

SMARTMOTOR™ SUCCESS CHECKLIST

Follow these easy rules and you will assure your success in using the SmartMotor™ to maximize your system's reliability. Please take a minute to see that your system design and implementation passes the test. Keep this page handy because you will be asked to fill it out and send it along with any motors returned for inspection or repair.

1. Power Supply selection is very important.

- Refrain from using a Switching Power Supply, *if at all possible*.
- Fuse the connection.
- Provide for a means to keep the SmartMotor's voltage below 48VDC by...
 - operating at 42VDC or less as nominal or,
 - using a shunt near the motor or,
 - adding a shunt to a switching power supply or,
 - operating at 42VDC or less and adding a shunt for a Vertical Application.

2. Proper electrical interfacing is essential.

- Refrain from creating any ground loops with the communications by...
 - isolating the ground prong of the host PC for a single motor application or,
 - isolating the motor's power supply for a single motor application or,
 - using a communication's isolation product to protect each axis or,
 - operating only smaller motors at low power, like short SM23s or smaller.
 - this does not apply when employing no serial communications at all.
- Refrain from creating any ground loops with the SmartMotor's I/O by...
 - using the main or 5V power at the motor to operate any sensors or,
 - using an opto-coupler to interface to the inputs or outputs or,
 - using an I/O isolation product or,
 - operating only smaller motors at low power, like short SM23s or smaller.
 - this does not apply when employing no I/O connections at all.

3. Properly sizing a SmartMotor for the application is critical.

- Determine that the motor selected has the torque to handle the friction.
- Determine that the motor selected has the torque to support any vertical loading by...
 - calculating the torque applied to the motor due to the hanging load or,
 - employing a design with no vertical load component at all.
- Determine that the motor selected has the torque to accelerate the load.
- Determine that the motor's rotor inertia is properly matched to the load.

4. Considering the thermal environment for the SmartMotor is important.

- Consider the ambient temperature and avoid applications above 70°C ambient.
- Maximize the heat sinking capability of the motor's mount to any extent possible.

5. Proper mechanical and environmental implementation is needed.

- Assure that the design places no appreciable axial force on the motor's shaft.
- Be certain that the motor does not get exposed to fluids or excessive moisture.

It is important to download the entire Success Checklist booklet from our web-site at www.animatics.com/web/literature.html