

Low-Power Motor Amplifier

TA115



- Very low electrical noise
- 150W continuous/325W peak
- 5Khz bandwidth
- Integral forced-air cooling
- Digital on-the-fly gain control (DTS)
- Over temperature protection
- Selectable current limit

Applications

- voice coil motors
- optics positioners
- x-y micro stages
- small DC motors

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

The TA115 is a linear servo motor amplifier, designed to drive a brush motor with up to 325W of power. The TA115 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 TA115 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 – J1

Wago P/N 733-110

| Pin | Description |
|-----|--|
| 1 | Command Signal Input A+ |
| 2 | Command Signal Input A- |
| 3 | Aux Gnd |
| 4 | Aux Gnd |
| 5 | Dynamic Transconductance Select Bit D0 |
| 6 | Dynamic Transconductance Select Bit D1 |
| 7 | /ENABLE* |
| 8 | FAULT* |
| 9 | Aux Gnd |
| 10 | V _{AUX} (user-supplied +5V)** |

Connector – J2

Wago P/N 734-105

| Pin | Description |
|-----|--------------------------------|
| 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# | DOWN | UP |
|-----|-------------------------------|---|
| 1 | TA115-supplied +5V (20mA max) | User-supplied +5V (for optical isolation) |
| 2 | Aux Gnd tied to GND | Aux Gnd isolated from GND |
| 3 | /FAULT | FAULT |
| 4 | Current mode | Voltage mode (A _v =20) |
| 5 | DTS bit 0 | |
| 6 | DTS bit 1 | |

S1-5, S1-6 are shown UP.



Gain - Transconductance & DTS

| Setting | S1-5 | S1-6 |
|-----------------|----------|----------|
| 10V in = 2A out | Down (0) | Down (0) |
| 10V in = 4A out | Up (1) | Down (0) |
| 10V in = 6A out | Down (0) | Up (1) |
| 10V in = 8A out | Up (1) | Up (1) |

NOTE:

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

Electrical

| | |
|---------------------------|------------------|
| Supply Voltage – unipolar | 15-48V |
| Equivalent Motor Voltage | up to ±43V* |
| Output Current | ±8A peak** |
| Fault | TTL Level 0 or 1 |
| /Enable | TTL Level 0 |
| Command Input | ±10V |
| Torque Gain | 0.2-0.8/V |
| Bandwidth | 5KHz*** |

*dependent upon motor load
 **for 0.5 second
 ***into a 2.5 mH load

Mechanical

| | |
|----------|--|
| Length | 9.0 inches (allow >1 inch clearance on each end for sufficient forced-air cooling) |
| Width | 2.7 inches |
| Height | 3.0 inches |
| Weight | 2lbs. 10 oz. |
| Mounting | (4) 6-32 screws |

Absolute Maximum Ratings

| | |
|-------------------------------|------|
| Supply Voltage | 52V |
| Command Input | ±12V |
| Heatsink Temperature | 75°C |
| Heat Dissipation – continuous | 100W |
| – peak | 200W |