# Micro-Power Motor Amplifier

# **TA105**



- Very low electrical noise
- 25W continuous/50W peak
- 5Khz bandwidth
- Integral forced-air cooling
- Digital on-the-fly gain control (DTS)
- Over temperature protection
- Selectable current limit

### **Applications**

- voice coil motors
- 🌒 metrology tools
- 🌒 x-y micro stages
- small DC motors

### A robust linear amplifier, built to provide quiet and smooth power to brush motors.

The TA105 is a linear servo motor amplifier, designed to drive a brush motor with up to 50W of power. The TA105 is an excellent solution for voice-coil type motors, high-precision positioning applications, and systems requiring ultra-quiet driving power, when low-noise operation is essential.

Trust Automation's Dynamic Transconductance Selection (DTS) feature allows changing the amplifier's torque gain on-the-fly thus permitting high-resolution control, without sacrificing power capa-

bility. DTS is included on all of Trust Automation's amplifiers.

The TA105 can be operated in voltage (velocity) mode or current (torque) mode; selected via a user-accessible DIP switch. Fault logic is also selectable via a DIP switch.

Trust Automation is committed to products that are easy to install and use. Amplifier connections are made via pluggable-terminal connectors. Therefore, all connections are easily installed and removed, which reduces hardware cost, and assembly time.



#### Connector Pinouts

#### Connector - I1

Wago P/N 733-110

#### <u>Pin</u> **Description** Command Signal Input A+ 1 Command Signal Input A-2

- 3 Aux Gnd Aux Gnd
- 5 Dynamic Transconductance Select Bit D0
- Dynamic Transconductance Select Bit D1
- 7 /ENABLE\*
- 8 FAULT\*
- Aux Gnd
- 10  $V_{AUX}$  (user-supplied +5V)\*\*

#### Connector - J2

Wago P/N 734-105

<u>Pin</u>	<b>Description</b>		
1	Motor +		
2	Motor -		
3	GND		
4	GND		
5	$V_{SUPPLY}$ (15-48VDC)		

- \*Referenced to Aux Gnd
- \*\*User-supplied/connected for optical isolation (optional)
- \*\*\*Referenced to GND

## Switch Settings

S1 - System Configuration

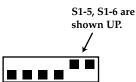
	, , ,	
SW#	<b>DOWN</b>	<u>UP</u>
1	TA105-supplied +5V	User-supplied +5V (for
	(20mA max)	optical isolation)
2	Aux Gnd tied to GND	Aux Gnd isolated from GND
3	/FAULT	FAULT
4	Current mode	Voltage mode (A <sub>v</sub> =20)
5	DTS bit 0	
6	DTS bit 1	

#### Gain - Transconductance & DTS

<u>Setting</u>	<u>S1-5</u>	S1-6
10V  in = 0.5A  out	Down (0)	Down (0)
10V  in = 1.0A  out	Up (1)	Down (0)
10V  in = 1.5A  out	Down (0)	Up (1)
10V  in = 2.0A  out	Up (1)	Up (1)

#### **NOTE:**

S1-5 and S1-6 must be "UP" for DTS



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#### Electrical

Supply Voltage 15-48V up to  $\pm 43V^*$ Equivalent Motor Voltage Output Current ±2A peak\*\* Fault TTL Level 0 or 1 TTL Level 0 /Enable Command Input ±10V Torque Gain 0.05-0.2A/V

5KHz\*\*\*

\*dependent upon motor load \*\*for 0.5 second

\*\*\*into a 2.5 mH load

Bandwidth

#### Mechanical

Length 5.5 inches (allow >1 inch clearance on each end for sufficient forced-air cooling)

Width 2.2 inches Height 2.1 inches Weight 20 ounces Mounting (4) 6-32 screws

# Absolute Maximum Ratings

Supply Voltage 52V Command Input  $\pm 12V$ Heatsink Temperature 75°C Heat Dissipation - continuous 30W peak 50W

