

# DigiSmart™ 4300-RT:

*Handheld test set for troubleshooting 2-wire E&M, POTS and DID circuits, as well as measuring Voltage and Levels.*

Ten years of service in telcos across North America have earned the *DigiSmart* 4000-series a reputation for simplicity, versatility and solid reliability. This family of handheld test instruments now welcomes the Model 4300-RT, which adds powerful new features to the suite of functions previously found only on the popular 4200-RT from Nicollet Technologies:

Transmit/Receive MF, DTMF and DP digits

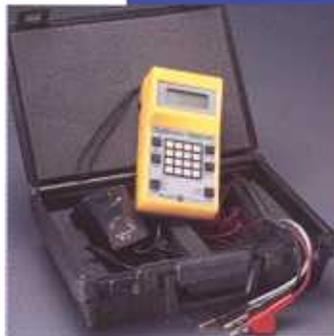
Emulate 2W E&M, POTS and DID signaling

Measure Signal Level of tones, including digits

Display DC voltage level and battery polarity

This new *DigiSmart* is much more than just a digit display device. The 4300-RT handles the signaling required to test either end of a DID or E&M circuit, including E-911 trunks at the PSAP. Or monitor any analog line to display digits and timing intervals. Here are a few of the other features that make it an indispensable tool:

- Bridge or Terminate modes
- Fixed-frequency tone source
- Wink intervals and duration
- Timing analysis of each digit
- Wink or Immediate-start DID
- Originate or Terminate E&M
- Bantam and modular test jacks
- Speaker for audible monitoring
- 600Ω/900Ω/Open termination
- Wall plug-in power supply



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**Nicollet**



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**SPECIFICATIONS**

**Display**

Alphanumeric LCD  
4 lines, 16 char/line  
32 digits maximum

*Signal levels are referenced to 900 ohms in the specifications below.*

**Speaker**

1.5 inch round  
volume control  
internal mount

**Level Measurement**

Method	Averaging
Measurement Range	+10 dB to -35 dB
Accuracy	1.0 dBm +/-0.2 dBm
Frequency Range	300 to 3500 Hz

**DTMF/Dual-Tone Multi-Frequency**

TRANSMIT (Store, Send & Repeat)	
Tone Duration	50 msec
Interdigit Duration	50 msec
Transmit Rate	10 digits/second
Level: Low/High Group	-6 / -3 dBm +/-2 dB
RECEIVE	
Tone Duration (min)	35 msec
Interdigit Duration (min)	35 msec
Receive Rate (max)	14 digits/sec
Sensitivity Range	0 to -30 dBm
Twist (maximum)	10 dB

**Voltage Measurement**

Method	Actual
Range	+60 to -60 VDC
Accuracy	2 VDC +/-0.5 VDC

**DID Parameters**

Line Resistance	1700 ohms maximum
Wink Type	Reverse battery
Off-Hook/Wink Delay	100 msec nominal
Wink Duration	200 msec nominal
Receive Inhibit Period	30 msec nominal
Normal / Reverse Battery	-48 / +48 VDC nominal
Battery Source Resistance	Balanced 220 ohms
Current	Current limited to 70 ma
Bridge Mode	Wink timing and digit display

**Dial Pulse**

TRANSMIT (Store, Send & Repeat)	
Pulse Rate	10 pulses/second
Percent Break	67%
Interdigit Period	800 msec
RECEIVE	
Pulse Rate (min / max)	8 to 16 pulses/sec
Percent Break (min / max)	35% / 80%
Interdigit Period (minimum)	160 msec

**E&M Parameters**

Trunk Type	Type I, 2-wire E&M, Wink
Wink Type	Ground
Off-Hook/Wink Delay	100 msec nominal
Wink Duration	200 msec nominal
Receive Inhibit Period	30 msec nominal
Terminate Signaling (E&M leads referenced to test set)	
Idle State	E = Open, M = Open
Busy State	E = Ground
Originate Signaling (E&M leads referenced to test set)	
Idle State	E = -54 VDC, M = Open
Busy State	E = -54 VDC, M = -54 VDC

**MF/Multi-Frequency**

TRANSMIT (Store, Send & Repeat)	
KP Tone Duration	100 msec
Duration of all other tones	70 msec
Interdigit Period	70 msec
Pause Duration	250 msec
Tone Level (each tone)	-6 dBm +/-1 dB
RECEIVE	
Sensitivity Range	0 to -25 dBm
KP Tone Duration (min)	60 msec
Duration of all other tones	40 msec
Interdigit Duration (min)	40 msec
Twist (maximum)	6 dB

**Wink Timing Analysis**

Trunk Types	DID, E&M
Pre-Wink Interval	10 to 999 msec
Wink Duration	100 to 500 msec
Post-Wink Interval	0 to 999 msec
Accuracy	5 msec

*Special MF tones are displayed as two characters, reducing display capacity to less than 32 digits.*

**Power Requirements**

AC Adapter	Class B transformer, 8 ft. cord
Input Voltage	120 VAC, 60 Hz
Output Voltages	+15 and -60 VDC

**Call Progress Tones**

*Dial Tone, Reorder, Busy, Ringback, Recall Dial, Special AR, Intercept, Call Waiting, Busy Verification, Executive Override, and Confirmation tone*

Frequencies (single or dual)	350, 440, 480, 620 Hz
Transmit Level (each tone)	-10 dBm nominal

**Dimensions/Weight**

Instrument	2.9 x 4.2 x 8.1 inches (7.4 x 10.7 x 20.6 cm)
	1.75 pounds (0.8 kg)
Carrying Case	4.6 x 11.0 x 13.5 inches (11.7 x 27.9 x 37.0 cm)
	4.0 pounds (1.8 kg)

**Tone Source**

Frequency	1004 Hz +/-2 Hz
Level into 900 ohms	0 dBm +/-0.2 dB
Level into 600 ohms	2 dBm +/-0.5 dB
Open Termination	no tones available

The **DigiSmart™ 4300-RT** comes complete with hardshell plastic carrying case, wall-mount AC adapter, 6-foot test lead with bantam plug and two 5-way alligator clips, instruction booklet and one-year warranty. Optional: test lead with modular RJ-14 and four test clips.

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