

CURRENT TRANSDUCERS

HALL EFFECT CURRENT TRANSDUCERS

MODEL CTL

FREQUENCY RANGE DC TO 1000 HERTZ



LISTED File E167120

FEATURES AND APPLICATIONS

- 5000 Volt line-to-output isolation.**
- DC to 5000 Hertz response. (CTL only)
- Bi-directional operation.
- Available in split-core configurations, except Model 51.
- Response time less than 100 microSeconds.
- Output is proportional in **direction and magnitude** to the current flow through the window.
- Overload capability to **50 times rating** (at 60 Hz.).
- Stability maintained during severe vibration.
- Easy installation.
- Replaces shunts.
- No insertion loss.
- For use with model CTA signal conditioners.
- Ideal for use on AC systems with dc components and/or chopped waveforms.

**1000 Volt Model 51 and Split-Core Options Models 101, 201 and 401.

CIRCULAR WINDOW MODELS (0.5% LINEARITY)

PEAK CURRENT (A)	EXCITATION (NOMINAL) (mA)	OUTPUT (NOMINAL) (mV)	TEMPERATURE		RESISTANCE (OHMS)		SENSOR SIZE	PART NUMBER
			EFFECTS	RANGE (°C)	INPUT	OUTPUT		
35	200	50	1%	-10°C to 40°C	6	25	A	CTL-51/35
50	200	50	1%	-10°C to 40°C	6	25	A	CTL-51/50
50	200	100	1%	-10°C to 40°C	6	25	C*	CTL-101/50
75	200	100	1%	-10°C to 40°C	6	25	C*	CTL-101/75
100	200	100	1%	-10°C to 40°C	6	25	C*	CTL-101/100
150	200	100	1%	-10°C to 40°C	6	25	D*	CTL-201/150
200	200	100	1%	-10°C to 40°C	6	25	D*	CTL-201/200
300	200	100	1%	-10°C to 40°C	6	25	D*	CTL-401/300
400	200	100	1%	-10°C to 40°C	6	25	D*	CTL-401/400
500	200	50	1%	-10°C to 40°C	23	25	E	CTL-601/500
600	200	50	1%	-10°C to 40°C	23	25	E	CTL-601/600
800	200	100	1%	-10°C to 40°C	23	25	E	CTL-202/800
1000	200	100	1%	-10°C to 40°C	23	25	E	CTL-202/1000
1500	200	100	1%	-10°C to 40°C	23	25	E	CTL-202/1500
2000	200	100	1%	-10°C to 40°C	23	25	E	CTL-202/2000
1000	200	200	1%	-10°C to 40°C	23	25	EES	CTL-202EES/1000
1500	200	200	1%	-10°C to 40°C	23	25	EES	CTL-202EES/1500
2000	200	200	1%	-10°C to 40°C	23	25	EES	CTL-202EES/2000
2500	200	100	1%	-10°C to 40°C	23	25	EES	CTL-302EES/2500
3000	200	100	1%	-10°C to 40°C	23	25	EES	CTL-302EES/3000

*Split-Core in these sensor sizes are not UL Listed.

RECTANGULAR WINDOW (BUS BAR) MODELS (1.0% LINEARITY)

500	200	200	1%	-10°C to 40°C	23	25	Z	CTL-202H/500
1000	200	200	1%	-10°C to 40°C	23	25	Z	CTL-202H/1000
1500	200	200	1%	-10°C to 40°C	23	25	Z	CTL-202H/1500
2000	200	200	1%	-10°C to 40°C	23	25	Z	CTL-202H/2000
2000	200	150	1%	-10°C to 40°C	23	25	Z	CTL-502H/2000
3000	200	150	1%	-10°C to 40°C	23	25	Z	CTL-502H/3000
4000	200	150	1%	-10°C to 40°C	23	25	Z	CTL-502H/4000
5000	200	150	1%	-10°C to 40°C	23	25	Z	CTL-502H/5000
2500	200	150	1%	-10°C to 40°C	23	25	G	CTL-502/2500
3000	200	150	1%	-10°C to 40°C	23	25	G	CTL-502/3000
4000	200	150	1%	-10°C to 40°C	23	25	G	CTL-502/4000
5000	200	150	1%	-10°C to 40°C	23	25	G	CTL-502/5000
5000	200	100	1%	-10°C to 40°C	12	32	H	CTL-103/5000
6000	200	100	1%	-10°C to 40°C	12	32	H	CTL-103/6000
7000	200	100	1%	-10°C to 40°C	12	32	H	CTL-103/7000
8000	200	100	1%	-10°C to 40°C	12	32	H	CTL-103/8000
9000	200	100	1%	-10°C to 40°C	12	32	H	CTL-103/9000
10000	200	100	1%	-10°C to 40°C	12	32	H	CTL-103/10000
12000	200	100	1%	-10°C to 40°C	12	32	H	CTL-203/12000
15000	200	100	1%	-10°C to 40°C	12	32	H	CTL-203/15000
18000	200	100	1%	-10°C to 40°C	12	32	H	CTL-203/18000
20000	200	100	1%	-10°C to 40°C	12	32	H	CTL-203/20000
25000	200	100	1%	-10°C to 40°C	12	32	HH	CTL-303/25000
30000	200	100	1%	-10°C to 40°C	12	32	HH	CTL-303/30000
35000	200	100	1%	-10°C to 40°C	12	32	HH	CTL-403/35000
40000	200	100	1%	-10°C to 40°C	12	32	HH	CTL-403/40000

Option - T (-40°C to 65°C) Add suffix "-T" to model number.

Option - S (Split-Core) Add suffix "-S" to model number.

CONNECTION DIAGRAMS AND DIMENSIONS SHOWN ON PAGES 72 AND 73

FLEX-CORE®

Div. Morlan & Associates, Inc.

6625 McVey Blvd. Columbus, Ohio 43235

WWW.FLEX-CORE.COM

flexcore@msn.com

PHONE (614) 889-6152

TECH. ASSISTANCE (614) 876-8308

FAX # (614) 876-8538



CURRENT TRANSDUCERS

CURRENT TRANSDUCERS

SIGNAL CONDITIONERS

MODEL CTA

FOR USE WITH MODEL CTL CURRENT TRANSDUCERS



DIRECT MEASUREMENT MODELS

RMS MODELS

- Provide output which is directly proportional to amplitude of AC and/or dc input waveform.

- Provide output which is proportional to RMS value of AC and/or dc input waveform.

MODEL CTL CURRENT TRANSDUCER (FROM PG. 70)	TRANSDUCER INPUT CURRENT RANGE	DIRECT MODELS OUTPUT PROPORTIONAL TO AC/DC INPUT				RMS MODELS OUTPUT PROPORTIONAL TO RMS OF AC/DC INPUT			
		STANDARD AC/DC OUTPUTS				STANDARD DC OUTPUTS			
		+/- 5V	+/- 10V	*4-20mA	+/- 1mA	0-5Vdc	0-10Vdc	4-20mA	0-1mAdc
CTL-51/35	0 to35A	CTA201RX5	CTA201R	CTA212R	CTA201RA	CTA213RX5	CTA213R	CTA215R	CTA214R
CTL-51/50	0-50A	CTA201X5	CTA201	CTA212	CTA201A	CTA213X5	CTA213	CTA215	CTA214
CTL-101/50	0-50A	CTA201X5	CTA201	CTA212	CTA201A	CTA213X5	CTA213	CTA215	CTA214
CTL-101/75	0-75A	CTA201HX5	CTA201H	CTA212H	CTA201HA	CTA213HX5	CTA213H	CTA215H	CTA214H
CTL-101/100	0-100A	CTA201PX5	CTA201P	CTA212P	CTA201PA	CTA213PX5	CTA213P	CTA215P	CTA214P
CTL-201/150	0-150A	CTA201HX5	CTA201H	CTA212H	CTA201HA	CTA213HX5	CTA213H	CTA215H	CTA214H
CTL-201/200	0-200A	CTA201PX5	CTA201P	CTA212P	CTA201PA	CTA213PX5	CTA213P	CTA215P	CTA214P
CTL-401/300	0-300A	CTA201HX5	CTA201H	CTA212H	CTA201HA	CTA213HX5	CTA213H	CTA215H	CTA214H
CTL-401/400	0-400A	CTA201PX5	CTA201P	CTA212P	CTA201PA	CTA213PX5	CTA213P	CTA215P	CTA214P
CTL-601/500	0-500A	CTA201X5	CTA201	CTA212	CTA201A	CTA213X5	CTA213	CTA215	CTA214
CTL-601/600	0-600A	CTA201X5	CTA201	CTA212	CTA201A	CTA213X5	CTA213	CTA215	CTA214
CTL-202/800	0-800A	CTA201X5	CTA201	CTA212	CTA201A	CTA213X5	CTA213	CTA215	CTA214
CTL-202/1000	0-1000A	CTA201X5	CTA201	CTA212	CTA201A	CTA213X5	CTA213	CTA215	CTA214
CTL-202/1500	0-1500A	CTA201HX5	CTA201H	CTA212H	CTA201HA	CTA213HX5	CTA213H	CTA215H	CTA214H
CTL-202/2000	0-2000A	CTA201PX5	CTA201P	CTA212P	CTA201PA	CTA213PX5	CTA213P	CTA215P	CTA214P
CTL-202EES/1000	0-1000A	CTA201PX5	CTA201P	CTA212P	CTA201PA	CTA213PX5	CTA213P	CTA215P	CTA214P
CTL-202EES/1500	0-1500A	CTA201KX5	CTA201K	CTA212K	CTA201KA	CTA213KX5	CTA213K	CTA215K	CTA214K
CTL-202EES/2000	0-2000A	CTA201LX5	CTA201L	CTA212L	CTA201LA	CTA213LX5	CTA213L	CTA215L	CTA214L
CTL-302EES/2500	0-2500A	CTA201HX5	CTA201H	CTA212H	CTA201HA	**	**	**	**
CTL-302EES/3000	0-3000A	CTA201PX5	CTA201P	CTA212P	CTA201PA	**	**	**	**
CTL-202H/500	0-500A	CTA201X5	CTA201	CTA212	CTA201A	CTA213X5	CTA213	CTA215	CTA214
CTL-202H/1000	0-1000A	CTA201PX5	CTA201P	CTA212P	CTA201PA	CTA213PX5	CTA213P	CTA215P	CTA214P
CTL-202H/1500	0-1500A	CTA201KX5	CTA201K	CTA212K	CTA201KA	CTA213KX5	CTA213K	CTA215K	CTA214K
CTL-202H/2000	0-2000A	CTA201LX5	CTA201L	CTA212L	CTA201LA	**	**	**	**
CTL-502H/2000	0-2000A	**	**	**	**	CTA213X5	CTA213	CTA215	CTA214
CTL-502H/3000	0-3000A	CTA201PX5	CTA201P	CTA212P	CTA201PA	CTA213PX5	CTA213P	CTA215P	CTA214P
CTL-502H/4000	0-4000A	CTA201NX5	CTA201N	CTA212N	CTA201NA	**	**	**	**
CTL-502H/5000	0-5000A	CTA201KX5	CTA201K	CTA212K	CTA201KA	**	**	**	**
CTL-502/2500	0-2500A	CTA201HX5	CTA201H	CTA212H	CTA201HA	CTA213HX5	CTA213H	CTA215H	CTA214H
CTL-502/3000	0-3000A	CTA201PX5	CTA201P	CTA212P	CTA201PA	CTA213PX5	CTA213P	CTA215P	CTA214P
CTL-502/4000	0-4000A	CTA201NX5	CTA201N	CTA212N	CTA201NA	**	**	**	**
CTL-502/5000	0-5000A	CTA201KX5	CTA201K	CTA212K	CTA201KA	**	**	**	**
CTL-103/5000	0-5000A	CTA201X5	CTA201	CTA212	CTA201A	CTA213X5	CTA213	CTA215	CTA214
CTL-103/6000	0-6000A	CTA201X5	CTA201	CTA212	CTA201A	CTA213X5	CTA213	CTA215	CTA214
CTL-103/7000	0-7000A	CTA201HX5	CTA201H	CTA212H	CTA201HA	CTA213HX5	CTA213H	CTA215H	CTA214H
CTL-103/8000	0-8000A	CTA201HX5	CTA201H	CTA212H	CTA201HA	**	**	**	**
CTL-103/9000	0-9000A	CTA201PX5	CTA201P	CTA212P	CTA201PA	**	**	**	**
CTL-103/10000	0-10000A	CTA201PX5	CTA201P	CTA212P	CTA201PA	**	**	**	**
CTL-203/12000	0-12000A	CTA201X5	CTA201	CTA212	CTA201A	CTA213X5	CTA213	CTA215	CTA214
CTL-203/15000	0-15000A	CTA201HX5	CTA201H	CTA212H	CTA201HA	CTA213HX5	CTA213H	CTA215H	CTA214H
CTL-203/18000	0-18000A	CTA201PX5	CTA201P	CTA212P	CTA201PA	**	**	**	**
CTL-203/20000	0-20000A	CTA201PX5	CTA201P	CTA212P	CTA201PA	**	**	**	**
CTL-303/25000	0-25000A	CTA201X5	CTA201	CTA212	CTA201A	**	**	**	**
CTL-303/30000	0-30000A	CTA201PX5	CTA201P	CTA212P	CTA201PA	**	**	**	**
CTL-403/35000	0-35000A	CTA201HX5	CTA201H	CTA212H	CTA201HA	**	**	**	**
CTL-403/40000	0-40000A	CTA201PX5	CTA201P	CTA212P	CTA201PA	**	**	**	**

* Denotes DC input current only. **Not available in RMS models, consult factory for other models.

For 220Vac Instrument PowerAdd "-22" suffix to model number. Optional 12, 15, 24, 28 and 48Vdc instrument power. ("-24" = 24Vdc)

NOTE: Use direct models for true DC and use RMS models for AC, or AC with DC component or chopped waveform.

ORDERING INFORMATION

EXAMPLE: 200 Amp split-core current transducer requiring 200mA excitation, with output of 100mV.

CTL-201S/200

TO ORDER WITH MODEL CTA SIGNAL CONDITIONER

Locate transducer model number in first column.

Specify model CTA signal conditioner model number based on required analog output.

The transducer and signal conditioner must be ordered as separate items although supplied as a calibrated set.

CONNECTION DIAGRAMS AND DIMENSIONS SHOWN ON PAGES 72 AND 73

FLEX-CORE®

Div. Morlan & Associates, Inc.

6625 McVey Blvd. Columbus, Ohio 43235

WWW.FLEX-CORE.COM

flexcore@msn.com

PHONE (614) 889-6152

TECH. ASSISTANCE (614) 876-8308

FAX # (614) 876-8538

CURRENT TRANSDUCERS

CURRENT TRANSDUCERS

SIGNAL CONDITIONERS

MODEL CTL/CTA

MODEL CTA SPECIFICATIONS

INPUT

Voltage See tables
 Frequency Range dc to 5000 Hz.
 Instrument Power 115VAC ($\pm 10\%$), 5W, 50-400 Hz.

OUTPUT

Output Ripple Less than 0.25% F.S.

LINEARITY $\pm 0.1\%$ F.S.

Temperature Effect.....(0°C to 70°C) $\pm 0.005\%/^{\circ}\text{C}$

Output Loading (OHMS)

1mA 0-10K

10V, 5V 2K min.

4-20mA 0-500

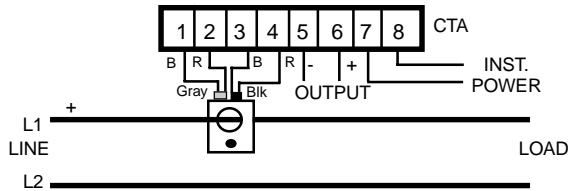
Response (90%)

Direct models 40 microSeconds

RMS Models 200 milliSeconds

CONNECTION DIAGRAMS

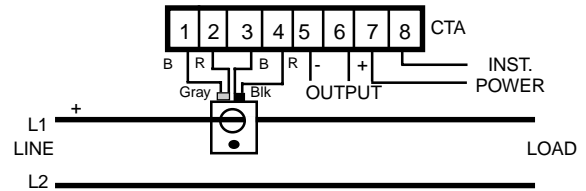
CIRCULAR WINDOW MODELS



STANDARD AND SPLIT-CORE MODEL CTL

GRAY CABLE **BLACK CABLE**
 Black: sensor output signal (-) Black: sensor excitation (-)
 Red: sensor output signal (+) Red: sensor excitation (+)
 All shields tied to terminal 3
 Cable length: 18 inches

Standard model CTA signal conditioner AC instrument power-terminals 7,8.
 Standard and split-core model CTL use integral cable configuration as shown.
 (100Amp split-core model CTL comes with 8 ft. cable.)
 (Model 51 not available in split-core configuration)



STANDARD MODEL CTL

GRAY CABLE
 Black: sensor output signal (-)
 Red: sensor output signal (+)
BLACK CABLE
 Black: sensor excitation (-)
 Red: sensor excitation (+)
 All shields tied to terminal 3
 Cable length: 18 inches

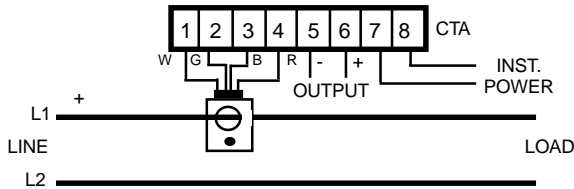
Standard model CTA signal conditioner AC instrument power-terminals 7,8.
 Standard model CTL use integral cable configuration as shown.
 Split-core model CTL use 5-pin connector-supplied with mating connector and 8 ft. 4 conductor cable.

SPLIT-CORE MODEL CTL

White: sensor output signal (-)
 Green: sensor output signal (+)
 Black: sensor excitation (-)
 Red: sensor excitation (+)
 All shields tied to terminal 3
 Cable length: 8 ft.

MODEL CTL 51, 101

MODEL CTL 201, 401 SOLID CORE



MODEL CTL 201, 401 SPLIT-CORE

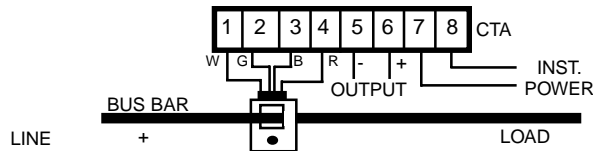
SPLIT-CORE MODEL CTL
 201 and 401
 White: sensor output signal (-)
 Green: sensor output signal (+)
 Black: sensor excitation (-)
 Red: sensor excitation (+)
 All shields tied to terminal 3
 Standard model CTA signal conditioner AC instrument power-terminals 7,8.
 Standard and split-core model CTL use 5 pin connector-supplied with mating connector and 8 ft. 4 conductor cable

STANDARD AND SPLIT-CORE MODEL CTL
 601 and 202
 White: sensor output signal (-)
 Green: sensor output signal (+)
 Black: sensor excitation (-)
 Red: sensor excitation (+)
 All shields tied to terminal 3
 Standard and split-core model CTL use 5 pin connector-supplied with mating connector and 8 ft. 4 conductor cable

MODEL 601, 202 SOLID CORE

RECTANGULAR WINDOW (BUS BAR) MODELS

CONNECTOR PIN IDENTIFICATION



STANDARD AND SPLIT-CORE MODEL CTL

White: sensor output signal (-)
 Green: sensor output signal (+)
 Black: sensor excitation (-)
 Red: sensor excitation (+)
 All shields tied to terminal 3

Standard model CTA signal conditioner AC instrument power-terminals 7,8.
 Standard and split-core model CTL use 5 pin connector-supplied with mating connector and 8 ft. 4 conductor cable

MODEL CTL 202H, 502H, 103, 203, 303 and 404

CONNECTOR PINS IDENTIFICATION SENSOR C, D, & Z PLASTIC CONNECTOR

PINS	COLOR
1	WHITE
2	GREEN
6	BLACK
8	RED

CONNECTOR PINS IDENTIFICATION SENSOR E, G, & H METAL CONNECTOR

PINS	COLOR
A	WHITE
B	GREEN
C	BLACK
D	RED
E	SHIELD

FLEX-CORE®

Div. Morlan & Associates, Inc.

6625 McVey Blvd. Columbus, Ohio 43235

WWW.FLEX-CORE.COM

flexcore@msn.com

PHONE (614) 889-6152

TECH. ASSISTANCE (614) 876-8308

FAX # (614) 876-8538

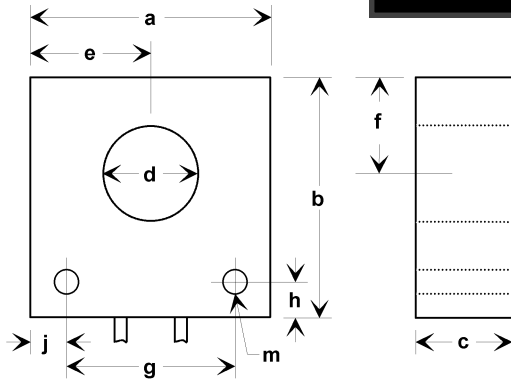
CURRENT TRANSDUCERS

CURRENT TRANSDUCERS

DIMENSIONS

MODELS CTL /CTA

CIRCULAR WINDOW MODEL CTL

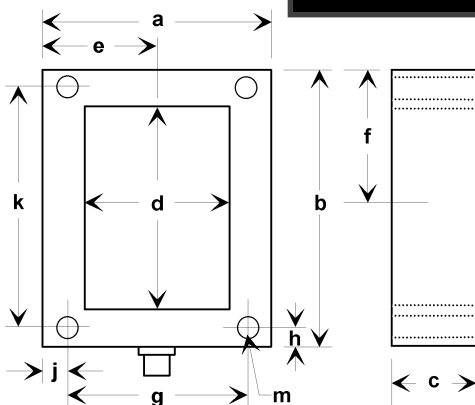


Solid core models supplied with integral 18 in. cables for sensor sizes A,C,D. All others have 8' cable. Split-core models use 4 pin connector-supplied with mating connector and 8 ft. 4 conductor cable.

SENS SIZE	SENSOR DIMENSIONS										WT. LBS.
	a	b	c	d	e	f	g	h	j	m	
A	1 1/8	1 1/2	1/2	3/8	9/16	7/8	9/16	3/16	9/32	1/8	0.12
C	2	2	3/4	3/4	1	7/8	1 1/2	1/4	1/4	5/32	0.28
D	3 1/8	4	3/4	1 1/8	1 9/16	1 1/2	2 1/8	1/2	1/2	11/64	0.75
E	4 1/8	5	1 1/4	2	2 1/16	2	3 1/4	7/16	7/16	17/64	2.80
EES	6 1/2	7 1/4	1 5/8	4 1/4	3 7/8	3 5/8	5 1/2	1/2	1/2	5/16	3.5

ALL DIMENSIONS IN INCHES

RECTANGULAR WINDOW (BUS BAR) MODEL CTL



All models supplied with mating connector and 8 ft. cable

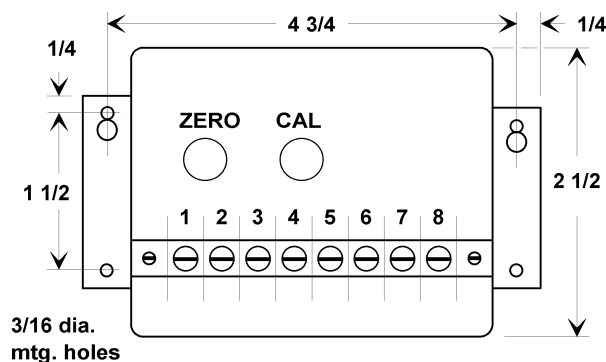
SENS SIZE	SENSOR DIMENSIONS											WT. LBS.
	a	b	c	d	e	f	g	h	j	k	m	
G	7 3/4	12	1 3/4	3 x 6 1/2	3 7/8	6	6 1/2	5/8	5/8	10 3/4	5/16	12.25
**H	10	13 3/4	1 3/4	5 1/2 x 8	5	6 1/2	8 3/4	1 1/2	5/8	11 1/2	5/16	13.00
**HH	21	21	2.0	13 x 13	10 1/2	10 1/2	18	1 1/2	1 1/2	18	3/8	22.00
*Z	4 1/16	7 3/32	1 1/8	4 1/2 x 1 1/4	-	-	-	-	-	-	-	5.25

*Mounting plate 2 1/2" X 7", Mounting holes 1 7/8" x 5 3/16"

** All models have a side interconnecting cable and connectors, requiring 3" of space for the cable.

ALL DIMENSIONS IN INCHES

MODEL CTA CASE DIMENSIONS



Case height 4 3/16

ALL DIMENSIONS IN INCHES

Weight: 1.4 Lbs.

FLEX-CORE®

Div. Morlan & Associates, Inc.

6625 McVey Blvd. Columbus, Ohio 43235

WWW.FLEX-CORE.COM

flexcore@msn.com

PHONE (614) 889-6152

TECH. ASSISTANCE (614) 876-8308

FAX # (614) 876-8538