

## QPT-RF™

### PAN & TILT POSITIONERS



The QPT-RF series of Pan & Tilt Positioners employ RF Rotary Joint technology for management of radio frequency signals. These rugged antenna positioners support a wide range of antenna sizes, frequency bands and one or two isolated channels of RF pass-through signals. Auxiliary sensor loads, such as visible and/or thermal cameras, can be mounted alongside the antenna and are completely supported. Essential for applications including: UAV tracking/telemetry, satellite communications, radar, GPS and many others.

All RF, video, power and control data cables are pass-through to eliminate cables in motion with the Pan & Tilt making cable management simple, neat, and safe. IP, RS-232 & RS-422, Pelco D Extended, Serial control of the Pan & Tilt and sensors are standard. Serial data and lens controls provide plug-and-play camera load interfaces.

### KEY FEATURES

- Supports multiple antenna sizes, from man-portable up to 3-meters
- Multiple RF channel pass-through from DC up to 18 GHz
- 365/24/7 surveillance in challenging environments
- Auxiliary payload support (cameras, laser range finders, laser designator, GPS, etc.)
- Network ready

#### Sensor Integration

- Antennas (Parabolic/Dish/Patch/Grid)
- Multi-Spectrum cameras (Visible/NIR/SWIR)
- Thermal Imagers (LWIR/MWIR)
- IR and Visible Illuminators



# QPT-RF™ SERIES

## RF CHANNELS

|                                    | QPT-50 & QPT-90 | QPT-50 & QPT-500                |  |
|------------------------------------|-----------------|---------------------------------|--|
| Number of Channels                 | Single          | Dual High Bandwidth             |  |
| Channel                            | Channel 1       | Channel 1                       | Channel 2  |
| Frequency                          | DC to 18 GHz    | DC to 18 GHz                    | DC to 16 GHz   |
| VSWR (max)                         | 1.5 : 1         | 1.75 : 1                        | (D.C to 4) 2 : 1, (4 to 8) 3.25 : 1<br>(8 to 12) 3.5 : 1, (12 to 16) 5 : 1 |
| VSWR<br>WOW/360 (max)              | 0.05            | 0.05                            | (D.C to 4) 1.0, (4 to 12) 0.60,<br>(12 to 16) 1.50                         |
| Insertion Loss (db max)            | 0.3             | (D.C to 12) 1<br>(12 to 18) 1.5 | (D.C to 4) 1.0, (4 to 12) 2.5,<br>(12 to 16) 5.0                           |
| Insertion Loss<br>WOW/360 (db max) | 0.1             | 0.05                            | (DC to 4) 0.1, (4 to 12) 0.6,<br>(12 to 16) 1.0                            |
| Isolation (Min db max)             | N/A             | 50                              |  |
| Peak Power                         | 3 kW            | 1 kW                            |  |
| Average Power                      | 500 W at 1 GHz  | 30 W                            | 10 W   |

## PAN & TILT STANDARD PERFORMANCE

|                             | QPT-50   | QPT-90                            | QPT-500                           |
|-----------------------------|--|-----------------------------------|-----------------------------------|
| Load Capacity               | 50 lb-ft (67.8 Nm) maximum   | 90 lb-ft (122 Nm) maximum         | 500 lb-ft (679 Nm) maximum        |
| Operating Voltage Range     | 24 VDC (±4 VDC)  | 24 VDC (±4 VDC)                   | 48 VDC (±4 VDC)                   |
| Total Power                 | 5.0 A Peak<br><0.5 A Steady State  | 7.5 A Peak<br><0.8 A Steady State | 6.0 A Peak<br><0.8 A Steady State |
| Pan-Axis Range              | Continuous Rotation (slip ring)  |                                   |                                   |
| Pan-Axis Speed              | 0.005° to 50°/sec  | 0.005° to 25°/sec                 | 0.001° to 20°/sec                 |
| Tilt-Axis Range             | 180° (±90°)  |                                   |                                   |
| Tilt-Axis Speed             | 0.005° to 12°/sec at 50 lb-ft  | 0.005° to 8°/sec at 90 lb-ft      | 0.001° to 4°/sec                  |
| Internal Heater             | Included standard, thermostatically controlled 0°C (32°F) ON • 1.7°C (35°F) OFF  |                                   |                                   |
| Operating Temperature       | -30° to 55°C (-22° to 131°F) (with heater)   |                                   |                                   |
| Rotational Limits           | Adjustable tilt hard limit, adjustable soft limits on both axes  |                                   |                                   |
| Feedback                    | Optical Encoders (0.01° readout)   |                                   |                                   |
| Repeatability               | Pan/Tilt ± .05°  | Pan/Tilt ± .05°                   | Pan/Tilt ± .1°                    |
| Motor Type/Drive            | Stepper Motor  |                                   |                                   |
| Communication to Pan & Tilt | RS232/422/485, IP Ethernet: 10/100 Base-T  |                                   |                                   |
| Communication to Sensors    | RS232/422, Ethernet Pass-Through & Coax Video  |                                   |                                   |
| Control Protocol            | QuickSet PTCR-96 or Pelco D  |                                   |                                   |
| Connector Specifications    | Mil-Spec grade used on all configurations  |                                   |                                   |
| Load Connector Interfaces   | 1 Mil-Spec connector at tilt-axis  |                                   |                                   |
| RF Connector                | N-Type Female Connector (50 Ohm) up to 18 GHz  |                                   |                                   |
| Materials                   | Housing 6061-T6 Aluminum, stainless steel hardware, permanently sealed radial ball bearings.   |                                   |                                   |
| Finish/Color                | White powder coat paint over alodined chromate for corrosion resistance standard.  |                                   |                                   |
| Weight                      | 36 lb (16.3 kg)  | 70 lb (32 kg)                     | 175 lb (79 kg)                    |
| Dimensions                  | Please contact a sales representative  |                                   |                                   |
| Test Cable and Software     | 6 ft test cable and software included  |                                   |                                   |
| Duty Cycle                  | These positioners are designed for periodic movement. For applications requiring constant motion, please contact our team for solutions tailored to your use case and environment. |                                   |                                   |

# MOOG

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