Groundkeeper 145
Continuity Type Ground Monitor

Fail-Safe Operation with Constant Ground Monitoring

Front Panel Design

Machine Remote Control

Application
Fail-safe control of machines stop and start operations and ground wire monitoring at the same time, is provided in a convenient package with the Line Power Groundkeeper 145. It can be used on remotely controlled machines or operator attended machines in achieving fail safe operation with freedom from nuisance tripping. The Groundkeeper 145B (P/N 17-0145B) is available for use up to 5kV applications.

System Operation
The Groundkeeper 145 Ground Monitor System is designed to monitor the continuity of both the pilot-conductor and ground-conductor in an equipment trailing cable. These cables are normally connected between a power source (i.e.: power distribution center) and a load (i.e.: motor), using a cable designed for power, safety ground, and pilot wire operation.

This type of ground monitor requires that a semiconductor diode be connected between the pilot wire terminal and the ground wire terminal at the load end of the trailing cable. A low voltage, D.C. signal current circulates in the pilot-wire/ground-conductor loop; the Groundkeeper 145 system continually monitors this circulating signal.

If this pilot-wire/ground-conductor loop is connected properly and is not open, shorted, or presenting a high impedance, the Groundkeeper 145 will continually provide permissive contact-closure for electrical interlocking of the control system.

The monitor's control contact will OPEN if any one of the following conditions are present:

- The semiconductor diode at the load end is absent
- The semiconductor diode at the load end is open
- The semiconductor diode at the load end is shorted
- The pilot-wire or ground-conductor is open at any location
- The pilot-wire and ground-conductor are shorted together at any location
- The total D.C. resistance in the pilot-wire/ground-conductor loop (in the trailing cable and/or pilot diode circuits) is greater than 50 ohms

Ground Wire Device (G.W.D.)
System interconnection of the Groundkeeper 145 requires that a G.W.D. be connected between the ground-wire return at the power source and the frame-ground of the power source. This device may be either a pair of back-to-back, high-current semiconductor diodes, or a high-current inductor, depending on the application. The purpose of the G.W.D. is to effectively isolate the pilot-wire/ground-conductor loops from each other while providing a ground to enclosure. This ground is used in the event of a problem resulting in significant ground-conductor current. In this way, the individual (separate) signals being monitored by each ground monitor system and its associated pilot-wire/ground-conductor loop are effectively prevented from interfering with each other.
### GROUND KEEPER 145

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### GROUND KEEPER 145B

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### Specifications subject to change without notice.