updates hourly and recalibrates program run times (even mid-program run)

NLP Receives Davis Weather



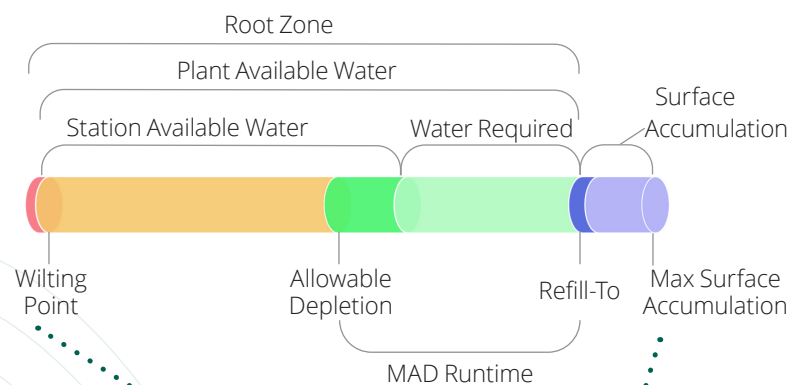
Using Davis WeatherLink.com, the NLP receives live ET data hourly. One subscription can be shared across up to 100 controllers.

Advanced

Optimize irrigation at the individual station level with MAD-based irrigation

- Record accumulated rain data as water is applied in real-time
- Station runtimes are recalibrated every second
- Automatic cycle and soak prevents irrigation-related run off
- Set station-specific parameters to automate watering

With NLP's MAD-based irrigation, the NLP always maintains irrigation between two user-set thresholds (MAD and refill-to), showing you each station's real-time status.



When water is limited, use the NLP's prioritization feature to ensure the most important plant matter gets the irrigation it needs.

ID	Description	ID	State	MAD runtime
1	1. D-East Side Planters (2)-ST-ON	41136-1	Wait for schedule	22m 02s
2	2. H-Round Oak Tree by Stairway	41136-2	Idle	6m 31s
3	3. H-Planters Under Arches and by S	41136-3	Idle	11m 27s
4	4. H-Fountain Planter/Small area of	41136-4	Idle	8m 05s
5	5. D-Planter leading Backstage	41136-5	Wait for schedule	26m 15s
6	6. RRR-Parade Route North-ST-ON	41136-6	Wait for schedule	12m 51s
7	7. H-On Porch, Oak Oak Tree	41144-1	Wait for schedule	15m 00s

HYDRAULICS

Basic

Track water usage and implement simple flow alerts to have the need-to-know information at your fingertips

- Schedule a "learned flow" program to calibrate station expected water usage automatically
- View real-time flow rate on controller dashboard
- Enable notice-only flow alerts



Flow Alerts

- No flow GPM
- Unscheduled Flow (GPM)
- Low flow (%)
- High flow (%)

Action Options

Choose between **standard** (notice only) and **automatic** action levels for flexible flow alarming. Send email notifications to up to 100 users.

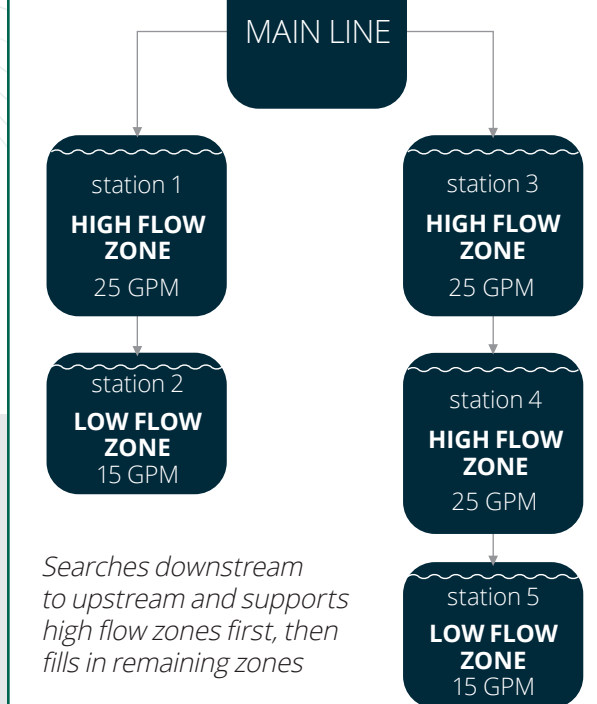
Advanced

Optimize irrigation based on your site's specific hydraulics and automatically detect and respond to leaks at the station level

- Support up to 20 points of connection minimizing irrigation disruption during an isolated flow issue
- Add more than one flow valve and flow sensor to one point of connection and set priority
- Irrigate based on site Hydraulics by designating up to 100 separate pipe sections
- Use Hydraulic Mode to maximize simultaneous station run

Zones furthest away from the main line and with the highest expected flow are supported first (station 4 in diagram). The controller seeks additional high flow zones (stations 3 and 1) and "fills-in" with other lower-flow zones (stations 5 and 2). This is repeated until the main line capacity is met, never exceeding the predefined flow capacity.

Hydraulic Mode



Searches downstream to upstream and supports high flow zones first, then fills in remaining zones

GPM = gallons per minute

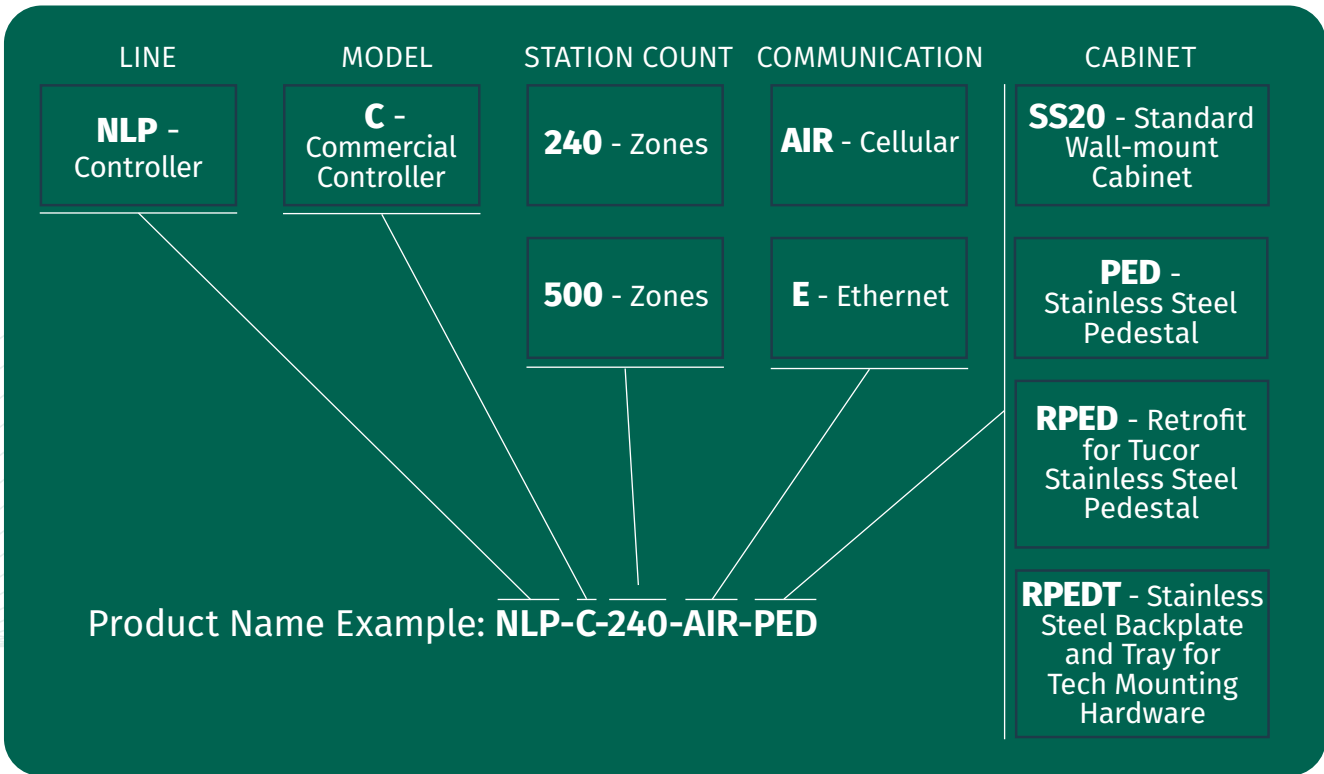
NLP COMMERCIAL CONTROLLER (NLP-C)



The **NLP Commercial Controller (NLP-C)** is available in both cellular and Ethernet configurations.

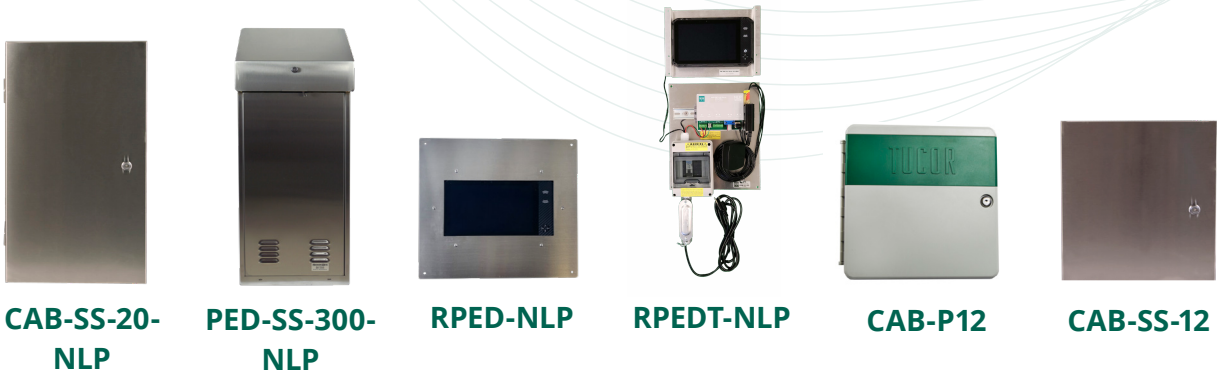
Communication	Cellular (AIR) or Ethernet (E)
Cabinet	20" wall-mount cabinet
Stations	240, upgrade 500
Conventional Retrofit	Increments of 24 via SERB-NLP. Up to 20 SERBs for a total of 480 conventional zones
Display	8"
Cloud-based Software	NLPNet - all NLP controllers require a yearly NLPNet subscription
Decoder Compatibility	NG series, LD series, RKLD-050, PD-100
Sensors	Requires 1 SD-110 sensor decoder per rain, flow, and other sensors

NLP Controller Configuration Options



NLP CABINET OPTIONS

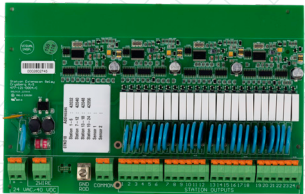
Options for the **NLP enclosure** will vary depending on desired configuration.



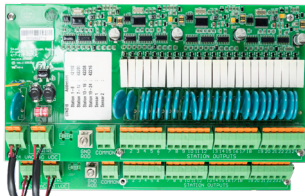
Description	20" wall mount standard NLP enclosure with louvres	1-piece, top-entry pedestal enclosure	Mounting kit for retrofit of existing Tucor PED-SS-300	Tech mounting hardware for non-standard applications	12" polycarbonate enclosure	12" stainless steel enclosure
Mount	Wall mount	Pedestal mount	Includes backplate and display enclosure	Retrofit for Tucor pedestal mount, includes backplate and tray for display	Wall mount	Wall mount
Material	Stainless steel	Stainless steel	Stainless steel	Stainless steel	Polycarbonate	Stainless steel
Fits Models	NLP-C	NLP-C	NLP-C	NLP-C	SERB-24-NLP, SERB-48-NLP	SERB-24-NLP, SERB-48-NLP

NLP OPTIONS

CONVENTIONAL RETROFIT Station Extension Relay Board (SERB)



24-station Model



48-station Model

- Easily retrofit existing conventional system
- 24-48 zone models
- Separately powered
- Connect up to 20 SERBs to a single NLP

SER-24-B-NLP	Station extension relay board for conventional retrofit of up to 24 zones, NLP version
SER-48-B-NLP	Station extension relay board for conventional retrofit of up to 48 zones, NLP version

FLOW ACCESSORIES

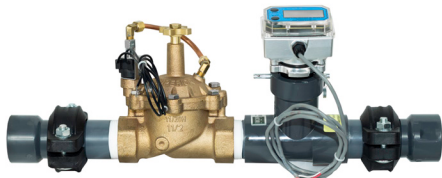
RainMate

- Combination rain sensor and tipping rain bucket
- Compact size
- Includes pole mounting hardware



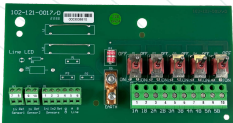
Ultrasonic Flow Meter Assemblies

- Available as meter-only, meter with couplings, or flow meter/master valve assembly
- No need for removal for winterization
- Low-flow accuracy allows perfect for small leaks& sites with drip irrigation



TRB-NLP	RainMate combination rain sensor and tipping rain can
UFM-1.5	1/5" ultrasonic flow meter
UFM-2	2" ultrasonic flow meter
UFMV-A	Ultrasonic flow meter-master valve assembly

2-WIRE PATH ISOLATOR



- Connect up to five 2-Wire paths
- Embedded surge protection
- Isolate 2-Wire paths for simplified troubleshooting

LTB-NLP	Line termination board for NLP controllers
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NLP PRODUCTS & ACCESSORIES

NLP COMMERCIAL CONTROLLER	
NLP-C-240-AIR-SS20	240 station controller assembly in 20" stainless steel cabinet (CAB-SS-20-NLP) with touch screen and built-in 4G LTE modem
NLP-C-240-E-SS20	240 station controller assembly in 20" stainless steel cabinet (CAB-SS-20-NLP) with touch screen for Ethernet connections
NLP-C-240-AIR-PED	240 station controller assembly in stainless steel pedestal (PED-SS-300-NLP) with touch screen and built-in 4G LTE modem
NLP-C-240-E-PED	240 station controller assembly in stainless steel pedestal (PED-SS-300-NLP) with touch screen for Ethernet connections
NLP-C-240-AIR-RPED	240 station controller assembly with touch screen and built-in 4G LTE modem for retrofit of existing Tucor pedestal (PED-SS-300) with retrofit mounting hardware. Does NOT include pedestal.
NLP-C-240-E-RPED	240 station controller assembly with touch screen for retrofit of existing Tucor pedestal (PED-SS-300) with retrofit mounting hardware. Does NOT include pedestal. Compatible with Ethernet connections.

NLP SERIES LICENSE KEY	
NLP-LK-240-500	License key to upgrade NLP Controller from 240 to 500 stations

NLP SERIES DECODERS	
NG-050	Single address new generation decoder for 1 output
NG-200	Dual address new generation decoder for 2 outputs with built-in SP-100
NG-400	Multi-address new generation decoder for 4 outputs with built-in SP-100
NG-600	Multi-address new generation decoder for 6 outputs with built-in SP-100
SP-100	Tucor line surge protection for all Tucor 2-Wire ystems, specified for placement every 500' and at the end of wire runs
SD-110	Configurable sensor decoder for analog, pulse, and digital sensors for NLP Controllers only, supports 1 input

NLP SERIES STATION EXTENSION RELAY BOARDS FOR CONVENTIONAL RETROFIT	
SER-24-B-NLP	Station Extension Relay Board for conventional retrofit of up to 24 zones, NLP version, includes 24VAC transformer
SER-48-B-NLP	Station Extension Relay Board for conventional retrofit of up to 48 Zones, NLP version, includes 24VAC transformer

NLP SERIES ACCESSORIES	
TRB-NLP	Tucor RainMate NLP tipping rain bucket with pole mounting hardware. Requires 1 SD-110 per RainMate.
LTB-NLP	NLP Line termination board for connection/isolation of up to five 2-Wire paths

NLPNET	
ACT-E-NLP	NLP one-time activation fee/re-activation fee for Ethernet connections
ACT-AIR-NLP	NLP one-time activation fee/re-activation fee for cellular connections
R-1-E-NLP	NLP yearly remote access for Ethernet connections
R-1-AIR-NLP	NLP yearly remote access for cellular connections
R-1-API-NLP-DAVIS	NLP yearly Davis Weather Station access - API only. Link up to 100 controllers per subscription.





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