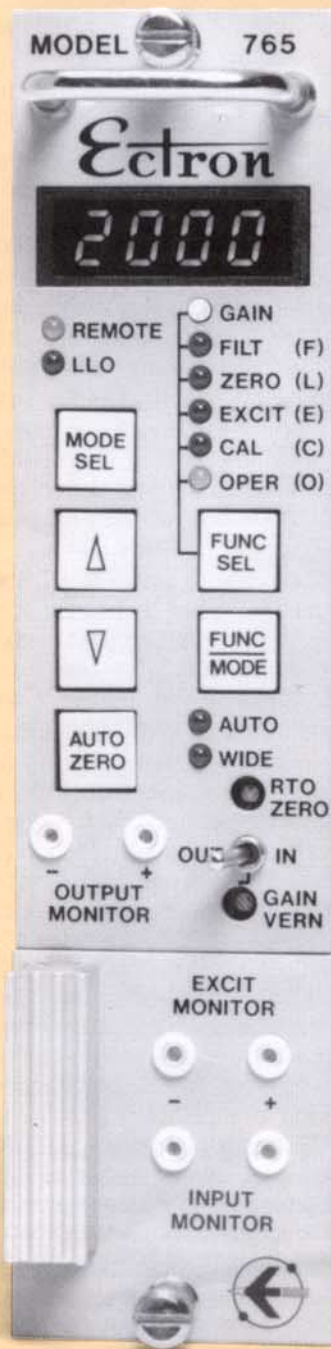


MODEL 765

PROGRAMMABLE TRANSDUCER CONDITIONING AMPLIFIER



- IEEE-488 programmable.
- Self-contained unit with fully programmable excitation, signal conditioning, calibration, amplification and filtering.
- Ten (10) wire input accommodates bridge-type transducers, strain gages, RTDs, potentiometers and other low- and high-level signal sources.
- Front-panel manual access and control of all programmable functions with four digit numerical display and LED status indicators on each amplifier.
- Front-panel plug-in Configuration Card contains bridge-completion, balance and calibration resistors.
- Gain programmable from 0.01 to 10,000.
- Four programmable calibration modes.
- Fully isolated excitation power supply programmable for constant current or constant voltage, local or remote sense and output level.
- Separate auto balance and true autozero.
- Separate DATA and TAPE outputs programmable for wideband (100 kHz) or filtered response.
- Ten programmable Butterworth or Bessel filter bandwidths from 1Hz to 30kHz, plus wideband.

- 19" rack mounting for up to ten amplifiers has rear-panel mounted connectors for inputs, outputs, power and control.
- IEEE-488 remote control interface included with every rack mount.
- Use a single IEEE-488 bus address to remotely control 200 amplifiers – all at once, per rack or individually. Up to 3000 channels from one controller.



GENERAL DESCRIPTION

The Model 765 Programmable Transducer Conditioning Amplifier (PTCA) features full remote or front-panel manual control of virtually every operating function including: several excitation, signal conditioning, and calibration modes; amplifier input, output, filter and gain modes; and automatic and incremental zero and bridge balance modes. Ideal for computer controlled data acquisition systems, the Model 765 PTCA can be used with almost any transducer from strain gages, RTDs and potentiometers to thermocouples, accelerometers, and pressure gages. Its precision amplifier can also be used for most low-level or high-level signal sources.

Each Model 765 PTCA is self-contained with individual isolated power supply. It is a mechanically rugged modular unit with all external metal surfaces at safety ground. Each unit is provided with a front-panel plug-in Configuration Card with a handle that doubles as a channel I.D. holder and with front-panel monitor jacks for amplifier input and excitation output.

All user-configurable components, including bridge completion resistors, shunt calibration resistors, balance limit resistor, bridge calibration configuration switches, and a plug jumper selection for voltage or current monitoring, are contained on the Configuration Card.

Ten Model 765 amplifiers mount in the Model R735 rack-mount enclosure, which contains the IEEE-488 remote control interface. The Model R735 is a standard 19 inch EIA rack enclosure, 7 inches high, with rear-panel mounted connectors for all inputs, outputs, power and control. All mating connectors, except the IEEE-488 interface connectors and BNCs, are furnished. Installation or removal of individual amplifiers is accomplished from the front of the rack enclosure without rear access or removal of the mating connectors.

The Model 765/R735 system is designed for operation via the IEEE-488 remote control interface bus and additionally via individual front-panel manual control. Individual amplifier operation without enclosure or bus interface is possible using the front-panel controls.

Each Model 765 PTCA has an on-board microprocessor with nonvolatile memory to handle all control functions whether received via remote program command or via its front-panel manual control. The Model R735 enclosure also has an on-board microprocessor as part of the IEEE-488 control interface.

The Model R735 includes a precision 10 Volt reference source that can be used as a CAL source for voltage substitution calibration.

All Model R735 enclosures are identical and interchangeable. A rear-mounted switch designates a unit as a master or slave enclosure.

INPUTS

A shielded 10-wire input is provided for each channel with separate connections for plus and minus excitation (2), plus and minus sense (2), bridge output (2), shunt calibration (4), and guard. The input connectors are PT02A-14-12S with mates provided. The input is differential, programmable ac or dc coupled, and may be used inverting, noninverting or single-ended. The input is isolated from output, power and control.

OUTPUTS

Two separate outputs, Data and Tape, are provided from each amplifier. Each output may be programmed for wideband or filtered response. The output connectors are isolated BNCs. A separate multiplex output is also provided. A set of amplifier output monitor jacks is located on the front of each amplifier.

AMPLIFIER

Gain is programmable from 0.01 to 10,000 in nineteen steps in a 1-2-5 step sequence. Bandwidth is dc to 100kHz. A four-pole, selectable Bessel or Butterworth, low pass filter provides ten programmable bandwidths from 1Hz to 30kHz, in a 1-3-10 step sequence plus a wideband position.

Automatic zero is programmable and may be used as a true zero suppression separate from or in addition to auto balance. The amplifier data, tape and multiplexer outputs are automatically programmed to zero Volts during the autozeroing operation. The amplifier operates from grounded or floating sources and provides 120dB of common-mode rejection for common-mode voltages to 300 Volts dc or peak ac.

SIGNAL CONDITIONING

Isolated transducer excitation power supplies are programmable on or off and to be either constant voltage or constant current. Voltage excitation is programmable from 0.1 to 15 Volts in 0.1 Volt steps. Current excitation is programmable from 0.5 to 100mA in 0.5mA steps. Local or remote sense is provided and is also programmable.

Automatic balance, separate from autozero, is programmable; and the amplifier data, tape and multiplexer outputs are automatically programmed to zero Volts during the auto balance operation.

CALIBRATION

Four different calibration modes are programmable.

1. Voltage Substitution – A precision guarded relay switches the input of the amplifier to a separate calibration voltage attenuator.
2. Zero – The amplifier is disconnected from the signal inputs and the inputs shorted to the guard shield.
3. Resistive Shunt – Two bipolar steps of single and double shunt are available. Four separate input connections are provided for the shunt calibration circuit.

4. Excitation – The excitation output is applied to the amplifier input through a 10:1 voltage divider.

FRONT PANEL

Each individual amplifier can be manually operated from its front panel. The front panel of each amplifier is provided with a 4-digit numerical display, function LEDs for each of the major programmable functions (i.e. Gain, Filter, Zero, Excitation, Calibration and Operate) plus six push-button control switches for selection and execution of the programmable functions. All major remote programmable functions are manually controllable from the front-panel. The status of the amplifier is also available at the front-panel.

Front-panel operation may be locked out by remote command, i.e., any function individually, any group of functions or all functions. A front-panel LED indicates status of lockout.

IEEE-488 BUS CONTROL

Programmable functions and status outputs are compatible with the IEEE-488 bus in both TALK and LISTEN modes. Up to 3000 channels can be controlled from one controller. A SINGLE bus address controls 200 amplifiers and allows addressing of instructions to each amplifier individually, all ten amplifiers in one rack simultaneously or all amplifiers on the bus address.

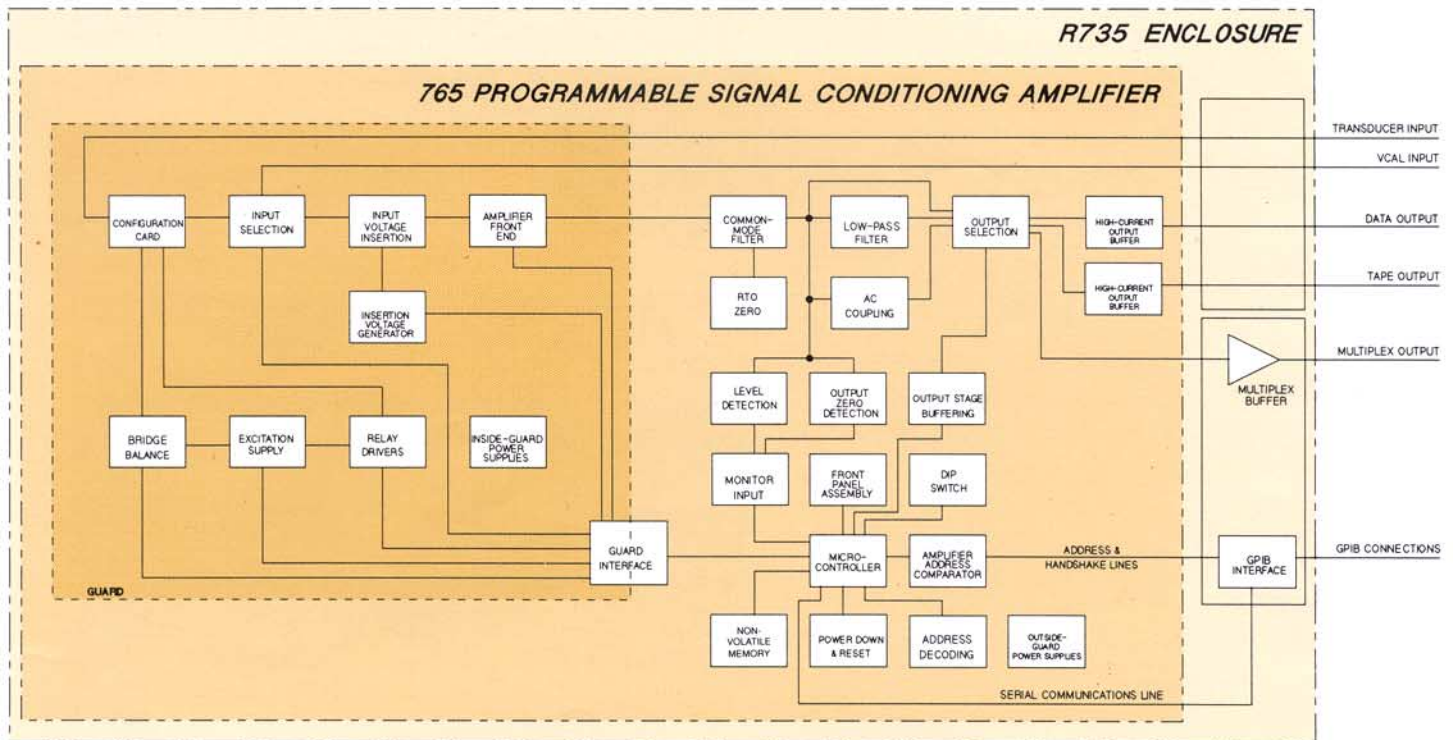
The Model R735 enclosures are interconnected by a local IEEE-488 data bus (completely separate from the external command IEEE-488 bus). The amplifiers within a given rack are interconnected by a 4-bit address bus and a serial data link.

The remote controller and the 765/R735 system operates in a two-level command/status mode, if desired, as well as an interrupt mode. The two-level mode of operation offers maximum programmable capability of the amplifier system while providing ease of programming.

In the first command/status mode, all data is exchanged in a high-level ASCII format. In this high-level mode all major programmable functions of the amplifier are supported with ease to understand and implement programming tasks. In the second command/status mode, data is exchanged in a low-level binary format. This low-level mode provides for full utilization of every programmable function in the amplifier. As an example, several hundred filter steps are available in low-level programming. In either mode, the remote controller sends a command message for a particular amplifier to the 765/R735 system via the external IEEE-488 bus where it is relayed over the local IEEE bus to the appropriate rack and then to the specific amplifier addressed.

The remote controller can also request status from any amplifier. The status message returned to the remote controller is in the same format (ASCII or binary) that was used to send the status request.

BLOCK DIAGRAM—765/R735 SYSTEM



SPECIFICATIONS

Unless otherwise noted, all specifications apply at 25°C under the following conditions:

1. 30 minute warmup
2. Gains 1 to 1000
3. Source resistance of 1k ohm or less
4. Input power over the specified voltage range

RTI means Referenced To Input.

RTO means Referenced To Output.

INSTRUMENTATION AMPLIFIER

The amplifier has a differential input, programmable ac or dc coupling, programmable gain, filter, zero, excitation, and calibration, and is useable with or without the signal conditioning circuits. It meets the following minimum performance specifications.

GAIN

- P RANGE**
0.01 To 10,000. Programmable gain steps: 0.01, 0.02, 0.05, 0.1, 0.2, 0.5, 1, 2, 5, 10, 20, 50, 100, 200, 500, 1000, 2000, 5000, 10000.

VERNIER GAIN

Manual front-panel vernier gain IN/OUT switch with recessed screwdriver potentiometer for vernier gain. Vernier gain range is X1 to >X2.5. A status flag is set whenever vernier is IN.

ACCURACY

±0.1% of step gain with vernier out.

LINEARITY

Within ±0.005% of full scale, best straight line.

STABILITY

±0.02% for six months, ±0.004% / °C.

INPUT

P CONFIGURATION

Differential, ac or dc coupled. May be used inverting, noninverting, differential or single-ended. Input isolated from output and power.

IMPEDANCE (DC COUPLED)

50 MΩ, minimum shunted by 200 pF, maximum – gains of 1 to 10,000.

2 MΩ minimum – gains below 1.

IMPEDANCE (AC COUPLED)

1.5 MΩ minimum.

INPUT BIAS CURRENT

±2nA ±0.5nA / °C, maximum.

MAXIMUM INPUT VOLTAGE (DC OR PEAK AC)

±50V differential or ±350V common mode without damage. ±350V differential or common mode for gains below 1.0.

COMMON MODE REJECTION

120dB, dc to 60Hz for gain of 1000 with up to 350Ω source unbalance. At lower gains, CMR exceeds 63dB plus gain in dB. CMR decreases ≤6dB per octave from the specified value at 60Hz, up to 10kHz.

COMMON MODE VOLTAGE

300 Vdc or peak ac operating.

NOISE (with 350Ω Bridge)

0.1Hz to 10Hz:
1μV RTI plus 0.5mV RTO, peak.
0.1Hz to 10kHz:
3μV RTI plus 0.3mV RTO, rms.
0.1Hz to 100kHz:
7μV RTI plus 0.6mV RTO, rms.

ZERO

STABILITY

±5μV RTI, ±0.5mV RTO at constant temperature, ±1.0μV/°C RTI and ±0.15mV/°C RTO.

RTO ZERO CONTROL

±100mV range using front-panel recessed 20-turn potentiometer. 0.02% resolution, ±0.15mV/°C stability.

P RTI ZERO CONTROL

Input zeroing (RTI) is either manual from the front-panel or by remote program command; or by autozero operation, which can be initiated from either the front panel or by remote command. RTI zeroing of the amplifier input is accomplished by inserting a voltage in series with the input of the amplifier without affecting input isolation or common mode rejection of the amplifier. (This requires extremely high isolation of the entire input zero control circuit, on the order of one femtofarad capacitive (1X10¹⁵F) and one gigohm (1X10¹²Ω) resistive isolation). If the insertion voltage exceeds ±1% of the voltage insertion range, the front-panel WIDE indicator lights. The RTI or automatic zero setting does not change when the ac power is off. Manual and Automatic RTI zero both have the same range and stability specifications.

Resolution –

0.01ppm of zero range.

Zero Insertion Full Scale Ranges –

±50mV RTI standard. Ranges to ±5 Volts may be set by changing terminal-mounted resistors. Other ranges to ±10 Volts are available.

Zero Insertion Reference –

Two references are provided: Potentiometric and Fixed, as determined by user selectable jumper. Potentiometric uses the excitation sense lines as the reference for the insertion voltage.

Fixed uses an independent reference source.

Full Scale Insertion Range –

Potentiometric – $\pm 0.1\text{mV}$ to $\pm 100\text{mV/Volt}$ of excitation sense voltage. 3.3mV/Volt standard.

Fixed – $\pm 2\text{mV}$ to $\pm 5\text{Volts}$. $\pm 50\text{mV}$ standard.

Insertion Stability ($\pm 50\text{mV}$ insertion range) –

Fixed Reference – $\pm 5\mu\text{V} \pm 0.02\%$ of setting at constant temperature. $\pm 4\mu\text{V} \pm 0.015\%$ of setting/ $^{\circ}\text{C}$ at other temperatures.

Potentiometric Reference – Same as for fixed reference except add excitation supply stability and temperature coefficient.

P AUTOMATIC ZERO

Automatic zero is a means of automatically adjusting the RTI zero offset in order to bring the amplifier output to 0 Volts. A front-panel pushbutton switch or remote command initiates the autozero operation. During autozero, the voltage on any amplifier output (Data, Tape, or Multiplexer) does not exceed $\pm 1\%$ of full scale.

Autozero Time – < 2 seconds typical.

MANUAL RTI ZERO

Manual RTI zero uses front-panel push button switches to set the amount of voltage insertion applied to the input of the amplifier. Four levels of resolution are provided; each has one hundred times the range of the next lower level. The resolution at each level is 0.5% of the range of that level.

DYNAMIC RESPONSE

BANDWIDTH

100kHz, minimum (-3dB), gains 1 to 10,000. 50kHz, minimum, gains < 1 .

P FILTER

Programmable four-pole (24dB per octave) filter with bandwidths (-3dB) of 1Hz, 3Hz, 10Hz, 30Hz, 100Hz, 300Hz, 1kHz, 3kHz, 10kHz, 30kHz, and wideband. The type of filter (Bessel or Butterworth) is user selected by plug jumper.

SETTLING TIME

$30\mu\text{s}$ to within $\pm 0.1\%$ of step.

OVERLOAD RECOVERY

$75\mu\text{s}$ to within $\pm 0.1\%$ of full scale for a ten-times overload to $\pm 10\text{V}$.

SLEW RATE

$> 5\text{V}/\mu\text{s}$, all gains.

OUTPUTS

DATA OUTPUT

$\pm 10\text{V}$ at 10mA, 100mA optional (Option 1). Output impedance is less than 1Ω . Program command selects either wideband or filtered response.

P TAPE OUTPUT

$\pm 1\text{V}$ ($0.1 \times$ Data Output) at 10mA, 100mA optional (Option 1). Output impedance is less than 1Ω .

P Program command selects either wideband or filtered response. Output may be set to any ratio of the Data Output by removing or changing the terminal-mounted divider resistors.

PROTECTION

Protected against continuous shorts. No instability with capacitive loads of $0.22\mu\text{F}$.

ISOLATION

Less than 100nA rms leakage to power or rack ground at 60 Hz line frequency.

OVERLOAD DETECTOR

A latched status flag and front-panel display indicate signals which exceed the amplifier's linear range.

SIGNAL CONDITIONING

All user-installed bridge completion and calibration resistors mount on the front-panel, plug-in Configuration Card.

BRIDGE COMPLETION

Terminals are provided for two sets of bridge-completion resistors on the Configuration Card.

P Selection of set A or B is programmable.

INPUT TERMINALS

Each transducer input has a corresponding wire-wrap terminal on the Configuration Card in parallel with the bifurcated solder terminals for configuring signal conditioning and calibration circuits.

CALIBRATION

The following set of calibration modes are programmable.

P VOLTAGE

A precision guarded relay switches the input of the differential amplifier to a separate calibration input. Terminals are provided for a calibration voltage attenuator. Calibration inputs are bused to a single input connector on the rack enclosure.

P ZERO

The amplifier is disconnected from the signal inputs and shorted to the guard shield for zero calibration.

P RESISTIVE

Two bipolar steps of single and double shunt resistive calibration are available. Calibration resistors mount in bifurcated terminals on the Configuration Card. Four separate input connections are provided for the shunt calibration circuit. Specific operation is determined by Configuration Card selection.

P EXCITATION

The excitation sense voltage is applied to the amplifier input through a 10:1, $\pm 0.2\%$ voltage divider.

BRIDGE BALANCE

The signal conditioning amplifier provides manual and automatic bridge balance. Manual or automatic setting does not change when ac power is off.

P AUTOMATIC BRIDGE BALANCE

A program command initiates automatic balance of input offsets from a bridge. During automatic balance operation, the voltage on any amplifier output does not exceed $\pm 1\%$ of full scale.

RESOLUTION

0.01% of full balance range.

BALANCE TIME

$< 1\text{s}$ typical.

ACCURACY

0.05% of range $\pm 2\text{mV}$.

MANUAL BRIDGE BALANCE

Front-panel pushbutton switches provide manual balance control with resolution of 0.01% of full balance range.

BALANCE RANGE

The voltage applied to the balance limit resistor is 11 to 89% of the excitation sense voltage.

STABILITY

$\pm 0.01\%$ for 8 hours $\pm 0.005\%/^{\circ}\text{C}$.

BALANCE DISABLE

A program command removes automatic and manual balance voltage.

EXCITATION

P The excitation power supply is programmable for constant voltage or constant current. Isolation from power, rack and output grounds is 10,000 M Ω , minimum, shunted by 1.0 pF, maximum.

Excitation level control and monitor jacks are mounted on the front-panel. Monitor jacks are configured to measure voltage or current by a switch on the Configuration Card. Remote control of the excitation on/off and level is also provided.

P A separate program command can select zero excitation output without altering the operational setting of the amplifier or excitation supply. Another can also apply the excitation monitor output to the amplifier input through a 10:1 $\pm 0.2\%$ voltage divider.

CONSTANT VOLTAGE

P OUTPUT RANGE:

0.1 to 15V adjustable with 0.1V steps.

OUTPUT CURRENT

0 to 100mA with short circuit current limited to 140mA.

REGULATION

$\pm 0.01\%$ $\pm 200\mu\text{V}$ for a $\pm 10\%$ line change or a no load to full load change.

NOISE

Less than $200\mu\text{V}$ plus 0.001% peak-to-peak from 0.1Hz to 20kHz.

STABILITY

$\pm 0.01\%$ $\pm 500\mu\text{V}$ for 8 hours. Temperature coefficient is less than $\pm 0.005\%$ $\pm 100\mu\text{V}/^{\circ}\text{C}$.

RESPONSE

$5\mu\text{s}$ to $\pm 0.1\%$ of selected output voltage for a no load to full load change.

P REMOTE SENSE

Local or remote-sense operation is programmable. Sense current is less than $10\mu\text{A}$. The excitation source reverts to local sensing when the remote sense inputs are not connected.

CONSTANT CURRENT

P OUTPUT RANGE

0.5 to 100mA adjustable with 0.5mA steps.

COMPLIANCE VOLTAGE

0 to 15V. Open circuit voltage is limited to 25V, maximum.

REGULATION

$\pm 0.01\%$ $\pm 0.1\mu\text{A}$ for a 10% line change.

NOISE

Less than $2\mu\text{A} \pm 0.001\%$ peak-to-peak from 0.1Hz to 20kHz.

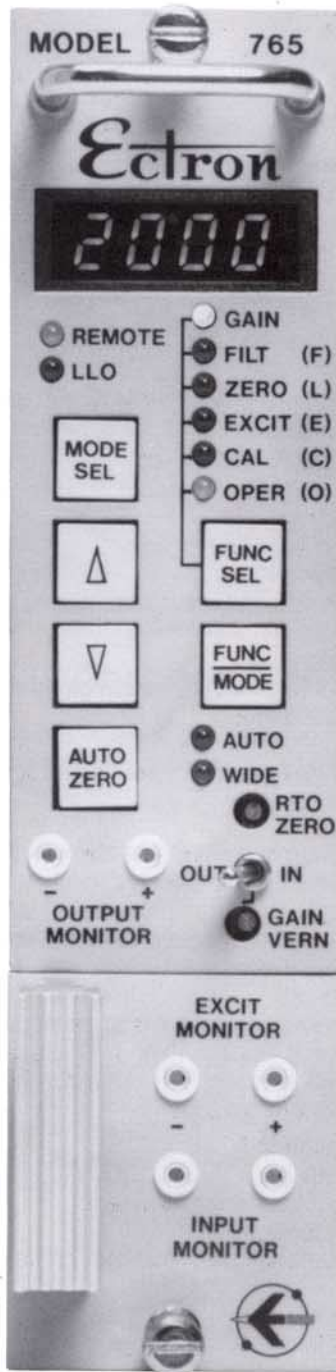
STABILITY

$\pm 0.01\%$ $\pm 2\mu\text{A}$ for 8 hours. Temperature coefficient is less than $\pm 0.005\%$ $\pm 1\mu\text{A}/^{\circ}\text{C}$.

OUTPUT IMPEDANCE

$> 1\text{M}\Omega$ in parallel with 300pF.

The Model 765 Programmable Transducer Conditioning Amplifier (shown actual size) is designed to operate under either computer control or under local front-panel manual control. The front panel of the Model 765 provides access to user-programmable functions and includes digital readout and status indicators.



The removable Configuration Card on the Model 765 contains all user-configurable components. The Configuration Card handle doubles as the amplifier channel I.D. holder.

The Model R735 rack mount enclosure is equipped with the IEEE-488 remote control interface and accommodates up to ten Model 765 Amplifiers.

P PROGRAMMING

The Model 765/R735 System is remotely programmable via the IEEE-488/GPIB and can be controlled with high-level ASCII character strings or a low-level binary command format. This choice between two command formats is one of the features designed into the Model 765/R735 Command/Status protocol. This protocol allows for amplifiers to be addressed and controlled individually, by groups of ten in a rack, or all of the amplifiers (up to 200) connected to a single bus address. The protocol allows for control of all amplifier functions, including: gain, bandwidth, auto balancing and zeroing, excitation, input/output modes, 10 calibration modes, front-panel lock-out and amplifier status.

A status request can be generated to report the current mode of operation and other functional status (overload count, front-panel lock-out, etc.). When a command is sent, a front-panel LED is turned on for 500ms to indicate reception.

INTERFACES

Self-contained integral interfaces use IEEE-488 (1982) for inter-rack and remote control.

HIGH LEVEL ASCII COMMANDS

In the following commands, "n" refers to a number specified as a string of ASCII digits, not to the ASCII character specified by the number n.

- SR Report status
- AZ Initiate autozero operation
- AB Initiate auto balance operation
- GA_n Select gain from amplifier gain table (n=0 to 18)
- FL_n Select filter setting from amplifier filter table (n=0 to 10)
- EV_n Set excitation mode to voltage and set voltage (n=0 to 150 x 0.1V)
- EC_n Set excitation mode to current and set current (n=0 to 200 x 0.5mA)
- EX Turn off excitation supply (output open)
- ES Turn off excitation supply (output shorted)
- ER Set excitation sense to remote
- EL Set excitation sense to local
- ZI_n Zero insertion increment
- ZD_n Zero insertion decrement
- BI_n Bridge balance increment
- BD_n Bridge balance decrement
- AI_n Amplifier input select according to n as follows:
 - 0 = Normal (transducer connection)
 - 1 = VCAL input
 - 2 = Short (amplifier input connected to guard)
 - 3 = Shunt (amplifier input connected to guard through resistance)
 - 4 = Excitation voltage (amplifier input connected to representation of excitation voltage)
 - 5 = Excitation current (amplifier input connected to representation of excitation current)
- AC AC coupling enabled (1Hz third-order high-pass filter)
- DC AC coupling disabled

- AX Connect inputs of amplifier Data, Tape and Multiplex output stages to ground (overrides DS, TS, MS commands)
- AN Connect inputs of Data, Tape and Multiplex output stages to filter output (overrides DS, TS, MS commands)
- DS_n Connect input of Data output stage to different sources as follows:
 - 0 = Ground
 - 1 = External signal
 - 3 = Wideband
 - 4 = Filter
- TS_n Connect input of Tape output stage to different sources as follows:
 - 0 = Ground
 - 1 = External signal
 - 3 = Wideband
 - 4 = Filter
- MS_n Connect input of Multiplex output stage to different sources as follows:
 - 0 = Ground
 - 1 = External signal
 - 3 = Wideband
 - 4 = Filter
- LL_n Local Lockout Bit Mask. The number, n, is the value comprised of the sum of the bits that have been set to lock out a particular function.
 - Gain = 1
 - Filter = 2
 - Zero = 4
 - Excitation = 8
 - Calibration = 16
 - Operate = 32
 - Wakeup = 64
- SC_n Shunt calibration select according to n. The specific codes are determined by the user specified Configuration Card shunt calibration operation.
- RC Reset overload occurrence counter
- SE Sleep enabled
- SD Sleep disabled
- IE Analog overload interrupt enabled
- ID Analog overload interrupt disabled
- ME Place output on rack multiplexer
- MD Remove output from rack multiplexer
- RD Reset all parameters to default

BINARY FORMAT COMMANDS

In addition to the high-level ASCII command set, there are more than 100 low-level binary format commands to provide for maximum programmable utilization of the amplifier system. Example; Low-level binary commands allow the filter to be programmed from 1Hz to 30kHz with 1% resolution.

SOFTWARE

Menu driven PC software giving full remote control of a Model 765/R735 System is available for use in maintenance and servicing.

PHYSICAL SPECIFICATIONS

These instruments are designed to be used in a controlled environment subject to the normal handling of electronic test equipment. They are ruggedly constructed to withstand removal and transportation for routine calibration and service. The following are minimum environmental specifications:

TEMPERATURE RANGE

0 to 55°C operating. Storage from -25 to +71°C.

HUMIDITY

5 to 95%, noncondensing.

SHOCK

5g, vertical; 2g, horizontal

POWER

105Vac to 125Vac or 210Vac to 250Vac, 50 to 60 Hz.

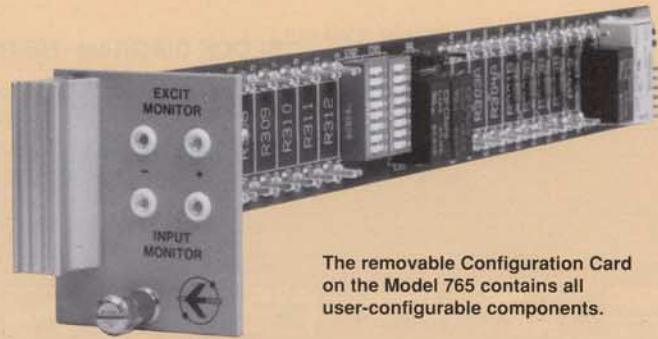
DIMENSIONS AND WEIGHT

MODEL 765 AMPLIFIER:

178mm (7") High
43mm (1.7") Wide
419mm (16.5") Deep
Weight less than 2.7kg (6.0lbs)

MODEL R735 ENCLOSURE:

178mm (7.0") High
483mm (19.0") Wide
610mm (24.0") Deep including connectors
Weight 7.5kg (16.5lbs)



The removable Configuration Card on the Model 765 contains all user-configurable components.



The Model R735 Rack mount enclosure rear panel

SAFETY

For personal safety, the frame of each amplifier/conditioner and the enclosure are connected to power ground and isolated from all signal inputs and outputs.

Model S765 Single Unit Bench Mount



ORDERING INFORMATION

- | | |
|----------------|---|
| MODEL 765 | PROGRAMMABLE TRANSDUCER
CONDITIONING AMPLIFIER |
| MODEL 765-1 | PROGRAMMABLE TRANSDUCER
CONDITIONING AMPLIFIER WITH
100mA OUTPUT OPTION |
| MODEL R735 | RACK MOUNT ENCLOSURE |
| MODEL S765 | SINGLE UNIT BENCH MOUNT |
| MODEL I765 | BENCH MOUNT IEEE-488 INTERFACE
UNIT (Controls up to four Model 765s.
Not required with R735.) |
| P/N 735-511-01 | FILLER PANEL (Single Channel) |

Specifications subject to change without notice.



Rear view



Model I765 Bench Mount IEEE-488 Interface Unit
(Controls up to four Model 765s. Not required with R735.)



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