SERIES I
TRANSDUCER INTERFACE AND DISPLAY

FEATURES
- Interfaces with Quartzdyne® and other frequency-based pressure transducers
- Internal frequency counter and microprocessor
- Computes pressure and temperature
- 6-digit display of frequencies, pressure, or temperature
- ¼ DIN package
- Computer interface via RS-232/422/485
- Built-in multiplex capability
- Long distance data transmission to computer: up to 1 km using RS-422/485
- User-selectable units, span, and zero adjustment

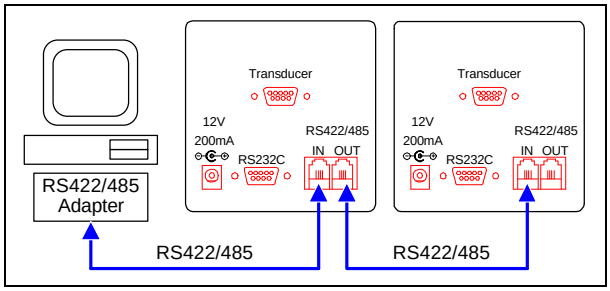
APPLICATIONS
- Laboratory testing
- Field calibration transfer standard

DESCRIPTION
The QUARTZDYNE® SERIES I TRANSDUCER INTERFACE AND DISPLAY incorporates a frequency counter and microprocessor to compute pressure and temperature from the frequency outputs of QUARTZDYNE® transducers. The SERIES I is a 6.5 inch [16.5 cm] deep ¼ DIN enclosure which provides a 6-digit display of frequency, pressure, or temperature, and can transmit this information to your computer using RS-232 or RS-422/485.

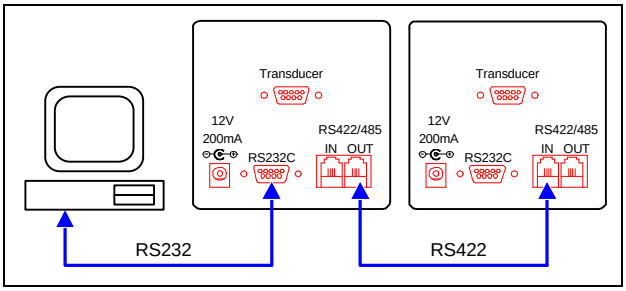
The serial computer interface allows the user to select the units of pressure and temperature, and permits re-zeroing and span adjustments. The user can select which data is transmitted to the computer. (The data transmitted includes one additional digit which is not shown on the display.) The transducer coefficient file (which is used to compute pressure) can be checked by reading the battery-backed memory of the SERIES I; for use with another transducer, a new file can be written into this memory. User-selected options (such as units of pressure and temperature, and which data is displayed) can be written to memory, so that the SERIES I operates in the desired mode on "power-up."

The SERIES I provides several options for serial communications with your computer. All interface options, including built-in multiplexing capability, are standard on the SERIES I. The software commands are the same for each option; the user selects the interface option by the wiring connection–RS-232 via the DB-9 connector on the back panel of the SERIES I, or RS-422/485 via the RJ-11 connectors.

The user may implement RS-232, four-wire RS-422, or two-wire RS-485 as the "master" link between the computer and the "first" SERIES I. In multi-unit systems, all subsequent links are via RS-422. The SERIES I uses RJ-11 connectors and flat "telephone" cable for all RS-422/485 links. (If the transmission distance makes it impractical to run new wiring, existing runs of twisted pairs may be used in the RS-485 mode.) In the RS-422/485 network, the signal passes directly through each SERIES I, so loss of electrical power in one unit will not interfere with communication to subsequent units.



RS422 or RS485 Mode. Up to 31 devices may be connected in series. AC-coupled termination pods may be necessary for long cable runs (up to 1 km).



RS232 translation mode. Additional devices may be connected using RS422 cables.

COMMUNICATION

The Transducer Interface monitors RS232 RXD (3) and both RS422 lines for activity.
..... Responses are placed on RS232 TXD (2) and RS422 XMT (2,5).
..... 2-wire RS485 operation uses only XMT (2,5).
RS232 Translation Mode requires 4 wire RS422 cables.
..... Activity on RS232 RXD (3) is echoed to RS422 RCV (3,4) simulating a DTE device.
..... Activity on RS422 XMT (2,5) is echoed to RS232 TXD (2).

ENVIRONMENTAL

Operating Temperature ..... 0 to 60°C
Storage Temperature ..... -40 to +80°C
Hermeticity ..... Dust Proof

ELECTRICAL

Power Supply Connector ..... 5.5 x 2.1 mm, center positive
alternate ..... Pin 9 of RS232 connector
Supply Voltage ..... 9 to 15 VDC
Supply Current ..... 200 mA maximum
..... 45 mA typical (Series I only)
..... 65 mA typical with QS Transducer (3 m cable)
..... 85 mA typical with TCXO Option and QS

FREQUENCY INPUTS	**Pressure/Temperature**	**Reference**
Frequency Range	1 kHz to 100 kHz	5 MHz to 10 MHz
Input Voltage	1 to 5 Vpp	1 to 5 Vpp
Input Impedance	10 kÙ to 0.6 VDC	220 pF AC coupled

CABLING

RS232 ..... 15 m maximum; shielded cable recommended
RS422/RS485 ..... 1 km maximum; two twisted pair
Transducer ..... 3 m typical, dependent on transducer SERIES

OPTIONS

TCXO ..... 10 MHz ± 3 ppm 0 to 60°C; 1 ppm/yr aging
Transducer Supply Voltage ..... 5 VDC ± 5% Standard, 9 - 15 VDC optional

DATA LOGGING

RAM ..... 96K lithium battery backed (Panasonic BR2330)
Data Points ..... 12,288 (pressure only); 8,192 (pressure + temperature)
Data Retention ..... 1 to 2 years typical with replaceable lithium battery

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