## Claims

1. A key (1) for a cylinder lock, comprising at least one encoded lateral surface (3, 3'), which extends along ~~the~~ a longitudinal direction (2) of the key (1),
    a. wherein at least one code (4) to be read in the cylinder lock is provided on the lateral surface (3, 3'),
    b. wherein the code (4) comprises a first reading surface (5), which extends in the longitudinal direction (2) of the key (1), and a second reading surface (5'), which extends in the longitudinal direction (2) of the key (1),
    c. wherein the reading surfaces (5, 5') are arranged offset from one another in a transverse direction (6, 6') of the key (1),

    ~~characterized~~wherein

    d. ~~in that~~ the reading surfaces (5, 5') are arranged offset from one another in the longitudinal direction (2), and
    e. ~~in that~~ their respective cross-sections have the shape of a continuous and preferably periodical curve,

    characterized in that

    the curves are designed as sine curves or cosine curves, preferably over at least an entire period length.

~~2. The key according to Claim 1, characterized in that the curves are designed as sine curves or cosine curves, preferably over at least an entire period length.~~

~~3.~~2. The key (1) according to Claim 1 ~~or 2~~, characterized in that the reading surfaces (5, 5') are offset from one another in the longitudinal direction (2) in such a way that the curves formed in the cross-section are offset from one another in the longitudinal direction (2) by an angle of preferably 45° to 135°, preferably about 90°, so that the reading surfaces (5, 5') intersect along the longitudinal direction (2) in two or more scanning points (8).

~~4.~~3. The key (1) according to ~~one of~~ Claim~~s~~ 1 ~~to~~ or 2~~3~~, characterized in that the curves have a period length of ~~about~~ 4 mm to 25 mm, preferably ~~about~~ 7 mm to 15 mm, particularly preferably ~~about~~ 8 mm to 12 mm.

~~5.~~4. The key (1) according to any one of Claims 1 to 3~~4~~, characterized in that the curves have an amplitude of 0.1 mm to 1.5 mm, preferably 0.3 mm to 1.0 mm, particularly preferably 0.5 mm to 0.8 mm.

~~6.~~5. The key (1) according to any one of Claims 1 to ~~5~~4, characterized in that the reading surfaces (5, 5') are formed in the shape of recesses by milling or embossing the lateral surface (3, 3'), wherein linear or non-linear inlet bevels (7, 7') are optionally formed at the transition to the lateral surface (3, 3') on both sides.

~~7.~~6. The key (1) according to any one of Claims 1 to 5~~6~~, characterized in that the code (4) is only provided in sections along part of ~~the~~ a longitudinal extension of the key (1).

~~8.~~7. The key (1) according to any one of Claims 1 to 6~~7~~, characterized in that a magnetic element (10) is arranged in the code (4), preferably along the transverse direction (6, 6') between the first reading surface (5) and the second reading surface (5') and preferably at one of ~~the~~ scanning points (8).

~~9.~~8. The key (1) according to Claim 7~~8~~, characterized in that the magnetic element (10) is arranged centrally in the longitudinal direction (2) along the reading surfaces (5, 5').

~~10.~~9. The key (1) according to any one of Claims 1 to 8~~9~~, characterized in that the key (1) is a flat key, wherein the lateral surface (3, 3') is a~~the~~ broad side of the key and extends in a first transverse direction (6).

~~11.~~10. The key (1) according to any one of Claims 1 to 8~~9~~, characterized in that the key (1) is a flat key, wherein the lateral surface (3, 3') is a~~the~~ narrow side of the key and extends in a second transverse direction (6').

~~12.~~11. The key (1) according to any one of Claims 1 to 10~~1~~, characterized in that the codes on the lateral surfaces (3, 3') are identical so that the key (1) is a reversible key.

~~13.~~12. The key (1) according to any one of Claims 1 to 10~~1~~, characterized in that the codes on the lateral surfaces (3, 3') are different so that the key (1) is a non-reversible key.

~~14.~~13. The key (1) according to any one of Claims 1 to 12~~3~~, characterized in that the reading surfaces (5, 5') have an extension of ~~about~~ 1 mm to 10 mm, preferably 1.5 mm to 3.5 mm, particularly preferably ~~about~~ 2.0 to 3.0 mm, in the transverse direction (6, 6').

~~15.~~14. The key (1) according to any one of Claims 1 to 13~~4~~, characterized in that the reading surfaces (5, 5') are designed as a~~the~~ groove bottom of a preferably conical or rectangular incision by milling (9, 9') of the lateral surface (3), wherein the reading surfaces (5, 5') do not protrude beyond an~~the~~ outer cross-sectional profile of the key (1).

~~16.~~15. The key (1) according to any one of Claims 1 to 13~~4~~, characterized in that the reading surfaces (5a, 5a') are designed as a~~the~~ tip face or ridge of a preferably conical or rectangular, protruding material bar (11, 11') of the lateral surface (3), wherein the reading surfaces (5a, 5a') do not protrude beyond an~~the~~ outer cross-sectional profile of the key (1).

~~17.~~16. The key (1) according to any one of Claims 1 to 13~~6~~, characterized

a. in that a first code (4) is provided, the reading surfaces (5, 5') of which are designed as a~~the~~ groove bottom of a preferably conical or rectangular incision by milling (9, 9') of a first lateral surface (3, 3'), wherein the reading surfaces (5, 5') do not protrude beyond an~~the~~ outer cross-sectional profile of the key (1), and
b. in that a second code (4) is provided, the reading surfaces (5a, 5a') of which are designed as a~~the~~ tip face or ridge of a preferably conical or rectangular protruding material bar (11, 11') of that or another lateral surface (3, 3'), wherein the reading surfaces (5a, 5a') protrude beyond the outer cross-sectional profile of the key (1).

~~18.~~17. A system of a key (1) according to any one of the preceding claims and a scanning element of a cylinder lock, characterized in that the scanning element is configured to read the code (4) in order to lock the cylinder lock.

~~19.~~18. The system according to claim 17~~8~~, characterized in that the scanning element comprises a pin (12, 12') with a scanning tip (13), wherein the scanning tip (13) is adapted to the shape of the reading surfaces (5, 5', 5a, 5a') at the scanning points (8).

~~20.~~19. The system according to claim 17~~8~~, characterized in that the scanning element comprises a sideshift (14) with an end face (15), wherein the end face (15) is adapted to the shape of the reading surfaces (5, 5', 5a, 5a').

~~21.~~20. The system according to claim 19~~20~~, characterized in that the sideshift (14) comprises a magnetic element (16) in an~~the~~ area of its end face (15), the magnetic element being configured to cooperate with ~~the~~ a magnetic element (10) of the key (1).