



## DOCSIS<sup>®</sup> 2.0 and EuroDOCSIS Status Monitoring Transponder for Power Supplies

### Description

The DHT-PS-AT-02 and DHT-PS-AT-06 are HMS status monitoring transponders with a DOCSIS<sup>®</sup>-EuroDOCSIS cable modem integrated as the front end.

Like all of Electroline's transponders, these versions offer the same ruggedness and standards compliance that operators require. They are designed to withstand extreme temperature and electrical conditions typical of the outside HFC plant, as well as to meet DOCSIS<sup>®</sup> and EuroDOCSIS cable modem specifications.

With SNMPv1, v2c and v3 support, the DHT-PS-NA-02/06 series easily interfaces with up to 10 network management systems to monitor power supply objects defined by HMS. It also monitors several DOCSIS<sup>®</sup> RF parameters, and supports various user-configurable objects to help operators customize the way they monitor and manage their power supplies. Dual IP capability provides further flexibility for implementation. Optional accessories enhance the DHT-PS-NA-02/06 status monitoring capabilities that include an independent tamper switch, input line voltage, output voltage and current, and an expansion port to accept future add-ons.

### Applications

Designed to monitor and control both legacy and HMS standby power supplies, the DHT-PS-NA-02/06 series installs in the power supply cabinet, and withstands the same extreme temperature conditions. It interfaces with the power supply's status monitoring ports to take measurements and translate the data into standard HMS performance parameters defined for power supplies. It then transports the data over the same channels as subscriber cable modems to an SNMP-based network management system. Operators can then leverage this information to maximize the network's quality of service, identify potential sources of outages before service is affected, and drive a preventive maintenance plan.

The DHT-PS-NA-02/06 series interfaces with a broad selection of HMS and legacy power supplies. Most networks can be outfitted

### DHT-PS-NA-02 and DHT-PS-NA-06



solely with Electroline transponders, thus reducing training and setup costs as well as laying the groundwork to benefit from enhancements available with Electroline's special firmware packages that can monitor VoIP performance and much more.

### The Electroline Advantage

As pioneers in power supply status monitoring using HMS and DOCSIS<sup>®</sup> technology, Electroline knows the importance of what is inside a transponder. Electroline uses field-proven DOCSIS<sup>®</sup> and EuroDOCSIS integrated circuits and builds each unit with components rated for extreme temperatures, thus setting the industry standard for quality and performance. Forward-looking and innovative, Electroline is also leading the way in enhanced network monitoring that harnesses the power of DOCSIS<sup>®</sup>-based field units.

### Features

- Proven technology with millions of DOCSIS<sup>®</sup> and EuroDOCSIS chips deployed
- DOCSIS<sup>®</sup> 2.0 and Euro-DOCSIS 2.0 compliant
- Easily upgraded to monitor network and VoIP service with optional EnetMonitor<sup>™</sup> firmware
- Downloadable VoIP testing functions
- Craft port for local diagnostics
- Integrated web server to view status of power supply and transponder
- Surge protection as per IEEE
- Operating temperature range -40 to +75°C

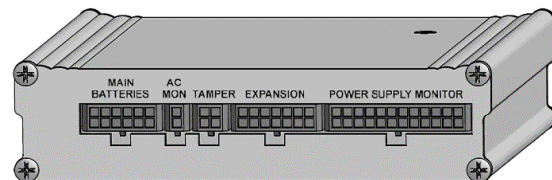
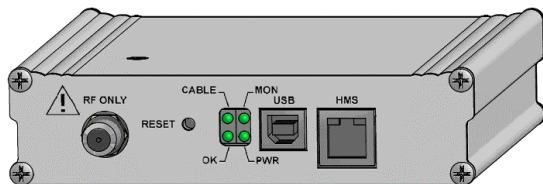
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## DOCSIS® and EuroDOCSIS Status Monitoring Transponder for Standby Power Supplies

### Specifications - Cable Modem

Upstream (Transmitter)		
Compliance	DOCSIS 2.0	EuroDOCSIS 2.0
Model	DHT-PS-NA-02	DHT-PS-NA-06
Frequency Band	5 to 42 MHz	5 to 65 MHz
Level Range	<b>TDMA</b> +8 to +54 dBmV (32QAM, 64QAM) +8 to +55 dBmV (8QAM, 16QAM) +8 to +58 dBmV (QPSK) <b>S-CDMA</b> +8 to +53 dBmV (all modulations of S-CDMA)	<b>TDMA</b> +68 to +114 dBuV (32QAM, 64QAM) +68 to +115 dBuV (8QAM, 16QAM) +68 to +118 dBuV (QPSK) <b>S-CDMA</b> +68 to +113 dBuV (all modulations of S-CDMA)
Modulation Type	QPSK, 8QAM, 16QAM, 32QAM, 64QAM and 128QAM	
Modulation Rate (nominal)	TDMA: 160, 320, 640, 1280, 2560 and 5120 KHz S-CDMA: 1280, 2560 and 5120 KHz	
Bandwidth	TDMA: 200, 400, 800, 1600, 3200 and 6400 KHz S-CDMA: 1600, 3200 and 6400 KHz	
Output Impedance	75 Ω	
Output Return Loss	> 6 dB	
Downstream (Receiver)		
Center Frequency	91 to 857 MHz ± 30 KHz	112 to 858 MHz ± 30 KHz
Level Range (one channel)	-15 dBmV to +15 dBmV	43 to 73 dBuV for 64QAM 47 to 77 dBuV for 256QAM
Modulation Type	64QAM and 256QAM	
Symbol rate (Nominal)	5.056941 Msym/sec (64QAM) and 5.360537 Msym/sec (256QAM)	6.952 Msym/sec (64QAM) and 6.952 Msym/sec (256QAM)
Bandwidth	6 MHz	8 MHz
Total Input Power (40 to 900 MHz)	< 30 dBmV	
Input (load) Impedance	75 Ω	
Input Return Loss	> 6 dB (88 to 860 MHz)	
Ports and Connectors		
Craft Interface	USB 1.1 type B	
HFC Network Side Interface Connector	Coaxial "F"-type per ISO 169-24	
Surge Protection (F port) ..... Ring Wave	IEEE C62.41-1991, cat A3 6KV 200A	IEC 61000-4-12, Level 4 (4KV/133A)
Combination Wave	IEEE C62.41-1991, cat B3 6KV 3KA	IEC 61000-4-5, Level 4 (4KV/2KA)
Power Supply Interface	2x12 header with analog and digital inputs and outputs	
Batteries, temperature probe, power	2x6 header with analog and digital inputs and outputs (power 21-60 VDC)	
Tamper Switch (optional accessory)	2x4 header with analog and digital inputs and outputs	
Expansion port	2x7 header with analog and digital inputs and outputs	
AC input voltage port	2x1 header, Purchase Accessory Model DHT-AC-NA-XX needed for some model power supplies	
HMS jack	Data port complies with HMS022/151 data link layer specification	
Environmental Specifications		
Operating Temperature Range	-40°C to +75°C (-40°F to 167°F)	
Storage Temperature Range	-40°C to +85°C (-40°F to 185°F)	
Humidity	0 to 90%, non-condensing	
Mechanical Specifications		
Outside Dimensions	6.75" x 5.10" x 1.31" (17.1 cm X 13.0 cm X 3.3 cm)	



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