Power Xpert C445™ User Logic

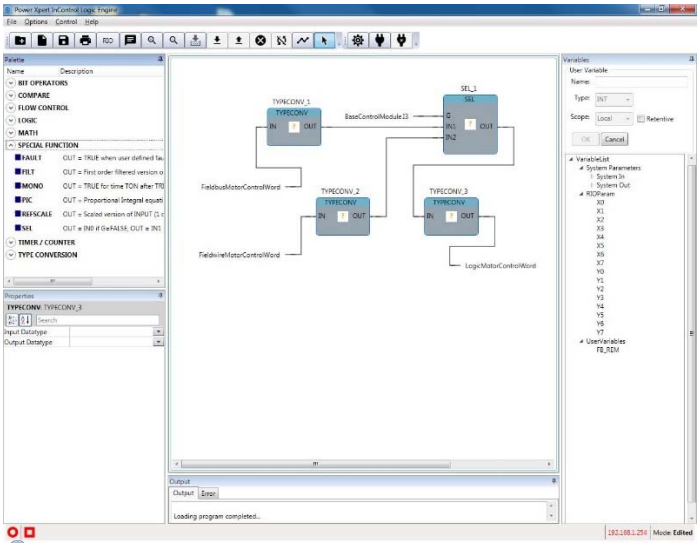
The Power Xpert C445 Motor Management Relay provides customizable control functions, extensive on- board communications and superior diagnostics, making the C445 a versatile motor protection relay for critical applications and improved uptime. The C445 Motor Management Relay offers protection and motor management for the following supported Operation Modes:

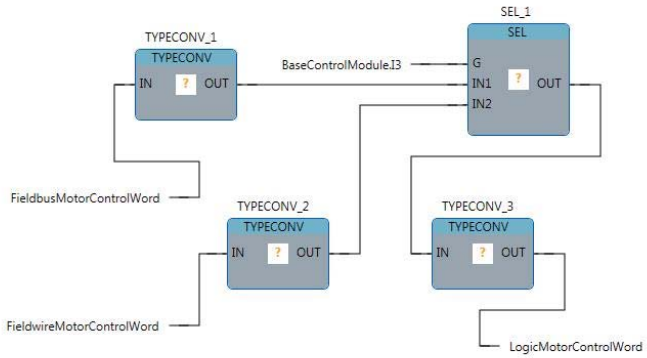
- Overload Only
- Direct On Line (DOL)
- Reversing (FVR)
- Star/Delta
- Two Speed Two Winding
- Two Speed Dahlander
- Auto Transformer
- Solenoid Valve
- MCCB Actuation
- Contactor Feeder
- General purpose Input/Output
- Stand Alone Ground Fault Module

Power Xpert C445 User Logic:

The addition of the Power Xpert C445 User Logic and expansion I/O allows the user to expand the capabilities of the C445 to control and monitor digital I/O, analog I/O and temperature measurements. The expansion I/O can be up to 16 I/O cards, where 8 of those 16 can be analog and temperature cards.

The user logic adds the functionality of a PLC to the compact size of the Power Xpert C445. The advantage to this capability is endless, but the most significant is the reduced overhead on the system level PLC. This frees up PLC processing time to better manage the system. The Logic Engine can also be used to replace a PLC in certain applications such as remote pump sites for Water/Waste Water applications. With a communication network connection information can be passed to an operator or maintenance person as well as back to a system controller.





Customer Benefits

The User Logic is programmed using function block programming. This allows the customer to determine the level of detail needed for their overall system use and maintenance.

Some examples of how the User Logic could be used in various control systems are described below. These are but a few of a potentially limitless number of applications for the Logic Engine and Expansion I/O features.

- Consider a system where the user logic is used to monitor the current and power consumed by a motor and indicate issues with the motor or system (pump, fan etc.) and alert the operator of these potential issues.
- By adding a thermocouple or RTD temperature input module, the bearing or windings temperatures may be monitored for a critical motor. The User Logic can be programmed to monitor the temperature values and trip the motor should these values go out of range. The Logic Engine can also generate a User Defined fault to indicate the reason for the trip. This fault will be displayed on the User Interface and may be monitored via a communication network.
- The User Logic can also be used as the controller for a system using two C445 Motor Management Relays for example, to control an Alternating 2-pump control scheme. Expansion or internal I/O could be used to link the two relays, where one of the C445 relays is running the Alternating 2-pump control logic. Each relay would be controlled by the User Logic and the relays would be used to protect the motors at the same time.
- Expansion I/O also allows the C445 Motor Management Relay to be used as a remote I/O node on PROFIBUS, Modbus TCP, Ethernet/IP or Modbus serial. At the same time, the C445 can be used as a motor protector. If used as a remote I/O node only, the “General Purpose I/O” Operation Mode can be used so a Measurement Module is not required, reducing the cost.

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