

PULSE WAVE/PCG TRANSDUCER

model TK-701T

Designed for Detecting Apex-cardiogram (ACG)/Phonocardiogram (PCG), Carotid Artery Pulse, Jugular Venous Pulse or Subclavian Venous Pulse, for Mechanocardiography. An air-conductive method for multiple applications.



The TK-701T is a pulse wave/phonocardiogram transducer utilizing a piezoelectric element (perovskite ABO₃ type compound). It is designed to be placed on various areas of the body with the aid of a strap or an adhesive collar for detection of ACG and PCG as well as other pulse waves. These parameters can be useful diagnostic information in mechanocardiography, offering non-invasive features for cardio-vascular diagnostics. The transducer is shown with its detecting surface down. The jugular venous pulse, carotid arterial pulse, or a mixture of ACG/PCG can be detected without using any adaptor. For detection of ACG, the wide-bored adaptor is used, while for the

detection of the carotid arterial or subclavian venous pulse, the nipple adaptor is used. For ACG/PCG measurement, the transducer is held on the apex cord by means of the accessory strap. As the detected signal contains frequency elements for both ACG and PCG ranges, they are separated afterward by filtering in the ACG/CAP Coupler, AK-650H (Block diagram below). For jugular venous pulse measurement, the transducer is affixed with the aid of an adhesive collar to the point where the jugular vein is palpable. The exterior of the transducer is made of plastic molding to isolate the patient from the circuit for safety.

SPECIFICATIONS

- 1) **Sensitivity:** Greater than -70dB (0dB = 1V/ μ bar)
- 2) **Time Constant:** 1.8 sec. or greater; an input impedance of 20M Ω /0.1 μ F, differential.
- 3) **Resonance Frequency:** 1kHz
- 4) **Linearity:** In a sound pressure range of up to 1000 μ bar (at 100Hz), \pm 3dB
- 5) **Internal Capacitance:** 1000pF
- 6) **Dimensions and Net Weight:** 30mm diameter X 16mm thick, approx. 15 grams, transducer only
- 7) **Connector Plug Used:** Hirschman MAS-5100S
- 8) **Patient Leak Current:** 100 μ V or less (240V AC 50Hz)

SAMPLE COMBINATIONS FOR CLINICAL MECHANOGRAPHY

| | Channels | Parameters | Transducers Used |
|----------------------------------|----------|-------------------------------|--------------------|
| Test of Right Ventricular System | Ch. 1 | ECG (Lead II or chest) | |
| | Ch. 2 | PCG (Pulmonary arterial area) | TK-701T or TA-601T |
| | Ch. 3 | Jugular venous pulse | TK-701T |
| | Ch. 4 | PCG (Tricuspid area) | TK-701T or TA-601T |
| Test of Left Ventricular System | Ch. 1 | ECG (Lead II or chest) | |
| | Ch. 2 | PCG (Aortic area) | TK-701T or TA-601T |
| | Ch. 3 | Carotid arterial pulse | TF-601T or TK-701T |
| | Ch. 4 | PCG (Mitral area) | TK-701T or TA-601T |

| | Channels | Parameters | Transducers Used |
|--|----------|---|-------------------------------|
| Test of Apex Beats | Ch. 1 | ECG (Lead II or chest) | |
| | Ch. 2 | PCG (As required) | TK-701T or TA-601T |
| | Ch. 3 | Apexcardiogram | TK-701T |
| | Ch. 4 | PCG Point of Maximum impulse, low frequency portion | TK-701T or TA-601T |
| Observation of the Split of the Second PCG Sound Caused by Respiration | Ch. 1 | ECG (Lead II or chest) | |
| | Ch. 2 | PCG Pulmonary arterial area, high frequency portion | TK-701T or TA-601T |
| | Ch. 3 | Respiration curve or Carotid arterial pulse | See Page 8 TF-601T or TK-701T |
| | Ch. 4 | PCG Tricuspid area, high frequency portion | TK-701T or TA-601T |

TRANSDUCER PLACEMENT BY A STRAP OR ADHESIVE COLLAR

• ACG/PCG MEASUREMENT



• JUGULAR VENOUS PULSE MEASUREMENT



Adhesive Collars, NK Parts No. 509 0063

- * With 30mm outer diameter.
- * Used for application to the body site for JVP measurement.
- * 3 pcs. on a sheet, 100 sheets in bag.

SAMPLE SYSTEM COMPOSITION

Polygraph Systems RM-6000/6200/6300, Mini-Polygraph RM-6100

