

Keltron PET400 RS485 Distributed Multiplex Communications Repeater

Keltron's PET400 repeaters reshape and regenerate all received distributed multiplex communications. They may be used to extend a PET400 Series wiring scheme beyond the maximum distance of a single wire run, or to branch off in a new direction from locations that don't require the presence of an input monitoring PET. A common application is the use of a Keltron PET400 to convert existing star multiplex wiring into a distributed-multiplex-compatible configuration. PET400s are not polled and do not take up one of the available distributed-multiplex addresses.

In certain applications, alarm systems engineers want to leverage existing field wiring rather than pull new cable for a distributed-multiplex system. However, the existing wiring may be a collection of home run pairs-direct wire runs from every monitored point to the central monitoring site. This is commonly known as star multiplex wiring. In these cases, repeaters may be used to convert this wiring to distributed-multiplex-compatible wiring.

Since Keltron PET400s do not supervise AC power or battery voltage, they are not available except in DC-powered versions. For this purpose, in general, a PET404AC is co-located with one or a group of PET400s. Keltron offers a six-PET enclosure (hub) inside which may be located up to five PET400s plus one PET404AC to monitor power and whose power supply provides the power for the PET400s. The branch ports of all the PETs are interconnected in a bus (Class B) configuration leaving all of the trunk ports open to accept the home run wiring. Each of the six trunk ports can terminate a home run, or by removing the termination jumpers, each trunk can splice together two home runs for a total of twelve home runs, provided that the wiring scheme distance limits are not exceeded. This provides an excellent means of converting to distributed-multiplex wiring from star multiplex wiring which, by definition, brings the wiring from the remote locations into a central location or hub.

Further, all terminations are removed from the branch ports, so that the distributed-multiplex bus that connects all of the branch ports must be terminated elsewhere, typically at the controller in small systems. The branch ports of the first and last PET are used to connect the hub to the distributed-multiplex bus. Only PET #1 requires an address, but all six PETs count as devices on the bus, where the device limit is 31. Therefore, a maximum of five hubs can be bussed together in this way, accepting a total of 60 home runs. However, by utilizing a trunk port to communicate with the next repeater hub, the system can accommodate another bus of 31 PETs. Many variations of this concept are possible and can be iteratively applied to infinitely increase the number of home runs. A maximum of 128 addresses are allowed on any one wiring scheme. Currently, Keltron's DMP/PLM703 can accommodate up to four wiring schemes.

The two repeater models available are the Keltron PET400DC and the Keltron PET400IDC. The PET400DC requires 10.8 to 25 VDC at 15 ma. The PET400IDC maintains isolation between its power source and others on the party line. It requires 17.6 to 25 VDC at 40ma.



Keltron develops and manufactures secure, reliable, UL-listed fire and security alarm response management systems and components for the municipal and proprietary life safety markets. Products include radio fire alarm, coded fire alarm and high-line security systems, digital alarm receivers, universally compatible fire alarm control panel networking solutions and a full line of alarm annunciators. For more information, visit www.keltroncorp.com or contact us at 781-894-8710 X 26, or info@keltroncorp.com.

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