WHAT IS CLAIMED IS:

1. A powered ophthalmic lens, the powered ophthalmic lens comprising:

a contact lens including an optic zone and a peripheral zone; and

an eyelid position sensor system incorporated into the peripheral zone of the contact lens, the eyelid position sensor system including a sensor array having a plurality of individual sensors to detect eyelid position, a system controller configured to sample each individual sensor in the sensor array to detect eyelid position and provide an output control signal, and at least one actuator configured to receive the output control signal and implement a predetermined function.

2. The powered ophthalmic lens according to Claim 1, wherein the plurality of individual sensors comprise photosensors for detecting light incident on the eye.

3. The powered ophthalmic lens according to Claim 2, wherein the eyelid position sensor system further comprises an amplifier connected to the photosensors, the amplifier being configured to condition signals output from the photosensors for downstream use.

4. The powered ophthalmic lens according to Claim 3, wherein the eyelid position sensor system further comprises a multiplexer configured to receive multiple inputs from the amplifier and output a single signal.

5. The powered ophthalmic lens according to Claim 4, wherein the eyelid position sensor system further comprises an analog-to-digital converter configured to convert the analog signal from the amplifier to a sampled, digital signal for further signal processing.

6. The powered ophthalmic lens according to Claim 5, wherein the eyelid position sensor system further comprises a digital signal processor configured to receive an output from the analog-to-digital converter and perform digital signal processing, including one or more of filtering, processing and detecting sampled data to permit incident light detection for downstream use.

7. The powered ophthalmic lens according to Claim 6, wherein the digital signal processor comprises associated memory.

8. The powered ophthalmic lens according to Claim 1, further comprising a power supply.

9. The powered ophthalmic lens according to Claim 1, wherein the plurality of individual sensors comprise capacitive touch sensors for detecting contact or proximity and outputting a signal indicative thereof.

10. The powered ophthalmic lens according to Claim 9, wherein the sensor system further comprises sensor conditioners that output a signal proportional to capacitance for downstream use.

11. The powered ophthalmic lens according to Claim 10, wherein the eyelid position sensor system further comprise a multiplexer configured to receive multiple inputs from the sensor conductors and output a single signal to the system controller.

12. The powered ophthalmic lens according to Claim 1, wherein the eyelid position sensor system further comprises a communication channel for coordinating action between pairs of powered contact lenses.

13. A powered ophthalmic lens, the powered ophthalmic lens comprising:
a contact lens; and

an eyelid position sensor system incorporated into the contact lens, the eyelid position sensor system including a sensor array having a plurality of individual sensors to detect eyelid position, a system controller configured to sample each individual sensor in the sensor array to detect eyelid position and provide an output control signal, and at least one actuator configured to receive the output control signal and implement a predetermined function.

14. The powered ophthalmic lens according to Claim 13, wherein the plurality of individual sensors comprise photosensors for detecting light incident on the eye.

15. The powered ophthalmic lens according to Claim 14, wherein the eyelid position sensor system further comprises an amplifier connected to the photosensors, the amplifier being configured to condition signals output from the photosensors for downstream use.

16. The powered ophthalmic lens according to Claim 15, wherein the eyelid position sensor system further comprises a multiplexer configured to receive multiple inputs from the amplifier and output a single signal.

17. The powered ophthalmic lens according to Claim 16, wherein the eyelid position sensor system further comprises an analog-to-digital converter configured to convert the analog signal from the amplifier to a sampled, digital signal for further signal processing.

18. The powered ophthalmic lens according to Claim 17, wherein the eyelid position sensor system further comprises a digital signal processor configured to receive an output from the analog-to-digital converter and perform digital signal processing, including one or more of filtering, processing and detecting sampled data to permit incident light detection for downstream use.

19. The powered ophthalmic lens according to Claim 18, wherein the digital signal processor comprises associated memory.

20. The powered ophthalmic lens according to Claim 13, further comprising a power supply.

21. The powered ophthalmic lens according to Claim 13, wherein the plurality of individual sensors comprise capacitive touch sensors for detecting contact or proximity and outputting a signal indicative thereof.

22. The powered ophthalmic lens according to Claim 21, wherein the sensor system further comprises sensor conditioners that output a signal proportional to capacitance for downstream use.

23. The powered ophthalmic lens according to Claim 22, wherein the eyelid position sensor system further comprise a multiplexer configured to receive multiple inputs from the sensor conductors and output a single signal to the system controller.

24. The powered ophthalmic lens according to Claim 13, wherein the eyelid position sensor system further comprises a communication channel for coordinating action between pairs of powered contact lenses.

25. A powered ophthalmic lens, the powered ophthalmic lens comprising:

an intraocular lens; and

an eyelid position sensor system incorporated into the intraocular lens, the eyelid position sensor system including a sensor array having a plurality of individual sensors to detect eyelid position, a system controller configured to sample each individual sensor in the sensor array to detect eyelid position and provide an output control signal, and at least one actuator configured to receive the output control signal and implement a predetermined function.

WHAT IS CLAIMED IS:

1. A powered ophthalmic lens, the powered ophthalmic lens comprising:

a contact lens including an optic zone and a peripheral zone; and

an eyelid position sensor system incorporated into the peripheral zone of the contact lens, the eyelid position sensor system including a sensor array having a plurality of individual sensors to detect eyelid position, a system controller configured to sample each individual sensor in the sensor array to detect eyelid position and provide an output control signal, and at least one actuator configured to receive the output control signal and implement a predetermined function,

wherein the plurality of individual sensors comprise capacitive touch sensors for detecting contact or proximity and outputting a signal indicative thereof.

2. The powered ophthalmic lens according to Claim 1, wherein the eyelid position sensor system further comprises an amplifier connected to the capacitive touch sensors, the amplifier being configured to condition signals output from the capacitive touch sensors for downstream use.

3. The powered ophthalmic lens according to Claim 2, wherein the eyelid position sensor system further comprises a multiplexer configured to receive multiple inputs from the amplifier and output a single signal.

4. The powered ophthalmic lens according to Claim 3, wherein the eyelid position sensor system further comprises an analog-to-digital converter configured to convert the analog signal from the amplifier to a sampled, digital signal for further signal processing.

5. The powered ophthalmic lens according to Claim 4, wherein the eyelid position sensor system further comprises a digital signal processor configured to receive an output from the analog-to-digital converter and perform digital signal processing, including one or more of filtering, processing and detecting sampled data to permit incident light detection for downstream use.

6. The powered ophthalmic lens according to Claim 5, wherein the digital signal processor comprises associated memory.

7. The powered ophthalmic lens according to Claim 1, further comprising a power supply.

8. The powered ophthalmic lens according to Claim 1, wherein the sensor system further comprises sensor conditioners that output a signal proportional to capacitance for downstream use.

9. The powered ophthalmic lens according to Claim 8, wherein the eyelid position sensor system further comprise a multiplexer configured to receive multiple inputs from the sensor conditioners and output a single signal to the system controller.

10. The powered ophthalmic lens according to Claim 1, wherein the eyelid position sensor system further comprises a communication channel for coordinating action between pairs of powered contact lenses.

11. A powered ophthalmic lens, the powered ophthalmic lens comprising:

a contact lens; and

an eyelid position sensor system incorporated into the contact lens, the eyelid position sensor system including a sensor array having a plurality of individual sensors to detect eyelid position, a system controller configured to sample each individual sensor in the sensor array to detect eyelid position and provide an output control signal, and at least one actuator configured to receive the output control signal and implement a predetermined function,

wherein the plurality of individual sensors comprise capacitive touch sensors for detecting contact or proximity and outputting a signal indicative thereof.

12. The powered ophthalmic lens according to Claim 11, wherein the eyelid position sensor system further comprises an amplifier connected to the capacitive

touch sensors, the amplifier being configured to condition signals output from the capacitive touch sensors for downstream use.

13. The powered ophthalmic lens according to Claim 12, wherein the eyelid position sensor system further comprises a multiplexer configured to receive multiple inputs from the amplifier and output a single signal.

14. The powered ophthalmic lens according to Claim 13, wherein the eyelid position sensor system further comprises an analog-to-digital converter configured to convert the analog signal from the amplifier to a sampled, digital signal for further signal processing.

15. The powered ophthalmic lens according to Claim 14, wherein the eyelid position sensor system further comprises a digital signal processor configured to receive an output from the analog-to-digital converter and perform digital signal processing, including one or more of filtering, processing and detecting sampled data to permit incident light detection for downstream use.

16. The powered ophthalmic lens according to Claim 15, wherein the digital signal processor comprises associated memory.

17. The powered ophthalmic lens according to Claim 11, further comprising a power supply.

18. The powered ophthalmic lens according to Claim 11, wherein the sensor system further comprises sensor conditioners that output a signal proportional to capacitance for downstream use.

19. The powered ophthalmic lens according to Claim 18, wherein the eyelid position sensor system further comprise a multiplexer configured to receive multiple inputs from the sensor conditioners and output a single signal to the system controller.

20. The powered ophthalmic lens according to Claim 11, wherein the eyelid position sensor system further comprises a communication channel for coordinating action between pairs of powered contact lenses.

21. A powered ophthalmic lens, the powered ophthalmic lens comprising:

an intraocular lens; and

an eyelid position sensor system incorporated into the intraocular lens, the eyelid position sensor system including a sensor array having a plurality of individual sensors to detect eyelid position, a system controller configured to sample each individual sensor in the sensor array to detect eyelid position and provide an output control signal, and at least one actuator configured to receive the output control signal and implement a predetermined function,

wherein the plurality of individual sensors comprise capacitive touch sensors for detecting contact or proximity and outputting a signal indicative thereof.