16 "N" Parameter Reference & Descriptions

If you are using the Ethernet Port on the Ultra unit, the N parameters are where network settings can be viewed and/or changed. Refer to the table below for information about the parameter values. Contact your network administrator or PE if further information is needed.

16.1 Ethernet Port Connection and Instructions

The following is a list of BASIC networking setup steps and tips. Network administration access may be required to configure your network for communication with the Ultra unit.

1) Using an ethernet cord, **connect the Ultra unit to an existing, or a dynamically-created network**.

    a. If connecting directly to a laptop or PC, it may take some time for your device to create the connection.

        NOTE: The Ultra unit cannot function as a DHCP server and will not create a network. See "Further Notes" below.

    b. After a direct connection is made, your laptop/device may say that the network is "unknown." This is normal.

2) After the unit is connected to the network, you can **now view the drive's IP address** and **browse to that address** by performing the following steps:

    a. From the "cOFF" or "rOFF" display, press and hold both the "Increase" and "Decrease" buttons together until "PA" is shown, then let go.

        i. The display will say "IP", followed by a sequence of numbers separated with a dot: "XXX.XXX"; then after a few seconds will show a second sequence of numbers: "XXX.XXX." This series of displays will cycle repeatedly until the scroll button is used to exit.

        ii. For example, if the display says: "IP" then "192.168," and then "0.100" this means that the IP address is 192.168.0.100.

            NOTE: If the display says **"IP," then "0.0" followed by "0.0,"** this means that the Ultra unit is NOT currently connected to a network. In this case, you will need to repeat step 1.

    b. While in the "PA" menu, tap the scroll button until you see "WEB.UNL." The display will change to "0"

        i. Use the increase button to select the amount of time (in hours – 24 is maximum) that the browser control interface will be unlocked. **NOTE: If this step is not performed, the information on the browser will be READ ONLY.** If the browser interface was already unlocked, and you wish to LOCK the browser interface, you can decrease this parameter to "-1."

        ii. While still in the PA menu, tap the scroll button twice to view the MAC ID (if needed), or Hold the scroll button to exit and to load in any changes to the WEB.UNL parameter.

3) Type the IP number found in step 2 directly into the address field of the connected device's browser and hit enter. A login prompt will display on your browser. Type in the following credentials:

    a. User = pedrive

    b. Password = 369

4) You can now use the browser interface to access the Ultra's parameters and network settings.

Further Notes:

- If your laptop or other directly-connected device does not automatically create an independent network, refer to that device's manual for instructions for how to either create/enable a DHCP server, or for information about what static subnet will be used/available.

- If connecting to an existing network, see your network administrator for assigning a static IP for the Ultra unit. Enter the 4 parts of the static IP into parameters N5 – N8.

16.2 N0-N19: Networking/Address Parameters

The following section contains a reference table with descriptions for the N parameters, grouped by function.

NOTE: Any changes made to the N parameters require drive reboot (power the VFD off/on). The standard parameter "load" procedure alone will not affect any change until a full reboot has been performed.

Label	Name	Range	Description	Default
N0	Code Variable	0-9999	To change any of the following "N" variables, a code must be entered in this location. If the code is not entered, it is still possible to view the other "N" values, but when a change is attempted, the word "COdE" will be displayed.	0
N1	Enable DHCP	0-1	Enables DHCP	1
		0	Static IP address.	
		1	Dynamic IP address.	
N2-N4	N/A	N/A	Reserved parameters.	N/A
N5	IP Address 1	0-255	Static IP Address Location 1	192
N6	IP Address 2	0-255	Static IP Address Location 2	168
N7	IP Address 3	0-255	Static IP Address Location 3	0
N8	IP Address 4	0-255	Static IP Address Location 4	100
N9	N/A	N/A	Reserved	N/A
N10	Subnet Mask Address 1	0-255	Subnet Mask Address Location 1	255
N11	Subnet Mask Address 2	0-255	Subnet Mask Address Location 2	255
N12	Subnet Mask Address 3	0-255	Subnet Mask Address Location 3	255
N13	Subnet Mask Address 4	0-255	Subnet Mask Address Location 4	0
N14	N/A	N/A	Reserved	N/A
N15	Gateway Address 1	0-255	Gateway Address Location 1	192
N16	Gateway Address 2	0-255	Gateway Address Location 2	168
N17	Gateway Address 3	0-255	Gateway Address Location 3	0
N18	Gateway Address 4	0-255	Gateway Address Location 4	254
N19	N/A	N/A	Reserved	N/A
N20	Primary DNS Address 1	0-255	Primary DNS Address Location 1	8
N21	Primary DNS Address 2	0-255	Primary DNS Address Location 2	8
N22	Primary DNS Address 3	0-255	Primary DNS Address Location 3	8
N23	Primary DNS Address 4	0-255	Primary DNS Address Location 4	8
N24	N/A	N/A	Reserved	N/A
N25	Secondary DNS Address 1	0-255	Secondary DNS Address Location 1	8
N26	Secondary DNS Address 2	0-255	Secondary DNS Address Location 2	8
N27	Secondary DNS Address 3	0-255	Secondary DNS Address Location 3	4
N28	Secondary DNS Address 4	0-255	Secondary DNS Address Location 4	4
N29	N/A	N/A	Reserved	N/A

16.3 N30-N39: Industrial Networking Parameters

The Micro-Speed Ultra® series is equipped with ODVA EtherNET/IP®, an open device network standard, and Modbus TCP industrial communications. These forms of communication allow for interoperability regarding control, status, and programming across industrial devices from multiple vendors on a network.

To enable communication with the drive via EtherNET/IP® the parameter 'N30' must be changed.

>NOTE: Without this parameter enabled you can still access the drive's internal web page, and discover it on a network, but any industrial communications are blocked.

Change 'N30' through the keypad, or internal webpage from its default value of '0' to '1' then cycle the power.

To control for/rev signal and frequency over Ethernet/IP enable 'N31' and 'N32' by changing their default values of '0' to '1'

>NOTE: If these values are NOT changed the drive will use the 24VDC or 120VAC logic control signal, and values from the VFD's speed parameters (C20-C29, C30-39, and/or Page Swap Settings).

Documentation for configuration of Ultra® units for use with specific communication types (EtherNet/IP, PROFINET, Profibus, Modbus TCP, Modbus RTU, and more) are available upon request. Contact Power Electronics International, Inc. for more information.

Label	Name	Range	Description	Default
N30	Enable Industrial Network	0-28	0: OFF 1: EtherNet/IP communication enabled Modes 2-28: Contact PE.	0
N31	Net Control Forward Reverse	0-1	0: OFF 1: Net Control Forward/Reverse enabled	0
N32	Net Control Frequency	0-1	0: OFF 1: Net Control Frequency	0
N33	Net Control S2 - A4	0-255	0: OFF 255: Net Control S2 - A4 all ON.	0
N34	Net Analog and Relay Control	0-63	0: OFF 63: Net Analog and Relay Controls all ON.	0
N35	Net Page Swap Control	0-511	0: OFF 511: Net Page Swap Control all ON.	0
N36	Fault on Link Loss while Running	0-1	0: OFF 1: Fault on Link Loss while Running	1
N37	N/A	N/A		N/A
N38	Net Control Signal Loss Timer	0.0-999.9	For explicit messages. Running a forward or reverse signal, and message not received for this time (sec) causes this code. 0.0 disables.	0.1
N39	Encapsulation Inactivity Timeout	0-3600	Encapsulation Inactivity Timeout (sec)	120

EtherNet/IP is a trademark of Open DeviceNet Vendor Association, Inc. (ODVA)
Modbus is a trademark of Schneider Electric.