

Automated Guided Vehicle

Industry: Defense



This OEM develops Automated Guided Vehicles (AGVs) that can go where humans cannot or should not tread for both investigative and offensive means. The robot is portable, and is controlled using either RF or a tethered line that can send visual or position data feedback to the user. The robots versatility is remarkable, allowing attachments for additional video monitoring equipment, chemical sensors, distracting devices, and weapons/destructive devices.

The AGV dimensions are 34 in. L x 22.5 in. W x 11 in. H (86.4 x 57.2 x 27.9 cm), comprising motorized wheels (2 axes servo) and a retractable arm that can be fitted with a host of tools. Batteries provide all necessary power, and an embedded microprocessor handles control and communications.

We came across the application when the customer was looking at amplifiers for a prototype. We developed a list of specifications and proposed a new dual axis amplifier with the following specifications -

- 2-axis current mode amplifier (no velocity control) no current mode required - just current sense output (isolated) and current limit/PWM and direction should be isolated from current sense to make sure ground loops are minimized.
- 20-30 VDC input
- 10/20 amps continuous/peak
- 150uH (necessary to meet minimum inductance with 50uH motor)
- 12,000 rpm
- Brushless trapezoidal commutation
- Approximate size of the drive will be 32 square inches.

Packaging this power in a tiny package under battery power required a great deal of design collaboration with the customer. AMC pulled through and delivered the product on time and in spec. Beta AGVs were built and deployed in the field, most notably at ground zero at the WTC in NYC.



Above: Standard B40A8 drive/amplifier may differ in appearance from actual custom product used.

