LIANSTOR ENERGY

Technical Datasheet

# TG8-V3

## Solar Tracking Racking

Powerful rotation, rear actuator, dual-side damping

WZPV-SZTZ-8



# Product Configuration and Supply Scope

Counts are per unit; the two-unit packing quantity is not a single-unit configuration.

| Item | Specification and applicable conditions |
| --- | --- |
| **Mechanical layout** | TG-8 V3; 8 module positions, 2 × 4 layout |
| **Azimuth actuation** | SE7A-57MHD-24HRC-1202 Rev.C, 1 unit |
| **Tilt actuation** | HB-DJ817W / Y817W-260328A1, 1 rear unit |
| **Dynamic buffering** | S30-535QQ-BE12-20260326, 2 units |
| **Structure and enclosure** | Single column, upper load-bearing frame; bill of materials includes 1 control box |
| **Module supply** | PV modules purchased separately; 8 positions do not equal a fixed rated power |
| **Order list** | Itemizes structure, accessories, fasteners and the control / electrical supply scope |

The actuator is on the rear of the array. Actual terminals, controller and protection accessories are listed in the supply documents.

# Azimuth Slew Drive | Output and Load Capacity

The table corresponds to the SE7A Rev.C; normal output and the 3-second peak are used separately.

| Item | Specification and applicable conditions |
|---|---|
| **Normal output torque** | 1026 N · m |
| **Maximum output torque** | 1596 N · m, up to 3 s; not a continuous output |
| **Rated output speed** | 0.02 rpm, at the slew drive output |
| **Slew gear ratio** | 57:1 |
| **Tilting moment** | 7000 N · m |
| **Holding moment** | 13500 N · m |
| **Axial / radial rated load** | 34 / 58 kN |

Component figures are not the system wind-resistance grade. Combined loads and the fitted array must be reviewed by the structural and component manufacturers; maximum values must not be applied simultaneously.

# Azimuth Slew Drive | Environment and Motor

Slew assembly, motor-end and system control figures are rated separately.

| Item | Specification and applicable conditions |
|---|---|
| **Component accuracy / mechanical efficiency** | < 0.17° / 40%; not system accuracy or generation gain |
| **Drive protection / environment** | IP66 / -40 to +80 °C, for the slew drive |
| **Slew component mass** | 28 kg |
| **Motor rated supply / current** | 24 VDC / < 1 A |
| **Motor output speed** | 1.2 rpm, at the gear-motor output |
| **Motor mechanical output power** | 18 W, mechanical output; not the whole-system input power |
| **Motor normal / stall torque** | 45 / 70 N · m, at the gear-motor output |

The stall torque is not a controller protection threshold; the holding moment does not mean the system needs no stow or weather protection.

# Slew Feedback and Electrical Interfaces

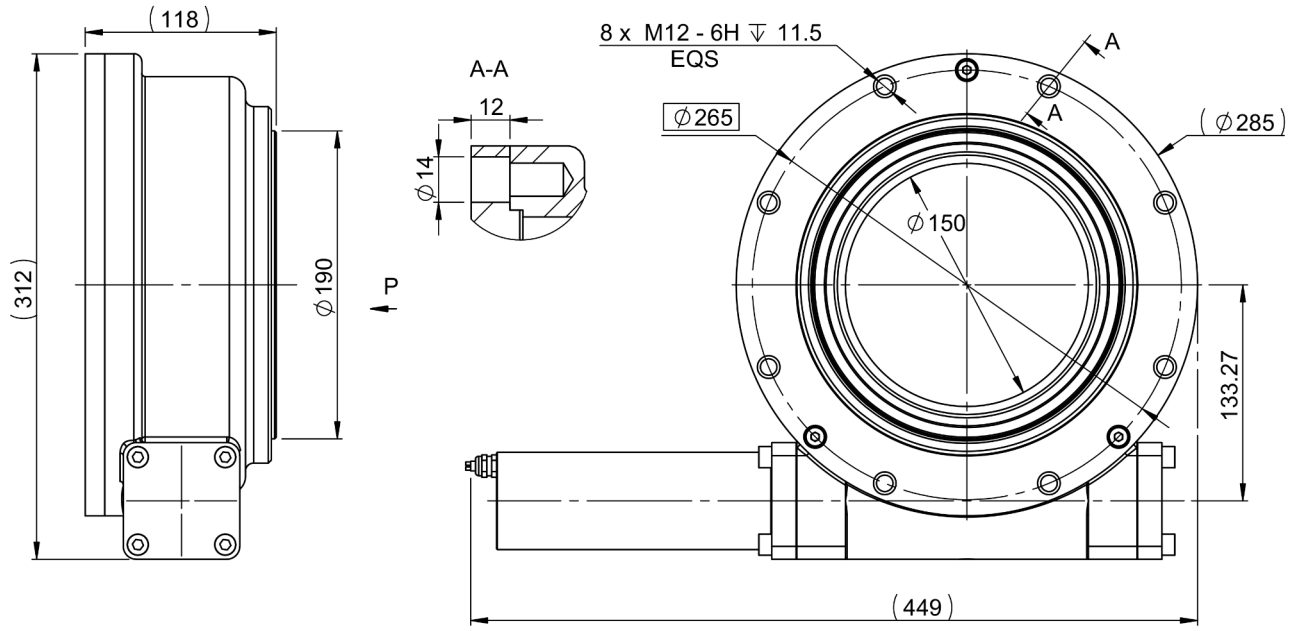
The slew motor also provides Hall A/B feedback for azimuth motion counting and calibration.

| Item | Specification and applicable conditions |
| --- | --- |
| **Hall output** | Voltage output with pull-up; 2 channels of square waves A/B, 90° quadrature; 2 pulse/rev per the source table |
| **Hall element supply / current** | General source table UN = 12 V (5-24 V); max. 12 mA at U = 12 V |
| **Hall timing / levels** | Pulse width and phase deviation each <= 15°; low level <= 0.4 V (20 mA); rise 85 ns, decay 60 ns |
| **Hall element temperature** | -40 to +85 °C, magnetic pulse element only |
| **Power pins** | pin1 red motor +24 V; pin2 black motor -24 V; pin3 yellow-green GND |
| **Hall supply pins** | pin4 red Hall +12 V; pin5 black Hall GND |
| **Hall signal pins** | pin6 yellow Hall A; pin7 green Hall B |

The connector uses the source drawing's Hall +12 V; power and feedback are on separate circuits. Incremental counting requires controller decoding and zero-position calibration; no absolute angle accuracy is promised directly.

# Slew Mounting Interface and Dimensions

The two mounting faces have different hole patterns; assembly must identify them against the source drawing.




## 8-hole mounting face

ϕ265 bolt circle; 8 × M12-6H, depth 11.5 mm, equally spaced

## P-View mounting face

ϕ170 bolt circle; 10 × M12-6H, depth 19 mm, equally spaced

## Body outer / inner diameter marking

ϕ190 / ϕ150 mm

Hole depth is not bolt length; dimensions in parentheses are reference values. The interface drawing is not a foundation or system construction dimension drawing.

# Slew Mounting Interface and Dimensions | Parameter Definitions

| Item | Specification and applicable conditions |
|---|---|
| **8-hole mounting face** | ϕ265 bolt circle; 8 × M12-6H, depth 11.5 mm, equally spaced |
| **P-View mounting face** | ϕ170 bolt circle; 10 × M12-6H, depth 19 mm, equally spaced |
| **Body outer / inner diameter marking** | ϕ190 / ϕ150 mm |
| **Source-drawing reference outline** | (449), (312), (118), (ϕ285) mm |
| **Local dimensions** | 133.27 mm; A-A detail ϕ14, 12 mm |
| **Fastening documents** | Confirm bolt specification, effective engagement and approved torques per mounting face |

# Rear Tilt Actuator | Key Parameters

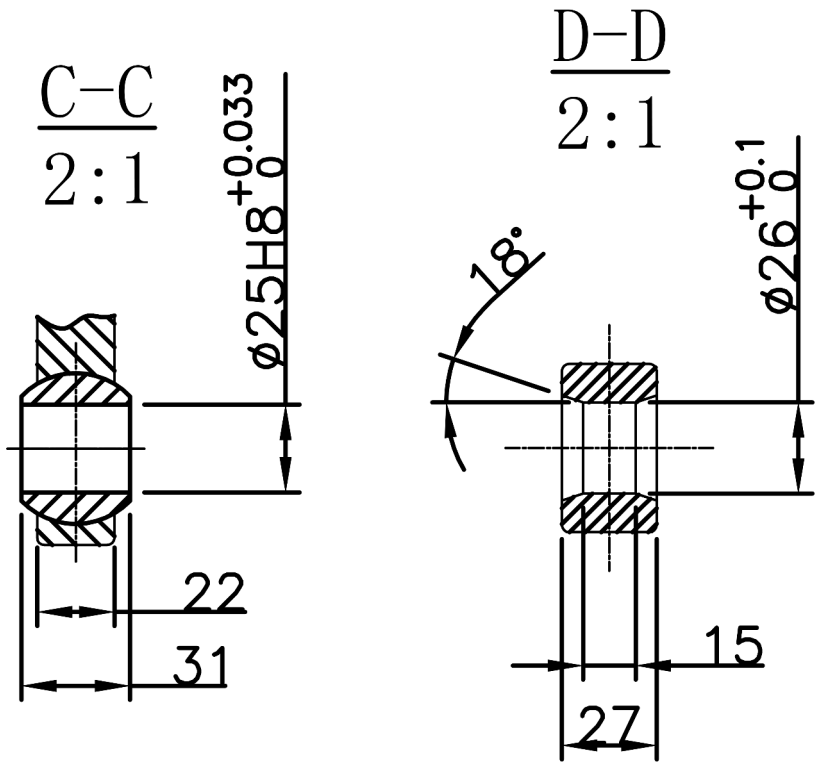
Uses HB-DJ817W, drawing no. Y817W-260328A1, V1.0.

| Item | Specification and applicable conditions |
|---|---|
| **Power / no-load speed / current** | 24 VDC; 1.0 mm/s ± 10%; max. 5 A |
| **Max. dynamic / static load** | 25 / 50 kN; the 50 kN static load applies at half-stroke position only |
| **Effective stroke** | 300 ± 3 mm |
| **Min. installation centre distance** | 800 ± 3 mm; not a universal site installation starting point |
| **Mass / duty cycle** | 11 kg; 10% maximum duty cycle |
| **Protection / corrosion / temperature** | IP66 when inverted with breather valve intact; C3; -20 to +60 °C |
| **Cable form** | 2 × 15 AWG power + 4 × 24 AWG feedback; 1.8 m tails, no bare ends |

The no-load speed does not predict loaded return time; 5 A is not a default stall threshold. Controller configuration must state the duty-cycle period and continuous-motion limits.

# Actuator Terminations and Feedback

The front fixed hole and rear spherical bearing are identified separately; assemble at the approved installation distance.




## Front fixed hole

ϕ26, tolerance +0.1/0 mm; end width 27 mm, section thickness 15 mm

## Rear spherical bearing

ϕ25 H8 (+0.033/0 mm).
End width 31 mm, bearing width 22 mm.

## Source-drawing angle marking

18° local to the spherical bearing; not an array operating angle

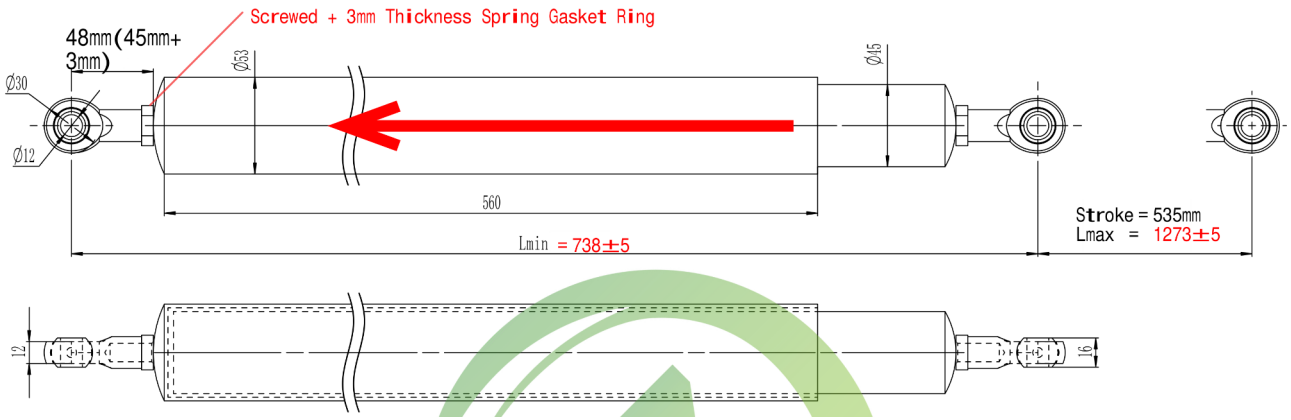
Power and Hall supply must not be mixed; the dual Hall is not system absolute angle accuracy. The front ϕ26 fixed hole must not be described as a spherical bearing.

# Actuator Terminations and Feedback | Parameter Definitions

| Item | Specification and applicable conditions |
|---|---|
| **Front fixed hole** | ϕ26, tolerance +0.1/0 mm; end width 27 mm, section thickness 15 mm |
| **Rear spherical bearing** | ϕ25 H8 (+0.033/0 mm). End width 31 mm, bearing width 22 mm. |
| **Source-drawing angle marking** | 18° local to the spherical bearing; not an array operating angle |
| **Power line** | 15 AWG red to power positive, black to power negative; power 24 VDC |
| **Feedback line** | 24 AWG red VCC (5-28 V), black GND, brown Hall1, green Hall2 |
| **Displacement feedback** | 151.92 pulse/mm per channel; dual Hall incremental displacement signal |
| **Gland and protection** | Internal thread M20 × 1.5; oil port and breather valve positions per the source dimension drawing |

# Side Dampers | Model and Dimension Reference

The original general assembly uses 2 × S30-535QQ-BE12-20260326; the figure is the S30 series factory dimension page.




## Series drawing model

S30-535QQ, 2023-08-31 reference drawing

## Stroke

535 mm

## Min. / max. centre distance

738 ± 5 / 1273 ± 5 mm

Identify the series drawing and the BE12-20260326 termination revision separately; the supplied version's actual terminations, dimensions and installation centre distance must be confirmed.

# Side Dampers | Model and Dimension Reference | Parameter Definitions

| Item | Specification and applicable conditions |
|---|---|
| **Series drawing model** | S30-535QQ, 2023-08-31 reference drawing |
| **Stroke** | 535 mm |
| **Min. / max. centre distance** | 738 ± 5 / 1273 ± 5 mm |
| **Source-drawing end holes** | ϕ12 mm |
| **Body and local dimensions** | Length 560 mm; ϕ53, ϕ45, ϕ30 mm markings per the source drawing |
| **Termination axial stack** | 48 mm = 45 mm + 3 mm spring washer |
| **Termination thickness reference** | 12 / 16 mm markings at the two ends in the source drawing |

# S30 Series | Velocity and Damping Force

The faster the relative motion, the higher the damping force at the corresponding test point, easing frame sway and transient disturbances.

| Item | Specification and applicable conditions |
|---|---|
| **Velocity 0.020 m/s** | 1000 N extension / compression, ±20% |
| **Velocity 0.200 m/s** | 4000 N extension / compression, ±20% |
| **Velocity 0.500 m/s** | 7500 N extension / compression, ±20% |
| **Velocity 0.660 m/s** | 9000 N extension / compression, ±20% |
| **Test temperature and position** | 20-25 °C; 980 mm centre distance |
| **Test stroke** | At least 40 mm |
| **Transport reference length** | Centre distance 980 mm; not a universal site installation centre distance |

Data corresponds to the S30 series' original test conditions; the supplied BE12 revision must be confirmed. The two dampers' forces must not simply be added as system wind capability.

# S30 Series | Installation and Surface Conditions

Dampers dissipate energy through relative motion of the load-bearing frame; they do not replace structural load bearing or protection strategies.

| Item | Specification and applicable conditions |
|---|---|
| **Installation direction** | Piston-rod end up, per the red arrow in the source drawing |
| **Corresponding ball-pin termination torque** | Minimum 25 N · m, for the source drawing's termination only; not a racking-wide torque |
| **Assembly pull-out strength** | Minimum 15 kN; an assembly inspection value, not a working load |
| **Operating temperature** | -40 to +60 °C |
| **Rod and body surfaces** | Hard-chrome piston rod; black powder-coated body |
| **Corrosion test scope** | Powder coating and ZnNi fisheye joints; ASTM B117 salt spray >= 500 h, no red rust |
| **Test exclusions** | Laboratory tests exclude sharp edges, welded joints and complex shapes |

Installation and surface test conditions correspond to the series source drawing only; do not extrapolate racking life, system protection grade or wind grade.

# Module Matching and Procurement Engineering Inputs

Align modules, mechanical documents and electrical / control configuration before supply.

| Item | Specification and applicable conditions |
|---|---|
| **Module positions** | 8 positions, 2 × 4; PV modules are not included in the racking supply |
| **Original module option example** | LR7-72HVDF 640-665M; 2382 × 1134 × 30 mm; 33.5 kg each |
| **Module-side power example** | 8 × 640-665 W = 5.12-5.32 kWp, STC nameplate total |
| **Mounting confirmation** | Model, mass, clamping zone, mounting holes, clamp instructions and allowable loads |
| **Mechanical engineering documents** | Signed general assembly, section profiles, connector grade / torque, motion envelope, structural calculations, foundation and anchor drawings |
| **Control and electrical configuration** | List controller, firmware, two-axis I/O, zero / limits, weather inputs, communication, monitoring and permissions |
| **Delivery and acceptance documents** | Approved parameters and circuit diagrams, site tests, configuration versions, training, maintenance and service records |

The module option is not a racking rated power; the enclosure outline does not represent the controller and software versions - operating strategies are integrated per this model's configuration.
LIANSTOR Energy: sales@lianstor.com | lianstor.com

LIANSTOR ENERGY

# Lianstor Energy Technology (Hebei) Co., Ltd.

www.lianstor.com

sales@lianstor.com

**C** Certified

**L** Long-lasting

**E** Efficient

**A** Affordable

**N** Net-positive