

Ordering Guide for Factory-Installed Options

ENCODER OPTIONS



EN001

Encoder options are available for customers desiring high accuracy positioning or for applications involving DSP-based motion control systems. These options are offered in incremental or absolute formats and replace the standard synchro assembly.

- **EN001** – Standard Accuracy, Rotary Incremental
- **EN002** – High Accuracy, Direct-Drive Incremental
- **EN003** – High Accuracy (EnDat® format), Direct-Drive Absolute
- **EN004** – Standard Accuracy (EnDat® format), Rotary Absolute

ROTARY JOINT OPTIONS



(Left to Right) RJ40, RJ18, RJ12

Coaxial single-channel rotary joint options include an internal RF path, an RJ mounting flange, and appropriate RF bulkhead connectors. Electrical travel limits remain but are typically disabled when this option is purchased.

LOWER AXIS USAGE

- **RJ12L** – DC-12.4 GHz, N-Type Connector
- **RJ18L** – DC-18 GHz, SMA-Type Connector
- **RJ26L** – DC-26.5 GHz, SMA-Type Connector
- **RJ40L** – DC-40 GHz, K-Type Connector
- **RJ50L** – DC-50 GHz, 2.4 mm Connector

UPPER AXIS USAGE

- **RJ12U** – DC-12.4 GHz, N-Type Connector
- **RJ18U** – DC-18 GHz, SMA-Type Connector
- **RJ26U** – DC-26.5 GHz, SMA-Type Connector
- **RJ40U** – DC-40 GHz, K-Type Connector
- **RJ50U** – DC-50 GHz, 2.4 mm Connector

SLIP RING OPTIONS



SR402

These options support **unrestricted** (continuous) rotation of positioner axes. They can be ordered in two configurations: integrated wiring for upper positioner axes and/or point-to-point thru-paths for customer use. Please specify the desired configuration when ordering this option. These options include internal wiring and MS bulkhead connectors. Electrical travel limits remain but are typically disabled when this option is purchased.

LOWER AXIS USAGE

- **SR051L** – 5 Contact
- **SR101L** – 10 Contact
- **SR201L** – 20 Contact
- **SR301L** – 30 Contact
- **SR402L** – 40 Contact
- **SR502L** – 50 Contact
- **SR602L** – 60 Contact
- **SR512L** – 50 Contact (High Current)
- **SR812L** – 80 Contact (High Current)

UPPER AXIS USAGE

- **SR051U** – 5 Contact
- **SR101U** – 10 Contact
- **SR201U** – 20 Contact
- **SR301U** – 30 Contact
- **SR402U** – 40 Contact
- **SR502U** – 50 Contact
- **SR602U** – 60 Contact

INTERNAL HARNESSING OPTION

This option supports **restricted** (non-continuous) rotation of positioner axes. It can be ordered in two configurations: integrated wiring for upper positioner axes and/or point-to-point thru-paths for customer use. Please specify the desired configuration when ordering this option.

This option includes an internal wiring harness and MS bulkhead connectors. Electrical travel limits typically remain enabled when this option is purchased.

- **EX002** – Internal Harnessing Option – Up to 60 Contacts

CONNECTOR FORMAT OPTION

These options specify available connector formats for light, medium, and heavy duty positioners. Please specify the desired configuration when ordering this option.

- **CF001** – Connector Format Option – Rear Panel Connector Location
- **CF002** – Connector Format Option – Single Connector Format

THRU-HOLE OPTIONS



TH002

These options provide a protective housing through the center of selected positioner models. They are available in either indoor or outdoor configurations. Applications for this option include cable pathways and stationary fixtures which pass through the center of the axis. Electrical travel limits typically remain enabled when this option is purchased. Consult your local sales representative when configuring this option.

- **TH002** - Indoor Rated for Light & Medium Duty Positioners
- **TH002-HD** - Indoor Rated for Heavy Duty Positioners
- **TH003** - Outdoor Rated for Light & Medium Duty Positioners
- **TH003-HD** - Outdoor Rated for Heavy Duty Positioners

STOW-LOCK OPTIONS



ST002L

This option provides a stow-lock pin mechanism which mechanically locks the specified rotary axis to prevent excessive gear tooth loading. Typical applications include gear-train protection when storing/handling/shipping the positioner or whenever axis movement must be avoided (ex: when mounting a vehicle). Stow-locks operate in one of two positions: stowed in housing or installed in the axis. When the stow-lock pin is removed from its housing and installed into the positioner, a special circuit breaker (normally closed – N.C.) causes an electrical shutdown to prevent operation. Stow-locks are typically installed at 0° position. Special positions are available. Consult your local sales representative when configuring this option.

- **ST002U** – Upper Azimuth Axis
- **ST002E** – Elevation Axis
- **ST002L** – Lower Azimuth Axis

LEVELING OPTIONS



LS002

Leveling options provide easy, quick and accurate leveling when installing medium and large sized positioners on uneven surfaces. They are available in varying quantities depending on the positioner model. Consult your local sales representative when configuring this option.

- **LS001** – Leveling Screw Set, Medium Duty
- **LS002** - Leveling Screw Set, Heavy Duty

MOUNTING THREAD OPTIONS

These options are available for applications requiring localized configurations.

- **MM002** - Metric Threads in Mounting Hole Interface
 - > **M6-1** – Replaces 1/4–20 UNC
 - > **M10-1.5** – Replaces 3/8-16 UNC
 - > **M12-1.75** – Replaces 1/2-11 UNC
 - > **M16-2** – Replaces 5/8-11 UNC
 - > **M20-2.5** – Replaces 3/4-10UNC

*Thread depth is 1.25 to 1.5 times larger than thread diameter.

- **MM003** – Third Party Mounting Hole Interface Replication - Consult your local sales representative with specific bolt circle and thread requirements.

INTERLOCK PROTECTION CIRCUIT OPTIONS

Interlock circuits can be special-ordered for applications in which the design calls for preventing the operation of a specific axis while another axis is parked in a specific travel region. Applications include configurations utilizing model towers in which the interlocks are designed to prevent the model tower from colliding with a surface. Other applications include overload protection and safety work zones.

- **IC001** – Interlock Circuit, Medium Duty
- **IC002** – Interlock Circuit, Heavy Duty

BASE-RISER OPTIONS



BR002

Base-risers can be special-ordered for applications in which a positioner must be located at a specific height above its main mounting surface. They are typically the same diameter as the positioner's base and are constructed of the same material, steel or aluminum, as the positioner itself. Some base-risers can be designed for specific applications by including features such as lifting hooks, fork lift provisions, thru-holes, hatches, and ladders. Base-risers are typically constructed in a way that does not limit the positioner's total capacity and overall specifications. Important parameters include overall capacity, diameter, and height. Consult your local sales representative when configuring this option.

- **BR001** – Base-Riser, Medium Duty
- **BR002** – Base-Riser, Heavy Duty

WEDGE OPTIONS

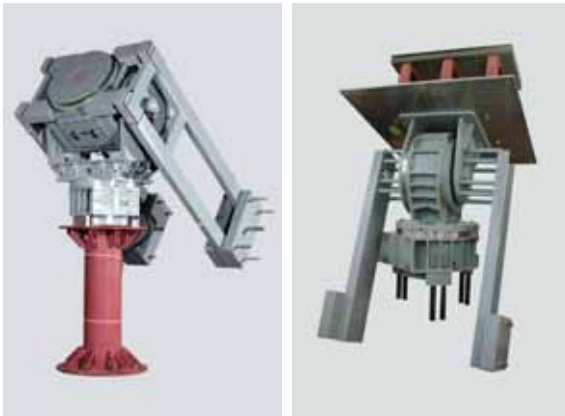


WG002

Wedge options can be special-ordered for applications in which the configuration requires the positioner to be pre-tilted. Applications include downward tilt of Roll/EL positioners in which the wedge's resulting tilt shifts the elevation travel beyond its normal downward-look angle. Wedges are constructed of the same material, steel or aluminum, as the positioner or base-riser and in a way that does not limit the positioner assembly's total capacity and overall specifications. Important parameters include tilt angle and overall height and width. Consult your local sales representative when configuring this option.

- **WG001** – Wedge, Medium Duty
- **WG002** – Wedge, Heavy Duty

COUNTERWEIGHT OPTIONS



Counterweights

Counterweights can be special-ordered for applications in which the load is counter-balanced, optimizing torque and motion control. They typically vary by weight and length and are constructed of the same material, steel or aluminum, as the positioner itself. Counterweights add weight to the overall assembly and sometimes restrict travel. Important parameters include overall length, adjustable weight plates, indoor or outdoor use, and positioner configuration. Consult your local sales representative when configuring this option.

- **CW001** – Counterweight Assembly, Medium Duty
- **CW002** – Counterweight Assembly, Heavy Duty