

# BATTERY VALVES (Low filament current series) WITH SIDE CONTACT BASES

| Type Number | Valve type          | Maximum dimensions<br>mm | Base (Connection reference in brackets) <sup>11)</sup> | Application (see p. 2) | Filament data |               |               | Anode voltage V <sub>a</sub><br>Volts | Anode current I <sub>a</sub><br>mA | Neg. grid bias V <sub>g1</sub><br>Volts | Screen-grid voltage V <sub>g2</sub><br>Volts | Screen-grid current I <sub>g2</sub><br>mA | Voltage on grids 3 (and 5) V <sub>g3(5)</sub><br>Volts | Voltage on grid 4 V <sub>g4</sub><br>Volts | Mutual conduct. S<br>mA/V | Amplification factor μ | Internal resistance R <sub>i</sub><br>Ohms | External anode resist. or optimum matching imped. R <sub>a</sub><br>Ohm | Output at 10% distortion W <sub>o</sub><br>Watts | Grid A.C. voltage at the indicated output V <sub>i</sub><br>V R.M.S. | Max. anode dissipation W <sub>a max</sub><br>Watts | Grid anode capacity C <sub>ag1</sub><br>μμF | Type Number |
|-------------|---------------------|--------------------------|--------------------------------------------------------|------------------------|---------------|---------------|---------------|---------------------------------------|------------------------------------|-----------------------------------------|----------------------------------------------|-------------------------------------------|--------------------------------------------------------|--------------------------------------------|---------------------------|------------------------|--------------------------------------------|-------------------------------------------------------------------------|--------------------------------------------------|----------------------------------------------------------------------|----------------------------------------------------|---------------------------------------------|-------------|
|             |                     |                          |                                                        |                        | Heating       | Voltage Volts | Current Amps. |                                       |                                    |                                         |                                              |                                           |                                                        |                                            |                           |                        |                                            |                                                                         |                                                  |                                                                      |                                                    |                                             |             |
| KK2         | Octode              | 120 × 46                 | P35 (37)                                               | 4                      | dir.          | 2,0           | 0,13          | 135                                   | 0,71)<br><0,015                    | 0                                       | 135                                          | 2,1 *)                                    | 45                                                     | —0,5<br>—12                                | 0,2710)<br><0,002         | —                      | 2,5.10*<br>> 10 <sup>7</sup>               | —                                                                       | —                                                | —                                                                    | —                                                  | <0,07*)                                     | KK2         |
|             |                     |                          |                                                        |                        |               |               |               | 90                                    | 0,71)<br><0,015                    | 0                                       | 90                                           | 1,3 *)                                    | 45                                                     | —0,5<br>—12                                | 0,2710)<br><0,002         | —                      | 2,0.10*<br>> 10 <sup>7</sup>               |                                                                         |                                                  |                                                                      |                                                    |                                             |             |
|             |                     |                          |                                                        |                        |               |               |               | 135                                   | 1,0*)                              | 0                                       | 135                                          | 2,3 *)                                    | 60                                                     | —1,5                                       | 0,2710)                   | —                      | 1,7.10*                                    |                                                                         |                                                  |                                                                      |                                                    |                                             |             |
| KF3         | Variable-Mu Pentode | 102 × 40                 | P30 (29)                                               | 1, 2, 5                | dir.          | 2,0           | 0,045         | 135                                   | 2,0<br><0,015                      | —0,5<br>—15                             | 135                                          | 0,6                                       | 0                                                      | —                                          | 0,65<br><0,002            | 850                    | 1,3.10*<br>> 10 <sup>7</sup>               | —                                                                       | —                                                | —                                                                    | —                                                  | <0,006                                      | KF3         |
|             |                     |                          |                                                        |                        |               |               |               | 90                                    | 1,0<br><0,015                      | —0,5<br>—10                             | 90                                           | 0,3                                       | 0                                                      | —                                          | 0,5<br><0,002             | 1000                   | 2,0.10*<br>> 10 <sup>7</sup>               |                                                                         |                                                  |                                                                      |                                                    |                                             |             |
| KF4         | H.F. Pentode        | 102 × 40                 | P30 (29)                                               | 1, 2, 7, 8, 11         | dir.          | 2,0           | 0,065         | 135                                   | 2,6                                | —0,5                                    | 135                                          | 1,0                                       | 0                                                      | —                                          | 0,8                       | 800                    | 1,0.10*                                    | —                                                                       | —                                                | —                                                                    | —                                                  | <0,006                                      | KF4         |
|             |                     |                          |                                                        |                        |               |               |               | 90                                    | 1,2                                | —0,5                                    | 90                                           | 0,4                                       | 0                                                      | —                                          | 0,7                       | 900                    | 1,3.10*                                    |                                                                         |                                                  |                                                                      |                                                    |                                             |             |
| KB2         | Duodiode            | 72 × 30                  | V24 (53)                                               | 13                     | indir.        | 2,0           | 0,095         | —                                     | —                                  | —                                       | —                                            | —                                         | —                                                      | —                                          | —                         | —                      | —                                          | —                                                                       | —                                                | —                                                                    | —                                                  | —                                           | KB2         |
| KC1         | Triode              | 90 × 44                  | P30 (24)                                               | 7, 11                  | dir.          | 2,0           | 0,065         | 135                                   | 1,2                                | —1,5                                    | —                                            | —                                         | —                                                      | —                                          | 0,6                       | 25                     | 40.000                                     | —                                                                       | —                                                | —                                                                    | 0,5                                                | 3,5                                         | KC1         |
|             |                     |                          |                                                        |                        |               |               |               | 90                                    | 0,3                                | —1,5                                    | —                                            | —                                         | —                                                      | 0,4                                        | 25                        | 60.000                 |                                            |                                                                         |                                                  |                                                                      |                                                    |                                             |             |
| KC3         | Triode              | 92 × 43                  | P30 (24)                                               | 10                     | dir.          | 2,0           | 0,21          | 135                                   | 3,0                                | —2,3                                    | —                                            | —                                         | —                                                      | —                                          | 2,5                       | 30                     | 12.000                                     | —                                                                       | —                                                | —                                                                    | —                                                  | —                                           | KC3         |
| KBC1        | Duodiode-Triode     | 112 × 47                 | P35 (27)                                               | 9                      | dir.          | 2,0           | 0,1           | 135                                   | 2,5                                | —4,5                                    | —                                            | —                                         | —                                                      | —                                          | 1,0                       | 16                     | 16.000                                     | —                                                                       | —                                                | —                                                                    | —                                                  | —                                           | KBC1        |
|             |                     |                          |                                                        |                        |               |               |               | 90                                    | 1,0                                | —3,0                                    | —                                            | —                                         | —                                                      | 0,7                                        | 16                        | 23.000                 |                                            |                                                                         |                                                  |                                                                      |                                                    |                                             |             |
| KL4         | Power Pentode       | 100 × 42                 | P35 (30)                                               | 12                     | dir.          | 2,0           | 0,14          | 135                                   | 6,5                                | —5                                      | 135                                          | 1,0                                       | —                                                      | —                                          | 2,1                       | —                      | 150.000                                    | 19.000                                                                  | 0,44                                             | 3,3                                                                  | 1,0                                                | —                                           | KL4         |
|             |                     |                          |                                                        |                        |               |               |               | 90                                    | 4,7                                | —2,6                                    | 90                                           | 0,7                                       | —                                                      | —                                          | 1,8                       | —                      | 170.000                                    | 19.000                                                                  | 0,16                                             | 2,0                                                                  |                                                    |                                             |             |
| KDD1        | Double Triode       | 92 × 43                  | P30 (47)                                               | 16                     | dir.          | 2,0           | 0,22          | 135                                   | 2 × 1,5*)                          | 0                                       | —                                            | —                                         | —                                                      | —                                          | —                         | —                      | —                                          | 10.000*)                                                                | 2,0 *)                                           | —                                                                    | —                                                  | —                                           | KDD1        |

<sup>1)</sup> The data of this horizontal column apply for the oscillating condition at  $V_{osc} = 8,5 V_{R.M.S.}$  ( $I_{g1} = 100 \mu A$ ) and for long and medium wave reception. The grid leak resistance amounts to 50,000 ohms and is connected to the neutral.

<sup>2)</sup> The data of this horizontal column apply for the oscillating condition at  $V_{osc} = 6 V_{R.M.S.}$  ( $I_{g1} = 60 \mu A$ ) and for short wave reception. In this range the valve must not be controlled by A.V.C. The grid leak resistance amounts to 50,000 ohms and is connected to the neutral.

<sup>3)</sup> Screen-grid current  $I_{g3} + I_{g5} = 0,7 \text{ mA}$ .

<sup>4)</sup> Screen-grid current  $I_{g3} + I_{g5} = 0,6 \text{ mA}$ .

<sup>5)</sup> Screen-grid current  $I_{g3} + I_{g5} = 1,0 \text{ mA}$ .

<sup>6)</sup> Quiescent current, anode current at full load =  $2 \times 14 \text{ mA}$ .

<sup>7)</sup> From anode to anode.

<sup>8)</sup> Ratio of intervalve transformer =  $2 : (1 + 1)$  (primary to secondary turns). Driver valve KC 3, required A.C. voltage on grid of KC 3 =  $2 V_{R.M.S.}$ .

<sup>9)</sup> Capacity between anode and grid 4.

<sup>10)</sup> Conversion conductance.

<sup>11)</sup> See page 15. The numeral after the letter gives the maximum base diameter in mm.

## PHILIPS NEON TUNING INDICATOR

| Type Number | Dimensions without pins<br>mm | Base (Connection reference in brackets) | Striking voltage at the auxiliary anode $V_{a_2}$<br>Volts | Operating voltage at the main anode $V_{a_1}$<br>Volts | Main anode current at fully lighted cathode $V_{a_1}$<br>mA | Auxiliary anode current $I_{a_2}$<br>$\mu A$ |
|-------------|-------------------------------|-----------------------------------------|------------------------------------------------------------|--------------------------------------------------------|-------------------------------------------------------------|----------------------------------------------|
| 4662        | 98 × 13                       | Small, 4-pin (XV, see page 12)          | 165—190                                                    | 150—170                                                | 2                                                           | 40—50                                        |

NEW "MINIWATT" VALVES MODERNISE YOUR RECEIVER