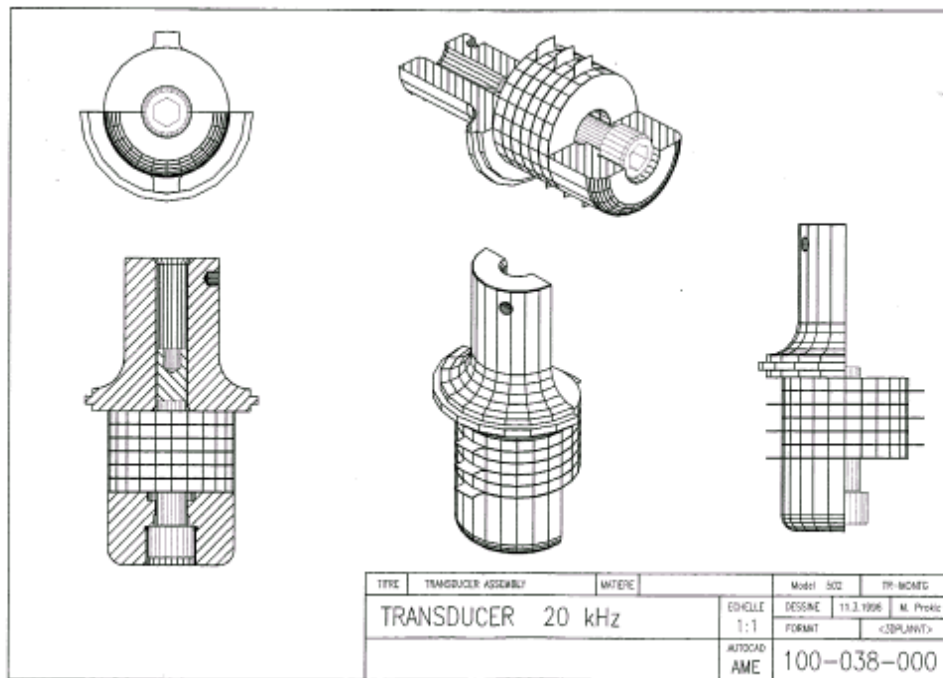


## **BRANSON 502 CONVERTER SPECIFICATION**



**Fig. 17 BRANSON converter model 502/932R**

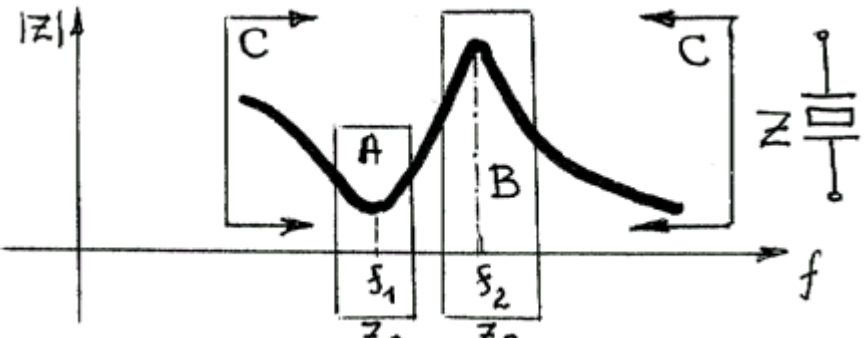
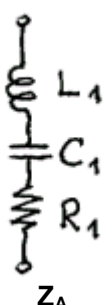
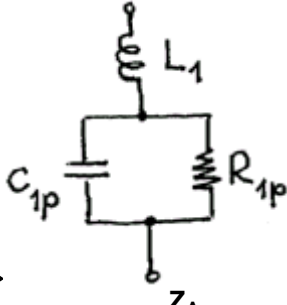
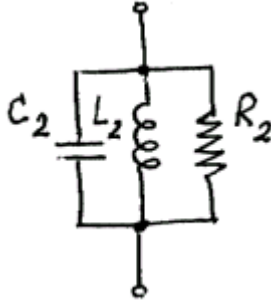
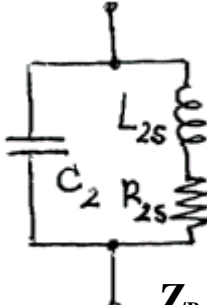
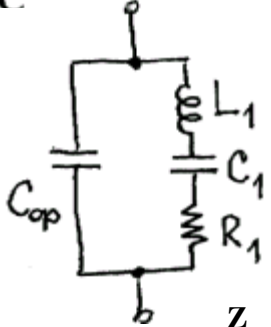
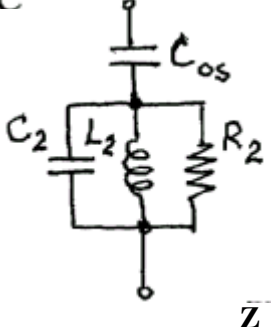
- Total axial length of the transducer  $L = 120$  mm
- Largest middle diameter  $D_{\text{max.}} = 69.5$  mm
- Front emitting surface diameter  $D_{\text{min.}} = 38$  mm
- Back mass diameter  $D_{\text{back}} = 51$  mm
- Threaded hole in the front mass UNF 20,  $\frac{1}{2}$ " (free hole length 27mm)

**T 1.5 BRANSON 502/932R, Typical Model Parameters Variations**

	In Series Resonance	In Parallel Resonance
<b>Model Parameters for Non-Loaded Converter (Measured on the random, standard-production-quality sample &gt; 100 pcs. of converters, taken after assembling)</b>	$C_{0p} \in [15.3 - 18.1] \text{ nF}, \pm 3\%$ $C_1 \in [3.92 - 4.05] \text{ nF},$ $L_1 \in [17.53 - 18.7] \text{ mH}$ $R_1 \in [1.75 - 4.6] \Omega, \pm 20\%$ $f_1 \in [18435 - 18905] \text{ Hz}, \pm 0.5\%$ $Q_{m01} \in \langle Q_{m01} \rangle \pm 20\%$	$C_{0s} \in [18.7 - 22.05] \text{ nF}, \pm 3\%$ $C_2 \in [79 - 101.53] \text{ nF},$ $L_2 \in [570.50 - 747] \mu\text{H},$ $R_2 \in [94 - 250] \text{ K}\Omega, \pm 20\%$ $f_2 \in [20635 - 20912] \text{ Hz}, \pm 0.5\%$ $Q_{m02} = \langle Q_{m02} \rangle \pm 20\%$

**T 4.6 Piezoceramics measurements and Models**  
**Piezoceramic Ring: Vernitron, PZT8, Ø2"xØ0.8"x0.2"**

**First Radial Resonance Parameters**

$f_1 = 32880 \text{ Hz}$ $f_2 = 34880 \text{ Hz}$ $ Z_{\min}  = 12.8724 \Omega$ $ Z_{\max}  = 256.861 \text{ k}\Omega$ $Q_{m10} = 1129$ $Q_{m20} = 1385$			
<b>A</b>  $Z_A$	$C_1 = 336.812 \text{ pF}$ $L_1 = 69.5565 \text{ mH}$ $R_1 = 12.6210 \Omega$	<b>A</b>  $Z_A$	$C_{1p} = 336.812 \text{ pF}$ $L_1 = 69.5565 \text{ mH}$ $R_{1p} = 16.8762 \text{ M}\Omega$
<b>B</b>  $Z_B$	$C_2 = 24.2667 \text{ nF}$ $L_2 = 857.904 \mu\text{H}$ $R_2 = 260.045 \text{ k}\Omega$	<b>B</b>  $Z_B$	$C_2 = 24.2667 \text{ nF}$ $L_{2s} = 857.903 \mu\text{H}$ $R_{2s} = 142.611 \text{ m}\Omega$
<b>C</b>  $Z$	$C_{op} = 2.68554 \text{ nF}$ $C_1 = 336.552 \text{ pF}$ $L_1 = 69.6164 \text{ mH}$ $R_1 = 12.741 \Omega$	<b>C</b>  $Z$	$C_{os} = C_{op} + C_1 = 3.0221 \text{ nF}$ $C_2 = 24.26 \text{ nF}$ $L_2 = 857.9 \mu\text{H}$ $R_2 = 260.045 \text{ k}\Omega$