

Claims

1. An endoscope comprising a handle comprising:
a proximal handle housing configured to house an electronic processing board for processing signals from an image sensor located at a distal end of a shaft of the endoscope;
a distal handle housing configured to hold the electronic processing board in a position fixed with respect to the distal handle section;
one or more rotation sensing magnets attached to an internal wall of the proximal handle housing, said rotation sensing magnets being located next to a first Hall effect sensor on the electronic processing board;
an electronic control button on the handle comprising a member including an electronic control magnet located above or adjacent a second Hall effect sensor on the electronic processing board, wherein the proximal handle housing is rotatable with respect to the distal handle housing, and the first Hall effect sensor is configured to provide a rotational position signal representing the relative rotation of the proximal handle housing with respect to the distal handle housing, and wherein the second Hall effect sensor is configured to provide a button position signal corresponding to a position of the electronic control button member with respect to the second Hall effect sensor.
2. The endoscope of claim 1, wherein the electronic processor is connected to a user interface displaying an image generated by the image sensor, and wherein a rotational orientation of the image is altered by a change in the relative rotation of the proximal handle housing with respect to the distal handle housing.
3. The endoscope of claim 1, wherein the electronic control button is located on the distal handle housing.
4. The endoscope of claim 1, wherein the second Hall effect sensor is configured to provide a button duration signal corresponding to a duration that the electronic control button member remains in a pre-determined position.

5. The endoscope of claim 4, wherein the second Hall effect sensor is configured to provide a combination signal corresponding to a pre-determined series of two or more depressions and releases of the electronic control button, or to a release of the electronic control button between two depressions having two or more variable durations.

6. The endoscope of claim 1, wherein the electronic control button is configured to cause an electronic controller communicating with the electronic processing board to start a recording of an image generated by the image sensor, to stop a recording of an image generated by the image sensor, or to take a photograph of an image generated by the image sensor, based on a movement or release of the button by a user.

7. The endoscope of claim 1, wherein the electronic control button is configured to cause an electronic controller communicating with the electronic processing board to turn on, turn off, or adjust a light source located at a distal insertion end of a shaft of the endoscope, based on a movement or release of the electronic control button by a user.

8. The endoscope of claim 1, wherein the position of the electronic control button comprises a position having a first duration or a longer second duration, a pre-determined series of two or more depressions and releases of the electronic control button, or a release of the electronic control button between two depressions having two or more variable durations.

9. The endoscope of claim 4, wherein the position of the electronic control button comprises a position having a first duration or a longer second duration, a pre-determined series of two or more depressions and releases of the electronic control button, or a release of the electronic control button between two depressions having two or more variable durations

10. — ~~An endoscope comprising:~~

~~a handle enclosing an electronic processing board for processing signals from an image sensor located at a distal end of a shaft of the endoscope;~~

~~an electronic control button on the handle comprising a member that includes a magnet;~~

~~the magnet positioned above or adjacent to a portion of the electronic processing board on which a Hall effect sensor is located;~~

~~wherein depression, release or movement of the electronic control button alters a position of the magnet relative to the Hall effect sensor, generating respective corresponding signals produced by the Hall effect sensor.~~

~~11.—The endoscope of claim 10, wherein the electronic control button is configured to cause an electronic controller connected to the electronic processing board to start a recording of an image generated by the image sensor, to stop a recording of an image generated by the image sensor, or to take a photograph of an image generated by the image sensor, based on a movement or release of the electronic control button by a user.~~

~~12.—The endoscope of claim 10, wherein the electronic control button is configured to cause an electronic controller connected to the electronic processing board to turn on, turn off, or adjust a light source located at a distal insertion end of a shaft of the endoscope, based on a movement or release of the electronic control button by a user.~~

~~13.—The endoscope of claim 10, wherein depression, movement or release of the electronic control button comprises a position maintained for a first duration or a longer second duration, a pre-determined series of two or more depressions and releases of the electronic control button, or a release of the electronic control button between two depressions having two or more variable durations.~~

~~14.—The endoscope of claim 10, wherein the handle comprises a proximal handle section and a distal handle section, the electronic processing board fixed to the distal handle section, wherein the proximal handle section is rotatable with respect to the distal handle section.~~

~~15.—The endoscope of claim 14, wherein the electronic control button is located on the distal handle section.~~

~~16. — The endoscope of claim 10, wherein the Hall effect sensor is configured to provide a button duration signal corresponding to a duration that the electronic control button remains in a pre-determined position.~~

~~17. — The endoscope of claim 10, wherein the Hall effect sensor is configured to provide a combination signal corresponding to a pre-determined series of two or more depressions and releases of the electronic control button, or to a release of the electronic control button between two depressions having two or more variable durations.~~