ZABER

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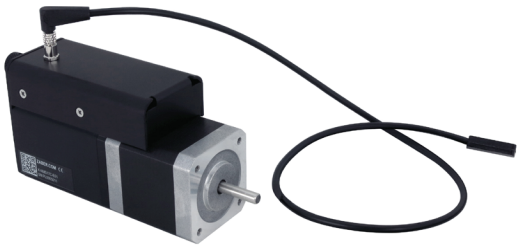
Home or Away Sensor Installation
X-NMS-E or X-NMS Series

Do I need to install the home and/or away sensors?

Most Zaber positioning products have built-in home sensors and require no additional installation. The X-NMS and X-NMS-E Series are unique, as the home and away sensors are optional and removable. Depending on the user's application, either sensor may or may not be required.



X-NMS(-E) Series

The purpose of the home sensor is to set a reference or zero position to 'sync' the controller position to the actual device position. On power-up, the default reference position assumed by the X-NMS(-E) controller is typically 0. In certain applications (for example, continuous rotation at controlled velocities), position synchronization isn't required and the home sensor may not need to be installed.

The purpose of the away sensor is to set the end of travel for a device. All Zaber devices can determine end of travel without an away sensor by monitoring the current position of the device, but in certain applications (for instance, when the end of travel needs to be easily adjustable), an away sensor is helpful.

How can I set a reference position without installing a sensor?

Typically the *home, tools gotolimit,* or *tools findrange* commands are used to set a reference, and rely on at least one sensor being connected to the controller. If a sensor is not connected, and one of these commands are called, the motor will move continuously trying to find the sensor.

To set a reference position without installing a home sensor, you can change the current position (*pos*) setting.

See the ASCII Protocol reference, as well as the product manual, at www.zaber.com/support for more information on using these commands and settings.

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Home or Away Sensor Installation
X-NMS-E or X-NMS Series

How do I install the home and away sensors?

The home and away sensors consist of a Hall effect switch connected to a cable that is plugged into the motion control device. A small magnet (included) activates each sensor when it approaches the face of the Hall effect switch. The limit sensors are compatible with any 4 mm T-slot. To install a sensor, slide it down the T-slot from the slot's end to the desired position and tighten the M3 set screw until the sensor is just secure. Over-tightening may strip the sensor's threads. A small boss on the top side of the sensor indicates the approximate centre of the sensing area on the underside (Image 1). If possible, nest the cable within the slot to avoid catching or pulling.

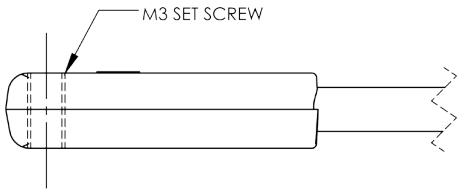

Image 1: Mounting

Use a strong adhesive to affix the magnet to the moving part of the device (i.e. stage or actuator). Ensure that negative motion (i.e. a negative relative/speed move or counter-clockwise turn of the manual knob) brings the magnet closer to the home sensor. The black side (south pole) of the magnet must face the sensor, as the sensor can only be triggered by a south pole with a magnetic field intensity of approximately 35 G or more. The triggering distance will vary depending upon the magnet's strength, the direction from which it approaches the sensor, its orientation relative to the sensor, and surrounding magnetic material. Standard mounting configurations and triggering distances are shown below (Images 2 & 3). Use a stronger magnet to trigger the sensor from greater distances.

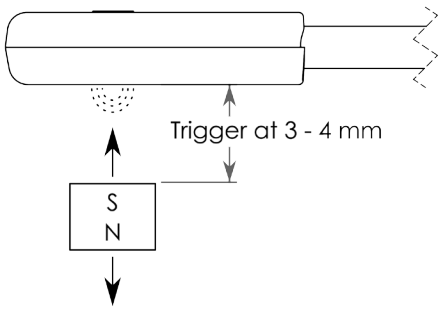

Image 2: Perpendicular Activation

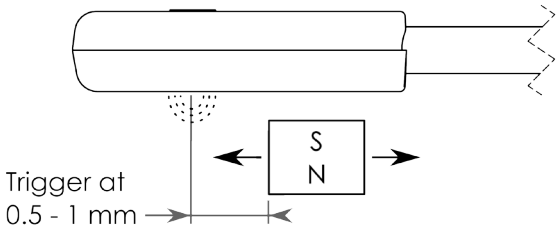

Image 3: Parallel Activation

For more information, visit www.zaber.com/wiki/Manuals/X-NMS#Physical_Installation