E-665

LVPZT Amplifier & Position Servo-Controller with High-Speed RS-232 Interface

E-665.SR

- **Integrated 20-Bit High-Speed RS-232 Interface**
- **Network Capability with up to 12 Channels**
- **36 W Peak Power**
- **Position Servo-Control**
- **For Strain Gauge, LVDT and Capacitive Sensors**

The E-665 is a bench-top, low-voltage PZT amplifier and position servo-controller with integrated high-speed RS-232 computer interface and a 20-bit D/A converter. The E-665 supports all position sensors offered with PI piezo translators and NanoPositioning stages: strain gauge sensors, LVDT sensors and capacitive sensors. It is ideal for use with single-axis translators such as

- P-841 stack actuators with strain gauge sensors
- P-721 PIFOC® microscope objective positioners with LVDT or capacitive sensors
- P-620 PIHera series single-axis stages with travel up to 500 µm and capacitive sensors
- P-753 LISA/P-752 series NanoAutomation® stages with capacitive sensors

Ordering Information

E-665.SR
LVPZT Amplifier & Position Controller, Strain Gauge Sensors, RS-232 Interface

E-665.LR
LVPZT Amplifier & Position Controller, LVDT Sensors, RS-232 Interface

E-665.CR
LVPZT Amplifier & Position Controller, Capacitive Sensors, RS-232 Interface
Custom Designs for Volume Buyers

New and Fast Communications Interface

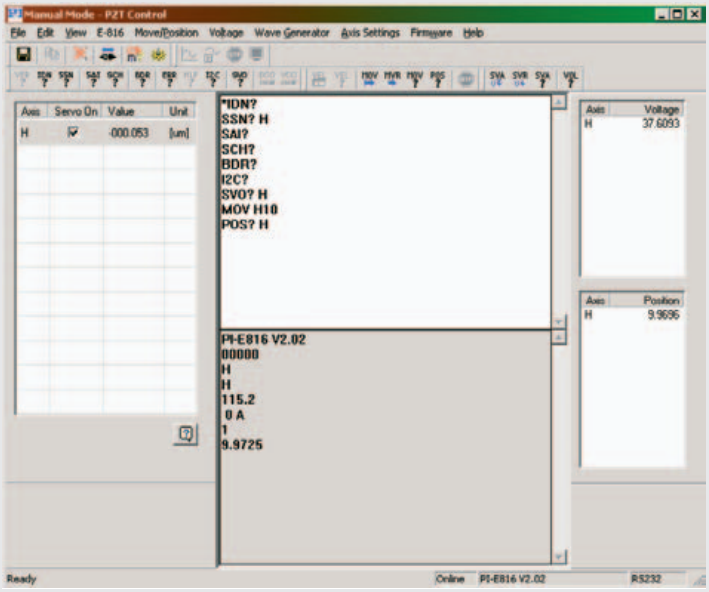
The RS-232 interface handles communications with the outside world. It performs up to 300 bidirectional read or write operations per second and incorporates precision 20-bit D/A and A/D converters for exceptional positional stability and resolution.

Multi-Axis Network

Up to 12 E-665s can be networked and controlled over a single RS-232 interface.

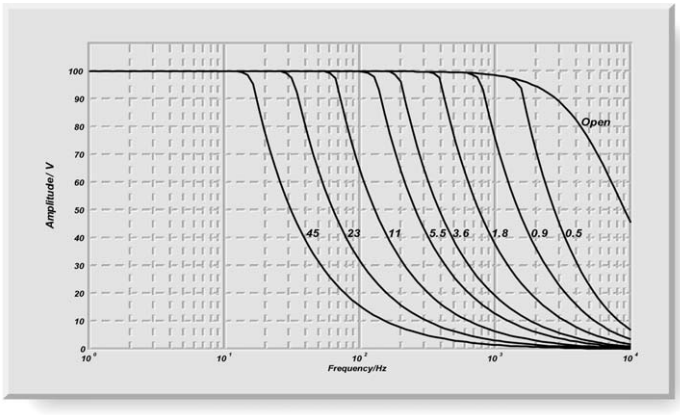
PI General Command Set

The E-665 is to a large extent freely programmable and its command structure conforms to the *PI General Command Set*. This command set is common to the *E-516 Computer Control and Display Module* and an increasing number of PI controllers, and is designed for multi-axis operation. It is PI's goal to make all of its controllers "understand" these commands, either directly or via command libraries. This will greatly reduce the effort required to produce custom programs, especially in environments which include a number of different controllers. Included with the E-665 is user-interface software as well LabView™ and other driver sets.



Screenshot of PZT-Control software for E-665. The commands listed in the editor are part of the PI General Command Set.

http://www.pi.ws
info@pi.ws



E-665, open-loop frequency with various PZT loads. Capacitance values are in µF, measured in actual PZT.

Technical Data

Models	E-665.SR	E-665.LR	E-665.CR
Function	Power amplifier & sensor/ position servo-control of LVPZTs	Power amplifier & sensor/ position servo-control of LVPZTs	Power amplifier & sensor/ position servo-control of LVPZTs
Channels	1	1	1
Amplifier			
Maximum output power	36 W	36 W	36 W
Average output power	12 W	12 W	12 W
Peak output current < 5 ms	360 mA	360 mA	360 mA
Average output current > 5 ms	120 mA	120 mA	120 mA
Current limitation	short-circuit proof	short-circuit proof	short-circuit proof
Voltage gain	10 ± 0.1	10 ± 0.1	10 ± 0.1
Polarity	Positive	Positive	Positive
Control input voltage	-2 to +12 V	-2 to +12 V	-2 to +12 V
Output voltage	-20 to 120 V	-20 to 120 V	-20 to 120 V
DC offset setting	0 to 100 V with 10-turn pot.	0 to 100 V with 10-turn pot.	0 to 100 V with 10-turn pot.
Input impedance	100 kΩ	100 kΩ	100 kΩ
Display	2 x 4 1/2-digit, LED	2 x 4 1/2-digit, LED	2 x 4 1/2-digit, LED
Control input socket:	BNC	BNC	BNC
PZT voltage output socket	LEMO ERA.00.250.CTL	LEMO ERA.00.250.CTL	Combo sub-D; size DB
Dimensions	235 x 103 x 288 mm	235 x 103 x 288 mm	235 x 103 x 288 mm
Weight	2.5 kg	2.5 kg	2.5 kg
Operating voltage	90–120 / 220–240 VAC, 50–60 Hz (linear P/S)	90–120 / 220–240 VAC, 50–60 Hz (linear P/S)	90–120 / 220–240 VAC, 50–60 Hz (linear P/S)
RS-232 Interface			
D/A Converter	20-bit resolution	20-bit resolution	20-bit resolution
Baudrate	9.6 kBaud –115.2 kBaud (default 115.2 kBaud)	9.6 kBaud –115.2 kBaud (default 115.2 kBaud)	9.6 kBaud – 115.2 kBaud (default 115.2 kBaud)
Wave Table	64 data points, 100 Hz, externally triggered	64 data points, 100 Hz, externally triggered	64 data points, 100 Hz, externally triggered
Position Servo-Control			
Sensor Type	SGS	LVDT	capacitive
Servo Characteristics	P-I (analog) + notch filter	P-I (analog) + notch filter	P-I (analog) + notch filter
Sensor socket	LEMO ERA.0S.304.CLL	LEMO ERA.0S.304.CLL	Combo sub-D; size DB
Sensor monitor output socket	BNC	BNC	BNC