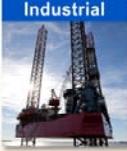


Powered by **Polarity**<sup>®</sup>

POL200Q

A Global Leader in Power Solutions



## 200 Watt Q Band Outdoor HPA

### High Band Width Communication HPA

*Ideally suited for demanding performance in next generation high bandwidth satellite uplinks. Meeting international standards for safety and EMI/EMC.*

#### RF Performance

- Frequency: 43.5GHz to 45.5GHz
- RF Output Power: 200W, 53dBm
- Gain: 70dBm
- Temperature range -40 to +60C

#### Built-in protection

- 3us electronic crowbar
- Output arc detector
- Input /output isolator
- Reverse power detection/c'bar

#### Additional Options

- BUC/Linearizer
- Airborne packaging
- High speed modulator
- Liquid / Conduction cooled

### Guaranteed Reliability

- Military proven high viscosity coatings for dust and humidity control.
- Critical component designs have accumulated more than 1 million hours of operation.
- Data logging and analysis for cost effective maintenance.

The POL100Q amplifier is specifically designed to meet multicarrier operation in demanding outdoor satellite communications applications for antenna mount operation. Polarity offers models suited for all major satellite bands. All models can include a linearizer and are further optimized for low noise and efficient operation at rated linear power levels. Harmonic filtering is built-in.

Outstanding thermal design ensures reliable operation to ambient temperatures of +60deg C. The POL200Q offers a design with industry leading reliability and its power supply design ensures rugged performance that is unmatched.

High efficiency modern user multi-collector designs meet the demands of today's complex systems and offer the ability to effectively power manage the overall network as well as the increasingly challenging requirements for mobile systems.

Optional features are 1:1 redundancy and 1:2 redundancy with associated switch control. Higher power can be provided through optional phase combining systems. Each amplifier has allocated internal space for integrated block up converter modules that are tailored for specific bands. Upconverters can also be provided that operate stand alone or lock to an external system reference. A rich control protocol provides serial RS232/422/485, ethernet, and advanced user friendly communication to provide data logging for cost effective maintenance.

**POL200Q — Industry Leading Performance — Affordable — Proven Reliability**

## Performance Specifications :

### Electrical

|                                 |        |   |
|---------------------------------|--------|---|
| Frequency                       | Band 1 | 43.5 - 45.5 GHz   |
| Output Power                    |        |   |
| HPA                             |        | 200 W (53.0 dBm)  |
| Flange                          |        | 150W (51.7 dBm) min   |
| Gain                            |        | 70dB (min)  |
| Gain variation                  |        | 2.5 dB p-p across band<br>0.8 dB per 60MHz  |
| Gain Slope                      |        | +/- 0.04dB/MHz max  |
| Gain Stability 24hr             |        | +/- 0.25dB  |
| Attenuator Range                |        | 30 dB   |
| Attenuator Step Size            |        | 0.1dB   |
| Input VSWR                      |        | 1.3:1 max   |
| Output VSWR                     |        | 1.3:1 max   |
| Harmonic Output                 |        | -60 dBc max   |
| Group Delay (max) in 60MHz band |        |   |
| Ripple                          |        | 0.5 nsec p-p  |
| Linear                          |        | 0.01 nsec/MHz   |
| Parabolic                       |        | 0.001 nsec/MHz <sup>2</sup>   |
| Noise Power                     |        |   |
| Transmit Band                   |        | -75dBW/4 kHz max  |
| Receive Band                    |        | -150dBW /4 kHz max  |
| Residual AM Noise (max)         |        | -50dBc below 10kHz<br>-20(1.5+log(f)) dBc 10 kHz to 500kHz<br>-85dBc above 500kHz |
| Spurious (max)                  |        | -60dBc at linear power (in band)  |
| Phase Noise (max)               |        | 10dB below IESS<br>-50 dBc max AC fundamental<br>-47 dBc max sum of all spurs     |
| Line Input                      |        | 100-240 +/- 10% VAC<br>47-63Hz  |
| Power Factor                    |        | 0.95 (min)  |

### Environmental

|                       |   |
|-----------------------|---|
| Operating Temperature | -40 deg C to +60deg C   |
| Non-Operating         | -40 deg C o +50 deg C, direct sunlight<br>50 deg C to +75 deg C |
| Relative Humidity     | 100% condensing   |
| Altitude              |   |
| Operating             | 10,000 ft with 2 deg C/ 1000ft derating above sea level         |
| Non-Operating         | 50,000 ft   |
| Shock                 | 20 g peak , 11 msec , ½ sine                                    |
| Vibration             | 2.1 grms , 5Hz to 500Hz   |
| Acoustic Noise        | 65 dBA , 3 ft from amplifier                                    |
| Thermal               | Forced Air cooling  |

### Mechanical

|                        |   |
|------------------------|---|
| RF Input               | WR-22<br>N-type ( BUC Option)               |
| RF Output              | WR-22G                                      |
| RF Output Monitor      | 2.92 mm , female<br>50dB coupling (nom)     |
| Dimensions (W x H x L) | 10.25 x 9.5 x 22 in<br>(260 x 241 x 558) mm |
| Weight                 | 67 lb                                       |
| Mounting Brackets      | Side mount fasteners                        |

### Interface

|               |                                      |
|---------------|--------------------------------------|
| Remote        | RS-232 /422/485<br>Ethernet<br>USB   |
| Local Control | HV on, reset, local or remote select |
| Status        | Pwr on, Standby, HV on, Fault, Mode  |

## Mechanical Outline

