

## Potentiometer conductive plastic linear

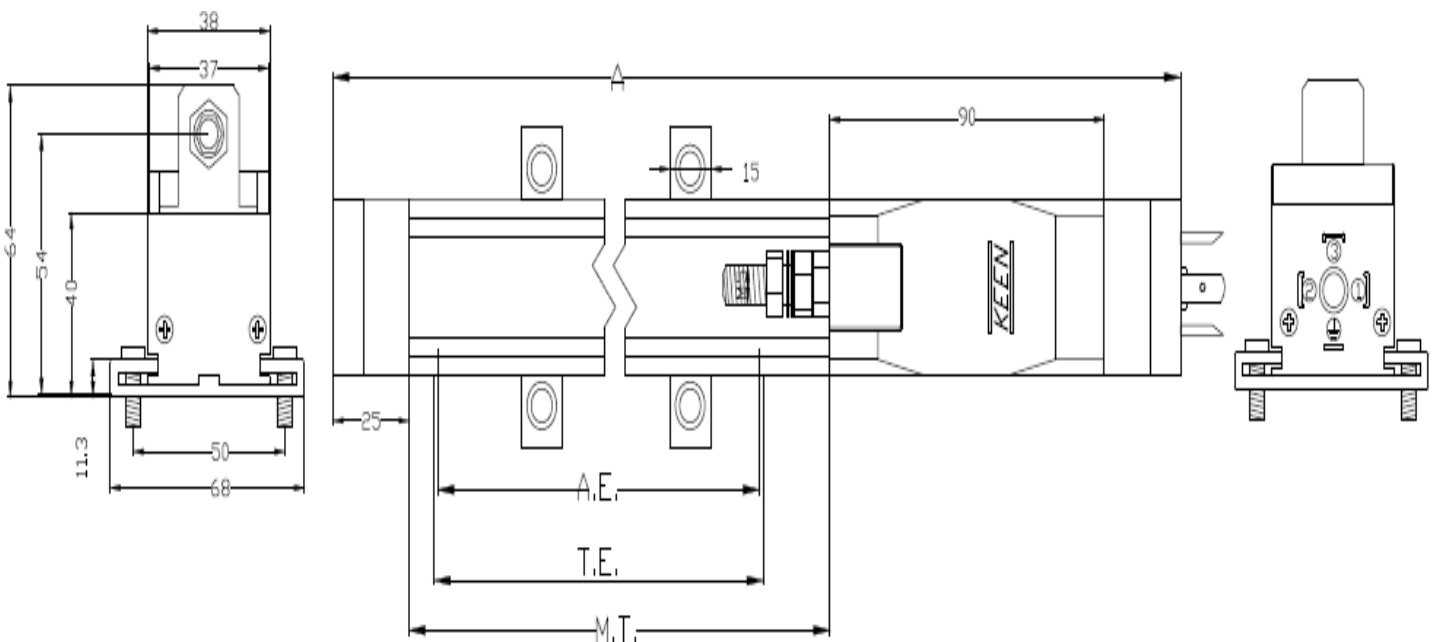
KTF potentiometer transducer with conductive track suitable for the measurement, monitoring and control of mechanical strokes. Critical in providing a smooth DC output, mechanically dependent on the stable glide of the shaft and wiper on the element's surface. Application includes industrial controls, robotics, process systems or replacement of a linear voltage differential transformer (LVDT). Ideal for applications on plastic injection presses, vertical presses, and on many other processing machines.

### Feature:

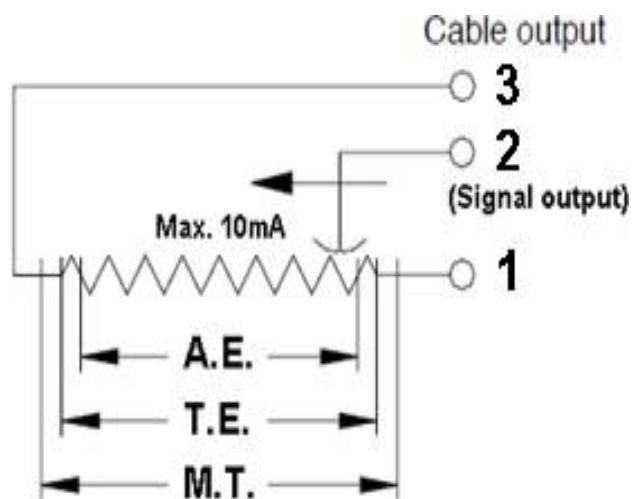
- Rodless design
- Very high operating speed
- Ball coupling avoids side loads
- Anodized aluminum case
- Brushes for both collector and resistive tracks in noble metal
- Conductive plastic track on polymer base
- Infinite resolution
- Protection level IP54
- Life time >  $100 \times 10^6$
- travelled >  $25 \times 10^6$  meters
- Repeatability within 0.01 mm



### MECHANICAL DIMENSIONS: (Unit : mm)



**ELECTRICAL CONNECTIONS:**



**ACCESSORIES:**

**STANDARD:**

Fixing kit for KTF from 75 to 900: 2 brackets, M4 screws

Fixing kit for KTF from 1000 to 1500: 3 brackets, M4 screws

4-pole 90° radial female connector DIN43650



**ON REQUEST:**

M5 Universal joint

## ELECTRICAL / MECHANICAL DATA ( 75 ~ 650 )

| KTF series   | 75   | 100 | 150 | 175 | 200 | 225 | 250 | 300 | 350 | 375 | 400 | 450 | 500 | 525 | 600 | 650              |
|--|--|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------------------|
| Useful electrical stroke (A.E.) mm                   | 75   | 100 | 150 | 177 | 203 | 226 | 253 | 302 | 353 | 378 | 403 | 455 | 503 | 531 | 607 | 653              |
| Resistance (T.E.) $\pm 20\%$                         | 5 K $\Omega$   |     |     |     |     |     |     |     |     |     |     |     |     |     |     | 6.9k<br>$\Omega$ |
| Independent linearity within A.E.                    | $\pm 0.05\%$   |     |     |     |     |     |     |     |     |     |     |     |     |     |     |                  |
| Mechanical stroke (M.T.) mm                          | 79   | 104 | 155 | 181 | 207 | 231 | 258 | 307 | 358 | 384 | 409 | 460 | 508 | 536 | 612 | 658              |
| Case length (A) mm                                   | 218  | 245 | 296 | 321 | 347 | 372 | 398 | 448 | 499 | 525 | 550 | 601 | 652 | 677 | 753 | 804              |
| Resolution   | infinite   |     |     |     |     |     |     |     |     |     |     |     |     |     |     |                  |
| Repeatability  | 0.01mm   |     |     |     |     |     |     |     |     |     |     |     |     |     |     |                  |
| Electrical connections                               | 4-pole connector DIN43650  |     |     |     |     |     |     |     |     |     |     |     |     |     |     |                  |
| Displacement speed                                   | $\leq 10\text{m/s}$ (Standard)                                     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |                  |
| Protection level                                     | IP54   |     |     |     |     |     |     |     |     |     |     |     |     |     |     |                  |
| Life   | 25x10 <sup>6</sup> M or 100x10 <sup>6</sup> strokes                |     |     |     |     |     |     |     |     |     |     |     |     |     |     |                  |
| Displacement force                                   | $\leq 1.2\text{N}$   |     |     |     |     |     |     |     |     |     |     |     |     |     |     |                  |
| Vibrations   | 5 ~ 2000Hz, Amax =0.75 mm, amax. = 20 g                            |     |     |     |     |     |     |     |     |     |     |     |     |     |     |                  |
| Shock  | 50 g, 11ms   |     |     |     |     |     |     |     |     |     |     |     |     |     |     |                  |
| Acceleration operative                               | 200 m/S <sup>2</sup> max (20g)                                     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |                  |
| Recommended cursor current                           | < 1 $\mu\text{A}$  |     |     |     |     |     |     |     |     |     |     |     |     |     |     |                  |
| Max. cursor current                                  | 10mA   |     |     |     |     |     |     |     |     |     |     |     |     |     |     |                  |
| Maximum applicable voltage                           | 60V  |     |     |     |     |     |     |     |     |     |     |     |     |     |     |                  |
| Electrical isolation                                 | >100M $\Omega$ @ 500V,1bar,2s                                      |     |     |     |     |     |     |     |     |     |     |     |     |     |     |                  |
| Dielectric strength                                  | < 100 $\mu\text{A}$ @ 500V ,50Hz, 2s,1bar                          |     |     |     |     |     |     |     |     |     |     |     |     |     |     |                  |
| Dissipation  | 3W @40°C, 0W @120°C  |     |     |     |     |     |     |     |     |     |     |     |     |     |     |                  |
| Thermal coefficient of resistance                    | -200 ~ + 200 ppm/°C (typical)                                      |     |     |     |     |     |     |     |     |     |     |     |     |     |     |                  |
| Actual Temperature Coefficient of the output voltage | $\leq 5\text{ppm}/^\circ\text{C}$ typical                          |     |     |     |     |     |     |     |     |     |     |     |     |     |     |                  |
| Working temperature                                  | -55 ~ +125 °C  |     |     |     |     |     |     |     |     |     |     |     |     |     |     |                  |
| Storage temperature                                  | -55 ~ +150 °C  |     |     |     |     |     |     |     |     |     |     |     |     |     |     |                  |
| Material for transducer case                         | Anodized aluminum Nylon  |     |     |     |     |     |     |     |     |     |     |     |     |     |     |                  |
| Mounting   | Brackets with adjustable distance between centers or with M5 screw |     |     |     |     |     |     |     |     |     |     |     |     |     |     |                  |

## ELECTRICAL / MECHANICAL DATA ( 750 ~1500 )

| KTF series   | 750  | 800          | 900  | 1000 | 1250 | 1500 |
|--|--|--------------|------|------|------|------|
| Useful electrical stroke (A.E.) mm                   | 759  | 803          | 912  | 1013 | 1263 | 1513 |
| Resistance (T.E.) $\pm 20\%$                         | 10 K $\Omega$  | 9 K $\Omega$ | 10K  |      | 13K  | 16K  |
| Independent linearity within A.E.                    | $\pm 0.05\%$   |              |      |      |      |      |
| Mechanical stroke (M.T.) mm                          | 765  | 809          | 917  | 1019 | 1269 | 1519 |
| Case length (A) mm                                   | 906  | 965          | 1058 | 1160 | 1410 | 1662 |
| Resolution   | infinite   |              |      |      |      |      |
| Repeatability  | 0.01mm   |              |      |      |      |      |
| Electrical connections                               | 4-pole connector DIN43650  |              |      |      |      |      |
| Displacement speed                                   | $\leq 10\text{m/s}$ (Standard)                                     |              |      |      |      |      |
| Protection level                                     | IP54   |              |      |      |      |      |
| Life   | 25x10 <sup>6</sup> M or 100x10 <sup>6</sup> strokes                |              |      |      |      |      |
| Displacement force                                   | $\leq 1.2\text{N}$   |              |      |      |      |      |
| Vibrations   | 5 - 2000Hz, Amax =0.75 mm, amax. = 20 g                            |              |      |      |      |      |
| Shock  | 50 g, 11ms   |              |      |      |      |      |
| Acceleration operative                               | 200 m/S <sup>2</sup> max (20g)                                     |              |      |      |      |      |
| Recommended cursor current                           | < 1 $\mu\text{A}$  |              |      |      |      |      |
| Max. cursor current                                  | 10mA   |              |      |      |      |      |
| Maximum applicable voltage                           | 60V  |              |      |      |      |      |
| Electrical isolation                                 | >100M $\Omega$ @ 500V,1bar,2s                                      |              |      |      |      |      |
| Dielectric strength                                  | < 100 $\mu\text{A}$ @ 500V ,50Hz, 2s,1bar                          |              |      |      |      |      |
| Dissipation  | 3W @40°C, 0W @120°C  |              |      |      |      |      |
| Thermal coefficient of resistance                    | -200 ~ + 200 ppm/°C (typical)                                      |              |      |      |      |      |
| Actual Temperature Coefficient of the output voltage | $\leq 5\text{ppm}/^\circ\text{C}$ typical                          |              |      |      |      |      |
| Working temperature                                  | -55 ~ +125 °C  |              |      |      |      |      |
| Storage temperature                                  | -55 ~ +150 °C  |              |      |      |      |      |
| Material for transducer case                         | Anodized aluminum Nylon  |              |      |      |      |      |
| Mounting   | Brackets with adjustable distance between centers or with M5 screw |              |      |      |      |      |