

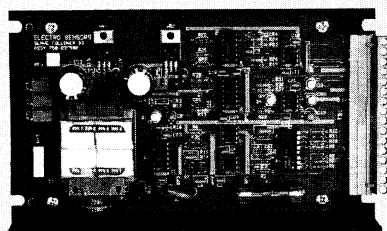
Open Loop Speed Follower



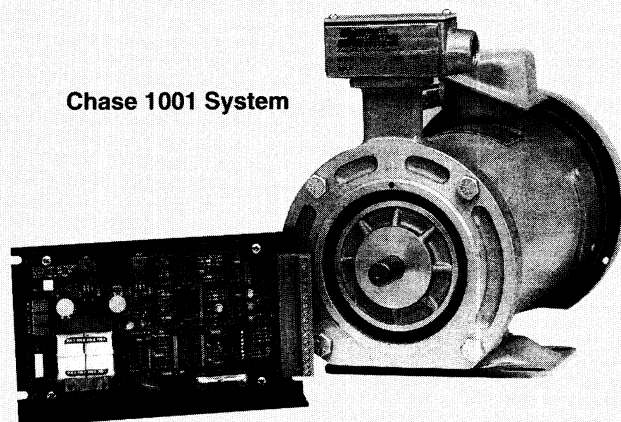
Chase 1000 Series

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Chase 1000



Chase 1001 System



Features:

- ▶ Works with AC or DC Drives
- ▶ Generates 0 to ± 10 Vdc Output
- ▶ Provides 4-20mA Output
- ▶ Tach Feedback for Variable Speed Drives
- ▶ External Ratio Control
- ▶ External Minimum Speed Control
- ▶ Wide Frequency Input Range to 25KHz
- ▶ Fully Field Adjustable
- ▶ Multiple Mounting Configurations
- ▶ Simple Set-up
- ▶ Chassis or 19" Eurorack Mount

Description:

Chase 1000:

The Chase 1000 functions as an Open Loop Follower motor control. It is designed to vary the speed of a Follower motor in accordance with a change in the frequency input from a transducer monitoring the Master motor or rotating shaft. The Chase 1000 accomplishes this by providing the 0 to ± 10 Vdc speed reference signal to the Follower variable speed drive. Ratioring of the Follower motor speed with reference to the Master frequency can be accomplished using an external Ratio Potentiometer. In applications where

the Follower motor must not stop even if the Master stops, i.e. glue or ink rollers, the Chase 1000 provides the feature of clamping the output voltage at a desired minimum level without any loss of linearity.

Because of its output linearity and its fast response time, the Chase 1000 is also an ideal frequency to analog converter card in applications where a linear analog signal proportional to frequency is to be sent to a computer, PLC, or other device.

Chase 1000TG:

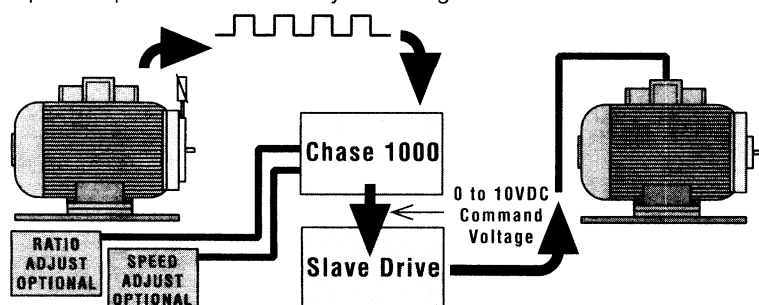
The Chase 1000TG is typically used in place of a mechanical DC Tach Generator to provide an analog feedback signal to a variable speed drive. The fast (.01 second) response time and exceptional linearity make it an ideal choice for non-contact feedback in closed loop control systems.

Chase 1001:

The Chase 1001 is a complete system including the Chase 1000 and a NEMA C Flange Ring Kit with a Hall Effect Sensor and a 60 pulse per revolution magnet wheel. The Ring Kits are available to fit any NEMA sized end bell. This Ring Kit transducer system mounts on the Master motor to provide the lead frequency that is used by the Chase 1000 in controlling the speed of the Follower motor.

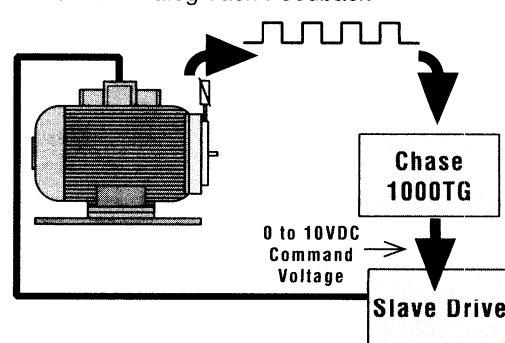
Chase 1000:

Open Loop Follower Control System Diagram

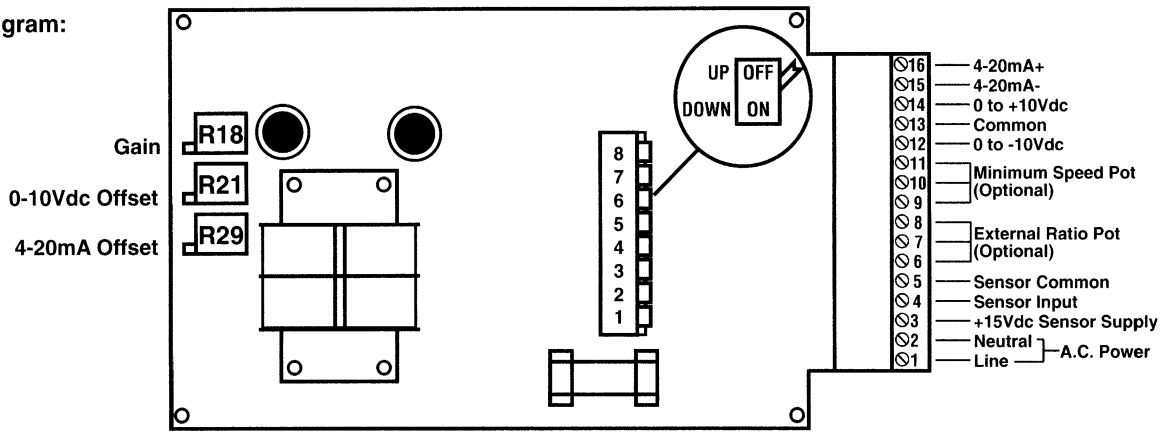


Chase 1000TG:

Drive with Analog Tach Feedback



Wiring Diagram:



Set Up Procedure - Speed Follower:

1. Select the Maximum Frequency Input Range using switches 5 - 8.

Max Frequency = (Max. RPM x Number of Pulses Per Revolution) / 60.
2. Select Sensor Type using switches 1 - 3.
3. If an External Ratio Potentiometer is used, turn it fully clockwise.
4. If an External Minimum Speed Potentiometer is used, turn it fully counterclockwise.
5. With the Master motor stopped (no Master frequency input) and the Follower motor enabled, adjust the offset potentiometer (R21 for voltage or R29 if using the 4 to 20mA output) until the Follower motor creeps. Then turn the potentiometer counterclockwise until the motor stops.
6. Run the Master motor up to its maximum speed (caution must be taken at this point to avoid over speeding the Follower motor). Adjust the Gain potentiometer (R18) until the desired Follower motor speed is obtained.

Set Up Procedure - Frequency to Analog Converter:

Follow steps 1 and 2 in the Speed Follower set up procedure. Then use the following steps:

1. Place a voltmeter on the 0 to 10Vdc output terminals or a milliammeter on the 4 to 20mA terminals. Observe meter polarity.
2. With the shaft stopped (frequency input to the Chase1000 at 0) adjust the R21 Offset potentiometer (for 0 to 10Vdc) or the R29 pot (for 4 to 20mA) until the voltmeter reads 0Vdc (or 4mA if using the 4 to 20mA output).
3. Run the shaft at full speed and adjust the R18 Gain potentiometer until the voltmeter reads 10Vdc or the milliammeter reads 20mA if using the 4-20mA output.

Input power connections are made via terminal strip TB1. Refer to the table below for proper connections.

115Vac (standard)		230Vac (optional)	
Line	TB1-1	Line	TB1-1
Neutral	TB1-2	Line	TB1-2

Switch Settings (ON enables selection):

Sensor Type Selection

- Switch 1 NPN Open Collector
- Switch 2 PNP Open Collector
- Switch 3 Magnetic Pick-up
- Sw. 1, 2 & 3 Off Logic Level

External Ratio Potentiometer Selector

- Switch 4 On unless External Ratio Potentiometer is used.

Input Frequency Selector

- Switch 5 40Hz - 200Hz
- Switch 6 200Hz - 1KHz
- Switch 7 1KHz - 5KHz
- Switch 8 5KHz - 25KHz

NOTE: Select the range that is the closest to your maximum frequency.

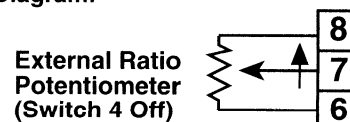
Optional External Ratio Potentiometer (Term. 6,7,8):

The External Ratio Potentiometer will provide a 1:1 ratio when it is providing maximum output (turned fully clockwise). To adjust the ratio, run the Master motor at full speed and simply turn the External Ratio Potentiometer counterclockwise until the desired ratio speed is reached. 50% output from the potentiometer will provide a 2:1 (Master to Follower) ratio, etc.

Example using 1000 potentiometer:

Pot. Setting	Lead Freq.	Voltage Output
1000	2000Hz	10V out.
500	2000Hz	5V out.
250	2000Hz	2.5V out.

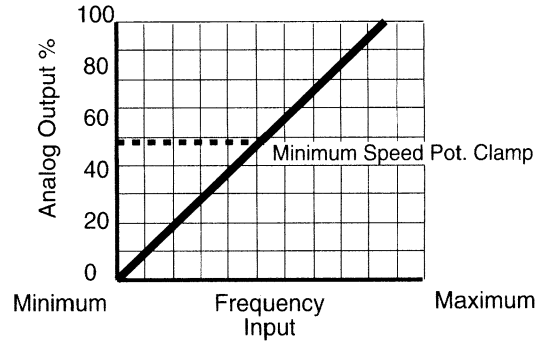
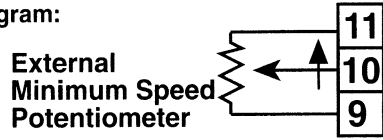
Connection Diagram:



Optional External Minimum Speed Pot. (Term. 9,10,11):

With the Master motor stopped, adjust the Minimum Speed Potentiometer clockwise to increase the output. Watch the speed of the Follower motor. When the motor is running at the desired speed the adjustment is complete. The only way to stop the motor at this point is to disable the drive.

Connection Diagram:



Nema C Flange Ring Kit (Chase 1001):

The Nema C Flange Ring Kit mounts on the Master motor to provide the Master frequency in the Chase 1001 system. This Ring Kit is a convenient method for mounting a sensor on the motor shaft of any motor with a Nema sized end bell. Four bolts hold the flange to the motor. The sensor is mounted through the flange and held at the proper gap by a set screw. Mounted on the shaft itself is a #199SM Magnet Ring. The size of the flange and the inside diameter of the mounting hub for the magnet ring are determined by the Nema size of the motor face. Consult Drive Control Systems for Custom Hub Bores.

Nema C Flange Ring Kit Specifications:

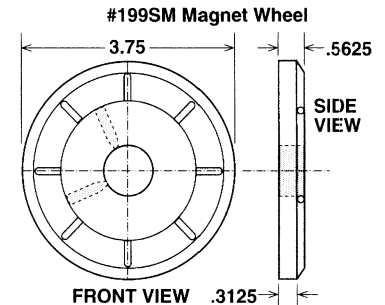
- Transducer Hall Effect, NPN Open Collector, 6-24Vdc supply.
- Output Square Wave, 10KHz Max.
- Magnet Wheel 60 pulse per revolution, ferrous nylon ring w/ aluminum hub.
- Ring Aluminum casting, 1/2" NPT conduit entrance on Junction box.

Ring Sizes (specify Nema frame size):

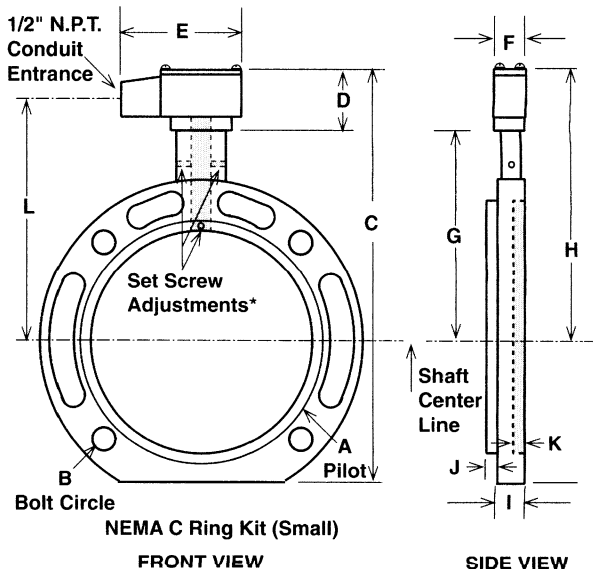
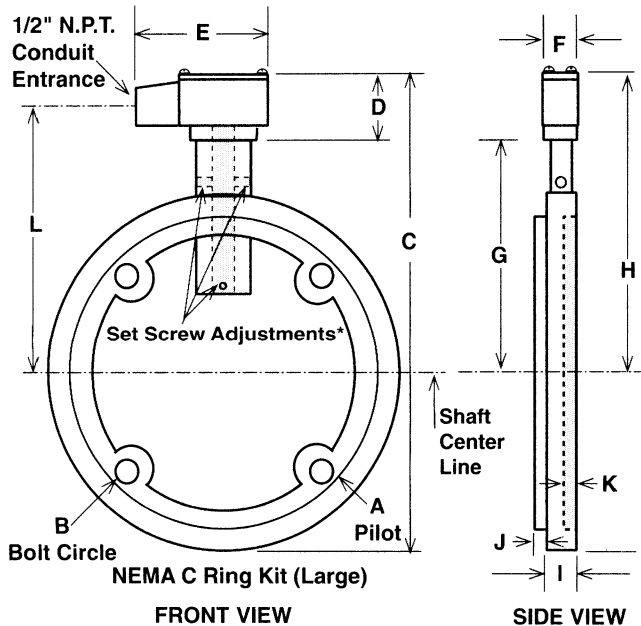
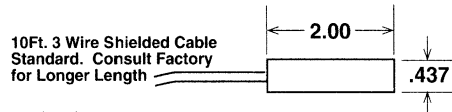
- Small Ring 56C, 143TC, 145TC, 182C, 184C
- Large Ring 182TC, 184TC, 213C, 215C, 213TC, 215TC, 254UC, 254C, 256UC, 254TC, 256TC

Ring Kit Dimensions: In Inches

	A	B	C	D	E	F	G	H	I	J	K	L
Small Ring	4.50	5.875	9.04	1.52	3.91	1.39	4.63	6.41	.780	.120	.160	5.485
Large Ring	8.50	7.25	12.81	1.52	3.91	1.39	6.23	8.00	.860	.190	.210	7.095



Sensor #2101 & #2102



*Only One Screw Needed to Secure Sensor

*Only One Screw Needed to Secure Sensor

Drive Control Systems Chase 1000 Series Open Loop Follower

Chase 1000 Specifications:

Power:

Input Power	115Vac or 230 Vac (optional)
Frequency	50/60Hz
Fuse	1/8 Slow-Blo

Transducer:

Types	Switch Selectable for NPN or PNP Open Collector, Logic Level, or Zero Crossing
Transducer Supply	15Vdc, 50mA max.
Pull-up Impedence	2.2K Ohms
Trigger Level	NPN, PNP, Logic Level =7.5Vdc Zero Crossing = 150mV
Logic Level Input Voltage Level	8Vdc min., 50Vdc max.; optional 2.5Vdc min.

Minimum Full Scale Freq:

Chase 1000	40Hz
Chase 1000TG	2000Hz

Analog Output:

Voltage	0 to +/-10Vdc (negative output on term. 12)
Current	4 to 20mA, 500 Ohm max load
Linearity1%
Response Time	150msec TG Option 10msec
Calibration	22 Turn Potentiometers

Physical/Environmental:

Operating Temperature	0° to 70° C
Storage Temperature	-65° to 105° C
Mounting	Chassis
Electrical Connections	Removable terminal strip

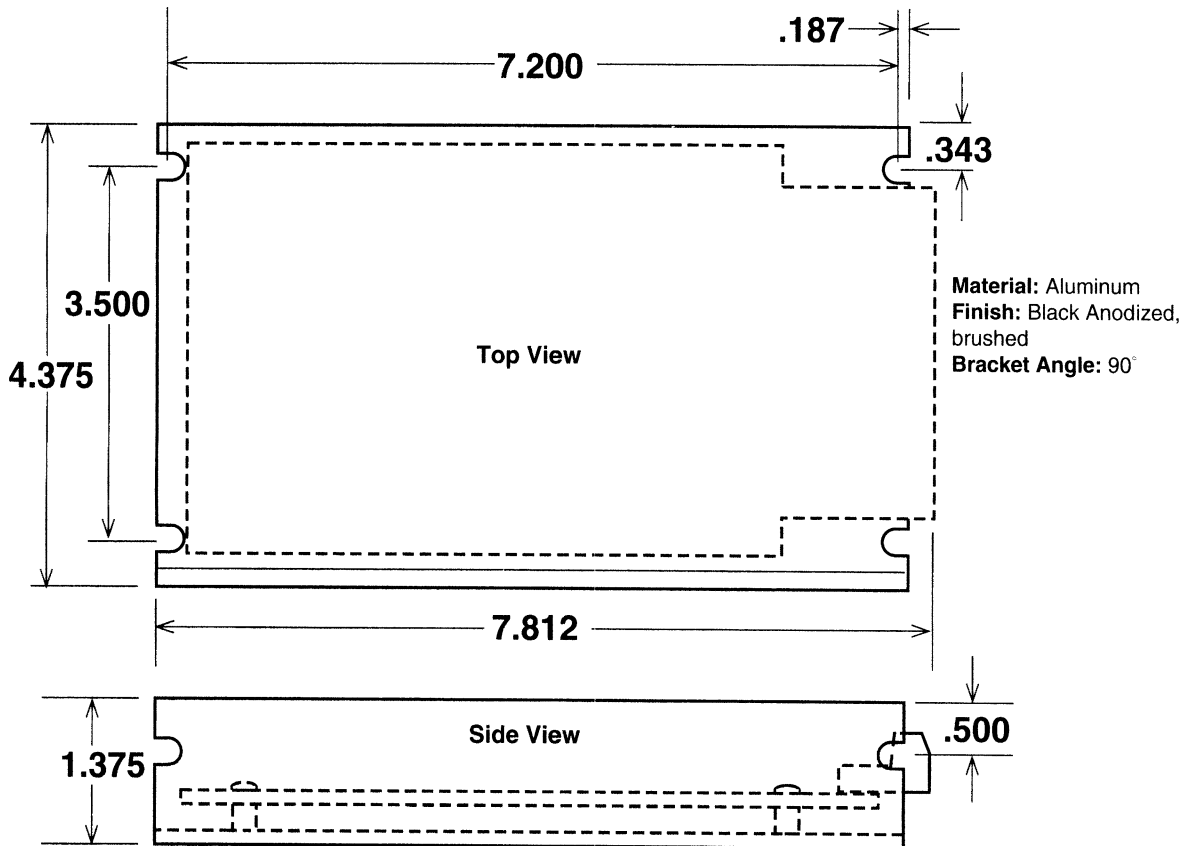
Sensor Signal Input:

Range	40Hz to 25KHz; TG Option 2KHz to 25KHz
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Specifications Subject to Change Without Notice

Dimensional Drawings:

In Inches



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INFORMATION



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