DEDICATED MEMORY MODULE FOR DEVICE

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Abstract
A memory module is provided for an electrical device such as a switching device or circuit interrupter wherein the memory module is arranged to be mounted with the device and arranged to store data including device characteristics, operating configuration and operational history.
DEDICATED MEMORY MODULE FOR DEVICE

[0001] This application claims the benefit of U.S. Provisional Application No. 60/730,526 filed Oct. 26, 2005.

BACKGROUND OF THE INVENTION

[0002] 1. Field of the Invention

[0003] The present invention relates generally to the field of electrical power systems and, more particularly, to a dedicated memory module for an electrical device such as a switching device or circuit interrupter wherein the memory module is arranged to be mounted with the device and arranged to store data including device characteristics, operating configuration and operational history.

[0004] 2. Description of the Related Art

[0005] Various computer controlled devices include system memory that retains error codes and operational history. For example, Micro-A1 control available from S&C Electric Co., Chicago, Ill. 60626, stores such data as do vehicle computers.

[0006] While the prior art arrangements may be generally useful, they do not provide for a dedicated memory module for a device that is independent of the control resources of the device.

BRIEF DESCRIPTION OF THE DRAWING

[0007] The invention, both as to its organization and method of operation, together with further objects and advantages thereof, will best be understood by reference to the specification taken in conjunction with the accompanying drawing in which:

[0008] FIG. 1 is a diagrammatic representation of a dedicated memory module in accordance with the present invention and illustrated in conjunction with an illustrative device.

DETAILED DESCRIPTION

[0009] Referring now to FIG. 1, a memory module 20 of the present invention is provided for use with an electrical device 30, e.g. an illustrative switch or circuit interrupter as shown that includes an automatic testing and closing feature in a specific implementation. A control 40 is provided to control the functions of the device 30. In the illustrative illustration, the control 40 communicates with a remote transmitter 50 via a communications channel referred to generally at 60 such that the functions and operational modes of the device 30 may be controlled remotely.

[0010] In a specific illustration, the device 30 is mounted with respect to a mounting arrangement 70 that houses the control 40 and the memory module 20. Preferably, the control 40 is removable from the mounting arrangement 70 as illustrated at 41 for service and replacement or the like. In accordance with important aspects of the present invention, the memory module 20 retains device data independent of the control 40 including device characteristics, operating configuration and operational history. The data stored in the memory module 20 is then available to the control 40 upon installation of a control 40 into the base 70. In this manner, when a new control 40 is installed, the control 40 can reestablish operational parameters and have the complete system information available to it immediately upon installation including device characteristics, operating configuration and operational history.

[0011] Considering now the memory module 20 in more detail, the memory module 20 communicates with the control 40 over a communications bus 80 for the bidirectional interchange of data therebetween. For example, the memory module 20 stores permanent or static data that includes characteristics of the device 30, i.e. data that does not change such as device catalog/serial number, device system address, options, etc. Such data is preferably stored in a non-volatile memory of the memory module 20. Additionally, the memory module 20 receives and stores dynamic data from the control 40 during operation of the device 30 such as operational parameters, e.g. device operation count, wear indicators, operational timing parameters, etc. For example, the control communicates with and receives data from the device 30 over bidirectional data bus 90. Further, user-defined settings are also stored in the memory module 20 such as current device and system configuration, assigned location or asset numbers, etc. In an illustrative embodiment, the user-defined settings are communicated from the remote transmitter 50 to the control 40. Accordingly, if the control 40 is replaced, the various categories of data stored in the memory module 20 are available for downloading into the new control 40. Thus, the identity and history of the device 30 are maintained even if the control 40 needs to be replaced. It should be understood that the memory module 20 must retain its stored data independent of the control 40 such that long term memory retention and integrity are important factors for the memory module 20.

[0012] While the present disclosure is susceptible to various modifications and alternative forms, certain embodiments are shown by way of example in the drawings and the herein described embodiments. It will be understood, however, that this disclosure is not intended to limit the invention to the particular forms described, but to the contrary, the invention is intended to cover all modifications, alternatives, and equivalents defined by the appended claims.

[0013] It should also be understood that, unless a term is expressly defined in this patent using the sentence “As used herein, the term ‘...’ is hereby defined to mean . . . .” or a similar sentence, there is no intent to limit the meaning of that term, either expressly or by implication, beyond its plain or ordinary meaning, and such term should not be interpreted to be limited in scope based on any statement made in any section of this patent (other than the language of the claims). To the extent that any term recited in the claims at the end of this patent is referred to in this patent in a manner consistent with a single meaning, that is done for sake of clarity only so as to not confuse the reader, and it is not intended that such claim term be limited, by implication or otherwise, to that single meaning. Unless a claim element is defined by reciting the word “means” and a function without the recital of any structure, it is not intended that the scope of any claim element be interpreted based on the application of 35 U.S.C. §112, sixth paragraph.

1. A memory module arrangement for an electrical device that has functions controllable by a control and that provides operational data to the control, the arrangement comprising:
a control that sends control information to and receives operational information from a controlled device;
a memory module having stored therein information about the device and having writeable memory storage facilities; and
bidirectional data communication means for communicating information between the memory and the control so as to receive the stored information from the memory module and write information to the memory module during operation of the device.

2. The memory module arrangement of claim 1 wherein the memory module includes facilities for retaining information independent of the presence of the control.

3. The memory module arrangement of claim 1 wherein the device includes a mounting arrangement that also houses the control and the memory module, the control being removable from the mounting arrangement.

4. An electrical device comprising:
a switching device;
a mounting arrangement for supporting the switching device;
a control housed within the mounting arrangement and including facilities for controlling the switching device;
a memory module housed within the mounting arrangement having stored therein first information about the switching device and retaining said first information independent of the control;
the control further including facilities for communicating information to and receiving information from the memory module, the memory module further having stored therein second information received from the control.

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