Power Converter Status

This application diagram depicts a power converter annunciator with ON/OFF, fault, and overheat status indicators. The indicator senses power signals from an external mechanical relay to determine the ON and OFF indication states. Discrete signals from the converter are used to indicate fault and overheat conditions.

The design uses a single annunciator that has a VIVISUN High Capacity Body which houses the NEXSYS Defined Logic (DL2) and Solid State Relay (SSR1H) components. The SSR1Hs control the ON/OFF indication states. The DL2 is configured as two buffer (unity) logic gates, and it controls the fault and overheat indication states by sensing the low current discrete signals from the converter and outputs corresponding low (ground) signals. An external AC coil mechanical relay is used to sense when converter power is ON/OFF, and LEDs in the circuit breaker panel provide local indication.

The converter is inactive in the default state. 28 VDC power is passing through the normally closed (NC) contact of the mechanical relay which energizes the upper SSR1H (H2). A low (ground) signal passes through this SSR1H (H1 & H4) and illuminates the OFF (A) indicator. When the converter is powered up, the mechanical relay is energized and 28 VDC is now passing through the normally open (NO) contact. This causes the upper SSR1H de-energize and the OFF indicator is no longer illuminated. Furthermore, the DL2 is now powered and the lower SSR1H (L2) is energized. A low (ground) signal passes through this SSR1H (L1 & L4) and illuminates the ON (C) indicator. In this ON state, the DL2 is actively sensing the converter fault and overheat discrete signals. The outputs of the DL2 are high-z (open) when the discrete signals are high-z (open). If a low (ground) is sensed on input A (J1), output Y (K2) becomes low (ground) which illuminates the FALT (A) indicator. Similarly, if a low (ground) is sensed on input C (J3), output Z (K4) becomes low (ground) which illuminates the OHT (D) indicator. Turning the converter off with return the indicator to the default state.

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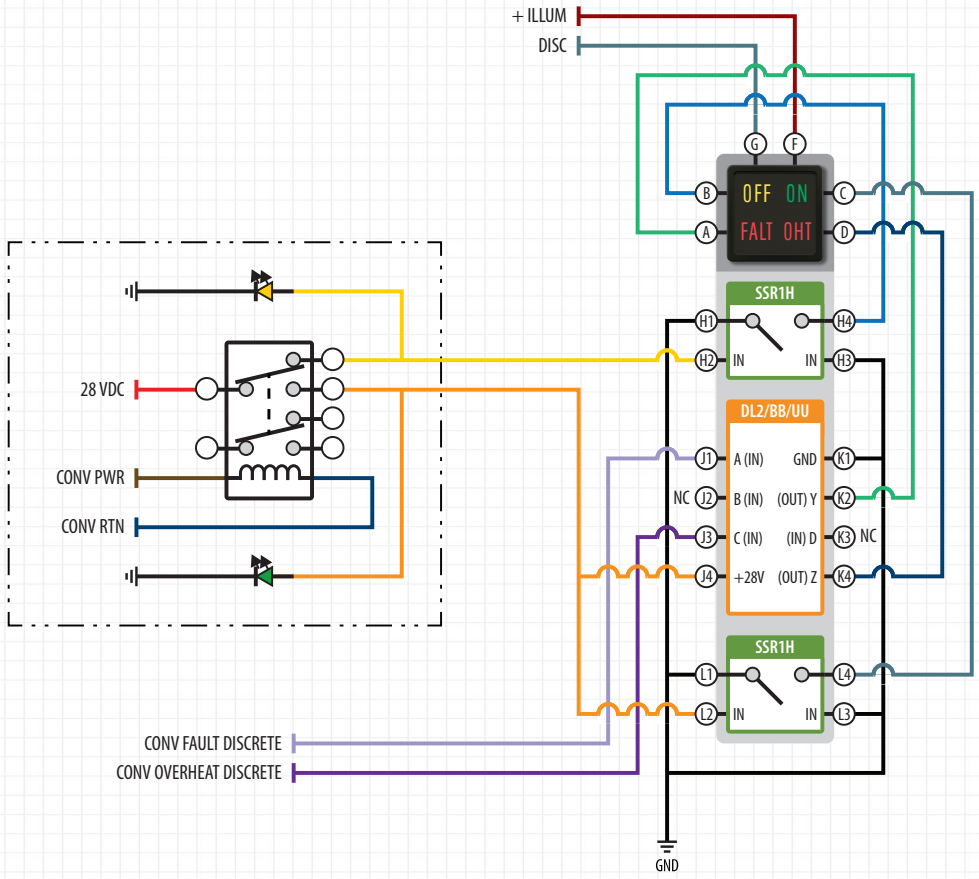

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