

# DCN 1000 Control Point Module

Reduces development time and lowers costs for meter manufacturers to "OSGP enable" electricity meters

nes

Networked  
Energy  
Services

## DCN 1000 Key Features

- 100% accurate picture for better outage detection with automatic topology mapping
- Communicates across the WAN using any wired or wireless IP-capable network, including analog telephone lines, GSM, CDMA, and fiber
- Reliable power line meshing avoids delay of weeks or months to certify RF routes
- Detect and report trouble conditions such as line breaks and device failures.
- Remotely upgradeable firmware
- End-to-end data encryption, multilayered authentication; monitors and report tampering
- A broadcast capability enables time-critical services such as demand response and load shedding

## Monitor Health and Operations of Grid Devices and PLC Network

NES's Data Control Node (DCN) 1000 series is a data concentrator that manages smart meters and other grid devices on a low-voltage power line network. It provides the communication infrastructure between grid devices and the head-end by efficiently coordinating the bi-directional delivery of device data. By automatically discovering grid devices at installation or as a result of dynamic topology change, you'll have a 100% accurate picture of asset location, and better outage placement. Detects and reports trouble conditions such as line breaks and device failures. A broadcast capability enables time-critical services such as demand response and load shedding and by collecting meter data, including consumption, load profiles and power quality measurements to help you monitor the health and operation of grid devices.

## Proven Reliability

Providing four times the bandwidth of second-generation RF and based on NES's proven power line technology powering more smart meters than any other data concentrator in the world. Enjoy daily communication reads delivered with 99.7-100% reliability, NES's DCN 1000 consistently ensures you the availability of power consumption and power quality data you need to gain visibility at the edge of the grid.

## Multiple Layers of Security Protects Consumers' Privacy

The NES DCN 1000 provides the end-to-end data encryption needed to secure grid data to protect consumer privacy with added multi-layer authentication needed to thwart potential cyber attacks. Monitor and report theft and tampering with the capability for in line-tap detection. All packaged within a flexible communication platform over the WAN using any wired or wireless IP-capable network, including analog telephone lines, GSM, CDMA, and fiber.





## Easy, Low-Cost Installation Proven to Work on Day One

The DCN 1000 can be installed at any point in the low-voltage power line network, including at the distribution transformer, co-located behind an IEC meter or beside an ANSI meter. The design allows you to choose the lowest-cost installation point on the network or where WAN signal strength is the best. Avoid delay of weeks or months to certify RF routes. Once installed, remotely upgradable firmware of the DCN and smart meters as well as the confirmation management allows you to upload tariff tables or change configuration settings to extend the life of your investment with true zero-maintenance installation.

## Specifications

### Maximum NES Devices Managed

1,024 NES electricity meters and 4,096 associated M-Bus devices (Models 787x4-001K and 787x5-001K), or 5 NES electricity meters and 20 associated M-Bus devices (Model 787x4-001V and 787x5-001V).

### Input Voltage

120/240VAC, 50/60Hz or 3 240VAC, 50/60Hz

### Power Consumption

5W to 10W typical

### Modem Power Supply

14VDC, 3W (maximum, DC-1000/SL).

### Phase Coupling

Models 78704 and 78705 support connections for 3 phases (L1, L2, L3) and Neutral for connection to star/bye networks. Models 78714 and 78715 support connections for 3 phases (L1, L2 L3) for connection to delta networks.

### Temperature

Specified operating range: -40° to +70°C

### Humidity

25-90% @ 50°C (non-condensing)

### Clock

Real-time clock accurate to ±1 minute per month; corrected by NES System Software.

### Life Expectancy

20-year design

### Safety Ratings

Certified by TÜV, SEMKO, and KEMAKEUR per EN 60950. Certified by TÜV per UL 60950 and CSA 60950.

### CE Mark

Compliant with European Directive 2002/95/EC on the restriction of the use of certain hazardous substances (RoHS) in electrical and electronic equipment.

### EMC

EN50065-1:2001, EN55022:1998, EN55024:1998, EN61000-4-2, EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6, EN61000-4-8, EN61000-4-11, EN61000-4-12, EN61000-4-13, EN61000-4-16.

### Optical Port

IEC 61107 (physical and electrical requirements).

### Mounting

DIN 43857

## Communications

### LAN Interface

CENELEC A-band power line communication channel.

### WAN Interface

Standard Hayes-compatible modem or null modem interfacing to an IP-capable network (Model 787x4). 10BASE-T/100BASE-TX Ethernet with 2 meter Ethernet cable (Model 787x5).

### Serial Port

EIA-232C serial port operates at standard baud rates up to 115.2 kbps (DC-1000/SL).

## Data Collection

### Data Security

CHAP, MS-CHAP, PAP and 128-bit application-level authentication for WAN; 96-bit authentication on power line network; 128-bit RC4 encryption for WAN and power line communication; strong passwords protect optical communication, with additional brute force attack protection.

### Data Storage

Non-volatile memory

## Installation

### Enclosure Type

Plastic; conforms to IP54.

### Enclosure Dimensions

22.2cm L x 16.9cm W x 7.9cm H.

### Mounting

DIN 43857; 3 screw hole mounts for ANSI markets; mounting points for an NES IEC poly phase or single phase meter are included on the face.

### Modem Dimensions

11cm x 7cm x 3cm (maximum, DC-1000/SL).

### Antenna Connection

Supports an external antenna through the upper enclosure gland (DC-1000/SL).

## Ordering Information

### Product

DCN 1000 Series

Model Numbers

78704

78705

78714

78715

All specifications subject to change without notice.