

Controller for Multi-Axis Piezo Tip/Tilt Mirrors and Platforms

Flexible Multi-Channel Electronics with Coordinate Transformation



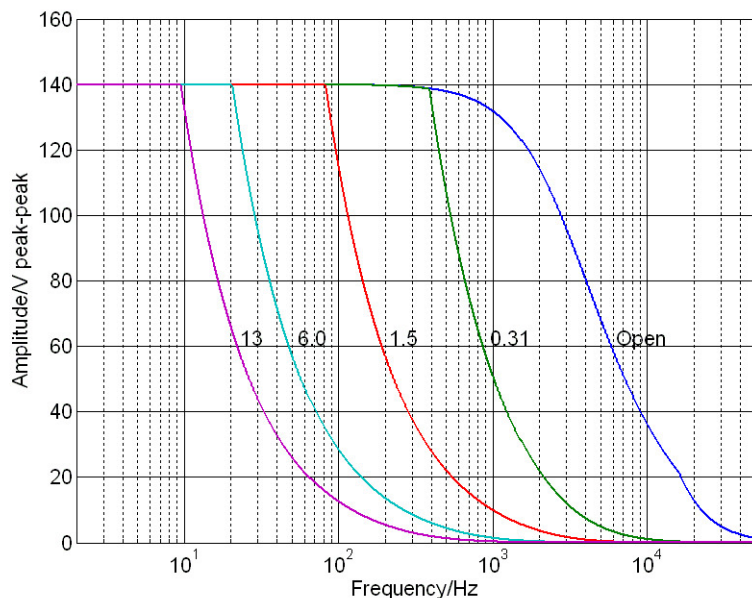
E-616

- Three integrated amplifiers provide up to 10 W peak power
- Closed-loop and open-loop versions
- Internal coordinate transformation simplifies control of parallel-kinematic designs (tripod and differential drives)
- Compact, inexpensive OEM design or benchtop device

Specifications

	E-616.S0 / E-616.S0G	E-616.SS0 / E-616.SS0G
Function	Controller for parallel-kinematic piezo tip/tilt mirror systems with strain gauge sensors, tripod drive E-616.S0: OEM board E-616.S0G: Benchtop device	Controller for parallel-kinematic piezo tip/tilt mirrors with strain gauge sensors, differential drive E-616.SS0: OEM board E-616.SS0G: Benchtop device
Tip/tilt axes	2	2
Sensor	E-616.S0 / E-616.S0G	E-616.SS0 / E-616.SS0G
Controller type	P-I (analog), notch filter	P-I (analog), notch filter
Sensor type	SGS	SGS
Sensor channels	3	2
External synchronization	200 kHz TTL	200 kHz TTL
Amplifier	E-616.S0 / E-616.S0G	E-616.SS0 / E-616.SS0G
Input voltage range	-2 to 12 V	-2 to 12 V
Output voltage	E-616.S0: -20 to 120 V E-616.S0G: -30 to 130 V	E-616.SS0: -20 to 120 V E-616.SS0G: -30 to 130 V Additionally: Fixed voltage 100 V
Amplifier channels	3	3
Peak power / channel (output power)	10 W	10 W
Average output power / channel	5 W	5 W
Peak current / channel	100 mA	100 mA
Average output current / channel	50 mA	50 mA
Current limitation	Short-circuit proof	Short-circuit proof
Voltage gain	10	10
Amplifier bandwidth, small signal	3 kHz	3 kHz
Ripple, noise, 0 to 100 kHz	<20 mV _{pp} , <2 mV _{pp}	<20 mV _{pp} , <2 mV _{pp}
Amplifier resolution	<1 mV	<1 mV
Interfaces and operation	E-616.S0 / E-616.S0G	E-616.SS0 / E-616.SS0G
Piezo / sensor connector	Sub-D 25 (f)	Sub-D 25 (f)
Analog input / control signal input	E-616.S0: 32-pin connector E-616.S0G: SMB connector	E-616.SS0: 32-pin connector E-616.SS0G: SMB connector
Sensor monitor signal	0 to 10 V for nominal displacement	0 to 10 V for nominal displacement
Sensor monitor output	E-616.S0: 32-pin connector E-616.S0G: Sub-D 15-pin connector	E-616.SS0: 32-pin connector E-616.SS0G: Sub-D 15-pin connector
Display and indicators	Power LED and sensor OFL display	Power LED and sensor OFL display
Miscellaneous	E-616.S0 / E-616.S0G	E-616.SS0 / E-616.SS0G
Operating temperature range	5 to 50 °C	5 to 50 °C
Overheat protection	Max. 75°C, deactivation of the voltage output	Max. 75°C, deactivation of the voltage output
Dimensions	E-616.S0: 186 mm × 128.4 mm × 10 HP E-616.S0G: 205 mm × 105 mm × 54.1 mm	E-616.SS0: 186 mm × 128.4 mm × 10 HP E-616.SS0G: 205 mm × 105 mm × 54.1 mm
Mass	E-616.S0: 0.95 kg E-616.S0G: 1.2 kg	E-616.SS0: 0.95 kg E-616.SS0G: 1.2 kg
Operating voltage	E-616.S0: 12 to 30 V DC E-616.S0G: 23 to 26 V DC	E-616.SS0: 12 to 30 V DC E-616.SS0G: 23 to 26 V DC
Max. power consumption	30 W	30 W

Drawings / Images



E-616.S0: Operating limits (open loop) with various piezo loads for one individual channel, capacitance values in μ F

Ordering Information

E-616.S0

Multi-channel servo controller for piezo tip/tilt mirrors / platforms with SGS and tripod drive, OEM board

E-616.S0G

Multi-channel servo controller for piezo tip/tilt mirrors / platforms with SGS and tripod drive, benchtop device

E-616.SS0

Multi-channel servo controller for piezo tip/tilt mirrors / platforms with SGS, for tip/tilt axes with differential drive, OEM board

E-616.SS0G

Multi-channel servo controller for piezo tip/tilt mirrors / platforms with SGS, for tip/tilt with differential drive, benchtop device