



LT-439™ Dielectric Channel Specifications



Figure 1
LT-439 Dielectric Channel

The LT-439 Dielectric Channel is a cost effective, compact instrument designed for cure monitoring in R&D, Quality Control/Quality Assurance and manufacture of thermoset materials—resins, composites, paints and coatings. The LT-439 will accept all Lambient Technologies dielectric/conductivity sensors, and most other dielectric or conductivity sensors.

Measurements from the LT-439 may be interfaced to any control network through its standard RS-232 serial port or optional RS-485 serial port. Each LT-439 supports one dielectric sensor and one thermocouple but up to 256 individual Dielectric Channels may be connected on a single RS-485 line. This low-cost flexibility eliminates complex cabling and allows simultaneous, multi-channel cure monitoring of material state at any point in a large part.

Lambient Technologies provides optional CureView software to control the LT-439 for a complete dielectric cure monitoring system. With CureView the user can define cure monitoring parameters, acquire and store data, recall and analyze data, and plot and print results. Information about cure state from the LT-439 also can be easily incorporated in the user's own process control software.

The standard LT-439 Dielectric Channel has 10 Hz, 100 Hz, 1 kHz and 10 kHz excitation frequencies. An extended frequency option expands the range to 1 Hz – 10 kHz with additional frequencies within each decade. When used with either disposable or reusable dielectric/conductivity sensors, also available from Lambient Technologies, or the user's own sensors, the LT-439 Dielectric Channel Interface becomes a complete system for dielectric cure monitoring in all processing environments.

Specifications

Physical:

Dimensions: 8.5" width x 4.0" height x 12.5 depth"
(21.6 cm width x 10.1 cm height x 31.8 cm depth)

Weight: 4 lbs (1.8 Kg)

Electrical:

Power: 100 VAC – 240 VAC, 50/60 Hz autoswitching universal input, 1 A max

Measurement:

Available standard frequencies (Hz):

10	100	1 K	10 K
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Extended frequency option (Hz):

1.0	2.0	3.0	4.0	5.0	6.0	7.0	8.0	9.0
10	20	30	40	50	60	70	80	90
100	200	300	400	500	600	700	800	900
1.0 K	2.0 K	3.0 K	4.0 K	5.0 K	6.0 K	7.0 K	8.0 K	9.0 K
10 K								

Measurement speed: 3 sec/measurement

Excitation amplitude: Sine wave, 3.0 V nominal (6.0 V peak-to-peak)

Inputs: 1 dielectric sensor, 1 thermocouple, 2 opto-isolated digital triggers (0-5 V)

Outputs: 2 isolated relay contacts (0.5 A max capacity each relay)

Dielectric sensor type: Interdigitated, parallel plate or single electrode

Thermocouple type: J standard, K by special order

Communications: USB (RS-232 with adapter standard), RS-485 optional

Multi-channel capability: Up to 256 LT-439 units on a single RS-485 line

Software:

Included: Terminal software for basic communication and control
(User must write own data acquisition software)

Optional—CureView Lite site license: Basic data acquisition and plotting, limited analysis. Output files written in Microsoft Excel format.

Optional—CureView site license: Complete data acquisition package with full analysis capability and features, including Critical Point Analysis.



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